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GEORGE H. SIMMONS, M.D., LL.D.

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TREATMENT OF CAUSALGIA

RESULTS OF INTRANEURAL INJECTION OF 60 PER CENT. ALCOHOL

DEAN LEWIS, M.D.
CHICAGO
AND
WESLEY GATEWOOD, M.D.
IOWA CITY

Causalgia is one of the most distressing complications or sequelae of peripheral nerve lesions. This syndrome, observed by Weir Mitchell during the Civil War, has as its predominant feature pain which is described as burning or throbbing in character and is often compared to the sensations produced by pin pricks, a red hot iron or an injury of the flesh. This pain, which never ceases, even at night, may be aggravated by any number of causes and finally becomes paroxysmal.

It is difficult to determine its frequency, for statistics concerning peripheral nerve lesions differ widely. This variation is probably due to differences of opinion regarding the type of case that should be regarded as causalgia. Varying degrees of pain are observed after peripheral nerve injuries, but only the intense paroxysmal type should be regarded as causalgia. Four cases of causalgia were noted among the 550 cases of peripheral nerve injuries which we observed at U. S. General Hospital No. 28. Three of these patients have been operated on and cured by intraneural injections of 60 per cent. alcohol. It is probable that the fourth patient, who is still under observation, will require this treatment.

Weir Mitchell believed the pain due to an ascending neuritis which might involve any injured nerve and gradually involve all the nerves of the extremity affected. It seems to have been demonstrated, however, as a result of surgical interference, that the median nerve is involved most frequently in causalgia affecting the upper extremity, and the internal popliteal in causalgia involving the lower extremity. When a lesion of the ulnar nerve is accompanied by intense pain, it is usually due to an associated lesion of the median nerve or to an injury of the brachial plexus affecting both ulnar and median nerves. Other nerves may be involved. In one of the cases observed by us pain persisted, although diminished in intensity, over the distribution of the long saphenous nerve after injection of the internal popliteal. The pain subsided completely after injection of the long saphenous nerve.

The pathology differs widely in different cases. Joyce has reported five cases, in one of which the median nerve when freed from scar tissue appeared swollen and bluish gray, mottled with purple spots. A small neuroma, which was adherent to the biceps, was found on the nerve. In another patient who complained of severe pain in the foot when walking, sitting or lying down, but who had no paralysis or anesthesia, there was found on roentgenographic examination a small foreign body in the neighborhood of the sciatic nerve. When the operation was performed, the foreign body was found embedded in scar tissue just posterior to the nerve. Immediate and permanent relief of pain followed removal of the foreign body. Gosset found the median nerve only slightly affected in the operations performed by him to relieve causalgia affecting the hand. In one of the cases observed by us, the median and ulnar nerves were embedded in scar tissue, and the median nerve was definitely enlarged and indurated just above the antecubital fossa; in another, the internal popliteal nerve was surrounded by some adhesions which were not at all dense, and the long saphenous nerve, which was subsequently injected below the wound, appeared normal. In both of these cases, neurolysis had been previously performed but had given no relief. In the third case, the median nerve appeared injected and somewhat enlarged, but its consistency did not differ from that of a normal nerve.

REPORT OF CASES

CASE 1.—*Median and ulnar nerve embedded in scar tissue in the lower third of left arm. Median nerve enlarged and indurated just above the antecubital fossa. Previous neurolysis without relief.*

Private E. G., wounded at Château-Thierry, July 19, 1918, had been struck by a machine gun bullet in the left arm midway between the shoulder and the elbow. This produced a comminuted fracture of the humerus and a paralysis of the ulnar, median and musculospiral nerves. He gradually recovered from the musculospiral paralysis, but about ten days after the wound was received he experienced a burning pain in the hand which became paroxysmal in character. This pain was increased by any attempts at movement, by jarring of the bed, and by any quick, irregular movement of the body.

The patient was operated on at Camp Grant, Feb. 10, 1919. Neurolysis of the median and ulnar nerves was performed at this time. After liberation, the nerves were surrounded by a fat transplant. The brachial artery had evidently been injured, for when the operation was performed, no pulsation could be detected in it distal to the wound. The median nerve was described in the operative findings as being bound down beneath the biceps muscle and kinked by scar tissue. The internal cutaneous nerve was not involved.

When examined, April 15, the patient held the forearm flexed at an angle of 80 degrees, with the hand raised and the fingers extended. The fingers were delicate and the whole hand appeared atrophied when compared to the other hand.

The skin was dry, there being no perspiration. A furfuraceous scaling was noted especially on the dorsal surface. The skin on the dorsum was white and shiny while that on the palmar surface was pink, there being no marked difference over the median and ulnar distribution.

All motions of the flexor and extensor muscles were limited. This limitation of motion was probably due to fear of paroxysms of pain which were induced by any attempt at movement. Extreme flexion of the fingers was limited by fibrosis.

The patient complained of a continuous pain over the hand which was more intense over the distribution of the median nerve and was aggravated by almost any movement. Exposure to air or to dry heat, especially a hot atmosphere, also induced a paroxysm, to prevent which the patient usually wore a glove soaked in cold water. When the glove was not worn the patient went frequently to the cold water tap and let the water run on the hand in order to secure relief. He assumed postures to protect the hand, which was usually held up, the body being inclined toward the left.

The patient's mentality and disposition became affected by this aggravating pain. He avoided other patients in the ward and often would be gone for long periods of time, evidently being desirous of being left alone. At times he would be found curled up in bed with the arm bent up and motionless and with the body curved toward the affected hand.

April 17, the ulnar and median nerves were exposed in the lower third of the arm. They were embedded in scar tissue from which they were freed. The median nerve was then injected with a 60 per cent. alcohol solution.

The patient experienced almost immediate relief from the pain. Motion returned; and although there was considerable atrophy, there has been a progressive improvement in the hand and a marked improvement in the health of the patient.

CASE 2.—*Causalgia of the left foot. Ulceration of the foot and leg resulting from maceration of the skin due to wrapping the leg with wet towels for weeks. Internal popliteal nerve surrounded by a small amount of scar tissue. Previous neurolysis without relief by fat transplant. Cure by alcohol injection of internal popliteal and long saphenous nerves.*

S. H. T. received a machine gun bullet wound of the left thigh at Château-Thierry, July 28, 1918. The bullet entered the anteromedial surface of the thigh about 8 inches above the level of the knee joint and made its exit at the same level on the external surface posteriorly. Ever since the wound had been received, pain had been noted along the back of the leg and inner side of the ankle and foot.

An operation performed at Camp Grant, Feb. 11, 1919, revealed scar tissue surrounding the sciatic nerve which did not, however, cause any gross pathologic change in the nerve. Neurolysis by fat transplant was performed. In the history it was noted that an ice bag was applied, February 24, to relieve this pain.

The patient was admitted to U. S. General Hospital No. 28, March 19. He said that he had had no relief from the pain as a result of the operation. It was aggravated by hot applications and irritation of any kind, but was relieved by cold.



Fig. 1.—Appearance of the hand and the position in which it is held in causalgia. The hand is atrophied and emaciated; more delicate and slender than the normal one. The skin has a glossy appearance and is dry, as the secretion of sweat is diminished or entirely suspended.

This patient presented a pitiful picture. He remained in bed all the time. The foot and leg were wrapped in a towel which was kept soaked with water. This had to be renewed frequently, for cold water relieved the pain. As a result of this continued application of a wet towel, the skin had become badly macerated, and several large ulcers had formed on the foot, and multiple small ones on the leg from the opening and the breaking down of blebs. Movements were preserved but were limited, for any attempt at movement induced a paroxysm of pain.

April 24, the sciatic nerve was exposed above the site of the previous operation and the internal popliteal nerve was injected with 60 per cent. alcohol. This was followed by almost immediate relief of pain over the distribution of this nerve, but some pain still persisted.

It was noted in the history that prior to the injection all movements controlled by muscles supplied by the sciatic nerve were present. After the injection, flexion of the toes was lost and inversion and plantar flexion of the foot were weak.

After the injection there was loss of pain and tactile sense in the sole of the foot and back of the heel. There remained, however, marked hypersensitiveness on the back and inner side of the leg down to the internal malleolus where sensory loss was complete.

Pressure on any part of the thigh, whether over the course of nerves or not, produced a sharp pain which started on the inner side of the knee and passed down along the inner side of the crest of the tibia to the internal malleolus, ending posterior to it. This pain had been present from the beginning and had persisted since the alcohol injection. Even the touch of the hand or a jar of the patient induced the same pain. A marked erythema was found along the entire length of the inner surface of the leg. The erythematous strip measured from 2 to 3 inches in width and extended down to the internal malleolus and back of it along the inner side of the foot. The pain did not seem to be influenced by the position of the foot.

June 23, the long saphenous nerve was exposed at the level of the knee joint and injected with 60 per cent. alcohol.

There was immediate relief from pain. It was noted in the history, June 30, that the ulcers were healing, that the erythema had disappeared, and that the patient was comfortable. Shortly after this, the patient was able to put on a shoe and walk with a cane, as the ulcers had healed.

By August 10, all motions had returned and the power of the gastrocnemius, soleus and tibialis posticus was practically normal. There has been no return of pain.

CASE 3.—*Causalgia of left hand. Chapping and ulceration of the skin due to dryness, causing a bleeding hand. Median nerve swollen and injected. Complete relief following injection of 60 per cent. alcohol.*

McM. H. R. received a perforating bullet wound of the left arm 1 inch above the elbow, unaccompanied by fracture, Oct. 2, 1918. Immediately after the wound was received, ulnar, median and musculospiral palsy was noted. Three days after the wound was received, the hand became painful. The pain was described as characterized by a burning sensation or by a feeling of being pricked by pins and needles. Within two weeks the pain became severe. The

skin commenced to peel off the hand about the same time, starting first in the palm of the hand and on the palmar surface of the index and middle fingers. By December, 1918, there was a weeping erythematous eruption involving the entire hand with the exception of the dorsum of the thumb. It extended up to the wrist on the dorsal surface. The pain was aggravated by heat, but relieved by cold, especially by cold water. To relieve the pain, the patient wrapped the hand with a towel soaked in cold water.

For several months the condition was so severe that even the slightest jar of any portion of the body induced a paroxysm of pain. At times the patient walked on his toes to prevent jarring. Rubbing any part of the body, especially dry rubbing, caused a paroxysmal burning pain in the hand. Sudden noise would aggravate the pain. The hand always felt as if "hot and dry." The pain was not so intense in rainy weather. When the hand became hot and sweated profusely, the pain was intense.

By March, 1919, the musculospiral paralysis had practically disappeared, and the patient could extend his wrist. By May, the patient was able to close the hand almost completely. By July 1, he had recovered all the movements of the hand and wrist. The power of the muscles was practically normal.

The ulceration originally involved the entire palm of the hand and the dorsum as high as the wrist. The back of the hand gradually healed from above downward, and when first examined at U. S. General Hospital No. 28, there was only slight roughness, redness and scaling on the back of the hand. The palm was ulcerated and bleeding. The ulcers had a foul odor. Severe pain was experienced in the hand and forearm whenever pressure was brought to bear over the course of the median nerve at the level of the scar.

It was thought at one time that there might be a neuroma, but a satisfactory examination could not be made because of the pain induced by pressure over the course of the nerve.

September 6, the median nerve was exposed just above the old wound. The nerve at this point was reddened and injected. It appeared larger than the median nerve usually does but did not differ in consistency from a normal nerve. It was injected with 60 per cent. alcohol.



Fig. 2.—Complete recovery of motion in muscles supplied by median nerve after injection with 60 per cent. alcohol. This occurred within three months following the injection. Beginning return of motion was noted within three weeks.

September 8, it was noted that the pain had been completely relieved; the hand was dry and healing.

September 11, there was no pain, the ulcers were healed, and the hand was dry and scaling.

Following the alcohol injection there was almost complete paralysis of the flexor sublimis digitorum, the flexor profundus of the index and middle fingers, and complete paralysis of the flexors of the thumb; also some weakness of the flexor carpi radialis and almost complete paralysis of the palmaris longus. Fair power remained in the opponens pollicis.

September 17, there was no pain. The hand, as described by the patient, felt "like a new hand." There had been considerable return of motor power within the last six days, notably in the opponens pollicis and flexors of the middle finger. Power was beginning to return in the flexor profundus of the index finger. There was no return of flexion of the thumb at this time. The patient went home on a furlough.

COMMENT

The pain as a rule reaches its maximum intensity four, five or six months after the injury, then it gradually but slowly, sometimes very slowly, decreases in intensity. The fear of exciting paroxysms of pain may persist long after the pain has actually decreased in intensity, and patients will still resort to methods already described of controlling or preventing the recrudescence of the pain. Improvement in voluntary motion may not occur or may occur slowly even when the pain has subsided and the positions of the parts affected may still persist, resulting in the development of ankyloses which are corrected with difficulty and may render the hand or foot practically useless.

These three patients treated by an intraneural injection of 60 per cent. alcohol experienced almost immediate relief from pain. The ulcers and chapped, bleeding areas healed rapidly, and the paralysis resulting from the injection of the alcohol was temporary.

The early use of the muscles of the extremity affected prevented the development of contractures and atrophy.

In the first case in which the median nerve was injected, April 17, 1919, examination made September 25 revealed good power, which was practically normal in all the muscles supplied by the median nerve. In the second case, the internal popliteal nerve was injected, April 24, 1919, and, Aug. 10, 1919, an examination revealed that all the muscles supplied by this nerve had recovered motion and that the power of the gastrocnemius, soleus and tibialis posticus was practically normal. In the third case the injection was made, September 6; and September 17, motion was present in the opponens pollicis and in the flexors of the middle finger. Motion was beginning to return in the part of the flexor profundus attached to the index finger, but there was no return of power in the flexor longus pollicis.

Sixty per cent. alcohol seems in some cases to interrupt the conduction of sensory impulses, but not to interfere with the transmission of motor impulses. As

is indicated by the excerpts from histories which have been given, motor palsies, when they do develop, are transitory and are rapidly recovered from.

When this injection is made, the nerves affected should be exposed under general anesthesia. The injec-



Fig. 3 (Case 2).—Swollen and macerated foot in a case of causalgia. For two months towels soaked in cold water were continually worn about the foot. These wet applications caused considerable maceration, associated with ulceration.

tion should be made above the wound or site of the injury, for in those cases in which the injection has been made below, the results have been temporary.



Fig. 4 (Case 3).—Scars on palm of hand and the palmar surfaces of the fingers indicate the extent of the ulceration. This foul smelling, ulcerated and bleeding area was healed five days after injection of the median nerve with 60 per cent. alcohol.

From 1 to 2 c.c. of 60 per cent. alcohol should be injected. As this is injected the nerve swells and becomes white, resembling in color a nerve that has been fixed in alcohol for histologic study.

Leriche has advocated in the treatment of these cases periarterial sympathectomy. This procedure of intraneural injection of 60 per cent. alcohol originally suggested by Sicard is so simple and the results are so satisfactory that it should be the operation of choice. Whenever neurolysis is performed in cases of causalgia it should be combined with an intraneural injection of 60 per cent. alcohol. Neurolysis, alone, does not control the pain in many cases, and in those in which there is some relief, it is but temporary.

OBSERVATIONS ON CHEST WOUNDS

REVIEW OF FIFTY-THREE CONSECUTIVE CASES *

HUGH CHAPLIN, M.D.
NEW YORK

The present article is based on a study of fifty-three consecutive thoracic wound cases admitted to the American Red Cross Military Hospital No. 2, Paris, France, from Aug. 20, 1918, to Jan. 31, 1919, a period of over five months. It includes all such cases admitted during this period. It is necessary to consider when comparing the results secured here that during the first part of this period this unit functioned as an evacuation hospital, whereas, later on, it became virtually a base hospital. Thus, early and late deaths appear in the mortality report. Thirty per cent. of the cases were received within four days from the time of wounding; 40 per cent. from four to fifteen days from wounding, while 30 per cent. were admitted later than fifteen days. Although a special effort was made to keep particularly complete reports, rushed conditions, especially during the first few months, often made these far from satisfactory. Particularly was this true of the records of many of the cases up to the time when the patients arrived here. Again, from the point of view of final results, length of necessary convalescence, etc., we are not in a position to make any definite statement, as our patients were in most instances transferred further to the rear as soon as they could be comfortably transported. The average stay in the hospital was forty-three days. In only eleven instances were we able to hear from them later, and then only by the briefest of letters, from one to three months after departure from this hospital, so that only a general impression could be safely secured as to their progress. Also a number of cases came to us when a nearby hospital was ordered to close. They were among its most serious cases, and in three instances death occurred within twenty-four hours, so that our observation of them was almost nil. Unfortunately, the ideal arrangement whereby patients go at once after wounding to a hospital, where they remain during their entire illness, is almost never found in times of great activity. No new methods of treatment were attempted by us, so that we have no innovations to offer. This study has been made, therefore, rather as a review of our experience with this class of cases, and also in the hope of corroborating facts previously noted in the many excellent articles already published by English, French and American surgeons. It may perhaps help to decide certain of the still debated

* From the American Red Cross Military Hospital No. 2, Paris, France.

* Owing to lack of space, this article is abbreviated in THE JOURNAL by the omission of several illustrations. The complete article appears in the author's reprints.

questions by the addition of further evidence for or against them. During this period also a number of isolated points of interest were noted and will be briefly dealt with.

STATISTICS OF CONDITIONS FOUND

Among the fifty-three cases considered in this article, 30 per cent. were perforating wounds; 60 per cent. penetrating wounds; 6 per cent. wide open wounds, and of the remaining 4 per cent. no record was made. Penetrating wounds were considered to be all those in which there was no wound of exit, even if the foreign body had emerged from the thorax and was lodged in adjacent structures. This attitude was taken because the foreign body might still remain in close proximity to the intrathoracic cavity and be directly connected with it by its tract, thus still acting as a possible focus of infection. In 53 per cent. of the cases, shell fragments were the offending instruments, machine gun bullets and rifle bullets in 40 per cent., and in the remaining 7 per cent. no record was made. Simple hemothorax occurred in 32 per cent. of the cases, of which 7 per cent. were large; namely, over 1,500 c.c., and 25 per cent. were less than this. Pneumothorax was reported present in a greater or less extent in 24 per cent., either with or without hemothorax or pyohemothorax. Roentgen examination has shown small pneumothoraces so often when they were not detectable by physical examination that it is quite likely that this figure is much too small. However, except in a very few instances, it is one of the least important intrathoracic conditions found in these cases. Pyothorax we found in 43 per cent. of all the cases. This figure, together with the 32 per cent. of simple hemothorax, would total 75 per cent., and leave 25 per cent. showing neither. However, as many of these patients came to us with insufficient



Fig. 1.—Insertion of a bronze wire rib-stay, apparently for the purpose of filling in the gap formed by the rib resection.

records of the conditions present soon after wounding, it is quite likely that some may have had sterile hemothoraces which had been drawn off or spontaneously absorbed before admission here. This would tend to increase the percentage of sterile hemothoraces, though still leaving some cases in which at no time was there any appreciable fluid in the injured thoracic cavity. This was clearly shown by one accident case admitted about one hour after wounding and watched carefully for the following sixteen days.

CLINICAL COURSE OF VARIOUS GROUPS

In a general way it was possible to divide the cases into two main groups, from the point of view of their

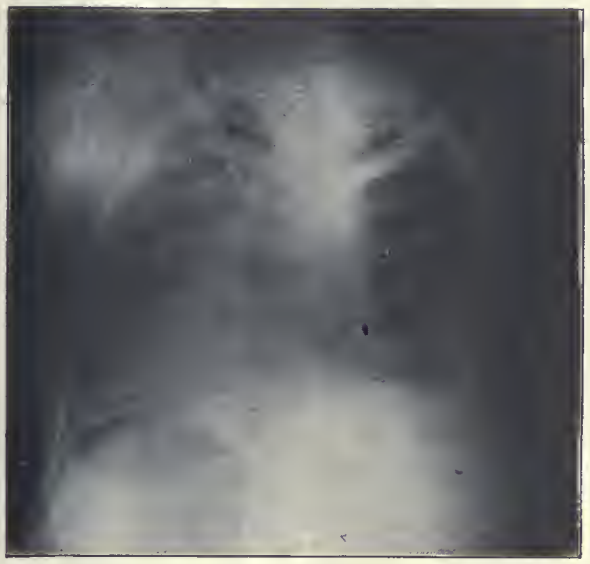


Fig. 2.—The same case as Figure 1; condition of patient after removal of wire rib-stay; increased expansion of right lung and lessened pleural thickening.

clinical course: namely, those without and those with intrathoracic infection. The former could again be divided into two further groups: those cases without and those with hemothorax. The cases without hemothorax rarely showed any rise of temperature and frequently a normal pulse rate. There might be moderate cough and perhaps some spitting of blood for a few days or a week, if the patient had been received soon after wounding. On the whole, they were quite comfortable and normal and were kept in bed for a week or ten days merely because of their almost universal fatigue and as a precaution against the development of any complication.

In those cases with hemothoraces, on the other hand, a fever of from 99 to 101 was generally present, with a moderate rise in pulse rate, probably more cough of a nonproductive, nagging, irritative character, and increasing proportionately with the amount of fluid present. There was often dyspnea, even orthopnea in cases of large collection of fluid. But in none of these cases were the men as acutely ill, with the flushing of the face, feverish brightness of the eyes, the nervous excitability or the severe toxic dyspnea, such as so often accompanied many of the infected thoraces. Exploration revealed a bloody fluid, little changed, without odor and showing no bacteria when cultures were taken. Aspiration of a fair amount of fluid seemed to relieve the fever and the dyspnea and cough, so that frequently after one satisfactory aspiration, though the remnant of fluid persisted for many days, the temperature, and other undesirable symptoms, gradually became normal. Therefore, the mere presence of a moderate temperature with a hemothorax is no certain indication of its infection. But as one cannot be sure except by examination of the fluid, and as it must always be consid-

ered guilty until proved innocent, frequent explorations should be made and the cultures of the fluid taken to check up regularly its sterility while the abnormal temperature lasts.

Two groups could also be made of the infected cases received: those without thoracic drainage and the cases arriving after this had been secured. The former usually showed a steady and rapid rise of fever within two or three days and an equally rapid increase in the other signs of general toxicity. *Streptococcus hemolyticus* either in pure culture or mixed with pneumococcus, or *Bacillus aerogenes-capsulatus* was present in 70 per cent. of the infected cases. The general failure in strength was rapid, so that, without any treatment, a patient's condition might become serious in a few days. In the cases with drainage already secured, the toxicity might continue for three or four days and then gradually diminish with the fever. At times, however, the response to drainage would be immediate. It was not clear if this persistence of fever and toxic symptoms for a few days was due to an unsatisfactory drainage at first, that is, to the retention of infected clots of considerable size, or to a coincident pulmonary complication or merely to the fact that it required an appreciable time for the tissues sufficiently to throw off the toxins absorbed before drainage was provided. After the first week following thoracotomy, except for complications, the whole course was toward a steady return to the normal. Dyspnea and cough practically disappeared and the temperature remained around 90 to 100, touching normal generally in the morning. The pulse, however, was very likely to remain from 90 to 100 for a much longer period even with the patients quiet in bed. A discussion of the variations in the clinical picture due to complications will be taken up later under that heading.



Fig. 6.—Drainage wound closed; large pneumothorax; dense pleural adhesions at base.

TREATMENT

The consideration of the treatment of these patients falls under two headings: namely, those received immediately after wounding and those received later, the discussion of which will be limited to such treatment as was given in this hospital. Because of the paucity of records in many cases we could not draw many conclusions about the early treatment. It is still a much debated question whether it is best when the missile or bone fragments or pieces of clothing may be present and when there may be lung laceration and hemothorax, to open the chest widely at the earliest opportunity, remove all such foreign bodies, sew up lung and diaphragm tears, and close the cavity. There is, to be sure, a great difference between this procedure and merely a rapid débridement of the exit and entry wounds and suturing of any sucking opening, the operative shock in the latter being far less. It is not wholly clear from the scanty records at our disposal whether the seventeen patients in this series operated on soon after wounding belonged entirely to the group of the more radical operation. Certainly the greater proportion did. Of these seventeen cases, eight, or 49 per cent., remained sterile, while nine, or 51 per cent., became infected later, requiring secondary thoracotomy for drainage. In each of these two groups there were three retained foreign bodies; and also in each the percentage of shell fragments and bullets as causative agents was approximately the same, so that these factors had no particular significance. Even when doing the work of an evacuation hospital, this organization was considerably farther to the rear than the average evacuation hospital unit, so that in almost every case the radical operations now under consideration were performed before admission here. Therefore, it was not possible to judge properly of their value, for the patients who might have succumbed to the shock of the operation would not reach us. Of those who did reach us, two out of the seventeen died, however, seven and thirteen days, respectively, after the original radical "clean-out and closure" operation.

One other word about the treatment in these cases before the patients were received by us. Three cases in which fractured ribs had been resected came to us from the same mobile hospital. Pleural infection had occurred requiring later thoracotomy. In each of these cases at the original operation a single bronze wire rib-stay had been inserted, apparently with the object of filling in the gap formed by the resection of part of the injured rib. This was passed through a hole drilled in at least one of the two ribs splinted. These were not cases of particularly large rib resection, and it was difficult to see that any advantage had been secured. In none of these three cases was the wire attached to the second rib when the patients arrived here. In one of these cases, roentgen examinations revealed the free end extending into a large pneumothorax cavity. This was fortunately within reach through the thoracotomy opening, the loop was severed by a pair of stout scissors under the fluoroscope, and the fragments were removed by forceps. The other two cases were not so favorable, as the wires did not jut into pneumothorax cavities. As the drainage openings were closing satisfactorily, the wires were left in place for later removal under a local anesthetic when the existing process of infection had completely ceased. Whatever the original indication for these rib stays, they proved a troublesome complication in the later progress of the cases. Figures 1, 2 and 3 are roentgenograms of two of these cases.

The treatment in these cases after arrival at this hospital may be considered under two headings: nonoperative and operative. The general procedure with all cases of chest wounds received was to have a

roentgen-ray examination of the chest made at once, even before sending the patient to the wards. In the case of the very sickest patients, one of whom was carried over in a semisitting position in his own bed from a nearby hospital, we had to defer the roentgen-ray examination until later. Whenever possible a stereoscopic pair of plates was taken, as these are by far the most valuable of the roentgen-ray examinations. When possible, fluoroscopic examination was also made, but when neither of these was possible, a single plate of the chest was taken with the patient on his back. One must, however, check up very closely by repeated physical examinations the roentgen-ray findings, and correlate them with the progress of the case. It is not usually practical to have many roentgen-ray examinations in every case, but the patients can be examined physically as often as desired. In general, it is possible to have one or two sets of plates made, and when the facilities are available, it is pure negligence not to use them freely. The ear or percussion finger will not tell the presence or location of a foreign body. Frequently also the skin and subcutaneous tissues are so changed either by hematoma from the blow, by a widespread cellulitis, or again from the presence of subcutaneous emphysema, that the exact conditions present within the chest cavity cannot be entirely determined by physical diagnostic means alone. If any fluid was found in a pleural cavity, an exploration and culture were made at once, unless it was a small amount and the temperature was normal. If sterile and of small quantity, it was not aspirated but examined at four and five day intervals so long as the elevated temperature or any other symptoms of infection continued. In all cases of hemothorax of approximately more than 100 or 200 c.c., it was the practice to aspirate as nearly dry as was possible in the belief that convalescence would be shortened. In all except two cases, aspiration was deferred to six or more days after wounding.



Fig. 9.—Drainage wound closed; small pneumothorax at left base; good lung expansion; same case as Figure 7; seventy days after thoracotomy.

Aspiration was performed on eighteen patients altogether: eight once, nine twice, and one four times. Never were more than 1,200 c.c. removed at one time, and no cases of infection of the hemothorax occurred as the result of aspiration. The patients were kept in a sitting or semisitting position during the procedure. A careful anesthesia of the skin and parietal pleura with procain was first secured. This is quickly and simply secured, and makes the aspiration painless. When aspiration may have to be repeated frequently, in case the patients are extremely weak and ill, as they often are, every little refinement of technic, especially when so simple, should be used. When repeated aspiration was necessary, its frequency was determined by the amount of fluid present and the symptoms caused by it, such as dyspnea, cardiac excitability, general restlessness, cough and also the persistence of a moderate elevation of temperature. In large collections it was done every day or two until the quantity of the fluid had been markedly reduced; or in moderate sized collections, a second and final aspiration might be layed for a week, as the remaining fluid was often absorbed quickly of itself.

The condition of the blood in the pleura has often varied considerably. It might be fairly thick and uniform, or thin and mixed with clots. Not infrequently the needle had to pass through repeated and firmly fixed partitions of clotted blood in order to reach the intervening layers of the thin fluid blood. If one is not certain of the amount of fluid in the chest, he is apt to stop after emptying a single small pocket and miss the main collection of fluid, for fear of doing damage to the lung by persistent attempts to penetrate to various depths and in various directions the tough wall which he takes to be the visceral pleura. If the patient can be in a semiupright position, held firmly by an attendant so that he can relax; if also one has not unnecessarily excited him to rapid respiration by undue pain; if the needle is sharp, of fairly large bore and rather short point, and if one avoids the obviously dangerous regions, it would seem quite safe to explore thoroughly even if the lung were to be punctured in the process. We have seen no undesirable complications from it and believe that one must persist in the effort actually to remove the fluid when one is sure it is there. Some chests, however, would appear to contain merely a mass of blood clot. There was one such case in this series in which, after several thorough attempts to remove what appeared, on examination, to be a moderately large fluid collection, it was necessary to leave it alone. We have not used the method of replacing the fluid aspirated, in the case of large collections, with oxygen. That would seem to be advisable if it permits the cavity to be more completely drained at a single time; for, though aspiration is simple and not dangerous, the fewer of such procedures needed, the better, particularly in men severely wounded, who are as a rule also thoroughly fatigued.

The nonoperative treatment of infected hemothoraces, and pure empyemas, without hemorrhage, is simple, though considerable judgment is needed to know when and how long to depend on it. In brief, our practice has been to employ repeated aspiration at from one to two day intervals in all cases in which it appeared that patient was too ill for the moment to stand a satisfactory operation for drainage, and when immediate relief was needed. Frequently a rapid, painless aspiration of as much fluid as could be readily obtained, together with a dose of morphin, would give the one or two days of comparative comfort necessary to raise the patient's resistance sufficiently to allow the operation to be done with relatively small danger. In certain cases in which the toxemia did not depend on the quantity of fluid present, or when aspiration, for one reason or another, was not complete enough, free operative drainage in spite of the operative risk seemed best. One cannot rely on nonoperative preliminary aspiration in every case, but must be guided by the particular conditions found in

each case. How long to persist in aspiration if temporary relief is given depends largely on whether the patient's condition can be kept good until the fluid becomes a thick pus and the empyema localizes. There are frequently larger or smaller blood clots which cannot be aspirated and which should be removed as soon as possible, so that when these are present an earlier recourse to operative drainage is wise. Then, lastly, there are some cases in which the patient's excellent condition takes from operative procedure almost all its dread. In these there is no particular reason for delaying it. In brief, then, aspiration in these cases is merely to be used as a bridge of the dangerous gap between the time when some relief is essential but the general condition is too critical for operative procedure, and the time when the patient's resistance has improved enough to stand these more satisfactory measures of relief.

Two types of operation are employed at this stage: The first consists of a wide opening secured by using



Fig. 12.—Perforating shell wound of right apex; compound, comminuted fracture of right scapula; suppurating tract; no pleural infection.

a strong screw rib-spreader. This permits a thorough exploration of the pleural cavity and search for foreign bodies, as well as the removal of infected blood clots. It is not a minor operation and entails considerable shock; but, if there is reason to believe that blood clots are present and the man's condition will permit of it, these should be removed. The same thing applies to all other foreign bodies if they can be reached without unduly increasing the trauma or length of the operation. It would seem to insure a freer drainage and a more certain, shorter and more steadily progressive after-course than the second type of operation; namely, the ordinary thoracotomy with merely the insertion of a double rubber drainage tube. The latter operation has the great advantage of being particularly suitable for the use of local anesthesia and the consequent diminution of shock. When careful anesthesia is produced, it is a comparatively simple operation; but it does not permit of search for the foreign body or cleansing of the cavity of clots. It should be reserved, therefore, either for cases with thin, homogeneous, clot-free fluid or for those cases in which the shock of the more radical operation could not be tolerated.

When shell fragments are present in the lung and there is no infection, they should not be removed except in the rare instance when they seem to be the cause of severe pulmonary hemorrhage. In the presence of infection of the pleura, our limited experience has led us to feel that, although a definite attempt at removal of the foreign body should be made, it should be left in place if not extractable with fair ease, because of the trauma incident to opening up fresh lung tissue. Eleven drainage cases were observed until the operative wound was closed. In three of these in which the shell fragment was present, the average time to closure was forty-two days. In the remaining eight cases without foreign body, the average time to closure was forty-eight days. From these figures it would appear that the presence of missiles in the lung has no retarding effect on the wound closure. Nor is it clear that their presence favors the occurrence of complications such as are dealt with later. Out of our thirty-two penetrating chest wounds, twelve, or 38 per cent., experienced some complication referable to the wounding; whereas of the sixteen perforating wounds only five, or 31 per cent., were complicated. However, of the twelve patients with foreign bodies in the lung when discharged from this hospital, only 33 per cent. were complicated; whereas complications occurred in 39 per cent. of the cases in which the missile was removed. In all these deductions it is necessary to bear in mind that they are based on a very small series. Yet, with this reservation, it is quite possible that they may point the way, in certain disputed questions, to the wiser course to follow. In this instance it would appear that the practice of insisting, in almost every case of infected intrathoracic penetrating wound, that the foreign body be removed at all costs is not wise, and that only in case it can be found with comparative ease and without obvious danger to the patient's condition should search be continued.

PERIOD OF RECOVERY

The period of recovery presents interesting points for consideration. Blow bottles were given to the patients just as soon as they were strong enough to use them. It is my impression that they were of benefit; and although started often at once after operation in the infected cases, we saw no bad effects that might have been laid to too early employment.

In most of the cases the drainage tubes were continued in place, though steadily cut down in length and diameter almost to the time when the wounds were ready to close permanently. In the few isolated cases in which the tubes were removed early, it was necessary to replace them very shortly to reestablish the drainage and reduce the coincident temperature. Careful daily dressings until the temperature is practically normal, the freedom of drainage assured, and its amount largely diminished, are essential. This has included replacing the tube each time by a fresh one. Whether or not to irrigate the cavity, and if so, with what solution, are questions which have received much general attention recently, both in empyema following chest wounds and in the postpneumonic type. In a few cases a gentle irrigation with salt or with surgical solution of chlorinated soda (Dakin's solution) was employed by us each day when the wound was dressed.

Patients were selected with the empyemic cavities circumscribed and apparently well walled off. Three of these patients, however, developed broncho-empyemic fistulas and only by very good fortune escaped serious consequences from the passage of the irrigating fluid



Fig. 14.—Shell fragment in middle of left lung; surrounding consolidation and probable abscess.

into the lung through the fistula. All three patients in whom this complication was noticed remarked that they tasted the solution. Two were thrown into violent fits of coughing and were nearly suffocated for the moment, while the third, though not troubled so much at first, developed a small bronchopneumonia around the fistula as the result of the fluid's irritating presence in the lung at that point. Therefore, although we made no systematic use of empyemic-cavity irrigation, our small experience was unfortunate and suggested that the occurrence of broncho-empyemic fistulas was not infrequent and that they might even be caused by the irrigations.

During the week or ten days immediately following operation for drainage, it was often very difficult to determine with certainty the cause of a persistent elevation of temperature and symptoms of absorption. These symptoms may have been due to retained blood clots blocking good drainage, or to a smaller or larger patch of bronchopneumonic consolidation. With us, it was necessary to consider always the intercurrence of an attack of influenza, as the period covered by this paper was that of the great, world-wide influenza epidemic. Frequent physical examinations, leukocyte and differential blood counts, and especially stereoscopic roentgen-ray plates and fluoroscopic examinations were absolutely necessary to give one a constant and clear picture of exactly the conditions present.

Figures 4 and 5, roentgenograms taken during such periods of uncertainty, show how difficult it is, even with the aid of repeated roentgen-ray examinations, to interpret the symptoms properly. The first case (Fig. 4) is that of a perforating wound of the right upper lobe, complicated by a moderately large hemothorax which clotted badly and became infected. Thoracotomy was done under local anesthesia and the clots were not thoroughly removed. It seemed quite certain that they prolonged the discharge for weeks until entirely digested. During this time it was a constant question whether or not there was some hidden sacculated pocket of pus not draining. The lower portion of the cavity anteriorly, where there was considerable dulness and a roentgen-ray shadow, was frequently needled for fluid but without result. There was also a definite, persistent and clearly outlined shadow in the upper and outer portion of the affected side suggestive of a localized empyema at that point. Being high up in the axilla, it was very difficult to reach even with the exploratory needle, so that exploration was delayed for a number of days. It so happened that about this time the drainage became freer from the thoracotomy wound, the temperature dropped, and the patient began an uneventful recovery. The shadow persisted, however, so we were constrained to believe it was not due to anything other than thickened pleura and that elevation of temperature was caused by the slowly digesting blood clots. The second case (Fig. 5) shown in this connection was somewhat similar, being that of a penetrating wound with a shell fragment lodged in the left upper lobe. No pneumonia, pneumothorax or hemothorax was present, and yet there was a high fever and toxemia for from three to four days after admission. The patient had the same dense shadow in the upper outer region of the left thorax, which was suspected of being a localized empyema. He did have, however, a moderate subpectoral abscess at the wound of entrance. This was drained freely by incision, with a complete subsidence of symptoms, though the roentgen-ray shadow persisted a long time. This is a good example of a case in which no one means of diagnosis could be relied on. The frequent careful use of all should, however, clear up most obscure cases.



Fig. 15.—Large perforating left lung tract surrounded by fibrous tissue; consolidation resolved; good lung expansion. Same as Figure 14 but with foreign body removed.

Eleven of the cases in this series with empyemic drainage wounds were observed up to closure. The shortest time required was thirty-three days in one case, the longest sixty days in one, while the average number of days was forty-seven. As stated before,

those with the missile still in the chest averaged forty-two days, while those free of any foreign body took forty-eight days. It has seemed that the persistence of large clots, not cleaned out at operation, has prolonged the closure.

It was interesting and instructive to watch the change taking place in the chest as the discharge lessened and the time for closure approached. Frequently after the discharge had become scant and thin and the temperature remained normal, the wound would close while a large pneumothorax still persisted. This is well shown by Figure 6. Now and then, however, the pneumothorax contracted gradually down and had practically disappeared when the drainage wound closed.

The final intrathoracic functional disability observed both in the noninfected and the infected cases was surprisingly slight. In sixteen cases of noninfected hemothorax, practically all of which were aspirated nearly dry, 56 per cent. had good lung expansion, 38 per cent. fair expansion, and only one case, or 6 per cent., poor expansion on discharge. In the last case the patient had to be evacuated with a large hemothorax still present. He was heard from two months after leaving our observation, and though he had not been aspirated again, he reported that his lungs gave him no trouble at all and that he felt in excellent health. Of sixteen empyema drainage cases, in eleven of which closure had taken place before the patients were transferred from this hospital, 44 per cent. showed good lung expansion, 44 per cent. fair and 12 per cent. poor expansion. It was particularly interesting to see how quickly the expansion would increase in cases of long standing intrathoracic suppuration with considerable fibrosis. Figures 7, 8 and 9 show this point particularly well.



Fig. 16.—Penetrating shell wound of left axilla; abscess in left upper lobe, draining through wound; no pleural infection.

COMPLICATIONS

Complications directly traceable to the chest wound were present in twenty-four cases, or 45 per cent. They were: bronchopneumonia and lobar pneumonia, purulent pericarditis, general septicemia, secondary hemorrhage, influenza, broncho-empyemic fistula, fibrinous and serous pleurisy, toxic diarrhea and pulmonary tuberculosis. Of these, bronchopneumonia was the most frequent, occurring in eight, or 33 per cent., of all cases. In all except three of this group it was in the opposite lung from the injured side. This does not include the moderate infiltration generally present in the lung tissue immediately about the track of the missile. In one of these cases it appeared that the pneumonia was just enough to cause death in an otherwise thoroughly exhausted patient. In three others which were not fatal it was a serious complication. General hemolytic streptococcus septicemia occurred once, causing death. Purulent pericarditis was present once, causing death. It was hard to detect this condition because a complete unilateral pneumothorax with what appeared to be a resulting displacement of the heart to the opposite side obscured what was really a distended pericardial sac. The partially collapsed lung on the pneumothorax side was another source of error appearing to account for the altered cardiac roentgen-ray shadow on that side. In this case, unfortunately, no audible signs of pericarditis were detected at any time. Figure 10 shows the conditions in this case. There was one case of intrathoracic secondary hemorrhage from intercostal vessels, causing death. The two cases of broncho-empyema fistula have already been mentioned. One of these patients left us with his drainage wound healed, and the patient gaining daily in strength. The other patient's wound was still open. The drainage in this case was not as favorable, so that it will undoubtedly take longer to heal. In the one case of diarrhea included here, no organism could be found in the stool. The condition persisted until drainage of an infected hemothorax was provided, after which it cleared up promptly. The infecting agent in the thorax was the bacillus of influenza. It was a late infection of a previously sterile hemothorax, very probably of the same origin as the severe accompanying bronchitis, although unfortunately the predominating organism in the bronchial secretions was not determined. The diarrhea appeared to be definitely of toxic origin.

In connection with this case of influenza infection of a hemothorax, there was one other case which developed quite late a bronchopneumonia in the left lower lobe, which had been the seat of a penetrating wound. Influenza bacilli in pure culture were recovered from the sputum. A moderate serous effusion occurred in the left pleura but continued sterile, and after one moderately large aspiration it was absorbed without further trouble.

Moderate and severe attacks of influenza occurred in six cases. They were without serious consequence, but were of interest as the aching, which in a non-wounded man is especially noticeable in the arms and legs and back, were in each of these cases especially referred to the region of the wound. It was often difficult at first to differentiate an attack of influenza from a pocketing of pus within the injured chest cavity. In influenza complications, however, the negative findings by roentgen ray and the usual low leukocyte count of influenza were of great differential assistance.

In only one of our cases was pulmonary tuberculosis found. This was in a young man (without pre-

vious tuberculosis history) who sustained a perforating wound of the left upper chest shattering the clavicle and scapula. The pleural cavity became infected and required thoracotomy and drainage. The patient was admitted to us ninety-six days after wounding. At that time he showed at the opposite apex a very generally scattered tubercular infiltration. The bacilli of Koch were present in the sputum. He was emaciated and presented a sharply remittent fever which reached each day between 103 and 104. It was suggested that this had probably been a hematogenous infection from some previously moderately quiescent focus in the wounded lung. It is one of the very few similar cases observed among the wounded of the American Expeditionary Forces. The roentgen-ray findings in this case are shown in Figure 11.

MORTALITY

In considering the mortality, reference should be made again to the fact that during the period covered by this paper this unit acted for a time as an evacuation hospital, and also that more than one third of the deaths occurred within twenty-four hours after admission from a nearby hospital compelled to close and transfer all its cases. If we consider these facts, the otherwise high mortality of 15 per cent. is better understood. Of the eight deaths, the average day of death in four cases was the thirty-third day after wounding; in two other cases the average day of death was ten days after wounding, and for the remaining two the figures were not available. Three patients died within twenty-four hours after admission, one four days after, and one each on the ninth, tenth, fifteenth and sixteenth day.



Fig. 17.—Large shell fragment in abscess of left upper lobe; consolidation above; lower lobe normal. Same case as Figure 16.

Eleven per cent. of our patients wounded by shell fragments died, while only 5 per cent. of the patients wounded by bullets died. All of the eight deaths occurred in infected cases. The causes of death were as follows: bronchopneumonia occurred twice, shock twice, while lobar pneumonia, purulent pericarditis, postoperative intercostal hemorrhage and *Streptococcus hemolyticus* septicemia each occurred once. Our statistics did not show any direct connection between the type of organism present and the percentage of mortality. Seventy-five per cent. of the cases resulting fatally were complicated. Of the cases in which recovery took place, only 33.3 per cent. showed such complications. The complication in the fatal cases seemed to be the direct cause of death. The two important deductions are, therefore, a reiteration of already well-known facts, that shell wounds are far more serious than bullet wounds, and that complications are much to be feared because of their high mortality.

Apart from the groups of cases already considered, there were a few special conditions of considerable interest. One was a perforating wound of the right upper chest near the shoulder, comminuting the scapula badly. Figures 12 and 13 show the outward appearance of the wounds and the intrathoracic condition. For a number of weeks there was a continuous tract through the chest. This gradually cleared, fibrosed, contracted to a cord, the surrounding traumatic consolidation resolved, and the wound closed satisfactorily. The other two were penetrating wounds. In one case (Figs. 14 and 15) with a posterior wound of entrance, two pieces of shell were found close together toward the anterior surface of the left lung just above and inside of cardiac apex. They were removed by anterior incision, a complete perforating tract being formed. The pleura remained uninfected and the same course was followed to closure as in the first case. The second penetrating wound case showed a piece of shell 1.5 by 0.5 by 4 cm. in size which had entered high in the left axilla and penetrated deeply into the upper lobe of the left lung, forming a lung abscess but sparing the pleural cavity. Figures 16, 17 and 18 should be seen in this connection. The fragment was removed and drainage improved. The abscess had contracted greatly when the patient was transferred.

One more freak case showed a great deal of the lower sternum and the sternal attachments of the right and left lower ribs shot away in such a manner as to produce a gutter wound. The mediastinal space was open for an area of 4 by 8 cm., showing clearly the outer surface of the parietal pericardium. The heart beat was clearly visible. Each pleural cavity contained between 50 and 100 c.c. of thin, slightly bloody, sterile fluid; but only a moderate superficial infection of the wound occurred which quickly cleared, the pleura and pericardium escaping entirely.

In this series there were only two cases in which *Bacillus aerogenes-capsulatus* was present in pure culture in the hemothorax. One of these men was wounded twenty-seven days before operative drainage was finally provided. When admitted, he was in great distress and pain from intrathoracic pressure. An aspiration of 500 c.c. of bloody purulent fluid gave no relief. Unfortunately, the needle was still below the upper level of fluid and so did not afford direct relief of air tension. After the aspiration there did not seem to be a great quantity of fluid left, but the intercostal spaces continued to bulge. It was only when free drainage by thoracotomy was provided that relief came. From observations in this case we were inclined to believe that the gas bacillus had been the positive agent in producing the increased intrathoracic tension. The second case of pure culture, although it was over two weeks after wounding before thoracotomy was done, showed no undue intrathoracic tension. Nor was this present in four other cases in which this organism was mixed with the hemolytic and nonhemolytic streptococcus.

The symptoms experienced immediately after wounding agreed entirely with those so often and so

well reported elsewhere. Generally there was the sensation of a heavy blow followed by dyspnea, cough and frequently hemoptysis, which was generally moderate and lasted only a few days. Now and then it was severe or continued for a week or two. We have no information as to how often the hemorrhage was



Fig. 18.—Apical consolidation resolved; foreign body removed; fibrosis about cavity; good lung expansion. Same case as Figure 16.

fatal. There was occasionally profound weakness and fainting or temporary weakness from which recovery was rapid. Very frequently in clean perforating bullet wounds the lack of symptoms was extraordinary. Men reported having walked alone or with assistance as much as five miles before collapsing.

CONCLUSION

The following facts seem fairly clear: The diagnostic means of needle puncture and stereoscopic and fluoroscopic roentgen-ray examination should be freely employed. As a nonoperative measure, repeated aspiration has a very important place in the treatment if judgment is used in employing it. In cases requiring merely thoracotomy and drainage or when this is all that can be attempted, local anesthesia with 1 or 2 per cent. procain is of great value. On the contrary, when large infected clots are present and the man's condition will permit it, a more radical operation is to be preferred. Foreign bodies in the lung are tolerated with unusual ease both in noninfected and in infected cases, so that, whereas, in the latter cases, an attempt should be made to remove them, no great dread need be entertained, so far as our early information goes, if they must be allowed to remain. It is most encouraging to see how much lung expansion can occur even after the severest injuries and infections within the pleural cavity.

We cannot yet say with certainty what is the best type of early operative treatment for these cases. This question (and many others still obscure) is bound up inextricably with the as yet unsolved administrative difficulty of providing special hospitals for thoracic wound cases near enough to the front that a sufficient number of patients can be sent there directly after being wounded and kept there under continuous observation during their entire convalescence.

SUMMARY OF FIFTY-THREE CASES OF INTRATHORACIC WOUNDS

	No. of Cases	Percentage
Mortality	8	15
Perforating wounds	16	30
Penetrating wounds	32	60
Wide open wounds	3	6
Type unknown	2	4
Sterile hemothorax	17	32
Pyohemothorax	23	43
Wounds due to shell fragments	28	53
Wounds due to bullets	21	40
Type of missile not known	4	7
Missile in lung when patients were transferred	12	38*
Missiles removed	20	62*
Presence of complications	19	36

* Of penetrating wounds.

FALSE PNEUMOTHORAX*

B. P. STIVELMAN, M.D.
Medical Superintendent, Montefiore Home Country Sanatorium
BEDFORD HILLS, N. Y.

Few localized pneumothoraces can be diagnosed without the aid of the roentgen rays. Indeed, most recent observations on interlobar pneumothorax[1] and pleural and pulmonary annular shadows[2] are based solely on the routine roentgenologic study of patients suffering from pulmonary diseases.

There are rare cases, however, in which a rapid roentgenologic examination may suggest a localized pneumothorax or hydropneumothorax, when in reality neither condition exists. French writers, who were among the first to recognize this condition, applied the term "faux pneumothorax" to these supposed roentgenologic aberrations. These false pneumothoraces do not cause any definite subjective symptoms, and the physical findings over the area involved are those of



Fig. 1.—Apparent hydropneumothorax at left lower lobe, showing advanced fibroid changes throughout the left lung suggesting evidence of multiple cavitation, with the heart drawn markedly to the left and upward.

* From the Montefiore Home Country Sanatorium.

1. Fishberg, Maurice: Localized and Interlobar Pneumothorax Complicating Pulmonary Tuberculosis, Arch. Int. Med. **20**: 739 (Nov.) 1917.

2. Sampson, H. L.; Heise, F. H., and Brown, Lawrason: A Study of Pulmonary and Pleural Annular Shadows, Am. Rev. Tuberc. **2**: 664 (Jan.) 1919.

thickened pleura with retraction of the lung tissue. There is usually a fluid level in the region of one or the other of the lower lobes of the lung, where these pneumothoraces usually occur. Their appearance either fluoroscopically or on flat or stereoscopic plates is characteristic of localized hydropneumothorax.



Fig. 2.—Same patient six months later, showing the fluid level of the apparent hydropneumothorax one inch higher after the ingestion of 16 ounces of water.

Careful observation, however, will disclose the fact that such air collections are extrathoracic and are situated below the diaphragm, which is either pushed or drawn high up into the hemithorax. When situated at the right lower lobe, such gas collections are frequently due to a subdiaphragmatic abscess. The gas formed pushes the diaphragm high up into the thoracic cavity, thus causing the adjacent lung tissue to collapse. When situated at the left lower lobe, they very frequently are due to extreme pulmonary fibrosis with marked upward traction of the diaphragm, and to a more or less dilated stomach. In the former instance the fluid level is caused by the gas-containing abscess, and in the latter instance by the stomach contents.

The paucity of reports of this condition in the literature prompts the recording of all such cases, for by so doing a great deal of inconvenience and some danger may be avoided when considering exploratory puncture. Lebon relates one such instance from his service at the military hospital at Buffon. A soldier's stomach, which was punctured for diagnostic purposes, was found drawn high up into the thorax, thus simulating an intrapleural fluid and air-containing space. It is reasonable to assume, however, that such instances occur more often than the number of reports on the subject would indicate.

I observed a case of pulmonary tuberculosis in which the lesion at the left lower lobe had been interpreted, at a hospital for the tuberculous, as a thickened pleura with retraction of the diaphragm. After a physical and roentgenologic examination of the patient, on her admission to our sanatorium, a diagnosis of pulmonary tuberculosis, complicated by spontaneous localized hydropneumothorax, was made (Fig. 1). Many months of observation and ultimately a more careful roentgenologic examination proved that the supposed hydropneumothorax was a markedly retracted stomach.

REPORT OF CASE

S. K., aged 27, admitted to our institution in February, 1919, gave a typical history of pulmonary tuberculosis, with recurrent attacks of chills, fever, sweats and hemoptyses, extending over the previous five years. Physical exploration of the chest disclosed evidence of consolidation and marked cavity formation of the upper half of the left lung with a very dull note on percussion and feeble breathing over the left base. Neither splash nor coin sign could be elicited. The condition at the left base was thought to be the result of a thickened pleura. The right upper lobe showed evidence of moderate tuberculous infiltration. The heart was drawn upward, markedly to the left. Fluoroscopic examination of the chest confirmed the physical findings in general, but instead of the thickened pleura at the left base we were astonished to find a marked hydropneumothorax. A roentgenogram (Fig. 1) taken the same day confirmed the fluoroscopic findings. The patient's general condition improved during the following six months, and repeated physical examinations during this period disclosed no evidence of the existence of the hydropneumothorax, although the roentgenogram disclosed the same condition as seen in the first examination.

Contrary to expectation, the air in the supposed pneumothorax was not absorbed to any appreciable degree. Furthermore, the fluid level varied with the ingestion of food, being higher after a full meal (Fig. 2), lower before breakfast, and entirely absent on fasting (Fig. 3). This prompted us to give the patient a barium meal which, on fluoroscopic observation, was seen to reach the supposed hydropneumothorax and cause a splash and distortion of the fluid level. Capsules filled with barium were seen to enter this air pouch and rest on the fluid level before disintegration (Fig. 4).

COMMENT

When these false pneumothoraces occur on the left side they must be differentiated from transdiaphragmatic hernias, which, with the exception of the few congenital cases reported in the literature, are almost invariably due to extensive shrapnel, gunshot and stab wounds, and give rise to acute symptoms, as dyspnea,



Fig. 3.—Same patient after fast of fourteen hours, showing absence of fluid level in the air-containing space at left lower lobe.

hemoptysis, hematemesis, fever and chills, which are referable to both the left lung and the stomach. Before the roentgen ray was extensively employed, a diagnosis was made in many such cases following a history of injury, tympanitic note over the area involved, or most often as a result of the protrusion of some of the abdominal contents through the wound in the chest

wall.[3] A transdiaphragmatic hernia may be recognized roentgenographically by the appearance of part of the stomach above the diaphragm and part below.

Patel and Jaboulay,[4] however, assert that a number of diaphragmatic hernias present no clinical histories, but are discovered at necropsy. It is reasonable to assume that these observers referred to the congenital form of this condition, for recent reports would indicate that all traumatic diaphragmatic hernias give rise to unmistakable symptoms which are usually corroborated by careful roentgenologic examinations.[5]

Extrapleural pneumothorax at the site of the needle puncture has been described by Gwerder,[6] who reports a case of pneumothorax in which a large gas pouch was formed extending from over the fifth to the eighth rib in the left anterior axillary line, presumably the result of high intrapleural pressure. The pouch, which distended on coughing and sneezing, could be reduced by firm bandaging.

Barjon and Courmont mention a case in which it was doubtful whether the diagnosis should have been



Fig. 4.—Same patient, showing height of fluid level after drinking about 24 ounces of fluid, with a barium capsule projecting from the fluid level about five minutes after it was taken.

pyopneumothorax or retracted stomach. Lebon[7] describes two cases of false pneumothorax, and more recently Aimé and Solomon have reported a case in a tuberculous patient.

The diagnosis in such conditions should present no great difficulty when it is borne in mind that:

1. These extrapleural air pouches are characterized by their failure to absorb the gas they contain. A true pneumothorax tends invariably to spontaneous absorption.

2. The height of the fluid level in a false hydropneumothorax varies most decidedly with the ingestion of food and with the emptying of the stomach. The fluid disappears on fasting.

3. By means of the fluoroscope a barium bolus may be seen to enter the supposed hydropneumothorax, causing a splash and distorting its fluid level.

4. A localized hydropneumothorax may be simulated by the diaphragm and stomach, when they are in a high position due either to extreme pulmonary fibrosis or gastrectasis. This possibility should be considered when an exploratory puncture is contemplated.

3. Davis, H.: Diaphragmatic Hernia, Internat. J. Surg. **28**: 120, 1915.
4. Patel and Jaboulay, quoted by Aimé, P., and Solomon, J.: Am. J. Roentgenol. **6**: 376 (Aug.) 1919.
5. Aimé and Solomon (Footnote 4). Sanderson-Wells, T. H.: Brit. M. J. **2**: 687 (Nov. 24) 1917.
6. Gwerder, J.: Extrapleural Pneumothorax, Cor.-Bl. f. schweiz. Aerzte **46**: 1618 (Nov. 25) 1916.
7. Lebon, H.: Faux pneumothorax, Presse méd. **36**: 351 (June 26) 1919.

RADICAL ABDOMINAL HYSTERECTOMY FOR CANCER OF THE CERVIX UTERI

A REPORT OF END-RESULTS, SHOWING AN UNUSUALLY LARGE PERCENTAGE OF FIVE-YEAR CURES *

FARRAR COBB, M.D.
BOSTON

This report of end-results in the radical abdominal hysterectomy for cancer of the cervix uteri is made with much satisfaction. It deals with a series of sixty cases, not a very large number as compared with that of some operators, but large enough to prove that cancer of the cervix may be cured in a large percentage of cases by the properly performed radical operation. I have had 57 per cent. of five-year cures in my personal work as shown here, and an operative mortality of 11.6 per cent.

RADICAL HYSTERECTOMY AS A CURATIVE MEASURE

I fear that the report of such a large percentage of five-year cures may be received with skepticism by some, especially by those who have doubted the curability of this disease; and I am compelled to state that in following up my patients, the number of those alive and well for many years after operation has surprised as well as pleased me.

All the cases were undoubted cancer of the cervix clinically, and in all cases but one there was a corroborative microscopic diagnosis made by a pathologist of established reputation, in almost all instances by one of the pathologic staff of the Massachusetts General Hospital. It has been possible to follow up every case, and each patient has been examined by myself periodically.

The cases were by no means all selected favorable ones, and there were only two cases of very early microscopic diagnosis. On the other hand, the majority were hospital cases of varying extent, many of them more than moderately advanced cases of cancer, and a few were borderline cases in which the hope of cure by operation seemed very small (Cases 1, 6, 9, 21, 24 and 30).

I want to emphasize by means of this paper the fact that the radical abdominal operation will cure cancer of the cervix in a large number of cases, and that in skilled hands it should cause no excessive operative mortality.

For many years I have been working, writing, lecturing on cancer of the uterus: its early diagnosis, the need of pathologic examinations, and the value of radical hysterectomy as a curative measure. It is borne

* Owing to lack of space, this article is abbreviated in THE JOURNAL by the omission of the report of cases. The complete article appears in the reprints, a copy of which may be obtained on application to the author.

in on me, however, that many medical men and even many surgeons still doubt its curability by operation, and that many patients seen sufficiently early to have a good chance of cure by hysterectomy are treated by radium or by the ill-advised Percy cautery method. It is absolutely certain that radium and the cautery cannot cure cancer of the cervix, no matter how valuable they may be as palliative treatments in the inoperable cases. The danger of the widespread exploitation of radium and the Percy method of cautery treatment is the depriving of certain persons of a chance of life by the only curative procedure, namely, hysterectomy.

My personal work on the whole question of cancer of the uterus in its different forms, its cure and its palliation, covers a period of twenty years. I performed my first hysterectomy in 1901, and it is interesting to note that this patient, my first case, operated on in my younger and more inexperienced years, is one of the cured cases today, being alive and in perfect health eighteen years afterward (Case 1). For several years, as one of the surgeons at the Massachusetts General Hospital, I held the special assignment of cancer of the uterus, seeing and operating on all the patients that came into the wards, both those with cancer of the body of the uterus and those with cancer of the cervix. In 1912 and again in 1914 and 1915, I published papers reviewing my work at the hospital and analyzing a series of 420 cases admitted to the hospital in the fifteen years from 1900 to 1914, including ninety-eight cases of my own. These papers deal with the general questions of operability, diagnosis, choice of operation, palliative treatment, etc.[1]

In this paper, I wish to consider only my personal work in radical hysterectomy and the end-results thereof, including a summary of each cured case, touching briefly on the technic of the operation and the lessons that experience has taught me.

I have performed personally sixty radical abdominal hysterectomies, what generally are called Wertheim operations, but differing from Wertheim's method in certain essential modifications of my own which, while making the operation none the less radical, make it somewhat safer. Thirty-one of these operations were performed at the Massachusetts General Hospital and twenty-nine in my private practice. Thirty-five were performed more than five years ago, previous to 1915, and of these, twenty-six were hospital cases. My percentage of five-year cures has been 57.1. An analysis of my end-results in detail will be given at the end of this paper.

Among the sixty cases, there were seven operative deaths, a mortality of 11.6 per cent. One death from intestinal obstruction occurred two months after the operation and, therefore, might be omitted; but owing to the fact that the patient had not left the hospital, I have included this case in my immediate mortality, as also one other patient who died in the sixth week of septic iliac thrombosis. Five deaths occurred among my first thirty cases; but in my last thirty cases, only two: a reduction in mortality commensurate with steady improvement in technic. Three patients died from shock, largely caused by hemorrhage. The control of hemorrhage, especially toward the end of the operation, is one of the most important technical questions. Two patients died of general peritonitis.

The operation comprised the removal of the uterus and a liberal portion of the vagina, with as much of the parametrium as possible, through a median abdominal incision, with ligation of both internal iliac arteries and removal of the regional glands when enlarged and palpable. It is a difficult operation and should be performed only by trained surgeons; but in such hands, it should not involve an excessive mortality, certainly not over 15 per cent. In my whole series of sixty cases, it was 11.6 per cent., and in my last thirty cases, only 6.6 per cent. Wertheim's mortality, in his last series of cases, was 12 per cent.

The operation should not be performed in the presence of marked obesity or debility. A renal function of 25 per cent. or less would contraindicate the method.



Fig. 1 (Case 16).—Anterior view of specimen, showing wide removal of parametrium.

With very fat or feeble patients, the more rapid and safer, but far less curative, simple vaginal hysterectomy should be the method of choice. The radical vaginal hysterectomy of Schauta and Schuchardt I have found more dangerous and difficult than the abdominal method, and the postoperative sequelae distressing.

CASES FAVORABLE FOR CURE

Undoubtedly, the most favorable cases for cure are those in which a microscopic diagnosis has been made very early; but in some of these cases I have had rapid local implantation recurrence.

In many cases, one cannot be sure whether fixation of the uterus and induration in the broad ligaments will make a curative operation impossible until one has opened the abdomen, because, in a definite percentage of cases, the fixation and induration may be due to inflammatory conditions and not to cancer; and even

1. Cobb, F.: Cancer of the Uterus, Boston M. & S. J. **167**: 37 (July 11) 1912; Cancer of the Uterus, The Possibilities of Cure by the Radical Abdominal Operation, Certain Original Methods of Operating, Including an Analysis of 367 Cases at the Massachusetts General Hospital, ibid. **170**: 861 (June 4) 1914; The Surgical Treatment of Cancer of the Cervix Uteri, ibid. **173**: 89 (July 15) 1915.

if due to cancer, a cure may be possible. Frequently, an exploratory incision is all-important in determining the possibilities of a cure, and no man, no matter how large his experience, has a right to condemn a patient without this. The possibility of cure in advanced cases, in which an exploratory incision has determined my course of action, is definitely illustrated by some of my own cured cases.

Marked involvement of the vaginal wall contraindicates a curative operation, as does enlargement of the inguinal glands. If, when the abdomen is opened, the sacral glands are found enlarged, there is no hope of a cure. But enlargement of the iliac and obturator glands does not so contraindicate because these frequently may be enlarged without being cancerous. When palpable, they should be removed. I have removed the iliac and obturator glands in about one half of the cases. In most of the cases, they were not found to be malignant; but in those cases in which they were malignant, a cure has not been obtained. My experience with the lymphatics and small glands in the parametrium, however, is decidedly different; here metastasis takes place very early.



Fig. 2 (Case 16).—Posterior view of specimen.

In all cases except those of very early microscopic diagnosis, that is to say, in every case in which there is evident cancer of the cervix, clinically, I use the actual cautery, destroying and sterilizing the cervical portion of the uterus as the first step of one operation in the least advanced and offensive cases; but in the cases of large, fungating disease with foul discharge, I have done this as a separate operative procedure, two weeks or more before the hysterectomy. This double operation I deem wise also with those patients that have lost much blood; in such cases, the period of waiting after the hemostatic cauterization is valuable in restoring strength and hemoglobin. In the last two years, I have abandoned the Percy theory as to the efficacy of a low or moderate degree of heat in using the cautery. In my opinion, this theory is fallacious, the use of the red-hot cautery point to destroy completely the diseased area being the only rational method. I have found also that other forms of the electrogalvanic cautery, soldering irons, or the old Paquelin type of cautery are safer and easier to use than the large instrument devised by Percy, the danger of burns of the vulva, bladder and vagina being much less, even though a water-cooled speculum is used.

AUTHOR'S TECHNIC

The technic of my hysterectomy has not changed in its essentials since my last published paper in 1915. The whole element of success in the operation lies in the wide removal of the parametrium. Unless this is done, recurrence is almost certain in the lateral areas along the pelvic wall, because, although the iliac and obturator glands are involved late, the lymphatics in the parametrium become cancerous very early, and any operation leaving an infected parametrium is noncurative. There are, in my series of cases, a number in which the iliac glands were enlarged and found nonmalignant, but in which a study of the removed parametrium showed cancer. The point of the whole operation is to dissect and isolate so freely the ureters, the bladder and the rectum that a large portion of the parametrium may be removed.

The operation is always long; two hours is a small allowance of time, and in cases that are difficult because of obesity or complicated by pelvic inflammatory disease with adhesions, or in those in which obstinate venous hemorrhage is encountered, much more time will be needed.

The choice of the anesthetic and the employment of a skilled anesthetist are very important. Ether is the anesthetic of choice, but I have used, whenever possible, a combined ether and spinal anesthesia, using a moderate sized intraspinal injection of tropacocain or procain to block off the pelvic operative trauma. After using this method in many cases, I am sure that shock, the chief cause of death in this operation, has been much lessened. Not only has a marked difference been noted in the amount of shock when this method has been used as compared with the cases in which ether alone has been the anesthetic, but also the patients have had much less postoperative disturbance.

The incision has been a median one, extending down to the symphysis pubis and well above the umbilicus. Considerably more room may be gained by dividing transversely the anterior sheath of the rectus muscles, or in the more difficult cases their tendinous insertions to the pubis. Repair may be rapidly and efficiently done at the end of the operation.

The dissection and handling of the ureters, freeing them completely from the parametrial tissues, is the most important technical part of the operation. The ureters should be so free that they may be lifted up and out of the pelvis, at the same time preserving their blood supply, thus avoiding necrosis and urinary fistula. The use of intra-ureteral bougies is ill advised because unnecessary and time consuming, and it is also dangerous since the bougies prevent free displacement of the ureters. It is my practice to use tapes to lift the ureters up and out of the way, a method described and illustrated in previous papers, by which I feel that the maximum amount of safety may be obtained in dissect-

ing the vesical end of the ureters, freeing the bladder and rectum, and excising the parametrium. While a reasonable degree of care must be used in handling the ureters, so as not to cause necrosis, they have been in all my cases freely retracted and elevated out of the pelvis, and in none has a urinary fistula from a damaged ureter followed. I have had only two urinary fistulas: in one case, a temporary vaginal leak following a suture of the bladder; and one other, in a case of anastomosis of an accidentally cut ureter. This patient subsequently came to nephrectomy. This freedom from ureteral fistulas, in the light of the reported experience of other operators, has surprised me.

RESULTS IN SIXTY CASES OF RADICAL ABDOMINAL HYSTERECTOMY

Total number of radical hysterectomies	60	
Hospital cases	31	
Private cases	29	
Operated on previous to 1915	35	
Operative deaths	7,	or 11.6%
Operative deatbs in last 30 cases	2,	or 6.6%
Number of cases traced	All	
Alive and well over 5 years	20	
Alive and well over 4 years	3	
Alive and well over 3 years	3	
Alive and well over 2 years	7	
Alive and well over 1 year	2	
Summary of operations previous to 1915:		
Total number done over 5 years ago	35	
Hospital cases	26	
Private cases	9	
Operative deatbs	5	
Recurrences	10	
Alive and well over 5 years	20	
Percentage of cured cases	57.1	

After the ovarian arteries have been ligated, and the broad ligaments opened, the peritoneum being split well above the bifurcation of the iliac arteries, the ureters are exposed lying in their sheaths on the inner or posterior layers of the broad ligaments. The internal iliac arteries are then ligated with catgut, after which the posterior layers of the broad ligaments are incised below and parallel to the ureter, midway between the bifurcation of the iliac arteries and the uterus; and through this slit in the broad ligament, tapes one-half inch wide are passed, traction on which rolls a protecting cuff of peritoneum around the ureters. With such protection, considerable traction can be made safely on the ureter. In cases complicated by inflammatory disease, dissection of the ureters is always more difficult, and the preservation of the broad ligament often impossible; but in such cases, I have had no evil consequences from the use of the tape tractors.

The accidental cutting across of a ureter is a very serious matter, one requiring fine judgment and experience to determine the subsequent procedure in each case. The extra time required to anastomose the severed ends or preferably, when possible, to implant the proximal end in the bladder, may be the cause of death from shock. I have divided the ureter inadvertently twice: one patient died from shock distinctly contributed to by the time required to anastomose the ureter; in the other case, the patient recovered, but the anastomosis was not a success and a urinary fistula and infection of the kidney resulted, necessitating nephrectomy later. This woman is alive and in perfect health today, four years afterward (case of Mrs. F. B., sent me by Dr. MacDougall of Haverhill, Mass., and operated on in 1915). Rather than subject the patient to the extreme added risk of death by taking time for ureteral anastomosis or implantation, one would be justified in ligating both ends of the divided ureter and staking the recovery of the patient on the functional capacity of the other kidney for the time being.

The most discouraging recurrences are the ones of early implantation metastasis. When such metastasis occurs, one should always suspect faulty technic in amputating the vagina. Necessary precautions against this form of recurrence are the thorough destruction of the diseased cervix by the preliminary use of the cautery, scrupulous disinfection of the vagina with iodin, and use of the double right-angled vaginal clamps and a cautery knife in cutting through the vagina.

After the uterus and upper half of the vagina have been freed from the bladder and rectum, the ureters should be lifted well out of the way by the tapes, and the lateral parametrium from above the internal os, well down the sides of the vagina, should be removed with scissors as close to the pelvic wall as possible. It is at this stage of the operation that one is liable to have trouble with obstinate hemorrhage. I have learned that this part of the operation may well be dreaded as time consuming. After the operation has been completed to all intents and purposes, checking this venous hemorrhage may cause a delay of over half an hour. The use of properly designed right-angled artery clamps is valuable in securing hemostasis deep down in the pelvic hole at this time. Ligation of the internal iliac arteries at an early stage of the operation is a decided help in lessening hemorrhage, and I am certain that it does not in any way increase the chance of postoperative sepsis or sloughing, or cause postoperative cystitis.

Vaginal drainage by a small gauze wick or a cigaret drain has always been used.

A summary of the results obtained in my series of sixty radical abdominal hysterectomies is given in the accompanying table.

419 Boylston Street.

A BENZIDIN-POLYCHROME STAIN FOR BLOOD*

F. A. McJUNKIN, M.D.
MILWAUKEE

For the accurate identification of endothelial leukocytes in blood smears, I have published an earlier report[1] of a staining method employing the so-called "oxydase or peroxidase" reaction. In this method the reagent employed was alphanaphthol, which brings out a blue granulation in the cytoplasm of the reactive leukocytes. Since the granulation is blue, a red nuclear stain was chosen; and the fact that the dilute basic fuchsin solution colors nuclei rather lightly detracts from the value of the stain. A second disadvantage of this earlier method is that the differential coloring of the blood elements in general which has brought the polychrome blood stains (Wright's and others) into universal use is not obtained. The greater accuracy in the identification of the leukocytes secured by the benzidin-polychrome combination, together with the preservation of the blood picture that hematologists now are so accustomed to, will, it is believed, make it of distinct clinical value in the examination of pathologic human blood.

* From the Department of Pathology, Marquette University School of Medicine.

1. McJunkin, F. A.: Differential Blood Count, Arch. Int. Med. 22: 157 (Aug.) 1918.

The method described in this article combines the "oxydase" reaction, which brings out the leukocytic granules, with polychrome staining of the remainder of the blood elements. The method, an account of which was published by Graham,[2] suggested to me the combination of benzidin and a polychrome stain. For fixation, Graham uses formaldehyd-alcohol, which does not permit of polychrome staining, as the corpuscles retain a deep blue color that cannot be washed out, and the nuclei stain blue. It was found that methyl alcohol of 80 per cent. strength made by adding 5 c.c. of distilled water to 20 c.c. of Merck reagent methyl alcohol, which is about 99.5 per cent. concentration of alcohol, preserves the leukocytic granulation so that smears fixed in it may be stained by Wright's or other polychrome stains, and the success of the benzidin-polychrome stain rests largely on this observation. The only precaution necessary is that the blood smears be allowed to dry for an hour or more before being stained.

BENZIDIN-POLYCHROME STAIN

The method which has now been used in this laboratory for several months on human and animal blood is as follows:

On a 22 mm. square cover glass (No. 1) 4 drops of 80 per cent. methyl alcohol, to 25 c.c. of which there has been added 100 milligrams of benzidin (Merck or that obtained from the Will Corporation) and one drop of hydrogen peroxid, are placed for thirty seconds; this is diluted with 8 drops of distilled water, and the diluted solution is allowed to act for four minutes. The solution is then washed with distilled water and blotted between filter paper; 4 drops of distilled water and 4 drops of polychrome stain (Wright's blood stain) are added, the diluted stain is allowed to act for four minutes, and then it is washed, blotted, dried in the air, and mounted in balsam. All solutions are dropped from similar bottles, with or without a snout-leak, and not from pipets. The benzidin solution keeps for several weeks. The depth of the granule stain is much increased by diluting the benzidin reagent with a phosphate solution having a hydrogen-ion concentration of p_H 6.4 instead of with distilled water. Such a phosphate solution is prepared by adding 63 c.c. of fifteenth-normal (9.078 gm. to the liter) of monobasic potassium phosphate (Merck reagent) to 27 c.c. of fifteenth-normal (11.876 gm. to the liter) dibasic sodium phosphate (Merck reagent). The phosphate solution is also used for diluting the Wright stain. In using the phosphate solution it is necessary to place 2 drops of the benzidin reagent on the cover glass for thirty seconds, dilute with 16 drops of the phosphate solution, and allow the dilution to act for only one minute. Since the amount of reactive substance in the leukocytes of guinea-pig blood is much less than that present in human blood, 8 drops of the phosphate solution are used to dilute 4 drops of the benzidin, and a reaction time of four minutes is allowed in staining the blood of this animal. If the granules are colored too heavily, the structure of the neutrophils and eosinophils is obscured and the dilution with water (or phosphate solution) should be increased and the time shortened. The character of the polychrome stain is important, and a perfect stain must be used. In this laboratory, a sample of polychrome stain had so changed in two weeks at room temperature that it gave very imperfect results.

The granules of the neutrophils, endothelial leukocytes, and eosinophils stain dark brown, while all other blood elements are colored exactly as they are in a simple Wright's stain. The basophilic granules are a rich purple; the large eosinophilic granules are brown and have a ringlike appearance due to their refractive centers; the neutrophilic are dark brown, irregular in shape, and thickly set in the cytoplasm, while the robin's-egg blue of the lymphocytes is entirely nongranular except for the characteristic "azur" metachromatic granules of a bright reddish color present in some of them. With the uncombined Wright's stain, although the polychrome staining is perfect, there are no positive data regularly present by which to differentiate endothelial leukocytes from lymphocytes, on the one hand, and from those neutrophils that have more or less horseshoe-shaped nuclei, on the other. This disadvantage which attaches to the uncombined Wright's stain is due to the fact that the granulation may not be brought out at all in a certain number of the endothelial leukocytes, in which case they would be mistaken for lymphocytes; and at best the granules are very fine. In the differentiation the nucleus does not deserve the importance so commonly attached to it, since it is perfectly round in some endothelial leukocytes, while in a small number of lymphocytes it shows indentations. In contrast to the results obtained with Wright's and other polychrome stains, which are for these reasons unsatisfactory, the "oxydase" granulation makes identification of the endothelial leukocytes much easier; for in the cytoplasm of these cells there are always distinct discrete dark brown granules. There is no difficulty even with the simpler stains in the identification of the usual neutrophils, for in the endothelial leukocytes there is no filamentous connection of nuclear masses; but in the case of the younger neutrophils in which the nucleus has not become typically lobulated, uncertainties may arise. After application of the "oxydase" reaction, however, the granules in these immature neutrophils are so conspicuous that the separation of these younger neutrophils (metamyelocytes) and the endothelial leukocytes is rather easy. Immature neutrophils are seen to the best advantage in smears of blood from cases of chronic myelogenous leukemia, in which there are many metamyelocytes and in which the younger forms of the bone-marrow cells with their heavy granulations are well brought out.

The differential counting of guinea-pig leukocytes after Wright's staining is more difficult than it is in human blood, and some confusion appears in published classifications of the white cells of this animal. With the benzidin-polychrome stain the guinea-pig leukocytes are found to fall clearly into the same five classes as those of human blood. The brownish neutrophilic granulation is not heavy; and frequently in the endothelial leukocytes there are only three or four distinct brown granules, and these are likely to be grouped together in a focal area in the cytoplasm, especially at the point where the nucleus is indented. The blood of guinea-pigs with an artificially produced endothelial leukocytosis[3] shows these peculiarities much better than the blood of the normal animal in which there are few of these leukocytes.

It is necessary that the polychrome stain used be a good one; that is, the chromatin must be colored purple or reddish so that in the lymphocytes the nucleus appears in marked contrast to the blue cytoplasm. During a six months' period this laboratory obtained four samples of Wright's stain, of which two stained well and two gave no chromatin staining manifested by a reddening of the nucleus. After standing two weeks, one of the two faulty samples gave a rather poor polychrome effect. This is the usual experience

2. Graham, G. S.: J. M. Research **39**: 15 (Sept.) 1918.

3. McJunkin, F. A.: Experimental Endothelial Leukocytosis in Guinea-Pigs, Arch. Int. Med. **24**: 295 (Sept.) 1919.

in ordering Wright's, Hasting's, Wilson's, Leishman's and other polychrome stains from commercial sources. In order to have constantly at hand for use in the polychrome-benzidin stain a polychrome solution that is uniform in action, it is advisable to prepare a stock polychrome as described below from which the blood stain may be made as often as desired.

POLYCHROME BLOOD STAIN

I[4] have described a polychrome blood stain that gives constant results when fresh; but, like the earlier ones, it has been found to deteriorate in a few weeks. Since the publication of this method, the constituents giving the polychrome effect have been found to keep much longer and perhaps permanently in a concentrated glycerin solution, and the stain made in this way has been used in the benzidin-polychrome process, although any good Wright's or other polychrome stain is just as satisfactory. The method of preparing the polychrome blood stain is as follows:

One gm. of methylene blue (Grübler's B. X.), 50 c.c. of decinormal sodium carbonate, 25 c.c. of distilled water, and 25 c.c. of glycerin (Merck reagent) are placed in a 500 c.c. beaker, and heated on asbestos gauze over a low Bunsen flame for one hour at from 87 to 89 C., the ingredients meanwhile being constantly stirred with a mechanical stirrer at the rate of about 120 revolutions per minute. The heating and stirring must be carried out carefully to secure correct polychroming. A mechanical stirrer may be improvised by unscrewing the top from a small electric or water centrifuge, replacing it with a half-inch wooden wheel with a groove for carrying a cord belt, and running the stirrer, with a 2-inch wheel on its top, directly from this. Ten c.c. of distilled water are added at the end of ten, twenty, and thirty minute periods.

At the end of the hour, 5 c.c. of distilled water and 50 c.c. of glycerin (Merck reagent) are added, and the stirring and heating are continued for five minutes; and any dry dye is carefully rubbed from the sides of the beaker into the liquid. There are added 0.75 gm. of eosin (Grübler's yellowish, water soluble) and 0.75 gm. of methylene blue (Grübler's B. X.), and the heating and stirring continued at the same temperature for fifteen minutes. While hot it is poured into a 100 c.c. graduate and made up to exactly 100 c.c. with glycerin, any dye adhering to the sides of the beaker being taken up with the extra glycerin added. It is then poured into a 4-ounce bottle and shaken at intervals for fifteen minutes. Methylene blue and eosin obtained from the Will Corporation, Rochester, N. Y., have given results as satisfactory as those obtained with the Grübler dyes.

The dry dyes are weighed out on analytic balances, and the carbonate solution, which is made decinormal by titration against hydrochloric acid with methyl orange as an indicator, is run in from a buret. All glassware must be free from traces of acid.

From the stock solution prepared in this way, the blood stain is made by adding 3 c.c. with a bulb pipet to 25 c.c. of methyl alcohol (Merck reagent), the alcohol being drawn into the pipet several times to remove the concentrated glycerin solution. All solutions of polychrome stains, except a concentrated glycerin one, change on standing so that the blood stain must be made up from the glycerin stock solution every two or three weeks. In this way it is possible to prepare a polychrome blood stain that has a reaction accurately adjusted and one that can be readily made up in small amounts so as to prevent deterioration. The latter was not accomplished by the method previously reported. It is possible that the stock glycerin solution may deteriorate after several years, but there is no evidence of change after a six months' period.

To apply the stain to unfixed films, 4 drops of the solution are placed on a 22 mm. cover glass held in suitable forceps, or suitably supported on the top of a small test tube, for one-half minute to fix the preparation. Four drops of distilled water are added, and the stain so diluted is allowed to act for four minutes. It is then washed with distilled water until the film turns uniformly pink. Both stain and distilled water are dropped from bottles and not from a small capillary pipet. A phosphate solution with a hydrogen-ion concentration of p_H 6.4 may be used instead of distilled water for dilution.

Spirochetes and protozoa may be stained heavily by placing the preparations fixed in methyl alcohol for forty-five minutes in a bath made by adding 4 drops of the stock glycerin solution to each cubic centimeter of distilled water. The preparation is removed from the bath, and, after washing out the excess of blue, mounted in the usual way. Cover glasses are floated and slides supported with the preparation side down in such a way as to bring the part to be stained as near to the surface of the liquid as possible. The results obtained compare very favorably with those secured by the Giemsa technic.

4. McJunkin, F. A.: A Polychrome Stain with Advantages Over the Giemsa, J. A. M. A. **65**: 2164 (Dec. 18) 1915.

DEATH FOLLOWING SPINAL ANESTHESIA

WITH REPORT OF A CASE

JAY IRELAND, M.D.
CHICAGO

Lumbar or spinal anesthesia was first employed by Corning; it was rediscovered and improved by Bier. During the recent epidemic of influenza, there was a need for an anesthetic other than that which might irritate the respiratory passages.

REPORT OF CASE

History.—Mr. C., aged 68, Scotch, a plasterer, entered the ward for nervous patients of the Cook County Hospital, Jan. 15, 1919, complaining of pain in the right side of the chest, eczema of the hands and feet, varicose veins of the legs, and inguinal hernia. The pain in the right chest started, Jan. 10, 1919. It was sharp and stinging, and extended around to the front of the chest at the level of the costal margin. He had had phlebitis in 1901 and 1911, and gonorrhea in 1899, but he denied chancre. He had taken a few drinks of alcoholic liquor a day for the past few years, and had smoked moderately. The family history was negative.

Physical Examination.—The patient was well nourished, not acutely ill, and was mentally normal. The scalp, face, ears, tongue, teeth and pharynx were negative. The pupils were regular and reacted to light and accommodation. No nystagmus was present. The chest was emphysematous; the heart, negative; but the peripheral vessels were sclerosed. The liver was palpable at the costal margin. A large right inguinal hernia was present. Marked varicose veins of the legs were present. Eczema of the hands and feet was present. The reflexes were all normal and present except the abdominals, which were absent.

Clinical Course.—January 19, the pain in the chest, which was diagnosed intercostal neuralgia, disappeared. After lumbar puncture, 3 grains of apothesin were introduced into the spinal canal by the French method (after mixing with spinal fluid) by gravity with the patient in a recumbent position. He was placed in the sitting position, but became

cyanotic. Herniotomy was performed. Four hours later the systolic blood pressure was 98; the diastolic, 62. The pulse was 60 and was very weak. January 22, he was very incoherent and cyanotic, mumbled frequently, and had to be restrained. January 23, he was more stuporous, and involuntaries occurred; these continued till death. January 24, the right arm was flaccid; and the Babinski, Oppenheim, Gordon, and Chaddock signs were positive on the right. He moved his lips, but made no audible sound. Motor aphasia was present. January 28, the left parotid gland was swollen. January 29, right facial paralysis developed. February 1, slight increased fremitus with crepitant râles was present in the right lower lobe posteriorly. The temperature was 102 F., and respiration was 32. The right pupil was larger than the left; but the fundi were normal. The patient died about six hours after the lung findings began.

Necropsy.—This was performed by Dr. J. P. Simonds, February 3. Findings of sections of the brain, transversely, are:

Section 1 (through the genu of the corpus callosum and anterior tip of the lateral ventricles): There are a few subendymal petechial hemorrhages on both sides. On the left, the corona radiata is soft and grayish; there are petechial hemorrhages in the gray matter of the inferior frontal gyrus; the anterior portion of the island of Reil is dark and red. On the right side, the upper portion of the corona radiata is slightly softer than the adjacent tissues.

Section 2 (through the posterior portion of the septum pellucidum): On the left side, the caudate nucleus is normal. The internal and external capsules and the lenticular nucleus are soft and gray; the corpus callosum is normal in appearance. There is hemorrhage into the superior temporal gyrus; there is an area of hemorrhage into the white matter adjacent to the superior temporal gyrus 0.5 gm. in diameter. On the right side, there are no gross changes of importance.

Section 3 (through the thalamus): On the left side, the internal and external capsules, the lenticular and caudate nuclei, and the corona radiata are soft, and disintegrated, and gray; the superior temporal gyrus is hemorrhagic. On the right side, the superior portion of the internal capsule, the external capsule, and the lenticular nucleus are soft, disintegrated, and gray.

Section 4 (through the splenium of the corpus callosum): Almost all the white matter on both sides is soft, disintegrated, and gray, the condition being somewhat less marked on the right side. Almost all the cortex of the left temporal lobe is soft and dark.

Section 5 (1 cm. posterior to the pulvinar): On the left side, there is hemorrhage with softening about the calcarine fissure and over the posterior portion of the temporal lobe involving the entire thickness of the cortex. The right side shows no gross change.

COMMENT

This case does not present the ordinary findings of cerebral hemorrhage because of the numerous petechial hemorrhages. Houghton[1] states that the higher nerve centers are as a rule unaffected by a spinal anesthetic, and, speaking of stovain, that it seems highly probable with its use as a spinal anesthetic, that its specific action is limited almost exclusively to the locality into which it is injected in moderate doses. The experiments of Barker tend to show that a fluid injected into a tube, the shape of the spinal canal, does not remain in the place where it is injected. Hence some of the fluid injected in spinal anesthesia may travel toward the brain. Bier believes that epinephrin prevents the diffusion toward the brain. Just because a substance in a fluid is heavier than a fluid, it does not follow that this substance will remain where it is placed in the fluid, or at the base of the column of fluid as shown by Barker. Hence it does not follow that apothesin will remain in the caudal portion of the spinal canal. Houghton states that spinal fluid becomes milky in nature when stovain is added, and microscopically some particles of a milky nature are seen in it, which in a course of time run together into larger globules.

The low blood pressure following operation was in this case probably due to the cerebral hemorrhage. However, Yount,[2] and Porter and Smith[3] state that spinal anesthesia causes fall of blood pressure, and that the amount of fall of blood pressure appears to depend on the amount of drug injected. The manufacturers of apothesin, Parke, Davis & Co., claim that it is less toxic than any other local anesthetic. Eggleston and Hatcher[4] have shown that in cats, at least, procain is less toxic than apothesin. Bevan[5] reports using 13⅓ grains of apothesin at one operation.

Spielmeyer examined the central nervous system of thirteen patients dying after spinal anesthetics. The changes for the most part consisted of degeneration of the motor ganglion cells of the anterior horns, and were seen low down and high up in the cord. In some, the changes were so prominent that they would seem to be irreparable; but none of these changes were found in cases in which the dose did not exceed nine-tenths grain. His experiments with dogs gave the same results. Klost and Vogt's experiments gave the same results. They found chromolysis in some of the anterior motor cells. When physiologic sodium chlorid was used instead of anesthetic solution no changes were observed.

Thompson and Nagel[6] state that death is probably due to the action of the drug on the vasomotor fibers supplying the splanchnic area. The cause of death in the case herewith presented was due to cerebral hemorrhage. Whether this hemorrhage was due to toxic action of the apothesin on the cerebral vessels cannot be definitely stated. The fact that the blood pressure is lowered by spinal anesthetics would seem to indicate that it was not due to the usual cause of cerebral hemorrhage, i. e., high blood pressure with arteriosclerosis.

5412 North Clark Street.

1. Houghton, W. H.: Oxford Surgery, Ed. 1, New York, Oxford University Press **1**: 119, 1918.

2. Yount, C. C.: Isthmian Canal Zone, Med. A. Proc. **9**, Part 2: 51 (July) 1916.

3. Porter, William, and Smith, G. R.: American Year Book of Anesthetics and Analgesia, 1915, p. 399.

4. Eggleston, Cary, and Hatcher, R. A.: The Pharmacology of the Local Anesthetics, J. A. M. A. **73**: 1256 (Oct. 25) 1919.

5. Bevan, A. D.: S. Clinics, Chicago **1**: 37 (Feb.) 1917.

6. Thompson, G. F., and Nagel, J. S.: Illinois M. J. **36**: 62 (Aug.) 1919.

The Hospital in a Small Community.—As usual in a small community, the two general hospitals seem to be regarded as competitors. It might seem that the community has work enough for both hospitals to do but, of course, there is room for competition if each seeks to monopolize the profitable patronage of the well to do. What will be the outcome of such rivalry? Will each institution, like a hotel, bid for trade regardless of the actual needs of the community? Will costly equipment be duplicated and high salaried employees multiplied until the cost of good hospital service reaches a maximum limit in both institutions? Or will one hospital, by virtue of its wealth and reputation, attract patients who can pay for the standards of service it maintains, while the other lowers standards as much as it dares, making its bid for patronage on the score of cheapness? And, meanwhile, what will be the fate of that part of the community which makes no demand for hospital care, both because it cannot afford the price and because it has not learned the value?—M. K. Chapin, *Modern Hospital*, December, 1919.

THE MEDICAL RESERVE OFFICER IN THE WAR *

LOUIS J. HIRSCHMAN, M.D.
DETROIT

So much has been written about the medical reserve officer and his activities in the great war that anything more said may seem to be mere repetition and superfluous. What I shall say will not deal with the scientific aspect of his connection with the army or with the methods of treatment of wounds or diseases incident to military life. I wish to speak in a broad way of the medical reserve officer himself—what he did for the army and what the army did for him. Whatever may be said of a critical nature is brought out merely in the hope that in the reorganization of the Medical Reserve Corps, cognizance may be taken of the errors made in the past with the hope that these may be avoided in the future.

While it is true that services of tremendous value to the soldier were rendered by the medical reserve officer in the cantonments, training camps and hospitals situated in this country, it is not my intention to discuss this phase of the subject, first, because of my personal ignorance of their duties, since my service was overseas, and, secondly, because I wish to discuss only the medical reserve officer's work in the war zone.

In 1908, the original Medical Reserve Corps was organized. Its personnel was selected from among the leaders in the profession throughout the United States. This was done for the purpose of giving the Reserve Corps a high standing because of the high character and professional attainments of the individuals invited to become "charter members" of the corps. After a couple of years, interest was again revived in the Medical Reserve Corps, so that by 1911 a corps of approximately three times the size of the regular army medical corps was organized.

Under limitation by a law in force at that time, all medical officers were commissioned as first lieutenants. After a space of a few years, during which time the medical officers would occasionally receive pamphlets and booklets published by the army, a correspondence course was established, and Medical Reserve Corps officers were invited to take a short course in training camps established throughout the country. A few medical officers accordingly availed themselves of the opportunity to become acquainted with the mysteries of "squads right," "morning sick report" and "service records" and their importance as cogs in the army medical machine.

INEQUALITY OF RANK

When the new bill was made law, abolishing the old corps, making the Medical Reserve Corps a part of the Officers' Reserve Corps, the rank to which a medical officer might be commissioned was raised to that of major. For some strange reason, in every other division of the Officers' Reserve Corps, the maximum rank which a reserve officer could attain was that of colonel. This was an injustice which subsequent events proved to be a severe detriment to the fullest efficiency which officers of the Medical Corps of the highest professional standing in civil life were able to render in service.

It was very soon realized by officers in the Medical Reserve Corps in overseas service that a man's professional ability, experience or attainments were judged, not by his position in the profession in civil life but entirely by the insignia of rank which he wore on his shoulder. In the dealings with medical officers of allied armies and especially with line officers and those of other staff corps of our own, this was too often the rule; and, unfortunately, the American medical officer was often outranked by his professional brothers occupying a similar position with the allied armies.

Those medical reserve officers who responded at once to the nation's call after war was declared, and who accepted whatever commission was given them without question because of their patriotic desire to serve and who went overseas in the spring and summer of 1917, have good cause to remember the penalty imposed on them by the War Department. To be a pioneer proved to be a misdemeanor or crime, because medical reserve officers who blazed the medical trail in France and who had toiled for months in helping to work out our scheme for hospitalization and for the care of the sick and wounded were presently forgotten when promotions were handed out by the powers that be.

Several months after the medical work in France was fairly well organized by the early birds, who were mostly lieutenants and captains and a few majors sprinkled here and there, a crop of newly made majors arrived on the scene. These officers, for the most part, were younger in years and experience than many of the lieutenants and captains in overseas service, and were comfortably enjoying the emoluments and comforts of civil practice while their predecessors had gone overseas and prepared the way for them.

What was our astonishment to find that many of these officers had never heard of the original Medical Reserve Corps. These officers either received their majorities direct from civil life or, after spending from sixty to ninety days in training camps, were rapidly promoted to majors and sent overseas to outrank in many cases their teachers and hospital heads at home.

It was interesting to note that at the early meetings of medical officers in Paris under the auspices of the American Red Cross, there was an absence of service stripes on the sleeves of young officers whose shoulders shone with brand new brightly polished golden oak leaves; while beneath those single and double silver bars of their more mature companions sprouted a goodly number of gold service stripes on the left sleeve and, here and there, a wound stripe on the other.

The first assistant to the chief surgeon of the American Expeditionary Forces, none other than our present Surgeon-General, soon recognized the inequality of rank among his medical reserve officers, and earnestly endeavored to rectify this inequality by recommendations for promotions made toward the end of 1917. For some as yet unexplained reason, the general staff frowned down on any promotions in the Medical Reserve Corps, while they raised the regular army medical officers at least one grade.

In the meantime, promotions up to the grade of brigadier-general were being made in other reserve corps of the army, and the officers so promoted, a few months previously, in civil life, had never heard of the corps in which they were now occupying responsible positions. At the same time, the medical profession

* Read before the Mississippi Valley Medical Association, Louisville, Ky., Oct. 21, 1919.

was furnishing the only reserve officers who had technical training in the department in which they were to serve.

I know of one instance in which the president of a large bank whose only interest in railroad engineering was the possession of large blocks of railroad securities was commissioned as lieutenant-colonel in the engineering corps and rapidly promoted to colonel, later becoming brigadier-general. In the meantime, surgeons whose names were household words in America were serving as captains, in a few cases as majors.

ATTEMPTS AT CORRECTION

It was not until the spring of 1918, nearly a year after some of the reserve officers had begun their service in France that, through the loophole of the National Army, some majors became lieutenant-colonels. The lieutenants and captains, however, without regard to their professional attainments, were still outranked by their interns, assistants and students fresh from home. In spite of all this, let it be said for the medical reserve officers that they kept on doing their duty and attending the sick and wounded, always cherishing the hope that some day conditions would be remedied. The result was that in many hospitals and even in line organizations, lieutenants and captains whose professional and military worth was early recognized were holding responsible administrative positions which, according to the tables of organizations, should have been occupied by officers of field rank. In some of our base hospitals, a captain, and in at least one case a lieutenant, was director in charge of the surgical division; and in one of our famous National Guard divisions, the ranking regimental medical officer for several months, and at the front, was a first lieutenant!

In the spring of 1918, in all other departments of the army, promotions began to appear. The Medical Department, realizing that the position of the pioneer medical reserve officer was unjust and humiliating, endeavored to find some way to remedy the existing conditions. After much thought and many conferences, a wonderful scheme which secured the approval of the general staff was decided on. This was the scheme to promote medical officers, not by the value of their services or of their professional qualifications or of their length of active service, but first and foremost by their age. It was decreed that no matter how valuable a first lieutenant's services might be, if he was unfortunate enough to have been born at so recent a date that he was not 35 years of age, he could not be promoted to a captaincy. Until he had reached the dignity of 40 years of age, no matter how valuable and efficient an officer in the Medical Corps he was, a majority was denied him.

The chief surgeon's office, in an endeavor to get the approval of the general staff on these so-called "corrective" promotions, secured the following concession: For every three months of active service the officer was to receive a year's credit in computing his age for the purposes of promotion. In other words, a lieutenant 33 years of age, who had served six months, would be considered 35 years old for the purpose of promotion to a captaincy. When the first large batch of recommendations for promotions was sent to Washington in July, 1918, however, the actual age was the basis, and not the actual age plus the credit for active service. The names of the officers who did not attain the actual age required were put on a roster for future promotion which was to include the added credit for actual service. Officers showing exceptional ability or meritorious service were supposed to be exceptions to the general rule. If such exceptional promotions did occur, the majority of medical reserve officers in France and England never heard of them.

UNFORTUNATE RESULTS

Why the reserve medical officer, professionally equipped for his work, was held down arbitrarily by an age limit, while in every other branch of the service the age limit was unheard of, is one of the mysteries of the war on which the medical reserve officer would be pleased to be enlightened.

Many faithful and efficient men were so disappointed by this ruling that their morale was severely affected, and, in spite of themselves, they were not giving their best efforts to their work. The conditions were so intolerable that apologetic and explanatory official circulars were published; in the meantime, however, promotions, except for a few which came through strictly on the age propositions, were slow to come to the medical reserve officer.

It was of the utmost importance that medical officers of high standing in the profession should insure the enforcement of their recommendations. Think of the humiliating position of a leading surgeon of one of our great cities, ranking as a captain, endeavoring to have certain important regulations enforced in a regiment whose colonel in civil life was a merchant who "hadn't much use for doctors."

When rank was needed the most by reserve medical officers, it was denied them by the general staff. Months after the armistice was signed and their relations with medical officers of allied armies and with other officers of our own were on an entirely different plane, then apparently as an act of eleventh-hour repentance, promotions were passed out freely. After the activity of war was over and medical officers were getting impatient awaiting their turns to go home, these belated promotions were not accepted in the spirit which they would have been had they come when higher rank was most needed. On account of the fact that the average practitioner of medicine is not a good business man, many left their families in meager circumstances. When one considers that a practitioner leaving his practice makes a greater sacrifice than the business man who leaves a "going concern" for his assistants to run, the financial part assumes great importance. The difference in salary and commutation between lieutenants' or captains' and field officers' rank meant often the difference between comparative want and comfort for the dear ones at home.

It would be interesting to see the proportion of medical reserve officers who saw overseas service who are now members of the Medical Reserve Corps, as compared with those who refused commissions in the corps. I have listened to conversations between discharged medical officers time and time again, and have found that the feeling of the great majority was that they had been unjustly treated, and that unless the situation was greatly improved, they would hesitate a long time before rushing into service again.

I believe that the "powers that be" at Washington are now commencing to realize that the medical reserve officer was not treated fairly, and I feel that with the

full knowledge of the valuable services rendered by the corps, the reorganization of the Medical Reserve Corps will give the medical officer at least an equal standing with the reserve officer of any other corps of the army.

Our regular army medical corps was, of course, pitifully small at the beginning of the war. Let me say this to the credit of those few men: They had to be spread out very thin in order to form any sort of a backbone to the organization. This meant, of course, that they were all required for headquarters and administrative work and to instruct reserve corps officers. It therefore necessarily followed that all of the professional work, with a very few exceptions early in the war, was done by the reserve corps officers.

The medical reserve officer showed such a marked aptitude for his work that very soon many important administrative positions were likewise filled by reserve officers. The glowing reports of Surgeon-General Ireland testify to the wonderful work done by the medical reserve officers.

From personal observation of the service rendered in front line positions by the reserve officers, I wish to say that patients came back to the field hospitals, in the main, in most excellent condition. The exceptions to this rule were so few that they need practically not be mentioned. In evacuation and base hospital work, medical and surgical teams were composed of men who were leaders at home, and sick and wounded soldiers received a type of professional care that has been seldom surpassed in our leading city hospitals. The casualties among medical reserve officers were high, as were also the citations and awards for individual bravery

Let it be said to the credit of our profession that, though smarting under the lack of recognition of their work and deserved promotion, they "delivered the goods" in a way that will always remain a tradition to be looked up to by the coming generation. The fact, however, that of 35,000 medical officers in service, a little over 10 per cent. have accepted commissions in the present reserve corps indicates that much missionary work must be done by the officers in charge.

SUGGESTIONS FOR THE BUILDING UP OF AN EFFECTIVE MEDICAL RESERVE CORPS

It is hoped that this subject will be discussed by the members of this association, and that in the discussion will be brought out suggestions which will prove of value to the Surgeon-General's Office in the building up of a reserve corps of excellent personnel and of goodly numbers. Might I make the following suggestions:

1. In order to secure an efficient corps, we have now a wealth of material from which to select its personnel. Approximately 35,000 physicians have seen active service, and a goodly proportion overseas service in the theater of operations. It is proposed, therefore, that all commissions in the Medical Reserve Corps for the next five years be limited to men who have been in active service.

2. Since the Surgeon-General's Office is in possession of data as to the fitness, capability, medicomilitary experience and military adaptability of every medical officer, this information will be of the greatest value in securing the highest type of material for medical officers.

3. Since it is now well recognized that inequality and injustice were frequent in the grading of Medical Reserve Corps officers, particularly in overseas service, it is suggested that all officers be recommissioned in the reorganized corps. Many officers deserve, by the character of their work and the postitions they filled, much higher grading than that with which they were discharged. Others were graded notoriously too high for the service they rendered.

4. It is recommended that all applicants for positions who have not seen military service be commissioned as first lieutenants. Since there are so many thousands of officers whose military experience and adaptability are on record, it is obviously unfair to these that a man from civil life should receive higher military commission than one who has shown his worth in active service. Every man in the profession, no matter how prominent he may be professionally or medicopolitically, had his opportunity to do his bit during the war. If he did not, he should take his place at the end of the line if he wants to join the corps at this late date. If all officers start as first lieutenants, they can be promoted as soon as they show that they are qualified to perform the duties of higher grade.

5. In securing professional information and data regarding the qualifications of civilians for commissions in the Medical Reserve Corps, it is hoped that such information will be secured from official rather than personal or political sources. It naturally follows that prospective medical reserve officers should be affiliated with their county medical society, the American Medical Association, hospitals, colleges or universities. From sources such as these, authentic information as to their professional qualifications, personal character and general suitability for the service can be gathered. It is assumed that a hospital in which a man practices his profession will be in a better position to report on his professional ability than will the congressman from his district.

6. As the soldiers of today were the civilians of yesterday, they are subject to the same illnesses and injuries as those of a purely military character. It therefore follows that all the specialties of medicine in civil life should be represented in like proportion in the army. If this had been done in the mobilization camps and recruiting stations, a more thorough system of preliminary examinations would have kept out those soldiers who later on required hospitalization overseas to the exclusion of battle casualties.

7. As different grades in the Medical Reserve Corps are in the same proportion as those in the regular army corps, it is recommended that all of those officers who held commissions who were not called to active duty be honorably discharged. It is well known that while many of these officers were prominent professionally, they were incapacitated for service either by age or unsuitability, and are holding commissions when they cannot possibly serve on active duty. These commissions, if vacated by honorable discharge, would assist in providing higher grades in the Reserve Corps for officers who have refused commissions because they felt they had not been fairly treated.

Let us hope that the Surgeon-General's Office, under its present able leadership, will take cognizance of the unfortunate error of our previous unpreparedness and will build up a Reserve Corps for future emergency which will have as its watchword "efficiency first."

Kresge Medical Building.

HEAT-RESISTANT ORGANISMS

A STUDY OF BACTERIA ENCOUNTERED IN HEAT STERILIZATION OF SURGICAL LIGATURES AND SUTURES *

FREDERIC FENGER
ELOISE B. CRAM
AND
PAUL RUDNICK
CHICAGO

We are dealing in this paper only with resistant organisms, which normally occur in commercial, unsterilized ligatures, as they are able to survive the drastic cleaning, bleaching and drying processes through which the raw sheep gut must pass before it becomes a finished ligature or suture.

In the course of the experimentation to determine the temperature necessary to insure sterility of the product, more than a hundred cultures were obtained, both from the raw, unsterilized ligatures and from those heated at various temperatures. These cultures were examined, and from them fourteen typical specimens were selected which included all the varieties observed. From these fourteen cultures five distinct types of bacteria were isolated: three spore-forming bacilli and two cocci. All were aerobic and facultatively anaerobic and grew at both 20 and 37 C., though somewhat more quickly at the latter temperature.

A careful search of the literature failed to disclose any descriptions that would apply to the cocci. The color of their growth on agar, however, indicated that they were saprophytic forms, and this was borne out by the fact that they were nonpathogenic for mice, guinea-pigs and rabbits, the animals showing no bad effects whatever from the injections. It is interesting, also to note the great resistance of these nonspore-forming organisms to extremely high temperatures when the conditions are such as found in the ligatures.

CULTURAL REACTIONS

1. Coccus giving yellow growth on agar:

Morphology.—A gram-positive coccus (from 1.2 to 1.75 microns in diameter) arranged in irregular clusters.

Cultural Reactions.—Agar Slant: A deep yellow, lustrous growth, nonspreading.

Gelatin Colonies: Small, lemon-yellow; under microscope edge entire; finely granular. No liquefaction.

Gelatin Stab: Slight growth on surface; no liquefaction.

Peptone Broth: Heavy turbidity and later a dense sediment.

Sugars: Slight acid production in glucose and saccharose; no gas production.

Pathogenicity.—Negative for rabbits, guinea-pigs and mice.

2. Coccus giving a rose pink growth on agar:

Morphology.—Fairly small gram-negative cocci (from 0.7 to 0.9 micron in diameter) arranged in grapelike clusters resembling staphylococci.

Cultural Reactions.—Agar Slant: Slight rose pink lustrous growth along streak.

Gelatin Colonies: Minute lustrous deep pink colonies. Under microscope, circular shape, highly refractive, brown color. No liquefaction.

Gelatin Stab: No liquefaction; slight growth at puncture.

Peptone Broth: An even turbidity, later giving a fairly heavy powdery, orange pink sediment.

Sugars: No gas, no acid production.

Potato: A few minute pink colonies.

Milk: No visible change.

Pathogenicity.—Negative for rabbits, guinea-pigs and mice.

Two of the bacilli were classified according to Lawrence and Ford.[1]

3. *B. vulgatus:*

Morphology.—Gram-positive bacilli of medium size (from 1.75 to 3.5 microns by 0.9 micron); ends rather square; spores in center very slightly bulging the sides. Many shadow forms; rotatory motility.

Cultural Reactions.—Agar Slant: Heavy, spreading growth, deep cream color, nonlustrous; wrinkled at bottom and at top; edge uneven. Small round colonies apart from the main growth.

Gelatin Colonies: Small, waxy, cream white colonies; under microscope, highly refractive; edge entire. Rapid liquefaction.

Gelatin Stab: Crateriform liquefaction; scum production.

Peptone Broth: Heavy turbidity, dry, wrinkled white scum. Later an almost complete clearing of the broth.

Sugars: No gas, but acid production in glucose and saccharose.

Potato: Heavy, pink-white, dry, very wrinkled growth.

Milk: No acid production or coagulation; pronounced peptonization.

Pathogenicity.—Negative for rabbits, guinea-pigs and mice.

4. *B. simplex:*

Morphology.—Gram-positive slender rods (from 3.5 by 0.58 to 0.87 micron) growing out in long filaments (from 14 to 17.5 microns), especially in glucose broth. The spores occur in the short rods and do not swell the sides. Very actively motile.

Cultural Reactions.—Agar Slant: Thin, transparent, cream colored growth.

Gelatin Colonies: Thin, white colonies, lustrous; edge entire.

Gelatin Stab: Cup shape liquefaction; no visible growth.

Peptone Broth: Even, faint turbidity.

Sugars: No gas, no acid production.

Potato: Heavy, moist, cream yellow, spreading growth.

Milk: No coagulation; pronounced peptonization.

Pathogenicity.—Negative for guinea-pigs.

5. Bacillus: This bacillus did not conform to any of the aerobic, spore-bearing, nonpathogenic bacteria classified by Lawrence and Ford, but its morphologic and cultural characteristics closely resemble those of *B. lacteus* as described by Chester.[2]

Morphology.—Gram-positive bacillus (3.5 microns by 0.9 micron in size), ocurring in chains; spores developing at end, swelling the sides. Motility negative.

Cultural Reactions.—Agar Slant: Medium heavy, gray white, nonlustrous, moist growth; edge undulate; wrinkled at bottom.

Gelatin Colonies: No visible colonies in from two to ten days; no liquefaction.

Gelatin Stab: Slight liquefaction over entire surface.

Peptone Broth: Tenacious scum, smooth surface; when shaken, scum gives off heavy flocculi into broth.

Sugars: Acid production in glucose. No gas.

Potato: Fairly heavy, moist, nonlustrous, cream colored growth; uneven edge.

Milk: Decolorized; coagulation and peptonization.

Pathogenicity.—Negative for rabbits, guinea-pigs and mice.

A twenty-four hour broth culture showing heavy growth was used for the animal injections; 0.2 c.c. injected intravenously in rabbits, 0.5 c.c. intramuscularly in guinea-pigs and 0.3 c.c. subcutaneously in mice.

*From the Research Laboratories of Armour and Company.

1. Lawrence, J. S., and Ford, W. W.: J. Bacteriol. 1:273 (May) 1916.

2. Chester, F. D.: Manual of Determinative Bacteriology, New York, the Macmillan Company, 1909, p. 291.

Before surgical ligatures can be sterilized, it is necessary to remove all moisture from them in order to prevent hydrolysis. If this is not done, the application of heat readily converts the collagen of the ligatures into gelatin, thereby destroying or at least seriously injuring their tensile strength. Sterility must, consequently, be produced by dry sterilization. Fractional sterilization is of no avail, since the spores are unable to develop in the absence of water. Mercuric iodid and other radical germicides, even in solution, have little or no germicidal value in the absence of water. The tanning and chromacizing processes do not in the least inconvenience the resistant organisms found in ligatures, nor does vacuum drying for six hours at from 90 to 95 C. Chloroform does not destroy these organisms and spores, even after heating in sealed tubes at 125 C. for one and one-half hours. They are also indifferent to petroleum benzin, kerosene, carbon tetrachlorid, toluene, xylene and similar liquids at the above mentioned temperature.

The only effective means of producing sterility in plain and chronic ligatures is by the application of heat. This may be accomplished by heating the ligatures in oil or some other suitable, nonaqueous liquid to the desired temperature, as originally suggested by Bartlett.[3] This temperature must be sufficiently high to destroy all living protoplasm, and it must at the same time be below the decomposition temperature of the ligature proteins in order to avoid destruction of the ligatures. Practical experience has demonstrated that such a margin exists, although its limits are rather narrow.

Absolute sterility is assured by heating the ligatures gradually up to 160 C. and maintaining this temperature for one hour. This confirms Bartlett's findings.[3] Numerous tests have demonstrated that heating at 150 C. for one hour or at 140 C. for three hours does not always produce sterility. This applies to the cocci as well as to the spore formers described in this paper. These temperatures weaken or stunt the organisms and spores to such an extent that growths do not appear until the fourth, fifth or even sixth day of incubation, a point of considerable importance in the control examination of ligatures.

The thermometers employed were certified by the U. S. Bureau of Standards.

CONCLUSIONS

1. Of five distinct types of heat-resisting bacteria described, including both cocci and bacilli, which commonly occur in raw ligatures and sutures, none were found to be pathogenic.

2. Plain and chromicized ligatures and sutures can be sterilized only by heat. Antiseptics and germicides are of no value in the absence of water.

3. The thermal death point for the five types of bacteria lies between 150 and 160 C. under the conditions found in ligatures and in nonaqueous liquids.

4. Absolute sterility is assured by gradually heating the ligatures in oil or some other suitable nonaqueous liquid up to 160 C. and maintaining this temperature for one hour.

5. The great resistance to heat of the two types of cocci described is a very important fact.

3. Bartlett, Willard, cited by Beckman, E. H.: Operating-Room Technic, Collected Papers by the Staff of St. Mary's Hospital, Mayo Clinic, 1905-1909, Philadelphia, W. B. Saunders Company, 1911, p. 586.

ACUTE METHYL ALCOHOL POISONING ASSOCIATED WITH ACIDOSIS

REPORT OF CASE *

GEORGE A. HARROP, JR., M.D.
AND
E. M. BENEDICT
BALTIMORE

Ever since its introduction into commerce, methyl alcohol has been the prolific cause of a severe and frequently fatal type of poisoning. The recent increase in the number of cases reported, due to various preparations which have this alcohol as their basis and which have resulted in blindness or death, has indicated the possibility that the condition will assume still greater importance with the more rigid enforcement of the national prohibition amendment. It seems desirable to report the following case, together with the collected data, because it appears to offer a suggestion as to therapy, hitherto disregarded.

A brief summary of the clinical history follows:

REPORT OF CASE

History.—C. B. (Medical No. 137328), woman, aged 25, white, actress, admitted, Nov. 24, 1919, discharged, December 23, with irrelevant previous history, on the night of November 22 drank about half a pint of a fluid supposed to be brandy. Subsequent examination by a chemist of the small amount available for analysis indicated that 87 per cent. of the alcohol content was methyl alcohol.

The following afternoon (November 23), the patient felt weak and nauseated. On the morning of the 24th she vomited, and began to notice dimness of vision, which rapidly increased. She had pain in her back, headache, marked thirst, and considerable difficulty in breathing. Late in the afternoon she was seen by a physician, who had her removed to the hospital.

Physical Examination.—On admission the patient was drowsy and cyanotic, her breathing was deep and rapid, she was restless, and she complained that everything looked black in front of her. The temperature was subnormal. The pupils were dilated, but reacted to light. No particular odor was noted on the breath. Gastric lavage was done, and alkali was given by mouth, but it was not retained. The air hunger rapidly grew more marked, and about midnight the bicarbonate content of the blood plasma (Van Slyke) was equivalent to 36.4 per cent. by volume of carbon dioxid. The patient was then given 400 c.c. of 5 per cent. sodium bicarbonate solution intravenously.

November 25, her vision was practically gone. She was still nauseated, and although the hyperpnea was much less marked, the determination of the plasma bicarbonate still indicated a marked acidosis, and a second intravenous injection was given of 500 c.c. of 5 per cent. sodium bicarbonate. Thereafter there was no evidence of acidosis as indicated by the plasma bicarbonate. The clinical examination of the blood, spinal fluid and urine revealed nothing of diagnostic significance.

During the following two or three days she exhibited a rather marked delirium with visual hallucinations. Thereafter she was quite normal mentally. The vision improved gradually, but a well-defined central scotoma remained on the left side, and there was evidence on opthalmoscopic examination of a mild postneuritic atrophy on the left.

The accompanying table shows the chemical studies made. There was at no time a disturbance of the phenolsulphonephthalein excretion or of the normal blood urea concentration. The acetone bodies were determined by the method of Van Slyke.[1] The titrable organic acids in the urine were

* From the Medical Clinic of the Johns Hopkins University and Hospital.

1. Van Slyke: J. Biol. Chem. **30**: 347, 1917.

estimated by the method of Palmer and Van Slyke.[2] The formic acid in the urine was determined by the method of Dakin, Janney and Wakeman.[3] The lactic acid in the urine was estimated by a modification of the Ryffel[4] method. It was impossible to obtain accurate total collection of the urine during the first days on account of the patient's condition, so that the total excretion of the several factors studied could not be determined. The creatin and creatinin determinations were done by Folin's method, while the inorganic phosphates of the blood serum were estimated by Marriott's method.

As is indicated, the patient was admitted with an acidosis of a severe grade, which promptly disappeared following the intravenous use of sodium bicarbonate.

COMMENT

It was pointed out long ago that, whereas ethyl alcohol is completely oxidized with ease by the animal metabolism, such is not the case with methyl alcohol; and Pohl[5] in 1893 showed that formic acid, a normal constituent of the urine, is excreted in greatly increased quantities following the administration of this alcohol to dogs by mouth. He found that the formic acid was excreted very slowly, and that the maximum amount of formates was not present in the urine until the third or fourth day. The total amount so excreted by no means accounted for the entire dose given, and the maximum recovered after the feeding of sodium formate itself, which is quickly excreted, was but 18 per cent.

One experiment was made on a man who drank 25 c.c. of methyl alcohol, which caused similarly a marked rise in the formate excretion.

The fate of the remaining portion of the alcohol is not known. A considerable quantity can be recovered, according to Asser,[6] in the expired air. Thus, he was able to recover, over a period of seven days following its administration, 55.8 per cent. of 25 c.c. of methyl alcohol given by mouth to a dog, while in the urine following such a dose he recovered only from 3.1 to 4.6 gm. of formates. This author has made the further interesting observation that when ethyl or amyl alcohol, or acetone, is given together with the methyl alcohol, the excretion of the formates is very appreciably diminished over the amount recoverable when methyl alcohol is given alone. As to the excretion of methyl alcohol itself in the urine, there is some disagreement. Pohl did not recover it but, on the other hand, Bongers[7] asserts that considerable quantities are thus disposed of.

Acting on a suggestion of Schmiedeberg's,[8] that an acidosis might be produced in cases of methyl alcohol poisoning, on account of the formation of formic acid, Król[9] was able to show a well-defined increase in the ammonia of the urine associated with the increased formic acid excretion in dogs. The formic acid excreted, however, accounted for only about one quarter of the ammonia. Król did not attempt to determine what acid might account for the major part of the ammonia, except that he states that it was not oxalic acid.

On the basis of somewhat crude methods, Tyson and Schoenberg[10] concluded that they could produce an acidosis in rabbits following the inhalation of methyl alcohol. They considered methyl alcohol to be a "true hemotoxic," and their plan of treatment, "based on the findings, might be summed up in two words: eliminate and stimulate." Authors have generally ignored the specific indications for the treatment of the acidosis as such.

The description of the clinical findings in the large group poisoned at Christmas, 1911, in Berlin states that in the most severe cases the patients had marked cyanosis and severe air hunger.[11] Many references can be found, in clinical reports, of respiratory distress and of forced breathing, in the severer cases, which may well have been the hyperpnea of acidosis.

The marked increase in the lactic acid excretion, together with the rise in the urinary creatin (which was far greater than could be accounted for simply by starvation), makes it evident that we are dealing with a more profound disturbance of the metabolism than is indicated by the simple failure of the body properly to oxidize the methyl alcohol. It would appear, however, that when an acidosis is demonstrated by the proper laboratory tests,[12] the employment of the usual therapy, particularly the administration of sodium bicarbonate, is urgently indicated. We feel convinced that a definite therapeutic aid was in all likelihood obtained by its use here. Certainly, so far as the formic acid is concerned, the excretion is limited by the amount of the

CHEMICAL DETERMINATIONS

Date 1919 (11:30 p. m.)	Blood Plasma Carbon Dioxid Per Cent. by Volume	Blood Urea, Gm. per Liter	Acetone Bodies (Urine), Gm. per Liter	Acetone Bodies (Blood), Gm. per Liter	Lactic Acid (Urine), Gm. per Liter	Formic Acid (Urine), Gm. per Liter	Titrable Organic Acids (Urine), C.c. N/10 Acid per Liter	Creatin (Urine), Gm. per Liter	Creatinin (Urine), Gm. per Liter	Inorganic Blood Serum Phosphates, Mg. per 100 C.c.
Nov. 24	36.4	.....	....	....	1.55	1.26	2,200	0.202	0.558	....
Nov. 25	36.0	0.175	2.79	0	0.75	....	2,258	0.283	1.000	3.0
Nov. 26	86.2	.....	0.83	....	0.26	0.60	1,560	0.535	0.800	....
Nov. 27	....	.....	....	....	....	....	710	.....	.....	....
Nov. 28	....	.....	0	....	....	....	220	.....	.....	....
Nov. 29	76.7	0.091	....	....	....	....	406	0.300	0.590	....
Nov. 30	....	.....	....	....	....	....	420	.....	....	....
Dec. 1	....	.....	....	....	....	....	256	0.180	0.538	....
Dec. 2	....	.....	....	....	....	....	270	0.137	0.557	....
Dec. 3	....	.....	....	....	0.68	0.07	364	.....	.....	....
Dec. 11	....	.....	....	....	....	....	199	0.105	0.378	....
Dec. 17	....	.....	....	....	....	....	260	0.024	0.476	....
Dec. 20	62.1	0.165	....	....	....	....	.....	.....	.....	....

2. Palmer and Van Slyke: Proc. Soc. Exper. Biol. & Med. **16:** 80, 1919.
3. Dakin, Janney and Wakeman: J. Biol. Chem. **14:** 341, 1913.
4. Ryffel: J. Physiol. **39:** 9, 1909.
5. Pohl: Arch. f. exper. Path. u. Pharmakol. **31:** 281, 1893.
6. Asser: Ztschr. f. exper. Path. u. Therap. **15:** 322, 1914.
7. Bongers: Arch. f. exper. Path. u. Pharmakol. **35:** 429, 1895.
8. Schmiedeberg: Therap. Monatsh. **26:** 329, 1912.
9. Król: Arch. f. exper. Path. u. Pharmakol. **72:** 444, 1913.
10. Tyson, H. H., and Schoenberg, M. J.: Experimental Researches in Methyl Alcohol Inhalation, J. A. M. A. **63:** 915 (Sept. 12) 1914.
11. Berl. klin. Wchnschr. **49:** 193, 1912.
12. Possibly it is not necessary to state that the presence or absence of a ferric chlorid reaction in the urine is of no significance in types of acidosis other than acetone body acidosis. The ferric chlorid reaction in the urine in only one specimen was markedly positive in this case.

alcohol ingested, and more is to be expected as a result of its prompt neutralization than in other types of acidosis, in which the formation of acid metabolites may continue quite independently of our ability to neutralize them.

Of practical importance is the observation of Bongers,[7] who gave methyl alcohol to dogs by mouth, and then estimated the amounts recoverable by gastric lavage repeated over several days. He asserts that he recovered about three times as much methyl alcohol in the combined washings of the second and third days as he was able to obtain in those of the first. He was also able to recover formic acid in the stomach washings twenty-seven hours after the alcohol was given. This work would appear to point out clearly the importance of thorough and repeated lavage.

SUMMARY

1. In case of severe acute poisoning with methyl alcohol, associated with a marked grade of acidosis, recovery followed the use of alkali therapy.

2. The acidosis was associated with an increase in the amount of titrable organic acids in the urine, and specifically with a marked increase in the excretion of lactic and of formic acids.

3. The acidosis, when present, furnishes an indication for the use of prompt therapeutic measures.

4. On the basis of the work quoted, it is submitted that gastric lavage should probably be done over a period of several days.

CULTURAL STUDIES ON A CASE OF SPRUE

PRELIMINARY NOTE *

WADE W. OLIVER, M.D.
BROOKLYN

The purpose of this preliminary communication is to record briefly certain laboratory findings in a case of sprue.

REPORT OF CASE

Charles W., an American, resident in Porto Rico, invalided north, was admitted to the Long Island College Hospital, where stool cultures were made. Following this, tongue cultures, sputum cultures and a culture from a tooth abscess were taken, as well as a blood culture. On two occasions from the stool, twice from tongue scrapings, once from the sputum and once from the tooth abscess, a growth of yeasts was obtained which corresponded in the main to *Monilia psilosis,* described by Ashford[1] as the cause of sprue.

Isolation of Organism.—In the case of the stool, cultures were obtained by emulsifying a standard loopful of stool in from 1 to 2 c.c. of sterile physiologic sodium chlorid solution and streaking from 1 to 2 loopfuls of the suspension across large (135 mm.) + 1 glucose agar plates which had previously been allowed to harden. Cultures from the tongue were taken in one case by scraping the inflamed tongue with a sterile knife, after preliminary swabbing of the tongue with sterile water, and in the other instance by thoroughly swabbing the tongue with a sterile cotton swab. In both instances, *Monilia* was isolated when a large + 1 glucose agar plate was streaked, and the culture incubated at 37.5 C. (99.5 F.). A positive culture was obtained from the tooth abscess by inserting into the latter a small sterile pledget of cotton mounted on a sterile stick and immediately streaking several large plates of + 1 glucose agar. From the sputum, which was lightly streaked with blood, cultures were secured by thoroughly washing a small fragment of bloody sputum in several tubes of sterile physiologic sodium chlorid solution and then streaking the fragment over three large 1 per cent. glucose agar plates (+ 1). The plates were incubated at 37 C. (98.6 F.). A blood culture was negative, and after two weeks' continuous incubation at body temperature, the + 1 glucose blood agar plates and the + 1 glucose blood broth were discarded.

Morphology.—The yeast exhibited quite a striking variation in size and form, which seemed somewhat independent of the medium, as a mount made from a single colony showed a polymorphism among its members. The single cells were round or oval, varying in diameter from about 2 to 7 microns, were sharply defined in outline, and possessed a nucleus which was recognizable in fresh preparations. Many cells showed an oval or spherical, faintly outlined vacuole. Mycelial elements were occasionally observed in + 1 glucose agar but best apparently in gelatin.

On + 1 glucose agar plates incubated at 37 C. for two days, the colonies of *Monilia* were white, glistening, elevated, and soft, with clearly defined borders. In cultures, a rather "yeasty" odor was observed. In + 1 infusion broth, at the end of twenty-four hours at 37 C., the broth was evenly clouded. Broth cultures incubated for three or four days or longer usually exhibited a sedimented growth at the bottom and a white growth ring at the surface of the medium where it was in contact with the glass.

In gelatin stab cultures, the growth resembled that of an inverted pine tree. Smears made from the growth in gelatin showed considerable numbers of mycelial elements, which varied in size and usually were somewhat wavy in outline.

Fermentation Tests.—Fermentation tests were made by the Durham tube-within-a-tube method. The medium employed was peptone water in which the respective sugars were present in a concentration of 1 per cent. The Andrade indicator was used to determine acid production. Readings were made daily, and the tubes were incubated for at least two weeks at 37 C. before they were discarded. The material used for inoculation was taken from twenty-four hour + 1 glucose agar slants. Between thirty-six and forty-eight hours' incubation was found to give the optimum acid and gas readings. In the tests herewith recorded, sugars that were not fermented within this time failed to be fermented on longer incubation, nor did transplants made from such sugars to respective sugar broths incubated at 37 C. for two weeks result in fermentation. From the table of fermentation tests, it is to be noted that the stool and tongue strains agree in their acid producing power, but that the tongue strain produces both acid and gas in saccharose, whereas the stool strain splits off acid alone from this disaccharid.

RESULTS OF FERMENTATION TESTS

Medium	Monilia from Stool	Monilia from Tongue Scrapings
Glucose	Acid +; gas @ 90%	Acid +; gas 100%
Levulose	Acid +; no gas	Acid; no gas
Galactose	Acid; no gas	Acid; no gas
Saccharose	Acid (faint); no gas	Acid +; gas @ 80%
Maltose	Acid; no gas	Acid; no gas
Lactose	No acid; no gas	No acid; no gas
Mannite	No acid; no gas	No acid; no gas
Dextrin	Acid (very faint); no gas	Acid (faint); no gas
Xylose	No acid; no gas	No acid; no gas
Inulin	No acid; no gas	No acid; no gas
Glycerin	No acid; no gas	No acid; no gas

Animal Inoculations.—Two standard platinum loopfuls of a twenty-four hour + 1 glucose agar slant culture suspended in 0.5 c.c. of sterile physiologic sodium chlorid solution were injected intraperitoneally into a guinea-pig weighing about 250 gm. Twenty-four hours after inoculation a lump about the size of the little finger nail was easily palpable in the abdomen at the site of inoculation. The guinea-pig, after the first day, refused to eat, and died on the seventh day after inoculation. At postmortem, a rather discrete, large abscess was found subcutaneously around the site of inoculation. The abscess extended into the peritoneal cavity and involved the omentum, spleen, colon and the lower lobe of the liver. Scattered, small discrete abscesses were also found on the under surface of the

* From the Department of Bacteriology, Hoagland Laboratory, Long Island College Hospital.

1. Ashford, B. K.: Etiology of Sprue, Am. J. M. Sc. **154:** 157 (Aug.) 1917.

colon and in the liver. The gallbladder was dilated, the fluid increased in amount, hemorrhagic, and contained a large white mass resembling a colony of yeasts. From the galibladder, as well as from a liver abscess, *Monilia* was recovered in culture, mixed with *Staphylococcus aureus.*

SUMMARY

From this case of sprue, a yeast was recovered which corresponds in the main to *Monilia* of Ashford. It is perhaps somewhat of interest because there are few recorded cases of sprue studied in temperate climates from an etiologic standpoint.

The organism was isolated on + 1 glucose agar plates from the stool, tongue, sputum and a tooth abscess.

Intraperitoneal injection of a guinea-pig killed the animal in seven days, and from the liver and gallbladder, the yeast was recovered, mixed with *Staphylococcus aureus.*

Henry and Pacific Streets.

Clinical Notes, Suggestions, and New Instruments

A NEW STAIN FOR DIPHTHERIA BACILLI *

HENRY ALBERT, M.D., IOWA CITY

The report of one or several "new" stains for diphtheria bacilli almost every year since 1895 would seem to indicate that none of those previously recommended have been entirely satisfactory.

I have tried practically every stain heretofore described. A rather critical review of these will appear before long in the *American Journal of Public Health.*

My purpose here is to make available the formula for a new method of staining diphtheria bacilli which I have developed and which my associates and I have found to be more satisfactory than any stain heretofore described. Two solutions are used:

SOLUTION 1

Toluidin blue	0.15 gm.
Acetic acid (glacial)	1.00 c.c.
Alcohol (95 per cent.)	2.00 c.c.
Water (distilled)	100.00 c.c.

Solution 2 is the same as the iodin solution used in the Gram stain:

SOLUTION 2

Iodin	1 gm.
Potassium iodid	2 gm.
Water (distilled)	300 c.c.

TECHNIC OF STAINING

Smears are made on slides or cover glasses in the usual manner, fixed by heat, and stained with toluidin blue solution for five minutes. The stain is then drained off without washing, and the iodin solution applied for one minute. It is then briefly washed with water and dried, preferably by means of filter paper. It is now ready for examination.

Occasional lots of toluidin blue stain the diphtheria too uniformly. One that stains the granules well should be selected.

If staining is done in staining dishes, the iodin solution should be replaced with a fresh supply daily, since a precipitate results from the introduction of the toluidin blue stain carried over on the slide.

MICROSCOPIC PICTURE

The granules of the diphtheria bacilli are stained black—standing out in marked contrast to other elements in the microscopic field. The bars of the bacilli take a color varying from dark green to black; and the intermediate portions, as well as other bacteria, take a light green.

The granules of diphtheria bacilli stand out very much more prominently than they do when stained by Loeffler's methylene blue and other stains that are commonly employed. The bars stain with varying intensity. Sometimes they stand out better, sometimes not so well as with the Loeffler stain. They are, however, easily recognized. In this respect it is much better than certain stains, such as the Neisser, which sometimes stain the granules very well.

ADVANTAGES

1. Diphtheria bacilli are more readily recognized by virtue of the fact that the granules of the bacilli stand out in very sharp contrast to other portions of the bacillus and more especially to other bacteria which are but feebly stained.
2. Diphtheria bacilli may be recognized in younger cultures, and hence the diagnosis made earlier.
3. The bacilli may be seen equally well by daylight and artificial light.
4. The results of staining are uniformly good.

* Brief description of a stain described before the Laboratory Section of the American Public Health Association at New Orleans, Oct. 26, 1919.

STEREOSCOPIC ROENTGENOGRAPHY WITH THE BEDSIDE UNIT *

HOWARD CURL, M.D., MADISON, WIS.

With the development by Dr. Coolidge of the self-rectifying roentgen-ray tube and the portable transformer, and the subsequent production of large numbers of these completed units, a long felt want has been realized.

Designed especially as a portable unit for bedside use in hospitals, they are nevertheless capable of handling a large part of the work that comes to the general practitioner. This fact, together with the low cost, ease of installation, and simplicity of operation, will mean that many of these units will soon be in the hands of the profession.

There is, however, one very important feature which until now the designers have apparently overlooked, and that is a means for shifting the tube for stereoscopic plates. The man accustomed to stereoscopy will feel this loss keenly, and the physician who has not yet learned to use stereoscopic roentgenography in his roentgenographic examinations should know that the difference between a single plate and

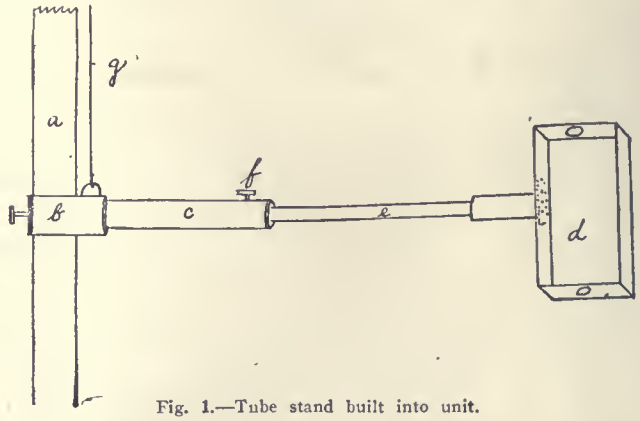


Fig. 1.—Tube stand built into unit.

a pair of stereoscopic plates is often the difference between failure and success in making a diagnosis. Especially is this true in regions about the hip or shoulder joint where it is impossible to obtain a two-way view.

Stereoscopic plates may be obtained with the bedside unit (1) by using a regular stereoscopic tube stand, or (2) by adapting the stand which is built into the unit to this type of work. The second method, besides being cheaper, eliminates the use of a second piece of apparatus. It is my purpose in this article to suggest a simple means of converting the unit tube stand into one that is suitable for stereoscopy.

Figure 1 illustrates the tube stand built into the unit: *a*, upright stand; *c*, horizontal sleeve, supporting extension

* From the Department of Clinical Medicine, University of Wisconsin Medical School.

arm *e; f*, screw for holding extension arm at any given setting; *d*, holder for self-rectifying tube, and *g*, wire cable passing over pulley to counter weight.

To obtain stereoscopic plates the extension arm was marked with circular grooves (Fig. 2, 6) at 6-cm. intervals. On this arm was also placed a sliding collar (5). The tube is adjusted over the patient with one of the circular markings on *e* flush with the end of the sleeve. The collar is set at 6-cm. distance, which will be at the next mark. The first

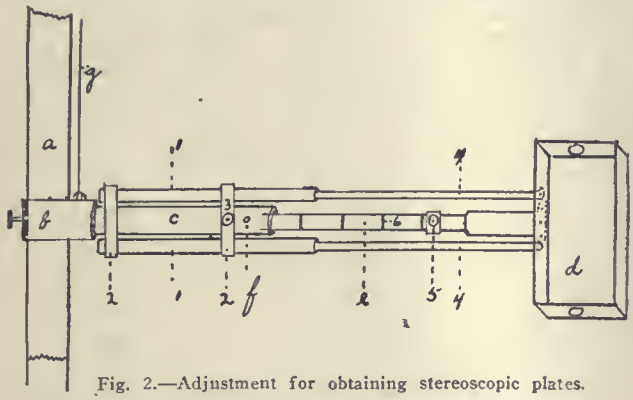


Fig. 2.—Adjustment for obtaining stereoscopic plates.

plate is taken, the tube is slid in as far as the collar will permit, and the second plate is taken. Care must be taken in shifting the tube to see that the tube does not rotate, i. e., that the same angle is preserved for the second plate. To eliminate this danger, we added two auxiliary sleeves (1, 1),



Fig. 3.—Plate changing tunnel.

parallel to *c* supported on it by two circular bands (2, 2). Two auxiliary rods (4, 4) fit into the sleeves. The tube may now be rotated to any angle and held by screw 3, screw *f* being no longer needed.

Thus, we have a tube stand with a horizontal displacement of several inches, a means for obtaining the regulation 6-cm. shift for stereoscopic plates, and a device for holding the tube at any desired angle while making the shift. With the aid of a plate changing tunnel, Figure 3, stereoscopic plates of any part of the body may be made at the bedside with a minimum of discomfort to the patient. This will be of especial value in fractures of the leg, femur or hip joint when the part is up in extension, and of which a two-way view would be difficult or impossible to obtain.

Tuberculosis in the Malay States.—Dr. J. T. Clarke, health officer of Kinta, has collected evidence in support of his thesis that the "massive dose" of tubercle bacilli is the all important factor in the causation of phthisis. He notes, as rather remarkable, that there is a higher proportion of phthisis among Chinese males than females in Singapore, the proportion being 6.04 to 3.81. But if all cases of phthisis, bronchitis and pneumonia be classed together, the difference is much less, the proportion being 8.99 males to 8.1 females. Bovine tuberculosis does not exist in the Malay Peninsula; no case of tubercle in a domestic animal has been discovered, and among more than 250,000 pigs killed in the Ipoh abattoirs during the last four years, there was no case of tuberculosis. The disease in man must, therefore, be exclusively due to infection from human sources. In Singapore, phthisis causes 16 per cent. of the total deaths. Discussing von Behring's theory of infection, which he rejects, Dr. Clarke observes that the Chinese seldom take milk, even as children, and that in the straits settlements the cattle are at present free from tuberculosis.—*Lancet*, Nov. 29, 1919.

Therapeutics

A DEPARTMENT DEVOTED TO THE IMPROVEMENT OF THERAPY. A FORUM FOR THE DISCUSSION OF THE USE OF DRUGS AND OTHER REMEDIES IN THE TREATMENT OF DISEASE.

USE AND ABUSE OF CATHARTICS*

(*Continued from page 1939*)

PHENOLPHTHALEIN

About twenty years ago the Hungarian government decreed that wine, adulterated by certain harmless additions, be earmarked by means of phenolphthalein, because of the property of this substance of assuming a brilliant red color on addition of alkali, and of its supposed harmlessness. This was done with the intention of enabling the poor man to buy this "necessity of life" at a price within his reach. But it was soon found that people partaking freely of this wine suffered from diarrhea, which at one and the same time led to a hasty repeal of the law and the discovery of a new purgative.

This recent addition to the cumbersome list of cathartics is of interest only because of the fact that it is almost tasteless and is active in small doses. It lends itself admirably to palatable administration, even to being given in the form of bonbons, which makes it especially suitable for children and for the insane; though women generally and even men prefer it on account of the inoffensiveness of its taste.

It is a yellowish-white powder, odorless and almost tasteless, very slightly soluble in water, and soluble in alcohol (13 parts) and in aqueous solutions of alkalis, yielding a pink fluid. It is also soluble in olive oil to the extent of about 2 per cent.

Being insoluble in acids, it passes through the stomach unchanged; hence it may be given in conditions of gastric irritation when many other cathartics would be contraindicated. On reaching the intestine, it is partially dissolved in the alkaline secretions, becoming converted into salts which are irritant, and thus becoming active. Very little is absorbed; more than 85 per cent. of it has been found unchanged in the feces. After large doses, however, traces are found in the urine, which then turns pink when rendered alkaline by decomposition or otherwise. That it does not irritate the kidney is shown by the fact that subcutaneous injection of a very similar substance—phenolsulphonephthalein—has become an accepted test for the functional capacity of the kidney. There are no known systemic effects produced after absorption.

Phenolphthalein probably acts chiefly by influence on peristalsis; in other words, it belongs among such drugs as cascara sagrada and senna, so far as mode of action is concerned. It is even effective as a cathartic when given subcutaneously, though Abel and Rowntree[1] found phenoltetrachlorphthalein (0.4 gm. in 20 c.c. of oil) superior for this purpose.

The chief disadvantage of phenolphthalein is a certain degree of variability of action. At times, a small dose acts excessively; at times, a larger dose fails to act. An overdose, and in especially susceptible persons even a therapeutic dose, may cause, in addition to free

* This is the twelfth of a series of articles on the pharmacology, physiology and practical application of the common laxatives and cathartics. The first article appeared October 18.

1. Abel and Rowntree: J. Pharmacol. & Exper. Therap. 1: 231 (Aug.) 1909.

purgation and colic, rapid pulse, palpitation, difficult breathing and general uneasiness, even collapse. The substance is otherwise quite free from toxic tendency. Doses of several grams have been tolerated without more severe effects than those just detailed. There are no fatal cases on record.

It should be borne in mind that phenolphthalein may cause reddish stools, when the reaction of the evacuation is alkaline, or is made so by a soap enema, for instance. Under such circumstances, the suspicion may arise that there is blood in the stools. Of course, the diagnosis can readily be made by the fact that acidification removes the color, which reappears when excess of alkali is added. In view of the frequency with which this drug is now being used, we must beware of making a diagnosis of blood in the stools by mere inspection.

The dose of phenolphthalein for adults is from 0.10 to 0.20 gm. (1½ to 3 grains). The U. S. Pharmacopeia states that the average dose is 0.15 gm., or 2½ grains. As little as 0.06 gm. (1 grain) is often sufficient for an adult, and this dose is none too large for a child. Babies aged 18 months are given 0.03 gm. (one-half grain). In obstinate cases, as for instance bedridden patients, from 0.5 to 1.0 gm. (8 to 15 grains) may be given without fear. It will be noted that, on the whole, the dose of this drug is quite independent of age. It is also true that at any age the effect is somewhat independent of dose. Evidently the activity depends on the amount of alkali in the intestine available for solution; and it is probable that variation in intestinal reaction accounts for the variability in intensity of action.

As phenolphthalein is a comparatively slowly acting drug, requiring from six to twelve hours for effect, it is generally given at bedtime. While, when large doses are needed, these would best be prescribed in powder form, the usual method of administration for the ordinary dose is in the form of sweet tablets to be eaten like candy. The National Formulary contains a formula for pink, vanilla flavored *troches of phenolphthalein*, each containing 0.06 gm. (1 grain) of the drug. These are made with acacia, and therefore disintegrate rather slowly. This is undesirable. Lozenges made in this way are suitable for mouth and throat medication; more rapid disintegration is desirable in candy medication for systemic action, as sick children sometimes refuse to suck candies that healthy children would enjoy. Friable tablets can be obtained by light compression in a tablet machine. The following formula[2] will yield such a product, which can be prepared extemporaneously by a pharmacist equipped with a tablet machine. Without compression into tablets the same formula yields a palatable powder.

SWEET TABLETS OF PHENOLPHTHALEIN, 0.06 GM. EACH

Phenolphthalein	6.00 gm.
Saccharin	0.12 gm.
Tincture of vanilla	1.50 c.c.
Cacao powder	3.00 gm.
Sugar, powdered	21.00 gm.

Mix the saccharin with the tincture of vanilla and incorporate the phenolphthalein. Finally add the sugar and the cacao by thorough trituration in a mortar. Compress in a tablet machine, using ⅜-inch die and punches, to make 100 0.30 gm. tablets.

All the various manufacturing houses of pharmaceuticals put up fairly acceptable sweet tablets containing 0.06 gm. each and up to 0.30 gm. Such tablets might simply be prescribed for as follows:

℞ 12 Sweet tablets of phenolphthalein..0.06 gm. (1 grain) each
Label: One or two at bedtime.

For infants, sweet tablets might be crushed and given in a little water.

The novelty and the inoffensiveness of this remedy has rendered it an inviting object for commercial exploitation. Soon after its introduction, the market became literally flooded with phenolphthalein in various disguises and combinations, the only original feature of most of which was a coined name. The following is a partial list of names under which phenolphthalein preparations and combinations are or were advertised:

Alophen,	Paraphthalein,	Purglets,
Cholelith Pills,	Phenalein,	Purgo,
Elzernac,	Phenolax Wafers,	Purgolade,
Ex Lax,	Phenolphthalein Laxative,	Purgotin,
Exurgine,	Probilin,	Purgylum,
Laxophen,	Prunoids,	Rhuphen,
Laxine,	Purgatol,	Thalosen,
Laxirconfect,	Purgen Konfect,	Veracolate,
Laxothalen Tablets,	Purgella,	Zam Zam.

What a Babeldom would arise in medical practice if this business policy of manufacturers to protect their product by coined names were encouraged by the patronage of physicians. Self-respecting manufacturers owe it to the progress of medical science to do away with such camouflage for revenue only; and the medical profession owes recognition to these manufacturers by prescribing products by their scientific names.

(To be continued)

2. From Fantus, Bernard: Candy Medication, St. Louis, C. V. Mosby Company, 1915.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

SULPHOICHTHYOLATE PREPARATIONS

(See N. N. R., 1919, p. 319)

ICHTHYOL.—Ammonium Ichthyol.—An aqueous solution the important medicinal constituents of which are ammonium compounds containing sulphur in the form of sulphonates, sulphones, and sulphides. These characteristic forms of sulphur result from the sulphonation of the tar-like distillate obtained from the bituminous shales, found near Seefeld in the Tyrol, and containing the fossil remains of fish.

Actions and Uses.—Ichthyol is weakly antiseptic and mildly irritant. It penetrates the skin to some extent and is said to cause some vasoconstriction on mucous membranes. Taken internally it produces some gastro-intestinal irritation, with diarrhea, etc. Its influence on metabolism has not been determined.

It is used locally under the supposition that it will secure the absorption of swellings and effusions in contusions, burns, etc., and especially in gynecologic practice, and in various skin diseases. Ichthyol has been tried internally in a great variety of conditions, but its therapeutic value in many of its suggested applications has not been fully established.

Dosage.—Internally, from 0.2 to 2 Cc. (4 to 30 minims) mostly in simple solutions in water, or peppermint water, sometimes in the form of pills or capsules. Locally, in vaginal, uterine or rectal suppositories, in from 0.06 to 0.18 Cc. (1 to 3 minims) bougies, or from 1 to 3 per cent. solution in treatment of gonorrhea. Ointments containing from 10 to 40 per cent. petrolatum may be prepared, using as a base fat, lanolin or petrolatum.

Manufactured by the Ichthyol Co., Hamburg, Germany (Merck & Co., New York). German patent No. 35,216. U. S. trademark No. 62,603.

Ichthyol is a reddish-brown to brown-black, syrupy liquid having a characteristic, empyreumatic odor and burning taste.

It should be completely soluble in water; incompletely soluble in alcohol or ether, but nearly soluble in a mixture of equal volumes of alcohol and ether; also soluble in a mixture of equal volumes of alcohol, water and ether. It is miscible with glycerine.

The aqueous solution of ichthyol (1:10) has a faintly acid reaction on blue litmus paper. The aqueous solution of ichthyol (1:10) yields a greenish-black, resin-like precipitate on the addition of hydrochloric acid. This precipitate is nearly insoluble in ether; it is partially soluble in alcohol; soluble in water, but if dissolved in the latter solvent it may again be precipitated from solution by the addition of hydrochloric acid. With barium chloride test solution the aqueous solution of ichthyol (1:10) gives a brownish-black precipitate which is insoluble in diluted hydrochloric acid. If the aqueous solution (1:10) be boiled with potassium hydroxide test solution ammonia should be evolved. If 1 Gm. of ichthyol be ignited it should leave no weighable residue. If 10 Gm. of ichthyol be diluted with 90 Cc. of water, the mixture placed in a glass-stoppered cylinder and allowed to remain undisturbed for twenty-four hours, no deposit should form.

If dried at 100 C. ichthyol should not lose more than 47.0 per cent. of its weight (absence of an undue amount of *water*). If from 5 to 6 Gm. of ichthyol be weighed into a flask, 25 Cc. of potassium hydroxide test solution and 100 Cc. of water be added, the mixture distilled until no more ammonia passes over, the distillate collected in 15 Cc. of normal sulphuric acid to which 1 drop of methyl orange test solution has been added, and the excess of acid then titrated with tenth-normal potassium hydroxide, the amount of normal sulphuric acid consumed should correspond to from 2.9 to 3.4 per cent. of total ammonia (NH_3). If from 5 to 6 Gm. of ichthyol be weighed into a beaker, diluted with 50 Cc. of water, 10 Cc. of a 10 per cent. solution of albumin added, followed by 5 portions of 5 Cc. each of diluted hydrochloric acid, shaking after each addition, the mixture made up to a volume of 500 Cc. and filtered through a dry filter, and if 200 Cc. of the filtrate be heated to boiling, 10 Cc. of barium chloride test solution added, the mixture allowed to stand for twenty-four hours, the precipitate of barium sulphate collected, heated and weighed in the usual way, the weight of barium sulphate obtained should correspond to from 5.7 to 6.2 per cent. of ammonium sulphate. If from 0.5 to 1 Gm. of ichthyol be weighed into a Kjeldahl flask, diluted with 30 Cc. of water, 5 Gm. of potassium chlorate added, followed by 30 Cc. of nitric acid, the mixture evaporated to about 5 Cc., 25 Cc. of hydrochloric acid added, this solution evaporated to about 5 Cc., 25 Cc. of hydrochloric acid again added, this solution evaporated to about 5 Cc., 100 Cc. of water added, this solution heated to boiling, 10 Cc. of barium chloride test solution added, the mixture allowed to stand for twenty-four hours, the precipitate of barium sulphate collected, heated and weighed in the usual way, the weight of barium sulphate should correspond to at least 10 per cent. of total sulphur. If the ammonia contained in the ammonium sulphate as previously determined in ichthyol be calculated, and the result subtracted from the "total ammonia" as previously determined, the remainder should represent the ammonia combined with the organic-sulphonic acids. If this value be multiplied by 1.88 the result should represent the sulphur present in the sulphonic acids in an oxidized state, i. e., the "sulphonic sulphur." If the sulphur contained in the ammonium sulphate as previously determined in ichthyol be calculated, and the result subtracted from the "total sulphur" as previously determined, the remainder should represent the sulphur present in the organic sulphonic acids contained in the substance. If the "sulphonic" sulphur in ichthyol as previously calculated be subtracted from the sulphur in the organic-sulphonic acids as previously calculated, the remainder should correspond to at least 5.5 per cent. of "organic" ("sulphid") sulphur.

Ichthyol is incompatible with acid and saline solution, fixed alkalies, their carbonates and iodides, alkaloidal salts and mercuric chloride.

MERCUROCHROME-220

Preliminary Report of the Council on Pharmacy and Chemistry

A report on the experimental and clinical status of this new germicide for use in the genito-urinary tract by Young, White and Swartz was published in THE JOURNAL of the American Medical Association, Nov. 15, 1919. This product is prepared and marketed by Hynson, Westcott and Dunning, Baltimore, Md., who request its acceptance for New and Nonofficial Remedies. The available evidence on Mercurochrome-220 is thus far limited to the article mentioned—obviously confirmation of the work there reported is necessary before more than a tentative acceptance can be accorded. However, Mercurochrome-220 is a definite and nonsecret compound. This, together with the evidence presented in the publication referred to, may be sufficient to warrant its use by physicians, provided, however, it is recognized that its therapeutic status is in the experimental stage. The Council has, therefore, deferred acceptance of this product for New and Nonofficial Remedies, and authorized publication of this preliminary report.

For the information of those who desire to use this compound, the following preliminary statement, based chiefly on the article by Young, White and Swartz, of its physical and chemical properties, pharmacologic actions and proposed therapeutic application is published.

W. A. PUCKNER, Secretary.

MERCUROCHROME-220.—Mercurochrome-220 is stated to be dibromo-oxymercury fluorescein.

The empirical formula is $C_{20}H_{10}O_5Br_2Hg$.

Mercurochrome-220 is described as occurring as a red powder, odorless, containing about 28 per cent. of mercury.

Mercurochrome-220 is insoluble in water, but soluble in alkalies, forming a deep cherry-red solution which fluoresces on dilution. The solution is stable in the air at ordinary temperatures, is not affected by moderate heating and does not respond to the usual tests for mercury ions. Alkaline solutions are incompatible with acids. The solution stains the skin red but the stain may be removed by rubbing first with 2 per cent. potassium permanganate solution and then with 2 per cent. oxalic solution. On ignition, Mercurochrome-220 leaves no ash.

Pharmacologic Action.—According to Young, White and Swartz, this compound is a strong and rapidly active germicide; it is active in urine, a 1:1,000 solution killing *B. coli* and *Staphylococcus aureus* in this medium in one minute. It penetrates the tissues readily. The drug is tolerated in a strength of 1 per cent. by the bladder, renal pelvis and urethra; a 2.5 per cent. solution applied to the anterior urethra caused only temporary discomfort. The toxicity, when tested by intravenous injections into rabbits, was found to be rather high, 10 Mgm. per kilo, invariably causing death within 24 hours and 5 Mgm. causing a decrease in phenolsulphonephthalein output and an albuminuria that lasted about a week. Dogs were more resistant. No systemic effects have been observed following its local application in the human.

Therapeutic Applications.—The drug has been used by Young, White and Swartz in infections of the renal pelvis, in cystitis and urethritis and in chancroidal ulcerations. In the treatment of infections of the kidney pelvis, the ureters were catheterized and the pelvis gently filled with a 1 per cent. solution of the drug; the catheter was plugged and the solution retained in the pelvis for five minutes. In the treatment of bladder conditions, one ounce of the 1 per cent. solution was introduced into the bladder and retained for one hour or longer, the treatment being given daily or on alternate days or at longer intervals according to circumstances. In anterior gonococcus urethritis, the anterior urethra was filled with a 1 per cent. solution and retained for five minutes; if the posterior urethra was involved, the solution was gently forced into the posterior urethra and bladder and retained for an hour or more.

Later, in the treatment of acute anterior gonorrhea, 2.5 per cent. solution[1] was used every three hours. In the case of chancroidal ulcerations, the drug was applied as a moist dressing (1 per cent.) or as a starch paste (5 per cent.) or as an ointment (5 per cent.).

The results have been satisfactory and no untoward effects observed. Cases of long-standing, purulent cystitis have cleared up in a few days; in the case of gonorrhea, the discharge became free of the organisms in from three to seventeen days, the average being ten. The chancroidal ulcerations cleared off in from one to four days.

BARBITAL SODIUM (See N. N. R., 1919, p. 83).

Veronal-Sodium—A brand of barbital sodium complying with the N. N. R. standards.

Manufactured by the Winthrop Chemical Co., Inc., New York. U. S. patent No. 782,739. U. S. trademark No. 40,115.

PROCAINE (See New and Nonofficial Remedies, 1919, p. 30).

Procaine-Calco.—A brand of procaine complying with the N. N. R. standards.

Manufactured by the Calco Chemical Co., Bound Brook, N. J. U. S. Patent No. 812,554 (Feb. 13, 1906; expires 1923) by license of the U. S. Federal Trade Commission.

TYPHOID VACCINE (See New and Nonofficial Remedies, 1919, p. 292).

E. R. Squibb and Sons, New York.

Typhoid-Paratyphoid Bacterin (Special Bacterial Vaccine No. 13).—Marketed in 5 Cc. vials, each cubic centimeter containing 1,000 million killed *B. Typhosus*, 750 million killed *B. Paratyphosus* "A," and 750 million killed *B. Paratyphosus "B."*

1. In the article by Young, White and Swartz, J. A. M. A. 73: 1483, 1919, it was stated that a 25 per cent. solution was being used; this was an error, J. A. M. A. 73: 1708, 1919.

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SATURDAY, JANUARY 3, 1920

CAROTINEMIA

Abnormal pigmentation of the body, as well as the appearance of unusual pigments in the fluids and secretions of the organism, has always elicited the interest of physicians. In recent years a new appreciation of the significance of some of these manifestations has come through the recognition that certain ingested pigments, notably the so-called carotinoids, are easily incorporated into the tissues. Under the general designation of "lipochromes" they have been recognized as the coloring matters of milk fats and body fats, of egg yolk, of the corpus luteum, and of other structures. Recently the lipochrome of nerve cells has also been identified as carotinoid coloring matter—carotin and xanthophyll pigments—derived from the food.

Through numerous researches of Palmer and his associates[1] in this country, it has become known that different species vary in their tendency to carry carotinoids in the blood serum. Man represents one of those capable of such distribution of the pigments, frequently derived from plant sources, which tend to give a yellow color to body fats, analogous to that of butter and egg yolk. Not until quite recently has it been appreciated, however, that certain unusual colorations indicated by a yellowish complexion are referable to the food pigments. Under the designation of carotinemia, Hess and Myers[2] have recently described in THE JOURNAL what they regard as a new clinical picture. The yellow discoloration of the skin observed in their cases resembled a mild jaundice except for the noninvolvement of the sclera. Hence, as they suggest, this pigmentation has no doubt frequently been confused with mild grades of icterus or attributed to some obscure metabolic disturbance. Through the careful laboratory examinations made by Hess and Myers it is demonstrated that a diet rich in carotin, as it is furnished by carrots, spinach, egg yolk and oranges, may produce the manifestations. It is the merit of these American investigators to have demonstrated an actual carotinemia, that is, tingeing of the blood plasma with pigment which was chemically identified as carotin. They point out that as carotin pigment is a constituent of much of our vegetable food, carotin discolorations are most likely to occur in those subsisting on diets rich in vegetables.

By a coincidence attributable to war-time dietary conditions, necessitating widespread liberal use of vegetable foods, what is evidently the same type of coloration has been widely observed in Europe during the past few years. Kaupe[3] described the jaundice-like complexion of children in Bonn who had received considerable quantities of carrots as food. The pediatrician Stoeltzner[4] at Halle, who has observed similar cases after the ingestion of carrots, designates the condition as "pseudo-icterus," and issues a warning against confusion with jaundice. The lack of sclerotic discoloration affords an easy differential diagnosis. Klose,[5] who observed the same phenomenon in Silesia, has called attention to the peculiar hue or orange-yellow tint which serves to differentiate the discoloration due to carotin-bearing foods. He also points out that it is most commonly observed in the better nourished children. This can be understood if we recall that the carotin pigment is fat-soluble and hence tends to migrate more readily when an abundance of fat is available.

Moro[6] evidently observed long ago the same type of discoloration in infants after the feeding of so-called carrot soup, and its cause was ascribed to carotin at that time. The phenomenon is by no means confined to the young or adolescent individual. The possibility of comparatively larger intakes of the responsible pigments in the diet may render the incidence of the discoloration more frequent in children; or it may be that the paler skin of the young renders the yellow complexion more readily detected and hence only apparently more common in childhood. Schüssler[7] has described what is undoubtedly a carotinoid pigmentation in three men beyond middle life who had been obliged to subsist largely on carrots because of the shortage of potatoes where they lived. Furthermore, it was in adults that von Noorden and Salomon[8] observed the comparable pigmentation termed by them "xanthosis" and most frequently seen in diabetics, presumably because the latter frequently subsist on vegetable (that is, carotin-containing) diets. Hymans, van den Bergh and Snapper,[9] as well as Umber[10] sus-

1. Palmer, L. S., and Eckles, C. H.: J. Biol. Chem. **17**: 191, 211, 223, 237, 245 (March) 1914. Palmer, L. S.: Ibid. **23**: 261 (Nov.) 1915; **27**: 27 (Oct.) 1916.
2. Hess, A. F., and Myers, V. C.: Carotinemia: A New Clinical Picture, J. A. M. A. **73**: 1743 (Dec. 6) 1919.
3. Kaupe, W.: Hautverfärbung bei Säuglingen und Kleinkindern infolge der Nahrung, München. med. Wchnschr., March 21, 1919, p. 330.
4. Stoeltzner, W.: Ueber Pseudoikterus nach Mohrrübengenuss, München. med. Wchnschr., April 11, 1919, p. 419.
5. Klose, E.: Hautverfärbung bei Säuglingen und Kleinkindern infolge der Nahrung, München. med. Wchnschr., April 11, 1919, p. 419.
6. Moro, E.: München. med. Wchnschr., 1908, No. 29, p. 1562; ibid., June 13, 1919, p. 674.
7. Schüssler: Ueber Hautverfärbung durch Mohrrübengenuss, München. med. Wchnschr., May 30, 1919, p. 596.
8. Von Noorden: Internat. Dermatologenkongress, 1904. Salomon, H.: Von Noorden's Handbuch der Pathologie des Stoffwechsels, Ed. 2, **2**: 290; München. med. Wchnschr., May 23, 1919, p. 564.
9. Hymans, van den Bergh and Snapper: Deutsch. Arch. f. klin. Med. **110**.
10. Umber: Berl. klin. Wchnschr., 1916.

pected the identity of the "xanthosis" pigment with that of carrots. Spectroscopic examination seemed to verify this.

Hess and Myers,[2] whose investigations represent the latest word on this subject and thus serve to direct the attention of American clinicians to a phenomenon earlier noted in Europe, have noted that in cases of carotinemia the urine as well as the blood serum was colored yellow. When a small quantity of concentrated carotin was fed, the pigment reappeared rapidly in the urine. This significant fact, so far as we are aware, has never before been reported for man.[11] It will henceforth be necessary to deal with the possibility that some of the yellow urine pigment—the indefinite so-called urochrome—is of exogenous origin rather than the descendant of blood or bile pigments, as is now commonly taught.

METHYL—WOOD—ALCOHOL AND ITS END-PRODUCTS IN THE BODY

The menace of methyl alcohol or wood spirits to human health, though long known to physicians, has never been adequately appreciated by the public. Heretofore the dangers arising from its introduction into the body have for the most part been confined to some accidental or casual intake of the substance, and larger numbers of fatalities have arisen only in unusual circumstances, such as the criminal adulteration of alcoholic beverages with wood alcohol. With the enforcement of national prohibition, however, the prospect of more frequent instances of harm through the use of this intoxicant in place of the forbidden grain spirits and other drinks containing ordinary ethyl alcohol is unfortunately before the nation. Within the last few weeks the newspapers have reported the deaths of more than a hundred persons from the adulteration of alcoholic beverages with methyl alcohol. It therefore becomes more necessary than ever to understand the toxicology of methyl alcohol and its behavior in the body. To combat an enemy we must learn to know its mode of attack.

Chemically, the difference between methyl alcohol (CH_3OH) and ethyl alcohol (CH_3CH_2OH) is not striking, though the methods of preparation are dissimilar. When wood is subjected to destructive distillation, methyl alcohol is one of the products formed. Ethyl alcohol is derived from the fermentation of grains or fruits. Wood alcohol, about 10 per cent., may be added to ethyl alcohol to render the latter unfit for beverage purposes, and the government has ruled recently that such denatured alcohol must bear on the label a special warning concerning the dangers of methyl alcohol. Elsewhere in this issue appears the report of a case of wood alcohol poisoning thoroughly studied with reference to the symptomatology and pathology.[1] When death occurs, there is usually coma, with death from respiratory paralysis. According to our present knowledge, methyl alcohol is eliminated slowly from the body, an end-product of the oxidation in the body being formic acid.

Formic acid, HCOOH, has been recognized as an excretory product of methyl alcohol since Pohl[2] demonstrated, in 1895, that introduction of this alcohol into the stomach leads to an increased output of formic acid in the urine. Hence the latter affords a possible means of ascertaining whether or not wood alcohol has been taken into the organism. A mere qualitative test for formic acid, however, will not suffice; for this substance has been known, at least since 1877,[3] as a normal constituent of the urine. Therefore it is essential to know something regarding the extent to which formic acid may occur in the urine under what may be called normal conditions of living. According to Autenrieth,[4] the quantity eliminated may vary considerably in different persons, though it tends to exhibit a uniformity in an individual living on a fairly uniform diet. The figures approximate 0.25 gm. a day as an illustrative average.

When methyl alcohol is ingested, the output of formic acid in the urine promptly increases. For example, a person who had taken 80 gm. of pure methyl alcohol in the course of eight days showed an extra elimination of formic acid above his usual output equivalent to 5 per cent. or more of the consumed spirits. It will be observed that even when these relatively innocuous doses were taken, a quantitative investigation betrayed the intake. With larger doses, methyl alcohol itself, which is missed in such instances as that just cited, may appear in the urine. Other alleged precursors of formic acid, such as glucose, and lactic acid which might readily be taken into the body in exceptionally large quantities in the course of an ordinary regimen, were found by Autenrieth to be without appreciable influence on the output. Formaldehyd, HCOH, did not produce an increment; but formic acid itself was quite resistant to oxidation in the body, so that unlike many other organic acids it again reappeared in the urine in considerable proportions unchanged. Fortified with these facts, the chemist will be better prepared to ascertain the occurrence of poisoning with wood alcohol when the direct evidence may be lacking or inconclusive. At the present juncture the public should be made to appreciate that methyl alcohol is a dangerous poison; that one of its serious effects is permanent blindness, and that it may be so prepared as to be ordinarily indistinguishable by

11. Kaupe (Footnote 3) specially records the absence of apparent changes in the urine in the cases observed by him.

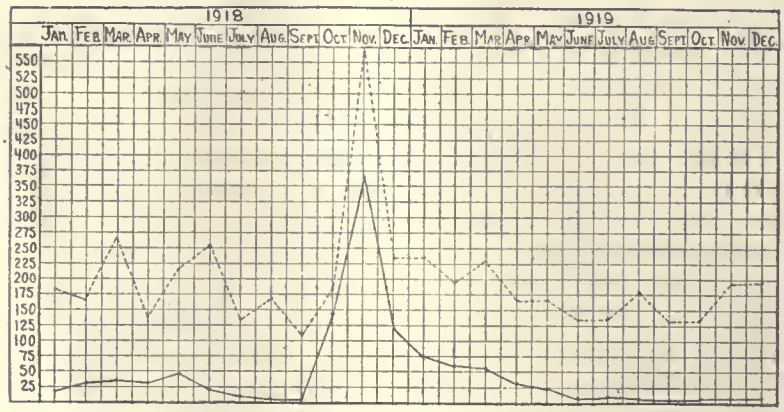
1. Harrop, G. A., Jr., and Benedict, E. M.: Acute Methyl Alcohol Poisoning Associated with Acidosis, THE JOURNAL, this issue, p. 25.
2. Pohl, J.: Arch. f. Exper. Path. u. Pharmakol. **31**: 286, 1895.
3. Thudichum: Arch. f. d. ges. Physiol. **15**: 129, 1877.
4. Autenrieth, W.: Ueber den Ameisensäuregehalt des Harns, normalerweise und nach Eingabe verschiedener Substanzen, München. med. Wchnschr., Aug. 1, 1919, No. 31, p. 862.

odor or taste from ethyl alcohol. It should be emphasized that the selling or promoting the sale of or use of either methyl or ethyl alcohol as a beverage is the doing of an unlawful act.

DEATHS OF PHYSICIANS IN 1919

During 1919, the deaths of 2,105 physicians of the United States and Canada were noted in THE JOURNAL. Adding 2.5 per cent. to this number on account of delayed reports and possible omissions, we may estimate the total number of deaths to have been 2,163. As the total number of physicians classified in the American Medical Directory is 159,444, we may estimate that the annual death rate approximates 13.29 per thousand. The average annual mortality for the period from 1914 to 1919, inclusive, is approximately 14.81.

Ages.—The age at death varied from 24 to 100, with an average of 59 years, 1 month and 25 days. Of the decedents, 88 were under 30; 239 between 31 and 40; 280 between 41 and 50; 442 between 51 and 60; 498 between 61 and 70; 366 between 71 and 80; 156 between 81 and 90, and 18 between 91 and 100. The greatest mortality occurred at the age of 59, at which 62 deaths were recorded.



Deaths from influenzal pneumonia and from all causes during 1918-1919: solid line, deaths from influenzal pneumonia; broken line, deaths from all causes.

Years of Practice.—The number of years of practice varied from 1 to 76, the average being 32 years, 5 months and 26 days.

Causes of Death.—General diseases caused 250 deaths; diseases of the nervous system, 248; diseases of the circulatory system, 369; diseases of the respiratory system, 334; diseases of the digestive system, 114; diseases of the genito-urinary system and skin, 156; senility, 320; suicide, 38; accident, 103; homicide, 35, and 90 deaths occurred after surgical operations. Among the principal assigned causes of death were: pneumonia, including influenzal pneumonia, 313; organic heart disease, 222; cerebral hemorrhage, 203; nephritis, 121; malignant disease, 78; tuberculosis, 66; angina pectoris, 53; arteriosclerosis, 35; septicemia, 31; diabetes, 30; appendicitis, 27; myocarditis, 23; uremia, 17; anemia, 16; kidney disease (unclassified), 15; cirrhosis of the liver, and gastritis, each, 14; peritonitis, 12; acute dilatation of the heart, and endocarditis, each, 11; embolism and thrombosis, each, 10, and other diseases, less than 10.

Violence.—There were 176 deaths from violence. Of these, 103 were due to accident and were: automobile, 42; automobile-railway (grade crossing), 15; poison, 10; drowning, 7; street car accidents, falls and railway accidents, each 5; injuries by horses and vehicles, 3; asphyxia, gunshot wounds and other accidental traumatisms, each 2; aeroplane, injuries by animals, explosion, burns and crushing, each 1. The 38 physicians who ended their lives by suicide selected the following methods: firearms, 18; poison, 11; strangulation, 3; cutting instruments, and causes not stated, each, 2; asphyxia, 1, and jumping from high places, 1. Of the 35 homicides, 21 occurred as the result of wounds received in battle; 10 were due to firearms; 3 were unclassified, and one was due to strangulation.

Influenzal Pneumonia.—The graphic chart shows the deaths of physicians from pneumonia and influenzal pneumonia and from all causes for the years 1918 and 1919, and indicates clearly the exceedingly rapid increase that occurred during October, November and December, 1918.

Military Service.—The deaths of 21 officers of the Army and Navy are reported to have occurred as the result of wounds received in battle; 37 officers died abroad from disease; 3, from accident; 2, from suicide, and one was murdered. During the year, 143 physicians died who had served in the Civil War, and of these 33 had followed the fortunes of the Confederacy, 45 had been officers of the United States Volunteers, 17 were veterans of the war with Spain, and 5 had served in foreign wars. The Medical Corps of the Army, including the Medical Reserve Corps, lost 325 officers and 11 contract or acting assistant surgeons. The Navy lost 29 medical officers, the United States Public Health Service, 9; the United States Indian Service, 4, and the organized militia, 22, of whom 5 had attained the grade of Surgeon-General.

Civil Positions.—Of those who died, one had been a member of Congress; 22, members of the lower house of legislature; 29 had been mayors; 15 had been members of state boards of health; 12, members of state boards of medical examiners, and 2, members of other state boards.

Association Officers.—Among those who died, one had been President of the American Medical Association, three had been members of the House of Delegates, and two members of the Board of Trustees.

THE TEACHING OF CLINICAL MEDICINE

Teachers of technical subjects naturally fall into one of two groups: first, the type whose interests lie mainly in the philosophic aspects of the subject taught, and second, the type who think of problems in terms of the individual. As Addis[1] has recently pointed out, this is true of clinical medicine, and it is equally true of clinical surgery or of any other clinical subject. Some clinicians who are mainly interested in underlying principles may be described as the investigative type. Others who are chiefly interested in the problem of the individual patient may be regarded as the practical type.

Quite frequently it has been assumed, particularly by the general practitioner and by the man on the street, that the two types are antagonistic, and this assumption is not without some basis in fact. It is doubtless true that the person with the investigative type of mind dislikes to be torn from his laboratory to attend to the details of the wards. We can all recall John Hunter's famous remark under circumstances of this sort that he must "go out and earn that damned guinea." It is equally true that the so-called practical clinician finds it difficult to detach himself from the study of disease in the patient to study disease by laboratory investigation. To this extent there is antagonism between the two types of clinicians; but the assumption that the investigative type is necessarily a feebleminded putterer when it comes to practical medicine is not correct. Nor is it correct to assume that the practical type of clinician is incapable of grasping the principles of research and of appreciating its importance.

As Addis points out, the teacher of clinical medicine at the present time is in difficulties because he is expected to combine in one person the attributes of these two types. He is expected to be a practical clinician capable of diagnosing and treating disease in the individual, and he is also required to demonstrate his ability to do laboratory research. True, there are those who possess the characteristics of both types, but they are exceptional. The details concerned in the study and treatment of disease have become more and more complicated as our theoretical knowledge has increased. New principles and new methods are constantly being discovered by the investigator, and new applications of these principles and methods to clinical work are continually being made. This has caused a great increase in the routine work involved in the study of a given case and has greatly complicated the task of the practical clinician. Indeed, as Addis points out, the complexity of modern diagnosis and of modern treatment is so great that all of the energies of one man may well be utilized in organizing and conducting this side of the work of a teaching hospital.

1. Addis: Edinburgh M. J., N. S. **23**: 235, 1919.

It is quite possible that, as has been suggested, we are approaching the time when there will be two types of persons connected with each clinical department, namely, the clinical physiologist, whose chief work will be the intensive study of selected groups of cases and the instruction of students in the application of the principles of physiology to the elucidation of disease, and the clinician, whose chief function will be the care of the patient and the instruction of the student in the practical methods of diagnosis and treatment. Obviously, some such arrangement already exists in some of our better schools. In institutions in which full time medicine has been introduced, there has been a distinct effort to appoint as heads of the clinical departments men of the investigative type. One question that Addis' discussion raises is whether in our enthusiasm for laboratory research we have not overlooked the importance of purely clinical investigation and of the type of physician that naturally tends toward this.

Current Comment

HORSE SERUM VS. DIPHTHERIA ANTITOXIN

Many physicians have been wondering what would be revealed when the veil was raised which has hidden Germany and Austria from the rest of the world during the war. Physicians have been scanning German literature as it began to filter in to see what the Germans have done in medical science. Thus far nothing has been revealed which might be regarded as epoch making. One episode is especially interesting and worthy of note. We are indebted to *Medical Science, Abstracts and Reviews* of London for the references referred to. The average physician believes that the use of diphtheria antitoxin in the treatment of diphtheria had long ago been accepted as a specific and satisfactory method. It has often been cited as typical of definite progress in therapeutics and as an example of what scientific medicine has accomplished. It was stratling, therefore, to read that a German investigator, Bingel,[1] perhaps carried away by recent work with nonspecific proteins had come to the conclusion that ordinary horse serum was just as effective as antidiphtheritic serum. He reports his conclusions in 471 cases of diphtheria treated with antitoxin, comparing them with 466 cases treated with ordinary horse serum; he claims to have found no difference in the results; in fact, that the results with ordinary horse serum in some instances were better. He concluded finally that the success of serum therapy in diphtheria could not be attributed to the antitoxin content of the serum and suggested that the large doses used, containing thereby large quantities of horse serum, were responsible for the good results. As might have been expected, Bingel's results and conclusions were not accepted. Numerous articles

1. Bingel, A.: Ueber Behandlung der Diphtherie mit gewöhnlichem Pferdeserum (Vergleich zwischen 471 mit antitoxischem Diphtherieheilserum und 466 mit gewöhnlichem Pferdeserum behandelten Diphtheriefällen—kein Unterschied), Deutsch. Arch. f. klin. Med. **125**: 284-332, 1918.

appeared invalidating the conclusions. Feer,[2] working in the Zurich University Children's Clinic, at once compared sixty-five cases of diphtheria treated with antitoxin with fifty-seven treated with ordinary serum, giving the ordinary serum only in mild cases. He found that the cases treated with ordinary serum, although mild and not ill for so long a time as the others, required five to seven days for the throat to become clean, as compared with three days for those treated by antitoxin. In six cases it was necessary to inject diphtheria antitoxin subsequently in order to obtain a satisfactory result. Moreover, he observed that the membrane again appeared in from three to nine days after the injection of ordinary serum. His results were so definitely in favor of antitoxin that the experiment was not continued. Feer was unable to understand Bingel's results and even suggests that they may have been due to his having used serum from horses which had previously supplied antitoxin. In the same way other German clinicians and experimenters, including Joannovics,[3] Friedberger[4] and Kolle,[5] confirmed the prophylactic and curative value of diphtheria antitoxin and demonstrated the inefficacy of ordinary horse serum in experimental diphtheria.

THE PROTEIN SHOCK REACTION

When vaccine therapy came into vogue many years ago, one of the points on which the earlier writers laid emphasis was the specificity of the reaction. As time has gone on, more and more doubt has been expressed regarding this specificity. It has been shown experimentally that a variety of substances of a protein nature are capable, when introduced into the body, of causing a reaction on the part of the body cells and fluids with the stimulation of the immunity-producing mechanism. Practical advantage of these studies in the treatment of disease was first sought in this country. Among the earlier studies were those of Miller and Lusk, of Cecil, and of Gay, which indicated the possible value of this form of treatment. In typhoid fever to some extent, but particularly in the treatment of various forms of arthritis, the administration of protein has proved of value. Such administration leads to a reaction that is now spoken of as the protein shock reaction, and this reaction is indeed the greatest drawback to the treatment. Patients capable of reacting to the treatment usually have a severe chill with fever and very often headache and general pains, which may be accompanied by nausea and vomiting and may last for several hours. This is accompanied by a primary fall and a secondary rise in the leukocytes, which may be taken as an indication that the tissues are reacting. Recently Gow[6] has substantiated previous studies regarding the reaction on the part of the leukocytes and the general reaction on the part of the patient. While the method is not one that has as yet been widely used, it seems to merit more extensive, careful study.

2. Feer, E.: Zur Behandlung der Diphtherie mit gewöhnlichem Pferdeserum, München. med. Wchnschr. **66**: 343-344, 1919.
3. Joannovics, G.: Zur Behandlung der Diphtherie mit gewöhnlichem Pferdeserum, Wien. klin. Wchnschr. **32**: 220-222, 1919.
4. Friedberger, E.: Hat das normale Pferdeserum einen Einfluss auf die experimentelle Infektion des Meerschweinchens mit Diphtheriebazillen? Berl. klin. Wchnschr. **56**: 151-158, 1919.
5. Kolle, W., and Schlossberger, H.: Zur Frage der Heilwirkung des Diphtherieserums, Med. Klin. **15**: 553-555, 1919.
6. Gow: Quart. J. Med. **13**: 82, 1919.

SIR WILLIAM OSLER

Osler is dead. These three words announce the passing of a man most influential for all that was good; noted for his kindly spirit, well beloved as a teacher and physician. The life of Sir William Osler, more than his works, placed him at the pinnacle of his profession. His winning personality, his cheerful disposition, his faith in mankind, but above all his love for his profession made him what he was—the great physician. Added to these is the fact that from boyhood to his last illness he was a tireless student, an enthusiastic, unceasing worker. His contributions to medical literature, recently compiled, include 730 titles; elegance of style, conciseness of statement and literary quality of his manuscripts marked him as a careful, conscientious writer. His contributions, whether as textbook, periodical literature or spoken word, were examples of masterly English diction. During his long career Sir William Osler was the recipient of practically every honor which the medical profession could bestow on those of merit in its ranks, culminating last July in the international celebration of his seventieth birthday. The occasion was marked by the felicitations and congratulations of the medical world. A memorial volume was prepared containing essays by students and colleagues and presented to him by a distinguished committee. In response to the presentation address Dr. Osler said:

"To have had the benediction of friendship follow one like a shadow, to have always had the sense of comradeship in work, without the petty pinpricks of jealousies and controversies, to be able to rehearse in the sessions of sweet, silent thought the experiences of long years without a single bitter memory, fill the heart with gratitude. That three transplantations have been borne successfully is a witness to the brotherly care with which you have tended me. Loving our profession, and believing ardently in its future, I have been content to live in it and for it. A moving ambition to become a good teacher and a sound clinician was fostered by opportunities of an exceptional character, and any success I may have attained must be attributed in large part to the unceasing kindness of colleagues and to a long series of devoted pupils whose success in life is my special pride."

The statement quoted is characteristic of the man. It shows why he was loved, why he succeeded—why his name will appear in the history of medicine as an example of the ideal physician.

Cuba's Fine Smallpox Record.—Our exchange *Vida Nueva* of Havana cites the recent smallpox death rate in various countries from 70 in France, 78 in England and 1,057 in Portugal to Spain's 1,262, while Cuba was the only country on the direct paths of commerce which had no cases. Havana had 1,654 cases in 1887; 1,404 in 1897; 2 in 1900, and then for ten years not a single case. As was mentioned recently, there has been a small epidemic in Cuba, for the first time in seventeen years, notwithstanding the opportunities for importation of the disease.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Convicted of Misuse of Mails.—Dr. George F. Purcell of Los Angeles was found guilty of misusing the mails to give information where an illegal operation might be performed. The case is the first of a scries of six brought by the government for similar offenses.

Illegal Practitioners Arrested.—Drs. Harry G. Palmer and Jay G. McMath, osteopaths of Compton, according to report, have been arrested on a charge that they murdered Mrs. Marie Vegas Martinez, who died as the result of an alleged illegal operation performed by them. The report states also that T. Wah Hing, a Chinese herb doctor, who has been practicing in Sacramento for many years, was convicted of practicing medicine without a state license.

Personal.—Dr. John A. Reily, medical superintendent of the State Hospital, Patton, has been reelected executive head of the institution.——Dr. Ethel M. Watters, San Francisco, has been appointed head of the new bureau of child hygiene.——Dr. Ray W. Karras has been reappointed surgeon to the Soldiers' Home, Los Angeles.——Robert M. Dodsworth, Major, M. C., U. S. Army, Long Beach, was honor guest at the meeting of the Harbor Medical Association, November 28.

Popular Medical Lectures.—Stanford University Medical School announces the thirty-eighth course of popular medical lectures, to be given at Lane Hall, San Francisco, on alternate Friday evenings at 8 o'clock.

Jan. 9, 1920: "The Cause and Prevention of Nervousness," by Dr. Julian Mast Wolfsohn, San Francisco; Jan. 23: "The Philosophy, Cause and Prevention of Disease," by Dr. Walter V. Brem, Los Angeles; Feb. 6: "The Hospital and the Public," by Dr. William Raymond Dorr, San Francisco; Feb. 20: "The Out-patient Clinic as a Health Center," by Dr. Alfred Cummings Reed, San Francisco; March 5: "The Problem of the Drug Addict," by Dr. Robert Eugene Bering, San Francisco, and March 19: "The Health Age," by Mr. Celestine Sullivan.

ILLINOIS

Personal.—Dr. Boleslaus Klarkowski, member of the Chicago Board of Education, sustained serious burns of the eye by explosion of chemicals, December 22.——Dr. John A. Wheeler, Springfield, formerly sheriff of Sangamon County, has been appointed medical director of the juvenile court.

Illegal Practitioner Again Fined.—J. P. Vizgird, St. Louis, has again been fined $200 and costs by the Department of Registration and Education for practicing medicine in Illinois without a license. The case had been pending against Vizgird in the St. Clair (Ill.) County Court for several months. Following the formal disposition of this case, five more informations were filed against Vizgird for violating the Medical Practice Act and he was compelled to give bond before he was permitted to return to St. Louis. Vizgird paid his fine and promised never to practice medicine in Illinois again so the remaining charges were dismissed. He had been fined for a similar offense in June, 1918.

Venereal Diseases in Illinois.—The division of social hygiene, state department of public health, has recently issued a report of known cases of venereal diseases in Illinois for the year ending June 30, 1919. The total number of cases reported is 11,915 with about 5,000 additional cases treated in the several clinics conducted by the state. There were 7,756 cases reported among males with 502 cases of syphilis, 5,752 cases of gonorrhea and 474 cases of chancroid. Total number of women infected was 4,159 of whom 1,808 were victims of syphilis, 2,342 were suffering from gonorrhea and nine from chancroid. Six hundred and fifty-six of these victims of venereal disease were employed in the handling of foodstuffs.

Chicago

The Quine Dinner.—A dinner was given to Dr. William E. Quine, December 27, in celebration of his completion of half a century in the practice of medicine. More than 300 of Dr. Quine's friends were present to do him honor. Dr. Frank Billings was toastmaster; Dr. David Kinley, dean of the University of Illinois, Urbana, spoke on "The Doctor and the Community"; Dr. Daniel A. K. Steele, on Dr. Quine as "The Colleague"; Mr. John T. Richards, on Dr. Quine as "The Man," and Dr. James B. Herrick, on Dr. Quine as "The Physician." Dr. William A. Pusey presented Dr. Quine with a book containing the autographs of those present at the dinner.

INDIANA

Personal.—Dr. Varney Hazlewood, Bedford, has been appointed head physician of the Indiana State Sanatorium, Rockville.

Smallpox at Evansville.—The Evansville Board of Health reported, December 4, that there were eighty cases of smallpox in the city, three fourths of the number being children.

Judgment Awarded Physician.—Dr. William F. Walsh, Indianapolis, was awarded a judgment of $4,000 against Patrick, Edward and Dennis Bryan, whom he charged with malicious prosecution.

Parking Privileges Extended.—Mayor Jewett of Indianapolis has signed an amendment to the traffic ordinance, extending to three hours the limit for parking in the congested districts for physicians who have downtown offices.

Illegal Practice Charged.—The State Board of Medical Registration and Examination filed affidavits, December 5, against B. C. Hendricks, a chiropractor of Kendallville, and A. J. Newman, Gary, who are alleged to be practicing medicine without a state license.

Society Reorganized.—Marshall County Medical Society has been reorganized and the following officers have been elected: president, Dr. Frank H. Kelly, Argos; vice president, Dr. Howard P. Preston, Plymouth, and secretary-treasurer, Dr. Harry Knott, Plymouth.

Anderson Clinic Organized.—The Anderson Clinic has been incorporated by Drs. Lee F. Hunt, Thomas M. Jones, Albert W. Collins, Weir M. Miley, George A. Whitledge, Henry W. Gante, S. G. McDonald, and Earl E. Brock. The clinic will be housed in a two-story brick building at Jackson and Twelfth streets, and will have clinical and pathologic laboratories, roentgen ray and all other necessary equipment. The clinic is incorporated for $75,000

Osteopath Sues Physicians.—A suit for $50,000 damages for an alleged conspiracy to prevent him from practicing surgery in any of the hospitals of Fort Wayne, has been instituted by Kent L. Seaman, an osteopath, against Drs. Henry O. Bruggeman, Miles F. Porter, Ralph M. Bolman, Ben P. Weaver, Lyman T. Rawles, Edgar N. Mendenhall, John E. McArdle, L. Parker Drayer, Albert E. Bulson, Maurice I. Rosenthal, Homer E. Glock, all of Fort Wayne, and the Poor Handmaids of Jesus Christ, a corporation. An injunction is brought against all the defendants to restrain them from hindering him from the practice of surgery in St. Joseph's Hospital or elsewhere.

IOWA

Tuberculosis Hospital for Polk County.—Announcement is made that Polk County will have a $100,000 tuberculosis hospital as soon as a suitable location is found.

Inebriate Hospital Closed.—The State Inebriate Hospital, Knoxville, was closed, December 1, on account of lack of patronage. At the time of closure only eleven patients were under treatment.

Personal.—David S. Fairchild, Jr., Col., M. C., U. S. Army, Clinton, chief surgeon of the Forty-Second Division, has been honorably discharged from the United States service.——Dr. Williams Cammack and Libby Seymour Cammack, formerly of Fort Dodge, have returned after twelve years' service as medical missionaries in Angola, Portuguese West Africa.

Laboratory Opened.—The Physicians' Club of Keokuk celebrated the formal opening of the Keokuk Clinical and Pathological Laboratory, December 2. The laboratory is operated by the state board of health, and Dr. Sarah R. Kellman is director. The physicians of the surrounding country were invited to a banquet which was followed by addresses by Dr. Henry Albert, Iowa City, who spoke on the laboratory from the standpoint of the laboratory man, and Dr. William H. Rendelman, Davenport, who discussed the value of the laboratory from the standpoint of the clinician.

Hospital Items.—St. Luke's Hospital, Davenport, was opened, October 15.——The United Lutheran Church Hospital has purchased the old Oaks Hotel, Clear Lake, and

will remodel the building for a hospital at an estimated cost of $300,000.——Cedar Valley Hospital, Charles City, has resumed operation.——Sisters Hospital, at Grinnell, has been turned over by the contractors, and will soon be opened formally.——The Eleanor Moore Hospital, Boone, has been taken over by Boone County.——The cornerstone of the new main building of St. Thomas Emergency Hospital, Marshalltown, was laid recently with impressive ceremonies.

MASSACHUSETTS

King Thanks Harvard Unit.—King George V of England, in a communication received by Harvard University, expresses his personal appreciation of the service contributed by the Harvard Unit during its three years and a half of duty with the British Forces in France.

Floating Hospital Opens Shore Work.—The new on-shore department of the Boston Floating Hospital, which will care for babies during the winter, and specialize in research study, has been opened at 40 Wigglesworth Street, Boston, where three three-story houses rented from Harvard University have been renovated at a cost of about $40,000.

Personal.—Dr. Ernest William Goodpasture, Boston, has been appointed assistant professor of pathology in Harvard University Medical School.——Dr. John H. Wyman, Medway, has been appointed associate medical examiner (coroner) for the Norfolk District.——Dr. Isidor D. Bronfin, superintendent and medical director of the Beth Israel Hospital, Roxbury, Boston, has resigned.——Dr. Robert B. Scales, Dorchester, Boston, has been commissioned lieutenant-colonel, M. R. C., U. S. Army.——Dr. Edward H. Bradford, Boston, has been reappointed president of the Massachusetts Hospital School.——Dr. Ernest B. Emerson, superintendent of the Brockton Hospital, has resigned and has returned to his former post as superintendent of the Rutland State Sanatorium.——Dr. Henry P. Walcott, chairman of the metropolitan water and sewerage board, Boston, has been retired after more than forty years in the service of the commonwealth of Massachusetts.——Dr. Thomas F. Joyce has been appointed superintendent of the Lawrence Municipal Hospital.

MICHIGAN

Club Election.—Charlotte Medical Club has elected Dr. Vinton J. Rickerd, president, Dr. Flavius J. Knight, vice president, and Dr. Stanley A. Stealy secretary-treasurer.

Fritch Sentenced.—A jury in Detroit is reported to have found Dr. George A. Fritch guilty of manslaughter, and he was sentenced, October 28, to serve from one to fifteen years in the state branch prison, Marquette, and was taken there to begin his sentence December 9.

Fires in Hospitals.—Fire destroyed Mercy Hospital, Big Rapids, December 1, with the loss estimated at $100,000. Forty patients were removed, and it is reported that one individual lost his life.——Reid City Hospital burned, November 18, with a loss of $5,000. The patients were removed without casualty.

Personal.—Dr. Griffith A. Thomas, Detroit, who resigned as police surgeon to enter the army in 1917, has returned to Detroit and resumed his work at police headquarters.——Dr. Eugene Miller, health officer of Battle Creek, has been elected director of the Michigan State Health Association.——Dr. Alvin H. Rockwell, Kalamazoo, has been elected president of the Michigan State Health Association.

Clinics for Practitioners.—The staff of the University Hospital, Ann Arbor, announces a series of medical, surgical and special clinics to be given on the afternoon and evening of the second Wednesday of every month and the morning of the following day. These clinics are intended to help practitioners to keep abreast of new and interesting developments. Difficult cases will be demonstrated and discussed. An added feature will be a clinicopathologic conference on cases coming to necropsy. The plan has been arranged to enable practitioners to see the maximum amount of clinical material with the least expenditure of time, and to carry out the policy of the hospital to put its teaching facilities at the service of the profession. Conferences will be held in the surgical amphitheater of the University Hospital unless otherwise stated. The schedule has been arranged with the view of allowing practitioners to make the best train connections in reaching and leaving Ann Arbor. The exercises will start at 1:30 p. m., 7:30 p. m. and 8:30 a. m. The first conference will be held, Jan. 14 and 15, 1920.

NEW JERSEY

Personal.—Dr. Wilfred M. Post, Princeton, has returned from Asia Minor, where he served with the Near Egypt Relief.——Dr. John Cook, Bayonne, has been appointed a member of the staff of the Dyersburg (Tenn.) General Hospital.

Banquet to Service Men.—Mercer County Medical Society gave a banquet, November 12, at Trenton, to thirty-one physicians of Mercer County who were in the United States service during the world war. Dr. Irvine F. P. Turner, Toronto, president of the society, officiated as toastmaster.

New Officers.—The nineteenth annual meeting of the Tri-County Medical Association of Morris, Sussex and Warren was held at Hackettstown, October 14, and the following officers were elected: president, Dr. Frederick P. Wilbur, Franklin; vice presidents, Drs. Henry W. Kice, Wharton, and Louis C. Osmun, Hackettstown; secretary, Dr. Charles B. Smith, Washington, and treasurer, Dr. Frederick W. Flagge, Rockaway.

Infant Mortality Rate.—During the first nine months of 1919, the infant mortality rate for Newark was 80.6 per thousand, as against 87.8 for the same period in 1918. This is held to be a very low rate, among the lowest in the country, and is especially noteworthy because Newark presents all the conditions that are held to make difficult a very low infant mortality rate, such as congestion, industrial community, milk supply coming from great distances, large foreign population, and a large percentage of births attended by midwives.

Mental Hygiene.—A new work has been introduced in the Bureau of Mental Hygiene, Mental Hygiene Social Service. A psychiatric social worker has been appointed to carry on the work. The objects are to aid the promotion of mental hygiene; to give assistance to the mentally maladjusted; to maintain psychiatric clinics, and to inform the public as to the cause and means of prevention of mental diseases and deficiencies. In the first month of its existence, forty-two cases were referred to this bureau by various organizations, charities and private individuals.

NEW YORK

Tuberculosis Survey.—The recent survey of Schenectady County shows that of 120 individuals examined, 17, or 14 per cent., were found positive, and 35, or 29 per cent., suspicious.

Laboratory for Montgomery County.—At a recent meeting of the board of supervisors of Montgomery County, it was voted to appropriate $5,000 for the establishment of a county laboratory at Amsterdam.

Water Purification for Tonawanda.—The town of Tonawanda has voted to issue $200,000 in bonds for a water purification works. The town has just recovered from an epidemic of typhoid fever, which was demonstrated to have been water borne.

Personal.—Dr. Thomas B Carpenter, Buffalo, for many years first assistant bacteriologist of the laboratories of the department of health of Buffalo, has been appointed director of laboratories, succeeding Dr William G. Bissell, deceased. ——Dr. Grace M. Norris, Utica, has been elected coroner of Oneida County.

Want Reformatory Reopened.—An appeal has been made to John D. Rockefeller, Jr., to reopen the buildings which he established at a cost of $500,000 near the Bedford Reformatory for Women, as a psychopathic hospital and institute for the study of social and mental hygiene, in connection with the work of the Bedford Reformatory. At the time Mr. Rockefeller erected the buildings he gave the state the privilege of buying them, but, as no action was taken, the buildings were closed.

New Officers.—The Albany County Medical Association, December 12: president, Dr. James N. Vander Veer; vice president, Dr. George W. Papen, Jr., secretary, Dr. Percival W. Harrig, and treasurer, Dr. Nelson K. Fromm, all of Albany.——Rensselaer County Medical Society, in Troy, December 9: president, Dr. Christopher J. Patterson (reelected); vice president, Dr. William J. Fleming; secretary, Dr. William Kirk, Jr., and treasurer, Dr. Russell F. Benson, all of Troy.——Onondaga County Medical Society at Syracuse, December 9: president, Dr. Harry J. Brayton; vice president, Dr. Robert Burns; secretary, Dr. George S. Reed, and treasurer, Dr. George M. Retan, all of Syracuse.

Clinics Combined.—The State Hospital Commission, which for some years, has been conducting clinics successfully

throughout the state in order to provide communities with facilities for the examination of cases of nervous and mental disorder, and the commission for mental defectives have evolved a program for a system of state-wide clinics. It is believed that better service can be rendered by combining the clinics for mental defectives with those for nervous and mental diseases. The first of these combined clinics was opened recently at Watertown, through the cooperation of Dr. William C. Sandy, New York City, and Dr. Paul G. Taddiken, Ogdensburg. It has been further suggested that these clinics could well be coordinated with the proposed system of health centers which the department of health desired to establish throughout the state.

Aid for Industrial Cripples.—The committee on education of the state reconstruction commission recently held a conference for the purpose of discussing plans for dealing with the problem of industrial cripples. According to statistics obtained by the commission, industrial casualties in the United States every year equal or exceed in number the country's total of wounded during the war. The questions particularly discussed were whether special schools and employment bureaus for industrial cripples were to be started and whether retraining and reeducation should be made compulsory. It was decided to urge the state immediately to inaugurate a policy of caring for men and women who are crippled through industrial accident or otherwise. A committee was appointed to draft proposals for the consideration of the legislature and to map out a program of rehabilitation. This is to be carried through irrespective of the federal bill now pending, in which $1,000,000 is appropriated for the work, to be matched dollar for dollar by the several states

New York City

Personal.—Dr. Abraham Strachstein has been appointed an instructor in urology in Columbia University.

Harvey Society Lectures.—The fifth lecture of the Harvey Society series will be delivered by Dr. Homer F. Swift, New York City, of the Rockefeller Institute, at the New York Academy of Medicine, January 10, on "Trench Fever."

New Hospital for Jamaica.—The trustees of the Jamaica Hospital, Queens, have planned to erect a new hospital building at a cost of $250,000 on a plot of ground 200 feet square extending along Ridgewood and Lester avennes, Jamaica.

Fund for Visiting Nurses.—The Brooklyn Visiting Nurses' Association has adopted resolutions authorizing the raising of $250,000 for work in that borough. A fund of $25,000 to endow a visting nurse in memory of Miss Elizabeth Hedin, who died during the influenza epidemic as a result of her devotion to cases under her care, will be a part of the campaign.

Division of Lectures Established.—The bureau of public health education of the department of health has instituted a division of lectures which is prepared to fill requests for lectures on any health subject, and especially on venereal disease. Societies or organizations desiring lectures may secure an appointment by communicating with Christine Kefauver, supervisor of lectures, bureau of public health education, 505 Pearl Street, Manhattan.

Health Department Sells Milk.—The health department has begun the sale of Grade B milk at 15 cents a quart at nine of its baby health stations. If the scheme is successful it will be extended to the entire sixty milk stations conducted by the health department. This is the grade of milk ordinarily retailing at 17 and 18 cents a quart. In this way Dr. Royal S. Copeland is endeavoring to develop a healthy competition which will eventually result in lower prices of milk delivered to consumers.

Cardiac Classes for Schoolchildren.—The cardiac class, conducted for the past two years by the Educational Alliance at East Broadway and Jefferson Street, has been so successful that three others have been started in Manhattan and one in Brooklyn. The results have been so gratifying that an appeal has been made to the board of education to provide special classes for children suffering from cardiac conditions. Beth Israel Hospital has been assisting at these cardiac classes with its social service department.

New Officers.—At the ninety-ninth annual meeting of the Medical Society of Kings County, December 16, Dr. John A. Lee was elected president; Dr. Arthur H. Bogart, vice president; Dr. Charles E. Schofield, secretary (reelected), and Dr. Robert L. Moorhead, treasurer, all of Brooklyn.——At the annual meeting of the Queens-Nassau County Medical Society at Jamaica, L. I., December 9, the following officers were elected: president, Dr. Arthur D. Jaques, Lynbrook; vice president, Dr. Thomas C. Chalmers, Forest Hills, and secretary-treasurer, Dr. James S. Cooley, Mineola.

OHIO

Personal.—Dr. Willard J. Stone, formerly of Toledo, has moved to Pasadena, Calif.

New Academy Officers.—At the annual meeting of the Dayton Academy of Medicine, December 12, Dr. Lynn M. Jones was elected president; Dr. Matthew Porter, vice president, and Dr. Edmund E. Bohlender, treasurer.

Academy to Issue Journal.—A new monthly medical journal to be called the *Academy Journal* is to be issued by the Cincinnati Academy of Medicine. Dr. Charles L. Bonifield is chairman of the committee to carry out this project.

Officers Elected.—The following officers of the Cleveland Medical Library Association were elected to serve during 1920: president, Dr. John P. Sawyer; vice president, Dr. Arnold Peskind; secretary, Dr. George E. Follansbee; treasurer, Dr. Clyde L. Cummer, and directing librarian, Dr. Carl A. Hamann.

Prizes to Nurses.—At the last meeting of the Medical Board of the Jewish Hospital, Cincinnati, it was announced that an anonymous donor had arranged to give prizes of $60 each to the two highest ranking nurses in the first and second years of the training school, and prizes of $120 each to the two highest ranking nurses among the graduating nurses of the institution.

Clinic Opened.—The Canton City Clinic was formally presented to the city by the Canton Chapter of the American Red Cross, December 11, and was accepted for the Canton Medical Society and the people of Canton by Dr. Austin C. Brant. The clinic is intended to be a stepping stone for a public or free city hospital. Dr. Harry P. Pomerene has been elected president, Dr. Charles A. Crane vice president, and Dr. Loyal E. Leavenworth secretary, all of Canton.

Prizes Awarded.—The Cleveland Medical Library Association awarded as prizes, to Cleveland physicians, the income from a fund established by Dr. Hamilton Fisk Biggar as follows: $250 to Dr. Roy Gentry Pearce, for an essay on "Cardiorespiratory Mechanism in Health and Disease"; $250 to Dr. Roy Wesley Scoti, for an essay on "Studies of Pulmonary Emphysema," and $100 to Dr. Marvin Da C. Shie for an essay on "The Importance and Scope of Modern Industrial Medicine."

PENNSYLVANIA

Increased Space for Sanatorium.—Dr. Edward Martin, Philadelphia, state commissioner of health, purchased, December 9, for $20,000, the White Pine Inn and other property adjacent to the Mont Alto Sanatorium.

New Contagious Disease Hospital.—Bower Hill, near Woodville, Allegheny County, has been tentatively decided on as the site for a proposed new contagious disease hospital, to be erected under the direction of the county commissioners. A plan has been presented providing for a ninety-six room institution to cost about $240,000.

Personal.—Dr. Stephen E. Tracy has been elected medical director of the Stetson Hospital, Philadelphia, succeeding Dr. Lewis S. Somers, resigned.——Dr. Robert B. Mackey, Clark's Summit, has been commissioned major, M. C., Pennsylvania National Guard, and assigned to duty with the Thirteenth Infantry.——Dr. John Murphy, Loretto, was given a testimonial, December 24, by the people of Loretto, in recognition of his services to the community for nearly forty years, and especially during the influenza epidemic of last year.——Dr. Charles C. Cooner, Kulpmont, has been appointed deputy coroner of Northumberland County.

WASHINGTON

Personal.—Joseph A. McKee, Lieut.-Col., M. C., U. S. Army, has returned to Seattle, after an absence of three and one-half years, abroad.——Dr. Frank P. C. Davis has been appointed city health officer of Kelso, succeeding Dr. Jeremiah Ballard.

New Hospital Building Plan.—The announcement is made that the Sisters of St. Joseph of Peace who have conducted the Wenatchee General Hospital for the last three years will immediately commence the erection of a $75,000 hospital on a 3-acre site at the edge of the town.

WEST VIRGINIA

Clinical Conference.—The Ohio Valley General Hospital, Wheeling, announces that its attending staff holds clinical conferences twice a month, at the hospital, at which other physicians are invited to be present.

Staff Named.—Dr. Hugh H. Carr, Fairmont, has been named chief of the surgical staff of the Cook Hospital, and Dr. Edward W. F. Howard, Fairmont, chief of the medical staff of the institution, by the Marion County Medical Society.

Society Meetings.—The Eastern Panhandle Medical Society met at Charleston, December 10, and elected Dr. H. G. Tomkin, Berkeley County, president, Dr. Briscoe B. Ranson, Harper's Ferry, vice president, and Dr. Joseph M. Miller, Charles Town, censor. The next meeting will be held at Martinsburg.——Harrison County Medical Society at its annual meeting in Clarkshurg, December 4, elected Dr. Solomon L. Cherry, Clarksburg, president, Dr. Arthur T. Post vice president, Dr. Irving D. Cole secretary, and Dr. Jesse F. Williams, treasurer.

WISCONSIN

Dispensary Opened.—The new Milwaukee Dispensary, on the third floor of the Saxe Building, has been opened under the charge of Dr. A. Harry Cohn.

Radium Association Incorporated.—The Physician's Radium Association has been incorporated at Milwaukee, with a capital stock of $20,000, by fourteen physicians of Milwaukee.

Hospital Items.—A movement was recently started which promises to provide a modernly equipped hospital for Ripon. ——Announcement has been made that the erection of a $60,000 hospital at Stanley has been definitely planned.

Personal.—Dr. Francis W. Starr, Stanley, is said to have been fined $25 for having broken the rule of the state board of health regarding public funerals over remains of persons having contagious diseases.——Dr. Augustus L. Beier, Chippewa Falls, has been appointed to succeed Dr. Alfred W. Wilmarth as superintendent of the State Home for Feebleminded, Chippewa Falls.

New Officers.—At the annual meeting of the Milwaukee County Medical Society, December 11, Dr. Frank C. Studley was elected president; Dr. Clarence A. Baer vice president; Dr. Daniel Hopkins, secretary, and Dr. Arthur R. F. Grob, treasurer.——Waukesha County Medical Society at its annual meeting held in Waukesha, December 4, elected Dr. Floyd W. Aplin, Waukesha, president; Dr. George H. Perrin, Menomonee Falls, vice president, and Dr. S. Breck Ackley, Oconomowoc, secretary-treasurer.——At the sixteenth annual meeting of the West Wisconsin District Medical Society held in Eau Claire, November 23, Dr. Johan B. Mathiesen, Eau Claire, was elected president, and Dr. Herman F. Derge, Eau Claire, secretary.

CANADA

New President of McGill.—Sir Auckland C. Geddes, M. P., Montreal, who served during the war as Minister of National Service and Reconstruction, and president of the Local Government Board, formerly professor of anatomy at the Royal College of Surgeons, Ireland, and later professor of anatomy in McGill University, has been elected principal of the latter institution.

GENERAL

Tristate Physicians to Meet.—The annual meeting of the Tristate Medical Society of Virginia and the Carolinas will be held in Charlotte, N. C., February 18, under the presidency of Dr. Robert C. Bryan, Richmond, Va.

More Gifts by Rockefeller.—Of the $100,000,000 Christmas gift of John D. Rockefeller, one half was given to the Rockefeller Foundation, and of this sum, $5,000,000 is to be expended to the development and improvement of the leading medical schools in Canada, these schools being required to raise additional sums from other sources.

Congress on Internal Medicine.—The American Congress on Internal Medicine will meet in conjunction with the American College of Physicians in Chicago, February 23 to 28. The sessions will include daily clinics and laboratory demonstrations in hospitals and teaching institutions, and evening meetings, one of which will embrace the fourth annual convention of the American Congress of Internal Medicine.

Deaths from Wood Alcohol.—As a result of the use of substitutes for liquor containing methyl alcohol since prohibition became effective, 255 deaths have been reported in the United States, and of these about 140 followed Christmas celebrations. Of these deaths thirteen have thus far been reported in Chicago alone, and in New York there are said to be at least 100 cases of blindness following the use of wood alcohol.

Tristate Physicians Meet.—The Tristate Medical Society of Louisiana, Arkansas and Texas held its fifteenth annual meeting at Marshall, Texas, under the presidency of Dr. Edwin L. Beck, Texarkana, and elected the following officers: president, Dr. Charles R. Hargrove, Marshall; vice presidents, Drs. Lucian H. Lanier, Texarkana, Texas, Henry W. Jarrell, Mansfield, La., and Joe Becton, Greenville, Texas, and secretary, Dr. Frank H. Walke, Shreveport, La.

Ship Named for Red Cross.—The *Amcross*, a cargo vessel of 9,000 deadweight tons, was launched in the yards of the Merchant Ship Building Company, Chester, Pa. Amcross, which is the cable-code word for the American Red Cross, was selected as the name of the new ship as a compliment to the war work of the Red Cross. Miss Margaret Farrand, daughter of Dr. Livingston Farrand, chairman central committee, American Red Cross, was sponsor for the vessel.

Southern Surgeons Meet.—At the annual meeting of the Southern Surgical Association held in New Orleans, December 16 to 18, the following officers were elected: president, Dr. Williard Bartlett, St. Louis; vice presidents, Drs. C. Jeff Miller, New Orleans, and Edward G. Jones, Atlanta, Ga.; secretary, Dr. Hubert A. Royster, Raleigh, N. C. (reelected), and treasurer, Dr. Guy L. Hunner, Baltimore (reelected). Hot Springs, Va., was chosen as the place of meeting for 1920.

The Seessel Fellowships.—Yale University announces the two Theresa Seessel Research Fellowships to promote original research in biologic studies. These fellowships yield an income of $1,000 each, and are open to men or women. Preference is given to candidates who have already obtained their doctorate, and have demonstrated, by their work, their fitness to carry on successfully original research of a high order. The holder must reside in New Haven during the college year from October to June. Application should be made to the dean of Yale University, before May 1, and should be accompanied by reprints of scientific publications, letters of recommendation and a statement of the particular problems which the candidate expects to investigate.

Child Surveys.—Special investigations made by the children's bureau of the U. S. Department of Labor in three American cities show how babies have suffered as a result of the advance in the price of milk. In Baltimore, of the 728 children between 2 and 7 years of age, only 29 per cent. are now having fresh milk to drink as against 60 per cent. a year ago; in Washington, half of those between 2 and 7 years of age, who were visited by the public health nurses were receiving no fresh milk to drink; and in New Orleans conditions were even worse. Studies of the type recommended by the chief of the children's bureau would seek to determine all a child's needs. They would be based on actual living conditions in various types of communities; and would accordingly have a practical and not merely a theoretical value. Through them mothers would obtain an authoritative statement concerning the basic needs of growing children, and communities would be given an insight into the way in which those needs may be supplied.

Bequests and Donations.—The following bequests and donations have recently been announced:

To establish and maintain a nurses' home and training school in connection with the Goshen, Ind., Hospital a bequest of $65,000, by the will of Mrs. Laura A. Kindig, Goshen.

Washington University Medical School, St. Louis, $300,000 to endow a department of pharmacology. Of this amount, one half was given by the General Education Board and the other half was raised by the medical school.

New York Post Graduate Medical School and Hospital, New York City, $25,000, by the will of Frederick Meade.

Presbyterian Hospital, New York City, the residuary estate valued at $500,000, at the death of his two sisters, by the will of Charles G. Thompson.

Grant Hospital, Chicago, a donation of $50,000 toward the endowment fund; $25,000 remitted from the Christmas sale at the Parkway Hotel, and an addition to the present nursery to accommodate twenty more beds, by Mrs. William C. Seipp.

Michigan Hospital and School for Crippled Children, $1,100,000; for a new nurses' home, $650,000; Children's Free Hospital, Detroit, $125,000, and St. Vncent's Orphan Asylum, Detroit, $75,000, a Christmas gift from Mayor James Couzens of Detroit.

FOREIGN

Deaths in the Profession Abroad.—Dr. **E. J. Pontoppidan,** professor of skin and venereal diseases at the University of Copenhagen and member of Danish, Swedish, Argentine and Italian dermatologic societies, elected at Rome in 1912 to preside at the Eighth International Dermatology Congress; surgeon in chief of the Rudolph Berghs Hospital; aged 72. ——Dr. **Raphaël Lépine** of Lyons and Dr. **C. Ladame,** professor of psychiatry at the University of Geneva.

Semicentennial of Sainte-Beuve.—It is just fifty years since the death of Sainte-Beuve whose "Monday essays" in the Paris dailies are said to have been events of European importance. As our French exchanges are recalling, he was a physician before he turned to literature, and his training in psychology and biology helped to make him, as he was called, the world's greatest literary critic. It was Sainte-Beuve who said when some one remarked that charlatanism was everywhere, "Yes, in politics, in the art of governing mankind that is perhaps true. But in science, in art, the glory, the eternal honor is that charlatanism shall find no entrance; herein lies the inviolableness of that noble portion of man's being."

The Flemish Congress of Physicians and Naturalists.—The Amsterdam section of this Flemish association recently gathered at Antwerp for its first meeting since the beginning of the war. About thirty members were present, and Professor De Bruyne presided. Prof. F. Daels delivered an illustrated address on clinical cures of cancer. The members voted unanimously—four refraining from voting—to drop twenty-four members from the membership of the general association on account of pro-German "activism." The *Nederlandsch Tijdschrift* states that the assembly discussed the foundation of a Flemish medical journal, in connection with publishing the transactions of the congress, but no decision was reached.

Citations for Bravery.—The *Presse Médicale,* November 29, gives a long list of official citations of French medical officers for exceptionally devoted services during the war, and two American names are included in the list. The first is Dr. Lester Pratt, medical officer in the Fifth Regiment of Marines. He is stated to have had charge of an advanced station in Belleau Wood, June 11, 1918. "His post being exposed to a violent bombardment, he displayed remarkable self possession and devotion to duty." The other is Dr. Richard Shea, also a medical officer of the Fifth Regiment of Marines. "During the attack of Belleau Wood, he displayed extraordinary heroism, tending the wounded during a violent bombardment, June 11, 1918." The official notice of the citations in the French records is dated Oct. 15, 1919.

Tuberculosis and Housing.—The medical officer of health for the city of Edinburgh claims that statistics have clearly proved the close relationship which exists between tuberculosis and overcrowding. Out of 263 cases of tuberculosis notified in Scotland in 1914 and 1915, no less than 159 came from houses of one, two and three apartments. The old country cottages of Scotland are badly situated and very damp. Thorough ventilation is impossible, and, indeed, there is often scarcely any ventilation at all, the windows being so fixed that only one small pane can be opened. The situation is not very much better in England. Of the tuberculous persons visited in Somerset between 1913 and 1918 more than 40 per cent. were found to be sharing their bedrooms with other persons, and in less than 10 per cent. of all cases was it found possible to remedy this state of affairs at a later date.

Inaugural Exercises of the French University of Strasbourg.—A most imposing ceremony, historical pageant and general tribute ushered in the opening exercises of the University of Strasbourg under French rule November 21. The president of the republic and the three marshals of France took part in the festivities, as also delegates from many other universities in France and abroad. The dean of the university is Professor Weiss of the chair of biology. Other well known names on the medical faculty are Ambard (physiology), Duverger (ophthalmology), Forster (obstetrics), Masson (pathologic anatomy), L. Blum and Bard (clinical medicine), Chavigny (forensic medicine), Nicloux (biologic chemistry), Stolz and Sencert (surgery), and Pautrier (skin and venereal diseases). The French Académie de Médecine was represented by Professors Delorme, Netter and Schwartz.

LATIN AMERICA

No Examination Required for Uruguayans with Foreign Degrees.—The *Anales de la Facultad de Medicina* gives the text of the law recently enacted which abrogates the requirements hitherto prevailing in regard to reexamination on returning to practice in Uruguay after obtaining degrees in foreign countries from institutions that grade to correspond with the Uruguayan faculties.

Deaths in the Profession.—Dr. **J. Lemos,** a prominent bacteriologist and clinician of Mendoza, Argentina, chief of the local Asistencia Publica and of the Pasteur Institute. His antiserums and vaccines have been widely used.——Dr. **L. J. Velarde,** the veteran of the Argentine naval medical service in which he occupied various high posts, displaying great initiative and executive ability.——Dr. **A. J. Drago,** medical expert for the courts in Argentina and director in the Obras Sanitarias of the nation, aged 58.——Dr. **Luis Manzone,** a physician of San Isidro, Argentina, succumbed to pneumonia, November 3, aged about 60.——Dr. **F. de Paula Valladares,** professor of clinical surgery in the University of Rio de Janeiro, and head of a private surgical clinic, aged 67.——Dr. **Ernesto Samit** of Santiago, Chile, succumbed to typhus while combating the recent epidemic there. The obituary notices of him mention also the deaths in the prevailing epidemic of three other young physicians, two medical students, nine trained nurses and numbers of the personnel of the different hospitals.

Sexual Enlightenment.—The *Semana Médica* states that great interest has been aroused in the work of the Federación Abolicionista Internacional by the Argentine-Uruguay committee. This committee is organizing an extensive conference at Montevideo to discuss sexual hygiene and venereal prophylaxis. Dr. R. E. Baethgen will open the discussion on sexual enlightenment of the young; addresses will be given also by Dr. Paulina Luisi, secretary-general of the Argentine-Uruguay committee and school medical inspector, and by Sr. J. A. Seniliosa. The closing address will be by Dr. José Brito Foresti, president of the committee, professor of syphilography at the University of Montevideo.

Uruguay Remits Import Duties on Drugs for Treatment of Syphilis.—The *Boletin del Consejo Nacional de Higiene,* published at Montevideo, gives the discussion in the senate and the text of the law signed by the president, October 1, which remits all duties on the importation of the specific products which the Consejo Nacional de Higiene regards as efficacious in combating syphilis. The Asistencia Pública Nacional is authorized by the law to purchase the necessary quantity of drugs and to sell them at cost price to physicians and pharmacists on demand. Reserve supplies of not less than 10,000 doses are also to be kept on hand. The Consejo Nacional de Higiene is to fix the price for sale to the public; this price must not be more than 10 per cent. above the cost price.

The Conference on Tuberculosis at Rosario, Argentina.—A large gathering of persons especially interested in the campaign against tuberculosis was held recently at Rosario, and the important resolutions adopted are reproduced in a number of our South American exchanges and have been sent to us by the secretary general. A general outline for the whole work was drawn up, advocating a preventorium for each 100,000 inhabitants at least, with simple inexpensive sanatoriums for the curable tuberculous; enforcement of hygiene for foods, vehicles, etc.; better housing facilities, with penalties for owners of insanitary dwellings; enlightenment of the public, and the compulsory declaration of tuberculosis. The conference suggested that part of the income from the lottery be devoted to the prophylaxis of tuberculosis. One resolution urged that a commission of experts should be appointed to have exclusive charge of the whole system of antituberculosis prophylaxis and coordinate all efforts, with ample means at its disposal. Larroque's proposal for insurance against tuberculosis was adopted also, the expense to be borne by both workingman and employer, and special preventoriums to be organized by the insurance societies. Another resolution urged that the state should interfere to enable workingmen to buy materials cheaply for home building. Other resolutions voted that vacation or colony schools should form an integral part of the public school system; that a premarriage certificate of freedom from serious disease should be enforced; that illiterate, new recruits should be taught to read, and that the army and navy should inaugurate a section for anthropometry. Other resolutions specified various desirable hygienic regulations.

Government Services

Appointment to Relief Commission

Walter P. Davenport, Major, M. C., U. S. Army, on duty with the American Committee for Relief of the Far East, Caucasus Branch, Tiflis, has been appointed medical advisor to the Interallied High Commissioner for the Caucasus. The commission is doing food and medical relief work in Armenia, Georgia and Azerbaijan.

Hospital Discontinued

Army General Hospital No. 7, Roland Park, Md., has been discontinued as a separate institution and will be maintained and administered as an annex from Subdivision of General Hospital No. 2, Fort McHenry, Md. The federal educational board and American Red Cross will maintain General Hospital No. 7 as a reconstruction school for disabled soldiers.

Army Medical Estimates

In the estimates submitted by the Army and Navy for the fiscal year ending June 30, 1921, about $6,800,000 is asked for the medical department of the Army, including an outlay of $500,000 for commencement of the structure of the army medical center at Walter Reed General Hospital, Takoma Park.

HONORABLE DISCHARGES, MEDICAL CORPS, U. S. ARMY

ALABAMA
Birmingham—Hamilton, G. C. (C.)
Center—Tatum, W. B. (C.)
Henagar—Mason, C. D. (C.)
Springville—Hagood, E. C. (L.)
Talladega—Dixon, D. P. (C.)

CALIFORNIA
Bishop—Doyle, G. P. (C.)
Long Beach—Ross, R. L. (L.)
Los Angeles—Bennett, W. H. (C.)
Blanchar, W. O. (M.)
Seager, H. W. (M.)
Pasadena—Riggin, L. L. (L. C.)
San Bernardino—Owen, C. C. (L.)
San Francisco—Harrington, J. G. (C.)
Stockton—Schermerhorn, L. J. (C.)

CONNECTICUT
New Britain—Faulkner, J. F. (L.)

DISTRICT OF COLUMBIA
Washington—Manning, W. J. (C.)
Sampson, D. G. (C.)

FLORIDA
Jacksonville—Black, H. O. (M.)
Miami—Skaggs, P. T. (L.)

GEORGIA
Chickamauga—Chase, C. L. (L. C.)

IDAHO
Twin Falls—Leigh, C. A. (L.)

ILLINOIS
Aurora—Berkheiser, E. J. (C.)
Chicago—Marcus, S. M. (C.)
Teixler, A. M. (C.)
Van Alyea, O. E. (C.)
Oak Forest—Morris, E. (C.)
Springfield—Beilin, L. M. (L.)

INDIANA
Evansville—Dyer, W. C. (M.)
Indianapolis—Martin, J. A. (M.)
Logansport—Holt, E. K. (L.)

IOWA
Cedar Rapids—Conn, H. R. (C.)
Iowa City—Secoy, H. R. (L.)
Laurens—Nilsson, F. C. (C.)

KANSAS
Morrill—Rushton, J. S. (L.)
Morrowville—Horn, M. H. (L.)
Pittsburg—Nichols, W. J. (C.)
Topeka—Miller, N. D. (L.)

KENTUCKY
Kevil—Aubrey, G. E. (C.)
Louisville—Choate, B. D. (M.)

MARYLAND
Baltimore—Davis, P. L. (C.)
Glenarm—Reier, A. W. (L.)

MASSACHUSETTS
Fort Revere—Pascoe, J. B. (M.)
Fort Rodman—Lowe, T. S. (M.)
Lowell—Johnson, J. B. A. (C.)
Medford—Burrell, H. C. (C.)
North Adams—Curran, A. M. (C.)
Worcester—Deering, G. E. (C.)

MICHIGAN
Franklin—German, F. D. (L.)
Gay—Schmidt, A. W. (L.)

MINNESOTA
Eveleth—Saari, J. A. (C.)
Minneapolis—Darling, W. H. (M.)
Red Wing—Bjerken, F. N. (C.)
Rochester—Ott, W. O. (L.)

MISSISSIPPI
Electric Mills—Champenois, C. (C.)

MISSOURI
Kansas City—Cohen, F. (C.)
Stewart, E. L. (M.)
St. Joseph—Underwood, M. L. (C.)
St. Louis—Altheide, C. H. (C.)
Esselbruegge, F. C. (C.)
Hagler, F. (C.)
Wachenfeld, C. H. (L.)

MONTANA
Bew—Davis, G. H. (L.)

NEVADA
Tonopah—Masterson, J. R. (L.)

NEW HAMPSHIRE
East Andover—Durgin, E. C. (C.)
Manchester—Stickney, H. L. (M.)

NEW JERSEY
Leesburg—Spence, G. S. (L.)

NEW YORK
Brooklyn—Pilzer, H. L. (C.)
Pudney, W. K. (C.)
Reynolds, J. H. (L.)
Camillus—Shaw, G. H. (M.)
Fonda—Glenn, G. M. (L.)
New York—Boyd, L. F. (C.)
Donnelly, J. E. (L. C.)
Fitzgerald, J. J. (L.)
Gardner, F. E. (C.)
Harris, H. C. (L.)
O'Neill, J. C. (L.)
Steele, P. A. (L.)
Zuckerman, S. (L.)
Poughkeepsie—Tighe, L. R. (C.)
Schenectady—Overton, D. W. (C.)
Stottville—West, J. (L.)
Troy—Curtis, S. H. (L.)
Valatie—Dimock, A. R. (C.)
Willard—Rexford, H. I. (L.)

NORTH CAROLINA
Davidson — MacConnell, J. W.. (L. C.)

OHIO
Akron—Drury, R. F. (C.)
Rambo, E. F. (L.)
Cincinnati—Dunham, H. K. (M.)
Sauer, F. J. (L.)
Dayton—George, J. C. (M.)
Salem—John H. J. (C.)
Winchester—Fenton, W. W. (C.)

OKLAHOMA
Broken Bow—McDonald, C. R. (C.)

OREGON
Duffer—Griffith, T. E. (C.)
Junction City—Love, D. P. (L.)
Portland—Wellington, R. H. (C.)

PENNSYLVANIA
Bowmansville—Henderson, R. J. (M.)
Chambersburg—Gans, C. C. (C.)
Philadelphia—Gibbon, J. H. (Col.)
Koenig, C. F. (L.)
Tamaqua—Speer, O. K. (C.)
Washington—Ramsey, G. W. (L.)
Waynesburg—Orndoff, H. E. (C.)

SOUTH CAROLINA
Charleston—Guess, J. D. (L.)

TENNESSEE
Columbia—Pillow, R., Jr. (C.)
Memphis—Granbery, R. (C.)

TEXAS
Commerce—Hyder, C. (C.)
Fort Worth—Powell, E. V. (C.)
Itasca—Robison, D. K. (C.)
Killeen—Ellis, J. W. (L.)
Palacios—Elliott, J. R. (L.)
San Antonio—Harris, W. T. (C.)
Whitesboro—Acton, G. P. (C.)

VERMONT
Pittsford—Hagan, T. J. (M.)
Shelburne—White, W. J. (C.)

VIRGINIA
Hopewell—Evans, R. J., Jr. (C.)
Lynchburg—Deekens, A. H. (L.)
New Castle—Caldwell, B. R. (C.)
Warrenton—Spilman, R. S. (M.)

WASHINGTON
Seattle—Calhoun, A. P. (M.)
Henderson, J. M. (M.)
Wood, C. B. (M.)
Tacoma—Janes, E. W. (C.)
Steele, J. F. (L.)
Turner, J. R., Jr. (L.)

WEST VIRGINIA
Huntington—Dickerson, W. M. (C.)

WISCONSIN
Cambria—Prees, R. L. (L.)
Walworth—Crowe, N. F. (C.)

WYOMING
Gebo—Williams, D. A. (C.)

Foreign Correspondence

LONDON

Dec. 10, 1919.

The Prevention of Venereal Diseases

The National Council for Combating Venereal Diseases has issued a memorandum stating that the prevention of venereal diseases is a large sociomedical problem. In the direct line of attack, ample facilities for treatment and instruction of the public—both social and hygienic—occupy the first place. Concerning the question of personal disinfection after risk is taken, it is no part of the council's policy to conceal the truth, and it has always acknowledged the value of cleansing and disinfecting material, applied early and thoroughly, in diminishing risk. But abstention from exposure is the only certain safeguard. Continence is to be encouraged by every means and on every ground both social and hygienic. As no person who has indulged in promiscuous intercourse can be sure that he is not infected, he is bound in duty to himself and to society to seek means of cleansing at the earliest moment. For this purpose a thorough local application of soap and water is of the greatest value, followed (if possible) by the use of such disinfectants as may be recommended by a physician. While such applications, if properly used, do sensibly reduce the risk of disease, if applied within four hours of exposure, they afford no certain security. They do not in the slightest degree prevent the contraction of syphilis in other parts of the body (as the lips, face or hands) than those disinfected. Satisfactory self-disinfection of women is practically impossible, and skilled medical attention at the earliest possible moment is absolutely necessary. No one should be urged to arm himself in advance with a prophylactic packet.

This advice differs little from that of another organization, formed with the same object though differing somewhat in policy, the Society for the Prevention of Venereal Diseases, which has already been mentioned. This society (which consists mainly of leaders of the profession—Osler, Mott, Arbuthnot Lane, Rolleston and others) is inviting the public to become members at an annual subscription of $5. All who are interested are asked, whether they become members or not, to send a stamped and addressed envelop, whereupon a leaflet giving the necessary instructions will be sent.

Report of Medical Officers of Board of Education

The annual report of the chief medical officer of the board of education, Sir George Newman, just published, is an important document in which future policy is outlined. In a section on "The Beginnings of Disease," Sir George says

that we are profoundly ignorant of this subject, but the school medical service gives an opportunity for examining "the nation in its childhood" and studying the earliest symptoms of disease, the importance of which has been so much insisted on by Sir James Mackenzie. A scheme for investigation of symptoms on a national scale is sketched. Beginning with the antenatal clinic, which the board of education supports in some measure, the work is to be continued through the school for mothers, the infant clinic, the day nursery and the nursery school to the secondary school and finally into the sphere of industrial employment. The observations are to be continuous and handed on from place to place with the child. Coincident with this work, efforts will be made to improve the health and physique of the child "other than by medical treatment. Playgrounds and playing fields, physical culture and games are to be provided and their effects noted.

As to the present condition of schoolchildren: In 1917 the death rate per thousand living was 94 for children under 1 year of age, 29 between the ages of 1 and 2 years, 13 for children aged 2 to 3, 8 for children aged 3 to 4, and 6 for children aged 4 to 5. One of the chief defects noted in "entrants" is malnutrition, expressed either as lack of growth or as rickets and dental defects. From 2 to 3 per cent. of entrants show a serious degree of rickets. Many districts have 60 per cent. of dental caries. Next in importance come infective diseases—measles, whooping cough, tuberculosis and rheumatism. From 50 to 60 per cent. of the entrants have suffered from measles, which leave behind ailments which cause prolonged or permanent disablement. Finally there are catarrhal conditions, which undermine the health and physique of the child and predispose to and create a nidus for various forms of permanent disease. It is these beginnings that must be attacked first by discovery and then by treatment. Both the normal and the abnormal child must be studied. "Why is this child normal? Has it had measles, adenoids, rickets, tuberculosis or rheumatism? If not, why not? If so, how has it overcome these maladies and escaped their sequelae? The answer is of the first importance to the child, to other children, to science, and to the national well-being."

The number of children in average attendance at school during 1917-1918 was 5,194,493. The number medically inspected during the year ending December 31 was 1,317,657. Compared with 1917 there was a great improvement in cleanliness, but the condition of the teeth was not so good. There are now 465 special schools for defective children accommodating 34,478. Defectives are estimated as follows: cripples, 34,500; mentally defective, 30,800; deaf and dumb, 5.500; blind, 4,250. Thus accommodation has not been provided for more than half of the defective.

Australasian Medical Congress for Queensland

The Australian federal authorities have announced that after an interval of six years, the Australasian Medical Congress will meet in Brisbane in August, 1920. At the 1911 congress, held in Sydney, it was decided to recommend the federal government to increase the funds for an Australian institute of tropical medicine, so as to enable an organized inquiry to be made into matters relevant to the permanent settlement of tropical Australia by the white race. The federal government, when approached, made a permanent subsidy for this purpose, with the result that much good work has been done. At the congress next year the principal item for discussion will be the white settlement of tropical Australia. Other matters for consideration are the doctors and lodges' dispute, the control of venereal disease, military surgery, and hygiene, in the light of war experience, and the adjustment of health administration as between the commonweath and the states. All the states and New Zealand will be represented at the congress.

Sir Auckland Geddes' Criticism of the Medical Profession

Sir Auckland Geddes, president of the board of trade, who, it may be remembered, is a qualified physician and was professor of anatomy in McGill University, in an address to the students of Charing Cross Hospital on the occasion of the annual presentation of prizes, delivered some severe criticisms of the profession. It was extraordinarily unequal not only in its technical knowledge but also in its public spirit. The glorious record of the profession in the war was won by a minority. A large number were now sharing in the glory who had done nothing to help. He had taught at a good many medical schools and therefore knew how limited was the outlook of the profession. What was passing for medical education in some schools was really only technical instruction with very little education about it. Men from schools where that type of mind predominated failed to rise to the occasion when the time came. All, whether teachers or students, should get clearly into their minds the difference between technical instruction in the medical schools and the educational side. Because of the state of the educational side for twenty years before the war, we witnessed some of the deplorable exhibitions during the war. There were three great emotions in every human being —the appreciation of beauty, the desire to serve one's generation, and the desire to know the truth. It was in relation to these three great emotions that the medical school was lax. On those sides they saw most in national service (Sir Auckland Geddes was minister of national service in the war), and they had found in the medical service a less satisfactory development than in some others.

As might be expected, this criticism has proved unpalatable to the profession. In a press interview published in the *Daily Chronicle* Dr. Cox, medical secretary of the British Medical Association, said that Sir Auckland Geddes' statement was in conflict with the opinion of men in as good a position to judge the work of medical service. "The medical service has been consistently praised and its work compared with that of other branches of the army." Physicians won 5,227 war decorations. Of these ten were V. C.'s (the most coveted decoration in the British army). More than 11,000 civilian physicians were passed into military service. Dr. Cox shared Sir Auckland's dissatisfaction with medical education, but his remarks did not apply only to it. All education was inferior to what it ought to be.

British Science in the War

At the anniversary dinner of the Royal Society, the president, Sir Joseph J. Thompson, O.M., in replying to the toast of the society, said that there was no country, excepting France, in which men of science threw themselves with such ardor as in this country into making researches which would benefit our troops at the front—certainly not Germany. One remarkable fact that stood out in this war was that every branch of science had its application in the service and defense of this country and was superior to that of our enemies. There had been nothing more conspicuous in the war than the triumph of medicine. They had made up leeway in the war, but it took them five years of suffering and sorrow and loss. That period would have been shortened if the nation before the war had been alive to the part which science must play in any war and had provided departments in which the development of the science of war could have been worked out under more favorable conditions. If they had had such departments, many requirements would have been anticipated.

PARIS

Nov. 27, 1919.

Death of Prof. Raphaël Lépine

French medical circles have suffered a great loss in the person of Professor Lépine, who died at Menton, November 17, in his eightieth year. Raphaël Lépine was born at Lyons in 1840, where he pursued his classical studies. His medical studies were also begun here. After having been intern at the Hôpitaux de Lyon for four years, he came to Paris, where he secured an internship in the Hôpitaux de Paris in 1865. Here he became a pupil of Charcot. In 1867 he studied in Berlin and later (1869) in Leipzig in the laboratory of Ludwig, where he made the interesting discovery of the vasomotor nerves of the tongue. On his return from Germany he entered the service of Brown-Séquard. In 1872 he became clinical chief, and in 1874 physician to the Hôpitaux de Paris. The following year he was appointed agrégé professor on the Paris Faculty of Medicine. Two years later (1877) he secured the chair of clinical medicine at the Lyons Faculty of Medicine. In 1888 Lépine was chosen correspondent of the Academy of Medicine, and in 1896 he was elected *associé national*. He was likewise correspondent of the Academy of Science. Dating from his stay in Paris he had been vice president of the Societé de biologie. In 1905 he was chairman of the Congrès français de médecine. He was repeatedly chosen delegate of the French government at the Congrès internationaux de médecine.

Being at once clinician and physiologist, Professor Lépine constantly pursued parallel clinical and experimental researches. He published numerous works on diabetes, its complications and treatment; on kidney diseases, etc. He was an active collaborator of the *Semaine médicale*, in which

he published many valuable essays on therapeutics, among others, one entitled, "Doit-on traiter la fièvre?" which constituted his report on this subject to the therapeutic section of the thirteenth Congrès international des sciences médicales, held in Paris in 1900.

In collaboration with Bouchard, Charcot and Vulpian, Lépine founded the *Revue mensuelle de médecine et de chirurgie* (1877), which in 1880 was segregated as the *Revue de médecine* and the *Revue de chirurgie*. Lépine remained one of the directors of the *Revue de médecine* up to the time of his death.

Lépine's hospital service and scientific researches did not absorb all his time and attention. He was far from indifferent to the great social problems of his day. He was president of the Lyons chapter of the Ligue des droits de l'homme from its foundation in 1898 until 1903.

Strasbourg University Festival

The reopening of the University of Strasbourg was recently celebrated with great enthusiasm. The president of the republic delivered an important address, in which he alluded to Pasteur, who, at the height of his fame, spoke feelingly of the course in chemistry that he took at the Ecole de pharmacie de Strasbourg and at the Faculté des sciences during the years 1848-1852. The president expressed his approval of the idea of forming a Société des amis de l'Université de Strasbourg, analogous to the Société des amis de l'Université de Paris. The object of such a society will be to aid in the establishment of professorial chairs, a wide range of courses and lectures, and in the more extended equipment of the laboratories and libraries. It is also hoped to found certain prizes to encourage study in certain fields, and to establish scholarships and traveling fellowships.

Concurrently with the celebration of the reopening of the university, the eighth Congrès des étudiants was held in Strasbourg, at which the chief topic of discussion was the devising of ways and means to bring about a betterment in the moral and physical life of students. American, Belgian, Dutch, English, Italian, Norwegian, Polish, Swiss and Czechoslovak delegations were present at the congress.

Personal

Dr. Cunéo, agrégé, has been appointed professor of medico-surgical anatomy on the Paris Faculty of Medicine.

Dr. Pinard, formerly professor of clinical obstetrics on the Paris Faculty of Medicine, who was a candidate at the parliamentary elections, as I mentioned in my letter last week, has been elected a member of the chamber of deputies.

Marriages

Harry Evans Trimble, Asst. Surg., U. S. P. H. S., to Miss Agnes Evelyn Malley of St. Paul, at Washington, D. C., December 18.

Charles Thomas Maxwell, Sioux City, Iowa, to Miss Nelontine Jane Alderson of Russellville, Ky., November 22.

Charles Hamilton Harbaugh, Philadelphia, to Miss Minnie Anna Moore Hall of Hayfield, Va., December 11.

William Oscar Ott, Rochester, Minn., to Miss Maggie Jane Smith of Lexie, Miss., December 7.

Stanley Ernest Crawford, Pittsburgh, to Miss Caledonia Stroud of Franklin, Va., December 6.

Lionel Francis Lorio, Lakeland, La., to Miss Marie L. Green of Lottie, La, December 4.

Fowler Burdette Roberts, Akron, Ohio, to Miss Marie dePaul of Chicago, November 1.

Jay Dever Linton to Dr. Nellie Cameron Craig, both of Philadelphia, December 20.

Harry August Naumer to Miss Anna Alvira Risch, both of Brooklyn, December 13.

Francis Weld Peabody, Boston, to Miss Virginia Chandler of Chicago, December 18.

Hyman Green, Boston, to Miss Leona Freedman of Brookline, Mass., November 11.

John Charles Mahr to Mrs. Ollie Dunn, both of Oklahoma City, December 11.

Albert Jacob Mishkind, Denver, to Miss Mollie Ettelson of Chicago, December 17.

Deaths

Sir William Osler, Regius professor of medicine in the University of Oxford, England, whose seventieth birthday was chronicled in The Journal of July 12, 1919, died at his home in Norham Gardens, Oxford, December 29, from pneumonia.

Dr. Osler was born in Tecumseh, Ont., the son of Rev. F. L. and Ellen Frere Osler. He received his preliminary education in Trinity College School, Trinity College, Toronto, and the Toronto University, and took his medical course in McGill University, Montreal, from which he was graduated in 1872. His graduation thesis on topics in pathologic anatomy was awarded a special prize, "because it was greatly distinguished for originality and research."

On his return after two years of study abroad Dr. Osler began to teach pathology in his alma mater. He was made professor of the institutes of medicine of McGill University in 1874, and remained in this position until 1884, when he accepted the professorship of clinical medicine in the University of Pennsylvania, Philadelphia. In 1889 he became professor of principles and practice of medicine in Johns Hopkins University, Baltimore, leaving this position in 1905 to become regius professor of medicine at Oxford.

In 1911 he was created a baronet of the United Kingdom, by King George V. He was deservedly honored by many universities and scientific bodies. He received the honorary degree of LL.D. from McGill University in 1895, the universities of Aberdeen and Edinburgh, in 1898; University of Toronto, 1899; Yale University, 1901; Harvard University, 1904, and Johns Hopkins, 1905; the degree of Doctor of Civil Law from Trinity University, Toronto, in 1902, and the University of Durham in 1913; the degree of Doctor of Science, from Oxford University in 1904, Liverpool University in 1910, and the University of Dublin in 1912. He was made a fellow of the Royal College of Physicians in 1883, and a fellow of the Royal Society in 1898.

Dr. Osler was an accepted authority in medical science, and as a teacher he aroused affection and enthusiasm in his students. The model medical clinic which he organized at Johns Hopkins was the first of its kind in this country, and in this clinic were trained many medical students and young physicians for higher work in clinical medicine, inspired by Dr. Osler's example and precepts. His literary work was of a high degree of literary and scientific merit, and was always inspired by lofty ideals. His literary works comprise 730 titles, chief among which were his Principles and Practice of Medicine, which appeared in 1892, and the encyclopedic Modern Medicine, of which he was coeditor.

Dr. Osler was taken ill with pneumonia in November, and later was reported to be convalescing; but pleurisy with effusion developed, necessitating a thoracentesis. On Christmas day he sent a typically cheerful telegram to Johns Hopkins Hospital, announcing that he was making a good fight; three days later he died. He is survived by his wife; his only son died while on active service in the war.

Thomas Terrell Jackson ⊕ San Antonio, Texas; University of Texas, Galveston, 1893; aged 51; president-elect of the State Medical Association of Texas; division surgeon of the Southern Pacific System; formerly president of the Bexar County Medical Society and Western Texas Medical Association; formerly secretary of the State Board of Medical Examiners, and a member of the State Board of Health; formerly president of the board of directors of the Southwestern Insane Hospital, San Antonio; a member of the San Antonio Board of Health, and health officer of Bexar County; captain and assistant surgeon, United States Volunteers, during the War with Spain; and major, M. C., U. S. Army, during the world war, and honorably discharged, Dec. 4, 1918; died December 12, from heart disease.

Charles Henry Cook ⊕ Natick, Mass.; Bellevue Hospital Medical College, 1875; aged 74; a trustee of the Leonard Morse Hospital, Natick, since its organization in 1893; a member of the Massachusetts Board of Registration since 1909, and first president of the Federation of State Medical Boards of the United States, serving from 1913 to 1916; died December 3, from cerebral hemorrhage.

Daniel Eli Haag, Liberty Center, Ohio; Cincinnati College of Medicine and Surgery, 1880; aged 84; for many years professor of materia medica and therapeutics and dean of the faculty of the Toledo Medical College, and president of

⊕ Indicates "Fellow" of the American Medical Association.

the board of trustees of Robinwood Hospital, Toledo; president of the Liberty State Savings Bank; died December 9, from heart disease.

Paul Gillespie ⊕ Wyoming, Ohio; Miami Medical College, Cincinnati, 1897; aged 48; local surgeon of the Cincinnati, Hamilton and Dayton Railroad; while driving his automobile over a grade crossng at Hartwell, December 15, was struck by a Baltimore and Ohio train, and sustained injuries from which he died a few hours later in Christ Hospital, Cincinnati.

Alexander James Connell ⊕ Scranton, Pa.; Bellevue Hospital Medical College, 1877; aged 63; attending surgeon to the Moses Taylor Hospital, Scranton, since 1889; surgeon and chief of staff and a member of the board of trustees of the State Hospital of the Northern Anthracite Coal Region of Pennsylvania, Scranton; died December 18.

Clarence W. Schaeffer ⊕ Philadelphia; Medico-Chirurgical College of Philadelphia, 1907; aged 34; diagnostician for the board of health for diphtheria and scarlet fever, and a member of the staff of the Lankenau, Episcopal, and Pennsylvania hospitals; died, December 19, from heart disease.

William McCarroll ⊕ Pontiac, Mich.; University of Michigan, Ann Arbor, 1881; aged 65; one of the organizers of the Oakland County Medical Society, and its president in 1906; one of the organizers and secretary of the Pontiac Medical Society in 1901; died December 12, from pernicious anemia.

Benjamin F. Gardner, Bloomsburg, Pa.; Medical College of Virginia, Richmond, 1865; aged 83; a member of the Medical Society of the State of Pennsylvania; a surgeon in the Confederate service during the Civil War; died at the home of his daughter, December 5, from senile debility.

Percy C. Hoskins ⊕ West Chester, Pa.; Jefferson Medical College, 1875; aged 66; once president of the Chester County Medical Society; a member of the staff of the Chester County Hospital and physician to the Smith Memorial Home; died in the Chester County Hospital, December 13.

Paul Rühnke Lanz ⊕ Oakland, Calif.; University of California, Berkeley, and San Francisco, 1899; aged 44; who was awaiting trial on the charge of forging names to prescriptions for narcotics; was found dead in the Hotel Herrick, San Francisco, December 8.



SIR WILLIAM OSLER, 1849-1919

William Bayles VanDuyn, Trenton, N. J.; University of the City of New York, 1866; aged 79; a veteran of the Civil War, and later surgeon, U. S. Army, from which he resigned in 1880; surgeon for the police and fire department of Trenton since 1888; died December 6.

James Van Siclen Woolley, New York City; University of the City of New York, 1868; aged 76; attending surgeon to the Northeastern Dispensary, New York City, since 1870, and visiting physician to the Presbyterian Hospital since 1874; died December 14.

Ormond Willis Murphy, Vancouver, B. C.; Queens University, Kingston, Ont., 1909; aged 38; while driving in his automobile over a grade crossing near Beaconsfield Station, December 6, was struck by an electric railway freight train and instantly killed.

Erastus Van Hood ⊕ Ocala, Fla.; College of Physicians and Surgeons, Baltimore, 1884; aged 58; a medical officer during the Spanish-American War; for several years a member of the State Board of Medical Examiners; died December 5.

Melvin H. Turner ⊕ Ticonderoga, N. Y.; Albany (N. Y.) Medical College, 1873; aged 57; once president of the village of Ticonderoga; died in Moses Hospital, Ticonderoga, December 12, after two operations for carbuncle.

Giuseppe Dalla-Chiara, New York City; University of Turin, Italy, 1892; aged 53; died in Presbyterian Hospital, New York City, December 15, from carcinoma of the lungs and bronchial tubes.

Florence Nightingale Ferguson Ward, San Francisco; Hahnemann Medical College of the Pacific, San Francisco, 1887; professor of obstetrics in her alma mater; aged 59; died December 15.

John Holloway Pratt ⊕ St. Stephens, S. C.; Medical College of the State of South Carolina, Charleston, 1909; aged 44; was shot and killed in an affray near St. Stephens, December 14.

Francis Marion Elliott, Aurora, Ill.; Rush Medical College, 1869; aged 75; a member of the staff of the Aurora City Hospital and St. Charles Hospital, Aurora; died December 9.

John Louis Metzger, Jr., Philadelphia; Hahnemann Medical College, Philadelphia, 1912; aged 29; died in the Hahnemann Hospital, Philadelphia, December 9, from heart disease.

Millard F. Gerrish ⊕ Seymour, Ind.; University of Pennsylvania, Philadelphia, 1881; aged 63; secretary of the Seymour board of health; died December 16, from heart disease.

Richard C. Mackey, Hobart, Ind.; Loyola University, Chicago, 1883; aged 57; a member of the Indiana State Medical Association; died December 1, from cerebral hemorrhage.

Stephen D. Yerrington, Bailey, Mich.; Michigan College of Medicine and Surgery, Detroit, 1899; aged 73; died at Grant, Mich., November 27, from valvular heart disease.

John T. Townley ⊕ Milwaukie, Ore.; University of Oregon, Portland, 1906; aged 50; for many years a practitioner of Portland; died December 9, from arteriosclerosis.

Van Buren Newman, Tilden, Ky.; Miami Medical College, Cincinnati, 1872; aged 80; died at his country home in Henderson County, December 7, from senile debility.

Samuel Augustus Wood, Elmhurst, L. I., N. Y.; College of Physicians and Surgeons in the City of New York, 1879; aged 64; died December 12, from heart disease.

John E. Haggerty, Jr., New York City; Electic Medical College of the City of New York, 1911; aged 43; died December 18, from pneumonia.

Henrietta Eason Holbrook, Lebanon, Ohio; University of Nashville, Tenn., 1899; aged 59; died in an infirmary in Mobile, Ala., December 6, from tuberculosis.

John Edgar Crawford, Ray, Ariz.; Western Pennsylvania Medical College, Pittsburgh, 1905; aged 39; died at the home of his brother in Crafton, Pa., December 14.

Francis R. Stone, Savannah, Ga.; Savannah, Ga., Medical College, 1860; aged 83; surgeon in the Confederate service during the Civil War; died December 9.

William Bruce Stricker ⊕ Nanticoke, Pa.; Medico-Chirurgical College of Philadelphia, 1901; aged 42; died November 18, from pneumonia.

William P. Hanna, Lafayette, Ind.; Jefferson Medical College, 1877; aged 69; died in his apartment, December 13, from cerebral hemorrhage.

John Gray Blount ⊕ Washington, N. C.; Bellevue Hospital Medical College, 1892; aged 49; died December 8, from cerebral hemorrhage.

Chester Jennings, Little Rock, Ark.; Tulane University, New Orleans, 1883; aged 61; died December 11, from bronchial pneumonia.

Charles H. Janney, Washington, D. C.; University of Maryland, Baltimore, 1885; aged 57; died December 4.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

"ANTI-PNEUMOCOCCIC OIL" AND THE USE OF CAMPHOR IN PNEUMONIA

Report of the Council on Pharmacy and Chemistry

The Council has adopted and authorized publication of the report which appears below. This report declares "Anti-Pneumococcic Oil" (a solution of camphor in oil sold by Eimer and Amend, New York) ineligible for New and Nonofficial Remedies because (1) the recommendations for its use in pneumonia are not warranted by the evidence, (2) the name is not descriptive of its composition but is therapeutically suggestive, and (3) the sale of a solution of camphor in oil under a name nondescriptive of its composition is unscientific and a hindrance to therapeutic progress.

W. A. PUCKNER, Secretary.

The Council having decided to consider Anti-Pneumococcic Oil (Eimer and Amend, New York), the preparation was assigned to the Committee on Therapeutics for report. The report that follows was made by a member of this committee:

According to the advertising, Anti-Pneumococcic Oil is a "twenty-five per cent. solution of camphor in a thin oil" which was "originated" by August Seibert, M. D. The following directions are given for its use:

"10 c.c. (150 minims) to every 100 pounds of body weight, to be injected hypodermically every eight to twelve hours in pneumococcic pneumonia, as soon after the initial chill as possible."

It is claimed that the prescribed dose one hour before general anesthesia begins, "safeguards against postoperative pneumonia," and, that "animals can so be immunized against later and otherwise fatal intravenous pneumococcic infection (Boehnke, Institute for Experimental Therapy, Frankfort)." The advice is given:

"In pneumococcic meningitis, endocarditis and pleuritis, 3% of salicylic acid should be added to this oil."

In an article by Seibert, "Camphor and Pneumococci" (*Medical Record,* April 20, 1912), a reprint of which is used to advertise Anti-Pneumococcic Oil, previous work (*München. med. Wchnschr.,* No 36, 1909) is mentioned as the starting point for the use of camphor in pneumonia. In this article, the author reports his first case, that of a young woman who entered St. Francis' Hospital on the third day after the initial chill "with the symptoms of severe toxemia (unconscious, temperature 105.5 F., pulse 130, and respiration 40) and involvement of both lower lobes." "Large doses of camphor," 12 c.c. of a 20 per cent. solution, were injected hypodermically "every twelve hours, resulting in *gradual* improvement and recovery by the fourth day, without a crisis." Seibert reports success in its use in twenty-one cases, but gives no case histories or protocols. He admits, however, that in four out of sixteen cases, following the first twenty-one so reported certain "limitations of this treatment were observed," and a "sudden rise of temperature in two patients on the second and third days of treatment, respectively, proved to be due to pneumococcic nephritis, promptly subdued by appropriate doses of urotropin, while the camphor injections were continued and resulting in speedy recovery." He further admits that empyema occurs, and states: "This proves that the camphor brought into the blood cannot prevent the as yet living organisms, constantly entering the blood current from the affected alveoli, from colonizing in the renal and pleural tissue."

He reports, among thirty-seven patients treated in this manner, one death, that of a man 68 years old, weighing 200 pounds, with a fatty heart. Heart failure was the real cause of death. Seibert also reports some very incomplete experimental work; Dr. Hensel, assistant and pathologist of the German Hospital, found that "1/10,000 part of camphor added to the usual culture media inhibited the growth of pneumococci, while the controls all thrived"; Dr. J. C. Welch, pathologist of the Lying-In Hospital, found that rabbits infected with lethal doses of pneumococcus cultures intravenously were saved by large doses of camphorated oil; fragmentary protocols are given. The assistant pathologist of St. Francis' Hospital carried on the experimental work, adding salicylic acid to the camphor. No blood cultures are reported. The conclusion reached by Dr. Seibert is that salicylic acid up to 3 per cent., added to the camphorated oil, is effective in preventing pleural infection. In the article by Dr. Seibert, there appear most sketchy reports of cases, recovery being reported without crisis in from three to nine days.

The referee has made a careful search of the literature, with the following results: Boehnke (*Berl. klin. Wchnschr.* **50**:818, 1913), using white mice, failed to confirm the experiments reported in Seibert's paper, unless camphorated oil were given before the pneumococci, and even then, he felt that the results were too irregular to be of great significance. When given with anti-pneumococcic serum, however, he felt that there was some benefit to be seen by the administration of camphor; his protocols, however, are not detailed. There is no report of blood cultures, etc.

Another worker, H. Leo (*Deutsch. med. Wchnschr.* **39**:690, 1913), reported that camphor water given intravenously prolonged the lives of thirty-eight rabbits inoculated with pneumococci. Here again there were no adequate protocols and very little evidence of careful experimental work appears.

In the literature of the past ten years, there appear sketchy clinical articles on the value of huge doses of camphor in pneumonia. Markevitch (*Russk. Vrach,* June 27, 1914; abstr., THE JOURNAL, Dec. 5, 1914, p. 2081) treated 226 cases of pneumonia with 5 c.c. of camphorated oil hypodermically four times daily, at the same time giving digitalis (amount not stated), with a mortality of 6.6 per cent., whereas, in 322 cases untreated, there was a mortality of 13.3 per cent. He reports 133 grave cases; sixty-six received no camphor; 48 per cent. died. Of sixty-seven treated with camphor, only 22 per cent. died. He reports temperature falling by lysis when camphor is used, and comments on the symptomatic improvement following its use. With the great variation in the clinical course of pneumonia, the above figures, though suggestive, certainly need further support before the routine use of camphor as recommended by Seibert can be sanctioned.

Later articles found on the subject refer to it in a very cursory way, giving no protocols and no cases, and giving the referee the feeling that the conclusions were very impressionistic.

RÉSUMÉ

After careful search of the literature, the referee concludes that: Huge doses of camphor, to 250 grains in twenty-four hours, may be given to man without serious results. No satisfactory evidence, however, appears that camphor has a specific germicidal action on pneumococci (similar to that of ethylhydrocuprein). The clinical evidence, as found in the literature, is certainly of very little value. It appears that the sale of a simple solution of camphor in oil under the guise of "Anti-Pneumococcic Oil" is to be deplored (a 20 per cent. solution of camphor in cottonseed oil is official in the U. S. Pharmacopeia as camphor liniment). It is recommended that the preparation be held inadmissible to New and Nonofficial Remedies because exaggerated therapeutic claims are advanced for it, and because the name is not descriptive of the composition, but is, instead, therapeutically suggestive.

Health First Means Safety First.—Eyestrain is a cause of headache and general bodily fatigue which could be eliminated with but little expense or loss in time and with an obviously great reduction in the amount of accidents.—*Minnesota Health J.,* Nov. 20, 1919.

Correspondence

"ALLEGED PLACENTAL FUNCTIONS"

To the Editor:—In an editorial comment (THE JOURNAL, Dec. 6, 1919, p. 1774), based largely on certain clinical observations recorded by Hammett and McNeile, your conclusions appear to be that we must "hesitate to give the placenta a place in endocrinology." I heartily concur with the display of such a laudable spirit of conservatism in the new and untried field of endocrinology, in which the tendency has been to allow speculation to outrun discretion. However, neither in Hammett's articles (let me instance the one on the "Function of the Internal Secretion of the Placenta," *Endocrinology* **3**: 307 [July-Sept.] 1919, which contains a summary of his work) nor in your comment has the evidence of the endocrine function of the placenta been favorably presented. The difficulties confronting research on this problem, because of the presence of ovaries and fetus, are numerous and baffling, and until recent years little progress had been made:

1. The earlier work of Veit and his successors who attempted by means of precipitin, complement fixation and similar tests to prove that eclampsia is due to an overwhelming of the maternal organism by foreign (placental) protein has been discredited, although the hypothesis has not been disproved.

2. The researches of Lane-Claypon and Starling and of others dealing with the growth of the breasts during pregnancy were performed with aqueous extracts of the placenta which contain none of the active principle, or mere traces of it. Moreover, these investigators were unaware of the cyclic changes occurring in the breasts during rut and were misled by these periodic changes, as Unger and I pointed out (*Arch. Int. Med.* **7**: 812 [June] 1911).

3. Not until extracts prepared by extracting placental material with lipoid solvents had been used (Iscovesco: *Compt. rend. Soc. de biol.* **73**: 104, 1912. Aschner: *Arch. f. Gynäk.* **99**: 534, 1913. Herrmann: *Monatschr. f. Geburtsh. u. Gynäk.* **51**:1, 1915. Frank and Rosenbloom: *Surg. Gynec. & Obst.* **21**: 646 [Nov.] 1915) were the results positive or concordant. The positive results were due to the greatly increased concentration of the active substance which is present in minute quantity only in the fresh placenta.

4. The problem is still further complicated by the fact that the corpus luteum of the pregnant ovary contains an active principle which acts similarly on the breasts (and uterus) to the substance contained in the placenta. So far as studied, a close biologic identity exists between these two substances (Frank: *Surg. Gynec. & Obst.* **25**: 329 [Sept.] 1917). For that reason, experiments dealing with breast hyperplasia must be conducted not only on virgin animals but also on animals castrated before their first rut (compare paragraph 2). As an additional precaution, at least one breast should be removed and kept for control before beginning the experiment.

5. A sharp distinction must be drawn between the physiologic *growth* of the glandular structures of the breast during pregnancy (hyperplasia) and the post partum *secretory* activity of the fully formed gland. This question was discussed by me as early as 1912 (*Arch. f. Gynäk.* **97**: 183, 1912), as the distinction between substances causing *breast hyperplasia* and *galactagogues* was already frequently lost sight of. Hammett appears to have fallen into the same error. "In an experiment carried on at the Boston Lying-In Hospital during the winter of 1917-1918, it was impossible to detect by *bedside observation* [the italics are mine] an increased growth of mammary tissue when desiccated placenta was fed post partum to lactating women, as compared with a series of patients not receiving the placental material" (Hammett: *Endocrinology* **3**: 307 [July-Sept.] 1919). Post partum, let it be understood, the mammary gland has reached its maximum development and is not amenable to further stimulation (the increasing refractoriness to stimulation, as the physiologic maximum is approached, has been mentioned by me in the *Journal of Cancer Research,* Proceedings of the American Association for Cancer Research, **2**: 515, 1917). Moreover, *bedside* observations do not lend themselves to delicate quantitative determinations. The question as to whether placental extracts exert a galactagogue action is quite distinct from the question of placental internal secretory activity. With Halban (*Arch. f. Gynäk.* **75**:353, 1905), I believe that the placenta inhibits milk *secretion.* The infinitesimally small amount of active substance contained in 10 grains of desiccated placenta, as given by Hammett, is far too small to produce such an effect, were it obtainable, particularly when introduced by mouth.

6. The report of Hammett that "it is evident that there is produced in the placenta some substance capable of acting as a stimulus to growth, when ingested by the mother and passed on to the infant in the lacteal secretion . . ." need not be dilated on in this connection. This is a question for pediatricians and food experts to settle from the clinical standpoint, but cannot be proved or disproved by means of infants observed under the varying and uncontrollable conditions existing in the best conducted maternity hospital; nor is an observation period of two weeks sufficient to permit the drawing of conclusions. To apply these observations to the fetus in utero is even more unjustified.

7. The evidence in favor of considering the placenta as a true gland of internal secretion may be thus indicated, in bare outline: By extraction of placental substance with lipoid solvents, a viscid concentrate is obtained which is thermostabile and resists fairly concentrated acids and alkalis. When it is injected subcutaneously into virgin immature castrates (rabbits show the changes most conclusively, but guinea-pigs, white rats and female dogs also react positively), rapid hyperplasia of the uterus and breasts results. On withdrawal of the extract, both uterus and breasts (the latter mainly in their acinous structures) regress. Colostrum then appears in the breasts, if the stimulation has been carried to the proper degree of development, in from three to seven days after conclusion of the injections. (For a short outline, the reader may consult Frank: The Placenta Regarded as a Gland of Internal Secretion, *Surg. Gynec. & Obst.* **25**:329 [Sept.] 1917.)

8. As stated in the article just referred to, the possibility cannot be denied that the active substance originates in the corpus luteum of pregnancy, and is merely stored in the placenta. Against this hypothesis, the fact that only minute amounts occur in the placenta, and that when inaugurated, the changes continue in spite of castration, must be weighed.

No experiments have been performed to determine whether the placenta of animals castrated during pregnancy contains less of the active substance, nor would such experiments prove conclusive even if exact quantitative methods of extraction were at our disposal. Therefore, the origin of the active substance obtained from the placenta must at present be ascribed to this temporary but important gland.

ROBERT T. FRANK, M.D., New York.

"ACUTE ABDOMEN"

To the Editor:—In reply to Dr. M. W. Lyon, Jr., whose letter (THE JOURNAL, Dec. 20, 1919, p. 1897) takes issue with the designation "acute abdomen": The reference is to a report of remarks by Dr. Deaver. I wish to refer to the usage of the same terminology by Dr. Charles L. Gibson of New York, whom every Cornell student remembers as a purist in surgical nomenclature. Lymph glands exist for some surgeons, but only lymph nodes for Dr. Gibson. My own memories of the course in medicine at Cornell include none more vivid than Dr. Gibson's "Please do not say 'lymph glands' in my clinic!" Did a student mention carcinomas or sarcomas? He learned instanter that he meant carcinomata or sarcomata. Let a student, demonstrating on a patient, say to Dr. Gibson "And here is your adenitis," and the response would inevitably be "Not *my* adenitis!"

This is submitted as evidence that Dr. Gibson is untiring in his efforts to instil into his students a sense of accuracy in nomenclature. Therefore, when he begins his lectures in

surgery with "Acute abdominal disease—the so-called 'acute abdomen,'" it is my own feeling that "acute abdomen" has the endorsement of usage by a past master of terminology. Dr. Gibson's syllabus of lectures, open before me as I write, begins:

A. ACUTE ABDOMINAL DISEASE
"ACUTE ABDOMEN"

The quotation marks that indicate Dr. Gibson's attitude toward the term that he uses with this qualification were omitted from the report of Dr. Deaver's remarks referred to before. I cannot refer at the moment to any writing of Dr. Deaver's that will show whether he uses quotation marks as does Dr. Gibson. At all events, with or without quotation marks, "acute abdomen" gives the impression of a condition for which something should be done in a hurry; and I do not feel that it is advisable to adopt a longer terminology even as a concession to purity of diction.

RAMSAY SPILLMAN, M.D., Washington, D. C.

Dr. Spillman's letter was referred to Dr. Lyon who replies:

To the Editor:—Dr. Spillman's chief argument for the employment of "acute abdomen" seems to be that it has the sanction of Dr. Charles L. Gibson, an undoubted purist as shown by several examples. The fact that Dr. Gibson uses the term within quotation marks is an admission that the expression is irregular. I see no special objection to using it with quotation marks. Like "T. B. bugs," "beasts" as applied to protozoa, and "shots" of bacterins, such expressions as "acute abdomen, acute appendix, chronic appendix," etc., would be better confined to familiar conversations than be used in formal speech or publication.

The Century Dictionary defines acute as follows: "1. Sharp at the end; . . . 2. Sharp or penetrating in intellect; . . . 3. Manifesting intellectual keenness or penetration; . . . 4. Having nice or quick sensibility; . . . 5. Keen; sharp; intense; poignant: said of pain, pleasure, etc. 7. In *pathol,* attended with more or less violent symptoms and coming speedily to a crisis: applied to a disease: as an acute pleurisy: distinguished from subacute and chronic." Such definitions scarcely apply to the human abdomen. With respect to the seventh definition it must be borne in mind that the abdomen is not a disease and that the abdomen does not have symptoms although diseases of the abdomen are characterized by symptoms.

"Acute abdomen" might be used temporarily with propriety when something "should be done in a hurry," but after it has been done it would be in the interest of better English and pathology to employ a more elegant and accurate expression.

M. W. LYON, JR., South Bend, Ind.

[COMMENT:—Scientific medicine demands scientific phraseology. When a doctor "operates" his patient, let it be understood that he "works" him. And if he "operated on" him, let him say so. "Operated cases" and "The child had no temperature" are further samples of the loose English too often used by scientific men.—ED.]

PHYSICIANS AND GENETICS

To the Editor:—"Given an incorrect diagnosis and you can cure any disease" is, I believe, a current saying in the profession. It seems to draw attention to one of the most striking spectacles of modern times—the expanding field of knowledge which the physician is drawing on for his diagnosis. The day is gone by when a look at the tongue and a count of the pulse and a few words with the patient are enough. The modern physician has come to realize that his patient is more than the product of a few years of growth; that he is, in fact, a combination of human stocks with hereditary tendencies.

What diseases are coupled with the hereditary traits? Which are independent of them? How allay the unwarranted phantoms of "hereditary diseases" in nervous patients? How can we distinguish the hereditary tendencies from phenomena of nutrition? These have come to be real questions with every physician. In the field of heredity, as in few others, the evidences of the laws of inheritance are being traced in widely different kinds of living creatures, and no physician can afford to overlook the great experimental work of the agricultural research men of America in this field. Their experiments in the breeding of plants and animals under conditions of control such as physicians cannot have, and on a scale which is impossible in the human species, are creating a fund of knowledge which the physician is bound to recognize.

Sixteen years ago, the secretary of agriculture established an association to bring together the breeders of plants, the breeders of animals, and those interested in human heredity. This association, now the American Genetic Association, has grown and become a real factor in the dissemination of the knowledge of heredity through the distribution to its members of a profusely illustrated journal—the *Journal of Heredity*—which is the property of the association. It is not a journal of the superficial class, but a serious one with contributions from specialists.

No longer should the confusion continue between what characteristics come to us in our inheritance and what ones are acquired. We must understand the importance of each, and not confuse them, if we would produce, by the only way possible, a better and nobler race of human beings.

The physician has become the father adviser of the race. It is in his hands, as in no others, to improve it by his advice and suggestion regarding the most vital problems that come to each individual. The science of genetics is already indebted to him for many great discoveries in eugenics, and from now on looks to him for many of the observations on which the generalizations of the future are to be made. No other class of people is more needed in the building of an American genetic association. May I ask your readers to send to the American Genetic Association, Washington, D. C., interesting photographs and accounts which illustrate the working of the laws of inheritance? A special illustrated folder, containing eighteen illustrations of heredity, will be sent to any one interested in this great subject.

DAVID FAIRCHILD, Washington, D. C.,
President, American Genetic Association.

MEDICAL VETERANS OF THE WORLD'S WAR

To the Editor:—Under this name, an organization was effected at the meeting of the American Medical Association in Atlantic City in June, 1919. At that time the membership numbered about 1,200. The executive committee held a meeting in St. Louis, October 15, and at that time the membership had increased to about 2,200. No profession responded more nobly to the country's call than did that of medicine. At least one third of all the legally qualified physicians in this country served in the Army, Navy, or on the Selective Draft Boards. All of these are eligible to this organization.

The purposes of the organization are multiple and varied. In the first place, it is hoped that annual meetings will give opportunity for renewing acquaintanceship begun and developed in camp and in field. It is desirable to preserve the memory of the hundreds of our profession who fell in defense of their country. Those who aided in making the world safe for democracy should be able to have some word in determining what kind of a democracy they fought for. It is not intended that this organization should be political in any sense, but it will be expected that it will be patriotic in every national and state problem that confronts us in the future. Provision is made in the constitution of this organization for state and local chapters. The membership should be extended until it includes all those that are eligible. The physician is interested in everything that touches the national welfare, and on many points in this connection he is the most competent man to speak. As individuals, medical men may have but little influence. Combined, the profession can be a tower of strength in everything that is good, wise and helpful.

VICTOR C. VAUGHAN, President,
Ann Arbor, Mich.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA: Montgomery, Jan. 13. Chairman, Dr. Samuel W. Welch, Montgomery.
ARIZONA: Phoenix, Jan. 6-7. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.
CALIFORNIA: Los Angeles, Feb. 16-19. Sec., Dr. Chas. B. Pinkham, 906 Forum Bldg., Sacramento.
COLORADO: Denver, Jan. 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.
DISTRICT OF COLUMBIA: Washington, Jan. 13. Sec., Dr. Edgar P. Copeland, The Rockingham, Washington.
HAWAII: Honolulu, Jan. 5-8. Sec., Dr. J. R. Judd, Honolulu.
INDIANA: Indianapolis, Feb. 10-13. Sec., Dr. W. 1. Gott, 84 State House, Indianapolis.
KANSAS: Topeka, Feb. 10. Sec., Dr. H. A. Dykes, Lebanon.
MINNESOTA: Minneapolis, Jan. 6-9. Sec., Dr. Thos. McDavitt, Lowry Bldg., St. Paul.
MISSOURI: St. Louis, Jan. 12-14. Sec., Dr. George H. Jones, State House, Jefferson City.
NATIONAL BOARD OF MEDICAL EXAMINERS: St. Louis and Chicago, Feb. 18-25. Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia, Pa.
NEW MEXICO: Santa Fe, Jan. 12-13. Sec., Dr. R. E. McBride, Las Cruces.
NEW YORK: New York City, Albany, Buffalo, Syracuse, Jan. 27-31. Asst. Professional Examinations, Mr. H. J. Hamilton, Albany.
NORTH DAKOTA: Grand Forks, Jan. 6. Sec., Dr. George M. Williamson, Grand Forks.
OKLAHOMA: Oklahoma City, Jan. 13-14. Sec., Dr. J. M. Byrum, Shawnee.
OREGON: Portland, Jan. 6. Sec., Dr. Frank W. Wood, 559 Morgan Bldg., Portland.
PENNSYLVANIA: Philadelphia, Jan. 13-17. Pres., Dr. John M. Baldy, Harrisburg.
SOUTH DAKOTA: Pierre, Jan. 13. Sec., Dr. Park B. Jenkins, Waubay.
VERMONT: Burlington, Feb. 10-12. Sec., Dr. W. Scott Nay, Underhill.
WASHINGTON: Spokane, Jan. 6-8. Sec., Dr. C. N. Suttner, 415 Old National Bank Bldg., Spokane.
WEST VIRGINIA: Charleston, Jan. 13. Sec., Dr. S. L. Jepson, Masonic Bldg., Charleston.
WISCONSIN: Madison, Jan. 13-15. Sec., Dr. John M. Dodd, 220 E. Second St., Ashland.

THE LOS ANGELES MATERNITY SERVICE

A Municipal Dispensary*

LYLE G. MC NEILE, M.D.
Supervising Obstetrician, Los Angeles Health Department; Attending Obstetrician, Los Angeles County Hospital
LOS ANGELES

In many maternity dispensaries, the primary object has been the teaching of clinical obstetrics to medical students; in such instances the patient is regarded merely as "teaching material," and has been used principally in the teaching of diagnosis. Little attention has been paid to the normal case, and treatment has been detailed to poorly trained assistants. In many of these dispensaries, the actual delivery of the patient has been done by medical students without supervision, and little if any attempt has been made to follow up the case.

Other maternity dispensaries have been operated from purely charitable motives; and if the number of cases cared for by such dispensaries becomes large, the immediate needs of the patient are apt to be considered of paramount importance, and as soon as she is delivered her future is lost sight of.

It is only within recent years that the state has recognized that one of its duties in the promotion of public health is the maintenance and proper regulation of well equipped dispensaries. While health departments throughout the United States have in many instances maintained general dispensaries for the diagnosis and treatment of the common diseases, the obstetric work of the community has in general been left to private dispensaries, and to dispensaries maintained by medical schools and lying-in hospitals. With the recognition of the economic value to the community of the unborn child, and of the child during the first year of its life, the public is becoming more interested in the problem of the maternity dispensaries. The public health dispensaries recognize the necessity for charity, and furnish, without charge to those who are in need, such medical services as they require. These dispensaries must also recognize, if they are to fulfil their entire function—the furtherance of every measure which would aid in maintaining the first degree of public health—that the proper education of medical students is a public health measure. It is well recognized that in the care of the pregnant woman an attendant possessing the highest type of medical education is required, if the mother and child are to be properly safeguarded. Public health is concerned not only with the life of mother and child, but also with the future health of both. It has been estimated that more than 20,000 women die each year in the United States of conditions which are the direct result of pregnancy. It would seem reasonable to argue that in the presence of such a death rate, health departments throughout this country should feel directly concerned with such measures as will materially reduce these appalling figures.

We feel that every woman has a right as a taxpayer—and all are taxpayers, either directly or indirectly—to demand such provision from the state as will insure her the best chance for a living baby, and good health following delivery.

With these various problems in mind, the Los Angeles Health Department in September, 1915, established the Los Angeles Maternity Service. The object of this service is to provide competent medical attendance for needy mothers, during pregnancy, labor, and the lying-in period.

GENERAL PLAN OF ORGANIZATION

The maternity service is actually the division of obstetrics, to which is referred anything of an obstetric nature which comes to the attention of the health department. In charge of this division is an assistant health commissioner, who is responsible only to the health commissioner.

The assistant health commissioner in charge of the division is known as the supervising obstetrician. The position can be filled only by a trained obstetrician, and not by a general practitioner. The supervising obstetrician receives his appointment from the health commissioner direct, and conditions in the Los Angeles Health Department are such that it seems probable that political activities will never determine the appointment of a physician to this position.

Two resident physicians report directly to the supervising obstetrician. These physicians are in reality interns in obstetrics. The senior resident physician receives $75 a month, with room, and the junior resident physician receives $25, and room. On appointment, the physician becomes junior resident physician, and after three months he is promoted to senior resident physician. The total length of service is six months, but the physician may elect to stay for a longer period. The resident physicians are appointed by the supervising obstetrician, and must be graduates of a medical college approved by the American Medical College Association, and licensed to practice medicine and surgery in California.

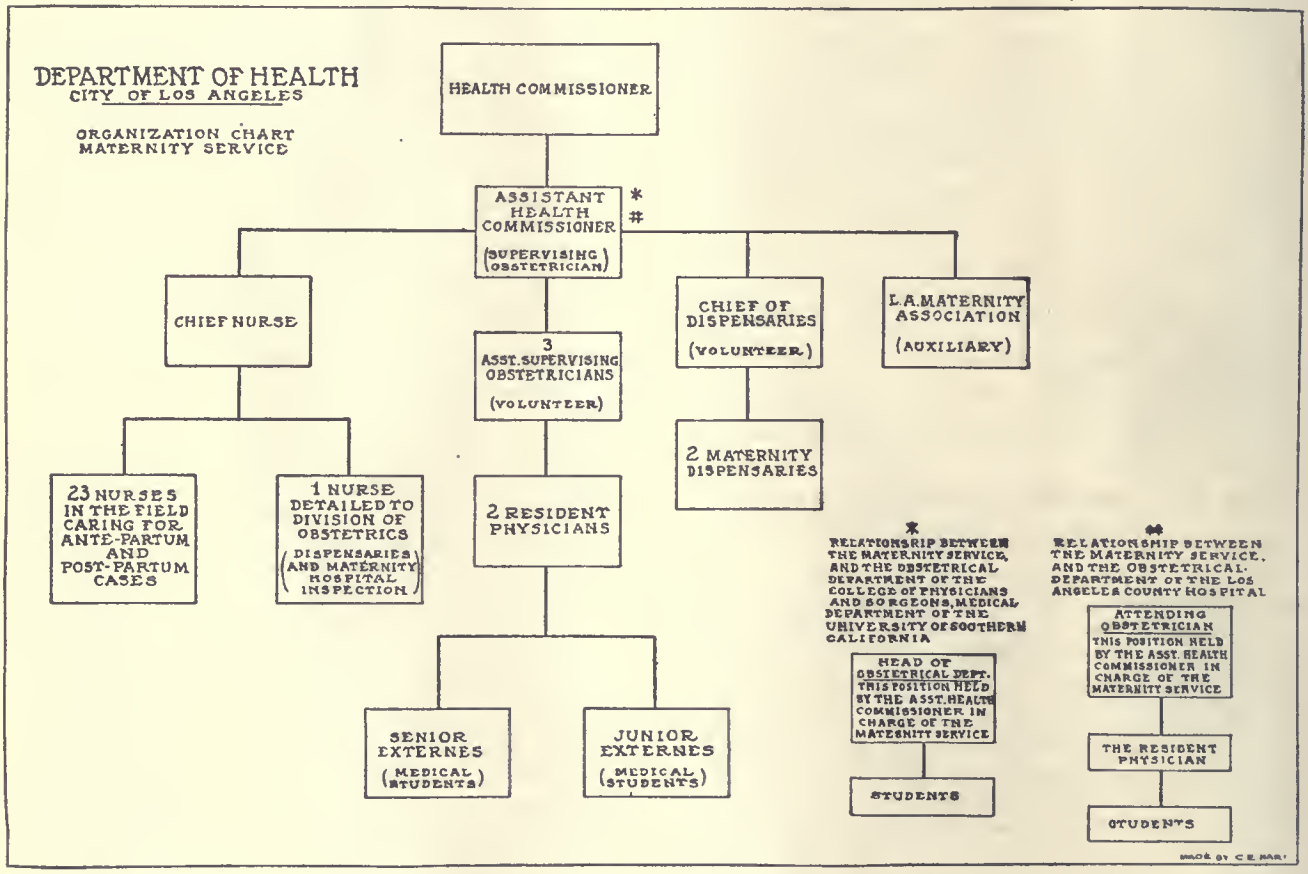
The assistant supervising obstetricians are appointed by the supervising obstetrician, and act as consultants to the resident physician on all cases. Their function is practically identical with that of the junior attending staff in hospital organization. The assistant obstetricians on this staff are all appointed as a result of teaching positions held by them in the obstetric department of either of the medical schools in Los Angeles.

The externs are senior medical students assigned in rotation from their respective schools for clinical work in

*Read before the Los Angeles Obstetrical Society (a section of the Los Angeles County Medical Association), May 13, 1919.

obstetrics. They serve continuously for two weeks on the dispensary staff, and report directly to the resident physician. They are at all times subject to, and under orders from, the supervising obstetrician and his assistants. All of their work is outlined and prescribed, and they are not allowed to do any obstetric work except under the direct supervision of the resident physician or a member of the staff. Conditions at present require the services of from three to five interns at all times.

The nurses, twenty-four in number, receive their orders from the supervising obstetrician through the chief nurse in charge of the bureau of nursing. They are civil service employees. One nurse is assigned to maternity hospital inspection, attendance at maternity clinics, and the general work of this division. There are twenty-three nurses in the field who care for antepartum and postpartum cases. We do not, at the present time, receive the services of a nurse at the time of delivery.



Organization of maternity service, Los Angeles department of health.

RELATION TO ALLIED ORGANIZATIONS

It is, we believe, essential that in a dispensary service of this kind, the most intimate relationship should exist between the dispensary, one or more reputable medical colleges, and a first class hospital maintaining a department for the reception and care of obstetric patients. We believe that our plan of organization meets all of these requirements.

The supervising obstetrician also holds the chair of obstetrics at the University of Southern California Medical Department (College of Physicians and Surgeons). He is therefore in direct touch with a majority of medical students acting as externs on the service, and is able to appreciate the problems peculiar to the teaching of clinical obstetrics.

In addition, the supervising obstetrician acts as attending obstetrician to the Los Angeles County Hospital, which maintains fifty beds for obstetric patients. In this hospital are provided adequate facilities for the care of such dispensary patients as require hospital care.

EQUIPMENT

The maternity service has been taken care of in the matter of quarters and equipment. Labor bags, each containing the necessary equipment for the conduct of a normal obstetric case, are provided for each extern. We have made it a rule to place no limit on the actual amount of sterile supplies used in a case, but each labor bag is supplied with a tin, sealed container, which contains a sufficient amount of sterile towels, pads, cotton pledgets, and cord dressing, with which to conduct the average case.

The resident physicians' bags are provided with the equipment found in the externs' bags, and in addition contain a Tycos sphygmomanometer, a perineorrhaphy set, forceps, and a copper sterilizer.

Each dispensary is provided with history desks, two gynecologic examining tables, two tables for external examinations, a sterilizing outfit, drug and supply cabinets, card index equipment, and the reagents and apparatus necessary for routine urinalysis.

Externs' quarters are provided at our Ninth Street Dispensary. Two rooms, each containing two beds, clothes closets, desks and bedside tables are sufficient at our Gless Street Station for the resident physicians.

A high pressure sterilizer is maintained at the Normal Hill Center for the sterilization of all supplies used on the service.

ROUTINE MODE OF PROCEDURE

Cases are reported to the office on a post-card form, report of maternity case, or by telephone in case of emergency. The majority of such reports come from district nurses,

charitable organizations, clinics, hospitals and other similar agencies. A relatively large number of calls come from new patients who have heard of the service from "old patients."

On receipt of a call, the clerk makes out a blank antepartum record, which is handed to the extern on duty. The extern sees the patient within a few hours, recording the medical and obstetric history, with the results of his obstetric examination. The patient is given a copy of our leaflet, "Advice to Those Who Are About to Become Mothers," and a dispensary card giving the location of the nearest dispensary, and directions for calling the maternity service at the time of labor. She is instructed to come to the maternity dispensary at least every two weeks throughout pregnancy, and to bring with her, at each visit, a specimen of urine for examination.

TABLE 1.—GENERAL REPORT, SHOWING GROWTH OF THE SERVICE*

Year	1916†	1917	1918	1919
Applications received	427	529	632	773
Women delivered	263	348	408	495
Antepartum house calls	1,020	1,796	3,194	3,158
Postpartum house calls	1,602	2,523	3,112	3,634
Calls at maternity dispensaries:				
Women	736	1,604	2,042	2,047
Children	169	353	454	468
Deaths:				
Mothers	0	0	0	4§
Babies‡	9	19	18	21

* For fiscal year ending June 30, of the year stated.
† Includes the last ten months of the fiscal year (organized Sept. 1, 1915).
‡ From all causes, including stillbirths.
§ All from influenza.

The routine procedure in caring for patients at the dispensary will be discussed under maternity dispensaries. If the patient cannot or will not go to the dispensary, an extern sees her at her home every two weeks throughout pregnancy.

Labor calls are handled by the telephone exchange maintained by the Los Angeles County Medical Association. On receipt of a call, the operator notifies an extern, who sees the patient immediately. As soon as the extern has made his external examination, he notifies the resident physician. The resident physician sees each patient during labor, and is present at each delivery.

All normal deliveries are cared for in the patient's home, but pathologic cases are, so far as possible, sent to the Los Angeles County Hospital, and remain on the service of our supervising obstetrician.

After the delivery, the bureau of nursing is notified, and a field nurse sees the patient each day for six days, and then on alternate days until the patient is discharged. An extern sees each patient once daily for five days, and then on alternate days until she is discharged. At each visit, routine medical and nursing care is given to the mother and child.

No patient is discharged for at least ten days, and then only if she presents no pathologic features. At the last visit, the extern instructs the patient to visit the dispensary in two weeks for final examination.

MATERNITY DISPENSARIES

At present, the maternity service is maintaining two dispensaries for the care of antepartum, postpartum, and gynecologic cases. In antepartum cases, the patients are carefully examined; external pelvic measurements and blood pressure are taken, and urinalysis is made at regular two week intervals. Internal measurements are taken only in early pregnancies.

We are able to make a postpartum examination of mother and child in nearly all of our cases. Gynecologic cases which are not operative are treated in each dispensary, while operative cases are referred to the county hospital.

The effect of the educational work done in these dispensaries is becoming more and more apparent, as larger numbers of patients are coming in and asking that they receive antepartum care, as they have noticed that their friends who have received dispensary care get along better at the time of confinement.

The dispensaries care for a large number of women who expect to go to the hospital for confinement. The dispensaries are under the direct supervision of a trained physician, the resident physicians and externs acting as assistants. The physician in charge has always been a woman, and we are convinced that the best results in similar dispensary work can be obtained only by placing a woman physician in charge. It must be remembered that a majority of the maternity clinic patients are used to the attendance of one of their own sex.

SUPERVISION OF MEDICAL STUDENTS

During the first week of his service, the student is called the junior extern, and is expected to make from eight to twelve antepartum and postpartum calls each day, do the routine urinalysis, and attend the dispensaries. In his second, or senior extern week, he does all deliveries, subject to direct supervision, and attends dispensary.

From the time the student goes on duty, until he leaves, he is under the supervision of a member of the staff. He must report to the exchange every forty-five minutes, unless he is at the "quarters" or actually engaged in the delivery of a patient. In this way, we are able to handle the calls promptly, and to know at all times where the student is, and what he is doing. In addition, he is required to make a daily report in writing at the end of each day's work.

In order to avoid the frequent disagreements which so often follow the giving of verbal orders, a comprehensive outline of all the orders and technic used on the service has been issued in book form, and is given the student several weeks prior to his service.

The average extern makes from sixty to seventy calls in pregnant or postpartum cases, examines (externally) from thirty to fifty pregnant women in the dispensary, and delivers from eight to twelve women during his service. He is called to the county hospital to witness all pathologic cases occurring during this period.

TABLE 2.—REPORT OF COST OF THE SERVICE

Year	1917	1918	1919
Equipment	38.50	35.90	293.39
Salaries	2,100.00	2,100.00	3,033.35
Contractual services*	220.87	192.02	341.53
Supplies	251.22	419.67	622.28
Total	2,610.59	2,747.59	4,290.55
Cost per delivery	7.50	6.73	8.67
Cost per patient based on applications	4.93	4.35	5.55

RELATION TO CHILD WELFARE CENTERS

Every child delivered on this service is referred to the nearest child welfare conference for weekly weighing and supervision of diet during the first two years of its life. Through the cooperation of the district nurses, it has been possible to persuade a large majority of our patients to attend these conferences regularly, and a surprising reduction in first year mortality has resulted.

LOS ANGELES MATERNITY SERVICE ASSOCIATION

There has recently been organized an auxiliary association, formed for the purpose of aiding the maternity service. Through this agency more social service work will be per-

formed, increased facilities for dispensaries will be provided, and eventually a maternity hospital will be erected.

RECORDS

The necessity for accurate and systematic record keeping was recognized at the time this service was first formed, and an appropriate system was installed.

Each report of a maternity case is numbered and filed. A cross reference is made for surname and address in each case. The antepartum record is kept at the quarters and an entry of findings is made each time the patient is seen. All entries are checked by a member of the staff.

Labor records and postpartum records are made at the bedside, and the entries checked. On the completion of a case all the data are filed at the main office.

Daily reports are made by externs and resident physicians, and are made a matter of record. Semimonthly summaries are made on the first and fifteenth of each month, showing all details of the work performed during the current month. A general summary has been kept in such form that it is possible, with the use of an adding machine, to obtain the entire record of the service, or of any period since its establishment, within a few minutes.

CONCLUSIONS

We believe that the maternity dispensary can well be operated as a public health measure. Properly managed, it will aid in raising the standards in obstetric work; will supplant to a large extent the work done by midwives and substitute trained for untrained work; will decrease infant and child mortality; will provide for the registration of births, or other statistics which would otherwise remain unrecorded, and may, in many instances, provide more adequate facilities for the proper training of medical students in clinical obstetrics.

626 Marsh-Strong Building.

Book Notices

The Health Officer. By Frank Overton, A.M., M.D., D.P.H., Sanitary Supervisor, New York State Department of Health, and Willard J. Denno, A.B., M.D., D.P.H., Medical Director of the Standard Oil Company. Cloth. Price, $4.50 net. Pp. 512, with 51 illustrations. Philadelphia: W. B. Saunders Company, 1919.

While it is seldom that a book is issued about which it can be said that it supplies a real need, the statement can be made of this book. So far as the United States is concerned the position of health officer is a new one. However, it is a position that already offers more opportunities than there are men to meet these opportunities. While he has the fundamental knowledge, the average physician is not qualified as a health officer unless he has especially prepared himself, for public health work is a specialty requiring as much special knowledge as any specialty in medicine. The book before us supplies this special knowledge. As the preface says, "It tells the health officer what to do, how to do it, and why he should do it. It describes the various activities in which a health officer engages; his relation to boards of health, physicians, social agencies, and the public; his qualifications and methods of work; the various diseases and insanitary conditions with which he deals; and the scientific principles on which the specialty of preventive medicine is founded." Actually, however, it does more; it discusses fully the more important contagious diseases from a public health point of view, giving diagnosis, management, methods of prevention, etc. The matter is up to date and reliable, the space allotted to the various diseases being wisely adapted to American needs. The illustrations are of practical value. As a whole the book is to be commended, not only to health officers but to all practitioners of medicine, for it contains information that should be available to every physician.

Psychoses of the War, Including Neurasthenia and Shell Shock. By H. C. Marr, Lt.-Col. R. A. M. C., Neurological Consultant to the Scottish Command. Cloth. Price, $6. Pp. 292. New York: Oxford University Press, 1919.

This book purports to describe the results of the observation of some 18,000 officers and men; but in reality the author has attempted a textbook of psychiatry and has included descriptions of the various forms of low-grade feebleminded-ness. The text presents a curious mixture of abstracts, often poorly digested, from modern neuropsychiatric literature, with primitive conception which may well be termed popular. Thus, in the introductory chapter there is a detailed account of nerve structure followed by a description of the "means of observation of mental phenomena" in which there is little besides a study of facial expression, which is said to give "the most reliable information of the nature and quality of mind." Under the heading of psychasthenia the author quotes Janet (not quite correctly), and then proceeds to describe a series of cases of constitutional inferiority with delinquency which obviously bear no relation to the definition given. Hysteria is "neurasthenia of toxic origin." The system of classification is certainly original, but hardly more than illustrates the view of Dr. Marr that "the primary object of classification is to keep our thoughts in order, and this is difficult to effect in relation to insanity." The case histories are sketchy and incomplete in many particulars, diagnosis depends on a purely formal description of symptoms without analysis, and but little light is thrown on treatment. It is difficult to find any useful purpose that can be served by this book.

Sex and Sex Worship (Phallic Worship): A Scientific Treatise on Sex, Its Nature and Function, and Its Influence on Art, Science, Architecture, and Religion, with Special Reference to Sex Worship and Symbolism. By O. A. Wall, M.D., Ph.G., Ph.M. Cloth. Price, $7.50. Pp. 607, with 372 illustrations. St. Louis: C. V. Mosby Company, 1919.

This book is largely based on a collection of erotica available prior to 1896. It is a rather miscellaneous collection of material on the psychology of sex, mythologic beliefs, and the relation of sex to primitive religions. There seems to be a general lack of completeness on any single subject, and lack of organization is apparent not only in the individual chapters but also in the work as a whole. For these reasons the book cannot be classed as a contribution to the advance of knowledge on this subject, since it presents practically nothing that is not available elsewhere. It may, however, be of interest to the casual reader. The illustrations are in large part reproductions of old paintings and sculpture

Social Medicine, Medical Economics and Miscellany

LIVING EXPENSES FOR THIRTY YEARS

There is probably no question today that the average American family views with so much anxious interest as the very practical one of the steadily advancing cost of living. Many discussions appear that take up the topic from various angles. One of the most unique contributions to the general subject appears in the *Outlook*, Dec. 3, 1919. The account given by R. R. R. of his household expenses for the thirty years period from 1889 to 1919 appeals to the reader more than government statistics, as it covers actual family experience and considers two of the elemental factors of human existence—income and outgo. The writer is the head of a family in Massachusetts, and has been a railway employee for thirty years. This significant record begins with 1889, the year of his marriage. In that year he introduced in the home the custom that each member of his family who bought an article was to write down the article and its cost on a tally board. Each week he entered these figures in his "house book." He found that his tally board system encouraged economy in his family. Entering everything on the tally board in black and white served to make the matter

of making ends meet a sort of game that everybody enjoyed. Would they meet or would they not meet? was always very much of a question. Some commodities, such as sugar and flour, were actually cheaper in 1899 than in 1889, and even up to 1909 there was not such a tremendous increase; the greatest came during the past ten, and more especially during the past four years. Table 1 well illustrates this.

TABLE 1.—A COMPARISON OF PRICES OF STAPLE COMMODITIES DURING A THIRTY YEAR PERIOD (1889-1919)

	Butter, per Lb.		Lard, per Lb.		Milk, per Qt.		Sugar, per Lb.		Flour, per Bbl.		Potatoes, per Bushel		Coal, per Ton
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	
1889..	$0.34	$0.26	$0.10	$0.09	$0.05	$0.05	$0.07	$0.07	$7.50	$6.50	$0.80	$0.80	$6.00
1899..	0.34	0.25	0.10	0.08	0.06	0.05	0.05	0.05	5.00	4.50	1.00	0.75	6.75
1909..	0.34	0.26	0.16	0.12	0.06	0.06	0.06	0.05	7.00	6.25	1.20	0.75	7.50
1919..	0.80	0.58	0.43	0.32	0.15	0.15	0.11	0.10	14.00	13.60	4.00	1.00	12.65

Eggs have changed more than any other commodity. In 1897 the highest and lowest prices were 36 and 15 cents a dozen, respectively. In 1919 the maximum and minimum were $1.20 and 40 cents. In 1894 and 1895 sugar was only 4 cents. The highest price prevailed in 1919.

It has been a very close race between the advancing prices and the writer's slowly increasing income. However, he has managed, with the aid of a $500 legacy, to buy a home worth $3,000 and to save $1,600 besides. For life insurance about $1,300 has been spent.

TABLE 2.—WAGE SCHEDULE DURING THIRTY YEAR PERIOD

Year	Daily Wage
1889	$1.75
1892	2.30
1895	2.50
1899	2.75
1902	3.00
1907	3.25
1910	3.75
1916	4.00
1918	5.00
1919	5.50

Since 1903 the writer has been employed as a freight conductor on a small nonunionized railway. He concludes with the thought that while he and his family have never had much, they have had enough.

MODERN HYGIENE

Desfosses publishes in the *Presse médicale* a signed editorial with the heading, "Demagoras, hygieniste." He compares Iatros and Demagoras. Iatros, the physician who has grown old helping the sick; his glory, the gratitude of a few whom he has saved from the tomb. Every day, every hour, he teaches practical hygiene. He is not afraid to tell Demos that many of his ills come from from his bad habits; that physiologic poverty comes often from vices; that the best way to keep well is to be clean physically and morally; he tells the young men that the surest way to avoid venereal diseases is to keep from exposing oneself to contagion; he hints to the workman that cirrhosis and dropsy and even tuberculosis are picked up in the barroom (*se prennent sur le zinc*), and that accidents are often the consequence of imprudence or drunkenness. He teaches that progress in hygiene is possible only by individual effort. General measures are effectual only with the active collaboration of the individual. Every man hews out his own destiny. He preaches constantly moderation in eating and in pleasures, and regularity in habits. But Demagoras with his new diploma as hygienist, obtained after a few months in a bacteriologic laboratory and attending a few lectures on hygiene, declares that the sick are the victims of Society; that diseases are the result of the bad organization of public hygiene. If people are tuberculous, that is because the declaration of tuberculosis has not been made compulsory: how can a disease be combated if its exact prevalence is not known? Far from exhorting Demos to lead a more hygienic life, his axiom is that Society is to blame for everything. If the laboring man drinks liquor, it is because he wants to forget; if he is lazy, it is because he does not get enough food. The young man should be able to obey without restraint the desires which Nature has implanted in him. It is for the antivenereal dispensary to render Venus safe and dry Cupid's tears. To establish once for all and absolutely school hygiene, urban hygiene, industrial hygiene, all that is necessary is to have numerous inspectors, well paid. Demagoras speaks with superb disdain of clinicians. He, himself, represents Science. Medicine for the physicians; hygiene for the hygienists. Demos can without fear seek his pleasures; Demagoras will assure him the scientific organization of hygiene. The people thus hear two voices preaching to them: To keep well, develop your individual energy, do not count on any one but yourself, says the physician. To keep well, develop the system of public functionaries, count on me, clamors Demagoras. We may well imagine how puzzling these two tendencies must prove to laymen accustomed to guide themselves by authority, and who under the circumstances cannot determine by themselves which is the correct advice. It would seem, however, that here as elsewhere, the middle of the road would be the safest, and that both individual hygiene and public sanitation must be observed if Society is to secure a maximum of protection against disease.

Medicolegal

Annulment of Marriage for Concealing Tuberculosis

(*Davis v. Davis* (*N. J.*), *106 Atl. R. 644*)

The Court of Chancery of New Jersey holds that a court of equity has inherent jurisdiction, independent of statute, to annul a marriage on the ground of fraud; and that the suppression by one party of the fact that he is suffering from a disease which renders the close intimacy of the marriage relation dangerous, and which may result in a transmittal of the disease to offspring, is such fraud as will warrant a court of equity in annulling a marriage. More particularly, the court holds that where, at the time of marriage, the defendant husband was suffering from hereditary chronic tuberculosis, and did not inform the petitioner of the fact for the reason that he feared, if he did, she would not marry him, and it appeared that if she had been so informed she would not have, in fact, married him, there was such fraud as would warrant the court in annulling the marriage, notwithstanding the fact that the parties lived together as husband and wife for a period of six months, until the discovery by the wife of the existence of the disease, and notwithstanding the fact that there was a child born, which lived for only four days, where it appeared that, immediately on the discovery of the existence of the disease, the petitioner ceased cohabitation; and such being this case, a decree for the petitioner is advised.

It is well known, says Vice Chancellor Lane in the opinion in the case, that close contact with one suffering from tuberculosis involves great danger of transmission both through infection and through contagion. It is almost impossible to conceive the ordinary relationship of husband and wife existing without that danger ever present. There is always also great danger of transmittal of the disease to offspring, and, if the disease itself is not transmitted, there are likely to be transmitted characteristics which predispose toward the development of the disease. False representations with respect to its existence go, then, to an essential of the marriage relation. They are very different from representations with respect to health in general. They are more akin to representations of freedom from leprosy or diseases of similar nature. I cannot agree that the only diseases which affect an essential of the marriage relation are those of a venereal nature. I can see nothing whatever in good policy, sound morality, or the peculiar nature of the marriage

relation which would warrant the court, after having found the fraud, denying relief. Neither good morals nor public policy are subserved by compelling parties to live together as man and wife, with the ever-present danger of infection, and beget offspring liable to be tuberculously inclined, nor are they subserved by compelling a woman, who has married under a misrepresentation with respect to the fact, to continue to be bound to a man affected with tuberculosis without having the close intimacy to which she is entitled. I am unable to conclude that there is any essential difference, so far as the matter now under consideration is concerned, between tuberculosis and syphilis.

While due caution may require a party to a marriage contract to make his own investigation with respect to fortune, family and other external conditions, it seems to me to be going too far to say that due caution requires a party to a marriage contract to require the production of a medical certificate, and in the case at bar a medical examination would have been required to advise the petitioner of the condition of the defendant. Such a rule is not applied in the case of syphilis, nor do I think it should be in the case of tuberculosis. The suppression by the defendant of the fact that he was suffering from tuberculosis of the nature that he was, for the reason that he did suppress it, was equivalent in law to an express representation on his part that he was free from it.

Board of Health Refusing Permit for Hospital

(People ex rel. Sprenger v. Department of Health of City of New York (N. Y.), 123 N. E. R. 379)

The Court of Appeals of New York, in affirming an order of the appellate division that affirmed one granting a peremptory writ of mandamus commanding the defendant to grant the relator a permit for a private hospital for the treatment of medical, surgical and obstetric cases, says that the head of the department of health of the city of New York is the board of health. The sanitary code enacted by the board of health provides that no person shall conduct a private hospital without a permit therefor issued by the board of health. The regulations of the department of health provide that the proposed site and sanitary condition of the hospital building shall be subject to the approval of the department of health. The charter of the city provides that the board of health may embrace in the sanitary code all matters and subjects to which, and so far as, the power and authority of the department of health extends, not limiting their application to the subject of health only.

The board has general jurisdiction over the establishment and maintenance of hospitals, including the licensing of hospitals. On an application for a permit, it should consider and give proper weight to all the ordinary contingencies and circumstances appropriate to the subject which require the exercise of discretion. The element of location may be material. The effect of a proposed location on property values in the neighborhood need not be wholly disregarded, and may even become decisive in a case otherwise doubtful. But the authority now conferred on the board does not include, expressly or by reasonable implication, the power to refuse a permit, as was done in this case, when all other conditions are satisfactory and no offense to the senses is suggested, for the exclusive reason that "considerable damage would accrue to the surrounding property if the permit were granted." That reason considered alone came not legally within the scope of its discretion. The property rights of one owner may not be subordinated to the property rights of his neighbors, except as an incident to the exercise of authority reasonably conferred for the general welfare. The action of the board was, as the law now exists, unauthorized, and therefore unreasonable and arbitrary; the relator's remedy was mandamus; and the order appealed from should be affirmed, with costs.

The question of legislative power wholly to exclude hospitals, such as hospitals for contagious diseases or for the treatment of inebriates or the insane, from particular places, such as thickly populated or fine residential districts, was not before the court.

Inadequate Ordinance and Complaint of Board of Health

Board of Health of City of Paterson v. Clayton et al. (N. J.), 106 Atl. R. 813)

The Supreme Court of New Jersey, in affirming an order setting aside a conviction of defendant Clayton of a violation of the health code of the city of Paterson, says that the section of the code, or ordinance of the board of health of the city, which he was charged with violating, reads:

"That whatever is dangerous to human life or health, whatever building, erection, or part or cellar thereof is not provided with adequate means of ingress and egress or is not sufficiently supported, ventilated, sewered, drained, cleaned or lighted, and whatever renders the air, food or water unwholesome, are declared to be nuisances and are prohibited Any person violating any of the provisions of this section shall be liable to a penalty of not less than five dollars nor more than one hundred dollars."

The complaint charged that Clayton violated the provisions of this section in this, that he "had people congregated and invited people to congregate in his saloon," at a certain location, such action of his "being dangerous to human life and health, there being an epidemic of influenza in the city." But the court does not think that the complaint charged any violation of the section. Passing the argument, which had much to support it, that the ordinance was aimed at physical conditions pertaining to inanimate objects, and not at human conduct, and, conceding for present purposes that the assembling of a numerous crowd in an unventilated and confined room during an epidemic of contagious disease was within the purview of the ordinance, as to which the court expresses no opinion, there was yet no allegation of any such act in the complaint. Certainly the mere inviting people to congregate in the saloon was not dangerous to life or health. As to the charge of "having people congregated" in the saloon, it might have been as few as three, and there was no proof that there were more, came together at the instance of Clayton in a saloon, of unknown dimensions, with unknown facilities of ventilation, on a certain date, while influenza was in a general way epidemic in the city. It may be freely conceded that epidemics of contagious and infectious disease may be, and have been, so severe and dangerous as to justify the most drastic rules against personal contact of individuals, but there was nothing in the complaint to show that such conditions prevailed in this case, and if they did prevail, the ordinance was not such a rule as to meet the emergency, and it did not support the complaint, which under well-recognized rules must be taken at the minimum of the facts charged.

Physicians Not Required to Report to Defendants

(Tutone v. New York Consolidated R. Co. (N. Y.), 177 N. Y. Supp. 818; Herbert v. Brooklyn Heights R. Co. (N. Y.), 177 N. Y. Supp. 901)

The Kings County, N. Y., court holds in these two personal injury cases that orders for the physical examination of the plaintiffs by physicians were erroneous in requiring that the reports of the physicians should be given to counsel for the defendants. The decisions are by two different justices. In the Herbert case, Justice May says there is nothing in the New York statutes which directs or requires a report to be made by the examining physician. The sole object of the statute in permitting physical examinations is to reduce the likelihood of fraud being practiced to a minimum, by granting the right to the defendant to compel the plaintiff merely to submit to such physical examination at the hands of the physicians, so that testimony thereof may be given on the trial. While it has been customary for physicians so appointed to make a report and deliver it to the defendant, there is no authority apparently in the law therefor. There may be no objection, perhaps, to the disclosure by the physician to the defendant of the results of his examination, but the court has no power to direct him to make such report, and therefore it follows that there can be no direction to deliver a report to the defendant, or to file a report in the office of the county clerk.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

December, 1919, **18**, No. 6

*Early Recognition of Hydrocephalus in Meningitis. K. D. Blackfan, Baltimore.—p. 525.
Stammering as Disorder of Speech Dependent on Conditions of Child Development. E. L. Kenyon, Chicago.—p. 537.
*Rôle of Antineuritic Vitamin in Artificial Feeding of Infants. A. L. Daniels, A. H. Byfield and R. Loughlin, Iowa City.—p. 546.
*Chemical Examination of Blood in Children. H. D. Chapin and V. C. Myers, New York.—p. 555.
Qualitative and Quantitative Changes in Cerebrospinal Fluid of Various Diseases and Their Significance. A. Levinson, Chicago.—p. 568.
*Résumé of Experimental Studies on Cutaneous Hypersensitiveness. E. C. Fleischner, K. F. Meyer and E. B. Shaw, San Francisco. —p. 577.

Hydrocephalus in Meningitis.—Blackfan carried out the phenolsulphonephthalein test in twenty-five cases of meningitis in which hydrocephalus had developed, and had roentgenograms made after the injection of the ventricles with air. Seventeen cases were caused by the meningococcus. Communicating hydrocephalus developed in eight of these cases, and the obstructure form in nine. Ten of the seventeen patients died. Two of the seven patients who recovered had an obstructive hydrocephalus and improvement followed promptly after the introduction of antimeningococcus serum into the ventricles. In four cases in which a communicating hydrocephalus was present, the process became arrested after treatment. The patients made an uneventful recovery. One patient developed a chronic hydrocephalus (communicating). A ventriculogram showed almost complete destruction of the cortex. A necropsy was performed in the ten fatal cases, and the clinical diagnosis was confirmed by demonstration of the exciting cause of the hydrocephalus. In seven cases of obstructive hydrocephalus an exudate occluded the foramina at the base of the brain, and in three cases of communicating hydrocephalus the basal cisternae were totally obliterated by a thick purulent exudate.

Antineuritic Vitamin.—The investigation reported on by Daniels, Byfield and Loughlin indicated that the addition of the antineuritic vitamin obtained from wheat embryo to the diet of babies who are supplied with food furnishing an adequate number of calories stimulated growth. The beneficial influence of adding a specially prepared vegetable soup in sufficient quantity as a part diluent in the milk modifications for infants is apparently due to the presence of the antineuritic vitamin contained therein. Both the alcoholic soluble material of the dried soup vegetables, and the water extract (soup) stimulated growth. The fact that the artificially fed infant requires a larger amount of food than the breast fed infant appears to be due to the relative paucity of diluted cow's milk in the antineuritic vitamin. The authors suggest the probability that failure of infants and young children to gain is often the result of an insufficient amount of the antineuritic vitamin in the food, therefore, the diets of the young should be scrutinized more carefully with this in mind.

Blood Chemistry.—Chemical blood observations were made by Chapin and Myers on 149 children, thirty-eight of whom were nephritics and six diabetics. In general, the results obtained are quite similar to those obtained in the adult, although the kidney of the child would appear to act somewhat more efficiently than in the adult, resulting in slightly lower normal figures for the sugar, urea, creatinin and uric acid, and a slightly better phenolsulphonephthalein output. In harmony with this, nephritis in children does not so quickly result in urea retention as in the adult, making the prognosis more favorable in early than in later life. As might be expected, creatinin retention rarely occurs in children. The authors regard the blood urea as an especially helpful prognostic test in the nephritis occurring in children. The results of phenolsulphonephthalein tests harmonize very well with the clinical findings and the blood urea. The carbon dioxid combining power of the blood is a very reliable method of ascertaining the severity of the acidosis in the diarrheal acidoses. The blood findings of diabetic children do not differ from similar observations in adults.

Cutaneous Hypersensitiveness.—Fleischner and his associates found that bacterial proteins, soluble or insoluble, which sensitize a guinea-pig in an anaphylactic sense will not sensitize its skin.

American Journal of Medical Sciences, Philadelphia

November, 1919, **158**, No. 572

*Recent Advances in Gastric Physiology. W. C. Alvarez, Berkeley, Calif.—p. 609.
*Persistent Eosinophilia with Hyperleukocytosis and Splenomegaly. H. Z. Giffin, Rochester, Minn.—p. 618.
Medical Aspects of Wounds of Chest in War. G. C. Shattuck, Boston.—p. 629.
*Heart in Bronchopneumonia: Activity and Response to Digitalis. T. S. Hart, New York.—p. 649.
*Transfusion of Blood in Pernicious Anemia. J. M. Anders. Philadelphia.—p. 659.
*Hypertension: Its Significance, Relation to Arteriosclerosis and Nephritis and Etiology. E. Moschcowitz, New York.—p. 668.
*Meningo-Encephalitis as Only Manifestation of Mumps: Report of Three Cases. T. Howard, Brooklyn.—p. 685.
*Myxoma of Heart Simulating Bronchopneumonia. W. H. Norton, Mt. Clemens, Mich.—p. 689.
*Bacteriology of Mumps: Report of Findings at Camp Lee. R. L. Haden, Detroit.—p. 698.
Is Essential Epilepsy a Life Reaction Disorder? L. P. Clark, New York.—p. 703.
Blood Transfusion. J. R. Losee, New York.—p. 711.
*Vaccination by Subcutaneous Injection. J. R. Goodall, Montreal. —p. 721.
*Laboratory Studies in Influenza at Camp Travis, Texas. P. B. Matz, U. S. Army.—p. 723.

Recent Advances in Gastric Physiology.—Evidence is presented by Alvarez which suggests strongly that there is a gradient of metabolism underlying and, perhaps, giving rise to the gradients of irritability, latent period and rhythmicity which, it is believed, determine the direction of peristalsis. The metabolic gradient is often found reversed in such animals which are refusing food. There appears also to be a gradient of metabolism in the mucous membrane of the stomach. The lowest values in the whole digestive tract are found in the antrum. It is shown how this may explain the high incidence of cancer in that region and the inability of the tumors to cross over into the duodenum, where there is a very high metabolic rate. An explanation is given for the fact that a sleeve resection gives a better functional result in ulcer of the lesser curvature than a V excision.

Persistent Eosinophilia.—Giffin's patient was a man, 31 years of age. He had a marked splenomegaly, slight enlargement of superficial lymph glands; leukocytosis—21,800 before splenectomy—with an eosinophilia of 73.6 per cent. The spleen was removed. It weighed 2,110 gm. Macroscopic appearance was similar to that of the spleen in myelogenous leukemia. The leukocyte count rose rapidly to 97,200 and later to 211,000; eosinophilia rose from 79 to 90.7 per cent. The patient was in good general condition for a period of four years following splenectomy. Death was due to empyema following pneumonia. At the necropsy, enormous numbers of eosinophilic polymorphonuclears were found in all hemopoietic organs; eosinophilic myelocytes were numerous in lymph glands, spleen and bone marrow. Giffin regards the case as an instance of eosinophilic hyperleukocytosis, the blood picture of which was remarkably altered by splenectomy, and suggests a special function of the spleen with respect to eosinophilic cells or with respect to the toxins which eosinophilic cells are capable of absorbing.

Heart in Bronchopneumonia.—In the cases studied by Hart the routine method adopted was to begin the administration of digitalis as soon as the diagnosis of pneumonia was reasonably sure. There was given of the tincture 25 minims, every four hours, for six doses, which was then reduced to 15 minims, every eight hours, and continued, with modification according to the individual indications, throughout the course of the disease. Patients who developed symptoms of toxemia very rapidly or who were found in this condition on admission, were frequently given from 15 to 30 minims of a digitalis preparation intravenously, and this was repeated every four hours, up to three or four doses, after which time the tincture was usually substituted. For the sake of com-

parison and control a considerable number of cases were from time to time selected at random and treated by methods identical in all respects, except that in these no digitalis was administered. Absolutely no difference in the course of the disease could be observed in the two series, except that the electrocardiograms of those patients receiving digitalis showed the characteristic changes, and in two instances an arrhythmia developed which proved to be due to a condition of partial heart block. The patients to whom digitalis was given ran their course without a change in the pulse rate which could be attributed to the drug. The terminal increase in the heart rate in the fatal cases was identical in both groups. No difference could be noted in the two series in the behavior of the blood pressure. In two cases of chronic cardiovascular disease with auricular fibrillation, the circulatory condition was much improved, the heart became slow and appeared reasonably efficient. Four patients out of several hundred to whom digitalis was given, showed block following digitalis, but recovered and gave no evidence of subsequent ill effects from its administration. In one case block appeared only after the administration of 465 minims of the tincture, in another an almost identical cardiac activity appeared after the administration of 230 minims of the tincture. Other patients in the series received considerably larger amounts of digitalis, and yet showed no evidence of heart block.

Transfusion of Blood in Pernicious Anemia.—Following two injections of 500 c.c. of whole blood (ten months apart), Anders' patient was so much improved in every way that he was able to attend to duties that he had not performed for the past ten years. Anders reviews the literature of 362 cases in which the result was given; in 204, or 56.3 per cent., there was an initiation of remissions. The average number of transfusions per patient was 2.4.

Hypertension Arteriosclerosis and Nephritis.—In many instances, at least, Moschcowitz says the pathologic changes in the kidney of Bright's disease are the results rather than the cause of hypertension. Such a conception would render it very probable that the hypothesis of the primary vascular origin of the lesions in the kidney in Bright's disease is correct. Arteriosclerosis and Bright's disease have therefore the same pathogenesis, the lesion in each being modified by the nature of the organ. The direct etiology of hypertension is unknown. However, a type of person is described, conforming to certain physical and psychic complexes, in whom hypertension is very likely to occur. This type is the antithesis of the child, both in mind and spirit.

Meningo-Encephalitis Due to Mumps.—The three cases reported by Howard are regarded as instances of mumps meningo-encephalitis, in spite of the absence of inflammation of the salivary glands, for the following reasons: 1. They occurred in the presence of a mumps epidemic. 2. Two of the patients had never had mumps, while the third had been told by his father that he had had mumps, but could not remember it himself. 3. They all presented mild symptoms of meningo-encephalitis, which were entirely relieved or much ameliorated by spinal puncture. 4. In two of the three cases there was recovered from the spinal fluid a gram-positive diplococcus. This was found in direct smear and grown in pure culture in both cases. In the third case it was found in smear three times and recovered in culture twice. 5. The spinal fluid in each case presented a moderate pleocytosis, characterized by a predominance of mononuclear cells. The conditions which show this picture are (*a*) syphilis, (*b*) sometimes tuberculous meningitis, (*c*) encephalitis lethargica and (*d*) mumps. As to syphilis, two of the patients were negative serologically and the third, while having a positive Wassermann, repeatedly showed the presence of a gram-positive coccus in the spinal fluid. Tuberculous meningitis is ruled out in all cases by the clinical course. The same is true of lethargic encephalitis, there being no cranial nerve involvement and no palsies of any kind. There was also lacking the increase of tendon jerk almost uniformly present in this disease.

Heart Myxoma Simulating Bronchopneumonia.—Norton describes the clinical and necropsy findings in his case in the hope that eventually a symptom complex for cardiac tumors may be worked out. The left auricle was filled by a tumor mass which was implanted by a broad base on the auricular wall. It was made irregular by polypoid-like growths, bulging the fossa ovalis into the right pulmonary vein, another into the mitral orifice and so completely filling the cavity that it was difficult to pass a small flexible probe between the tumor and auricular wall into the left ventricle.

Bacteriology of Mumps.—Five cases of mumps are reported by Haden in which a gram-positive diplococcus was isolated from the spinal fluid, the blood and a lymph gland. The injection of the organism into the testicle of a rabbit produced a severe orchitis in ten days. These findings confirm previous reports.

Vaccination by Subcutaneous Injection.—A similar article was published in the *Lancet* **2**:285 (Aug. 16) 1919, and abstracted in The Journal, Sept. 20, 1919, p. 942.

Laboratory Studies in Influenza.—The epidemic of influenza at Camp Travis was characterized by the presence of the bacillus of Pfeiffer in 39 per cent. out of a total of 868 throat cultures examined. Blood cultures in the influenza cases were all negative. Blood cultures in the complicating bronchopneumonias gave 11 per cent. positives. The organism recovered was the pneumococcus. The blood picture of the average case of influenza showed a slight leukopenia, with a relative increase of the small mononuclears. When the bronchopneumonia developed there followed a slight increase in the total leukocyte count and an increase of the polymorphonuclears. Chemical examination of the blood showed a retention of urea nitrogen in the pneumonias having no kidney involvement. The retention of urea nitrogen in cases with transient nephritis was no greater. It is Matz' opinion that this retention in the bronchopneumonia under discussion was due to protein injury and distintegration, associated with extensive lung inflammation. Blood chemistry in the empyema cases showed a retention of urea nitrogen. Acidosis was a factor in a large number of the bronchopneumonias.

American Journal of Ophthalmology, Chicago

November, 1919, **2**, No. 11

Macular Hole in Retina. A. B. Middleton, Pontiac, Ill.—p. 779.
Hole at Macula. E. E. Maxey, Boise, Ida.—p. 792.
Disturbance of Vision in Patients Harboring Filarial Tumors. R. P. Luna, Guatemala, C. A.—p. 793.
The Scoop Perimeter. S. J. Beach, Augusta, Me.—p. 796.
Ocular Angioneurotic Edema and Glaucoma. H. Barkan, San Francisco.—p. 800.
Ophthalmologic Paris. C. A. Bahn, New Orleans.—p. 804.
Treatment of Symblepharon and Restoration of Orbital Socket. W. H. Wilder, Chicago.—p. 807.
Visual Disability from Eye Injury and Compensation. S. G. Higgins, Milwaukee.—p. 813.

American Journal of Physiology, Baltimore

November, 1919, **50**, No. 2

Hyperglycemia Provoking Ability of Asphyxial Blood. K. Yamakami, Tohoku, Japan.—p. 177.
*Urea Excretion After Suprarenalectomy. G. Bevier and E. A. Shevky, San Francisco.—p. 191.
Posture-Sense Conduction Paths in Spinal Cord. E. S. May, and J. A. Larson, San Francisco.—p. 204.
Regulation of Blood Diastase. B. Fujimoto, Tokyo, Japan.—p. 208.
Changes in Content of Hemoglobin and Erythrocytes of Blood in Man during Short Exposures to Low Oxygen. H. W. Gregg and E. C. Schneider, Mineola, N. Y.—p. 216.
Circulatory Responses to Low Oxygen Tensions. B. R. Lutz and E. C. Schneider, Mineola, N. Y.—p. 228.
Conduction in Small Intestine. W. C. Alvarez and E. Starkweather, San Francisco.—p. 252.

Urea Excretion After Suprarenalectomy.—It is suggested by Bevier and Shevky that their findings support the hypothesis that an epinephrin-pituitrin balance exists in the blood which may regulate the rate of kidney function, the results obtained after suprarenalectomy exhibiting apituitary effect unopposed by the normal secretion of the suprarenals.

Annals of Surgery, Philadelphia

December, 1919, **70**, No. 6

*Conservative Treatment of Sarcoma of Long Bones. W. B. Coley, New York.—p. 633.
Analysis of Results of Six Years' Follow-Up System in a Hospital Surgical Service. C. L. Gibson, New York.—p. 661.

War Surgery Under Front Line Conditions. E. C. Cutler, Boston.—p. 695.
*Postoperative Suppurative Parotitis. W. H. Fisher, Toledo.—p. 713.
Drainage in Appendicitis. E. T. Rulison, New York.—p. 724.
Ankylosing Operations on Tuberculous Spine. L. W. Ely, San Francisco.—p. 744.
*Experimental Study of Buried Bone. L. W. Ely, San Francisco.—p. 747.
Self-Retaining Slide Bone Graft. H. C. Masland, Philadelphia.—p. 750.
Use of Metallic Fixatures in Securing Bone Fragments. W. L. Bell, Oakland, Calif.—p. 754.
Case of Left Branchial Cyst Opening on Right Side. A. G. Brenizer, Charlotte, N. C.—p. 758.

Treatment of Sarcoma of Long Bones.—This paper consists chiefly of a report of the cases of sarcoma of the long bones that have come under Coley's personal observation during the past five years, with a brief review of cases previously published. The toxin treatment was resorted to in these cases.

Postoperative Suppurative Parotitis.—Fisher claims that septic parotitis is of hematogenous origin, and that cachexia and malnutrition, by lowering resistance, are predisposing factors. The secretion of the gland is under the influence of nerve stimuli, and the incidence of postoperative parotid involvement is neurologically dependent on surgical shock or inhibition of the secretory and trophic fibers from higher psychic centers. The gland must be susceptible to pyogenic micro-organisms, and when affected, bacteriemia exists in all cases. Early incision and drainage are indicated.

Experimental Study of Buried Bone.—The conclusions reached by Ely in former studies are confirmed, but this series indicates, in addition, that the bone and marrow of the buried fragment both die. The marrow is then reformed by blood vessels, pushing in from the surrounding tissues, and a certain amount of new bone is laid down on the old, especially along the margins of the trabeculae. The cartilage usually lives, but slowly becames eroded at its surface, and becomes thinner. Its buttress soon disappears. Raw bone resists absorption better than boiled bone, but it also is slowly absorbed.

Boston Medical and Surgical Journal

Dec. 11, 1919, **181**, No. 24

*Transmission of Influenza. J. P. Leake, Washington, D. C.—p. 675.
Bacteriology of Secondary Pneumonia. H. T. Chickering, New York.—p. 679.
Treatment of Influenzal Pneumonia by Convalescent Human Serum. W. R. Redden, U. S. Navy.—p. 687.
Surgical Treatment of Acute Empyema Following Influenza. W. Whitemore, Boston.—p. 692.

Transmission of Influenza.—The results of all human experiments with the Pfeiffer bacillus, with secretions, with direct exposure, with subcutaneous inoculation of filtered secretions and unfiltered blood, were entirely negative in the work reported on by Leake. Micrococci of the group found by Mathers as very frequent in the respiratory tract of influenza patients were similarly inoculated without result. A sudden outbreak of 215 cases of influenza furnished donors for other experiments which also were negative. Two men, however, developed acute follicular tonsillitis, and a strongly hemolytic streptococcus became the predominating organism in the throat. In one of these patients the symptoms resembled influenza nine hours after onset. Transfer was then made of his secretions to ten more volunteers. In all of these ten, with one exception, the strongly hemolytic streptococcus became the predominating colony, and five of the nine developed acute follicular tonsillitis about two days after inoculation. This other volunteer, five days after inoculation, suddenly began to have a headache, fever, prostration and cough, pains in the back, etc. At first his nasopharyngeal bacterial flora were not much altered but after several days of sickness, Pfeiffer's bacillus began to be the predominant organism. The donor from whom the patient was inoculated apparently had an acute follicular tonsillitis due to the hemolytic streptococcus (beta type) though he had in turn received secretions from true cases of influenza. Another set of ten volunteers received the secretions obtained from an uncomplicated case of influenza four hours after onset. All of these remained well except one, who after thirty-six hours began to have fever, pain in the back and chest, cough, anorexia, etc. The same bacteria were present after as before inoculation, but instead of the hemolytic streptococcus being predominant as at first, its place was taken by the Pfeiffer bacillus, which was second in importance before inoculation. Fifty-four hours after onset, an attempt was made to transfer the infection by means of secretions to the final group of fifteen volunteers, but without success. It appears from these experiments that influenza is transmissible by means of the nose and throat secretions of persons suffering from the disease, with the nose and mouth as portals of entry, but that such transmission is far from a uniform result of such exposure; the first twenty-four hours of the disease were the most favorable for this transmission. The customary measures for prevention are therefore reasonable.

Iowa State Medical Society Journal, Des Moines

Nov. 15, 1919, **9**, No. 11

Reconstruction Problem for Disabled Soldier. J. L. Porter, Chicago.—p. 365.
Blood Transfusion as Employed in an Evacuation Hospital in the Advance Zone, A. E. F. L. E. Shafer, Davenport.—p. 317.
Statistics of Rejections and Their Causes in Recent Draft. C. S. Grant, Iowa City.—p. 375.
Laboratory Service of Divisional Laboratories. L. A. Flitze, U. S. Army.—p. 378.
Work of Red Cross Organizations in Relation to Preventive Medicine of Future. A. Newsholme, London, England.—p. 382.

Journal of Biologic Chemistry, Baltimore

November, 1919, **40**, No. 1

Cephalin. VII. Glycerophosphoric Acid of Cephalin. P. A. Levene, and I. P. Rolf, New York.—p. 1.
Comparative Metabolism of Certain Aromatic Acids. III. Fate of P-Nitrophenylacetic Acid in Organism of Fowl, Dog and Man. C. P. Sherwin and M. Helfand, New York.—p. 17.
*Studies of Blood Regeneration. I. Effect of Hemorrhage on Alkaline Reserve. M. V. Buell, Madison, Wis.—p. 29.
*Id. II. Effect of Hemorrhage on Nitrogen Metabolism. M. V. Buell, Madison, Wis.—p. 63.
Animal Calorimetry. Influence of Lactic Acid on Metabolism. H. V. Atkinson, and G. Lusk, New York.—p. 79.
*Antiscorbutic Value of Banana. H. B. Lewis, Urbana, Ill.—p. 91.
*Determination of Carbon Monoxid in Blood. D. D. Van Slyke and H. A. Salvesen, New York.—p. 103.
Determination of Blood Volume by Carbon Monoxid Method. H. A. Salvesen, New York.—p. 109.
Determination of Catalase in Blood. M. Bodansky, Lakewood, N. J.—p. 127.
Action of Furfurol and Dextrose on Amino-Acids and Protein Hydrolysates. C. T. Dowell and P. Menaul, Stillwater, Okla.—p. 131.
*Heat Coagulation of Milk. H. H. Sommer and E. B. Hart, Madison, Wis.—p. 137.
*Action of Intravenous Injections of Pancreas Emulsions in Experimental Diabetes. I. S. Kleiner, New York.—p. 153.
Crystalline Guanylic Acid. P. A. Leveoe, New York.—p. 171.
A New Sterol: Mycosterol. T. Ikeguchi, Osaka, Japan.—p. 175.
Relative Accuracy of Colorimetric and Titrimetric Procedures for Determining Nitrogen as Ammonia. E. R. Allen and B. S. Davisson, Wooster, Ohio.—p. 183.
*Creatinuria in Infants. I. Relation of Creatinuria to Acidosis. Elimination of Ingested Creatine and Creatinine. J. L. Gamble and S. Goldschmidt, Baltimore.—p. 199.
*Id. II. Relation of Protein Intake to Urinary Creatine. J. L. Gamble and S. Goldschmidt, Baltimore.—p. 215.
Placental Feeding and Purin Metabolism. V. J. Harding and E. G. Young, Montreal, Canada.—p. 227.

Effect of Hemorrhage on Alkaline Reserve.—The blood examined by Buell was obtained without anesthesia from a spurting artery so that it only came in contact with the flask in which it was collected. When the animal remained perfectly quiet throughout the experiment, the drop in alkaline reserve was invariably small. If the animal struggled, the drop in alkaline reserve was much greater, this being noticeable soon after struggling took place. When the animal remained quiet, the maximum drop in alkaline reserve was reached within half an hour after the bleeding was completed. At the end of five hours, and often sooner, the alkaline reserve was near its original value. The total nitrogen content of the blood always fell immediately after hemorrhage. There was a distinct tendency for the urea nitrogen and the nonprotein nitrogen to rise. Although one animal was bled seven times while restricted to a diet of corn and water, the percentage of chlorids in the blood remained constant. On an inadequate diet (corn and water) under conditions of repeated hemorrhage there was a distinct tendency toward regeneration of blood proteins.

Effect of Hemorrhage on Nitrogen Metabolism.—The theory that hemorrhages amounting to 6 c.c. per pound of body weight are not necessarily accompanied by a severe grade of acidosis is supported by Buell's observations.

Antiscorbutic Value of Banana.—The value of the banana as an antiscorbutic in the treatment of experimental scurvy was investigated by Lewis. Guinea-pigs fed on an exclusive diet of bananas were unable to maintain their body weight and died in from twenty to thirty days. Bananas in amounts greater than 25 gm. daily, as supplement to a diet of rolled oats, prevented the onset of scurvy. Such a diet, however, does not protect against scurvy. These experiments suggest that a lower content of the antiscorbutic principle may be sufficient to protect against scurvy if the diet is adequate in its content of the other essential dietary constituents.

Determination of Carbon Monoxid in Blood.—Van Slyke and Salvesen have worked out a gasometric method which permits the determination of the carbon monoxid gasometrically in 2 c.c. of blood in the course of from ten to fifteen minutes. The technic is exactly the same as that previously described by Van Slyke for the determination of oxygen, except that after the gases are extracted the oxygen is absorbed in the apparatus by introducing alkaline pyrogallate solution. The carbon monoxid remains and is measured directly at atmospheric pressure.

Heat Coagulation of Milk.—Sommer and Hart found that the main factor in the heat coagulation of fresh milk is the composition of the milk salts. Apparently, casein requires a definite optimum calcium content for its maximum stability. The calcium content of casein is largely controlled by the magnesium, the citrates and the phosphates present. In fresh milk there is no relation between titratable acidity and heat coagulation. Acid fermentation in milk lowers the coagulating point by changing the reaction and by lowering the citric acid content. However, the titratable acidity of fresh milk samples varies so widely that it is impossible to determine the extent of acid fermentation by titration. Therefore, it is impossible to use the acidity of milk as a criterion of coagulability. Difference in concentration accounts partly for the difference in coagulation of fresh milk samples. Hydrogen ion concentration is not the determining factor in fresh milk coagulation. It is, nevertheless, a factor in fresh milks, and in commercial milks it may become an important factor.

Use of Pancreas Emulsions in Experimental Diabetes.—Diabetic dogs were given intravenous injections of unfiltered water extracts of fresh pancreas, diluted with 0.9 per cent. sodium chlorid solution. The preparation was administered very slowly and usually resulted in a marked decrease in the blood sugar. There was no compensating increase in urinary sugar, but rather a decrease, which may be owing partly to a temporary toxic renal effect. The result is regarded by Kleiner as further evidence for the internal secretion theory of experimental diabetes. The fact that these pancreas emulsions lower blood sugar in experimental diabetes without causing marked toxic effects indicates a possible therapeutic application to human beings, but further study of the problem is necessary.

Creatinuria in Infants.—The subjects of the experiments described by Gamble and Goldschmidt were infants obtained from a well conducted home for foundlings. One of them was a normal infant. The others failed to come up to the specifications for normal infants only in the respect that they were more or less underweight. There was in no instance a history of recent nutritional disturbance, or during the experimental periods, symptoms of malnutrition. They all made moderate or rapid gains in weight on the experimental diets. The diet was in all cases cow's milk. The results obtained show: first, that in the infant small amounts of ingested creatin lead to an increased urinary output; second, there is evidence that in infants the ingested creatin in nearly or completely eliminated during a period of several days. Third, from a comparison with experiments in the literature of the behavior of creatin ingested by adult men with the behavior in the infants studied, the following points are suggested: (*a*) smaller absolute amounts of ingested creatin lead to urinary excretion of creatin in infants than is the case with adult males: (*b*) ingested creatin is more completely excreted by the infant than by the adult male; (*c*) although the comparison presents greater difficulties of demonstration, there is an indication that, per kilogram of body weight, smaller quantities of ingested creatin lead to excretion of creatin in infants than in adult males.

Id.—On the assumption that preformed creatin in milk modifications is in proportion to the quantity of whey present, the results reported by Gamble and Goldschmidt suggest that the ingestion of creatin is probably a large factor in the creatinuria of infants fed on cow's milk.

Journal of General Physiology, Baltimore

Nov. 20, 1919, 2, No. 2

Heliotropism of Onchidium: Problem in Analysis of Animal Conduct. W. J. Crozier and L. B. Arey, Chicago.—p. 107.
Combination of Enzyme and Substrate. I. Method for Quantitative Determination of Pepsin. II. Effect of Hydrogen Ion Concentration. J. H. Northrop, New York.—p. 113.
*Labyrinth and Equilibrium. I. Comparison of Effect of Removal of Otolith Organs and of Semicircular Canals. S. S. Maxwell, Woods Hole.—p. 123.
Studies on Bioluminescence. X. Carbon Dioxid Production During Luminescence of Cypridina Luciferin. E. N. Harvey, Princeton.—p. 133.
Studies on Bioluminescence. XI. Heat Production During Luminescence of Cypridina Luciferin. E. N. Harvey, Cleveland.—p. 137.
Isoelectric Points of Proteins in Certain Vegetable Juices. E. J. Cohn, J. Gross and O. C. Johnson, U. S. Army.—p. 145.
*Iodin and the Thyroid. IV. Quantitative Experiments on Iodin Feeding and Metamorphosis. W. W. Swingle, Princeton.—p. 161.
Influence of Concentration of Electrolytes on Electrification and Rate of Diffusion of Water Through Collodion Membranes. J. Loeb, New York.—p. 173.

Otolith Organs and Semicircular Canals.—The results of experiments have convinced Maxwell that the assumption of a sharp differentiation of function between the otolith bearing vestibular portions of the labyrinth and the semicircular canals is not justified by the facts. Between the effects of extirpation of the one and of the other set of structures there is more resemblance than contrast. They certainly reenforce each other, for the reactions produced by either one alone are always slower and less vigorous than when both sets of organs are intact. It would not, however, be safe to affirm that the functions are identical. In one respect a difference is apparent; namely, in the response to rotation in a horizontal plane. If the ampullae are uninjured, compensatory movements occur when the animal is rotated around its dorsoventral axis. Maxwell has never seen this reaction in the absence of the ampullae of the horizontal canals.

Iodin and the Thyroid.—Swingle holds the view that iodin will eventually take rank along with chlorin, phosphorus and other elements essential to the maintenance of normal metabolism, growth, and development. The almost universal ocurrence of a thyroid mechanism among the vertebrates for the assimilation and utilization of iodin in minute quantities, points to the conclusion that there is a definite iodin metabolism and that it is necessary for normal functioning.

Journal of Laboratory and Clinical Medicine, St. Louis

November, 1919, 5, No. 2

*Studies on Irritable Heart: II. Etiology. L. M. Warfield, Milwaukee, and F. M. Smith, Chicago.—p. 75.
*Id. III. Value of Exercise in Diagnosis and Determination of Fitness of Irritable Heart for Military Service. L. M. Warfield, Milwaukee, and F. M. Smith, Chicago.—p. 81.
*Some Uses of Nonspecific Protein Therapy. W. Boyd, Winnipeg, Canada.—p. 89.
*Incidence of Syphilis Among White and Colored Troops as Indicated by an Analytical Study of Wassermann Results in Over Ten Thousand Tests. W. Levin, Parsons, Kan.—p. 93.
*Tonicity of Sphincter at Duodenal End of Common Bile Duct. F. C. Mann, Rochester, Minn.—p. 107.
Further Studies in Plasmogenesis. A. L. Herrera, Mexico City.—p. 110.
Sex Attraction. V. C. Vaughan, Ann Arbor.—p. 114.
A New Double-Way Syringe for Use in Intravenous Medication, Transfusion and Aspiration. H. O. Ruh, Cleveland.—p. 123.
A Device for Centrifugalization at Low Temperatures. W. H. Welker, Chicago.—p. 124.
A New Method for the Preservation of Specimens. J. S. Platzker, U. S. Army.—p. 126.
A Simple Laboratory Shaker. E. J. Warnick, Cleveland.—p. 128.
Quick Method for Making Small Inner Tubes for Dunham's Fermentation Tubes. E. M. Taylor, Le Mans, France.—p. 128.

Studies on Irritable Heart.—The authors prefer the name "irritable heart" to "effort syndrome." Many diseases and convalescence from many other diseases reveal practically the identical syndrome. However, the cases of true irritable heart have one factor not usually found in other cases showing a similar syndrome, that is history dating back years with no definite cause. The victims at times seem to be born with a constitutional inferiority. The least touch of the throttle races the engine. They seem unable to get into gear and carry the load. Exercise under observation is unquestionably the surest and quickest method of sorting the fit from the unfit. Graded exercise is also valuable in diagnosis between cases of irritable heart and pulmonary tuberculosis.

Nonspecific Protein Therapy.—Boyd has resorted to this form of therapy, using typhoid bacilli, in cases in which there is a chronic intoxication from some focus of infection which cannot be located or removed. The toxins may give rise to arthritis, myositis, neuritis, or iritis, depending on the organ whose resistance is below normal, but if the focus can be attached and the toxins neutralized, benefit will follow. In several cases of toxic iritis, infective arthritis and neuroretinitis, favorable results were obtained.

Incidence of Syphilis Among White and Colored Troops.—Based on the + + reactions alone, Levin found 10.5 per cent. syphilitics among the white and 18.3 per cent. among the colored soldiers. Considering the + reactions in this series also diagnostic, the percentage of syphilitics was 13.08 for the white and 24.1 for the colored soldiers. Estimate is made that the same and probably a higher percentage of syphilitics exists among the white and colored civilians from 21 to 31 years of age.

Sphincter at Duodenal End of Common Bile Duct.—The tone of the sphincter at the duodenal end of the common bile duct was studied by Mann in species of animals possessing a gallbladder and in two species in which the gallbladder is lacking. It was found that the tone of the sphincter under the experimental conditions studied varied considerably in the different animals and various species. In each species possessing a gallbladder, however, the sphincter was usually able to withstand a minimum pressure of from 75 to 100 mm. water. In the species lacking a gallbladder, the sphincter would not withstand pressure, or only pressures of less than 30 mm. water. While anatomic studies have shown that a sphincter is present in each species lacking a gallbladder, the sphincter does not seem to functionate appreciably.

Medical Record, New York

Oct. 11, 1919, **96**, No. 15

Necessity for Application of Differential Air Pressure in Thoracic Operations. W. Meyer, New York.—p. 617.
Outlook of Medical Practice. S. S. Sprigge, London, Eng.—p. 622.
*Vaccine as a Prophylactic Against Influenza, and Local Reaction as a Guide to Immunity. H. Greeley, Blooklyn.—p. 624.
Common Colds and Grippe. L. L. Bulkley, New York.—p. 627.
Commotional Shock Caused by Shell Explosions. A. Leri, Paris, France.—p. 628.

Vaccine as a Prophylactic Against Influenza.—Greeley notes his experience from the use of a vaccine comprising seventeen "strains," or cultures of the influenza bacillus (Pfeiffer's) from as many different cases. A large group of nonimmune children, exposed to the infection in an attack, and no further cases of the disease occurred in the institution.

Minnesota Medicine, St. Paul

December, 1919, **2**, No. 12

Reconstruction in Medical Education. G. D. Head, Minneapolis.—p. 455.
Intracapsular Extraction of Cataracts. W. L. Benedict, Rochester, Minn.—p. 461.
*Treatment of Burns. G. E. McGeary, Brown's Valley.—p. 567.

Treatment of Burns.—The preparation used by McGeary is of a waxy consistency with a melting point of 120 F. The formula is: resorcinol, 10 parts; oil of eucalyptus, 20 parts; olive oil, 50 parts; petrolatum, 250 parts; paraffin, 670 parts. Melt petrolatum and paraffin together. Dissolve the resorcinol in alcohol and add to the petrolatum-paraffin mixture while it is hot, to drive off the alcohol. When cool, add the eucalyptus and olive oil.

Missouri Medical Association Journal, St. Louis

December, 1919, **16**, No. 12

Nerve Suture. F. Reder, St. Louis.—p. 399.
*Physiopathology of Intestinal Obstruction. E. P. Hamilton, Kansas City.—p. 402.
*Influenza in Children in St. Louis. J. Zahorsky, St. Louis.—p. 407.
Influenzal Pneumonia at Barnes Hospital from October, 1918, to March 6, 1919. R. L. Murdock and J. R. Dean, St. Louis.—p. 411.
Roentgenologic Findings in Influenza and Pneumonia. C. E. Gilliland, St. Louis.—p. 413.
Treatment of Hemorrhoids. C. Smith, St. Louis.—p. 417.
Care of Eye, Ear, Nose and Throat in General Practice. J. P. McCann, Warrensburg.—p. 419.
*Round Cell Sarcoma of Arm. J. G. Montgomery, Kansas City.—p. 421.

Intestinal Obstruction.—This paper was abstracted in THE JOURNAL, June 28, 1919, p. 1930.

Treatment of Influenza in Children.—In the treatment of influenza in children, Zahorsky favors sodium benzoate, and, as there is a marked tendency to acidosis, he adds potassium citrate, about 4 grains of each drug per dose every two hours. As a rule, quinin was prescribed in the severe cases and seemed to be of service in lowering the temperature. Intramuscular injections of quinin were used in two cases. For the distressing cough, paregoric or codein were occasionally prescribed. In all children showing considerable prostration camphor was used as a stimulant. It was generally prescribed in the form of spirits of camphor, and from 5 to 15 drops diluted with milk were administed several times a day. In a few cases the neutral camphor in oil was given hypodermically. Coffee and tea also were frequently used as stimulants. In one serious case of pneumonia, the principal stimulant was caffein, given hypodermically. The treatment in these cases was guided by the theory that the child had to produce certain antibodies. For this purpose it needed rest, fresh air, food and light. Zahorsky did not use vaccines.

Round Cell Sarcoma of Arm.—In Montgomery's case several points are emphasized: (1) the sarcoma of the humerus apparently developed after a trauma, and (2) there was also an osteomyelitis of the humerus; (3) a four plus Wassermann was present, but treatment with potassium iodid and mercury had no effect. Therefore, Montgomery concludes that the Wassermann by itself is of no clinical consequence.

New York Medical Journal

Nov. 22, 1919, **110**, No. 21

Treatment of Bladder Growths by Electricity. B. A. Thomas, Philadelphia.—p. 833.
*Ambulatory Treatment of Fracture of Neck of Femur. E. H. Bradford, Boston.—p. 835.
Laryngeal Bouginage. H. L. Lynah, New York.—p. 838.
Duty of the Strong to the Weak Poor. E. Souchon, New Orleans.—p. 844.
Hysteria Simulating Brain Tumor. I. S. Wechsler, New York.—p. 845.
Submucous Resection Operation. M. Lubman, New York.—p. 847.
Case of Acute Pulmonary Abscess. Treated with Artificial Pneumothorax. W. D. Tewksbury, Washington, D. C.—p. 849.
Spasmophilic Child. J. Epstein, New York.—p. 851.
Malarial Splenomegaly in France. C. G. Cumston, Geneva, Switzerland.—p. 853.

Ambulatory Treatment of Fracture of Neck of Femur.—The abduction traction apparatus described by Bradford is a modification of the well known Thomas knee splint. to which is added a traction attachment and also a curved padded rod which gives bearing on the descending ramus of the unaffected side and is bent in such a way as to secure proper abduction. The splint was devised and has been long in use at the Boston Children's Hospital and the Massachusetts Hospital School at Canton as an ambulatory apparatus for the treatment of hip disease. Experiments have shown that as great or greater amount of fixation can be secured by this form of apparatus than by a plaster spica. The apparatus is fitted without difficulty and causes but little discomfort, permitting, if properly shaped, the use of the bedpan without removing the spint. As there are no perineal straps which can be loosened, the apparatus, when applied, is reasonably secure. The apparatus is made with no greater difficulty than the ordinary Thomas knee splint.

With properly applied traction the fragments can be kept in correct position and riding upward is prevented. The results obtained by Bradford in the cases treated with the abduction traction splint lead him to recommend this form of treatment in a large number of cases in this type of injury.

Ohio State Medical Journal, Columbus

Dec. 1, 1919, **15**, No. 12

*Venereal Diseases. H. N. Cole, Cleveland.—p. 738.
*Fractures of Pelvis and Their Complications. C. E. Caldwell, Cincinnati.—p. 798.
Advantages of Ether-Oxygen Anesthesia. A. S. McCormick, Akron.—p. 801.
Importance of Birth and Death Bookkeeping. J. E. Monger, Columbus.—p. 804.
First Stage in Renal, Vesical and Prostatic Surgery. E. H. Harsh, Cleveland.—p. 807.
Insanity; Influence on Society and Methods of Control. E. A. North, Cincinnati.—p. 810.

Venereal Disease.—Some of the points stressed by Cole are: Do not use injections at the beginning of a gonorrhea—rather treat it as an acute inflammation. Plenty of water and rest in bed are of great value in acute gonorrhea. Do not give alkalis. Clinical diagnosis of chancres is not enough. Substantiate them with dark field illuminator or Wassermann tests or both. Do not wait for a secondary eruption. A negative Wassermann on the blood in an old case of syphilis is not sufficient. Examine the spinal fluid also. The patient taking treatment for syphilis should have frequent examination of the urine to ward off nephritis.

Fractures of Pelvis and Their Complications.—In cases of pelvic fracture Caldwell has never found any other methods of fixation necessary than can be obtained with well adjusted sand bags and adhesive plaster strapping. Buck's extension may be used in cases of double vertical fracture with overriding of the fragments.

Pennsylvania Med. Journal, Chicago, and Athens, Pa.

November, 1919, **23**, No. 2

*Community Sanitation as Based on Knowledge of Camp Sanitation. W. G. Turnbull, Cresson.—p. 47.
*Work of Sanitary Engineer in Pennsylvania Department of Health. C. A. Emerson, Jr., Harrisburg.—p. 49.
Physical Findings of Pennsylvania Men in Draft. W. G. Murdock, Harrisburg.—p. 51.
Present Views Concerning Sympathetic Ophthalmia. W. Zentmayer, Philadelphia.—p. 55.
*Pulse Pressure in Traumatic Cerebral Compression. H. M. Armitage, Chester.—p. 58.
Surgical Treatment of Carcinoma of Stomach. H. F. Smith, Harrisburg.—p. 61.
Empyema. J. S. Rodman, Philadelphia.—p. 65.
*Fractures of Pelvis. S. P. Mengel, Wilkes-Barre.—p. 70.

Community Sanitation as Based on Knowledge of Camp Sanitation.—This paper was abstracted in The Journal, Nov. 1, 1919, p. 1387.

Work of Sanitary Engineer in Pennsylvania Department of Health.—This paper was abstracted in The Journal, Nov. 1, 1919, p. 1387.

Pulse Pressure in Traumatic Cerebral Compression.—This paper was abstracted in The Journal, Nov. 1, 1919, p. 1388.

Fractures of Pelvis.—This paper was abstracted in The Journal, Nov. 1, 1919, p. 1388.

Southwest Journal of Medicine and Surgery, El Reno

November, 1919, **27**, No. 11

Surgical Responsibility. J. D. Griffith, Kansas City.—p. 242.

Southwestern Medicine, El Paso, Texas

November, 1919, **3**, No. 11

Foreign Body Injuries to the Eyes; Localization and Removal of Foreign Bodies. A. Martin and W. W. Watkins, Phoenix, Ariz.—p. 1.
Splenomyelogenous Leukemia. B. L. Sweet.—p. 19.

Surgery, Gynecology and Obstetrics, Chicago

December, 1919, **29**, No. 6

*Treatment of Placenta Praevia by Conservative Measures. G. W. Kosmak, New York.—p. 525.
*Study of Frozen Sections of Pelvis; Description of Operation for Pelvic Prolapse. A. B. Spalding, San Francisco.—p. 529.
Ovarian Residue. W. P. Graves, Boston.—p. 537.
Age Distribution and Age Incidence in Five Hundred Cases of Cancer of Uterus. R. Peterson, Ann Arbor.—p. 544.
*Elective Cesarean Section. E. P. Davis, Philadelphia.—p. 554.
Relation of Preventive Medicine to Gynecology. H. P. Newman, San Diego.—p. 557.
*Etiology of Tubal Pregnancy. G. B. Miller, Washington.—p. 560.
*Toxic Effects of Fibroid Tumors of Uterus. R. R. Huggins, Pittsburgh.—p. 561.
Origin of Intrapelvic Treatment of Stump After Supravaginal Hysterectomy for Fibroid Tumor of Uterus; to Whom Belongs the Credit? J. R. Goffe, New York.—p. 567.
*Actinomycosis of Both Ovaries and Fallopian Tubes. M. R. Robinson, New York.—p. 569.
Ruptured Uterus Occurring Twice in Same Patient. E. L. Cornell, Chicago.—p. 574.
Abruptio Placentæ Associated with Spontaneous Rupture of Uterus, Report of Two Cases. L. F. Phaneuf, Boston.—p. 575.
*Temporary Sterilization of Female. A. Turenne, Montevideo, Uruguay.—p. 577.
Torsion of Spermatic Cord; Report of Two Cases and Review of Literature. V. J. O'Connor, Boston.—p. 580.
Ureteral Occlusion: Its Relation to Renal Lesions. H. G. Bugbee, New York.—p. 585.
Congenital Depressions, Sinuses and Cysts Occurring in Sacrococcygeal Region. R. W. McNealy, Chicago.—p. 593.
Secondary Wound Closure. A. G. Brenizer, Charlotte, N. C.—p. 596.
Ambulatory Braces in Treatment of Fractures and Injuries of Lower Extremities. H. R. Conn, U. S. Army.—p. 598.
*Interstitial Transplant of Round Ligaments in Treatment of Selected Cases of Uterine Retroversion. Y. Wardlow, Columbus, Ohio.—p. 603.
Removal of Machine Gun Bullet from Sacral Canal. K. Bulkley, New York, and H. M. Bergamini, M. C., U. S. Army.—p. 606.
Some Aids in Technic of Blood Transfusion by Paraffin Tube Method. T. P. Shupe, Cleveland.—p. 608.
Pre-Operative and Postoperative Treatment to Prevent Recurrence of Stone Following Nephrolithotomy. A. J. Crowell and R. Thompson, Charlotte, N. C.—p. 609.
Chronic Abscess of Prostate Cured by Intra-Urethral Procedures. P. W. Aschner, New York.—p. 610.
Coccygodynia. F. C. Yeomans, New York.—p. 614.

Treatment of Placenta Praevia.—This paper was abstracted in The Journal, July 12, 1919, p. 140.

Operation for Pelvic Prolapse.—This paper was abstracted in The Journal, July 12, 1919, p. 140.

Elective Cesarean Section.—This paper was abstracted in The Journal, July 12, 1919, p. 140.

Etiology of Tubal Pregnancy.—Miller believes in a causal relation between the taking of oxytocics, and, perhaps, the other measures commonly employed in the production of any early abortion, and tubal pregnancy.

Toxic Effects of Fibroid Tumors of Uterus.—This paper was abstracted in The Journal, July 12, 1919, p. 140.

Actinomycosis of Both Ovaries.—Robinson cites a case in which an operation was followed by recovery, and presents a tabulation of all the cases of actinomycosis of the female genitalia recorded in the literature.

Temporary Sterilization of Female.—Turenne sutures the fimbriated end of the tube into a pocket made in the broad ligament. With this technic, he says, one can be certain of being able later to do a salpyngostomy with ease and to adjust the opening to the ovary as in the classic salpyngo-ovaropexy.

Interstitial Transplantation of Round Ligaments.—Wardlow describes his method of operation by which the round ligaments are transplanted into the anterior wall of the fundus of the uterus.

U. S. Naval Medical Bulletin, Washington, D. C.

Supplement for the Hospital Corps

October, 1919, No. 11

Immunity. R. H. Laning, U. S. Navy.—p. 7.
In Santo Domingo with U. S. Marines. L. C. Haspel, U. S. Navy.—p. 12.
Molecules, Ions, Atoms, Electrons. C. W. Cuno, Yankton College, S. D.—p. 35.
Naval Hospital Corpsmen in Action with Marines. J. T. Boone, U. S. Navy.—p. 41.
Instruction of Hospital Corps Aboard Ship. W. S. Pugh, U. S. Navy.—p. 59.
Roentgen-Ray Tube; Its Construction and Operation. C. E. Snider, U. S. Navy.—p. 67.
Impressions of Course of Special Instruction at School for Naval Pharmacists, Hampton Roads, Va. N. L. Saunders, U. S. Navy.—p. 70.
Sanitary Garbage System. H. W. Elliott, U. S. Navy.—p. 73.
Sick Bay de Luxe. A. J. Heuschling, U. S. Navy.—p. 74.
Naval Medical Exhibit—Meeting of the American Medical Association, Atlantic City, June 9-13, 1919. J. T. Cassady, U. S. Naval Reserve Force.—p. 77.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

Nov. 29, 1919 ,2, No. 3074

Preventive Treatment in Influenza. T. Horder.—p. 695.
Normal and Morbid Conditions of Testes from Birth to Old Age in One Hundred Asylum and Hospital Cases. F. W. Mott.—p. 698. To be cont'd.
*Surgical Treatment of Facial Paralysis. G. Fenwick.—p. 700.
Obstetrics: Past Preseot and Future. A. Stookes.—p. 701.
*Experiments on Destruction of Lice and Nits. A. Bacot and G. Talbot. —p. 703.
*Radium in Treatment of Tuberculous Adenitis. E. S. Molyneux.—p. 704.
Fatal Cerebral Hemorrhage at Thirty-Four Years of Age. A. B. Fearnley.—p. 706.

Surgical Treatment of Facial Paralysis.—Fenwick reports a case in which one slip of temporal muscle was inserted into the orbicularis palpebrarum and another slip was inserted into the orbicularis oris to restore lost motion to the eyelid and the lip in these cases.

Destruction of Lice and Nits.—The experiments recorded by Bacot and others, in which sodium chlorid, compound solution of cresol, cresol and kerosene were used, showed that the degree of temperature is the important thing in the delousing process, not the chemical.

Radium in Treatment of Tuberculous Adenitis.—Molyneux is convinced that radium is, if properly used, a safe and certain cure, whether for an early or an advanced case of tuberculous glands. He treated between twenty and thirty cases of every grade with radium. In every case the swellings and even old sinuses faded away. Unless there were already sinuses present, no scars were left. The skin in some instances was a little red for a few weeks from the action of the radium, but this always disappeared. In no case was any ulceration caused.

Japan Medical World, Tokyo

Nov. 9, 1919, No. 308

Migration of Sewing Needles in Human Body. R. Miyata.
Cytologic Study on Internal Secretion of Human Placenta and Decidua. G. Fujimura.
Phosphorus in Urine of Rabbit Treated with Toxins Acting Against Brain Tissues. S. Tsuchiya.
*Injection of Oxygen Under Skin. Y. Ozaki.

Injection of Oxygen Under Skin.—In cases in which oxygen is needed, Ozaki injects from 200 to 500 c.c. subcutaneously in the intrascapular region or the inner side of thighs.

Journal of State Medicine, London

November, 1919, 27, No. 11

General Principles of Housing and Town Planning in Relation to Health. E. W. Hope.—p. 321.
Housing Problems in Rural Districts. W. G. Savage.—p. 327.
Tuberculosis Problem Under After-War Conditions with Reference to Canada. W. M. Hart.—p. 336.

Journal of Tropical Medicine and Hygiene, London

Nov. 15, 1919, 22, No. 22

*Simple Method of Mounting and Preserving Insects, Etc. A. Moore. —p. 205.

Simple Method of Mounting and Preserving Insects.—Moore describes a method by means of which each insect is enclosed in a separate, flat, transparent chamber, hermetically sealed, so that destructive agents of all kinds are excluded from gaining entrance and the specimen itself is prevented, as far as possible, from giving off its natural moisture and thus becoming completely shriveled up.

Kitasato Archives of Experimental Medicine, Tokyo

October, 1919, 3, No. 2

*Leukocytogregarine of Wild Rat; Special Reference to Its Life History. S. Kusama, K. Kasai and R. Kobayashi.—p. 103.
*Bruck's Reaction and Its Comparison with Wassermann's Reaction. M. Terada.—p. 123.
Rat-Bite Fever Spirochete, with a Comparative Study of Human, Wild Rat and Field Vole Strains. S. Kusama, R. Kobayashi and K. Kasai.—p. 131.
*Experimental Immunologic Tests of Anti-Influenza Serum. S. Umeno, Y. Watanabe and T. Sato.—p. 151.
Experimental Study on Life-History of Sparganum Mansoni Cobbold. T. Okumura.—p. 191.

Leukocytogregarine of Wild Rat.—The parasite described by the authors is believed to be similar to *Leukocytozoon muris*, Balfour, *L. ratti, adie*, etc., and possesses many resemblances to *Hepatozoon perniciosum*, Miller. Numerous well made illustrations and a very comprehensive bibliography form a part of this article.

Comparative Value of Bruck and Wassermann Reactions.—One hundred and fifty serums of syphilitic and nonsyphilitic patients, whose cases were clinically diagnosed, were used by Terada in his investigations. Both reactions corresponded in 77.3 per cent. of the cases. In the primary stage of syphilis, Wassermann's reaction was positive in 75 per cent. of the cases; Bruck's reaction was positive in 50 per cent. In the secondary stage of syphilis, the Wassermann was positive in 88 per cent. and the Bruck in 85.5 per cent. of the cases. In the tertiary stage the Wassermann was positive in 86.6 per cent. of the cases, and the Bruck in 80 per cent. of the cases. In cases in which the presence of syphilis was very doubtful, Wassermann's reaction was positive in 39.5 per cent. and Bruck's reaction was positive in 40.1 per cent. In nonsyphilitic cases the former was positive in 12.5 per cent. and the latter in 25 per cent. Bruck's reaction always showed a smaller positive percentage than Wassermann's in each stage of syphilis, while Bruck's reaction always indicated a higher positive percentage than Wassermann's in nonsyphilitic cases. Wassermann's reaction was negative in all cases which had been submitted to arsphenamin injections several times, while Bruck's reaction was positive in two cases among eight. When Bruck's reaction was intensively positive, Wassermann's reaction was strongly positive in many cases, but not always. Owing to the simplicity of the technic and the ease with which Bruck's test can be made, Terada recommends this reaction as an aid in the diagnosis of syphilis when a complicated method, such as Wassermann's cannot be used. However, the decision of a serious question, such as the diagnosis of syphilis, should never depend on Bruck's reaction alone.

Experimental Immunologic Tests of Anti-Influenza Serum.—Influenza immune horse serum was tested by the authors as to its immunologic properties and found to contain certain immune bodies which normal horse serum does not contain. Influenza immune horse serum possesses chiefly antitoxic instead of antibacterial properties. The supernatant fluid of a blood broth culture of influenza bacilli contains soluble toxin, which causes immediate death in experimental animals, while the precipitated bacillary bodies contain the endotoxin which causes hemorrhagic inflammation. Influenza immune horse serum has an antitoxic power against soluble toxin, and very likely also against bacillary toxin. Remarkably satisfactory results have been obtained by the practical application of the serum during the recent influenza epidemic.

Lancet, London

Nov. 29, 1919, 2, No. 5022

*Physical Defects Among General Male Population Based on Ten Thousand Recruit Examinations. J. D. Comrie.—p. 957.
Treatment of Antral Suppuration. S. Hastings.—p. 960.
Ophthalmic Physicians and Advancement of Ophthalmology. B. D. Batten.—p. 962.
*Value of Complement Fixation Test in Gonococcal Infections. H. B. F. Dixon.—p. 964.
*Late Complications of Gunshot Wounds of Chest. J. B. McDougall. —p. 968.
*Influenza Epidemic. M. H. Smith and M. J. Saunders.—p. 975.
Myalgic Pains. J. M. Taylor.—p. 976.
*Modified Operation for Scrotal Varicocele. S. H. Meaker.—p. 973.

Physical Defects Among Male Population.—Comrie's observations would seem to indicate that physical defects worthy of note are present in four fifths of the adult male population. Many of these develop after the age of 18 years; thus three men out of four are fit for general military service at the age of 18, but only two out of four at the age of 23. Many of the defects are preventable or curable—for example, defective teeth, in 20 per cent., varicose veins in 5 per cent.,

hernia in more than 3 per cent., deformities of limbs in 7 per cent., skin diseases in 3 per cent.

Complement Fixation Test in Gonorrhea.—Eight hundred and forty tests were made by Dixon and Priestley on 625 persons sent from both gonorrhea and syphilis wards. Of 53 strong positives, 90.4 per cent. agreed clinically or in history; of 66 moderate positives, 86.3 per cent. agreed clinically or in history; of 75 weak positives, 72.0 per cent. agreed clinically or in history; of 90 doubtfuls, 58.9 per cent. agreed clinically or in history; of 341 negatives, 26.1 per cent. agreed clinically or in history. Twenty-six and one-tenth per cent. of the negatives were cases of gonorrhea or with a history of gonorrhea. Only one case of known gonorrhea remained negative on second test. The authors emphasize that in diagnosis a positive result is strongly indicative of active gonococcal infection. A single negative is of no value, but a second negative in two to three weeks is strong presumptive evidence of absence of infection. Patients doing well show a positive reaction by the ninth or tenth week, which soon begins to fall, such fall coinciding with clinical improvement. Cases in which a strong positive reaction is maintained over several weeks still have an active focus. The administration of detoxicated vaccine in doses of 1,000 millions or more produces an artificial power of fixing complement, which, however, does not necessarily mean any improvement in the patient's condition. In such cases, the complement fixation test is of no value. The complement fixation test should prove of the greatest value in the diagnosis of obscure pelvic diseases in women, so often the result of gonorrhea.

Gunshot Wounds of Chest.—McDougall's experience differs in no way from that of others who have found that the number of persons developing evidences of tuberculosis after chest wounds is exceedingly small. Out of a total number of 1,782 cases of old chest wounds collected from the literature, definite signs of tuberculosis supervened in five, that is, 0.28 per cent.

Treatment of Influenza.—The medical officers at Portland prison treated all the influenza patients with sodium salicylate, ipecac and aromatic spirits of ammonia during the pyrexial stage and tonics during convalescence. Complications were treated as they arose.

Modified Operation for Scrotal Varicocele.—On the basis that the removal of veins is never necessary for the relief of physical symptoms provided the testicle be adequately suspended, Meaker restricts his efforts almost wholly to suspending and supporting the testis. This is accomplished by shortening or reefing the cremaster so that the top of the testicle is brought to the level of the root of the penis. This is accomplished by eight interrupted sutures of fine catgut, and making no attempt to bring the ligated ends together. The next step is the shortening of the cremaster.

Medical Journal of Australia, Sydney

Nov. 1, 1919, **2**, No. 18

After-Effects of Gas Poisoning, with Special Reference to Lung Lesions. S. O. Cowen.—p. 369.
Pulmonary Fibrosis After Gassing. Roentgen-Ray Findings. C. E. Dennis.—p. 372.
*Case of Lymphosarcoma of Both Suprarenals. G. H. Burnell.—p. 373.
Amyotonia Congenita. E. W. Fairfax.—p. 374.
Case of Raynaud's Disease. E. W. Fairfax.—p. 375.
Chronic Ulcers of Stomach and Duodenum. J. Morton.—p. 375.

Case of Lymphosarcoma of Both Suprarenals.—Aside from the fact that both suprarenals were the seat of a tumor, the point of special interest in Burnell's case was the fact that clinically it resembled a case of intussusception, and the patient was operated on for this supposed condition. The tumors were discovered at the necropsy.

National Medical Journal of China, Shanghai

September, 1919, **5**, No. 3

Spindle Cell Sarcoma of Arm. J. W. H. Chun, Harbin.—p. 146.
Treatment of Influenza. K. Gronstedt, Stockholm.—p. 153.
Medical Ethics. F. Clark.—p. 156.
Prevention of Bubonic Plague. S. M. Woo.—p. 161.
Temple of Medicine in Peking. W. Lien-Teh.—p. 168.
Photo of a Chinese Mummy in Mongolia. W. Lien-Teh.—p. 171.

Archives Médicales Belges, Brussels

July, 1919, **72**, No. 7

*Cyclopean Microphthalmos. G. Van Duyse.—p. 1. Conc'n.
*Cervical Ribs. M. Dubois.—p. 40.
*Treatment of Ulcerating Cicatrix. Derache.—p. 60.
*Testicle Implantation. J. Voncken.—p. 64.

Cyclopean Microphthalmos.—See summary of Van Duyse's article on page 1963 of the last volume.

Cervical Ribs.—Dubois reports three cases, but the disturbances from the supernumerary ribs were not pronounced enough to warrant operative interference. Two of the patients were men of 39 and 60, with pains and impotence in one arm. They had been noted for six months in one case and twenty years in the older man. He was a pianist and could not play for more than half an hour at a time. There was a pair of cervical ribs in this case. The third patient was a woman of 29, and a pair of cervical ribs had induced the complete Claude Bernard-Horner syndrome. The condition was found unaltered when reexamined six years later. The diagnosis of cervical ribs is generally made only by exclusion but roentgenoscopy confirms it. Pains, atrophy, circulatory disturbances and paresthesias should suggest a supernumerary rib, especially when the smaller muscles of the hand are affected; or there may be symptoms suggesting paralysis of the cervical sympathetic. He reviews the literature on operative intervention.

Ulcerating Cicatrix.—Derache describes his success in curing chronic suppuration when a war wound has ulcerated after apparent healing. In seven cases he made incisions around the cicatrix, in sound tissue, cutting down through the subcutaneous layers, and sometimes making a double row of these circumferential incisions. This technic has proved its usefulness for old varicose ulcers.

Testicle Implantation.—Voncken reviews what has been accomplished in this line, citing Lydston's work and Steinach's experimental research, the clinical case reported by Steinach and Lichtenstern, and Rohleder's experimental and clinical experiences with treatment of homosexual perversion. He then describes Voronoff's "painstaking experimental research carried on for more than a year at the Collège de France. He studied on sheep and goats the influence of transplantation of testicle tissue. He found it easy to follow by the external manifestations the changes in the functioning of the internal secretion of the testicles." Castration of a young goat arrested the development of the horns. He conducted three series of experiments: In the first series, testicle implantation in the young castrated animals restored in a short time their normal vigor. The growth of the horns, arrested by the castration, began anew as soon as the implant had grown into intimate connection with the adjacent tissues. In his second scries of experiments implantation of testicle tissue in females transformed their character: Gravid goats were delivered normally, but they exhibited marked repulsion for suckling their young and other maternal cares. The testicle implant seemed to stifle all the instincts of maternal affection. In his third set of experiments, he implanted the testicle tissue in rams and goats 14 to 15 years old. This age in these animals corresponds to the human age of 65 to 70. The senile animals, with sluggish reactions, underwent a radical transformation within periods ranging from a few days to three weeks after the implantation of the testicle graft. Voncken emphasizes that the photographs which Voronoff exhibited with his report at the recent Congrès de chirurgie at Paris testified most significantly to the truth of his statements. One of the goat bucks impregnated a female.

"Counter experiences were equally significant," he adds, "removal of the graft reducing the animal to his former senile condition. A new implantation restored anew *les avantages de la jeunesse.* In view of such an ensemble of facts," Voncken comments, "can one doubt further the preponderant influence of the internal secretions of the testicle on senile phenomena?" He adds that Voronoff's histologic study of the grafts showed that the vessels growing into the graft do not reach the center in time to perpetuate its vitality. The center dies and is resorbed; only the periphery

retains its vitality. Hence small grafts take better than large ones. He only succeeded in keeping two alive out of thirty whole testicles implanted, while the partial grafts were constantly successful. A number of small grafts can be implanted under the skin in any part of the body, or in the peritoneal cavity, or under the vaginalis in the scrotum. He found this latter technic the most reliable. Voncken adds that Lydston's experience has given a practical confirmation of the experimental results thus realized in the laboratory. "Organotherapy is invading more and more the different chapters of pathology, and this surgical opotherapy seems to augur a fruitful future which is only the natural sequence of the marvelous results already realized with transfusion of blood." He suggests the possibility that grafts of thyroid tissue might be used in treatment of cretinism. "With any endocrine insufficiency, some harmless surgical intervention might definitely restore the organic balance." (Voronoff's report of improvement in a case of myxedema after implantation of monkey thyroid tissue was summarized in THE JOURNAL, Aug. 29, 1914, p. 810.)

Archives Mens. d'Obstétrique et de Gynécologie, Paris

August, 1919, **8**, No. 8

The Hemostatic Apparatus of the Human Uterus.—This issue of the *Archives* is accompanied with a set of nineteen fine plates which were omitted by mistake from Keiffer's article on this subject in the issue for June, 1919.

*Hysterectomy with Suppurating Adnexa. J. L. Faure and L. Bégouin.—p. 417.
System for Care of Prospective and Nursing Mothers at the Creusot Factories. M. Bourret.—p. 448.
*Roentgen Treatment of Uterine Fibroma. Béclère.—p. 453.

Hysterectomy with Suppurating Adnexa.—Faure and Bégouin say that each surgeon has his own method, but these methods often conflict with the laws which fifteen years of experience have impressed on them. With virulent lesions, the pelvis scattered with pus pockets, the patient feverish, vaginal hysterectomy may work a miracle when abdominal hysterectomy would be too risky. Under other conditions, abdominal hysterectomy is called for whenever there is bilateral adnexitis rebellious to medical measures, becoming chronic, and causing pain and other disturbances. Even when direct inspection fails to reveal any lesions in tube or ovary on one side, if they are painful, they should be removed with their suppurating mates, unless the patient prefers to take the chance of a second operation later. In the majority of cases, the cervix is not diseased enough to warrant its removal. Leaving the cervix simplifies the hysterectomy materially. The adhesions that form around the suppurating adnexa are high up in the pelvis, and the depths of the pouch of Douglas are generally free, so that planes of cleavage there allow the easiest means of working the adnexa loose. They can also be readily detached from the broad ligament in front of them. The adnexa should thus be attacked from below upward, from the front backward, and from within outward. This not only facilitates detaching the adnexa but there is less danger of injuring the ureters. Section of the cervix is the key to the whole procedure, as this is the lower pole of the fused uterus-adnexa mass. Hemisection of the uterus may be advisable besides, in difficult cases. They give six illustrations showing the various methods to meet varying conditions.

Roentgen Treatment of Uterine Fibromas.—Béclère concludes from his 400 cases of roentgen-treated uterine fibromas that, aside from certain conditions which imperiously demand surgical intervention, roentgen therapy is applicable to all fibromas of the uterus, without restrictions of any kind. His experience has demonstrated that radiotherapy arrests the development and induces more or less complete retrogression before 40 as well as after 40, with large as well as with small fibromas, and in women with normal menstruation as well as with excessive uterine hemorrhages. He gives weekly exposures with moderate doses. The rays are applied in turn from the right and left of the median line, just above the horizontal ramus of the pubis. If the tumor is very large, more fields may be exposed. Each exposure is limited to a circular surface 10 cm. in diameter, through a leaded glass cylinder, resting on a thin disk of wood. The rays are filtered through 5 mm. aluminum; the dose for each field is 3 H. units. In 60 per cent. of the cases from 12 to 14 weekly exposures were required; in only six cases from 31 to 50. In the more favorable cases the upper pole of the fibroma shrinks down nearer the pubis by 1 cm. a week. This shrinking in size is usually apparent by the third and sometimes by the second exposure.

Bulletin Médical, Paris

Nov. 22, 1919, **33**, No. 52

*Vaccine Therapy of Meningitis. H. Méry and L. Girard.—p. 691.

Vaccine Therapy of Meningitis.—Méry and Girard report a case of recovery from severe and protracted meningitis with septicemia, otitis of the internal ear and intolerance for the antiserum. They ascribe their success to an autogenous vaccine, all other treatment suspended. They say that this case teaches the wisdom of combining the antiserum with vaccine therapy in all cases of meningitis from the start.

Bulletins de la Société Médicale des Hôpitaux, Paris

Oct. 31, 1919, **43**, No. 30

The Sphygmotensiophone for Auscultation of Blood Pressure. C. Vaquez and H. Laubry.—p. 899.
*The Skull in Paget's Disease. P. Marie and A. Léri.—p. 901.
*Syringomyelia with Paget's Disease. Idem.—p. 904.
*Hippocratic Fingers. F. Regnault.—p. 907.
*Local Serotherapy of Gonococcus Rheumatism. R. Debré and J. Paraf.—p. 908.
*Case of Gonococcus Polyarthritis. H. Dufour, and others.—p. 918.
Atypical Spirochete Jaundice. M. Villaret and others.—p. 920.

Paget's Osteitis.—Marie and Léri describe peculiar anomalies found in the skull in persons who have had Paget's disease.

The same writers report further the unexpected discovery of extensive syringomyelia at necropsy in a case of Paget's disease. They theorize to explain this by mechanical factors.

Hippocratic Fingers.—The nails had grown to assume this type during the months an arteriovenous aneurysm had been forming in the upper arm.

Serotherapy of Gonococcus Arthritis.—Debré and Paraf say that the experiences with local serotherapy in meningitis encourage similar local measures in gonococcus arthritis. They found that intra-ocular injection of anti-gonococcus serum promptly cured the lesions induced by direct injection of gonococci into the anterior chamber of the rabbit eye. The account of their experimental anti-gonococcus serotherapy is soon to appear in the *Annales de l'Institut Pasteur*. The results were so encouraging that they injected the antiserum in 15 patients with different forms of recent gonococcus rheumatism. These cases are described in detail; in all the joint disease was severe, and without the local serotherapy would have probably terminated in ankylosis after weeks of fever and pains. In 6 cases the cure was complete in less than eight days; in 8 others before the fifteenth day. In all these 14 the joint functioning was normal. In one case no benefit was derived. The woman was pregnant and in bad general condition.

They punctured the joint and injected the antiserum in place of the evacuated effusion, repeating this every day or second or third day, applying afterward a compressing dressing. In 6 of the cases several joints were affected, and they were all injected with the antiserum at the same time. This local serotherapy has to be supplemented with intramuscular or intravenous injections of the antiserum for the general effect and to ward off involvement of other joints. This local serotherapy is limited to the larger joints, as it is practically impossible to inject the antiserum into a small articulation. They say they have never seen anything to indicate that there are special strains of gonococci.

Differentiation of Gonococcus Arthritis.—Dufour remarks that when it is difficult to tell gonococcus polyarthritis from acute articular rheumatism, pressure on the intra-articular ends of the bones will decide the question. This causes pain with gonococcus lesions, but not in acute rheumatism. In

three recent cases roentgenograms showed definite changes in the bones, which explained the pain. The multiple arthritis in these cases had developed five and ten days after the first symptoms of gonorrhea or after supposed recovery from gonorrhea. All three recovered completely. The roentgen findings in two cases of acute articular rheumatism failed to reveal any similar changes in the bones.

Journal de Médecine de Bordeaux

Nov. 10, 1919, **90**, No. 21

*Dissociation of Pain. A. Le Dantec.—p. 451.

Dissociation of Pain.—Le Dantec's study of the electric sensibility of the normal skin and of the pain in war wounds has revealed an unsuspected dissociation of sensations. The different forms of the electric current elicit different sensory responses, as he explains in detail. This, he says, gives a basis for treatment of pain. The article is concluded in the following issue.

Paris Médical

Nov. 8, 1919, **9**, No. 45

*Early Reparative Surgery. P. Descomps.—p. 369.
*Diagnosis of Aortitis. A. Mougeot and Pacaud.—p. 374.
*Clinical Signs of Typhus. A. Porot.—p. 380.

Early Reparative Surgery.—Descomps reports 91 per cent. successes in 451 cases of war wounds treated by primary suture, but he explains how impossible this is as a rule in the wounds of peace times. It is rare that surgical intervention is practicable at once. Retarded primary reunion is therefore the practitioner's reliance for early reparative surgery. This is the more necessary as the prudent physician would prefer to wait for the clinical and bacteriologic findings after excision. Two or three days' delay will permit this, so that retarded primary suture is destined to be the method of choice or necessity. It is now a regular classic method, and every one should be familiar with its indications and technic. He warns to be prodigal in cutting out crushed tissues but to be stingy in débridement. After excision, he cleans the focus with ether; whenever the wound allows he gives it a prolonged bath of ether, repeating this several times, allowing the ether to evaporate each time.

Differential Diagnosis of Aortitis.—Mougeot and Pacaud declare that the actual topography of the descending portion of the thoracic aorta differs from the recently published descriptions in several respects. They give some roentgenograms and arguments to correct the discrepancies.

Typhus.—Porot reiterates that of all infections, typhus seems to be the one with the greatest affinity for the nervous system. The clinical picture is that of an eruptive fever with toxi-infection, striking predominantly the nervous system as the cerebrospinal fluid testifies.

Nov. 22, 1919, **9**, No. 47

*Orfila and the Toxicology of Arsenic. Balthazard.—p. 401.
*Postoperative Colic Pains. A. Schwartz.—p. 411.

A Pioneer in Toxicology.—Balthazard gives a historical sketch of the first incumbent of the chair of legal medicine in the Paris medical school, Orfila (of Spanish birth), and a celebrated poisoning case in which he had to invent tests and methods to detect the arsenic in the tissues, and thus laid the foundations for modern toxicology.

Postoperative Colic Pains.—Schwartz has been delighted with his success in warding off and curing postoperative colic pains by applying a bag of ice to the abdomen. He has the ice bag large enough to cover the entire abdomen, and keeps ice in it all the time. The cold seems to prevent the spasms almost inevitable otherwise, while it does not check peristalsis, and the gases escape. He keeps it on generally for about twenty-four hours, applying it first the day after the operation, after the close of the phase of the "absolute silence" of the first few hours.

Presse Médicale, Paris

Nov. 8, 1919, **27**, No. 66

*History of Grafts in Man and Animals. Mauclaire.—p. 661.
*Epilepsy a Coma, not a Convulsion. P. Hartenberg.—p. 664.

Grafts of Tissues.—Mauclaire reviews the history of tissue grafts from the description of rhinoplastics in the Vedas down to Tagliacozzi of Bologna in 1580, who reconstructed the nose from a pedunculated flap from the arm, and others' experiences, bringing his long list down to date. His analysis shows that the question of grafts is still quite complex and is not so simple as it might appear. The surgeon has to be guided by the biologist and not by mere empiricism. Grafts heal in place better when the tissue is taken from consanguineous subjects. Just as in transfusion of blood the blood of donor and recipient should be of the same class, it might be well to select consanguineous homografts. The future of grafting operations opens wonderful vistas, thanks to this symbiosis between the biologist and the surgeon. But, he adds, we must advance only by solidly established facts, and not take our wishes for realities, but wait patiently but hopefully for progress and results.

Epilepsy.—Hartenberg entitles his communication "A New Conception of Epilepsy," as he insists that the main features of the epileptic seizure are not the phenomena of excitation but those resulting from the arrest of the functioning of the brain. This inhibition of the cortical centers dominates the clinical picture, and not the convulsion, as he explains in detail. Experimental research has shown that any sudden inhibition of brain functioning causes unconsciousness first and then muscular movements. All the data exclude spasmophilia as responsible for epilepsy, while they all fit perfectly into the assumption of inhibition of cerebral functioning, with its secondary inevitable muscular play of movements. Sleep arrests the activity of the brain and favors inhibition, and thus explains the frequent predominance of the severer seizures at night. Strychnin tones up the neurons and six epileptics who are taking strychnin have had their seizures remarkably attenuated, some having had no return for one to three months of their weekly seizures. If the seizures were due to primary excitation of the motor centers, as generally assumed, strychnin would increase and aggravate the seizures. But the exact reverse was realized. Unfortunately, he adds, this effect does not last long; the system becomes accustomed to the strychnin and it ceases to influence the seizures. Epilepsy he defines as a paroxysmal abolition of the higher functions of the brain. Not the convulsion but the coma is its essential element.

Nov. 12, 1919, **27**, No. 67

Importance of Concussion in the Prognosis of Traumatism of the Skull. P. Lecène and H. Bouttier.—p. 673.
Iodoform Injections in Treatment of Chancrellous Bubo. Hudelo and Rabut.—p. 676.

Nov. 15, 1919, **27**, No. 68

*Surgery of the Large Intestine. J. Okinczyc.—p. 681.
*Differentiation of Disease in Stomach and Liver. G. Leven.—p. 684.
*Treatment of Blackwater Fever. Houssiau.—p. 685.

Fixation of Cecum and Colon.—Okinczyc's study of cecopexy and colopexy is accompanied by fourteen illustrations of the preferable technics.

Differentiation of Disease in Stomach and Liver.—Leven comments on the intimate connection between the biliary passages and gallbladder and the region of the pylorus and duodenum, and the close reflex connection between the biliary and the gastric regions. Disease in one is liable to hide under the mask of the other, but differentiation is possible by a course of treatment which will soothe the pains, relax the spasms and abolish the reflexes, and thus leave nothing but the organic lesions if there are such, and enable them to be correctly located. He describes this "therapeutic test" in detail. Absolute repose for body and mind is indispensable, bedrest the first week, dieting, and sodium bromid in the middle of two meals for five days, and then supplemented with bismuth every two hours for twenty days. Moist heat should be applied to the abdomen while in bed, and for five or six hours daily after getting up. The whole course is thus the systematic elimination of everything functional and reflex, and in two, three, or four weeks the previously baffling diagnosis is clear.

Blackwater Fever.—Houssiau noted two distinct types of this disease in his twenty cases. In the hemoglobinuria

developing in the course of very severe malaria, treatment must aim to attenuate the malaria, and quinin must be pushed. With this form there are vomiting, chills, high fever, scanty and pink urine, pulse regular but fast, and heart sounds normal. The other type develops in the course of chronic malaria, from some secondary cause. The urine is black and abundant at first, the pulse and heart sounds weak, and treatment must aim to sustain the heart as the main thing. In both forms, death may occur from anuria. Drugs should not be given by the mouth with anuria. Massive injections of camphorated oil, large enemas, and hot packs are useful. The prognosis is grave but not inevitably fatal. Recovery occurred in one of his cases after fifty hours of anuria.

Nov. 19, 1919, **27**, No. 69

*Phenomena of the Type of Anaphylaxis in the Pathogenesis of Epileptic Seizures. P. Pagniez and P. Lieutaud.—p. 693.
*Why Tuberculosis is so Prevalent. F. Mouisset.—p. 694.
*Paradental Cysts. P. Jacques.—p. 696.

Nov. 22, 1919, **27**, No. 70

Opening Lecture of Gynecology Course. J. L. Faure.—p. 701.
Universal Automatic Retractor. E. Juvara.—p. 706.

Anaphylaxis as Factor in Epileptic Seizures.—Pagniez and Lieutaud here announce that they have applied to epilepsy the treatment by antianaphylaxis which has proved effectual in treatment of certain cases of urticaria, circumscribed edema, migraine and other phenomena of anaphylaxis of alimentary origin. In persons subject to these, the anaphylactic phenomena are preceded by changes in the blood, the *crise hémoclasique initialc*, as Widal calls it. This testifies to the anaphylactic nature of the disturbances, and this is confirmed by the warding off of the disturbances when a small amount of the substance responsible for the anaphylaxis is ingested before the regular amount is eaten. (Previous communications on the subject have been summarized in these columns, May 24, 1919, p. 1577, and Aug. 16, 1919, p. 562).

Studying epileptic seizures from this standpoint has shown that if certain epileptics eat a little more than usual of a certain food, the number of leukocytes is liable to drop and there may be an actual hemoclasic crisis, and within a few hours a typical seizure. One case is described in detail. The robust epileptic of 18 with the mentality of an illiterate of 14 was tested with a cup of chocolate, 50 gm. after his usual meal, and a seizure followed. Ten days later the experiment was repeated only that forty-five minutes before the meal he took 50 cg. of pulverized chocolate in a cachet, and there were no seizures for several days. The circumstances otherwise the same, he was given then 60 gm. chocolate after a similar meal. A pronounced hemoclasic crisis followed, the leukocytes dropping from 11,000 to 5,400, while the maximal arterial pressure wavered, and during the night there were three seizures, and a total of eight during the following nine days. Then the experiment was repeated, only with preliminary ingestion of 50 cg. of the chocolate. No hemoclasic crisis followed and no seizures during the ensuing week. Similar experiments on normal subjects showed no change in the blood picture except the physiologic digestion leukocytosis. But whenever the young epileptic took the 50 or 60 gm. of chocolate, either with or without the preliminary dose, the leukocyte count showed pronounced fluctuations, the mononuclears increasing. The meal otherwise consisted of 250 gm. of bread, 200 gm. of meat and vegetables and 250 c.c. of linden flower tea. The effect of the antianaphylaxis measures apparently confirms the correctness of the premises. Similar experiments were repeated on a few other epileptics, with analogous results.

Prophylaxis of Tuberculosis—Mouisset discusses why tuberculosis is more prevalent than any other disease, and reiterates the necessity for and the success in warding it off by keeping the resisting forces up to par. This should be taught from the earliest childhood. He remarks parenthetically that one of the few agreeable surprises of the war was the small proportion with open tuberculosis among the French soldiers returning from imprisonment in Germany. Only 14 per cent. in two groups of 15,000 each, and only 3 or 5 per cent. in an advanced stage. He suggests that the enforced abstention from alcoholic excesses may have had something to do with this.

Paradental Cysts.—Jacques insists that the diagnosis of paradental cyst in the upper jaw is not difficult if the possiblity of such a lesion is borne in mind. It is usually mistaken for sinusitis.

Progrès Médical, París

Nov. 15, 1919, **34**, No. 46

*Sarcoma of the Stomach. M. Loeper.—p. 455.
Technical Points in Mycology. A. Sartory.—p. 458.
Trocar for Lumbar Puncture. P. Delmas.—p. 460.

Sarcoma of the Stomach.—Loeper describes a case of gastric sarcoma in an African soldier. The differential diagnosis of these tumors is based on the hour-glass shape of the stomach and the presence in the stomach contents of round cells which are elements of the sarcoma, but are liable to be mistaken for lymphocytes. Fourteen out of 22 operative cases of sarcoma on the outside of the stomach had survivals up to three years. The outlook is much less favorable when the sarcoma develops inside the stomach or works through the wall into and through the mucosa. Only 4 recoveries are known in 19 operative cases of this type. He expatiates on the importance of cytologic examination in all cases of suspected gastric tumors.

Revue Neurologique, Paris

October, 1919, **26**, No. 10

*Progressive Lipodystrophy. L. Boissonnas.—p. 721.
*Genitoglandular Dystrophy. E. Feindel.—p. 752.
*Oneirism: Dream-like Waking Hallucinations. R. Charpentier.—p. 755.

Progressive Lipodystrophy.—Boissonas summarizes twenty cases from the literature and reports two personal cases. He also summarizes a number of cases in which the atrophy of the adipose tissue was restricted to the face. His conclusion from analysis of all the data is that some lesion of the nervous system seems to be the only plausible explanation for the condition.

Genitoglandular Dystrophy.—Feindel discusses de Souza and de Castro's recent publications on this subject.

Waking Hallucinations.—Charpentier discusses the relations between oneirism and mental confusional states.

Annali d'Igiene, Rome

July 31, 1919, **29**, No. 7

Acid-Resisting Bacilli in Animals Succumbing to Inoculation of Tubercle Bacilli. F. Sanfelice.—p. 429.
Glossina Transmitting Trypanosomes to Domestic Animals in Somali District. P. Croveri.—p. 432.

Aug. 31, 1919, **29**, No. 8

*Experimental Mutation of Anthrax Bacilli. A. Zironi.—p. 493.

Mutation of Anthrax Bacilli.—Zironi describes research on rats with anthrax bacilli in which the bacilli showed mutation to a type which he calls *Bactcrium anthracis colisimile.*

Policlinico, Rome

Sept. 28, 1919, **26**, No. 39

*Recent Progress in Syphilitic Internal Diseases. T. Pontano.—p. 1129.
To be cont'd.
*Reduction of Prolapsed Hemorrhoids. F. Grande.—p. 1141.

Oct. 5, 1919, **26**, No. 40

Congenital Cystic Lymphangioma. J. Aboularage.—p. 1161.

September, 1919, **26**, Medical Section No. 9

Epidemic Influenza. G. Vernoni.—p. 325.
Hypertrophic Cirrhosis of Liver with Extreme Hypertrophy of Spleen. G. Antonelli.—p. 347.

Recent Progress in Knowledge of Internal Syphilitic Disease.—In the course of this long study of recent achievements in this field, Pontano comments on the information sometimes to be derived from the Herxheimer reaction. For example, in one case heart block developed after injection of arsphenamin, revealing an unsuspected localization of the infection. The mitral valves are always spared, but the aortic valves may suffer from the extension of syphilitic aortitis. Romberg says that this latter does not develop until from four to forty-three years after infection. In his

278 cases the average interval was twenty years. Syphilitic aortitis should be suspected, he says, when there are pains and a sensation of oppression back of the sternum, a systolic murmur at the aorta, accentuation of the second aortic sound, and marked relief in the orthodiagram of the left and upper portion of the arch. The pains are of the compression type, and are referred to the upper part of the sternum, radiating to the shoulders and arms, especially to the left, to the neck and the interscapular region. These pains usually are noticed after exercise or copious eating or drinking, but sometimes they come on independently of such factors and even in the night. The modification in the sounds is connected with the changes in the valves and the dilatation of the arch which brings it closer to the wall of the chest. Romberg asserts that accentuation of the systolic murmur may precede the dilatation of the arch as detectable by roentgen examination, and thus may be the first and the only sign of the aortic disease. It should be ausculted, the patient supine, in the first or second intercostal space. The strong second sound differentiates this murmur from that with aortic stenosis in which the second sound is scarcely perceptible. These auscultation findings were manifest in 75 per cent. and the pains in 50 per cent. of his cases. The pains from aortitis may be followed by symptoms of angina pectoris from extension of the process to the mouth of the coronaries. In the early stages of syphilis, Pontano adds, the symptoms from the heart are usually functional and transitory. In 200 soldiers with secondary syphilis, hypoacidity was found in 60 per cent., anacidity in 18 and hyperacidity in 17 per cent. Lesions in the liver from any cause are liable to exaggerate the production of antibodies, so that serologic tests may give a positive response even in the absence of syphilis. He says of tabes and general paralysis that experience is confirming more and more the fact that very mild syphilis is particularly liable to be followed by them as it receives only irregular or irrational or no treatment. He reiterates that there is no morbid condition of the central nervous system or the meninges which may not be simulated by syphilis, but the instability of the symptoms, their brief duration and tendency to recurrence are suggestive of the syphilitic nature.

Treatment of Hemorrhoids.—Grande describes an automatic pumping arrangement which drives the blood out of the turgid veins in the hemorrhoids by the action of compressed air. As the blood is expelled, the hemorrhoids return into the bowel. After defecation the patient sits down on a special metal cup with a valve which compresses the air. It is possible that the veins might recover tone, and the tendency to hemorrhoids be abolished in time by this compressed air massage.

Oct. 12, 1919, **26**, No. 41

Best Incision for Submaxillary Adenophlegmon. A. Poggiolini.—p. 1193.
Recent Progress in Certain Internal Syphilitic Diseases. Tommaso Pontano.—p. 1195. Conc'n. See abstract above.
Local Treatment of Anthrax with Pulverized Mercuric Chlorid. C. M. Pertusio.—p. 1204.

Oct. 19, 1919, **26**, No. 42

*Rat-Bite Disease. G. Bergamini.—p. 1225.

September, 1919, **26**, Surgical Section No. 9

*Purpura Simulating Appendicitis. G. Fantozzi.—p. 281.
Surgical Treatment of Displacement of the Uterus and Genital Prolapse. P. Gilberti.—p. 288.
War Wounds of Bones and Joints. R. Bompani.—p. 297. Cont'n.

Rat-Bite Disease.—Bergamini describes a case of sodoku in a soldier free from inherited or acquired taints and intoxications. The Wassermann reaction was positive, and the young man threw off the disease under arsphenamin after the failure of all other measures.

Purpura Simulating Appendicitis.—This case teaches that purpuric patches or edema at the ankle, knee or elbow should warn not to operate without further consideration when intense abdominal pain and fever suggest appendicitis or perforation of the bowel or intussusception. The fever and the location of the intense pain in the boy of 11 simulated appendicitis, but the purpuric patches were discovered in time. The abdominal pains in these cases of peliosis or purpura rheumatica are evidently from hemorrhagic *poussées* in the viscera. Even without the petechial exanthem, pains in the joints and edema or even simple rheumatic pains should warn of the necessity for caution in operating, and for symptomatic treatment as for hemophilic states in general.

Crónica Médico-Quirúrgica, Havana

August, 1919, **45**, No. 8

*Ocular Complications of Influenza. F. M. Fernández.—p. 232.

September, 1919, **45**, No. 9

*The Victory Meeting of the A. M. A. F. M. Fernández.—p. 251.

Ocular Complications of Influenza.—Fernández states that among his hundreds of influenza cases he encountered only 6 in which there was iritis from toxic action (2), or the optic nerve and papilla (2), or the angle of filtration (1), were suffering from the same toxic action. In the sixth case the corneal ulcer might have been merely a coincidence, but it might have been the direct work of the influenza infection. The patients were all men between 19 and 40, and 4 recovered under the usual local measures. One man was left with incipient atrophy of the optic nerve, and in another case the choked disk accompanying sinusitis only partially retrogressed.

Victory Meeting of the A. M. A.—The editor-in-chief of the *Crónica* (and also of the *Revista cubana de oftalmología*), Dr. F. M. Fernández, was the official delegate from Cuba to the Atlantic City meeting, and he reproduces the program entire with running comment on many of the communications presented in the various sections. He thus comments on practically all in the section on ophthalmology.

Gaceta de los Hospitales, Mexico, D. F.

Aug. 10, 1919, **2**, No. 6

*Surgery of Goiter. Velázquez Uriarte.—p. 59. Conc'n.
Experiences with Pituitary Treatment in Mexico. E. L. Abogado and others.—p. 62.

Surgery of Goiter.—Velázquez reiterates that medical measures seldom have any influence on goiters except on those of the colloid type, and that goiters are like tumors elsewhere in that they are liable to become malignant any day. He gives an illustrated description of some gratifying operative cases. One patient required thyroid treatment afterward for a time. Vision had been blurred for some months before the operation, but soon returned to normal after this.

Juventud Médica, Guatemala

July, 1919, **18**, No. 194

*Yellow Fever in Guatemala. A. Madrid.—p. 94. To be cont'd.
*Lethargic Encephalitis in Guatemala. F. Arana G.—p. 100.
Influenza in Guatemala. M. Y. Arriola.—p. 104.

Yellow Fever in Guatemala.—Madrid relates the particulars of the recent epidemic of yellow fever and the way in which it was stamped out. He emphasizes the absence of prodromes, and the primary vasoconstriction with congestions, followed by the vasodilatation responsible for the hemorrhages.

Lethargic Encephalitis.—The woman of 36 was supposed at first to be drunk when she was brought to the hospital, and she slept continuously for five days, with slight fever but no other symptoms. Under mercurial treatment, facial paralysis and ptosis developed, and the somnolency became more intense, with mild delirium at times. Lumbar puncture showed the tension and albumin content slightly above normal. The fifteenth day hexamethylenamin was given systematically by the mouth, and 1 gm. of peptone was injected by the vein. This was repeated with one day intervals six times. The reaction was severe, with chill and fever, but by the second injection great improvement was manifest. The twenty-sixth day lumbar puncture still showed high tension but the fluid was otherwise normal. By the fifth or sixth week recovery was complete, with no traces of the disease and no memory of any of the weeks of the somnolency. There had been no bulbar paralysis, vertigo or vomiting at any time. Arana ascribes the favorable outcome in large part to the proteosotherapy.

Medicina Ibera, Madrid

Nov. 1, 1919, **9**, No. 104

Cholesterin as Factor in Immunity. T. Morató and G. Villanueva. —p. 77. To be cont'd.
Malignant Pterygium. Jenaro González.—p. 80.
Surgical Tuberculosis. Ricardo Lozano.—p. 82. Begun in No. 103, p. 64.

Observador Médico, Mexico, D. F.

October, 1919, **1**, No. 4

*Syphilis as a Factor in the Eye Complications of Typhus. A. Torres Estrada.—p. 62.

Syphilis as Factor in the Eye Complications of Typhus.—Torres has encountered six cases in which typhus was accompanied by ocular lesions. In all they resembled closely the lesions of syphilis. The optic neuritis progressed to blindness in four of the six cases. One of the others had inherited syphilis, and after having been totally blind for a time after the typhus, under mercury and iodid he regained considerable visual acuity in both eyes. Torres witnessed also a number of similar cases of optic neuritis following influenza, and retrogressing likewise under specific treatment.

Prensa Médica Argentina, Buenos Aires

Sept. 30, 1919, **6**, No. 12

*Pancreatitis and Tardy Inherited Syphilis. C. Bonorino Udaondo and J. E. Carulla.—p. 113.
*Subacute Intestinal Amebiasis. R. F. Vaccarezza and R. Finochietto. —p. 114.
Euphorbia as Diuretic. Manuel Galdós.—p. 117.
*Headache in Children. R. Argañaraz.—p. 118. Conc'd in No. 13. —p. 130.

Chronic Pancreatitis with Tardy Inherited Syphilis.—The case in a young man here reported is the only one of which the writers could find record in which chronic pancreatitis subsided completely and permanently under treatment for tardy inherited syphilis. The clinical picture did not differ in any respect from that of ordinary sclerosis of the pancreas, but the improvement under specific treatment proved the touchstone of its nature. The young man had been married three years and had a healthy child.

Fatal Amebiasis.—A previously supposedly healthy man of 30 suddenly developed symptoms of colorectitis with peritonitis the fifteenth day, and death five days later, from necrosis of the cecum and part of the ileum. The ameba in this case had required only twenty days to induce innumerable ulcerations and perforations, with extensive necrosis not only of the bowel but of adjacent muscle.

Headache in Children.—Argañaraz refers to headache from intermittent loss of balance between the sensory and motor functions of the eyes. The trouble is merely from unbalanced growth, as the eyes do not always develop parallel. The position of the eyes in functional balance differs from the position in anatomic balance, that is, in repose. This position in repose is what is often responsible for the headaches in children between 5 and 12, that persist after defects in refraction and muscular balance have been corrected. He explains how it is possible to detect this anomaly and correct it by the use of weak prisms with the base inward. The headaches subside at once when this is done, as he shows by the details of eight typical cases.

Oct. 10, 191 , **6**, No. 13

*Treatment of Ankylosis of the Knee. A. Ceballos.—p. 121.
Etiology of Influenza. R. Kraus.—p. 126.
*Access to Bones Through the Calf. R. Finochietto.—p. 129.
Dissociation of Bile Pigments. C. P. Waldorp.—p. 131. Begun in No. 11, p. 109.

Ankylosis of the Knee.—Ceballos reviews the ultimate outcome in seven cases of ankylosis of the knee corrected by an operation before 1917. The ultimate outcome has been so satisfactory that he declares operative correction should be undertaken not only for angular but for straight stiff knees. He prefers a pedunculated flap of aponeurosis to interpose, but has used both free and pedunculated flaps, and the results were equally good with both. Gonococcus ankylosis of the hip joint is usually harder to cure than the traumatic, as the margin of the acetabulum is generally damaged, which favors secondary displacement. A year at least must elapse after the infection, as the vitality of the gonococcus is so great. He followed Murphy's technic for the knee, and begins at once to apply extension to both legs. Illustrations are given of the device for passive exercise of the suspended joint by the patient himself.

Access from the Rear to the Bones of the Leg.—Finochietto gives an illustrated description of the large U-shaped flap which he turned back on the calf to the knee for access to a huge osteoma. The flap was readily replaced after the tumor had been removed.

Revista Médica del Rosario

October, 1919, **9**, No. 4

*Teratomas in the Thorax. D. Staffieri.—p. 255.
School Colonies and Vacation Schools. C. Muniagurria.—p. 260.
*The Ideal for the Fight Against Tuberculosis. A. Martelli.—p. 271.

Teratomas in the Chest.—Staffieri adds another to the less than 100 cases of intrathoracic teratomas on record. They have been found at all ages, but they generally make themselves manifest first during the rapid growth at puberty. In only four of the cases on record was the surgeon able to remove the teratoma completely; the others had to be content with evacuating the contents and draining. Most of the patients were left with a fistula. In some of the nonoperative cases the cyst underwent malignant degeneration, and as there is always danger of fatal compression or other injury from the teratoma, it should always be operated on. In the personal case described the woman of 33 had been having pains back of the right breast for seven years, with a recurring cough and blood-stained expectoration. In the last two years she had often found hairs in the sputum but there had never been fever. The operation confirmed the assumption of a teratoma opening into a bronchus, and recovery was soon complete except for a small fistula.

The Ideal Prophylaxis of Tuberculosis.—An important national conference has recently been held at Rosario to discuss the prophylaxis of tuberculosis. The transactions and resolutions adopted are given in this issue of the *Revista*. Martelli urges the general adoption of vaccination against tuberculosis as the ideal method of prophylaxis, citing Maragliano's experiences with it.

Semana Médica, Buenos Aires

Aug. 21, 1919, **26**, No. 34

*Motor Plastic Operations. G. Bosch Arana.—p. 191.
*Voluntary Mutism. F. F. Morixe.—p. 208.
*Syphilitic Hemiplegia. O. E. Adorni.—p. 211.
Fracture of the Elbow. R. A. Rivarola.—p. 216.

Motor Plastic Amputations.—Bosch Arana discusses the general principles and the practical application of means to impart volitional control to artificial limbs by plastic devices. He thinks this vitalization of prostheses has a future beyond anything now anticipated. In this article he does not describe his extensive personal contributions to the subject, reserving this for a later article.

Voluntary Mutism.—The man in question is a docile inmate of the public asylum for the insane. He has persisted for seventeen years in his refusal to speak. This is the first case of prolonged aphrasia published in Argentina.

Syphilitic Hemiplegia.—Adorni's patient developed suddenly flaccid paralysis of the right arm and leg and left facial paralysis. The rapid recovery under mercurial treatment confirmed the suspected syphilitic nature of the paralysis.

Aug. 28, 1919, **26**, No. 35

Subtilis Infection of Eye. E. B. Demaria.—p. 221.
*Reconstruction of Biliary Passages. E. Nicholson.—p. 223.
*Technic for Partial Colectomy. G. Palacios.—p. 229.
*Infanticide. Antonio D'Alessandro.—p. 231.
*Syphilis in Argentina. Manuel Beatti.—p. 235.
*Teaching of Sexual Hygiene for the Young. L. Bard.—p. 237.
*Commercial Aviation. J. A. López.—p. 239.

Reconstruction of Biliary Passages.—Nicholson reviews recent literature on this subject, and describes a personal case of gallstone disease of five years' standing in which several operations were required to correct conditions.

Megacolon.—Palacios describes two cases with successful partial colectomy.

Infanticide.—D'Alessandro makes a plea for arrangements permitting infants to be clandestinely abandoned without immediate injury to the infant. His text for this arraignment of present conditions is a local news item to the effect that four infant cadavers were found in a single day in the same district of the city.

Syphilis in Argentina.—Beatti protests against the assumption of the extreme prevalence of syphilis. He obtained a positive response in only 13 per cent. of 2,400 applications of the Wassermann test to the blood and spinal fluid.

Sexual Hygiene.—Bard refers to the necessity for lectures in the high schools and colleges on the prophylaxis of venereal diseases, as these diseases are so often acquired between 16 and 20. The lectures should be given preferably by the professor of anatomy. The task cannot be left to the parents; for one reason, among the many, because the parents are themselves too ignorant.

Commercial Aviation.—In this eighth instalment of his study of the psychophysiology of the aviator, López discusses the difference between conditions in war and in commercial aviation. He emphasizes the necessity for strict medical tests for commercial aviation or accidents will destroy the public's confidence in it.

Siglo Médico, Madrid

Nov. 1, 1919, **66**, No. 3438

The Medicolegal Conception of Deformity. Jesús Canseco.—p. 929.
*Serodiagnosis of Typhus. J. Blanco and M. Tapia.—p. 931.
*Coagulation Time as Element for the Prognosis. M. Corachán and F. Gallart Monés.—p. 935. Conc'n in No. 3439, p. 960.

Serodiagnosis of Typhus.—Blanco and Tapia obtained pronounced agglutination with the proteus X in thirty-three cases of typhus, in one case at 1:1,000 as early as the third day. In one case the agglutination at 1:1,000 continued up to a month after defervescence.

Coagulation Time and the Prognosis.—Corachán and Gallart comment on the importance of recording the coagulation time of the blood before operating, to be warned of any tendency to hemorrhage or to thrombosis. A family tendency to hemophilia or to thrombosis—a history of phlegmasia alba, of phlebitis, etc., in any member of the family—is also instructive, but the coagulation time of the patient's blood is more certain. They use Bloch's citrated blood-calcium chlorid technic, and in 56 cases thus tested they found that coagulation occurred abnormally fast in 2 and abnormally slow in 18. Ingestion of 3 or 4 gm. of calcium chlorid daily before the operation brought the coagulation time up to normal. When this was not done the operative and postoperative losses of blood confirmed the warning from the coagulation index. They found a normal coagulation index in their cases of venous thrombosis; this suggests that other factors, such as infection, cooperate in thrombosis. In 2 cases of gangrene of the feet, no modification of the abnormally slow coagulation could be realized, even with systematic calcium chlorid and gelatin treatment.

Nov. 8, 1919, **66**, No. 3439

*Intraspinal Treatment of General Paralysis. G. R. Lafora.—p. 953.

Intraspinal Treatment of General Paralysis.—Lafora remarks that Spain is one of the countries where intraspinal treatment of syphilitic disease of the central nervous system has made recently the greatest progress, and vast experience has been acquired during these years of the world war. His latest report on the subject was recently summarized in these columns Dec. 6, 1919, p. 1808.

Hospitalstidende, Copenhagen

Oct. 15, 1919, **62**, No. 42

Influenza in Danish Army. L. Ammentorp.—p. 1161.

Oct. 22, 1919, **62**, No. 43

*Vaccine Treatment of Gonorrhea. H. Boas and O. Thomsen.—p. 1185.
Blood Platelet Extract for Hemorrhage. E. Als.—p. 1190.

Oct. 29, 1919, **62**, No. 44

*Gas Phlegmon in Femur. H. C. Hall and M. Kristensen.—p. 1209.

Vaccine Treatment of Gonorrhea.—Boas and Thomsen tabulate the results of treating recent uncomplicated gonorrhea in men with a vaccine made of twenty-four hours' cultures of several strains of gonococci on ascites-agar plates in 0.9 per cent. saline. In 202 cases not treated with the vaccine, 45 per cent. developed complications, but only 19 per cent. developed complications in 126 treated with the vaccine. The outcome was in reality even more favorable than this, as in 7 of the 23 complication cases a vaccine had been used which proved later to have been defective. The complications in the vaccine cases were very mild; there was prostatitis only in 3, while in the nonvaccine cases prostatitis formed half of the 90 complication cases.

Gas Phlegmon in Femur.—Both the Welch bacillus and *Bacillus phlegmonis emphysematosae* were cultivated from the phlegmon in the femur in the two young men. Infection had presumably occurred from the needle during an injection of caffein.

Hygiea, Stockholm

Oct. 16, 1919, **81**, No. 19

Medical Impressions of the United States. Anderson-Tesch.—p. 785.

Oct. 31, 1919, **81**, No. 20

*Indications for Prostatectomy. Torsten Rietz.—p. 837.
Hypernephroma in Center of Kidney. Nils Stenström.—p. 843.

Indications for Prostatectomy.—Rietz states that the mortality with prostatectomy in Sweden still averages 11 or 12 per cent. even with the best surgeons. In England and America, he adds, the mortality is lower, but in some of the German clinics it is still higher. Analysis of some of the fatal cases showed pathologic conditions in the kidneys in an unexpectedly large proportion, and probably many of the cases recorded as heart disease may have been primarily disease of the kidneys. These facts suggest the importance of ascertaining the functional capacity of the kidneys before attempting any operation on the prostate, and he has been systematically investigating this since the beginning of 1918. He has now a record of 18 cases thus investigated by himself and 9 by Kjellgren—a total of 27 cases, and the outcome has brilliantly confirmed the information thus derived. He selected the water test as the simplest and a very reliable means for functional diagnosis. The patient drinks 1,000 c.c. of water, fasting, at 8 a. m. and the urine is collected at hourly intervals till 12 and then at 3, 6 and 9 p. m. and the night urine till 8 a. m. With this systematic research he found that the patients fell naturally into five groups, as he explains in detail, and the outcome of the cases confirmed the accuracy of the data thus acquired.

Ugeskrift for Læger, Copenhagen

Nov. 13, 1919, **81**, No. 46

*Significance of Bile Pigment in the Serum. E. Meulengracht.—p. 1785.

Clinical Significance of Bile Pigment in the Serum.—Meulengracht reports extensive research and experience in two hospitals with colorimetric estimation of the bilirubin in the blood serum. The bilirubin has to reach a certain level in the serum before it passes into the tissues, and a still higher level before it passes into the urine. There are thus two thresholds for bilirubin. The amount of dilution necessary to bring the blood serum to the same tint as that of a 1:10,000 solution of potassium bichromate or a 1:300 solution of ferric chlorid is the colorimeter gage. He draws 3 c.c. of blood into a Wassermann glass containing a few drops of a 20 per cent. solution of sodium citrate. Only 1 c.c. of the serum is taken for the test. The dilution figure may range from 10 or 20, with slight jaundice, to 200 or 300 in the severer cases. Bilirubin is found in the blood as febrile or toxic bilirubinemia, and as congestion, hemolysis or obstruction bilirubinemia. Examination of the blood for bilirubin is thus an important aid in detecting slight degrees of jaundice and thus sustaining the diagnosis of liver disease in dubious cases, especially with cholelithiasis, hemolytic and pernicious anemia and certain cases of insufficiency of the heart. Examination for urobilinuria supplements but cannot take the place of examination for bilirubinemia. He describes in detail and compares the findings in forty healthy persons, and large numbers of others with various forms of liver and heart disease.

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THE PATIENT HIMSELF*

HUGH T. PATRICK, M.D.

Emeritus Professor of Nervous and Mental Diseases, Northwestern University Medical School

CHICAGO

Among the vices of advancing years are carping criticism. garrulity and needless admonition. To all of these I plead guilty and so can only beg your indulgence while I say a few things that I think should be said, knowing that I say them poorly and that I add nothing to our store of knowledge.

My theme is that much neglected individual, the patient himself. Concerning his organs and their functions, we have numberless tomes. Concerning the diseases that attack his parts, we have whole libraries. Concerning the various ways of cutting him open and sewing him up, there are several six-foot shelves. For the manifold instruments, machines and appliances of our armamentarium, an extensive congeries of industries is in constant operation. Indeed, some of us are so used to practicing medicine by machinery that the cortical cell bids fair to shrink into sterile desuetude. But of the patient himself — the man, the woman, the child — relatively little is thought or written.

THE PATIENT ABOVE THE EYEBROWS

What do I mean by the patient himself? I mean what we mean when we speak of our friend, our enemy, our son, our daughter. We like a man because he is sensible, kind or entertaining; dislike him because he is selfish, irritable or pessimistic. So do we admire or despise because of certain mental, not physical, qualities: traits that reside above the eyebrows. Our attitude depends on the individual's personality: the biggest thing to us and to him. It is more important than his kidneys and his liver, and its disorders are as momentous to him and to society as is disease of his organs. His personality is what he is — the man himself; and he is the sum of all his tendencies and experiences; his desires, aversions, affections, hates, passions, inhibitions, appetites, reflections and knowledge. The tendencies are few and simple, the experiences myriad. And a little thought shows that most of this experience has been in the form of conflicts. From the beginning, life is a conflict: an effort to live and be happy — that is to say, an effort to adapt ourselves to the conditions under which we must live. The struggle between what we consciously or unconsciously wish to do, and what the present state of society requires us to do begins in infancy and never stops. Very early the normal child learns that certain perfectly natural functions may not be fulfilled in a completely natural way. He may not urinate in the parlor nor appropriate anything he happens to see. As we grow older these conflicts become more complex and more acute. Some of us come out of them pretty much to the satisfaction of ourselves and our neighbors. We are the happy, the well and the successful. Some of us are unable to make the adjustment. We, then, are the unhappy, the ill or the unsuccessful. Now, as every one of us has these conflicts and has them all the time, it does not take much perspicacity to see that there are many defeats. Occasionally one comes out of the conflict a thief, a tramp, a pauper, an invalid. Perhaps one does not think of petty larceny, constipation and eye strain in the same terms; but they may be equally due to social inadaptability. Each is the reaction to a difficult situation.

THE RESULTS OF MALADAPTATION

The whole question of health is one of adaptation or adaptability. We have typhoid fever either because individually we are still vulnerable to the typhoid germ, or because as a community we have failed successfully to combat it. Some of us have neuroses or psychoses because we are unable successfully to harmonize with our environment — *and for no other reason.* Often this fact is overlooked. What has social inadequacy to do with the practice of medicine? A great deal, because it starts a multiplicity of symptoms which the patient expects the physician to relieve. To speak of the hyperacidity and gastric distress of financial insufficiency, the dysmenorrhea of domestic disharmony and the tachycardia of industrial futility may sound incongruous, but sometimes that is what they are.

An easy approach to consideration of the neuroses as a result of maladaptation, that is to say, as the outcome of a conflict, is by way of the war neuroses because there the conflict is so apparent. A war neurosis, grossly miscalled shell shock, is a means of, let us say, getting out of the front line trenches. The soldier can no longer stand the bursting shells, the falling parapets, the horrible sights and the imminent danger of death. But army discipline and morale, personal honor, pride, ideals make running away impossible. A neurosis makes it possible. So does loss of an arm. If he loses an arm, the soldier doesn't have a neurosis. A neurosis is no fun, but it is a great deal better than the trenches.

Peace neuroses are just the same. They are a way out of trouble or around an obstacle; a way selected more or less unconsciously. If one cannot remove an obstacle from his path and cannot surmount it,

* Presidential address, read before the Institute of Medicine of Chicago.

he goes around. Perhaps he *can* push it away, or *can* surmount it; but he *prefers* to go around. For our patients, the way around is often insomnia, "nervous breakdown," backache, dysmenorrhea, asthenopia, indigestion, headache, abdominal pain, dyspareunia, impotence, exhaustion, palpitation and many other things for which medicines are given and operations performed.

As already indicated, a neurosis is by no means the only avenue of escape from an intolerable or uncomfortable situation. Some ways are much simpler. The man who, when tired of his job and dissatisfied with his wife, stops work, gets drunk and beats up his connubial partner, does not develop a neurosis from those particular troubles. He doesn't have to. But he is just the one to get a lame back or sore feet in the army, where he can't escape by the simpler way.

An intelligent and pleasing woman was dissatisfied with her town and her husband. She referred to the former as "a piffling little place," and said of the latter, "He gives me no satisfaction." What was the solution? Recently she spent four months in New York, and with bright eyes and a pleased smile said, "You bet I had satisfaction there." Last winter she visited Los Angeles with the same gratification. Did she have a neurosis? Why should she? There was absolutely no conflict. She was as simple and direct as a child.

Contrast the following:

A woman of 34 years complained of daily headache, poor sleep, ready exhaustion, some dyspnea on exertion, poor appetite and constipation. With considerable pains, I ascertained that she too was dissatisfied with her husband and with her social and financial position. She could not adjust herself to conditions as they were, and she could not change them. Her ideals and training did not allow the simple means of escape adopted by the other. Instead of deliberately going to New York and California, she subconsciously went to headache and insomnia.

NEUROSIS AS DEFENSE REACTION

In short, the neurotic is an individual in trouble with no easy and direct means of escape. A neurosis is a defense reaction, a means of escape; a psychologic dugout in which to hide. That the difficulty may be imaginary, the patient fleeing from a ghost, does not alter the situation. His efforts to adjust his appetites and desires to the demands of convention, society, the herd are the same as ours. He attempts to dodge defeat and to shift responsibility for lack of success as do we whom a lenient society calls normal. Because he played so poorly, an irascible golfer first threw his bag of clubs and then his caddie into the creek. Very, very often the nervously inadequate person unconsciously shifts the responsibility to some bodily trouble, when he naturally comes into the physician's domain. And too, too often the physician takes his complaint at its face value. Sometimes the literalness of physicians is equal to that of religious fanatics. Once I examined a justly celebrated clergyman who was in a state of profound delusional melancholia, in consequence of which he falsely accused himself of sundry grave sins. Having recovered, he was tried by a church tribunal and dismissed from the ministry because of these self accusations of a disordered mind. Such superficiality and narrowness makes a physician smile. But compare the following:

A young man brought to me his wife, who at various medical hands had received sundry powders and potions for insomnia, nervousness and loss of appetite. After a bit of questioning, I sent the husband on an errand. As the door closed behind him I said, "Now, quick, tell me what's the matter." The startled wife then told me that their young priest, a close friend of the husband, was almost daily assailing her virtue, and that she was quite distracted between fear that she might yield and fear to tell her husband.

And the following:

A woman of 50 years was having a prolonged rest cure because of general nervousness, mental depression, "exhaustion," and insomnia. She appeared to be very weak, and walked across the room with difficulty. A bit of direct questioning revealed that she was intensely afraid of a stroke, and that this fear was based on tinnitus, which she expressed as a "noise in the head." This to her meant cerebral calamity: a stroke, paralysis, death. When the simple situation was explained to her she got up and went to the coast of Maine for a holiday.

Would these medical examples make an ecclesiastic smile? The following incident is not unusual:

Many years ago, only with uncomfortable persistence did I dissuade a well-known surgeon (since deceased) from performing a gastro-enterostomy on his wife. He insisted that she never could be well until operated on. But I knew of grave emotional stress of which he was partly ignorant and which he partly ignored. With the mental adjustment which came about in a couple of years, all abdominal symptoms disappeared, and she has continued well.

How many of us constantly keep in mind that we, the acme of civilization and culture, have every instinct and passion of the caveman? Are we always alert for the ever present emotional-ideational-intellectual conflict? And do we recognize its importance? To repeat: The product of these conflicts is WE — the patient himself. And in the vast and intricate complexity of modern life, the name of the conflicts is legion. Neurotics are just as different as physicians, and for as many different reasons. Consequently, investigation in many directions is necessary. Here laziness, carelessness and false modesty on the part of the physician have no place. I should not like to say, even if I knew, how often to my question "Did you tell all this to all these other doctors?" the reply has been "No, they didn't ask me."

THE SEXUAL ELEMENT

And here I venture a direct word on sex matters. Without following the self-styled psychanalysts in tracing practically all psychoneuroses to a sexual origin, without even discussing their tenets, I wish definitely to state that something relating to matters sexual has a great deal to do with starting many nervous disorders. Aside from the demonstration of experience, a little reflection will show that this is reasonable. In the present state of society, practically every individual between early childhood and presenility has sexual problems and conflicts. In the solution of the problems and disposition of the conflicts, generally he has the assistance of neither publicity nor knowledge. On the contrary, he is handicapped by ignorance, superstitition and isolation. All the conditions are there for the development of fear, shame, remorse, guilt, resentment, a feeling of inadequacy or impotence; the most painful emotions, plus secretiveness. Who would not escape from them by way of a neurosis, very distressing but with none of the tragedy of the other forms of suffering? Thousands of soldiers escaped from the shell torn trenches, that is, from their intolerable

emotions, by way of a psychoneurosis. Millions of us have tried to escape from other tearing emotions by means of so-called functional nervous disorders. Hence, whatever our decision as to the psychology of sex, in the case of the individual patient there is but one answer: sufficient investigation, proper instruction, and counsel based on adequate understanding.

But I do venture to add that, in my opinion, to express love of power, money and ease; fear of pain and death; the satisfaction of food, delights of the eye and ear; the disappointment of failure, the pleasure of work well done, all in terms of sex—howsoever sublimated — is to express a narrow conception of *Homo sapiens*. And I also believe that in the vast majority of cases, the exhaustive and intricate corkscrewing methods of the freudians are unnecessary. Sometimes they are harmful.

DIAGNOSES THAT FALL SHORT

Our medical affinity seems to be the concrete and tangible. Organic abnormality is the most facile explanation of disorder. Given almost any complaint, if the patient reveals undoubted organic disease, our tendency is to stop there. When shall we learn that a prolapsed kidney or stomach may be as good as normal, a valvular lesion innocuous, a urethral stricture of small importance, a deviated septum symptomless, and a torn cervix not even a cosmetic offense? But prolonged fear, disappointment, resentment, anxiety, regret, perplexity are never symptomless. The physician's wife, mentioned above, undoubtedly had enteroptosis; but that did not cause the trouble. The following is a common type:

> A middle-aged woman had been operated on for ruptured perineum, rectocele, and "ulcer of the womb"; later, for hemorrhoids and laceration of the cervix. Still later, she had a curettage, and then the ovaries and tubes were taken out. Finally a hernia, a relic of one of the previous operations, was repaired.

No very exhaustive investigation was required to show that this patient never had been physically disabled, but that she always had been intellectually and temperamentally absolutely unequal to life's demands. Each operation was only an additional urge into physical invalidism as an escape from the toil and responsibilities that fell to her lot. That such treatment tends to perpetuate the trouble is obvious. If dysmenorrhea and pelvic pain are really a recourse from laborious housekeeping, ventrifixation fixes the mental attitude of the patient. And the next operation for adhesions makes her more adherent to her disability.

When a woman dates her symptoms from marriage or childbirth, it behooves the physician to look for the presence of discontent, unhappiness and fear. A diagnosis of pelvic disease may have to be changed to mother-in-law, which often means a more or less inadequate daughter-in-law. When a man is disabled by an organic disease or abnormality that apparently doesn't measure up to the disability, one should take the precaution to look for the neurosis which really makes the trouble. A simple arthritis, with which some people would happily limp through life, makes others useless. Why? Because there is something back of the arthritis; something the matter with the patient himself. While the clinical picture may be made up of symptoms strictly organic plus others purely functional, the latter may be by far the more important, even though the former are more salient.

EFFECTS OF FEAR

Elsewhere,[1] I have tried to emphasize the importance of recognizing fear. One might think that if a patient were afraid he would know it and tell of it. Neither may be the case. That one may be sick from fear and not be aware that he is afraid is certainly true. And "to deny fear seems to be almost as instinctive as that emotion itself."[1] That is to say, the physician must not wait for the avowal: he must dig it out. This is especially true of that exceedingly common apprehension, the fear of "losing the mind." Patients will carry this fear for years and never mention it. A very common way of consciously or unconsciously dissembling fear is to complain of the symptom which is the basis or the result of the particular fear. The patient bitterly complains of headache. But the real distress is not the headache (often it isn't a pain at all), but the idea that the headache means insanity or a stroke. Abdominal distress may be trifling, but it is disabling because to the patient it signifies cancer. But he doesn't say so. He hardly knows that it is so. He doesn't wish constantly to be afraid of insanity or cancer; he prefers to have headache or nausea. How can one successfully treat such a headache or stomachache without becoming acquainted with the patient himself?

FREQUENCY OF MILD MELANCHOLIA

One other very practical aspect of the real patient, the patient above the eyebrows, I must at least mention: the frequency of unrecognized mild melancholia. Instinctively, these patients hide their feelings of uselessness and hopelessness, their self reproach and fear of insanity. They complain of what to them seems to be the cause of their ill feeling, and generally this is some bodily complaint. Headache, insomnia, indigestion, constipation, biliousness; exhaustion from overwork, worry or sexual irregularities; leukorrhea, loss of memory and pelvic distress are among the more common. And the literal physician overlooks the disorder of the personality. The result is useless or harmful treatment. This is bad enough. What is worse, the patient is given every chance to commit suicide — which he rather frequently does. In Chicago there are more than 600 suicides a year, and I am quite sure that fully 400 of these are due to melancholia — every one of them preventable.

EFFECT OF DISTURBING EXPERIENCES

The relations of past experience to present conduct are most complex. Our feelings and behavior today are the result of myriad experiences, most of them forgotten, and still more not in our awareness at any given time. No man can trace all the steps that have led him to be a Republican or to dislike a certain person. Why does Miss X delight in ice cream and abominate pork chops? It didn't just happen. There are reasons. Of four men in trouble one prays, one gets drunk, one has a fit and one has a headache. Why? That is for us to find out. Generally it can be done. Not always.

Clinically, the relation of a pathogenic experience to consciousness is generally one of two, with no definite line of division. First, the patient remembers perfectly well the (generally unpleasant) experience, but has no idea that it has anything to do with his

1. Patrick, H. T.: The Factor of Fear in Nervous Cases, J. A. M. A. 67: 180 (July 15) 1916.

present trouble. Second, the disturbing episode has been quite forgotten and is brought back into consciousness only by some unusual stimulus or mental state. Obviously, it may happen that we cannot bring it back at all. To illustrate the first type:

A young traveling man was unable to eat in restaurants because of intense feeling of prostration and oppression, palpitation, etc. He had not in any degree forgotten that a few months before consulting me he had been taken very ill while dining in a restaurant, had nearly fainted and had liberally distributed vomitus over the floor before he could get out. But apparently a connection between the causative disagreeable episode and the neurosis never had occurred to him, and information of the illness was not volunteered. It was elicited by leading questions.

Another example:

A middle-aged, happily married woman complained of nervousness, insomnia, mental depression, intense dislike of social intercourse, even with good friends, and intense agoraphobia. Painstaking inquiry for more than two hours, evidently with the cooperation of the patient, failed to elicit a cause. Only after the analysis of two dreams by Dr. Lewis J. Pollock, my assistant at that time, did we learn of events in her childhood and youth causing poignant shame and self reproach that were clearly the cause of her disorder. These experiences she had not forgotten; but their relation to her present complaints had never occurred to her, the subject was distasteful, and instinctively, scarcely deliberately, she had suppressed the facts.

An example of the second type:

A young married woman had so-called vaginismus to a degree entirely preventing intercourse. No local cause could be found. The patient neither feared nor objected to the nuptial embrace; indeed, she was most anxious to be a complete wife and an early mother. It was only after many questions and the awakening of many associations that she recalled two not very striking experiences when she was about 11 years old. Aside from temperament, these were the prime cause of her disorder; but apparently for years she had not consciously thought of them.

NEED OF APPROPRIATE TREATMENT

A good many years ago, Möbius described akinesia algera, paralysis from pain; the patient does not move because it hurts to move. When we come to therapeutics for the patient himself, many of us have a sort of amblyopia algera. We do not see because it is uncomfortable to see. It is much more comfortable to say, "nothing to it," "just a nervous crank" and do nothing, than it is to realize that here is a pathologic condition, obscure, maybe complex, that must be laboriously worked out. So we naturally go blind, see nothing and do nothing. Probably every physician makes an effort to regulate the bowels. How many of us make an effort to regulate emotional and intellectual movements? But intestinal stasis is vastly to be preferred to intellectual stagnation: so-called autointoxication is not half so lethal as disintegrating emotions.

To state it another way, we must first have a just conception of the nature of the trouble and then institute *appropriate* treatment. Nowadays few ovaries are removed for dizziness and indigestion, but the "rest cure" is applied about as heedlessly as was formerly oophorectomy. Confinement to bed, isolation, forced feeding and massage for perturbations of the personality may be compared to a linseed poultice for pain in the belly. Occasionally the cataplasm suffices, but treatment of the cause is to be preferred. Equally, we should treat the cause of neurotic manifestations. Who would prescribe a pill for vagrancy or a powder for prostitution? The tramp and the prostitute are recognized as defective, unadaptable to society as now constituted, except on the underworld level. The psychasthenic (nearly always miscalled neurasthenic), the neurotic, the psychotic is a rather similar product. Unadapted to the upper strata of social efficiency, he gravitates to the underworld level of pain, prostration and dyspepsia: the realm of consultation rooms, hospitals and sanatoriums. But I hasten to add that when properly adjusted to his environment, the neurotic may be one of the most efficient, valuable and delightful members of society.

A fine young woman was about to decline marriage because handicapped, even disabled, by what she did not recognize as phobias. For years she had been unable to go down town except in a carriage, and then only for a few minutes. To go alone to a nearby market was out of the question. Deeply religious, she could not go to church alone, and when accompanied, she could sit only near the exit. There were other phobias. A short course of training and reeducation removed the lot, and for about ten years she has been an ideal wife and mother.

A fine young chap of 22, because hypersensitive and hyperconscientious, became depressed and worried over the usual sexual problems of youth to the extent of total disability. The situation was explained to him: in a proper environment, he was carefully guided and was gradually led back to normal activities. In the spring of 1917, he entered the army and served brilliantly throughout the war.

An unmarried woman of 29, doing office work, for ten years had had attacks of dyspnea and palpitation, great weakness and insomnia. Although she positively and honestly denied that she was afraid of anything, exact questioning showed that she had several intense phobias. She really was ill and had been for ten years. But the trouble was not the heart muscle, it was lack of adjustment to her job, her associations and necessary conditions of living. Fortunately, she married happily, and her bodily complaints all disappeared.

A woman of 32, of the intellectual type, had been an invalid for years. Accurately to describe her symptoms would require a descriptive catalogue. They included "stomach trouble," "rectal trouble," severe headaches, ready exhaustion, tenderness at places over the abdomen and in the pelvis, loss of weight and anemia. She certainly had enteroptosis, with the right kidney far down. One of the greatest surgeons of Chicago thought it best to take out the appendix, fasten up the kidney, ventrifix and curet the uterus. Did all this help? Not a bit. She was sent East for a prolonged rest cure under the greatest master of that procedure, with the same result. She remained the same practically useless martyr, a burden to herself and the despair of her family. Finally, she was induced to take up an active, intellectual and taxing occupation in an environment that fitted her. Presto! The baffling organic disorders, the profound prostration, the disabling pains evaporated. She had found her place, and she has continued to be a busy, exceedingly useful and happy woman.

The following case shows the obverse mechanism:

A young man of ample means, shy and a bit effeminate, retired to a small farm where he raised a few fancy sheep and experimented in crossing flowers—all to his complete satisfaction, and with perfect health. Circumstances forced him into business and the hated city. He developed rebellious stomach, insomnia and headache, lost considerable weight and frequently his temper.

NATURE OF THE TREATMENT

These illustrations, which might be continued indefinitely and with interesting variations, serve to indicate not only that the neuropath may be useful but also what sort of treatment he should have. Very simply stated, the object is so to mold the patient that he

will fit his environment, and so to arrange the environment or so to place the patient that the environment fits him. Sometimes it cannot be done. Our laws and customs contain fragments from the dark ages and more primitive eras. So do we. Some of us belong to the period about 100 A. D. For such, transplantation to the present epoch is difficult. A few of us belong in the stone age, and we cannot live in the captivity of modern civilization without falling ill. Perhaps occasionally one is 500 years ahead of his time. If so, he has a hard life, and probably is a failure, judged by our standards.

In assisting to adjust a patient to necessary conditions, frequently we have to show him that he can do things that he says he cannot do. That is his way of expressing his great reluctance to do or fear of doing something necessary for his health. Demonstration discounts admonition. He should be given an understanding of his situation; but simply telling him is not enough. We must demonstrate to him that he can eat turnips or walk a mile or sleep without a hypnotic or go without a headache powder.

Let me again emphasize that the headache or the pain in the legs or indigestion is simply a means of escape from something for which the patient feels himself inadequate, or really is inadequate. Our job is to make him equal to the task he is trying to escape or so modify the task that he can perform it, or give him another which he can do with satisfaction. To say, "Don't worry" or "Why Worry?" or "That headache isn't in the least serious" is not enough. The unwholesome ideas, the distressing disorder, can be driven out only by wholesome satisfactory ideas, which in the vast majority of cases means a satisfying occupation, a something which makes life taste good.

THE OUTCOME

And for our encouragement, we may remember that the temperamental individual who is confused and discouraged by life's perplexities and takes refuge in physical disabilities is, when rightly placed, likely to be the finest enthusiast, the most glowing optimist. Just as he is dominated and defeated by a depressing idea, so is he exhilarated and activated by sanguine ideas. Some of the greatest and most beautiful work of all time has been done by these men and women who are too much controlled by their emotions, too sensitive to the jars of a battling society, too unstable to carry the gross burdens of a materialistic world. Ours the task, then to strengthen their intellectual control, to toughen their shrinking sensibilities, and adjust the burden to the bearer. Thus may we, too, add to the sum total of human health, happiness and progress.

25 East Washington Street.

Diet and Health.—A lack of the knowledge of how to adjust income and food expenditures is holding many children back in normal development, and thereby decreasing the ability of future citizens. Oftentimes medicine can be of no lasting value until the diet is regulated, and quite frequently when the diet is regulated medicine is unnecessary; but in the majority of cases the doctor has not the time to sit down and plan this adjustment with the mother, and the problem of food economics is a work apart from nursing, just as nursing is apart from the practice of medicine. To meet just such a situation as this the nutrition specialist in social work has come into existence.—L. L. Gillett, *The Commonwealth* **6**:111 (May-June), 1919.

PELVIS OF KIDNEY AS POSSIBLE SOURCE FOR INFECTION OF BLOOD STREAM

PRELIMINARY REPORT *

J. A. H. MAGOUN, JR., M.D.
Fellow in Surgery, Mayo Foundation
ROCHESTER, MINN.

During recent years it has been generally conceded that in cases of renal infection the kidney is infected secondarily following a primary bacteremia. In some instances it seems that the kidney, previously infected either through the blood stream or by an ascending infection, may be the cause from which a bacteremia results. For the purpose of investigating this interesting problem, experiments have been conducted under the direction of the Departments of Urology, of Experimental Bacteriology, and of Experimental Surgery, with reference to the following questions:

1. Can organisms pass from the pelvis of the kidney into the blood stream?
2. Are the conditions under which they pass at all analogous to the pathologic status found clinically?
3. Are there clinical cases in which the kidney has acted as a focus of infection?

Our investigations have been concerned, as yet, only with the first two of these hypothetic questions.

The literature concerning the absorption from or the passage of organisms through the kidney is very meager. Albarran[1] was the first to investigate experimentally the infections of the blood stream through the kidney. In 1888, working with *Bacillus pyogenes,* which was afterward identified as *Bacillus coli* by Krogius, Achard and Renault,[2] he produced infection in the blood stream by introducing *Bacillus pyogenes* into the ureter. His work was without previous bacteriologic control of the blood, however, and in many cases peritonitis occurred. He traced the organism from the bladder to foci of infection in the kidney. "From these foci the organisms go into the connective tissue and then penetrate into the blood vessels, enter the circulation, and lead to far off emboli." Thus it is seen that thirty years ago the thought was suggested that the kidney might be a focus for blood stream infection.

Burns and Swartz[3] do not believe that absorption takes place from the pelvis of the kidney under normal conditions. If an acute pyelitis occurs, however, absorption, and the clinical phenomena of chills and fever result. These authors consider such clinical manifestations as due to the absorption of urine and bacterial toxin either from the blood vessels or lymphatics of the renal pelvic mucosa directly, or from the urine and bacterial toxins retained in the uriniferous tubules. They do not suggest, however, that these clinical symptoms may be due to the passage of the bacteria through the kidney into the blood stream, thus causing a bacteremia. In their later work, after the injection, by the gravity or syringe method, of indigocarmin and india ink particles into the previously

* From the Mayo Clinic.

1. Albarran, J.: Étude sur le rein des urinaires, Thèse de Paris, 1888.
2. Krogius, Achard and Renault, quoted by Brown, T. R.: The Bacteriology of Cystitis, Pyelitis and Pyelonephritis in Women, with a Consideration of the Accessory Etiological Factors in These Conditions, and of the Various Chemical and Microscopical Questions Involved, Johns Hopkins Hosp. Rep., **10**: 11-89, 1902.
3. Burns, J. E., and Swartz, E. O.: Absorption from the Renal Pelvis in Hydronephrosis Due to Permanent and Complete Occlusion of the Ureters, J. Urol. **2**: 445-455 (Dec.) 1918.

ligated ureter, they found these substances in the opposite kidney, in the liver, lungs, and spleen. They then conclude: "It is reasonable to suppose that if particles of ink can travel in this manner, bacteria and other foreign substances can do likewise."

Macht[4] states that certain drugs or poisons may be absorbed through the walls of the ureter and the kidney pelvis. Weld[5] has shown with what ease certain drugs may be absorbed from the renal pelvis, and the untoward action of some of them. Weld's finding that "absorption from the kidney pelvis indicates that the kidney may be a focus of infection which should always be considered" stimulated me to make the present investigation.

EXPERIMENTAL WORK

Dogs were used in all the experiments. The animals were etherized with a constant ether tension; their condition was kept as near normal as possible by the judicious use of heat, etc. In some of the experiments the blood pressure was recorded. All operative manipulations were carried out with the minimum of trauma and hemorrhage. *Bacillus prodigiosus* was the organism chosen, since it is easily identified, since it probably never occurs spontaneously in the sites from which cultures were taken, and since it is rarely the cause of bacterial contamination in the laboratory. The bacillus was grown in broth cultures and injected by the gravity method.

TABLE 1.—RESULTS OF EXPERIMENTS IN SERIES 1

Experiment	Pressure Above Kidney Pelvis, Cm. of Water	Positive Cultures of Bacillus Prodigiosus
550-19	20 to 30	1. Renal vein 2. Left kidney cortex 3. Left kidney medulla
560-19	20 to 30	1. Left kidney medulla
562-19	20 to 30	1. Left kidney cortex 2. Left kidney medulla
565-19	10 to 30	1. Heart blood 2. Liver 3. Renal vein, A and B
592-19	20 to 30	All cultures negative
618-19	20 to 30	1. Left kidney cortex
620-19	20 to 30	1. Left kidney cortex
630-19	20 to 30	1. Left kidney cortex 2. Right kidney cortex
649-19	20 to 30	1. Left kidney cortex
654-19	20 to 30	1. Left kidney cortex
657-19	20 to 30	1. Left kidney cortex
666-19	20 to 30	All cultures negative

A straight glass tube about 2.5 mm. in diameter was connected by a T-tube to a cannula inserted into the ureter and to a graduated buret. The straight glass tube was graduated in cubic millimeters. A stopcock was inserted on each side of the T-tube. The fluid containing the bacteria was placed in the buret and allowed to flow into the graduated tube to any desired height. At this definite and controlled pressure it was then allowed to enter the ureter. Great care was taken to exclude air from the entire system and not to contaminate adjacent tissues.

The dogs were killed with ether at the end of from two to three hours, and cultures taken from the heart's blood, the lungs, liver, spleen, inferior vena cava opposite the renal vein, right kidney cortex and medulla, and left kidney cortex and medulla. The cultures were made by planting from 2 to 5 c.c. of blood and from 0.2 to 0.5 c.c. of the tissue juice of the various organs into tall tubes of glucose broth. The material from the tissues was obtained by aspirating the macerated particles and juice into sterile pipets. The inoculated tubes were allowed to stand at room temperature for from forty-eight to ninety-six hours. The positive cultures were then plated on plain agar.

TABLE 2.—RESULTS IN SERIES 2

Experiment	Pressure Above Kidney Pelvis, Cm. of Water	Positive Cultures of Bacillus Prodigiosus
531-19	78	1. Left kidney cortex 2. Left kidney medulla
534-19	70	1. Heart blood 2. Right kidney 3. Liver 4. Renal vein?
704-19	60	1. Lung 2. Renal vein, A and B 3. Heart blood, A and C 4. Right kidney cortex 5. Left kidney cortex 6. Right kidney medulla 7. Liver, A and B 8. Spleen
800-19	60	1. Renal vein 2. Left kidney cortex
801-19	60	1. Liver, A and B 2. Renal vein, A, B and C 3. Heart blood, A, B and C 4. Spleen 5. Right kidney cortex
802-19	60	1. Liver, A and B 2. Spleen
803-19	78	1. Heart blood, A, B and C 2. Renal vein, 1 and 2 3. Liver, 1 and 2 4. Left kidney cortex

Series 1.—In the first series, through a lumbar incision a cannula was inserted into the left ureter from 2 to 4 cm. from the pelvis of the kidney. A twenty-four hour broth culture of *Bacillus prodigiosus* was then permitted to flow into the pelvis at from 10 to 30 cm. pressure. From two to three hours afterward the dogs were killed with ether and cultures made as outlined above. Results are shown in Table 1. In twelve experiments even with this low pressure, *Bacillus prodigiosus* was recovered from the blood stream or other organs in three instances. It was found in the left kidney in all but two of the experiments.

Series 2.—The procedure in the second series was the same as in the first, with the exception that the pressure at which the organisms were passed into the ureter was increased to from 60 to 78 cm. Results are shown in Table 2. At this pressure, which was slightly less than the secretory pressure of the kidney, the organisms were recovered from the blood stream or other organs in six of seven experiments, and they were recovered from the left kidney in all.

TABLE 3.—RESULTS IN SERIES 3

Experiment	Pressure in Left Ureter, Cm. of Water	Pressure in Right Ureter, Cm. of Water	Positive Cultures of Bacillus Prodigiosus
739-19	20	65	1. Lung 2. Heart blood, A, B and C 3. Renal vein, A and B 4. Liver 5. Right kidney cortex 6. Left kidney cortex
756-19	20	64	1. Renal vein 2. Liver 3. Left kidney cortex
760-19	20	78	1. Liver 2. Left kidney cortex
804-19	20	50	1. Heart blood 2. Left kidney cortex
805-19	20	65	All cultures negative

Series 3.—In the third series in addition to the procedure followed in Series 1 and 2, a cannula was inserted into the right ureter 4 cm. above the bladder; to the cannula was attached a straight glass tube. The cannula inserted into the left ureter was also 4 cm. above the bladder. A forty-eight hour broth culture of *Bacillus prodigiosus* and washings from forty-eight hour agar slants were placed in the buret and allowed to flow into the left ureter, while the pressure was

4. Macht, D. I.: Concerning the Absorption of Drugs and Poisons from the Ureter and Pelvis of the Kidney, J. Urol. **2**: 481-485 (Dec.) 1918.

5. Weld, E. H.: Renal Absorption with Particular Reference to Pyelographic Mediums, Med. Clin. North Am., to be published.

kept under 21 cm. The tubing connected with the cannula in the left ureter was then clamped. The femoral vein was isolated, and from 100 to 150 c.c. of a 5 per cent. sodium sulphate solution were injected slowly. The secretory pressure of the right kidney was measured in the graduated tube connected with the right ureter. After from two to three hours the routine procedure as previously described was carried out. The organisms were introduced under a very low pressure and the intrapelvic pressure was subsequently increased by stimulation of the kidney. The results are shown in Table 3. In four of these five experiments, *Bacillus prodigiosus* was recovered in other organs than the kidney.

It may be concluded, therefore, that bacteria can pass from the kidney pelvis into the blood stream, and that they may do this under conditions analogous to some of the pathologic states found in man.

INTRAVENOUS INJECTIONS OF HYPERTONIC GLUCOSE SOLUTION IN INFLUENZAL PNEUMONIA

CLIFFORD W. WELLS, M.D.
Captain, M. C., U. S. Army
DES MOINES, IOWA
AND
R. C. BLANKINSHIP, M.D.
Lieutenant, M. C., U. S. Army
MADISON, WIS.

One of the trying experiences of the medical profession during the late pandemic of influenza was the apparent helplessness in the treatment of the chief complication, pneumonia. The experience at the Camp Travis Base Hospital probably paralleled that of other similar institutions. At first, only the commonly accepted methods of treatment were used; but it soon became evident that some additional measures must be employed, else a very high mortality would result. At this hospital, resort was made to the use of quinin because of its recognized pneumococcidal action, and to the intravenous injections of hypertonic glucose solution. The results following the quinin medication are to be reported by others. The good results following the glucose treatment are attested by a relatively low mortality. This report deals with the results obtained in 319 cases of influenzal pneumonia, in which one or more injections of a sterile hypertonic glucose solution were used.

The use of glucose in the treatment of serious diseases is not new: heretofore, its use has been restricted chiefly to administration by mouth and rectum for the purpose of supplying the organism with a food easily assimilated and of high caloric value. Litchfield[1] has recently urged the intravenous use of hypertonic glucose solution in serious diseases. The present report is offered because it comprises the largest series of cases on record in which the intravenous use of a hypertonic glucose solution has been intensively employed in the treatment of pneumonia.

PREPARATION OF SOLUTION AND TECHNIC OF INJECTION

The solutions were prepared in the base hospital laboratory from chemically pure glucose: Several thousand cubic centimeters of a solution of a desired strength were prepared in distilled water brought slowly to the boiling point in order to dissolve the glucose, and filtered through a heavy layer of cotton to remove any gross contamination; then they were made up to the original volume, autoclaved at 20 pounds pressure for twenty minutes, again filtered through several layers of filter paper and made up to the original volume with distilled water, after which the solution was distributed into suitable flasks, holding about 300 c.c. These flasks after being properly stoppered were again autoclaved, and set aside for use as needed. The necessity for several filtrations is important, for in our experience, the boiling as well as the autoclaving tended to precipitate foreign matter which otherwise would be injected. We have used solutions of four strengths in this series: 5, 10, 15 and 25 per cent. strengths of glucose.

The technic of injection and the apparatus are those commonly employed in the intravenous injection of arsphenamin. Any large vein is suitable for puncture, usually one in the antecubital space being selected. Only three precautions should be taken: First, the solution, containers, tubing and needles should be sterile. Second, the solution as it enters the vein should be kept slightly above body temperature; this may be accomplished by placing the rubber tubing in a basin of warm water. Third, the solution should be injected slowly; it should require from thirty to forty minutes to complete the injection of from 250 to 300 c.c. We have found that if the fluid is allowed to flow from the needle before puncture at the rate of from sixty to ninety drops per minute this precaution will have been taken. A pinch-cock attached to the rubber tubing is used to control the rate of flow.

RESULTS IN THREE GROUPS OF CASES

For the purpose of comparison, the cases in this series are divided into three groups, based on as accurate a prognosis as possible at the time of the injection. Group 1 includes those patients who were seriously ill, but who were expected to do reasonably well under the usual methods of treatment. Group 2 includes those patients who were critically ill, but who had a fighting chance for recovery under the ordinary methods of treatment. Group 3 includes those patients who invariably died under the former methods of treatment. Many of the patients in the latter group did not receive glucose injections until late, other methods being tried first, only to fail; many were practically moribund at the time of the first injection, as will be noted in the illustrative cases. The subdivision of each group into A and B denotes the day of the disease on which the injections were given. In Group A the injections were made on the first, second or third day of the disease; while Group B includes patients in whom injections were made after the third day. Table 1 shows the results obtained in 319 cases, as regards mortality and length of febrile period.

TABLE 1.—RESULTS OBTAINED IN A SERIES OF THREE HUNDRED AND NINETEEN CASES

	Group 1		Group 2		Group 3	
	A	B	A	B	A	B
Number of patients injected	75	37	87	37	51	32
Deaths	0	0	8	0	34	20
Mortality, per cent.	0	0	9.1	0	66.6	62.5
Average day of disease on which first injection was given	2	4.2	1.8	4.6	2	5
Average length of febrile period in days	4.5	8.2	4.9	9.6	5.6	9
Complications	4	2	6	4	4	1

1. Litchfield, Lawrence: Glucose Intravenously as a Therapeutic Measure, J. A. M. A. 71: 503 (Aug. 17) 1918.

So-called protein reactions occurred in forty-two cases. Possibly the complete removal of all foreign material from the solution would eliminate this feature. Table 2 shows the mortality rate as regards strength of solution injected. The distribution of the forty cases as regards strength of glucose injected is shown in Table 3.

TABLE 2.—RELATION OF STRENGTH OF GLUCOSE SOLUTION TO DEATHS

	Strength of Solution, per Cent.				
	5	10	15	25	Mixed
Number of patients injected	31	201	28	39	20
Deaths	8	39	3	9	2
Deaths in Group 3	5	35	3	8	1
Mortality, per cent.	25	19.4	10	25	10

TABLE 3.—RELATION OF STRENGTH OF GLUCOSE SOLUTION TO THE OCCURRENCE OF PROTEIN REACTION

	Strength of Solution, per Cent.				
	5	10	15	25	Mixed
Number of patients injected	31	201	28	39	20
Number of reactions	2	37	0	2	1
Per cent. of reactions	6.4	18.3	0	5.1	5

The subjoined case reports illustrate the effect of the glucose injections. The first case was one of the most severe encountered during the epidemic, while the second was quite severe but less so than the first.

REPORT OF CASES

CASE 1.—The onset of influenza occurred, Oct. 29, 1918, and of pneumonia, Nov. 3, 1918. The patient was admitted to the hospital, November 2. The day following, bilateral consolidation of the lower lobes was noted. November 4, 250 c.c. of a 10 per cent. glucose solution were injected intravenously. November 5, the condition was critical, the patient was semicomatose and delirious, and there were marked cyanosis and dyspnea. Two hundred and fifty c.c. of the glucose solution were given which produced some improvement in the degree of cyanosis and in the condition of the pulse. November 6, the lung involvement had extended to the left upper lobe; the pulse was rapid and weak; the temperature was 103.8 F.; the pulse rate was 120, and respiration was 38. Two hundred and fifty c.c. of glucose solution were injected, after which the pulse became stronger and slower. November 7, the pulse rate was 130 and was irregular. Two hundred and fifty c.c. of glucose solution were injected. The patient was delirious, but slept after the injection, the first time in three days. November 8, the pulse was rapid and thready, respiration was shallow, the nails and lips were extremely cyanotic, and the mouth and tongue were dry and coated. Two hundred and fifty c.c. of glucose solution were given intravenously, after which the patient slept. November 9, the patient was still delirious and cyanotic. Two hundred and fifty c.c. of glucose solution were injected, followed by marked improvement. November 10, the patient was rational, there was no cyanosis; the pulse was regular, and of improved quality. The patient continued to improve, but convalescence was prolonged owing to the development of pulmonary tuberculosis.

CASE 2.—The onset of influenza occurred, November 7, and of pneumonia, Nov. 11, 1918. The patient was admitted to the hospital on the latter date with definite consolidation of the right lower lobe, and with temperature of 103 F. November 15, the lung involvement had extended to the right middle lobe, and the patient became extremely cyanotic and dyspneic. He was given 250 c.c. of a 10 per cent. glucose solution intravenously, which was followed by a moderately severe reaction, after which he showed remarkable improvement. The following day he had improved, but he was given a second injection of glucose. November 18, the temperature was normal, and recovery followed.

COMMENT

The beneficial effects of an intravenous injection of glucose solution are most striking in those patients who are critically ill, and who present the toxic symptoms commonly observed in this disease, as nausea and vomiting, anxiety, restlessness, vasomotor disturbances shown by cyanosis, rapid, feeble pulse, a cold, clammy skin, and a dry coated tongue and mouth. In many instances, a change occurring shortly after the injection to a state of well being seemed almost miraculous. Frequently, the patient would fall into a restful sleep before the completion of the injection.

An analysis of Table 1 shows that among 112 patients in Group 1 there were no deaths; among 124 patients in Group 2 there occurred eight deaths, and among eighty-three patients in Group 3 there occurred fifty-four deaths. The mortality rates for each group being: Group 1, 0; Group 2, 6.45, and Group 3, 65.06. It is expected that the mortality would be lower among those patients receiving glucose early, yet in Group 2 there occurred eight deaths among eighty-seven patients receiving glucose injections during the first three days of the disease, while among thirty-seven patients to whom the injections were not given until after the third day there were no deaths. The number of cases as well as the number of deaths in this group is too small to warrant the drawing of any conclusions from these results. In Group 3 there occurred thirty-four deaths among fifty-one patients receiving injections during the first three days of the disease, while among thirty-two patients receiving the first injection after the third day there occurred twenty deaths, the death rate being slightly lower in the latter. Two points must be considered before any conclusions are drawn in regard to Group 3 cases; first, that a hopeless prognosis had been made in all these cases; and second, that by the end of the third day some of the patients in Subgroup B had probably developed a certain amount of immunity. Quite significant is a definite shortening of the febrile period in those cases in which glucose was received prior to the third day; in each group, this time was reduced practically 50 per cent. Complications were too few to warrant the drawing of any conclusions relative to the influence of glucose injections on their occurrence.

The majority of patients in this series received injections of a 10 per cent. glucose solution. The important facts relative to the relationship of different strengths of the solution injected to the number of deaths are shown in Table 2. The lowest death rate occurred among those patients receiving a 15 per cent. solution, and the highest among those receiving a 5 and 25 per cent. solution. The number of cases in these three series differs so slightly that the inference that a 15 per cent. solution is the one of choice is probably not warranted. The death rate in the group of cases in which the 10 per cent. solution was used is 19.4 per cent., the average for the entire series of 319 cases being 19.1 per cent. From our experiences we have not been able to demonstrate that the injection of a 25 per cent. solution has any particular advantage over that of a 10 per cent. solution. Theoretically a 25 per cent. solution should be more efficacious than a weaker solution, and possibly its use in a larger series of cases than ours would bring out this advantage.

PROTEIN REACTION

The occurrence of the so-called "protein reaction" following the injection of glucose solution is mentioned

by Litchfield; we encountered it in forty-two instances, or 13.4 per cent., of the patients injected. Erlanger and Woodyatt,[2] and Wilder and Sansum[3] have given a large number of glucose injections without the occurrence of such reactions. Concerning what may be the responsible factor for this phenomenon we confess ignorance. It has been suggested that failure to remove all foreign matter from the solution may be responsible. Opposed to this suggestion is a condition that we have several times observed: In attempting to provoke a therapeutic protein reaction, we have repeatedly failed after the addition of 1 c.c. of our killed typhoid bacilli mixture to 250 c.c. of glucose solution, and this occurred in patients who previously and afterward showed a typical reaction following the injection of the same amount of the bacterial mixture diluted in 2 c.c. of physiologic sodium chlorid solution. We are certain no harm has resulted in our cases from the occurrence of this reaction, and, as reported elsewhere,[4] it may have a definite therapeutic value.

ACTION OF GLUCOSE

The mechanism by which glucose solution aids in recovery is somewhat complicated and probably not altogether known; undoubtedly both the ingredients present in the solution play a definite rôle. Litchfield has emphasized that the process of dehydration in serious diseases is especially potent for evil because least appreciated and consequently neglected in treatment. The introduction of several hundred cubic centimeters of water directly into the blood stream immediately tends to correct this dehydration. The introduction of hypertonic solution into the blood stream would render the blood hypertonic if it were not for several changes which occur to maintain a state of isotonicity. The value of the glucose solution lies in part in the occurrence of these changes. As the glucose solution enters the blood, there at first is a withdrawal of fluids from the body tissues sufficient to maintain an isotonic condition in the blood. That this is probably the case is shown by the fall in the hemoglobin content of the blood following such injections; and also blood chemistry studies, in our cases, of blood taken during and shortly following the injections show a normal sugar content. The latter finding may possibly be due to a withdrawal of the glucose from the blood as rapidly as it is injected; but it may also mean a dilution of the blood by fluids extracted from the tissues of the body. This condition is not due to the elimination of glucose from the body through the kidneys for in our cases glycosuria was uniformly absent. The occurrence of the extraction of fluids from the tissues, as just assumed, would only tend to increase the degree of dehydration in the tissues of the body, if it were not for the fact that the glucose is rapidly taken up by the tissues. This process is increased by the condition of starvation present in the tissues, and makes demand on the blood for fluid which is necessary in the physiologic process of cell metabolism; this brings about a reversible flow of fluids to the tissues, and tends to neutralize the tissue dehydration.

In diseases characterized by toxin production, either from the products of the infecting organisms or from the products of catabolism, with the extraction of fluids from the tissues there is considerable washing out of toxins into the blood stream, from which these may be more readily eliminated through the kidneys.

In addition to the influence of the glucose solution on the condition of dehydration, it also has a marked effect on the condition of starvation, characteristic of most serious infectious diseases. Lusk[5] has pointed out that there is a certain amount of stimulation of cell activity by glucose, in addition to its purely food value. The marked improvement in the pulse following glucose injections would suggest a possible direct stimulation of the cardiac muscle.

We do not know how to account for the marked improvement in desperate cases following glucose injections, unless they are due to the theoretical processes that have just been mentioned. One is struck by the rapid improvement in many cases: patients previously restless and semidelirious have dropped into a restful sleep during the course of an injection, the anxious toxic look has disappeared, and the hot, dry skin has become moist. The tongue, previously dry and coated, has become moist. The appetite for food and liquids becomes less capricious and is stimulated. The urinary output is increased.

CONCLUSIONS

1. The intravenous injection of glucose solution is a valuable aid in the treatment of serious cases of pneumonia.
2. The results following are almost immediate, but are not necessarily lasting; and success may follow only after repeated injections.
3. The injection of glucose solution is not more difficult than the injections of other intravenous medication.
4. It is not intended that glucose solution should be substituted for antipneumococcic serum in cases of Type I infections; it may, however, be added to the serum treatment.

2. Erlanger, Joseph, and Woodyatt, R. T.: Intravenous Glucose Injections in Shock, J. A. M. A. **69**: 1410 (Oct. 27) 1917.
3. Wilder, R. M., and Sansum, W. D.: *d*-Glucose Tolerance in Health and Disease, Arch. Int. Med. **19**: 311 (Feb.) 1917.
4. Wells, C. W.: Intravenous Injections of Foreign Protein in Influenzal Pneumonia, J. A. M. A. **72**: 1813 (June 21) 1919.
5. Lusk, Graham: Elements of the Science of Nutrition, Ed. 3, Philadelphia, W. B. Saunders Company, 1917.

AN OUTBREAK OF BOTULISM

REPORT OF CASES

CHARLES G. JENNINGS, M.D.
ERNEST W. HAASS, M.D.
AND
ALPHEUS F. JENNINGS, M.D.
DETROIT

The outbreak of *Bacillus botulinus* poisoning reported in this paper occurred at Grosse Pointe, a residential suburb of Detroit. The source of the toxin was a glass jar of ripe olives. This food was later analyzed by Dr. Herbert W. Emerson of the Hygienic Laboratory of the University of Michigan, Dr. Plinn F. Morse of Harper Hospital, and the Detroit Board of Health. *Bacillus botulinus* was found by each of these investigators, and the fluid from the olives was demonstrated to be lethal for guinea-pigs in doses of 0.01 c.c.

THE OUTBREAK

The olives were first served at a formal dinner, Oct. 18, 1919, at the residence of Mr. M. W. S., and there were present the host, hostess and six guests. One of the guests noticed that the olives were soft and remarked that they had a peculiar odor. They were, however, eaten by four of the diners and one waitress, and of this group two died, two were made moderately

sick but recovered, while one escaped entirely. On the following days, October 19-21, the olives were eaten by Master L. S. and Miss F. S., children of the host, and by Miss J. M., a waitress in the home. All of this group died. There were in all eight persons who are known to have eaten the olives. Of these one escaped entirely, two were slightly affected, and five died.

CLINICAL HISTORIES

CASE 1.—Mrs. C., aged 27, a temporary waitress, ate two or more olives in the evening after the dinner. On the morning of the next day, October 19, she had slight difficulty of vision, pain in the head and nervousness. At noon she had slight difficulty in swallowing. She was seen by her family physician about 3 p. m., who could find no objective symptoms of disease. At 7 p. m. she began vomiting and had moderate abdominal pain and diarrhea. These symptoms soon were followed by collapse, and death occurred at 10 p. m., twenty-four hours after eating the fruit, and twelve hours after the onset of symptoms.

CASE 2.—Mr. A. I. L., aged 45, ate one or more olives at dinner, October 18. The following day, October 19, he played golf. While on the links he had difficulty of vision, and on returning home he said that he had never felt so tired before. October 20, he noticed diplopia and at night difficulty in articulation. October 21, he developed great difficulty in swallowing and articulation, which later developed into total paralysis of deglutition and phonation. At this time the pupils were dilated and reacted slowly to light. There was internal strabismus of the right eye and partial ptosis of the right eyelid. The eyes were suffused and red. There was paresis of the whole right face. The pharynx and larynx were filled with thick mucus, which the patient could not dislodge. The blood pressure was 140 systolic and 80 diastolic. There was no fever, the urine was normal, the nonprotein blood nitrogen was 36 mg. per hundred c.c., and the Wassermann test was negative.

October 22, dyspnea with laryngeal spasm began. The tongue could not be protruded. The patient became weaker and died of respiratory paralysis that evening, four days after taking the toxin and after an illness of three days.

CASE 3.—Mrs. A. I. L., aged 43, ate a small part of one olive at dinner, October 18. October 21, about sixty-five hours following the meal, she developed slightly disturbed vision, mild ptosis, obstinate constipation and difficulty in swallowing solid food. These symptoms were not severe, and she recovered in a few days.

CASE 4.—Mrs. M. W. S., aged 48, ate a small part of an olive, October 18, and a whole olive, October 19. October 22, she noted mild haziness of vision with diplopia, and October 23 slight difficulty in swallowing solid food, and moderate ptosis of the right eyelid. Aside from the ptosis the physical examination was negative. October 24, at 8 p. m., she received 1 c.c. of antibotulinus serum intravenously and 10 c.c. at 9 p. m. On the following day she received 10 c.c. subcutaneously. The ptosis continued for several days, and she recovered very slowly from the nervous and muscular debility.

CASE 5.—Master L. S., aged 12, ate an unknown number of olives, October 19, 20 and 21. October 22, about noon, he vomited once and then was comfortable until late in the afternoon, when he developed dimness of vision and diplopia and had difficulty in entering his home from the automobile. About 7 p. m. he began vomiting, and about 8:30 p. m. he had a severe convulsion lasting one minute. He vomited once after the convulsion. At this time there began inability to swallow and speak and marked weakness. He rapidly failed, and died of respiratory paralysis at 3 a. m., October 23, three days after first eating the olives and twelve hours after the onset of symptoms.

CASE 6.—Miss J. M., aged 43, a maid in the home of Mr. M. W. S., ate an unknown number of olives, October 19-21. About 3 p. m., October 22, she began vomiting, with moderate abdominal pain. During the afternoon she developed difficulty in swallowing, diplopia and dimness of vision. These symptoms kept up for twenty-four hours, but she had several periods of a few hours each during which they cleared up almost completely. Calomel was given and good catharsis obtained. She found that olives relieved her nausea and so kept on eating them. On the morning of October 23 she vomited blood. At noon of October 23, paralysis of deglutition became complete and ptosis of the left eyelid was present. During the afternoon she became very weak and had difficulty in breathing, it being necessary to use all the accessory muscles of respiration. The pharynx was filled with thick mucus. In the evening she was in a semicoma and the pulse was rapid, weak and irregular. Nystagmus and strabismus were observed, and râles were present at the bases of both lungs. She died of cardiac and respiratory paralysis at 10:30 p. m on the fourth day after eating olives, and about thirty-six hours after the onset of symptoms.

CASE 7.—Miss F. S., aged 23, ate a total of two or more olives, October 19-21. Illness began on the morning of October 22, when she noticed coryza and sore throat, blurred vision and diplopia. She did not feel sick. October 23, she felt weak. About noon, she started to eat soup and was unable to swallow it. She became nauseated and vomited once. Because of weakness and dimness of vision, she had to be assisted to bed.

At this time the heart, lungs, abdomen and general examination were negative. There was ptosis of both eyes, so that the patient had to throw back the head to see. There was paralysis of the right external rectus muscle. The pupils reacted to light and accommodation, and were normal in size. There was no paralysis of the facial muscles, and the tongue protruded normally. The patient was unable to swallow food or liquids, and there was an accumulation of thick mucus in the pharynx which she could neither expel nor swallow. Her mentality was clear, there were no paralyses or disturbances of sensation, and the deep reflexes were normal. The urine was normal. During the night she rested well.

The following day, October 24, the patient was weaker, but the ptosis was less. Other signs were unchanged, and she spent a comfortable morning. At noon she complained of smothering, and the respiration became wholly thoracic and labored with the accessory respiratory muscles in play. There was no cyanosis or dyspnea. The mucus became more annoying. With difficulty of respiration, the mentality became more anxious and the patient restless. The physical signs did not change during the day.

In the morning the duodenal tube was passed easily to the stomach. Two ounces of magnesium sulphate in one pint of water were injected and later, before the tube was removed, 8 ounces of milk and two eggs. There was a good bowel movement after five hours, and the patient passed about 15 ounces of urine during the day.

At 4:40 p. m., 10 c.c. of antibotulinus serum were given intravenously. At 5:45 p. m., 20 c.c. were given, and at 2:15 a. m. of October 25, 12 c.c. There was no reaction, and the injections seemed to quiet the patient.

On the final day, October 25, she was clear mentally, but drowsy and almost too weak to move. Speech, which up to now had been fairly clear, became very indistinct. The tongue could not be protruded. She complained of numbness in both hands and kept rubbing them "to restore the circulation." She suddenly became cloudy mentally, and the pulse rose to 160. In a few moments she became comatose, the pulse and respiration became slow, and she died of respiratory paralysis seventy-two hours after her first symptoms and on the sixth day after first partaking of the olives.

ANALYSIS OF CASES

Onset.—Difficulty of vision was the first symptom in five cases, and vomiting in two. Abdominal pain was present with the vomiting in one case, and weakness was an accompanying symptom in two cases, in one of which it was very severe. The symptoms began within twelve hours in one case, twenty-four hours in one case, sixty hours in one case, and seventy hours in four cases. The onset was gradual, and in only one case was it of such a character as to cause apprehension of illness on the part of the patient.

Course. — Once established, the disease became steadily and progressively worse in the fatal cases, excepting the one in which the patient showed some temporary relief for a few hours at a time. Death occurred in twelve hours in two cases, thirty-six hours in one, and seventy-two hours in two.

Gastro-Intestinal Symptoms. — These consisted of vomiting and moderate general abdominal pain. They dominated the clinical picture in Case 6, and masked the neurologic syndrome in Cases 1 and 5. They were absent or negligible in the remaining four cases. It was observed that death occurred much more quickly in the patients showing gastric symptoms, and that so far as could be determined they ate more of the poisoned food than did the patients showing only neurologic symptoms.

Neurologic Symptoms.—With the exception of paralysis of the diaphragm, the motor lesions were confined to the cranial nerves.

The olfactory (first), the trigeminal (fifth) and the auditory (eighth) nerves were not affected in any of the cases. The oculomotor (third), the trochlear (fourth) and the abducens (sixth) nerves were involved very early in every case. There was ptosis of one or both eyelids, and diplopia and paralysis of one of the ocular muscles, in two of the cases the right external rectus being affected. In only one of the cases, Case 2, was mydriasis present. Nystagmus was observed in Case 6. Vertigo was not seriously complained of by any of the patients. The facial (seventh) nerve showed involvement in Case 2, in which paresis of the right face appeared. The paralyses involving the glossopharyngeal (ninth) and the vagus nerves (tenth) were the most distressing features of the illness and occurred in every case. The difficulty of swallowing appeared shortly after the disturbances of vision, and sooner or later complete paralysis ensued. Strangling generally followed attempts to swallow. Though there was no excess of secretion, there was an annoying accumulation of mucus in the pharynx and larynx which the patient could not expel. There was great difficulty in articulation in Case 2. Paralysis of the trapezius and sternocleidomastoid muscles or of the deep muscles of the neck was not observed. The spinal accessory (eleventh) nerve may have been involved in the pharyngeal paralysis. Paralysis of the hypoglossal (twelfth) nerve appeared in two cases shortly before death. Paralysis of the diaphragm, as evidenced by total absence of abdominal breathing, was observed in Cases 6 and 7 toward the end of the illness. It may have been overlooked in the others. The patients at that time breathed heavily but not over 28 per minute, and the accessory respiratory muscles were in play. They complained of smothering and lack of air, but there was no cyanosis of lips or face. Whether the paralysis was due to injury to the phrenic nerve or to interference with the respiratory center we are unable to say. Incoordination was not observed.

A general convulsion occurred in Case 5 (Master L. S., aged 12). It was severe but of short duration, and did not recur.

With one exception, the mentality was clear in all the patients until shortly before death, when drowsiness and inattention to environment appeared. Patient 6 had a period of coma on the last day lasting two or three hours from which she partially aroused. Patient 1, not observed by us, was described by her physician as hysterical, which condition was attributed to a domestic misunderstanding of a few hours before.

The temperature was normal or subnormal in all cases except following serum administration in Case 7 and shortly before death in Case 2. The respiration was below 30 in all cases in which it was noted. The pulse was rapid and variable in rate, a little exertion or anxiety sending it as high as from 130 to 150 per minute. The general physical examination was negative in all cases except Case 6, in which there were râles at the bases of the lungs a few hours before death.

Urinalysis in two cases was negative. Blood counts were not made. One nurse called our attention to a peculiar sweetish odor in the stool of three patients.

The termination of illness came with great weakness and collapse, slowing and diminishing of the respiratory excursion, and a rapid, weak pulse. The heart continued to beat after the breathing had ceased.

Diagnosis.—In our experience, two points stand out: First, cranial nerve paralyses are constant symptoms in food poisoning due to *Bacillus botulinus;* they frequently precede the gastric symptoms, and they may constitute the whole clinical syndrome. Second, the time of onset of symptoms varies to such an extent that the poisoned individuals may become widely scattered and the presence of an outbreak may not be recognized.

The first patient to be taken sick, Case 1, was not observed by us and her illness was unknown to the family until, seeing the report of the death of the boy in the papers, her relatives called up. Her physician was puzzled over the case and suggested poisoning, but his suspicions were not aroused enough to demand a necropsy.

The cause of illness in the second patient was also unrecognized. A diagnosis of pseudobulbar paralysis was made on the evidence of paralysis of the third, seventh, tenth and twelfth cranial nerves, the first two showing right sided lesions. The etiology of the condition was obscure because the patient was in excellent health and presented no evidences of cardiovascular disease or syphilis. A bulbar palsy of infectious origin was ruled out by the absence of fever, and similarly a diagnosis of acute poliomyelitis with bulbar symptoms was discarded. Because of the rapidity of the course, progressive muscular atrophy of the bulbar type and myasthenia gravis were not considered. Poisoning by belladonna, hyoscyamus or gelsemium were impossible because the patient had not taken any of the drugs. The unsatisfactory conclusion was finally reached that cerebral thrombosis and softening were responsible for the condition. When, October 22, the boy and the maid in the home of Mr. M. W. S. came down almost simultaneously with gastro-intestinal and neurologic symptoms, the presence of food poisoning was recognized and the diagnosis of the two previous cases was cleared up.

Treatment. — Antibotulinus serum was obtained through the kindness of Prof. Robert Graham, of the University of Illinois. Forty-two c.c. of the serum were administered intravenously in Case 7, forty-eight hours after the initial symptoms. It did not affect the disease. Patient 4 received 10 c.c. of antiserum intravenously forty-eight hours after the initial symptoms, and twelve hours later 10 c.c. were given subcutaneously. Her illness was very mild, and we cannot state that the serum had any influence on her recovery.

To be of value, the serum must be administered early. This can be accomplished only by an early recognition of the disease and by having depots of serum

in various centers about the country. The dosage has not been fully established. McCaskey used small amounts, while Dickson reports the use of 85 c.c., or about 250,000 units. If a case of botulism occurs, careful search for the poisoned food should be made and all persons who have eaten it should be given good sized prophylactic doses of the serum.

Gastric lavage, free catharsis by castor oil and enemas, sedatives, supportive measures and, in the subacute cases, feeding by the stomach tube are indicated.

REVIEW OF THE LITERATURE

Dickson[1] states that up to October, 1918, there had been thirty reported outbreaks of botulism in the United States, with 104 cases and seventy-three deaths. Besides these he mentions four unreported outbreaks with a total of twelve cases and two deaths. Bine[2] reports an outbreak of three cases and two deaths, Nevin[3] one of three deaths, and McCaskey[4] one of seven cases and four fatalities. During the past year, besides the outbreak observed by us, one has been reported by Thom, Edmondson and Giltner,[5] and a third occurred in Ohio recently. Thom's outbreak was of five cases with four deaths, and the one in Ohio of eight cases and six deaths. There have been, therefore, at least forty recognized outbreaks of botulism in the United States, with 150 cases and ninety-seven deaths.

The pathology of the disease has been studied by Dickman. The abdominal and thoracic viscera show congestion. The veins and in some cases the arteries show varying degrees of thrombosis, the process beginning in the endothelial lining and eventually leading to occlusion. In the nervous system there are vascular congestion and hemorrhages, more marked at the base of the brain and in the region of the pons. Microscopic changes in the nuclei of the affected nerves were not found by Dickman. He is unable to explain the pathogenesis of the paralyses. We have found no record of examination of the peripheral nerves.

The clinical findings in the recorded cases have been similar to ours. The onset generally occurred before or on the third day after ingestion of the poison, though delays of six and nine days have occurred. The paralyses of the third, fourth, sixth and tenth cranial nerves were almost universally present. Great muscular weakness, incoordination and staggering were often found. Several persons have had paralysis of the sternocleidomastoid and trapezius muscles. Motor paralysis of the stomach with food retention for many days has been noted, and severe constipation is common. The course of some of the cases has been longer than ours, and there are several instances in which patients extremely ill eventually recovered after weeks of illness. The laboratory tests were all negative except for moderate leukocytosis.

Burke[6] has demonstrated that *Bacillus botulinus* occurs in nature under conditions that are ideal for the contamination of foods such as are canned for human consumption. In certain regions she has recovered the organism from moldy and bird picked cherries, pole bean leaves, spiders taken from bean plants, and moldy hay. It was also found in the intestinal contents of a hog that had eaten vegetables contaminated by the bacillus several months previously. Burke[7] has also found that the spores are more resistant to heat than has previously been supposed, some of them surviving a temperature of 100 C. for from fifteen minutes to two hours, and steam under 15 pounds pressure for ten minutes. Dickson, Burke and Ward[8] have investigated the efficiency of certain of the methods for sterilization of home canned vegetables. They found that the organism survived when the can was placed in boiling water for two hours, and when fractional sterilization of fifteen minutes for three successive days was employed. Fractional sterilization of one hour for three successive days, provided the cans were tightly sealed during the interval, was successful in sterilizing the food, as was the method of adding over 2 per cent. lemon juice to the food and exposing the cans to boiling water for one hour. The toxin is destroyed by light and air, but maintains its virulence for more than six months if it is sealed and in a dark place. It is not destroyed by the gastric juice. It is destroyed by a temperature of 80 C. for half an hour and by boiling.

435 Jefferson Avenue E.—202 Fine Arts Building.

1. Dickson, E. C.: Botulism: The Danger of Poisoning from Vegetables Canned by the Cold-Pack Method, J. A. M. A. **69**: 966 (Sept. 22) 1917; Monograph 8, Rockefeller Institute for Medical Research; Botulism: A Further Report of Cases Occurring in the Pacific Coast States, Arch. Int. Med. **22**: 483 (Oct.) 1918.
2. Bine, René: Boston M. and S. J. **177**: 559 (Oct. 18) 1917.
3. Nevin, Mary: Paper read in abstract before conference of the American Public Health Assn., Sept. 8, 1915.
4. McCaskey, G. W.: Am. J. M. Sc. **158**: 57 (July) 1919.
5. Thom, Charles; Edmondson, Ruth B., and Giltner, L. T.: Botulism from Canned Asparagus, J. A. M. A. **73**: 907 (Sept. 20) 1919.
6. Burke, G. S.: J. Bacteriol. **4**: 541, 1919.
7. Burke, G. S.: The Effect of Heat on the Spores of Bacillus Botulinus, Its Bearing on Home Canning Methods, Part 1, J. A. M. A. **72**: 88 (Jan. 11) 1919.
8. Dickson, E. C.; Burke, G. S., and Ward, E. S.: Botulism: A Study of the Resistance of the Spores of Bacillus Botulinus to Various Sterilizing Agencies Which Are Commonly Employed in the Canning of Fruits and Vegetables, Arch. Int. Med. **24**: 581 (Dec.) 1919.

A REVOLUTION IN TREATMENT OF CONGENITAL DISLOCATION OF HIP IN YOUNG CHILDREN

HENRY W. FRAUENTHAL, A.C., M.D.
Physician and Surgeon-in-Chief, Hospital for Deformities and Joint Diseases
NEW YORK

The method for the correction of congenital dislocation of the hip has been in vogue only about twenty years, and up to the time of the innovation which I shall describe, the correction has been done either by the closed method after the style of Lorenz, or by the open method as devised by Hoffa in recalcitrant cases. Both of these methods require a long period of encasement in plaster of Paris, followed by corrective exercises, the duration of the treatment extending over a period of many months.

Chance has placed in my hands a method which has been successfully applied to twenty-five cases and which I wish to present to the profession, this method being used in children up to the age of 2½ years.

In reviewing the literature of the anatomy of congenital dislocation of the hip, we find, according to Drs. S. S. Davis,[1] John Ridlon[2] and Ralph Thompson[3], that before the child has borne weight on the affected limb, the head and the acetabulum are normal and there has been no muscular contraction. It is only after the weight has been borne on the affected limb that the muscles about the hip joint are contracted, the upper dislocation resulting in a stretching of the ligamentum teres; and ultimately the artery accompanying the ligamentum teres fails to functionate, resulting in a malformation of the head of the femur.

1. Davis, S. S.: Am. Med. Aug. 29, 1903.
2. Ridlon, John: N. Y. Acad. of Medicine, March 3, 1904.
3. Thompson, Ralph: Lancet **2**: 777, 1909.

The origin of the method here described dates back to Oct. 17, 1918, when, in the presence of a number of visiting physicians, I replaced, without an anesthetic, a hip that was congenitally dislocated, in a child, aged 2 years. Wishing to demonstrate to one of the visiting surgeons present the simplicity of the replacement of the hip without an anesthetic, I attempted to displace the hip again; but, having failed to do so after a ten minutes' effort, I said I would permit the child to go about without applying the usual plaster-of-Paris fixation and allow the dislocation of the hip to reoccur, so that the following week I might give the visiting surgeon the opportunity of performing the replacement without an anesthetic as I had done. When the child returned, the following week, our surprise was great to see that the head of the femur was fixed firmly in the acetabulum. I was so impressed with this unexpected result that I have attempted this method on all young children with congenital dislocation of the hip, coming under my observation when they first begin to walk. I have so operated on twenty-five patients in the past year, making the correction without an anesthetic.

Of these twenty-five patients operated on, I myself was compelled to place in plaster of Paris one limb that would not remain in the acetabulum, and I know of only one other such case, in which the cast was applied at another institution.

TECHNIC

The pelvis is held fixed by an assistant; the thigh is completely flexed on the abdomen; pressure is made on the knee which brings the head of the femur under the acetabulum, and as the leg is rotated outward in the flexed position, the head of the femur is raised into the acetabulum, with the fingers of the other hand. The whole procedure in these cases is accomplished in less than a minute's time. The child is immediately placed on the ground and allowed to walk; and in one case, a child, aged 2 years, walked seven blocks on leaving the dispensary, immediately following the operation.

It is my intent to make a detailed report of these cases in about a year, at which time roentgenograms will be presented showing the dislocation and the replacement of the hip, and photographs showing the apparent shortening and cure. Sufficient time will have elapsed then to appreciate what percentage of perfect cures can be accomplished by this new method.

The method is not adapted to children that have walked on the affected limb for six months or more: then the old Lorenz method must be resorted to. It is effectual only when the child first starts to walk; and the oldest patient in whom I have been able to make the correction effectually was 2½ years of age.

A number of these cases were reviewed by the fellows of the American College of Surgeons during the recent October meeting.

CONCLUSIONS

From the observations of Thompson, Davis and other anatomists, one may conclude that:

1. Before the child bears weight and develops muscular and ligamentous contraction, the acetabulum and head and neck of the femur are normal in a large percentage of cases.

2. With normal conditions prevailing, there is no reason why the condition should not be regarded and treated as a traumatic dislocation and replaced in the same manner, and the child permitted to go about.

When we compare the large percentage of good results accomplished by this method with those of the Lorenz method, and the great saving of time and mental suffering, this, in the future, must be the method of choice and trial, to be followed by the plaster-of-Paris fixation, if there develops a failure of retention.

160 West Fifty-Ninth Street.

TREATMENT OF GOITER WITH INJECTIONS OF PHENOL, TINCTURE OF IODIN AND GLYCERIN

A FURTHER REPORT OF EIGHTY CASES *

JOSEPH EASTMAN SHEEHAN, M.D.
Instructor in Diseases of the Nose and Throat, New York Post-Graduate Medical School and Hospital; Consulting Otologist, St. Mary's Hospital and Port Jervis Hospital

AND

WILLIAM H. NEWCOMB, M.D.
Instructor in Diseases of the Nose and Throat, New York Post-Graduate Medical School and Hospital

NEW YORK

The injecting of diseased thyroid glands as a means of curing or relieving the pathologic condition has greatly interested us for the past five years. Through the courtesy of Prof. Beaman Douglass of the New York Post-Graduate Hospital, we have been able to observe all cases of goiter coming before us.

Eighty cases of all forms of goiter were injected at regular intervals by us for the past two years, with a mixture of equal parts of phenol (carbolic acid), tincture of iodin and glycerin. The eighty cases represented more than 500 injections. A limited number of the patients were injected with boiling water, but with poor results. We doubt its efficacy and we have discontinued its use.

There were no untoward results from injecting the goiters with the phenol preparations, disproving the statement of some that it is a blind, uncertain and dangerous procedure. It is true if one's technic is not perfect, there is a chance of entering a vein or of injecting too much of the phenol solution, thereby causing symptoms of acute strumitis. In four of the ten patients who were operated on there was some difficulty in separating adhesions between the anatomic and surgical capsule caused by the material oozing out, when the needle was retired from the gland.

The object of the injections is to produce an inflammation, which eventually causes a fibrosis in the gland and the obliteration of that part of the gland injected. After the case has favorably reacted to the treatment, one is able to feel islands of fibrosis. It gives one the feeling of a hobnail liver. The production of a fibrosis in the gland is borne out by the reports of the pathologists, when previously injected patients were operated on and were submitted for examination.

It will be seen from the accompanying table that the injections are particularly suitable in the ordinary parenchymatous goiters of young women. Of fifty-five patients of this type injected, 76.4 per cent. were cured. It relieves the thyrotoxicosis, as in exophthalmic goiter, but unfortunately the relief is only temporary. In fourteen toxic cases, relief was given in 80 per cent. It is of no avail in the cystic or colloid form; in fact, if

* In the Medical Record (92: 591 [Oct. 6] (1917) one of us (J. E. S.) published a report on seventeen cases of goiter, the treatment of which was similar to that described in this presentation.

the treatment is persisted in, it may do harm by causing a sudden enlargement of the gland which may seriously interfere with respiration.

The majority of the patients sought relief simply for the swelling in the throat. Some had slight difficulty in swallowing or lifting the arms upward. In other cases the swelling was brought to the attention of the patient by friends or members of the family. The majority of the patients noticed the swelling themselves.

RESULT OF TREATMENT IN EIGHTY CASES IN WHICH PHENOL, IODIN AND GLYCERIN MIXTURE WAS INJECTED *

Type of Goiter	No. of Patients	Cured	Improved	Unimproved
Parenchymatous	55†	42	10	3
Exophthalmic goiter	14‡	..	12	2
Cystic	8	..	..	8
Colloid	2	..	..	2
Adenomatous	1	..	..	1

* The number of injections ranged from three to twenty-six. All the patients were females except one, a male suffering from an advanced form of exophthalmic goiter.
† Fifty of whom were between 12 and 30 years of age.
‡ Eight mild cases, 6 advanced.

ACTION

The treatment causes an inflammation in the gland with a resultant fibrosis. It quiets the heart's action, improves the appetite, has a favorable effect on metabolism, stays emaciation, and reduces the mental irritability.

It is our custom to inject all goiters which are to be operated on, as the relief of the toxic symptoms is a powerful adjunct to the success of the surgical procedure. Patients are put to bed, but are allowed to get up daily for several hours to break the monotony, provided they do not display an excessive degree of thyrotoxicosis. A strict nonanimal protein diet is ordered, and small doses of codein at frequent intervals are given. The object is to produce mental and body quiet. Colonic irrigations of 2 per cent. sodium bicarbonate are given daily, as this is a powerful way of reducing the toxemia.

Two bowel movements should be obtained daily. The patient should have plenty of rest; noon and afternoon rest is insisted on. Plenty of alkaline water should be given. Patients with little means are advised to take plenty of water with the addition of a little sodium bicarbonate. Plenty of outdoor air and sunlight is essential. Tobacco and alcohol are prohibited. A cleansing bath should be given daily to promote perspiration.

Meat and fish are forbidden. Milk, buttermilk and food cooked with milk should be given. No soups are to be made from meat or fish stocks. Eggs, butter, bread, rice, cereals, cooked fruit and especially fruit juices prepared out of ripe fruit, should be given.

Of the fourteen patients with exophthalmic goiter, ten were operated on and all recovered, the results of which I attributed mostly to the preoperative treatment. Four cases of the series of fourteen proved inoperable, but the patients were greatly relieved by the injections and preoperative treatment. A careful history should be taken of all patients presenting themselves for treatment. An exhaustive examination of the throat should be made to determine the form of goiter present, as the injections are of no avail in the cystic or colloid forms.

METHOD

Five drops of equal parts of tincture of iodin, chemically pure phenol and glycerin are injected into the most prominent part of the gland. The needle is plunged directly into the substance of the gland, and the patient is told to swallow. If the needle is in the gland, it will have a wide upward and downward movement during the act. If the needle is extraglandular, no such excursion of the needle will take place. Care should be taken to inject the material very slowly, as hasty injection causes great pain, which may be referred to the ears. Other times it will be referred to the jaw and sides of the neck. There is always some pain, which takes place after the fluid has been injected; but this subsides within a short time. If too much of the material is injected, alarming symptoms of acute strumitis may set in. Some patients feel weak; others may actually faint. The interval of treatment is generally five days, but the frequency of the injections will be in direct ratio to the reaction. Some may accept treatment every three or four days, others between the fifth and seventh day. It is never safe to inject more than 12 drops. After the fifth injection, one can readily determine the progress of the case. In some cases five injections suffice; in others, many more may be needed. In one case of the series of fifty-five, as many as twenty-six injections were given before a cure was effected.

CONCLUSIONS

1. A goodly percentage of parenchymatous goiters will be cured by this method.
2. It relieves the thyrotoxicosis in the graver forms.
3. It is of no use in the cystic and colloid forms, and never should be given.
4. It is a safe procedure if one's technic is not faulty.
5. It is given as a preliminary in all cases going to operation, with the exception of the cystic, colloid and cancerous forms.
6. It is the only hope of relief in the inoperable cases and those in which surgery is refused.

ADDISON'S DISEASE

MORRIS J. BALEN, M.D.
PHILADELPHIA

The case here reported presents the characteristic syndrome of Addison's disease, together with definite and conclusive necropsy findings confirming the diagnosis of this rare and unusual affection.

REPORT OF CASE

History.—E. L., a Norwegian tailor, aged 48, entered the Easton Hospital, 8:30 p. m., Oct. 28, 1919, complaining of "liver trouble," and extreme and progressive weakness. There was nothing noteworthy in his family history. He had had mumps and whooping cough in childhood; his past medical history was otherwise unimportant so far as known. He had been in fairly good health until about six months before, when he began to experience constant muscular fatigue, independent of exertion, and to be subject to spells of faintness, dull headaches and pain in his shoulders. These spells of faintness were often accompanied by shortness of breath, palpitation, chilliness, nervousness and dull cerebration. There was little or no cough or sputum. He had frequent attacks of indigestion, associated with epigastric pain and occasionally vomiting. His appetite of late had been poor, and his bowels more or less constipated. For the past six months, he had been growing progressively weaker, and on admission his weakness was extreme. Coincidently with the beginning of his weakness, his skin became brownish. The pigmentation was gradual in appearance, and steadily progressed in intensity. He was told by friends that it was due to "liver trouble."

He smoked heavily and used alcohol quite freely. There was no history of venereal infection or of any accidents or operations.

Physical Examination.—The patient was apparently well nourished and well developed. The brownish pigmentation of the skin was more marked on the face, upper chest and hands, and there were many spots of deeper brown on the abdomen. There was slight, if any, pigmentation in the mouth. There was no dropsy or edema, and no glandular enlargements. The pupils were equal, and the reaction to light and distance was good. The conjunctivae were slightly icteric, and the finger nails somewhat cyanosed. The cardiac impulse was neither visible nor palpable. The heart was not enlarged, but its action was very feeble. The first sound at the apex was distant, of poor muscular quality, and was accompanied by a faint systolic murmur, which was not transmitted. Both lungs showed extensive infiltration, chronic in character, especially marked at the apexes. There were harsh exaggerated breath sounds, but no râles. The xiphoid cartilage was unusually prominent, and the costal arches wide and flaring. The abdomen was negative, except for the spots of deeper pigmentation just mentioned. There was a cystic tumefaction over the right instep, and there were some scattered yellowish spots on both feet. The swelling over the right instep was painless, and when it was punctured, clear serum escaped. The patellar reflexes were exaggerated. The blood pressure was very low: systolic 85 mm. of mercury, and diastolic 75 (?). The radial pulses were equal, small and of very low tension. The temperature was 98, the pulse 96, and the respiration 24. The urine showed a faint trace of albumin but no casts. No blood count was made. The patient was put on tincture of digitalis, 5 minims, every three hours, alternated with 1/60 grain of strychnin sulphate subcutaneously. Twenty-four hours after admission the patient became pulseless, went into coma, and died suddenly at 10:30 p. m., October 29.

Necropsy Findings.—October 31, the lungs were found to be anthracotic. The right lung showed numerous miliary tubercles scattered throughout all the lobes, with several small areas of calcification in the upper lobe and a calcareous plaque, about 12 mm. in diameter, at the extreme apex. The pleura on the right side was greatly thickened, and there were adhesions between the costal and visceral layers. Numerous miliary tubercles covered the diaphragmatic surface of the pleura on the right side, and tubercles were also found on the under surface of the sternum. The left lung presented a crater-like ulceration at the apex, about 3 cm. in diameter, with an irregular surface and ragged margins. Section revealed many miliary tubercles, with here and there a calcareous nodule—evidence of healed lesions. The lower lobe and pleura were comparatively free from tubercles. The heart was negative except for some roughening of the mitral leaflets. The abdominal viscera were surrounded by considerable fat. The spleen was about twice its normal size, and on section appeared quite friable, but free from tuberculous deposits. The other abdominal organs, except the suprarenals, showed nothing abnormal.

Suprarenals.—The left suprarenal was many times its normal size, and about three times as large as its fellow on the opposite side. On section, both presented an appearance not unlike that of brain tissue. There was great atrophy of the cortex, and extensive and diffuse fibrocaseous degeneration of the medullary portion, with only minute islands of the original gland tissue remaining. Microscopically, the capsule was seen to be thickened. The histologic distinction of the various zones of the cortical portion could not be made out. A number of small, but typical, tubercles occupied that portion of the cortex corresponding to the zona glomerulosa of the normal suprarenal gland. The medullary portion was the seat of a uniform and diffuse caseation.

COMMENT

This history of a condition with an obscure and insidious onset, with profound and progressive asthenia, general debility, feeble heart action and circulation, low blood pressure, nervous and mental depression, digestive disturbances and a brownish pigmentation of the skin, immediately brings to one's mind the characteristic syndrome of Addison's disease. The finding at necropsy of tuberculosis of the lungs and of the suprarenals, together with enlargement of the spleen, completes the clinical picture of this rare disease. The very low blood pressure was probably due to an alteration, insufficiency or total suppression of the internal secretion of the suprarenal bodies in consequence of their destruction by tuberculosis. The sudden death precluded any attempts at suprarenal treatment. It is doubtful, however, if such therapy could materially influence the course of the disease in a person whose system had been irreparably damaged by grave and extensive lesions of tuberculosis. The strange feature in this case is the absence of a history and symptoms of pulmonary tuberculosis.

CONTROL OF DIPHTHERIA BY CULTURES OF THE NOSES AND THROATS OF SCHOOL-CHILDREN

L. B. GLOYNE, B.S., M.D.
Health Commissioner
KANSAS CITY, KAN.

The importance of taking swabs from the throats of schoolchildren for the controlling of diphtheria has not been fully recognized by a number of public health officers. In one section of Kansas City, Kan., called Argentine, we have a district that is isolated by natural boundaries. The Kansas River bounds this district on the north and east, while large hills form a natural boundary on the west and south. The retail trade, the milk supply and the school system are all confined within these limits.

Oct. 1, 1919, we had fourteen cases of diphtheria in this district and none in the rest of the city. We took cultures of the schoolchildren, 367 in all, and found thirty-four carriers. One of these was a child who had had diphtheria one month previously and had been released from quarantine after having had only one negative culture. This child had been given antitoxin at the time he was suffering clinically from diphtheria. The physician in charge thought that because antitoxin had been given, the diphtheria bacilli were killed, and the child was safe to return to school.

We placed these carriers in quarantine and required two negative cultures, taken in the homes, from each of these before they could return to school. Only two new cases developed in this community. One was in a child who had had a positive culture, and the other was in the home of a carrier. In the rest of Kansas City, Kan., scattered in all districts, thirty-three new cases soon developed.

The only one of these carriers who was given the antitoxin was the child who developed diphtheria clinically. All the rest cleared up entirely within three weeks, only throat swabbing, gargles and nose syringing being employed. We all doubt the efficacy of this treatment, but we cannot completely disregard our findings in these cases.

CONCLUSIONS

1. The swabbing of the throats of the children should be a measure adopted at the outbreak of a single case of diphtheria in a school.

2. The quarantine of carriers is as essential as is the quarantine of those suffering from diphtheria, in the controlling of an epidemic of diphtheria.

3. Two negative cultures should be required as the minimum from all children who have had a positive culture. A negative culture means something, but does not have the significance that a positive culture has.

4. Antitoxin has a very definite place in giving immunity against diphtheria, but it does not kill the diphtheria bacillus; so those who have had diphtheria may continue to be carriers for an indefinite time, if great care is not taken in getting at least two negative cultures from them.

5. Carriers usually clear up entirely without the use of antitoxin.

A CASE OF CEREBROSPINAL MENINGITIS DUE TO A DIPHTHEROID BACILLUS *

GEORGE F. DICK, M.D.
CHICAGO

While the part played by pseudodiphtheria bacilli in pathologic processes has been much discussed, they have not been recognized as the cause of meningitis, and those found in the nose are usually considered unimportant. Cases such as the one reported here are doubtless rare; but they are important in their bearing on the pathogenic possibilities of pseudodiphtheria bacilli.

REPORT OF CASE

A white man, aged 49, admitted to the service of Dr. James B. Herrick, June 20, 1919, with a family and personal history which gave no information bearing on this illness, two weeks before admission had fallen in the bathroom as the result of a shock received from a defective electric fixture. Three days after the fall he began to complain of headache and "seemed feverish." After ten days of persistent headache, he was brought to the hospital.

He was a well developed, well nourished man. The mouth temperature was 104.8 F., the pulse 88, the pharynx was red, the tonsils were small, the teeth were in bad condition and the cervical glands were palpable. There were dulness and subcrepitant râles over the left lower chest anteriorly, and in the axilla. The patient was drowsy, the knee and ankle reflexes were active, and flexion of the neck increased the headache. Roentgenograms of the head revealed no fracture. The erythrocyte count was 3,980,000; the leukocyte, 12,600, and hemoglobin, 65 per cent. The urine contained a trace of serum albumin and some leukocytes, but no casts.

The patient's condition grew progressively worse, and he died five days after admission, on the fifteenth day of the disease.

Spinal puncture on admission yielded a cloudy fluid containing 740 leukocytes per cubic millimeter, 54 per cent. of which were polymorphonuclear neutrophils, and the rest lymphocytes. The sediment was blood tinged. The ammonium sulphate test for globulin was positive, and the colloidal gold test indicated meningitis (0011234432). Wassermann tests of the cerebrospinal fluid in 0.2, 0.5 and 1 c.c. amounts were clearly negative. No tubercle bacilli were found in direct smears of the sediment. A guinea-pig inoculated subcutaneously and intraperitoneally with the sediment, and killed at the end of six weeks, showed no tuberculous lesions. Organisms were found in Gram's stains of direct smears of the cerebrospinal fluid. They were gram-positive, short, diphtheroid bacilli which most frequently occurred in pairs, end to end. They were often within the leukocytes. In methylene blue stains they did not show polar bodies, and were shorter than the usual forms of diphtheria bacilli.

Aerobic and anaerobic goat blood agar slants and agar shake cultures were made of the fluid. At the end of twenty-four hours' incubation, all tubes contained in pure culture the gram-positive bacillus found in direct smears. In the shake culture made with 1 c.c. of the cerebrospinal fluid, the colonies were so numerous that it was impossible to count them. The bacillus grew both aerobically and anaerobically on the surface of goat blood agar, producing a delicate grayish film, or isolated, slightly convex, grayish colonies less than a millimeter in diameter. The blood was not changed. The growth on goat blood agar was more luxuriant than on plain agar or Loeffler's serum. The bacillus grew but produced no acid or gas in maltose, raffinose, saccharose, lactose, salicin, mannite, dulcite, inulin, galactose, or dextrin azolitmin broth. In glucose azolitmin broth, it produced acid without gas. It had no effect on milk. Broth cultures were clear, with a finely granular sediment. In twenty-four hour old cultures the bacillus was not motile.

A guinea-pig inoculated intravenously with two twenty-four hour slants of the original culture died twenty-two hours later. There was a marked fatty degeneration of the liver, and a blood-tinged cerebrospinal fluid, which contained the bacillus in pure culture. Two guinea-pigs were inoculated intraperitoneally with a forty-eight hour broth culture of the organism, and one of them also received diphtheria antitoxin; neither of these pigs died.

Cerebrospinal fluid obtained from the patient three days later showed a negative Wassermann test in 0.2, 0.5 and 1 c.c. amounts. There were no tubercle bacilli in the smears. Cultures contained numerous colonies of the bacillus described. No other organisms were found in any of the cultures.

A blood culture the day following the first lumbar puncture showed about one colony of a gram-positive bacillus from each cubic centimeter of blood. Morphologically and culturally, it was identical with the organism found in the cerebrospinal fluid. A Wassermann test of the blood was negative.

COMMENT

The organism described differs from the diphtheria bacillus in the absence of polar bodies; failure to acidify maltose and dextrin; and in being not pathogenic for guinea-pigs on intraperitoneal injection of a forty-eight hour broth culture.

Eberson[1] has made an attempt to group diphtheroid organisms. He finds that strains isolated from the eye and nose are usually in the nonfermenting or in the glucose splitting group. The bacillus found in this case of meningitis resembles in morphology and staining properties Hofmann's type of pseudodiphtheria bacillus. It constantly fermented glucose with the production of acid. The pathogenicity of the bacillus for guinea-pigs was discovered only by intravenous inoculation: according to the method usually employed for testing the virulence of diphtheroids, it would be classed as nonvirulent.

On the whole, it is probably best considered as a pseudodiphtheria bacillus closely related to that described by Hofmann. It may be pathogenic for man, as in this case it was doubtless the cause of the fatal meningitis; and is pathogenic for guinea-pigs on intravenous, but not on subcutaneous or intraperitoneal inoculation.

637 South Wood Street.

1. Eberson, Frederick: J. Infect. Dis. **23**: 1 (July) 1918.

* From the John McCormick Institute for Infectious Diseases and the Presbyterian Hospital.

Diagnosis of Tuberculosis.—The diagnosis in the early stage of tuberculosis must and should often be made before the bacillus can be found in the sputum and before the examination of the chest can give any help.—*Bull. Maine State Dept. of Health,* October, 1919.

A PLASTIC OPERATION FOR THE CURE OF URETHRAL STRICTURE

MAXIMILIAN STERN, M.D.
NEW YORK

In view of the fact that external urethrotomy can never promise a lasting benefit and is never performed with the hope of effecting a cure, it is my opinion that it should be replaced by an operation that is logical to that end.

Russell's partial resection, Marion's radical resection and Cabot's plastic operation are operations which have advantages over external urethrotomy, but which are more or less difficult of performance, because of injury to the corpus spongiosum which causes hemorrhage and obscures the field.

In a previous communication[1] I reported four cases of urethral stricture, with acute retention of urine, treated without external urethrotomy, and I made reference to an operative procedure, which I thought, at that time, promised lasting results.

In that communication there was a report of one case of urethral stricture in a patient on whom previous external urethrotomy had been performed and who had a frankly cicatricial stricture at the bulb. With the operation that I am about to describe, this patient was apparently cured, as a recent examination has proved.

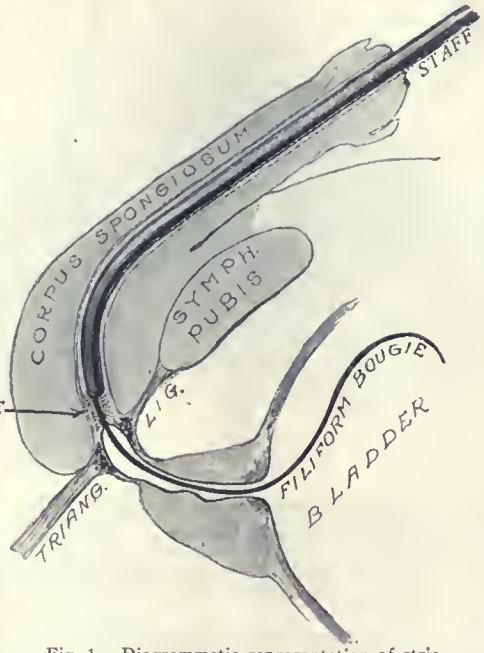


Fig. 1.—Diagrammatic representation of stricture at bulbomembranous junction; staff in urethra arrested at stricture; filiform through stricture into bladder. The corpus spongiosum overlying the stricture and attached to superficial layer of the triangular ligament will be noted.

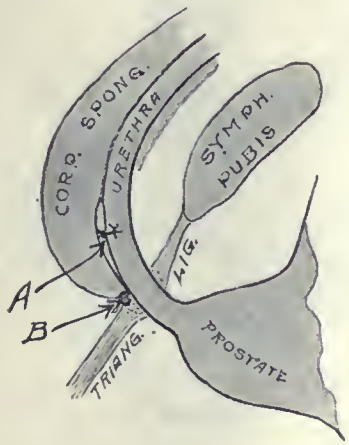


Fig. 2.—Diagrammatic representation of finished operation: *A*, stricture excised and sutures in place; *B*, corpus spongiosum replaced over urethra and sutured.

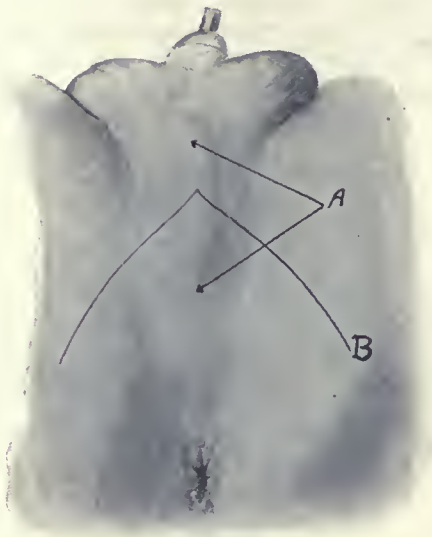


Fig. 3.—*A*, bulging caused by staff in urethra, the lower arrow corresponding to beak of staff at stricture; *B*, inverted V incision, its apex well above stricture.

PURPOSE OF THE OPERATION

By the method that I am about to describe it is purposed to excise the strictured floor at the bulbomembranous junction without inflicting injury to the overlying structures or to any other portion of the urethra.

Figure 1 indicates the location of strictures most commonly encountered in their relation to the anatomic structures overlying and to the triangular ligament.

The muscle structures are separated, thus exposing the corpus spongiosum, as subsequent illustrations will show. The corpus spongiosum is detached from the triangular ligament and elevated from the urethra, thus exposing the strictured area. This is excised and a repair is made in a horizontal direction, thus preventing any diminution in the lumen of the urethra. The structures overlying are then restored to their normal positions, as indicated in Figure 2. With the indwelling catheter in the urethra for several days and the several layers of tissue securely sutured over the urethral wound, primary union is logical and no escape of urine through the perineal wound should occur.

PREOPERATIVE PREPARATION OF THE PATIENT

In patients presenting themselves with acute retention of urine and in an anxious and desperate state incident to many sleepless nights and vain endeavor to micturate, it seems inadvisable to introduce the additional risk of an ether narcosis. In such extreme cases the preliminary introduction of a ureteral catheter through the stricture with the aid of the author's instrument, as described in another communication,[2] will be found a valuable preoperative measure.

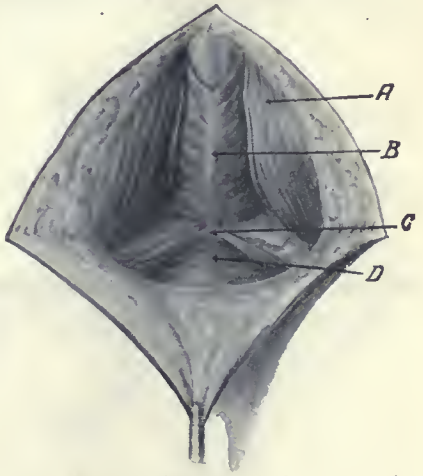


Fig. 4.—Skin flap turned down, exposing structures overlying corpus spongiosum: *A*, ischiocavernosus muscle; *B*, bulbocavernosus muscle; *C*, junction of the superficial transversus perinei and bulbocavernosus muscles on corpus spongiosum; *D*, levator ani muscle.

Since that time an operation has been performed in like manner in six other cases that were not amenable to palliative measures, with results that have seemed perfect.

1. Stern, Maximilian: Four Cases of Urethral Stricture with Acute Retention of Urine Treated Successfully without External Urethrotomy, Internat. J. Surg. **32**: 180 (June) 1919.

2. Stern, Maximilian: The Easy Penetration of Urethral Strictures: Operating Urethroscope of the Gerringer Type, J. A. M. A. **73**: 1360 (Nov. 1) 1919.

The rehabilitation of the patient and the amelioration of cystitis and urethral edema will do much toward making a radical operation successful. These can be accomplished only by giving the patient several days of respite from his vesical urgency. Through a ureteral catheter the urine dribbles away into a receptacle, and uninterrupted sleep can be obtained. The back pressure on the kidneys is relieved and the general condition of the patient is improved.

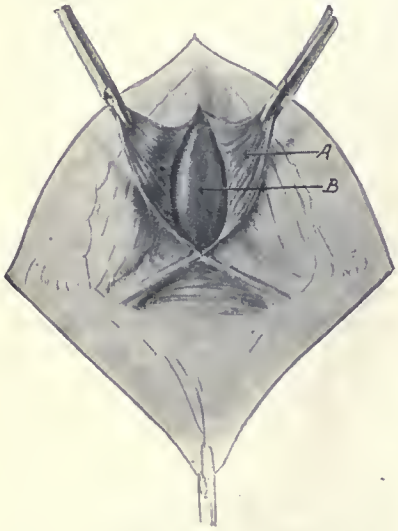


Fig. 5.—*A*, bulbocavernosus muscles separated and held apart, permitting corpus spongiosum (*B*) to protrude.

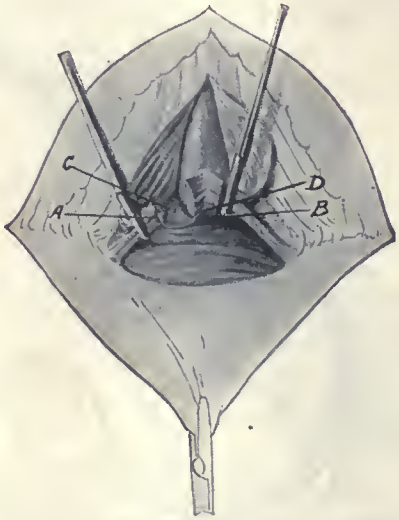


Fig. 6.—*B*, clamps grasping junction of bulbocavernosus and superficial transverse perinei muscles near their attachment to corpus spongiosum; *A*, right side severed, exposing *C*, superficial layer of the triangular ligament; *D*, muscle stump remaining attached to corpus spongiosum.

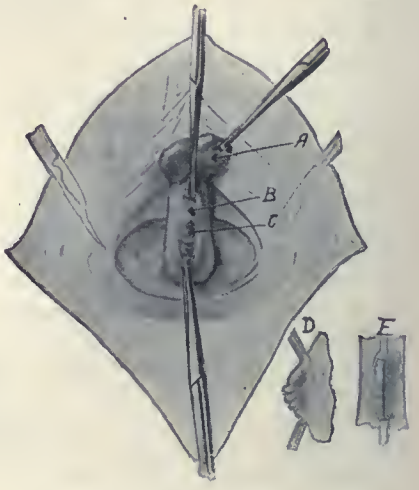


Fig. 7.—*A*, corpus spongiosum elevated, exposing urethra; *B*, beak of staff engaged in stricture in urethra throwing it into folds, *C*; *D*, same, lateral view; *E*, Allis clamps placed above and below stricture and line of incision.

THE OPERATION

The patient is placed in an exaggerated lithotomy position, with a sandbag under the buttocks, in order to bring the perineum into a higher plane than a vertical one — almost approaching the horizontal. An inverted V incision is made, the apex of which corresponds to a point about 1 inch above the position of the beak of the staff in the urethra, its lower arms extending nearly to the tuber ischii (Fig. 3). The skin flap is dissected carefully, so as not to injure the thin muscle layers overlying the corpus spongiosum (Fig. 4).

At the apex of the denuded area, the bulbocavernosus muscles are separated from above downward in a median line, the corpus spongiosum being avoided, while care must be taken not to puncture the structure (Fig. 5).

These muscles cleave easily from the corpus spongiosum, as far downward as the superficial transversus perinei muscles. At this point they are firmly fixed with the superficial transversus perinei muscles to the corpus spongiosum. A hemostat is placed so as to grasp the insertion of these two muscles on either side and an incision is made mesial to the hemostats, so as to leave a muscle stump attached to the corpus spongiosum (Fig. 6). Two lateral spaces now appear beside the "butt-end" of the corpus spongiosum, into which the finger easily penetrates to the superficial layer of the triangular ligament, and it will be observed that the cor-

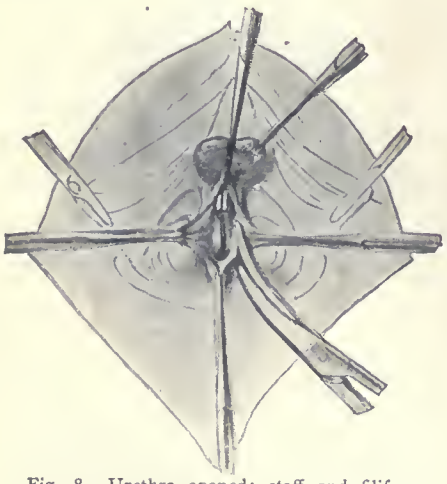


Fig. 8.—Urethra opened; staff and filiform exposed; left stricture bearing flap being removed.

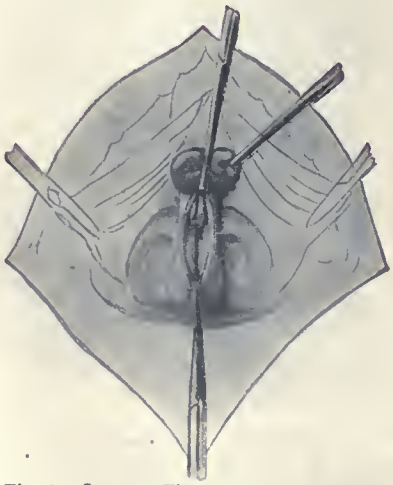


Fig. 9.—Same as Fig. 8; aperture in urethra after removal of stricture tissue may be seen.

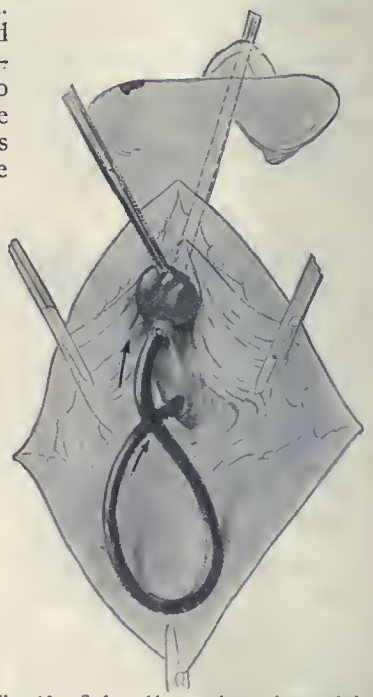


Fig. 10.—Soft rubber catheter inserted into bladder; open end of catheter slipped over beak of staff about to be drawn up through urethra.

pus spongiosum is fixed to this structure. With the aid of scissors the elevation of the corpus spongiosum from the triangular ligament and from the urethra itself is easy of accomplishment. This procedure is carried as far as may be necessary, that portion of the urethra in which the staff is arrested and a short distance above it, being thus exposed. The strictured urethra is now exposed to view, and when the tip of the staff is pressed downward the urethra below the point of engagement will pucker in advance of it (Fig. 7).

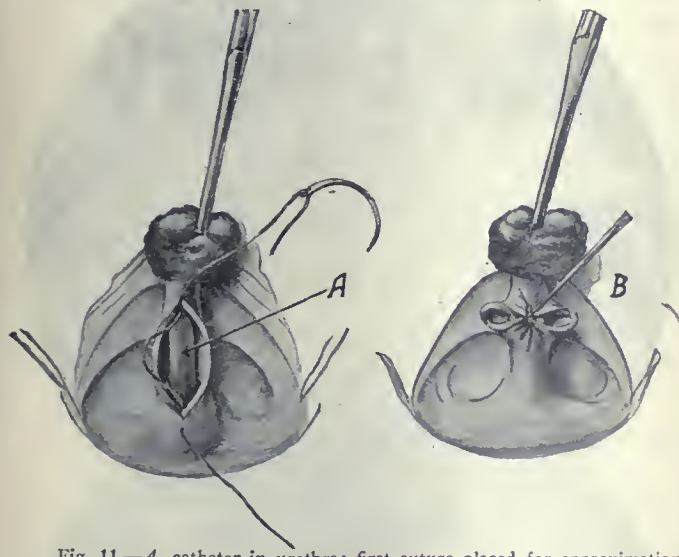


Fig. 11.—*A*, catheter in urethra: first suture placed for approximation of upper and lower angle of wound; *B*, suture tied.

Two Allis clamps grasp the urethra, one above the strictured area and the other well below it. A linear incision in the midline is made between these two points, by which the strictured area is opened. Allis clamps are attached to the free edges, the interior of the urethra being thus exposed, while the beak of the staff and the filiform are brought into view (Fig. 8). These two lateral flaps are removed with scissors, an ovoid fenestra being left in the urethra (Fig. 9). A rubber catheter, size 22 F., is now inserted into the bladder and the filiform removed. The open end of the catheter is slipped over the beak of the staff, and withdrawn through the urethra (Fig. 10). Urethral repair must now be made. It will be found that there is ample urethral tissue for the transverse repair without causing even slight tension (Figs. 11 and 12).

REPLACEMENT IN THEIR NORMAL POSITIONS OF ALL THE STRUCTURES OVERLYING THE URETHRAL WOUND

1. The corpus spongiosum is attached to the superficial layer of the triangular ligament by two sutures of fine catgut.

2. A single suture is placed in such a manner (Fig. 13) as to bring the two bulbocavernosus muscles and the transversus perinei muscles in apposition with the muscle stump remaining on the corpus spongiosum. This suture also includes the levator ani, which frequently drops away when the transversus perinei muscles are severed.

When this suture is tied, the structures are restored to their original positions and the union of the bulbocavernosus muscles completes the muscular repair (Fig. 14).

The skin flap is now replaced with interrupted silk or linen sutures. It will be observed that there are three distinct coverings over the urethral wound, The close apposition of these structures may be confidently expected after from forty-eight to seventy-two hours, during which time the catheter remains in the urethra. After the expiration of this time, no urinary leakage is to be expected, and the patient is permitted to void.



Fig. 12.—Urethral repair completed.

POSTOPERATIVE TREATMENT

The indwelling catheter is fixed to the glans so that the eye of the instrument is situated just inside the internal vesical sphincter and fastened with an elastic device manufactured for that purpose, or by any of the methods improvised by urologists. It is allowed to remain in situ for forty-eight hours, the patient being cautioned during this time not to make any urinary effort. At the expiration of forty-eight hours the catheter is slowly withdrawn, while a gentle stream of hot boric acid solution is flowed through it. A sterile catheter is then inserted and allowed to remain twenty-four hours. This concludes the third postoperative day. On the fourth postoperative day the patient is catheterized every four hours or when request is made. On the fifth day, voluntary micturition is permitted.

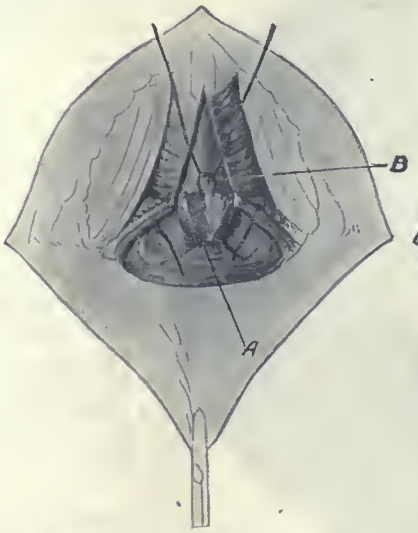


Fig. 13.—*A*, corpus spongiosum replaced over urethral wound and sutured to superficial layer of triangular ligament *B*, single suture so placed as to restore all muscle structures to their original positions over "butt-end" of corpus spongiosum.

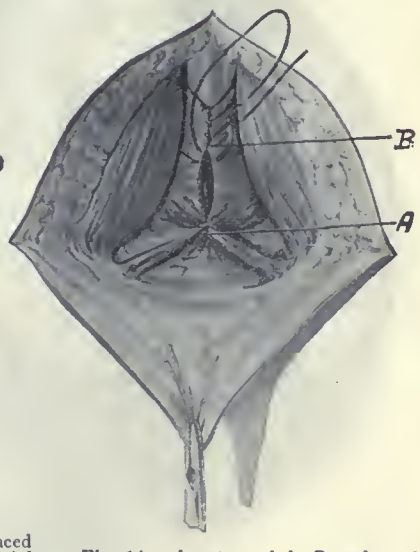


Fig. 14.—*A*, suture tied; *B*, union of bulbocavernous muscles.

The care of the perineal wound includes certain important considerations in order to accomplish primary union. In a moist, bacteria-laden area, frequent changes of dressings must be made and perspiration prevented, if possible by avoiding heavy bedclothes.

Immediately after the operation, it is my practice to cover the operative field with an unguent, comprising paraffin, wax and petrolatum, which acts not only as an occlusive covering, but also as an antiseptic, in that it envelops any organisms present in the skin and renders them inert.

A sound (24 F.) is passed on the tenth day, and one of larger size a week later. It is my experience that no further instrumentation is necessary.

CONCLUSIONS

1. Since all, or nearly all, strictures occur anterior to the superficial layer of the triangular ligament, this operation can easily reach them. Extravasation of urine or infiltrating abscesses are not to be feared in a surgical procedure that does not disturb the membranous or prostatic urethra lying posterior to the triangular ligament.

2. An operation which is directed precisely to the diseased area, and which does not inflict injury to any other part of the urethra, must be conceived as a logical step toward a cure, and as superior to procedures heretofore in vogue.

219 West Eighty-First Street.

CARCINOMA OF THE EXTERNAL EAR

RICHARD L. SUTTON, M.D.
KANSAS CITY, MO.

To the uninitiated, the successful treatment of early, superficial carcinoma of the external ear may seem a comparatively simple matter; but after one has acquired a little experience in combating even the milder type of the disorder in this region, a pessimistic attitude generally replaces the former optimistic one.

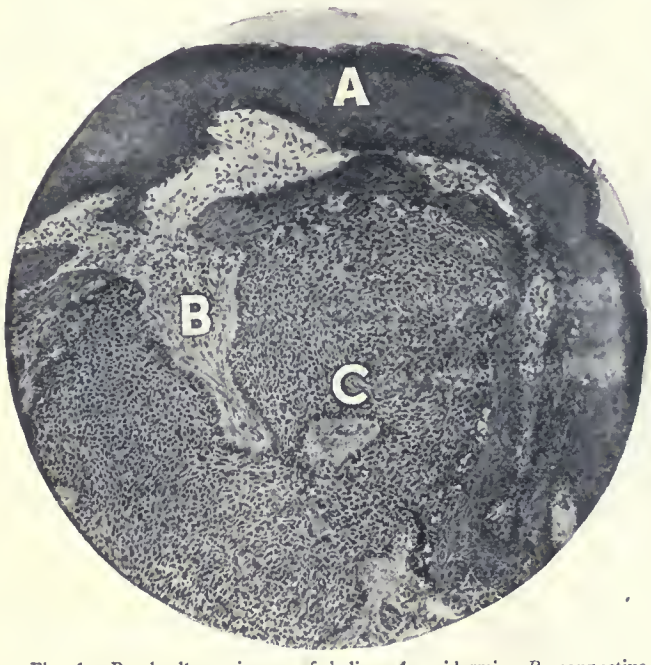


Fig. 1.—Basal-cell carcinoma of helix: *A*, epidermis; *B*, connective tissue of derma; *C*, masses of cancer cells; hematoxylin-eosin stain; low magnification.

The difficulty of bringing about a cure in these cases is largely due to the fact that the skin lies very close to the cartilage; and even if the latter escapes direct cancerous involvement, the chronic inflammatory changes to which it is subjected, together with the poor blood supply, prevent prompt healing, even after the removal of the parent cause of the trouble.

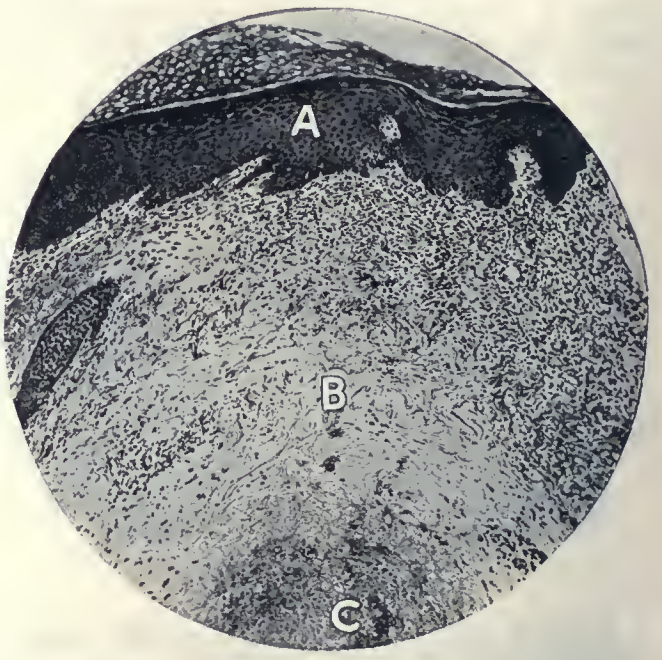


Fig. 2.—Very early basal-cell carcinoma of ear, showing effects of radium treatment: *A*, cellular infiltration; *B*, changes in connective tissue; elastic fibers broken and twisted; *C*, cartilage; hematoxylin-eosin stain; low magnification.

During the past two years, I have had opportunity to study seventeen cases of carcinoma of the ear. All the patients were men. The youngest was 28, the oldest 81 years of age. In five cases studied microscopically, all the growths were of the basal-cell type.

Owing to the character of the structures involved, the histologic picture differs in some minor respects from that seen in basal-cell carcinoma of other parts of the body.

In thirteen instances, the growths had developed from seborrheic keratoses, usually of the keratotic variety, and in nearly every case there was a history of primary injury, such as a cut or a bruise. Eleven of the patients, at one time or another, had suffered from frost-bite.

All the lesions developed at some point above the level of the floor of the external auditory meatus. In no instance was the lobe primarily involved. The upper portion of the helix was a favorite site for the development of the lesions, probably because of its exposed position. Occasionally the cranial surface of the pinna was attacked, in one instance following an injury from a spectacle bow, and in another a slight cut from a razor, inflicted by a barber while trimming the hair.

There was a striking similarity in the case histories. Following a slight injury of the ear, generally at some point on the helix, the patient developed a small, superficial ulcer, which healed very slowly. The retarded healing was, in a measure, the fault of the patient himself. If the scab was not deliberately scratched off, because of the slight irritation to which its presence gave rise, it was accidentally rubbed off by the too vigorous use of a rough towel. Finally, the lesion apparently healed, but a small keratosis developed at the site of the former wound.

The growth of the little hyperkeratotic tumors may have been retarded by the frequent application of grease or petrolatum; but in the course of months or years, a large percentage of them became malignant. The subjective symptoms were at first comparatively slight, and consisted of itching and burning of variable degree, easily allayed by a mild antipruritic. Later, as the carcinoma developed, and the deeper structures were invaded, the patients frequently complained of a throbbing, penetrating pain, which often involved the entire side of the head, and which only narcotics would relieve.

The plan of treatment varies with the character, stage and extent of the lesion. In growths of the prickle-cell type, early and radical excision is the best and safest course. The basal-cell tumors are less serious, and more weight can be given to the importance of a good cosmetic result when it comes to dealing with them.

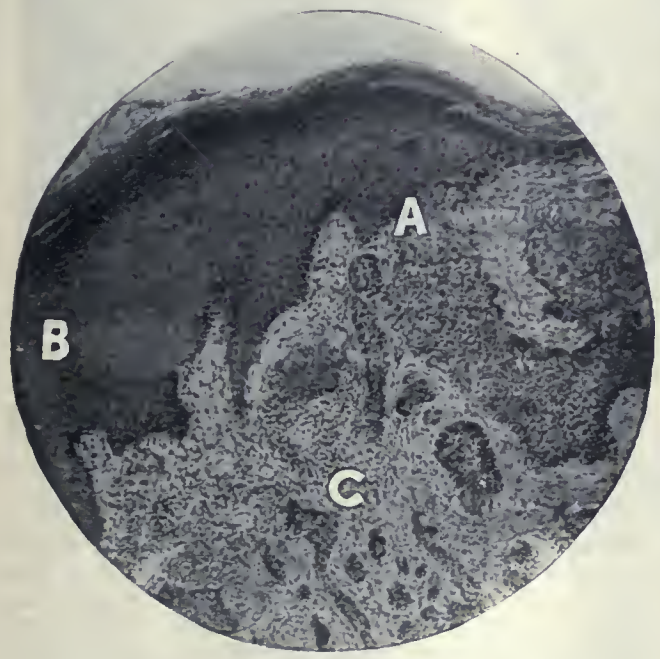


Fig. 3.—Early basal-cell carcinoma of ear: *A*, strand of cancerous tissue extending downward from basal layer of epidermis into corium; *B*, thickened prickle layer; *C*, derma, with masses of new growth lying between the bundles of connective tissue; hematoxylin-eosin stain; low magnification.

As a prophylactic measure, the ears should be suitably protected from cold during the severe winter months. Frost-bite may not be a direct causative factor, but repeated injury from this source undoubtedly predisposes to cancer.

Even slight lacerated wounds of the ear should receive proper surgical attention. In treating rough, jagged injuries of the skin, the edges should be pared down and carefully approximated, and the wound properly closed and dressed.

Seborrheic keratoses, which are often the precursors of the more serious lesions, can sometimes be successfully combated by the daily use of a mild keratolytic, such as salicylic acid ointment (10 per cent.). Also carbon dioxid snow is a valuable remedy in some instances, although its field is limited, and in suspicious or advanced lesions, more harm than good is liable to follow its use. This is due largely to the fact that its destructive action is not that of a direct escharotic, but a sequel to the acute inflammatory changes that follow intense refrigeration.

The widely dilated vessels, together with the lowered vitality of the immediately adjacent tissues, tend to extension rather than eradication of the lesions attacked. The actual cautery is a much better agent

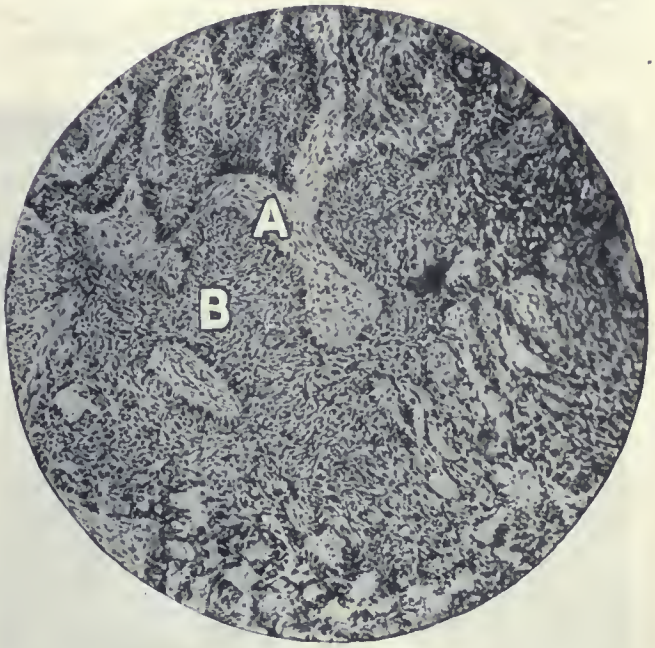


Fig. 4.—Late basal-cell carcinoma of ear: *A*, connective tissue of derma: only a bridgework remains; *B*, masses and strands of cancer cells penetrating the fibrous network; hematoxylin-eosin stain; low magnification.

in these intermediary or frankly malignant cases. The destruction of the lesion is certain, for, as Hazen, Bloodgood, MacKee and others have shown, the efferent vessels are promptly sealed off, and the liability to

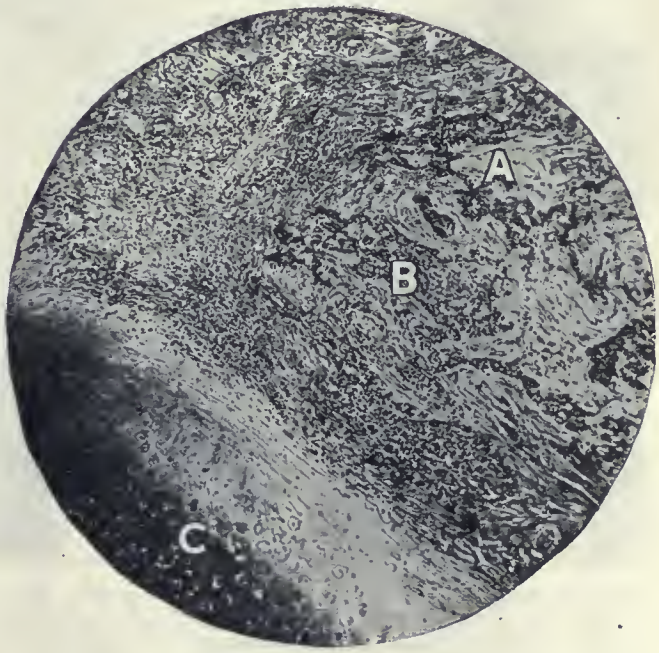


Fig. 5.—Late basal-cell carcinoma of ear, showing involvement of cartilage at *C*: *A*, disorganized strands of connective tissue; *B*, irregular masses of cancer cells; hematoxylin-eosin stain; moderate magnification.

peripheral extension is reduced to a minimum. Unfortunately, the tissues in this vicinity do not heal very promptly following actual cauterization, and the ensuing burns are frequently a source of extreme discomfort to the patient. Fulguration is painful and, as

ordinarily practiced, unreliable. Of the various chemical caustics, arsenous oxid, as recommended by Robinson, is probably the best; but when employed in this locality, it is open to the same objection as the actual cautery.

Prior to the involvement of the cartilage, many of the cases respond very satisfactorily to roentgen-ray treatment and especially to radium. If the former agent is employed, only the intensive method should be used, otherwise the result is liable to be disastrous rather than beneficial. I once saw a case of superficial carcinoma of the concha which at the time could readily have been successfully removed by a competent surgeon in about fifteen minutes. Nine months later, I again saw the case, but during the interval the patient had received more than a hundred brief roentgen-ray exposures in and around the affected area. The combination proved too much for him, however, and the man died.



Fig. 6.—Basal-cell carcinoma of ear involving cartilage of eighteen months' duration; very painful.

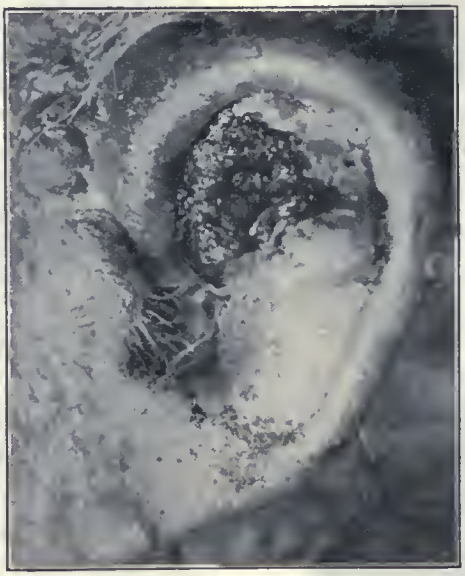


Fig. 7.—Multiple basal-cell carcinoma of the ear; of three years' duration; no lymph node involvement; radical operation, followed by cure.



Fig. 8.—Carcinoma of the ear, showing ulcer that remained after radium therapy. Lesion healed under the action of soothing local applications in seven weeks; no recurrence had taken place one year later.



Fig. 9.—Basal-cell carcinoma of the ear in a man of 70; the growth was destroyed by means of radium, but the lesion healed very slowly, and was extremely painful.



Fig. 10.—Seborrheic keratosis on helix which developed following slight cut from razor and ultimately became malignant.



Fig. 11.—Early basal-cell carcinoma of ear, showing condition after patient had received more than 100 exposures to the roentgen ray.

In the treatment of basal-cell carcinoma of the ear by means of radium, a severe reaction is seldom necessary, and in the superficial cases should always be avoided. The skin in this region is very thin, and affords only slight protection to the underlying structures. The inflammatory changes that occur as a result of prolonged exposures subside very slowly, and weeks or even months may elapse before the ulcer marking the site of the former carcinoma is entirely healed. The healing process can sometimes be expedited by the cautious use of liquor hydrargyri nitratis, a remedy first suggested to me by my friend, Dr. T. S. Blakesley. The agent is applied by means of a tooth-pick, and its action is promptly halted at the end of one or two minutes by a liberal coating of sodium bicarbonate. Occasionally, diluted citrine ointment (unguentum hydrargyri nitratis, 1 part; petrolatum, 7 parts) will prove helpful at this stage of the disorder. Cleanliness is essential, for, as Dr. Du Noüy has said, the ideal conditions of perfect and rapid healing are realized when a wound is kept practically sterile, or deprived of pathogenic micro-organisms, as cocci, diplococci and streptococci.[1]

In those cases presenting cartilaginous involvement, I have found both radium and roentgen-ray treatment useless. Prompt excision is the best and safest plan, and in the hands of a skilled operator, the results are generally good. As a rule, the ensuing deformity is comparatively slight, and the patient is promptly relieved of a disorder that is liable ultimately to prove both distressing and dangerous to life.

1. Du Noüy, P. L.: Am. J. Physiol. **49**: 121 (June 1) 1919, cited in The Search for Cicatrizing Substances, editorial, J. A. M. A. **73**: 428 (Aug. 9) 1919.

Altruism.—Sympathy for manifest evils, and self-sacrifice for others have no limit when the emotions are directly stimulated.—Brend.

TUMORS OF THE BLADDER

THEIR DIAGNOSIS AND TREATMENT

ROBERT H. HERBST, M.D.
AND
ALVIN THOMPSON, M.D.
CHICAGO

Tumors of the bladder comprise but a small percentage of all the tumors of the body, this being variously estimated at from 0.75 per cent. to as high as 5 per cent. of the total number. Of these, approximately one half are malignant, and most of the remainder potentially so, in that they later become malignant.

TYPES OF BLADDER TUMORS

There are two common varieties of bladder tumors: papilloma and carcinoma. The papillomas are fibrous, benign or malignant, and the carcinomas adenoid or diffuse, adenomas being very rare.

Besides these common varieties of epithelial origin, other types of tumor are found occasionally, including myomas, angiomas, fibromas and various types of sarcomas. The papillomatous growths, benign or malignant, are by far the commonest form of tumor found in the bladder. Ewing[1] states that this is due to the structure of the mucous membrane and the physical conditions to which the tumors are exposed. The transitional type of epithelium accounts for the histologic varieties of tumors arising from it. The villous form is probably due to muscular activity and the constant bathing in fluid. Ewing further states that the long confinement of these tumors to the site of origin is probably due to their villous form rather than to a lack of lymphatics, which was once thought to be the reason.

Bladder papillomas occur in various forms, coarse or fine villous growths with more or less narrow pedicles, flat or lobulated forms, or they may be sessile. Papillomas vary greatly in size and are frequently multiple. The commonest location is in the trigonal area, especially about the ureteral orifices and the edges of the trigon. They have been observed at all periods of life, but are commonest after middle life, especially in the sixth decade. They occur about three times as frequently in men as in women. Their course is prolonged, and they have a tendency to remain confined to the bladder. A few of them remain benign for many years, but most of them become malignant eventually. Many are malignant from the beginning.

THE DIAGNOSIS OF MALIGNANCY

The question of malignancy is the all-important point in diagnosis. If a tumor is benign it can be removed by fulguration, and recurrences or additional tumors appearing later can usually be removed by the same means, whereas if it is malignant it is usually resistant to fulguration, and other or additional means must be used. The macroscopic appearance of a tumor is not a certain guide in judging its malignancy. However, there are certain characteristics which may be taken as evidence of malignancy in papillary tumors, as necrosis or sloughing, calcific incrustations, edema about the base of the growth, nodules in the mucosa near the growth, the presence of an intractable cystitis, an induration felt through the vagina or rectum, and multiplicity or great size and the slow response to fulguration. The sessile growths and the flat warty or the extensive velvety patches on the wall of the bladder are quite sure to be malignant. If a piece is removed through the cystoscope for examination, it may have benign characteristics even though the pedicle or base may be actually malignant. However, the removed portion may show actual malignancy. Then, of course, the diagnosis is assured. The removed portion may not show well-defined malignant characteristics and still give evidence of malignancy by exhibiting unusual growth capacity. Buerger[2] gives, in addition to the usual well-defined microscopic evidences of malignancy, these morphologic criteria on which the diagnosis of carcinoma or carcinomatous change in papillomas may be made: "Cells manifesting irregularity in size and shape; nuclei rich in chromatin, deeply staining and of bizarre shape; cells with atypical mitosis; giant cells and multinucleated cells."

Extension of malignant tumors may occur through the bladder wall to other pelvic structures, up the

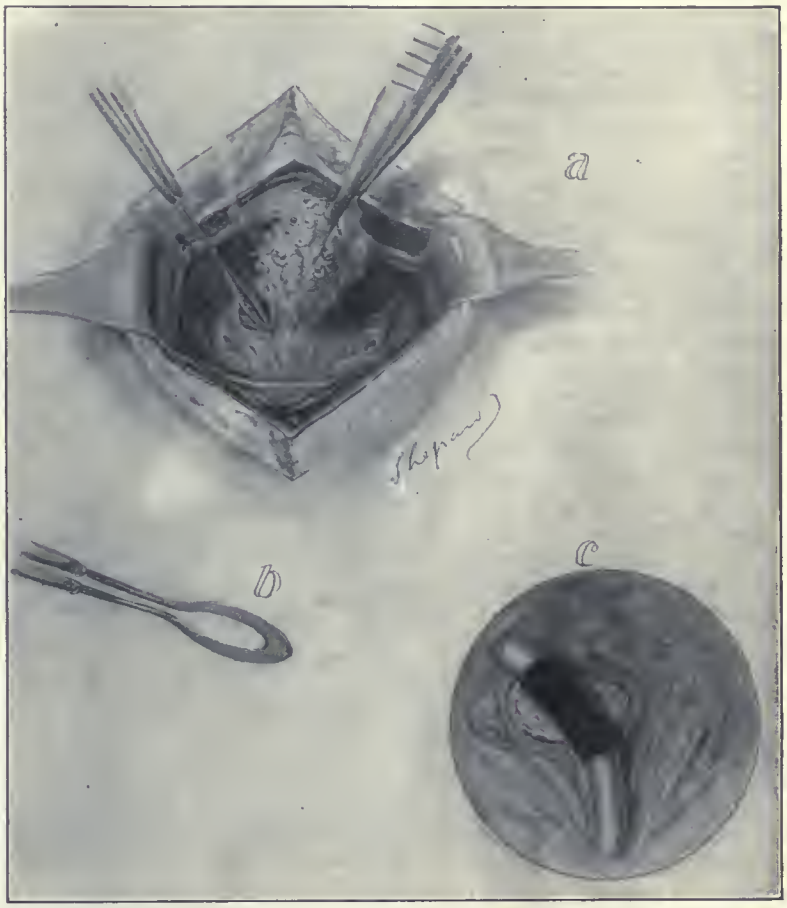


Fig. 1.—Excision of papilloma of bladder with electrocautery knife: *a*, method of grasping pedicle of tumor with forceps and excising it with electrocautery knife; *b*, electrocautery knife; *c*, method of applying radium to former site of tumor.

1. Ewing, James: Neoplastic Diseases, Philadelphia, W. B. Saunders Company, 1919.

2. Buerger, Leo: Tr. Am. Urol. A. 9: 14, 1915.

ureter to the kidneys, and along the pelvic lymphatics to the prevertebral lymph nodes. Cases of metastases from bladder tumors have occurred in remote organs; but such metastases are comparatively rare and occur late.

Bladder tumors may be complicated by secondary anemia from hemorrhage, by cystitis, by hydronephrosis complicating tumors which may occur about or within the ureteral orifices, and by renal suppuration. Serious kidney complications may occur in those cases, benign or malignant, wherein blood clots or fragments or parts of the tumor interfere with the emptying of the bladder resulting in back-pressure from retention.

There is one dominating symptom which should be investigated by cystoscopic examination of the bladder without delay, and that symptom is hematuria, especially of the painless intermittent type. Neglect in giving prompt heed to this early warning has allowed too many papillomas to develop undisturbed until the bleeding has become profuse or the later attending symptoms, pain and frequency, have made investigation urgent. By that time the growth may have reached a large size or have become malignant, if not originally so, making the treatment not only more difficult, but too often less effective.

ETIOLOGY

The etiology of bladder tumors, like that of neoplasms in other parts of the body, is not definitely established; but many observers have noted that in a large number of cases there is a definite history of an irritation of some kind, as cystitis or stone. Bladder tumors appear to be common in anilin workers. These observations seem to indicate that irritation may predispose toward the formation of the growth.



Fig. 2.—Carcinoma of the prostate: 1, radium needles inserted into prostatic tumor through cystotomy incision; 2, schematic sagittal section illustrating the direction in which the needles are pushed, and the depth to which they are carried.

Besides these primary growths of the bladder, secondary growths are not uncommon, spreading from the kidney, abdominal or pelvic viscera, and especially from the prostate.

TREATMENT

The treatment of bladder tumors has been more or less discouraging in the past, especially before the day when cystoscopy made early diagnosis possible. The choice of method to be used should be based on the pathology of the tumor. This, as we have stated, cannot always be determined accurately. If the tumor is thought to be benign, there is no question but that the fulguration method described by Beer in 1910 gives the best results with the least discomfort to the patient and the lowest rate of recurrences. This method is carried out by means of the high frequency current used through an operating cystoscope. The two types of current used in this procedure are the Oudin and the d'Arsonval. The Oudin, or monopolar spark, produces cauterization and coagulation through its marked local action at the point of application. The d'Arsonval, or bipolar spark, has a deeper and less local action, producing coagulation by heat and a more extensive destruction. For this reason it must be used with more caution, especially when its action is directed to the base of the tumor close to the bladder mucosa, in order to avoid too deep destruction of the bladder wall. These fulguration treatments are repeated at intervals varying from five days to two weeks, depending on the local reaction following each treatment and the progress made. Almost all benign papillary growths are readily removed by this method, and even some of the malignant papillomas are wholly removed, though usually more slowly and with greater likelihood of recurrence.

Surgical removal of both benign and malignant bladder tumors is attended by a large number of recurrences. It seems that fragments of the tumor even of the benign type are readily transplanted, producing recurrences either at the original site or in other parts of the bladder. Gardner,[3] in an analysis of 666 cases of bladder carcinoma, shows that in 224 cases of partial resection of the bladder there were recurrences in 43.7 per cent. of the cases; while in 442 cases in which only the growth was excised, the percentage of recurrences was 88. Comparison of these two surgical methods shows that the more radical removal gives the better results. Total cystectomy in these cases is very discouraging, as there is not only a very high immediate mortality but the results otherwise are not favorable. Gardner[3] reports ninety-six cases of benign papillomas removed by excision with recurrences in 35.5 per cent., while in sixty-

3. Gardner, J. A.: Tr. Am. Urol. A. 9: 226, 1915.

one cases treated by fulguration only 13.1 per cent. recurred. This shows a decided advantage in favor of the fulguration method in benign papillomas.

Radium has now been used for a number of years in the treatment of malignant bladder tumors; and the results, while far from being satisfactory, have been somewhat encouraging. The unsatisfactory results are partly due to faulty application of the radium. As radium acts in proportion to the inverse squares of the distances from the tissue acted on, it is obvious that it must be placed directly on the tumor or inserted into the mass to get the maximum effect. It may be applied in a specially constructed sound or cystoscope and kept in place on the tumor by holding the instrument with special clamps designed to keep it from moving (Young).

AUTHORS' PROCEDURE

Our usual procedure with a tumor thought to be malignant, if located in an accessible part, is to excise the growth and with it resect the entire bladder wall of that region, using an electrocautery knife in preference to the ordinary scalpel. Those tumors located in parts of the bladder not easily accessible, such as the trigon about the internal urethral orifice or closely associated with the ureters, are excised through the open bladder, carrying the incision down to the muscularis (Fig. 1 *a*), using the electrocautery knife (Fig. 1 *b*), following which radium is applied (Fig. 1 *c*) to the denuded surface from which the tumor has been removed.

Sessile growths and those with broad pedicles may be treated by introducing needles containing radium directly into the growth. When this is not possible, the radium may be applied on a staff or sound either through a suprapubic opening or through the urethra, care being taken to keep it in contact with the involved area.



Fig. 3.—Wound with drainage, the threads attached to the radium needles having been carried out through the drainage opening.

Many of the unsatisfactory results in the past may be charged to the inaccurate placing of radium in the bladder. It is of the utmost importance, therefore, that the radium be not only placed accurately but also kept in place throughout the entire exposure.

It is known that commonly prostatic cancer spreads to and involves the bladder wall; and for this reason, the treatment of certain types of prostatic cancer will be included in this paper. Radical excision of a malignant prostate cannot be carried out with any reasonable degree of safety and success, except in very early cases. Those cases of cancer of the prostate which are not too far advanced and which show no evidence of metastasis are thus treated with radium:

A suprapubic cystotomy is made with a liberal high opening so as to give easy access to the involved bladder neck. A bimanual examination is made to determine the limits of the tumor. By means of a needle carrier, a number of hollow needles, each containing a capsule of radium, are inserted directly into the mass about 1 cm. apart in different directions (Fig. 2). A silk guide attached to each needle extends out of the suprapubic wound, by means of which the needle is withdrawn (Fig. 3). These needles are left in place from twelve to twenty-four hours, depending on how much exposure is desired. It is surprising how little reaction occurs from these long exposures as compared to the extensive burns which we see on the mucous membrane of the bladder and rectum when the radium is placed directly on these membranes. One such exposure usually causes the removal of most of the upper part of the tumor, though it may be repeated in a few weeks if found necessary. As most of the tumors begin in the lower part of the gland, a second introduction of needles is made into this part of the tumor by making a dissection through the perineum, exposing the prostatic mass, and introducing the needles carrying the radium into the mass from below.

We have not described this method of attacking the malignant prostate with the intention of reporting cures, because the time since operation has been too short (about two years); however, our results are sufficiently encouraging to warrant continuation of the method.

32 North State Street.

National Department of Health.—In the creation of a department of health, all of the bureaus or parts of bureaus and divisions and boards could be easily adjusted without the loss of prestige by any of them. Some functions could be consolidated into single bureaus. The plan should be constructive of the agencies we now have, certainly not destructive. The Public Health Service, owing to its size and present organization, would constitute the main foundation on which to construct such a department. Its mobile corps of medical and sanitary personnel is an excellent one to expand so as to include in the commissioned corps all of the scientists and specialists transferred from the other departments in grades according to the nature of the work and experience of each. Furthermore, some provision should be made to commission high class specialists in the various branches of preventive medicine from civil life, in grades commensurate with their ability and experience. The mobile corps, as expanded, should continue under the supervision of the surgeon-general, and should perform all of the medical and sanitary duties for all of the bureaus and divisions of the department. The provisions for one well organized, disciplined mobile corps of highly trained health experts to perform all of the medical and sanitary duties for all of the bureaus and divisions will doubtless be an effective agency in coordinating the work of those bureaus.—B. S. Warren, *Pub. Health Rep.*, Dec. 5, 1919.

TWO CASES OF MONGOLIAN IDIOCY IN THE SAME FAMILY*

IRVING H. PARDEE, M.D.
Assistant Chief of Clinic, Neurological Institute
NEW YORK

Recent endeavors to throw light on the etiology of Mongolian idiocy have resulted in considerable literature on the subject during the past few years. The rarity of its occurrence in more than one child in a family is an observation of universal note.

Goddard[1] has collected the histories of 322 cases of Mongolian idiocy, and in not one instance was there a history of more than one Mongolian child in the family. McClelland[2] remarks that it is a common observation that in no family was more than one Mongolian idiot encountered. Shuttleworth[3] says that the production



Two Mongolian children of the same family and their next older brother, showing characteristic mongolian facies, spatula hand, and short thumb and little finger.

of more than one Mongol in the same family is a great rarity, he himself having heard of only two cases and having never seen any. He also reports the case of twins, one normal and the other a Mongol, as does Swanberg.[4] Dr. Max Schlapp, in the course of examining mental defectives for the city of New York, has seen over 500 Mongols, and in a personal communication to me states that he has never seen two Mongolian children in a family. Van der Scheer[5] has collected reports of two families, one with two Mongols and the other with three, and states that he has been able to find on record the reports of several families in which more than one child presented the disease.

As this type amounts to about 5 per cent. of all types of imbecility, it assumes the proportion of a considerable problem, and a determination of its exact etiology will be a large factor in its prophylaxis.

The controversy over the relation of syphilis to Mongolian idiocy is not yet definitely settled; but to those whose experience has been large, the occurrence of a positive Wassermann reaction is only a coincidence. The proportion of positive Wassermann reactions obtained from groups of Mongols should be over 80 per cent., instead of under 15 per cent., if the causative factor were syphilis, and so far the brains of Mongols have failed to show the characteristic pathologic changes of the disease. Two families showing the apparently intimate relation between the two conditions are reported in the literature: In one, reported by Van der Bogert,[6] first, a syphilitic child was born, second, a normal child, and third, twins, one of whom was a syphilitic of the Mongol type. Babonnieux and Villette[7] tell of a family of four Mongolian children whom they consider congenital syphilitics because of two maternal miscarriages, the death of six other children when infants, the presence of hutchinsonian teeth in these offspring, and a buccal leukoplakia in the father.

The family that has come under my observation is interesting not only from a statistical point of view, owing to the fact that two of the children present classical textbook pictures of Mongolian idiocy, but also from an etiologic point of view, since it presents two possible etiologic factors.

REPORT OF CASE

Family History.—The father, an Italian by birth, aged 49, formerly a bookkeeper, now a postoffice clerk, came to this country before his children were born. His ancestors were of an intelligent class, including lawyers, physicians and druggists, and there is no history of mental disease. The mother, also of Italian birth, aged 42, was the daughter of an engineer. Her mother had diabetes. She is large, obese, and has always been well except for frequent frontal headaches. Her pregnancies have been borne without any difficulty, and she has eleven living children whose ages are 27, 22, 20, 18, 17, 15, 13, 11, 9, 7 and 4. Between the last two children, she had two induced miscarriages. All of the children above 15 have finished school and have then taken business courses so that they are contributing their bit to the support of this large family. Their mentality is unimpaired, several of them showing considerable promise. The two youngest children were never considered to be like the others; they were backward in their development and did not resemble the rest of the family, but the parents have noticed a decided similarity in appearance between these two.

History.—Robert P., aged 7 years, was born after normal but rather prolonged labor. He has always been well but slow to develop. He was brought to see me because of his failure to talk, his vocabulary being limited to single words. He is able to call his parents and some of his brothers by name, and he seems to understand a great part of what is said to him. He is easily embarrassed, good natured, and somewhat restless in his activity. Physically he is undersized and bears the following characteristics of the Mongol: He has blepharitis, almond-shaped eyes with oblique palpebral fissures, epicanthic folds and an external strabismus in the left eye; the mouth hangs open; the lips are thick and

* Read before the New York Neurological Society, Dec. 2, 1919.

1. Goddard, H. H.: Syphilis as an Etiologic Factor in Mongolian Idiocy, J. A. M. A. **68**: 1057 (April 7) 1917.
2. McClelland, J. E., and Ruh, H. O.: Syphilis as an Etiologic Factor in Mongolian Idiocy, J. A. M. A. **68**: 777 (March 10) 1917.
3. Shuttleworth, G. E.: Mongolian Imbecility, Brit. M. J. **2**: 661 (Sept. 11) 1909.
4. Swanberg, Harold A., and Haynes, H. A.: A Case of Mongolism in One of Twins, Arch. Neurol. & Psychiat. **1**: 717 (June) 1919.
5. Van der Scheer, W. M.: Multiple Cases of Mongolian Idiocy in Family, Nederlandsch. Tijdschrift v. Geneesk. **1**: 328 (Jan. 25) 1919; abstr., J. A. M. A. **72**: 1114 (April 12) 1919.
6. Van der Bogert, Frank: Congenital Syphilis, Simulating Mongolism, in One of Twins, Am. J. Dis. Child. **11**: 55 (Jan.) 1916.
7. Babonnieux and Villette: Arch. de méd. d'enf. **19**: 478 (Sept.) 1916.

the tongue is large and protruding, having deep transverse fissures and prominent papillae; the nostrils point forward from a broad, flat nose. The expression is dull and stupid. The skin is soft, dry, and slightly puffy with plenty of subcutaneous fat; the joints are lax, showing a hypotonus. The fingers are short and thick; the thumb is obliquely cut off and the little finger is only half the usual length. Besides these signs he has small genitals with undescended testicles, and until a few years ago he wet the bed. The teeth are very bad, and there is no sign of second dentition as yet.

Edward P., aged 4 years, was born after normal labor. His development was slow. This child wets himself, and is noisy, destructive, and ceaseless in his activity, but is affectionate and good natured. It was most difficult to persuade him to submit to examination and to be photographed. He cannot talk and makes only unintelligible noises. His physical status is the exact counterpart of that of his brother: bullet head, brachycephalic skull, grimacing face with slit eyes, blepharitis, drooling mouth, thick lips, protruding tongue, hypotonus, hand of the typical spatular type, and skin of the same quality as that of his brother. To describe one is to describe the other.

The illustration shows the characteristic facies and the spade hand of the younger, though the difficulty in controlling the children made a better picture impossible. As I could not obtain consent for a Wassermann test, those data are unavailable; but a survey of the family history, with nine healthy children previous to these two, and parents who have no evidence of the disease. seems to be sufficient to exclude syphilis.

COMMENT

In these two Mongolian imbeciles we have the last children of a large family, a potent argument for the theory that they develop from a parent in whom the germ plasm has become defective through exhaustion. A history obtainable in over 50 per cent. of Mongols is that the idiot child was the last one of a large family, when the mother was far advanced in her reproductive life, or else that the child was the product of a marriage union consummated late in life.[3]

Let us consider this hypophrenic type from the endocrine aspect, for it is almost impossible to observe this peculiar appearing creature without remarking the growth and the tissue abnormalities. For some time the few points of similarity between the Mongol and the myxedematous cretin have been emphasized and made the basis for thyroid medication; but how different is the restless activity of the former from the dull sluggishness of the latter. So far, absolutely no results have been obtained with thyroid feeding in mongolism. In this family there is a strong endocrine heredity especially on the maternal side; her mother had diabetes, and she herself is of a pronounced dyspituitary type with nasal eyebrows, spacing of the incisors, obesity, and frequent frontal headaches. The children with their dry, smooth, hairless skin, prognathous jaw, small stature, abnormal bony growth, and undescended testicles show some very definite signs which could be classed as polyglandular. Therapy along these lines has, thus far, failed to bring about any cures, but further work will, we believe, throw light on this probable etiologic factor.

74 West Forty-Eighth Street.

Aerial Dust.—Establishments devoted to the manufacture of abrasive materials may present conditions in regard to aerial dust content that can scarcely be equaled in any other industry. The study of such conditions and the devising of adequate means for so controlling them as to protect the workers in this trade from the menace of tuberculosis would seem to invite serious attention.—*Public Health Reports,* May 30, 1919.

A CASE OF LUMBOSACRAL PARALYSIS (TRAUMATIC)

G. B. HASSIN, M.D.
Attending Neurologist, Cook County Hospital
DAVID M. LEVY, M.D.
AND
W. E. TUPPER, M.D.
CHICAGO

The lumbosacral plexus comprises the ventral branches of a portion of the fourth and fifth lumbar nerves and of the three upper sacral nerves. The principal nerves arising from this plexus are the anterior crural (second, third and fourth lumbar nerves), external popliteal (fourth and fifth lumbar and first and second sacral), internal popliteal (fourth and fifth lumbar and first, second and third sacral) and obturator (third and fourth lumbar). A combined involvement of all these nerves occurred in the case here reported.



Fig. 1.—Drooping of left foot, and atrophy of entire limb.

REPORT OF CASE

History.—A colored boy, aged 18, a laborer, admitted to the orthopedic service (Dr. Harger), Aug. 19, 1919, complaining of difficulty in walking, stated that about fourteen years before, while in perfect health, he fell on the floor with the legs widely stretched. For nine months he was unable to walk, having been all this time confined to bed. He asserted that up to four years before he had had little difficulty in walking, but

admitted that the left leg was always smaller and weaker than the right. Four years before, this leg became much weaker, and he would fall frequently because of sudden flexion of the knee joint. The whole left leg, he said, had a feeling of being dead and colder than the opposite one, but there never was pain. The patient had had measles, smallpox, mumps, whooping cough, pneumonia (twice), influenza, gonorrhea (one and one-half years before) and multiple sores on the penis (a year before). The family history was good.



Fig. 2.—Atrophy of left leg; tilting of pelvis; bent trunk; scoliosis.

Examination. — The patient looked healthy, and had a marked left scoliosis in the lumbodorsal region; the left side of the pelvis was much lower and the left leg was atrophied, while the right thigh appeared hypertrophied. In standing, he kept the left knee slightly bent and the body bent toward the right (Figs. 1 and 2). In walking, he bent the body forward and to the left, and swung the pelvis, throwing the leg and foot which struck the ground. The muscles of the entire left lower extremity were greatly atrophied, flabby and weak. The leg was much shorter and thinner than the right. The right thigh in the middle measured 25½ inches, and the left, 19 inches; above the patella, 18 and 14¾ inches, respectively. The length of the left limb was 33¾ inches, that of the right, 36 inches. The thighs measured in length 18¾ inches on the right, 18½ on the left. The measurements of the calf muscles at three levels gave a difference of 3 inches in favor of the right side; above the ankle joint the difference was very slight (a fraction of an inch).

Passive movements of the joints of the affected side were exaggerated and somewhat limited in the ankle. Kernig's, Lasègue's and Patrick's "faber sign" were absent.

Active movements on the same side were all abolished except abduction and flexion of the leg. Thus the patient was totally unable to move, on the left side, the toes or the foot, and could not extend or cross the leg, and adduct or flex the thigh over the abdomen. In contrast to such an extensive motor lesion, the sensory disturbances repeatedly studied in various wards of the hospital were rather mild, in the form of patches of anesthesia and hypesthesia over the dorsal surface of the foot and anterolateral surfaces of the leg.

The affected muscles and nerves showed some electrical changes which were rather indefinite. The muscles supplied by the anterior crural and peroneal nerves, as well as these nerves themselves, gave a normal response to the galvanic current, while the posterior tibial and the obturator gave no response whatever. The faradic current was not available.

The roentgen examination detected no changes in the bones or joints (Fig. 3).

The reflexes, like the Achilles tendon and the knee, were lost on the left, the cremasterics were very inconstant; the plantar was absent, and the Babinski negative. Pupillary and genito-urinary changes were absent.

SUMMARY

The clinical findings can be summed up as a flaccid atrophic, partly degenerative paralysis of the left lower limb, with involvement of the main branches of the great sciatic nerve (external and internal popliteal nerves), anterior crural and obturator nerves. The paralysis was of fourteen years' standing, and occurred after a fall in a 4 year old child with the legs abducted. Recovery occurred nine months after the injury, was never complete, and for the last four years the condition had become worse. The extensive paralysis was associated with comparatively mild sensory and indefinite, rather unusual, electrical changes. Bone changes, in spite of a long duration of the paralysis, were totally lacking.

COMMENT AND CONCLUSIONS

The clinical findings in this patient very much resemble those observed by Lorenz,[1] Bernhardt,[2] Schuster,[3] Bade,[4] Peltesohn[5] and others in patients after not altogether successful attempts at reduction of dislocated hip joints. Thus, Lorenz speaks of a "tearing paralysis" (*Zerrungslähmung*) of the sciatic nerve which he has observed twice in 360 cases of so-called



Fig. 3.—Tibia and fibula of affected side, lateral and front views; no changes.

1. Lorenz, Adolph: Ueber die bisherigen Erfahrungen mit der unblutigen Einrenkung der angeborenen Hüftgelenksluxationen, Therap. Monatsh. **13**: 413, 1899.
2. Bernhardt, M.: Ueber einige seltener vorkommende peripherische Lähmungen, Berl. klin. Wchnschr. **28**: 237 (March 7) 1904.
3. Schuster, E.: Neurol. Centralbl. **27**: 654, 1908.
4. Bade, Peter: Ueber Lähmungen im Anschluss an die Reposition der angeborenen Hüftverrenkung, Verhandl. d. Deutsch. Ges. f. Orthop. Chir. **8**: 198, 1909; Beilageheft der Ztschr. f. Orthop. Chir. **24**.
5. Peltesohn, S.: Die Lähmungen im Gefolge der unblutigen Einrenkung der angeborenen Hüftgelenksverrenkung, Ztschr. f. Orthop. Chir. **23**: 222, 1909.

bloodless reposition of the hip joint, while in five of his 360 cases there was a paralysis of the quadriceps from the same cause (tearing of the crural nerve), without sensory changes. Bade explicitly states that the forced abduction procedures are the factors which most frequently lead to paralysis (of the crural and sciatic nerves), which he found to occur in 2.1 per cent. of Lorenz's operations.



Fig. 4.—Long bones of the affected extremity in an old case of poliomyelitis.

Peltesohn comes to the same conclusion from his extensive clinical and experimental studies, though he admits also the possibility of the compression of the sciatic nerve between the trochanter and tuber ischii. In addition to the sciatic paralysis he and many other orthopedists observed also anterior crural paralysis ("from overstretching" the nerve) without any neuralgic pains or sensory changes. The combined lesion of the sciatic and crural nerves he explains, together with the rest of observers, as a "plexus lesion."

It is unquestionable that in our case, in view of the history of a trauma, long duration of the paralysis (nine months), and the presence of sensory disturbances, mild as they are, the lesion should be placed in the plexus, not in the spinal cord. In other words, it should be considered a peripheral and not a central lesion, as in poliomyelitis. Even if we disregard the sensory symptoms, neither the etiology nor the condition of the bone changes speak for the latter. In poliomyelitis of long duration the bones of the affected limb are thin and smooth, and are deprived of their anatomic characteristics. The bone changes confined to the diaphysis only and sparing the epiphysis, are very well shown in Figure 4, which represents the bone changes in a demented 39 year old patient who was paralyzed in both lower limbs for thirty-seven years. This also followed a fall. Not only the bone changes but also the entire clinical picture in this case[6] were totally different from the case reported in this article.

31 North State Street—Cook County Hospital.

6. Hassin, G. B.; Lukas, Christine, and Brown, R. O.: Roentgenographic Bone Changes in a Case of Poliomyelitis, J. A. M. A. **65**: 1459 (Oct. 23) 1915.

Clinical Notes, Suggestions, and New Instruments

VERRUCAE

REPORT OF A CASE

WILLIAM ALLEN PUSEY, M.D., CHICAGO

This case in an Italian boy is interesting, both on account of the excessive number of warts, and the result of the application to them of Vleminckx's solution.

The young man appeared at my office for treatment, September 3, at which time a photograph (Fig. 1) was made. He had a crop of warts that were literally confluent over nearly all of the forehead and temples, and were scattered in large numbers over the rest of the face. The photograph, unfortunately, because of the bad lighting, does not give an adequate idea of the abundance of the lesions. They were as abundant, and as prominent, over the entire forehead as they appear on the right side in the photograph. They made, in fact, a continuous patch three fingers wide below the hairline over the whole forehead. The patient had also a large crop on the backs of his hands.

He was given a solution of 1 part of Vleminckx's solution and 3 parts water, which he applied once daily to the face and hands. In a week he returned. There was a slight scaling dermatitis from the Vleminckx's solution, and a remarkable decrease in the warts. He continued the application, and returned again nine days later. At that time the warts on his face had almost entirely disappeared. His condition at this time is shown in Figure 2, taken sixteen days after the first photograph.



Fig. 1.—Appearance of warts on the day the patient presented himself for treatment.

The warts on the hands, which individually were larger, had not completely vanished, but many of them were gone, and all of them were flattened down and manifestly involuting rapidly.

My attention was first called to the use of Vleminckx's solution in connection with verrucae by the late Dr. James Nevin Hyde. I have used it in a desultory way for many years without being impressed with its value. Lately I have

been using it in stronger solutions and with interestingly good results. I have never seen another case in which removal of the lesions was so surprising as in the one described above, but the solution has served me well in many



Fig. 2.—Appearance of the patient sixteen days after he first presented himself for treatment.

of these troublesome cases. The method of application that I have found most effective is to put on a small dressing, just a little larger than the wart, wet with full strength Vleminckx's solution, and held in place by adhesive plaster. This is left on over night, and repeated until irritation is produced; then it is used less frequently until the wart disappears, or until, in case of plantar warts, the desiccated horny mass can be dug out.

7 West Madison Street.

A NEW METHOD FOR PROCURING BLOOD FOR WASSERMANN TESTS *

R. G. OWEN, M.D., AND F. A. MARTIN, M. D., DETROIT

For the past three years we have drawn bloods for Wassermann tests with a special instrument which we have found convenient and economical.

As shown in the accompanying illustration, it is a small metal cap which fits the centrifuge tube into which the blood



Instrument for drawing blood for Wassermann test.

is drawn. The sides of the cap are flexible so that it will fit tubes of varying sizes within a moderate range.

A needle without a hub is sterilized by dry heat in a small test tube with the point of the needle down. When ready for use the needle may be removed without touching the point. It is held by the middle, the wire withdrawn and the butt end of the needle is inserted into a hole in the top of the cap and tightened with a set screw. The cap is placed on the sterile centrifuge tube, and the instrument is ready for use.

With this instrument, the tube and cap furnish a good handle, and the needle is held rigidly so that it may be guided accurately. The hole in the cap is made large enough to hold any size needle up to and including an 18 gage.

In our work we use thick-walled centrifuge tubes, without a lip, whose outside diameter is approximately 16 mm. The needles used are either 18 or 20 gage. They may be purchased in gross lots for slightly less than five cents each.

After use, the needle is dropped in a strong soap solution from which it may be cleaned with alcohol and ether, resterilized, and used many times.

When the needles and tubes are sterilized in large lots, numerous bloods may be drawn within a very short time and at a slight cost, particularly if the needles are cleaned and used again.

These instruments may be obtained from the Central Scientific Company of Chicago.

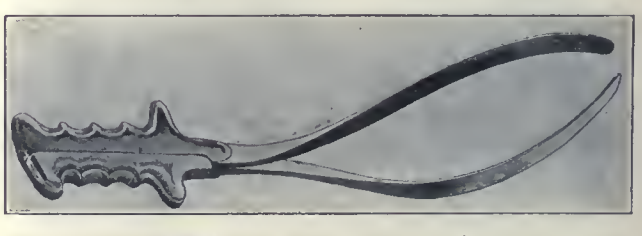
33 East High Street.

* From the Detroit Clinical Laboratory.

FORCEPS FOR USE IN PLACENTA PRAEVIA

W. B. HANBIDGE, M.D., OGDENSBURG, N. Y.

The patient on whom these forceps were first used was at term but not in labor. She had a rather profuse hemorrhage while in bed at 3 a. m., Aug. 11, 1919, and was sent to the hospital with a diagnosis of lateral placenta praevia. Examination revealed a very rigid cervix which admitted the index



Forceps for use in placenta praevia.

finger. The placenta was felt to the left about one-half inch from the os. An anesthetic was given and the cervix dilated to the extent of slightly over an inch. There was some hemorrhage during dilation. A pair of forceps had been prepared by cutting off the posterior part of the fenestra of each blade of a pair of obstetric forceps close to the shank, and at the point where the anterior portion curves backward. In using these forceps, the left blade was turned with the concave surface to the pubes. The handle was held well to the right of the operator and the point pushed up within the uterus, the handle at the same time being carried well to the left and back to the perineum. At the same time the assistant pressed on the fundus of the uterus to hasten the discharge of liquor amnii, and to keep the head well down. The right blade was introduced by reversing the movements. The forceps locked easily and gripped the head firmly. Gentle traction was applied, and all oozing of blood ceased. The anesthetic was removed, and gentle traction was kept up by tying a roller bandage tightly around the handles and extending it over a rod, at the foot of the bed, which could be elevated or lowered by being attached to the irrigating stand. A 2½ pound weight which was tied to the end of the pendant strip of bandage was all the traction that seemed necessary. Occasionally the weight was removed for a short time so that there would not be a continuous pressure of the forceps on the scalp. Pains came on promptly, and at the end of five and a half hours the cervix was about three-fourths dilated. As the presentation was a left occipitoposterior one and the head was not descending, the placenta praevia forceps were removed and obstetric forceps applied. The head was brought down and the occiput rotated to the front.

The infant was normal and uninjured except for a slight cut behind one ear. This may have been done by the obstetric

forceps, but it was probably caused by the placenta praevia forceps on account of no axis traction attachment being used, the blade being too sharp in front and the position being left occipitoposterior.

In this case the placenta praevia forceps were very easily applied, and the pains came on at once and at short intervals. The forceps seemed to act as a gentle dilator of the cervix to stimulate uterine contractions, and a slight amount of traction kept up sufficient pressure of the head on the placenta to prevent hemorrhage.

In modifying a pair of obstetric forceps, it would be preferable to have one with a lock that allows the shanks to come closely together, as it can be applied through a smaller opening than one made with the English lock.

116 Ford Street.

A NEW FRAME FOR TUBERCULOSIS OF THE SPINE

GORDON N. MORRILL, M.D., CLEVELAND

The rather general acceptance of the Whitman-Bradford frame as the best appliance for hyperextension of tuberculous spines leads me to describe a frame which in my experience has proved superior to it in every way for treatment of this disease in children.

The principal reasons for dissatisfaction with the Whitman modification of Bradford's appliance are obvious to those who have had experience with it, namely: (1) the impossibility of holding the kyphos up, owing to the inevitable sagging of the canvas; (2) difficulty in ascertaining the position of the kyphos after the child is strapped into place, because of the thick padding underneath; (3) the necessarily tight apron holding the patient in position, with the result that not only is breathing made difficult, but the body is flattened and compressed to such a degree that normal development is impossible; (4) bad ventilation caused by direct bodily contact with the canvas cover and rubber sheeting; (5) the fact that the entire frame must be bent to the corrective angle, and (6) the great danger of genu recurvatum, owing to the rigid fixation of the knees in a hyperextended position.

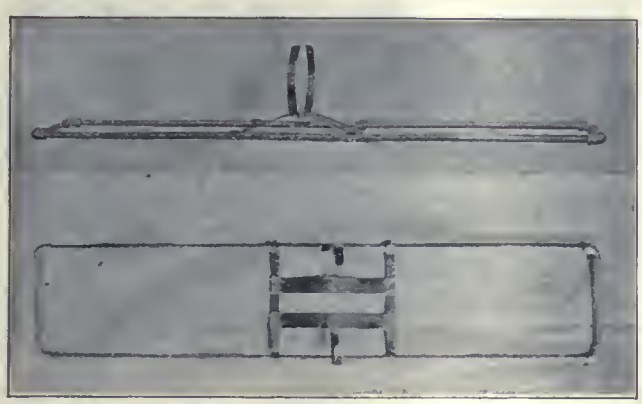


Fig. 1.—Above, Bradford foundation with the new support attached; below, top view of frame.

Each of these defects is completely eliminated in a frame devised by Dr. H. O. Feiss and myself. For eight years I have used it exclusively in all acute cases of dorsal and lumbar tuberculous spines in my work at Lakeside and Rainbow hospitals, with unvarying success and the increasing conviction that it is the most practical device I have yet seen for the purpose.

Because of these excellent results, I feel justified in going considerably into detail in describing the frame and the part it plays in the treatment of Pott's disease in children.

The appliance is constructed on the Bradford frame foundation, which need be made in but two sizes for children under 12. Fastened to the sides of the gas-pipe frame is the support-unit of the device, and this may be moved to any desired position by adjusting four screws holding the cross bars in place (Fig. 1). The support proper is composed of two curved pieces of steel fastened to the cross bars 1½ or 2 inches apart, leaving sufficient space for the spinous processes. To each side of this support proper is attached one-half the waist band, which serves, not as a means of confining the patient, but of fixation for the perineal and shoulder straps. These are attached as shown in

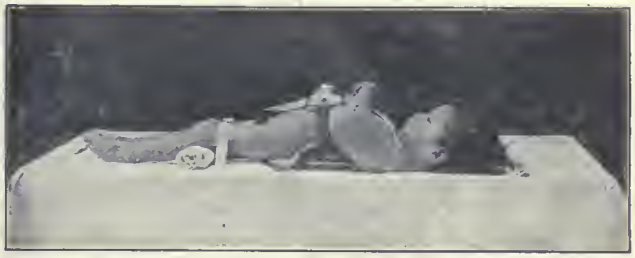


Fig. 2.—Child in position on the frame, showing the arrangement of accessories.

Figure 2, and buckled firmly in place. The knee strap, it should be noted, is placed well above the patellae, thus eliminating the danger of pressure at a sensitive point. An important item, also, is the pad under the knees (Figs. 2, 4, etc.), to prevent stretching the posterior structures of the knee joints. Strips of felt are used as padding on the spinal support and waist-band; and canvas covers, as well as overslips of finer material, are laced on the ends of the frame. A space is left between the lower of these and the support-unit for the use of the bed-pan, for which the entire frame should be raised on blocks. The child wears shirt and drawers when put on the frame, and the outer garment may be buttoned beneath the support, making it unnecessary that the clothing be so large as to include the entire apparatus.

The many advantages of the frame I have described are easily recognized. Naturally, the convex curve of the two pieces of steel, which may be quickly adjusted for any degree of kyphosis, is the main corrective agent of the device. It tends to restore the normal curve of the spinal column, through exaggerating it to compensate for the deformity. By hyperextension of the spine, and by the rigid convexity of the support, the body weight, pulling in opposite directions, separates the diseased vertebrae—which in itself has a naturally curative effect—and at the same time reduces the kyphos. There is no weight or pressure to flatten the chest or abdomen; therefore, normal development and the body metabolism are not interfered with—facts which are made evident by the increase in weight which has always occurred in these cases.

The raising of the trunk above the frame not only makes good ventilation, but also enables the visiting physician

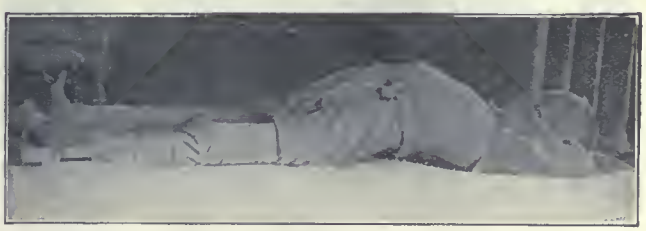


Fig. 3.—Patient having tuberculous spine and hip, with traction on limb.

instantly to ascertain the position of the kyphos in relation to the support.

Moreover, traction may be used without interfering with the patient's position on the frame, as in Figure 3, in which the boy is being treated simultaneously for tuberculosis of the hip and of the spine. In such instances, the frame should be tied at its upper end to the head of the bed, which, together with the perineal straps, makes slipping downward

impossible. In one case, a child having complete pressure paraplegia with paralysis of the bladder and bowels was so treated, with traction on the legs, and in three weeks the paralysis had practically disappeared.

If this frame is to be used on a bed, it is advisable to put a board under each end to prevent the bed's sagging. But it may be laid on a table quite as well (Figs. 2, 4 and 6).

Beyond seeing that the support fits the deformity, there is little to be done for the patient while on the frame, except that he must be rolled off carefully once every day, and his back bathed with alcohol and powdered with zinc oxid. While this is being done, the child should always take a position resting the elbows on the table, the chin in the hands (Fig. 5), thus keeping the spine in hyperextension until the apparatus is again in place. In rolling the patient both off and on the frame, the nurse places her hand on the chest with her arm supporting the abdomen, and turns the frame with the child. To this treatment and proper adjustment of the support is due the fact that there has never been a pressure sore in my experience with the appliance. If the pressure is correctly applied, there will be merely a slightly reddened area on each side of the kyphos. However, it must be clearly understood that this device is never to be used with adult patients, as their skin cannot withstand the pressure of the proportionately greater body weight without resulting abrasions.

With caries of the bodies of the vertebrae it is absolutely essential that the patient be kept on the frame at least six months, as the spasm of the erector spinae seldom ceases under that period. Even if this were not true, a shorter



Fig. 4.—Examples of the two sizes of frame used for children under 12; the pad under the knees is important.

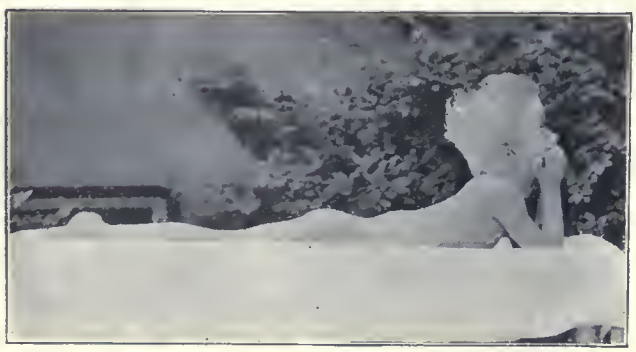


Fig. 5.—Position to be assumed by patient daily while the back is being cared for.

period of recumbency would be unwise, owing to the probability of an exacerbation of the disease. Frequently, as much as a year is required to make certain the best results. Lateral roentgenograms and tracings of the kyphos should be made every two months while the patient is on the frame, increasing the tracings to one a month when the patient has been removed and fitted to a suitable brace. Only in these ways can reliable data on the progress of the disease be secured.

For treatment of tuberculosis of the upper dorsal spines, I use the same frame with a specially adapted support-unit. It differs from the one described only in the curve of the two steel bars, which in this case are bent into a figure S (Fig. 7). With the high point of the curve under the

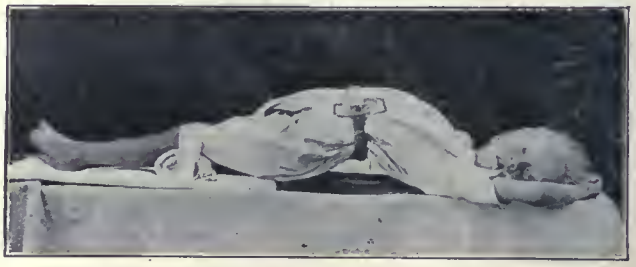


Fig. 6.—Patient in Figure 5 in place on the frame.

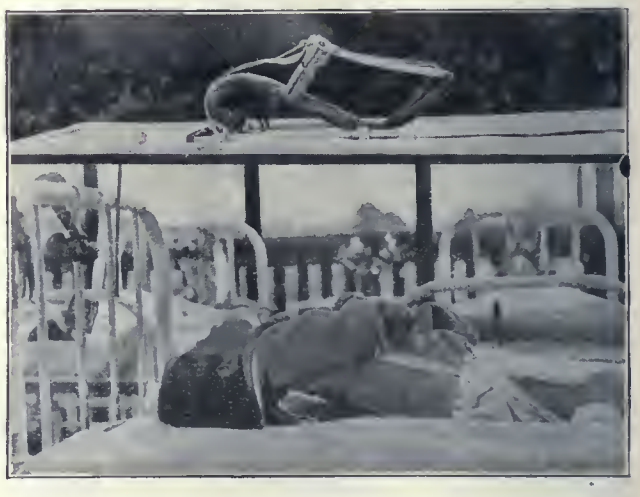


Fig. 7.—Above, special device for tuberculosis of the upper dorsal region (note arrangement of straps and padding); below, patient in position on frame.

kyphos, the weight of the head acts as traction, and usually secures all the extension needed. This is much better than the commonly used plaster bed, owing to the complete ventilation secured, and the ease with which its curve may be adjusted.

In spinal, as in all forms of tuberculous disease, the open air treatment is of vital importance. Therefore, one of the extremely practical features of the device is the ease with which it may be carried about by the nurse in the hospital or the parent at home. The child may even be brought to the physician's office without removal or danger of displacement.

The accompanying photographs cannot fail to make more evident the points I have endeavored to emphasize, particularly the patients' invariable well-being and their normal bodily development while recumbent.

It is with the hope that this appliance may prove of value to others who are interested in the treatment of tuberculous spines that I present it for consideration.

429 Osborn Building.

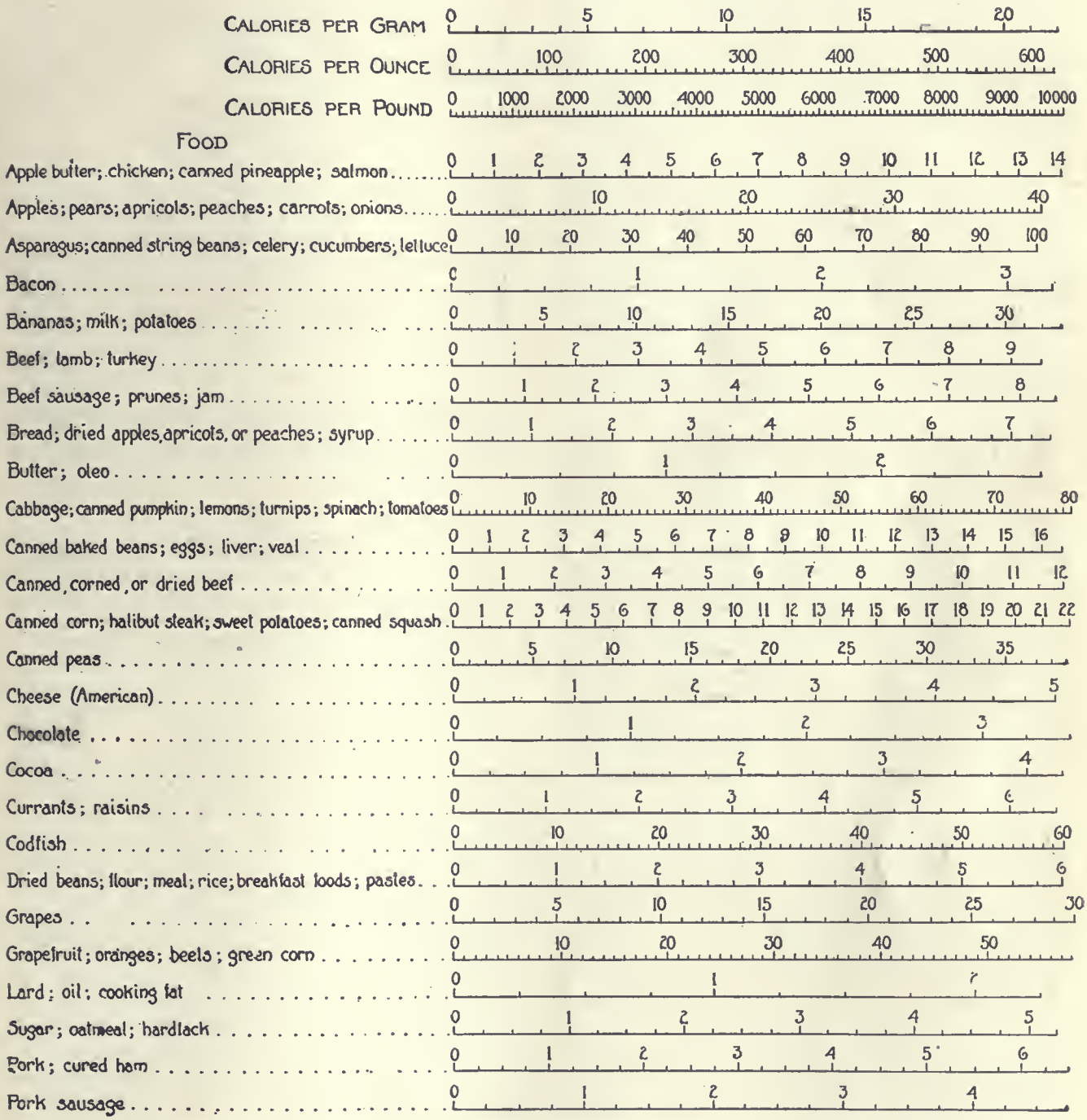
Treatment of Mental Disorders.—In every large center of population a department for nervous and mental cases should be provided in connection with the best general hospital. This department should be so organized and equipped that the patients would be treated by the most approved methods at the hands of specially trained and experienced nurses and physicians. In no class of case is the necessity for specialists more pressing. In fact special knowledge and skill are the only sure safeguard against gross neglect and mismanagement in the treatment of mental cases.—W. L. Russell, *Canadian J. Mental Hygiene* **1**:161 (July) 1919.

A CHART FOR RAPID CALCULATION OF CALORIFIC VALUES OF DIET

J. F. McCLENDON, PH.D., MINNEAPOLIS
Associate Professor of Physiology, University of Minnesota Medical School

The accompanying chart furnishes the calorific value per unit weight and performs simultaneously the process of multiplication and division, thus giving an immediate answer to the question of the calorific value of any diet, bill of fare or store of food. It is one thing for the physician to recommend a more adequate diet for a patient suffering from pellagra, tuberculosis or other disease, but quite another thing for the patient to procure such a diet. With the increase in cost of food, economic rationing becomes more and more desirable. The calculation of the calorific value of food is seldom done as an economic measure, since the cost of such calculation often exceeds the savings that may arise therefrom. The object of the chart is to reduce the labor of calculation to a vanishing quantity. The time required to use the chart decreases with practice, but is so small as to be negligible even the first time the chart is used. The first time I used the chart, five minutes were required to calculate the calorific value of a diet containing seventeen articles of food, and the error was only 5 per cent. The error due to variation of the foodstuff may be 5 per cent. or more, and hence the use of the chart in calculation is open to no more criticism than the use of Atwater and Bryant's data for the composition of food.

Since food is usually purchased by the pound or in containers whose capacity in pounds is known, the use of the pound as the unit of weight is most convenient. Besides the chart, a measuring tape is necessary. A millimeter tape is most convenient if it is remembered that each millimeter



Scale for rapid determination of calories.

represents 100 calories, or each centimeter, 1,000 calories. The "calories per pound" scale at the top of the chart represents a millimeter tape with the calory units marked on it, and it may be cut out or copied for use, but it is not long enough and should be extended. A fine thread may be used in conjunction with the "calories per pound" scale, as in the ordinary practice of measuring with a string and transferring to a rule.

A list of the foods and their weights in pounds is prepared. Beginning with the first food on the list, the scale opposite its name on the chart is found and the number corresponding to its weight is noted on the scale and the distance from this number to the left hand end of the scale is measured with the tape. The part of the tape used in this measurement is marked off by covering it with the left thumb, the next succeeding portion of the tape is used to measure the second article of food, and at the end of the process, the calorific value of the whole list of foods is read off directly from the tape. For instance, let us suppose that we wish to calculate the total calorific value of 1 pound of bread and 10 pounds of apple butter. Using the millimeter tape measure (which is identical with the "calories per pound" scale at the top of the chart) we measure off one unit of the bread scale and find it to be 13 mm. Then, taking the same measure and commencing at the 13 mm. point we measure 10 units on the apple butter scale. We shall find that this will take us up to about 84 mm. Therefore, the total calorific value of the 1 pound of bread and 10 pounds of apple butter are 8,400 calories. There may be an error in calculation of 20 calories, which is only 0.5 per cent. Of course, in rapid work, ten times as great an error may occur.

Some further examples are as follows: Suppose a meal is made of 1 pound of beef and 1 pound of potatoes. We measure the beef as about 10 mm. and the potatoes as about 3 mm., or a total of 13 mm. or 1,300 calories (whereas the correct calculation is 1,307 calories by multiplication and addition). Besides this slight error in calculation there is a much greater error in using an average figure for beef. If we were calculating the beef used in an army mess, the data would be nearly correct; but when the beef is cut up there is considerable variation in the different cuts, as illustrated by the fact that Atwater and Bryant devote ten pages of tables to data on fresh beef. Since the different cuts vary from 125 calories per pound for very lean neck to 2,440 calories per pound for very fat flank, it might seem useless to use the chart for beef at all. In case of the higher calorific values, most of the calories are due to large masses of fat that would not be eaten as such, and the lower calorific values are due to the presence of much bone that makes the cuts fit only for soup. In the ordinary practice of eating steaks and chops, the average figure for beef would not be very far wrong. If we have a different scale for every cut of beef, the chart would be too large for ordinary use.

As another example, suppose we make a pudding of a dozen eggs, 5 pints of milk and half a pound of sugar. A dozen eggs weight approximately 1½ pounds, and 5 pints of milk 5 pounds. We find that eggs have the same calorific value as canned baked beans, and milk the same as bananas, to remember which will aid in finding the scale. We measure off 1.5 units on the egg scale and find it to be 9 mm., and 5 units on the milk scale and find it to be 15 mm., or a total of 24 mm., and half a unit on the sugar scale and find it to be 9 mm., making a grand total of 33 mm., or 3,300 calories. The correct calculation gives 3,317 calories; hence our error is about 0.5 per cent.

If the food has been weighed in ounces, the same chart is used, but a new measuring tape must be prepared by cutting out or copying the "calories per ounce" scale at the top of the chart. For instance, to find the calorific value of 1 ounce of butter we measure one unit on the butter scale with our new tape and find it to be 217 calories, whereas the correct calculation gives us 217.38 calories.

If the weight of the food is recorded in grams, the same chart is used, but a third form of measuring tape is prepared by cutting out or copying the "calories per gram" scale at the top of the chart. For example, to find the calorific value of 1 gm. of butter, we measure one unit on the butter scale with this third form of tape, and we find it to be 7.7 calories, whereas the correct calculation would give us 7.668 calories.

In case the food is not sold by weight, the capacity of containers may be estimated. The volumetric capacity of containers may vary if not fixed by law, and the gravimetric capacity may vary with variation in the character of its contents. The tabulated data, obtained in San Francisco, may be of some use. The weights are net.

ESTIMATED CAPACITY OF CONTAINERS

Apples	40 lbs. per box (135 apples in a 4-tier box).
Bananas	70 lbs. per bunch.
Beets	10 lbs. per dozen.
Cantaloupe	65 lbs. per crate.
Cassaba melon	40 lbs. per crate.
Carrots	80 lbs. per sack.
Cauliflower	40 lbs. per dozen.
Celery	3 lbs. per bunch
Cucumbers	40 lbs. per lug-box.
Corn (green)	70 lbs. per sack.
Eggs	54 lbs. per case, 1½ lbs. per dozen.
Grapes	45 lbs. per lug-box, 40 lbs. per crate.
Grapefruit	65 lbs. per crate (64 grapefruits).
Lemons	70 lbs. per crate (350 lemons).
Lettuce	40 lbs. per crate, 13 lbs. per dozen.
Milk	2 lbs. per quart.
Oranges	70 lbs. per crate.
Peaches	55 lbs. per lug-box, 40 lbs. per pony-crate.
Potatoes (sweet)	118 lbs. per box.
Radishes	7 lbs. per dozen bunches.
Spinach	10 lbs. per dozen bunches.
Tomatoes	55 lbs. per lug-box.
Turnips	80 lbs. per sack.

The weight of contents of canned and dry package goods is marked on the container. The foods sold by volume and not weight are usually of low calorific value, and hence the absolute error in estimating the weight is very small.

Therapeutics

A Department Devoted to the Improvement of Therapy. A Forum for the Discussion of the Use of Drugs and Other Remedies in the Treatment of Disease.

USE AND ABUSE OF CATHARTICS*

(*Continued from page 30*)

THE CATHARTIC SALTS

"Taking a dose of salts" is generally considered an easy and simple way of producing an evacuation of the bowel. Consequently few medicaments are more generally used—and abused—by both physicians and laymen than are the saline cathartics. These salts, in fact, belong among the habit-producing drugs, and are responsible for a large proportion of cases of cathartic habit. That they are occasional accessory causes of death from ileus and appendical and other forms of peritonitis is only too well known to the surgeon.

The chief effect of the salines is to interfere with the absorption of some of the ingested water, so that it is eliminated into the stool instead of passing through the system. They do this, presumably, because they are practically nonabsorbable in the alimentary tract and therefore retain enough water in the colonic contents to render them isotonic with the blood.[1]

As an isotonic solution of sodium sulphate is 2 per cent. of the dried (4 per cent. of the crystalline) salt,

* This is the thirteenth of a series of articles on the pharmacology, physiology and practical application of the common laxatives and cathartics. The first article appeared October 18.

1. Other theories have been advanced to explain the action of these agents. Space for the discussion of these is not taken here, as they do not influence their use.

it would take 500 c.c. (1 pint) of fluid to carry out of the system a dose of 10 gm. (2½ drams) of this salt. In case of magnesium sulphate, 7.5 per cent. of which is isotonic, the proportion of water abstracted is somewhat greater, because this substance is converted in the intestine into magnesium bicarbonate and sodium sulphate, both of which are soluble and practically nonabsorbable. Evidently this is why magnesium sulphate is a more efficient purgative than sodium sulphate. Magnesium citrate, on the other hand, yielding sodium citrate and magnesium bicarbonate, is proportionately less powerful than magnesium sulphate, to the extent that sodium citrate is a feebler cathartic than sodium sulphate.

ILL EFFECT ON THE STOMACH

When the salts are ingested in any other than isotonic strength, they are rendered isotonic in the stomach. In case of strong salt solutions, this is accomplished at the expense of delayed evacuation of the stomach and irritation of the gastric mucosa. We may, therefore, formulate the rule that *salines should be given in dilute solution—generally, a teaspoonful to a tumblerful of water—unless abstraction of fluid from the system is aimed at.* The gastric distention produced is by no means advantageous to the functions of the stomach. This is so well known that purgative salts are preferably taken on an empty stomach; their ingestion is so timed, that they have largely left the stomach before food enters it, which is ordinarily accomplished by giving them at least half an hour before meals. This presupposes, however, a normal emptying time of the stomach. When there is gastric motor insufficiency —a condition in which fluid is evacuated with difficulty and therefore interferes with digestion—these agents are, as a rule, not well tolerated. The condition of sufferers from gastritis is likewise aggravated by any but most moderate doses of isotonic alkalized solution. When there is nausea or vomiting, these agents, with the exception of magnesia, cannot be administered, for they have a tendency to provoke nausea and vomiting in sensitive persons. These are the reasons that most of the cathartics of this class are practically taboo with the gastro-enterologist, who deals with so many of these patients. Even their transduodenal administration by means of Jutte's tube has recently been advocated, to spare the stomach the action of these chemicals.

EFFECTS IN INTESTINE

While these bodies delay the evacuation of the stomach when they are given in concentrated solution or when they produce diarrhea, the moment they enter the intestine they hasten the onward progress of its contents, producing a liquid evacuation within from one to four hours of their ingestion. Such prompt effect is dependent, however, on good peristaltic activity. When this is deficient, as is likely to occur in those confined to bed, instead of one prompt and comfortable bowel movement in one, two or four hours, several small bowel evacuations may ensue with considerable griping in the course of twenty-four hours. For this reason the salines may be advantageously combined with peristaltic stimulants, as salts and senna, sulphur and cream of tartar. From what has been said it is evident that the best time for giving these salines is in the morning before breakfast: while administering them last thing at night is least likely to produce desirable results.

The rush of fluid through the intestine, induced by saline cathartics, results in a veritable washing out of the bowel, which cannot, however, be complete. Liquid and solid materials are passed along the intestine by different processes. While the rhythmic segmentation movements of the intestine may cause a rapid passage of fluid, solid contents, which depend for their propulsion on peristalsis, may be left behind. While the artificial diarrhea produced may carry away poisons, it also causes the loss of a certain amount of nutriment. On the latter action is based their use in the treatment of obesity, which, however, is not nearly as rational as diminution in the intake of nutriment. Not much can be said in favor of their action in so-called intestinal autointoxication: for, while they may remove some of the bacteria and the poisons produced by them, the fluidity of the bowel contents and the greater amount of organic matter contained in them may favor the more rapid growth and development of those organisms left behind.

The evacuant action of the salines is chiefly useful when a single flushing out of the bowel is desired to remove, as thoroughly as possible, irritant or otherwise offensive material. As they produce but little irritation in the intestine, they may be used even in the presence of enteritis and in dysentery. Salines are the classical evacuants to be used in connection with mercurials and anthelmintics, and in case of poisoning.

One of the chief faults of the cathartic salines is their deficiency in stimulating peristalsis: indeed, intravenous or intramuscular injection has been shown to inhibit bowel movement. The rapid evacuation produced is due to distention of the intestine with fluid; and this is so marked that salines are particularly obnoxious for preoperative purgation or for evacuation of the bowel prior to a roentgenologic examination of the abdomen. They are contraindicated in chronic atonic constipation, as they not only do not antagonize the underlying pathologic condition, but actually aggravate it by lessening the need for peristaltic activity, as liquid contents are more easily propelled than solid material. Their use in dyschezia (torpor recti) is irrational, as in these cases they act no better than an equivalent amount of water injected by rectum; and it surely is not good sense to upset water absorptive and other physiologic processes all the way down the alimentary canal in order to distend its lowest segment with fluid that might so much more readily and efficiently be introduced from below.

The chronic use of salines is justified only in those cases of constipation due to minor colonic stenosis, even cancerous, and to partial anatomic obstacles (adhesions, etc.) in patients for whom surgical relief is not desirable.

SYSTEMIC EFFECTS

The source of the fluid eliminated in the stools in the course of saline catharsis is chiefly ingested water. Even if the saline is not taken in isotonic solution, enough water is ordinarily consumed in our diet to produce isotonicity without abstraction of fluid from the blood. It is only when dry diet and concentrated salt solution are used simultaneously that abstraction of fluid from the system occurs. As a result of such concentration, the red blood count may rise to 7,000,000 per cubic millimeter, to return to normal within the next few hours even if no fluid has been taken. A second less marked rise in the concentration of the blood may be observed during the stage of diuresis.

Alongside of this temporary diminution in the volume of circulating fluid there is a tendency to depression of the circulation. This accounts for the feeling of faintness experienced by feeble individuals at the height of action of these agents, as well as for the relief of headaches due to cerebral hyperemia or high blood pressure testified to by others.

In treatment of dropsy, the cathartic salines are perhaps the least harmful among the hydragogues, owing to absence of intestinal irritation. However, their unfavorable action on the stomach may render jalap or elaterin preferable in certain cases. When given for this purpose, from 15 to 30 gm. (½ to 1 ounce) of sodium sulphate (preferable to magnesium sulphate for reasons to be given below), dissolved in from 30 to 60 c.c. (1 to 2 ounces) of water, are taken on an empty stomach, best in divided doses every fifteen minutes until all has been taken. It would be poor therapy, however, to force a patient to take this disagreeable potion, obnoxious not only to the palate but also to the stomach, unless moderate drink restriction is practiced at the same time. The policy of this therapy may be questioned when we realize that mere drink restriction could produce the same result, as far as dehydration of the system is concerned, in a more gradual and less disturbing manner. There are a number of other weighty objections to it. Thus, the salines fail to produce their purgative effect as soon as a certain degree of systemic dehydration has occurred. Under such circumstances they are absorbed; and, if they cannot be promptly thrown out by the kidney, must be retained with an adequate amount of water to maintain isotonicity, thus still further adding to the waterlogged condition of the patient. Furthermore, in the dropsy of myocardial insufficiency, the weakening of the patient by the routine administration of heroic doses of salines more than offsets the benefit to be derived from the abstraction of the small amount of fluid lost in this way. In patients with enfeeblement of the circulation, the drastic use of salines, so commonly practiced, cannot be too strongly deprecated. All this accounts for the observation made, at times, that a patient who at first seemed to improve on this treatment becomes more dropsical again on its continuance. All that can be said in favor of it is that a dropsical patient should not be permitted to become constipated; and that the gentle use of salines, enough to produce one or at most two liquid stools a day, might be recommended, alongside of moderate drink restriction. When watery bowel movements do not result, the administration of the saline should be stopped.

A note of warning should furthermore be sounded against the use of magnesium salts when there is a suspicion that they might be absorbed instead of being thrown out with the stools, as might occur not only under conditions just described, but also in case of ileus. If the patient cannot get rid of the dose in the usual way, it may, by its absorption, aggravate the existing intoxication and even contribute to a fatal result by the depression of the respiratory center and the curare-like action on muscles inherent in the magnesium ion. An extraordinarily high specific gravity of the urine (even 1.070 or 1.080) is suggestive of magnesium sulphate poisoning. In such a case, the antagonism between calcium and magnesium, demonstrated by Meltzer, might be of practical importance, as well as the hypodermic use of 0.6 instead of 0.9 per cent. salt solution to lessen the prevailing excess in osmotic tension. Sodium sulphate is much safer under these circumstances, as it would be less poisonous if absorbed.

One may well be skeptical that anything can be accomplished by saline catharsis in the way of diminishing the bulk of exudates, such as those of pleurisy with effusion. The most that can be said for the practice is that salines, in moderate doses and given in fairly concentrated solution, may be preferred to other cathartics to antagonize constipation. Exhausting purging is a display of poor judgment in these cases, as it can only do harm.

To reduce milk secretion in weaning or to lessen engorgement of the breasts in an otherwise healthy woman, drink restriction may be accompanied by use of saline cathartics for a day or two.

(To be continued)

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

CHINOSOL.—Oxyquinolin Sulphate.—$(C_9H_7ON)_2H_2SO_4$.—A normal oxyquinolin sulphate.

Actions and Uses.—So far as experimental evidence and experience go, chinosol is non-toxic. It is a powerful antiseptic, somewhat stronger in this respect than mercuric chloride and considerably stronger than phenol. It has been found to exert an antiseptic action in solutions containing 1 part to 10,000. It is a feeble germicide, being weaker than phenol and much weaker than mercuric chloride. It is incompatible with alkaline substances (soap) and with salts of mercury and iron. Chinosol does not coagulate albumin or injure the mucous membranes or tissues. The sensitiveness of patients to its solution varies considerably. In some it produces a pronounced stinging when applied to mucous membranes even in dilute solutions (1 to 2,000), but it is claimed not to cause harmful irritation in any strength. It is claimed to possess marked analgesic power and to be an efficient deodorant.

Dosage.—For internal use 0.3 Gm. (5 grains) three times daily. As an antiseptic the average strength of solution used is 1:1,000; as a nasal spray or douche 1:3,000; as a gargle 1:2,000, and as an eye-wash 1:4,000, gradually increased in each case according to the tolerance of the patient up to 1:500. In gargles the strength may be increased to 1:250. As a vaginal douche the initial strength used is 1:1,000, increased to 1:100 if necessary.

Manufactured by Chinosol Co., Parmele Pharmacal Co., New York. U. S. patent No. 906,918 (Dec. 15, 1908; expires 1925). U. S. trademark No. 28,750.

Chinosol Tablets.—Each tablet contains chinosol ¼ Gm.

Chinosol is a yellow crystalline powder of saffron-like odor and burning taste. It melts at from 175 to 177.5 C. It dissolves readily in water, but with difficulty in alcohol and it is insoluble in ether. The aqueous solution has an acid reaction.

A drop of solution of ferric chloride produces in a solution of chinosol a marked green coloration. Barium chloride produces a white precipitate. Solutions of alkaline hydroxides precipitate from an aqueous solution of chinosol a white precipitate, consisting of interlaced crystalline needles, which, after filtration, washing and careful drying in a desiccator, should melt at from 73 to 75 C. On incineration chinosol should not leave a weighable residue.

DUBOIS' IODOLEINE.—Iodized Poppyseed Oil.—An iodine addition product of poppyseed oil.

Actions and Uses.—Dubois' Iodoleine may be used whenever iodides are indicated, its effect being more gradually exerted. See general article, Iodine Compounds for Internal Use, N. N. R., 1919, p. 143.

Dosage.—From 0.25 to 2 Cc. (0.3 Gm. to 2.5 Gm.) per day in capsules taken at meals of Dubois' Iodoleine containing 33

per cent. of combined iodine by weight. From 1 to 10 Cc. (1.14 Gm. to 11.4 Gm. of Dubois' Iodoleine containing 26 per cent. of combined iodine by weight injected intramuscularly when intensive action is desired. Warm to body temperature before injection. For oral administration Dubois' iodoleine is supplied in the form of capsules. For intramuscular administration it is also supplied in ampules.

Manufactured by Laboratoires Dubois, Paris, France (David B. Levy, New York, distributor). No U. S. patent or trademark.

Dubois' Iodoleine Capsules, 0.25 Cc.—Each capsule contains 0.3 Gm. Dubois' iodoleine equivalent to 0.10 Gm. iodine.

Dubois' Iodoleine, Injectable.—100 Cc. contain 30 Gm. iodine.

Dubois' Iodoleine, Injectable, Ampules, 1 Cc.—Each ampule contains 1 Cc. of sterile Dubois' iodoleine equivalent to 0.3 Gm. of iodine.

Dubois' iodoleine is an oil-like liquid, lightly brownish, with an odor of poppyseed oil. It is insoluble in water or alcohol, soluble in chloroform and in ether.

Specific gravity of Dubois' iodoleine 30 Gm. per 100 Cc. at 15 C. is 1.14. Specific gravity of Dubois' iodoleine 40 Gm. per 100 Cc. at 15 C. is 1.22.

When heated it chars and gives off purple vapors of iodine.

When heated with alcoholic potassium hydroxide, Dubois' iodoleine is saponified and the iodine changed to potassium iodide.

About 1.5 Gm., accurately weighed, is saponified by boiling with 100 Cc. half-normal alcoholic potassium hydroxide for three hours under a reflux condenser. The condenser is then removed and the alcohol evaporated. The residue is then acidulated with diluted nitric acid, a small amount of sodium sulphite is added to prevent oxidation of iodine. The fatty acids are then removed by filtration or extraction with chloroform and the iodide determined by titration with potassium sulphocyanate, using ferric ammonium sulphate as indicator.

By this method the iodine in Dubois' iodoleine capsules is not less than 40 Gm. in 100 Cc., and in Dubois' iodoleine injectable not less than 30 Gm. in 100 Cc.

THYROXIN. — 4,5,6-trihydro-4,5,6-triiodo-*alpha*-oxy-*beta*-indole proprionic acid ($C_8H_3ONI_3$).C_2H_4.COOH; an active principle obtained from the thyroid gland. It contains 65.1 per cent. iodine.

Actions and Uses.—Thyroxin is used essentially for the same purposes as Dried Thyroids, U. S. P. It is indicated in cases of diminishing or absent thyroid functioning such as simple goitre, cretinism and myxedema. The reports of Kendall show that thyroxin affects the pulse rate, blood pressure, nitrogen metabolism, relieves symptoms of myxedema and will produce hyperthyroidism. According to Kendall's view the emphasis for the activity of the thyroxin molecule should be placed on the oxy-indol nucleus rather than on the presence of iodine. The most important quantitative measure is the determination of the basal metabolic rate. One milligram (0.04 Gm.) of thyroxin increases the basal metabolic rate in adults approximately 2 per cent. The relation holds for larger amounts, that is, 10 milligrams increases the metabolic rate 20 per cent. It is through the basal metabolic rate that the pharmacological action of thyroxin can be followed best. When given by mouth or intravenously, there is no immedate effect except occasionally when an increase in pulse rate and respiration occurs, which, however, will soon disappear. After twenty-four to thirty-six hours there is a noticeable increase in pulse rate. There may be loss of weight and beginning of nervous manifestations. If the dosage is continued for five or six days, the typical so-called hyperthyroid symptoms will be produced: loss of weight, increased pulse rate with tachycardia, nervous manifestations and a sense of fatigue. With small doses the harmful effects are not produced and a stimulating effect is manifest in cases of myxedema. With large doses, the above symptoms are aggravated: the amount of thyroxin required to produce toxic effects is exceedingly small. It has been reported that the maximum effect from a single injection is not reached until the tenth day, the duration of the effects of a single administration of thyroxin being about three weeks.

In some forms of goiter (such as simple adolescent colloid goiter) the function of the thyroid is defective and the administration of thyroxin is indicated; but in most cases of goiter (especially exophthalmic) thyroxin should never be administered.

Dosage.—0.2 mg. to 2 mg. Thyroxin should always be given in minimum doses and in each case the optimum amount should be determined by trial. In general a *normal* adult will show evidences of hyperthyroidism if given as much as 2 mg. per day. A person afflicted with cretinism requires generally 0.4 to 0.8 mg. per day; a very small cretin requires 0.2 to 1.0 mg. every day or every other day.

In many cases after symptoms of hypothyroidism have disappeared, remarkably small doses suffice to keep the patient in an almost normal state.

The patient should be careful of exertion and should take sufficient protein in the diet to compensate for increased loss of nitrogen from the action of the drug. Thyroxin is offered in the form of tablets which should be used *only* for oral administration.

Manufactured by E. R. Squibb and Sons, New York, by license of the University of Minnesota. Patents applied for.

Thyroxin Tablets 0.2 mg.—Each tablet contains thyroxin 0.2 mg. (1/324 grain).

Thyroxin Tablets 0.4 mg.—Each tablet contains thyroxin 0.4 mg. (1/162 grain).

Thyroxin Tablets 0.8 mg.—Each tablet contains thyroxin 0.8 mg. (1/81 grain).

Thyroxin Tablets 2 mg. (0.002 Gm.).—Each tablet contains thyroxin 2 mg. (1/33 grain).

Thyroxin was introduced into medicine by Kendall (Kendall, E. C., J. A. M. A., Sept. 14, 1918, p. 872; J. Biol. Chem., December, 1919, p. 265). It is prepared from the thyroid glands of animals by severe alkaline hydrolysis and by precipitation from this alkaline solution of the acid insoluble constituents. Thyroxin is separated from this fraction by treatment with barium hydroxide and subsequent crystallization of the sodium salt from an alkaline solution; it is then further purified by treatment with alcohol containing a weak organic acid. It is presumed to exist in three tautomeric forms.

Thyroxin occurs as white crystalline needles in the pure form. It is insoluble in water and the usual organic solvents. It melts at 250 C. It is very susceptible to reduction being easily decomposed by zinc in alkaline solution. It is decomposed by prolonged cooling in water.

Thyroxin forms salts with solutions of sodium and potassium hydroxides. It also forms insoluble salts of barium and silver.

When thyroxin is treated with alcohol in the presence of mineral acid, it dissolves; this does not occur in the presence of weak organic acids.

Dissolve thyroxin in sodium hydroxide solution; on addition of sodium chloride a disodium salt is precipitated. Add the disodium salt thus obtained to alcohol containing ammonium chloride; on boiling, thyroxin separates in long needles.

On analysis it should yield 65 per cent. iodine.

BARBITAL SODIUM (See N. N. R., 1919, p. 83).

Veronal Sodium-Winthrop.—A brand of barbital sodium complying with the N. N. R. standards.

Manufactured by the Winthrop Chemical Company, Inc., New York. U. S. patent No. 782,739 (Feb. 14, 1905; expires 1922). U. S. trademark.

Thromboplastin Hypodermic-Squibb.—A sterilized extract of cattle brain in physiological solution of sodium chloride. It complies with the description of thromboplastin-Squibb, but a longer time is required for the clotting of blood plasma.

Actions and Uses.—See general article Fibrin Ferment and Thromboplastic Substances (New and Nonofficial Remedies, 1919, p. 117). Thromboplastin hypodermic-Squibb is intended for hypodermic and intramuscular injection to increase the coagulability of the blood.

Dosage.—From 10 Cc. to 20 Cc. every 24 to 72 hours. Thromboplastin hypodermic-Squibb is marketed in 20 Cc. vials which bear an expiration date after which time, the contents should not be used. (The manufacturer reports that no loss of potency could be detected in specimens which had been kept unopened for two years.)

Manufactured by E. R. Squibb and Sons, New York. No U. S. patent or trademark.

Brains from cattle freshly killed are removed under aseptic conditions, using sterile gloves and sterile instruments, and are transferred immediately to sterile containers. They are then taken into a sterile room, connective tissue, blood vessels, etc., removed, and the brain substance is thoroughly ground either in a ball mill or sterile meat grinder. The brain substance is then diluted by the addition of physiological solution of sodium chloride containing 0.4 per cent. trikresol in the proportion of eight parts saline solution to one part of brain substance by weight. The reaction of the mixture is then taken, and sufficient sodium hydroxide solution is added to make it neutral to phenolphthalein. It is then filled under precautions insuring sterility into sterile bottles which are stoppered with cotton plugs. The resultant mixture is sterilized by streaming steam for 40 minutes after a preliminary warming. The result is a slightly opalescent, supernatant fluid overlying the coagulated brain substance. It is then tested for sterility, and when required filled into 20 Cc. containers.

Meningitic Form of Acute Poliomyelitis.—When the cervical region of the cord is attacked, one must be on the watch for paralysis of the diaphragm because the virus will not need to spread far to implicate this region. Complete paralysis is easily recognized by the indrawing of the epigastrium with inspiration. When the intercostal muscles are also paralyzed, the condition is pitiable. The child lies cyanosed, with widely dilated nostrils, raising the chest by the accessory muscles. Oxygen gives some little relief, and it is remarkable how long life is prolonged. It is when the paralysis is partial that it may be overlooked, but ineffective cough may rouse suspicion, for in order to cough effectually the diaphragm must be steady.—*Clinical Journal,* December, 1919.

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SATURDAY, JANUARY 10, 1920

IMPROVED METHODS OF TREATMENT OF SHOCK

Whatever may be the cause or causes of surgical shock—which it would be too venturesome to debate at this juncture—considerable evidence is now available pointing to a loss of circulating fluid.[1] In the early studies of shock, when fall of blood pressure appeared to be the most conspicuous symptom, remedial measures were directed toward inducing the blood vessels to acquire a better tonus in order to restore the efficiency of the circulation. It must be admitted frankly that most of these have failed in general to accomplish anything more than very transitory advantage. Stimulants and vasoconstrictor drugs were naturally first to be tested, and, like related methods of physical therapy, they proved to be of little importance. Subsequently, attention was turned more directly to the impaired volume of the blood in shock, even though no external hemorrhage had occurred. Gasser, Erlanger and Meek[2] point out, in one of the most recent discussions of this subject, that the blood volume has been found to be decreased in all forms of experimental shock studied and after all grades of damage. They have shown, in common with other investigators, that the effective volume of the blood may be reduced by transudation of plasma, by absolute stasis in some part of the vascular system, by hemorrhage into tissue, especially into the lumen of the intestine, as well as by dilatation of the capillaries and small veins with greatly increased slowing of the circulation.

Consequently, it has seemed logical of late to treat the condition by an attempt to restore the lost fluid to the circulation. The use of isotonic saline solutions for this purpose has proved to be elusive, as the fluid passes out of the vascular system so rapidly that scarcely any gain can be registered. This fact, long known, has led investigators to seek an artificial fluid that will be more effective in restoring blood volume and maintaining a more normal pressure. The outcome has been the suggestion of various alkaline solutions, and more recently solutions of gelatin[3] or glucose.[4] Mann[5] of the Mayo Clinic, to whom we owe numerous valuable contributions to the subject of shock, has lately come to the conclusion that the best results in the treatment of experimental shock are obtained by the injection of fluid mediums. The data of the experiments justify the conclusion that none of the artificial solutions give such good results as the use of blood. Mann believes that the so-called colloidal solutions and their various modifications give better results than physiologic sodium chlorid solution, but their potency is certainly not equal to blood or blood serum, and occasionally they might be harmful.

During the war, when the subject of shock came into greater prominence than ever before, many surgeons followed the suggestion of Bayliss[6] of London and his followers who have used solutions containing acacia for transfusion. This colloid is not readily diffusible, and it is assumed to increase the osmotic pressure of the blood into which it is introduced. Accordingly, the concentration of the blood by transfer of water from it tends to be prevented. For example, whereas after injection of a crystalloid like salt or sugar into the circulation the diluted blood returns to normal volume within a few minutes, this is not the case when concentrated solutions of gum acacia are employed.[7] When both colloid and crystalloid are introduced in hypertonic solution, it appears that the colloid will hold in the circulation not only the water that it itself slowly attracts, but also the water brought to it rapidly by a hypertonic crystalloid, so that the combined injection of the two results in a rapid and well-sustained expansion of the blood volume. In other words, to quote Erlanger and Gasser, hypertonic gum solutions attract tissue fluids into the circulation very slowly. Hypertonic crystalloids injected intravenously, as is well known, attract water quickly. When the two, the hypertonic gum and the hypertonic crystalloid, are injected to all intents and purposes simultaneously, the gum holds the water that the crystalloid quickly brings into the circulation. Presumably, the blood volume is thus increased by a process that resembles the one which the organism itself employs in combating a reduction in blood volume.

1. Cannon, W. B.: Shock and Its Control, Am. J. Physiol. **45**: 544, 1918. Dale, H. H., and Laidlaw, P. P.: Surgical Shock and Some Allied Conditions, Brit. M. J. **1**: 381, 1917.

2. Gasser, H. S.; Erlanger, J., and Meek, W. J.: Studies in Secondary Traumatic Shock, IV, The Blood Volume Changes and the Effect of Gum Acacia on Their Development, Am. J. Physiol. **50**: 31 (Oct.) 1919.

3. Hogan, J. J.: The Intravenous Use of Colloidal (Gelatin) Solutions in Shock, J. A. M. A. **64**: 721 (Feb. 27) 1915.

4. Erlanger, Joseph, and Woodyatt, R. T.: Intravenous Glucose Injections in Shock, J. A. M. A. **69**: 1410 (Oct. 27) 1917.

5. Mann, F. C.: Experimental Surgical Shock, V, The Treatment of the Condition of Low Blood Pressure Which Follows Exposure of the Abdominal Viscera, Am. J. Physiol. **50**: 86 (Oct.) 1919.

6. Bayliss, W. M.: Methods of Raising a Low Arterial Pressure, Proc. Roy. Soc., London, Series B, **89**: 380, 1915, 1917; Intravenous Injection in Wound Shock, London, Longmans, Green & Co., 1918.

7. Gasser, H. S., and Erlanger, Joseph: Studies in Secondary Traumatic Shock, V, Restoration of the Plasma Volume and of the Alkali Reserve, Am. J. Physiol. **50**: 104 (Oct.) 1919. Erlanger, Joseph, and Gasser, H. S.: Studies in Secondary Traumatic Shock, VI, Statistical Study of the Treatment of Measured Trauma with Solutions of Gum Acacia and Crystalloids, ibid., p. 119.

Since the functional collapse of the vasomotor center or of the heart is now regarded as a relatively late consequence of low arterial pressure rather than its cause, it seems well worth while to pursue further the efforts to restore blood volume and thereby maintain adequate return of blood to the heart and a safe arterial pressure in shock. This immediately helpful feature may be undertaken quite apart from the means to combat the ultimate etiologic factors, such as are represented by the postulated and much discussed tissue poisons, acidosis, etc., which are supposed to deteriorate the normal exchange of fluid through the vessels, or occasion stagnation of blood in certain areas. Erlanger and Gasser[7] of Washington University in St. Louis have convinced themselves, in a series of animal experiments on traumatic shock, that the viscosity of strong gum solutions may be quite harmful, but that when hypertonic gum and hypertonic glucose are given simultaneously and slowly so as to avoid altogether the period during which the high viscosity of the gum is hampering the circulation, a maximum saving of life can be effected. They argue that such beneficial results as they saw are presumably due to the internal transfusion effected by the hypertonic solutions, to the maintenance of the increased blood volume through the colloidal and possibly other properties of the gum acacia, to the action of the hypertonic solution on the heart and blood vessels, and to the specific action of glucose on nutrition in general and on that of the heart muscle in particular. They suggest, further, that blood transfusion is not essential to recovery even from the severest acute hemorrhage, if only the blood bulk can be restored in other ways. The apparent innocuousness of gum-glucose solutions given slowly has already justified a few trials on man[8] which encourage further tests of the method. With the principles and certain limitations of the procedure well recognized through preliminary animal experimentation, the surgeon will be justified, we believe, in giving them further trial in the emergencies of shock that so often fail to yield to current modes of treatment.

HIGH PROTEIN DIETS AND NEPHRITIS

The science of pathology is still far from formulating an entirely satisfactory hypothesis for the genesis of all forms of nephritis. It is known, of course, that incident to the attempts of the kidney to eliminate certain substances like the salts of mercury or uranium or several other metals, a tubular nephritis of varying intensity may arise; and the acute injury may subsequently become chronic in its manifestations. There is considerable justification for the belief that the reaction of the secreted urine, which in turn is dependent on the nature of the food intake, is not without influence on the behavior of the kidney cells under secretory stress. Usually, however, the etiology of nephritic changes is sought in some foreign factor, such as the inorganic possibilities just cited, or nephrotoxins or nephrolysins assumed to arise within the organism itself.

Although the alleged "strain" of eliminating a large quantity of those substances, namely, the products of protein catabolism in the body which the kidney is normally intended to excrete, has been pointed to from time to time as a possible cause of kidney damage, there has been little convincing evidence for such an outcome. Urea, which represents the great bulk of the nitrogenous waste, is evidently excreted with great ease. There are numerous recorded instances of large increments in urea output without any signs of kidney defect or detriment; but experiments to determine the functional efficiency of the kidney have usually been of comparatively short duration. The clinical forms of nephritis are frequently slow in making their appearance. Newburgh[1] has therefore attempted, in the department of internal medicine at the University of Michigan, to ascertain whether nephritis will be produced when the kidneys have been eliminating an unusually large amount of nitrogenous material over a considerable period of time. He argues that just as the kidney secretes ordinary medicinal doses of mercury without harm, but is injured when the quantity offered for elimination in a given time is augmented greatly, as it is in acute poisoning, so the renal cells may react unfavorably if the quantity of some or all of the nitrogenous substances secreted is increased and kept at the higher level for some time. In feeding experiments on rabbits, renal injury was quickly and constantly noted in animals that ate several egg whites daily. Prolonged egg white feeding caused acute and subacute nephritis. When the nitrogenous metabolism was increased by means of casein, rabbits suffered no demonstrable renal injury from eating 15 gm. of casein daily; but when the daily intake of casein was 30 gm., and the nitrogen metabolism was about three times normal, a well marked deleterious effect on the kidney was produced. Rabbits that lived for months on soy beans, which are rich in vegetable proteins, regularly acquired chronic nephritis and frequently died of it. The nitrogen metabolism from this diet was about twice the normal.

We may accept these observations, which are likely to be widely quoted by the advocates of a low protein diet or at least of greater economy in the use of protein, without admitting their wider significance in the etiology of human nephritis. The vegetarians will find little solace in the fact that sources of plant proteins were involved as well as the tabued animal products. Urea per se is not charged with the harm done. It must be remembered that the diets used by Newburgh

8. Erlanger, Joseph, and Gasser, H. S.: Ann. Surg. **69**: 389 (April) 1919.

1. Newburgh, L. H.: The Production of Bright's Disease by Feeding High Protein Diets, Arch. Int. Med. **24**: 359 (Oct.) 1919.

were potentially acid in character, and certain to produce an acid urine in a species adjusted and accustomed to secrete an alkaline fluid under a free choice of food. Until such experiments are successfully duplicated under conditions in which the normal reaction of the renal secretion is not tremendously altered and the accessory factors in the diet are known to be adequate, the incrimination of the high protein diets in connection with nephritis must be considered with judicial reserve.

THE ERADICATION OF TUBERCULOSIS

In the control of a disease like tuberculosis, which permeates all strata of society and which is obviously of an infective nature, there are clearly two factors concerned. It is, of course, essential that the disease should be scientifically studied from all aspects; but it is also necessary that the scientific knowledge that has been gained shall be transmitted in comprehensible form to the masses. There is no disease that has been more systematically and more intelligently combated than tuberculosis, and yet we have no more than scratched the surface. The disease continues to be one of the greatest scourges to which civilized man is subjected. Indeed, it is, as Krause[1] remarks, "a price we pay for our civilization."

In a recent address on the subject, Krause discusses the question of a progressive program for combating this disease. Incidentally, he points out, what had already become apparent, that the fight against tuberculosis will really be a fight against all diseases of an infectious nature; for the same principles underlie the prevention and cure of all parasitic disease. It is interesting to note that the keynote of this address by a scientific student of tuberculosis is not the necessity for further scientific investigation, though this is not denied, but the necessity for the wider application and diffusion of facts already long known, and for a much greater attention to the social aspects of the disease. Of what profit is our scientific knowledge of the etiology of tuberculosis if we fail to apply its obvious lessons? As Krause properly points out, we fail to control the most outstanding and obvious etiologic factors in the spread of tuberculosis. The statute books of our states are replete with antispitting laws, and yet our highways are spattered with expectoration. The regulations of boards of health on the subject of clean milk are voluminous, and yet clean milk is frequently unobtainable by the masses.

These, however, are not the only obvious factors that are neglected. As physicians we have known for generations that tuberculosis is undoubtedly associated with unsatisfactory social conditions. Poverty, insufficient or improper food, alcoholism and insanitary housing all predispose to the activity of tuberculosis infection. It may be said that the adjustment of such conditions does not lie within the realm of the physician. The reforms that are necessary to change them must occur partly as the result of political action, and partly as the result of education. While there are some who hope to change these unfortunate conditions by revolutionary methods, there seems to be little reason to anticipate that much will be accomplished in this way.

1. Krause, F.: Am. Rev. Tuberc. **3**: 513, 1919.

SOME FEATURES OF ASCARIASIS

Ascariasis, or infestation with the eelworm, *Ascaris lumbricoides,* is one of the most common invasions of man by animal parasites. Although it is usually more frequent in childhood, it may occur at any age in the human subject. *Ascaris* is one of the parasites that have generally been asserted to develop in man by the direct method. No intermediate host is required. The swallowed eggs begin their transformation into the lumbricoid worm directly in the alimentary tract. A comparable roundworm is of very frequent occurrence in the intestine of the pig.

Stewart[1] has attempted without success to infect pigs by feeding *Ascaris* eggs to them. Rats and mice, on the other hand, were readily infested by this procedure. In the course of these studies he observed that the larvae find their way into the tissues and particularly into the liver and lungs of the host. The larvae then find their way back to the intestinal tract after migration through the pulmonary tissue, and may ultimately pass out of the alimentary canal without further development. This migration of the larvae of *Ascaris* has also been verified in experiments conducted by Yoshida[2] at the Osaka Medical Academy in Japan. These observations of the larval parasites in rats and mice, taken in connection with the apparent resistance of the pig to direct infestation with eggs, have raised the question as to whether the rodents act as intermediate hosts, the young worms being passed on to human beings (and to pigs) through the contamination of food and water by the saliva or feces of rats and mice that had themselves become infested by swallowing the eggs of the parasite.

More recent investigations by Ransom and Foster[3] at the Bureau of Animal Industry in Washington indicate that it is not necessary to assume an intermediate host in the case of *Ascaris* infestation in man. The real explanation, they remark, of the behavior of *Ascaris* larvae in rats and mice is that the worms are merely going through the same course as they do in their usual hosts, man and pig. The rats and mice are, however, unsuitable hosts; hence the larvae are unable to complete their development to maturity in

1. Stewart, F. H.: On the Development of Ascaris Lumbricoides Lin. and Ascaris Suilla Duj. in the Rat and Monse, Parasitol. **9**: 213, 1916-1917, and several earlier papers in the British Medical Journal.
2. Yoshida, S.: On the Development of Ascaris Lumbricoides L., J. Parasitology, **5**: 105 (March) 1919.
3. Ransom, B. H., and Foster, W. D.: Recent Discoveries Concerning the Life History of Ascaris Lumbricoides, J. Parasitology, **5**: 93 (March) 1919.

them; whereas in human beings the parasitic larvae, after migration through the lungs and return to the alimentary canal, can continue their growth to an adult stage.

The "wanderings" of eelworms in man have been recognized for a long time, and such cases present a dangerous aspect of ascariasis.[4] That the erratic ascarids may produce lung symptoms in man is more than likely. Ransom and Foster therefore properly remind us, in commenting on Stewart's interesting discovery of the migration of *Ascaris* larvae through the lungs, that this new aspect of the pathology of eelworm infestation is likely to lead to a better understanding of certain obscure diseases of the pulmonary organs. Other dangers from the migrations, whereby perforations of ulcers, liver complications, or other abdominal symptoms have arisen, are recorded in medical literature. Eelworms ought, therefore, to be treated as something more than a "passing curiosity."

Current Comment

MEDICAL VETERANS OF THE WORLD WAR

Our profession responded unselfishly to the call of our country during the world war. The demand for medical men was tremendous, but it was met. Including the 35,000 of the regular services, and the more than 25,000 on the selective service boards, over 60,000 physicians enlisted to support the ideals that the United States has endeavored to maintain. Although our entrance into the conflict was followed by a speedy victory, although our sickness and mortality rates were matters of pride and signalized a great achievement by the medical profession, it is no secret that these happy results were accomplished, in many instances, by great personal sacrifice and by altruistic devotion. In other words, unsatisfactory conditions in many instances were tolerated "for the good of the service"—to win the war—and the physician could only promise himself that should future occasion arise, certain things must be corrected. At the Annual Session of the American Medical Association, immediately following the termination of the war, a group of physicians who had been in the military service, having in mind their experiences, effected the organization known as the Medical Veterans of the World War, and invited into its membership not only those connected with the government services but also those who had served on the selective service boards. Dr. Vaughan,[5] whose letter was published last week, and Surgeon-General Ireland,[6] who discusses the subject in this issue of THE JOURNAL, believe that this organization is entitled to support. It should make possible a united effort by which the greatest good may be accomplished. Many things can be done that otherwise would remain undone. It offers a medium for the presentation of constructive criticism. Finally, through this organization particularly may be preserved, by occasional gatherings, the sympathetic comradeship of men whose ideals today are as high as they were during the war.

BOTULISM FROM CANNED RIPE OLIVES

In recent editorials[1] THE JOURNAL has summarized our knowledge of botulism, especially with relation to extensive investigations made under the auspices of the National Canners Association and in the laboratories of the Leland Stanford University. Because of the violence of the symptoms and the rapidly fatal issue of poisoning with the toxins of *Bacillus botulinus*, the subject has interest beyond the extent of its relative importance in mortality statistics. The recently reported deaths following the eating of ripe olives in Detroit and in Canton, Ohio, were especially significant, because first reports seemed to indicate that the use of the ordinary precautions would not protect the user against such contingencies. There is now available more detailed report of these cases. We are informed[2] of some significant factors that have a practical bearing: First, various members of the party at the banquet in Canton, Ohio, in describing the olives used such expressions as, "Smelled like limberger," "bit the tongue," "soft," "not fit to eat," "stuck to the tongue," etc. Second, it was found that some of the olives had been washed previous to serving and that one person who ate two of these olives recovered. These factors would seem to lend strength to the contention of Weinzirl that the observance of ordinary precautions in eating, such as cleanliness, and the rejection of all food of which there is a suspicion of spoiling, will, in many cases at least, protect the user.

PROHIBITION AND THE DEATH RATE

The large number of deaths recently caused by the drinking of wood alcohol should not lead the public to overlook the important drop in the death rate from certain causes that has followed the legal prohibition of alcoholic beverages. Recent statistics[3] show that for July, August and September, 1919, the number of deaths in Boston from alcoholism amounted to only 7, as compared with 31, 46, 38 and 34 for the corresponding period of the four preceding years. Similarly, accidents diminished from 152 in 1915, 176 in 1916, 197 in 1917 and 151 in 1918 to 112 for the corresponding three months of 1919. Suicides also diminished to a very marked degree. On the other hand, homicides showed no material decrease, a fact that has been noticed in other cities. It seems probable, however, that certain unusual factors are at work to increase the number of murders. As is usual after a great war, familiarity with means of violence and readiness to resort to such means are circumstances that must be reckoned with during the slow return to law and order. The diminution in the deaths from

4. Stiles, C. W., in Osler and McCrae: Modern Medicine **2**: 290, 1914.
5. Vaughan, V. C.: Medical Veterans of the World War, Correspondence, J. A. M. A. **74**: 48 (Jan. 3) 1920.
6. Ireland, M. W.: Medical Veterans of the World War, Correspondence, this issue, p. 122.

1. Botulism: I, II, editorials, J. A. M. A. **73**: 1844, 1887 (Dec. 13, 20) 1919.
2. Jennings, C. G.; Haass, E. W., and Jennings, A. F.: An Outbreak of Botulism, this issue, p. 77. Botulism from Eating Canned Ripe Olives, Miscellany, this issue, p. 127.
3. Month. Bull., Health Dept. City of Boston, September, 1919.

alcoholism, accident and suicide that has occurred in Boston has been observed in many other large American cities, and the saving of life from these causes probably far exceeds the increased number of deaths from wood alcohol poisoning.

THE PRODUCTION OF PRESSURE SYMPTOMS BY NORMAL RIBS

The rôle of cervical ribs in the production of pressure symptoms has been understood for some time, though it is only since the introduction of the roentgen ray as an aid to diagnosis that the frequency of such lesions has been appreciated. Stopford and Telford have recently pointed out that not only cervical ribs but also perfectly normal first ribs may give rise to a similar syndrome. There are peculiarities about the production of symptoms in connection with rib pressure that may with propriety be recalled at this time. It is to be noted that women are more likely to develop such symptoms than men, although they are no more prone to the development of cervical ribs. It is further to be noted that although the rib abnormality is frequently present from birth, the symptoms may not appear until puberty or even later. In some instances trauma plays a definite part in producing the symptoms, particularly injuries that involve the trapezius muscle and interfere with its function as a support to the shoulder girdle. In other cases the symptoms appear spontaneously and without obvious reason, though in these patients also it may be that a lack of tone in the trapezius muscle is responsible. The pressure, no matter whether it is exerted by a cervical rib or by a normal first rib, is almost always on the lower trunk of the brachial plexus. The symptoms are more or less variable, depending on whether the motor, sensory or sympathetic fibers are mainly involved. Patients are likely to complain of neuralgic pain along the ulnar side of the forearm. They may develop partial paralysis of the intrinsic muscles of the hand and of the flexors and extensors of the wrist. Atrophy may occur, and often trophic and vasomotor phenomena are present. Pallor or cyanosis of the fingers, hypothermia, and even trophic ulcers in the distribution of the ulnar nerve have been noted. Objective sensory disturbances in which the protopathic sensibility is more pronouncedly affected than the epicritic sense may result, and in rare cases decidedly elective sensory paralyses are present. Attention is called at this time to those in whom the symptoms are due to a normal first rib, because these cases are not particularly uncommon. Stopford and Telford saw ten such cases in less than two years. In the diagnosis the roentgen ray is of no value, and in the past such cases have doubtless been wrongly diagnosed and wrongly treated because roentgenograms failed to show the cervical rib, and because the clinician did not recognize that a normal first rib could cause pressure and lead to the same syndrome.

Association News

THE NEW ORLEANS SESSION

Headquarters for the Registration Bureau and the Exhibits

The Josephine Hutchinson Memorial Building, the home of the Tulane University School of Medicine, will house the Registration Bureau, the Information Bureau, the Association branch postoffice, and the Scientific and Commercial exhibits. It will also provide meeting places for three of the sections. Thus, the coming annual session will center at Tulane. The Hutchinson Memorial Building is near the business center of the city on Canal Street, between Villere and Robertson. This convenient location, the attractions of the exhibits, and the assured hospitality of the Louisiana profession extended through the Tulane Medical School assure a hearty welcome to those who attend the annual session at New Orleans, April 26 to 30, 1920.

Hotel Headquarters

The following hotels have been designated as the general and the various section headquarters for the New Orleans Session:

Practice of Medicine: St. Charles.
Surgery, General and Abdominal: Grunewald.
Obstetrics, Gynecology and Abdominal Surgery: Grunewald.
Ophthalmology: Monteleone.



The Josephine Hutchinson Memorial Building, Headquarters for the New Orleans Session.

Laryngology, Otology and Rhinology: Monteleone.
Diseases of Children: St. Charles.
Pharmacology and Therapeutics: Planters.
Pathology and Physiology: Planters.
Stomatology: Lafayette.
Nervous and Mental Diseases: Lafayette.
Dermatology: De Soto.
Preventive Medicine and Public Health: De Soto.
Urology: St. Charles.
Orthopedic Surgery: Grunewald.
Gastro-Enterology and Proctology: Lafayette.
General Headquarters: Grunewald.

To New Orleans by Boat

Inquiries received from various parts of the country indicate that a number of physicians would like to make the trip to New Orleans by boat. These prompt the suggestion that physicians conveniently near to the Atlantic Sea Board and Gulf ports, as well as those at different points along the Mississippi and Ohio rivers, might arrange boat parties which should provide a pleasant and restful journey. It has been suggested further that if boats were chartered to go to New Orleans from different points and were docked there, these "house boat parties" would provide cool and delightful quarters for those who prefer to stay on the boats during the session.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

Hospital Items.—The trustees of Spark's Memorial Hospital, Fort Smith, have purchased a building in which they propose to install a laboratory costing $5,000.——A new sanatorium has been built and equipped at Arkadelphia, by Drs. Charles Wallis and J. Sheppard Moore.

New Officers.—The First Councilor District Medical Society at its meeting in Jonesboro, December 10, elected Dr. Hiram L. Throgmorton, Pocahontas, president; Dr. Charles M. Litterloh, Jonesboro, vice president, and Dr. Thad Cothern, Jonesboro, secretary-treasurer.——Jefferson County Medical Society at its annual meeting, December 2, elected Dr. Mark A. Shelton, Wabbaseka, president; Dr. James F. Crump, Pine Bluff, vice president, and Dr. Joseph F. Gill, Pine Bluff, secretary-treasurer.——Drew County Medical Society at its annual meeting, December 2, elected Dr. Mardelle Y. Pope, president; Dr. Edward R. Cotham, vice president, and Dr. A. S. J. Collins, secretary-treasurer, all of Monticello.

ILLINOIS

Low Death Rate.—The death rate of Chicago for 1919 was 12.76 per thousand, the lowest in the history of the city.

Hospital Item.—Announcement is made that a United States Public Health Hospital is to be established at Great Lakes, the barracks of naval units No. 19 and No. 20 being employed for this purpose, after remodeling.

Fined for Insufficient Heat.—A number of landlords who have failed to provide sufficient heat for their tenants have been fined from $50 to $200 each. On hearing the evidence in one case, the court assessed the maximum penalty and ordered the defendant committed until the fine had been paid. So far as is known, this is the first fine imposed for an offense of this kind in the history of the Chicago Department of Health. The health commissioner caused the arrest of these persons on complaints of the tenants and of physicians who had patients resident in the buildings concerned.

Chicago

Society of Medical History to Hear Drs. Wood and Garrison.—The Society of Medical History of Chicago will meet January 17, at 8 p. m. at the City Club, to hear addresses by Col. Casey A. Wood, on "Walter Bailey, the First Writer of an Ophthalmic Treatise in English," and by Lieut.-Col. Fielding H. Garrison, on "Medical Men and Music," and "Remarks on the Medical History of the War." Those desiring to attend should notify the secretary, Dr. Stanton A. Friedberg.

INDIANA

Personal.—Dr. John A. Scudder, Edwardsport, is ill with septicemia in the Good Samaritan Hospital, Vincennes.

Banquet to Health Department Employees.—Dr. John N. Hurty, secretary of the state board of health, and Dr. William F. King, assistant secretary, gave their annual Christmas dinner to employees of the department, December 24.

Open Air School.—A new open air school has been opened by the Indiana State Sanatorium, with a capacity for about forty children. It is planned to introduce vocational work in the school, both for its therapeutic value and utility in later life. The general course of the state will be followed, interspersed with simple breath and muscular exercises and regulated rest periods.

Will Appeal Smith Case.—The state board of medical registration and examination has employed W. A. Cullop, Vincennes, as its attorney to carry to the supreme court its case against Dr. George F. Smith, Bicknell, whose license to practice medicine was revoked in February last year. A circuit court judge in Knox County decided against the board and ordered the license restored.

Verdicts For and Against Physicians.—In the case of Robert Frederick Volland against Dr. David J. Marshall, Columbus, in which $10,000 damages was claimed on account of severe burns alleged to have been the result of hot water overflowing on the complainant, the jury, December 19, returned a verdict in favor of Dr. Marshall.——In the case of Raymond Uland, Sullivan, against Drs. Edward T. Edwards and Vance A. Funk, both of Vincennes, in which malpractice was alleged, and damages of $15,000 were asked, a jury, December 18, decided in favor of the plaintiff, awarding him $2,000.

IOWA

New Officers.—Dubuque County Medical Society, at its annual meeting, December 9, elected the following officers: Dr. Charles Palen, president; Drs. Alanson M. Pond, Dubuque, and Richard C. Sherman, Farley, vice presidents; Dr. James E. Calhoun, Dubuque, secretary, and Dr. Godfrey C. Fritschel, Dubuque, treasurer.

Warning.—A report has been received that a tall, smooth-shaven man of fine appearance, passing under the name of J. T. McMillan, with graying hair, parted near the center, and brushed toward the sides in a wave, and weighing from 180 to 190 pounds, has been making contracts for the Lee Supply Company of Detroit, which is said to be out of business. This man is wanted by the police and information regarding him should be sent to the chief of police, Fort Madison.

KENTUCKY

Full-Time Health Department Voted Down.—The Harrison County fiscal court, at a special session, December 13, voted down the proposition for a full-time health department for the county by a vote of four to two. The movement was endorsed by the Harrison County Medical Society, Pomona Grange, Harrison County local Red Cross chapter, women's clubs and other organizations.

Health Work.—Dr. Platt W. Covington of the International Health Board has been loaned to Kentucky to assume the directorship of county health work. The state board of health is now in position to give $5,000 annually to the first five counties making like appropriations.——The fiscal court of Daviess County appropriated $5,000, December 11, toward a clinic to be established by the Rockefeller Foundation.

Personal.—The board of control of penal and charitable institutions has reappointed Dr. Frank L. Peddicord, Lakeland, superintendent of Lakeland Hospital for a term of four years, from May, 1919.——Dr. Clifford E. Harkey has succeeded Dr. Elbert W. Jackson as physician of Paducah.——Dr. Harry H. Lewis, Louisville, who has been on trial for murder of his wife, is said to have been declared of unsound mind by the jury.

New Officers.—At the annual meeting of the Clark County Medical Society at Winchester, December 31, Dr. Howard Lyon was elected president; Dr. Edward P. Guerrant, vice president, and Dr. George F. Doyle, secretary and treasurer, all of Winchester.——Daviess County Medical Association, at its annual meeting held in Owensboro, December 16, elected Dr. John C. Hoover, Owensboro, president; Dr. Cicero M. Rice, Sutherland, vice president, and reelected Dr. John J. Rodman, Owensboro, secretary-treasurer.

LOUISIANA

Another Plague Victim.—John Rich, a negro patient in the Charity Hospital, New Orleans, was found to have bubonic plague, and was removed to the Isolation Hospital, December 29.

Maternity Clinic to Be Opened.—A maternity clinic was opened at the Kingsley House, New Orleans, December 23, under the direction of Dr. Phillips J. Carter and Miss Grete Judice, nurse of the child welfare staff. The clinic is one of five which will be operated under the auspices of the Kingsley House and the Child Welfare Association.

Parish Society Election.—At the annual meeting of the Orleans Parish Society, December 13, the following officers were elected: president, Dr. Hector E. Bernadas; vice presidents, Drs. Hamilton P. Jones, Jerome E. Landry and Joseph M. Hountha; secretary, Dr. Edward P. A. Ficklen, and treasurer, Dr. Foster M. Johns, all of New Orleans.

MARYLAND

Appointment to Health Department.—Dr. William T. Howard, Jr., former assistant commissioner of health, has returned to the Baltimore City Health Department as a con-

sultant and expert in statistics. Dr. Howard will continue his duties as teacher in the Johns Hopkins School of Hygiene.

Mortgage Paid Off.—The committee to which was entrusted the securing of funds to pay off the mortgage on the building of the Medical and Chirurgical Faculty of Maryland Library, Baltimore, and of which Dr. W. Edward Magruder, Baltimore, was secretary, completed its work on the day the death of Sir William Osler, who made the first contribution of $1,000 to the fund, was reported in Baltimore.

To Direct School Health Work.—With the idea of making the medical inspections of the schools of Baltimore more effective, Health Commissioner C. Hampson Jones has placed the work under the direct supervision of Dr. H. Warren Buckler, who now heads one of the divisions of the health department. For this work he will have the assistance of the twenty-eight health wardens. The new division will include the sixteen school nurses and the seven physicians who heretofore have reported directly to the commissioner of health. With the health wardens at his call, Dr. Buckler will have a large force of physicians available for examining schoolchildren, thus keeping the schools free from infectious and contagious diseases.

Services in Honor of Dr. Osler.—A notable gathering of members of the medical profession and other friends of the late Sir William Osler attended services in his honor at 3:15 o'clock on January 1, in Old St. Paul's Church, Baltimore. The time was set on receipt by Dr. Henry Barton Jacobs of a cablegram from Lady Osler, stating that the funeral services in England for the famous physician would be held at that hour. The ceremony at St. Paul's was most impressive. The trustees, faculty and student body of the Johns Hopkins University were represented, as well as the nurses of the training school and officials of Johns Hopkins Hospital. The Medical and Chirurgical Faculty of Maryland and the Baltimore City Medical Society were represented by leading members of the medical profession.

Tribute to Dr. Hurd.—The *Bulletin of the Johns Hopkins Hospital* for December contains a record of the work and writings of Dr. Henry Mills Hurd, Baltimore, who was the first superintendent of the hospital. Portraits of Dr. Hurd are shown from the age of 6 to the present time. Dr. Thomas S. Cullen, Baltimore, is the author of the article on Dr. Hurd and has arranged the record of his hospital reports year by year, so that an admirable history of the hospital is presented in small space and biographical data is placed in the record of each year. Dr. Cullen draws special attention to the tremendous amount that Dr. Hurd has accomplished and of how largely he has been responsible for the phenomenal success of the hospital. He also speaks of the splendid tribute to Dr. Hurd in the "Henry M. Hurd Library" of the hospital, plans for which are under way and the funds for which were the gift of the late George K. McGaw.

MASSACHUSETTS

Influenza Research.—Dean David L. Edsall of Harvard Medical school announces a gift of $50,000, the greater portion of which will be used by Dr. Milton J. Rosenau, professor of preventive medicine and hygiene, and his assistants to carry on exhaustive studies and research, to discover some means to prevent future outbreaks of influenza epidemics.

Personal.—Dr. Richard P. Strong, Boston, has been appointed chief medical director of the League of Red Cross Societies of the Nations of the World, with headquarters at Geneva.——Dr. Charles E. Prior, Malden, has been appointed a member of the state board of registration in medicine, succeeding Dr. Charles H. Cook, Natick, deceased.——Dr. Lowell F. Wentworth, Boston, has been appointed assistant commissioner in the department of mental diseases of the state department of health.——Dr. Hamlin P. Bennett, Lynn, was attacked by automobile thieves at a garage recently, and beaten into insensibility.

MICHIGAN

Personal.—Dr. Alvin L. Bailey, Chesaning, was struck by an automobile at Saginaw, recently, and suffered severe injuries.——Dr. Edwin M. Chauncey, Albion, has been appointed assistant in the internal medicine department of the University of Michigan.

Bulletin Michigan Department of Health.—The December issue of this bulletin is devoted entirely to the subject of cancer. It is discussed in such a way that the layman can understand what is said. This bulletin was prepared with the cooperation of the American Society for the Control of Cancer.

Hospital Items.—Work is already under way on the new University Hospital, Ann Arbor.——The Will Curtis residence, Reed City, has been purchased and will be occupied as a hospital in place of the one recently destroyed by fire.——The Lange Hospital, Lansing, has been temporarily leased to the Sisters of Mercy of Jackson and will be operated by them until they can locate a proper site and erect a new building. It will be opened for service to the public, January 15. It is the purpose of the Sisters of Mercy to locate here, and through the operation of the Lange Hospital they hope to determine the needs of the city before building the new hospital.

MINNESOTA

Osler Memorial Meeting.—A meeting of the staff of the Mayo Clinic, Rochester, was called, December 31, in honor of the late Sir William Osler.

Personal.—Dr. Harry A. Britton, acting superintendent of city hospitals, Minneapolis, and Dr. Harry M. Guilford, city health commissioner of Minneapolis, have resigned.

Red River Valley Physicians Meet.—At the annual meeting of the Red River Valley Medical Society held in Crookston, the last week in December, Dr. O. Edward Bratrud, Warren, was elected president; Dr. Ralph L. Kirsch, Crookston, vice president, and Dr. Hallward M. Blegen, Warren, secretary-treasurer.

NEBRASKA

Personal.—Dr. Philip H. Bartholomew, Blue Hill, has succeeded Major Leader as head of the venereal disease work in Nebraska.

Society Election.—The Omaha and Douglas County Medical Society held its annual meeting and banquet, December 22, and elected the following officers: president, Dr. Paul H. Ellis; vice president, Dr. Arthur D. Dunn, and secretary-treasurer, Dr. Roy A. Dodge, all of Omaha.

Alumni Elect Officers.—At the ninth annual alumni meeting of the University of Nebraska, College of Medicine, held in Omaha, November 20, the following officers were elected: president, Dr. Charles R. Kennedy, Omaha; vice presidents, Drs. Jacob E. Meisenbach, Staplehurst, and John C. Davis, Jr., Omaha, and secretary-treasurer, Dr. William N. Anderson, Omaha.

NEW YORK

Erie County Society Elects New Officers.—At the ninety-eighth annual meeting of the Erie County Medical Society, December 16, the following officers were elected: president, Dr. Earl P. Lothrop; vice presidents, Drs. Arthur G. Bennett and DeWitt H. Sherman; secretary, Dr. Franklin C. Gram (reelected for the twenty-seventh consecutive term), and treasurer, Dr. Albert T. Lytle, all of Buffalo.

Hospital Items.—Bethesda Hospital, Hornell, has been raising funds for a new building.——It is reported that the buildings of the U. S. General Hospital No. 8, Otisville, are to be destroyed, as the New York Health Department does not allow the removal of buildings that have been occupied by tuberculosis patients for use in other places, and since the buildings for this hospital were erected on the grounds owned by the New York City Sanitarium, the rule is said to be effective in this case.

State Death Rate Higher.—The latest vital statistics report of the New York State Health Department shows that the general death rate for the state increased slightly in November over that of the preceding month, though it was still 17 per cent. below the average death rate for that month during the past five years. The birth rate for November was 20.4 per thousand population, which is much below the average for the years 1913-1917. The infant mortality rate for November was 66, which is 19 points below the average for that month. The number of deaths from diphtheria increased during the month of November, being 187 as compared with a five years' average of 142 for the same month.

Preschool and Other Clinics Established.—The Visiting Nurses' Association of Watertown, which has been conducting a child welfare clinic, has recently opened a preschool clinic, which is under the direction of Dr. Horace C. Montgomery, Watertown, and Miss Carey.——The board of health of the city of Elmira has authorized the establishment of a general clinic to include child welfare work and measures against tuberculosis and venereal disease.——At New

Rochelle, a committee has been appointed to interest the people of the community in a health center.——At Gloversville, a committee has been named by the board of health for the purpose of securing suitable quarters for a health center.

New York City

Smallpox on Ship.—On the arrival of the steamer *Duca Degli Abruzzi* from Genoa and Naples, January 3, two cases of smallpox were found on board. The patients were removed to Swinburne Island, and the 1,300 steerage passengers will be held on Hoffmann Island three weeks for observation.

Low Death Rate.—Health Commissioner Royal S. Copeland announced, January 3, that the death rate for greater New York was lower than any year since the department has been organized. For 1919, the mortality rate was 12.30 per thousand; 1918, 16.71 per thousand, and for the five preceding five-year periods, 13.94 per thousand.

Mary Putnam Jacobi Fellowship.—The Women's Medical Association of New York City offers this Fellowship of $800, available for postgraduate study. It is open to any woman physician for work in any of the medical sciences. Applications for the year 1920-1921 must be in the hands of the committee on award by April 1, 1920. For information address Dr. Rose Cohen, secretary, 151 West Seventy-Eighth Street, New York City.

Organizations Warn Against Wood Alcohol.—A record of fifty-one deaths and at least one hundred cases of blindness due to wood alcohol during the first twenty days of December, has aroused to action the National Committee for the Prevention of Blindness, the New York Academy of Medicine, the department of health and Chief Medical Examiner Charles Norris. These agencies, after a conference, issued a warning to the public of the danger of drinking anything in the saloons that passed for whisky. Dr. Ward A. Holden has been designated by the committee on public health and hygiene of the New York Academy of Medicine to make an exhaustive study of wood alcohol in relation to blindness.

Personal.—Dr. Charles F. Hunt has been elected surgeon of the Defendam Association.——Theodore C. Lyster, Col., M. C., U. S. Army, who has been with the yellow fever commission in Ecuador, Colombia, and Southern Mexico, since March, 1918, returned to New York on the *Esperanza*, December 21.——Dr. Jacques Loeb of the Rockefeller Institute for Medical Research has been elected an honorary member of the Royal Institution of Great Britain and Ireland. ——Wickliffe Rose, chief director of the International Health Board of the Rockefeller Foundation, and Dr. Richard M. Pearce, Philadelphia, director of the division of medical education of the board, sailed for Europe, December 11, to secure information about public health administration and methods of medical education in England and on the Continent.

OKLAHOMA

Personal.—Dr. George W Goss, Pawhuska, has been appointed superintendent of health for Osage County.

New Officers.—Muskogee County Medical Society, at its annual meeting, elected the following officers: president, Dr. Pleasant P. Nesbitt; vice president, Dr. Joseph H. Sanford, and secretary, Dr. Joseph G. Noble, all of Muskogee. ——Woodward County Medical Society elected the following officers: president, Dr. Ralph A. Workman, Woodward; vice president, Dr. Paul G. Eilers, Quinlan, and secretary, Dr. Charles W. Tedrowe, Woodward.——Kay County Medical Society met at Blackwell, December 11, and elected Dr. James C. Hawkins, Blackwell, president; Dr. Ralph P. Mavity, Braman, vice president, and Dr. Isaac D. Walker, secretary-treasurer.——At the annual meeting of the Tulsa County Medical Society, Dr. Gregory A. Wall was elected president; Dr. Fred S. Clinton, vice president, and Dr. Albert W. Pigford, secretary-treasurer, all of Tulsa.

PENNSYLVANIA

Mellon Lectures.—The fifth Mellon lecture of the Society for Biological Research of the University of Pittsburgh was delivered by Major-Gen. William C. Gorgas, M. C., U. S. Army (retired), January 8, on "Yellow Fever," illustrating the application of modern sanitation and preventive medicine in the control of epidemic diseases.

Physicians Held Under Prohibition Law.—Four physicians of Pittsburgh and one druggist were arrested, December 27, and are held under $1,500 bonds each on a charge of violation of the war-time prohibition law. The physicians were charged with prescribing whisky to a special agent of the department of justice, and the druggist was charged with having sold a quart of whisky "for beverage purposes."

Public Health Activities.—To promote the public health and social welfare of the people of Lehigh County, a public health and welfare society has recently been organized in Allentown, of which Dr. Charles D. Schaeffer is president and Dr. J. Treichler Butz is vice president.——The new county health committee, under the guidance of Dr. Howard C. Frontz, Huntingdon, county medical director, have outlined a health program for the county which will be conducted on the broadest lines and include a tuberculosis committee to be affiliated with the Pennsylvania Society for the Prevention of Tuberculosis.

Personal.—Dr. Walter W. Seibert, Easton, has been appointed a trustee of the State Hospital, Rittersville.—— Dr. Chester G. Crist, Gettysburg, has been elected coroner of Adams County.——Dr. Thomas M. Baird, Tunkhannock, recently discharged from service, has been commissioned lieutenant-colonel, M. R. C., U. S. Army.——Dr. Raleigh R. Huggins, Pittsburgh, has been appointed dean of the faculty of the School of Medicine of the University of Pittsburgh, succeeding Dr. Thomas S. Arbuthnot, resigned.——Dr. Henry C. McKinley, Meyersdale, has been elected secretary of the Somerset County Medical Society for the thirty-first consecutive time, having served for thirty years, or since the organization of the society.——Dr. William J. Crookston, Pittsburgh, has been commissioned lieutenant-colonel, Medical Corps, N. G., Pa., and assigned to duty with the first division.——Dr. Dewitt B. Nettleton, Pittsburgh, has been commissioned major, M. C., N. G., Pa., and assigned to duty with the First Field Artillery.——Dr. Constantine P. Faller, Carlisle, has been commissioned major, M. C., N. G., Pa., and assigned to duty with the Eighth Infantry.

The Wood Alcohol Question.—The commissioner of health of Pennsylvania has issued the following advertisement:

"TO MANUFACTURERS, DISTRIBUTORS AND DEALERS"

Owing to the unusual conditions arising in neighboring states from the sale and distribution of mixtures containing wood alcohol which has resulted in a large number of deaths, the Pennsylvania State Department of Health in conjunction with the Pennsylvania Food Commissioner and the Pennsylvania Board of Pharmacy and the Attorney General's Department hereby serves notice upon manufacturers, distributors and dealers that an embargo will be placed upon all non-official preparations containing alcohol unless the manufacturer, dealer or distributor of such preparations satisfy by affidavit the State Department of Health that the preparations do not contain wood alcohol. The affidavits must be filed with the State Department of Health on or before January 8th, 1920.

EDWARD MARTIN, Commissioner of Health.

By the act of July 17, 1919, the putting of wood alcohol in medicines, toilet preparations, etc., is punishable by a fine of $500, and Thomas S. Blair, Harrisburg, chief of the bureau of drug control, has nine inspectors going over the state to examine into the enforcement of the law.

Philadelphia

Testimonial Dinner to Dr. Krusen.—A testimonial dinner to Dr. Wilmer Krusen, former director of public health and charities, was given by the physicians of Philadelphia at the Bellevue-Stratford, December 30. Dr. Hobart A. Hare was the toastmaster.

Pathologic Laboratory Dedicated.—At the dedication of the new pathologic laboratory of the Philadelphia General Hospital, the principal address was delivered by Dr. William H. Welch of Johns Hopkins University, who spoke of the important part played by morbid anatomy in the advancement of medicine. Addresses were also made by Dr. Arthur D. Bevan, Chicago, and Louis B. Wilson, Rochester, Minn.

Assistant Health Director Appointed.—Col. C. Lincoln Furbush, the newly elected director of public health and charities, has appointed as his assistant director, Dr. Norman H. Taylor of Chestnut Hill. Dr. Taylor after his graduation from Harvard Medical School was chief resident physician at the Pennsylvania Hospital before the war; he became first lieutenant in the Medical Corps of the Army and attended vacation courses at the Sorbonne, Paris.

Navy Hospital Abandoned.—After continuous use since the Civil War days, the United States Naval Hospital, at Twenty-Fourth and Gray's Ferry Road, has been ordered abandoned by the United States Navy Department. The

250 patients in the institution at the present time, will gradually be removed to the new naval hospital at the Philadelphia Navy Yard which has accommodations for 1,000 men. Besides the old hospital of Civil War days, three fine modern structures, which were erected in 1918, will be left vacant. It is thought that they may be made into an extension of the United States Naval Home on the grounds of which they are located, but no orders have been received to that effect.

Personal.—Dr. Ellen C. Potter, having been appointed a special lecturer in the health department of the Bryn Mawr College, has opened a course of lectures on social hygiene. —Dr. James R. Martin has been commissioned major, M. C., N. G., Pa., and assigned to duty with the First Infantry.—— Dr. Harry A. Schatz has been commissioned first lieutenant in the Pennsylvania Reserve Militia.——Dr. Lawrence F. Flick has been elected president of the newly organized American Catholic Historical Society.——Dr. Horace B. Anderson has been appointed chief of the genito-urinary clinic at Phipps Institute, by the state commissioner of health.——Dr. Louis Schwartz, who for the past four and one-half years has been in charge of the medical department of the immigration service at this port, has been transferred to Ellis Island. Dr. Dana E. Robinson, who has been connected with the War Risk Insurance branch at Cincinnati, has been appointed to take Dr. Schwartz' place.

TENNESSEE

Personal.—Dr. George C. Thomas has been appointed health officer for the city of Greeneville.——Dr. Walter S. Nash has been appointed chief of the medical staff of the Knoxville General Hospital.

Society Meetings.—At the annual meeting of the Sullivan-Carter-Johnson County Medical Society, December 3, the following officers were elected: president, Dr. Wiley W. Vaught, Shouns; vice presidents, Drs. George E. Campbell, Elizabethton, Thomas F. Staley, Bristol, and James R. Butler, Mountain City, and secretary-treasurer, Dr. William K. Vance, Bristol.——At the annual meeting of the Memphis and Shelby County Medical Society, held at Memphis Country Club, December 18, Dr. J. Lucius McGehee was elected president; Dr. Julian B. Blue, vice president, and Dr. Joel J. Hobson, secretary-treasurer, all of Memphis.——Chattanooga Medical Association, at its annual meeting, December 5, elected Dr. William H. Cheney, president; Dr. Willard H. Steele, vice president, and reelected Dr. Hiller P. Larimore, secretary and treasurer.

CANADA

Released After Long Imprisonment.—Hon. Dr. Henri Severin Beland, St. Joseph de Beaue, Que., member of the Dominion House of Commons, returned to Canada, recently, after several years' imprisonment in a prison camp near Berlin.

Rockefeller's Donation to Medical Education.—Of the $5,000,000 said to have been donated by Mr. John D. Rockefeller to the medical colleges of Canada, President Falconer and Dean Clark of the medical faculty of the University of Toronto say that they have had no official notification up to this time. In Ottawa, great interest has been manifested in the announcement, coming as it does on the renewed discussion of the removal of Queen's Medical College from Kingston to Ottawa. The Manitoba Medical College, the third largest in the dominion, expects to get at least $1,000,000 of the donation, while the Western at London, Ont., will lay its claims before the Rockefeller Foundation so that it may receive its share.

GENERAL

Bequests and Donations.—The following bequests and donations have recently been announced:

Toronto General Hospital, a donation of $250,000, by Sir Joseph Flavelle, chairman of the hospital board of trustees.

Rockefeller Institute for Medical Research, New York City, $1,000,000 by the will of the late Jacob D. Schmidlapp.

American Section of the German Red Cross, a check for 2,500,000 marks donated by relief committees in the United States for the benefit of tuberculous and undernourished German children.

Senate Passes Bill for Treatment of Tuberculous.—On January 5, the senate unanimously passed the bill permitting civilian employees of the United States government who may be stricken with tuberculosis to enter hospitals already established by the Army and Navy and Public Health Service. Civilian employees of the government will, primarily, receive treatment in Public Health Service hospitals but, in emergency, may go to Army and Navy hospitals. The bill now goes to the House of Representatives.

Appropriation for Research Work.—The Trustees of the American Medical Association have made an appropriation of money to further meritorious research in subjects relating to scientific medicine and of practical interest to the medical profession, which otherwise could not be carried on to completion. Applications for grants should be sent to the Committee on Scientific Research, American Medical Association, 535 North Dearborn Street, Chicago, before Feb. 1, 1920, when action will be taken on the applications at hand.

The Index Catalogue of the Surgeon-General's Library.—Volume 1, 3rd series, dated Aug. 1, 1918, covering the titles included under A-Army, has just appeared. The total number of volumes to date in the previous series is thirty-eight. The complete series, including the present volume, lists 349,313 author titles, including 178,000 volumes and 319,497 pamphlets. It also includes 309,499 book titles and 1,186,271 periodical articles—certainly an extensive accumulation of medical literature. The Surgeon-General's library itself includes 230,559 volumes, bound and unbound, and 352,523 pamphlets.

Red Cross Appointments.—The following appointments to the medical department of the League of Red Cross Societies are announced: Prof. George Chandler Whipple of Harvard University, chief of the division of sanitation; Col. Francis L. Langley, assistant chief; Dr. Thomas R. Brown, Johns Hopkins University, Baltimore, chief of the division of medical information and medical publication; Miss Alice Fitzgerald, chief of the division of nursing; Dr. George C. Shattuck of Harvard University Medical School, Boston, chief medical secretary, and Col. Henry A. Shaw, M. C., U. S. Army, in charge of the field work of the league in the prevention of communicable diseases in eastern Europe. Colonel Shaw will have as assistants, Lieut.-Col. George Fordham, M. C., U. S. Army, and Major S. H. Dunn, S. C., U. S. Army.

Red Cross and Order of St. John Unite.—An agreement has been signed by the Red Cross Society and Order of St. John by which the joint working of the joint corporations which led to good results during the world war will continue during peace. Under the agreement, a joint council has been appointed consisting of an equal number of members of each body and to this council is given the general control of the work of the two corporations. The matters which it is expected to bring under the immediate attention of the joint council are the care of the sick and wounded; such care as may still be necessary for prisoners of war; the care of those suffering from tuberculosis; child welfare; work parties to provide the necessary garments, etc., for hospital and health institutions; assistance required in all branches of nursing, health and welfare work, and home service ambulance work.

Physicians Desire Free Transportation.—The Cummins Bill providing for the return of the railroads to their owners, as finally passed by the Senate, does not contain the provision forbidding the use of free transportation to railroad surgeons. Such provision was contained in the Esch Bill as it passed the House, and prohibited free transportation to physicians and lawyers, "unless they devoted the principal part of their time to the railroad service." This provision of the Esch Bill was the occasion for wide-spread protest on the part of roailroad surgeons and of local physicians for railroads who are called on in emergency to render medical aid in connection with the railroad service. The subject now will be determined by the Conference Committee appointed to adjust conflicting portions of the Cummins Bill and the Esch Bill between Senate and House. If the Conference Committee recognizes the hundreds of protests that have come to senators and members of the House, it is likely that this objectionable feature of the Esch Bill will be stricken out by the committee.

Regulation Proposed for Wood Alcohol.—State authorities, when fatalities occur, may prosecute for manslaughter and murder persons charged with selling wood alcohol for beverage purposes. However, additional legislation to safeguard the use of the poison will be recommended to Congress by the commissioner of internal revenue. The character of the proposed legislation has not yet been defined, but it is probable that it will be to place a tax on the manufacture and sale of wood alcohol, subjecting it to the restrictions which govern the manufacture and sale for nonbeverage purposes of ethyl alcohol, and requiring the holding of permits by those engaged in the traffic. There is no provision

in the internal revenue laws or in the National Prohibition Act regulating or affecting the manufacture, sale or distribution of wood alcohol, and the commissioner has no authority under present laws to regulate or restrict its use. The bureau of chemistry of the department of agriculture also has no effective control over the distribution of wood alcohol under the Pure Food and Drug Act, and new legislation is necessary if the federal government is to prohibit the use of wood alcohol as a beverage.

FOREIGN

The Nobel Prize in Medicine Not Awarded.—The Nobel prize in medicine has not been awarded since 1914.

Influenza in Spain.—Influenza is reported to have reappeared in Santander, Valencia, and other towns and to have caused many deaths.

Lepers Return Thanks.—A colony of lepers at Tarafangana, Madagascar, in a letter recently received, pays testimony to the relief extended by the American Red Cross.

Osler's Body Cremated.—The body of Sir William Osler, who died, December 29, was cremated, January 2. The urn containing the ashes will be taken to Oxford, and probably forwarded to his birthplace in Canada.

Lectures Before the Royal College of Surgeons.—The Thomas Vickery lecture was delivered by Sir John Tweedy, December 2, on "The Surgical Tradition," and the Bradshaw Lecture by Sir Charles Vallance, on "Surgery of the Heart."

Plague in Constantinople.—The *Wiener klinische Wochenschrift* quotes a press item from Saloniki to the effect that plague has appeared in Constantinople and the government of Greece has declared a four-day quarantine for travelers arriving from Constantinople.

Yellow Fever in Mexico.—Press reports state that an epidemic of yellow fever is reported in many cities and towns in Yucatan, Campeche, Chiapas, and Oaxaca, and that quarantine has been established at Tampico against Salina Cruz, Progreso, Frontera and other ports.

Personal.—Sir Donald MacAllister, superintendent of the British General Medical Council, has been invested by President Poincare, with the Cross of the Commander of the Legion of Honor.——Surg.-Gen. Sir Alfred Keogh and Sir Almroth E. Wright have had the honorary degree of doctor of science conferred on them by the University of Leeds.

League of Dispensing Physicians in Switzerland.—The *Correspondenz-Blatt* states that the physicians who dispense their own drugs in the by-ways of Switzerland's mountain fastnesses have combined to form a league of dispensing physicians to maintain their rights, and combat abuses, such as the sale of drugs by incompetent persons, and to obtain the advantages of collective purchasing, etc. The officers of the league include Dr Trösch of Biglen and Dr. Schaad of Herzogenbuchsee.

Deaths in the Profession Abroad.—Dr. **Troisier,** professor *agrégé* of clinical medicine at the University of Paris.——Dr. **J. Hoffmann,** professor of neurology at the University of Heidelberg.——Dr. **K. Moeli,** professor of forensic medicine at the University of Berlin.——Dr. **A. Onodi,** professor of laryngology at the University of Budapest, author of numerous works on the anatomy, physiology and innervation of the throat, aged 62.——Dr **F. Di Donato,** a physician of Rome who took the leading part in organizing mountain and seashore colonies for weakly children.

Typhus Relief in Poland.—For purposes of administration, Poland has been divided into six districts with headquarters, respectively, at Warsaw, Lodz, Kielce, Lublin, Lonzia and Lwow. The active operations for the elimination of typhus and other infectious diseases are being handled by the central committee of the ministry of public health, which consists of Col. Harry L. Gilchrist, M. C., U. S. Army, and Drs. Viktor Hyszkiewicz, and Ludwik Rajchman of the ministry of public health of Poland. Departments of propaganda, transportation, statistics, hospitalization, quarantine, finance and schooling have been established and a Polish official has been placed in charge of each department. Each district is divided into counties and at the head of each county is a medical officer of health appointed by the minister of public health. Lieut.-Col. Lee R. Dunbar, M. C., U. S. Army, has been appointed to take charge at Lublin; Lieut.-Col. Edward C. Register, M. C., U. S. Army, at Lwow, and Major Willis P. Baker, M. C., U. S. Army, at Kielce. These officers are closely associated with the Polish district medical officers and will conduct activities in cooperation with them. The personnel of the Polish Typhus Relief Expedition consists of twenty-two officers and 420 men with thirty-one trainloads of supplies, including 10,000 beds, equipment for 40,000 beds, 1,000 tons of soap, 50 tons of washing soda, 1,000,000 suits of underwear, all the mobile laundries and sterilizers of the American Expeditionary Forces, 320 ambulances, 320 touring cars, and 160 heavy trucks, a large quantity of drugs and other supplies purchased from the American Army in France, five complete hospital trains, and sixty-eight cars of American Red Cross supplies. Experts are setting up mobile steel laundries in eight of the large cities to provide cleansing facilities for the poor and needy. Hospital repair and construction units are at work in two of the sanitary bases of the worst infected districts. Four field columns, each of twenty enlisted specialists under commissioned officers of the Army are supervising the bathing and delousing at a rate of 800 each, daily. Hospitalization and quarantine operations are being conducted in many places in the south and east of Poland, and American property purchased by Poland is being conveyed from the warehouse in Warsaw to towns and communities designated at the rate of about ten truck loads a day. Word has been received from Col. Harry H. Snively, director of field operations, that at Lemberg, 50,000 people are waiting to be bathed and deloused. Five medical officers have been assigned to the quarantine station and military cordon, along the eastern border of Poland, and a strict quarantine is being placed along the border to prevent the large influx of refugees into Poland, before having been bathed and deloused.

The German Inhumanity at Lille.—THE JOURNAL mentioned at the time the protest signed by Calmette and four other members of scientific organizations who had remained at Lille during the long occupation by the Germans, and witnessed the "actes de barbarie" which they specified, saying in conclusion: "The high command in Germany willed the war, but the people in arms approved it, and resolutely waged war with the most ferociously cruel means, even the physicians with the army doing the most odious acts without a word of excuse, regret or pity." (THE JOURNAL, Dec. 28, 1918. Also in Paris Letter, March 8, 1919, p. 742). The *Deutsche medizinische Wochenschrift* of April 10, 1919, related that the matter was brought up in the Berlin Medical Society, and Calmette's protest and the resolutions voted thereon by the Académie de médecine at Paris were discussed. Dr. Fuld offered a resolution that the society should go on record as expressing its regret ("—das tiefe Bedauern —") at such happenings as were specified in the Calmette protest, but his suggestion was opposed by Orth and others, the speakers saying that there was no proof of the truth of the statements made by Calmette, and no voting should be done on a matter of which only one side had been presented. However a committee was appointed "nach einer ungefähr 1 stündigen Geschäftsordnungsdebatte—" to report after obtaining an official copy of the resolutions that had been adopted by the Académie. The *Deutsche medizinische Wochenschrift* of Nov. 6, 1919, relates that this committee recently presented its report. It was in the form of a resolution which was adopted without a dissenting voice "—widerspruchslos angenommen." The members of the committee were Fuld, Kraus, Krause, Morgenroth and Schwalbe, the latter the editor of the *Deutsche medizinische Wochenschrift.* The resolution reads:

"Die Berliner medizinische Gesellschaft ist nicht in der Lage, über die Erklärung der Liller Professoren und der Akademie der Medizin sowie über die deutsche Rechtfertigungsschrift, 'Lille unter deutscher Verwaltung und die Kritik des Gegners', zu entscheiden. Sie steht aber nicht an, offen zu erklären, dass sie alle inhumanen Handlungen auf das schärfste missbilligt, wo, wann, und von wem sie begangen sein mögen. Diese Stellungnahme entspricht dem von der deutschen Aerzteschaft stets hochgehaltenen Geist der Medizin, jenem wahrhaft internationalen Geist, dem wir huldigen, dessen Anerkennung wir aber auch bei allen anderen Aerzten, gleichviel welchem Volke sie angehören, voraussetzen."

"The Berlin Medical Society is not in a position to pass judgment on the Manifesto of the Lille professors and the Académie de médecine and on the published justification issued by the German authorities, entitled 'Lille under German Rule and the Criticism of the Foe.' But the society does not hesitate to declare openly that it condemns in the most unqualified manner all inhuman actions, wherever, whenever, and by whomsoever they may be committed. This attitude corresponds to the spirit of medicine always held high by the German medical profession, that really international spirit to which we are loyal and to which we assume all other physicians are loyal wherever they may be and to whatever nation they may belong."

Government Services

Personnel of the Medical Department

For the week ending January 2, the Medical Corps contained 2,193 officers; the Medical Reserve Corps contained 4,249, an increase of eleven over the previous week.

MEDICAL OFFICERS, U. S. NAVY, RELIEVED FROM ACTIVE DUTY

ARKANSAS
Arkadelphia—Brown, C. C.

INDIANA
Indianapolis—Mitchell, E. H.

LOUISIANA
Spring Hill—Browning, B. L.

MISSOURI
Kansas City—Walker, J. C.

TEXAS
Houston—Flickwir, A. H.

UTAH
Salt Lake City—Marshall, H. L.

VIRGINIA
Covington—Gardner, F. P.

WISCONSIN
Racine—Colbert, C. N.

Cuban Order for Colonel Havard

President Menocal of Cuba has conferred the Cuban Order of Military Merit on Col. Valery Havard, M. C., U. S. Army, retired, in recognition of his work in sanitation in the Cuban Army.

Historical Division of Medical Department

A historical division, which will handle all matters pertaining to the medical and surgical history of the world war, has been created in the office of the Surgeon-General. Col. Charles Lynch, M. C., U. S. Army, has been designated as chief of the department and is assisted by Drs. Louis C. Duncan, M. C., U. S. Army, Raymond C. Turck, M. C., U. S. Army, and contract surgeons Casey A. Wood and Roy McAfee.

Hospital Ship Launched

The U. S. Hospital Ship *Relief* was launched at the Philadelphia Navy Yards, December 23, and was christened by Mrs. William C. Braisted, wife of the Surgeon-General of the Navy. The vessel is of 10,000 tons displacement, 433 feet long, has a speed of 60 knots, and a capacity for 500 patients with complete operating room and hospital equipment. An appropriation of $3,250,000 was made by Congress for the construction of this ship.

Examination for Army Medical Corps

The Surgeon-General of the Army announces that preliminary examinations for appointments in the Medical Corps, U. S. Army, will be held March 15, 1920, at various points throughout the United States, in the Philippine Islands, Hawaiian Islands, Panama Canal Zone, Porto Rico, France, Germany and Siberia. The vacancies in the Medical Corps now amount to about 725 and since the armistice, resignations have been accepted at a rate of about twelve a month. The requirements are that the applicant shall be a citizen of the United States, between 22 and 32 years of age, a graduate of a medical school authorized to confer the degree of doctor of medicine, and that he shall have had at least one year postgraduate hospital internship, the latter requirement being waived in the case of those who have served as commissioned officers for at least one year during the world war.

Awards of Distinguished Service Medal

The Distinguished Service Medal has been awarded to the following officers of the Royal Army Medical Corps:

Major Gens.—Sir Robert Jones, eminent orthopedic surgeon and chief of Division of Orthopedic surgery, British army. Placed at disposal of medical service of A. E. F. his eminent talents and broad experience in standardizing methods of treatment for sick and wounded and took active personal interest in class instruction of American medical officers.

Sir Anthony Bowlby, while serving with the B. E. F. in France devoted his time and energy toward cooperating with and unreservedly placing at disposal of the A. E. F. his eminent talents, broad experience and knowledge of general conditions in preventing wastage among our forces from wounds and disease. His research work in wound bacteriology and evacuation resulted in saving many lives among our sick and wounded.

Cuthbert Wallace, while serving with the B. R. F. in France, devoted time and energy toward promoting standard methods for efficient treatment of American sick and wounded.

Sir Henry Tnompson, director of the medical service, 1st British Field Army in France. Placed time and energy at disposal of A. E. F. The sanitary school maintained in his army for teaching front-line medical requirements was utilized for instruction of American medical officers sent to him by classes. The observation and experience gained by these student officers under his able supervision and guidance eventually resulted in saving lives of many American wounded.

Report of the Surgeon-General, U S. Army, for 1919

This report appears in two massive volumes containing in all 2,167 pages and covering the experience of the medical department of the United States Army for the year 1918. It records the expansion of the army from a group of less than 100,000 men to one of 3,500,000; transportation of more than 2,000,000 soldiers, with all necessary equipment and supplies, to Europe and the safe return of the vast majority to this country. In his report to the Secretary of War the Surgeon-General says: "It was only by the concentrated and combined efforts of the country, as a whole, that the undertaking was successfully accomplished." "Practically the entire medical profession of the United States," he says, "became the medical department of the army and navy." In his letter he recapitulates the organization of the army and the construction of hospitals for the care of the sick. The effect of the influenza epidemic plays a leading part. In summarizing his letter of transmission, Surgeon-General Ireland says:

1. The total number of admissions during 1918 for diseases for officers and enlisted men, American and native troops, was 2,422,362; for ordinary injuries, 182,789; and for battle injuries, 227,855.

2. The total number of deaths from disease was 47,384; from wounds received in battle (cases treated in hospital), 13,735; killed in action, and lost at sea, 34,359; from ordinary traumatisms, 3,500.

3. Including the deaths from 1917, there were 50,714 from disease and 52,423 as the result of injuries of various kinds, including wounded, killed in action, and lost at sea.

4. The total number of days lost from disease for the year was 40,692,302; from battle injuries 12,545,442; and from ordinary injuries 3,687,060. The average number of men absent each day of the year on account of sickness and injuries was 155,957. Seventy-one per cent. of the time lost was caused by disease, 6 per cent. by ordinary injuries, and 22 per cent. by battle injuries.

5. Since the soldiers of the Civil War for the United States Army were drawn only from the Eastern and Northern States, with a few from the Western States, if other conditions had been the same, the rates should have been lower for the first two years of the Civil War than the corresponding rates for the Army in 1917-1918, which was made up of troops from all sections of the country, including the colored.

6. For the first two years of the Civil War, as compared with 1917-1918, the admission and the death rates for disease was three and one-half times as high.

7. Comparing the rates for the Spanish-American War and the Philippine Insurrection, 1898-1899, with those for 1917-1918, the admission rate in 1898-1899 was a little over twice as high and the death rate about 20 per cent. higher.

8. The admission rate for the specific fevers and the diseases of the intestines (including diarrhea and dysentery) was twenty-nine times as high in 1861-1862 as in 1917-1918, and the death rate was 258 times as high.

9. For these diseases for 1898-1899 the admission rate was twenty-four times as high and the death rate 125 times as high as in 1917-1918.

10. For the acute infectious diseases (excluding influenza, pneumonia, and the common respiratory type) the admission rate for 1861-1862 was practically the same as in 1917-1918. The death rate in 1861-1862 was two and one-half times as high as in 1917-1918, but 8 per cent. lower in 1898-1899 than in 1917-1918.

11. The respiratory type, including influenza, pneumonia and the common respiratory diseases, had higher admission and death rates for 1917-1918 than for either 1861-1862 and 1898-1899.

12. Influenza, probably associated with virulent pneumonia, was epidemic during the latter part of 1917 in this country and in Europe. The epidemic wave declined during the cold, dry, winter weather, and increased again in the spring, after which time it again declined, but continued throughout the summer to rise again to the high point in the autumn months.

13. Influenza, combined with pneumonia and respiratory diseases, caused 17.33 per cent. of the total admissions for

diseases, and 82 per cent. of the total deaths. This type of disease was the most important cause of loss of time.

14. All of the epidemic diseases other than influenza, pneumonia and the common respiratory diseases declined after the first part of 1918. The rates for most of these diseases were lower during the first part of 1918 than during the latter part of 1917.

15. Approximately 5.6 per cent. of the men who came into the military service from civil life had a venereal disease.

16. Approximately 7.4 per cent. of all the men in the army were detected with a venereal disease some time prior to their leaving the United States.

17. Of this number three fourths had contracted the infection prior to coming into the military service.

18. Two thirds of all that were detected with a venereal disease in the entire army, during 1917-1918, brought the infection in from civil life.

19. The occurrence rate in Europe and in the United States of new cases of venereal diseases in the army was approximately the same.

20. The negroes in the United States had an admission rate for venereal diseases of seven times as high as the whites.

21. Practically 70 per cent. of the negro soldiers either had a venereal disease when brought in from civil life or contracted an infection during 1918.

22. Of the average number of colored soldiers who served in the United States during the year 1918, 4.6 per cent. had to be discharged for a venereal disease.

23. The rate for venereal diseases for the colored in countries other than the United States was slightly higher than the rate for the whites.

24. The nativity rates for venereal diseases for the negro soldiers from the South, as compared with the white soldiers from the South, show that the negro had approximately four times as much venereal disease as the whites from the same section.

25. The nativity rates for the white soldiers from the various sections of the country show that the white soldiers from the South had higher rates for venereal diseases than the white soldiers from other sections of the country.

26. The nativity rates show that the white soldiers from the South have higher rates for measles, mumps, cerebrospinal meningitis, bronchopneumonia, lobar pneumonia and influenza, and that the soldiers from the West and Northwest have higher rates for scarlet fever, diphtheria and German measles.

27. The soldiers from the Eastern States had lower nativity rates for mumps and measles, but the soldiers of the West and Northwest had lower rates for influenza, bronchopneumonia and lobar pneumonia and meningitis. This low standing of the latter states may possibly be due to the recent immigration to them.

28. The negroes have lower admission rates than the whites of the country at large for measles, German measles, scarlet fever, diphtheria and influenza, and much lower rates for these diseases than the whites from the South.

29. The negroes have higher rates for meningitis and tuberculosis than the whites from the entire United States, but approximately the same rates for them as the whites from the South.

30. The incidence rate for all forms of pneumonia, both primary and secondary, was nearly three times as high for the colored as for the whites of the entire country. The death rate was more than twice as high, but the case mortality was 20 per cent. lower.

31. As compared with the whites of the South, the negro had a nativity rate for the combined pneumonias of more than twice as high.

Following his letter of transmission, the Surgeon-General presents the statistics covering the health of the army; a tabulation of the strength of the army; a complete discussion of all of the large camps in the United States, thirty-seven in number; a vast department on infectious diseases occupying pages 618-1015, discussing the infectious diseases, as a whole, and as they affected various parts of the service; a separate discussion of the work of each of the special divisions of the Surgeon-General's Office, and, finally, the work of the expeditionary forces abroad. A significant feature of the report, as a whole, is the lack of personal mention of any medical officer in relation to the service done. This appears to have been the custom of similar reports in previous years. The extent of the compilation and its value as a reference work are, of course, permanent. The Surgeon-General's Office is to be congratulated on having issued such an important document in such good order and with such facility.

Foreign Correspondence

PARIS

Dec. 4, 1919.

Important Modifications of Disability Pensions

In a former letter (THE JOURNAL, May 17, 1919, p. 1479), I reported certain increases in military pensions. Since then a number of worth-while reforms in the military pension system have been introduced. For example, as regards the furnishing of proof that the wound or the disease in question was actually contracted in the service, the new law establishes the "presumption of origin" in favor of applicants for pension. This applies not only to the term of actual service but, if it is a question of disease, also to the six months following the demobilization. It suffices, in order to take advantage of the presumption of origin, that the applicant shall have made, within the time limit of six months, written application to the regional director of the army medical department. The burden of proof as to whether the wound or the disease in question was contracted in the service or not rests on the state.

On the other hand, the number of pensions to be allowed having been settled, there seemed to be a need of doing away with some of the formalities complicating payment. For instance, according to the laws and regulations as they formerly existed, the army medical department acted in the matter of pensions in a purely advisory capacity. Henceforth, it will be the duty of the army medical department to institute demands for pensions and to superintend all matters of a medicolegal nature until the decision of the pension board is reached. The personnel of the pension boards has of late been modified in such a manner as to give the weight of authority to the physicians, who formerly acted only in an advisory capacity (THE JOURNAL, June 28, 1919, p. 1929).

The instructions in regard to the examination of pension claims have also been simplified. The chief surgeons who act as chairmen of the pension boards have received instructions not to insist too strongly on finding the causes of the infirmities, unless there are elements in the case that might cause one to infer some cause extraneous to military service. The presentation of the hospital card of admission suffices to allow the presumption of origin to operate, when it is a question of disease, or to establish such origin if it is a wound that is being considered. The examination of pension claims is conducted now by two physicians instead of five as formerly. These two physicians devote themselves exclusively to the expert survey of pension claims. An interesting modification is the establishment of local sessions of the pension boards throughout the country. Applicants, especially those who are untransportable, may take advantage of these sessions and be examined at home. This also makes it possible for their family physician to render them aid, as is authorized by law. The applicant may, moreover, be excused from presenting himself in person, in which case the pension board may decide the case on the basis of written evidence. The number of pensions granted by the pension boards is constantly increasing. From 8,700 in January, 1919, the number rose to 40,000 in September, 1919, and now the number has passed the 150,000 mark.

Death of Physician in Accident

Dr. Jaugeas, assistant roentgenologist in the Saint-Antoine Hospital, has just met death under distressing circumstances. He had been called to the American Hospital at Neuilly to do some roentgenologic work. While he was occupied in adjusting the Coolidge tube in order to regulate the quality of the roentgen rays, a terrible deflagration occurred and Dr. Jaugeas was electrocuted on the spot. Jaugeas had been for seventeen years Dr. Béclère's assistant in the roentgenologic laboratory of the Saint-Antoine Hospital. In 1913 he published a valuable compendium on radiodiagnosis.

Industrial Diseases and the Workmen's Compensation Law

The senate has just passed a bill that had been previously approved by the chamber of deputies which provides that certain industrial diseases shall be brought within the scope of the workmen's compensation law. The law in the form approved by the senate recognizes only two diseases as having the character of industrial diseases, namely, lead and mercurial poisoning (saturnism and hydrargyrism). Provision is made, however, for the amplification of the law and the recognition of other diseases as industrial diseases. In

view of this ultimate extension of the law and also for the purpose of preventing industrial diseases, the law makes it compulsory for any physician who recognizes the existence of a disease presenting the characteristics of an industrial disease to report such to the minister of labor. For reporting such diseases, stub books are furnished physicians gratis, and reports are frankable.

The new law imposes a penalty of from 100 to 500 francs or imprisonment for from three days to six months on any one who by threats, gifts, promises of reward, or "ristourne" (underhanded rebates) on medical fees or pharmaceutical supplies made to injured workmen or to syndicates or associations, or to the heads of industrial enterprises, to insurance companies or to any other person, shall induce or attempt to induce the victims of industrial accidents or of industrial diseases to enter any clinic or any physician's office or any pharmaceutical laboratory and shall have thus attempted to deprive a workman of the liberty of choosing his physician or his pharmacist. This legislative action was taken on account of the shameful practices of a certain class of tricksters whose ranks have seemed to be growing the past few years.

A Medical Controversy

At the last general meeting of the Syndicat des médecins du département de la Seine, several members of this corporate body took the floor to attack the conduct, during the war, of certain men who are military surgeons by profession. Others went still further and preferred general charges against the army medical department, maintaining that during the war it had often shown itself inadequate to the task that rested on it. The president of the syndicat, Dr. Leredde, made the following suggestion: "The best thing to do will be to make an inquiry into the activities of the army medical department during the war, and for the Corps médical non militaire to consider the best way of reorganizing this service in agreement with the Union des syndicats médicaux." To this proposal the military surgeons by profession have replied, not without reason, that in that case the civilian physicians would be both plaintiff and judge.

The Milk Shortage in Paris and Vicinity

At no time since the beginning of the war have Paris and the department of the Seine been so inadequately supplied with milk as at present. Before the war (in 1913) 830,000 liters of milk were shipped in daily, and 115,000 liters were produced locally, which made the total daily consumption 945,000 liters. During the war and since, shipments from without, as well as local production, have continued to diminish, and, at the present time, Paris and its environs have become reduced to 473,000 liters, which is only 50 per cent. of the prewar supply. Besides, the population of Paris and its suburbs has increased considerably during the last few years, so that if the present supply of milk were divided equally among the inhabitants the per capita apportionment would be scarcely one-tenth liter.

M. Martel, chief of the veterinary and public health service of Paris and the department of the Seine, has recently called the attention of the Academy of Medicine to this state of affairs, pointing out at the same time the causes. This unfortunate situation is due, he states, to the systematic destruction of milch cows in the regions invaded by the enemy; to the misuse of milk in order to obtain certain derivative products by reason of the high prices secured for these (which explains why in the devastated regions of France milk is selling at 70 centimes [13 cents] per liter wholesale, while butter is sold for 18 francs per kilogram [$1.58 per pound]; to last summer's drouth, which caused an advance in the prices of various kinds of cow feed; to aphthous fever, which has been prevalent in numerous dairy sections of the country, and finally to the greed of certain producers who take advantage of the exigencies of the situation to boost the prices.

How is this milk shortage to be remedied? In the first place, as soon as spring opens, milch cows at reasonable prices should be placed at the disposal of the farmers of the devastated regions, while, at the same time, the carrying out of the provisions of the peace treaty with Germany should be hastened (especially as regards the surrender of the stipulated number of milch cows, is doubtless meant.—Ed.). Furthermore, the order prohibiting the use of fresh milk and cream in cafés, tea rooms, etc., as reported in a previous letter (The Journal, Nov. 15, 1919, p. 1539) should be strictly enforced. It would perhaps be advisable, in order to enforce the requirements of this order, to prohibit in such establishments the sale of milk in any form whatsoever. It would also be well to prohibit, or at least to control, the manufacture of cream cheeses, the extraordinarily high prices of which permit the manufactures operating in Normandy to offer to milk producers prices such as the milk companies supplying the cities cannot hope to secure. Likewise, it would seem in place to prohibit on the market the listing of the so-called "extra" grade of veal, the production of which requires an excessive consumption of milk. An appeal must also be made to the conscience of the heads of families in order that the use of preferential milk tickets may be confined to those for whom milk, by reason of age or sickness, is an actual necessity.

Professor Pinard, also, has protested against the custom that prevails in certain sections of feeding young calves large quantities of milk, giving a single animal as much milk as five or six patients or fifteen babies would require.

For the study of the milk question the Academy of Medicine has appointed a commission composed of Professors Pinard and Ribemont-Dessaignes, Dr. De Fleury and M. Martel. At the instance of this commission, the Academy of Medicine has passed a resolution embodying four lines of action which it recommends be taken to cope with the situation: 1. The sale at cattle markets, abattoirs or meat shops of milk-fatted calves, so-called "veau de lait," should be prohibited. 2. The manufacture and sale of cream cheeses should be suppressed. 3. The order of Oct. 10, 1919, with respect to the use of fresh cream and milk, should be strictly enforced. 4. The prefecture of the department of the Seine should be requested to study out a system by which patients could secure without fail fresh milk at any time, and more particularly the prefecture should be asked to consider the feasibility of fresh milk being kept on hand by pharmacists and sold to those who produce medical prescriptions for it.

A Maternity Hospital for Unmarried Mothers

M. Herriot, the mayor of Lyons, has induced the general council of the department of the Rhone to appropriate the sum of 200,000 francs for an exceedingly humane project, namely, the establishment of a secluded maternity hospital which will be open without distinction to all unmarried prospective mothers. Thus far it has been equipped with forty-five beds.

LONDON

Dec. 17, 1919.

A Higher Qualification in Ophthalmology

The Council of British Ophthalmologists has issued a report on examinations in ophthalmology. At present there are examinations of two classes: (1) that in which ophthalmology forms part of a higher examination in medicine and surgery, as for the M.D. or M.S. of the University of London, and (2) that in which qualified physicians are examined independently of any examination in general medicine and surgery, as, the diploma in ophthalmology of the University of Oxford. The first examination in ophthalmology as a special subject was established by the Royal College of Surgeons of Edinburgh in 1883. In the examination for the fellowship, ophthalmology is compulsory. At the University of London, ophthalmology has recently been recognized as a special branch of the M.S degree, the candidate having had to spend at least two years in the study and practice of ophthalmology at an approved school for one year at least subsequent to obtaining the M.B., B.S., and to hold during this time for at least six months an appointment in the ophthalmic department of a recognized general or ophthalmic hospital. A circular letter was sent to the principal hospitals of the United Kingdom asking what professional qualificaitons were required for candidates for the post of ophthalmic surgeon. Most of them required higher qualifications in surgery, but these often did not imply a special knowledge of ophthalmology. Only five required this. In the present higher examinations there is seldom any adequate test of a candidate's knowledge of ophthalmology. The report concludes with the recommendation that the universities and colleges should provide a special examination in ophthalmology for those who propose to devote themselves to it. Ophthalmology should be one of the optional subjects which a candidate can elect to be examined in for the degree of Master of Surgery of a university or for the fellowship of a college of surgeons. Before presenting himself, the candidate should have studied ophthalmology for at least two years and held recognized ophthalmic appointments for one of these years. The special examination in ophthalmology should be written, oral and practical, and should comprise

anatomy, pathology, optics, systematic and clinical ophthalmology, and operative surgery.

Graduate Medical Teaching in London

The problem of graduate medical teaching in London continues to exercise the leaders of the profession. In a joint letter to the *Times*, Adami, Clifford Allbutt, Dawson, Arbuthnot Lane, Makins, Osler, and Rolleston point out that America and England are the only countries mutually interested in each other's history—so interested that the students of each are likely to seek graduate instruction in the other country—whereas every civilized country is interested in the science of health and is anxious to gain fresh knowledge wherever it can be found. Before the war, Germany and Austria, by their skilled and subtle propaganda, developed by enlightened government subsidy, had hypnotized the world into believing that medical graduates could complete their knowledge only in those countries. Americans, Frenchmen and even our own ambitious physicians took it as a matter of course that they must "finish" by sitting at the feet of the Teuton, who fed them with a *réchauffé* of what he had gleaned from England, France and America; for with few and rare exceptions no striking advance in medicine and surgery can be claimed by Teutonic workers. The war closed the German schools to the Allies, and very quickly it was discovered that we had better material at home if it could only be made available. Of this there has been convincing evidence in the year now ending. Soon after the armistice, the Fellowship of Medicine was founded to promote friendly relations between the members of the profession in the allied nations, and a graduate medical course was arranged in London to meet the wishes of a large number of medical officers of the dominions and the United States. The course was so successful that it is still maintained. But something more permanent is needed. The Post-Graduate Medical Association has been amalgamated with the Fellowship of Medicine. The immediate duty of the teaching hospitals is to teach undergraduates. Any satisfactory scheme for advanced training for graduates must provide not only for visitors from abroad but also for the home graduates who wish to extend their knowledge or to undertake research. It will therefore be necessary to have in London one or more graduate teaching hospitals, including laboratories. It is hoped that this proposal will receive the support of the board of education and the University Grants Committee. The object of the writers is to inform the public of what is needed and to enlist its sympathy. The project is of imperial significance, but cannot be accomplished by the medical profession and the staffs of the teaching schools without substantial help. Time will not permit of the building and equipment of a new hospital for the purpose. Before it could be finished, the students to be provided for would have wandered elsewhere in search of what they need. Before we could be ready, thousands would have found their way to Teutonic centers, which will make frantic efforts to regain what they have lost. In a single year American students alone spent more than $200,000 in Vienna. The writers therefore urge that the government should enable one or two large general hospitals in London to equip themselves exclusively for graduate work and that these should by cooperation with other medical schools provide themselves with such a staff as to be second to none, if not indeed superior to any in the world.

Insurance Scheme for Panel Physicians

The medical committees under the national health insurance act are devising an insurance scheme for providing physicians with certain benefits. It is urgently needed, as cases of distress are often reported. If a reservation of 12 cents per insured person were made, this would give, on an insured population of 14 millions, an annual income of $1,750,000. It is proposed to form a society and to ask the government to pay into it a certain sum, either 12 or 24 cents a year, in respect to each insured person. It would be managed by a committee of physicians and actuaries. The benefits proposed are: (1) $500 to cover funeral and similar expenses; (2) a sum of money to be paid when a member reaches the age of, say, 65, or previously if death occurs; (3) a pension payable from a fixed age for the remainder of life; (4) sums to meet the education of children, temporary financial difficulties, the purchase of a practice, a house, etc.; (5) money to be paid to a member on leaving the organization through ceasing to be a panel physician before reaching the fixed age; (6) a lump sum or a pension payable to a member compelled to retire owing to ill health before he becomes entitled to the ordinary scale of pension.

MEXICO CITY

Dec. 21, 1919.

The Academy of Medicine

At the meeting held on the third instant by the Academy of Medicine, the guest of honor was Dr. Theodore C. Lyster, colonel (retired) of the Medical Corps of the United States Army and a member of the yellow fever commission of the Rockefeller Foundation. At the same meeting there was exhibited one of the preparations of *Leptospira icteroides*, and Dr. Cervera described in detail Noguchi's scientific work, discussing especially that part relating to the etiology of yellow fever. In his opinion this question has been solved, as the only thing remaining to be done is to have other workers confirm Noguchi's statements which comply fully with Koch's postulates relative to the discovery of pathogenic organisms, and in addition other requirements have been fulfilled which were unknown in Koch's epoch. After other persons discussed the work done in Mexico to eradicate yellow fever, Dr. Lyster spoke in Spanish to describe the work he has performed in different places in Central and South America and the results obtained in his campaign against this disease. In concluding he expressed his thanks to the Academy for the many attentions he had received, which showed that among the scientists of this country there is no ill feeling towards the United States. In the meeting of the 17th, on motion by Dr. Monjarás, Dr. Hideyo Noguchi was elected unanimously, honorary member of the Academy in recognition of the meritorious services rendered by him to science and humanity.

Yellow Fever

This disease is still present in the state of Yucatan and it seems even to be spreading as the board of public health has reported one case in the port of Campeche and placed that city in quarantine. On the other hand, it has been confirmed that the cases that occurred in the southern part of the state of Sonora were of malaria and not yellow fever.

Noguchi in Mexico

Dr. Noguchi has just landed at the port of Progreso from which he will proceed to Merida in order to carry on confirmatory studies of his discovery of *L. icteroides* and to try on a larger scale the curative properties of the specific serum prepared by him. It is expected that his efforts may contribute to eradicate yellow fever from Yucatan and amplify our bacteriologic and therapeutic knowledge of this disease.

Personal

On December 11 Dr. Gregorio Mendizábal celebrated the fiftieth anniversary of his entering the practice of medicine, receiving on this occasion many tributes. The Association "Escobedo" held a meeting in his honor and finally the physicians of the city of Orizaba, where he was born, have invited him to spend a few days there as their guest.——Dr. A. Lozano Garza, lieutenant-colonel of the medical corps, has been designated by the government to proceed to the United States to study with other persons the operation of the institutes devoted to the training of abnormal children.

Marriages

LEWIS WELLS JOHNSON, Asst. Surg., Lieut. (j. g.), U. S. Navy, Chelsea, Mass., to Miss Mildred E. Stevens, at Manchester, N. H., December 22.

BELLENDEN SEYMOUR HUTCHESON, V. C., Capt., C. A. M. C., Cairo, Ill, to Miss Frances Young of Kentville, Nova Scotia, December 1.

JOSEPH CLARK STEPHENSON, Norman, Okla., to Miss Alice Marie Gerlach of Woodward, Okla., December 27.

WILLIAM EDWARD MORGAN, Longmont, Colo., to Miss Venice Zajicek of West Point, Neb., November 6.

DAVID RALPH BOWEN, Philadelphia, to Miss Edith Mary Warrington of Georgetown, Del., December 29.

THURMAN ROSS BEAVER, Akron, Ohio, to Miss Lillian Catherine Arnold of Rockford, Ill., December 8.

WILLIAM EUGENE KENDALL, Oak Park, Ill., to Miss Jessie May Thorpe of El Paso, Ill., December 26.

ANDREW JACKSON CLAY, Hoxie, Ark., to Miss Enid Laveta of Hugo, Okla., December 25.

HOWARD KAYLOR, Bluffton, Ind., to Miss Ella Cary of Pennville, Ind., November 11.

Deaths

Horatio C. Wood, Philadelphia; University of Pennsylvania, Philadelphia, 1862; aged 78; successively professor of botany, therapeutics, clinical professor of diseases of the nervous system, and emeritus professor of therapeutics in his alma mater; editor of *New Remedies* from 1870 to 1873; of the *Philadelphia Medical Times*, from 1873 to 1880; of the *Therapeutic Gazette*, from 1884 to 1890; and of the *United States Dispensatory* from 1893 to 1907; president of the Pharmacopoeial Convention of the United States from 1890 to 1910; and of the College of Physicians of Philadelphia, in 1902-1903; author of standard works on materia medica and therapeutics, and nervous diseases and their diagnosis; who was given the honorary degree of LL.D. by Lafayette College in 1883, by Yale University in 1889 and by the University of Pennsylvania in 1904; died, January 3.

Mitchell Otis De Vaney ⊕ Indianapolis; Medical College of Indiana, Indianapolis, 1901; aged 40; lieutenant, M. C., U. S. Army, with services on the Mexican boarder and at Camp Taylor, Louisville, Ky., and honorably discharged, Jan. 9, 1919; associate medical director of the Indianapolis Life Insurance Company; formerly secretary of the Marion County health board; was drowned, December 30, when the automobile which he was driving ran over a 30-foot embankment, near Fall Creek, pinning Dr. De Vaney underneath the machine.

Thomas Jefferson B. Rhoads, Boyertown, Pa.; Jefferson Medical College, 1861; aged 82; a member of the Medical Society of the State of Pennsylvania; assistant surgeon of the 169th Pennsylvania Volunteer Infantry during the Civil War; president of the National Bank of Boyertown, and later of the Farmer's National Bank of Boyertown; president of the Boyertown Mutual Fire Insurance Company; died December 24, from heart disease.

Dwight Seymour Spellman, New York City; College of Physicians and Surgeons, Baltimore, 1889; aged 53; a member of the American Medico-Psychological Association; assistant senior physician and since 1889 a member of the staff of the Manhattan State Hospital, Wards Island; while skating at Tom's River, N. J., December 18, broke through the ice, and before assistance arrived, died from shock.

Jesse Fonda Millspaugh, Los Angeles; University of Pennsylvania, Philadelphia, 1883; aged 64; president of the Minnesota State Normal School, Winona, from 1899 to 1904, and of the California State Normal School, Los Angeles from 1904 to 1913, and president emeritus since that time; a member of the California State Board of Education from 1904 to 1912; died December 13, from pneumonia.

George Elliot Chamberlain, South Newbury, Vt.; Dartmouth Medical School, Hanover, N. H., 1896; aged 50; acting assistant surgeon, United States Army, from September, 1898, to December, 1902, with service in Cuba and the Philippine Islands during and after the war with Spain; captain M. R. C., U. S. Army, and discharged, March 27, 1918; died in a hospital in Cambridge, Mass., December 14.

Frank W. Wyman, Stroud, Okla.; College of Physicians and Surgeons, Keokuk, Iowa, 1877; aged 71; a member of the Oklahoma State Medical Association; a surgeon in the United States Indian Service for many years, and government physician at the Sac and Fox Agency for more than twenty years; died at the home of his daughter in Detroit, December 19.

Robert Mason Fuller, Schenectady, N. Y.; Albany (N. Y.) Medical College, 1865; aged 75; a member of the Medical Society of the State of New York; said to have been the originator of the idea of administering medicine in tablet form; surgeon of U. S. Volunteers during the Civil War; died December 28.

Warren Cushman Hewitt, Xenia, Ohio; Homeopathic Hospital College, Cleveland, 1888; aged 54; a member of the Ohio State Medical Association; for sixteen years resident physician to the Ohio Soldiers' and Sailors' Home, Xenia; died December 18, from heart disease.

George A. B. Hays ⊕ Happy Jack, La.; Tulane University, New Orleans, 1874; aged 72; for many years superintendent and chief physician of the East Louisiana Hospital for the Insane, Jackson, and the Louisiana Hospital for the Insane, Pineville; died December 20.

⊕ Indicates "Fellow" of the American Medical Association.

John Houstoun M. Clinch ⊕ Danville, Ill.; University of Oregon, Portland, 1896; aged 56; a member of the medical staff of St. Elizabeth's Hospital; while driving in his automobile over a grade crossing in Danville, December 24, was struck by a train and instantly killed.

Daniel Murray Cheston, West River, Md.; University of Pennsylvania, Philadelphia, 1864; aged 76; who fractured both arms and his nose, from a fall, while visiting in Chestnut Hill, Philadelphia; died from his injuries in the Chestnut Hill Hospital, December 22.

Edwin Augustus Down, Hartford, Conn.; College of Physicians and Surgeons in the City of New York, 1887; aged 64; a member of the Connecticut State Medical Society; for ten years president of the state board of charities; died December 22, from heart disease.

Charles Albert Folsom, Epping, N. H.; Dartmouth Medical College, Hanover, N. H., 1902; aged 45; a member of the New Hampshire Medical Society and New Hampshire Surgical Club; until a year ago a practitioner of Manchester, N. H.; died December 16.

Robert Dodds ⊕ Escondido, Calif.; formerly of Chicago; Northwestern University Medical School, Chicago, 1890; aged 63; a specialist in gynecology; died in the Sanitarium Escondido, December 18, from sclerosis of the cortex with spastic paralysis.

Joseph Alexander Doyle ⊕ Greenville, Pa.; Western Reserve University, Cleveland, 1893; aged 57; lieutenant, U. S. N. R. F., and relieved from active duty, July 11, 1919; died September 5, from valvular heart disease.

Joseph Johnston Fleming, Wickenburg, Ariz.; Cleveland College of Physicians and Surgeons, 1898; aged 47; chief surgeon of the Rio Grande Mines Company; died at Pierce, Ariz., October 22, from myocarditis.

Frank Atwater Stove ⊕ Bowling Green, Ohio; Ohio Medical University, Columbus, 1904; aged 46; lieutenant, M. R. C., U. S. Army, and honorably discharged, Oct. 25, 1919; died December 18, from carcinoma.

Charles R. Rosendale, Bowling Green, Ohio; Eclectic Medical Institute, Cincinnati, Ohio, 1856; aged 87; died at the home of his daughter in Bowling Green, December 15, from senile debility.

William B. Van Note ⊕ Lima, Ohio; Medical College of Ohio, Cincinnati, 1895; aged 52; a specialist on diseases of the eye; died at Miami, Fla., December 20, from pneumonia.

William B. Ellis, Concord, Mo.; Homeopathic Medical School of Missouri, St. Louis, 1888; aged 73; a Confederate veteran; also a dentist; died December 20, from heart disease.

William Edward Hodges, Bynum, Texas (registration, Texas Fifth Judicial Board of Medical Examiners, 1901); aged 59; died December 10, while making a professional call.

Thomas A. Crawford, Rock Hill, S. C.; Hospital College of Medicine, Louisville, Ky., 1877; aged 66; a member of the South Carolina Medical Association; died November 11.

Herbert Orray Benner ⊕ Framingham, Mass.; Dartmouth Medical School, Hanover, N. H., 1896; aged 55; died in the New England Baptist Hospital, Boston, recently.

Frederick Halves, Brooklyn; Bellevue Hospital Medical College, 1870; aged 79; died at the home of his daughter in Brooklyn, December 21, from heart disease.

O. M. Norman, Roseville, Ohio; Cincinnati College of Medicine and Surgery, 1873; aged 88; a member of the Ohio State Medical Association; died December 18.

Norman L. Lee, Junction City, Ore.; Willamette University, Salem, Ore., 1871; aged 82; a veteran of the Civil War; died October 24.

Wilhelmina F. O'Connor, Denver; Denver College of Physicians and Surgeons, 1898; aged 71; died December 8, from heart disease.

Josiah W. P. Jarvis ⊕ Fairview, W. Va.; Baltimore University School of Medicine, 1895; aged 66; died December 12.

Dumont Durant Howell, Stillwater, Okla.; University of Nashville, Tenn., 1903; aged 45; also a banker; died December 6.

Carl Henry Golbeck, Chicago; University of Illinois, Chicago, 1913; aged 29; died December 21, from acute endocarditis.

Robert Suttenfield Lipes, Hudson, N. Y.; Albany, N. Y., Medical College, 1907; aged 39; died December 9, from myocarditis.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

MORE MISBRANDING

King's Kidney Remedy.—George L. King, Kingfisher, Okla., shipped in December, 1916, a quantity of nostrum called "King's Kidney Remedy." The Bureau of Chemistry analyzed this preparation and reported finding uva-ursi, sarsaparilla, cascara, gentian, senna, poke root, buchu, wild cherry bark, dandelion, yellow poplar, stillingia, hydrangea, and possibly, in addition prickly ash, black cohosh, golden seal and coriander. The stuff was sold under the false and fraudulent claim that it was an effective remedy for lumbago, rheumatism, sciatica, neuralgia, diabetes, dropsy and any irregularity of stomach, liver, kidneys or urinary organs, "when in truth and in fact it was not." In September, 1918, the defendant pleaded guilty and was fined $25 and costs.—[*Notice of Judgment No. 6516; issued Dec. 29, 1919.*]

Miscellaneous Tablets.—In September and November, 1917, the United States Drug Manufacturing Co., Philadelphia, shipped a number of different tablets which the federal authorities declared were adulterated and misbranded. Acetphenetidin and Salol Tablets, when analyzed, were found to have an average shortage of acetphenetidin of over 20 per cent. and an average shortage of salol of over 18 per cent. Tablets containing Acetylsalicylic acid, Acetanilid and Caffein Citrate were found to have an average shortage of acetylsalicylic acid of 9 per cent., an average shortage of acetanilid of 9.5 per cent. and an average excess of caffein citrate of over 40 per cent. Tablets of Morphin Sulphate were found to have an average shortage of the amount claimed of over 62 per cent. Tablets of Acetanilid and Salol were found to have an average shortage of the former drug of about 11 per cent. and of the latter of over 21 per cent. In November, 1918, the United States Drug Manufacturing Co. entered a plea of guilty and was fined $25.—[*Notice of Judgment No. 6548; issued Dec. 29, 1919.*]

Casey's Rheumatic Cure.—In October, 1917, the John H. Casey Medicine Co. of Hillyard, Wash., shipped a quantity of "Casey's Rheumatic Cure—The Great Montana Remedy" which was misbranded. The Bureau of Chemistry analyzed this preparation and found it to consist essentially of a water-alcohol solution of potassium iodid, sugar and drug extractives carrying saponin (sarsaparilla indicated), emodin, volatile oil and resins. It was falsely and fraudulently represented as a cure for rheumatism, diseases of the blood and kidneys, Bright's disease and a remedy for stomach trouble, heart trouble, and impure blood. In addition to these fraudulent claims the amount of alcohol present was falsely given and it was falsely declared to be a "Purely Vegetable Compound, Contains No Mineral," when as a matter of fact it contained potassium iodid. In February, 1919, the John H. Casey Medicine Company pleaded guilty and was fined $25.—[*Notice of Judgment No. 6549; issued Dec. 29, 1919.*]

Miscellaneous Capsules.—In February, May and June, 1917, Joseph McManus, who did business under the name of Philadelphia Capsule Co., Philadelphia, shipped a number of articles which were declared to be adulterated or misbranded or both. Some capsules labeled "Grip Pans" were declared by the company to contain "acetanilid derivative 125 grs. to the ounce . . . phenysal 1½ grs., salipyrine, 1 gr." The federal chemists found that these capsules contained no acetanilid derivative, phenysal or salipyrine. They did contain acetanilid (28.15 per cent.) and the label failed to bear a statement of the quantity or proportion of this drug as the law requires; they also contained ammonium salicylate, 37.38 per cent. and sodium bicarbonate, 25.52 per cent. Capsules labeled "Aspirin 5 grains," contained only 3.585 grains each, or a shortage of 28 per cent. "Mixed Treatment Capsules" declared to contain 5 minims of syrup ferrous iodid and 2 minims of solution arsenous and mercuric iodids, actually contained not more than 3.72 minims syrup ferrous iodid and 0.52 minim solution arsenous and mercuric iodids. "Sedative Capsules," according to the label, each contained ammonium bromid, 2½ grains, sodium bromid, 2½ grains and potassium bromid 2½ grains; actually the capsules contained less of each of the bromids than the label declared; also the boxes of capsules instead of containing 200 as labeled, contained only 172. "Codeiphen Capsules" according to the label, contained 3 grains of acetphenetidin each, when, as a matter of fact, they contained no acetphenetidin. The capsules did, on the other hand, contain codein, the quantities or proportions of which were not declared as the law requires. Capsules known as "Migraine, Pref. No. 2," were misbranded in that the bottle declared the presence of 200 capsules when only 186 were found and for the further reason that the capsules contained acetanilid but the label failed to give the quantity or proportion of this drug. Capsules labeled "Salol and Acetphenetidin" were misbranded in that the quantity or proportion of acetphenetidin was not declared as required. In December, 1918, Joseph McManus entered a plea of *nolo contendere* and was fined $150.—[*Notice of Judgment No. 6550; issued Dec. 29, 1919.*]

Correspondence

"CREDULITY AND CURES"

To the Editor:—The admirable article of Dr. Frederick Peterson (THE JOURNAL, Dec. 6, 1919, p. 1737) is so clearly and entertainingly written and, on the whole, so sane and strong, that a certain error in it might, if not corrected, tend to do much harm by misleading practicing physicians. I refer to the implied condemnation of the prescription of glasses for the remedy of certain reflex nervous disturbances by the relief of eye strain. In his reasoning, the gifted author strangely seems to have fallen into the fallacy termed by logicians "non sequitur."

One might, for example, argue in this fashion:

Freudian psychanalysis is ill founded and repulsive.
Freudian psychanalysis is advocated by certain neurologists.
Ergo, all neurologists are untrustworthy.

But it is quite evident that the conclusion does not follow from the premises. The correct conclusion is: Those neurologists who advocate freudian psychanalysis are mistaken, and not to be followed in that respect.

Concerning eye strain and its relief, Dr. Peterson's syllogism is practically as follows:

Certain ophthalmologists formerly practiced a wrong method (operation) for the relief of muscular imbalance of the eyes.
Another ophthalmologist pointed out a different and correct method (prism exercises) of remedying muscular imbalance, and also called attention to the importance of correct refraction in the relief of reflex disorders provoked by eye strain, and especially of disorder dependent on small degrees of astigmatism.
Ergo, the second ophthalmologist was wrong.

The reality of eye strain as a provocative condition, in certain persons, of many sorts of reflex disturbances, surely cannot be doubted at this period of medical observation. We have all seen migraine, various forms of tic, persistent headache, recurrent vertigo, and gastro-enteric, cardiovascular and nervous disturbances of many kinds relieved for long periods, and sometimes permanently, by the use of lenses prescribed after careful measurement and adjustment to the needs of the particular case. This is an everyday commonplace of medical experience, and needs no elaboration. Neurasthenia—the "fatigue neurosis" of Dercum—is a reality; but many cases are miscalled neurasthenia and the patient vainly submitted to rest cures, in which, later, a

correct diagnosis of eyestrain is followed by relief through correctly measured and properly adjusted lenses. Does this prove that there is no such thing as neurasthenia or no value in rest cures? Not at all. But it does indicate that neither the ophthalmologist nor the neurologist who makes a correct diagnosis can be blamed for his confrères who do not make correct diagnoses.

The same thing may be said concerning hysteria, with this addition: that in certain persons predisposed to hysterical manifestations, unsuspected and uncorrected visual error—commonly hyperopic astigmatism, but not confined to that—will provoke such disturbances; while its relief will tend toward quieting them.

When the history of American medicine comes to be written by an impartial and broad-minded observer, I am quite sure that the names of Weir Mitchell, William Thomson and George M. Gould will be jointly honored for their contributions to this field of diagnosis and therapeutics—Mitchell and Thomson for the discovery and demonstration of the possibilities of eye strain as a provocative of various forms of reflex disorder, and Gould for his enlargement of the field and for the courage with which, in the face of difficulties and discouragements innumerable, he has persisted in preaching the truth. That he has used violent language in his preachments may be admitted and regretted; but I am tempted in this connection to quote the comment of Henry Adams on Lowell's criticism of John Bright:

> As the party rose from the table and passed into the drawing room, Adams said to Lowell that Bright was very fine. "Yes!" replied Lowell, "but too violent!"
>
> Precisely this was the point that Adams doubted. Bright knew his Englishmen better than Lowell did—better than England did. He knew what amount of violence in language was necessary to drive an idea into a Lancashire or Yorkshire head. He knew that no violence was enough to affect a Somersetshire or Wiltshire peasant. Bright kept his own head clear and cool. He was not excited; he never betrayed excitement.

Perhaps the future historian may conclude that Gould knew better than the rest of us "just what amount of violence in language was necessary to drive an idea into the [*medical*] head."

S. Solis Cohen, M.D., Philadelphia.

MEDICAL VETERANS OF THE WORLD WAR

To the Editor:—The beginning of this war found the medical profession of the country wholly unprepared for the tremendous military responsibilities which were to be thrown on it. No organization had been perfected by which the profession could be called into service, and no instructions had been given to the profession to acquaint them with the duties of a medical officer in the field with troops.

The Medical Department of the Army had been accumulating for many years field medical supplies, and through the great foresight of Col. Jefferson R. Kean, Medical Corps, the American Red Cross, with which he was serving, had organized a large number of base hospital units from among the staffs of our large and important civil hospitals.

The Medical Reserve Corps had not been developed, and the officers who were in this corps and who were fit for military service had not been instructed in their duties as medical officers. This laid a tremendous task on the Medical Department to meet the emergency when war was declared in April, 1917.

The response the profession made to the emergency was superb. We are all proud of the manner in which the country as a whole met its obligations. And we are all proud of the manner in which special organizations met their obligations. But I am sure it is a fair statement that no part of our country met its call in the superlative manner the medical profession met theirs.

At the beginning of the war there were about 450 officers of the Medical Corps and something like 2,000 officers of the Reserve Corps. Many of the latter were not physically fit for military service, and some were essential to the welfare of their communities. But through the tremendous efforts of all concerned, medical officers were obtained in sufficient numbers to meet the demands as they arose.

The medical men who came into the corps brought with them the finest spirit that ever existed in any organization. It was the spirit of service, which enabled them to meet their new duties in a most admirable way. When the armistice was signed, there were more than 30,000 physicians in active service. This does not include the hundreds of physicians who were assisting the Provost Marshal in executing the draft and in doing other essential work necessary to carry on the great war. These officers have been demobilized just as rapidly as the interests of the service would permit, so that today there are only 1,200 temporary officers remaining.

Americans, as a people, have the very highest ideals regarding the quality of medical and surgical treatment that is due our soldiers, and it is only fair to state that the greatly enlarged Medical Corps was able to meet their ideals in every respect. There were some complaints at the beginning when troops were rushed into camp before adequate provisions could be made to care for the sick; but careful investigations, which were made, revealed the fact that the medical man had met his emergency as well as it was humanly possible to do with the facilities at hand. In France the American soldier was cared for as no other soldier was ever cared for. I think this can be said with perfect fairness, but with the understanding that we started with the advantage of the information our allies had accumulated during their three years of war. The wounded man was treated by the most expert surgeons of this country, and the man who fell ill from disease was cared for by the best internists of the land. The sick and wounded who were brought back to the United States have been treated in the best equipped hospitals this country has ever seen. The number now remaining under treatment in our hospitals is so small that it is almost a negligible quantity.

The effort this country made in meeting the responsibilities of war was the greatest thing that has occurred in our history, and the part the medical profession played has only added another bright page to the traditions of which we are so proud. I am sure every medical officer should be proud of having had an opportunity to play even a very small part in the tremendous effort which has been carried on since April, 1917.

And now that the profession has returned to its duties in civil life, I think it would be a tremendous mistake if we should not band ourselves together in some organization which would perpetuate the traditions of this great war, which would keep us in closer touch in the future, and which would keep alive an organization which would meet any obligations which the profession might be called on in the future to discharge to our government. I know of no better way of carrying on these principles than for all of us to become active members of the Medical Veterans of the World War, an organization composed exclusively of those who served in the Medical Department of the federal government.

M. W. Ireland, M.D., Washington, D. C.
Surgeon-General, U. S. Army.

Ocular Complications of Vaccination Against Typhoid.—A case of febrile herpes of the cornea developing a few hours after antityphoid vaccination is reported by Dr. F. M. Fernández in his *Revista cubana de oftalmologia*, page 592. The issue of the *Revista* containing it is the fourth number of this new quarterly, and has 229 pages and twenty-eight original articles. Dr. R. Pacheco Luna of Guatemala also reports, page 600, a somewhat similar case in which a man of 52 had a relapse of herpes of the cornea after vaccination against typhoid. The first attack had been three years before. Pacheco Luna reviews the literature on the subject, and states that his case proves that herpes of the cornea is not due directly to the typhoid vaccine: in some of the cases on record it was evidently merely a coincidence. He adds that it is better to refrain from the vaccination when there is a history of preceding disease of the uveal tract, especially in the syphilitic, tuberculous, rheumatic, etc. There does not seem to be any ocular lesion which depends solely and exclusively on the typhoid vaccine.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

THE METRIC SYSTEM

To the Editor:—1. What action has the American Medical Association taken regarding the adoption of the metric system both in this country and as a world wide standard of weights and measures? If possible, give me date and place of action taken.

2. What is the procedure for bringing this important subject before our association?

WILLIAM H. QUAY, M.D., Townsville, Pa.

ANSWER.—1. THE JOURNAL, May 18, 1895, p. 766, in the official reports of the proceedings of the forty-sixth annual session, held in Baltimore in 1895, reports:

The General Business Committee endorses the following recommendations from the Section on Materia Medica and Pharmacy:

Resolved, That in view of the adoption of the Metric System in the U. S. Pharmacopeia, this section recommends the more thorough instruction of the students at the medical schools in the use of metric weights and measures, and further recommends that physicians, when writing metric prescriptions, always make use of the signs Grm. and Cc. to distinguish between quantities by weight and volume.

2. New business may be presented in the House of Delegates by any delegate in attendance at a meeting. The ideal procedure for submitting a proposition is to present it first to a component county society that a memorial on the question may be addressed to the constituent state or territorial association. Then, if approved, its delegation will submit the subject to the House of Delegates of the American Medical Association.

BRAZILIAN WORK ON SNAKE VENOMS

To the Editor:—In THE JOURNAL, Aug. 23, 1919, p. 629, in the answer to a query from W. T. P., an injustice is done to Brazilian scientists. The question referred to snake venoms, and the inquirer requested bibliographic information on this subject. The answer mentioned twelve authors, and no mention is made of Brazilian works on this subject. I wish to state that the "ophidism" (as we call it here) is a matter absolutely solved by Brazilian scientists, among whom stands out the name of Dr. Vital Brazil Mineiro da Campanha, the discoverer of the antivenom serums. At present in Brazil, the only ones who die from snake bites are those who wish to do so.

D. DE MORAES LIMA, M.D., Ribeirao Preto, Brazil.

COMMENT.—Our list was a suggestive one and by no means complete. Among South American references might have been included the following from Brazil:

Brazil, Vital: Sobre un novo tratamento organotherapico do ophidismo do Dr. Ernst von Bassewitz, *Rev. med. de S. Paulo* **7**: 25, 1904; Ophidismo no Brazil, *Brazil-med.* **20**: 7, 1906; Serum anti-ophidico, ibid. **17**: 384, 1903; Da serumtherapia no envenamento ophidico, ibid. **18**: 21, 31, 1904.

Barroso, S.: Mordeduras de cobra e seu tratamento, Rio de Janeiro, 1889.

Villela, E.: Antiscorpion serotherapy, *Brazil-med.*, May 25, 1918.

Pinto: Campaign Against Snake Poisoning in Brazil, *Brazil-med.*, July 8, 1916.

Effective Treatment of Tuberculosis.—The physician is a life saver who promptly prescribes what may be required to prevent the incipient case of tuberculosis from becoming a plain case.—*Bull. Maine State Dept. of Health,* October, 1919.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

CALIFORNIA: Los Angeles, Feb. 16-19. Sec., Dr. Chas. B. Pinkham, 906 Forum Bldg., Sacramento.

INDIANA: Indianapolis, Feb. 10-13. Sec., Dr. W. I. Gott, 84 State House, Indianapolis.

KANSAS: Topeka, Feb. 10. Sec., Dr. H. A. Dykes, Lebanon.

NATIONAL BOARD OF MEDICAL EXAMINERS: St. Louis and Chicago, Feb. 18-25 Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia, Pa.

NEW YORK: New York City, Albany, Buffalo, Syracuse, Jan. 27-31. Asst. Professional Examinations, Mr. H. J. Hamilton, Albany.

VERMONT: Burlington, Feb. 10-12. Sec., Dr. W. Scott Nay, Underhill.

EFFICIENT HOSPITALS

ASA S. BACON
Superintendent, Presbyterian Hospital
CHICAGO

Hospitals are often compared to hotels; but while they are, in a sense, hotels for the sick, there is a distinct difference between the two from the patient's standpoint. A man goes to a hotel prepared to pay for his accommodation: he is usually on a business or vacation trip. Sickness comes to a man unexpectedly and catches him unprepared: he is sent to a hospital unprepared: he is not on a business or vacation trip. His salary is often discontinued. If a well man does not like his hotel accommodations, he can go elsewhere; but a sick man entering a hospital has to take what he can get. The man in moderate circumstances, unable to pay for an expensive room, must take a ward bed, which his sensitive condition causes him to rebel against, and the physician wastes a great deal of valuable time in getting his patient properly located. A patient came to my office the other day to say good-by. He told me about the kind attention he had received from physicians and nurses, but he added, "When I return, put me in a closet rather than in the ward."

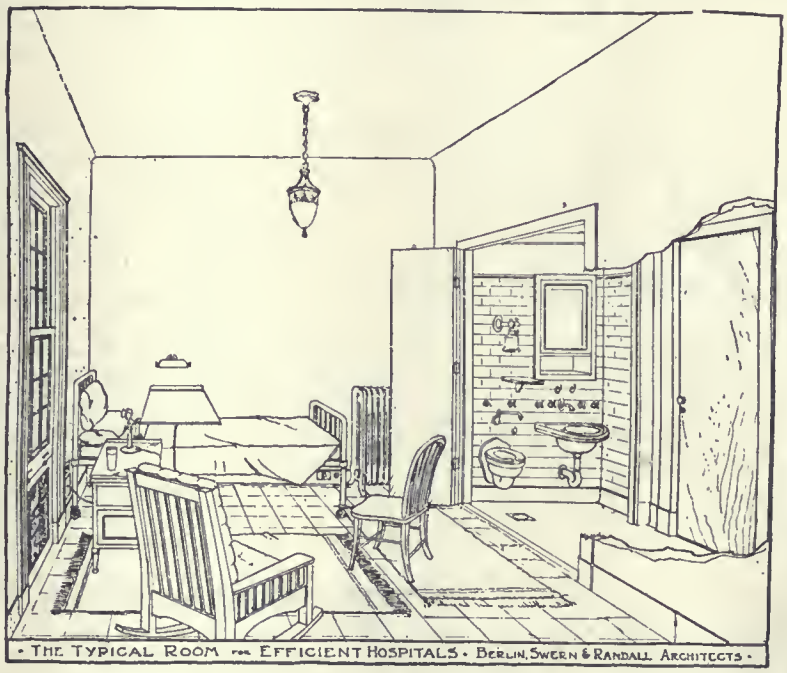


Fig. 1.—Typical room in perspective.

Wards are intended for the poor people, for charity patients or for those who can pay but a small amount. Labor conditions have so changed that the average working man does not want charity. The labor leaders frown on it and ask for a sufficient wage to enable the laborer to pay for his care, and they are going to get it. It is now evident that national prohibition is also going to be an important factor in reducing charity work.

When a man is sick, his earning capacity is cut off. He is a nonproducer. It is the duty of the hospital to get him well in the quickest time possible, so that he can get back to work and begin producing.

To provide efficient hospitals to serve the people in moderate circumstances, at charges within their means, giving

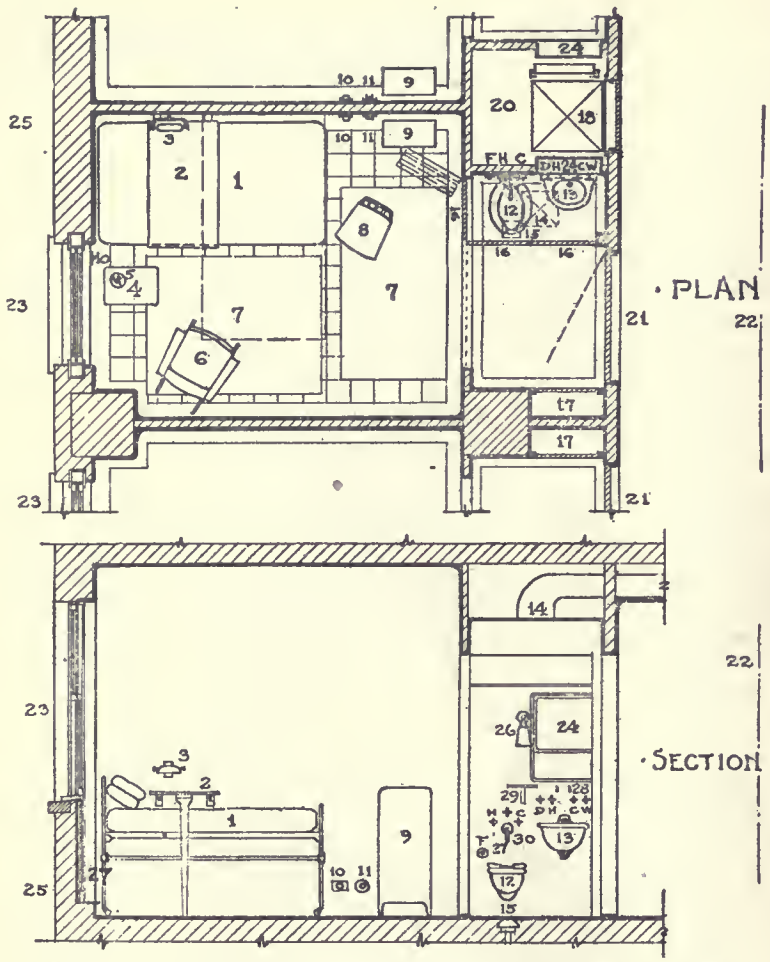


Fig. 2.—Plan and section of typical room: 1, standard bed and back rest; 2, adjustable table (removable); 3, reading lamp (removable); 4, nursing table; 5, telephone; 6, rocking chair; 7, small rugs; 8, straight-back chair; 9, radiator; 10, base plugs; 11, vacuum outlets; 12, water closet; 13, lavatory; 14, exhaust vent register; 15, floor drain; 16, three-leaf door; 17, lockers; 18, dumbwaiters; 19, door to dumbwaiter; 20, pipe space; 21, entrance to rooms; 22, center line of corridor; 23, windows; 24, steel cabinet for equipment; 25, exterior wall; 26, electric light and attachment; 27, sliding screen; 28, stupe ringer books; 29, shelf for equipment work; 30, swivel spout for bedpan and washing and shower attachment; *B*, hot water; *C*, cold water; *D*, drinking water; *W*, waste; *F*, flushing valve. These and the accompanying plans were made by Berlin, Swern and Randall, architects and engineers, 19 South La Salle Street, Chicago.

them all the conveniences of the most exclusive institutions, and rendering the much needed educational work to the community, is the ideal to be attained; but to accomplish this ideal requires new methods and much thought.

Present hospitals are rated at a certain bed capacity, but it seldom happens that the maximum capacity is reached when there are wards. This is due to the constant variation in the percentages of the various cases handled, namely, the proportion of calls for men's or women's beds does not remain the same, and certain diseases seem to come in epidemics. This makes imperative some scheme for flexibility in the use of beds. The private room for each patient, with its complete utility equipment, not only provides comfort, but absolutely solves this problem. The question of contagion is eliminated, each room is complete in itself, needing no service which is common to any other; nor does a patient, developing some contagious disease at a late date, have to be moved at possibly the most critical period of his illness because of danger to others. Again, the room temperature can be kept at the degree best suited to each patient, or the room can be turned into a solarium if desired. Better examinations can be made and better histories taken than in a ward. They may be made at odd hours, which if done in a ward might disturb others. Hospital visiting rules can also be regulated to fit the individual patient and need not be allowed to fret the patient for the sake of observing a rule. It also allows the occupancy of *all the beds all of the time.*

In working out this plan, certain fundamental principles of construction and organization have been found to be imperative. These are the abandonment of wards and the substitution of small private rooms; the elimination of special duty rooms and general lavatories, and the substitution of a toilet and lavatory in each patient's room; the abandonment of floor diet kitchens and serving rooms, and the substitution of one large central kitchen and serving station; the abandonment of floor linen rooms, and the substitution of one central linen supply room; the abandonment of long corridors necessitating the carrying for long distances of food, linen, drugs and supplies, and the substitution of dumb waiters direct from the central supply rooms to each floor section; and the installation of pneumatic tubes to carry written requisitions from each floor to the central supply station, and also to carry any supplies that can enter the tube.

Probably the most trying question to every superintendent is the conservation of supplies. There are more provisions used than the capacity warrants, and there is an enormous shrinkage in the linens and household goods. Where do they go? Even the best supervision cannot control this, and numerous rules and regulations are hard to enforce. A trip through any large, progressive factory will show clearly that the materials and tools are not spread out at random, and that when the day's work is done every article is in its place. This is an application of efficient methods. Why not apply them to the hospital? In the new plan, the amount of provisions and equipment required will be reduced by the elimination of cooking and the necessary paraphernalia throughout the build-

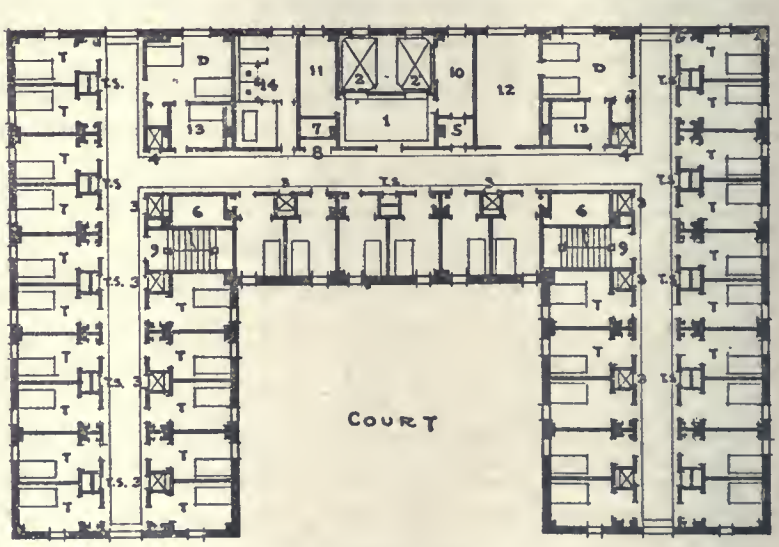


Fig. 3.—Typical floor plan of 160 bed hospital: 1, elevator lobby; 2, elevators; 3, service dumbwaiters; 4, specimen dumbwaiters; 5, linen and waste paper chute; 6 vent ducts; 7, pipe shaft; 8, medicine cabinet; 9, stairways; 10, service and janitor room; 11, toilet room; 12, dressing room; 13, bath and toilet rooms; 14, shower and tub room; *T*, typical room; *D*, double room; *T, S*, pneumatic tube station. According to this plan a five story building would have a capacity of 120 beds, a six story building 160, and a seven story building 200 beds.

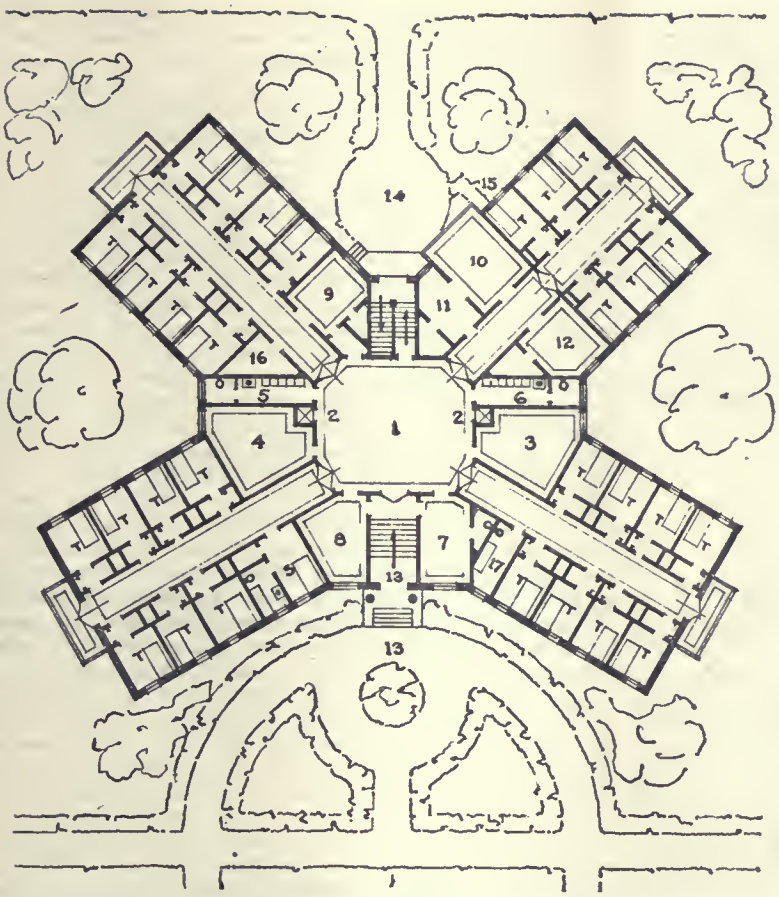


Fig. 4.—First floor plan of thirty bed hospital: 1, general rotunda, from the center of which a view of every door is secured; 2, service dumbwaiters from basement; 3, chart room, library and depository for histories; 4, laboratory and drug room; 5, men's toilet and locker room; 6, women's toilet and locker room; 7, general waiting room; 8, office of superintendent; 9, examining room and emergency operating room; 10, major operating room; 11, sterilizing and instrument room; 12, roentgen-ray room and dark room; 13, main entrance; 14, rear and ambulance entrance; 15, entrance to basement; 16, storage, chairs, carts, etc.; 17, special bath; *T*, typical room; *S*, special room with bath.

ing and the centralization of it in one general kitchen. The centralization of serving eliminates poor judgment on the part of floor nurses in setting up trays, and the use of unnecessary dishes, and provides a means of checking up more systematically those that are used. The cooking also is more economically done in bulk and is under the supervision of an expert dietetian. The elimination of linen and supply rooms all over the building, and the collecting together of all household supplies in one general storeroom, allow absolute supervision, as in a toolroom in a factory. In this way, carelessness and extravagance can be located. *Centralized control is the system which we should establish in efficient hospitals.*

If more people went to the hospital when they were sick, it would be possible to collect more data in regard to the various diseases. Hospital treatment in the past has been considered a luxury, and has been resorted to only when every other means of care failed. This should be reversed, and would be, if the charges for hospital services were within reach of the general public. The efficient city or community hospital, floor plans for which are submitted herewith, makes this possible. It will collect the cases of sickness in a community, tabulate them, and file their histories for future reference. It takes sickness out of the home and from the hands of inexperienced care and puts it under the proper supervision, giving it the advantage of trained nursing. Epidemics and the spreading of disease in homes can at once be controlled. Physicians will be able to give more of their time to their profession and less to traveling around from house to house. They can compare notes and gain from each other's experiences, to the advantage of the community as a whole.

Thousands of small hospitals are going to be erected. Efficiency and economy in the *medical* as well as the *material* service of the hospital should be our standard.

ILLUSTRATIVE PLANS

Figure 1 is an interior diagram perspective of the small typical room and shows the equipment in its place.

Figure 2 illustrates the small typical room in direct plan and section elevation. The intention of this drawing is to show the compactness of the facilities and the arrangement for furniture. This is the minimum size for the room advisable. This can be expanded and made more commodious as the building funds will allow, without interfering with the practicability of the idea.

Figure 3 is a suggested floor plan for a building of from 120 to 200 beds. The ground floor of such a building would be devoted to service, first floor to administration, physicians' offices, receiving departments and dispensary, and the top floor, operating, roentgen-ray and laboratory department. The use of the U-shaped plan allows the strategic placing of dumbwaiters around the central kitchen on the service floor. These dumbwaiters and elevators are the arteries of communication between all of the departments in the building.

Figure 4 is a suggested layout for a small community hospital of about thirty bed capacity,

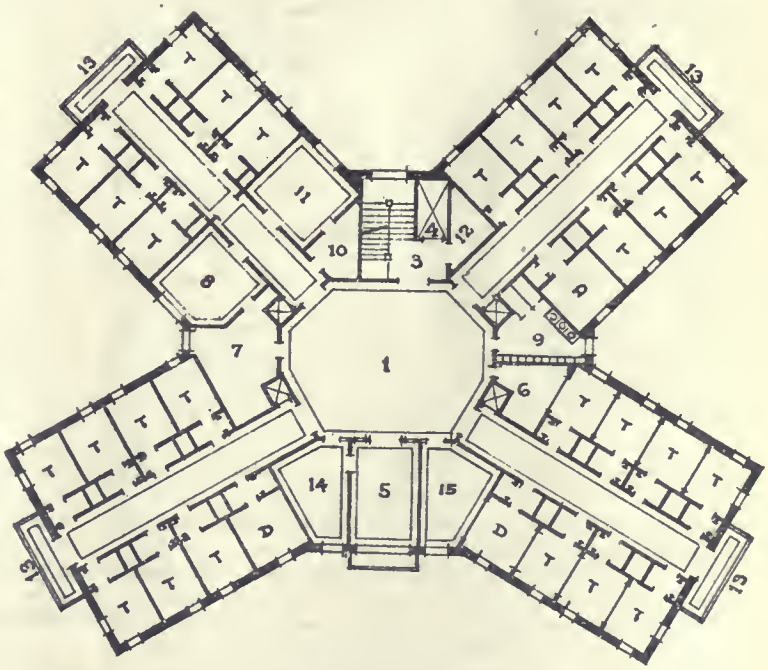


Fig. 5.—Second floor plan of eighty-five bed hospital: 1, general rotunda; 2, service dumbwaiters; 3, elevator and stair halls; 4, elevator; 5, sick babies' room; 6, milk laboratory; 7, work room; 8, nursery; 9, toilet room; 10, work room; 11, delivery room; 12, wheel chairs and carts; 13, solariums; *T*, typical room and utilities; *D*, double room and utilities; 14, bath room for babies; 15, dressing room for children.

using the individual room idea. All of the departments with which the patients come in contact are located on this floor, together with the general nursing. All of the service departments are collected together in the ground floor, where proper supervision can be given, with dumbwaiters as the arteries of communication between the two floors.

Figure 5 is a suggested layout similar to the one in Figure 4, for a community hospital of approximately eighty-five beds. Here again the departments with which the patients come in contact are collected together on the upper floors, and the ground floor is devoted entirely to service, with the dumbwaiters and elevators as arteries of communication. The operating suite, roentgen-ray department and laboratories of this particular scheme are located on the top floor, and administration on the first floor, together with a dispensary and physicians' offices if required.

Miscellany

PHYSICIANS' LIABILITY FOR INCOME TAX

The first of the year brings up again the annual question, "How much income tax must I pay for 1919?" In case of salaried officials, business men whose operating expenses are distinctly separate from their personal and family expenses, and those happy persons who derive a fixed and definite income from investments, this question is easily answered. The difficulty which has arisen in applying the income tax law to physicians is one that is inherent in the practice of medicine and for which the old habit of physicians of lumping their personal and professional expenses is responsible. It is, or was before the passage of the federal income tax law, difficult to determine what constitutes the actual income of physicians. More than any other class of professional men, they have, as a rule, confused gross and net income and have regarded the gross intake for the year as their professional income without regard to the cost of carrying on their business. Owing to the close relation between professional, personal and family habits, no clear dividing line has heretofore been drawn between personal and family expenses and the expenses of carrying on the practice. As a result, few physicians have kept sufficiently accurate records to enable them to separate these two classes of expenditures. In the first year or two of operation of the federal income tax law, many physicians paid a tax on a larger income than they were really liable for, owing to the fact that they did not understand what were legitimate exemptions under the law. Since the passage of the law, a number of rulings have been issued defining the meaning of the law, especially as it refers to physicians.

There are two general principles underlying the application of the federal income tax law: The first is that a man's income is the difference between his gross intake for the year and the total cost of carrying on his business. The second is that all money paid out for expenses directly connected with one's business and for articles the use of which is limited to the current year is deductible, but that money paid out for articles which will be used over a considerable period of time is not expense but investment, and as such is not deductible. For instance, the original cost of an automobile is an investment and not an expense; but the annual depreciation or loss of value of an automobile used by a physician for professional purposes is a legitimate and deductible expense. As the average automobile is estimated to have a life period of five years, a deduction of 20 per cent. each year on the original cost of the automobile is allowed. In the same way, office furniture and equipment is not an expense but an investment. Such equipment, however, deteriorates with use and age. A physician is, therefore, allowed to deduct the original cost of the equipment divided by the number of years for which it can be used.

Applying these principles to a physician's income, it is evident that his gross annual income is the total amount of his actual collections for professional services plus any additional income from any other sources. From this he is allowed to deduct all actual expenses necessary for carrying on his business. This would include office rent and maintenance, such as heat, light, cleaning, attendance, etc., office telephone, salary of a stenographer or office assistant, and the cost of any drugs, dressings or other materials that are used in the treatment or care of patients. But while drugs and dressings are deductible, surgical instruments and appliances are not, since they are for permanent use and are an investment. Depreciation of such instruments or equipment through breakage, wear and tear or use can be deducted, dividing the original cost of the instrument by the number of years of usefulness. Books are an investment, but medical libraries are subject to deterioration. Medical books do not wear out, but they do become old and obsolete. Some books, such as textbooks on anatomy, are good for a lifetime; while books on the practice of medicine and especially on some of the more recent special subjects soon become out of date. The average life of a physician's library can fairly be estimated at twenty years, so that one twentieth of the cost of books during the year can be deducted. Medical journals, being of temporary value, are an expense and not an investment, and consequently subscriptions to medical journals can be deducted. Membership in medical societies of a strictly professional nature is also an expense, and the dues can be deducted; but membership in organizations, whether medical or otherwise, of a social nature, such as physicians' clubs, is a personal expense and is not deductible. Regarding an automobile, as stated above, the original cost is an investment; but one fifth of the cost may be deducted for depreciation. If the automobile is used solely for professional purposes, then the upkeep and expense of operation, including gasoline, oil, tire repairs, chauffeur's wages, garage expenses, etc., are deductible. If the automobile is used partly for professional and partly for personal use, then both the depreciation and the expenses should be prorated. Regarding home expenses, if a physician maintains an office in a rented house, then a portion of his house rent can be deducted; but if a physician owns his own home, he is not allowed to make any deduction for rent for his office, whether he uses his home as a place of business or not. He would, of course, be allowed to charge off a proportional amount of the expense of heat, light, telephone, etc. Railway fare and cost of berth in attending medical society meetings of a strictly professional character may be deducted, but not hotel bills, meals or incidental expenses, the assumption being that these expenses would be incurred whether the physician attended the meeting or remained at home. If the physician uses horses instead of an automobile, the cost of maintenance may be deducted, provided the horses are used entirely for professional purposes; otherwise, the proportionate amount. Depreciation to the proper amount can also be charged off on horses, buggies or sleighs used for professional purposes. Physicians maintaining a laboratory can, of course, deduct the salary or wages of a laboratory assistant, the cost of chemicals, drugs and other materials used, and the depreciation on the laboratory equipment. Physicians maintaining roentgen-ray apparatus or laboratories can deduct salaries paid to operators and depreciation on the cost of equipment. Roentgen tubes and plates which are constantly breaking and have to be replaced would come under the same head as drugs, bandages, etc., and may be deducted. In the case of oculists furnishing glasses to patients, there should be two distinct charges recorded, one for professional services as an oculist and the other for glasses supplied to the patient as merchandise. Contributions to philanthropic, benevolent, religious and humane organizations may be deducted up to 15 per cent. of the total income, but not dues to clubs and social organizations.

The federal income tax law has been productive of two benefits to physicians. The first is that it has compelled physicians to keep more accurate and minute financial records. The second is that it has made it possible for physicians to determine their real income from professional work. Prior to the passage of this law, many physicians were accustomed to regard their total annual cash receipts as their income.

whereas their actual income was often only a third or a fourth of what they supposed it to be. While it has been a shock to many a man to find that instead of making ten thousand dollars a year, he was really clearing only from five to seven thousand, the result in the end will be highly salutary both to the individual and to the profession.

FEDERAL AID IN THE PROTECTION OF INFANCY AND MATERNITY

Every year about 16,000 mothers die in childbirth and nearly a quarter of a million babies die under one year of age. Most of these deaths are preventable. Among sixteen important countries, thirteen show a more favorable maternal death rate than the United States and six a more favorable infant mortality rate. Maternal mortality and infant mortality from maternal causes are not decreasing in the United States. About one half of all infant deaths occur within six weeks of birth and these early deaths are due chiefly to the condition of the mother and the lack of proper care and instruction for the mother during pregnancy and confinement. Maternal deaths and infant deaths from maternal causes are not decreasing because mothers do not yet have the skilled care and advice that they need. The Children's Bureau has secured detailed information about the mothers of 2,978 babies born within a short preceding period in eight rural areas representing six states. In these confinements, only five women received prenatal care approaching the minimum standard of "adequate" care outlined by the conference on child welfare standards at Washington in May, 1919, and in 80 per cent. of the cases, the mothers reported having had no prenatal care whatever.

BOTULISM FROM EATING CANNED OLIVES

Armstrong, Story and Scott (*Pub. Health Rep.* **34**:2877 [Dec. 19] 1919) report on the epidemic of botulism in Canton, Ohio—mentioned in THE JOURNAL, Nov. 15, 1919, p. 1538—following a club banquet, Aug. 23, 1919, at which about 200 people were present. The cases were confined to the chef, waiters and diners of one table at which ripe olives, nuts and candy had been substituted for regular items of the menu. By a process of exclusion, graphically portrayed in a tabulation, the attacks were attributed to the ripe olives. Seventeen persons ate or tasted of the olives; fourteen became definitely ill, seven cases ending fatally; three showed no definite symptoms. None were ill who did not partake of the olives. Those who ate the most olives died first, while among those who recovered, the severity of illness bore a close relation to the numbers eaten; three who developed no symptoms ate the least of all. Two diners, who took a relatively large amount and recovered, had partaken freely of alcohol during the evening. The olives were packed in a sealed glass jar, but the vacuum had been accidentally destroyed. They were placed in three table dishes; the contents of two dishes were washed under the tap and drained, the third dish was unwashed. This factor, in the opinion of the authors, may explain the death of one person who ate half an olive, while another recovered after eating two olives. The symptoms were very similar in all cases, varying mainly in severity: headache, diplopia, dimness of vision, and slight vertigo were the most common phenomena. The authors believe that certain diagnostic pitfalls are present in all cases. Botulism may be mistaken for poisoning by mushrooms, wood and ethyl alcohols, cerebral hemorrhage or syphilis, and hysteria; only the occurrence of attacks in others will make the matter clear.

A thorough chemical and biologic investigation of the toxin was made. Chemical examination for definite poisons yielded negative results. Subcutaneous injection of 0.5 c.c. of an emulsion of the suspected fruit in sterile saline solution produced symptoms; 1 c.c. proved lethal to guinea-pigs weighing from 250 to 300 gm.; while from 0.001 c.c. to 1 c.c. of the brine caused death in from eighteen hours to four days. Ingestion of small quantities of brine and of the olives also proved fatal. The brine, after passing through a Berkefeld filter, although culturally sterile, proved highly poisonous on subcutaneous injection; heating at 80 C. for thirty minutes rendered the filtrate harmless.

Anaerobic culture at 37 C. in beef infusion glucose agar yielded a growth of a gas producing, agar fragmenting bacillus, gram positive, motile, coarse, sporogenic, and staining well but irregularly with ordinary dyes. Cultural characteristics and toxin formation led to its identification as a strain of *Bacillus botulinus*. The organism grew well in the brine of unspoiled olives of the same brand, and its spores resisted 100 C. for thirty minutes. Potent toxins developed, a sterile filtrate from a nine-day culture proving lethal in doses of 0.00005 c.c. intraperitoneally. Subcutaneous or intraperitoneal injection of various doses of toxin diluted to 1 c.c. with sterile saline, mixed with 0.5 c.c. of 95 per cent. alcohol, protected guinea-pigs against twenty times the lethal dose. Tests for agglutinins and antitoxins were negative.

Medicolegal

Value After Death of Good Will of Business of Roentgenologist—of Physician

(*In re Caldwell's Estate* (*N. Y.*), *176 N. Y. Supp. 425*)

The Surrogate's Court of New York County holds that, where a physician, who had specialized in roentgenology or the taking of roentgenograms as an aid to physicians, bequeathed the good will of his business, together with the apparatus used in connection therewith, to his two assistants, one of whom was a physician who leased the office that had been occupied by the testator, but removed the latter's name from the door and substituted his own, the transfer tax appraiser erred in valuing the good will at $38,874.12, and that his report should be remitted to him for the purpose of excluding the good will as an element of value. The court says that the question of whether the good will of the practice and business of a man who has attained eminence in his profession has, on his death, a value that is capable of ascertainment or computation, does not seem to have been decided in the reported cases. The extensive and lucrative business transacted by the decedent was the result of his reputation for great skill in taking roentgenograms, and as this skill and knowledge died with him it could not constitute an element of good will that would survive him. The death of a man who had attained such prominence and reputation as a roentgenologist must have received such publicity as would bring it to the attention of practically all the members of the medical profession who knew him by reputation or who would ordinarily have sent patients to him. Therefore, after his death those physicians would not send any more patients to the office theretofore conducted by him; and if the office passed into the possession of another physician or roentgenologist, it could scarcely be said that its former occupancy by the decedent made it more valuable to his successor. The skill and knowledge which the physician who had been an assistant to the decedent acquired during his association with the decedent, and which induced physicians to send their patients to him, were entirely personal to him, and were not transferred to him by the decedent as part of the good will of the business. The reputation which the decedent had acquired was personal to him, and it was not due to the place where he maintained his office or to any trade mark or trade name.

It has been held that a physician may sell the good will of his business and that the courts will recognize the right of the purchaser to such good will. But there seems to be a distinction between the business sold by a physician during his lifetime and the value of that business after death. If sold by the physician during his lifetime, he could introduce the purchaser to his patients and friends as a prudent and reliable physician, and such introduction would immediately give the purchaser a reputation and standing which otherwise might require years to establish. It seems to the court that such introduction and recommendation to patients con-

stitute the real consideration for the money paid to a retiring professional man by one who wishes to succeed him. But after a man who has acquired a reputation for great skill or knowledge is dead, persons who would go to his office for the purpose of consulting him and availing themselves of his superior skill would not go there merely because the office was still open and occupied by another person, who had no reputation for superior knowledge or skill.

It seems to the court that the criterion by which it may be determined whether the business of the decedent had a good will capable of being transferred by his will is: If an inconspicuous and unknown physician should take the office which had been occupied by the decedent at the time of his death, and put his own name on the door, would the clients of the decedent, or a considerable number of them, continue to send their patients to that office? In the court's opinion, it is extremely improbable that such a person would receive any patients from the physicians who patronized the decedent because of his exceptional skill and knowledge.

Liability of Operating Surgeons to Pay Assistants

(Semple v. Ringo (N. D.), 172 N. W. R. 817)

The Supreme Court of North Dakota, in reversing a judgment rendered on a verdict directed in favor of the defendant, and ordering a new trial, holds that in surgery the proper administration of an anesthetic is an essential part of the operation, for which a surgeon is commonly paid a good round fee, which includes the minor fee of an assistant. When he employs an assistant, the presumption is that he agrees to pay him, unless the contrary appears from express words or conditions.

In the opinion in the case, prepared by Justice Robinson, it is said that the complaint averred that on several occasions, at the special request of the defendant, the plaintiff administered anesthetics to patients of the defendant on whom the latter performed surgical operations; that the plaintiff's services were reasonably worth $25, which the defendant promised to pay. The defendant admitted that at his request the plaintiff performed such services, and that these were reasonably worth $25, but set up the defense that in requesting the services he acted merely as the agent of his patients, and did not assume any personal obligation, and that in such cases it is customary for a physician to administer anesthetics and to look for his pay to the patients, and not to the surgeon calling him. In this case the defendant had a hospital, and did quite an extensive operating business. On the several occasions, without disclosing the names of his patients or anything concerning them, he requested and accepted the services of the plaintiff in what are known as minor and major surgical operations. In such a case the principal surgeon commonly gets a good liberal fee for doing everything necessary for a successful operation. In modern surgery the proper administration of an anesthetic is a very essential part of the operation. It may also be necessary to obtain from a druggist antiseptic gauze or cotton and other small things. All such services and necessaries are properly chargeable to the surgeon when he orders them without giving the name of his patient as the person to whom the charge should be made. In this case it appeared that, at the request of the defendant, the plaintiff went and administered anesthetics, not knowing anything of the patients, not even their names, and not looking to them for payment. It also appeared from abundant evidence that the custom is for a surgeon to pay the small fee of an assistant physician whom he clearly requests to administer an anesthetic. Clearly both the presumption of law and the weight of the testimony was in favor of the plaintiff. The case should have been submitted to the jury. Justice Birdzell concurs; Justices Bronson and Grace concur in the result; and Chief Justice Christianson dissents.

Chief Justice Christianson says, in his dissenting opinion, that the plaintiff testified that in the first case in which he helped the defendant they were in the Elks' Home and the defendant asked him if he would care to go out for a drive with him to see a case of gunshot wound of the knee; it was another physician's case, and that physician wanted to assist the defendant in the operation, and they had the plaintiff give the anesthetic. In the next case the defendant telephoned to the plaintiff's office and asked him if he could go up and give an anesthetic. The third case was one wherein the defendant called the plaintiff to give an anesthetic for a patient on whom he was operating for appendicitis. The next case was one in which the defendant asked him if he would come over and see a case with him. It was undisputed that the defendant at no time expressly promised to pay the plaintiff for the services which he rendered, and the sole question was whether, on the facts stated, there was an implied promise on the part of the defendant to pay for such services. The plaintiff knew that the defendant had been engaged as attending physician by certain patients. The defendant summoned the plaintiff to assist in treating such patients. The plaintiff met them. They received the benefit of his services. They were all persons of mature age, and in possession of their faculties. It would seem that under these circumstances the law did not imply any promise on the part of the defendant to pay the plaintiff for the services which he performed. In order to be binding, a custom must be certain, uniform and general, which the plaintiff's evidence did not show of the alleged custom for surgeons to pay assistant physicians.

Release Not Bar to Action for Roentgen-Ray Burns

(Wheat et al. v. Carter (N. H.), 106 Atl. R. 602)

The Supreme Court of New Hampshire, in overruling exceptions to a judgment that dismissed the plaintiff's petition for an injunction to prevent the defendant from prosecuting an action which he had brought against them because they had burned him with a roentgen-ray machine after he had employed them to treat his hand which had been injured, holds that a release which he gave to his employers, in whose service he was injured, was not necessarily a bar to his right of action against the plaintiffs. The court says that it is settled in New Hampshire that the release of one joint tort-feasor or wrong-doer is a bar to a suit against the others; and that is also true as to the effect of a release when the releasor's loss is caused by the concurrent misconduct of the one released and others. The reason that a settlement with one of several tort-feasors or wrong-doers is ever a bar to a suit against the others is that the injured party has been fully compensated for the loss which he is seeking to recover in the second suit. Since this is so, the question in this case was whether the defendant had already been compensated for the loss he sustained as the result of the plaintiffs' use of the roentgen-ray machine, not, as the plaintiffs contended, whether his employers might have been liable for that loss. In other words, the test to determine whether the release was a bar to his suit against the plaintiffs was to inquire as to the extent of the claim he made at the time he settled with his employers. Was he claiming to recover all the loss he sustained as the result of the original injury to his hand, or only the loss which resulted immediately from that injury? However the fact may be in other states, in New Hampshire the issue raised by that inquiry was an issue of fact to be determined, like all such issues, by the weight of competent evidence. The question, therefore, which was raised by the plaintiff's exception to the sufficiency of the evidence, was whether it would warrant a finding that the defendant had not been compensated for the loss he was seeking to recover from the plaintiffs. It was permissible, when considering that issue, to consider the defendant's testimony, even though it might contradict the terms of the release. In short, notwithstanding his employers might have been liable for all the loss the defendant sustained, and the release included all claims he might have against them, it was permissible for him in this proceeding to show just what he was claiming when he settled with them, for these plaintiffs were not parties to the release. In other words, the release in and of itself was not a bar to the defendant's suit against the plaintiffs; but, if he had already been compensated by his employers for the loss he was seeking to recover in that suit, that fact was a bar to the suit.

Society Proceedings

WESTERN SURGICAL ASSOCIATION

Twenty-Ninth Annual Meeting, held in Kansas City, Mo., Dec. 5-6, 1919

The President, DR. ROLAND HILL, St. Louis, in the Chair

Artificial Impaction of Femur in Aged

DR. CHARLES D. LOCKWOOD, Pasadena, Calif.: Artificial impaction affords immediate bony contact and insures an adequate blood supply for union. With the patient under anesthesia, the limb is placed in extreme abduction and strong traction, with slight internal rotation. The great trochanter, protected by two layers of felt, is struck three or four swinging blows with a large wooden mallet. A light plaster-of-Paris cast is applied extending from below the knee to the waist line and including the sound limb to the knee. The anesthesia lasts only five or ten minutes, and there is no shock to the patient. The patient is placed on a fracture bed equipped with a special frame and elevating device, enabling the nurse to raise the patient with ease, to bathe, attend to the bowels, and to change the bedding. The cast may be removed as early as the eighth week; but if well borne, it should be left on for twelve weeks. By the end of the fourth month the patient is up and about on crutches, and is bearing some weight on the broken leg. I have treated three patients more than 70 years of age by this method, and all are walking and perfectly well.

Tuberculosis of Joints; Rollier's Heliotherapy

DR. GUSTAV SCHWYZER, Minneapolis: It is my practice to operate in every case of tuberculous joint whenever it is feasible, with Esmarch's constrictor applied. Only with this bloodless procedure is it possible to differentiate between healthy and diseased tissues. In operating, I generally follow the method of Kocher. It would be taking another great step ahead in the treatment of surgical tuberculosis if we could establish numerous institutions in America where Rollier's treatment could be used intelligently; but there will always be persons who cannot spend from one year to three years in such institutions, waiting for a definite cure. For these patients, surgery may be preferable.

A Mixture of Ethyl Chlorid, Chloroform and Ether for General Anesthesia: An Experience in War Surgery

DR. E. P. QUAIN, Bismarck, N. D.: In France this mixture was considered the most suitable anesthetic for most minor injuries as well as for wounds of moderate severity. We employed it as the anesthetic of choice for most operations that could be finished within fifteen or twenty minutes. In many instances, therefore, the speed of the operating team was the criterion as to whether the choice would be the ethyl chlorid mixture or simply ether. We used ethyl chlorid, 5 c.c.; chloroform, 1 c.c., and ether, 24 c.c. This mixture is poured on a piece of flannel, which is spread out smoothly over a similar piece of flannel laid on the patient's face. A mask is placed over the face so that the margin of the mask is held firmly around the face, under the chin, in front of the ears and over the top of the head. The mask should be as air-tight as possible. There can be no reason why this mixture should not be used in emergency surgery in civil practice when conditions and necessities correspond more or less to those of the wounded soldiers.

Operative Technic in Spina Bifida

This paper, by Dr. Joseph Rilus Eastman, Indianapolis, will be published in full in THE JOURNAL.

Rhinophyma

DR. M. G. SEELIG, St. Louis: The treatment of the disease is exclusively operative. The most satisfactory operative procedure consists in shaving off the redundant tissue until the nose is brought back to what is believed to have been its original form. In this shaving process, two things should be borne in mind: 1. One should not shave too deeply. 2. A thin rim of epithelium should be preserved around the nares. If the shaving is carried too deeply, all sebaceous gland rests are removed, and there are left no niduses of epithelium from which, as brood centers, epithelization may spread. This delays healing, and even if the nose be grafted, the resultant skin has a harsh, white, dry appearance so striking as always to command attention and cause comment. Furthermore, deep shaving may injure the nasal cartilages and set up a stubborn perichondritis. If a thin ring of intact skin is not left around the nares, serious disfigurement may result from the contractions incident to cicatrization. Hemorrhage, which is usually very free, is checked with comparative ease by simple gauze pressure, and the patient is sent to bed with a large gauze pad well smeared with petrolatum over the nose. Next day this pad is removed, and the denuded area strapped with imbricated strips of sterile zinc oxid adhesive plaster. This dressing is changed daily. Skin grafting is not necessary.

Diaphragmatic Hernia

DR. T. F. RIGGS, Pierre, S. D.: According to the authorities, the great majority of diaphragmatic hernias occur to the left of the midline. My case was one of true traumatic hernia on the right of the median line.

Jaundice and Its Surgical Significance

DR. CHARLES H. MAYO, Rochester, Minn.: In approximately 50 per cent. of cases, the jaundice is caused by obstruction of the common duct by gallstones; in 20 per cent. it is caused by absorption of bile in the liver, or infective or catarrhal jaundice without duct obstruction. From 5 to 8 per cent. of cases of jaundice are caused by serious infection of the gallbladder, possibly gangrene with or without stones. Jaundice from cancer represents 15 per cent. of the cases seen; one half of these cases are caused by cancer of the liver, and the other half, by cancer of the pancreas or the gallbladder and ducts. Jaundice is a late symptom of gallstones in the majority of cases, the result of neglect to recognize the condition or to advise operation in the preventive period. The mortality following cholecystectomy for cholecystitis, with or without stones, is low: only 1.8 per cent. in 2,460 operations performed during a period of three years. There were 337 cases in which both cholecystectomy and choledochotomy were done, with a mortality of 3.2 per cent. In a very serious group of thirty-six cases of obstruction and malignancy, cholecystostomy and choledochotomy were done, with a mortality of 16.6 per cent. Choledochotomy alone was done in a somewhat similar group of forty-seven cases, with a mortality of 15 per cent. If all the choledochotomies are grouped together, however, the mortality in 420 cases is 5.7 per cent., too high a mortality for simple cases of stone and obstruction, and too low for the late and complicated cases, including the cancer cases. Stones were found in the common duct in 274 of the 420 cases.

Congenital Anomaly of Duodenum and Its Surgical Significance

DR. LEONARD FREEMAN, Denver: I have operated in six cases of duodenal obstruction. In none was the diagnosis made previous to the operation. Partial occlusion of the duodenum at the duodenojejunal angle, simulating pyloric obstruction, occasionally occurs from the persistence of a condition normally existing in fetal life. The duodenum, instead of appearing in the abdominal cavity from beneath the transverse megacolon to the left of the spine, emerges to the right, its transverse and ascending portions possessing a peritoneal covering and mesentery of their own, similar to the rest of the small intestine, instead of being fixed in fibrous tissue, as is normally the case. At the duodenojejunal angle, however, the bowel is hung up to the root of the colonic mesentery by a firm adhesion, the kink thus produced being intensified by the downward pull of the free duodenal loop. This kink is deeply situated, and in freeing it care must be taken not to injure the bowel, the inferior mesenteric veins or the left colic artery. A considerable denudation of the intestine may be necessary, which should be covered either by reuniting the peritoneum or by means of a free omental graft.

Surgical Treatment of Empyema

DR. W. W. GRANT, Denver: In the fall of 1917 and the spring of 1918, I operated in twenty-eight cases of empyema,

with a mortality of six cases. In the winter of 1918 and early in 1919, I operated in three cases with no mortality. In all cases, twenty minutes before the operation, one ounce of whisky was administered, and a hypodermic injection of ⅙ grain of morphin, 1/200 grain of atropin and ½ grain of spartein. From 1 to 1½ inches of rib were resected. On the right side, the eighth rib, and on the left side, the ninth or tenth rib, usually in the posterior axillary line, were selected, the aim being to secure the most dependent drainage. A rubber drainage tube, sometimes double, was immediately introduced, and the tissues were sutured snugly around it, the tube was fixed primarily with a suture and a safety pin, and the long outer tube was dropped into a bottle of water beneath the bed as in certain cases of gallbladder drainage. The quantity of pus evacuated varied from 2 to 4 quarts. The discharge diminished rapidly, and on the second or third day the patients were taken to the dressing room twice daily and the cavity irrigated with a 5 per cent. sodium bicarbonate solution, boric acid being added, followed immediately by a solution of iodin. The shortest period in which any patient returned to duty after operation was seventeen days, while the convalescent period in most instances was from two to three months.

Malignant and Benign Tumors of Breast

Dr. Byron B. Davis, Omaha: My study of 210 private cases is encouraging rather than discouraging. Operations for cancer save lives. The very early operation, so early that the microscope is necessary to make the diagnosis, is bound to produce better results than the operation done after the disease is easily diagnosed. The radical operation should be directed in such a way as to remove as thoroughly as possible the highways along which the disease is disseminated. The campaign of education of the public with reference to the signs of early cancer and its curability, when operation is performed early, should be continued and kept up unceasingly. The fact should be appreciated that every woman operated on for cancer of the breast, who remains free of the disease, is more powerful propaganda in the community in which she lives than all the tracts that could be written.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Archives of Internal Medicine, Chicago

Dec. 15, 1919, **24**, No. 6

*Botulism; Resistance of Spores of B. Botulinus to Sterilizing Agencies Commonly Employed in Canning Fruits and Vegetables. E. C. Dickton, G. S. Burke and E. S. Ward, San Francisco.—p. 581.
*Pneumococcus Carriers. J. Sailer, Philadelphia; M. W. Hall, U. S. Army; R. L. Wilson, Jeannette, Pa., and C. McCoy, U. S. Army. —p. 600.
Antipyretics. I. The Benedict Respiration Chamber at the New Haven Hospital. H. G. Barbour, New Haven.—p. 610.
Antipyretics. II. Acetylsalicylic Acid and Heat Regulation in Normal Individuals. H. G. Barbour and M. M. Devenis, New Haven. —p. 617.
*Antipyretics. III. Acetylsalicylic Acid and Heat Regulation in Fever Cases. H. G. Barbour, New Haven.—p. 624.
*Mental Disorders Following Influenza. A. Gordon, Philadelphia. —p. 633.
*Electrocardiogram and Ventricular Preponderance. E. P. Carter and C. H. Greene, Baltimore.—p. 638.
*Basal Metabolism in Exophthalmic Goiter. J. H. Means and J. C. Aub, Boston.—p. 645.
More Common Gases; Their Effect on Respiratory Tract in Two Thousand Cases. R. S. Bergboff, Chicago.—p. 678.

Botulism.—The experiments reported on by Dickson and his associates were undertaken to determine the thermal death point of *B. botulinus* and its spores under various conditions. They found that the spores of *B. botulinus*, when mixed with animal or vegetable protein, are much more resistant to heat than has been believed. The acidification of the culture medium by the addition of 5 per cent. lemon juice does not prevent the growth of *B. botulinus* or the formation of its toxin, but the thermal death point of spores of *B. botulinus* is markedly lowered when they are heated in an acid medium of similar concentration. The addition of cane sugar to beef broth in concentration up to 64 per cent. does not prevent the growth of *B. botulinus* or the formation of its toxin, although it does inhibit both to a certain extent. Certain fruits which have been canned in sugar form suitable mediums for the growth of *B. botulinus* and the development of its toxin. Peaches, apricots and pears were tested. Certain of the methods of canning are inefficient if the raw material happens to be contaminated with spores of *B. botulinus*. This is true of commercial canners' processes as well as of the home canning processes.

Pneumococcus Carriers.—The results of the disinfection experiments made by Sailer and others in their study of pneumococcus carriers may be summarized as follows: Dichloramin-T, dissolved in eucalyptol gave good results; used in solution in chlorcosane the results were far less satisfactory. Chlorin gas is not efficient and caused discomfort and is possibly dangerous even in such concentration as was used. Phenol showed good results. The solution in oil is more efficacious than that in glycerin. The use of instillations rather than sprays is perhaps preferable on account of reduced danger of ear infection. Iodin in oil gave good results. It caused no discomfort. Quinin sulphate proved of no value. An accidental observation suggests that it may be valuable in another way. The experiment was under way when the spring epidemic of influenza visited the camp. The carriers of other groups were attacked by the disease in the same proportion as the men of the rest of the camp. No cases of the disease developed in the group being sprayed with the quinin. The prompt subsidence of the epidemic prevented further observations. Chloramin-T is apparently of little value. Carriers were detected by means of smears from the nasopharynx spread on blood agar plates and transplantation of the green pneumococcus colonies in the blood broth medium of Avery. The application of this method to 700 men showed the presence of 16 per cent. of pneumococcus carriers. The authors believe that the contacts of cases of pneumonia should be subjected to culture in the same way as is now done for contacts of meningitis; that when such contacts are shown to be carriers of the same type of pneumococcus as that infecting the patient, vigorous antiseptic treatment should be instituted, combined with such measures of isolation as conditions permit. In the presence of epidemics of pneumonia or of diseases fatally complicated thereby, such as influenza or measles, it is practical to treat large numbers of men by these methods.

Antipyretic Value of Acetylsalicylic Acid.—Acetylsalicylic acid, in 1 gm. doses, which has no such action in normal persons, Barbour found exhibits a marked antipyretic effect in febrile, temporarily afebrile and convalescent subjects. The antipyretic effect is due essentially to the heat elimination, which is associated with marked perspiration and subjective warmth. Sensitivity of febrile, temporarily afebrile and convalescent subjects to antipyretics is not explained. These drugs do not "stimulate" a "depressed" heat regulating mechanism, nor is sensitivity due to a lack of readily combustible material (glucose); but the respiratory quotient of antipyretic sensitive individuals appears to be increased by doses of acetylsalicylic acid which do not affect the quotient of normal persons.

Mental Disorders Following Influenza.—Gordon's study is based on a series of sixty-two cases, all seen at the end of the febrile period during the phase of asthenia which ordinarily follows infectious diseases. The majority of the cases (forty-four) presented the well known confusional type of psychosis, more or less pronounced. The mental manifestations were particularly marked in persons whose previous medical histories either suggested various episodic phenomena of neuropathic character or contained accounts of actual psychotic disorders. This particular group differed greatly from the groups of cases without previous nervous or mental disorders. Each group is described in detail.

Value of Electrocardiogram.—It is emphasized by Carter and Greene that the electrocardiogram is the only satisfactory clinical method capable of estimating the relative pre-

ponderance of the two ventricles. Combined with the teleroentgenogram as a guide to gross hypertrophy of the heart, it should furnish the clinician with an increased insight into the question of the mechanics of cardiac response in cases of hypertrophy.

Basal Metabolism in Goiter.—From the work done by Means and Aub it would appear that the safest program for the treatment of exophthalmic goiter, as a whole, is the routine irradiation of thyroid and thymus glands in all cases, with surgery held in reserve for patients who do not then do well. Surgery is contraindicated with patients whose metabolism is rising in spite of complete rest in bed, and also with patients of the type with moderate tachycardia and great metabolism increase, except when they have previously had their thyroid and thymus glands treated by the roentgen ray. The risk of operation is greater, and the need for preoperative roentgen ray treatment is greater in cases with a very high metabolism and moderate tachycardia than in those with an extreme tachycardia and moderate metabolism elevation. In the management of exophthalmic goiter, periodic determination of the basal matabolism should be quite as much a routine as is the examination of the urine for sugar in diabetes mellitus. In borderline cases the basal metabolism furnishes very valuable aid in differential diagnosis.

Archives of Neurology and Psychiatry, Chicago

Dec. 1919, **2**, No. 6

*Acute Ascending Paralysis Among Troops. L. Casamajor, New York. p. 605.
*Infective Neuronitis. F. Kennedy, New York.—p. 621.
*Hereditary Occurrence of Hypothyroidism with Dystrophies of Nails and Hair. A. M. Barrett, Ann Arbor.—p. 628.
Case of Congenital Facial Paralysis. F. R. Fry and M. Kasak, St. Louis.—p. 638.
Problems in Diagnosis and Treatment of Injuries to Peripheral Nerves. C. A. Elsberg, New York, and A. H. Woods, Philadelphia. —p. 645.
Overlap of So-Called Protopathic Sensibility as Seen in Peripheral Nerve Lesions. L. J. Pollock, Chicago.—p. 667.

Acute Ascending Paralysis.—The material for this paper consisted of the spinal cords from two cases. Only one patient was seen by Casamajor before death. This man, a soldier, had had a fever for about twenty-four hours, five days before the onset of the paralysis. He suddenly became weak in the knees while working with a pick. He went to his dugout and lay down, and after a few hours was unable to move his legs. The next morning he could not move either legs or arms. He was not incontinent of feces or urine. His arms were completely paralyzed with the exception of the fingers of the right hand, which he could move voluntarily to a slight extent. His pulse was rapid and he had a temperature of 101 F. His breathing was labored and he had a beginning edema of the lungs. The paralysis was of an extreme flaccid type with complete abolition of all reflexes. No sensory loss could be determined anywhere. He died less than three days after the onset of the paralysis. The pathologic findings were practically identical in both cases. In both cases the histologic findings were approximately the same: 1. Hyperemia, hemorrhage edema, and fibrous swelling in the arachnoid; thickening of the pia. 2. No changes in blood vessel walls; no round cell infiltration. 3. Increase of the cellular neuroglia in the central gray, around the root fibers and in the posterior root ganglions. 4. Evidence of beginning degeneration of both a secondary and primary character in the anterior horn cells and some tract cells. Hyperemia of the central gray. 5. Marked degeneration of primary and secondary character of the nerve fibers where they lie in the arachnoid, always most marked in the motor fibers. In the second case there was also a beginning degeneration in the posterior nerve roots just outside the dura and marked degeneration of the posterior root ganglion cells with neuronophagy.

Infective Neuronitis.—Kennedy cites four cases revealing definite clinical variants from the well known syndrome of polyneuritis, which, when considered along with the widespread changes in the posterior ganglions, spinal roots, ventral cornual cells and Betz cells of the cortex, would seem to make it fitting to remove this disease from the neuritides proper, and to designate it by a title more descriptive of the clinical and pathologic picture produced. This condition was described fully by Bradford, Bashford and Wilson in the *Quarterly Journal of Medicine* **12**:88, 104 (Oct., 1918, Jan., 1919) and abstracted in THE JOURNAL, March 22, 1919, p. 899.

Hereditary Hypothyroidism.—Among sixty-one members of a family belonging to six generations, investigated by Barrett both hair and nails were affected in fourteen instances. The nail defect seemed to be about the same in all, but there was much variation in the degrees of loss of head hair. In the greater number there was an extreme scantiness as to the amount of hair. In no instance was there a total loss of all hair of the head, the most extreme cases showing a fine lanugo-like covering of the scalp. Aside from this particular abnormality, there were other features that showed that in this family group there were conditions active in the production of a variety of disorders that are of much interest to neuropsychiatry. This is the high frequency of feeblemindedness and neurologic disorders of a degenerate type among the family. The members of the third generation who had dystrophies of nails and hair, and all of their descendants, numbered twenty-nine persons. Of these, twenty-two were definitely abnormal Twelve of the latter had the characteristic family dystrophy, and ten others, who lacked this, showed other constitutional and nervous disorders. These included one case of epilepsy, one of hysteria, one of severe tic, four instances of feeblemindedness, one of nocturnal enuresis and four died at an early age from marasmus. Even those who had the nail and hair dystrophy had other abnormalities. One of these was an epileptic; one had cancer; four were feebleminded, one had nocturnal enuresis The well known association of abnormalities of hair and of nails in hypothyroidism, and two fairly well defined cases of juvenile myxedema which led to this study, and the reaction of one patient to thyroid feeding, Barrett says, seems to warrant the conclusion that the fundamental disorder in this family was of the thyroid gland.

Archives of Ophthalmology, New York

November, 1919, **48**, No. 6

Nonoperable Tumor of Orbit and Brow Treated Successfully with Radium. G. H. Bell and S. Tousey, New York.—p. 531.
*Cases of Lethargic Encephalitis. H. Woods, Baltimore.—p. 536.
Ocular Complications Due to Typhoid Inoculations. F. P. Calhoun, Atlanta.—p. 553.
Subretinal Exudate Simulating Sarcoma of Choroid with Anatomic Examination. A. Knapp, New York.—p. 559.
Two Cases of Epithelioma of Eyeball and Lids. Operation. No Return After Eleven and Six Years. D. Roy, Atlanta.—p. 563.
Positive Focal Tuberculin Reaction in Spindle Cell Sarcoma Which Had Perforated Sclera. J. W. Charles, St. Louis.—p. 568.
Positive Posterior Fibrovascular Sheath of Lens. Report of Two Cases. F. Lane, Chicago.—p. 572.
Antidiphtheritic Serum in Severe Ocular Infections with Special Reference to Hypopyon Keratitis. B. W. Key, New York.—p. 581.

Eye Findings in Lethargic Encephalitis.—Of seven cases reported by Woods two gave history of antecedent influenza, one, a doubtful history, and four, no history of this disease. In only one case was there optic neuritis, and this was of low grade. In three cases there was serious impairment of accommodation, and the pupils were dilated, sluggish and at times inactive. In another case, the patient's age prevented accommodation tests, but the pupils presented similar conditions. These four patients presented other defects; involvement of other branches of the third nerve; abducens and facial paralysis. These cases confirm the observation that the return to normal of the intrinsic muscles is slower than that of the extrinsic muscles. Of special interest were the nystagmoid movements, which occurred in five of these seven cases. In two cases they were the only signs pointing to involvement of the eye muscles.

Boston Medical and Surgical Journal

Dec. 18, 1919, **181**, No. 25

Public Health. A. Worcester, Waltham, Mass.—p. 703.
*Tumors of Anterior Surface of Sacrum. F. B. Lund, Boston.—p. 704.

Tumors of Sacrum.—Lund reports two cases, one of chordoma of the sacrum and one of sacrococcygeal dermoid.

California State Journal of Medicine, San Francisco

December, 1919, **17**, No. 12

Encephalitis Lethargica in San Francisco. P. K. Brown, San Francisco.—p. 427.
*Intestinal Flagellates: A Plea for Their Pathogenicity. J. V. Barrow, Los Angeles.—p. 429.
Plea for Earlier Recognition of Subacute Infantile Scurvy. L. Porter, Los Angeles.—p. 431.
*Case of Tetanus Successfully Treated by Antitoxin. H. P. Jacobson, Los Angeles.—p. 434.

Intestinal Flagellates: Plea for Their Pathogenicity.—Among the twenty-one cases cited by Barrow there were three cases of intestinal perforation. From one of these, *Trichomonas intestinalis* was recovered, both in the feces and in the peritoneal drainage. He points out that intestinal flagellosis is relatively common in California. Their pathogenicity is not wholly manifested by dysentery, but rather more often by other signs of an absorptive toxemia. No treatment thus far recommended is wholly successful. Calomel, followed by a saline laxative, gives the best temporary relief, but in about ten days' time, a careful search will reveal the parasites again. It is, therefore, necessary to repeat treatment many times. Thymol in large doses has considerable value. Emetin and ipecac exert a helpful influence in most cases. Oil of chenopodium and turpentine are very helpful; enemas of kerosene, ichthyol, or allied substances, have a marked beneficial effect, while those of methylene blue and sodium bicarbonate have about the same relative value as tap water.

Case of Tetanus Successfully Treated by Antitoxin.—During six days of treatment, Jacobson administered 117,000 units of antitoxin; 22,000 units were given intramuscularly; 70,000 units were given intravenously and 25,000 units were given intraspinally. Jacobson favors the administration of antitoxin jointly or alternately intraspinally, intravenously, intramuscularly and locally as being the most rational and promising method of treating tetanus.

Canadian Journal of Mental Hygiene, Toronto

October, 1919, **1**, No. 3

The Mysterious Stranger (Henry More Smith). C. K. Clarke, Toronto.—p. 199.
The Parents' Plea. H. MacMurchy, Toronto.—p. 211.
Oriental Immigration. W. G. Smith, Toronto.—p. 213.
Summer School for Auxiliary Class Teachers at Toronto. B. Kellaway, Toronto.—p. 223.
One Phase of Foreign Invasion of Canada. J. Halpenny, Winnipeg.—p. 224.
Invalid Occupation as a Guide to Vocational Fitness of Handicapped. N. L. Burnette, Toronto.—p. 227.
Relation of Juvenile Court to Community. H. G. Macgill, Vancouver, B. C.—p. 232.
Account of Work for Feebleminded in Hamilton, Ontario. T. H. Willis, Toronto.—p. 237.

Colorado Medicine, Denver

December, 1919, **16**, No. 12

State Program for Control of Venereal Disease. S. R. McKelvey, Denver.—p. 289.
Organotherapy. H. W. Hazlett, Paonia.—p. 293.
Cholesteatoma Involving Orbit. F. R. Spencer and C. L. LaRue, Boulder.—p. 302

Delaware State Medical Journal, Wilmington

July-August-September, 1919, **10**, No. 3

Dermoid Cyst in Child. S. C. Rumford, Wilmington.—p. 8.
Cited for Distinguished Service. L. S. Conwell, Camden.—p. 10.
Autointoxication. C. deJ. Harbordt, Dover.—p. 23.

Georgia Medical Association Journal, Atlanta

November, 1919, **11**, No. 7

Twenty-Five Cesarean Sections. C. P. Proctor, Athens.—p. 117.
Transchoroidal Therapy in Neurosyphilis. C. E. Dowman, Atlanta.—p. 119.
Early Diagnosis and Treatment of Cancer. M. B. Hutchins, Atlanta.—p. 121.
Appendicitis. L. C. Fischer, Atlanta.—p. 123.
Gastric Complications of Vascular Hypertension. G. Giddings, Atlanta.—p. 128.
Case of Intestinal Paresis Following Abdominal Section. A. M. Dimmock, Atlanta.—p. 132.

Illinois Medical Journal, Oak Park

December, 1919, **36**, No. 6

Medical Organization. W. Johnson, Chicago.—p. 289.
Of the World as Well as in It. R. J. Folonie, Chicago.—p. 292.
Ileus; Ruptured Ectopic Pregnancy; Appendicitis; Ulcer of the Stomach and Duodenum. D. R. Connell, Beloit, Wis.—p. 294.
Abdominal Emergencies. D. J. Twohig, Fond du Lac, Wis.—p. 298.
Relation of Dust to Spread of Tuberculosis. H. C. Sweany and C. C. MacLane, Chicago.—p. 302.
*Optic Neuritis and Etiologic Relation of Diseased Tonsils; Report of Case. C. B. Welton, Peoria.—p. 305.
New Problems in Empyema. E. G. Beck, Chicago.—p. 311.
Skin Grafting. J. F. Pember and T. W. Nuzum, Janesville, Wis.—p. 314.
Study of One Hundred Cases of Suspected Chronic Nasal Accessory Sinus Disease with a Report of Roentgen-Ray Findings. H. C. Ballenger, Chicago.—p. 316.

Optic Neuritis and Diseased Tonsils.—The case of optic neuritis cited by Welton is of interest: first, because of the obscure etiology; second, because of retention of normal central vision with an inflammation of the nerve head present, but with permanent damage sustained by the nerve, shown in the contraction of the color fields, and third, because of the apparent nonparticipation of the tonsils and the quick relief obtained with removal of this remote point of infection.

Indiana State Medical Ass'n Journal, Fort Wayne

Dec. 15, 1919, **12**, No. 12

Treatment of Tetanus; Report of Six Cases. C. G. Beall, Fort Wayne.—p. 321.

Journal of Biologic Chemistry, Baltimore

December, 1919, **40**, No. 2

*Effects of Malt and Malt Extracts on Scurvy and Alkaline Reserve of Blood. J. F. McClendon, W. C. C. Cole, O. Engstrand and J. E. Middlekauff, Minneapolis.—p. 243.
*Toxicity of Phenylacetic Acid. C. P. Sherwin and K. S. Kennard, New York.—p. 259.
*Chemical Identification of Thyroxin. E. C. Kendall and A. E. Osterberg, Rochester, Minn.—p. 265.
*Carbonic Acid and Carbonates in Cows' Milk. L. L. Van Slyke and J. C. Baker, Geneva, N. Y.—p. 335.
*Conditions Causing Variation in Reaction of Freshly Drawn Milk. L. L. Van Slyke and J. C. Baker, Geneva, N. Y.—p. 345.
Method of Preliminary Detection of Abnormal Milk Based on Hydrogen Ion Concentration. J. C. Baker and L. L. Van Slyke, Geneva, N. Y.—p. 357.
Extraction and Concentration of Water-Soluble Vitamin from Brewers' Yeast. T. B. Osborne and A. J. Wakeman, New Haven.—p. 383.
Crystalline Salts of Uridinphosphoric Acid. P. A. Levene, New York.—p. 395.
Identity of Water-Soluble Growth-Promoting Vitamin and the Antineuritic Vitamin. H. H. Mitchell, Urbana, Ill.—p. 399.
Structure of Yeast Nucleic Acid. IV. Ammonia Hydrolysis. P. A. Levene, New York.—p. 415.
*Activity of Lung Extract, as Compared to Extracts of Other Tissues, in Inducing Coagulation of Blood. C. A. Mills, Cincinnati.—p. 425.
Hydrolysis of Stizolobin, Globulin of Chinese Velvet Bean, Stizolobium Niveum. D. B. Jones and C. O. Johns, Washington, D. C.—p. 435.
*Nutritive Value of Banana. H. K. Sugiura and S. R. Benedict, New York.—p. 449.
Physiology of Phosphorus and Calcium Metabolism of Dairy Cows. E. B. Meigs, N. R. Blatherwick and C. A. Cary, Washington, D. C.—p. 469.
Fat-Soluble Vitamin. II. Fat-Soluble Vitamin Content of Roots, Together with Some Observations on Their Water-Soluble Vitamin Content. H. Steenbock and E. G. Gross, Madison, Wis.—p. 501.
Chemotherapeutic Studies on Organic Compounds Containing Mercury and Arsenic. G. W. Raiziss, J. A. Kolmer and J. L. Gavron, Philadelphia.—p. 533.

Effects of Malt and Malt Extracts on Scurvy.—The study made by McClendon and others shows that acidosis has nothing to do with scurvy. Sprouted cereal grains, especially after the acrospire projects one-half inch beyong the grain, are rich in antiscorbutic substance. The antiscorbutic substance in sprouted grain is not destroyed by heating to 70 C. to gelatinize the starch. The antiscorbutic substance may be extracted from sprouted barley after crushing it between steel rolls that are so close together that the cells of the acrospire are crushed.

Toxicity of Phenylacetic Acid.—As a result of feeding excessive doses of phenylacetic acid to a dog, Sherwin and Kennard found that the secreting epithelium of the proximal convoluted tube of the kidney was markedly affected; the endothelium of the blood vessels was not affected; the epithelium of the arched collecting tubule showed evidence of a destructive action, while that of the straight collecting tubule appeared to escape. The secreting epithelium of the

limbs of Henle's loop was most distinctly involved. The interstitial tissue of the kidney was found not to be injured, and the liver changes, the authors believe, are in all probability secondary.

Chemical Identification of Thyroxin.—In this, the second paper o fa series, Kendall and Osterberg report in detail on the most important physical and chemical properties of thyroxin.

Carbonates in Cow's Milk.—In the case of twenty-five samples of milk drawn from separate quarters of the udder, Van Slyke and Baker found that the CO_2 varies from 7 per cent. by volume to 86 per cent.; the p_H value varies from 6.50 to 7.16, in a general way increasing with the CO_2 content; the degree of acidity, as measured by titration, tends to decrease with increase of CO_2 content. In comparison with the results of other workers, the results obtained by us are higher. The CO_2 content of normal milk appears to be about 10 per cent. by volume.

Variations in Reaction of Fresh Milk.—The object of this investigation was the study of the extent and causes of the variation of the hydrogen ion concentration in freshly drawn cow's milk.

Activity of Lung Extract.—The strong coagulative activity of lung and kidney tissues, and to a lesser degree of skin, Mills says, is suggestive of a possible protective mechanism against hemorrhage.

Nutritive Value of Banana.—According to Sugiura and Benedict, a diet consisting of bananas, 83.0 per cent., casein, 16.0 per cent., yeast, 0.5 per cent., and protein-free milk, 0.5 per cent., is an adequate diet for the growth, maintenance, reproduction and perfect milk production of the albino rats.

Journal of Cutaneous Diseases, Chicago

December, 1919, **37**, No. 12

Parapsoriasis Lichenoides Linearis. Report of Case. H. J. F. Wallhauser, Newark, N. J.—p. 763.
Relationsbip of Kidney Function to Certain Skin Diseases Based on Phenolsulphonephthalein Test. R. H. Davis and M. F. Engman, St. Louis.—p. 772.
Dermatology and Syphilology in a Medical Advisory Board. H. H. Hazen, Washington, D. C.—p. 779.
Arithmetical Computation of Roentgen Dosage. G. M. MacKee, New York.—p. 783.
*Treatment (?) of Psoriasis. W. A. Pusey, Chicago.—p. 791.

Treatment (?) of Psoriasis.—Pusey records a case which illustrates the futility of most of the empiric treatments for psoriasis to which the patient had submitted in the course of three years. The patient had been given emetin, arsphenamin, staphylococcus and streptococcus vaccine, Fowler's solution and autoserum. He had been on as strict a nonprotein diet as he could devise for himself for seven months. He had his tonsils removed, seven teeth extracted and then had a few roentgen-ray exposures. In spite of these measures, the psoriasis showed no improvement; in fact, no material change of any sort.

Journal of Experimental Medicine, Baltimore

Dec. 1, 1919, **30**, No. 6

*Strain of Connective Tissue Seven Years Old. A. H. Ebeling, New York.—p. 531.
Streptolysin Production in Carbohydrate Medium. F. A. Stevens and S. A. Koser, M. C., U. S. Army.—p. 539.
*Pfeiffer's Bacillus and Influenza: A Serologic Study. M. Wollstein, New York.—p. 555.
Single Cell Method of Influence of Homologous Antipneumococcic Serum on Growth Rate of Penumococcus. M. A. Barber, New York.—p. 569.
*Antiblastic Phenomena in Active Acquired Immunity and in Natural Immunity to Pneumococcus. M. A. Barber, New York.—p. 589.
Blood Viscosity: I. Conditions Affecting Viscosity of Blood After Withdrawal from Body. L. Langstroth.—p. 597.
Effect of Hypotonic and Hypertonic Solutions on Fibroblasts of Embryonic Chick Heart in Vitro. M. J. Hogue.—p. 617.

Old Strain of Connective Tissue in Culture.—A fragment of heart extirpated from a chick embryo, Jan. 17, 1912, is still alive. It has been under cultivation in vitro for a period of over seven years and has undergone 1,390 passages. Ebeling describes the technic employed in perpetuating the strain during the last five years and in measuring the increase of the tissue, the factors which influence the rate of growth, and the present condition of the strain. The medium used for perpetuating the strain is composed of equal volumes of chicken plasma and chick embryo extract.

Pfeiffer's Bacillus and Influenza.—The serums of patients convalescent from influenza yield reactions for agglutinins, precipitins, and complement binding bodies with antigens of Pfeiffer's bacillus. These reactions appear constantly at the end of the first week, increase in intensity during the second week, and remain demonstrable for a period of from two to four months. They were most complete in the serum of patients suffering from postinfluenzal pneumonia. It is also demonstrated by Wollstein that the strains of Pfeiffer's bacillus isolated during the epidemic were morphologically and biologically similar to the strains isolated from influenza cases in other years, and antigenically they differed from them only quantitatively. The patients' serologic reactions indicate the parasitic nature of the bacillus, but are not sufficiently stable and clean cut to signify that Pfeiffer's bacillus is the specific inciting agent of epidemic influenza. They do, however, indicate that the bacillus of Pfeiffer is at least a very common secondary invader in influenza, and that its presence influences the course of the pathologic process.

Antiblastic Phenomena in Immunity to Pneumococcus—Barber gives the results of a series of experiments made with a special technic for the purpose of testing whether or not so-called antiblastic phenomena or bactericidal phenomena play any part in immunity to pneumococcus

Journal of Immunology, Baltimore

September, 1919, **4**, No. 5

Thermolabile and Thermostabile Antilysins (Anticomplementary Substances) of Human Serum. T. Kyutoku, Philadelphia.—p. 239.
Removal of Hemaglutinin from Rabbit Antihuman Serum. J. E. Sands and L. B. West, Philadelphia.—p. 275.
*New Method of Testing Antityphoid Serum. Y. Fukuhara and M. Yoshioka, Osaka, Japan.—p. 285.
*New Method of Testing Antitoxic Dysentery Serum. Y. Fikuhara, Osaka, Japan.—p. 299.
Experimental Purpura. M. J. Gottlieb, New York.—p. 309.
*Antigenic Property of Pfeiffer Bacillus as Related to Its Value in Prophylaxis of Epidemic Influenza. C. W. Duval and W. H. Harris, New Orleans.—p. 317.
*Poisons of Influenza Bacillus. J. T. Parker, New York.—p. 331.
*Existence of a Multiplicity of Races of B. Influenzae as Determined by Agglutination and Agglutinin Absorption. E. Valentine and G. M. Cooper, New York.—p. 359.
Protein Intoxication. IV. Histologic Lesions Produced by Injections of Pepton. T. H. Boughton, Chicago.—p. 381.
Production of an Antihemotoxin for Hemotoxin of Bacterium Welchii (Bacillus Aerogenes Capsulatus). W. W. Ford and G. H. Williams, Baltimore.—p. 385.

Testing Antityphoid Serum.—The new method of testing typhoid antiserums worked out by Fukuhara and Yoshioka is as follows: With the use of an arbitrary protective unit of antiserum (standard serum). the L_+ dose of a typhoid culture is determined; with this L_+ dose see p. 290 the serum to be tested is mixed in varying quantities; the largest amount of the serum which will just permit the death of a guinea-pig of 250 gm. weight within twenty-four hours after the mixture has been injected into the peritoneal cavity is taken as the protective unit. The value of an antityphoid serum is expressed by the number of such protective units contained in 1 c.c. of the serum. Any strain of typhoid bacteria can be used for the test. The virulence control is not important.

Testing Antitoxic Dysentery Serum.—In order to determine the antitoxic value of antidysentery serum it is necessary to select a standard serum which can be preserved in a dry state in the vacuum tubes of Ehrlich. The standard antitoxin unit adopted by Fukuhara was the amount that neutralized 100 minimal lethal doses of the toxin which at that time was available. For the testing of other antidysentery serum the so-called L. dose of dysentery toxin was adopted as the smallest amount which when mixed with the antitoxin unit and injected intravenously into a rabbit of 1,500 to 2,000 gm. weight caused the death of the animal within from four to five days. The L. dose of the toxin is employed, in the usual manner, to determine the relative antitoxic value of newly prepared antiserum.

Antigenic Property of Pfeiffer Bacillus.—During the height of the epidemic of influenza in New Orleans more

than 5,000 persons were vaccinated by Duval and Harris with a specially prepared protein suspension of the Pfeiffer bacillus. Of this number approximately 90 per cent. did not contract influenza, either during the period of the epidemic or its recrudescence which occurred two months afterward. The culture used in the preparation of the vaccine was grown on the surface of hemoglobin nutrient agar at a temperature of 37 C. for from thirty-six to forty-eight hours, when the growth was washed off and suspended in physiologic sodium chlorid solution and immediately devitalized by being saturated with chemically pure chloroform.

Poisons of the Influenza Bacillus.—While the evidence obtained by Parker is by no means conclusive, it seems probable that the poison of *B. influenzae* contains two poisons; the first, the more important one, a true soluble toxin, filtrable, thermolabile, against which antitoxins can be produced; the second, present also in the vaccine of *B. influenzae*, also filtrable, but differing from the first poison in its thermostability, and in the fact that it is not detoxicated by the antitoxin.

Multiplicity of Races of B. Influenzae.—The results recorded by Valentine and Cooper are held to indicate that under the term *B. influenzae* are included a group of organisms which, for practical purposes, is heterogeneous in character as determined by immunologic reactions. The existence of a multiplicity of races is advanced as evidence that *B. influenzae* is not the primary etiologic agent in epidemic influenza.

Journal of Infectious Diseases, Chicago

December, 1919, **25**, No. 6

*Pathogenicity of Bacillus Influenzae for Laboratory Animals. H. Albert and S. R. Kelman, Iowa City.—p. 433.
*Adjustment of Reaction of Culture Mediums. E. A. Feunel and M. B. Fisher, Washington, D. C.—p. 444.
Complement Fixation with Acid Fast Bacteria. I. Study of Various Organisms with Immune Rabbit Serums. J. V. Cooke, New York.—p. 452.
*Complement Fixation with Acid Fast Bacteria. II. Leprosy. J. V. Cooke, New York.—p. 474.
*Complement Fixation with Acid Fast Bacteria. III. Tuberculosis. J. V. Cooke, New York.—p 491
*Amebic Dysentery in California W. W. Cort and J. D. McDonald, Berkeley.—p. 501.
Streptolysin. Y. Nakayama, Chicago.—p. 509.

Pathogenicity of Bacillus Influenzae.—The Pfeiffer influenza bacillus was found by Albert and Kelman to be distinctly pathogenic to mice, guinea-pigs and rabbits. Although the symptoms of intoxication as seen in lower animals following injections of the Pfeiffer bacillus are suggestive of the profound intoxication seen in connection with many cases of the epidemic disease influenza in the human being, the authors feel that their experiments do not furnish any proof that the Pfeiffer bacillus has any specific etiologic relationship to that disease. On the other hand, they suggest that a possible etiologic relationship cannot be ignored.

Reaction of Culture Mediums.—According to Fennel and Fisher the adjustment of bacteriologic culture mediums according to hydrogen-ion concentration, because of its accuracy and simplicity, should wholly supplant the phenolphthalein (total acidity) method.

Complement Fixation in Leprosy.—In a study of twenty cases of leprosy of the nodular, macular, nerve and mixed type, Cooke found that leper serums contain complement binding substances that react with antigens of acid fast bacilli and give an acid fast fixation similar to that obtained with serums of rabbits immunized with acid fast organisms. Some serums contain these antibodies in rather high concentration, notably those from cases of the nodular type of the disease; other serums show a relatively low antibody content. The serums of high titer may give a nonspecific fixation also with nonacid fast antigens and with lipoidal (Wassermann) antigen, but only in comparatively low dilutions. It is suggested that this attribute of such high titer leper serums may explain in a certain percentage of positive Wassermann reactions described in leprosy. The acid fast reaction given by leper serums with acid fast bacterial antigens prevents the use of the complement fixation reaction in obtaining evidence of the etiologic importance of any acid fast organism isolated from leprosy.

Complement Fixation in Tuberculosis.—In tuberculosis, the serum contains complement binding substances that give fixation when members of the acid fast group of bacteria are used as antigen. These antibodies show a considerable difference in concentration in different serums, but this difference in titer does not correspond with the severity of the infection in the different cases. A relatively small percentage of patients with active tuberculosis have too small an amount of complement fixing antibody to be recognized in the test. These cases are analagous to those of syphilis that give a negative Wassermann reaction. Cooke found the test of some value in calling attention to unrecognized tuberculosis, but it does not always indicate a clinically active process. Leprosy and tuberculosis are the only human infections that give the reaction, and since it is specific for the acid fast group of bacteria, the term acid fast fixation seems appropriate.

Amebic Dysentery in California.—As a result of a circular letter sent out by the California State Board of Health a total of fifteen cases of amebic dysentery were reported from eight hospitals. No cases of dysentery caused by flagellate protozoans were reported.

Medical Record, New York

Oct. 25, 1919, **96**, No. 17

Present Status of Vaccination Against Influenza. F. E. Stewart, Philadelphia.—p. 681.
*Treatment of Influenza and Complications. J. Diner, New York.—p. 685.
*General Treatment of Influenza. N. P. Barnes, Washington, D. C.—p. 687.
Control of Epidemic Influenza in Large Institution. H. C. Wood, Jr., Philadelphia.—p. 689.
Lipovaccines. A. P. Hitchens, Indianapolis.—p. 692.
*Therapeutics of Aspidosperma. R. W. Wilcox, New York.—p. 698.

Nov. 8, 1919, **96**, No. 19

Compulsory Health Insurance; Its Promises and Its Dangers. E. M. Stanton, Schenectady, N. Y.—p. 749.
Possible Dietary Causes of Rheumatism. J. M. W. Kitchen, East Orange, N. J.—p. 752.
Mental Diseases. H. Lavesou, New York.—p. 754.
Donor and Receptor in Regard to Blood Groups. A. L. Benedict, Buffalo.—p. 761.
Symptoms Associated with Dentition. E. Moody, Joplin, Mo.—p. 762.
Case of Scarlet Fever with Pneumonia as Complication. A. Lobell, New York.—p. 763.

Treatment of Influenza and Complications.—This paper was abstracted in The Journal, Aug. 9, 1919, p. 448.

Treatment of Influenza.—This paper was abstracted in The Journal, Aug. 16, 1919, p. 554.

Therapeutics of Aspidosperma.—Wilcox considers this drug a valuable remedy when the respiration is embarrassed, as in emphysema, chronic bronchitis or chronic pneumonia. Given in proper doses, it relieves not only the dyspnea but also the cyanosis and sense of suffocation. It appears to assist the oxygenation of the blood as well as to stimulate the respiratory center. Aspidospermine represents fairly well the activity of the drug with the further advantage that it may be used hypodermically in a dose of one-half grain (0.03 gm.).

Nebraska State Medical Journal, Norfolk

November, 1919, **4**, No. 11

Laennec. L. Crummer, Omaha.—p. 315.
Immunization Against Diphtheria. J. H. Dillon, Lincoln.—p. 319.
Dupuytren and His Contemporaries. A. F. Jonas, Omaha.—p. 320.
History of Omaha-Douglas County Medical Society. A. B. Somers, Omaha.—p. 324.
Series of Interesting Accident Cases. C. H. Waters, Omaha.—p. 325.
Etiology and Pathology of Cancer. D. T. Quigley, Omaha.—p. 328.
Postinfluenzal Pulmonary Complications Simulating Tuberculosis. W. N. Anderson, Omaha.—p. 332.
Nitrous-Oxid Anesthesia for Obstetric Practice in Country. H. J. Wertman, Milford.—p. 335.
*A Working Classification of Tumors. R. G. Breuer, Omaha.—p. 336.

Working Classification of Tumors.—Breuer's classification of tumors is based on their histologic, histogenetic and clinical characteristics: I. Tumors due to reproductive power of tissues: A. From the germ cell. B. From the somatic cell blastomata (unipotential). C. From the undifferentiated

somatic cell: Mixed tumors. II. Tumors due to errors of development: A. Failure progression of development: B. Failure of regression of development.

New York Medical Journal

Nov. 29, 1919, **110**, No. 22

Application of Cardiovascular Studies of War to Civil Practice. J. H. Musser, Philadelphia.—p. 877.
Occupational Causes of Ill Health. L. I. Harris, New York.—p. 880.
Capillary and Venous Circulation in Relation to Disease. A. T. Livingston, Jamestown, N. Y.—p. 884.
Syphilitic Ocular Affections. A. Brav, Philadelphia.—p. 889.
Neurasthenia. A. Sauthoff, Mendota, Wis.—p. 891.
New Needles for Sewing in Deep Cavities. A. Kahn, New York.—p. 893.
Surgery at Base Hospital. A. G. Brenizer, Charlotte, N. C.—p. 894.
Case of Lethargic Encephalitis. H. Hershberg, New York.—p. 899.

Dec. 13, 1919, **110**, No. 24

Modern Commentaries on Hippocrates. J. Wright, Pleasantville, N. Y.—p. 965.
Syphilis and Its Serologic Significance. D. Kaplan, New York.—p. 969.
Influenza Prevention in Army Camps. W. S. Cornell, Philadelphia.—p. 973.
Benzyl Benzoate; Résumé of Work Done by Various Observers. J. M. Boice, Philadelphia.—p. 977.
Nature and Treatment of Acne Vulgaris. O. L. Levin, New York.—p. 982.
Health Protection and Sickness. H. Emerson, New York.—p. 985.
*Treatment of Burns. A. W. Hengerer, Buffalo.—p. 988.

Treament of Burns.—In every case of severe burn, Hengerer immediately gives full dose of morphin. Then he covers the damaged area with a clean towel or absorbent cotton, gets the patient to the hospital as soon as possible, administers an anesthetic and removes the damaged tissue by scrubbing the burned area with ordinary hand brushes until the surface appears to be covered with normal tissue. In scrubbing the burned area, the object is to remove all of the destroyed tissue. The scrubbing should be done as soon after the burn has occurred as possible but the length of time is not necessarily a contraindication. Hengerer has scrubbed burns three days after their occurrence with happy results. Brushes are changed frequently and aspesis should be employed as much as possible. The wound may then be dressed with a thick covering of petrolatum on gauze on which a small amount of bismuth subiodid is sprinkled, or the wound may be covered with wax. Hengerer claims that patients with over one half of the body burned have been saved by this treatment, and that the resulting horrible deformities and disfiguration so often seen were greatly lessened. The dressings are bearable and often painless, the time of convalescence is greatly shortened. Hengerer terms this the surgical treatment of burns.

New York State Journal of Medicine

November, 1919, **19**, No. 11

Plastic Surgical Restoration of War Injured Faces. G. V. I. Brown, Milwaukee.—p. 385.
Epidemiology of Influenza. P. B. Brooks, Albany.—p. 391.
Clinical Aspects of Influenza. W. R. Williams, New York.—p. 393.
Measure and Development of Nutrition in Childhood. G. M. Retan, Syracuse.—p. 397.

Northwest Medicine, Seattle, Wash.

November, 1919, **18**, No. 11

Therapeutic Problems of Future. G. W. Middleton, Salt Lake City.—p. 225.
Value of Tuberculin Cutaneous Test. C. C. Browning, Los Angeles.—p. 230.
Ophthalmoscopic War Injuries. E. E. Maxey, Boise.—p. 232.
Histogenesis of Papillary Carcinoma of Bladder. J. R. Corkery, Spokane.—p. 234.

Pennsylvania Med. Journal, Chicago, and Athens, Pa.

December, 1919, **23**, No. 3

The Milk Problem. C. H. Miner, Wilkes-Barre.—p. 115.
First Aid Industrial Accidents. M. J. Shields, Washington, D. C.—p. 117.
The Industrial Cripple. F. D. Patterson, Harrisburg.—p. 119.
*Diagnosis of Cholecystitis and Gallstone. D. Riesman, Philadelphia.—p. 120.
*Value of Roentgenologic Study of Gastro-Intestinal Tract. H. K. Pancoast, Philadelphia.—p. 125.
Thorough Study vs. Exploratory Incision in Gastro-Intestinal Lesions. J. H. Gibbon, Philadelphia.—p. 127.
*Surgical Treatment. A. C. Wood, Philadelphia.—p. 128.
*Medical Treatment of Diseases of Gastro-Intestinal Tract. J. A. Lichty, Pittsburgh.—p. 134.
*Attitude of General Practitioner. W. E. Robertson, Philadelphia.—p. 139.
*Value of High Rectal Enema. H. D. Jump, Philadelphia.—p. 142.
*Cancer of Esophagus. E. J. Patterson, Pittsburgh.—p. 147.
Community Organization. C. R. McKinniss, Pittsburgh.—p. 150.
Duty of State and Physician to Mental Patient. O. Copp, West Philadelphia.—p. 152.
*Foot Prophylaxis in Childhood. J. T. Rugh, Philadelphia.—p. 155.
Practical Points in Infant Feeding. F. C. Monks, Kittanning.—p. 158.
Anesthesia in Children. E. W. Beach, Philadelphia.—p. 161.
The Antinarcotic Law. T. S. Blair, Harrisburg.—p. 164.

Cholecystitis.—This paper was abstracted in THE JOURNAL, Nov. 15, 1919, p. 1548.

Roentgenologic Study of Gastro-Intestinal Tract.—This paper was abstracted in THE JOURNAL, Nov. 15, 1919, p. 1548.

Surgical Treatment.—This paper was abstracted in THE JOURNAL, Nov. 15, 1919, p. 1549.

Medical Treatment of Diseases of Gastro-Intestinal tract.—This paper was abstracted in THE JOURNAL, Nov. 8, 1919, p. 1468.

Attitude of General Practitioner. — This paper was abstracted in THE JOURNAL, Nov. 8, 1919, p. 1468.

Value of High Rectal Enema.—This paper was abstracted in THE JOURNAL, Nov 8, 1919, p. 1467.

Cancer of Esophagus.—Patterson advocates endoscopic examination in these cases, but warns that before any person is examined esophagoscopically it is of paramount importance to study the esophagus by means of fluoroscopy and roentgenoscopy in order to exclude aneurysm and to observe any hesitance in the normal function of the esophagus or obstruction in the passage of the barium meal through the esophagus. Three cases are reported.

Foot Prophylaxis in Childhood.—The prevention of foot disability in children, Rugh says, centers about two great classes of conditions, viz., the congenital and the acquired. Under all conditions, however, whether congenital or acquired, intrinsic (within the foot) or extrinsic (without the foot), fully 98 per cent. of disabilities in the foot in childhood (as, indeed, also in adults) are mechanical both in origin and in character. Every case examined must be looked at with this fact in mind, and whatever the type of the disability, its mechanics must be recognized and proper treatment advised. The various types of foot disorder and their treatment are discussed by Rugh.

Tennessee State Medical Association Journal, Nashville

November, 1919, **12**, No. 7

Acriflavine in Treatment of Gonorrhea and Allied Conditions. P. Bromberg, Nashville.—p. 239.
Plea for More Perfect Anatomic Results in Fractures. S. R. Miller, Knoxville.—p. 245.
Multiple Neuritis; Its Treatment. D. Hayes, Tracy City.—p. 246.
Injuries of Cornea. W. W. Hill, Harriman.—p. 248.
*Congenital Diverticula of Intestines: Report of Case. W. T. Black, Memphis.—p. 253.
The More Common Psychoses. G. A. Hatcher, Nashville.—p. 258.

Congenital Diverticula.—In Black's case a tumor arose from the tip of a congenital diverticulum of the sigmoid. This tumor was connected only to the serosa side of the diverticulum. Potentially it was a malignant growth. A diverticulitis or perforation could be assigned as a predisposing or existing cause, although it could also be attributed to a fetal inclusion.

Texas State Journal of Medicine, Fort Worth

December, 1919, **15**, No. 8

Diagnosis and Treatment of Goiter. A. C. Scott, Temple.—p. 275.
Surgery of Peripheral Nerves. W. L. Crosthwaite, Waco.—p. 279.
Mental and Nervous Diseases in Young People. G. F. Witt, Dallas.—p. 280.
Potential Dementia Praecox. T. Dorbandt, San Antonio.—p. 281.
Movable Retropositions of Uterus, Their Mechanism and Significance. M. C. O'Brien, San Antonio.—p. 284.
Acute Infectious Disease of Female Pelvic Cavity; Report of Cases. R. J. Alexander, Waco.—p. 287.
Mastoid Operation Under Local Anesthesia. T. A. Dickson, Houston.—p. 290.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Bulletin of Naval Medical Association of Japan, Tokyo

August, 1919, No. 25

Non-Gas Forming Bacillus Paratyphosus B. J. Ishiguro.—p. 1.
A Case of Extension Ulcers (Kocher) Following Strangulated Ileus of the Jejunum. T. Orimo.—p. 2.

Dublin Journal of Medical Science

November, 1919, Third Series, No. 575

Teaching of Pathology. T. T. O'Farrell.—p. 177.
The Ductless Glands. G. H. Davis.—p. 192.

Lancet, London

Dec. 6, 1919, **2**, No. 5023

The Surgical Tradition. J. Tweedy.—p. 1009.
Plea for Better Teaching of Oto-Rhino-Laryngology. H. Tilley.—p. 1014.
Treatment of Malaria in England. S. P. James.—p. 1016.
Present Position of Roentgen Rays and Radium in Gynecology. D. Turner.—p. 1018.
*Diathermy. N. Patterson.—p. 1020.
Sporulation of Syphilis Organism as Seen on the Dark Ground. G. Lundie and F. H. Goss.—p. 1024.
*Frequency of Right Inguinal Hernia After Appendectomy by the "Gridiron" Incision. G. H. C. St. G. Griffiths.—p. 1026.
Environmental Factor in Causation of Beri-Beri. K. Simpson.—p. 1027.
Case of Carcinoma of Transverse Colon and Intussusception. I. Back and A. T. Edwards.—p. 1028.
*Unusual Form of Ventral Hernia. F. L. Apperly.—p. 1029.
A Pseudo-Paratyphoid Carrier. R. C. Watts.—p. 1029.

Diathermy in Mouth Cancer.—In the treatment of epithelioma of the mouth and pharynx, Patterson regards diathermy as the best method to adopt in all cases, not only in cases on the borderland of being inoperable by the knife. No excision of a carcinomatous growth in the tongue, mouth or pharynx, however small that growth may be, should be carried out with the knife if diathermy is available. Encouraged by the good results in cases where the disease was limited, Patterson has applied the method in advanced cases where nothing could really be expected from treatment of any kind. The results in selected cases have been extraordinarily good. Patterson believes that if patients could only be seen early enough a large number of cures would probably be effected. It has been too much the habit, he says, and it is still too much the habit of surgeons to regard this method as a palliative measure only, and as one to be reserved for "inoperable" cases.

Right Inguinal Hernia Following Appendectomy.—Griffiths has collected eleven cases of inguinal hernia following appendectomy. Of these, ten were on the right side and the eleventh appeared as a left inguinal hernia. The date of appearance of these hernias varied from a few months to three and one half years after appendectomy was performed. In one case the hernia followed twelve years after operation, but this case had also been complicated by an operation for ventral hernia in the old scar. This late occurrence may account for this end result or complication having passed unnoticed so long. In ten of the cases the gridiron incision was used, none of the incisions being near the outer border of the right rectus muscle. In the eleventh case, a Battle's scar was present, the hernia having appeared eighteen months after operation. The length of the scars varied from two and one half inches to a maximum of six inches. The situation, too, differed somewhat in position, from immediately above Poupart's ligament and the right iliac crest to near the midpoint between the right anterior superior spine and the umbilicus. The hernias were mostly small. The greater majority of the original operations for appendicitis had not required draining for pus, and the incision had been closed in the ordinary way. In explanation of this occurrence, Griffiths suggests that it may occur in two ways, either by avulsion or division of the fine muscular nerve twigs to the lower portions of the internal oblique and transversalis muscles during the opening of the peritoneal cavity, and leading to a partial or complete atrophy of the muscle fibers in the region of the internal abdominal ring; or, on the other hand, by compression of the same nerves by the encircling catgut sutures in sewing up the incisions in the transversalis and internal oblique muscles, in repairing the abdomen after appendectomy.

Unusual Form of Ventral Hernia.—In Apperly's case the hernia protruded from the site of an artificial anus, made about six inches above the cecum. Part of the wall of the colon had been forced through the colostomy opening, and by stretching and turning inside out, formed the sac of a hernia, the content of which was a loop of gangrenous small intestine 10 inches long. The mucous membrane of the colon was so stretched and shining as to be indistinguishable from peritoneum. The gangrenous contents of the sac were readily removed when relieved from constriction and were resected. A lateral anastomosis was made, the colostomy being returned to its normal position.

Japan Medical World, Tokyo

Nov. 16, 1919, No. 309

Tuberculous Bacillary Antigen. T. Kodama and T. Hayashi.
Charge of Electrolytic Curve of Kakka Blood and Concentration of Hydrogen-Ion in Same. M. Sugawara.
Influence of Various Drugs Against Pulmonary Blood Circulation. K. Abe.

Nov. 23, 1919, No. 310

Physiologic and Pathologic Examination of Nerves and Muscles of Domestic Fowl Suffering from So-Called Polished Rice Disease. G. Kato and S. Shizume.

Nov. 30, 1919, No. 311

*Experimental Study of Spirochete of Weil's Disease. S. Wataguchi.
*Penetration of Drugs into Spinal Cavity and Their Disposal. H. Hashimoto.
Serum of Patient with Reference to Wassermann's Test. R. Kobayashi.

Cultivation of Spirochete of Weil's Disease.—Wataguchi succeeded in cultivating the spirochete of Weil's disease on a watery mixture of the blood. Guinea-pig inoculation with these cultures resulted in a reproduction of the disease, and an immunizing serum was obtained from rabbits. Specific immune bodies were found, and immunity was conferred by injection. All this work was done on animals. Further work is now in progress to apply these findings to human beings.

Penetration of Drugs Into Spinal Cavity and Their Disposal.—Iodin and hexamethylenamin were found in the urine by Hashimoto after injection of small amounts into the cerebrospinal fluid. However, it was more difficult to detect iodin in the cerebrospinal fluid, no matter whether given by mouth or intravenously, than was the case with hexamethylenamin. The penetration of these drugs seems to depend on the degree of the pathologic changes present. The greater the change, the less the degree of penetrability. Hashimoto claims that this finding is of value clinically.

Medical Journal of Australia, Sydney

Nov. 8, 1919, **2**, No. 19

Intestinal Obstruction. R. A. Macleod.—p. 391.
Method of Ventro Suspension of the Uterus. W. T. Chenhall.—p. 395.
Lesion of Optic Thalamus. A. E. Mills.—p. 397.

Nov. 15, 1919, **2**, No. 20

Cardiac Murmurs. J. M. Gill, London.—p. 411.
*Apparent Transmission of Leprosy to a Macaque Monkey. B. Bradley, Sydney.—p. 414.
*Exophthalmic Goiter Combined with Myasthenia Gravis. G. E. Rennie, London.—p. 416.
A Case of Urethral Calculus. P. S. Clarke, Sydney.—p. 417.

Transmission of Leprosy to a Monkey.—Bradley reports on the inoculation of a monkey, *Macacus rhesus*, with leprous material, and the subsequent development of nodular granulomatous lesions. The material was obtained from a nonulcerated lesion on the eyebrow of a leper. Numerous attempts were made on half of this piece of tissue for cultural purposes by Noguchi's and other methods, anaerobic and aerobic, but in all cases contamination occurred and the cultures were discarded. The remainder of the tissue was used for inoculating the monkey. Sixty days later the disease was seen to have developed. Smear preparations from three lesions showed leprosy bacilli in each one. A few days later the monkey was found dead. A thorough postmortem examination was made. Lepra bacilli were found in the axillary and inguinal glands, and in the spleen.

Exophthalmic Goiter Combined with Myasthenia.—The outstanding feature in Rennie's case is the survival for a period of at least thirteen years of a patient suffering from a combination of the symptoms of two diseases, each of which is considered to have a grave prognosis; and not only a survival after these many years, but a practical recovery of a large amount of health and strength. A second point is the permanence of some defect of the external ocular muscles.

Practitioner, London

December, 1919, **103**, No. 6

Mental Condition Preceding Suicide. W. A. Brend.—p. 401.
Anesthetics. J. Blomfield.—p. 412.
Recent Work in Diseases of Lung. A. J. Jex-Blake.—p. 419.
Tuberculosis Problem. O. Holden.—p. 428.
Recent Work on Diseases of Heart. C. W. Chapman.—p. 436.
Treatment of Sepsis in Nose and Ear by Ionization. A. R. Friel.—p. 449.
*Cesarean Section in Osteomalacia. E. F. Neve.—p. 453.
*Malignant Measles: Two Cases. H. V. O'Shea.—p. 460.
*Delayed Tetanus, with an Unusual Complication. H. K. V. Soltau.—p. 467.

Cesarean Section in Osteomalacia.—This article is based on seventy-three cases of cesarean section with seventeen deaths, a mortality of 23.3 per cent. Neve points out that these osteomalacia patients are poor subjects for operation; therefore even better results may be expected in other maternity cases. He advocates the judicious but extended use of this method of delivery. In any case, he considers craniotomy of a living child as little short of homicide.

Malignant Measles.—The first case cited by O'Shea was one of hemorrhagic measles. Although the nervous symptoms were well marked, approaching the "status typhosus," the most remarkable feature was the extensive hemorrhages, petechial and otherwise, which occurred throughout the body. Contrary to the usual issue, death, the patient recovered. The second case is an example of the toxic type of the infection, which was characterized by a badly developed rash, not well raised above the skin and of a bluish tint. The rash was of the dark malignant type, and hot mustard baths and diaphoresis failed to bring it out properly. Symptoms of meningitis showed themselves on the fourth day, and the condition of the patient became hopeless. Toward the end edema of the lungs set in with the failing circulation, preceded by hyperpyrexia and convulsions. Treatment was of no avail. The child died.

Tetanus with Unusual Complication.—A retained foreign body—subsequently removed—was probably the source of delayed tetanus in Soltau's case, but the interesting feature was not related to the tetanus. The man developed a small abscess, situated just behind the right trochanter. It was opened and drained a week later. Another incision over his right buttock opened up a collection of pus beneath the gluteus maximus. While swabbing out the abscess cavity, a dead worm, covered with blood clot, was removed on the gauze. The worm was 4 inches long, and, after investigation by the pathologist, was pronounced to be a male *Ascaris lumbricoides*. The stools were subsequently examined several times for ova, but only at the first examination, two days later, were any found, and these were ova of *Ascaris lumbricoides*.

Siamese Red Cross Medical Journal, Bangkok

August, 1919, **2**, Pt. 2

Rebellious Consecutive Uterine Hemorrhage in Case of Hydatid Mole Cured by Serotherapy. L. Robert and P. S. Balaraksha.
Case of Epidemic Cerebrospinal Meningitis. L. Robert and M. C. Shavara.

Archives Mens. d'Obstétrique et de Gynécologie, Paris

September, 1919, **8**, No. 9

*Allowing Parturients to Get up Early. Bourcart (Geneva).—p. 465.
Idem. Brouha (Liége).—p. 487.

Allowing Patients to Get Up Early.—Bourcart gives four pages of bibliography, set solid, to sustain the advantages of allowing normal parturients to get up early, as also the patients after operations. The abdominal balance must be restored, however, he says, before patients are allowed to get up. This can be promoted by massage, exercising the abdominal muscles, to reestablish the normal course of the blood. Vibratory massage below the liver is particularly useful for this. A semiseated position or reclining on the side helps further to hasten conditions which permit getting up. The abdominal massage should be done by the physician; usually four or five minutes twice a day are enough at first in hospital practice. After operations for ileus the manual vibratory massage is very useful, possibly warding off peritonitis. Turning to the prone or knee-chest position is also useful.

Allowing Parturients to Get Up Early.—Brouha insists that the getting up should be individual and progressive. The accoucheur must be the one to decide the question in each case, with the intelligent collaboration of the parturient herself and the nurse. This restricts the method, he admits, to the privileged classes, especially as tradition is all against it, and the family usually combat it and ascribe every mishap to the physician's getting the patient up too early. Working women are more robust and bear without harm the inconvenience of overlong staying in bed.

Bulletin de l'Académie de Médecine, Paris

Nov. 18, 1919, **82**, No. 36

General Prophylaxis of Tuberculosis. J. Lignières.—p. 301.
*Pulmonary Mycosis. A. Sartory.—p. 304.
*Intraspinal General Anesthesia. Paul Delmas.—p. 305.
*Mites in Barley. Loir and Legangneux.—p. 308.
*Open Tuberculosis in Dogs and Cats. Gabriel Petit.—p. 310.
*Gas Cysts of the Intestines and Peritoneum. M. Letulle.—p. 315.

Pulmonary Mycosis.—Sartory describes an aspergillus recently cultivated from the sputum of a pulmonary tuberculosis suspect.

Intraspinal General Analgesia.—Delmas states that 600 operations done under his intraspinal technic without a single untoward feature have convinced him of its superiority to other methods whenever general inhalation anesthesia is contraindicated. He dissolves the cocain cold in the patient's own cerebrospinal fluid and injects it at once through a needle 7 cm. long by $1\frac{1}{10}$ mm. interior diameter. The analgesia lasts for about an hour (1 cg. = one-fourth hour). He says that the motor and sensory nerves are not touched, and there are no immediate or remote by-effects. The only precaution necessary is that the patient must not sit up for twenty-four hours.

Barley Mite Eruption.—Sixty-three men unloading a cargo of barley, just arrived from the near East, developed in two or three hours a confluent eruption which was traced to an acarus of the pediculoides group. The eruption yielded to treatment for scabies. Six similar epidemics have been recorded at Havre since 1911. Preventive measures should include sulphur fumigation of the vessel hold, and douches, with change of clothing, for the dock workers.

Tuberculosis in Dogs and Cats.—Petit expatiates on the facility with which human tuberculosis is transmitted to dogs and cats, and the danger of infection from those with intestinal, pulmonary and skin discharging lesions. Any dog or cat should be regarded with suspicion when it is growing thin and coughs, or has a diarrhea or persisting ulceration on the face or neck. The pus from these latter lesions in particular swarms with tubercle bacilli.

Gas Cysts in the Intestines.—Letulle describes with seventeen photomicrographs the histopathogenesis in four cases of gas cysts in bowel and peritoneum.

Journal de Médecine de Bordeaux

Nov. 25, 1919, **90**, No. 22

*The Electrophysiologic Dissociation of Sensation. A. Le Dantec.—p. 483. Conc'n.
Determination of the Total Acidity of the Gastric Juice. L. and H. Barthe.—p. 499.
Extraction of Projectiles in the Chest. H. L. Rocher.—p. 501.
*The Argyll Robertson Sign. Cabannes.—p. 502.

Electrophysiologic Dissociation of Cutaneous Sensation.—See abstract on page 64, Jan. 3, 1920.

The Argyll Robertson Pupil.—Cabannes declares that this sign may be encountered with any lesion of the centripetal

arm of the pupil reflex, not necessarily of syphilitic origin, or in tabes, or general paralysis.

Paris Médical

Nov. 29, 1919, **9**, No. 48

*Opening Lecture of Course on History of Medicine and Surgery. Menetrier.—p. 417.
*Determination of Acidity of Gastric Juice, P. Baufle.—p. 428.

History of Medicine.—Menetrier devotes most of his inaugural lecture to Laennec and the centennial of his work, "L'Auscultation médiate," although auscultation is now usually direct and not "médiate" as he described. Menetrier adds, "As Laennec had been for eighteen years an ardent student of pathologic anatomy, the findings with his new method of exploration explained the lesions to such an extent that he may be called the creator of modern pathology."

Acidity of the Gastric Juice.—Baufle comments on the error resulting from the assumption that the stomach contents obtained after a test meal represent pure gastric secretion. In reality they represent the admixture of gastric juice and what is left of the test meal lingering in the stomach. This admixture varies within a wide range as one or the other of these elements fluctuates, and the proportion of each should be determined. This can be readily accomplished by incorporating with the test meal some substance which does not modify gastric secretion and which is not absorbed by the gastric mucosa. Subtracting the amount of this substance in the stomach contents one hour after taking the test meal, leaves the gastric secretion alone. The substance answering the above conditions may be sodium phosphate (Mathieu and J. C. Roux) or ferric sulphate (Meunier). He prefers the latter. For example, after an Ewald test meal of 340 c.c. extraction of the stomach contents gives 270 c.c. Estimation of the iron in this stomach contents shows that 90 c.c. is what is left of the test meal, and 180 c.c. is the amount of stomach secretion. Applying the Töpfer test this gives 0.584 free hydrochloric acid; 0.146 acid of fermentation; 0.438 combined acid, and total acidity of 1.168 per thousand cubic centimeters. If 180 c.c. of pure gastric juice is found in 270 c.c. of chyme, and 1 c.c. of gastric juice is equal to $\frac{270}{180}$ c.c. of chyme, then 1,000 c.c. is equal to $\frac{270}{180} \times 1{,}000 = 1{,}500$ c.c. The formula is thus A (acidity) $\times \frac{\text{C (chyme)}}{\text{S (gastric juice)}}$. This formula is accurate enough for all practical purposes, while the technic is so simple, Baufle emphasizes, that it should become a routine procedure.

Presse Médicale, Paris

Nov. 26, 1919, **27**, No. 71

*Acute Aseptic Purulent Arthritis. E. Apert and Cambassédès.—p. 713.
*Urobilinuria. Brulé.—p. 714.

Aseptic Purulent Arthritis.—Apert and Cambassédès have encountered two cases in which an acute arthritis of the knee in children seemed to be absolutely aseptic, although puncture brought pus. They cite a third case in which the elbow was the seat of the lesion. Recovery was soon complete and permanent in all. The pus coagulated *en masse*, the fibrin not being destroyed by bacterial action as with ordinary arthritis. The absence of fever—in marked contrast to the swelling of the joint—is also characteristic but is not invariable; in one of the cases there was temperature of 39 C., but a concomitant meningitis was probably responsible for this. Pain occurs only when the joint is very much distended. In one of the children there was no pain, and the arthritis was discovered only by accident during convalescence from scarlet fever. No treatment was attempted in these cases beyond the exploratory puncture, done twice in one case.

Urobilinuria.—Brulé reviews the conflicting views on the origin and clinical significance of urobilinuria. His opinion is that it signifies retention of bile pigments, but the retention is not intense enough for bilirubin to appear in the urine. This retention may be due to lesions in the liver or biliary passages or to hemolytic processes. He never found urobilinuria in normal subjects. By examining the urine for bile salts, as well as for urobilin, we may throw light on the cause of the retention. With obstruction in the biliary passages, the icterus is never dissociated, while with hemolytic icterus there is always dissociation. With liver disease the retention may be complete or dissociated. There may be retention without jaundice, and urobilinuria may be the only sign to warn that the liver is touched. It should be excluded before accepting a pigmentary acholia. Examination for stercobilin is also important as its absence proves that no bile is passing into the feces even when the stools seem of normal color. A further test of this is to examine the blood dust or the fat in the blood after test ingestion of fat.

Nov. 29, 1919, **27**, No. 72

*The Teaching of Obstetrics at Paris. A. Couvelaire.—p. 721.
*Rapid Clinical Tests for Albuminuria and Glycosuria. L. Bauzil.—p. 725.
*Gas Cysts in the Mesentery. Cristol and Porte.—p. 726.

Teaching of Obstetrics at Paris.—Couvelaire reviews the history of the teaching of obstetrics at Paris from the founder of modern obstetrical surgery, the barber-accoucheur, Ambroise Paré (1541) to Tarnier (1857) and the modern school. In conclusion he emphasizes that the science of obstetrics is the science of the generation of man, not merely the science of labor alone.

Tests for Albumin and Sugar in the Urine.—Bauzil describes how he has simplified the technic for these tests so that any practitioner can determine the proportion of albumin and sugar in the urine rapidly and readily with approximate precision.

Gas Cysts in the Abdomen.—Cristol and Porte report a case in which an emergency laparotomy was required for sudden intense abdominal pain and vomiting of bile; pulse 100; the abdomen distended with gas. The dilated stomach reached to the pubis, and puncture released gas and 4 liters of a blackish fluid. The mesentery was found studded with small gas cysts and it had strangulated the bowel close to the pylorus. Almost the entire mesentery was studded with thousands of these pearly cysts of different sizes. The abdomen was merely sutured, but the admission of air seems to have been responsible for the subsidence of the cysts, as there have been no further symptoms since. The woman's health has been apparently perfect during the year to date.

Progrès Médical, Paris

Oct. 18, 1919, **34**, No. 42

*Recent Progress in Intestinal Pathology. J. Carles.—p. 413.
Tuberculin and Serotherapy in Pulmonary Tuberculosis. J. Bertier.—p. 416.

Recent Progress in Intestinal Pathology.—Under the heading "Lessons Learned from the War," Carles expatiates on the precision in the differential diagnosis of pathologic conditions in the intestines which is one of the acquisitions from the war. Cultures from the stools, serodiagnosis, rectosigmoidoscopy, analysis of the products of digestion in the stools, determination of the intestinal flora and parasites, and radioscopy—these supplement clinical examination and have become routine procedures. They reveal the nature of the enteritis and whether it is recent or the remote result of some extinct infection which has left merely what he calls a sympathosis or an enteroneuritis.

Nov. 22, 1919, **34**, No. 47

*Epiploitis. A. Aimes.—p. 465.
*Retinitis in Diabetics. A. Cantonnet.—p. 468.
Morbid Timidity. R. Benon.—p. 469.

Omentitis.—Aimes reviews the literature on acute and chronic epiploitis, including several publications in The Journal and large numbers of theses.

Retinitis in Diabetics.—Cantonnet comments on the frequent coincidence of chronic nephritis and diabetes, and the

predominance of the symptoms of one or the other. In Onfray's twenty-four cases of retinitis in diabetics, the kidneys were apparently normal in 20 per cent. while in 50 per cent. there was evidence of incipient Bright's disease, and in 20 per cent. there was azotemia. An exact diagnosis is a guide to effectual treatment.

Nov. 29, 1919, **34**, No. 48

*The Blood Pressure in Psychoses. J. Enzière and J. Margarot.—p. 477.
*The Sacro-Iliac Articulation. R. Pilatte and H. Vignes.—p. 479.
Sodium Bromid in Pathologic Conditions in the Digestive and Circulatory Apparatus. P. M. Besse and P. Goutzait.—p. 483.

The Blood Pressure in Psychoses.—Enzière and Margarot refer to what they call anxious states in persons without organic lesions. The arterial pressure is often high, rising proportionally to the feeling of distress. Sympathicotony is evident in the more pronounced cases, and this readily explains the high arterial tension by vasoconstriction.

The Sacro-Iliac Articulation.—Pilatte and Vignes discuss the anatomy and physiology of this articulation, and the interpretation of symptoms in case of pathologic changes.

Revue Franç. de Gynécologie et d'Obstét., Paris

September, 1919, **14**, No. 9

*Ovarian Cysts in the Newly Born. P. Gaifami (Rome).—p. 345.

Ovarian Cysts in the Newly Born.—Gaifami's illustrations show the large ovarian cysts in the three infants. They had all died during or soon after birth.

Anales de la Facultad de Medicina, Montevideo

July-August, 1919, **4**, No. 7-8

*Hypertension. H. Vaquez.—p. 421.
*The Cerebrospinal Fluid in Differential Diagnosis. G. Aráoz Alfaro.—p. 469.
*Epinephrin in Treatment of Asthma. Octavio Maira.—p. 515.
*Early Diagnosis of Gastric and Duodenal Ulcer. H. García Lagos.—p. 532.
Influenzal Pneumonia. A. Ricaldoni.—p. 553.

Hypertension.—Vaquez defines hypertension as a blood pressure above 150 or 160 in men and 140 or 150 in women. Age in itself does not entail hypertension; he has one woman patient who is almost a centenarian but her blood pressure keeps below 140. The most effectual remedy for paroxysmal hypertension, he reiterates, is venesection; this permanently reduces the pressure if 700 or 800 gm. of blood are withdrawn. Lumbar puncture has sometimes given good results in treatment of the intense headache from hypertension, but he shares Osler's skepticism in respect to the action of drugs except in transient emergencies.

The Cerebrospinal Fluid in Differential Diagnosis.—Aráoz enumerates the characteristic findings in the fluid in different pathologic conditions and especially in meningeal states of doubtful origin. In one child the somewhat sudden onset of what seemed to be tuberculous meningitis and the early semiunconsciousness suggested a doubt, and under mercurial treatment recovery was soon complete. It was learned later that the father was syphilitic. Another child developed the symptoms of tuberculous meningitis but the lumbar puncture fluid showed high proportions of albumin and urea, and the child improved under treatment to such a degree that the diagnosis was rendered uncertain. The urine and eye findings were normal. Two weeks later the headache returned with convulsions, and the puncture fluid then showed 7.4 per thousand chlorids and 3.45 urea, and necropsy disclosed tuberculous pyelonephritis but no meningeal lesions. Otitis is often misleading, but the lumbar puncture fluid will exclude meningitis, and when the ears are drained the meningeal symptoms may subside.

Epinephrin in Asthma.—Maira reiterates that many years of experience have convinced him that epinephrin is the treatment *par excellence* for combating attacks of asthma. These patients stand large doses. One had suffered from asthma for fifteen years when subcutaneous injections of epinephrin were begun in 1914, with prompt relief for several hours. The dose was 15 drops, and it was repeated twice and sometimes three or four times a day. This has been kept up for five years, with more than 300 injections, and no by-effects have been observed. Maira has seen nothing to indicate that epinephrin brings on arteriosclerosis when given by subcutaneous or intramuscular injection. The latter is preferable when rapid action is desired. He has obtained good results with it also in whooping cough.

Early Diagnosis of Gastric and Duodenal Ulcers.—García emphasizes that it is the succession of the symptoms, their occurrence through weeks, their connection with the meals, and the possible remissions—up to ten years in one of his cases—that give the clue before the classic triad of symptoms of ulcer develop. The symptoms differ in different patients but the attacks in the same patient are almost all alike.

Archivos de Ginecopatía, Obstet. y Ped., Barcelona

August, 1919, **32**, No. 8

*Treatment of Epidemic Poliomyelitis. F. Vidal Solares and J. F. Ayguavives.—p. 177.
*Acute Rheumatism in Children. Joaquín Puchades.—p. 188.

Treatment of Epidemic Poliomyelitis.—Vidal and Ayguavives wait for the acute phase to be over, and then give hypodermic injections of strychnin plus application of electricity. This seems to ward off the atrophy of the muscles. They test the child's susceptibility to the strychnin with 0.25 mg. first. If this does not induce trismus, they increase by the same amount until the child is getting 1 mg. in this way, which is kept up for five days. At the seventh day they give 0.5 mg. and increase in a week to 1.5 mg. This is kept up for ten days if no signs of intoxication are evident. At the twenty-third day the drug is suspended for two weeks but the electric sittings and massage are continued. It is then resumed. Two cases are described. One child of 3 is now walking well after 125 injections of the strychnin; the other child of not quite 2 shows great tendency to improvement after six months of the faradic current, then, after this, galvanic sittings, and the injections of strychnin.

Acute Rheumatism in Children.—Puchades comments on Langmead's examination of 2,556 schoolchildren at London for signs of rheumatism. The findings were positive in 5.20 per cent. of all the children, and 87 per cent. with positive findings had some heart lesion, although all of the children examined were supposedly healthy, and no precautions to guard the heart were being taken. Hence Puchades emphasizes that rheumatism is far more prevalent among children than is generally recognized, and that when a child has acute rheumatism, repose afterward should be enforced for a much longer period than the stay in the public hospital. The child should not be allowed to go home as soon as the acute phase is past as the heart may become irreparably damaged, if further repose is not enforced. The rheumatism may develop insidiously and not be recognized in time to ward off damage by appropriate treatment. Medical school inspectors should be on the alert to detect the disease in its incipiency.

Gaceta Médica de Caracas

Sept. 30, 1919, **26**, No. 18

*Appendicitis. L. Razetti.—p. 187.
Hydatid Cysts in Venezuela. F. A. Risquez and others.—p. 190.
Importance of Elimination in Therapeutics. F. A. Rizquez.—p. 192.

Appendicitis.—Razetti remarks that acute appendicitis is extremely rare in Venezuela while chronic appendicitis is very common. He describes his mode of procedure in such cases.

Medicina Ibera, Madrid

Nov. 15, 1919, **9**, No. 106

*Albee's Operation in Pott's Disease. T. R. de Mata.—p. 117.
Prophylaxis of Tuberculosis on Ships. Medardo Rivera.—p. 123.

Albee's Operation for Vertebral Tuberculosis.—De Mata is convinced that the implant made according to Albee's technic heals in place just as a simple fracture of a long bone heals. His roentgenograms have confirmed this, as also his clinical experience. The Albee method seems better adapted for the poor. For those who can spare the time, he prefers heliotherapy and other medical measures, although

his experience with it in thirty-five cases has been absolutely favorable. The interval since has been over four months in thirty of the cases. One man required a new operation six months later as the implant had fractured at the vertex of the kyphosis. The broken off fragment had become necrotic, but all the rest formed a solid living whole with the spine, and a second small implant restored clinically normal conditions. The reappearance of pain testifies to fracture of the implant. Two of his patients had paraplegia from compression, and this has not been modified in any way by the implant. The article is illustrated.

Prensa Médica Argentina, Buenos Aires

Oct. 20, 1919, **6**, No. 14

*Action of Snake Venom on Coagulation of the Blood. B. A. Houssay and A. Sordelli.—p. 133.
Chorea. Camilo Muniagurria.—p. 133. To be cont'd.
Tuberculin Inunctions in Prophylaxis of Tuberculosis. S. de Madrid.—p. 139.
The Arrhythmias. P. M. Barlaro.—p. 140. Cont'n.

Action of Snake Venom on Coagulation of the Blood.—In the course of their years of research on snake venoms, Houssay and Sordelli found that all of the twenty-two venoms investigated destroyed the cytozym in the blood, that is, the substance which combines with the serozym and calcium to form thrombin. With the cytozym destroyed, no thrombin can form, and hence there can be no coagulation. This is the case with cobra and certain other venoms, but the lachesis and crotalus venoms (Argentine species) possess a special coagulating property which coagulates even citrated blood. Their research has demonstrated further an extremely active precipitation of fibrin under these latter circumstances, as if to protect the erythrocytes with a varnish of fibrin against the active coagulating agent circulating in the blood. This protecting mechanism of temporary defibrination is interesting from the standpoint of the phenomena of immunity, they add.

Revista Española de Medicina y Cirugía, Barcelona

October, 1919, **2**, No. 16

*Pregnancy in Double Uterus. Alvaro Esquerdo.—p. 533.
*Preventive Vaccination Against Influenza. A. Salvat.—p. 538.
Spontaneous Rupture of the Aorta. A. Aguilar Feliu.—p. 542.
*Drainage of the Bile Ducts. E. Ribas y Ribas.—p. 546.

Pregnancy in Double Uterus.—Alvaro Esquerdo's patient had pains in the lower abdomen after an apparently normal rapid delivery, and a tumor was palpated. It was assumed to be a large fibroma until puncture a month later released thick black blood, and the diagnosis was changed to sarcoma. The laparotomy revealed accumulation of blood in the right half of a double uterus and prompt recovery followed panhysterectomy. He has encountered a number of cases of double uterus with hematometra, once in a virgin. With anomalies of this kind there are usually other malformations, so that panhysterectomy is generally advisable on account of the special tendency to complications. However, he adds, if the hematometra in the double uterus can be correctly diagnosed and amply drained without operative intervention, this might be tried to begin with.

Preventive Vaccination Against Influenza.—Salvat published in 1918 his successful vaccination of 4,900 Spanish subjects none of whom developed fatal influenza thereafter, but five had severe complications in a group of fifty English subjects vaccinated at the same time. He theorizes to explain this difference in the two groups, and claims priority for this prophylactic vaccination to ward off grave complications.

Drainage of Bile Ducts.—Ribas analyzes his 118 gallstone operations, and commends his practice of draining whenever the symptoms seem to come from the gallbladder alone, unless there is merely one gallstone.

Revista Española de Obstet. y Ginecología, Madrid

July, 1919, **4**, No. 43

*Cancer of the Mamma. Victor Conill.—p. 289.
Trophic Function of the Connective Tissue of the Ovum. M. Sánchez y Sánchez.—p. 293.
Histology of Mucosa in Endometritis. A. Mora and C. Gil.—p. 296.

Cancer of the Mamma.—Conill describes and commends his method of systematic roentgen, radium and chemical treatment applied after excision of a cancer of the breast. The colloidal metals by intravenous injection multiply the action of the radiotherapy as the particles of metal become foci for secondary radiation.

August, 1919, **4**, No. 44

*Manikin to Demonstrate Mechanism of Delivery. J. A. Beruti (Buenos Aires).—p. 337.
*Microbiologic Action of Roentgen Rays. J. M. Vilaplana.—p. 346.
Roentgen Treatment of Uterine Myomas. P. González Duarte.—p. 352.

Obstetric Manikin.—Beruti gives ten illustrations of his obstetric machine which reproduces the mechanism of delivery.

Microbiologic Action of Roentgen Rays.—Vilaplana's histologic research was restricted to female genital organs, human and guinea-pig ovaries, and cancerous cervix tissue, before and after raying. The cancer cells pass rapidly through three phases, first the enlargement of the cells, then their degeneration, without karyokinesis. The degenerative cycle is exceptionally rapid and tenacious. Sarcoma cells are destroyed so rapidly that large amounts of toxins are poured out and may do great damage. In one case of uterine myoma the reaction to raying was so severe that the patient insisted on hysterectomy instead, and the microscope disclosed sarcoma nodules in the fibroma.

Revista de Gyn., d'Obstet. e de Pediat., Rio de Janeiro

August, 1919, **13**, No. 8

Obstetric Manikin. J. A. Beruti (Buenos Aires).—p. 231. See above.
*Pregnancy Pyelitis. J. Adeodato.—p. 245.

Pregnancy Pyelitis.—Adeodato reports four cases from his service at Bahia during the last eight years, but he is convinced that routine microscopic examination of the urine would reveal that pyelitis is far more common than generally supposed. Even when fever and pains attract attention they are liable to be attributed to other causes, and as the pyelitis is generally thrown off after delivery, it escapes detection. In two of his cases the disturbances had been ascribed to malaria, and the patient was about to be stuffed with quinin when the microscope revealed the true state of the matter. If the pyelitis is not recognized, it may become aggravated by treatment on a mistaken basis, and be forced into a chronic phase or at least into conditions favoring return at each pregnancy.

Revista Medico-Cirurgica do Brazil, Rio de Janeiro

July, 1919, **27**, No. 7

*Blocking the Nerves for Operations on the Limbs. Alvaro de Figueiredo Guião.—p. 231.

Blocking the Nerves for Operations on the Limbs.—Alvaro de Figueiredo gives minute directions for blocking the various trunk nerves, and states that in his experience healing afterward was normal and there was no special tendency to nervous disturbances. The great drawback to local anesthesia is the dread and worry from the sight of the operation, but two or three whiffs of ether put an end to this. He gives the details of ten cases to demonstrate the great advantages of regional anesthesia for both children and adults.

August, 1919, **27**, No. 8

*Isolation of Lepers. E. Rabello and Silva Araujo, Jr.—p. 271.
*Hemorrhagic Purpura. Cardoso Fonte.—p. 281.

Isolation of Lepers.—This is a committee report on the question whether it is advisable to leave lepers in their homes under special surveillance or to segregate them. In Norway both systems have been followed, the report states, and the number of lepers has dropped from 3,000 to 285 in fifty-seven years. But analysis of these statistics shows that the decline closely parallels the increasing numbers of cases that were isolated. In Norway, besides, the central government has control over the whole country, and uniform measures of surveillance could be applied. The report emphasizes that conditions in Brazil are very different from this, no uniformity in the twenty different states of Brazil being pos-

sible under existing conditions. Hence segregation is the only practicable system for prophylaxis of leprosy. But the committee urges that the leper colonies should be attractive and easy of access to the lepers' friends.

Hemorrhagic Purpura.—Cardoso relates that the first of his two recent patients with hemorrhagic purpura was a man of 31. This is the only case in his experience with recovery after hematuria. The second case was in an infant, 6 days old, and the child died in a week, notwithstanding energetic treatment. Other members of the family showed signs of inherited syphilis, and specific treatment had been pushed but the child succumbed before its effect had had time to become manifest.

Revista de Medicina y Cirujía, Caracas

May 31, 1919, **2**, No. 14

*Urinary Calculi. J. B. Ascanio-Rodriguez.—p. 293.
*Syphilitic Disease of the Heart. Ignacio Benitez.—p. 301.
Acute Pulmonary Edema. B. Perdomo Hurtado.—p. 308.
*Ocular Hyperemia and Menstruation. J. M. Espino.—p. 311.

Urine Factors in Pathogenesis of Calculi. — Ascanio-Rodríguez insists that urinary calculi require certain conditions for their development: The urine has to be alkaline before phosphate concretions can form; and it has to be extremely acid for urate concretions. He refers further to the hyperacidity of the soil and the hypo-acidity of the excretions in the uric acid diathesis, while the reverse is the rule in conditions such as scrofula. By modifying the reaction of the urine, therefore, conditions are brought about which directly favor or annul the tendency to formation of concretions, and aid in the dissolving of the concretions already formed. Analysis of the urine is the guide, and will warn of incipient lithiasis in time to ward it off. He gives no details of treatment along the lines he thus suggests.

Syphilitic Disease of the Heart.—Benitez describes the pathologic anatomy of syphilitic lesions in the heart, saying that the coronaries usually feel the effect first.

Ocular Hyperemia and Menstruation.—Espino describes the case of a healthy married woman of 28 who for the last three years has had severe congestion in one or both eyes just preceding and during her menstrual periods and never at any other time. There is slight photophobia but no pain, secretion or lacrimation.

Revista de Medicina y Cirugía, Havana

Oct. 10, 1919, **24**, No. 19

*Mixed Tumors of Salivary Glands. Elpidio Stincer.—p. 477.
*Asthma in Child. M. A. de Villiers.—p. 481.

Tumors of Salivary Glands.—Elpidio Stincer reviews his experience with 9 mixed tumors of the salivary glands. In 4 there was sarcomatous tissue and one was of endothelial nature mostly; 2 were adenocarcinomas. All but 2 were in the parotid gland, and all were on the right side. The duration of three to thirteen years suggests the mixed type; cases of ten, twenty and thirty years' standing have been recorded. These tumors are generally encapsulated and recurrence need not be feared when removed early.

Asthma in Child.—The girl of 9 was of the lymphatic temperament, but healthy, and she had a severe attack of asthma for the first time last July. It lasted for two days and then subsided without leaving a trace. In August, after exposure to rain, intense asthma developed, with severe cardiovascular complications, weak and rapid pulse, cyanosis and extreme prostration. Epinephrin, camphorated oil, revulsion with mustard baths, etc., finally reduced the severity of the symptoms, and the temperature which had gone up during the day returned to normal and by the third day from the exposure there were no further symptoms. The child has had no return of them since.

Revista de Medicina y Cirugía Prácticas, Madrid

October, 1919, **125**, Nos. 1573-1576

*Salpingitis and Neoplasms with Prolapse of the Uterus. Alvaro Esquerdo.—p. 5.
*Technic for Administration of Digitalis. A. Espina.—p. 81. Conc'n.
*Progressive Muscular Atrophy. R. del Valle y Aldabalde.—p. 122.

Salpingitis and Neoplasms with Prolapse of the Uterus.—Alvaro Esquerdo has had two cases in which gangrene developed in the prolapsed uterus and part of the vaginal walls; in one of the cases he succeeded in arresting the gangrene, with recovery, but the other woman died from peritonitis. In three other cases the prolapse was strangulated, but reduction proved possible in time. He warns against attempting a vaginal operation if there is any question of complicating salpingitis or tumor. For one reason, because removing the uterus would open the way for hernia of intestines. Another reason against it is the risk of hemorrhage from the inflamed and congested tissues. A third reason is the danger of cutting the bladder, rectum, or ureters as these organs are pulled out of their normal places. The suppurating adnexa can be drained by posterior colpotomy, but conditions otherwise should be corrected by way of the abdomen. Subtotal hysterectomy is preferable for obvious reasons, he reiterates.

Digitalis.—In this study of the technic for administering digitalis, Espina remarks that the most difficult point is to know when and how to stop it. The urine and the pulse form the gage for this. He advises to give digitalis only with the finger on the pulse, the ear over the heart, and watching the patient's aspect.

Progressive Muscular Atrophy.—Del Valle reports pronounced improvement in the case of progressive muscular atrophy in a man of 46 under electricity and hot sand baths twice a day. The best results were noted when the sand bath just preceded the faradization. The impotence of the hands from the muscular atrophy retrogressed under this mixed treatment in five months to such a degree that further treatment was not required. He was a workingman, and the first symptoms had been noted three years before. Repeated chilling of the hands was the only causal factor that could be discovered, and this suggested the advisability of the hot sand baths. The advantages of the sand bath are the unusually high temperature that can be used, the fact that perspiration can proceed unhindered, and that there is no maceration of the skin. No benefit was apparent from a course of strychnin, and it was abandoned.

Revista Médica del Uruguay, Montevideo

August, 1919, **22**, No. 8

*Gouty Rheumatism. Carlos Butler.—p. 579.
*Puerperal Thrombophlebitis. J. M. Estapé and Collazo.—p. 589.
*Spontaneous Rupture of Uterus at Term. A. Curbelo Larrosa and H. García San Martin.—p. 615.
*Gold Reaction in General Paralysis. A. Prunell.—p. 620.
*Herpes Zoster. J. Servetti Larraya.—p. 635.
*Slow Pulse with Appendicitis. Carlos Stajano.—p. 640.
*Temporary Tubal Sterilization. Augusto Turenne.—p. 645.

Gouty Rheumatism.—Butler's patient is a well-to-do man of 55 with rheumatism in the shoulders which yielded to potassium iodid and dieting. For some years there had been pains in the sacrum and the roentgen rays revealed a huge tophus. There were also small tophi in other bones and joints, confirming the case as one of gouty rheumatism. In true rheumatism the condensing osteitis casts a heavier shadow than normal, while in gouty rheumatism the shadow of the tophi is much lighter than usual, the urates which have taken the place of the calcium salts being comparatively translucent. The apparent loss of substance in the sacrum measured 6.5 by 7 cm.

Puerperal Thrombophlebitis.—Estapé and Collazo comment on the difference in the prognosis according as the thrombophlebitis is of septic or aseptic nature. All parturients should be systematically examined for any rise in the rectal temperature and for any signs of phlebitis in the genital sphere, while the pulse should be taken every eight hours. When the rectal temperature runs up in waves but no cord can be palpated in the pelvis, although the pulse shows steps of acceleration and there are chills and other symptoms of thrombophlebitis and even of phlegmasia alba dolens, the phlebitis is probably located in muscle or the viscera at some distance. When the cord can be palpated in addition, septic puerperal thrombophlebitis is probable and the outlook is grave on account of complications unless a ligature is applied

early. An aseptic phlebitis does not have the rise in the rectal temperature although the pelvic cord, the pulse, varices and the atony of the uterus are otherwise the same, but the prognosis is benign. The progressive septic form has, in addition, slight edema and formication in the members. The outlook is grave with this, even after the ligature. The complications may be biologic from infection of the thrombus, or mechanical from its extension or fragmentation. They give the details of three cases; in two there was double phlegmasia alba dolens and one of these women was left with complete functional impotence of the legs. The septic uteropelvic thrombophlebitis was confirmed by the laparotomy, and ligation of the hypogastric vein on both sides and also of the utero-ovarian vein on the left side arrested the process. The first symptoms had been noted twenty-two days before the operation, but there was no fever for the first ten days, and then only transiently.

Rupture of Uterus at Term.—The rupture was spontaneous and longitudinal but it caused no characteristic symptoms and was only casually discovered. Immediate abdominal cesarean section and subtotal hysterectomy were followed by prompt recovery.

The Colloidal Gold Reaction in the Spinal Fluid.—Prunell analyzes the findings with Lange's reaction in forty-five cases. They were constantly negative in normal cerebrospinal fluid and also in nervous pathologic conditions other than syphilitic, while with general paresis the curve was constantly between 555555 and 455431.

Electric Treatment of Herpes Zoster.—Servetti reports the prompt attenuation of the pain and the disappearance of the eruption in the two cases in which he applied the galvanic current to the region. The positive electrode was placed on the vesicles of the eruption and the negative electrode over the emerging point of the posterior roots of the fourth and fifth intercostal nerves of the right side, increasing from ten to twenty milliamperes, the sitting lasting from twenty-five to thirty minutes daily. The pain was relieved by the first sitting, and the cure was complete by the fifth.

Slow Pulse and Appendicitis.—Stajano emphasizes that in children a slow pulse is a favorable sign as it does not appear until the process is retrogressing. It is followed by progressive improvement. It is rarely observed in adults, and its significance varies in adults.

Temporary Tubal Sterilization.—Turenne has operated in four cases by suturing the fimbriated extremity of the fallopian tube in a bed made for it through an incision 15 or 20 mm. long in the anterior layer of the broad ligament. This leaves the tube freely movable, and does not kink it. Conception can be rendered possible again at any time by a short incision in the tube lower down, and suturing the lips of the incision to the ovary.

Semana Médica, Buenos Aires

Sept. 4, 1919, **26**, No. 36

*Bacteriology of Influenza. J. Destéfano and J. W. Tobías.—p. 249.
*Cyst of the Iris. E. B. Demaría.—p. 266.
Treatment of Influenza. Ricardo Colón.—p. 270.
*Internal Genital Aplasia. D. A. Rojas.—p. 271.
Epithelioma of Upper Jaw. R. Becco.—p. 276.
Intravenous Sugar Treatment of Tuberculosis. V. Delfino.—p. 278.
*Pregnancy Asthma. M. Ruibal Salaberry.—p. 278.
Influenza. Luis Lancelotti.—p. 281.

Bacteriology of Influenza.—Destéfano and Tobías conclude their seventeen page review of the data on record to date by accepting a filtrable virus as the primary cause of influenza.

Cyst in the Iris.—The spontaneous serous cyst in the iris in the case of which an illustrated description is given subsided under bipolar electrolysis.

Atresia of the Vagina.—Rojas explains that atresia of the vagina and internal genital organs generally includes lack of the ovaries also. When there is atresia of the vagina and a rudimentary uterus, there is usually a tendency to menstruation. If the uterus and ovaries are well developed, along with atresia of the vagina, retention of the menstrual flow causes severe disturbances. When an artificial vagina has to be provided, the Baldwin or Abbott method seems preferable as a rule.

Pregnancy Asthma.—Ruibal Salaberry has encountered four cases of pregnancy asthma during the last four years, and he found albumin in the urine and no chlorids as special features of this type of asthma. The farther advanced the pregnancy, the severer the asthma, the greater the retention of chlorids and the more intense the albuminuria and the edema, and the woman weighs more to correspond. The asthma is thus a manifestation of toxic chlorid retention. Treatment to promote elimination of chlorids and prevent their ingestion—that is, theobromin and restriction to water and milk—soon arrests the tendency to asthma.

Sept. 11, 1919, **26**, No. 37

McDonagh's Works on Biology of Venereal Diseases. C. Pillado Matheu.—p. 285.
*Ossification in Laparotomy Incision. A. and A. Gutiérrez.—p. 296.
*Tuberculin in Treatment and Prophylaxis of Tuberculosis. F. Gómez Alvarez.—p. 298.
Modified Lambotte Plate and Screws. J. C. Labat.—p. 304.
Influence of Alcohol as Factor in Tuberculosis. V. Delfino.—p. 306.

Bone Formation in Laparotomy Incision. — Gutiérrez removed the gallbladder through a transverse incision in July, 1917. In May, 1918, the woman returned, complaining of a bulging of the laparotomy cicatrix and some pain in it. The old cicatrix was incised and a bony formation extracted, corresponding to the shape of the cicatrix, with no contact with the ribs. The microscope showed the structure of true bone; the aspect was much like that of a rib.

Tuberculin Treatment of Tuberculosis.—Gómez Alvarez reiterates the advantages of extreme dilution of tuberculin for systematic treatment of tuberculosis. He calls this extremely diluted tuberculin "bacillin," and relates his surprise when infinitely better results were obtained with a much weaker dilution than the one he had been using. Further experience, he declares, and study of the classified card records of his cases have confirmed more and more the correctness of his premises and his methods.

Archiv für Kinderheilkunde, Stuttgart

Nov. 30, 1918, **67**, No. 1-2

*Acute Lymphatic Leukemia in Infants. E. Tancré.—p. 7.
*The Weight and the Resistance to Infection. F. Stickler.—p. 15.
Congenital Atresia of the Isthmus of the Aorta and Mitral Stenosis in Girl of Five. H. Bergmann.—p. 44.
*Individual Isolation as Factor in Prophylaxis of Infections in Institutions. D. A. Sokolow.—p. 56.

Leukemia in Infant.—The acute lymphatic leukemia had developed in an apparently healthy male infant after a suppurating process at the umbilicus at the age of one month. Necropsy at 4 months revealed intense lymphoid proliferation in all the organs and that all the glands were slightly enlarged although they could not be palpated during life. The skin never showed ecchymoses and suffusions and the case was exceptional further in that no leukocytes but lymphocytes were found in the blood.

Weight and Resistance to Infection.—Stickler analyzes 200 cases of scarlet fever and 500 of diphtheria, recording the severity of the infection and the child's weight in proportion to its height and to the standard weight for its age. The findings were in favor of the thin children, the course and outcome of the diseases being on the whole somewhat more favorable in the children below the average weight.

Individual Isolation in Hospitals.—This long and illustrated article by Sokolow was read at the All-Russian Pediatrists' Congress in 1912.

Correspondenz-Blatt für Schweizer Aerzte, Basel

Nov. 6, 1919, **49**, No. 45

*Sudden Death in Heart Disease. Walter Frey.—p. 1689.
*Lethargic Encephalitis in Switzerland. G. Müller-Bergalonne.—p. 1695.
*Raying after Removal of Cancers. Max Steiger.—p. 1704.

Sudden Death in Heart Disease.—Frey disputes Hering's assertion that auricular fibrillation is the cause of sudden death. This, he asserts, is incapable of causing the sudden arrest of both heart action and respiration which is characteristic of this "seconds-heart death," as it is called when only a few seconds elapse between the first symptoms and

death. He presents arguments to sustain the assumption of a nervous shock affecting functionally the closely connected centers of respiration and circulation. With heart disease, the regulating mechanism for these centers is in an abnormally excitable state, so that there is an excessive reaction to even normal stimuli. He describes how a stimulus emanating from the heart itself may act on these centers, and thus arrest by reflex action both the heart and respiratory functioning. Intracardial increase in pressure may be an important factor in this. Physical exertion is frequently the determining factor; or sudden failure of the contracting power. The latter is witnessed in the sudden death in diphtheria, the relaxation of the heart muscle setting up the reflex inhibition of heart and respiration.

Lethargic Encephalitis.—The case described is said to be the first one of epidemic lethargic encephalitis encountered in Switzerland, but four others have been observed since in the same town (Geneva). The patient was a woman of 28 and the symptoms indicated tuberculous meningitis at first. Necropsy revealed a primary microscopic acute polioencephalitis.

Raying After Removal of Cancer.—Steiger reviews the experiences with cancer at the university clinic for women's diseases at Bern before and during the four years since roentgen exposures after removal of the cancer have been the routine procedure. In a series of 148 cases 1908-1913, only 13 per cent. have been practically cured to date. The survival averaged 12.2 months but the corresponding survivals in the later, rayed series averaged 18.3 months. Fully 90 per cent. of the nonrayed series died and only 4.3 per cent. of the rayed in corresponding periods of time. These and other data confirm the decidedly favorable influence of roentgen exposures after removal of the cancer, and as the technic is being improved, constantly better results are being realized.

Nov. 13, 1919, **49**, No. 46

*Otogenous Osteomyelitis in Children. F. Siebenmann.—p. 1737.
*The Declining Birth Rate. H. Hunziker.—p. 1741.

Fulminant Otogenous Osteomyelitis in Children.—Siebenmann refers to the acute otogenous osteomyelitis of the temporal bone or other bones of the skull, of which he has encountered seven cases, all but one in girls. There had been preceding chronic otitis media in only one case. The onset is stormy in the midst of apparent health or infectious sore throat or bronchitis, with intense earache and high fever, continuous or of a pyemic type. All his seven patients died between the ninth and sixteenth days. Even an early operation in such cases shows places where the destructive process seems to have skipped these points to attack points beyond, but this does not imply a blood-borne origin. The skeleton outside of the immediate region was not involved. Operative measures in his cases were unable to ward off the fatal pyemia, although the focus was excised apparently into sound tissue the fourth or fifth up to the ninth day.

The Declining Birth Rate.—Hunziker's charts show that the birth rate in Switzerland has long been gradually declining, but the drop has been steeper since 1914. Even in 1911, only Spain, Belgium, Ireland, and France had a smaller excess of births over deaths among the twenty-one states in Europe. In Basel the birth rate per thousand was 18.37 in 1914 but only 12.7 in 1917. Hunziker comments that the gravest danger from the declining birth rate is that birth control is not practiced by the feebleminded, the drinkers, paupers and other inferior elements. They breed out of all proportion to the better elements of society. He adds that Greece and Rome owe their fall to the lack of production of new generations of members for the leading classes.

Therapeutische Monatshefte, Berlin

August, 1919, **33**, No. 8

Treatment of Wounds from Pharmacologic Standpoint. III. L. Loewe and G. Magnus.—p. 281.—To be cont'd.
*Treatment of Malaria with Intestinal Complications. H. Wörner.—p. 287.
Floating Kidney and Its Treatment by a System of Gymnastic Exercises. J. Oldevig.—p. 292. Conc'n.
*Influence of Fat-Poor Food on Cholelithiasis. Kirschner.—p. 300; Idem. W. N. Clemm.—p. 302.

Malaria with Intestinal Complication.—Wörner reports considerable experimental and clinical experiences which demonstrated that the elimination of quinin by way of the feces continues for three or four days almost the same whether the intestines are sound or there is dysentery. Hence with dysentery the quinin can be given by the mouth if desired. But with profuse diarrhea, suggesting disease of the small intestine, there seems to be an exaggerated elimination of the quinin through the stools. Consequently parenteral injection of the quinin is preferable under these conditions. The dose of quinin in the cases ranged from 1.2 to 2 gm., given in half gram doses at hourly intervals.

Fat-Poor Diet Invites Gallstone Disease.—Clemm is convinced that a diet with plenty of fat is less liable to be accompanied with gallstones than a fat-poor diet. He remarks that cholelithiasis seems to have become much more prevalent in the last two years.

October, 1919, **33**, No. 10

*Present Status of Intralumbar Therapy Exclusive of Serotherapy. G. Neumann.—p. 369.
*Sterility of Women and Possibility of Therapeutic Aid. A. Sippel.—p. 374.
*Therapeutic Value of Puncture of the Brain. B. Paetsch.—p. 382.
Subcutaneous Administration of Quinin to Children. R. Lange.—p. 384.
Scopolia Poisoning; Two Cases. A. Heffter.—p. 387.

Intraspinal Treatment Exclusive of Serotherapy.—Neumann reviews the present status of intralumbar therapy with physiologic salines, tuberculin, magnesium sulphate, silver salts and ethyl-hydrocuprein. The consensus of opinion in regard to the latter, she says, seems to be favorable. No untoward by-effects were observed in the experience of several, but Landsberger had paralysis of the bladder develop in several of his cases which, although transient, compelled the suspension of the treatment. The indications for it were pneumococcus and meningococcus meningitis.

Treatment of Sterility.—Sippel describes various measures that might be used for correction of mechanical obstacles to the passage of the ovum or spermatozoa into the uterus. A suppurating catarrhal condition in the cervix may impede conception, and disease of the endometrium may prevent the embedding of the ovum. When the fimbriated extremity of the tube has become obstructed, he advises to resect the distal end of the tube and overcast the raw edges with fine catgut to hold the lumen open. Unsuccessful attempts at artificial sterilization have demonstrated that conception is possible with only a fragment of the tube. In conclusion he discusses artificial fertilization, and what he calls war pregnancies, that is, when women who have long lived in sterile wedlock conceive when their soldier husband returns home on a furlough after a long absence. Among the factors which might explain this are the thinness of the women from the war diet restrictions and the chance for any genital inflammatory processes to have healed. We must remember, however, that even when one element is corrected, there may be other inhibiting factors at work.

Puncture of the Brain.—Paetsch comments on the fact that so few think of puncturing the brain for diagnostic and still fewer for therapeutic purposes. He insists that it is much less of an operation to puncture the brain than it is to trephine the skull, and he reports several cases to illustrate the great therapeutic value of the simple procedure. In one case puncture released 35 c.c. of fluid blood and the paresis of the left arm and leg retrogressed. The puncture had been made between the arm and leg centers and the puncture was repeated ten days later at the same point on account of the persistence of headache, choked disk and pulse of 50 or 60. About 36 c.c. of thick blood containing methemoglobin was evacuated and there has been no further trouble since. A tendency to unconsciousness, pulse 40, and frontal headache had been the only symptoms at first, coming on two weeks after a fall. In another case a girl fell down stairs and was unconscious for five days notwithstanding early puncture of the brain. Then the motor region in the other hemisphere was punctured and 56 c.c. of old fluid blood was evacuated from beneath the dura. The condition improved but recovery was not complete until after

another puncture which released merely cerebral fluid. No local symptoms had been evident at any time and the surgeon would not have known where to trephine, while the puncture answered every purpose and undoubtedly saved the child's life. One man presented the symptoms of a brain tumor in 1903 but it could not be localized. Puncture of the right and left frontal lobes and the right cerebellum gave no relief, but puncture of the left cerebellum released 40 c.c. of an amber fluid and all disturbances subsided. They returned again after a few months and again after intervals up to eight years, but each time puncture in the same region seemed to drain the presumed cyst, and all the disturbances disappeared. Paetsch has had two similar cases in wounded soldiers in which each time recovery followed puncture of the brain.

Zeitschrift für Geburtshülfe und Gynäk., Stuttgart

Jan. 25, 1919, **81**, No. 1

*Pregnancy Kidney. K. Eckelt.—p. 1.
*Contracted Pelvis. A. Heyn.—p. 30.
*Toxic Meningitis After Lumbar Anesthesia. E. Bracht.—p. 61.
*The Question of Diabetes and Pregnancy, E. Reinhardt.—p. 81.
Injury of Bladder During Delivery with Contracted Pelvis. E. Reinhardt.—p. 98.
*Cancer of the Clitoris. R. Ederle.—p. 110.
*Osteomalacia. E. Scipiades.—p. 156.

Genesis of Symptoms of "Pregnancy Kidney."—Eckelt reiterates that tests of kidney functioning have conclusively demonstrated that there is no insufficiency of the kidneys with the congested kidney of the albuminuria of pregnancy, and hence its cause must be sought elsewhere than in the kidneys. The dropsy, the hypertony and the visual disturbances which we encounter in the pregnant are to be regarded as independent morbid phenomena for which the gestation process is responsible. They are pregnancy toxicoses like eclampsia, albuminuria, uncontrollable vomiting, etc. In none of the cases on record of the alleged evolution of pregnancy kidney into chronic nephritis is the proof convincing, preexisting kidney disease excluded, or such after intercurrent infectious sore throat; the course traced continuously from the pregnancy kidney to the chronic nephritis, and, thirdly, the diagnosis of nephritis not based merely on the albuminuria but on reliable functional tests. The frequent occurrence of albuminuria in the course of pregnancy testifies that the kidney is often subjected to great strain, and it is possible that repeated damage might in time entail chronic nephritis. With pregnancy kidney no benefit was derived from restriction of water and of salt in the cases described in detail. Any benefit from the restrictions was evidently due to the bed rest enforced along with them. Some toxic change in the structure of the vessels is manifestly the cause of the dropsy and of the higher blood pressure and this, also, is favorably modified by the bed rest. The experiences he relates confirm that even extreme edema and high blood pressure should never decide as to whether the pregnancy should be interrupted or not. He has witnessed both very pronounced borne without harm for mother and child. Even disturbance in vision is not an absolute indication for emptying the uterus. Only when it develops a long time before term is there danger, as a rule, of irreparable damage to the eyes. When it occurs just before delivery, expectant treatment, particularly under supervision of an ophthalmologist, is indicated. In two of the cases he reports, severe retinal changes retrogressed completely after delivery. It seems wisest, on the whole, he adds, with normal renal functioning to accept the eye findings as the guide whether to interrupt the pregnancy or not. If the functional tests, albuminuria, the dilution and concentration properties of the kidney, the residual nitrogen, and the molecular concentration of the blood show reduced functional capacity in the kidneys, then the pregnancy should be interrupted, regardless of whether the kidney is suffering from a pregnancy toxicosis or an actual nephritis.

Contracted Pelvis at the Berlin Charité.—Heyn analyzes the experiences with 311 primiparae with contracted pelvis and 317 multiparae. The mortality was 1.7 per cent. among the mothers and 11.6 per cent. among the children. The outcome among the women taken into the hospital a little before term was almost as favorable as in normal cases. A further advantage of this is that it gives an opportunity to study such cases under safe conditions.

Toxic Meningitis After Intraspinal Anesthesia.—Bracht compares the necropsy findings in one case and the clinical findings in two others with similar cases on record. The microscope confirmed the aseptic nature of the meningitis; death occurred from pulmonary embolism. The symptoms closely resemble those of any meningitis, and delirium alternates with somnolency. The temperature is no criterion. The fluid was clear at first but later opalescent or strongly turbid. The procain-epinephrin solution had been boiled up the night before, and it had probably altered by standing till next day. In conclusion he urges research to distinguish between the symptoms due to irritation of the meninges and the symptoms from direct injury of the nerve substance itself. This might reveal which of the elements of the anesthetic are responsible for the different injuries and permit their elimination.

Diabetes and Pregnancy.—Reinhardt concludes from the three cases he reports and review of the literature that the pregnancy does not necessarily aggravate the diabetes during the first two thirds. But very often the uterus becomes dangerously distended with amniotic fluid, and a large proportion of the fetuses die. After the delivery, the puerperium proceeded approximately normally in his three cases. The diabetes, however, seemed to become graver from the fact of the pregnancy, although it was not allowed to go to term. The pregnancy in itself is a strain for the diabetogenous organs, especially the liver, and acidosis and coma are menacing even after the most cautious induced delivery. The danger of acidosis grows greater the longer the pregnancy lasts, and when coma has once developed we cannot control it. Hence he advises not to wait too long before emptying the uterus.

Primary Carcinoma of the Clitoris.—The carcinoma had developed on the basis of a papilloma of fifteen years' standing, and it was eradicated with the cautery. Ederle reviews the publications on these growths, showing a percentage of about 16 per cent. clitoris cancers among 677 vulvar cancers. Ederle has compiled a total of 182 cases of clitoris cancers; in 64 they were restricted exclusively to the clitoris. Among the patients 0.3 per cent. were under 20 and 4.4 per cent. between 20 and 30. Pruritus is usually the first symptom. He compares the glandular involvement, etc., with those of other cancers in the genital organs, and remarks that roentgen therapy does not seem to offer any prospects of success with vulvar cancers.

Osteomalacia.—Scipiades devotes seventy pages to this account of his experimental and clinical research on internal secretions as affecting osteomalacia. It has convinced him that the thymus is responsible for the processes which induce human malacia. All influences which induce an intensive accidental pathologic involution of the thymus gland entail osteomalacia, especially when followed by a rapid succession of pregnancies without corresponding pauses for lactation and involution of the thymus. The thymus etiology does not conflict with but throws more light on the data already accumulated in regard to osteomalacia.

Hygiea, Stockholm

Nov. 30, 1919, **81**, No. 22

*Relations between Pregnancy and Pulmonary Tuberculosis. E. Lindhagen.—p. 897.

Relations Between Pregnancy and Pulmonary Tuberculosis.—Lindhagen has witnessed in three cases the whipping up of pulmonary tuberculosis into a fulminant form after a childbirth, as he describes in detail. He also cites similar experiences published by veterinarians in regard to goats and other domestic animals. The curves from his three cases show the almost immediate rise of the temperature after the delivery, and the close succession of peaks to the fatal outcome in one, two and six months.

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SELECTIVE BACTERIOSTASIS IN THE TREATMENT OF INFECTIONS WITH GENTIAN VIOLET

JOHN W. CHURCHMAN, M.D.
NEW YORK

The selective bacteriostatic property of gentian violet, which has been the subject of various publications[1] since 1912, has been studied during the past three years with particular reference to the possible application of the laboratory findings to the treatment of infections. In recent publications in The Journal,[2] the results of the treatment of acute infections of the knee joint, by the method of lavage and staining, without operation, were described. These results were sufficiently encouraging to warrant an extension of the studies, and this is now being undertaken with a more abundant material than was at my disposal at the time of the earlier publications.

My purpose in this paper is to report the results of attempts to apply the selective bacteriostatic power of gentian violet to the treatment of infected wounds.[3] The activity of the dye is described as bacteriostasis, the dye is called a bacteriostat, and its property is referred to as bacteriostatic, partly because these words, unlike the monstrous "bactericide" and "bactericidal," are etymologically correct; but more particularly because they describe with nice accuracy the action of the dye. It is certainly true of gentian violet (careful study would doubtless prove it also true of other so-called bactericides) that apparent death of organisms, following exposure to the dye, may turn out, on careful study, to be only delay of growth.

Attention was called to this fact, and to its possible theoretical significance, in a brief note on a series of experiments in which stained *B. anthracis* was injected into the circulation.[4] Furthermore, the fact that the power of this dye (or of any other agent used in the treatment of infection) to prevent growth, may be of equal therapeutic importance with its power to kill organisms is recognized when the dye is described as a bacteriostat; and the fact is of sufficient importance to demand recognition. None the less, in the large amount of literature on the treatment of infections with anilin dyes which has appeared since my first publication in 1912, this important feature of bacteriostasis has been consistently overlooked.

The fact that the power of a therapeutic agent to prevent the growth of organisms may be quite as important as its power to "kill" organisms is one reason the more (a dozen others could be cited) why the custom of estimating the value of a "bactericidal" agent by its phenol coefficient alone is a pernicious one. Such a growth-preventing, or bacteriostatic, property gentian violet possesses, even in very high dilutions. At least it possesses this power, in high dilutions, when the test is made in vitro; but it would be unwise to expect that this sharp selective activity would be exhibited in as clear cut a fashion in wounds as in the test tube. Numerous considerations warned against the folly of such a supposition; and the results in the study on wounds carried out at the Walter Reed Hospital were, indeed, less concise and clear cut than they had been with test tube experiments. None the less they paralleled these; and it was particularly interesting to find that in wounds, as in the test tube, it was the gram-negative organisms which were least affected by the dye. In Figs. 2 and 3, the organism persisting in wounds which had been treated with gentian violet has been stroked at each side of a gentian violet plate, and a stroke of *Staphylococcus aureus* has been made at the center, for contrast. The persisting organism is seen to behave as gram-negative organisms do; and it proved, indeed, to be *B. coli*. The behavior of the gram-positive *B. diphtheriae*, on the other hand, toward gentian violet is shown in Figure 1; and treatment of the wounds, as will be described later, was completely efficacious in ridding them of this organism.

In attempting to apply gentian violet to the treatment of infected wounds, I had in mind the difficulty which had first to be contended with in attempting to use the dye in the treatment of infected joints: the absurdity, that is, of applying this, or any other, bacteriostatic agent to an infected surface with the hope of reaching the organisms concerned, unless this surface had first been mechanically cleansed. When a substance is used which can be as plainly seen as gentian violet, this absurdity is apparent; for the dye is seen staining the secretions and fibrinous products of inflammation, which protect from the action of the dye (as effectively as a layer of grease would do) the

1. Churchman, J. W.: The Selective Bactericidal Action of Gentian Violet, J. Exper. M. **16**: 221 (Aug.) 1912. Churchman, J. W., and Michael, W. H.: The Selective Action of Gentian Violet on Closely Related Bacterial Strains, ibid. **16**: 822 (Dec.) 1912. Churchman, J. W.: The Selective Bactericidal Action of Stains Closely Allied to Gentian Violet, ibid. **17**: 373 (April) 1913; The Selective Bactericidal Action of Methylene Blue, ibid. **18**: 187 (Aug.) 1913; Proc. Soc. Exper. Biol. & Med., 1914, p. 120.

2. Churchman, J. W.: Treatment of Acute Infections of the Joint by Lavage and Direct Medication, J. A. M. A. **70**: 1047 (April 13) 1918; Septic Arthritis of the Knee Accompanying Fracture of the Patella, ibid. **72**: 1280 (May 3) 1919.

3. Ample opportunity for this study was given by the kindness of Surgeon-General Ireland, through whom laboratory facilities and free access to the rich material of the Walter Reed Hospital were provided for the purpose. It is a pleasure to acknowledge with gratitude the kind assistance of the commanding officer, Colonel Glennan, and of the chief of the surgical service, Col. William Keller.

4. Transactions, Tenth Annual Meeting, National Association for the Study and Prevention of Tuberculosis.

underlying granulations in which lie the organisms concerned. In the case of the joints, an apparatus has been devised whereby this preliminary cleansing can be well done;[5] in the case of wounds it was necessary to incorporate mechanical cleansing in the technic of the daily dressings. This was done in a painstaking way. After the usual cleansing of the skin surrounding the wound, the granulations themselves were gently washed with neutral soap, dried by mopping, and then flooded with hydrogen peroxid. This was repeated until the granulations were left naked. Minute pockets were cleaned, much as a dentist cleans the pockets in the gums, and special attention was given to the space just under the skin edge at the junction of skin and granulations where bacteria and secretions are likely to accumulate.

The cleansed granulations were dried by mopping with gauze, and were then painted with a saturated aqueous solution of gentian violet. The first coat was allowed to dry and a second coat applied. This was also allowed to dry, and a dry dressing applied.

Two types of wound were treated in this manner: amputation stumps that had become diphtheria carriers, and amputation stumps with ordinary infection.

These were sufficient reasons for assuming that it might kill this organism in wounds. Something might also be hoped for from its power of penetrating tissue;[6] and the persistence of the dye (it remained apparently unchanged for periods varying from twenty-four to seventy-two hours and even longer) made it seem possible that even if the organisms were not actually stained, the continued presence of dye in the tissues might prevent growth, by a true bacteriostasis.

Both the cases treated were freed of *B. diphtheriae* in a short time. In order to determine positively that the organism was no longer present, the wounds were subjected to the most rigid scrutiny, for no dependence whatever can be placed, in these cases, on a single culture made from a surface smear. It seems probable that the organisms lie below the surface. For these reasons the wounds were regarded as sterile for *B. diphtheriae* only after the following technic had been observed:

(*a*) Four negative cultures were obtained on successive days, the cultures made twenty-four hours after the last previous treatment. Material for cultures was taken from the granulating surface and also *from the blood serum obtained after rubbing the superficial granulations away.*



Fig. 1.—Effect of gentian violet on B. diphtheriae: A divided gentian violet plate, the upper half of which contains gentian violet agar, and the lower half plain agar. The two lateral strokes (*D, D*) are of B. diphtheriae, and between them, for contrast, is a stroke of B coli (*C*). B. coli grows equally well on the two portions of the plate, while B. diphtheriae fails to grow either on the gentian violet agar or anywhere near it.



Fig. 2.—Persistence of a gram-negative organism in a wound treated with gentian violet: The organism obtained from the wound (B. coli) has been stroked across the plate at the sides (*C, C*) and grows equally well on the gentian violet agar and on the plain agar. At the center (*A*) the plate has been stroked with M. aureus, which fails to grow on the gentian violet agar.

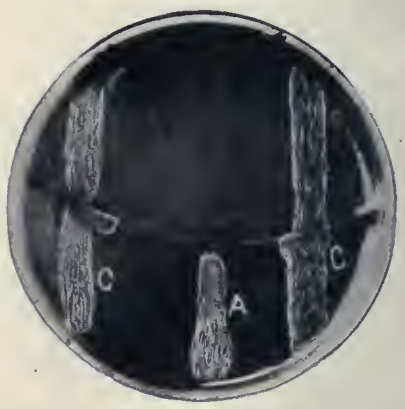


Fig. 3.—Persistence of a gram-negative organism in an empyema sinus treated with gentian violet: The organism obtained from the wound has been stroked across the plate at the sides (*C, C*); it is B. coli and grows equally well on the gentian violet agar and the plain agar. Between these two strokes (*A*) the plate has been stroked with M. aureus; this organism fails to grow on the gentian violet agar.

I. AMPUTATION STUMPS THAT HAVE BECOME DIPHTHERIA CARRIERS

One of the most difficult problems to be dealt with at the Walter Reed Hospital was presented by patients with thigh amputations in which wound diphtheria had developed, and who had become diphtheria carriers. Two such patients had been isolated as carriers, one for four months and the other for several weeks; and from the wounds of both, cultures for *B. diphtheriae* had been constantly positive in spite of treatment with diphtheria antitoxin, surgical solution of chlorinated soda (Dakin's solution), argyrol crystals, tincture of iodin, chromic acid, silver nitrate, etc.

B. diphtheriae is gram positive and will not grow in mediums containing minute amounts of gentian violet (Fig. 1). It is killed by staining with the dye; and when observed in the living form in a hanging drop, it takes up the stain with great avidity, in contrast to the gram-negative organisms which—in a hanging drop—stain poorly and slowly.

(*b*) A fifth negative culture was obtained (in the manner just indicated, from the surface and from below the surface) after the wound had been left untouched for four days and the secretions allowed to accumulate on the surface.

(*c*) The cultures were made on Loeffler's medium; after twenty-four hours' incubation they were enriched by pouring glucose broth over the surface; and from this broth, after

5. Fully described in THE JOURNAL, April 13, 1918, p. 1047.

6. Frequent reference has been made, in previous publications, to the fact that gentian violet, applied to the surface of a mucous membrane, penetrates to its depths. Great difficulty has been experienced in getting satisfactory sections, to study the exact depth of this penetration, as the dye is dispersed during the process of cutting even frozen sections, and this fact may lead to great error in interpretang the results. A technic has finally been devised which gives fairly satisfactory sections for microscopic study. The dye is applied to the living mucosa (by injection, for example, into the knee joint or the bladder), and the tissue is at once removed and thrown into Gram's solution, where it is left for two hours. The stained mucosa becomes a brownish black. The material is then put in 40 per cent. dilution of liquor formaldehydi, which, acting like an alcohol, restores the violet color, fixes the tissue, and dissolves out the excess of stain, but either removes not at all, or in the slightest degree, the stain that has been absorbed by the cells. After twenty-four hours' fixation, paraffin sections may be made in the usual manner. I have injected the living human knee joint by the technic described for the treatment of acute infections of the joints, and have made sections of the synovial membrane in the manner described, the leg having been amputated at the midthigh for senile gangrene of the toes. These sections show beautifully the penetration of the dye (Figs. 4 and 5). The question will be more fully discussed in a subsequent publication.

twenty-four hours' further incubation, transplants were again made on Loeffler's medium.

CASE 1.—N., Ward 26. A bad wound diphtheria, with membrane, about four months before. The membrane responded to antitoxin, but the patient had been a constant carrier ever since. Treatments with gentian violet were given daily from July 21 to July 25. Cultures were negative for *B. diphtheriae*, July 21, 23, 24, 25 and 29. There was a slight dermatitis in the skin about the wound, August 10, the wound having been left untouched for one week; cultures from the wound were negative for *B. diphtheriae*.

CASE 2.—Y., Ward 26. A constant carrier since July 2 (probably much longer, as the wound had given an unusual amount of trouble since it was first inflicted, months previously; but *B. diphtheriae* was first discovered July 2). Culture, July 26, was positive for *B. diphtheriae*. Treated with gentian violet, July 26, 27, 28 and 29. Culture, July 30, was positive for *B. diphtheriae*. Daily treatments were given from July 31 to August 9. Cultures, August 5, 7, 8, 9 and 12 were negative for *B. diphtheriae*. Transfer from the isolation ward was delayed by the appearance of an erysipelatoid rash in the upper thigh, 5 inches away from the wound, which appeared suddenly—with constitutional symptoms—and subsided in three days. Culture from the skin showed a coccus, but no *B. diphtheriae*. The patient was transferred to the open ward.

II. STERILIZATION OF STUMPS

No more difficult surgical problem occurs in a hospital like the Walter Reed—where the cases which still present problems are concentrated after the simpler ones have been sifted out—than that presented by unhealed or badly healed amputation stumps. In many of these cases, infection of the skin, soft parts and bone is present; in others, the skin flap left at the original amputation (often a guillotine) is deficient; in some, a persistent dermatitis or eczema has developed. All these conditions interfere with proper treatment, and militate against the success of the plastic operation necessary to provide the patient with a good weight-bearing stump.

The experience with the Dakin-Carrel technic in this type of case had not been particularly satisfactory. If the thigh stump was a short one it had not proved easy to apply the tubes; and when it was necessary to pull the skin flaps down with traction straps—as in most cases it was necessary—this difficuty was greatly increased. Worse than this, the dermatitis of the flaps, if present, was greatly aggravated by the Dakin solution, and in many instances it had to be abandoned for this reason. In other cases, dermatitis not present in the beginning was incited by the Dakin solution; and even in patients who developed no visible skin lesion, complaints of severe burning of the skin were common.

It seemed possible that these difficulties might in part be avoided by attempting to sterilize the wounds with gentian violet. It was certain that this dye could be used without difficulty, by a simple technic, in combination with tension straps, with the use of which it would in no way interfere. It seemed certain, also, that the production of dermatitis need not be feared, as the dye would be applied to the granulations, where it was needed, rather than to the skin, where it was not. It proved, indeed, to be the fact that the progress of the most obstinate cases of dermatitis, already present, was greatly impeded by the use of the gentian violet technic.

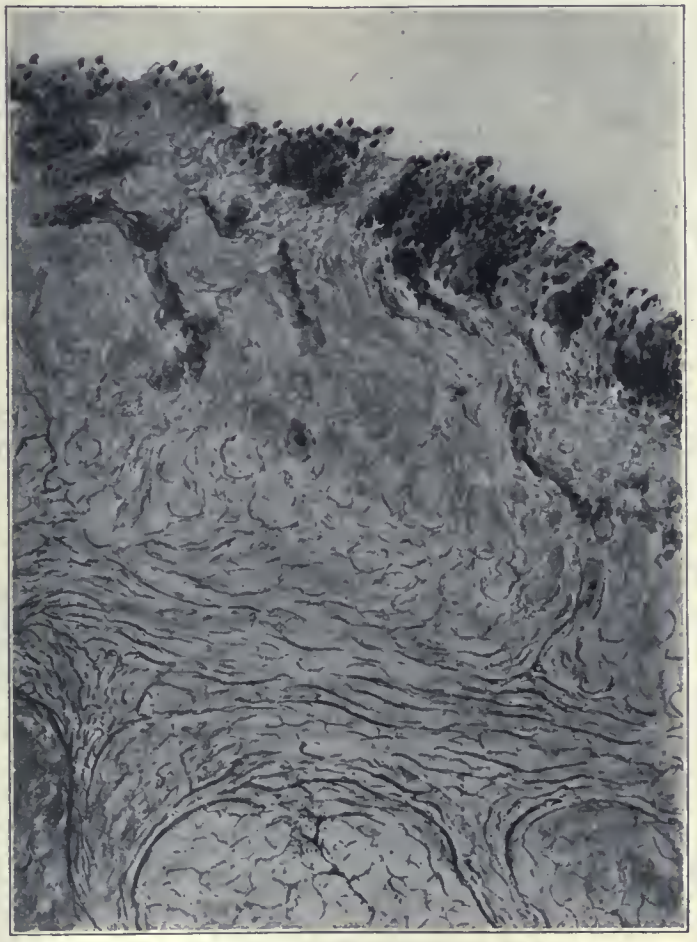


Fig. 4.—Synovial membrane knee joint injected with gentian violet, 1: 1,000, just before a midthigh amputation (low power).

Four cases of this sort were treated:

CASE 3.—*Simple granulating wound at the end of a partially closed stump (midthigh).*—Skin irritation had made the use of Dakin's solution impossible. It seemed probable that if the wound could be sterilized and the skin kept healthy, closure could be effected by adhesive plaster traction on the skin edges. Sterilization of this wound was accomplished without difficulty; the granulations became red and healthy, the skin normal; fairly rapid closure occurred, adhesive strap traction being used.

CASE 4. — *Granulating wounds accompanied by marked dermatitis.*—In D., Ward 74, the wound was an unhealed amputation of the thigh and consisted of a strip of dirty, grayish granulations, about 1.5 cm. wide, separating the edges of skin which, for a distance of about 5 cm. from the open wound was the site of a dermatitis of the most obstinate character. The skin was a light, brownish red, covered with dirty, superficial yellow crusts, and touched, here and there, with very superficial ulcerations or abrasions of the top layers of epidermis. The patient suffered much from itching. Nothing that had been tried—and everything known had been tried—had done the slightest good. The indications, it seemed clear were to sterilize the granulations and thus do away with the infection which was causing their unhealthy appearance: and to do this without using any material likely to aggravate the skin condition. This was accomplished by careful mechanical cleansing of the whole field; the granulating surface was then painted with gentian violet and the skin well protected with paste. I received the distinct impression from this case and other cases that the relative sterility of the granulations produced by gentian violet, made the wound secretions less irritating to the skin and so less likely to produce or aggravate dermatitis. At any rate, the progress of this case was striking; the der-

matitis showed marked improvement in a short time; the appearance of the granulations became healthy, and epithelial growth from the skin edges, which had been stationary for weeks, began soon to close the wound in.

CASE 5.—*Granulating wounds accompanied by marked dermatitis.*—C., Ward 74. A case similar to the preceding. The

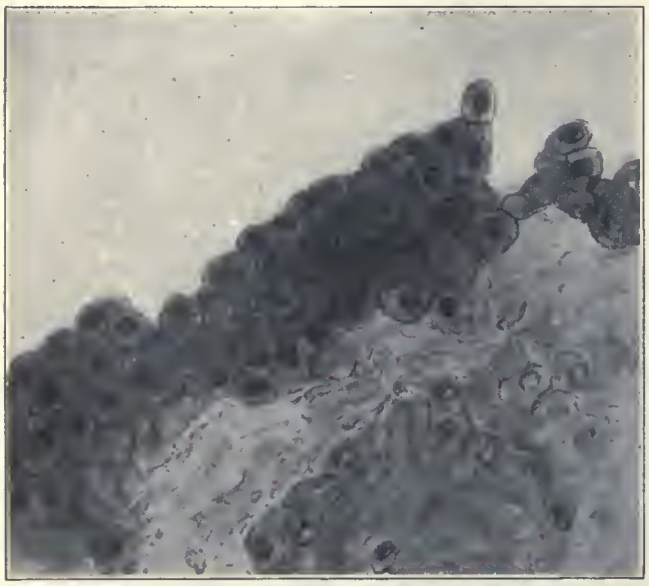


Fig. 5.—Synovial membrane, knee joint, injected with gentian violet, 1:1,000, just before a midthigh amputation (high power).

result of treatment with gentian violet was equally good, though less striking, as the dermatitis was less severe.

CASE 6.—*Granulating wound prepared for plastic closure.*—O., Ward 73, had had a long hospital career, with several operations, always complicated by sepsis. The amputation was at the midthigh. The skin would not tolerate Dakin's solution. A preliminary operation had recently been done, flaps prepared for closure, and the wound left wide open. Under gentian violet treatment, healthy granulations sprang up throughout the wound with great rapidity; these, in three weeks' time, had covered the bone end and reduced the wound to a space about 2½ by 1½ inches. It was impossible completely to sterilize it, a few colories of a gram-negative bacillus (*B. coli*) always appearing in the plates (Fig. 2). August 15, however, a plastic closure was satisfactory except for about 1 inch at the center of the wound where infolding made good approximation impossible. Convalescence was uneventful. Healing occurred by first intention for about seven eighths of the wound. The central eighth (where approximation had been poor) separated about the sixth day for a length of about 1 inch. There was, no doubt, a mild infection in the subcutaneous tissues, but this did not interfere with healing by first intention throughout seven eighths of the wound.

GINGIVITIS DUE TO B. FUSIFORMIS

Reference was made in an earlier article[7] to attempts made to use gentian violet in pyorrhea alveolaris, attempts which were attended with a considerable degree of success. The frequency and severity of ulcerative gingivitis (Vincent's angina) at the Walter Reed Hospital led to the adoption of the dye in the treatment of this disease. The cases were under the care of Major Butler of the dental department, in the excellent dental clinic under his charge. They were large in number and severe in degree; and their course was extremely satisfactory. It was Major Butler's distinct impression that the patients were materially benefited by the dye; but as it is difficult, if not impossible, to control these cases bacteriologically, on account of the presence of the organism concerned in the normal mouth, the conclusions reached have only the value of clinical deductions. The penetration of the gum by the dye and its persistence are not open to dispute; and it certainly deserves more extensive trial in this and kindred types of gingivitis. Moreover, the *injection of the dye into the gums* (suggested in 1918[7]) should be studied, for this method of administration would allow the bacteriostatic action of the dye full play against organisms lying below the surface.

7. Footnote 2, first reference.

VAS PUNCTURE IN ACUTE GONORRHEA

WILLIAM T. BELFIELD, M.D.
CHICAGO

Current treatment of acute gonorrhea in the male recognizes the two conspicuous end-segments of the seminal duct, urethra and epididymis, but ignores the invisible, intermediate portion—vasa, ampullae and vesicles; yet these, combined, present a mucous surface nearly equal in area to that of the urethra (Figs. 1 and 2). The following departures from the current conception and therapy of acute gonorrhea are based on seven years' treatment of this intermediate segment:

1. The infection reaches the vesicles in more than half the cases during the acute stage, the first weeks. Such extension has been generally unrecognized because the symptoms induced by it have been commonly ascribed to acute prostatitis. The rôle of the vesicles is proved not merely by the detection of their pathologic condition by the trained finger in the rectum, but strikingly by the pronounced mitigation of symptoms which follows immediately on filling them with a proper solution by way of the vasa. For example, a patient in the fourth week of gonorrhea, recently seen with Dr. L. B. Russell of Hoopeston, Ill., had for six days urinated painfully every thirty minutes to two hours night and day. Immediately after his vesicles were filled with 5 per cent. collargol solution, the pain



Fig. 1.—Vasa, ampullae and vesicles filled with collargol solution by vasostomy; stiletted catheter in right ureter.

disappeared and the urinary intervals promptly increased to four, five and seven hours.

2. Acute gonorrheal vesiculitis, whether identified or not, has received merely symptomatic treatment combined with vaccines and foreign proteins. When with this aid the patient's immunizing powers fail to overcome the vesicle infection, he joins the great army of sufferers from gleet, chronic prostatitis, sexual



Fig. 2.—Vesicles, etc., filled with collargol solution. Since in chronic vesiculitis the diverticula of the vesicles here pictured are filled with semisolid masses, stripping of such vesicles usually fails to cure the chronic infection; even filling them with collargol occasionally fails.

derangements, and other recognized results of chronic vesiculitis.

3. The acutely infected vesicle, hitherto inaccessible to direct medication, is easily filled with a suitable solution by puncture of the vas. Moreover, a given infection is far more amenable to treatment in the vesicle than in the urethra, for two reasons: first, because the unstratified vesicular mucous membrane is entirely free from lacunae, follicles and glands, such as crowd the deeply stratified epithelium of the urethra; second, because the vesicle, like other sacs enclosed in unstriped muscle (stomach), automatically churns its contents. Since the color of the emitted semen proves the presence of collargol in the vesicles for weeks after they have been filled with it, we can understand that a single filling, followed by weeks of automatic mixing with the infecting agents unprotected by follicles, etc., may end acute infection of the vesicle, though producing far less effect in the urethra.

4. Medication of the vesicles does not, of course, cure the urethral infection, which requires independent treatment. A married man in the third week of gonorrhea showed bilateral vesiculitis; both vesicles were filled with collargol solution, and the urethra was treated by standard methods. At the end of a week the discharge had almost ceased, whereupon the patient discontinued treatment and resumed conjugal relations, using condoms. After nine days he returned with a profuse, purulent discharge, which was found to involve only the urethra (vesicles not infected), and which yielded to appropriate treatment of the urethra.

The prompt arrest of severe infection by this method was illustrated in a patient in the fifth week of gonorrhea, recently referred by Dr. George W. Hall of Chicago:

When first seen, this patient presented frequent and painful urination, severe perineal pain, creamy discharge with gonococci, tenderness of vesicles, and painful swelling of the right elbow and the right anterior tibial muscle; the temperature was 102.5. Both vesicles were filled with 6 per cent. collargol solution; two days later a thin discharge and subsiding swellings of the elbow and the leg were the only symptoms remaining. The discharge ceased after two weeks' treatment of the urethra and prostate; the arm and the leg were well within ten days after the vesicles were injected. A month after all treatment was discontinued, the emitted semen was found free from gonococci—the only proof of recovery, in my judgment, without which I decline to pronounce a patient cured.

This was the seventh case of acute gonorrheal rheumatism promptly cured by filling the vesicles with collargol. The first patient was operated on in St. Luke's Hospital, in February, 1913.

GONORRHEAL EPIDIDYMITIS

Since gonorrheal epididymitis is always an extension from the infected vesicle, and is prevented by timely medication of the vesicle, it should not occur in patients who obey instructions. Furthermore, the French operation, epididymotomy, leaves undisturbed the infection in the vesicle of which the epididymitis is a result; it mops up the floor but does not turn off the faucet. Twelve cases of recurrent infection in the incised epididymis have come to my notice. In one there had been three recurrences within five months after epididymotomy. In this and six other cases the trouble was ended by medicating the infected vesicle through the vas, which should, of course, be done whenever epididymotomy is performed. It is true that epididymotomy is not always followed by recurrence, and equally true that epididymitis without incision is not always followed by recurrence. But epididymotomy does not prevent recurrence, whereas injection of the vesicle does.

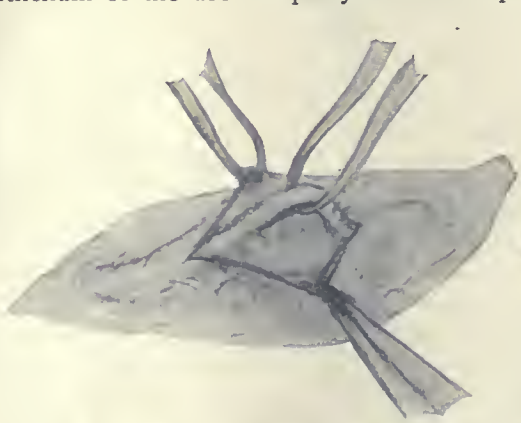


Fig. 3.—Vasostomy: Through a scrotal incision three-fourths inch long the vas is lifted above the skin.



Fig. 4.—Vasostomy: The handle of an aneurysm needle is slipped under the vas, which is drawn tense and punctured with a bistoury point; a silkworm thread is passed into its lumen; the remaining steps are those described under vas puncture.

TECHNIC OF VAS PUNCTURE

The physician inexperienced in the surgery of the spermatic cord should first employ for the medication of the vesicle by way of the vas my original operation, described in textbooks on urology. For by this open operation the vas is lifted out of its sheath, in which it normally slides freely like a tendon, and is supported

above the skin before its minute lumen is opened (Figs. 3 and 4); hence the common pitfalls, notably the disastrous error of injecting the sheath of the vas instead of its lumen, are avoided through visual control.

Vas puncture, on the other hand, does not disturb the relations of the structures concerned, and hence requires familiarity with them. The vas must be immobilized under a tense scrotum. This can be done in many ways, for example, as a woman's embroidery is held tense between two embroidery hoops. The following is perhaps the simplest method:

After cleansing and anesthesia of the scrotum are secured, the vas is pressed by fingers against the lateral scrotal wall, and is fixed by tenaculum lock forceps (Braun's) whose points pierce the skin beneath the vas above the epididymis; a second pair of forceps encircles the vas similarly half an inch above the first. Gentle traction of the two instruments by an assistant renders tense the scrotum overlying the intervening vas (Fig. 5). The scrotum is then rested on any convenient support. An incision one-half inch long or less exposes the vas. This is punctured with a bistoury point just enough to admit a fine silkworm thread, which should advance freely in its lumen. Or the puncture can be made with a hypodermic needle carrying the thread; but the bistoury point causes less injury and gives greater security. A blunt hypodermic or silver canaliculus needle is threaded over the silkworm into the vas (Fig. 6); the thread is withdrawn, and 10 c.c. of a 1:25,000 methylene blue solution are gently and slowly injected (Fig. 7). This should presently cause a desire to urinate; the urine passed should show the dye. If the color fails to appear in the urine, the procedure is faulty, and must be corrected or abandoned. The vas has been found occluded in more than 1 per cent. of my operations. The second vas is injected with fuchsin solution for contrast.

When the appearance of the dye in the urine has proved correct operation and patency of the seminal duct, 20 c.c. of 5 per cent. collargol solution are slowly injected, followed after two minutes' interval, by 1 c.c. of water, to minimize the possible regurgitation of collargol out of the vas. Threaded in a fine hypodermic needle, a silkworm or waxed silk strand is carried into the lumen of the vas and out through the skin one-half inch above (Fig. 8); the needle is withdrawn, leaving the thread; its projecting ends are merely knotted, but are not tied together (important). This thread is a drain out of the vas and a guide for the blunt needle into the vas for subsequent injections, if needed; it should be withdrawn within five days.

Percutaneous puncture without using the knife appeals to the timid patient; but the security afforded by visual control of the puncture through incision far outweighs the disadvantage of the slight cut in the skin.

THE ADVANTAGES OF COLLARGOL AS A REMEDY

Collargol is used for medicating the acutely infected vesicles because of its advantages over all other remedies tried in my treatment of chronic vesiculitis by vasostomy.[1] Among its advantages are its penetrating power (unpleasantly illustrated in the kidneys), which probably explains its presence in the vesicles for weeks after injection; and its liquefying effect on semisolid, purulent masses. That collargol in 5 per cent. solution causes no damage to vas or vesicle, though certain other solutions used in the urethra do, was shown in an admirable experimental work by Lespinasse.[2] It seems also to be the agent generally used by those experienced in vasostomy.[3]



Fig. 5.—Vas puncture: The vas is immobilized under a tense scrotum by traction on tenaculum forceps; half-inch incision through scrotum and sheath to vas, whose coverings are drawn apart by snap forceps.

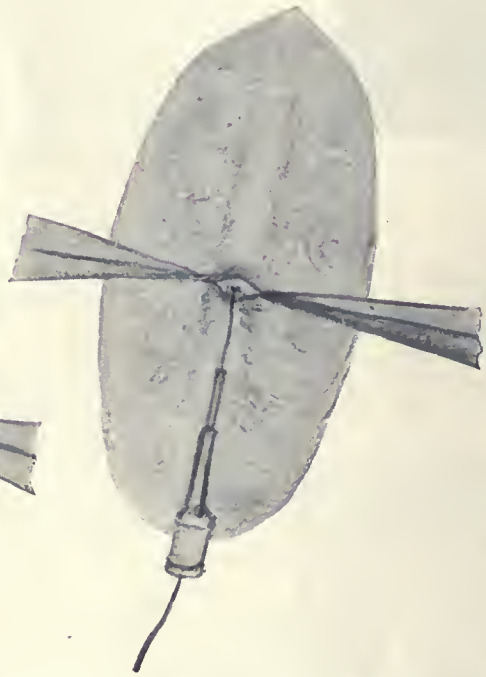


Fig. 6.—Vas puncture: Through puncture of the exposed vas with bistoury point a silkworm thread is passed into its lumen, and a blunt hypodermic needle is threaded over the silkworm toward the vas. (In this and the next illustration the tenaculum forceps, really remaining in position, are omitted to avoid confusion.)

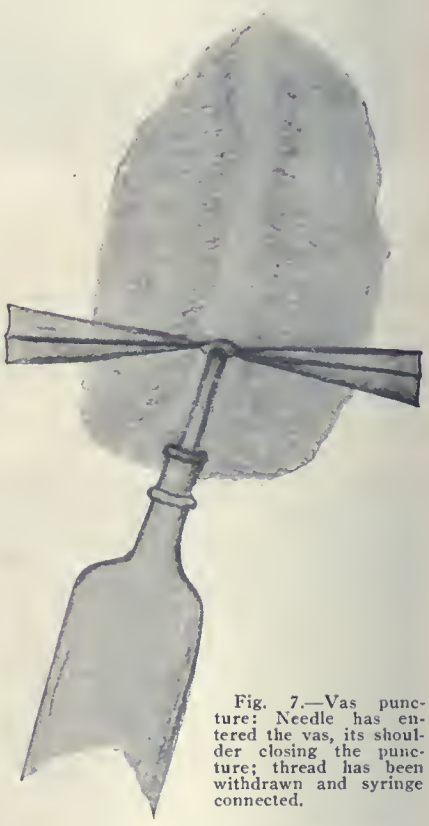


Fig. 7.—Vas puncture: Needle has entered the vas, its shoulder closing the puncture; thread has been withdrawn and syringe connected.

1. Belfield, W. T.: Surg., Gynec. & Obst., November, 1906; Med. Rec., May 4, 1907; Pus Tubes in the Male, J. A. M. A. **53**: 2141 (Dec. 25) 1909; Vasostomy — Radiography of the Seminal Duct, ibid. **61**: 1867 (Nov. 22) 1913.

2. Lespinasse, V. D.: Bull. Chicago M. Soc. **19**: 17, 1919.

3. Herbst, R. H.: Seminal Vesicle Infections as the Cause of Persistent Urethral Discharge, J. A. M. A. **68**: 761 (March 10) 1917; Chicago Surgical Clinic, April, 1919. Bremerman, L. W.: Interstate M. J. **23**: 694, 1916. Caulk, J. R., and Greditzer, H. G.: Ibid. p. 702. Schmidt, L. E.: Bull. Chicago M. Soc. **19**: 18, 1919. Lespinasse, V. D.: Ibid., p. 17, 1919. Thomas, B. A.: Surg., Gynec. & Obst., January, 1917. Mark, E. G.: Proc. Chicago Urol. Soc., Nov. 20, 1919. Martin, A. P.: Siglo méd. **66**: 356 (May 3) 1919; abstr. J. A. M. A. **73**: 305 (July 26) 1919.

ONE UNTOWARD RESULT OCCASIONALLY FOLLOWING VASOSTOMY

On the other hand, collargol is a factor in the only untoward result that ever follows vasostomy properly performed, namely, occlusion of the vas at the site of operation. That this is exceptional is indicated by the observation that four men, each of whom had only one testicle, all furnished normal semen after vasostomy. Such occlusion results partly from the extensive dissection, and partly from the regurgitation of collargol out of the vas into its sheath and surrounding structures, resulting in the formation of fibrous tissue. Both causes are eliminated by the technic of vas puncture already described, which should supersede vasostomy; but should such occlusion occur, it is remediable by a simple procedure, namely, excision of the occluded portion of the vas and union of the cut ends by a catgut or other suture.[4]

In working with the vas and its coverings I never use a sewing needle, but do my sewing with a fine hypodermic needle. This is made to pierce the vas and its surroundings wherever a stitch is desired; a silkworm or other thread is passed through the needle, which is then withdrawn, leaving the thread in the desired position with a minimum of injury to the delicate tissues involved (Fig. 8).



Fig. 8.—Vas puncture: After completion of injection, thread is placed and left as drain from the vas and guide for entrance of blunt needle for subsequent injections.

SUMMARY AND CONCLUSIONS

1. The traditional and still prevalent conception of acute gonorrhea as "specific urethritis" presents only a half truth; for in the majority of cases the disease becomes urethrovesiculitis within the first month.

2. Medication of the acutely infected vesicles and ampullae by way of the vasa with 5 per cent. collargol solution eliminates the infection from these otherwise inaccessible cavities. For this purpose vas puncture is preferable to the original operation, vasostomy.

3. The prompt arrest of the vesicular infection in the acute stage averts chronic vesiculitis with its manifold evils, eliminates epididymitis, and converts the hitherto refractory urethrovesiculitis into a urethritis only, with which we are well equipped to cope.

4. The seriocomic aphorism "Any man can make a date to get the gonorrhea; no man can make a date to get rid of it" reflects the futility of current treatment of the acute infection, futile chiefly because treatment is limited to one half of the infected area, the urethra; while in the other half, comprising vesicles and ampullae, the untreated infection persists undisturbed indefinitely. So long as pus produced in the vesicles appears at the meatus, the urethra is subjected to fresh—and futile—assaults.

In short, we treat acute gonorrhea as urethritis only; we are commonly dealing with urethrovesiculitis.

5. Before injecting the vesicle by way of the vas, the physician should master the technic either on the cadaver or through clinical observation; otherwise the patient should be referred to some one experienced in this work.

32 North State Street.

4. Mayo, W. J., and Mayo, C. H.: Ann. Surg., January, 1895. Lydston, G. F.: A New Method of Anastomosis of the Vas Deferens, J. A. M. A. 47: 169 (July 21) 1906.

MODERN TREATMENT OF THE WEAK FOOT

ARMITAGE WHITMAN, M.D.
NEW YORK

The subject of weak foot and its treatment has already been so thoroughly dealt with that those familiar with the subject may feel that anything now written can be nothing but repetition. To a certain extent this is true, yet there are aspects of the question that still need to be brought home to both the practitioner and the specialist.

Having only lately returned from an absence of nearly two years, I perhaps have somewhat altered my perspective, so that some things stand out more clearly than they otherwise would. I may not claim to cast any new light on an old subject, but I do state fairly that I regard it from a new angle.

To begin with, we have during the past two years given a large number of medical men, old and young, a grounding, or in case that word may seem too sanguine, an interest in orthopedic principles that they never had before. The medical officers in the Army who took the special orthopedic training have had emphasized, for probably the first time in their lives, posture, backs and feet in their direct relationship to efficiency. Efficiency is a much overworked word, one that is exceedingly objectionable to me. Let us say that it has been impressed on these observers that the man who walked with his back hollow and his toes turned out was unfit for the job that he had in hand. There could not have been a more favorable opportunity for the demonstration of the soundness of these principles, and for the change in public opinion that removed their supporters from the ranks of the faddists to those of the practical men. For almost the first time they were able to work with large bodies of men who were interested in what they had to say, and who looked to them to remove the stigma of being "unfit for active service." Incidentally, the surgeon experimenting for the first time in the application of these principles found the interest of his patients a spur to his mastery of the principles which he was trying to apply.

It is the combination of these two elements—interest on the part of both patient and physician—that is responsible for the present optimism displayed by certain members of the profession toward orthopedic practice in general. Many whose experience has been solely in cantonments on this side or in base hospitals or on splint teams in France are now deciding to take up orthopedics as a specialty. The public is interested and anticipatory. The word "orthopedics," though its meaning is by no means understood, has obtained wide circulation. It is with the idea of averting a certain disappointment that I am taking up the subject of the present day treatment of weak foot.

It may be said that there are at present two schools in the treatment of the weak and painful foot. The

first, and undoubtedly the largest, believes, or at any rate, practices, on the assumption that a sore foot is one of those ills to which man is inevitably heir, and that all that is needed in the way of treatment is relief of the patient's symptoms. This is accomplished in a variety of ways—by raising the inner border of the shoe, by applying a leather footplate, by putting bent pieces of metal in the shank of the shoe, or by applying various forms of metal sole plates. Little if any attention is given to the patient's attitude, or manner of standing or walking. If one questions the more learned followers of this school, they will answer that no patient is interested in his feet beyond the relief of the pain from which he may be suffering at the moment, and that any attempt to reform lifelong habits of gait, or style of shoe, is a waste of breath.

WEAK FOOT IN THE ARMY

The war has dealt a heavy blow at what we may call this "laissez-aller" school by demonstrating that the great majority of foot troubles could be cured without any apparatus whatever. There are two reasons for this. The first is that it was impossible to apply the apparatus. When I first joined the British Expeditionary Forces in May, 1917, as orthopedic surgeon to Base Hospital No. 2 (General Hospital No. 1, B. E. F.), I made a few attempts at manufacturing braces for the Tommies sent down the line because of disabilities of the foot. These, however, were fruitless, partly on account of the stupidity of the local French blacksmith, but mainly on account of the attitude of the British liaison officer, who said that even the most finished apparatus would be neglected or broken by the Tommy—neglected because he neglected everything outside his regular routine, or broken because he wanted an excuse for a rest. As they were in the habit of losing, breaking or pawning their false teeth for similar reasons, his point seemed well taken, and hundreds of otherwise fit men were shipped through to Blighty, there to be classified as P. B. (permanent base troops).



Fig. 1.—The body weight, when the toes are turned out, falling on the inner border of the foot, as shown by the crease of the trousers.

At the time I was transferred to the American Expeditionary Forces, in February, 1918, this attitude—that apparatus was unpractical—seemed officially adopted by the orthopedic department of the American Expeditionary Forces. It, however, had gone the British one very much better in establishing a camp, or battalion, for soldiers rejected for active duty because of weak feet, weak backs, etc. There the feet were treated by raising the inner borders of the patient's heels and soles, and occasionally by applying a leather strap about the foot and ankle. Metatarsalgia was treated by a leather bar nailed across the sole behind the heads of the metatarsals. By carefully graded exercises alternated with periods of rest, and by constant supervision and rigid discipline, a very large proportion of these soldiers were returned to combat duty, one of Colonel Goldthwaite's greatest triumphs.

The first demonstration that weak foot could be cured without apparatus thus being that apparatus under the existing circumstances was unpractical—a decided forcing of the issue—we now come to the second. This was, as has already been suggested, military discipline plus morale and intelligence. The majority of the troops in question were willing and anxious to fight. Unless their feet were cured they could not. They therefore took the liveliest interest in their recovery. They were, in addition, under the direction of trained officers of more than ordinary experience, such as Major Z. B. Adams and Lieut.-Col. G. W. Hawley, and under them they were supervised by highly trained noncommissioned officers. They were properly shod and properly clothed, and their general condition was excellent. We have demonstrated the proposition that weak foot of this type can be cured without apparatus by taking highly trained athletes, eager for their task, under expert supervision and rigid military discipline.

WEAK FOOT IN CIVIL PRACTICE

Contrast the conditions which obtain in civil life. In hospital practice at least half of the patients are women, middle aged, hard working, fat housekeepers, on their feet all day long, 25 per cent. suffering also from varying degrees of varicose veins. The men are very much of the same class, middle aged street car conductors, policemen, bakers, cooks, and the like. There are comparatively few young men and girls and almost no children. As an illustration, the statistics of the Hospital for the Ruptured and Crippled during September, 1919, may be considered: Double weak foot: Males, 117; females, 146; under 15 years, 45; over 15 years, 218.

In private practice, men come because they are worried about a continual tired feeling, or a "strained foot" that does not get well, or because they have been told by the family physician that they have gout or rheumatism. Women come for the same reasons, and in addition there are a few who seek cosmetic improvement. Of late years, there have been a large, and fortunately increasing, number of children brought because of the ugly appearance of their feet, or awkward and peculiar gait.

To attempt the cure of these classes of patients is a widely different proposition from the military problem just described. The main obstacle, and the one first encountered, is indifference—indifference on the part of the patient and on the part of the physician. Most of the patients come expecting to be given some shoe that will afford immediate relief, and most of the physicians give treatment which may well be summed up in a reply given me by the chief of a large orthopedic clinic in a center of orthopedic teaching, when asked

how he treated these patients in hospital practice: "Anything to get rid of them."

We may assume, however, that men taking an interest in the subject for the first time, as our lately developed orthopedic practitioners are, will not be satisfied so lightly to dismiss the subject. We may assume also that an increasing number of patients will not be satisfied so lightly to be dismissed. I am strengthened in this opinion by the fact that I encounter in my hospital practice practically no patients who have not previously sought relief in some form of "orthopedic shoe," or by means of the various sole plates sold in drug stores. They will all state that these measures gave temporary relief, but that in a comparatively short time their symptoms returned. It is only rarely that they have been given any instruction in exercises, gait, posture, and the proper methods of using their feet. These facts may explain my skepticism in regard to the permanent effect of treatment by varied and nondescript forms of apparatus—apparatus applied for the relief of symptoms without aiming definitely at the original cause of the defect.

Except in rare cases of congenital flatfoot, and deformity as the result of accident, it may be safely stated that the underlying cause of weak foot is the attitude of eversion of the foot. To put it in the simplest possible way, the principal cause of weak foot is the persistent attitude of eversion, to which the commonest predisposition is the practice of standing and walking with the toes turned out. The effect of this attitude is to cause the body weight, transmitted downward through the lower extremities, to fall to the inner side of the foot instead of through its center. This attitude being established, it is only a question of time for the astragalus to begin rolling downward and forward off the os calcis, thereby pressing on the ligaments, causing pain, and ultimately deformity. The mechanism of this process is simplicity itself, and may be demonstrated by dropping a plumb line from the patella, noting where the weight falls when the feet are in the different attitudes. A well creased pair of trousers may be adapted to the same purpose, as in the accompanying illustrations.



Fig. 2.—The body weight, when the feet are parallel, falling through the center of the foot.

Once this principle has been established, it remains only to correct the bad habit in the patient. Granted that this may be done by military discipline plus the desire of the patient to be cured, in civil practice we encounter two difficulties. The private patient is not sufficiently interested in his feet to devote to them the necessary amount of thought; and the hospital patient, who has to be cured during the course of the very occupation that may have caused his disability, has not the strength in his tired and overstretched muscles to maintain the attitude continuously. We therefore find it necessary in most cases to apply some form of support.

METHOD OF TREATMENT

The only apparatus hitherto devised which at the same time supports and attempts to correct the predisposing attitude is that of Dr. Whitman. It not only "supports the arch," but also provides the lateral pressure which, as it were, nips the deformity in the bud. If a patient wearing the brace attempts to turn his toes out, he becomes actively uncomfortable; and in pulling away from the pressure of the brace, he assumes the overcorrected attitude which is intended to become habitual.

It is a fact unfortunately not universally recognized that the muscles of the weak foot have become stretched, relaxed and weakened in proportion to the length of the period of their accommodation to the faulty attitude of the foot. By a proper combination of rest and exercise, they may be enabled to "take up their slack"; but it is exactly this combination that the patient is not willing to give them. In short, it is the lack of respect with which the individual regards his feet that makes proper treatment so difficult. He will take time from business to devote to the treatment of an abscess at the root of a tooth from which he has never had any symptoms; he will give up days to the correction of an error of accommodation; but the idea of staying off his feet out of consideration for an acute foot strain appeals to him as absurd, unless an element of the mysterious and bizarre be added. This is the basis on which lies the success of the tendon-lengthening and other operations for the relief of the weak foot. If the patient can be so impressed with the gravity of his complaint that he is willing to submit to an operation, the prolonged rest in plaster of Paris enables the relaxed ligaments and muscles to contract in the overcorrected position, and when he emerges from his confinement, the operative scar serves as a constant reminder of the surgeon's advice as to gait and posture. It is only in exceptional cases, however, that actual shortening of the Achilles tendon makes such a procedure necessary.

It is as a mean, therefore, between depending solely on the patient's attention to the directions given him, and placing his foot in plaster—the fool-proof preliminary method of treatment—that we have recourse to the proper brace. This forces the patient when walking to employ his muscles with the foot held in the correct attitude, and when he is at rest serves as a splint to prevent his foot from sagging into the attitude of deformity, and again overstraining his weakened muscular and ligamentous supports.

It is not my purpose to maintain that brace treatment may be uniformly successful. While it is acknowledged that the fitting of a tailor-made suit is a procedure calling for a high degree of skill, it appears to be assumed that any one, from surgeon to chiropodist, should be able to fit a rigid metal support to a weight-bearing surface and make it fit comfortably the first time. This impression should be dissipated. The process implies a familiarity with the handling of plaster of Paris, the molding of casts, the vagaries of the brace maker and, above all, of the patient.

The cast of the entire foot should be taken with the foot on its side, in the corrected and nonweight-bearing

attitude—in other words, the brace is to be fitted to the foot in its best possible form. Braces fitted to sole impressions of the foot are practically useless. The cast of the foot should then be trimmed according to what the surgeon thinks the particular patient will stand, always with the idea of obtaining the closest fit coincident with comfort. The outer aspect of the heel, where the lateral and plantar surfaces join, should be slightly built out with plaster to allow for the expansion of the heel when weight is borne; otherwise the outer flange of the brace will cause too much pressure at this point. The outline of the brace should be carefully marked by the surgeon himself. The heel and sole of the shoe should be raised a quarter of an inch on their inner borders. The patient should then be instructed that he is to accustom himself to the brace gradually. The first day that he wears it, he is to take it out of his shoe as soon as it hurts him. He is to do the same on the three or four following days. If at the end of that time he notices that the brace is still pressing into his foot sufficiently to cause a painful spot, he is to report to the surgeon, wearing the brace, so that adjustment of it may be made according to the marks on his foot. It should eventually be possible so to adjust the brace that it makes neither a mark on the foot nor a perceptible line on the shoe. Any external evidence on the shoe that the patient is wearing a brace is an indication of improper fitting.

Finally, one should always instruct the patient that his cure rests entirely with himself. Of course, there will always be found cases of such severity and of such long standing that cure cannot be hoped for. To the average patient, however, it should be made perfectly clear that his true recovery depends on himself, not on any form of support. He should be encouraged to look forward to the time when he may give up braces, lifted shoes and exercises, and depend for the future on his acquired habits of gait and posture. The first stage in the discarding process is that of the lifted shoe. He should change every other day, or, perhaps, at the beginning for only half a day, from the lifted to the flat shoe. When he has become accustomed to the flat shoe permanently, he should start a similar process with a brace; but during this period he should go so slowly and methodically that he can immediately lay his finger on any excess that causes a return of symptoms. In such an event he sets his program back to where he was a week before his symptoms occurred, and starts over again.

SUMMARY

The points which I wish to make in the rational treatment of the weak foot are these:

1. The average weak foot may be cured.
2. It may be cured in three ways:
   - (*a*) By proper shoes, plus a rigid supervision of the patient's daily exercise, gait and posture.
   - (*b*) By prolonged rest in plaster of Paris with the foot in the overcorrected attitude, plus or minus operative procedure, followed by exercises, etc.
   - (*c*) By the application of a proper brace, combined with daily exercises, etc.

I wish to establish a line of demarcation between the treatment of the weak foot and the treatment by palliative measures of the symptoms arising therefrom.

I do not expect that the average practitioner or specialist will depart from his present practice, or that any large proportion of patients will make the esthetic sacrifice of abandoning the footwear that to them seems beautiful, or the lifelong habits of walking and standing that have descended to them from generations of dancing masters. I do believe, however, that the late wide experience of the war has awakened a large number of physicians, and a much larger number of laymen, to an interest in the foot and its disabilities. I believe that from now on there will be a steady improvement in the shape of footwear, particularly in men's shoes, and that the rising generation, in view of the possibility of universal military training, will be anxious to avoid the stigma of being physically unfit, and will therefore seek and require constantly better advice on the subject of foot management. I do not quarrel with long established measures for relieving symptoms which have in the past and will in the future satisfy large numbers of patients and practitioners.

I hope that eventually when a patient appeals to a surgeon for the relief of symptoms arising from a weak foot, the first point to be established will be whether that patient is to be treated for the relief of symptoms or for the cure of their underlying cause. I believe that no matter how enthusiastic a patient and physician may be at the outset, without military discipline it will always be difficult to effect a cure without applying a support. I hope that if a support is applied it will be a rational one, painstakingly fitted by a competent person, and applied with a perfectly clear mutual understanding of its purpose and of its temporary character.

283 Lexington Avenue.

MALIGNANT ENDOCARDITIS WITH PERFORATION OF BOTH MITRAL AND AORTIC VALVES

REPORT OF A CASE *

JOHN E. CONBOY, M.D.
NEW YORK
AND
HERMAN L. KRETSCHMER, M.D.
Genito-Urinary Surgeon, Alexian Brothers Hospital; Urologist, Presbyterian Hospital; Assistant Professor of Surgery, Rush Medical College
CHICAGO

Perforation of one of the valves of the heart occurring in malignant endocarditis is occasionally seen at necropsy and is not considered a very unusual complication. However, the finding at necropsy of perforation of two valves of the heart is of rare occurrence, and we believe it is of sufficient interest to warrant the subjoined report of a case.

REPORT OF CASE

History.—Private J. A. A., white, aged 27, admitted to one of the medical wards of U. S. Army Debarkation Hospital No. 5, March 3, 1919, directly from the overseas transport, had no untoward symptoms on board ship, and was admitted to the hospital in good condition considering the gravity of his cardiac condition.

The present trouble began, Feb. 1, 1919, following exposure, with indefinite pains in the right lumbar region which were aggravated by standing, and with inability to use the right leg. For a few weeks previously the patient had had a slight cough and occasional night sweats, and had lost some weight.

* From the medical wards, U. S. Army Debarkation Hospital No. 5, Grand Central Palace, New York City.

Physical Examination.—On admission, the head and neck were negative. The pupils were equal, and reacted to light and accommodation. The throat was negative, and there was no enlargement of the thyroid gland, but there was visible pulsation in the vessels of the neck. Examination of the lungs revealed the presence of a few moist râles over both bases, posteriorly.

The left border of the heart extended two finger breadths to the left of the midaxillary line. The apex beat was located in the fifth intercostal space to the left of the nipple. A systolic murmur was heard at the apex, and transmitted to the left axilla. A diastolic murmur was heard over the aortic region, and transmitted downward over the sternum. The heart was fully compensated.

The patient had a peculiar "waxy complexion," which persisted up to the time of his death. He gave one the impression that he was suffering from a very grave form of anemia.

Examination of the blood, March 12, revealed 3,270,000 red cells, 11,000 leukocytes, and 90 per cent. hemoglobin. The cellular structure was normal. Differential leukocyte count revealed 89 per cent. polymorphonuclears, 4 per cent. small mononuclears, and 11 per cent large mononuclears. Blood cultures on the same day showed the presence of a pure culture of *Streptococcus viridans.*

Urinalysis, March 4, revealed clear, amber urine of acid reaction; the specific gravity was 1.018; there was a trace of albumin; no sugar was detected; there were a few granular casts. Urinalyses, March 6, 10 and 11, revealed no change.

Clinical Course.—From March 4 to 9, the patient's condition remained about as described. March 10, at 10 a. m., the patient very suddenly complained of severe dyspnea. The pulse rate was 140, the air hunger was very marked, and he was covered with a profuse perspiration. The extremities were cold, and the patient complained of chillness. After the application of heat he appeared to be more comfortable and less dyspneic.

March 11, he had another very severe attack of dyspnea, and showed signs of collapse. The forenoon of the following day, he had another severe attack of dyspnea and was extremely restless. This dyspnea was followed by a sudden onset of cyanosis, and the patient died at noon, March 12.

Necropsy Findings.—Necropsy was performed one hour after death. The skin was very pale and somewhat emaciated. There were no scars or markings on the body.

The head was not opened. The abdomen and chest were opened by the usual incision. Very little subcutaneous fat was present, and the muscles were fairly well developed.

The pericardium was adherent to the parietal pleura. The tissue was seared, and a sterile pipet was thrust into the pericardial sac and about 10 c.c. of fluid withdrawn for culture. This culture showed the presence of a pure culture of *Streptococcus viridans.* The pericardial sac was then opened and about 500 c.c. of clear, straw-colored fluid were withdrawn.

The heart was seared, a sterile pipet thrust into the left ventricle, and about 5 c.c. of blood were withdrawn for culture. This showed a pure culture of *Streptococcus viridans.* The heart was enlarged about two and a half times the normal size. The muscular structure was poor, and the muscles were somewhat flabby. The left ventricle was hypertrophied. In the heart, postmortem clots were found in abundance. The pulmonary and tricuspid valves were apparently normal, while the aortic valves were greatly thickened with dense vegetations, and their margins were very irregularly perforated. One of the cusps of the aortic valve showed a perforation which admitted the tip of the little finger (Fig. 1). There were small, warty vegetations on the wall of the aorta. The mitral valve showed the presence of vegetations similar to those seen on the aortic valve. One of the cusps of the mitral valve was so sacculated that the sac would admit the thumb. There was a perforation at the bottom of the sac (Fig. 2), and warty vegetations on the chordae tendineae and papillary muscles, and above the walls on the wall of the left auricle.



Fig. 1.—Perforation of mitral valve (*A*) and aortic valve (*B*) in malignant endocarditis.

There was one dense adhesion to the surface of the chest wall at the upper part of the lower lobe of the lung on the left in the midaxillary line. There was marked anthracosis. The bronchial glands were somewhat enlarged.

The liver was mottled and slightly enlarged, and there were numerous soft adhesions to the surrounding structures. The spleen was about two and one-half times the normal size. There were many adhesions and a small cyst with a thick capsule and filled with necrotic material. Both kidneys were adherent to the surrounding structures by firm adhesions. They were slightly enlarged and congested, with small petechial areas on the surface.

Microscopic Examination.—The lungs, heart, spleen, liver and kidneys were removed for microscopic examination.

Sections of the lungs showed that many of the alveoli were filled with desquamated epithelial cells, some of which contained a brown, finely granular pigment. A few of the bronchioles were also filled with epithelial cells. The blood vessels were not dilated, and there was no thickening of the alveolar or bronchial walls.

Near the pericardial surface of the myocardium was an area containing many small blood vessels and small round cells. The muscle fibers had been replaced by scar tissue, which was believed to be a small healing infarct. The myocardium otherwise seemed normal. The pericardium showed no change. Section of one of the aortic leaflets revealed the surface covered with great masses of fibrin, in the meshes of which polymorphonuclear leukocytes were entangled, and in and on the surfaces of which there were also enormous masses of bacteria. Some of the fibrin had undergone hyalinization. With the Goodpasture-Weigert stain the bacteria were found to be gram-positive cocci in long chains.

In one of the sections of the spleen, many small areas of coagulative necrosis were seen. The pulp contained many leukocytes. The connective tissue was not increased. In another section there was a large infarcted area containing great colonies of bacteria. About this area there were many pigments containing phagocytes. There was much fibrous tissue about the margin of the infarct.

The cells about the portal areas of the liver were very much swollen and granular. About the hepatic vein the parenchyma cells were necrotic, and there were rather dense accumulations of leukocytes. In some of the areas the necrosis was not so marked, and in these the nuclei of the cells had disappeared; and there were many fat droplets within the cells. There was no increase in the amount of connective tissue, and the bile ducts seemed normal.

In one of the kidney sections, the epithelial cells of the tubules were very much swollen and granular, giving the lumen of the tubules a ragged or stellate outline. There was

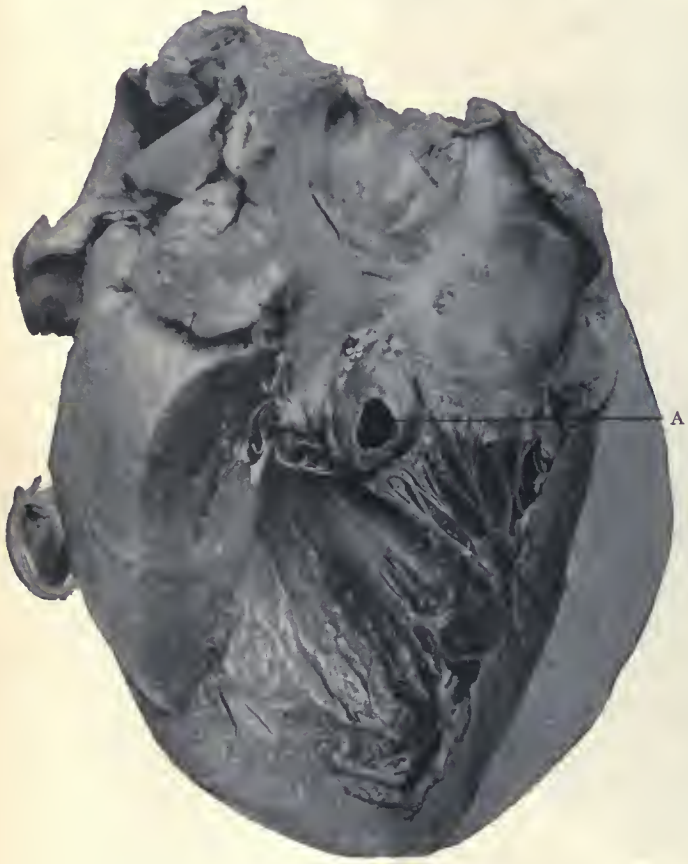


Fig. 2.—Heart in malignant endocarditis: *A*, perforation of mitral valve.

no increase in the interstitial tissue. A small hyaline thrombus was found in one of the glomeruli. In another section, there was seen in addition to the changes mentioned above an area of coagulative necrosis. There was a moderate accumulation of leukocytes at the margin of the infarct.

2676 Morris Avenue—122 South Michigan Avenue.

Vomiting and Pyloric Stenosis.—Pyloric stenosis requiring surgical measures for its cure may exist many months or years without any vomiting at all, the patient's symptoms being merely those of more or less severe indigestion and discomfort. Experience teaches that the stomach begins to reject its contents only when the stenosis has been existing for a fairly long time; that in the earlier stages—when the condition is all the better for operation—the stomach does its level best to carry out its duty of driving the food along through the narrowing pylorus, only later giving up the effort and ejecting the food by periodic vomiting as the easier alternative.—Herbert French, M.D., F.R.C.P, *Medical Press and Circular.*

OPERATIVE TECHNIC IN SPINA BIFIDA *

JOSEPH RILUS EASTMAN, M.D.
INDIANAPOLIS

In few operative procedures is the mortality, both immediate and secondary, as high as that of spina bifida. The immediate death rate from shock, meningitis, etc., is approximately 33⅓ per cent., while the secondary mortality from hydrocephalus, convulsions, etc., is equally great, resulting in an ultimate loss of from 60 to 70 per cent.[1] of the patients. According to Hildebrand[2] only about 39 per cent. make complete recoveries. Judicious selection of cases for operation, followed by rational, conservative technic would surely do much not only to reduce this discouraging mortality, but also to establish the surgery of spina bifida on a sound basis.

This very obvious point has been quite clearly set forth in the majority of writings on the subject. Thus, Beckman and Adson[3] emphatically advise against operations associated with marked hydrocephalus or paralysis of the lower extremities unless, in the first instance, the hydrocephalus is either allowed to become stationary or is relieved, for example, by puncture of the corpus callosum; and in the second instance, unless it is understood by all concerned that operation will have no remedial effect on the paralysis. Thorburn[4] and Tubby[5] of England agree with these authors and enumerate frequent instances in which operations for spina bifida associated with hydrocephalus markedly aggravated the hydrocephalic condition.

Excluding, therefore, all cases associated with an increasing hydrocephalus as at least temporarily inoperable, we are reduced to: (1) operations on simple meningoceles in which the prognosis, if precautions hereinafter mentioned are observed, should be good, perhaps below 5 per cent., and (2) operations on meningomyeloceles and syringomyeloceles, which are performed with little hope of remedying the paralysis and with the purpose only of removing a deforming tumor and preventing subsequent ulceration and rupture.

In the latter cases, despite the disappointing results in regard to paralysis, operations may be said to have a quasi justification, since few children thus afflicted ever reach maturity if not operated on; moreover, an unsightly tumor is removed. In the meningoceles, there is no contraindication to operation so far as the local condition is concerned, and no apparent reason why low mortality and good operative results cannot be secured in any of the three varieties of this group, as described in the excellent classification of Binnie[6]:

A. A defect of the posterior osseous wall of the spinal canal is present. The skin, spinal membranes and cord are intact. There is a hernia of the dura through the osseous defect. Fluid in greater or less quantity is present in the dilated subdural space.

B. The conditions are the same as in A, except that the arachnoid is involved in the hernia, and the collection of fluid is in the subarachnoid space.

* Read before the Western Surgical Association, Kansas City, Dec. 5, 1919.

1. Albee, F. H.: Orthopedic and Reconstruction Surgery, 1919.
2. Hildebrand: Verhandl. d. deutsch. Gesellsch. f. Chir., 1893, p. 69.
3. Beckman, E. H., and Adson, A. W.: Collected Papers, Mayo Clinic, Philadelphia, W. B. Saunders Company, 1917.
4. Thorburn, W.: Oxford Surgery, 3.
5. Tubby, A. H.: Deformities.
6. Binnie, J. F.: Operative Surgery, Philadelphia, P. Blakiston's Son & Co., p. 716.

C. A defect exists in the dura as well as in the bone. Through these defects there protrudes a hernia sac consisting of the arachnoid. The skin, pia and cord are intact.

OPERATIVE TECHNIC

By transillumination, as used in hydrocele, one can determine with a fair degree of accuracy whether the sac contains nerves or cord, or both. At times, however, this may be misleading because of thickening and irregularities of the sac wall. In such cases application of a weak faradic current to various points on the sac may be of some diagnostic aid. Most frequently, however, the diagnosis of meningomyelocele depends directly on clinical evidence, such as clubfoot, partial or complete paraplegia, or defective sphincter control, some of which are nearly always present in a greater or less degree if a nerve is involved in the sac.

It is usually advised to place the child in the ventral Trendelenburg position or in the hanging position of Babcock in order to prevent or reduce to a minimum the escape of cerebrospinal fluid following incision of the sac. This step, of course, is of considerable importance, but I prefer in its place the expedient of applying a light rubber-covered clamp to the neck of the sack, as is hereinafter described and advocated. With this step in view, the child is placed in the ventral recumbent position with the operator and his assistant seated on opposite sides of the operating table. In this, as in other delicate and minute surgical operations, the sitting posture of the operator has advantages which are obvious and important.

The first step of the operation consists in the taking of every precaution against the contamination of the wound. The importance of this cannot be overestimated, because the one imminent postoperative danger in spina bifida is meningitis from wound infection. Contamination is made especially dangerous because often the site of the wound not only lies near the anal region, but because it also lies in the direct groove along which the infant's urine and feces are most likely to extend. Tubby,[5] in discussing contraindications to operations in spina bifida, emphasizes that "lumbosacral tumors must be approached with caution because of the difficulty of avoiding fecal and urinary contamination." With this in mind, I place a piece of rubber dam over the tumor, and suture its lower border with fine chromic catgut to the skin of the child's back. The suture material, if quite fine, will allow of from eight to ten incursions and excursions of the needle to each inch of skin traversed. By reinforcing with collodion, this suture line may be made water tight. The rubber dam is then turned downward, and the second procedure is begun.



Fig. 1.—Suturing lower curved border of rubber dam protective to the skin of child's back: first step in making water-tight barrier against contamination of wound from excreta.



Fig. 2.—Circular incision begun in the collar of true skin which is present in most meningoceles. This circular incision to free the sac neck is conveniently and safely done by scissors-spreading dissection.



Fig. 3.—Circular skin and fat inclsion complete, and neck of sac free.



Fig. 4.—Rubber-covered light intestine clamp applied to neck of sac to prevent escape of cerebrospinal fluid and entrance of infection.



Fig. 5.—Opening sac at thin and unusually transparent vertex of tumor.



Fig. 6.—If cord elements, as shown diagrammatically here, are present in sac, they can be freed while clamp offers protection against infection and escape of fluid, although the chance of benefit to paralysis resulting from operation in myelocele is practically nil.

This step consists in dividing the circular collar of true skin which usually is present about the base of the tumor. The tumor may, of course, in the first variety of meningocele, have a covering of true skin; but in

those cases in which the tumor has no external covering except a very thin skin epithelium, there is nearly always a collar-like base of thick skin through which the true sac extrudes. By the employment of the scissors-spreading method of dissection, the circular incision through the skin at the base of the tumor may be made with little danger of the escape of fluid. The neck of the sac is then exposed as is the neck of the sac of the umbilical hernia in the Mayo operation, and is freed of all fat and connective tissue. The sac is then grasped between the rubber-covered jaws of a pair of light, delicate intestinal forceps.

The use of these clamps may be considered as of the highest importance in the surgery of spina bifida. It has been the practice, as mentioned above, to place the child either in the ventral Trendelenburg posture or in the hanging position of Babcock in an effort to minimize cerebrospinal fluid leakage. The clamps, however, preclude such leakage with much greater certainty than does position, and in addition they are a valuable agent in excluding infection from the spinal cord. It may be contended that clamps will traumatize whatever nerves may be present in the sac. In respect of this point it should be noted, first, that whatever nerves are present in the sac will probably never functionate even if replaced, and secondly, that the brief application of such delicate clamps will no more cause permanent nerve injury than will gastro-enterostomy clamps injure the stomach, or obstetric forceps injure the fetal head.

The advantages presented by any method which assures against loss of cerebrospinal fluid should not be overlooked. Thorburn[4] calls attention to this fact, saying, "It is in connection with this portion of the operation that its principal dangers—shock from profuse flow of cerebrospinal fluid or interference with nervous structures and meningitis—arise, and great caution should therefore be used to avoid a sudden escape of contents." Further he advises that "the upper end of the sac should be compressed with gauze to prevent a gush of fluid from the spinal cord." In addition to the advantages of the clamp method as just presented, the application of a rubber-covered light clamp greatly facilitates the replacing of the nerve elements in meningomyelocele.

With the neck clamped, the sac is opened by snipping it through the thinnest part, which is usually at the vertex of the tumor. Binnie[6] advises against opening the sac at this point since in meningomyelocele one is most likely to encounter cord and nerve structures in the median line. This is clearly a proper precaution unless one has been able to establish the diagnosis of meningocele beyond any doubt. If, however, the sac is opened at any point by a very small incision which is enlarged by scissors-spreading dissection, cord and nerves may be saved from trauma. If on opening the sac it is found to be free from nerve elements, a stout ligature is applied under the clamp jaws, the sac is cut away, and the clamp is removed.

The ligation of the sac, just mentioned, is performed as in inguinal hernia. Several writers, notably Bayer[7] and more recently Beckman and Adson, have called attention to the analogy between spina bifida and inguinal hernia. I am of the same impression and believe, in addition, that the operative treatment, when possible, should be similar.

If the opened sac is found to contain cord or nerve tissue, these structures may in some instances be removed by blunt dissection, while the light clamp is still in place to prevent the escape of fluid and the entrance of infection. If necessary, the bony defect of the vertebral column may be enlarged to admit of such replacement. This removal of bone can be accomplished while the clamp is still applied. I have encountered cases in which the spinal canal was not large enough to receive the cord and nerve elements completely and others in which it was impossible to separate the thick ribbons of cord tissue from the sac. It is, of course, well understood, as mentioned previously, that operation in such cases promises little or nothing so far as relief of paralysis is concerned.



Fig. 7.—Tying stout transfixing ligature about base of sac, as in other forms of hernia.



Fig. 8.—Closing skin wound with running suture of chromic catgut reinforced with collodion.



Fig. 9.—Gauze square covering wound; edges strapped with adhesive plaster painted with collodion.

After the neck of the sac is tied and the clamp removed, no attempt is made to close the bony defect by an osteoplastic operation. The danger of this step probably offsets the few and doubtful advantages it may provide. I have known of no recurrences of this form of hernia which might be traced to the omission of this step; I have found no record of such an accident, and I believe it must be rare. The muscles are drawn together over the stump of the sac, and the skin wound closed with a continuous suture of fine chromic catgut, either transversely or longitudinally, depending on which is the more easily accomplished. Hemostasis should be complete.

Procedures directed against wound contamination, which were begun by stitching of the rubber dam to the child's back, are now completed. Collodion is

7. Bayer, C.: Ztschr. f. Heilk., Berlin, **18**: 405, 1897.

applied over the wound line. Over this a strip of gauze is placed, and its edges glued to the skin with adhesive plaster straps. This gauze and adhesive plaster are then painted with the collodion solution, after which the rubber dam protective is drawn up and laid flat on the back, and its three remaining margins are glued to the skin, as was the underlying gauze, by adhesive plaster straps. Next a small triangular piece of adhesive plaster is so applied that a sharp point passes downward between the buttocks, with the base of its triangle overlying the straps of adhesive plaster securing the lower border of the rubber dam. The adhesive plaster is then covered with collodion so that the zone of operation is sealed against infection by excreta.

In certain rare forms of spina bifida, as in spina bifida occulta, the suggestions offered in this paper are, of course, without value. However, in one rare form, the anterior meningocele, a successful operation for which is reported by S. Roux,[8] the use of the clamp might remove many inconveniences. In the several forms of meningomyelocele, it is submitted that the application of the light clamp will facilitate and render more safe the additional steps required in the attempt to deal in a radical way with this condition. With the simple meningoceles it is believed that the careful application of the technic herein embodied will make the operative mortality of this form quite as low as that in the analogous condition of inguinal hernia.



Fig. 10.—Rubber dam drawn up over wound and secured at edges with adhesive plaster straps coated with collodion.



Fig. 11.—Inverted position used by Babcock to prevent sudden escape of cerebrospinal fluid.

CONCLUSIONS

1. Spina bifida associated with increasing hydrocephalus is inoperable.

2. Operation should be performed in cases of spina bifida associated with paralysis only for the purpose of preventing subsequent ulceration and rupture.

3. A rubber dam sutured at one margin to the skin below the tumor, adhesive plaster, and plentiful collodion should be used to prevent fecal and urinary contamination.

4. A light, rubber-covered clamp applied to the neck of the tumor is the safest method of preventing the loss of cerebrospinal fluid and also of excluding infection from the cord.

5. The sac can usually be tied off as in inguinal hernia.

8. Roux, S.: Rev. méd. de la Suisse Rom. **38**: 47 (Jan.) 1918.

Civil Versus Military Syphilis.—All returning Canadian soldiers whose military history sheets bear the record of venereal disease are given the Wassermann test before being discharged. In August, 1918, 2 per cent. of those returning reacted, all tertiary, noninfectious cases, for no primary or secondary cases are permitted to return. The average number of reactions in the civil population is estimated at from 8 to 12 per cent., showing four to six times as much syphilis in the civil population as in the army. It is not the civil population that has to fear the soldier, but the soldier the civil population.—Adami, *Canad. Med. Assn. Jour.*

SURGICAL DRAINAGE FROM A BIOLOGIC POINT OF VIEW*

J. SHELTON HORSLEY, M.D.
RICHMOND, VA.

The biologic defenses of the body against disease, trauma and the wear of age are wonderful, but they are not perfect. If they were perfect, man would live forever. Particularly interesting is the manner in which the body protects itself against injurious foreign substances. The epithelial lined body cavities have more or less specialized methods of protection. The stomach, for instance, by vomiting emits food that is spoiled, and many drugs that are irritating or disagreeable to the taste, and sometimes even rejects substances that are thought to be nauseating or noxious even though they are not. The excessive salivation when nausea occurs probably tends to dilute the offensive material, or to protect the walls of the mucous membrane. Vomiting undoubtedly is a habit that was acquired in the early days of evolution. The more refined drugs or poisons that are a result of chemical manufacture have not created a similar defense by the stomach, and are often retained.

Foreign irritating substances in the rectum, the bladder or the larynx are also expelled by muscular action. Irritating matter in the nose causes a profuse secretion, which tends to wash away the offending substance. An irritating foreign body in the eye causes at once a flow of tears in an effort to wash it away, and at the same time the spasm of the muscles of the eyelids is probably due partly to an effort to expel the foreign body, as well as to protect against further injury.

In endothelial lined cavities or in solid tissue there is an attempt to wash away foreign irritating matter. This is done by the pouring out of serum from the lymph circulation in the neighborhood of the foreign substance, which is accomplished by the reversal of the circulation in the local lymphatics, so as to empty their contents around the irritating material. This is really the chief basis of surgical drainage.

In surgical drainage, mechanical measures that are followed by fortunate results would appear ridiculous if no biologic conditions existed. In preventing infection of a fresh raw surface, or in the so-called walling off of healthy tissue from the products of infection, gauze is often placed over the raw surface or as a coffer-dam in the abdominal cavity, and an abscess is drained through the center of this gauze packing. If we could convert this into a mechanical proposition and imagine that the pus was a solution of methylene blue and that it was flowing over this raw surface which had been covered with absorbent gauze to pre-

* Read before the Southern Surgical Association, New Orleans, Dec. 18, 1919.

vent contamination, we know that both the gauze and the wound would be deeply stained. However, this method of protection does act in a beneficial manner, and a clean wound is often by this means kept from septic infection. The drainage of a peritoneal abscess is practically always up-hill and is usually successful. If mechanics were the only principle, how could an appendical abscess ever be drained by putting a tube down to it through the abdominal incision? The whole method of drainage really depends on the reversal of the circulation in the local lymphatics and is chiefly a biologic process. It is nature's effort to extrude a foreign substance.[1]

A splinter in the finger which becomes mildly infected will discharge a thin seropus for days. This is nature's effort to expel the splinter. After it has been removed, the wound rapidly closes; and the lymph circulation, which was in part at least reversed in an effort to extrude the splinter, assumes its normal course, and probably in twenty-four hours after the splinter has been removed there is no further discharge.

The peritoneum and its underlying structures in the abdominal cavity constitute an enormous lymph space, and the lymph is here abundantly poured out in response to an irritation. The insertion of a drainage tube causes a reaction in which there is a flow of lymph in an effort to expel the drainage tube. Drainage of the abdominal cavity prevents positive pressure in the septic region, and also the drainage tube is a stimulus for a reversal of the lymphatic circulation. The packing of a fresh wound with gauze causes a similar reversal of the lymphatic circulation; and though pus may flow over this gauze from a deeper focus, the lymphatics, instead of absorbing the pus, pour out lymph into and around the gauze to extrude it. The beneficial action of the cigaret drain, which is soon clogged with coagulated lymph, is comprehensible when we look on it as a stimulus for reversal of the local lymphatic circulation.

In regions of the body in which the lymph supply is less abundant than it is in the abdomen, unless the infected focus is very small it will be necessary to utilize gravity when instituting drainage, because there is not a sufficient flow of lymph to flush the septic cavity thoroughly and constantly, as is the case with abdominal drainage.

Drainage in surgical operations may be classified under three heads:

CLASSIFICATION OF SURGICAL DRAINAGE

1. Drainage of solid tissue or endothelial lined cavities:
   (*a*) Drainage of endothelial covered tissues of the abdominal cavity.
   (*b*) Drainage of other endothelial lined cavities, as pleura, joints.
   (*c*) Drainage of solid soft tissue, as muscle, fascia, fat.
   (*d*) Drainage of bone.
2. Drainage of inflammatory products from infected epithelial lined hollow viscera, as the gallbladder and the urinary bladder.
3. Drainage of hollow viscera in order to restore function or to secure physiologic rest.

1. DRAINAGE OF SOLID TISSUE OR ENDOTHELIAL LINED CAVITIES

Considering first 1 *a*, drainage of abdominal abscesses, we find, as has already been stated, that the abdomen has an enormous supply of lymph and that the successful drainage of an abscess in this region consists, first, of relieving the pressure in the abscess cavity by opening it and inserting a drain; and, second, of inducing a sufficient reversal of the lymph circulation by the presence of the drainage material to cause much of the septic products to be washed away along the drainage track. If the drainage material reaches the abscess cavity so that the pus is not under positive pressure, and if the drainage is sufficient in amount and of the proper kind to act as a stimulus for reversal of the lymphatic circulation, so much lymph is poured out that practically a continuous irrigation is going on from the local lymphatics along the tube or track of the drainage material, and it is a matter of but little importance whether the drainage material is pointed up or down. But in other endothelial cavities (1 *b*), such as the pleura or the joints, where the lymphatic supply is much smaller than in the abdomen or where the configuration is such as to make the drainage difficult, gravity must aid and the problem becomes more mechanical than biologic. Drainage here should be at the lowest point possible.

Drainage carried down to the sutured bowel frequently results in a fistula, particularly if gauze in the form of a cigaret drain is employed. The reversal of the lymphatic circulation in the neighborhood of a recently sutured intestinal wound, which will direct the current of lymph to the drainage, interferes with the normal process of repair in the intestinal wound, causes a weak fibrinous deposit, and diminishes the nutrition of the repairing bowel; consequently, the sutures readily break down and a fistula results.

In drainage of muscle, fascia and fat (1 *c*), gravity drainage must be considered, but the biologic problem is also prominent. An abscess in the thigh heals better if gravity drainage is instituted. The drainage material should be sufficient not only to carry off the secretion but also to excite the local lymphatics to reverse their circulation. The local lymphatics, being much less abundant than in the abdomen, cannot usually furnish enough lymph to cause the flushing out of the septic products, as occurs in the abdomen. In rapidly spreading inflammation, wide incisions and drainage are useful in relieving the pressure that is made by the binding fascia or skin, and in reversing the circulation of the lymphatics and so preventing absorption of much of the septic products into the main lymphatic trunks.

The old operation of "fence rail" incisions along the margin of an advancing erysipelas causes the pouring out of lymph from these cuts and the diversion of the lymph current, which would otherwise carry the septic products to further uninfected regions. The undermining of the skin and insertion of tubes or gauze drainage from point to point make the pouring out of lymph along the drainage material even greater than after a simple incision.

That the reversal of the circulation is the chief biologic process by which surgical drainage acts beneficially in solid soft tissue can also be recognized when there is a small abscess in a large amount of inflammatory exudate and it is impossible to locate the small abscess cavity. If a drain is placed in the immediate neighborhood of the abscess, it frequently opens into the drain. It seems probable that this occurs because the lymphatic current attempts to extrude the drain and so the products of the abscess are carried in this direction, and the abscess burrows to the tube.

The drainage of tissues whose lymphatic trunks have been clogged and where, consequently, edema is present depends on an effort to increase the lymphatic circula-

1. Horsley, J. S.: The Value of Biologic Principles in Surgical Practice, J. A. M. A. **72**: 1263-1266 (May 3) 1919.

tion or to create new lymphatic connections. In the operation of Handley in which long threads of silk are placed under the skin in edema of the arm, lymphatic channels form along the threads. In the operation of Kondoleon, the deep fascia of the arm or leg is split in order to promote an anastomosis between the deep and the superficial sets of lymphatics and so to divert the lymph current from the superficial to the deep lymphatic trunks.

Local edemas that are persistent are usually caused by blockage of the lymphatic channels and not by interference with the blood circulation. The edema that sometimes appears in the arm after a radical operation for cancer of the breast in which the axilla is thoroughly dissected is due to the removal of the lymphatics. If this immediately follows operation, it may disappear when the collateral lymphatic circulation is established; but when a late edema results it is frequently because the lymphatics have become plugged with cancer cells; and such an edema is ominous. Resection of the axillary vein if the lymphatics are in satisfactory condition is followed by but little if any swelling in the arm, and that of a temporary nature. A phlebitis causes edema only when the lymphatics around the vein are involved in the inflammation.

Drainage of wounds after radical operations for carcinoma in solid soft tissue should always be done. This is not so much in order to carry off the fluids that may accumulate in the wound, as an effort to reverse the circulation of the lymphatics which may be induced to pour out their contents in the direction of the drainage tube and so to discharge through this drainage cancer cells that have been left in the wound or that may have lodged in the open lymphatics. This is an important step in many radical operations for cancer, as after operations in the neck or on the mammary gland.

Drainage of bone (1 *d*) involves problems of a somewhat different nature, because of the structure of bone. Bone is compact, rigid tissue in which lime salts are arranged in an orderly way. On account of the rigid structure it is impossible for either the blood vessels or the lymphatics to form, or for the lymph current to reverse as readily as in soft tissue. Before drainage can be accomplished or any effective stand against infection can be made, the lime salts must be removed, so converting bone into what is practically soft tissue. For this reason, in areas of inflammation bone is always soft. Around an irritating substance in bone, whether accompanied by infection or not, lime salts are absorbed. When this is accomplished the offending material becomes loose and is prepared for extrusion. If, for instance, a piece of iron, as a screw used in plating bone, is inserted into a bone, the lime salts in the neighborhood of the screw and of the plate are absorbed. The screws, which may have been very tight and firm when inserted, gradually become loose. This induced osteoporosis around the screws and the metal plate is just the reverse of what is desired when a fracture is to be repaired, and it accounts for the frequency of nonunion after the plating of bones.

The numerous so-called abscesses at the roots of teeth are probably often the result of the reaction of the bone in the neighborhood to some material that was used in filling the cavities in the roots of the teeth. Undoubtedly apical abscesses frequently occur, but it is probably equally true that an osteoporosis sometimes interpreted as an apical abscess may be sterile and due to the reaction of the bone to the material with which the root of the tooth has been filled.

Because of the poor lymphatic supply of bone and its rigid walls which protect its vessels, a bone abscess may be more readily disinfected by means of strong antiseptics, such as phenol (carbolic acid), than if the abscess were in soft tissue. Here, as disinfection can be more thorough, the necessity for full drainage in the milder chronic infections of the bone is not so great if the diseased bone has been removed as it would be in soft tissue. Consequently, "fillings" or "bone plugs" are utilized.

2. DRAINAGE OF INFLAMMATORY PRODUCTS FROM INFECTED EPITHELIAL LINED HOLLOW VISCERA, AS THE GALLBLADDER OR THE URINARY BLADDER

Drainage here involves principles different from the drainage of an abscess that has formed in solid tissue. This drainage not only is for removing the products of infection, but serves a double purpose of also giving physiologic rest to the infected organ. The drainage of a septic gallbladder that may be filled with pus carries off the products of the bacteria and at the same time gives rest to the gallbladder by preventing distention, and this removes both a stimulus for contraction and the tension that would occur on the distended walls. Drainage of this type does not have to be gravity drainage. If a sufficient opening is provided in the general axis of the peristaltic current, it is all that is necessary. In draining an infected urinary bladder, for instance, an opening made at the top of the bladder is as satisfactory in securing results as an opening at the bottom.

When these hollow muscular organs are contracted, a small opening will insure the viscera keeping empty if it is made in due regard to the action of peristalsis. Even in such instances, however, the beneficial action of the drainage is not solely removal of the contents of the hollow viscera or the giving of physiologic rest. It seems highly probable that reversal of the lymphatic current is also of importance here. This appears to be borne out by the results of drainage of the bile tracts in inflammation of the pancreas. It is well known that chronic pancreatitis can best be treated by prolonged drainage of the bile tracts; and drainage of the common bile duct for this affection seems to be particularly effective.

The work of Deaver and Pfeiffer[2] on pancreatic and peripancreatic lymphangitis is interesting in this connection. They call attention to the anatomy of the lymphatic supply of the pancreas and its ultimate connection with the lymphatics of the bile tracts and gallbladder. They say:

> To the objection that infection to be carried into the pancreas must stem the efferent lymph current and force the valves, the answer can be made that every one has seen infection in cellular tissues proceeding in a reverse direction to the lymph current. Thrombolymphangitis readily diverts the normal lymph course, and infection easily destroys valves. The force of pathology here, as in so many other instances, perverted the normal function.

If infection of the pancreas can be through the lymphatic supply from the gallbladder or the galltracts, as Deaver and Pfeiffer assert, it seems that the method of relieving this infection is to reverse the lymphatic current and cause it to be diverted toward the drainage tube and the incision in the gallbladder or in the com-

2. Deaver, J. B., and Pfeffer, D. B.: Pancreatic and Peripancreatic Lymphangitis, Ann. Surg. **58**: 151-163, 1913.

mon duct, just as the lymph flow is reversed in the drainage of an abdominal abscess. Septic products that would be carried in the lymphatics from the infected gallbladder to the pancreas are thus diverted to the drainage tube in an effort to extrude it. If this diversion can be maintained sufficiently long to permit nature to build up the resistance of the pancreas to the infection and repair the damage already done, the patient may be considered cured. But if the drainage tube is removed too soon, there is no further stimulus for a reversal of the lymph circulation, and the pancreatitis recurs.

Too early resumption of function after drainage of inflamed hollow viscera frequently results in a recurrence of the inflammation. This may be due to one of three causes, or more probably to a combination of these causes: 1. There may be an accumulation of secretion that is not free from the products of the inflammatory process. 2. There is an interruption of physiologic rest. 3. There is a change in the lymph current from that which had been instituted by the drainage.

3. DRAINAGE OF HOLLOW VISCERA FOR PHYSIOLOGIC REST

In enterostomy, the operation may be done to sidetrack the normal contents of the hollow viscera and so to afford less work for the diseased tissue below the point of opening, as in colostomy for disease of the large bowel farther down. Drainage may be instituted to prevent distention of a hollow viscus and so induce rest in order that an operative wound may heal. This principle is put into practice in such operations on the bladder as for vesicovaginal fistula when a self retaining catheter is placed in the urethra, and in the introduction of a tube through the rectum and through the site of resection of the sigmoid or left colon in order to draw off the gas and prevent distention in the region of the operation. This principle of drainage is often utilized after the removal of stones from an uninfected gallbladder.

DRAINAGE MATERIAL

The material for drainage must be considered not only with regard to transporting the products that are to be drained, but also with regard to the biologic influence of the drain on the local lymphatics. Certain substances call for a more pronounced flow of lymph than others. Rubber, for instance, is not so irritating to tissue as gauze. When gauze is placed over a raw surface, the local lymphatics pour into the gauze quantities of lymph. This is nature's effort to extrude an irritating foreign substance. When the lymph has coagulated, the meshes of the gauze become entangled with the wound; and an effort to remove the gauze before this fibrin has softened results in tearing the delicate tissues of the wound and injures its granulations, causing bleeding. An ideal drainage material would be one which, on the one hand, is a pronounced stimulus for the lymph to be poured out along the drain, and, on the other hand, would not be sufficiently attached to the raw surface of the wound to injure it. This material has not yet been found.

Rubber drainage tubes are frequently used, and have the advantage of draining off inflammatory products readily; but they do not provoke such an outpouring of lymph as gauze would. Naturally, however, the larger the tube the greater the irritation, and the more pronounced the stimulus for a reversal of the circulation of the local lymphatics. Consequently, for draining an abdominal abscess, it is often found that a large tube does better than a smaller one, not because the smaller one is insufficient to carry off the serum or the pus, but because the small tube is not large enough to provoke a sufficient amount of reaction among the local lymphatics. Frequently the advantages of both gauze and rubber are combined by placing a gauze strip inside the tube or by wrapping strips of gauze in rubber tissue or rubber dam, which is called a "cigaret drain," and using this in addition to a tube. In this way the gauze which is exposed at the end of the cigaret drain causes a more pronounced flow of lymph than the rubber tube alone could produce, and the tube drains away the lymph that is thrown out to extrude the gauze and the tube. Drainage material should not remain too long in a wound, else it will act as the infected splinter mentioned above.

Combinations that are effective have been worked out to a large extent empirically. Sometimes strands of catgut, silkworm-gut, or strips of rubber tissue are inserted into a wound in which it is anticipated that there may be a collection of serum or broken down fat on account of the nature of the wound. This foreign substance, the drainage material, directs the current of the lymphatic flow toward itself and so prevents an accumulation in the tissues which might later become a culture medium for bacteria. An opened superficial abscess often needs no drainage material, for the necrotic products of the inflammatory process are a sufficient stimulus for drainage.

ENCAPSULATED FOREIGN BODIES IN THE PERITONEUM

If such foreign materials as gauze or cork are left in the abdominal cavity under sterile conditions, they are rapidly surrounded by a deposit of fibrin, as shown by Hertzler.[3] This fibrin, which is coagulated lymph, soon is covered with endothelium and takes on the characteristics of peritoneum. If the gauze is left for a number of weeks or months, it may intrude into a neighboring hollow viscus and be expelled, as this may be the point of least resistance and, consequently, of greatest pressure. Instances are recorded in which gauze that has been accidentally left after a surgical operation has been expelled by the bowel or by the bladder months or years later. Sometimes, however, the gauze is completely encapsulated with a cystlike wall and becomes so thoroughly infiltrated with fibrin that partial organization takes place. Portions of the gauze may be disintegrated and removed by phagocytes, and the connective tissue penetrating the rest of the gauze is so intimate that it may have to be dissected away with much difficulty.

3. Hertzler, A. E.: The Peritoneum, St. Louis, C. V. Mosby Company, 1919, **1**: 251-253.

Mental Hygiene.—As far as treatment and care of mental abnormals are concerned, it is necessary in each locality to determine the number of feebleminded, epileptic, insane and psychopathic among the population, to inquire into their individual needs, and finally to provide facilities for scientific care and treatment. In connection with prevention the public must be informed concerning certain salient facts relating to mental disorders and taught through newspaper and magazine articles, leaflets, and public addresses, what is practical in the way of preventive measures. Prevention and treatment are intimately bound together, because when the feebleminded, for example, are segregated in institutions and farm colonies, they are prevented from reproducing their kind.—C. M. Hincks, *Am. J. Pub. Health* **9**:353, 1919.

LATE RESULTS IN THE RADIUM TREATMENT OF CANCER OF THE UTERUS*

J. LOUIS RANSOHOFF, M.D.

CINCINNATI

What place shall radium have in the treatment of carcinoma of the cervix? This is a question of vital importance, as it concerns the treatment of a disease of universal distribution, a disease which in spite of the efforts of the world's greatest surgeons continues to take its large annual toll of suffering and death.

Carcinoma of the cervix has long been one of the most fruitful fields for radium treatment. Thousands of cases are annually declared inoperable and must needs be aided by some other means than surgery. Because of its unusual accessibility, radium can be brought into close contact with the neoplastic cervix where it can exert its direct influence.

Radium has long been granted its position as the agent of choice in the treatment of inoperable cervical carcinomas. The question which now concerns us is whether it shall supplant the radical operation in the treatment of so-called operable cancers of the cervix. I say so-called advisedly, as the question of operability depends entirely on the judgment of the individual operator, and in numerous instances cannot be definitely decided until after the abdomen has been opened.

With the publication of an account of the Wertheim operation in 1898, and its adoption by the leading gynecologic clinics of the world, it was thought that a step forward had been taken in the war against uterine cancer; but now, after two decades, the Wertheim operation is still on trial. One of the most distressing phases of carcinoma of the uterus is the low percentage of operability among those patients applying for relief. In a decade, Clark[1] operated on sixty patients and estimated that during the same period more than 300 were refused operation, an operability of only 15 per cent.

In Jacobson's[2] collection of 5,027 cases, only 1,720, or a little over 31 per cent., were considered operable. In reviewing the statistics of the Wertheim operation it would seem that the higher the percentage of operability in a given series of cases, the higher the percentage of operative deaths. Probably more discouraging than the small percentage of operability is the high immediate mortality. The operative mortality of Jacobson's collected cases was 18.25 per cent. These figures, bad as they are, nevertheless leave too optimistic an impression, as they represent the work of the most skilled gynecologists of the world. In the hands of the great body of operating surgeons, the mortality is undoubtedly far larger.

Peterson,[3] in his own cases, had a total primary mortality of 25.4 per cent. In speaking of the operation he says:

> Unquestionably added experience has strengthened my belief that the extended operation for cancer of the cervix is an exceedingly dangerous one, always attended by high primary mortality. No one will be more glad to discard the radical abdominal method than will I, if I can be shown that more patients can be ultimately cured by less dangerous methods.

Turning again to Jacobson's statistics, of 1,090 patients operated on that were followed, there were 386 cures, or 35.41 per cent. of the patients that were traced, or only 19.32 per cent. of the entire number of patients operated on; but what is most striking is that only 11.72 per cent. of all those patients applying for treatment were cured.

Clark has struck the keynote of modern opinion of the Wertheim operation. He says:

> If an operation or other therapeutic process is to have a permanent place in our armamentarium it must be sufficiently easy to make it available not for a few skilled specialists, but for the great body of surgeons working in every quarter of this and other countries.

In these days of low mortality percentages attending nearly all major operations, no operation can possibly gain headway which combines with it a shockingly high mortality and a large majority of distressing and desperate sequelae. The effect on the lay mind must be taken into consideration, for while one may have over 50 per cent. of ultimate cures among those patients that survive the operation, the effect on the average intelligent citizen is abhorrent, if for this number of survivors there have been twenty-five deaths, and for the other twenty-five a wretched existence attended by repulsive postoperative sequelae, followed by a painful and lingering death. It is possible that when we make a final summary of our combined experiences we may have to accept the conclusion that a less radical operation, even though it saves fewer patients, may be preferable when attended by a low surgical mortality and few or no operative sequelae.

A CONTRAST OF METHODS

Disregarding for a time the end-results of radium treatment of cancer, it is interesting to compare the two methods of treatment from other standpoints. Contrasted with the high mortality of the extensive operation for uterine cancers, there is practically no mortality from the radium treatment. In place of a dangerous operation with its attendant suffering, long stay in the hospital, and distressing postoperative sequelae, there is the simple radium treatment with a few days' stay in the hospital, no danger and little pain.

Again, while less than one third of those patients who present themselves for treatment are fit subjects for the radical operation, radium treatment is available for all classes of cases, no matter how far advanced. The immediate result of treatment, and the palliation of symptoms, the relief from hemorrhage, pain and foul discharge have been too frequently described to warrant further comment.

The conclusions published by Dr. Joseph Ransohoff and myself[4] in 1916 remain unchanged. That is, in all cases the immediate results have been without exception good. The concern now is, Can radium permanently cure cancer of the cervix? If so, does the percentage of cure equal that of operation? If that is true, the conclusion is obvious.

The pendulum is swinging toward radium as the method of choice in the treatment of operable cervical carcinomas. With the report of later results, its position is becoming more definitely established. As early as 1914, there were some operators convinced that radium should entirely supplant operation. Dobbert[5] in that year, from an observation of twenty-four cases,

1. Clark, J. G.: The Radical Abdominal Operation for Cancer of the Uterus, Surg., Gynec. & Obst. **16**: 255, 1913.
2. Jacobson, quoted by Janeway: Surg., Gynec. & Obst., September, 1913.
3. Peterson, Reuben: Surg., Gynec. & Obst. **23**: 280 (Sept.) 1916; Tr. Am. Gyn. Soc., 1916.
4. Ransohoff, Joseph, and Ransohoff, J. L.: Ann. Surg., September, 1916.
5. Dobbert, T.: Ergebnisse der Behandlung des Gebaermutter-Krebses mit Radium, St. Petersburg med. Ztschr. **39**: 97, 1914.

eighteen inoperable and six operable, concluded that it was justifiable to use radium alone in the treatment of operable cases. Cheron[6] reported an inoperable case in which radium was used. Two and one-half years after treatment, death occurred from intercurrent disease. Necropsy revealed no trace of cancer.

In 1915, Döderlein[7] definitely advocated the use of radium in operable cases. Pozzi,[8] in 1915, had given up the Wertheim operation in borderline cases and treated them with radium alone. In cases which are decidedly in their inception, a simple vaginal hysterectomy is done, followed by prophylactic radium treatment. Flautau,[9] in 1915, definitely relinquished operation in favor of radium. The title of his article was, "May We Trust Radium Alone in the Treatment of Uterine Cancers?" In the same year, DeGrais[10] reported both operable and inoperable cases free from recurrence four years after treatment.

A very important contribution is one of Recasens, a Spanish surgeon. In the beginning he used radium only in those cases too far advanced for operation; but later he used radium to the exclusion of operation. He believes that in very early cases, a cure by radium is almost certain.

RESULTS IN THE AUTHOR'S SERIES OF CASES

As Dr. Joseph Ransohoff and I began the use of radium in the treatment of malignant disease in February, 1914, this report represents the results of nearly six years' experience.

On my return after two years in the army, I was interested in the fate of those patients whom I had seen in the three years prior to my entrance into the service. With the exception of the last case, which was two months later, this series includes those cases observed between February, 1914, and April, 1917, a period varying from two and one-half to nearly six years. As far as possible, all patients were traced; those that could not be located were regarded as having succumbed to the disease.

There are in all thirty-two cases. This includes all patients observed, varying from those whose cases were operable to those in a terminal stage of sepsis. There are also included cases in which for one reason or another the treatment was not complete. It is interesting to note that eight of these patients had what was considered an incomplete course of treatment, that is, three or less radium applications. The average number of applications for all cases, healed and fatal alike, was six. There were six recurrent and twenty-six primary cases treated. There were two cases of cancer of the fundus, and thirty of cancer of the cervix, so that this report deals principally with cervical carcinoma.

Of this entire series there were six patients, or 19 per cent., well and free from all evidence of disease at intervals varying from nearly three to five and one-half years after treatment. In the two cases of carcinoma of the body of the uterus, the results have been disappointing. Neither of these cases, however, was operable. Nevertheless, I am of the opinion that these patients when possible should be operated on rather than treated with radium, as the operative mortality is low and the end-results good. One of these cases is worth reciting in detail:

Miss C. M., aged 34, referred by Dr. Palmer, had been having uterine hemorrhages for eight months. Three weeks before my examination, a curettage revealed an adenocarcinoma of the body of the uterus, which was confirmed by microscopic examination. The first radium treatment was given, July 3, 1914. In July, 1917, the patient was well. During the fall of 1918, she developed a pernicious vaginal hemorrhage, which was controlled by roentgen-ray treatments. Examination revealed what was thought at that time to be a large fibroid. A month before, these hemorrhages had again recurred. A piece was removed for section and proved to be an adenocarcinoma. One reason for the persistence of this tumor was probably the age of the patient, as it is well known that carcinoma is far more malignant in young persons than in those who are older.

Deducting the eight cases in which an incomplete series of treatments were given, we have 25 per cent. relief from symptoms during this period. There has been no definite operable case in which the treatment has not been successful.

REPORT OF CASES

CASE 1.—Mrs. I. F., aged 53, six months before had noticed sudden pains in the lower abdomen and for four months had suffered from bleeding from the uterus. The family history was negative. Examination, April 28, 1914, revealed an ulcerating epithelioma involving the entire anterior lip of the cervix. The uterus, however, was freely movable. A small piece removed for examination revealed epithelioma. The first radium treatment was given, April 28, 1914, and the last radium treatment, Sept. 11, 1914. Hemorrhage ceased after the first three treatments, and there had been no evidence of recurrence. The patient was in perfect health. In July, 1919, examination revealed a normal movable uterus, with no evidence of any ulceration, a freedom from recurrence after five and a half years.

CASE 2.—Mrs. K. H., aged 71, referred by Dr. Bachrach, for seven months had had severe vaginal hemorrhages. Examination disclosed carcinomatous degeneration of the entire cervix. There was a microscopic diagnosis of carcinoma. The uterus, however, was movable. The first radium treatment was given, May 1, 1915, and the last treatment, May 29, 1915. There were in all four treatments. The patient was reported well, April, 1919, a freedom of recurrence after four and one-half years.[11]

CASE 3.—Mrs. S., aged 45, referred by Dr. Oliver, had been bleeding off and on for eight months. She was very much exsanguinated and was severely emaciated. Examination revealed a cancerous mass filling the vagina. A microscopic diagnosis of carcinoma was made. Under an anesthetic the mass was curetted away, the vagina was cauterized, and 100 mg. of radium were inserted for twenty-four hours. March 20, 1915, the first treatment was given, and the last treatment was given, May 7, 1915. April 25, 1919, examination revealed the patient perfectly well and able to do her work. Her weight was 124½ pounds. Sept. 10, 1919, a rectovaginal fistula developed. Examination under anesthesia disclosed a very small fistula in the posterior vaginal wall, communicating with the rectum. This fistula was situated just above a very dense fibrous stricture. Under an anesthetic, the stricture was stretched and a very careful examination revealed no evidence of cancer. Here the stricture was probably due to the concentration of a large number of treatments in a short time, necessitated by the desperate nature of the case. An examination made a week ago demonstrated the fistula nearly healed and absolutely no evidence of any tissue remotely resembling carcinoma, a freedom from recurrence for four and a half years.

CASE 4.—Mrs. S. S., aged 65, referred by Dr. S. Wolf, had been bleeding for eight months. Examination disclosed the

6. Cheron, H.: Fortschr. a. d. Geb. d. Roentgenstrahl. **21**: 229, 1913.
7. Döderlein, A.: Unsere weiteren Erfahrungen mit der Mesothorium Behandlung des Carcinoms, München. med. Wchnschr. **61**: 225, 1914.
8. Pozzi, S.: Rev. de. gynec. et de chir. abd. **23**: 2, 9, 264, 1914-1915.
9. Flautau: Zentralbl. f. Gynäk. **39**: 611. 1915.
10. DeGrais, P.: Ann. de gynec. et d'obst. **11**, 1915; Surg., Gynec. & Obst. **22**: 298 (March) 1916.

11. Since this article was written, this patient has died of some intercurrent disease, at the age of 76.

cervix entirely replaced by neoplastic tissue. There were a foul discharge and hemorrhage. A microscopic diagnosis of carcinoma was made. The first treatment was given in February, 1916, and the last treatment in April, 1916. Examination, November, 1919, revealed the patient in excellent health. The vaginal vault and the remains of the cervix were covered by smooth, pliable mucosa; there was no evidence of a recurrence, a freedom from recurrence of nearly four years.

CASE 5.—Mrs. J. W., aged 50, referred by Dr. Newfarth, with symptoms present for eight months, had had severe hemorrhage. The site of the cervix was occupied by a crater and cancerous vegetation. It was probably a borderline case. Under gas oxygen anesthesia, a curettage was performed. A microscopic diagnosis of carcinoma was made. The first treatment was given, December, 1916, and the last treatment, July, 1917. Examination, December, 1919, revealed a woman in excellent health, with no evidence of recurrence. There was a small scar in the vault of the vagina covered with normal mucosa, a freedom from recurrence for three years.

CASE 6.—Mrs. B., aged 54, referred by Dr. Aitkin, was operated on for cancer of the uterus two years before. She had had hemorrhage for the past two months. The vagina was narrow, and there was a recurrence in the vault. The first treatment was given in June, 1917, and the last treatment in December, 1917. The patient reported by letter, November, 1919, that she was well, a freedom from recurrence of two and a half years.

COMMENT

We have here 19 per cent. of those patients treated free from recurrence for from two and one-half to five and one-half years; one patient for five and one-half years; two patients for over four years; one patient for three years, and one for two and one-half years. The latter case may perhaps be a little too recent to be definitely called cured. This percentage of cure may seem small, but it compares favorably with that following operation. Deducting the eight cases in which the treatment was incomplete raises the percentage to 25.

The remaining twenty-six patients are either known to have died of the disease, or have at present a recurrence, or could not be traced.

Just a word here as to technic, that is, the question as to whether the radium treatment should be preceded by a curettage or the cautery. From our observation it would seem that the results were the same one way or the other; therefore we have definitely given up both curettage and cauterization as preliminary to radium treatment, and now we depend entirely on the radium.

If the cases were chosen for radium treatment with the same degree of care that they are chosen for operation, I feel confident that the percentage of cures would be very large. This is not, however, the function of the radium workers, who should give an opportunity for relief to every person who seeks treatment.

There is scarcely any case so far advanced that some improvement may not be obtained from radium treatment. In this work it should be the province of all observers not to work for statistics, but to give every patient a chance, if not for a cure, at least for an amelioration of symptoms.

Contrast the results of these thirty-two cases in which there was a 19 per cent. cure, with the Jacobson statistics, in which there was only an 11 per cent. cure. Also remember that there was no fatality from this entire series of treatment. Contrast this with the 18.25 per cent. mortality from the radical operation. Contrast again the economic saving of weeks in the hospital, the postoperative suffering, and the unbearable sequelae. I do not hesitate to state that in my opinion radium treatment should entirely supplant operation, not only in the treatment of inoperable cases, but also in the treatment of operable cases of cancer of the cervix.

Seventh and Race streets.

METASTATIC ABSCESSES OF THE THYROID ASSOCIATED WITH HYPERTHYROIDISM

REPORT OF CASE FOLLOWING REPEATED ATTACKS OF SORE THROAT

DAVID GREENBERG, M.D.
NEW YORK

The case here reported is of interest because of its possible bearing on the etiology of exophthalmic goiter. In spite of the recent advances made in the study of this disease, its etiology is still unknown. This case directs our attention to the possibility of a bacterial cause. The similarity of symptoms in acute febrile diseases and thyrotoxicosis is well known. It is therefore possible that bacteria, now recognized as the cause, even though remote, of some chronic, so-called degenerative diseases, such as some forms of asthma, nephritis, arteriosclerosis and subacute and chronic arthritis (which until very recently were considered beyond the realm of bacteria) may play an equally important rôle here as well.

REPORT OF CASE

History.—Mrs. B., aged 46, a native of the United States, and a life long resident of New York City, with a negative family history, and with a previous history of scarlet fever at 16, from which she had made a good recovery, with good habits, drinking tea and coffee moderately, had had a goiter for the past twenty years. As far as she recollected, it had come on at about the age of 22. It was small at first and gradually grew until at the time of examination it was quite large (about the size of a small orange). This goiter had not increased in size for the past five years, according to the patient's statement. The menstrual history was negative.

Examination.—The patient first came under my observation about August, 1916, when she had a peritonsillar abscess on the left side. The temperature was 104, and the pulse 100. There were fairly large, irregular, vascular and inflamed tonsils and a peritonsillar abscess, with bulging of the supratonsillar tissues on the left side. Over the thyroid region there was a fairly large tumor, evidently cystic in nature and slightly larger toward the right side. No tenderness was felt over the tumor, and no thrill or bruit. Because of the presence of the goiter a thorough search was made for signs and symptoms of hyperthyroidism, but none were found.

Treatment and Results.—The peritonsillar abscess was incised, and the patient recovered without any complications and without any symptoms referable to the thyroid appearing.

After about six months she was taken ill with a sore throat, and soon developed what clinically looked like a double quinsy. She was quite ill at this time, the temperature ranging between 103 and 105 F., and with a good deal of glandular enlargement in the cervical and submaxillary groups. Both supratonsillar areas were incised, but no pus was obtained; nor was her general condition improved. The redness and edema of the throat, tonsils and soft palate persisted, and the temperature remained at about 105. The patient became very toxic, and I took her to Lebanon Hospital, where she was admitted to Dr. M. Lederman's service.

Dr. Lederman reincised the throat, but obtained no pus. Several throat cultures showed no diphtheria, but did show the presence of streptococci and pneumococci. In view of the

irregular, high temperature and the absence of pus, a diagnosis of streptococcus sore throat was made. During the patient's stay in the hospital, traces of albumin, and hyaline and granular casts were found in the urine. The temperature, however, was reduced by lysis. The kidneys cleared up to a great extent, and she went home in good condition.

About seven weeks after leaving the hospital, she began to complain of some pain over the right side of the neck in the area of the right lobe of the enlarged thyroid, which was quite tender. She also complained of general weakness, some dyspnea on exertion, palpitation, and occasional diarrhea.

Examination revealed a rather striking change in the patient's general appearance. She looked markedly emaciated, had a very decided fine tremor of the hands and tongue, and a rapid pulse, from 150 to 160, but regular. The heart was enlarged; there were ringing sounds, but there was no adventitious sound, and there were no eye signs. The thyroid was larger than it had been, and moderately tender. There was a distinct thrill and, at times, a bruit over the thyroid; the temperature was 100.

A diagnosis of hyperthyroidism was made. The tenderness was thought to be the result of a possible hemorrhage with sudden enlargement and pressure on adjacent nerves.

The patient was put to bed, the diet was regulated and sedatives were given, but no improvement resulted. After about four weeks of medical treatment, I advised an operation, but she refused. Roentgen-ray treatment was, therefore, tried for about three months at Mount Sinai Hospital in the outpatient department, but no improvement was noted. The patient finally decided to be operated on, and she was admitted to the Presbyterian Hospital for operation.

During this period, while under medical and roentgen-ray treatment, she had two attacks of sore throat similar to the ones described, but of a milder character. Both these attacks were treated conservatively, and the patient recovered without incision of the edematous soft palate.

While in the Presbyterian Hospital she was observed on the medical service for several days, and a diagnosis of hyperthyroidism was made by the internists. She was then transferred to the surgical service for operation.

At the operation, which was performed by Dr. McWilliams under gas and oxygen anesthesia, the exposed gland was found to be cystic, especially in the right lobe. This lobe, together with the isthmus and part of the left lobe, was removed.

On sectioning, the gland was found to consist of multiple abscesses filled with a greenish-yellow pus. The report from the laboratory stated that cultures had been made of the pus, and that Type IV pneumococci were recovered. The gland showed areas of acute and chronic inflammation, as well as an increase in glandular material.

The patient's subsequent course in the hospital was rather stormy. After the operation, she developed a parotitis on the left side with edema of the face. She eventually made a good recovery. The pulse rate decreased, and the muscular tremor disappeared gradually. Now, two and one-half years after operation, she is free of all symptoms or signs of hyperthyroidism.

COMMENT

This case of hyperthyroidism appears to have followed repeated attacks of acute peritonsillar and pharyngeal infection. We may, therefore, feel justified in emphasizing these points:

1. Thyrotoxic symptoms may appear in cases of simple goiter, the result of an acute infection.

2. Bacteria may be a factor in the causation of exophthalmic goiter: if not directly so, at least effecting such changes in the physiology of the gland as to make its appearance likely.

3. Suppuration of a thyroid gland should be suspected when there is even slight pain and tenderness over the gland with enlargement, especially when there is a history of a preceding infection.

1220 Grand Concourse.

WORKMEN'S COMPENSATION, WITH ESPECIAL REFERENCE TO LOSS OF VISION

FRANK ALLPORT, M.D.
CHICAGO

Surprise is often expressed concerning inharmonious medical expert testimony. Doubtless dishonest medical evidence is sometimes heard, but most medical opinions expressed in court are honest, and divergent views between witnesses are dependent on varying degrees of knowledge, and personal experience. The human body and its diseases, possessing but little uniformity, can be variably interpreted by a plurality of honest and intelligent observers, especially in borderland cases in which demarcation lines are vague and indistinct.

Long experience in examining plaintiffs for injury cases inevitably produces skepticism and demands for objective indications, as a high percentage of such cases is, more or less, based on fraudulent claims, fostered and nourished by unprincipled attorneys, unwise friends, and the general desire to extract money from wealthy corporations. Employees have themselves to blame, therefore, for having built a structure inimical to their own interests, while employers may be congratulated on a more benevolent attitude toward their employees—even if produced primarily by strikes, unionism, legislation, etc., induced by previous unjust demands on labor by capital. Employers now desire to produce and maintain friendly relations with their employees, and demonstrate such intentions by good wages and working conditions, hospital care, willingness to concede financial awards for honest personal injury claims, etc., whereas union labor, with its bosses and organizations, seems determined to produce conditions as hard as possible for those men endeavoring to conduct the business of our country.

Honest medical expert testimony is, therefore, influenced by various conditions, and as a consequence is frequently inconclusive; and any proper effort toward systematization should fall on receptive minds.

Owing to variable conditions, compensation tables for damages cannot be invariably equitable, and should not be so regarded; they are merely basal conclusions on which to work. An accepted compensation table for monocular visual losses is an unaccomplished necessity; yet it can merely become a steadying foundation for judicial consideration, and medical testimony will always be necessary for learned opinions and interpretations of present and future conditions, such as corneal scars, retinal and optic nerve diseases, and vitreous opacities. State laws and medical opinions differ as to whether vision (after injury) should be estimated with or without glasses, forgetful of the fact that almost all eyes improvable by glasses possess refractive errors antedating the injury. As a rule, therefore, a claimant should be required to accept the visual results obtainable by glasses with the exception of monocular traumatic cataract cases in which the required lens is so strong as to create annoyance, through discrepancy, diplopia, etc. Under such circumstances, the chief advantage of an operation is to demonstrate to the patient the visual capacity of the eye, and to restore actually a seeing eye to the injured that can be used in case of accident to the other eye. This is a valid asset, and should be considered when judgment is awarded, especially when all expenses are paid by the employer.

ESTIMATION OF OCULAR DAMAGES

It has been asserted that the payment of sick bills by employers has no significance, for such and such is the law and there is an end to it. But not all laws are just laws, and the justice of this law is questionable. Why should an employer be held liable for accidents over which he has no control? If he furnishes good tools, good wages, a good shop, well ventilated and lighted, and equipped with accident preventing devices, and an employee through ignorance, carelessness or obstinacy is injured, why should the employer be held liable? For these cogent reasons, legislatures and courts should not deal with employers too harshly; heavy responsibilities have been thrust on them and they should be given all reasonable benefits of doubts, instead of being buffeted and excoriated whenever opportunity presents itself. It therefore seems reasonable and just, first, that ocular damages should be estimated on conditions prevailing at the time of litigation, unless reasonably positive and reliable evidence is obtainable as to future conditions; second, that visual conditions should be estimated with glasses, except, third, after cataract operations, when the visual result might be measured on a 50-50 basis; this means, for instance, that if, after a cataract operation, good vision is obtained of, say, 20/20 or 20/30, by a glass, the vision may be reckoned as about one-half of normal and compensation paid accordingly.

Referring to unjust legislation, how unfair to both employer and employee is the law rendering the employer responsible for the loss of both eyes, when one eye was lost before the employee entered his service, and his remaining eye has been destroyed while working for the employer. The law is unjust to the employer because he was not responsible for the loss of the first eye, and it is unjust to the employee because it renders the securing of work difficult, as many employers dislike the presence of the maimed, and refuse the assumption of unnecessary legal and financial responsibilities, however much they might desire to assist the handicapped. Besides this, a one-eyed man is more likely to be injured than a two-eyed man, because he can see on only one side of him, and also for the reason that if his seeing eye is injured during work by a cinder, etc., he is quite helpless, as he cannot see through the other eye. Thus a law intended to benefit the laboring man is obstructive to his prosperity, as it often legislates him out of work. The law should be changed and the employer should be held responsible only for the loss of the eye injured during his own service. The employee cannot even legally give the employer a written document releasing him from responsibility concerning the first eye if the second eye is lost during his service. This is almost, if not quite, unconstitutional, as it debars the employee from exercising the right of personal privilege.

Among the very frequent causes of personal injury litigation are the varying losses of vision in one eye, necessarily followed by estimations concerning visual impairment. This produces discrepant expert testimony, leaving the court in mental uncertainty, usually resulting advantageously to the plaintiff—he being the poor unfortunate, and the employer representing what is called corporate wealth.

As Snellen's test types represent to ophthalmologists varying degrees of vision, it has been assumed that Snellen's fractions must also represent varying losses of vision, and that, for instance, 20/40 indicates 50 per cent. of visual loss, 20/30, 33⅓ per cent. of visual loss, etc. Such conclusions are erroneous and misleading, for Snellen and his followers never intended these fractions to indicate visual insufficiencies—they were merely an international language interpreting ocular refraction, and I am confident that Snellen himself would be astonished and amused at the absurd use of his fractions in our courts, in the awarding of damages to ocularly injured plaintiffs.

It must be evident to all who intelligently and impartially consider this subject that 20/40 does not indicate 50 per cent. loss of vision, nor 20/30, 33⅓ per cent. loss of vision. Indeed, 20/30 is practically no loss of vision at all, and does not reduce a man's earning capacity one cent a year. Technically, it represents a small visual loss and should be so regarded; but practically, the loss is almost negligible. Why, then, should courts continue such erroneous calculations, entailing great and unjust financial losses on employers, accident insurance companies, etc.? The mistake was natural, especially as it received partial ophthalmologic sanction; and once begun, the custom prevailed, particularly as no saner or more accurate method endorsed by ophthalmologists was proposed. If ophthalmologists will propose and endorse a fair and simple table of compensation for visual losses, of reasonable accuracy, there can be little doubt that our courts will adopt such a table, thus removing at least one element of doubt and discord from our tribunals. It must be remembered, however, that such a table must be exceedingly simple, and devoid of all technicalities, as otherwise it will never be even considered by our courts.

While various compensation tables have been proposed by which to estimate monocular visual losses, no table has as yet been suggested on which all interested factions seem to unite, although they all arrive at about the same financial conclusions; and meanwhile the courts continue delivering unjust decisions, guided by palpably erroneous deductions. In the interest, therefore, of fairness, simplicity and brevity, I submit a table, recently adopted by the Chicago Ophthalmological Society, which it is hoped may be universally and uniformly adopted. In constructing a compensation table for monocular visual losses in working men, three points must be considered:

1. What constitutes industrial blindness in one eye?
2. What is the maximum legal compensation for such blindness?
3. What are fair and diminishing percentages of visual losses from the maximum to the minimum?

Concerning industrial blindness, many opinions are possible. Real blindness in its last analysis means a loss of light perception. I consider an individual industrially blind whose vision is insufficient for ordinary work. The injured may be unable to continue a habitual avocation; but if sufficient vision remains to perform ordinary work by ocular assistance, industrial blindness does not exist. What, then, constitutes "industrial blindness"? The answer must be more or less arbitrary. After consulting with many ophthalmologists, lawyers, industrial commissioners and insurance managers, the Chicago Ophthalmological Society arbitrarily concluded that vision worse than 20/200 constitutes industrial blindness. This opinion is, of course, open to discussion, but it is not remote from a fair conclusion to both employer and employee. Let this view, therefore, be tentatively assumed, and let it be said for the purpose of progress that vision worse

than 20/200 represents industrial blindness or 100 per cent. loss of vision, entitling the injured to the maximum compensation for monocular blindness allowed by the state law. This varies in different states, but in Illinois it entitles the injured to 100 weeks of compensation at $12 a week, or $1,200. The minimum to be paid for the total loss of one eye is $6 a week. In case the maximum or $12 a week is paid, the amount is increased $1 a week for each child of the applicant under 16 years of age, up to and including three children. In case the minimum or $6 a week is to be paid,

COMPENSATION TABLE FOR VISUAL LOSSES OF ONE EYE

20/20	indicates	100%	of	visual	efficiency	and	no	loss	of	vision
20/30	"	94.5%	"	"	"	"	5.5%	"	"	"
20/40	"	89.0%	"	"	"	"	11.0%	"	"	"
20/50	"	83.5%	"	"	"	"	16.5%	"	"	"
20/60	"	78.0%	"	"	"	"	22.0%	"	"	"
20/70	"	72.5%	"	"	"	"	27.5%	"	"	"
20/80	"	67.0%	"	"	"	"	33.0%	"	"	"
20/90	"	61.5%	"	"	"	"	38.5%	"	"	"
20/100	"	56.0%	"	"	"	"	44.0%	"	"	"
20/110	"	50.0%	"	"	"	"	50.0%	"	"	"
20/120	"	41.0%	"	"	"	"	59.0%	"	"	"
20/130	"	36.5%	"	"	"	"	63.5%	"	"	"
20/140	"	32.0%	"	"	"	"	68.0%	"	"	"
20/150	"	28.5%	"	"	"	"	71.5%	"	"	"
20/160	"	23.0%	"	"	"	"	77.0%	"	"	"
20/170	"	18.5%	"	"	"	"	81.5%	"	"	"
20/180	"	14.0%	"	"	"	"	86.0%	"	"	"
20/190	"	12.0%	"	"	"	"	88.0%	"	"	"
20/200	"	10.0%	"	"	"	"	90.0%	"	"	"

the amount is increased 50 cents a week for each child of the applicant under 16 years of age, up to and including three children.

Two points in the construction of a compensation table may be said to be now finished, namely, the meaning of industrial blindness, and the maximum compensation payable for this misfortune. The latter, it must be remembered, is definitively settled by most states and we have nothing to say about it. Individuals desiring personally to assume financial responsibility for expensive accident insurance are at liberty to do so; but when insurance is assumed and paid for by the employer, $1,200 is the maximum amount payable for the loss of one eye in Illinois. The last step to be taken in constructing a compensation schedule is fairly and equitably to grade down the percentages and compensations, to accord with the amount of vision that is lost. This has been attempted in the accompanying Chicago Ophthalmological Society table.

EXAMINATION OF APPLICANTS BEFORE EMPLOYMENT

Before the subject of compensation for monocular visual deficiencies is dismissed, it seems desirable to suggest to employers of labor a simple method for extensively reducing the frequency of claims for personal injury, not only for ocular damage, but for all other accidents as well. Reference is here made to the skilful physical examination of applicants before assignment to employment. Perfunctory examinations should be discountenanced, as errors in either direction may lead to unfortunate results. Eye and ear examinations, for instance, should be performed by competent specialists, that correct ocular and aural conditions may be ascertained. Two instances will demonstrate the necessity for such examinations before employment:

CASE 1.—A man received a slight head blow three weeks after obtaining employment. Shortly after he claimed blindness in one eye. Examination disclosed old chronic simple glaucoma with atrophied disk.

CASE 2.—A man was struck on the head by a piece of coal; no wound was produced. In five weeks he complained of deafness and discharge from one ear. Examination disclosed an old chronic otorrhea, necrosis, foul discharge, and tympanic polypi.

In spite of convincing medical testimony, both men recovered damages. If these men had been properly examined before employment, both these diseases would have been detected, and litigation would probably not have been begun, but if begun would have been unsuccessful. The proper examination before employment of applicants for work is an economical necessity, but it is useful only if properly performed by skilful and conscientious physicians. In this way physical records are established that are bound in many instances to save, in the aggregate, enormous sums of money—much more, in fact, than the cost of proper medical examinations. Besides this, many employees have unknown physical infirmities which, when disclosed, can be cared for, and perhaps cured, to the great satisfaction of the employees themselves. Finally, when bodily imperfections are understood by both employer and employee, such knowledge can make employers more considerate of the afflicted, and inspire them to offer suitable occupation for individual needs. Some labor leaders demand the abandonment of physical examinations, thus clearly disclosing their sinister intentions, and ignoring the fact that such examinations should be welcomed by both honest employers and honest employees. Nor can the idea be ignored that, if employers are to be held liable for accidents, they certainly have a right to know the physical conditions of their employees before they assign them to work.

7 West Madison Street.

ENDOTHELIOMA OF THE PLEURA

REPORT OF CASE

P. J. McDONNELL, M.D.
Major, M. C., U. S. Army; Chief of Medical Service
SCRANTON, PA.
AND
E. S. MAXWELL, M.D.
Captain, M. C., U. S. Army; Pathologist, Base Hospital No. 79, A. E. F.
CHICAGO

This case is reported not only because of the rarity of the occurrence of the condition, but also because of the interesting conditions which prevailed throughout the course of the illness.

REPORT OF CASE

History.—A white man, aged 31, first reported at sick call, Oct. 29, 1918, and was sent to a field hospital, where a diagnosis of ileocolitis was made. From there he was immediately transferred to a base hospital. There he gave a history of having had diarrhea for two weeks previously. He was suffering from headache, and incontinence of feces, but he had no fever; mentally he was stupid and somnolent. November 9, on the discovery that the right side of the chest was partially flat, 500 c.c. of serosanguineous fluid were removed. Apparently no pus cells nor organisms were found in the fluid. As the mental condition grew worse, and definite auditory hallucinations were present, a diagnosis of a hebephrenic type of dementia praecox was made.

December 22, the patient was sent to the psychiatric department at Bazoilles, where examination disclosed that his memory was poor, that he had persecutory delusions, and that he was confused and disoriented. After physical examination the diagnosis of fluid in the right chest, with possible empyema, was made. The mental condition was then

ascribed to the toxemia and exhaustion and the patient was transferred to the medical service. There the chest was explored with a needle, but no fluid was obtained; something solid, however, was encountered. Over the flat area, tactile and vocal fremitus were lost, and breath sounds were distant. Above the flat area there were coarse moist râles, and the breathing was only faintly heard. The mediastinal dulness was noted as widened, and the heart impulse as outside the nipple line. A needle had been inserted at numerous times and by different surgeons but no fluid had been found, and on each occasion the impression of solidity was obtained. At the time of this examination there was some bulging of the right chest, and the patient began to complain of pain in the right upper abdominal quadrant. The leukocyte count was continually around 60,000, with 94 per cent. polymorphonuclears; the temperature would often rise to 102 F. The roentgenologist consistently reported fluid in the right chest.

February 1, the patient with others was taken over by our hospital. He was unable to sit up, although he would continually ask to be allowed out of bed. His body was emaciated, and the face had a hectic appearance. He showed marked mental deterioration, with the talk and manner of speech of a boy. He was emotional, crying easily and usually begging to be sent home. He was well acquainted with his present surroundings and with all in attendance. His movements were coordinate, and there was no spasticity. He usually lay on his back, but he could easily move about in bed. The chest examination disclosed that the cardiac dulness was not increased, and the apex beat was but slightly outside the normal position. The left chest was negative. The right chest was markedly larger than the left, and at one place, anterior and just above the costal margin, bulged somewhat into a solid rounded bump. Everywhere there was absolute flatness. Percussion below the fifth rib anteriorly was like striking a board. Over the lower and midlobes, breath sounds were but faintly heard and at a great distance. They were much louder at the apex and along the spine. However, everywhere they were of transmitted quality, distantly tubular. No râles were heard. Fremitus was abolished. With the history of 500 c.c. of serosanguineous fluid having been obtained early, of the numerous dry taps with the needle meeting strong resistance later, of the wooden percussion note, of the uneven breath transmission along the spine, of the right-sided shadow on the roentgenogram, and especially of the absence of cardiac displacement, the diagnosis of a new growth was made. Opposed to this diagnosis were the disconcerting features of a very high leukocytosis with the increase in polymorphonuclears, and a consistently moderate rise in temperature. It was thought that perhaps there might be a degenerated area in the tumor mass with abscess formation. However, there were no rigors nor high elevations of temperature. The expectoration was not profuse, nor at any time blood stained, nor of bad odor. Even the urine was albumin free.

The patient was observed from almost every angle as he progressively grew weaker. One had to bear in mind that perhaps there was present a condition which could be relieved by operation. The roentgenologist could not definitely diagnose the lesion with plates, and the horizontal screen was not in good working order. Tubercle bacilli were never found. The Wassermann reaction was negative. The blood picture showed no atypical cells. The sputum typed Group IV pneumococci. The pain in the right upper abdominal quadrant came oftener and grew more intense. There were no paralyses, nor stupor, nor loss of consciousness up until the patient's death, which occurred March 14, 1919, five months after the first symptoms were noticed. Because of the patient's age and the absence of recognized signs of metastases or lung infiltration, the tumor growth was thought to be probably of connective tissue origin. Death came without any new signs appearing except in the last few days, when there was an impairment of the good lung.

Necropsy Findings.—The anatomic diagnosis was malignant tumor of the right pleura and lungs with extension into the liver, chest wall and left pleura, and metastasis into the brain and peritoneum.

The right chest, just external to the nipple line at the seventh rib, showed a distinct bulging which was slightly nodular. On removal of the skin and muscles, several grayish white nodules were found adherent to the chest wall. The right pleural cavity was obliterated by a nodular, grayish white, friable tissue from 1 to 3 cm. in thickness, being thinnest at the apex and thickest near the mediastinum. It was firmly adherent to the lung and chest wall. The diaphragm was replaced by the same tissue, which extended deeply into the liver. The left pleural cavity contained 200 c.c. of clear fluid. A few adhesions were present. Posteriorly the parietal and visceral pleurae were covered by numerous firm white tubercles, varying in size from that of a pinhead to that of a large bean. A few appeared anteriorly.

The right lung was firm, and on section appeared dry with a marked increase in interstitial tissue. In the upper lobe the bronchi were surrounded by a white fibrous tissue. Occasionally a distinct nodule of this fibrous tissue was seen. All lobes were somewhat atelectatic. The left lung was soft and air-containing, but somewhat nodular. On section the nodules were found to be white with definite strands of fiber visible. The neck organs and cervical lymph glands were not remarkable.

The peritoneum was smooth and glistening, and the cavity contained no fluid. The upper and external surface of the liver was adherent to the peritoneum with a comparatively firm, friable adhesion in which were many grayish white nodules of varying sizes. A few isolated grayish nodules, the size of a pea, were scattered over the visceral and parietal layers. The liver was pushed downward about 4 cm. Its surface, especially the upper anterior and external aspects, was covered by the same nodules. On section, the advance of the tumor was seen to extend from 2 to 5 cm. into the liver substance. The advancing margin was composed of small, round tubercles which seemed to coalesce with age.

In the intestine, about 1 meter below the beginning of the ileum, there was a gray nodule which involved the entire thickness of the intestinal wall. It was surrounded by a zone of hyperemia. On the cecum, near the appendix, there were two nodules, 1 cm. in diameter, but they seemed to involve only the peritoneum.

The spleen was moderately enlarged and the capsule was wrinkled and thickened. On section, a smooth surface the color of grape juice was presented. The right suprarenal was somewhat enlarged, and near its center there was a nodule the size of a pea and similar to those just described. The left suprarenal was not remarkable. The kidneys were small and pale. The capsule stripped easily, and the cortex and medulla were well defined. The stomach, pancreas, bladder and genitalia showed nothing of note.

The meninges were clear. The brain on section showed a cavity, 3 by 3 by 6 cm., above the left lateral ventricle. The wall of this cavity was composed of a layer of brownish red tissue, 1 cm. in thickness, and distinctly nodular. The cavity was filled with an amber fluid containing numerous cholesterin crystals and a small amount of granular débris. Several smaller cysts similar to this were seen in the white matter throughout the brain sinuses.

Microscopic Diagnosis.—Thickened Pleura: The bulk of the tumor consisted of fibroblasts and connective tissue cells. These were arranged in many bands which communicated freely with one another. In certain areas these cells were nucleated and showed active growth. Usually, however, no nuclei were demonstrated. Between these strands of cells were many nests of cells. Near the center of the thickened pleura these nests were small, and the cells markedly distorted. Near the periphery the cells were more plentiful and the connective tissue much less conspicuous. There was a marked variation in the size and in the staining characteristics of these cells. Some were large and polygonal and stained densely; others were large with pale staining protoplasm, while still others were small and pyknotic. The cells were formed in groups, and in some places had a slight glandular arrangement. Karyokinesis was seen in many cells.

Liver Metastasis: The liver cells were cloudy, and many contained fat globules. The fat was especially noticed in

the cells surrounding the central vein. The line between the tumor cells and the liver cells was marked by a thin zone of scattered round cells with an occasional polymorphonuclear. Usually this line was cleancut and distinct. Occasionally tumor cells extended beyond it. The tumor cells were identical in appearance and arrangement to those in the tumor of the pleura. There was, however, very little connective tissue in the liver tumors.

Metastatic Nodules in Left Pleura: The cells were identical to those described above. Those in advance filled the alveoli of the lung, and in many cases were limited to a given alveolus. Deeper in the tumor, however, the alveolar wall was represented only by a thin line of connective tissue.

Right Suprarenal: The tumor was identical in every way to those just described. Its extending margins were clear and distinct.

Metastasis into Brain: Here the cells were arranged in a more orderly manner. Many definite papillae were present. The margin invading the brain substance was somewhat more irregular, and frequently the cells extended deeply into the brain. However, the general characteristics of the tumor cells were the same as those of the pleura.

The microscopic diagnosis was endothelioma of the right pleura with metastasis into the liver, left pleura, suprarenal, peritoneum and brain.

COMMENT

Most likely the first symptoms in this case were produced by the metastases in the brain, as no history of the chest condition was obtained until later. The diarrhea, noted at first as incontinence of feces, the stupor, and the psychosis were the outstanding signs and the ones that caused the patient to come under medical observation. The growth proper was not detected early because it produced no painful symptoms and invaded no tissue that gave any local reaction. The pleural effusion was the first sign noticed in the chest, and this was some time after the mental symptoms had appeared. The metastases were doubtless of a blood vessel type, and those in the brain were probably the first given off. Neither the motor nor the sensory areas were attacked, but apparently the parts associated with thought activity were greatly disturbed. The nodules in the intestine may have produced the diarrhea. The liver was invaded directly through the diaphragm. The latter lost its identity on the right side and was replaced by the advancing growth. The necropsy findings in no way explained the consistently and extremely high increase in white blood cells. The metastatic areas in the brain were sterile and showed no inflammatory reaction. The fever was no doubt due to toxic resorption. The growth began in the right pleura at the mediastinum and extended along the diaphragmatic and later the costal portions, compressing the lung upward in its course. Death was the result of asthenia.

The Geographic Distribution of Diseases.—L. R. Grote declares that not enough statistics and other data have been accumulated as yet for what he calls nosogeography. This is a science of the future, to be based on geographic, climatic influences, racial differences, social and economic conditions, the biology of the causative agents, and the effect of human efforts at prophylaxis. He reiterates that there is no part of the world absolutely free from any of the constitutional diseases, or where the infectious diseases cannot get a foothold when the causal agent is imported. In discussing these five elements of nosogeography in the *Geographische Zeitschrift* **25,** No. 7, 1919, he cites a number of puzzling facts, such, as the high tuberculosis death rate and the low cancer death rate—only 4 per ten thousand—in the Münster region, while the reverse prevails in the East Sea provinces, the cancer rate being 14 while the tuberculosis rate is among the lowest.

THE PRODUCTION OF AN ACUTE RESPIRATORY DISEASE IN MONKEYS BY INOCULATION WITH BACILLUS INFLUENZAE

A PRELIMINARY REPORT *

FRANCIS G. BLAKE, M.D.
AND
RUSSELL L. CECIL, M.D.
NEW YORK

Many attempts have been made to produce influenza in animals, or to transmit it experimentally from man to man by inoculation of the secretions, both filtered and unfiltered, from the respiratory tract in cases of influenza, by direct exposure of the subject to patients with influenza, and by inoculation with cultures of *Bacillus influenzae* isolated from patients with the disease. In large part, the results obtained have been entirely negative. In the few instances in which successful transmission of the disease has been reported, the methods employed and results obtained by different observers have been to a considerable extent inconsistent.

During the course of an investigation of experimental pneumonia in monkeys produced by the intratracheal injection of pneumococcus and *Streptococcus hemolyticus,* a further series of experiments with *B. influenzae* was undertaken in the hope of throwing some light on the relation which this organism bears to epidemic influenza and to the pneumonia which so frequently complicates it. The results obtained have been of such interest that it seems desirable to present a brief preliminary report at this time. The work will subsequently be reported in detail with full protocols.

Two species of monkeys were used: *Macacus syrichtus* from the Philippine Islands, and *Cebus capucinus* from Central America. All were fresh stock and had not previously been kept in captivity in this country. No preliminary procedures to lower resistance or to injure the respiratory tract before inoculation were resorted to. The strain of *B. influenzae*[1] employed was originally isolated from a case of influenzal pneumonia in a child. When received it had been in subculture on blood agar for a period of six weeks, and was found to possess no virulence for white mice. Since it was well known that the pathogenicity and virulence of *B. influenzae* are extraordinarily labile and very rapidly lost on subculture on artificial mediums, it was deemed necessary to raise the virulence of the strain to a considerable extent if successful results were to be obtained. This was accomplished, in brief, by successive animal passages, first through a series of eleven white mice, and then through a series of thirteen monkeys. These animals were inoculated intraperitoneally, the attempt being made always to give a sufficiently large dose to kill the animal within from twenty-four to forty-eight hours. Presumably because of individual variation in resistance, the desired result was not always obtained. In order, therefore, to avoid delay and possible loss of virulence because of this circumstance, fluid was withdrawn from the peritoneal cavity of the inoculated animals from eight to ten hours after injection, when the bacteria were still

* From the Bacteriological Laboratories, Army Medical School, Washington, D. C.

1. We are indebted to Dr. T. M. Rivers of the Johns Hopkins Medical School, Baltimore, for the strain of B. influenzae used.

actively growing in the peritoneum, and cultures were prepared to be used for inoculation of a fresh animal on the next day in case the previously inoculated animal failed to succumb. By this means the virulence of the strain of *B. influenzae* employed was sufficiently raised so that 0.01 c.c. of a sixteen-hour blood broth culture injected intraperitoneally killed a white mouse within forty-eight hours.

It was then considered probable that the organism had attained sufficient virulence to warrant testing the effect of inoculating monkeys in the respiratory tract. Accordingly, a series of twenty-two monkeys were so inoculated. The material used for inoculation may be divided into three groups: (1) first or second subculture on blood agar or in blood broth of *B. influenzae* recovered from the peritoneal exudate or heart's blood of monkeys dying of *B. influenzae* peritonitis and septicemia; (2) first or second subculture of *B. influenzae* recovered from the respiratory tract of monkeys killed during the acute stage of the pneumonia produced by intratracheal injection of the organism, and (3) the peritoneal exudate of monkeys dying of *B. influenzae* peritonitis, the exudate being controlled as to its purity by microscopic examination of stained films and by culture on blood agar plates.

Two modes of inoculation were employed, and for convenience the experiments may be divided into two groups according to the method used. In one group, in order to determine whether *B. influenzae* would initiate an infection of the upper respiratory tract, and if so, what the characteristics of the disease produced might be, the material to be inoculated was introduced into the nose and mouth either by application with a sterile cotton swab or by instillation with a pipet. In the second group, the material was introduced into the lower respiratory tract by direct intratracheal injection with a Luer syringe, the needle of which was inserted into the lumen of the trachea between the tracheal cartilages just below the larynx, the special purpose of this series of experiments being to determine if possible the pathologic characteristics of *B. influenzae* pneumonia.

In the majority of the experiments, the monkeys were held under preliminary observation for a period of from three to seven days before inoculation, during which time morning and evening temperatures (rectal) were taken, and daily total and differential leukocyte counts were made. The methods of study after inoculation consisted in the observation and recording of clinical symptoms, in the taking of morning and evening temperatures (rectal), daily total and differential counts of the leukocytes, and blood cultures at irregular intervals. Since the disease produced did not prove fatal, most of the animals were killed and necropsies performed at varying intervals during the acute stage of the disease or immediately after recovery.

THE EFFECT OF INOCULATING MONKEYS IN THE NOSE AND MOUTH WITH BACILLUS INFLUENZAE

Twelve monkeys received inoculations of *B. influenzae* in the nose or in the nose and mouth, with the successful production in every instance of an acute respiratory disease which appeared to be identical with influenza in man. The amount of culture or peritoneal exudate inoculated varied from what could be introduced by the single application of a cotton swab previously dipped in the culture up to 1 c.c. in each nostril and in the mouth.

Clinical Course and Symptoms.—The onset occurred from three to six hours after inoculation, the first symptom being a variable degree of prostration, often extreme, the animals in many cases lying prostrate on the floor of the cage, eyes closed and very stuporous. This was accompanied by an abrupt rise in temperature varying between 103 and 106 F. in some cases, with only moderate or no febrile reaction in others. Symptoms of upper respiratory tract infection soon followed, frequent sneezing, blinking of the eyes and rubbing of the nose being the prominent initial manifestations. The subsequent course of the disease showed some variation, but in general it was that of a self limited respiratory disease of from three to five days' duration. In most cases, by the end of from twenty-four to forty-eight hours, the infection had spread to the lower respiratory tract, as shown by the development of a racking cough. A variable amount, usually scanty, of mucoid or mucopurulent nasal secretion appeared in which *B. influenzae* might or might not be found. The temperature reaction varied greatly and showed no constant type of curve, being analogous in this respect to the variable types of febrile reaction seen in influenza in man. The leukocyte counts showed during the active stage of the disease either a definite degree of leukopenia or no significant variation from the normal, leukocytosis occurring in only three cases on the third or fourth day of the disease coincident with the development of a complicating purulent sinusitis.

Complications.—Five monkeys developed an acute purulent sinusitis of the antrum of Highmore from which *B. influenzae* in pure culture or mixed with some other organism was recovered at necropsy. Two animals developed pneumonia on the third and fourth days, respectively. The onset of pneumonia was insidious, and the presence of the disease was suspected only because of a rise in temperature and moderate acceleration of the respiratory rate. Both animals were killed during the early stage of the pneumonia, *B. influenzae* being recovered from the lungs in pure culture in both cases.

Pathology.—Nine animals were killed, and necropsies with bacteriologic examination were performed. Those killed during the active stage of the disease all showed rhinitis, with purulent sinusitis of the antrums in five cases. Cultures from the antrums showed *B. influenzae* in abundance in three cases, moderate numbers in a fourth, and none were recovered in the fifth. In two cases, *B influenzae* was present in pure culture; in two, other bacteria also were found. Six cases showed a tracheitis or tracheobronchitis. *B. influenzae* was recovered from the trachea or bronchi in all of these: in two cases, in pure culture; in four, mixed with other bacteria (*Staphylococcus albus,* nonhemolytic streptococcus, or a gram-negative micrococcus). Two animals showed a fairly extensive bronchopneumonia involving the right upper and lower lobes, and the left upper lobe in one; the left lower, middle and upper and right upper lobes in the other. This pneumonia, in brief, was characterized by extensive hemorrhage, peribronchial areas of consolidation with an exudate of leukocytes, mononuclear cells and desquamated alveolar epithelium and thickening and infiltration of the alveolar walls, absence of pleurisy, and considerable patchy emphysema of the peripheral lobules. *B. influenzae* was recovered in pure culture from the lungs in both cases.

THE EFFECT OF INTRATRACHEAL INJECTION OF BACILLUS INFLUENZAE IN MONKEYS

Ten monkeys received intratracheal injections of *B. influenzae,* in amounts varying from 1 to 5 c.c. of culture or peritoneal exudate, with the successful production of pneumonia in seven instances. Two monkeys showed only a tracheobronchitis; one showed no evidence of infection. The symptoms of prostration and cough, temperature and leukocyte reactions were the same as in the preceding group. In addition, the respiration was accelerated. In two cases, the infection spread to the upper respiratory tract with the development of coryza and frequent sneezing. In one case, a general infection with *B. influenzae* septicemia and pericarditis ensued. In no case did the disease prove fatal. It seems probable, however, that death would have occurred in the monkey that developed septicemia and pericarditis had it not been killed.

Pathology.—Of the seven monkeys developing pneumonia, three were killed during the active stage of the disease with the recovery of *B. influenzae* in pure culture in all; four were killed immediately after recovery, cultures made at necropsy being sterile. In the two cases in which only a tracheobronchitis developed, cultures from the trachea at necropsy yielded *B. influenzae* in pure culture in one, and no growth in the other.

Two types of pneumonia were encountered: a widespread, patchy pneumonia with extensive hemorrhage and edema, little cellular exudate or infiltration, and patchy emphysema; or a bronchopneumonia with extensive bronchitis and bronchiolitis, thickening and infiltration of the alveolar walls with swelling, proliferation and desquamation of the epithelial lining, and areas of peribronchial consolidation in which the alveoli were filled with mononuclear cells, polymorphonuclear leukocytes, red blood corpuscles and desquamated epithelial cells in varying proportions. Fibrin was very scanty or entirely wanting, and the pleural surface was rarely involved. One animal showed bronchiectasis. These two types of pneumonia appear to be essentially identical with the types of pneumonia in man that have been ascribed to infection with *B. influenzae,* when uncomplicated by secondary invaders.

SUMMARY

Twelve monkeys inoculated in the nose or in the nose and mouth with a strain of *B. influenzae* originally isolated from a case of influenzal pneumonia in man and subsequently raised in virulence by animal passage developed an acute, self limited respiratory disease of from three to five days' duration, characterized by sudden onset with profound prostration; the development of rhinitis and tracheobronchitis, with sneezing, cough, and the outpouring of a scanty mucoid or mucopurulent exudate; a variable febrile reaction, and either a leukopenia or no significant change in the leukocyte count. This disease was complicated in five instances by the development of a purulent sinusitis, in two by the development of a fairly extensive hemorrhagic pneumonia with areas of peribronchial consolidation. *B. influenzae* was recovered at necropsy from lesions of the disease either in pure culture or in association with organisms that are normal inhabitants of the upper respiratory tract of monkeys. The disease produced appears to be identical with influenza in man in its course, symptomatology, complications and pathology.

Of ten monkeys injected intratracheally with the same strain of *B. influenzae,* seven developed pneumonia, two developed tracheobronchitis without pneumonia, and one resisted infection. The general symptoms of the disease produced were the same as in the preceding group, that is, sudden onset, prostration, a veriable febrile reaction, and leukopenia or no significant change in the leukocyte count. The disease was accompanied by a severe cough and accelerated respirations; and in two cases, infection of the upper respiratory tract ensued. *B. influenzae* was recovered in pure culture from the lungs, bronchi or trachea in those animals killed during the active stage of the disease. The pneumonia produced presented the same pathologic picture as that which was found in the two animals developing influenzal pneumonia following inoculation of *B. influenzae* in the upper respiratory tract, and appears to be essentially identical with that ascribed to pure influenza bacillus infection of the lungs in man.

CONCLUSIONS

1. *Bacillus influenzae* can initiate in monkeys an acute infection of the upper respiratory tract which may be complicated by acute sinusitis, tracheobronchitis and bronchopneumonia.

2. This disease appears to be identical with influenza in man.

3. *B. influenzae* when injected intratracheally will produce in monkeys a tracheobronchitis and bronchopneumonia, the pathology of which appears to be essentially identical with that which has been ascribed to pure influenza bacillus infection of the lungs in man.

4. In view of these facts and the constant association of *B. influenzae* with early uncomplicated cases of influenza, it seems reasonable to infer that *B. influenzae* is the specific cause of influenza.

SIMPLIFIED TREATMENT OF THE ORDINARY VARICOSE ULCER

L. M. STEARNS, M.D.
KEARNEY, NEB.

Ulcer of the leg is by far the most common type of ulcer with which the medical practitioner has to deal, and its treatment is generally most unsatisfactory. The reasons for this lie in the fact that the patient will not consent to take the necessary time for the rest essential to successful treatment, until the ulcer becomes painful; or the physician contents himself with the application of some ointment and allows the patient to gain the impression that there is little else to be done. Many of these patients suffer for years from this extremely annoying condition, thinking that there is no help for it.

When these cases first come under observation, the surface of the ulcer is denuded, with a ragged, overhanging edge, while the base is filled with gray granulation tissue accompanied by a continuous discharge. There is usually more or less edema and a brawny condition of the surrounding skin, and if the ulcer lies over bone, there may be a secondary periostitis which stimulates the patient to seek relief. Bacterial absorption from the ulcer plays an important rôle in the causation of the local edema; usually this clears up following the healing of the ulcer, in spite for the fact that there may be more or less varicosity.

During the past few years, I have evolved a technic which seems to me very simple and applicable in most cases with the minimum loss of time to the patient.

The mode of procedure is as follows: The ulcer is first cauterized with fused silver nitrate, and the leg elevated for twenty-four hours, to clear the edema. Then a dressing, after the formula of Unna, is applied: gelatin, two parts; zinc oxid, one part; glycerin, three parts, and water, from four to six parts (depending on the consistency desired). These are mixed in a water bath and the paste is applied warm with a spatula to the entire leg from the ball of the foot to the knee, leaving the heel free. A roller bandage is immediately applied over this so that the paste penetrates the first layers of the bandage; if applied smoothly and evenly this makes an ideal supporting bandage and prevents a return of the edema when the patient is again ambulant. Forty-eight hours after cauterization, a small window is cut in the dressing over the ulcer. The slough is cleaned away with a sharp curet until the surface is clear, clean and easily bleeding; the edges will be found somewhat undermined.

With curved scissors the edges of the ulcer are trimmed away, removing a barrier to epithelization from the periphery of the wound. The tissue thus removed is placed on a piece of gauze moistened with physiologic sodium chlorid solution, and with a piece of dry, sterile gauze gentle pressure is made on the ulcer until all oozing has stopped. The edge is then coiled in the crater of the ulcer, and over this is placed a perforated piece of rubber to assist in drainage, and the whole is covered by a sterile dressing and a snug roller. Elevation of the limb should be continued for three days, when the wound should be dressed, after removing the rubber drain, with gauze impregnated with a 5 per cent. scarlet red ointment. The patient is now allowed to be up and about, but is cautioned to remain quiet for a few days longer or until epithelization of the wound is complete. The paste dressing is left on the leg for two weeks and is then reapplied if continued support is desired.

In sensitive patients, the area may be blocked with a 2 per cent. solution of procain.

GALLBLADDER DISEASE

SUMMARY OF FOUR HUNDRED AND TWENTY-FIVE CASES TREATED AT THE HARTFORD HOSPITAL FROM 1914 TO 1918

A. W. BRANON, M.D.
HARTFORD, CONN.

This report is based on 425 admissions to the Hartford Hospital from 1914 to 1918 in which a gallbladder or gallduct disease was suspected or found during treatment. The hospital records have been studied in some detail, and a personal letter was sent to 350 patients who left the hospital, of whom 148 filled in and returned the questionnaire. I have tried to group some of the more important notations for analysis. These patients, both ward and private, for the greater part were admitted to, or transferred to, the surgical service for treatment. Each staff surgeon's work is represented, also a liberal sprinkling of private work done by nonmembers of the hospital staff.

I have arranged this report somewhat after the model of an individual history as taken by the house officer. As regards family history, there seems to be little of importance. Occasionally there was an interesting coincidence; for example, one patient, a physician's wife, wrote me that she, her husband and their son were each recently operated on for cholelithiasis.

For convenience the ages are divided into decades, from 10 to 20 to 71 to 80 (Table 1). Complications and associated pathologic conditions have not been noted here.

TABLE 1.—AGE GROUPS

Age	Cholelithiasis No.	Cholecystitis No.
From 10 to 20	1*	6
From 21 to 30	41	17
From 31 to 40	83	18
From 41 to 50	92	20
From 51 to 60	80	17
From 61 to 70	32	6
From 71 to 80	9	3
Total	338	87

* A girl of 18.

There were eighty-three males and 342 females who came under observation, a ratio of about 1:4.

TABLE 2.—NATIONALITY*

	No.	Per Cent.
Americans	229	53.8
Russians	49	11.5
Swedish	18	4.2
German and Austrian	21	4.9
Polish	20	4.7
Italian	26	6.1
Armenian	6	1.4
Greek	1	

* Fifty-five histories did not state the nationality, but no marked disproportion is evident.

TABLE 3.—OCCUPATION*

	No.
Housework	273
Labor	24
Shop	28
Sedentary	36
Nurses	5

* Fifty-nine histories did not state the occupation.

Under previous illnesses (Table 4) are noted the more important ones, not including the contagious diseases of childhood, one or more of which was recorded in nearly every case.

TABLE 4.—PREVIOUS ILLNESSES

	No.	Per Cent.
Marked constipation*	166	39
Recurrent attacks of tonsillitis	46	10.8
Typhoid fever	43	10.1
Scarlet fever	38	8.9
Pneumonia	31	7.8
Appendicitis	29	6.8
Rheumatism	25	5.8

* This not being mentioned in the other histories.

Of the 342 women, 151, or 44.1 per cent., had had children, and twenty-three, or 6.7 per cent., were unmarried.

Pain of some sort was almost a constant symptom, it being described in 84 per cent. of cases. Practically all patients had repeated attacks; many of them could ascribe an attack to some particular cause. Probably the most common cause in those having had children was labor. Not a few patients suffered an attack shortly after delivery.

Indiscretion in diet would precipitate an attack in many. A few patients could almost certainly expect

an attack following an alcoholic debauch, while constipation figured frequently.

The time of onset was not mentioned in most of the histories, but from those in which it was stated, about 50 per cent. were nocturnal.

The duration of gallbladder disease as determined by pain seemed to be of considerable interest when considered with the complications, the difficulty experienced at operations, and the advanced age of many of these patients when they eventually came to operation.

A few of the younger patients, and particularly those who had a cholecystitis, were admitted during the initial attack. The duration in the 283 cases in which this was stated is given in Table 5.

TABLE 5.—DURATION

Duration Years*	No.	Per Cent.
From ½ to 1	118	41.7
From 1 to 2	38	13.4
From 2 to 3	29	10.2
From 3 to 4	14	4.9
From 4 to 5	14	4.9
From 5 to 30	70	24.7

* In a few the duration was even longer than thirty years.

TABLE 6.—LOCATION OF MAXIMUM PAIN

Location	No.	Per Cent.
Right upper quadrant	179	50.5
Epigastrium	130	36.7
Right lower quadrant	27	7.6
General to abdomen	18	5
Radiation to back or shoulders	159	44.9
Colicky	148	41.8

The maximum pain as located in 354 cases is given in Table 6. The character was not definitely described in about half the cases. Other symptoms frequently mentioned were indigestion and vomiting, which were noted in 215, or 50.5 per cent. of cases. In 120, or 28.2 per cent., jaundice appeared, and loss of weight in fifty-three, or 12.4 per cent. The maximum point of tenderness as noted in 270 cases was located 177 times in the right upper quadrant; forty-eight times in the right lower quadrant, and forty-five times in the epigastrium. It was not localized in 155 examinations. On palpation, the gallbladder could be felt in forty-nine cases, the liver in six, and the pancreas in one.

A roentgen-ray examination of the stomach or gallbladder was made in seventy of the cases, with the reports given in Table 7.

TABLE 7.—ROENTGENOGRAPHIC REPORTS

Condition	Diagnosis	No. of Cases
Cholelithiasis	Adhesions about the pylorus	10
Cholelithiasis	Gastroptosis	8
Cholecystitis	No evidences of cholelithiasis	7
Cholelithiasis	Gastric or duodenal ulcer	8
Cholelithiasis	New growth	6
Cholelithiasis	Stomach and gallbladder appeared normal	17
Carcinoma of gallbladder with cholelithiasis	Gastric carcinoma	1
Cholelithiasis	Poor plates	5

Gallstones were demonstrated in two cases. In six cases gastric or duodenal ulcer was demonstrated in which cholelithiasis was also present.

Of the 425 patients under discussion, thirty-five, or 8.2 per cent., had previously been operated on for cholelithiasis, a drainage of the gallbladder having been done; fifteen of these had recurrent cholelithiasis; three had stones in the common duct; fourteen suffered from cholecystitis and adhesions, and three from biliary sinuses. In two other cases the gallbladder had previously been removed; these patients returned with symptoms of stones in the common duct.

In all, 331 cases came to operation. Ninety-four patients either refused operation or were advised not to be operated on for some sufficient reason. Cholecystostomy was performed in 171, or 51.6 per cent., of cases; cholecystectomy, in 139, or 42 per cent. Adhesions about the gallbladder were broken up in twelve cases. There was primary closure of the gallbladder after removal of stones in four cases. No pathologic condition about the gallbladder was found in three cases, and in two cases the small bowel was opened for the removal of gallstones causing intestinal obstruction.

ASSOCIATED PATHOLOGIC CONDITIONS

The appendix was found to be definitely diseased and was removed in thirty-nine cases; cancer of the gallbladder in four; ruptured gallbladder and general peritonitis in four; gastric ulcer in three; duodenal ulcer in four; a perforation of the gallbladder into the duodenum in two, and a perforation of the gallbladder into the stomach in one. There was one case of acute pancreatitis with fat necrosis and there were twelve cases of chronic pancreatitis.

One patient had a painless jaundice of six months' duration, with congestion of the liver and marked loss of weight. A large stone was removed from the common duct, following which she made a complete recovery and is now well, four and a half years following operation.

TABLE 8.—AGE OF PATIENTS WHO DIED

Age, Years	No. of Patients
Between 61 and 70	7
Between 51 and 60	10
Between 41 and 50	13
Between 31 and 40	3
Between 20 and 30	2

MORBIDITY, CONVALESCENCE AND MORTALITY

The average length of time spent in the hospital following cholecystostomy was twenty-three and a half days, as against twenty-two and a half days for cholecystectomy. Of 148 replies to the circular letter, sixty were from cholecystectomy patients, of whom three, or 5 per cent., had recurrent pain since operation. Seventy-four were from cholecystostomy patients, of whom nine, or 12.1 per cent., had recurrent attacks of pain. Four were from patients who had adhesions about the gallbladder broken up; two, or 50 per cent., of these had recurrent attacks of pain. In one of the four primary closures the patient had recurrent attacks of pain.

Nine patients who were discharged without operation replied. Convalescence was recorded as satisfactory in 271 cases and as stormy in twenty-nine, while thirty-one patients died. Of these there were eleven cholecystectomies, one carcinoma of the gallbladder, in which nothing more than exploration was done, and nineteen cholecystostomies. It is a fact, however, that the more desperate cases, including one carcinoma with stones and four ruptured gallbladders with general peritonitis, were among the cases with drainage.

The operative mortality, excluding the four cases of general peritonitis and the one case of carcinoma in which the patient lingered on and died before leaving the hospital, is 7.8 per cent. Deaver, in 1916, reported 1,031 cases with a mortality of 7.2 per cent. Twenty-five New York hospitals reported a series of cases with a mortality of 8.3 per cent. Mayo reports 4,000 cases with a mortality of 2.75 per cent.

TABLE 9.—DURATION OF GALLBLADDER DISEASE IN PATIENTS WHO DIED

Duration Years	No. of Patients
40	3
55	1
25	1
6	2
From a few days to 3 years	22*

* Three of these patients had previously been drained.

TABLE 10.—CAUSES OF DEATH

Myocarditis and general arterial changes	9
Pneumonia	6
Postoperative hemorrhage	5
Peritonitis	4
Pulmonary embolism	2
Fecal fistula	2
Typhoid fever	1
Acute nephritis	1
Abscess of liver	1

SUMMARY

It will be noted that when patients with gallbladder disease pass the 50-year mark, the operative mortality rises very abruptly, as out of the seventy-one patients admitted between 50 and 60 years, thirteen, or 18⅓ per cent., died. Of thirty-eight between 60 and 70, ten, or 26⅓ per cent., died; of twelve between 70 and 80, seven, or 68⅓ per cent., died, while out of 278 under 50, five, or 1.8 per cent., died.

When we consider the fact that the vast majority of cases develop before the age of 50 years, it would seem that we should try to prognosticate the eventualities and at least advise early operative procedures.

Of previous diseases, constipation is the most striking and of undoubted significance.

The addition to the twenty-nine previous appendectomies of the thirty-nine chronically inflamed appendixes removed at the time of gallbladder operation makes a total of sixty-eight, a rather large coincidence.

Of the acute infectious diseases in this series of cases, typhoid fever was not noted as frequently as recurrent attacks of tonsillitis, and only slightly more frequently than was scarlet fever, pneumonia or rheumatism.

When we add to the eighty-three males the twenty-three unmarried females and the 168 married women who did not give a history of childbearing, we get a total of 274 cases occurring independently of childbirth; and when it is recalled that the age of gallbladder disease in all patients coincides pretty closely with that of gestation, it does not seem that the latter is of unusual significance. (Undoubtedly there were some cases of pregnancy not noted.)

Indigestion without typical gallbladder pain was one of the most difficult symptoms to solve, and delayed the accurate diagnosis for a long time in many cases.

The comparative results of cholecystostomy and cholecystectomy in this series of cases show forty-four unsuccessful drainages against five unsuccessful removals.

110 High Street.

Therapeutics

A DEPARTMENT DEVOTED TO THE IMPROVEMENT OF THERAPY. A FORUM FOR THE DISCUSSION OF THE USE OF DRUGS AND OTHER REMEDIES IN THE TREATMENT OF DISEASE.

USE AND ABUSE OF CATHARTICS*

(*Continued from page 104*)

THE CATHARTIC SALTS

EFFECT ON URINE

That portion of the saline which is absorbed is chiefly eliminated by the urine, producing a diuretic action in inverse proportion to the cathartic effect. Generally, of course, owing to abstraction of water by way of the intestine, there is a diminution in the urinary secretion for about twelve hours. This is followed by increased secretion of urine for perhaps the next twenty-four hours. Very dilute, as well as very concentrated solution, and also very small doses, or antagonizing the cathartic action by remaining in bed after taking the dose or by the use of morphin, all bring out the diuretic action at the expense of the cathartic effect.

The curious observation has been made that magnesium sulphate increases acidity and ammonium in the urine, while sodium sulphate decreases urinary acidity. The reason for this lies in the different degree of absorbability of the various ions yielded by these salts in the intestine. The magnesium ion is more slowly absorbed than the sulphate ion. Hence, more magnesium remains in the bowel, while the acid ion, in passing through the system, abstracts alkali and acidifies the urine. With sodium sulphate, the reverse is the case. The sodium ion is more rapidly absorbed than the sulphate ion. Hence, an alkaline wave passes through the system and into the urine. This might cause sodium sulphate to be preferred to magnesium sulphate in conditions of acidosis or when it is desirable to keep urinary acidity low.

CHOICE AND ADMINISTRATION

The cathartic salines differ among themselves in potency and palatability, as well as in details of action, all of which determine their choice.

The mildest and most inoffensive of the group is *magnesium oxid,* which, in the form of "milk of magnesia" (magnesia magma), is the only cathartic saline admissible in the presence of vomiting. The preparation is so mild in action that it is chiefly suitable as a laxative for infants, with whom 1 or 2 teaspoonfuls added to milk or other feeding daily may suffice as a temporary expedient. To the adult, tablespoonful doses may have to be given repeatedly before laxative effect is obtained. Magnesium oxid is likewise rather feeble in cathartic action, and is more useful as a gastric antacid than as a laxative, especially in view of the reputed danger of formation of intestinal con-

* This is the fourteenth of a series of articles on the pharmacology, physiology and practical application of the common laxatives and cathartics. The first article appeared October 18.

cretions, when it is used for a time in the large doses required for cathartic effect. When magnesium oxid is prescribed by the teaspoonful, its lightness should be borne in mind. Even the "heavy magnesium oxid," the only form that should be employed internally, does not weigh much more than 1 gm. (15 grains) per teaspoonful. True, 2.5 gm. (40 grains) are equivalent in magnesium contents to 15 gm. (240 grains) of magnesium sulphate; but the oxid is much feebler in action, as it lacks solubility and, of course, the sulphate ion. To children, magnesium oxid might be given in the following dosage:

For 6 months old, from 0.30 to 0.60 gm. (5 to 10 grains)
For 18 months old, from 0.60 to 1.30 gm. (10 to 20 grains)
For 3 years old, from 1.30 to 2.00 gm. (20 to 30 grains)
For 5 years old, from 2.00 to 3.00 gm. (30 to 45 grains)

The subjoined prescription yields a palatable administration form for this drug:

℞ Magnesium oxid .....15 gm.
Fennel oil-sugar .....30 gm.
M. Label: One half of level teaspoonful two or three times daily.

Sodium phosphate is undoubtedly, next to magnesia, the least offensive of the cathartic salines. The taste is sufficiently like that of cooking salt to permit its administration in salt-free broth without the knowledge of the patient. It can thus be readily administered to a child. For bottle-fed infants, a dose of from 0.12 to 0.25 gm. (2 to 4 grains) may be added to each bottleful of milk. Dosage for children might range as follows:

For 6 months, from 0.30 to 0.60 gm (0.5 to 10 grains)
For 18 months, from 0.60 to 0.90 gm. (0.10 to 15 grains)
For 3 years, from 0.90 to 1.30 gm. (0.15 to 20 grains)
For 5 years, from 1.30 to 2.00 gm. (0.20 to 30 grains)

For a child 3 years old this salt may be prescribed in the form of the following solution of actually delicious taste:

	Gm. or C.c.	
℞ Sodium phosphate	12|0	ʒiii
Syrup of raspberry.....	20|0	ʒv
Orange flower water to make.....	60|0	ʒii

M. Label: Teaspoonful with water every two hours until evacuation is obtained.

As this is a fairly saturated solution, increase in dosage would be obtained by having the patient take a larger spoonful. For an adult, the dose of this solution would be a tablespoonful. However, adults take it readily in doses of from 2 to 8 gm. (½ to 2 drams) in a teacupful of water, as hot as can be borne. Such a dose might be administered once, twice or thrice daily, half an hour before meals; or else the effervescent sodium phosphate may be taken by the dessertspoonful in half a tumblerful of cold water or lemonade.

For the bitter cathartic salines, cold effervescing solution is the best administration form. The effervescence diminishes their taste: chiefly, perhaps, in a physical manner. Innumerable gas bubbles are formed the instant the cold fluid charged with carbon dioxid comes in contact with the warm surface of the mouth. The tasteless gas, taking the place, to a large extent, of the salty liquid, protects much of the gustatory surface against excitation. Furthermore, carbon dioxid as well as coldness have a depressing effect on the excitability of the gustatory nerve endings. Imparting effervescence to the dose is also of advantage for its effect on the stomach, chiefly because it expedites the passage of ingested material out of the stomach.[2] The sedative effect of the carbon dioxid on the gastric mucosa also lessens the nauseating tendency of these salts. These considerations enable one to understand why effervescent preparations are so prominent among the administration forms for soluble salines. It seems self-evident, however, that the administration of carbonated drinks should be avoided in patients with flatulent distention of the abdomen and in those suffering from dyspnea. Likewise is administration in effervescing form contraindicated in patients with cardiac enfeeblement. It is particularly obnoxious in dropsical patients with ascites.

All four available means of imparting effervescence to pharmaceutical products are made use of in the administration of these bodies.

In the preparation of the *Solution of Magnesium Citrate,* the most pleasant administration form for soluble cathartic saline, there is added to the sweetened and flavored fluid containing magnesium citrate and an excess of citric acid, just before inserting the stopper, a sufficient quantity of crystallized potassium bicarbonate to neutralize the acid. The stopper, having been securely fastened, retains the liberated carbon dioxid under pressure, so that on removal of the stopper, copious effervescence ensues. The dose of this solution for a vigorous adult is a bottleful (360 c.c., or 12 ounces). For persons presumably easily acted on, one half of the contents of the bottle may be given, and the balance kept in a cool place and well stoppered, to be administered in two or three hours if the first dose has not produced the desired result. Larger children will take a wineglassful of this solution with relish; and this dose may be repeated every two hours until a satisfactory evacuation has been obtained. Small children or infants should not be given this or any other effervescent medicament, as the unaccustomed appearance of the "spots" in the fluid frightens and repels them.

"Seidlitz Powders" (Compound Effervescing Powder) represent an ingenious method of obtaining an effervescing preparation of excellent keeping qualities. The effervescing ingredients (sodium bicarbonate and tartaric acid) are simply kept separate by being wrapped in powder papers of distinctive color—white for the acid, blue for the alkaline powder—to the latter of which are added 8 gm. (2 drams) of sodium and potassium tartrate. Just before taking, they are mixed in half a tumblerful of water. By having the water ice cold, and adding lemon juice and sugar to it, the dose may be made fairly palatable. One pair of powders is a rather mild aperient. Two pairs may be taken at one time, if required; or the dose may be repeated every three or four hours until the desired effect is obtained. A patient who is nauseated will probably not retain the whole dose given at once; but, when each of the powders is divided into fourths and this given in half a wineglassful of water every fifteen

2. This is the reason, for example, for the popularity of "soda water" during hot weather for water quenches thirst only while it is in the mouth and after it has left the stomach.

minutes, one may succeed in "settling" the stomach and producing an evacuation of the bowel at the same time.

Effervescent purgative salts are nothing more or less than a mixture of sodium bicarbonate and tartaric acid with the purgative saline—preferably sodium phosphate. All that is required for fair keeping qualities is that the ingredients be dry and be kept dry. Granulation is nonessential.

Finally, the saline may be added to carbonated water from a siphon bottle. In this manner, *magnesium sulphate,* the cheapest, most powerful, and most widely used of the salines, may readily be administered in its best disguise, namely, in form of ice-cold effervescing lemonade made without sugar, for the bitter-sweet taste is even more obnoxious than the bitter. Thus, a tablespoonful of Epsom salt may be mixed in a tumbler with a tablespoonful of lemon juice, a little cold water added for solution of the salt, and then the glass be half-filled with ice-cold carbonated water. Sucking a little lemon before, and drinking a large tumblerful of cold water immediately afterward are still further helpful in overcoming the disagreeableness of a dose of bitter salt.

In view of this abundance of satisfactory administration forms for salines, what justification is there for prescribing proprietary fancy-named products, whose only merit lies in clever advertising? An example of the result of the thoughtless recommendation of nostrums by physicians is "Sal Hepatica."[3]

MINERAL WATERS

Mineral waters are closely akin to nostrums in the manner in which many of them are exploited. For example, "Pluto Concentrated Spring Water," for which claims are made which in mendacity almost rival those of "patent medicines" in their palmiest days, owes its activity to Glauber's salt, 50 per cent.; Epsom salt, 31 per cent.; cooking salt, 2.5 per cent., with calcium sulphate nearly 3 per cent., and a trace of magnesium carbonate.[4] Does any rational-minded physician believe that he will get better or different results from this combination than he would from an analogous amount of either sodium sulphate or magnesium sulphate? Then why make the patient pay so much more for his "dose of salts"? Whenever physicians are as lavishly supplied with samples as they are with "Sal Hepatica" and "Pluto Water," let us remember that, aside from many other objections to them, somebody will have to pay a great deal more for the stuff than it is worth and resolve that it will not be our patients.

Experience, forced on us by the war, has shown that we can get along just as well—and, in point of fact, a great deal better—without such world-famed mineral waters even as "Hunyadi" or "Carlsbad."

While taking a mineral water at the springs adds the benefit of climatotherapy to that of pharmacotherapy, it is surely indisputable that whatever virtue is inherent in a mineral water taken at home is innate in its constituents. An artificial combination of these cannot fail to be just as good. Indeed, it is much better; for the physician can then control the constituents in such a way as to make them more suitable to the individual for whom they are intended. For example: Carlsbad salt is a combination of approximately the following composition: sodium chlorid, 1 part; sodium bicarbonate, 2 parts; sodium sulphate, 4 parts. The combination of alkali with cathartic saline must be admitted to have peculiar virtues. For one thing, it is better borne by the stomach of most dyspeptics than is the simple saline. Furthermore, the alkali has certain therapeutic indications, the consideration of the details of which would lead us beyond the scope of this article, which at times, might well be met in a constipated individual by simultaneous administration of a purgative. The advantage of the possibility of varying the proportions in the salt combination to meet the special indication of these different cases is sufficiently obvious to require further discussion. More than this can, however, be accomplished. There is no reason to suppose that it is impossible to improve on "nature," which, in this case, is nothing but the fortuitous presence of certain salts in the strata of earth through which the water happened to pass. In case of the Carlsbad salt combination, for instance, a great improvement in taste can be secured by substituting sodium phosphate for the sodium sulphate, and sodium citrate for the sodium chlorid, as in this prescription:

		Gm.	
℞	Sodium citrate	15|0	℥ss
	Sodium bicarbonate	30|0	℥i
	Sodium phosphate	60|0	℥ii

M. Label: Teaspoonful in a cupful of hot water half an hour before meals.

This salt formula has secured as good results as have been obtained in suitable cases from Carlsbad salt, natural or artificial. A most important thing to be remembered in prescribing the salts of mineral waters is that the chief ingredient of mineral water is the water.

(To be continued)

3. Sal Hepatica, J. A. M. A. **62**: 472 (Feb. 7) 1914.
4. Pluto Concentrated Spring Water, J. A. M. A. **60**: 1013 (March 29) 1913.

Campaign Against Child Labor.—How hundreds of communities throughout the country have organized against child labor and illiteracy is told in a bulletin "Every Child in School" just issued by the Children's Bureau of the U. S. Department of Labor. This bulletin describes the methods and results of the "Back-to-School" and "Stay-in-School" campaigns carried on last year by forty-four states and the District of Columbia under the auspices of the Children's Bureau and the Council of National Defense. A larger proportion of these states have continued their efforts to stamp out child labor. As a result school time has been prolonged in many communities for boys and girls who might otherwise have had their education cut short. The "Back-in-School" and "Stay-in-School" campaigns have shown that in many places school attendance and child labor laws are not enforced. Many children of school age are in factories because there was not a sufficient number of attendance officers and factory inspectors to keep them in school and out of industry. In a single district an inspector reported 1,700 children as not having had a day of schooling. In many rural districts the children attend school only about half the time, and the hours for rural schools are very short. It is conditions such as these, the bulletin points out, that make the United States eighth instead of first on the list of civilized countries with regard to the proportion of literacy among its citizens.

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SATURDAY, JANUARY 17, 1920

RECENTLY DISCOVERED ASPECTS OF THE CAPILLARY BLOOD VESSELS

Recent investigations are conspiring to invest the blood capillaries with unexpected powers and correspondingly increased importance. Most of us have been taught to regard them as plastic vessels that permit the passage of waste or nutriment, as the case may be, through them by diffusion or other physicochemical processes. The capillaries, being devoid of a musculature such as is responsible for the changes in the caliber of the arteries, were assumed to be incapable of independent alteration of size, although they evidently respond passively to the greatly unlike volumes of blood driven into them at different times by the varying condition of the other parts of the circulatory system. Thus the capillary is well filled or empty, dilated or collapsed, according to the different masses of blood that reach it.

What has long been suspected regarding the motility of the capillaries in a few locations in the body has latterly become likely for many or all of them. These structures are known to have a formerly unsuspected nerve supply, which might be regarded as at least one prerequisite for independent contractile power. The existence of motility in nonmuscular cells, such as leukocytes, is familiar; hence, as Bayliss[1] has recently remarked, the absence of a muscular coat in the case of the capillaries does not warrant a denial of the possibility of active changes in caliber in the latter.

Professor Krogh[2] of Copenhagen has summarized considerable evidence which contravenes the prevailing conception that the blood is continuously flowing through the capillaries at rates that are determined solely by the state of contraction or dilatation of the corresponding arterioles. Under the old hypothesis, the dilatation of an arteriole will cause a rise of pressure in the corresponding capillaries, which will become passively expanded, to contract again by their own elasticity when the pressure is reduced. Today we seem, rather, forced to admit that these smallest vessels contain contractile elements of some sort within themselves and that they function especially in the direction of active dilatation. Thus the significance of a "capillary tone" can be understood.

The assumption of independent motility of the capillaries helps to explain the enormous variations in permeability that may be exhibited somewhere in the capillary region quite independent of any corresponding or coincident changes in general blood pressure, which have often been regarded as the impelling forces in the exchanges thus going on. In certain types of shock, for example, changes in the volume and concentration of the blood cannot be satisfactorily correlated under the older theories with the alterations of pressure in the circulation. The demonstration of independent activity on the part of the capillaries makes it easier to understand how blood may, as it were, disappear from the circulation. The capillary effect represented by the actively dilating vessels may actually overcome the usual effect of the contracting arterioles. Hereafter, therefore, it will be essential to know how and what substances act on the capillary mechanism, as well as their behavior toward the heart or the vessels equipped with contractile musculatures.

1. Bayliss, W. M.: The Capillary Circulation, Science Progress, October, 1919, p. 272.
2. Krogh, A.: The Supply of Oxygen to the Tissues and the Regulation of the Capillary Circulation, J. Physiol. **52**: 457 (May 20) 1919.

CARCINOMA OF THE APPENDIX

An English surgeon, Adams,[1] has recently commented on the fact that carcinoma of the appendix seems to be much less common in Great Britain than it is in the United States. He bases this statement on the observation that only four cases have been recorded among the 7,000 appendectomies that have been performed at St. Thomas' Hospital in London in the past seventeen years. This would give carcinoma of the appendix an incidence of only 0.05 per cent. in Great Britain, as contrasted with American figures which vary between 0.13 and 0.49 per cent.

Adams calls attention again to certain peculiarities of carcinoma of the appendix that distinguish it from most other forms of carcinoma. The explanation for the discrepancy between his figures and the American figures is quite clear, for he states in his article that routine microscopic examinations of the appendixes removed at operation were not made. This brings out the most important fact concerning carcinoma of the appendix, namely, that it is practically always an accidental finding. Figures such as those which have been published from the Mayo Clinic showing that nearly 0.5 per cent. of the appendixes removed were carcinomatous are due entirely to the fact that careful routine examination of all specimens is carried out. The fact that carcinoma of the appendix is usually an accidental discovery is due to certain peculiarities of the disease, the most important of which are the extreme slowness of its development and its comparative benignity. As a matter of fact, carcinoma of the appendix has practically never been diagnosed except on the operating

1. Adams: Proc. Roy. Soc. Med. **12**: 37, 1919.

table or in the necropsy room. When symptoms are present, they are the symptoms associated with appendicitis.

The condition is interesting on account of the questions that it raises. Carcinoma of the appendix is perhaps the best illustration we have of the fact that the microscopic structure of a neoplasm is not always a safe indication of clinical malignancy. It emphasizes a point of view that is sometimes forgotten—the division of neoplasms into benign and malignant neoplasms is, after all, an arbitrary one. There are not a few instances of tumors that are structurally benign causing metastases and presenting other characteristics of malignant growths. There are instances of new growths with the microscopic structure usually associated with malignancy which fail to metastasize and even fail to invade neighboring structures. Carcinoma of the appendix also brings up another question, namely, whether vestigial structures are more likely to be the seat of neoplasm than organs that are still of value to the body. It is, of course, notorious that degenerative changes take place in the appendix with great frequency, particularly the so-called obliterative appendicitis, and it has been suggested that carcinomas of the appendix are associated with this obliterative appendicitis. Some pathologists, indeed, have doubted whether many of the so-called neoplasms of the appendix were true neoplasms. They have held that the changes which occurred were in the nature of an atypical epithelial growth, such as may occur with many inflammatory chronic conditions, rather than true malignant neoplasms. The subject is worthy of further and more careful investigation.

THE METABOLISM OF THE NERVOUS SYSTEM

Recent years have witnessed a marked change in the views held with respect to the metabolism of the nervous system. Formerly this tissue was not regarded as an active participant in those types of chemical change in the body for which the muscles have been preeminently noted. The products of such metabolism are excreted in the body in the respiratory gases and, in far smaller degree, in the urine. Augmented muscular activity is promptly followed by an increased output of carbon dioxid and water that is rarely so small as to escape detection. In all the experiments which have been conducted to discover analogous increments of waste products incident to the activity of the nervous system, only negative results have been recorded by the same method of investigation. When dietary factors and muscular performance have been essentially unchanged, the vigorous exercise of the higher nervous system, so far as this is possible by the conscious cerebration of intellectual effort, has never been observed to alter the metabolism of matter and energy of the body as a whole.

This is not strange, however, if the small bulk of the nervous system in comparison with the ever-functioning muscular tissues is taken into account. Small increments of output may fail of appreciation in the larger aggregate of waste from other sources. The conventional methods of study have left us in the lurch in the study of the possible metabolism of the small, yet highly valuable portion of the body represented by the brain and its nervous appendages. Here the study of the isolated tissue, particularly by micro-analytic methods, has thrown new light on the functioning of those structures which were scarcely believed to exhibit the same order of energy transformations and material changes that are the conspicuous accompaniments of activity in muscles and glands. The investigations of Tashiro, in particular, at the University of Chicago, have demonstrated that nerve fibers have a metabolism as active as that of any tissue in the body. Ganglions appear to have a somewhat higher rate than the nerve fibers. Such estimations as have been made of the oxygen consumption of the brain—an index of its chemical exchanges—place it at a figure decidedly greater than that of skeletal muscle.

Evidently, then, the nervous tissues are not devoid of a vigorous "internal respiration." For the activity of the muscles, carbohydrates are now looked on as the preferred source of energy. Recent studies by Hirschberg and Winterstein[1] at Rostock have shown that the nervous system likewise can utilize sugars if one may judge from their disappearance from solutions brought into intimate contact with surviving nerves. There may also be some metabolism of nitrogenous components detectable even in the small portions of tissue that have been examined in this way by these observers.[2]

Even more unexpected, however, is the evidence presented for the metabolism of the lipoid components of nerves in the presence of oxygen.[3] This disintegrative change can be retarded by the presence of sugars, which seem to exert a "sparing" action on the lipoids. The products of the oxidative breakdown of the nerve lipoids is not yet known. This evidence of the possible involvement of the lipoids in nerve metabolism is in harmony with the contention of Mathews,[4] who regards the medullary sheath as probably nutritive. He has pointed out that the brain contains no glycogen or neutral fat. Since the nerve cells must have a good supply of raw material for such active metabolism as the experiments on tissue respiration indicate them to have, there is no apparent reason why the abundant lipoids should not be drafted into use.

1. Hirschberg, Else, and Winterstein, H.: Ueber den Zuckerstoffwechsel der nervösen Zentralorgane, Ztschr. f. physiol. Chem. **100**: 185, 1917. Hirschberg, E.: Der Umsatz verschiedener Zuckerarten im Stoffwechsel der nervösen Zentralorgane, ibid. **101**: 248, 1918.

2. Hirschberg, Else, and Winterstein, H.: Ueber den Stickstoffumsatz der nervösen Zentralorgane, Ztschr. f. physiol. Chem. **101**: 212, 1918.

3. Hirschberg, E., and Winterstein, H.: Ueber den Umsatz von Fettsubstanzen in den nervösen Zentralorganen, Ztschr. f. physiol. Chem. **105**: 1, 1919.

4. Mathews, A. P.: Physiological Chemistry, New York, 1915, Chapter XIII.

RENAL GLYCOSURIA

Interest in the subject of so-called renal diabetes has been greatly increased since estimations of the sugar content of the blood have become more commonly and easily carried out. The current conception of the condition referred to involves a glycosuria that occurs when the blood sugar is not significantly increased in amount, that is, when hyperglycemia cannot be demonstrated. The analogy of experimental phlorizin diabetes in which there is likewise a liberal renal output of sugar without any increase in the percentage content of sugar in the circulating medium of the body has frequently been referred to. In either case it has been assumed that the anomaly leading to the "renal glycosuria" resides in the kidneys, and that the disease is of renal rather than general metabolic significance.

A careful student of the subject has stated that "clinically, it is dangerous to make a diagnosis of renal diabetes until the patient has been under observation for several years."[1] This can scarcely be true in those instances in which the examination of the patient is controlled and supplemented by accurate and adequate laboratory data. Otherwise we should hesitate to refer to cases of "renal glycosuria" studied with exceptional care by Allen[2] and his co-workers in U. S. Army General Hospital No. 9 at Lakewood, N. J., where a diabetic service was instituted. Observation of three cases of the renal type as compared with thirty-seven cases of true diabetes in military service, and the increasing number of reports in the literature, as the determination of blood sugar content increases, led the army investigators to conclude that "renal" glycosuria is not as rare as once supposed, and probably is much commoner than other anomalies, such as pentosuria or levulosuria. It has by no means been definitely established, however, that the excreted sugar in "renal" glycosuria is in every instance identical with the common diabetic sugar, glucose.

As has been noted in earlier cases, no fixed relations were observed between the sugar in blood and urine. The renal excretion does not necessarily serve to maintain a low level of blood sugar. The output is not always higher with high than with low blood sugar. According to Allen's observations, the sugar excretion seems to be determined by the supply of available carbohydrate, especially preformed, but also to less degree by the potential carbohydrate of protein. The fat ration and total metabolism, which are important in true diabetes, are probably without influence.

No hypothesis that has been suggested thus far serves to explain satisfactorily the genesis of a condition of glycosuria apparently independent of hyperglycemia. As Allen and his co-workers point out, it is not yet proved that the abnormality lies in the kidney, or that it consists merely in a lowering of the normal threshold of sugar excretion. It is possible that cases differ in kind as well as degree, and that a group of anomalies have heretofore been included under this name. Fortunately, however, the prognosis in the persistent condition described is very favorable, thus standing in striking contrast with what so commonly obtains in true diabetes mellitus. Perhaps "renal" glycosuria will be found to represent only an exaggerated instance of the "glycuresis" which Benedict has described as occurring in normal man and leading to a minute though commonly present content of sugar in the urine.[3] In any event, now that the greater frequency of a relatively harmless renal glycosuria is appreciated, it will henceforth be more essential than ever before to make a differential diagnosis with the utmost accuracy that present clinical methods permit. One type of glycosuria may benefit greatly by suitable dietary restrictions, whereas the other rarer form does not require comparable personal sacrifices.

1. Joslin, E. P.: Treatment of Diabetes Mellitus, Philadelphia, 1917, p. 64.
2. Allen, F. M.: Wishart, Mary B., and Smith, L. M.: Three Cases of "Renal Glycosuria," Arch. Int. Med. **24**: 523 (Nov.) 1919.

SOME ASPECTS OF WAR EDEMA

The people of the United States were fortunate, during the past five years, in averting more than one disaster that has overtaken the inhabitants of some European countries. They have escaped the dangers of various infections; they have been far removed from the nervous depression and accompanying harm; and however restricted they may have been in diet, real physiologic deprivations of necessary food have not been felt to any considerable extent. Hence we must look abroad for direct evidences of the diseases that unusual deprivations have created or brought into prominence. "War edema," known in Napoleon's campaigns and sometimes observed in institutions in which restrictions in living conditions are enforced, was emphasized as a disease entity of widespread distribution in the last three years of the war.

The pathologist is wont to dwell on the special or immediate causes of edemas, on cardiac or renal factors, on inflammatory involvements, on neuropathic and even hereditary features that precede the symptoms. The phenomena of war edema must be related to antecedent causes which still need to be recognized clearly and determined with scientific accuracy before the complete etiology can be written. An unusually comprehensive investigation reported by Schittenhelm and Schlecht[4] of Kiel, as the result of elaborate studies amid an abundance of German cases, may assist in clearing up some of the disputed points. Aside from the somewhat differing symptoms of pain, fatigue, skin

3. Glycuresis versus Glycosuria, editorial, J. A. M. A. **72**: 1772 (June 14) 1919. J. Biol. Chem. **34**: 195 (April) 1918.
4. Schittenhelm, A., and Schlecht, H.: Ueber die Oedemkrankheit. I. Klinik und pathologische Anatomie der Oedemkrankheit, Ztschr. f. exper. Med. **9**: 1 (July) 1919; II, Das Oedem, ibid., p. 40; III, Chemische Untersuchungen von Blut und Oedemflüssigkeit bei der Oedemkrankheit, ibid., p. 68; IV, Stoffwechsel der Oedemkranken, ibid., p. 75; V, Die Pathogenese der Oedemkrankheit, ibid., p. 82.

disorders, localized edema, etc., there is unanimity in the finding of a greatly lowered condition of general nutrition. The subcutaneous adipose tissues are always entirely depleted; the musculature may be reduced to an exquisitely atrophic state, and the vigor of the subject is correspondingly diminished. Resistance to infectious invasions of the skin naturally decreases, leaving all sorts of cutaneous and subcutaneous disorders in its wake.

The recent tests in many illustrative cases show that the excretory capacity of the kidney for water and salt is not essentially decreased; hence it appears that edema of this type is not of renal origin. Not only this fact, but the entire symptomatology suggests that war edema represents an involvement of the entire organism in which the edematous features are only a single manifestation. The blood plasma has been found to be greatly diluted, as if there were a decided depletion of protein in the body. The restoration of the blood in respect to protein content is accordingly one of the early manifestations of feeding albuminous foods to edema patients.

Depletion of the body's reserves of nutriment furnishes the keynote to the pathogenesis of war edema. For a long time this loss of substance may not be apparent, because edema fluids replace the losses and, by keeping up the weight and contour of the body, simulate satisfactory nutrition. Chemical investigations tell the real story. Fats, lipoids and glycogen vanish; the blood is poorer in protein—not merely diluted with water; the composition of its corpuscles even is altered. Everywhere there is depletion; but this by no means implies that loss of calories per se is responsible. Here we come into the domain of controversy. Is war edema to be regarded as the outcome of severe undernutrition in general, or is it the expression of a specific deprivation, such as a lack of protein or fat or vitamins? At present it cannot be gainsaid that all of these factors may be involved. The admittedly specific deficiency diseases, such as beriberi, frequently include manifestations of edema, but it must be borne in mind that lack of vitamins is not infrequently associated with diminished food intake in general and with consequent depletion of other body reserves. Whether the organism requires a minimum of fat as truly as a quota of protein below which nutritive disaster is sure to be encountered remains to be seen. Aron[5] has lately contended that fats as such furnish constituents, aside from so-called fat-soluble vitamins, indispensable to the body. In the past much has been said about overfeeding of protein. The diet of war-time shortage abounds in carbohydrate which forms the basis of the intake of those compelled to live on restricted rations. May there not be an ill effect from undue increments in starch and sugar—an excess of carbohydrate?

5. Aron, H.: Biochem. **92**: 211, 1918.

These and other questions vigorously present themselves for consideration in connection with the mysterious war disease. As for the edema itself, we may quote the suggestion of Schittenhelm and Schlecht that scanty and one-sided diets may lead to imperfect make-up of the tissues—which includes that of the capillaries wherein the anatomic cause of the edema is to be sought. Arguing that even the war-time diets are not likely to be so utterly devoid of vitamins as to lead to the specific deficiency diseases classed as avitaminoses, the German clinicians are rather inclined to incriminate shortage of other food factors or overabundance of carbohydrate or both combined. Such dietary conditions are known to lead to camparable nutritive disorders, for example, the "Mehlnährschaden," in children. At any rate, the fact that it is possible for large masses of men to live and carry out their normal employment—as happened in Germany—on a much scantier diet than that to which they were accustomed can no longer be cited in support of the once widely quoted statement that "this state of economical nutrition seems to be without danger to health even when extended over several months."[6]

Current Comment

LEST YOU FORGET—"A REMINDER"

Three weeks ago a green slip, to be used in remitting subscriptions and Fellowship dues for 1920, was inserted in THE JOURNAL. This slip was circulated in place of statements addressed to individual subscribers and Fellows. A large number have returned the slips with their remittances, and their cooperation has resulted in a large saving for the Association in postage. For the convenience of those who have not yet made the remittance, another slip is inserted in this issue. Moreover, it will remind those who may have made use of the previous slip that they may take advantage of the clubbing offers announced on the colored insert in the front advertising section of this number.

PUPILLARY CHANGES IN SYPHILIS

Stress has been placed for many years on the importance of pupillary changes in the detection of latent syphilis and of certain diseases of syphilitic origin, such as locomotor ataxia and general paresis. These pupillary changes have usually been described as symptomatic of the late stages of the disease. Recently Nicolau[7] has called attention to the fact that pupillary changes are common in the early stages of syphilis. Thus, inequality of the pupils particularly may occur even before the appearance of the skin manifestations of secondary syphilis. Nicolau associates it with the early changes in the central nervous system which are

6. Report on the Food Requirements of Man and Their Variations According to Age, Sex, Size and Occupation, Food (War) Committee, Royal Society, London, Harrison & Sons, March, 1919, p. 16.
7. Nicolau: Ann. de dermat. et syph. **7**: 283, 1919.

evidenced by changes in the cerebrospinal fluid obtained by lumbar puncture. He recognizes the well known fact that pupillary inequalities are not infrequent in normal persons, and states that approximately 3 or 4 per cent. of normal persons show such changes. He maintains, however, that syphilitic persons show pupillary inequalities in the early stages of the disease in a much higher percentage of cases. At least 10 per cent. of early syphilitics were found to have marked pupillary inequality, and 70 per cent. showed slight pupillary inequality. While the value of these observations is somewhat impaired by the comparative frequency of pupillary inequality in normal persons, they are not without interest, and the sign will doubtless be of some value in conjunction with other signs. In doubtful cases of any disease the diagnosis is usually reached by combining many symptoms and signs which in themselves may be trifling.

COLD STORAGE TESTIMONIALS

The law which limits the length of time that food products may be kept in cold storage could with advantage have its scope extended to include "patent medicine" testimonials. Physicians recently received through the mails—at a time when the mails were frightfully congested with Christmas business—a sixteen page pamphlet sent out in a plain envelop as First Class Matter. The caption of the pamphlet reads: "Cough and Its Treatment in Pulmonary and Laryngeal Tuberculosis: By Henry Levien, M. D., While Medical Director and Physician-in-Charge of the Liberty Sanitarium, Liberty, N. Y. From the *Buffalo Medical Journal.*" The pamphlet is devoted to the alleged virtues of that dangerous and widely advertised nostrum, "Glyco-Heroin (Smith)," whose more recent and less descriptive name is now "Glykeron." Physicians might assume, and doubtless will assume, from the pamphlet that this reprint represents a recent pronouncement on the subject with which it deals. The facts are that the "Liberty Sanitarium" has, apparently, been out of existence for at least fifteen years, while the article itself originally appeared more than eighteen years ago—September, 1901. One of many physicians who sent in the copies received, called attention to the fact that he had left the address to which the pamphlet was directed, more than six years ago. Even at that, the mailing lists of the concern that sells this heroin-containing nostrum are more than twelve years ahead of its "clinical reports."

Medicated Soaps.—Medicated soaps are for the most part a snare and delusion so far as any increased germicidal action is concerned. In fact, the addition of carbolic acid, bichlorid of mercury, and other substances which have the property of combining chemically with the soap seems actually to diminish the disinfecting value of the substance. As a rule a very small quantity of the disinfecting substance is added to the soap, and when we call to mind what an exceedingly small quantity of soap is generally used for the ordinary washing of the skin and the further dilution of this small amount by the water used it is easy to understand that medicated soaps as ordinarily applied cannot have an energetic disinfecting action.—Rosenau, "Preventive Medicine and Hygiene."

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPIALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Child Hygiene Bureau Established.—The Birmingham Health Department, December 1, established a bureau of child hygiene. This bureau will undertake to teach child culture and to act in an advisory capacity to parents and to the other branches of the health department.

Infirmary to Be Remodeled—A permit was issued, November 17, for the Fraternal Hospital, Birmingham. The present building of the McAdory Infirmary is to be remodeled and additions made until the capacity of the institution will be 152 beds. Dr. Willington P. McAdory, Birmingham, is president, and Dr. John H. Stephens, Hendersonville, secretary of the new hospital organization, which is capitalized at $125,000.

Personal.—The Bureau of Venereal Disease Control of the State Board of Health has arranged with Dr. Hugh L. Appleton, Gadsden, to conduct a cooperative clinic in Gadsden.——Dr. Lloyd Noland, Birmingham, superintendent of health of the Tennessee Coal and Iron Railroad Company, was the guest of honor at a banquest, held December 13, in Birmingham, tendered by the district physicians and other officials of the department of health as a tribute to the achievements wrought by Dr. Noland in the organization of that work. Dr. Grosbeck Walsh, Birmingham, presided as toastmaster.

New Officers.—The Mobile Medical Society at its meeting, December 6, elected Dr. Alfred E. Mammenee, president; Dr. William H. Oates, vice president; Dr. Willis W. Scales, secretary, and Dr. Edly W. Cawthon, Plateau, treasurer.——At the annual meeting of the Jefferson County Medical Society in Birmingham, December 3, Dr. E. Marvin Mason, Birmingham, was elected president; Dr. Robert E. Cloud, Ensley, vice president, and Dr. Gaston W. Rogers, Birmingham, secretary-treasurer.——Montgomery Medical Society at its annual meeting elected Dr. Milton B. Kirkpatrick, president; Dr. Frederick F. P. Boswell, vice president; Dr. Abraham Tumper, secretary, and Dr. Forney C. Stevenson, treasurer.

CALIFORNIA

Orthopedic Hospital School to Be Established.—To meet the physical, educational, and vocational needs of crippled children, an orthopedic hospital school is to be established by the Los Angeles Orthopedic Foundation. The site for the proposed institution has been donated to the foundation by John Bruckman, in addition to which $60,000 has thus far been donated.

New Officers.—At the annual meeting of the San Diego County Medical Society, held December 9, Dr. Lyell C. Kinney was elected president; Dr. J. Perry Lewis, vice president; Dr. George B. Worthington, secretary, and Dr. Mott H. Arnold, secretary-treasurer, all of San Diego.——Sonoma County Medical Society at its annual meeting, held at Petaluma, December 11, elected Dr. Fred O. Butler, Eldridge, president; Dr. William C. Shipley, Cloverdale, vice president; Dr. Nils R. H. Juell, Santa Rosa, secretary, and Dr. Reuben M. Bonar, Santa Rosa, treasurer.

Lecture on Psychology and Health.—Prof. George M. Stratton of the University of California is giving a series of lectures during January and February on psychology and health. The lectures are being given in Emanu-El Auditorium, 1337 Sutter Street, San Francisco, on successive Friday evenings, beginning, January 9. The lectures will deal with the modern aspects of the relation of psychology and the principles of health and practice of medicine, with diseases of the mind, insanity, hypnotism, and with multiple topics on personality and other subjects. They will be scientific in essence, but will not be technical in character.

Personal.—Dr. Eugene A. Hensel, San Diego, is under treatment in St. Joseph's Hospital.——Dr. Henry P. Newman, San Diego, who has been ill for several weeks, has recovered.——Dr. Paul W. Newcomer, Pomona, has been elected president of the Pomona Valley Medical Association, and Dr. William H. Eaton, Pomona, secretary.——Dr. Henry G.

Brainerd, Los Angeles, has been elected president of the Psychological Association of California.——Neal Naramore Wood, Major, M. C., U. S. Army, has been appointed first assistant superintendent of charities and medical director for the department of charities of the county of Los Angeles.

DISTRICT OF COLUMBIA

New Building for Society.—It is announced that during the next few weeks ground will be broken on a lot which has been purchased on M Street near Connecticut Avenue for the new building for the Medical Society of the District of Columbia.

Personal.—Dr. J. Ward Mankin, resident surgeon of Emergency Hospital, Washington, for two years, has resigned.——Dr. John F. Rooney, United States Public Health Service, was shot three times by a former soldier and a patient at Providence Hospital. Although the wounds are serious, Dr. Rooney is expected to recover.

New Officers.—The Medical Society of the District of Columbia, at its meeting, December 4, elected the following officers: president, Dr. Francis R. Hagner; vice presidents, Drs. Virgil B. Jackson and A. Frances Foye; recording secretary, Dr. Henry C. Macatee; corresponding secretary, Dr. J. Russell Verbryke, Jr., and treasurer, Dr. Edward G. Seibert.

GEORGIA

New Officers of Medical Board.—At the annual meeting of the state board of medical examiners, Dr. Jarrett W. Palmer, Ailey, was reelected president; Dr. Alfred F. White, Florilla, vice president, and Dr. Charles T. Nolan, Marietta, secretary-treasurer.

Personal.—The office of Dr. Amos C. Smith in the First National Bank Building, Elberton, has been destroyed by fire.——Dr. William E. Wood, Dalton, has been elected mayor in a hotly contested race with Dr. Jesse G. McAfee.——Dr. Taylor Lewis, Americus, sustained serious knife wounds of the abdomen and face in an affray recently.

Hospital Notes.—The Cheston King Sanitarium, Atlanta, has been secured by the United States Public Health Service which will use the institution as an emergency hospital and a clearing house for soldiers, sailors, marines and civilian employees of the government, through which patients will be sent to the various public health hospitals in the Southeast.

ILLINOIS

Personal.—Dr. Charles B. Caldwell, assistant superintendent of the Peoria State Hospital, South Bartonville, has been appointed superintendent of the Lincoln State School and Colony, succeeding Dr. Thomas H. Leonard.——Dr. Dudley B. Reid of the University of Chicago was elected president of the National Council of the American Physical Education Association at its annual meeting in New York City, January 1.

MAINE

New Officers.—At the annual meeting of the Penobscot County Medical Society, held in Bangor, the following officers were elected: Dr. William E. Fellows, president; Dr. Jarvis B. Wood, vice president, and Dr. Harry D. McNeil, secretary-treasurer, all of Bangor.

New Hospital Wing Under Construction.—A new wing to the Augusta General Hospital is being built, and will be ready for occupancy in March. The new building will be three stories and a basement in height, of steel and tile construction, 96 feet long and 40 feet wide, and will have three operating rooms on the third floor.

MARYLAND

Accident to University President.—Dr. Frank J. Goodnow, president of Johns Hopkins University, who suffered a fracture of the leg, January 11, is reported to be resting comfortably.

Whisky to Hospitals.—Every hospital and charitable institution in Baltimore will be given a generous quantity of whisky by Mrs. William Lanahan, owner of the wholesale liquor house of William Lanahan & Sons, who has announced that the entire stock in the warehouse will be distributed among hospitals and institutions.

Vaughan on Sanitation.—At a lecture before the members of the Johns Hopkins University School of Hygiene and Public Health, Dr. Victor C. Vaughan, professor of hygiene and physiologic chemistry at the University of Michigan, Ann Arbor, spoke at length on the influenza epidemic of 1918 and sanitation, expressing the belief that the limit of modern sanitation had been reached.

In Memory of Dr. Osler.—A joint meeting of the Medical and Chirurgical Faculty and the Book and Journal Club of the faculty was held at Osler Hall, January 13. This meeting was called in memory of the late Sir William Osler, and addresses were made by Dr. Lewellys F. Barker, Dr. Harry Friedenwald, Dr. John Ruhräh, all of Baltimore, and Dr. Francis R. Packard, Philadelphia.

Personal.—Dr. Robert H. Riley, Cumberland, has been appointed to the state board of health as chief of the bureau of communicable diseases of the state department of health. Dr. Riley was formerly chief bacteriologist of the health department of Oklahoma, and his affiliation with the local health department came as a result of a trip he made here to study public health administration methods.

Pathological Building Burns.—The Pathological Building of the Johns Hopkins Hospital group, the professional workship of Dr. William H. Welch, was wrecked by fire, January 12. It is said that none of the valuable specimens was lost, nor were any of the records of research work damaged. The fire necessitated the removal of twenty colored women patients from Ward O, but the patients in the maternity ward remained in their beds. Great credit is to be given to the nurses and physicians for their presence of mind in this emergency.

War on Social Evil.—To carry on active warfare against social evils and diseases, the Maryland Social Hygiene Society has opened headquarters in the Hoen Building, Baltimore. Dr. Hugh H. Young, Baltimore, has been elected president of the society and the other officers and the board of directors include many of the leading men of Baltimore. Legislation, law enforcement, thorough investigation of existing conditions, protective measures, urging the proper disposition of offenders by means of probation, commitment to institutions or custodial care, recreation, education and medical attention are among the activities planned by the organization. The association, which is the fusion of all the unofficial organizations of the state which have been combating social disease, will act as a clearing house in diffusing knowledge on social health and in conducting vigorous attacks on vice.

Raid on "Associated Doctors."—Through an exposé in the *Evening Sun*, the offices of the "Associated Doctors" which were raided by detectives and all paraphernalia used by them, including the widely advertised intravenous injection outfit and the fluoroscope and roentgen-ray apparatus, found to be imitations, were sent to detective headquarters. J. Newbold Kirk and G. G. Payne escaped arrest only because they had left the city, following the exposé in the newspaper. The attention of the police board was directed to the "Associated Doctors" by Dr. Herbert Harlan, Baltimore, president of the state board of medical examiners. Subsequent investigation showed that most of the work in the office was done by a registered physician, after an extensive door-to-door advertising campaign had been made. It is intimated at police headquarters that criminal action will be brought against the "Associated Doctors."

New Hospital Opposed.—Protests have been issued by persons interested in the South Baltimore General Hospital to the people of South Baltimore, Brooklyn, and Curtis Bay against the establishment of a competing hospital in the section from which the South Baltimore General Hospital draws its patronage. The protestants set forth that to care for the medical and surgical cases developing in the industrial district of South Baltimore, Brooklyn and Curtis Bay, the South Baltimore Eye and Ear Hospital was reorganized as the South Baltimore General Hospital and was thoroughly equipped to care for all kinds of injuries and diseases, supplied with a staff of trained physicians and nurses and is prepared to give this industrial district every possible advantage of modern hospital service. If the patronage of this territory is divided and the field occupied by a competing institution, it is apparent that instead of one institution being an assured success and constantly improving, two institutions could barely keep their heads above water.

Southern Sociological Congress.—The Southern Sociological Congress, which has headquarters in Washington, D. C., held its annual conference at the Medical and Chirurgical Faculty Building, Baltimore, January 6 and 7. The program for the opening session included as speakers Henry E. Jackson of the United States Bureau of Education and

Congressman S. D. Fess of Ohio; the subject under discussion was American citizenship. Judge Joseph A. McCulloch presided at the conference. Three sessions were held on January 7, and these were followed by a dinner at the City Club. The aim of the congress is to promote health, justice, patriotism, and training for citizenship, and to teach the sacredness of law both as to person and property, as well as to foster loyalty to home, church and government. It also aims to unite the religious, educational, civic and industrial factors of the South in a general movement to promote the welfare and conservation of human life. Its plan has been to accomplish the coordination of church and school so that the greatest benefit may be derived from both.

MASSACHUSETTS

Physician Decorated.—Dr. Charles S. Butler, Boston, has received from the French government the Cross of the Legion of Honor in recognition of his service to wounded French soldiers.

New Hospital.—A new building is to be erected for the Baptist Hospital, Boston, at a cost of about $500,000. The funds for the new building came from the estate of Mrs. Samuel N. Brown.

Personal.—Dr. Irwin H. Neff, formerly superintendent of the Foxboro State Hospital and for the past five years superintendent of the Norfolk State Hospital, Boston, has been made head of the Oak Grove Hospital, Flint, Mich.

Society Offers Reward.—The Essex South District Medical Society, December 27, offered a reward of $1,000 for information leading to the arrest and conviction of the person or persons who assaulted Dr. Hamlin P. Bennett, Lynn, December 24.

Banquet to Cabot.—The trustees of the New England Baptist Hospital gave a farewell banquet at the Hotel Vendome, Boston, January 3, to Dr. Hugh Cabot, head of the surgical staff of the Baptist Hospital for twenty years, who had accepted the post of head professor of surgery in the University of Michigan, Ann Arbor. Tributes to Dr. Cabot were paid by Col. Edward H. Hackett, Dr. George S. C. Badger, Boston, and Walter I. Badger, Albert H. Curtis, and others.

Honor to Sargent.—In recognition of his fifty years of continuous service in the physical training field, a banquet was given by the Sargent School Alumni Association to Dr. Sargent at the Hotel Vendome, Boston, December 27, at which many prominent educators, including Dr. Charles W. Eliot, professor emeritus of Harvard University, gave testimony that the untiring efforts of Dr. Sargent had resulted in making educational leaders throughout the world realize the value of physical education for children and college students. At the close of the evening a testimonial volume containing articles written in eulogy of his work was given Dr. Sargent.

Committee on Public Health.—This committee of the Massachusetts Medical Society has recently initiated several important movements in promoting the activities in the interest of which it was created. In addition to furnishing to the county medical societies speakers on subjects of preventive medicine, hygiene and public health, it has each year conducted a convocation on public health in which it has secured the cooperation of the United States Public Health Service, the Massachusetts State Department of Health, and the Massachusetts Association of Boards of Health. Two of these health convocations have been held in Boston, and recently a third was held at Springfield. The program for the Springfield convocation shows a wide range of subjects, including the state health program, personal and school hygiene, industrial hygiene, diet, special disease problems, and sanitation. The registration at these meetings has averaged about 225 people from over fifty cities and towns. These conferences have been attended not only by physicians, but also by health officials, public health nurses, and others professionally interested in public health. This committee consists of Dr. Enos H. Bigelow, chairman; Dr. Annie Lee Hamilton, secretary, and Drs. Edmond F. Cody, Victor Safford and Roger J. Lee.

NEW YORK

Personal.—Dr. Edward F. Brush has retired from office after serving eight terms as mayor of Mount Vernon.——Dr. Edward W. Mulligan, Rochester, was chosen director of reorganized Base Hospital No. 19, December 15.

New Officers.—At the annual meeting of the Monroe County Medical Society held in Rochester, December 16, Dr. Emory W. Ruggles was elected president; Dr. George H. Gage, vice president; Dr Benedict J. Duffy, secretary, and Dr. Irving E. Harris, treasurer, all of Rochester.

State Society Meeting.—The annual meeting of the Medical Society of the State of New York will be held in New York City, March 23 to 25. The house of delegates will meet at the New York Academy of Medicine, 17 West Forty-Third Street, March 22. The scientific sessions will be held on the second floor of the Waldorf-Astoria, and the third floor of the Hotel McAlpin. A section on neurology and psychiatry will be inaugurated on March 23. There will be an open meeting of the society at the Hotel Pennsylvania, March 23, which will be followed by the president's reception. The annual banquet will be given, March 24, in the ballroom of the Waldorf-Astoria.

Governor Smith Advocates Public Health Centers and Industrial Insurance.—Governor Smith, in his annual address to the legislature, recommends liberal provision for the department of health and redistricting the state so that each community can support a proper health administration. He expresses the view that the time has come when there should be some plan of reorganization within the counties themselves under the supervision of the state authorities. He urges the establishment throughout the state of an adequate system of public health centers, in conjunction with local health activities, where the necessary public health supervision can be provided for all classes of the population. He believes the state should subsidize local health efforts and thus bring about a coordination of public and private health facilities so that every health center could command the services of a full-time health officer and the necessary public health nurses. He reiterates his belief in the principle of compulsory health insurance for industrial workers. He says that legislation carrying this principle into execution can be so drawn as to safeguard the interests of the medical profession.

New York City

Harvey Society Lecture.—The sixth lecture of the Harvey Society Series will be delivered, January 24, by Dr. Carl Voegtlin, professor of pharmacology, United States Public Health Service, on "Recent Work in Pellagra."

New York's Banner Health Year.—Dr. Royal S. Copeland, Health Commissioner, announces that the death rate for 1919 is the lowest recorded in the fifty-three years that the Health Department has been organized. The death rate for the year 1919 was 12.39 per 1,000 population, as compared with a rate of 16.71 for 1918, and 13.94 for the five-year period from 1913 to 1917, inclusive.

Personal.—Dr. Simon Flexner of the Rockefeller Institute for Medical Research was elected an associate member of the Société de pathologie exotique, December 10; of the Société royale des sciences médicales et naturelles, December 1; and of the Société belge de biologie, December 6; and was also made a corresponding member of the Bataafsch Genootschap der Proefondervindelijke Wijsbegeerte, of Rotterdam, December 22.——Dr. Phoebus A. Levene of the Rockefeller Institute for Medical Research was elected an associate member of the Société royale des sciences médicales et naturelles, Brussels, December 1.——Dr. Joshua H. Leiner has been appointed adjunct attending neurologist to Lebanon Hospital.

Scabies in New York.—The health department reports that in certain parts of the city there has been a slight increase in the prevalence of scabies. Investigation shows that in a number of families in which cases have been found there have been returning soldiers and it is thought that this may account for the infection. The average number of cases reported for the year 1918 is much lower than for the preceding five years, while the total for the first three quarters of 1919 is within 194 cases of the total for 1918. The reports of all cases of scabies among schoolchildren are being carefully verified, and home visits are made by the school nurses for the purpose of ascertaining conditions and giving advice. Patients with scabies not under effective medical treatment are excluded from school.

Health Department Regulates Heating of Buildings.—At a meeting of the board of health, in December, 1919, Section 225 of the Sanitary Code was amended so that it shall be the duty of every person who has contracted or undertaken to furnish heat for any building or portion thereof, occupied as a home or place of residence of one or more people, or as a place of business, to furnish heat for every occupied room in such building so that a minimum temperature of 68 F. may be maintained therein at all times between the hours of 6 a. m. and 10 p. m. In the absence of a contract the owner, agent or lessee is deemed to have contracted or

bound himself or herself to furnish heat in accordance with the provisions of this section.

Association for the Prevention and Relief of Heart Disease.—This organization, recently installed in its new headquarters at 325 East Fifty-Seventh Street, is engaged in furthering the establishment of dispensary classes in many of the city hospitals for workingmen with crippled hearts. It also seeks the opening of more convalescent homes to patients with the milder types of heart disease and the founding of institutions for the continued care of permanent invalids from the same cause. The association has recently issued a pamphlet showing that there were, according to the statistics of the health department, 10,682 deaths from heart disease in this city in one year, while during the same period tuberculosis in all its forms caused 9,622 deaths and cancer 4,702. This serves to call attention to the importance of heart disease as a cause of disability and death. The pamphlet states further that not less than 25,000 schoolchildren in this city have permanently damaged hearts. The association is endeavoring to disseminate in popular form some of the facts with reference to heart disease and the need of treatment as has been done in regard to tuberculosis.

NORTH CAROLINA

Personal.—Dr. Sylvester Utter, Crab Creek, is reported to be in a critical condition at the Patton Memorial Hospital, Hendersonville, as the result of a gunshot wound accidentally received while hunting.

Malaria in Goldsboro.—A recent survey has shown that approximately 25 per cent. of the population of Goldsboro are suffering from malaria in some form, and the city with the assistance of the state and federal health authorities is beginning an antimalarial campaign.

OHIO

Trachoma Surveys.—The schools of Hamilton are being surveyed for trachoma. When the schools closed for the Christmas holidays, about 3,900 pupils had been examined and 104 cases of trachoma had been found. When the survey is completed a clinic will be held by the U. S. Public Health Service and the state department of health.——The survey of schoolchildren of Ross County for trachoma has been completed. The work was done by Dr. Rose Hopkins, assistant epidemiologist, state department of health, in cooperation with the local chapter of the Red Cross. Arrangements are now being made for a trachoma clinic to be held in Chillicothe some time in January.

Personal.—Dr. William G. List, Cincinnati, assistant superintendent of the Cincinnati General Hospital, has been appointed superintendent of the Minneapolis City Hospital, succeeding Dr. Herbert O. Collins, resigned.——Drs. James D. Parker and Carl R. Knoble have been made members of the Sandusky board of education.——Dr. John E. Mongor, Columbus, state registrar of vital statistics for four years, has resigned and has been succeeded by Dr. Ulysses G. Murrell, Wilmington.——Dr. Willard C. Rank, Newark, who has been ill with septicemia in Mount Carmel Hospital, is reported to be convalescent.——Dr. William R. Keller, Dover, has been elected commander of the Dover Post, No. 205, American Legion.

Legislature Amends Hughes Health Act.—The same legislature which adopted the Hughes act during the first part of their 1919 session has reconsidered its action and replaced it by the Griswold bill, which has now passed both houses and awaits the signature of the governor to become a law. The Supreme Court of Ohio, in a decision affecting another law, decided that the cities of Ohio could not be classified for purposes of legislation. This decision rendered it necessary to amend the Hughes act, as it classified cities as over and under 25,000 population. The legislature further amended it by removing the civil service provisions, by providing for whole or part time health commissioners, and by making the employment of nurses optional. Under the provisions of the new bill, cities may employ any one as a health officer, but in general health districts the health commissioner must be a licensed physician. The bill still permits counties and cities to have real health organizations and to do effective health work, and is a considerable advance over the old township and village law. The opposition to the Hughes act came largely from the rural districts and was based on the expense of the new system. Two hundred and seventy-six applicants from twenty-five states took the state civil service examination for district health commissioners under the Hughes act. Candidates were just about to be called to Columbus for a personal interview when the examination was called off on account of the action of the legislature.

PENNSYLVANIA

Tuberculosis Home Opened.—The Hackett Home, the new building for tuberculous women at Norristown State Hospital, was dedicated, January 7. This building, containing wards, private rooms, special observation rooms and sun parlors, was erected at a cost of $15,000. Dr. Jessie M. Peterson, Norristown, is in charge and under her is a staff of thirty nurses. The building will accommodate about 200 patients.

Personal.—Dr. Claude P Brown, Ambler, Major, M. C., U. S. Army, has been made commander of Post 125, American Legion, Ambler.——Dr. Albert H. Wilkinson, Wilkes-Barre, has been elected medical superintendent of the Roper Hospital, Charleston.——Dr. Samuel B. Horning, Coolegeville, has announced his retirement from the practice of medicine, and will spend the rest of the winter in Florida.——Dr. Joseph Scattergood has been appointed local surgeon of the Pennsylvania system at West Chester, succeeding Dr. Percy C. Hoskins, deceased.

Philadelphia

Food Demonstration at Dietetic Center.—January 6, the dietetic center connected with the Jefferson chest department for nurses and social workers held an open demonstration of cooking and nutritious foods for mothers of the district.

Health Department Advisory Group Named.—Director Clinton L. Furbush of public health and charities, January 9, announced the appointment of a general advisory council for the department of health, and named eight committees, composed of prominent men and women of the city, to act as auxiliaries to the regularly employed officials of the department.

New Officers.—Physicians' Motor Club of Philadelphia: president, Dr. S. Leon Gans; vice presidents, Drs. John J. Robrecht, Charles R. Haig, Jr., and J. Torrance Rugh; secretary, Dr. Howard A. Sutton, and treasurer, Dr. Lewis H. Adler, Jr.——Philadelphia Association of Industrial Medicine: president, Dr. Mervyn Ross Taylor; vice president, Dr. Lorne E. Hastings; secretary, Harry M. Gay, Camden, N. J., and treasurer, Dr. Robert Perry Cummins.——West Philadelphia Medical Association: president, Dr Henry B. Kobler; vice president, Dr. D. Clinton Guthrie; secretary, Dr. Henry G. Munson, and treasurer, Dr. Edmund L. Graf.——Northern Medical Association: president, Dr. Mulford K. Fisher; vice president, Dr. James H. McKee; secretary, Dr. Robert Boyer, and treasurer, Dr. John W. Millick.——West Branch Medical Society: chairman, Dr. Collin Foulkrod; vice chairman, Dr. D. Randall MacCarroll, and clerk, Dr. Ralph Getelman.

SOUTH CAROLINA

Work Against Trachoma.—Dr. Joseph L. Goodwyn, United States Public Health Service, has commenced his work in Lexington, and has already operated on and treated about fifty patients with trachoma.

Medical Society Meeting.—The annual meeting of the Charleston County Medical Society was held in Charleston, December 8, and the following officers were elected: president, Dr. Robert Wilson, Jr.; secretary, Dr. George F. Heidt, and treasurer, Joseph H. Cannon, all of Charleston.

Faculty Changes.—Dr. John Van de Erve, Milwaukee, has been elected professor of physiology in the Medical College of the State of South Carolina.——Dr. Lane Mullally, who resigned as professor of obstetrics on account of ill health, has been elected emeritus professor of obstetrics and has been succeeded by Dr. G. Fraser Wilson.——Dr. John F. Townsend, Charleston, has been elected assistant professor of ophthalmology and otology.——Dr. Julius C. Sosnowski, Edward H. Sparkman, Jr., and Joseph S. Rhame, Jr., have been elected assistant professors of surgery.

VIRGINIA

Preventable Disease Commission Named.—Governor Davis has announced the appointment of Drs. N. Thomas Ennett and A. Murat Willis, Richmond; J. Hoge Ricks, Richmond; Lindsay Gordan, Louisa, and A. F. Thomas, Lynchburg, as members of the division of preventable disease authorized by the last session of the general assembly.

Hospital Items.—Buxton Hospital is building a new nurses' home, which it hopes to have completed by about

April 1, 1920.——A budget of $350,000 has been submitted to the governor by the Hospital College of Medicine of Virginia. This includes the funds necessary to complete and equip the new negro hospital and the Dooley Hospital for contagious diseases and to maintain the three hospitals for one year.——Plans have been filed for an addition to the Stuart Circle Hospital, Richmond, to cost $132,000. The new addition will be six stories in height and of fireproof construction.

Personal.—Dr. W. F. Rudd of the department of chemistry of the Medical College of Virginia, Richmond, has been elected president of the American Conference of Pharmaceutical Faculties.——Dr. Herbert Mann, Richmond, has been elected surgeon of the Virginia Penitentiary for a third term of four years.——Dr. John H. Crum, Louisa, has been placed in charge of the local station of the United States Public Health Service.——Dr. Howard Armstrong, Edom, has been elected city health officer of Harrisonburg.——Dr. Elisha L. McGill, Petersburg, has been appointed coroner of Dinwiddie County, succeeding Dr. William H. Crockford, Jr., deceased.

New Officers.—Lynchburg and Campbell County Medical Society, at its annual meeting in Lynchburg, December 21, elected Dr. John W. Carroll, president; Dr. Bernard H. Kyle, vice president, and Dr. Edward F. Younger, secretary-treasurer.—At the annual meeting of the medical faculty of Petersburg, the following officers were elected: president, Dr. Edwin J. Nixon; vice presidents, Drs. Fletcher J. Wright, Petersburg, and George Reese; secretary-treasurer, Dr. John M. Harwood, Richmond, and corresponding secretary, Dr. William C. Powell, Petersburg.——Prince George County Medical Association, at its annual meeting held in Hopewell, elected Dr. William D. Daniel, Disputanta, president.——At the annual meeting of the Richmond Academy of Medicine and Surgery, the following officers were elected: president, Dr. J. Garnett Nelson; vice presidents, Drs. Ramon D. Garcin, George C. Woodson, and William B. Porter; secretary, Dr. Mark W. Peyser (reelected); assistant secretary, Dr. Emmett H. Terrell (reelected), and Dr. Howard Urbach, treasurer (reelected), all of Richmond.

CANADA

New Montreal Hospital.—A bill has been introduced into the Quebec legislature for the incorporation of the St. Mary's Memorial Hospital in Montreal. The institution is intended to make up for the shortage of hospital accommodation in that city.

Public Health Statistics.—There were almost 2,000 fewer deaths from communicable diseases in Ontario in 1919 than in 1918. The great falling off is due to the absence of the influenza and pneumonia scourge which swept the province in the latter part of 1918. There were more tuberculosis fatalities in 1919, the total number being 1,722 as against 1,359 in 1918.

Public Health at Ottawa.—The public health department of the Canadian Conservation Commission at Ottawa has been placed under the new federal department of health. Dr. Charles A. Hodgetts, Ottawa, who has been for many years medical adviser to the conservation commission, takes office in the new department and is given charge of statistics, information, publication, library and circulation.

Smallpox.—The total number of smallpox cases in Toronto at the present time, January 8, is 449, eighteen new cases occurring a day. The epidemic seems to be declining. Altogether there have been about 2,000 cases.——The Provincial Board of Health of Ontario will take no further action toward compulsory vaccination in Toronto. The board recently applied to the court of appeal to compel the city to order general compulsory vaccination, but the order was refused by the judges, who stated the Ontario Vaccination Act had not been properly drawn.——Certificates of vaccination are no longer satisfactory to United States border authorities for Canadians entering that country. It must be shown that the operation has been successful.——The entire province of Quebec is now in a state of quarantine against Ontario. Even residents of Quebec who visit in Ontario will not be allowed to reenter their own province unless provided with a vaccination certificate.

GENERAL

Proctologists to Meet.—The American Proctological Society will hold its annual meeting in Memphis, Tenn., April 22 and 23, under the presidency of Dr. Collier F. Martin, Philadelphia.

Bill for Marine Hospital in California.—Julius Kahn of California has introduced a bill appropriating $600,000 for the erection of a marine hospital on the present marine hospital site at San Francisco and to remove the present structure.

Child Labor Day.—The National Child Labor Committee announces that child labor day will be observed by churches on January 25, by synagogues, January 24, and by schools and clubs, January 26. On these days, the needs of children are to be discussed, viewing the subject in the higher moral aspects and urging the furtherance of child welfare activities.

Medical Men Needed for Overseas Service.—Brig.-Gen. Robert E. Noble, M. C., U. S. Army, makes an appeal for fifty medical men for Red Cross service overseas, for a period of at least one year. Practitioners are desired who have had military experience. The salary will be that of their previous rank in the military service with the 10 per cent. addition for overseas service and a liberal commutation allowance.

Joint Resolution for Control of Malaria.—Senator Harris of Georgia has introduced a joint resolution "to enable the Public Health Service to cooperate with states in the investigation and control of malaria." It provides for carrying on measures for the control of malaria through the respective state boards of health and the Federal Public Health Service. Five hundred thousand dollars were appropriated for the work, but no expenditures are to be made in any state until an equal sum shall have been appropriated by the legislature of a state or county or by individual contribution for malaria control work.

Committee on Industrial Dermatoses.—The National Safety Council, 168 North Michigan Avenue, Chicago, through a special committee is undertaking a survey of the relation of occupational factors to the production of skin diseases. The committee has issued a questionnaire designed to elicit information regarding the prevalence and distribution of industrial dermatoses, including any abnormalities of the skin or appendages that result from special manufacturing processes. The council proposes to compile the data, and to act as a clearing house for information on methods of control and treatment of industrial skin diseases.

Specialists Convene.—The Federation of Societies for Experimental Biology held its annual meeting in Cincinnati, December 29 to 31. This meeting would have been held in Toronto but for the smallpox quarantine. This federation includes the American Physiological Society, the American Bio-Chemical Society, the American Society of Pharmacologists, and the Society for Experimental Pathology. At the closing session of the American Bio-Chemical Society, Dr. Stanley J. Benedict, Ithaca, N. Y., was elected president; Dr. Victor C. Meyers, secretary, and Howard Bradley of the University of Wisconsin, Madison, treasurer.——Dr. William H. Park, New York City, was elected president of the Society for Experimental Pathology; Dr. Warren P. Lombard of the University of Michigan, Ann Arbor, president of the American Physiological Society, and Dr. Arthur S. Loevenhart, Madison, retiring president of the federation, president of the American Pharmacologists' Society.

Different Types of Botulism.—The department of animal husbandry of the University of Illinois for some years has been particularly interested in the subject of botulism and has made a serum for combating the disease. Specimens of the olives that were responsible for the outbreak of botulism in Detroit were sent to the department, which has reached the conclusion that this outbreak was due to a different strain of *Bacillus botulinus* than that heretofore isolated from contaminated food of animal or man. We have received the following statement on the subject from the university:

> The Animal Husbandry Department of the University of Illinois, in studying a disease of animals commonly called forage poison, has apparently brought out the close relation of this disease to botulism in man. Experimental serum developed for the prevention of the disease in horses and mules has, in addition to veterinary use, been furnished on request to physicians for emergency treatment of botulism in man. In the light of our present knowledge, the immune serum, to be effective, must possess the highest degree of poteney and should be used before symptoms appear or in the early stages of the disease.
>
> A baeteriologic examination at the university of poisonous olives, recently implicated as the eausative factor of the fatal food poisoning recognized as botulism in Detroit, has disclosed the fact that the strain of *Bacillus botulinus* encountered in the olives is a different and probably distinct type than heretofore isolated from contaminated food of animal or man, in our experienee. This information is highly important to the veterinary and medical profession, in view of the more frequent recognition of this disease in reeent years. In preliminary studies of botulism in animals, more frequently designated as forage

poisoning, all outbreaks studied to date occurring in the Mississippi Valley proved to be associated with a common strain of *B. botulinus*, but in view of tests recently conducted, it appears that more than one type of this disease may prevail.

It is obvious that if more than one type of poisonous micro-organisms of the botulinus type produce distinct and separate varieties of poisoning, botulinus antitoxin need be prepared against each disease producing strain if a consistent and high degree of efficiency is to be attained in prophylactic treatment. It is also reasonable to presume that the favorable results recorded in the laboratory may be gradually applied to natural outbreaks of this disease in animals with a fair degree of success and bid fair to curtail the tragedy of botulism in man.

FOREIGN

Prize Awarded to Escomel.—Among the prizes distributed by the Paris Académie de Médecine at its recent annual public meeting was one to Dr. E. Escomel of Arequipa, Peru. The Monbinne prize of 1,500 francs was divided between him and H. Velu of Casablanca.

Physicians as Aldermen.—The *Journal de médecine* of Bordeaux relates that the recent local elections resulted in four physicians being elected to the *Conseil municipal*, Professors Arnozan and Sigalas, the latter the dean of the university; Moure, the ear and throat specialist, and Lamarque.

Deaths in the Profession Abroad.—Dr. **D. Bocciardo**, instructor in pathology at the University of Genoa, serving at the front during the war as radiologist, aged 44.——Dr. **R. Rainaldi** of Narni, Italy, author of works on neuropathology and forensic medicine, aged 63.——Dr. **A. Werner**, professor of chemistry at the University of Zurich, recipient of the Nobel prize in chemistry in 1913.

The Crisis in the Medical Journals.—Under this heading the *Policlinico* of Rome, the leading medical journal of Italy, comments on the lack of appreciation of the scientific press on the part of the authorities. They make no efforts to smooth the rocky path for the medical journals. In France, conditions are the same; a recent editorial in one was entitled "L'agonie des journaux scientifiques." The *Policlinico* states, "The daily press in Italy is allowed to buy paper at reduced rates and various other concessions are accorded the lay press, while the medical journals—which aided so materially in the winning of the war and in the maintaining of the public health at all times by the prompt dissemination of every progress in treating the sick and wounded and in preventive medicine—the medical press is allowed to be crushed by the high prices of paper and labor." The *Policlinico* compares with this disregard of the scientific press the opposite system in Germany, the privileges granted the leading medical journals in Germany. "During the war and since the war they have been able to get their paper much as usual and at reduced rates and their subsidies from the state have not been allowed to lapse. . . . And we victorious Latins are showing ourselves more barbarian than the barbarians!" The few "Zeitschrifts" and "Archivs" that have reached America, published in 1918 and 1919, have the same paper, the same typographical appearance and the same size as the numbers issued before the war. The weeklies also compare favorably with the before-the-war issues except that the paper is of a slightly poorer grade.

LATIN AMERICA

Personal.—Dr. M. J. Wunderlich, Guatemala City, is now visiting in this country with his family.

Prophylactic Institute in Paraguay—Under the direction of Dr. Victor Idoyaga a prophylactic institute has been organized recently in La Asunción.

Pasteur Institute in Nicaragua.—Recently a Pasteur Institute has been inaugurated at Managua, Nicaragua, presented to that country by the president of Mexico. The institute has therefore been named Instituto Antirábico Carranza.

New Sanitary Regulations in Santo Domingo.—A recent amendment to the sanitary code of Santo Domingo divides all towns for sanitary purposes into four groups according to their population: namely, of less than 1,000 inhabitants; from 1,000 to 5,000; from 5,000 to 10,000, and over 10,000.

Public Health Association in Colombia.—There has been organized at Bogotá an association under the name Sociedad Sanitaria de Bogotá, which will have for its purpose the cleaning of the city in order to eradicate all infectious diseases having for their cause impure water supplies and personal uncleanliness.

Congress of Practitioners.—The Sociedade de Medicina e Cirurgia of Rio de Janeiro has taken the initiative in organizing a Congresso dos Medicos Praticos to be held in connection with the Pan-American Medical Congress on the occasion of the celebration of the centenary of the independence of Brazil. The Practitioners' Congress will have five sections: public hospitals and other charities; public health and preventive medicine; social medicine; practice of the profession, and medical education. The *Brazil-Medico* gives the five to ten different topics appointed for discussion in these five sections. Among the topics to be discussed in the section on medical education are the limitation of the number of medical students; national graduate courses, and study trips to other lands. This section is in charge of Prof. Miguel Couto.

Government Services

MEDICAL OFFICERS, U. S. NAVY, RELIEVED FROM ACTIVE DUTY

CONNECTICUT
New Haven—Rapoport, F. H.

INDIANA
Vevay—Shadday, A. A.

MICHIGAN
Detroit—Van Volkenburgh, V. A.

OHIO
Dover—Shawcker, M.

NEW YORK
Brooklyn—Gastineau, F. M.
New York—Jahlons, A.
Klapper, H.

PENNSYLVANIA
Nesquehoning—Griffith, R. S.
Philadelphia—McGlinn, J. A.

WASHINGTON
Seattle—Cole. T. O.

Personnel of the Medical Corps

For the week ending January 9, the Medical Corps contained 2,153 medical officers; the Medical Reserve Corps contained 4,348 officers, an increase of 99 over the previous week.

Legislation in Interest of Reserve Officers

A bill has been introduced by Congressman S. R. Sells of Tennessee which provides that allowances of officers in the Medical Reserve Corps of the Army shall be computed in accordance with the time served by them as contract surgeons. This bill would give longevity pay allowances as contract surgeons in addition to the time they are in the regular service.

New Legislation for Army Medical Corps

January 9, Senator Wadsworth of New York, chairman of the Committee on Military Affairs, introduced the Army reorganization bill in the Senate. Section 33 of this bill relates to the medical service of the Army, and will create a large number of vacancies in the Medical Corps in the grades of major, lieutenant-colonel and colonel. This is due to the fact that the bill fixes certain age limits in promoting medical officers now in the Army, and few present officers can qualify. For instance, this section provides that "commissioned officers shall be promoted to the grade of captain on completion of three years' service; major fourteen years, lieutenant-colonel, twenty and colonel twenty-six years' service." Vacancies thus created will be filled by appointment, on due examination, from "persons under the age of 50 years who shall have served as officers in the Medical, Dental or Veterinary Corps in the U. S. Army between April 6, 1917 and Nov. 11, 1918." The Wadsworth bill also contains a provision for commissioning the Army Nurse Corps. The bill substantially adopts the so-called Riker-Jones bill, which has been before Congress for several months, and will make Army nurses commissioned officers. Nurses who act as superintendents will have the relative rank of major; assistant superintendents, directors and assistant directors, the relative rank of captain; chief nurses, the relative rank of first lieutenant, and nurses the relative rank of second lieutenant. Nurses will wear insignia to indicate their rank as may be prescribed by Army regulations. The Wadsworth bill will become the committee bill because Senator Wadsworth is chairman of the Committee on Military Affairs, and it is quite likely that this bill will be the basis of all military legislation at the present Congress. The bill contains provision for a system of universal military training for youths between 18 and 21, the recognition of the National Guard of the United States in each state and the maintenance of the Reserve Officers' Training Corps.

Foreign Correspondence

LONDON

Dec. 17, 1919.

The Number of New Practitioners Registered

At the General Medical Council, the president, Sir Donald Macalister, delivered an address in which he stated that two years ago he predicted that in 1919 the number of new physicians registered would be far below the average. The registrations to date proved the truth of his prophecy, although some compensation had been afforded by the addition of 400 British practitioners to the colonial list of the register. The province of Alberta in Canada had now legislated in favor of medical reciprocity with the United Kingdom. Only one province of the Dominions, British Columbia, now remained outside the agreements concluded between the United Kingdom and the British Empire beyond the seas. The number of registered medical and dental students for 1919 are, as was also foreseen, greatly in excess of former records. They are filling the schools to overflowing. Some schools, indeed, have had to postpone all fresh admissions until next April. Apparently in a few years the professional ranks will be more than replenished. In some minds the expected influx is causing anxiety least the new practitioners may not all find employment when they reach the register. But the wastage of war has been great and the openings for skilled men and women would be multiplied by the increased activities of the new authorities concerned with the conservation of the health and physical welfare of the people. There would, in fact, be many new demands which no doubt would ultimately match the new supplies.

Representatives of the National Board of Medical Examiners of the United States recently visited this country with the object of studying and reporting on the methods employed here for the testing of candidates for medical qualification and for the control of their registration as practitioners. The registrar was instructed to place at their disposal the fullest information which the office possessed. By courtesy of the licensing bodies the representatives attended a number of the qualifying examinations. They stated that they derived much valuable knowledge from their visit. The influential movement toward the establishment of a high and uniform standard of professional qualification throughout the American commonwealth, of which the National Board of Medical Examiners is the expression, might have issues of importance extending beyond the United States.

Tribal Ties in Modern Nations

Prof. Arthur Keith delivered the Boyle lecture before the Junior Scientific Club at Oxford on this subject and threw a philosophical light on problems that have proved very thorny for the politicians. He said that the modern problems of race and nationality were due to the struggle between inherited tribal instincts and the conditions of existing civilization. We had broken up or were attempting to break up Nature's ancient tribal machinery, and were striving to replace her designs by others evolved in the minds of modern statesmen and politicians. The United States showed one of the most acute of the struggles that arise whehever races or nationalities came into close contact. Within the frontiers of the States was massed a population of 110 millions. More than 10 millions of these were marked off from the rest by a frontier, a color line, as sharply defined and jealously guarded as the frontiers of a kingdom. Across that racial frontier all legitimate social traffic was barred, the custodians of the frontier line being those who stood on the white side. Any attempt to cross produced mob war. While these 10 millions of segregated citizens abode within their racial fence they saw millions arise from Europe and pass freely through the national and social gateways which for them were barred. In the course of a generation they saw these new arrivals become slowly stripped of their alien outlook and gradually incorporated within a new national mass. In the States, then, a machinery was at work which maintained racial frontiers but broke down all national barriers. In Canada a mechanism was at work which converted immigrants of alien nationalities into loyal Canadians. But the artificial segregation of French Canadians in the province of Quebec might tend to turn a national differentation into a racial differentiation. On the other hand, on the Pacific Coast there was a tendency to maintain a racial barrier against the Japanese and Chinese. In Spanish America a huge problem had arisen because, while the Nordic race in North America had maintained its distinctness from Indian blood, in Mexico and South America an Iberian stock of European origin had blended with Indian blood. The Nordic European had preserved a feeling of race caste absent in the Iberian European, more closely akin to African races. A still more potent historical influence was that the Iberian immigrants had originally been male adventurers in whom the sex instinct overcame race instinct, whereas the Nordic immigrants had been of both sexes.

There were two processes of nationalization at work in Europe. All the great nationalities of Europe—France, Germany, Great Britain, Italy and Spain—had been built up by fusion. In these cases the process had been from above downward, from statesmen and rulers to the people. On the other hand, Nature's method was by disruption. The people of Norway and Sweden were of the same racial composition, and union would have given them strength. But a tribal feeling which swept through the people of Norway compelled a disruption. Ireland was another case in which the tribal instinct had flamed up, producing a desire for separation, which had no basis in race or interests. Force would be no response. All that a statesman could do was to provide conditions in which a favorable spirit was most likely to develop and mature.

LIÉGE

Nov. 30, 1919.

Belgian Surgical Congress

THE WILLEMS METHOD

It was appropriate that after five years of war the first meeting of the Belgian Surgical Society, observing the twenty-fifth anniversary of its foundation, should celebrate the most valuable acquisition that the surgery of the war has given us, namely, immediate active mobilization in joint lesions. The treatment that Willems introduced has brought fame to Belgian surgery, and at the present time the Willems method is accepted in principle by all surgeons of the Allies. At the meeting held September 27, Willems described the excellent results secured by his therapeutic method. The indications for this treatment have been extended, and it would seem now that the principle of immediate active mobilization should be applied in all joint lesions, whether simple or compound, and even in the septic complications of purulent arthritis. No doubt there are cases in which the method cannot be applied inflexibly, for instance, in extensive bone fractures, or in lesions of the extensor muscles that forcibly limit the use of voluntary mobilization on the part of the patient himself. However, even in such cases a slight attempt at voluntary movements, supplemented by passive mobilization, will render good service. At this meeting of the Belgian Surgical Society, Willems emphasized especially certain details in the application of the method and the necessity of prolonging the mobilizing treatment over a long period of time. Willems stated that very often the failures reported by certain writers after using his method are due to its incorrect application. Above all, mobilization must be immediate and active. These two conditions must be strictly carried out, and their observance requires a well trained hospital personnel. If proper precautions are taken, it would not seem that treatment by means of mobilization is contraindicated in any joint lesion; for, even in extensive bone fractures, mobilization in the splint can be begun while at the same time the fracture is being reduced.

A distinction must be made between the elbow and the knee: In the case of the elbow, conservation of mobility; in the knee, of solidity, is the principal thing. In certain cases in which the knee has been kept mobile, it will occasionally be necessary to have recourse to an extra support in order to consolidate a joint that is badly shattered. Willems rejects all primary resections for the reason that they appear to him to rest on a premature decision; to his mind secondary resections are alone indicated.

While paying homage to M. Willems as the inventor of this method during the war, Delrez reported the results that he had secured by the use of the method; he also endeavored to point out the limits of its application. He is more conservative than the author of the method and as a rule refrains from applying it in case the joint wound is complicated by extensive damage to muscles, chiefly through fear of setting up an infection. Aside from this restriction, the treatment recommended by Delrez is identical with that of Willems. We shall not take up again the operative technic that is applicable in joint wounds or the indications for intervention, as these questions have already been discussed; but

let us note especially in Delrez' report the restorative operations that he had occasion to perform on the war wounded. In wounds of the shoulder in case the deltoid has been severed transversely, causing a linear scar which prevents the elevation of the arm, relief may be secured secondarily by excision of the cicatricial tissue and suturing of the two muscle fragments. The member is kept in abduction for a certain length of time. Delrez referred to several cases of loose shoulder and elbow joints that were treated by suspension, the results of which were very encouraging; also to transplant operations in the region of the knee; once of a condyle, another time of a patella, taken from the cadaver and preserved in alcohol.

SURGICAL TREATMENT IN POTT'S DISEASE

The second topic treated at the surgical congress is likewise of great importance. A lengthy discussion arose in regard to the therapeutic treatment of Pott's disease. The American authors recommend immobilization of the vertebral joints in the vicinity of the lesion either by arthrodesis of the arches of the vertebrae and transposition of the spinous processes (Hibbs) or by grafting pieces of bone into the spinous processes (Albee). The French authors (Calvé especially) are opposed to such intervention ordinarily and apply it only in cases of recovery from Pott's disease in order to give greater solidity and make the cure more definite. Calot is of the same opinion; in fact, he goes so far as to claim to be the originator of the Hibbs method, although he combats it.

Maffei has, since 1914, given treatment in fifty-three cases of Pott's disease, in nineteen of which the Albee method of operation was employed. He called special attention to the fact that in 1915 and 1916 the patients operated on recovered much more slowly and with greater difficulty, which he thinks was due to undernutrition consequent on the bad food conditions during the occupation. In seventeen cases a prompt cure was effected. He considers that the Albee operation is conservative, capable of immobilizing the lesions and therefore justified. However, its curative value in Pott's disease is negligible; the evolution of the disease continues.

Lorthioir, who also gave a report, agreed with Maffei that the operation of itself did not effect a cure. It is, he stated, a simple means of fixation which avoids the necessity of immobilizing the patient or of the wearing of a plaster cast or a corrective brace. This was the only consideration (a palliative and not a curative operation) that guided him in the cases in which he operated by the Albee method and used a tibial or a costal graft. General statistics on the subject that he has gathered in regard to operative methods and to conservative methods lead him to the rather significant conclusion that the percentage of mortality in cases in which general operative methods were employed was 7.6, and in cases in which conservative methods were used, 7.7. From these facts, Lorthioir added, the conclusion may be reached that the operative method has only minimal influence on the mortality rate in Pott's disease, but that it does exert an influence on the duration of treatment, shortening it to an extent worth while, and also saving the patient the long torture of forced immobilization, either total or partial.

THORACOPULMONARY WOUNDS

The studies of thoracic wounds carried out by Derache and by Janssen give a summary of the statistics of the war on the Belgian front. The anatomic study of wounds, the symptomatology, and the complications of pleuropulmonary traumatisms constitute the principal chapters of these two interesting reports. They take up especially the septic complications of hemothorax and the treatment of pyothorax. The short drain and irreversible drainage by Delagénière's valve drain are the two best means of draining a pyothorax. Pleural lavage is not often indicated. However, Depage and Tuffier secured remarkable results by sterilization of the pleural cavity by means of interrupted irrigations of surgical solution of chlorinated soda (Dakin's solution), which allows of early closure of the thorax.

The two essayists spoke highly of Pierre Duval, the great originator of war surgery of the lung. The clearer conceptions in regard to the relatively slight gravity of operative pneumothorax opened up at once renewed activity in the whole domain of intrathoracic surgery. The extraction of intrapulmonary projectiles by means of a wide opening in the thorax has caused a revolution in pulmonary surgery that is very hopeful. The technic of this intervention has now been definitely determined. It remains to fix the operative indications. Janssen says in his report that many authors recommend systematic intervention and that he feels more and more inclined to coincide with their views. Derache is less decided; he thinks that many times shell fragments and bullets may be well tolerated. He believes that definite indications for this intervention should be present and that no absolute formula should be set up. The decision may well be left to the surgeon's clinical judgment. Furthermore, certain objective signs will furnish elements that will aid in reaching a decision, for example, repeated slight hemoptysis, sharp pains accompanied by dyspnea, pulmonary congestion, and formation of an abscess.

PARIS

Dec. 11, 1919.

Hospital Ships During the War

Dr. Chevalier, general medical inspector of the Public Health and Marine Hospital Service, recently made an interesting report to the Academy of Medicine on the subject of hospital ships during the war. The part that these ships were to play during the war proved to be quite different from what was anticipated. As there were no great naval combats, they helped transport to the interior the wounded coming from the various battle areas. During the first month of the war they aided in transporting the wounded of the army of Flanders, thus supplementing the inadequate transportation facilities of the railroads. At the beginning of February, 1915, they began to operate in the Mediterranean, bringing home 220,000 wounded and sick from various Mediterranean fronts in the East. Toulon and Bizerta received 147,000 and 64,000, respectively, while in the ports of Algeria 5,000 were debarked. After the first conflicts in the Dardanelles a certain proportion of the sick and wounded were taken to Egypt. The ports of debarkation were informed in advance by wireless of the number of wounded on board the ships. Experience has shown that the hospital ships constitute a most valuable means of evacuating the sick and the wounded. The men are well quartered, well fed and have constant medical care. The rocking of the boat is the only disadvantage, but this is very slight owing to the great size of the steamers, and is at least preferable to the shaking of the railway trains. A great amount of surgical work was done on board. In one instance a single surgeon, during the course of several voyages representing thirty-nine days of hospitalization, treated 1,884 wounded and performed 155 major operations. Another surgeon, in fifteen crossings, performed 968 operations, 300 of which were under general anesthesia. It is to be hoped that in the future, instead of its being necessary in an emergency to use boats that have been remodeled, enough hospital ships will be constructed in advance, according to special plans, and that the medical supplies for these ships will also be on hand in ample quantities in whatever port constitutes their base.

Conference of French and Swiss University Authorities

At the invitation of the University of Geneva, a conference of French and Swiss university authorities was held recently. Delegates from the French universities and from the Swiss universities, including both those of so-called French and of German Switzerland, convened at Geneva and took up the question of establishing proper university relations between the two countries, particularly as regards the exchange of students and professors. The medical faculties were represented at the conference by four Swiss professors and by two French professors, the regretted Lépine of Lyons and Dr. J. Vanverts, professor in the University of Lille. The conference passed a resolution to the effect that French and Swiss medical students holding a baccalaureate degree and provided with a certificate of maturity, whether French or Swiss, may be matriculated in the universities of either country and may receive full credit for work done.

Commemorative Tablet to French Physicians Killed in Battle

At a meeting held December 9, the Academy of Medicine decided to erect a stele in the Hall of Fame in commemoration of the members of the medical corps who died on the battlefield. The execution of the stele will be entrusted to Dr. Paul Richer, professor in the School of Fine Arts and member of the Academy of Medicine.

Departure of the Canadian Red Cross

The Canadian Red Cross, which is about to withdraw from France, gave recently a farewell reception at which a representative of the undersecretary of the army medical corps, as well as M. Justin Godart, the former undersecretary, were present. Without counting the Canadian Hospital, which

has 520 beds and cost 2,000,000 francs, the Canadian Red Cross has turned over 2,000,000 francs to the French Red Cross and to various other welfare societies A gift of 1,300,000 francs was also made to the president of the French republic in aid of the refugees, so that the Canadian Red Cross has expended in France a total sum of 30,550,646 francs.

Reeducation of Disabled Alsatians and Lorrainers

A decision has been reached that enlisted men and officers residing in Alsace or Lorraine who are suffering from disabilities arising from wounds and diseases contracted or aggravated during the war may secure admission to a special school of reeducation with a view to their being trained and placed in some industry or profession, provided they are of French origin or come within the category of persons permitted by the treaty of peace with Germany to be reclaimed as French nationals, and provided further that those requesting admission to such schools shall have reclaimed French nationality before making their request. The Landesfürsorgestelle für Kriegsinvaliden, which was created, June 3, 1915, under the German administration, has been transformed into the Institut des mutilés, réformés et veuves de guerre d'Alsace et de Lorraine, the purpose of which is to serve as a clearing house for information concerning the action of various administrative and private societies; to encourage and facilitate the reeducation of the disabled; to study into the regulations and legislative enactments that may be of advantage to certain persons interested, and, in a general way, to secure for such persons the help and support that they may need and are their due.

The Closing of a School of Reeducation

The School of Reeducation of Maison-Blanche, located in Neuilly-sur-Marne, department of the Seine-et-Oise, founded in July, 1916, by the Union des colonies étrangères en France en faveur des victimes de la guerre, has just closed its doors after more than three years of labor devoted to the reeducation of war cripples. During this period, this school reeducated more than 3,000 partially disabled men, preparing them for twenty or more different trades or professions. Positions were secured for a large number of these immediately on leaving the school. The funds for the support of this school, amounting to more than a million francs, were furnished entirely by a generous citizen of the United States, Edward T. Stotesbury of Philadelphia.

MEXICO CITY

Jan. 4, 1920.

Yellow Fever

Yellow fever is apparently spreading in this country, since a case has been reported at the port of Salina Cruz on the Pacific Coast far from Yucatan, the focus of the present epidemic. Dr. Noguchi has already begun his efforts to eradicate the disease, employing for this purpose his method of prophylactic vaccination by means of killed cultures of *Leptospira*. It is expected that this vaccine will give good results in view of the fact that yellow fever is one of those diseases that confer complete and permanent immunity and that the germ isolated by Dr. Noguchi is apparently the etiologic agent of this disease.

It is stated here that the sanitary authorities of Washington, having in mind the possibility of this disease spreading to the United States, have designated a commission composed of sanitarians and bacteriologists to come to this country and study the subject.

Noguchi has also presented to the Instituto Bacteriológico Nacional a dozen monkeys which will be utilized to carry out experiments on typhus fever (these animals being sensitive to the virus of this disease) and also to try the curative value which is claimed for a dog serum prepared here by inoculating dogs with the blood from typhus fever patients.

Death Due to Arsphenamin

A few days ago there happened in this town a death in a physician's office, caused by an injection with arsphenamin. The patient, about 24 years of age, was in the secondary stage of the disease with no apparent visceral lesions, and had a good physique. The injection was the third one, and German salvarsan was employed in doses of 30 cg. dissolved in 15 c.c. of distilled water without previous alkalization and being administered with a syringe. Respiratory symptoms occurred almost immediately, and the patient succumbed to acute dyspnea in about five minutes. Necropsy revealed a unilateral suppurating pyelitis and many enlarged blood vessels in both lungs, accompanied by embolisms of the same vessels. The two previous injections were administered at intervals of a week, in the same amount as the fatal one and with the same technic. In this case the death must be attributed to the defective technic and not to the drug, since it was obviously at fault in two respects, the acidity of the solution and the very small amount of the vehicle, which should have been at least 75 c.c. If no accident happened during the first injections, it may perhaps be attributed to the existence at the time of sufficient alkali reserve for the neutralization and redissolution of the arsphenamin.

Campaign Against Syphilis

The municipal council of the city of Puebla has adopted the proposal of Dr. Camarillo, who advocates that the municipal councils of the whole country should unite to formulate a program for a campaign against syphilis, to arrest contagion at its source. His plan is to treat energetically the contagious sores of prostitutes in the hospitals, so that these creatures may receive the benefit of modern arsenical medication. In Dr. Camarillo's opinion, it is criminal to isolate prostitutes and treat them only with mercury, since their lesions reappear afterward. He wants to have street-walkers properly cared for and forbid them to practice their profession, unless in addition to the lack of contagious lesions they give negative Wassermann reactions. For this purpose they will be compelled to have a sanitary card in which will be noted their sanitary condition from clinical and serologic standpoints.

Personal

During the year 1920 the position of mayor of the City of Mexico will be filled by Dr. Luis Coyula, former professor of physiology of the School of Medicine and a prominent journalist.

BUENOS AIRES

Nov. 25, 1919.

Anesthesia

The Association of Surgery has devoted several meetings to discussions on general anesthesia, the consensus being in favor of ether.

Thyroid Disorders

The Medical Society has devoted its special meetings this year to a study of hyperthyroidism and exophthalmic goiter. Drs. Lozano and Kraus discussed the first subject and Drs. Hardoy, Houssay, Escudero, Peralta Ramos and Domínguez the second.

Lecture on War Surgery

Dr. Pedro Chutro, who has just arrived from the United States, has given a series of lectures on war surgery in the School of Medicine.

Surgical Aeroplanes

Dr. Beretervide has declared that he intends to organize a service of aeroplanes to carry all the equipment necessary for surgical operations. In this way there can be performed any emergency operations that may be required in out of the way places.

Professorial Appointments

Dr. Pedro Chutro has been appointed professor of clinical surgery and Dr. B. A. Houssay professor of physiology in the School of Medicine of Buenos Aires. There has been approved the foundation of an institute of physiology which will include chairs of physiology, chemistry and biologic chemistry.

Marriages

Albert LeRoy Brown, Captain, M. C., U. S. Army, Douglas, Ariz.; to Miss Vlasta Coffey of Ellsworth, Kan., at Douglas, November 12.

Fred Lowe Soper, Sao Paulo, Brazil, formerly of Chicago, to Miss Juliet Snider of Fort Scott, Kan., December 27.

Alfred Lee Loomis Bell, Englewood, N. J., to Miss Grace Pauline Seidel of Philadelphia, January 1.

Willis Clarence Kools, Holland, Mich., to Miss Wilma Denabel, at Kalamazoo, in November.

Chapin Carpenter, Wayne, Pa., to Miss Mary Ruth Smyth, at Pottsville, Pa., December 27.

Robert Shafer, to Miss Ruth Hollis Taneyhill, both of Baltimore, December 27.

Deaths

Christian Rasmus Holmes, dean of the Medical Department of the University of Cincinnati, died in the Post-Graduate Hospital, New York City, January 9.

Dr. Holmes was born in Denmark, Oct. 18, 1857. His early education in Denmark and Germany was in civil engineering. On the death of his father he came with his mother to Cincinnati, beginning the study of medicine in the Miami Medical College, graduating in 1886. He became assistant to Dr. Joseph Aub, well known ophthalmologist of Cincinnati, and succeeded him in this specialty.

In 1892, Dr. Holmes became a member of the City Hospital staff. He appreciated the necessity of a city hospital worthy the name, and of the consolidation of the warring factions of the two chief medical colleges in the city. In the attainment of the first object, the establishment of an adequate general hospital in Cincinnati, he spent ten years of arduous labor in the hospitals of the United States and Europe. The result of these labors stands today as Dr. Holmes' greatest monument, the Cincinnati General Hospital. Dr. Holmes aided greatly in the consummation of the merger of the Medical College of Ohio and the Miami Medical College into the University of Cincinnati in 1909. The two colleges were made an integral part of the University of Cincinnati, with Dr. Holmes as dean of the new institution. In order to secure the union of the two colleges, Dr. Holmes helped in framing the charter which made the medical department of the hospital a part of the university whose trustees should have the sole right to elect the staff and supervise the nursing department.

Dr. Holmes was commissioned major, M. R. C., 1917, and placed in charge of the eye, ear, nose and throat department at the base hospital, Camp Sherman, Chillicothe, Ohio, where he remained until the end of hostilities.

Dr. Holmes was a prolific contributor to the literature regarding hospitals and their relation to medical education and to the literature of his specialty. He served as professor of otology in Miami Medical College from 1890 to 1904, as professor of ophthalmology in the Laura Memorial Medical College and Presbyterian Hospital from 1892 to 1903, and as professor of otology and dean of the University of Cincinnati since 1904. He was ophthalmologist and otologist to the Cincinnati Hospital from 1888 to 1899, and has been consulting ophthalmologist to the institution since 1908. He was third vice president of the American Medical Association in 1902-1903, chairman of the Section on Laryngology and Otology in 1904 and 1905, and of the Section on Ophthalmology in 1905-1906. He was president of the American Academy of Ophthalmology and Oto-Laryngology in 1901 and 1902, of the American Ophthalmological, Rhinological and Otological Society in 1908-1909, and of the Cincinnati Academy of Medicine.

Dr. Holmes was an idealist and enthusiast, and worked with untiring energy, sacrificing health and fortune to the accomplishment of the great plans which he had conceived.

Emery Marvel ⊕ Atlantic City, N. J.; second vice president of the American Medical Association; died January 8, after a surgical operation. Dr. Marvel was born in Dover, Del., in 1868, and received his medical degree from the University of Pennsylvania, Philadelphia, in 1895; he was a member of the American Association of Obstetricians and Gynecologists, and of the New York Academy of Medicine. Dr. Marvel made a specialty of surgery and was surgeon to the Atlantic City Hospital, consulting surgeon to the Jewish Seashore Home, and had been physician to St. Michael's Children's Hospital, Atlantic City. Dr. Marvel in addition to being vice president of the Association has been a member of the House of Delegates; he was always an active worker at the many annual sessions of the Association held in Atlantic City. Last year he was chairman of the committee of arrangements; those who were present at the session will testify to the splendid executive ability he displayed at that meeting.

Charles McIntire ⊕ Easton, Pa.; University of Pennsylvania, Philadelphia, 1883; aged 72; secretary of Northampton County Medical Society from 1878 to 1897 and president in 1900; president of the Lehigh Valley Medical Association in 1907; secretary of the American Academy of Medicine from 1891 to 1902, and from 1903 to 1915, president in 1902 and 1903, and treasurer since 1915; a specialist in ophthalmology; assistant in chemistry from 1868 to 1870, adjunct professor of chemistry from 1870 to 1874, and lecturer on sanitary science from 1880 to 1905, in Lafayette (Pa.) College; editor of the *Lehigh Valley Medical Association Journal* for several years, and of the *Bulletin of the American Academy of Medicine,* since 1896; died January 4.

Lorenzo P. Gibson ⊕ Little Rock, Ark.; Jefferson Medical College, 1877; aged 62; demonstrator of anatomy in the University of Arkansas from 1878 to 1903; acting assistant surgeon United States Marine Hospital Service since 1892; vice president of the American Medical Association, 1890-1891; president of the Arkansas Medical Society in 1895-1896; ex-president of the College of Physicians and Surgeons, Little Rock Medical Society and Pulaski County Medical Society; editor of the *Journal of the Arkansas Medical Society* for fifteen years; formerly secretary of the Arkansas State Board of Health; died December 29, from pneumonia.

Lucien F. Salomon, New Orleans; Tulane University, New Orleans, 1872; aged 69; a member of the Louisiana State Medical Association, a well known expert on yellow fever and typhoid fever; secretary of the Louisiana State Board of Health from 1886 to 1894; acting assistant surgeon U. S. Army in 1884 during the yellow fever epidemic; who investigated sanitary conditions in Jamica in 1885 and in Porto Rico in 1898 for the United States government; for two terms president of the New Orleans Medical and Surgical Association; died December 31, from heart disease.

William Edward Grant, Louisville, Ky.; Jefferson Medical College, 1886; Kentucky School of Medicine, Louisville, 1887; aged 74; a member of the Kentucky State Medical Association; health officer of the city of Louisville from 1909 to 1917; professor of medical life insurance and dean of the University of Louisville, Medical Department, from 1911 to 1914, and at the time of his death registrar of vital statistics for Jefferson County; died from angina pectoris, January 3.

Andrew Nelson Lerskov, Claremore, Okla.; University of Nashville, Tenn., 1907; aged 35; a member of the Oklahoma State Medical Association; formerly secretary of the Rogers County Medical Society and superintendent of health of Rogers County; First Lieutenant, M. R. C., U. S. Army, and honorably discharged Dec. 7, 1918; died in Kansas City, Mo., in November, from tuberculous peritonitis.

Charles S. Harle, Clifton, Ariz.; University of Louisville, Ky., 1892; aged 49; a member of the Arizona Medical Association; who practiced for several years in Chihuahua, Mexico, and spent ten years in prison, following his conviction for complicity in the murder of several men for their life insurance, and was afterward surgeon-general of Villa's armies, died in Abilene, Texas, December 30.

Warwick Miller Cowgill ⊕ Lincoln, Neb.; University of Louisville, Ky., 1883; aged 62; who limited his practice exclusively to diseases of the eye, ear, nose and throat; for many years ophthalmic and aural surgeon for the Louisville and Memphis divisions of the Illinois Central System, at Paducah, Ky.; died in St. Elizabeth's Hospital, Lincoln, December 29, from nephritis.

Neidhard Hahnemann Houghton ⊕ Boston; New York Homeopathic Medical College, New York City, 1887; aged 58; associate professor of diseases of the nose and throat in the medical department of Boston University; died in the Massachusetts Homeopathic Hospital, Boston, December 26, from injuries received when struck by a streetcar in Brookline, a short time before.

John F. Glover, Evansville, Ind.; University of Illinois, Chicago, 1888; aged 64; a member of the Indiana State Medical Association; for many years assistant superintendent of the Southern Indiana Hospital for the Insane, Woodmere, Evansville, and secretary of the Evansville Board of Health; died December 28, in the Walker Hospital, Evansville, from heart disease.

William Harold Townsend ⊕ Sac City, Iowa; State University of Iowa, Iowa City, 1897; aged 50; assistant surgeon of the Fifty-Second Iowa Infantry, U. S. V., during the war with Spain; once mayor of Sac City and for sixteen years coroner of Sac County; died December 24 from carcinoma.

Thomas Estill Holland ⊕ Hot Springs, Ark.; Missouri Medical College, St. Louis, 1874; aged 70; formerly president of the Medical Association of the Southwest; formerly Lieut.-Col., M. C., Mo. N. G.; a member of the staff of the Ozark Sanitarium; died December 21.

John D. Cope, Negley, Ohio; American Eclectic Medical College, Cincinnati, 1882; aged 70; was thrown from his

⊕ Indicates "Fellow" of the American Medical Association.

buggy in a runaway accident near his home, December 22, sustaining a fracture of the skull and other injuries from which he died ten hours later.

Oliver Tracy Logan, Changteh, Hunan, China; Medical College of Indiana, Indianapolis, 1895; aged 49; for twenty-three years a medical missionary of the Presbyterian Board in China; died December 7 in China as the result of an accidental gunshot wound.

Willard Clyde Foster ⊕ Casper, Wyo.; University of Minnesota, Minneapolis, 1902; aged 42; formerly local surgeon of the Colorado Fuel and Iron Company and the Colorado Midland Railway at Gulch, Colo.; was killed in an automobile accident, recently.

Edward C. Ellerbrock, St. Louis; Homeopathic Medical College of Missouri, St. Louis, 1896; St. Louis College of Physicians and Surgeons, 1902; aged 64; died in the St. Louis City Hospital, December 25, from accidental poisoning by bichloride of mercury.

Benjamin Franklin Archer, Sweet Water, Texas; Tulane University, New Orleans, 1861; aged 85; surgeon of a Mississippi regiment in the Confederate service during the Civil War; representative in the state legislature from 1872 to 1874; died December 14.

Elva A. Cram, Great Falls, Mont.; Kentucky School of Medicine, Louisville, 1903; aged 42; a member of the Kentucky State Medical Association and for several years a practitioner of Peach Grove, Ky., died December 26, from pulmonary tuberculosis.

Mary Caroline Hollister, Chicago; Northwestern University Woman's Medical School, Chicago, 1882; aged 59; a member of the Illinois State Medical Society; a specialist on diseases of the eye and ear; died at her winter home, Lake Worth, Fla., January 2.

Walter Ralie Francis, Bowling Green, Ky.; Cincinnati College of Medicine and Surgery, 1881; aged 63; a member of the Kentucky State Medical Association; died in St. Joseph's Hospital, Bowling Green, December 24, from pneumonia.

Marcus H. White, Roseburg, Ore.; Keokuk, Iowa, Medical College, 1891; aged 76; a veteran of the Civil War; for twenty-five years a practitioner of Portland; died at the Oregon Soldiers' Home, Roseburg, October 23, from paralysis agitans.

Robert M. Foster ⊕ Russellville, Ind.; Kentucky School of Medicine, Louisville, 1903; aged 48; died in the L. L. Culver Union Hospital, Crawfordsville, Ind., December 29, from peritonitis two weeks after an operation for appendicitis.

Corydon S. McClain, Springfield, Mo.; College of Physicians and Surgeons, Keokuk, Iowa, 1870; aged 76; formerly one of the editors of the *Springfield Advertiser;* was found dead, December 22, from gas asphyxiation.

Benjamin Davis, New Carlisle, Ohio; Medical College of Indiana, Indianapolis, 1879; aged 73; president of the Clark County Health Board; died at the home of his daughter in Osborn, Ohio, December 23, from heart disease.

Peter C. Guinan, Rochester, N. Y.; University of Buffalo, N. Y., 1887; aged 64; a member of the Medical Society of the State of New York; died in the Rochester General Hospital, January 4, from cerebral hemorrhage.

James Pittman, Cincinnati, Ark.; St. Louis College of Physicians and Surgeons, 1898; aged 48; a member of the Arkansas Medical Society; died in the City Hospital, Fayetteville, Ark., December 18, from appendicitis.

Joseph William Little, Washington, D. C.; George Washington University, Washington, D. C., 1872; aged 76; a member of the Medical Society of the District of Columbia; died December 28, from myocarditis.

Cephas L. Carroll, Taylorville, Ill.; Detroit Medical College, 1870; aged 83; died in St. Vincent's Hospital, Taylorville, December 26, a few hours after an operation for the removal of stones of the bladder.

Rachael Swain, Indianapolis; Northwestern University Woman's Medical School, Chicago, 1882; aged 80; who had been spending the winter in Long Beach, Calif., died December 31.

Benjamin Griffiths Beddoe ⊕ Scranton, Pa.; Jefferson Medical College, 1890; aged 64; a member of the staff of the West Side Hospital, Scranton; died December 24, from pneumonia.

Harry J. Garber, Essexville, Mich.; Homeopathic Hospital College, Cleveland, 1889; aged 53; died in Grace Hospital, Detroit, December 17, from carcinoma of the esophagus.

William Rutherford Young ⊕ Long Beach, Calif.; State University of Iowa, 1893; aged 51; for many years a practitioner of Ansley, Neb.; died December 22, from heart disease.

Edmund Gerrish Dearborn, Antrim, N. H.; Harvard Medical School, 1904; aged 40; a member of the New Hampshire Medical Society; died in Nashua N. H., November 30.

Martin F. Moore ⊕ Ottumwa, Iowa; Keokuk, Iowa, Medical College, 1898; aged 44; died December 27, at the Ottumwa Hospital from heart disease, after a sinus operation.

John Thomas Strode, Maysville, Ky.; Jefferson Medical College, 1862; Pulte Medical College, Cincinnati, 1879; aged 81; died December 24 from cerebral hemorrhage.

Walter Louis Havens, Chester Depot, Vt.; College of Physicians and Surgeons in the City of New York, 1885; aged 58; died December 7, from tuberculosis.

Paris Garner Clark, Unadilla, N. Y.; Bellevue Hospital Medical College, 1868; aged 74; for many years a member of the local school board; died December 21.

William A. Brown, Louisville, Ky.; Meharry Medical College, Nashville, Tenn., 1892; aged 58; a colored practitioner; died October 19, from cirrhosis of the liver.

James L. Holden, Zanesville, Ohio; Medical College of Ohio, Cincinnati, 1882; aged 61; mayor of Zanesville in 1901 and 1902; died December 20, from nephritis.

Duane P. Andrus, St. Louis; American Medical College, Eclectic, St. Louis, 1883; aged 69; was found dead in his room, December 16, from gas asphyxiation.

Marion Cooper Geiger, Polytechnic, Texas; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1881; aged 66; died December 26, from heart disease.

Ella Ridgway Ziegler ⊕ Philadelphia; Woman's Medical College of Pennsylvania, Philadelphia, 1874; aged 74; died December 30, from cerebral hemorrhage.

Thomas M. Dromgold, Ottawa, Ill.; Eclectic Medical Institute, Cincinnati, 1878; aged 71; in Ryburn Hospital, Ottawa, December 21, from cerebral hemorrhage.

William Delay ⊕ Rome, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1881; died at Selma, Ala., December 7, from cerebral hemorrhage.

Levi N. Smith, Western, Neb.; Kentucky School of Medicine, Louisville, Ky., 1881; aged 65; died December 19, as the result of an automobile accident.

Davis A. Hogue ⊕ Altoona, Pa.; Jefferson Medical College, 1875; aged 65; died in Mercy Hospital, Altoona, December 18, from pulmonary embolism.

John Franklin Bradshaw, Lincoln, Neb.; Rush Medical College, 1879; aged 63; also a druggist; died December 19, from gangrene of the lungs.

Helen Grant Winn Zimdars, San Francisco; Cooper Medical College, San Francisco, 1897; aged 50; died December 25, from angina pectoris.

William E. Robinson, Rapid City, S. D.; Louisville (Ky.) Medical College, 1894; aged 48; died December 3, from pulmonary tuberculosis.

Sylvester Bronson Moon, Wilmington, Ohio; Miami Medical College, Cincinnati, 1872; aged 84; died December 21, from senile debility.

Andrew P. Davis, Los Angeles; Rush Medical College, 1867; Pulte Medical College, Cincinnati, 1877; aged 84; died December 19.

John F. Finley, Palmyra, Ind. (license, Indiana, 1897); aged 72; a practitioner for forty years; died December 25, from heart disease.

Stanley Wheelock, Quincy, Ill.; Kentucky School of Medicine, Louisville, 1893; aged 48; died November 22, from endocarditis.

Elisha J. Graham, Hodgenville, Ky.; University of Louisville, Ky., 1866; aged 80; a veteran of the Civil War; died December 24.

T. F. Donaldson, Knoxville, Tenn. (license, Tennessee, 1889); aged 70; died December 15 from pulmonary hemorrhage.

John Loomis, Jeffersonville, Ind. (license, Indiana, 1897); aged 99; a practitioner since 1860; died December 22.

David Norwood, Esperance, N. Y.; Albany (N. Y.) Medical College, 1867; aged 86; died November 24.

Jeremiah Roberts, Holton, Ind. (license, Indiana, 1897); aged 81; died November 19.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

SINGLETON'S EYE OINTMENT AND OTHER NOSTRUMS

The letter quoted below, from a layman in Oregon, is typical of those received by the Propaganda department from the general public. It is reproduced and answered because, in the answering, certain facts may be brought out that may be of interest to the medical profession.

"In looking over and re-reading your valuable work 'Nostrums and Quackery' I see no mention made of the alleged three-hundred-year-old British eye remedy, 'Singleton's Eye Ointment' nor 'Congreve's Elixir for Consumption.' Neither is the analysis of Swift's S. S. S. Remedy given nor 'Absorbine'; not a word about the remedies of Dr. Miles of Elkhart—bis 'Nervine,' 'Anti-Pain Pills' and 'Heart Cure'; nor the 'Dr. Blosser Catarrh Remedy Company' of Atlanta, Ga. I should like to know the composition of the above mentioned remedies.

"How much I would like to see you organize a great campaign and print large bills exposing these frauds and have them on bill-boards in cities and your information distributed in form of pamphlets from house to house.

"In 'Nostrums and Quackery' you do not mention the 'Enk Tissue Remedies' nor 'Bon Opto' for the eyes. What is the composition of 'Tanlac' put up by the Cooper Medicine Company and 'Yellow Minyol' for the scalp put out by the Blackburn Products Company"

"Singleton's Eye Ointment" is not dealt with in "Nostrums and Quackery" because the stuff has but a limited sale in the United States; it is a British nostrum. It was analyzed by the chemists of the British Medical Association in 1909 who reported it to be essentially a mixture of lard, Japan wax and purified cocoanut oil with 4 per cent. of beeswax and 7.4 per cent. of red mercuric oxid. This analysis is recorded in Street's book "The Composition of Certain Patent and Proprietary Medicines"[1] published by the American Medical Association. "Congreve's Elixir for Consumption" was also omitted from "Nostrums and Quackery" because the stuff is sold almost entirely in the British Isles or British possessions. It, too, has been analyzed by the chemists of the British Medical Association, who reported the presence of over 28 per cent. of alcohol by volume with only 2.6 per cent. of total solids, of which about 1 per cent. was sugar and 0.5 per cent. resinous constituents, with a little tannin, coloring matter and extractives. This formula also is given in Street's book.

"S. S. S." or "Swift's Sure Specific" is not discussed in "Nostrums and Quackery" (which came from the press in January, 1913) but is dealt with in more recent publications. An article on the product will be found in the pamphlet "Miscellaneous Nostrums."[2] In the same pamphlet will be found articles on "Absorbine," "Miles' Heart Treatment" (with incidental mention of "Miles' Anti-Pain Pills") "Bon Opto" and "Tanlac." "Miles' Nervine" is the subject of an article in the pamphlet "Epilepsy Cures,"[3] while the composition of "Yellow Minyol" as found by the chemists of the Connecticut Agricultural Experiment Station is given in the pamphlet "Cosmetic Nostrums"[4] also published by the Association.

The Blosser concern was dealt with by Mr. Adams in his "Great American Fraud"[4] series (reprinted by the Association); the report of the North Dakota state chemists to the effect that this "catarrh remedy" is a mixture of chamomile flowers, aniseed, cubeb and pepper, is briefly quoted in Street's book.

The "Enk Tissue Remedies," while on record in the files of the Propaganda department, have seemed to constitute too insignificant a piece of quackery to warrant the preparation of any article on them. While the Association does not have large posters on the bill-boards exposing the nostrum evil, it does have on sale educational posters on the subject and these are used to no small extent by individuals and organizations interested in bringing home to the public the menace of the nostrum. While, too, the Association does not distribute its pamphlets on the nostrum evil and quackery from house to house, nevertheless, in the past few years over a million pamphlets and books dealing with this subject have been put in the hands of the public.

1. Street, J. P.: The Composition of Certain Patent and Proprietary Medicines, Chicago, American Medical Association, price $1.25 postpaid.
2. Miscellaneous Nostrums: Chicago, Am. Med. Assn., price 20 cents.
3. Epilepsy Cures: Chicago, Am. Med. Assn., price 10 cents.
4. Adams, S. H.: Great American Fraud, Chicago, Am. Med. Assn., price 25 cents.

KLINE'S NERVE RESTORATIVE

A physician in South Carolina, writes:

"I am anxious to learn the chemical composition or formula of 'Kline's Nerve Restorative'; also its therapeutic properties, if any. I was consulted recently by a patient regarding the preparation and, unfortunately, could only inform the patient—to quote a recent and very pertinent editorial in a most valuable medical journal—that possibly it was a preparation 'founded on 5 per cent. banalities of elementary science and 95 per cent. of pseudo-scientific flapdoodle,' and was not noted for any special therapeutic properties."

"Kline's Nerve Remedy" is one of a group of alleged epilepsy cures investigated by the Propaganda department and analyzed by the A. M. A. Chemical Laboratory in 1915. At that time it was reported, of the Kline nostrum, that: "Essentially, each 100 c.c. of the solution contains approximately 8.7 gm. ammonium bromid, 9.2 gm. potassium bromid and 8.0 gm. sodium bromid. Calculating from the bromid determinations each meal-time dose, one teaspoonful (1 fluidram), contains the equivalent of 17.2 grains potassium bromid, and each daily dose (5 teaspoonfuls) corresponds to 87.0 grains potassium bromid." The article on Kline's remedy, as well as the articles on other so-called epilepsy cures, have been brought together in one pamphlet ("Epilepsy Cures," price 10 cents) prepared and issued by the Propaganda department of THE JOURNAL.

Correspondence

MEDICAL VETERANS OF THE WORLD WAR

An Appeal to Medical Members of Selective Service Boards

To the Editor:—Immediately on the termination of hostilities in November, 1918, members of the medical profession on active service in Washington recognized the need of an organization to perpetuate the principles and fellowships developed during the war. A committee was therefore formed, which was representative of those governmental services—including the Provost Marshal General's Office—which were directly associated with the selection and administration of the armed forces of the United States. This committee formulated a constitution and by-laws which were adopted by the newly formed society at its first annual meeting, held at Atlantic City in June, 1919, in connection with the meeting of the American Medical Association. The society was tentatively named the Medical Veterans of the World War.

The qualifications set forth in the constitution provide that, in addition to men of the military, naval and public health services, the following are eligible to membership, namely, all medical members and medical examiners of Local, Medical Advisory and District Boards, officially appointed by the President of the United States, the Provost Marshal General, or the governors of the various states; also, additional examining physicians who were appointed by the President of a Local or Medical Advisory Board and vouched for by the medical aide to the governor.

When the armistice became effective, there were about 25,000 physicians who were associated with the operations of the Selective Service, in one or other of the capacities just cited. The personal and official relationships formed in

their activities were of so binding a character that medical men thus engaged were conscious of a strong bond of fellowship. It would be a great pity if the fine sentiments and comradeships engendered by the work should cease to be, through lack of opportunity for their continued expression. The society of Medical Veterans of the World War fills the need ideally, and it is felt that all medical men who were associated in the great and eminently successful work of the Selective Service should identify themselves with this organization.

The next annual meeting of the society will be held at New Orleans, April 27, the first day of the meeting of the American Medical Association. The dues are negligible—only one dollar with the application. The secretary-treasurer is Col. F. F. Russell, M. C., U. S. Army, Army Medical School, Washington, D. C. The president is Dr. Victor C. Vaughan, Ann Arbor, Mich.; the vice president is Admiral Stitt, and the trustees are Col. F. A. Winter and Drs. James C. Perry, John M. Dodson, George E. Brewer, Hubert Work and Joel E. Goldthwait.

F. R. KEEFER, M.D., Carlisle, Pa.
Colonel, M. C., U. S. Army; Late Chief, Medical Division, Provost Marshal General's Office.

[COMMENT.—According to the report of Col. F. F. Russell, secretary, on December 1 there were 2,399 members of the Medical Veterans of the World War, distributed as follows:

1. Medical Corps, U. S. Army	1,019
2. Medical Corps, U. S. Navy	41
3. Medical Corps, U. S. P. H. S.	57
4. Contract Surgeons, U. S. Army	81
5. Acting Asst. Surgeons, U. S. P. H. S.	43
6. Local Boards	491
7. Medical Examiner, Local Board	162
8. Medical Advisory Board	505
Total	2,399

The insignia which the badge committee has reported on is now being manufactured, and will be ready for distribution to the members within a short time.—ED.].

"Medical Veterans of the World War" Offers Opportunity for Constructive Work

To the Editor:—Would that the letter of the Surgeon-General of the Army (THE JOURNAL, Jan. 10, 1920) might be placed in the hands of every medical officer who served in the Medical Reserve Corps.

The Surgeon-General has struck at the very crux of the matter: Instead of criticism and fault finding, what is needed is united support to prevent a recurrence of much of the inefficiency of which many of us were witnesses. You cannot make an army medical officer out of a civilian practitioner over night. If we suffered from unpreparedness, we have no one to blame but ourselves. It is our duty to see that it does not recur. This can be accomplished only through education, not through carping criticism. We all have our story to tell of those under us—and by those over us. I, who served as a divisional instructor, might add much which would not appear complimentary, but such observations would profit little unless constructive in character.

The skilful operator who may have filled an important chair in a teaching institution or a medical internist of equal reputation may utterly fail in rendering efficient service in the field. Other qualifications in addition are necessary to produce an efficient army officer. The failure on the part of many to realize this phase of the situation was the cause of much heart burning. The time has come to cease complaining and to join hands in upholding the efforts which that small body of medical officers of the regular Army tried to exert in attempting to overcome a condition well nigh unsurmountable (450 medical officers for an army of 2,000,000 men). Those of us conversant with the conditions which then existed realize that in no better way can we aid in preventing a recurrence than in supporting whole heartedly the efforts of those who wish to make the organization of the Medical Veterans of the World War a powerful force in preparing for any future emergency.

JOSEPH LEIDY, M.D., Philadelphia.

"ALLEGED PLACENTAL FUNCTIONS"

To the Editor:—The communication from Dr. Robert T. Frank (THE JOURNAL, Jan. 3, 1920, p. 47) contains some misconceptions of my interpretations of the results of the work that has been done in the studies directed toward ascertaining whether or not the placenta can be classified among the glands of internal secretion, as published in *Endocrinology* (**3**: 307 [July-Sept.] 1919). This article was merely intended as a review of the work to date in as brief a manner as possible. It was therein distinctly stated that "a retrospective analysis of the work undertaken, however, reveals four fairly distinct nuclei of attention," and a discussion was made of these four fields of effort, namely: (1) the possibility that the placenta produces an internal secretion concerned in eclampsia; (2) the possibility that the placenta produces an internal secretion effecting the mammary hyperplasia of pregnancy; (3) the possible galactogogic activity of the placenta, and (4) placental products considered as stimuli to growth. Each one of these phases of possible function was taken up seriatim and individually, and the statement that I have fallen into the error of not differentiating between hyperplasia or galactogogic stimuli or processes indicates a misreading of what I said, as any one can verify by reading the original article. Moreover, a wrong impression is given, as frequently happens when partial quotations are made. That I definitely assigned a finality to the bedside observations is implied by the quotation given by Dr. Frank. If he had quoted the following sentence, this implication would not have seen print. The next sentence is as follows:

> It is of course obvious that we are here dealing with a condition much different from that occurring during pregnancy and that the negative results may mean little or nothing as evidence toward the part played by the placenta in *pregnancy hyperplasia;* nevertheless, the validity of the interpretation is on a par, *until disproved,* with that given from the work on virgin animals.

As to the effect of the ingestion of desiccated placenta on the growth of breast-fed infants, the observations of Van Hoosen, Cornell, and McNeile and myself have yet to be disqualified by experimental work.

Now as to my reading into the results that the placenta *does of a fact* produce an intra-uterine growth-promoting hormone: Such was neither my intention nor my aim. The statement that "it is not illogical to suppose that the placenta in utero produces a substance acting as a stimulus to fetal growth" should to any thoughtful reader convey what it was intended for, the idea, purely speculative, that such a possibility might exist, and pointing out a possible field of investigation. Its intention should be particularly obvious, since I did not make any references to any work that had been carried on tending to throw light on the possibility.

FREDERICK S. HAMMETT, PH.D., Philadelphia.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

GLUE FOR TRACTION IN FRACTURES

To the Editor:—Please inform me concerning Sinclair's formula for a glue for traction in fractures.

W. E. WHALEN, M.D., Ogden, Utah.

ANSWER.—According to Sinclair's formula, 4 ounces of glue are placed in 4 pounds of cold water and left in a cool place for twelve hours. If the glue dissolves, it is bad; if it is coherent and gelatinous, weighing 8 ounces, it is good; if coherent and gelatinous, weighing 16 ounces, it is very good; if coherent and gelatinous, weighing 20 ounces, it is excellent. Fifty parts of good glue are soaked for twelve hours in water, 50 parts; glycerin, 4 or 6 parts, and menthol, 1 part, and then melted on a water bath. After neutralizing to litmus with sodium hydroxid, as commercial glue at times contains free hydrochloric acid, there are added 4 parts in summer and 5 parts in winter of glycerin and 1 part of

menthol. Frequent heating evaporates the water, which should be added from time to time. When reheated many times, adhesive power is lost. The technic is as follows:

1. The skin is not shaved.
2. Wash the skin with soap and hot water which contains about 4 drams of washing soda to the pint, to convert the oil of the skin into soap, as glue will not adhere to a greasy surface.
3. Dry the skin.
4. Apply the warm glue evenly, brushing all the hairs of the limb in an upward direction.
5. Keep a tension on the gauze all the time; bring it quickly but carefully into contact with the limb (inner and outer surface), and apply neatly a loose woven bandage, starting a hand's breadth above the malleoli up to the joint.
6. When dry, apply traction.

(The adhesive can be made waterproof with a 2 per cent. solution of potassium bichromate applied in the dark and then exposed to the light, or by means of liquor formaldehydi.)

7. The extension must always be applied very carefully, whether with Maw's elastic cotton net or with gauze.
8. The extension must be changed at once if the patient complains of a tickling or burning sensation under it, but it generally requires changing about the tenth, twentieth or fourtieth day.

In THE JOURNAL, Sept. 27, 1919, p. 973, Dr. W. F. Cunningham describes a new adhesive material for this purpose, which he believes superior to the Sinclair formula. It consists of a solution of celloidin in acetone, which is prepared as follows:

The required amount of celluloid scrap and acetone are placed in a *dry*, clean, wide-mouthed bottle and securely stoppered. The bottle is then shaken or agitated at intervals, and the solution is ready for use in from twenty-four to forty-eight hours. When properly made, it should be an almost clear, homogeneous, syrupy fluid.

In the experiments, no careful preparation of the skin was made. It should, however, be absolutely dry; and the preliminary use of a few cubic centimeters of acetone on the region to be employed may aid in this respect, but is not necessary. A layer of celluloid solution is rapidly applied by means of a small, stiff brush. The quantity should be sufficient to soak through the strip on which traction is to be applied, and a thin coating should be applied externally to get out all the wrinkles and air bubbles. Canton flannel is the best material for strips, but a double layer of gauze or muslin that is neither too hard nor too finely woven may be used.

Iodin and also picric acid and alcohol should be avoided as far as possible on areas to which any type of adhesive is to be applied. Both these drugs increase exfoliation, and we well know the reaction of certain skins to the former. We believe, with Sinclair, that the part should not be shaved before adhesive material is applied, for the hairs, if abundant, increase the efficiency of the adhesive, like hair in plaster. If there is delay in putting on the strip, the skin should be recoated, for it dries out in a thin, flexible film in a minute or two. The application of a circular gauze bandage over cotton increases the effectiveness of adhesion and should be used. It is needless to state that the solution is combustible; therefore it should not be heated, and containers should be so labeled.

COMPARATIVE FOOD VALUES OF BUTTER AND OTHER FATS

To the Editor:—Can you give a comparison in food values and in digestibility of cocomargarine; olive oil and oleomargarine as compared with butter? With present prices for real butter, many are compelled to seek substitutes which may or may not be more economical.

J. TRACY MELVIN, M.D., Porterville, Calif.

ANSWER.—The heat values of butter and other fats are fairly constant; the values given are: for butter fat, 9.312; for fat of animal tissue, 9.372, and olive oil, 9.384 calories per gram. The nutritional value of a food is, however, also determined by the presence or absence of certain vitamins, as for instance, fat-soluble A, normally present in butter. The fat-soluble accessory growth substance is present in beef fat and "oleo-oil," and margarins prepared on such a basis are probably the nutritive equivalent of butter. Coconut oil, cottonseed oil, peanut oil, olive oil, and nut and vegetable oils in general contain little or none of this accessory substance, and margarins prepared from these are not the nutritive equivalent of butter. With allowance for metabolic products, the coefficients of digestibility have been found to be: for butter fat, 97 per cent.; for beef fat, 93; for olive oil, 97.8, and for coconut oil, 97.9 per cent.

For more complete details the following contributions may be consulted:

A Problem Concerning Edible Fats, editorial, THE JOURNAL, Dec. 1, 1917, p. 1876.
The Digestibility of Nut Oils, editorial, THE JOURNAL, Aug. 10, 1918, p. 467.
Langworthy C. G., and Holmes, A. D.: Digestibility of Some Animal Fats, U. S. Dept. Agric. Bull. 310, Nov. 9, 1915; Digestibility of Some Vegetable Fats, U. S. Dept. Agric. Bull 505, Feb. 13, 1917.
Halliburton, W. D., and Drummond, J. C.: The Nutritive Value of Margarines and Butter Substitutes, *J. Physiol.* **51**: 235, 1917.
Lusk, Graham: The Elements of the Science of Nutrition, Ed. 3, Philadelphia, W. B. Saunders Company, 1917.

LITERATURE ON NITROUS OXID-OXYGEN ANESTHESIA

To the Editor:—I am desirous of obtaining all the literature in the past two years (American) on general anesthesia with nitrous oxid and oxygen.

V. D. THOMAS, M.D., Bloomington, Ill.

ANSWER.—In the Quarterly Cumulative Index for 1918, under the heading "Anesthesia," appear the following references:

Nitrous oxid analgesia in obstetrics (J. C. Hoag) *Illinois M. J.* **33**: 324 (April) 1918.
—in labor (L. C. Redmon) *Kentucky M. J.* **16**: 499 (Nov.) 1918.
—in production of painless childbirth (M. Salzer) *Ohio State M. J.* **14**: 406 (July) 1918.
—new inhaler for (A. H. Miller) J. A. M. A. **71**: 109 (July 13) 1918.
—on possibility of mixing air in lungs with foreign air, especially as it is used in Krogh and Lindhard's nitrous oxid method (C. Sonne) *J. Physiol.* **52**: 75 (July) 1918.
Nitrous oxid-oxygen, comparative dangers and availability of (J. R. McCurdy) *Am. J. S.* (anesthesia supp.) **32**: 19 (Jan.) 1918.
—and anaesthol sequence in oral surgery (C. H. Sanford) *Ann. Surg.* **67**: 462 (April) 1918.
—changes produced in blood by nitrous oxid-oxygen anesthesia (T. D. Casto) *Am. J. S.* (anesthesia supp.) **32**: 42 (April) 1918.
—in labor (C. E. Turner and W. I. Jones) *Am. J. S.* (anesthesia supp.) **32**: 52 (April) 1918.
—in obstetrics (C. S. Fleming) *W. Va. M. J.* **12**: 246 (Jan.) 1918.
—simple apparatus for (A. S. Wilson) *Brit. M. J.* **1**: 78 (Jan. 19) 1918.
Nitrous oxygen, experimental researches in warming of nitrous oxygen for anesthesia (P. Cassidy) *Am. J. S.* (anesthesia supp.) **32**: 46 (April) 1918.

In the issue for January-September, 1919, under the same heading, appear:

Nitrous oxid analgesia in labor (R. C. Coburn) *New York State J. Med.* **19**: 37 (Feb.) 1919.
—in labor (R. S. Allison) *Northwest Med.* **18**: 9 (Jan.) 1919.
Nitrous oxid-oxygen analgesia in obstetrics (A. L. Smith) *Nebraska M. J.* **4**: 54, 1919.
—cesarean section and obstetric observation under nitrous oxid-oxygen (E. I. McKesson) *Am. J. Surg.* (anesthesia supp.) **33**: 84 (July) 1919.
—for cesarean section and obstetric operations (E. I. McKesson) *Ohio State M. J.* **15**: 422 (July) 1919.
—for difficult extractions (H. R. Francis) *Am. J. Surg.* (anesthesia supp.) **33**: 56 (April) 1919.
—in combination with ether or C. E. mixture for nose and throat operations (H. E. G. Boyle) *Brit. M. J.* **2**: 684 (Dec. 21) 1918.
—in major surgery (F. K. Camp) *Southwest J. Med. & Surg.* **27**: 49 (March) 1919.
—in normal labor and operative obstetrics (W. C. Danforth) *Am. J. Surg.* (anesthesia supp.) **33**: 5 (Jan.) 1919.
—in obstetric operations and cesarean section (E. L. McKesson) *J. Indiana M. A.* **12**: 8 (Jan.) 1919.
—some observations on limitations of nitrous oxid-oxygen anesthesia and a restraining device for obstreperous patients (W. F. Dramburg) *Am. J. Surg.* (anesthesia supp.) **33**: 78 (July) 1919.
—Study of blood pressure changes during (W. B. Davis and W. H. Spencer) *Therap. Gaz.* **43**: 82 (Feb.) 1919.

RESTORATION OF MENSTRUAL FUNCTION LOST AFTER RADIUM TREATMENT

To the Editor:—Can you give me any treatment for the restoration of the menstrual function in a young person after it has been partially stopped for a year from radium treatment, or inform me of literature on the subject?

J. A. VALENTA, M.D., Lake City, Iowa.

ANSWER.—In articles on the treatment of uterine fibroids or menorrhagia by radium it has been noted that many patients, after a cessation of menstruation from nine months to two years, begin spontaneously to menstruate again. This may occur even after the third year. It also seems likely that the giving of corpus luteum alone or in combination with hypophysis extract (pituitary solution) can hasten the return. If, however, the original radiation has been intense enough to destroy all the primordial follicles of the ovary, no return of menstruation can be expected.

A Swedish View of the Council on Pharmacy and Chemistry.—The leading, in fact, the only article in *Hygiea,* Oct. 16, 1919, is an account by Anderson-Tesch of his five months in the United States as delegate sent by the Association of Swedish Manufacturing Chemists to study the chemical industry in America and its development during the war. Incidentally he was much impressed with the medical institutions of this country, as he relates with minute detail, especially the way in which the physical examination of the recruits was managed and recorded. He devotes several pages to describing in detail the work of the Council on Pharmacy and Chemistry which, he says, is "undoubtedly the most energetic and well planned work for control of non-official remedies. It was realized by the initiative of the American Medical Association, America's largest and most esteemed medical association."

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, Mar. 2. Sec., Dr. L. O. Sloan, Juneau.
CALIFORNIA: Los Angeles, Feb. 16-19. Sec., Dr. Chas. B. Pinkham, 906 Forum Bldg., Sacramento.
ILLINOIS: Chicago, Mar. 1-3. Director, Mr. Francis W. Shepardson, Springfield.
INDIANA: Indianapolis, Feb. 10-13. Sec., Dr. W. I. Gott, 84 State House, Indianapolis.
KANSAS: Topeka, Feb. 10. Sec., Dr. H. A. Dykes, Lebanon.
NATIONAL BOARD OF MEDICAL EXAMINERS: St. Louis and Chicago, Feb. 18-25. Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia, Pa.
NEW YORK: New York City, Albany, Buffalo, Jan. 27-31. Asst. Professional Examinations, Mr. H. J. Hamilton, Albany.
VERMONT: Burlington, Feb. 10-12. Sec., Dr. W. Scott Nay, Underhill.
WYOMING: Thermopolis, Feb. 2-4. Sec., Dr. J. D. Shingle, Cheyenne.

ANNUAL CONFERENCE ON MEDICAL EDUCATION AND LICENSURE

The next conference on medical education and licensure will be held, March 1, 2 and 3, at the Congress Hotel, Chicago, under the auspices of the Council on Medical Education of the American Medical Association, the Association of American Medical Colleges, and the Federation of State Medical Boards of the United States. Instead of the three separate disjointed programs heretofore held, there will be a single program by which conflicts and duplications will be avoided, papers will be more carefully selected, and discussions will be more effectively directed. The program as now arranged is as follows:

Introductory Remarks by Dr. Arthur Dean Bevan, chairman of the Council on Medical Education; Dr. George Blumer, president of the Association of American Medical Colleges, and Dr. David A. Strickler, president of the Federation of State Medical Boards.

"Present Status of Medical Education," Dr. N. P. Colwell, secretary of the Council on Medical Education.

Symposium on "The Needs and Future of Medical Education," Dr. George E. Vincent, president of the Rockefeller Foundation, New York. The following also have been invited: Dr. Ray Lyman Wilbur, president of Leland Stanford University. Dr. Henry S. Pritchett, president Carnegie Foundation for the Advancement of Teaching, New York. Dr. Harry Pratt Judson, president University of Chicago. Mr. Abraham Flexner, secretary of the General Education Board, New York.

"The Larger Function of State University Medical Schools," Dr. Walter A. Jessup, president of the State University of Iowa, Iowa City.

"Full-Time Teachers in Clinical Departments," Dr. William Darrach, dean of Columbia University College of Physicians and Surgeons, New York.

"Research in Medical Schools, Laboratory Departments," Dr. Oskar Klotz, professor of pathology, University of Pittsburgh School of Medicine.

"Research in Medical Schools, Clinical Departments," Dr. G. Canby Robinson, dean, Washington University School of Medicine, St. Louis.

"Graduate Medical Instruction in the United States," Dr. Louis B. Wilson, Mayo Clinic, Rochester, Minn.

"Interallied Medical Relations; Qualifying Examinations, Licensure Requirements, Graduate Medical Education," Dr. Walter L. Bierring, secretary of the Federation of State Medical Boards, Des Moines, Iowa.

"Interstate Relations in Medical Licensure," Francis W. Shepardson, director of the Department of Education and Registration of the State of Illinois, Springfield.

"Essential Improvements in Medical Licensure," Dr. John M. Baldy, president of the Pennsylvania Bureau of Medical Education and Licensure, Philadelphia.

Reports on Medical Teaching from the Committee on Medical Pedagogy of the Association of American Medical Colleges.

Remarks by the chairman of the committee, Dr. W. S. Carter, dean, University of Texas, Department of Medicine, Galveston.

Anatomy: Dr. Charles R. Bardeen, dean, University of Wisconsin Medical School, Madison.

Histology and Embryology: Dr. F. C. Waite, secretary, Western Reserve University School of Medicine, Cleveland.

Physiology: Dr. E. P. Lyon, dean, University of Minnesota Medical School, Minneapolis.

Biologic Chemistry: Dr. Otto Folin, professor of biologic chemistry, Medical School of Harvard University, Boston.

Pharmacology: Dr. C. W. Edmunds, assistant dean, University of Michigan Medical School, Ann Arbor.

Pathology: Dr. James Ewing, professor of pathology, Cornell University Medical School, New York.

Bacteriology and Parasitology: Dr. A. I. Kendall, dean, Northwestern University Medical School, Chicago.

Public Health and Preventive Medicine: Dr. Victor C. Vaughan, dean, University of Michigan Medical School, Ann Arbor.

The afternoon of Wednesday, March 3, will be devoted to the separate business sessions of the three organizations. It is expected that the conference will be immediately followed by the annual meeting of the American Conference on Hospital Service.

Montana April Examination

Dr. S. A. Cooney, secretary of the Montana Board of Medical Examiners, reports the written examination held at Helena, April 1-3, 1919. The examination covered 10 subjects and included 50 questions. An average of 75 per cent. was required to pass. Of the 15 candidates examined, 12 passed and 3 failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
George Washington University	(1907)	79.8
College of Physicians and Surgeons, Chicago	(1901)	75.6
Rush Medical College	(1919)	*75.7, 83.9
Kansas Medical College	(1911) 79.1, (1913)	79.7
College of Physicians and Surgeons, Baltimore	(1912)	78.3
Washington University	(1911)	82
John A. Creighton Medical College	(1913) 82, (1919)	79.9
Jefferson Medical College	(1904)	77.4
Medico-Chirurgical College of Philadelphia	(1900)	77.9
FAILED		
Loyola University	(1917)	67.1
Kansas City Hahnemann Medical College	(1905)	71.5
Ensworth Medical College	(1909)	38.1

*Received certificate for four years' work; will receive M.D. degree after completing his intern year.

Arkansas Eclectic May Examination

Dr. Claude E. Laws, secretary of the Arkansas Eclectic Board of Medical Examiners, reports the written examination held at Little Rock, May 13-14, 1919. The examination covered 12 subjects and included 120 questions. An average of 75 per cent. was required to pass. Thirty-four candidates were examined, all of whom passed.

College	Year Grad.	No. Licensed
Hospital Medical College, Atlanta	(1909)	1
Bennett Medical College	(1909)	1
American Medical College	(1902)	1
Kansas City College of Med. and Surgery	(1918) 1, (1919)	30, 31

New Jersey June Examination

Dr. Alexander MacAlister, secretary of the New Jersey Board of Medical Examiners, reports the written examination held at Trenton, June 17-18, 1919. The examination covered 9 subjects and included 90 questions. An average of 75 per cent. was required to pass. Thirty-six candidates were examined, all of whom passed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Georgetown University	(1917)	88
Howard University	(1916)	85.7
Baltimore Medical College	(1912)	81.4
Johns Hopkins University	(1917)	91.3
University of Maryland	(1917)	86.3
Tufts College Medical School	(1916)	82
Columbia University	(1915)	83.5
New York Homeo. Med. Coll. and Flower Hosp.	(1918)	86.7
University and Bellevue Hospital Medical College	(1918) 86.6, 88.8, 89.2	
Hahnemann Medical College and Hospital of Philadelphia	(1917) 80.7, (1918) 87.1.	
Jefferson Medical College	(1915) 82.2, (1916) 83.4, 85.4, (1917) 83.5, 84.1, 84.8, 87.8, (1918) 82.2, 83.3, 84.6, 85.4, 85.5, 86.2.	
Medico-Chirurgical College of Philadelphia	(1916)	79
University of Pennsylvania	(1917) 82.7, 87.1, (1918) 83.1, 85.5, 88.4.	
Vanderbilt University	(1912)	86
Fort Worth School of Medicine	(1902)	83.6
University of Virginia	(1917)	90.5
Queen's University	(1918)	88.6

Dr. MacAlister also reports that ninety-eight candidates were licensed by reciprocity from Jan. 1 to July 5, 1919. The following colleges were represented:

College	Year Grad.	Reciprocity with
LICENSED THROUGH RECIPROCITY		
University of California	(1907)	New York
Yale University	(1912)	New York
Columbian University	(1902)	New York
George Washington University	(1916)	Dist. Colum.
Howard University	(1917, 2)	Dist. Colum.
Kentucky School of Medicine	(1894, 2)	Penna.
University of Louisville	(1915)	Kentucky

Baltimore Med. Coll. (1896) Pennsylvania, (1905), (1913) New York
Univ. of Maryland ..(1916, 2) New York, (1916), (1917) Maryland
Tufts College Med. School..(1910) Massachusetts, (1916) New Hamp.
Missouri Medical College .....(1889), (1896) New York
Washington University .....(1897) Connecticut
Dartmouth Medical School .....(1901) New Hamp.
Albany Medical College .....(1905), (1908), (1915) New York
Columbia University (1885) Oregon, (1898) New York, (1899) Connecticut, (1903), (1914), (1917), (1918, 4) New York.
Cornell University .....(1911) New York
Fordham University .....(1914), (1918, 3) New York
Long Island College Hospital (1898), (1914, 2), (1915, 2) New York
New York Homeopathic Medical College and Flower Hospital (1915), (1916, 2), (1917, 2), (1918) New York, (1918) Illinois.
University and Bellevue Hospital Medical College ..(1912) New York
(1913) Connecticut, (1914) (1916, 2), (1917, 2), (1918, 7) New York
University of Buffalo .....(1905), (1913) New York
University of the City of New York (1890) Illinois, (1894) New York
Medical College of Ohio .....(1890) Kentucky
Jefferson Medical College (1899), (1903) Pennsylvania, (1912), (1913) New York, (1915) West Virginia, (1916) Delaware, Alabama, (1917) New York.
Medico-Chirurgical College of Philadelphia (1903), (1911), (1913), (1914) Pennsylvania.
University of Pennsylvania (1889), (1898), (1900, 2), (1916), (1917) Pennsylvania.
Woman's Medical College of Pennsylvania .....(1915) Penna.
Temple University .....(1917) Penna.
University of Vermont .....(1904), (1908) Vermont
Medical College of Virginia .....(1915) Virginia, (1917) Maryland
Trinity Medical College .....(1900) New York
University of Munich .....(1892) New York
University of Naples .....(1896) Connecticut

Wisconsin June Examination

Dr. John M. Dodd, secretary of the Wisconsin State Board of Medical Examiners, reports the written and practical examination held at Milwaukee, June 24-26, 1919. The examination covered 18 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 16 candidates examined, 15, including 1 osteopath passed, and 1, an osteopath, failed. Six candidates were licensed by reciprocity. Seventeen candidates were licensed by virtue of a commission in the Medical Corps. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Northwestern University (1918), 83 (1919) 85, *86, 89.			
Rush Medical College (1919) *81, *84, 85.			
Washington University (1919) 77, 84, 87.			
Columbia University		(1919)	88
Jefferson Medical College		(1919)	82
Marquette University		(1919)	79, 84

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Georgetown University		(1909)	Illinois
College of Physicians and Surgeons, Chicago		(1904)	Illinois
Rush Medical College		(1917), (1919)	Illinois
University of Illinois		(1916)	Illinois
University of Louisville		(1915)	Kentucky

College	LICENSED BY ENDORSEMENT OF CREDENTIALS	Year Grad.	Certificate from
University of Arkansas		(1918)	U. S. Army
College of Physicians and Surgeons, Los Angeles		(1912)	U. S. Army
Bennett Medical College		(1915)	U. S. Army
Chicago College of Medicine and Surgery		(1916), (1917)	U. S. Army
Northwestern University		(1910), (1917)	U. S. Army
Rush Medical College		(1915)	U. S. Army
University of Illinois		(1914)	U. S. Army
St. Louis University		(1910)	U. S. Army
Cleveland College of Physicains and Surgeons		(1905)	U. S. Army
Jefferson Medical College		(1916)	U. S. Army
University of Pennsylvania		(1914, 2)	U. S. Army
Meharry Medical College		(1915)	U. S. Army
University of Virginia		(1916)	U. S. Army
Marquette University		(1917)	U. S. Navy

*Received limited licenses pending completion of their hospital internship.

District of Columbia July Examination

Dr. Edgar P. Copeland, secretary of the District of Columbia Board of Medical Supervisors, reports the oral and written examination held at Washington, July 8-10, 1919. The examination covered 16 subjects and included 80 questions. An average of 75 per cent. was required to pass. Of the eighteen candidates examined, 15 passed and 3 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
George Washington University (1919) 75.3, 81.5, 81.7, 85.2, 85.7, 86.2, 91.1.			
Howard University	(1918) 75.3, 83.5, (1919) 76.5,		82.1
Harvard University		(1917)	90.5
Middlesex College of Medicine and Surgery		(1918)	76.6
University of Pennsylvania		(1919)	90.2
University of Tennessee		(1918)	82.2
	FAILED		
Howard University		(1919)	64, 72.2
Columbus Medical College		(1884)	60

Book Notices

INDUSTRIAL MEDICINE AND SURGERY. By Harry E. Mock, B.S., M.D., F.A.C.S., Assistant Professor of Industrial Medicine and Surgery at Rush Medical College. Cloth. Price, $10 net. Pp. 846, with 210 Illustrations. Philadelphia: W. B. Saunders Company, 1919.

The purpose of this book is to describe modern American efforts and methods directed to maintenance of health, conservation of man-power, and rehabilitation of the disabled in industry. The contents fall in six parts: industrial health service; prevention; industrial medicine; industrial surgery; compensation, insurance, and medicolegal phases; and reconstruction. At the end is a bibliography of the pertinent literature since 1916, but as the references are listed alphabetically according to authors' names the practical value of the bibliography is limited. The author reveals himself in this book as an able and skilful physician and surgeon, a successful administrator of large enterprises, and a forceful propagandist and promoter of the movement to conserve the health and strength of working men and women, and he has provided a useful work for many employers, health workers, and especially physicians attached to industries and concerned with the organization and development of the medical service. Throughout it is the busy executive officer who speaks rather than the careful and thoughtful scholar, and there is no lack of evidence in both text and arrangement of undue haste in preparation and failure carefully to consider relative values. Careful revision with merciless rejection of all unnecessary words and statements—and we were about to add chapters—would increase the value of the book; and it is hoped that the author soon may be called on to prepare a second edition, and that he then may have leisure to do himself more justice than it has been permitted him in the first issue.

TOWARDS RACIAL HEALTH. A Handbook on the Training of Boys and Girls, Parents, Teachers and Social Workers. By Norah H. March, B.Sc., M.R.San.I., with Foreword by J. Arthur Thompson, M.A., LL.D., Professor of Natural History in the University of Aberdeen. New American Edition with an Introduction by Evangeline W. Young, M.D. Cloth. Price, $2 net. Pp. 320, with illustrations. New York: E. P. Dutton & Company, 1919.

Miss March's book is intended for the instruction of parents, teachers and social workers on sex education rather than for boys and girls. Evidently this subject has not been discussed in England to the extent that it has been in this country. The approach to the subject, as well as the discussion, is much more largely influenced by the biologic point of view than in most of our American books on sex hygiene, nearly a third of the book being devoted to the purely biologic side of sex development and reproduction. Although somewhat conservative, the book is scientifically sound. It is better adapted for the teacher and the parent of education and leisure than for the average reader. The carefully selected bibliography will be of assistance to those desiring to take up a further study of the subject.

OXFORD LOOSE-LEAF MEDICINE. Edited by Heny A. Christian and Sir James Mackenzie. Advance pages, Volume II. Part 1. Paper. New York: Oxford University Press, 1919.

This part contains 115 pages on diseases of the heart, by Sir James Mackenzie, and thirty-four pages on asthma and hay-fever by I. Chandler Walker. Mackenzie's topics are symptoms; heart failure; the examination of the patient; myocardial affections; angina pectoris; exhaustion, palpitation and syncope; the soldier's heart; mechanical aids in examination; modified sounds of the heart; valvular diseases; prognosis, and treatment. It is significant of the change that has come over cardiology that the diseases of the valves are discussed in eleven pages. Not so very many years ago they would have taken a much larger proportion of space. Mackenzie's treatment of all these subjects is in his usual clear style with little citation of authority but with direct, blunt statement of facts based on his wide clinical experience. Walker has an unusually lucid, up-to-date discussion of asthma, concerning the nature of which his extensive researches have made him an expert.

Squibb's Materia Medica, 1919 Edition. A Complete Alphabetical List of the Squibb Products, including all the articles of the United States Pharmacopœia (IXth Revision) and of the National Formulary (IVth, 1916, edition), together with the Non-Official Chemicals, Pharmaceutics and Newer Remedies in general use. By the Medical Department, E. R. Squibb & Sons. Cloth. Gratis. Pp. 544. New York: E. R. Squibb & Sons, 1919.

The text gives the official name of the drug, the English name, synonyms, botanic origin, habitat, part of plant used, description, chief constituents, official standards of purity and strength, dose, and list of official preparation, if any. It is to be regretted that the useless or little used drugs, such as cactus, celery, elder flowers, galega and horse-nettle are given the same prominence as those of recognized value. Some of the information concerning the drug constituents cannot be relied on, as it has evidently been compiled from dispensatories or other second-hand sources. For example, the statement is made under Sabal that the drug contains volatile oil. The researches of Mann and Lloyd have shown that the drug contains no volatile oil, although on standing alcoholic preparations may develop an ester which is volatile. The book should be useful to drug analysts, pharmacists and pharmacognocists.

Medicolegal

Death from Glanders Contracted Through Inhalation

(Richardson v. Greenburg (N. Y.), 176 N. Y. Supp. 651)

The Supreme Court of New York, Appellate Division, Third Department, holds, in answer to a question certified to it by the state industrial commission, that where an employee was required to lead a horse affected with glanders and during such time contracted the disease through inhalation of the bacteria, and died from the disease fourteen days thereafter, his death was not due to an accidental injury arising out of and in the course of his employment, within the meaning of the workmen's compensation law. The court says that compensation is payable by an employer only "for the disability or death of his employee resulting from an accidental personal injury," and that "injury" and "personal injury" are stated to "mean only accidental injuries arising out of and in the course of employment, and such disease or infection as may naturally and unavoidably result therefrom." The plain meaning of the words of the law, without the aid of judicial interpretation, induces the conclusion that the legislature intended to make compensatory no condition or death resulting from disease, unless the disease itself followed a traumatic injury or other injury not partaking of the nature of a disease. It is a matter of common knowledge that the conditions generally prevailing in cases of infectious disease are caused by poisons or toxins exuded by living organisms or bacteria present within the human body. Glanders cannot be differentiated from other diseases by the fact that ordinarily it is a disease which affects a horse rather than a human being, for it cannot matter whence the bacteria have proceeded which set up disease within the human body.

State Not Liable for Death of Militiaman from Inoculation

(McAuliffe v. State (N. Y.), 176 N. Y. Supp. 679)

The Court of Claims of New York, in dismissing a claim for damages for the death of a state militiaman from inoculation with an immunizing vaccine administered at one of the state's armories by a physician in charge of said armory, the vaccine used being alleged to have been impure, or the treatment improperly administered, says that states are not liable in damages for torts or wrongful acts committed by their agents or servants, unless such liability has been voluntarily assumed by act of the legislatures. This rule follows from the maxim of the English common law, "The king can do no wrong," and not alone from the other rule of the English common law that the sovereign cannot be sued without his consent. In organizing the national guard for the public defense, the state is exercising one of the highest and most important of the attributes of sovereignty and of the functions of government in the interest of the public at large, and under such circumstances it cannot be held liable for the negligence of its agents or servants. Furthermore the state has by statute provided a tribunal and a method for affording relief to those of its soldiers who shall be wounded or incapacitated as a result of illness and for pensioning dependents of such soldier, including his widow, minor children, or dependent mother, in case he shall have died as the result of injuries received or from illness. The state having furnished such tribunal, and submitted such cases to it for its consideration, this court is denied jurisdiction to hear and determine such claims.

Award May Be Commuted When Operation Is Necessary

(Jensen v. F. W. Woolworth Co. (N. J.), 106 Atl. R. 808)

The Court of Errors and Appeals of New Jersey affirms a judgment approving of the commutation to the lump sum of $1,247.25 of an award under the workmen's compensation act of $1,410 that was payable in instalments of $5 a week, when an employee had accidentally swallowed pins while assisting in trimming a show window, and a physician testified that there was a pin near the base of her brain and in his opinion an operation would have to be performed to save the woman's life; that she was in need of constant care and attention, and unless she received it, her life could not be saved. The court says that the workmen's compensation act of New Jersey provides that, as commutation is a departure from the normal method of payment, it is to be allowed only when it clearly appears that some unusual circumstances warrant such a departure. But, if to be bedridden, with the requirement of a surgical operation to save the patient's life, is not an unusual circumstance, and such a one as warrants commutation of future weekly payments into a lump sum, to enable the patient to procure the services of a surgeon and the proper medical attention and nursing, it is hard to conceive of circumstances that would call for the making of an order for commutation. Bearing in mind that it is the intention of the act that compensation payments are in lieu of wages, and are to be received by the injured employee in the same manner in which wages are ordinarily paid, that is, instalments; and while commutation is a departure from the normal method of payment, to be allowed only when it clearly appears that some unusual circumstances warrant it, the court thinks those circumstances were present in the case under consideration, namely, that the life of the employee appeared to be at stake, and that, at least in all probability, it could be saved only by a surgical operation, by the attendance of a physician, by nursing, and by medicines, all of which would require the expenditure of moneys, which the patient did not possess and could not raise. Nor was commutation in these circumstances to be defeated by the concluding provision of the statute that it shall not be made to enable the employee to satisfy a debt, or to make payment to physicians, lawyers or other persons.

Employer Not Liable for Negligence of Physician

(Smith v. Buckeye Cotton Oil Co. (Ark.), 212 S. W. R. 88)

The Supreme Court of Arkansas affirms a judgment on a verdict directed in favor of the defendant in this case where the plaintiff alleged that while he was employed by the defendant he had his fingers crushed, and was directed to go to a physician employed by the defendant to treat its injured employees, and that this physician treated his injuries so carelessly and negligently that the amputation of all the fingers on the injured hand became necessary. The court says that the testimony in the case appeared to have been addressed to the proposition that the physician was negligent, and that the defendant was liable for this negligence because it directed the plaintiff to consult him. There was no intimation in the pleadings that the defendant was negligent in selecting a physician, nor was there any testimony to that effect unless it was by inference that the defendant was negligent through having employed a negligent

physician. The court had a case, therefore, in which the pleadings and proof showed only that an injured employee was directed to, and placed in charge of, a physician who was guilty of negligence in his treatment of the case. But this allegation and this proof did not make a case for the jury. Where the employer owes his employee the duty of furnishing medical attention, or undertakes to discharge that duty, he does not become liable for the physician's negligence or lack of skill, but is liable only when he fails in the discharge of his duty to exercise ordinary care to select a physician possessing the requisite skill and learning and one who would give the patient the attention and treatment which the case requires.

Ordering Physical Examination Partly Discretionary

(Titus v. City of Montesano (Wash.), 181 Pac. R. 43)

The Supreme Court of Washington holds that there was no error in this personal injury case in denying the defendant's motion for an order directing the plaintiff to submit to a medical examination for the purpose of determining the extent of her alleged injury and for the purpose of qualifying the witnesses of the defendant to give testimony in the cause. The court says that the statute of that state relating to such examinations provides that, on or before the trial of any action brought to recover damages for injury to the person, the court before which such action is pending may from time to time, on application of any party therein, order and direct an examination of the person injured as to the injury complained of by a competent physician or physicians, surgeon or surgeons, in order to qualify the person or persons making the examination to testify in such case as to the extent, nature and probable duration of the injury complained of. This statute is not mandatory. It provides that the court "may . . . order and direct" a physical examination, and leaves something to the discretion of the court. When the motion was made in this instance, no issue had been framed as to the extent of the plaintiff's injuries, and no showing as to the necessity for such an examination accompanied the motion. It was not the purpose of the statute needlessly to harass a litigant, and, unless it is shown that some necessity exists for the examination at the time the application is made, the appellate court cannot say it is an abuse of discretion to deny it.

Testifying Indirectly to Privileged Communications

(McGinty v. Brotherhood of Railway Trainmen (Wis.), 172 N. W. R. 714)

The Supreme Court of Wisconsin holds, in this action brought by a mother on a policy of insurance issued on the life of her son after he had stated in his application for the insurance that his father had never had any cancerous disease, that there was no error in refusing to permit a physician to testify that he told the mother, at the time of his professional visit, that her husband had cancer. The court says that the mother had been examined adversely, and testified that the physician did not make such statement to her. A portion of the physician's deposition was then offered in evidence to show that he had made such statement. The trial court excluded the testimony, and the supreme court sees no theory on which the testimony could be received. It certainly could not be probative evidence of the fact that the father in fact had cancer. The physician could not testify to that fact. His knowledge in that respect constituted a confidential communication which the statute prohibited him to reveal. The confidential nature of the communication could not be waived by any one except the father himself. The privilege of the statute would not amount to very much if the physician were permitted to testify in this indirect manner to facts concerning which he could not give direct testimony. The testimony clearly was not admissible. A waiver by the insured of the privilege so far as confidential communications between himself and another physician were concerned did not extend to confidential communications between his father and his father's physicians.

Society Proceedings

SOUTHERN SURGICAL ASSOCIATION

Thirty-Second Annual Meeting, held in New Orleans, Dec. 16-18, 1919

The President, DR. JAMES E. THOMPSON, Galveston, Texas, in the Chair

Injection of the Gasserian Ganglion for Neuralgia and Other Conditions

DR. CARROLL W. ALLEN, New Orleans: The proper execution of the technic of this injection demands a thorough knowledge of the anatomy of the parts involved, and of the effects of injected alcohol on these parts. The method most commonly used and the one practiced by me almost exclusively is the Haertel route. It has been found that chromium sulphate exerts a curative influence on the keratitis which sometimes follows these injections. Accordingly, I have in all recent cases been giving a 4-grain tablet of this salt, three times daily, as a prophylactic, advising its use for about one month. In my last twelve cases there has been no evidence of eye inflammation. From my experience, I am convinced that when the value of these injections for these conditions are recognized they will be used extensively.

Gunshot Wounds of Brain with Retained Missiles

DR. CHARLES BAGLEY, JR., Baltimore: During the spring and summer of 1918, 175 cases of gunshot wounds of the skull and brain were studied at General Hospital No. 2, Baltimore. Removal of the foreign bodies was undertaken because of the presence or probability of infection. I am of the opinion that because of the likelihood of metallic foreign bodies of average size giving trouble even several months after the injury, they should be removed, if their removal does not offer too great difficulties. However, a metallic foreign body may remain encapsulated in the brain substance without giving trouble.

Spermatoceles and Hydroceles Containing Spermatozoa

DR. RANDOLPH WINSLOW, Baltimore: The occurrence of six cases of hydrocele containing spermatozoa, and of one of true spermatocele associated with a hydrocele in the course of a few months, has directed my attention to this condition. In the cases of which I have notes, no mention is made of an injury, except in one instance. I think it probable that in some cases, at least, true spermatoceles rupture into hydroceles and in that manner permit the ingress of spermatozoa into the sac of the tunica vaginalis. In one case there was a hydrocele with clear contents; and contiguous to but not communicating with it was another cyst containing a milky looking fluid, which showed spermatozoa when examined microscopically. This cyst might have ruptured into the hydrocele if it had remained unoperated on. The treatment of true spermatocele is usually excision, while that of the hydrocele containing spermatozoa is similar to that of ordinary hydroceles, namely, excision of the tunica vaginalis, or suturing the tunica behind the testicle, or Andrew's bottle operation, etc., and the results appear to be equally as good as in cases of uncomplicated hydroceles.

Hypodermoclysis

DR. WILLARD BARTLETT, St. Louis: When continuous hypodermoclysis is used, the visible dropper and screw clamp are added. An attempt is made to get gravity pressure by placing the container directly above the patient. As to the fluid employed, Dr. McKittrick proposed that we use plain, freshly distilled water. In view of the large amounts of fluid instilled, and the harmful effects which occasionally follow the absorption of abnormal amounts of sodium chlorid, we do not countenance its use, especially in patients already weakened by disease or surgical trauma. The water is heated to between 100 and 110 F. and is then poured into the warm container. The injection is made at a point near the outer border of the pectoral muscles, midway between the nipple and the head of the humerus. By this method, the fluid extends directly into the subcutaneous tissue of both the axilla and the breast. Absorption is almost twice as fast as

it is when the injection is under the breast alone. Only the one side is used at a time, regardless of the amount of fluid to be infused. Usually from 800 to 1,200 c.c. are given during one injection, though a much larger amount can be given if it is allowed to run in slowly. The giving of hypodermoclysis is easily accomplished without pain or distress in most patients not under the influence of a narcotic. The procedure has completely supplanted the rectal administration in my service, and when intelligently applied, seems not to have unduly disturbed the patient, has never been attended by an accident, and has given the greatest satisfaction.

Pseudomyxoma Peritonei

Dr. M. H. Biggs, Rutherfordton, N. C.: This condition is much more frequent than is generally recognized. It is caused by cellular implantation. It is histologically benign, but may be clinically malignant. If it is considered to be a form of cancer, it must be assumed that pseudomucin inhibits its destructive power. It may originate in the ovary or the intestinal tract, ovarian origin being by far the most frequent. If it is appendical in origin, the appendix has been the seat of chronic inflammation. Early invasion of the peritoneum is characterized by a pebbly appearance. In early cases the condition will sometimes be cured, and at any stage it may be inhibited by operation.

Pseudomyxoma Peritonei in Male Subjects

Dr. M. G. Seelig, St. Louis: The characterizing feature of the disease is the accumulation of a colloid exudate in the peritoneal cavity, varying in consistency from a syrup to solid colloid masses. In some instances there is a progressive cachexia leading to death; in others the disease runs a benign course with perfect recovery after suitable operative procedure and often doubtlessly without operation. In some cases the colloid material is confined in loculi whose walls are made up of a connective tissue new growth so firm and abundant that it fuses all the viscera into a solid mass, molded, as it were, into the peritoneal cavity. The appendix is the sole responsible agent for the disease as we encounter it in the male. Treatment consists in removing the primary focus of disease—the appendix—and scooping out that portion of the exudate which can be reached conveniently and with safety, without any attempt to clear the abdominal cavity of its entire pseudomucinous contents.

A Warning Against Promiscuous Uterine Curettage

Dr. J. Wesley Bovée, Washington, D. C.: It is well to point out the many dangers incident to uterine curettage. Not infrequently is a pregnancy in its first month thus scraped from the uterus and perhaps never recognized. Certainly humilation has often come to the operator by discovering during curettage that an unsuspected pregnancy has been interrupted. Very often pregnancy has unnecessarily been ended by curettage for incomplete abortion. The literature teems with reports of cases of perforation of the uterus by the curet with or without dangerous sequels and even death. The cervical canal is so constantly infected that it does not seem strange that infection may be carried from it into the uterine cavity by the curet, sound or dilator. Again, it is shown by Curtis that infection of the endometrium is nearly always associated with similar infection of the tubes and most often gonorrheal. Curettement under such conditions is strongly contraindicated. The dangers from curetting are ever present. If chronic endometritis as a clinical entity is to be ruled out, one potent indication for curettage in the past will be removed.

Operative Treatment of Pelvic Inflammation

Dr. Charles R. Robbins, Richmond, Va.: Pelvic inflammation is most frequently due to one of two causes: gonorrhea or infections following abortion or labor at term. Operation in gonorrheal cases may be performed with comparative safety at any stage, but radical operation in the septicemic group, in the acute stage, is attended by a high mortality and should not be done. Delay in operation on the septicemic group is an advantage, is less dangerous, and often results in symptomatic or absolute cure. The best method of treatment is that usually known as the Fowler-Ochsner-Murphy treatment. The details of operation on which emphasis is laid are the complete removal of the tube, excising also the uterine portion, and the attachment of the broad ligament to the horn of the uterus, thereby elevating the ovary away from pressure and adhesions and the temporary suspension of the uterus.

Stone in the Kidney

Dr. Charles H. Mayo, Rochester, Minn.: Stones form in the cortex, in the calices, and in the pelvis of the kidney. The kidney is constantly eliminating living bacteria, so that it is always exposed to infection, and usually shows no results from it except gross lesions of rare occurrence. Stone formation may proceed with exceeding slowness, and without pain or other symptoms until marked destruction of the kidney occurs, mixed infection develops, or until the stone assumes great size or becomes loosened and moves into the ureter. If the stone originates in the cortex of the kidney, its growth will be slow; but if it originates in the calices or pelvis, growth may be much more rapid because of the ease with which its chemical material is secured.

Results of Operations for the Removal of Stones from the Ureter

Dr. E. S. Judd, Rochester, Minn.: Stones in the ureter may pass voluntarily into the bladder. In my experience 12 per cent. of a group of 400 persons have admitted the passing of stones. Stones may be lodged in the ureter and produce no symptoms, and again they may produce the classic syndrome of ureteral calculus. There are two methods of treatment: the nonoperative and the operative. The first method consists in the dislodging of the stone by a ureteral catheter or small sound. The kidney should not be removed unless extensively infected, as it may recover its function. Conservative methods are justified in any case of chronic kidney infection, while radical methods must be employed in acute, severe infections. Nephrectomy is the operation of choice. Dr. Braasch has removed ureteral stones in about 126 cases by nonoperative methods. During the same period, 400 patients were operated on; about half the patients require operation to rid them of stone. Two deaths occurred in the series of 400 cases, only one of which was directly due to the operation.

Uretero-Ureteral Anastomosis

Dr. Reuben Peterson, Ann Arbor, Mich.: Ureteral Anastomosis is a perfectly feasible procedure. Not only can the duct be made patent with little or no stricture, but a functionating kidney and ureter can result. In skilled hands, the primary mortality should be very small. The invagination methods are preferable to the transverse end-to-end method, since they are followed by fewer cases of leakage. The end-in-end method of anastomosis is the operation of choice. It is extremely simple, and sacrifices the minimum amount of the ureter.

Sarcoma of Stomach

Dr. William D. Haggard, Nashville, Tenn.: Primary gastric sarcoma is one of the rarest surgical diseases. A certain diagnosis of sarcoma of the stomach before operation is practically impossible. Only an operative diagnosis is possible. Hemorrhage from the stomach and blood in the stools are a frequent occurrence, especially in the round cell variety, although in sarcoma it is not so frequent as in cancer. Early exploration should be invoked.

Gastro-Enterostomy Following Rammstedt Operation Which Failed to Relieve the Obstruction

Dr. Frank D. Smythe, Memphis, Tenn.: Posterior gastroenterostomy should be performed as a last resort in cases in which a Rammstedt operation has failed to relieve the obstruction. An otherwise hopeless case may be saved thereby, as in my case. The second operation was done seventy-six hours after the first.

Ileostomy for Postoperative Obstruction Following Appendectomy

Dr. Edward P. Richardson, Boston: I have to report seven cases of obstruction occurring during convalescence from

appendicitis. In five of these, ileostomy was done for obstruction apparently mechanical in nature. Four of these patients were children. Recovery with spontaneous closure of the fistula occurred, the patients remaining well for from one to eight years These results suggest that ileostomy is a more favorable method of treatment in obstruction by recent adhesions than in other types of obstruction. Good results depend on the operation being undertaken early, and it is far better to operate unnecessarily occasionally than to postpone operation until the later stages of obstruction have developed.

Surgical Drainage from a Biologic Standpoint

DR. J. SHELTON HORSLEY, Richmond, Va.: Drainage from the abdominal cavity is practically always uphill, and yet it is successful because the drainage material not only relieves the pressure, but also provokes the outpouring of large quantities of lymph in an effort to extrude the drainage material, and this serum carries along with it products of bacterial infection that might otherwise be absorbed. In solid soft tissue, as in the thigh, the lymph supply is not so abundant, and consequently gravity drainage must be used. In the abdomen, the supply of lymph is so abundant and its pouring out so constant along the drainage tract it makes little difference whether the drainage tube is pointed up or down, so long as it is of sufficient size and of the proper kind of material to provoke the outpouring of serum. Drainage should be instituted after every radical operation for cancer of the breast or neck, as it tends to prevent the absorption of cancer cells that may be left in the wound. Drainage of infected epithelial lined hollow viscera carries off the inflammatory products, affords physiologic rest, and also produces a reversal of the circulation of the local lymphatics that will prevent the absorption of much of the septic products. Drainage material should be selected with a view to inducing a reversed flow of lymph to carry away the liquid products of the wound, and also with a view to injuring the wound as little as possible. Ideal drainage material has not been found, but empirically combinations of gauze and rubber tissue have been worked out that are fairly satisfactory.

Carrel-Dakin Treatment of Infected Wounds

DR. E. DUNBAR NEWELL, Chattanooga, Tenn.: It was almost universally observed in the hospitals of the American Expeditionary Forces that patients whose infected wounds had been properly treated by the Carrel-Dakin method suffered less pain, had less systemic infection, were more alert and cheerful, had a more rapid convalescence, and the wounds closed far earlier and with less deformity and less morbidity than in those patients whose infected wounds were treated by other methods.

Results and Feasibility of Treating Lymphangiomas with Injections of Boiling Water

DR. FRANCIS REDER, St. Louis: So far eight patients have been injected with boiling water. The reaction following the injection seemed unusually severe when compared with the reaction following the injection of a hemangioma. For twenty-four hours the patient gave evidence of feeling sick, and usually registered a temperature of 100 or 101 F. with a pulse from 100 to 110. When the reaction had passed off, which was generally after the third day, the feeling of euphoria returned. The increase in the size of the tumor after the injection, although considerable, bore a minor ratio to the increase seen in hemangiomas after injection. Inflammatory processes seemed active and prolonged, the skin giving evidence of the severity by a marked reddish discoloration. Retrogression seemed very slow. It required from four to six months to show that the tumor had decreased in size. In the case of a baby with the left foot about four times its normal size, it required two years for the foot to attain the size to be fitted with a shoe. Subsequent injections are almost impossible to be given, if the initial injection has been a thorough one. The tumor mass is so hard that no hot water can be forced into it. All of the eight patients injected with boiling water have been benefited, but in none has the tumor entirely disappeared.

Some Plastic Operations on the Rectum

DR. HARVEY B. STONE, Baltimore: In certain special types of stricture of the rectum, an application of the principle of the Heineke-Mikulicz pyloroplasty is helpful. These strictures are of the diaphragm type; that is, firm, with small lumen, but narrow and annular in their involvement of the long axis of the bowel. In tubular strictures of the rectum, occurring in the lower 4 inches of the bowel in multiparous women, the utilization of part of the voluminous vaginal mucosa as a transplant into the rectum has been tried. This has been done only when long continued dilatations have failed to give relief, and when the Wassermann test has been for a long time negative. The advantages of this operation are direct closure of the urethral orifice, the complete removal of the fistulous area of the rectum, the interposition of perineal structures between rectum and urethra, and the temporary diversion of the urine. It has proved very successful in practice.

Autogenous Bone Grafting for Repair in Fractures of Long Bones

DR. FRANK MARTIN, Baltimore: The chief factors for successful bone grafting are perfect aseptic technic; avoidance of mechanical injury or trauma to the graft; scrupulous avoidance of traumatizing tissues; definite and firm fixation of the graft, and the allowing of a long interval to elapse after complete healing of the wound. Grafts will not remain viable when there is infection. There should be perfect hemostasis.

Oxycephaly

DR. STEPHEN H. WATTS, Charlottesville, Va.: It is only in recent years that operative measures have been undertaken with the object of combating the symptoms of increased intracranial pressure, especially the threatened blindness. Since most observers think that this increased pressure is due to the disproportionate growth of the brain and skull, decompression seems to be the operation of choice; moreover, it has the advantage of simplicity and relative safety. It should be done early, for in cases with irreparable optic atrophy and no other pressure symptoms, operation is not indicated. The results of this operation in the small number of cases in which it has been done are distinctly encouraging, in spite of the fact that the optic atrophy was rather advanced in most instances. The patient on whom I did a bilateral subtemporal decompression was seen about two years after this operation. His general condition was much better, and he seemed to see better, as he stumbled much less in walking. He could count fingers at 3 feet, which he could not do before operation. Examination of the eye grounds, however, detected practically no change, there being a marked optic atrophy in both eyes. An interesting feature of this case is that at operation the bulging of the brain was so marked that the temporal fascia could not be at all approximated on either side; therefore the defects were covered by transplanted patches of fascia lata. Another point of interest is the ossification of the tissues over the region of the decompression, this bone showing the same digital impressions as the rest of the skull.

An Efficient Treatment for Carbuncle

DR. A. C. SCOTT, Temple, Texas: By strong traction the mass is lifted out of its bed while the cautery sweeps back and forth between it and the cellular tissue below or skims along the fascia covering the muscle beneath or penetrating the muscle, if necessary, until the entire mass is free. If any vessels spurt freely or fail to close when the cautery is held in contact with them a few seconds, they should be ligated. Any doubtful places beneath the remaining skin margins should be explored by the cautery tip. If the emission of steam is noted, the cautery should be applied until the cavity is apparently dry. Such a wound is now sterile and may be handled as any sterile burn. As soon as all burned tissue has been cleared away, perforated skin grafts sufficient to cover the granular surface soon complete the cure. The period of convalescence appears to be 50 per cent. less than by the old methods of treatment.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

January, 1920, **19**, No. 1

*Study of Achondroplasia. T. F. Wheeldon, Richmond, Va.—p. 1.
*Food Value of Milk of Water Buffalo. W. W. Cadbury, Canton, China.—p. 38.
*Dextrose Tolerance in Atrophic Infants. P. M. Mattill, K. M. Mayer, and L. W. Sauer, Chicago.—p. 42.
*Case of Hypersensitiveness to Cow's Milk. E. A. Park, Baltimore. —p. 46.
Anomaly of Diaphragm, with Herniation into Thorax of Certain Viscera Resulting in Gastric and Intestinal Obstruction. L. R. DeBuys, New Orleans.—p. 55.

Achondroplasia.—Wheeldon reviews the literature and reports six cases. Two show a new symptom, a wedge-shaped vertebra, which falls in the group of symptoms of infolding, and which, Wheeldon says, fortifies the belief that achondroplasia is produced by the smallness of the amnion.

Milk of Water Buffalo.—Cadbury shows that the milk of the water buffalo is a valuable dairy product and contains on an average 12.6 per cent. of fat. This milk can easily be modified for infant's use, as is shown by a table of formulas.

Dextrose Tolerance.—The dextrose (glucose) tolerance of the approximately normal infant, as determined by the Woodyatt method, is very likely identical with that of the normal adult, which is 0.8 to 0.9 gm. per kilogram per hour. But the tolerance of atrophic infants for dextrose is considerably greater: it varied in the authors' seven cases from 1.4 or 1.5 gm. to 1.8 gm. per kilogram per hour.

Hypersensitiveness to Cow's Milk.—Park reports the existence of hypersensitiveness to cow's milk in an infant 6 weeks old who had never been known to receive cow's milk previously, so that it seems necessary to regard the condition as prenatal in origin. The possibility that the hypersensitiveness was derived passively from the mother was excluded by its duration. In the absence of evidence that the peculiarity was acquired, it must be regarded as having been inherent in the germ plasm. Attempts at desensitization were successful.

American Journal of Insanity, Baltimore

October, 1919, **76**, No. 2

Cross Sections of Mental Hygiene, 1844, 1869, 1894. E. E. Southard, Boston.—p. 91.
Establishment of a National Institute of Neurology. H. Cushing, Boston.—p. 113.
Classification of Nervous and Mental Diseases. S. T. Orton, Philadelphia.—p. 131.
Rehabilitation in Nervous and Mental Cases Among Ex-Soldiers. C. B. Farrar, Canada.—p. 145.
Chemical Analyses of Two Pathologic Human Brains. C. G. MacArthur and E. A. Doisy, Palo Alto, Calif.—p. 159.

American Journal of Medical Sciences, Philadelphia

December, 1919, **158**, No. 6

Medical Aspects of Reconstruction. W. S. Thayer, Baltimore.—p. 765.
Cardiac Diagnosis in Light of Experiences with Army Physical Examinations. L. A. Conner, New York.—p. 773.
*Case of Rupture of Aortic Aneurysm into Left Innominate Vein. J. B. Herrick, Chicago.—p. 782.
*Clinical Significance of Postural Changes in Blood Pressures and Secondary Waves of Arterial Blood Pressure. H. Sewall, Denver. —p. 786.
*Vital Capacity of Lungs and Carbon Dioxid Combining Capacity of Blood in Cases of "Effort Syndrome." F. D. Adams, Washington, D. C., and C. C. Sturgis, Pendleton, Ore.—p. 816.
*Studies of Cases of "Effort Syndrome" with Measured Work. T. M. Mahon, Pittsburgh.—p. 818.
*Position of Arm in Blood Pressure Measurements. M. H. Kahn, New York.—p. 823.
*Functional Diagnosis of Polyglandular Disease in Acromegaly and Other Disturbances of Hypophysis. Report of Cases. C. P. Howard, Iowa City, Iowa.—p. 830.
*Problem of Nutrition and a Satisfactory Method of Feeding in High Intestinal Fistulas. M. M. Peet, Ann Arbor, Mich.—p. 839.
Later Stages of So-Called War Nephritis. T. Howard and A. F. Robertson, U. S. Army.—p. 845.
Lethargic Encephalitis in the A. E. F. A. Skversky, New York. —p. 849.
Significance of Certain Pulmonary Lesions in Relation to Etiology of Influenza. E. W. Goodpasture, Boston.—p. 863.
Roentgenologic Determination of Pulmonary Tuberculosis. F. E. Diemer and I. H. Cramer, Portland, Ore.—p. 871.

Rupture of Aortic Aneurysm.—In Herrick's case the rupture was less than 1 cm. from the superior vena cava. The opening was 1.5 cm. in diameter. A typical syphilitic aortitis was present. Herrick discusses the clinical history and reviews the literature.

Postural Changes in Blood Pressures.—Sewall analyzes much material to demonstrate anew the clinical importance of tests to determine the quantitative range as contrasted with the qualitative perversion of physiologic functions. It is suggested that estimations should be made under different conditions of the velocity of the blood current, as represented by the product obtained in multiplying the pulse pressure by the pulse rate. Attention is called to the great frequency with which, in persons suffering from weakness of the circulation, the pulse sounds revealed by the auscultatory method are enfeebled or absent.

Lungs and Blood in Effort Syndrome.—Neither the number of cases found nor the degree of decrease of vital capacity present in the series studied by Adams and Sturgis is sufficient to indicate that the tendency to dyspnea in these patients is in any way dependent on a diminished vital capacity of the lungs. Tests of general muscular strength showed no relation between the muscular development and the vital capacity of the lungs. Observations were made in fifty-four cases, and from the carbon dioxid chemically bound as bicarbonate was found to fall within normal limits in all instances. Since, therefore, the carbon dioxid combining capacity of the blood is normal, there is no indication that a decrease in the buffer salts of the blood is a factor in the production of dyspnea in patients with "irritable heart."

Effort Syndrome with Measured Work.—A study was undertaken by Mabon of the changes in pulse rate and blood pressure taking place in fifty patients with "effort syndrome" after the hardest exercise which they could be induced to perform. These were, for the most part, patients with symptoms of many years' duration. The amount of work which they could do before becoming fatigued was much less than was done by normal controls. The pulse rate at rest was higher than in the normals, but the rise after exercise and the time for return of the pulse rate to its resting value were not definitely abnormal. No "delayed rise" of blood pressure, suggesting myocardial inefficiency, was observed. The amount of work which the subjects were able to perform usually corresponded closely to their physical strength, as determined by tests of the skeletal muscles, and this, Mabon says, indicates that lack of development of the skeletal muscular system is a factor to be considered in the cause of the fatigue following slight exertion in certain types of cases of "effort syndrome."

Arm in Blood Pressure Measurements.—Tests were made by Kahn to note the effect of raising the arm on auscultatory blood pressure readings. The normal effect is a progressive fall of the systolic and diastolic pressure readings as the arm is raised upward; the amount of fall increases with the elevation. Therefore, blood pressure readings should be obtained with the patient's arm at the side of his chest, as the normal reading varies considerably with the arm in different positions. This holds good for the seated, the standing and the recumbent postures.

Polyglandular Disease in Acromegaly.—From an analysis made by Howard of six cases it is evident that a secondary hyperpituitarism may result from a greatly or rapidly increasing intracranial pressure. The determination of a decrease in the sugar tolerance in the presence of other symptoms of disturbance of pituitary function justifies a diagnosis of increased activity of the pars intermedia. The epinephrin conjunctival test may be of positive value in certain cases of dyspituitarism in demonstrating a hypofunction of the chromaffin system. The subcutaneous epinephrin test was only of doubtful value in both normal and pathologic cases. Both the conjunctival and subcutaneous pituitary extract tests were too equivocal to be depended on for studying the functional activity of the hypophysis. The internal administration of the pituitary extract of either the whole gland or the anterior or the posterior lobes appears to exert no definite influence on the symtomatology of the disease.

Nutrition and Feeding in Intestinal Fistulas.—The problem of nutrition in high intestinal fistulas is solved by Peet by the enteric administration of foodstuffs through a small, soft catheter, inserted by way of the fistula into the efferent loop. By this method sufficient calories are utilized to maintain a good, physical condition and to build up an emaciated patient, so that he can withstand necessary operative treatment.

American Journal of Public Health, Concord, N. H.

December, 1919, **9**, No. 12

Historical Development of Public Health Work in England. A. Newsholme, London, England.—p. 907.
Administrative Measures Against Influenza. A. W. Freeman, Columbus, Ohio.—p. 919.
American Red Cross Health Crusade. After Effects of Influenza in Cincinnati. W. H. Peters, Cincinnati.—p. 924.
Public Health Perspective. L. L. Lumsden, U. S. P. H Service.—p. 930.
Need and Method of Coordinating Federal, State and Local Health Agencies in Promoting Industrial Hygiene. J. W. Schereschewsky, Washington, D. C.—p. 937.
Public Health Work in India. II. Review of Nature and Progress of Sanitation. H. J. Jenks, Berkeley, Calif.—p. 943.
Public Health Departments and Private Health Agencies. C. E. McCombs, New York.—p. 951.
Standard System of Bacteriologic Dilutions. W. F. Wells, Boston.—p. 956.
Influenza in Framingham, Mass. D. B. Armstrong, Framingham.—p. 960.

Annals of Surgery, Philadelphia

January, 1920, **71**, No. 1

Surgical Problems in Reconstruction of Peripheral Nerve Injuries. C. H. Frazier, Philadelphia.—p. 1.
*Lymphosarcoma of Mesentery. L. L. Bigelow and J. Forman, Columbus, Ohio.—p. 11.
*Recurrent Nephrolithiasis. Report of Case. O. F. Lamson, Seattle.—p. 16.
*Hour-Glass Bladder: Resection of Base of Bladder for Transverse Septums. J. R. Caulk, St. Louis.—p. 22.
Elephantiasis and Kondoleon Operation. Report of Case. T. M. Green, Wilmington, N. C.—p. 28.
Studies in Bone Growth. F. H. Albee, New York, and H. F. Morrison, U. S. Army.—p. 32.
Causes of Delayed Union and Nonunion in Fractures of Long Bones. W. L. Estes Jr., Bethlehem, Pa.—p. 40.
*Treatment of Bone Cavities. W. Martin, New York.—p. 47.
Abduction Treatment of Central Luxation of Femur. Report of Cases. R. Whitman, New York.—p. 62.
Gunshot Fractures of Tibia and Fibula. F. Christopher, Chicago.—p. 66.
Rapid Closure of Surgical Wounds, Specially of Laparotomies. A. L. Soresi, New York.—p. 84.

Lymphosarcoma of Mesentery.—The case presented by Bigelow and Forman adds one to the few cases of mesenteric sarcoma on record and the long list of sarcomas in other regions where the onset of the symptoms and the development of a tumor have followed a definite history of trauma. The patient suffered from abdominal "cramps" for several weeks before the "lump" was noticed. The case conforms to the established picture of a regional lymphosarcoma. The size of the mesenteric mass, as compared with the involved retroperitoneal nodes, leaves little doubt that the tumor arose in the mesentery.

Recurrent Nephrolithiasis.—Thorough flushing of the urinary channels through drinking freely of water, preferably of distilled water, Lamson says, may help in the dislodgment and removal of any possible nucleus of future stones. This treatment must be continued for a considerable period even after the urine has completely cleared up. Faulty or incomplete surgery, by leaving in the pelvis fragments of stones, may contribute toward a recurrence of nephrolithiasis.

Hour-Glass Bladder.—Caulk emphasizes the importance of free mobilization of the bladder before resection; the value of ureter catheter drainage in bladder resection; the need of complete removal of such transverse partitions and not temporizing with mere slit operations; the importance of vesical spasm in the neighborhood of inflammatory areas, and the protective value to a kidney of removing causes of vesical spasm in the presence of a patent ureteral vesical valve.

Treatment of Bone Cavities.—When the removal of sufficient portions of the wall of the cavity to allow the soft parts to fall in and fill it up is impracticable, as in certain tunnels and cavities near joints, some form of plugging is indicated. Of the many materials used as plugs Martin favors the free fat transplants.

Archives of Neurology and Psychiatry, Chicago

January, 1920, **3**, No. 1

*Histopathology of Brain and Spinal Cord in Case Presenting a Post-influenzal Lethargic Encephalitis Syndrome. H. A. Calhoun, Iowa City, Ia.—p. 1.
*Effects of Gunshot Wounds of Head. Based on Two Hundred Cases. C. H. Frazier and S. D. Ingham, Philadelphia.—p. 17.
*Comparison of Anterior Horn Cells in Normal Spinal Cord and After Amputation. A. E. Taft, Philadelphia.—p. 41.
Nonconcomitance of Spinal Fluid Tests. H. C. Solomon, Boston.—p. 49.
Influenza Psychoses in Successive Epidemics. K. A. Menninger, Topeka, Kan.—p. 57.
Résumé of Neurologic and Psychiatric Observations in a Hospital Center in France. J. W. Stephenson, New York.—p. 61.

Lethargic Encephalitis.—The case reported by Calhoun belongs to the new epidemic encephalitis group. The pathology is an acute infiltrative encephalomyelitis, the most marked changes occurring about the blood vessels of the thalamus, the cranial nerve nuclei, the floor of the fourth ventricle and in the white substance of the spinal cord.

Gunshot Wounds of Head.—The conditions in which Frazier and Ingham believe operation for cranial defects is indicated are: 1. For cosmetic reasons, especially when the defect is in the frontal region below the hair line. 2. In certain selected cases of epilepsy. 3. In the presence of a large defect where the brain is exposed to trauma. 4. When the patient is apprehensive, because of the defect and he dreads the possibility of a direct blow on the uncovered cortex. 5. In a few cases where the symptoms are wholly subjective an operation is advisable in the hope that, combined with the influence of suggestion, the neurosis will be relieved. Under these indications the authors have operated in fifty-nine out of 153 cases of cranial defects.

Studies on Anterior Horn Cells.—Cell counts were made by Taft on the anterior horns of the spinal cord in twenty-eight cases. Three of these were cases following amputation of an extremity. The twenty-five additional cases were said not to have had signs of a cord lesions. Variations in the counts between the two sides in the amputated cases was not more than two or three cells in the final average. In two of these, the greater number was on the side corresponding to the amputation. Variations in the counts between the two sides in the cases without amputation was at times greater than with amputation. In the sections where identification was made of the right and left sides, there appears no uniform difference between the two corresponding counts.

Boston Medical and Surgical Journal

Dec. 25, 1919, **181**, No. 26

Vaccines in Influenza. W. H. Watters, Boston.—p. 727.
*Primary Sarcoma of Stomach. A. R. Kimpton, Boston.—p. 731.
Functional Heart Disturbances in Women. F. L. Meredith, New York.—p. 734.
Enlarged Thymus Gland in Infancy and Its Treatment by Radium. H. W. Brayton and A. C. Heublein, Hartford, Conn.—p. 740.

Jan. 1, 1920, **182**, No. 1

"Flat Foot" and other Static Foot Troubles. F. J. Cotton, Boston.—p. 1.
Frequency of Urination. F. D. Davis, Springfield, Mass.—p. 11.

Primary Sarcoma of Stomach.—Kimpton reports the case of a patient who is alive and perfectly well, with no evidence of return of the sarcoma five years and ten months after an extensive resection of the stomach for a very rapidly growing sarcoma of the round cell type. She is able to drive, oil and grease, and even change the tires of her own car.

Canadian Medical Association Journal, Toronto

December, 1919, **9**, No. 12

Mental Hygiene in Relation to Social Hygiene. A. H. Desloges, Montreal.—p. 1057.
Multiple Infarcts of Spleen in Malignant Endocarditis. Rupture of Spleen and Peritonitis. A. Vallee, Quebec.—p. 1064.
Practical Aspects of Quarantine for Influenza. T. H. Whitelaw, Alberta.—p. 1070.
Treatment of Influenza. F. H. Wetmore, Hampton, N. B.—p. 1075.
Mental Tests in Practice. A. G. Morphy, Montreal.—p. 1081.
Perforating Gunshot Wound of Face with Extensive Destruction of Superior Maxillas. J. N. Roy, Montreal.—p. 1088.

Mental Excitement in Psychopathic Hospital; Its Prevention and Care. E. Mills.—p. 1101.
Bacillus Coli Infection of Kidney. P. Weatherbe, Halifax, N. S. —p. 1107.

Iowa State Medical Society Journal, Des Moines

Dec. 15, 1919, **9**, No. 12

Roentgenotherapy and Radium in Surgery. F. L. Nelson, Ottumwa. —p. 400.
Laboratory Service of Divisional Laboratories. L. A. Fritze.—p. 403.

Journal of Experimental Medicine, Baltimore

Jan. 1, 1919, **31**, No. 1

*Lymphocyte in Natural and Induced Resistance to Transplanted Cancer. V. Histologic Study of Lymphoid Tissue of Mice with Induced Immunity to Transplanted Cancer. J. B. Murphy and W. Nakahara, New York.—p. 1.
Studies on Roentgen-Ray Effects. V. Effect of Small Doses of Roentgen Ray of Low Penetration on Lymphoid Tissue of Mice. W. Nakahara and J. B. Murphy, New York.—p. 13.
*Toxins and Antitoxins of B. Dysenteriæ, Shiga. P. K. Olitsky and I. J. Kligler, New York.—p. 19.
Cultural Differentiation of Beta Hemolytic Streptococci of Human and Bovine Origin. J. H. Brown, Princeton, N. J.—p. 35.
*Dairy Infection with Streptococcus Epidemicus. J. H. Brown and M. L. Orcutt, Princeton, N. J.—p. 49
Effects of Intravenous Injections of Dichlorethylsulfide in Rabbits, with Special Reference to Its Leukotoxic Action. A. M. Pappenheimer and M. Vance, New York.—p. 71.
Fungous Developmental Growth Forms of B. Influenza. H. W. Wade, and C. Manalang, Manila.—p. 95.
*Method of Standardizing Bacterial Suspensions. F. L. Gates, New York.—p. 105.

Lymphocyte in Resistance to Transplanted Cancer.—Murphy and Nakahara found that mice immunized against cancer by means of an injection of defibrinated blood show in the germinal centers of the lymphoid organs a marked increase in the numbers of mitotic figures. The increase becomes evident forty-eight hours after the injection in the majority of instances, and reaches its climax at about the fifth day. After this time it subsides, returning to the normal rate about the tenth day. These immunized animals, when inoculated with a cancer graft ten days after the injection, show a second stimulation of the lymphoid centers similar to the first but more intense in character. This increase in the number of mitotic figures becomes evident as early as twenty-four hours after the cancer inoculation and persists in a marked degree for a week, after which there is a gradual return to the normal rate. The lymphocytes of the circulating blood during the establishment of the immunity show frequent examples of amitotic division, and many examples of irregular and lobulated nuclei. These changes suggest intensified functional activity. Cellular reaction in the subcutaneous tissues of immunized animals is present only in the region infiltrated by the injected cells. This fact becomes conspicuous when the immunizing injection is given intraperitoneally, in which case no cellular accumulations are noted in the loose connective tissues. No constant cellular changes were noted in the bone marrow, thymus or thyroid gland, liver or kidney of the treated animals.

Bacillus Dysenteriae Shiga.—Olitsky and Kligler have separated an exotoxin and an endotoxin from cultures of the Shiga dysentery bacillus. The two toxins are physically and biologically distinct. The exotoxin is relatively heat labile, arises in the early period of growth, and yields an antiexotoxic immune serum. The endotoxin, on the other hand, is heat stable, is formed in the later period of growth, and is not neutralized by the antiexotoxic serum. The exotoxin exhibits a specific affinity for the central nervous organs in the rabbit, giving rise to a characteristic lesion—mainly, hemorrhages, necroses and possibly a perivascular infiltration in the gray matter of the upper spinal cord and medulla. The endotoxin exerts a typical action on the intestinal tract, producing edema, hemorrhages, necroses and ulcerations, especially in the large intestine. A potent antidysenteric serum should contain antibodies against the exotoxin as well as the endotoxin. That such a serum can be produced in horses has been demonstrated experimentally.

Dairy Infection with Epidemic Streptococcus.—A streptococcus epidemic of moderate extent and severity was characterized by clinical symptoms different from the usual septic sore throat, though the organism found was culturally *Streptococcus epidemicus*. The infection was traced to the milk from a single quarter of the udder of a cow in a dairy of 112 cows producing an otherwise excellent grade of raw milk. A number of the milkers on the dairy farm were found infected. It was impossible to trace the infection of the cow's udder to any one of the milkers, though such an infection seems probable since the streptococcus isolated from the cow was in every respect like streptococci isolated from patients and milkers, and different from those usually found in normal cows or cows with garget. Certain recommendations are made to safeguard producers of raw milk against the occurrence of such epidemics.

Standardization of Bacterial Suspensions.—The opacity of a bacterial suspension is measured by the length of the column of the suspension required to cause the disappearace of a wire loop. By a simple formula the measured opacity is translated into terms of the concentration of bacteria per cubic centimeter, and so made comparable with that of other suspensions of the same organism. An instrument for measuring the opacity of bacterial suspensions is described in detail.

Journal of Infectious Diseases, Chicago

January, 1920, **26**, No. 1

Ultraspectroscopic Studies on Blood Serum. I. Antagonistic Action of Salt in Blood Serum. T. Tadokoro, Chicago.—p. 1.
Ultraspectroscopic Studies on Blood Serum. II. Difference in Colloidal State of Normal and Immune Serum. T. Tadokora and Y. Nakayama, Chicago.—p. 8.
*Nonlactose Fermenting Organisms from the Feces of Influenza Patients. N. P. Sherwood, C. M. Downs and J. B. McNaught, Lawrence, Kan. —p. 17.
*Hemolytic Streptococci in Throat in Certain Acute Infectious Diseases. A. Otteraaen, Chicago.—p. 23.
Bacteriology of Chronic Empyema. J. E Gordon, Camp Gordon, Ga. —p. 29.
Phenol Red-China Blue as an Indicator in Fermentation Tests of Bacterial Cultures. K. Morishima, Washington, D. C.—p. 43.
Metabolism of Virulent Human Tubercle Bacilli. A. I. Kendall, A. A. Day and A. W. Walker, Chicago.—p. 45.
Action of B. Typhosus on Xylose and Some of Other Less Frequently Used Sugars. O. Teague and K. Morishima, Washington, D. C. —p. 52.
Metabolism of Bovine Tubercle Bacilli. A. I. Kendall, A. A. Day, and A. W. Walker, Chicago.—p. 77.
*Complement Fixation in Diagnosis of Tuberculosis. W. H. Moursund, Ft. Sam Houston, Texas.—p. 85.

Nonlactose Fermenters in Feces in Influenza.—Bacteriologic examinations of the feces of thirty-two patients with influenza showed the presence of *B. typhosus* in three, and of enteritidis-like organisms in seventeen others. Examination in control cases (one case of typhoid and one of mumps, two cases of measles, three cases of tonsillitis, several cases of lobar pneumonia and several surgical cases) yielded *B. typhosus* in the case of typhoid, but no enteritidis-like organisms in any of the other cases. There seemed to be no correlation between the nature of the stools and the presence of these organisms. They were found in both diarrheal and constipated stools, in mild and severe cases of influenza. The authors point out that if these organisms have no clinical significance in these cases, it would seem to raise the question as to the value of much of the published work on epidemics of food poisoning, supposedly due to enteritidis-like organisms where the mere presence in feces, coupled with more or less vague clinical pictures quite similar to many cases of influenza, have been assumed to prove the enteritidis-like organisms as being the causative factor.

Hemolytic Streptococci in the Throat.—The throats of 300 patients were examined by Otteraaen. He says that hemolytic streptococci are frequent inhabitants of the throats of normal individuals and of persons suffering from acute infectious diseases. These streptococci are not virulent so far as indicated by the results of animal inoculations and phagocytoses experiments. Otteraaen says that the enrichment method should be used in preference to the surface plate method in examinations for streptococci.

Complement Fixation in Diagnosis of Tuberculosis.—The complement fixation test for tuberculosis, as described in Moursund's paper, is of no value as a diagnostic or prognostic aid. The complement fixation test for tuberculosis with alcoholic extract of tubercle bacilli as antigen is not specific.

Not all complement fixation tests with bacterial antigens are specific. A large percentage of serums giving a positive Wassermann reaction give fixation with tubercle and gonococcus antigens. A certain number of individuals not infected with tuberculosis or gonorrhea will give positive fixation tests with one or both of the corresponding antigens.

Journal of Laboratory and Clinical Medicine, St. Louis

December, 1919, **5**, No. 3

Applications of Pragmatic Method to Psychiatry. E. E. Southard, Boston.—p. 139.
*Relation of Glycogen to Pathologic Changes in Pancreatic Diabetes. D. M. Ervin, Cincinnati.—p. 146.
*Pathology of Influenzal Pneumonia. O. J. Walker, Youngstown.—p. 154.
Choice of Serums in Treatment of Meningococcus Sepsis. M. B. Cohen, Ashland.—p. 176.
New Stomach Examiner Based on Hydraulic Principle. K. Togami, Fukuoka, Japan.—p. 178.
*Preformed Ammonia in Cerebrospinal Fluid. P. F. Morse and E. S. Crump, Detroit.—p. 185.

Glycogen and Pancreatic Diabetes.—Glycogen is a stabilizing colloid in the cell and as such prevents the breaking of the emulsion or fatty degeneration by its resistance to acids, salts, etc. Glycogen is hydrolyzed by acids, and when hydrolyzed, there is left a protein-fat emulsion that is but poorly resistant against acids. In diabetes, Ervin says, no glycogen is formed, the fat is only slightly emulsified, permitting a high concentration of the fats or soaps to reach the cell and a consequent limited oxidation with the production of the acetone bodies. The equilibrium of glycogen with glucose is shifted toward the glucose side by the presence of the hydrogen ion; hence the high blood sugars in fevers, mercury and phosphorus poisoning and nephritis.

Pathology of Influenzal Pneumonia.—The pneumococcus and hemolytic streptococcus were the most frequent secondary invaders found in the lungs at necropsy in the pneumonias at Camp Sherman. Pfeiffer's bacillus was found in only 4 per cent. of the cases. Walker claims that interstitial and lobular bronchopneumonia cannot be regarded as typical lesions resulting from the invasion by the hemolytic streptococcus. The pneumococcus was found to be the only invader just as frequently as the hemolytic streptococcus in these types of pneumonias. In fact, it is doubtful whether the type of organism isolated from pulmonary tissue in pneumonia is of any great value in determining the type of pneumonia present, for the type of organism concerned and the type of lesion in the lung are decidedly variable at different times even at the same station. Influenzal pneumonia is primarly an acute, hemorrhagic lesion, interstitial, nodular, or massive in extent, arising from a pulmonary capillary phlebitis with disseminated capillary necrosis due to some toxic agent, and resulting in a secondary purulent pneumonia with healing by organization. The organism or organisms predominately present in nose or throat in the individual in any particular section of the country is the organism most commonly found in cultures and tissue sections from the lungs of secondary pneumonias in that region. Empyema and pericarditis were frequent complications.

Preformed Ammonia in Cerebrospinal Fluid.—Morse and Crump present a method for the determination of excess preformed ammonia in the spinal fluid, which they have found to be great value for quickly determining the cause of coma. To an appropriate quantity (2 c.c.) of spinal fluid, an equal quantity of Nessler's reagent is added. In normal persons and in conditions not tending to acidosis or nitrogen retention, scarcely any brown color develops. A cloudy greenish gray precipitate gradually forms and the fluid turns a dirty pale green color. When there is acidosis or nitrogen retention from any cause, a deep brown color develops immediately, the depth of color depending on the amount of ammonia present in the spinal fluid. Only one precaution is necessary. The fluid must be free from contaminating bacteria. These form ammonia and give false readings. Sterile spinal fluids, well corked, give good reactions even when several days old. The reaction is read immediately (within thirty seconds). In general, cases of acidosis associated with infection, and terminal stages of meningitis, develop less color than cases of uremia with nitrogen retention.

Journal of Orthopedic Surgery, Lincoln, Neb.

December, 1919, **1**, No. 12

Calcaneo Cavus and Its Treatment. N. Dunn. Birmingham.—p. 711.
Tuberculin in Treatment of Bone and Joint Tuberculosis. S. Kleinberg, New York.—p. 722.
Disability Following Injuries to Back in Industrial Accidents. J. W. Sever, Boston.—p. 743.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

October, 1919, **14**, No. 2

*Penetration of Dichlorethylsulphid (Mustard Gas) into Marine Organisms, and Mechanism of Its Destructive Action of Protoplasm. R. S. Lillie, G. H. A. Clowes and R. Chambers, Woods Hole, Mass.—p. 75.
*Effect of Pyretics and Antipyretics on Catalase Production. W. E. Burge, Madison, Wis.—p. 121.
*Drugs After Chlorin Gassing. III. Treatment of Gassed Dogs with Calcium, Quinin and Atropin. H. G. Barbour, New Haven, Conn.—p. 131.
*Local Anesthetics: Do They Precipitate Proteins? T. Sollmann, Cleveland.—p. 135.
Rôle of Bromid Salts on Rhythmically Contracting Organs. I. Action of Bromid on Isolated Mammalian Heart T. Kruse, Columbia, Mo.—p. 137.
II. Action of Bromids on Smooth Muscle. T. Kruse, Columbia, Mo.—p. 149.
Plasma and Blood Clotting Efficiency of Thromboplastic Agents in Vitro and Their Stability. P. J. Hanzlik and C. M. Weidenthal, Cleveland.—p. 157.
Hemostatic Properties of Thromboplastic Agents under Different Conditions. P. J. Hanzlik and C. M. Weidenthal, Cleveland.—p. 189.

Penetration of Dichlorethylsulphid.—The experiments recorded by Lillie and his associates lend strong support to the theory, that "mustard gas" penetrates the cell on account of its organosolubility, and within the cell undergoes hydrolysis, with the liberation of nascent hydrochloric acid, which exerts the destructive effect.

Effect of Pyretics and Antipyretics.—According to Burge, chloroform and ether lower temperature in so far as decreased oxidation is involved in this by decreasing catalase, the enzyme principally responsible for oxidation in the body. The fact that acetanilid, quinin and acetphenetidin have little or no effect in decreasing catalase suggests that their mode of action in lowering temperature is not due to a decrease in oxidation.

Drugs After Chlorin Gassing.—No evidence was obtained by Barbour favorable to the employment of subcutaneous injections of calcium lactate in edema of the lung. Calcium was tested in twenty-three, quinin in eight and atropin in four gassed dogs, without a single recovery.

Do Local Anesthetics Precipitate Proteins?—Sollmann's experiments show that most of the local anesthetics now available do not precipitate proteins, and none did so to a serious degree.

Laryngoscope, St. Louis

November, 1919, **29**, No. 11

Treatment of Gunshot Wounds of Mastoid. H. Neuhof and G. H. Cocks, New York.—p. 615.
Injuries of Nose and Throat, Due to Bullet and Shell Wounds. J. M. Ingersoll, Cleveland.—p. 624.
Foreign Bodies in Air and Upper Food Passages in Pre-Endoscopic Days. H. Arrowsmith, Brooklyn.—p. 633.
Thrombosis of Internal Jugular Vein with Pyemia as a Complication of Retropharyngeal Abscess. H. P. Mosher, Boston.—p. 638.
Nature and Origin of Stammering. E. L. Kenyon, Chicago.—p. 639.
Three Reflex Signs Useful in Examining Ears for Deafness. O. J. Stein, Chicago.—p. 657.
Roentgen-Ray Diagnosis of Acute Mastoiditis in Absence of Mastoid Symptoms. H. M. Hays, New York.—p. 660.

Medical Record, New York

Nov. 1, 1919, **96**, No. 18

*Roentgen-Ray Findings with the Delineator in Cardiospasm. M. Einhorn and T. Scholz, New York.—p. 715.
Mental Diseases. H. Laveson, New York.—p. 717. To be cont'd.
Results of Nonspecific Vegetable Protein Therapy in Cases of Bronchial Asthma. A. Sterling, Philadelphia.—p. 725.
Intraspinous Treatment of Neurosyphilis. C. R. Humbert, Kansas City.—p 726.
Relation of Eye and Ear Disturbances to Disorders of Gastroenteric Tract. J. Katz, Brooklyn.—p. 727.

Roentgen-Ray Findings with Delineator in Cardiospasm.—Einhorn claims that this is the best method for studying

cases of cardiospasm. The delineator string, once swallowed by the patient, may remain in situ for any length of time, outlining permanently the course of the esophagus and reacting even to slight spastic conditions of the organ. In the normal esophagus the course of the string shows a straight line. In the spastic organ the course of the string is more or less tortuous, according to the degree of spasticity. The instrument casts a definite shadow on the fluoroscopic screen as well as on the plate. The patient, therefore, can be examined repeatedly during any period of time, and at the roentgenologist's leisure, without subjecting the patient to the inconvenience of repeated ingestions of contrast mixtures. If necessary, plates can be taken for records.

Nov. 15, 1919, **96**, No. 20

Emotional Unrest, Its Causes and Treatment. S. Paton, Princeton, N. J.—p. 787.
Obstetric Paralysis (Erb's Palsy); Report of Seventeen Cases. S. W. Boorstein, New York.—p. 790.
Aconite in Treatment of Epidemic Influenza. S. G. Strauss, New York. —p. 798.
Absolute Rest as a Metabolic Stimulant. W. H. Porter, New York. —p. 800.
Medical Neologisms of Rabelais. D. W. Montgomery, San Francisco. —p. 801.
*Convenient Method for Concentrating and Isolating Tubercle Bacilli. H. J. Goeckel, Cranford, N. J.—p. 804.

Nov. 22, 1919, **96**, No. 21

A Year of Proteal Therapy. H. S. Williams, New York.—p. 825.
Necessity of Accuracy in Diagnosis of Tuberculosis. M. J. Fine, Newark, N. J.—p. 836.
Treatment of Pandemic Influenza. A. M. Corwin, Chicago.—p. 838.
Homosexuality. C. P Oberndorf, New York.—p. 840.
Hammer Toes. N. A. Ludington, New Haven.—p. 843.

Convenient Method for Concentrating and Isolating Tubercle Bacilli.—Goeckel uses Rice's bromin and alkali reagent (Rice's solution No. 1: Bromin [pure], 1 ounce [30 gm.]; sodium bromid, 1 ounce [30 gm.]; distilled water, q. s. ad. 8 fluidounces [250 c.c.]; Rice's solution No. 2: Sodium hydroxid, 2½ ounces [70 gm.]; distilled water, q. s. ad. 8 fluidounces [250 c.c.]) not only on sputum, but likewise on tuberculous glands. To the sputum, caseous pus, or moderately cut or minced tissues add a few cubic centimeters of the sodium hydroxid solution (Rice's solution No. 2). Mix well and add Rice's bromin solution (No. 1) in successive small portions until a clear liquid is obtained. The use of heat is not necessary. The liquid is then diluted with distilled water to reduce the specific gravity and is centrifuged at high speed to precipitate the bacilli. These are then washed with two successive portions of distilled water, centrifuging to remove the alkali The residue is mounted on a microscopic slide in the usual manner, using a trace of albumin to fix on the slide.

Michigan State Medical Society Journal, Grand Rapids

December, 1919, **18**, No. 12

Varicose Ulcers of Leg. J. Van Becelaere, Detroit.—p. 585.
Typhoid Fever. A. R. Hackett, Detroit.—p. 597.
When Should the Gallbladder Be Removed? W. J. Gillette, Toledo. —p. 602.
Diagnosis of Duodenal Ulcer. J. A. Andries, Detroit.—p. 605.
When Is Sterilization of Women Justifiable? R. Peterson, Ann Arbor.—p. 618.
Serologic Examinations in Eye and Ear Cases. D. M. Campbell, Detroit.—p. 615.
Multiple Fistula of Anorectal Origin; Surgical Solution of Chlorinated Soda; Plastic Skin Flap. E. G. Martin, Detroit.—p. 620.

Modern Medicine, Chicago

December, 1919, **1**, No. 8

Historical Development of Public Health Work in England. A. Newsholme, London, England.—p. 655.
American Public Health Association. C. E. A. Winslow, New York. —p. 663.
Fulfilling the Part of Physical Education in Reconstruction. J. Daniels, Washington, D. C.—p. 667.
Benzol Poisoning. R. P. Alhaugh, Cleveland.—p. 670.
*Recognition and Better Treatment for Mental and Nervous Injuries. F. D. Donoghue, Boston.—p. 671.
*Securinig Proper Medical Service for Injured Persons. J. W. Trask, U. S. P. H. Service.—p. 675.
Infections of Upper Extremities. P. A. Bendixen, Davenport, Ia. —p. 679.
Disabilities as Aggravated by Preexisting Conditions. J. W. Mowell, Olympia, Wash.—p. 683.
*Better Methods in Medical Service. F. H. Thompson, Salem, Ore. —p. 688.
How Can Medical Service Be Improved? M. R. Gibbons, San Francisco.—p. 689.
Critical Survey of Public Health Topics. J. Schevitz, Oklahoma City, Okla.—p. 694.
Larger Field in Tuberculosis. A. K. Krause, Baltimore, Md. —p. 697.
An Iowa Enterprise in Medical Service. A. E. Kepford, Des Moines.—p. 714.
Training School of Psychiatric Social Work at Smith College. E. R. Spaulding, Bedford Hills, N. Y.—p. 720.
Present Day Problems in Obstetrics. J. T. Williams, Boston. —p. 731.

Recognition and Better Treatment for Mental and Nervous Injuries.—Donoghue emphasizes the need of calling to the assistance of the compensation boards men competent to diagnose and advise treatment in the psychoses, and through them to encourage the further standardization of this group of cases. The present method of handling them by exerting constant pressure from the insurance physician, insurance adjuster, or compensation commissioner, is not always a success. Nonacceptable work forced on a man tends to develop in him the reaction against work. Forcing a high class man to sweep a floor, may not be treatment; it may be the opposite. The difficulty of the administration of workmen's compensation by lay boards in this group of cases comes down to the unsurmountable fact that there is no specific treatment for hysteria. When a person presents himself he is coming more for relief than for monetary compensation.

Securing of Proper Medical Service for Injured Persons.—Trask outlines the work done by the U. S. Employee's Compensation Commission, its aims and objects, and particularly the requirements of a competent personnel. Physical restoration is accomplished through medical treatment in its broad sense. To be effective it must be competent and adequate. The question of satisfactory medical care for injury cases seems to resolve itself into ascertaining who are competent, well trained surgeons, with the necessary temperamental qualifications, and where they are located,, and then placing the injury cases under their care. The experience of the commission has been that the whole problem depends on the selection of properly qualified surgeons who will conscientiously do whatever is possible toward the physical restoration of their patient.

Better Methods in Medical Service.—In Thompson's opinion, one thing essential to the betterment of the medical service, is the occasional meeting of the county and state medical societies and the presentation of papers that deal with the problems arising between the surgeons and the board. He urges doing away with the hospital contract system that too frequently renders poor service and overcharges the workman.

Neurological Bulletin, New York

August, 1919, **2**, No. 8

Functional Significance and Principal Syndrome of Cerebellum. F. Tilney, New York.—p. 289.

New Jersey Medical Society Journal, Orange

December, 1919, **16**, No. 12

Has the Medical Profession Adequately Met Its Responsibilities? G. E. Tucker, Hartford, Conn.—p. 419.
Surgical Complications of Influenza. P. Correll, Easton Pa.—p. 423.
Plea for Rational Removal of Diseased Tonsils. C. J. Sullivan, New Brunswick, N. J.—p. 425.
Close Relationship Existing Between General Practitioner and Ophthalmologist and Otolaryngologist. T. H. Odeneal, Beverly, Mass. —p. 427.
Medical History of Cumberland County, N. J. T. J. Smith, Bridgeton, N. J.—p. 432.

New York Medical Journal

Dec. 6, 1919, **110**, No. 23

*Causation and Treatment of Rickets. E. Pritchard, London.—p. 921.
Argonne Influenza Epidemic. H. Brooks and C. Gillette, New York. —p. 925.
*Treatment of Climacteric Hypertension. A. H. Hopkins, Philadelphia.—p. 930.
Treatment of Chronic Discharging Ear. H. B. Blackwell, New York. —p. 933.
*Shelley the Invalid. A. A. Moll, Chicago.—p. 934.
Spontaneous Evacuation of Gauze Sponge from Peritoneal Cavity by Way of Bowel. Report of a Case. J. P. Jones, Wakefield, R. I.—p. 941.

Factors of Safety in Prostatic Surgery. M. Meltzer, New York.—p. 942.
Hemoglobinuric Bilious Fever. C. G. Cumston, Geneva, Switzerland.—p. 944.

Causation and Treatment of Rickets.—Pritchard holds the view which is that practically all varieties of malnutrition occurring during infancy and early childhood tend to terminate in rickets, provided they are sufficiently severe or long enough continued. They should not, however, be regarded as evidence of rickets, unless they are actually accompanied by the typical changes in bone which are characteristic of the disease. The essential and central feature of rickets he believes is the want of calcification or mineralization of developing bone, and this in its turn is due to the existence of requirements for calcium which for the time being are more urgent than of developing bone. These urgent requirements are the necessity for neutralizing acid bodies in the blood; in other words, to neutralize or compensate an existing acidosis. In Pritchard's opinion all chronic conditions of malnutrition of whatever kind or from whatsoever cause finally terminate in an acidosis, and that all claims on alkaline bases arising in connection with the neutralization of this acidosis must be satisfied before those of developing bone are attended to. It is in the satisfaction of these claims for alkaline bases that the injury is done to growing bone.

Climacteric Hypertension.—In considering the treatment of climacteric hypertension Hopkins divides the condition into three stages: 1. The first or larval stage in which high blood pressure and nervousness are the chief symptoms. 2. The second stage, in which the pressure is higher and remains more constant and in which the gastric neurosis, cardiac or pressure symptoms, as headache, vertigo, etc., make their appearance. 3. The third stage comes later in life, i. e., in the sixth or seventh decade and represents what might be regarded as the early evidences of senility. The treatment for each stage is described in detail.

Shelley the Invalid.—An analysis of Shelley's writings bearing on his illness has convinced Moll that the poet was suffering from either gastric or duodenal ulcer.

Dec. 20, 1919, **110**, No. 25

*Staphylococcic Bacteriuria. P. Nolf, Brussels, Belgium.—p. 1009.
Fasting Treatment of Diabetes. H. S. Stark, New York.—p. 1010.
Gas Gangrene. B. Jahlons, Washington, D. C.—p. 1014.
Relation of Arteriosclerosis to Eye. L. W. Fox, Philadelphia.—p. 1020.
*Industrial Medicine and Surgery an Integral Part of Industry. R. M. Little, New York.—p. 1022.
Rheumatism in Light of Modern Research. H. W. Frauenthal, New York.—p. 1024.
Relation of Malaria to Pregnancy. B. Kaufman, San Francisco.—p. 1028.

Vaccinotherapy of Bacteriuria.—Nolf cites his experience with progressive intravenous vaccination in the treatment of these cases. His results have been very satisfactory.

Industrial Medicine and Surgery.—Little points out the needs of industrial medicine and surgery and suggests how these may be met by the medical profession. He would have a bureau headed by a practical business man who is also a surgeon, and which bureau will prepare, or have prepared pamphlets on the subject of health and the treatment of disease and injuries in clear, nontechnical, forcible language, which pamphlets should be sent to every chamber of commerce, manufacturers' association and trade body in the country. Letters should be sent to all the employers of the country, calling their attention to the necessity of health as a factor in industry and making suggestions concerning the proper organization of a health service in industrial plants. Little would have a roster of able men who can speak effectively on this subject before chambers of commerce, before manufacturers' associations and the leading trade bodies at their annual meetings, and also a roster of well qualified physicians and surgeons who are willing to enter the industrial field, provided suitable conditions and opportunities are open for them. This propaganda and education work should be carried into the medical schools and hospitals of the country in order that the regular medical course may provide training in industrial surgery.

Public Health Journal, Toronto

December, 1919, **10**, No. 12

Epidemic Pneumonia. A. G. Nicholls, Halifax, N. S.—p. 537.
Statutory Practice. A. E. Forbes, Maccan, N. S.—p. 547.
Nineteenth Annual Report of Executive Council of Canadian Association for Prevention of Tuberculosis. G. D. Porter, Ottawa.—p. 551.
Plan for a More Effective Federal and State Health Administration. F. L. Hoffmann, Newark, N. J.—p. 557.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Annals of Tropical Medicine and Parasitology, Liverpool

Dec 10, 1919, **13**, No. 3

Coincident Malaria and Typhoid. H. H. Scott, London.—p. 195.
*Metabolism of White Races Living in Tropics; II. Composition of Urine. W. J. Young.—p. 215.
Endemic Tsutsugamushi Disease of Formosa. J. Hatori.—p. 233.
Bionomics of Stegomyia Fasciata. J. W. Fielding.—p. 259.
Ancylostoma Ceylanicum in the cat in Durban. B. Blacklock.—p. 297.

Urine of White Races Living in Tropics.—The twenty-four hours' urine collected from a number of persons living in North Queensland and of different occupations was analyzed by Scott. The daily average volume was only 784 c.c. This volume was increased considerably in the cooler weather. The specific gravity was very much higher, while the freezing point did not differ very much from that found in Europe, thus the osmotic pressure was not very much higher. A striking difference was noticed in the quantity of sodium chlorid excreted in the urine, which was very low, and this may be accounted for by the large loss of water in the sweat which carries with it this salt. It is calculated that a man doing manual labor in the tropics must lose several grams of sodium chlorid per day through the skin, which would readily account for the deficiency in the urine. The total nitrogen showed a lower figure than that found in Europe, which cannot be accounted for by loss of nitrogen from the skin, since it is shown that this can only amount to 1 or 2 gm. per day under normal circumstances. These results differ from those obtained by other observers in other parts of the tropics.

British Journal of Surgery, Bristol

October, 1919, **7**, No. 26

Specimens of Gunshot Injuries of Long Bones. A. Keith and M. E. Hall.—p. 149.
*Compression of Lower Trunk of Brachial Plexus by a First Dorsal Rib. J. S. B. Stopford.—p. 168.
*Traumatic Myositis Ossificans Resulting from Gunshot Wounds. J. Morley.—p. 178.
*Paget's Disease of Nipple. W. S. Handley.—p. 183.
*Operation for Exophthalmic Goiter. T. P. Dunhill.—p. 195.
*Repair of Bone. W. E. Gallie and D. E. Robertson.—p. 211.
Physiologic Pathology of Gunshot Wounds of Head. G. Jefferson.—p. 262.
Case of Large Splenic Cyst; Splenectomy. E. E. Maples.—p. 290.
Shell Wound of Small Intestine: Resection. Recovery. W. Tyson.—p 292.
Gas Cyst of Thigh from Foreign Body Retained After Shell Wound. F. J. Tees.—p. 293.

Nerve Compression by First Dorsal Rib.—Ten cases of this type were seen by the authors in less than two years. Eight of these are described as belonging to the idiopathic group, while two were of traumatic origin. In all the ten cases, except one (and that was a very early one), objective sensory disturbances were present, and in all the nine cases, loss of protopathic sensibility was greater than the epicritic loss—a dissociation which Stopford has previously suggested as characteristic of nerve compression. Trophic and vasomotor phenomena were very constant, the most frequent being hypothermia, pallor or cyanosis, and trophic sores affecting the little and ring fingers and more rarely the inner border of the forearm. There does not appear to be any advantage in subdividing the cases into the three types—motor, sensory and trophic disturbances in the hand and forearm may be and sympathetic—according to which group of symptoms predominates, provided it is remembered that weakness of the hand, objective and subjective sensory manifestations,

the result of compression of the lower trunk by a first thoracic rib as well as by a supernumerary costal element.

Traumatic Myositis Ossificans.—Morley draws attention to the fact that gunshot wounds, and particularly shell wounds, which graze tangentially the smooth shaft of such a bone as the femur, may give rise to a growth of bone in the adjacent muscles precisely similar to the familiar myasitis ossificans that follows a subcutaneous trauma. He also points out the value of this fact as evidence of the true nature of the process.

Paget's Disease of Nipple.—The nature of this disease is discussed at length by Handley, and he finally concludes that the probabilities all favor the view that the lymphatic obstruction which is the cause of Paget's eczema results from neoplastic and not from mere inflammatory obstruction of the lymphatics. Even if in rare cases it is possible that the eczema results from a block in the lymphatics of inflammatory origin, it is certain that this form of chronic inflammation of the ducts is a very dangerous condition which almost invariably leads to carcinoma. Paget acknowledged that in all cases in which he excised the eczematous nipple a carcinoma subsequently appeared in the breast. Early and complete removal of the breast is, therefore, demanded whatever the view adopted as to the order in time of the eczema and the carcinoma.

Operation for Exophthalmic Goiter.—In operating on the thyroid for exophthalmic goiter, Dunhill insists that only so much gland tissue should be removed as is necessary, but that this must be done even if more than one or even three operations should be performed. He is convinced that one cause of failure is leaving gland tissue which should have been removed cleanly, i. e., the posterior surface of the first lobe ,or portion of the isthmus, attached to the trachea. Small portions such as these always grow and function, and they cannot subsequently be dug out of their surrounding scar tissue without great difficulty. "What you remove, remove cleanly; what you leave, leave undisturbed. See that the portion left has always its blood supply intact. Failures are due to leaving too much gland behind." Dunhill prefers to operate under local anesthesia.

Repair of Bone.—Gallie and Robertson have made a complete review of the literature on the repair of bone, and performed a large number of experiments on animals in trying to arrive at a definite conclusion. They are of the opinion that periosteum is not osteogenetic, and should not be depended on under any circumstances to assist in the production of new bone. The presence or absence of the periosteum in autogenous bone transplants has no decided influence on the activity of the subperiosteal osteoblast, and is of no practical clinical importance. The periosteum is of great importance, however, from a clinical standpoint, because of its control of the circulation throughout living bone. Extensive stripping of the periosteum at operation will result in necrosis, which may cause delay in the union of aseptic fractures, and which will result in sequestration where sepsis is present. Disturbance of the circulation should be reduced to a minimum in all operations on bone. The method of new bone growth and other points of interest in connection with bone repair are discussed fully.

Edinburgh Medical Journal

December, 1919, **23**, No. 6

Relation of Chemistry to Medicine. G. Barger.—p. 350.
Technic of Blood Transfusion. J. M. Graham.—p. 358.
Position of General Hospital in a Regional Survey. N. Burnett.—p. 387.

Indian Medical Gazette, Calcutta

November, 1919, **54**, No. 10

Midwifery Impressions. J. R. Roberts.—p. 401.
*Successful Cholera Prophylactic Vaccination: An Experiment in a Village During an Epidemic. A. Roy.—p. 404.
*Economic Value of Anticholera Inoculation. T. C. McC. Young.—p. 407.
Diabetes in Madras. S. K. Aiver.—p. 410.
*Case of Ophitoxemia—Snake Poisoning (Echis Carinata); Recovery. D. J. Asana.—p. 412.
Paka Oil in Mustard Oil as an Adulterant. R. C. Bose, and S. N. Sen.—p. 413.
Surgical Emphysema Complicating Influenza. I. C. Aich.—p. 418.
*Case of Hydatid Cyst. G. M. Butt.—p. 419.
Case of Ectopic Gestation Which Burst into Rectum. E. B. Wolf.—p. 419.

Anticholera Inoculation.—Roy and Young report very favorably on the use of anticholera vaccines in the prevention of cholera. Even under the most unfavorable circumstances, as existed in one village, Roy succeeded in checking an extensive epidemic after all other measures had failed.

Ophitoxemia.—In Asana's case the treatment consisted in cleaning the bitten part, the application of antiseptic dressings, calcium chlorid in 10 gm. doses, every three hours, 0.33 gm. emetin hydrochlorid morning and evening hypodermically, and alum gargles for the mouth as often as possible. The treatment was continued for four days. On the eighth day the patient was well.

Abdominal Hydatid Cyst.—Butt removed an intra-abdominal hydatid cyst measuring 5½ inches in diameter from his patient. The cyst arose from the peritoneum.

Journal of Laryngology, Rhinology and Otology, London

December, 1919, **34**, No. 12

*Tongue Holder and Depressor for Tonsillectomy. J. Donelan.—p. 477.
Cases of Maxillary Antrum Disease. W. S. Syme.—p. 478.
Complications of Chronic Middle Ear Suppuration. J. S. Fraser and W. T. Garretson.—p. 480.
Case of Aural Bacteremia. R. Webber.—p. 499.

Tongue Holder and Depressor for Tonsillectomy.—Donelan's instrument consists of a tissue forceps on the back of which a fenestrated tongue depressor is fixed. The patient being in the supine position, with head retracted over a sand pillow, the points of the forceps are inserted transversely and well back in the dorsum of the tongue. The tongue is then gently drawn forward by the anesthetist, and at the same time the dorsum is depressed in such a way as to free the respiratory passage and completely expose the field of operation.

Journal of Pathology and Bacteriology, Cambridge

October, 1919, **23**, No. 1

Experiments on Action of Unsaturated Fatty Acids and Lipoids on Amylolytic and Hemolytic Phenomena. P. Stocks.—p. 1.
*Modified Wassermann Test. C. Y. Wang.—p. 15.
*Biochemistry of Pathogenic Anaerobes. VIII. J. E. G. Harris.—p. 30.
*Paths of Spread of Bacterial Exotoxins with Special Reference to Tetanus Toxin. F. H. Teale and D. Embleton.—p. 50.
Macroscopic Appearances of War Injured Nerves. S. M. Cone, M. C., U. S. Army.—p. 69.
Protozoal Parasites of Rat; the Rat as a Natural Reservoir of Spirocheta Icterohemorrhagiae. A. G. R. Foulerton.—p. 78.
Squamous Epithelioma Involving the Frontal and Superior Maxillary Sinuses in a Mare. J. F. D. Tutt.—p. 104.
Ectopia Cloacae. C. Walker.—p. 109

Modified Wassermann Test.—In the method described by Wang the technic is simple, consisting in the mixing, in loopfuls, of an antigen with the suspected serum and the sensitized corpuscles, all at one and the same time. The blood required for the test is available from a prick and collected in small capillary tubes, such as those used for the Widal test. The examination need not be undertaken almost at once, as in Birt's test, but may be delayed to the third day, or perhaps even longer, after the sample has been taken. The test is said to be superior to the Wassermann.

Biochemistry of Pathogenic Anaerobes.—Experimental methods are described by Harris for carrying out a comparison of the biochemical reactions of two closely allied organisms. Details are given of the apparatus used for fermentation experiments, and of the methods for obtaining values for gas production, ammonia and amino-acid formation, production of volatile acids, and changes in hydrogen ion concentration and sugar content. A simple method is described for determining the degree of oxygen toleration of organisms for routine purposes; it is suggested that results should be expressed in the form of the "aerobic index," which is defined. A comparison is made of two anaerobes —*B. sporogencs* and the Reading bacillus—which, morphologically and in cultural reactions, are closely related. The

results are given of fermentations on five different mediums, and of determinations of the aerobic indices both of spores and young organisms on liquid and solid mediums. From the experimental results it is concluded that these two organisms are of the same race, but show small differences, possibly acquired. In their biochemical behavior toward the five mediums used, they are remarkably similar, but they show a somewhat striking difference in their powers of growing in the presence of oxygen. The use of methods, such as those described, for investigations of the biochemical properties of bacteria in general, is discussed, and a means is suggested for using these methods with aerobic organisms.

Paths of Spread of Bacterial Exotoxins.—The experiments recorded by Teale and Embleton show that although tetanus toxin ascends to the central nervous system by way of the axis cylinders of the nerves, it also to a very great extent passes up the nerves to the cord by way of the perineural lymphatics. Blocking of the latter paths greatly delays and in some cases completely prevents the occurrence of tetanus in the part corresponding to the nerve whose lymph path has been blocked. Although tetanus toxin passes rapidly from the blood vessels into the connective tissue spaces and thence to the thoracic duct, the toxin does not pass from the capillaries of the central nervous system to the tissues thereof. Tetanus toxin does not pass from the choroidal plexus to the cerebrospinal fluid. Although bacteria can pass through the posterior root ganglion to the cord, colloidal pigments and tetanus toxin are prevented from doing so. Iodin, although it prevents tetanus toxin from producing its characteristic effects when iodized toxin is inoculated subcutaneously or intravenously, does not affect the toxin when inoculated intracerebrally, it does not hinder the occurrence of the typical symptoms of cerebral tetanus, and there is no apparent diminution in its toxicity. Tetanus antitoxin does not pass to the central nervous system either by way of the blood vessels, axis cylinders, or neural lymphatic channels. It also cannot pass from the cerebrospinal fluid into the substance of the cord when inoculated intrathecally. The antitoxin simply acts by combining with the circulating toxin at the seat of production, and prevents it from reaching the central nervous system. The toxin already in this position is unaffected.

Journal of Tropical Medicine and Hygiene, London

Dec. 1, 1919, **22**, No. 23

Case of Bronchospirochetosis (Castellani's Bronchitis). W. Broughton-Alcock.—p. 213.

Seale Hayne Neurological Studies, London

August, 1919, **1**, No. 5

Obsessions. R. G. Gordon.—p. 235.
Hysterical Contractures. A. F. Hurst—p. 244.
Studies in Hysteria. XI. Suggestibility and Its Relation to the Psychology of Hysteria. R. G. Gordon.—p. 264.
Organic Basis of Neurasthenia. Two Cases Presenting Symptoms of Addison's Disease. A. F. Hurst.—p. 272.
Dissociation of Physical Signs of Organic Lesions of Pyramidal Tract. A. F. Hurst.—p. 276.
Hysterical Deafness; Auditory Motor Reflex and Psychology of Hearing. A. F. Hurst.—p. 279.
Case of Cerebral Abscess, Probably Influenzal in Origin. J. Culross and A. F. Hurst.—p 290
Hysterical Amnesia of Fourteen Months' Duration Cured at a Single Sitting by Hypnosis S. H. Wilkinson.—p. 293.
Case of Hysterical Pain and Vomiting Following Appendicitis, with Relapses. R. G. Gordon.—p. 294.
Hysterical Symptom of Forty Years' Duration. R. G. Gordon.—p. 296.

Bulletin Médical, Paris

Nov. 29, 1919, **33**, No. 53

*The Physiopathology of Jaundice. M. Brulé.—p. 709.
*System for Clinical Examination in Cases of Jaundice. F. Saint-Girons.—p. 713.
*Diagnosis of Jaundice. P. Ameuille and R. Huguenin.—p. 717.
*Icterohemorrhagic Spirochetosis. P. Pagniez.—p. 720.

Physiopathology of Jaundice.—Brulé reiterates that besides hemolytic jaundice—which calls merely for iron and possibly splenectomy—discovery of dissociated retention of bile salts shows that the jaundice is due to insufficiency in liver functioning and not to mere obstruction of the biliary passages, from within or without. Recent research has confirmed that infectious jaundice in the great majority of cases is the manifestation of disease in the liver, and hence operations, cholagogues and measures to clear out and disinfect the biliary passages are useless when the stoppage of the course of the bile is in the liver itself. Treatment should aim to fortify and facilitate the task of the liver; ingestion of sugar, for example, promotes the glycogen function. Although therapeutic efforts in this line have been very imperfect to date, yet our increasing knowledge of the physiopathology of jaundice will certainly some day aid in corresponding improvement in its treatment.

Examination in Cases of Jaundice.—Saint-Girons devotes over four pages to the systematic outline of the questions to be asked in the clinical examination and the interpretation of the findings. Ameuille and Huguenin give a similar systematic outline and technic for the laboratory tests to complete the clinical diagnosis.

Icterogenous Spirochetosis.—Pagniez had only 15 per cent. typical forms in his 45 cases of icterogenous spirochetosis in the Aisne district in the summer of 1917. The catarrhal jaundice type was encountered in 10 or 12 per cent. In 2 cases there was no jaundice with the spirochetosis, the meninges bearing the brunt of the attack. In 4 cases the meningeal syndrome preceded the jaundice. No really active antiserum seems to have been produced to date. Arsphenamin has given no results, and this medication, he says, has been completely abandoned. Lumbar puncture relieves the pain in the meningeal form but the danger in the graver cases is mostly from the kidneys. Hence abstention from nitrogenous food and repeated venesection are indispensable to enable the patient to resist the intoxication until kidney functioning becomes reestablished.

Bulletins de la Société Médicale des Hôpitaux, Paris

Nov. 7, 1919, **43**, No. 31

Hemiplegic Amyotrophic Lateral Sclerosis. Marie and others.—p. 925.
*Neo-Arsphenamin in Contractures and Spasms. M. Sicard.—p. 930.
*Gall by Rectum in Constipation. R. Bensaude and M. Vicente.—p. 932.
*Dehydration of Pancreas in Coma. Chauffard and Grigaut.—p. 939.
*Peritoneal Symptoms in Acute Pneumococcus Infection. C. Flandin, M. Debray and F. Françon.—p. 943.
Acute Poliomyelitis in Adult. P. Marie and A. Léri.—p. 949.
*Roentgenoscopy of the Viscera after Intra-Abdominal Injection of Oxygen. L. Ribadeau-Dumas, Mallet and de Laulerie.—p. 952.

Neo-Arsphenamin in Treatment of Contracture and Spasms.—Sicard relates that the by-effects of neo-arsphenamin on the nervous system can be utilized in direct treatment of certain nervous disturbances in both syphilitics and non-syphilitics. The arsenical inhibition may range from a simply sedative effect to abolition of all reflex action in the legs, depending on the dose and the way the drug is pushed; small injections by the vein every day or two are more potent than a weekly injection. The Achilles reflex has not returned during the fifteen months to date in some of his cases. This by-effect of arsphenamin may lead to the mistaken assumption of impending tabes unless the normal findings in the spinal fluid are taken into account, as also the electric responses, knee jerk and pupil reactions. A sedative influence on contractures and in chorea was evident after 4 or 5 gm. of neo-arsphenamin had been thus administered in the course of five or six weeks. This hitherto misinterpreted property of the drug can thus be utilized in many cases of pathologic nervous conditions, under control of the skin, nerve and azotemic reactions

Bile by the Rectum in Treatment of Constipation.—Bensaude and Vincent have been amazed at the way in which beef gall (10 gm. extract of beef gall in a liter of water) started up peristalsis twelve hours after ingestion of a contrast meal. When the bile enema was given the opaque mass was in the ascending colon. It passed rapidly along and was expelled the fifth minute. This amount of the gall extract caused griping, but 5 gm. proved equally effectual without inducing colic. Various preparations of beef gall were tried, but 4 or 5 gm. of the powder form, that is, two teaspoonfuls in 250 gm. of tepid water, is the most convenient method. The gall does not seem to lose its efficacy in time, according to their several months of experience. They review the history

of the use of bile in medicine, beginning with the Egyptian papyrus thirteen centuries B. C. which among various prescriptions for enemas gives: "Beef gall ⅓; cow's milk ⅔. Usually cures in four days. A good remedy."

Dehydration of the Pancreas in Diabetic Coma.—Chauffard and Grigaut have long noted the extreme dehydration of the organs in diabetic coma, most pronounced in the pancreas. In a recent case, even the spinal fluid was thick and syrupy, and the coefficient of dehydration in the pancreas was 170 per thousand. Examination of the pancreas from diabetics and others succumbing to causes other than coma showed normal hydration of the pancreas.

Abdominal Reactions in Pneumococcus Septicemia.—In the case reported, the signs of grave general infection were accompanied by intense abdominal pain and extreme distention of the intestines with complete arrest of stools and flatus. There were no symptoms from the lungs, and an exploratory laparotomy showed no signs of peritonitis. The young woman died the seventh day. In another case the acute peritoneal reaction developed during convalescence from pneumonia. A suppurating joint lesion may have aided in the recovery, acting like a fixation abscess. Other cases are cited in which the course tended to suppuration, diffuse and fatal in some, or localized, with recovery. The relief was usually great as soon as a suppurating focus developed. Pneumococcus pus does not seem to be spontaneously resorbed and requires surgical measures.

Roentgenoscopy After Injection of Oxygen.—Ribadeau-Dumas expatiates on the remarkable precision with which the viscera can be inspected after intraperitoneal injection of a liter or two of oxygen. He changes the patient's attitude until the viscus shows best on the screen, and then roentgenographs it.

Nov. 14, 1919, **43**, No. 32

*Diabetes and Exophthalmic Goiter. M. Labbé.—p. 955.
*Parotitis in Cerebrospinal Meningitis. Serr and Brette.—p. 962.
*Duodenal Ulcer with Ptosis. A. Durrieux and Parturier.—p. 966.
*Spontaneous Rupture of Aorta. Menetrier and Durand.—p. 968.

Diabetes and Exophthalmic Goiter.—Labbé describes the five cases he has encountered of this combination. The glycosuria in this thyroid diabetes seems to be more resistant and less dependent on the diet than in ordinary diabetes. In one of his cases the woman developed goiter at 20; glycosuria became installed at 50, and at 54 the symptoms of severe exophthalmic goiter developed and the diabetes became aggravated. Each time there was a hyperthyroid attack, with tachycardia, the sugar content of the urine and blood ran up high, scarcely modified by dietetic measures, but subsiding with the paroxysm of hyperthyroidism. He cites Manby, Lancereaux and others' reports of instances of diabetes in some members of a family and exophthalmic goiter in others. Diabetics with exophthalmic goiter seem to display an exceptional tendency to acidosis, probably from the derangement in nitrogen metabolism which is constant in exophthalmic goiter. He adds that the action of drugs also tends to individualize this form of diabetes; drugs like quinin and salicylate, which act on the goiter, modify likewise the glycosuria. In two of the cases described, treatment with iodin proved effectual; at the same time that the palpitations and tachycardia subsided, the glycosuria declined also. His five cases show the multiplicity of types which the diabetes may assume in these cases. A number of writers have called attention to the frequency of alimentary glycosuria in *basedowiens*. In the discussion that followed, Garnier related that when feeding animals suprarenal extract, a much higher degree of glycosuria was realized when thyroid extract was associated with it than when the suprarenal extract was given alone. Linossier commented on the exceptionally high alimentary glycosuria in some cases of exophthalmic goiter, but this does not occur in all. It is evident that in some cases the interaction of other glands may maintain a functional balance.

Parotitis in Meningitis.—The meningitis was declining in the two young men when the parotitis flared up.

Differential Diagnosis of Duodenal Ulcer.—The predominant symptom presented by the man of 32 was constantly recurring intense dizziness, evidently from the upper digestive tract. The pains suggested duodenal ulcer, and this was confirmed by the constant painful point, at the middle of a line from the umbilicus to the tenth rib, not varying during inspiration or change of position. There was also a remote painful point at the left, between the two heads of the sternocleidomastoid muscle; Parturier has already called attention to this referred pain at this point as an aid in diagnosis of abdominal disease. Still further aid in the diagnosis was afforded by the elective action of belladonna in relieving the pain, while it was not modified by opium, which is so effectual with disease in the biliary apparatus. The stomach in this case sagged 8 cm. below the crest of the ilium.

Spontaneous Rupture of the Aorta.—The woman of 43 was syphilitic, and necropsy disclosed changes in the middle layer of the aorta which were of a different type from the specific arteritis hitherto described.

Médecine, Paris

November, 1919, **1**, No. 2. Syphilis and Skin Disease Number

*Recent Progress in Skin Diseases and Syphilis. Gougerot.—p. 69.
*Phthiriasis as a Symptom. E. Jeanselme.—p. 79.
*Serodiagnosis of Skin Diseases. E. Joltrain.—p. 81.
Joint Disease in Psoriasis. L. Bory.—p. 85.
Eczema a Defensive Reaction. H. Gougerot.—p. 87.
*The Herxheimer Reaction. G. Milian.—p. 91.
*Syphilitic Meningitis. M. Bloch.—p. 92.
Syphilitic Vitiligo. A. Touraine.—p. 97.
*Syphilitic Exophthalmic Goiter. A. Lévy-Franckel.—p. 99.
*Raynaud's Disease and Syphilis. L. Giroux.—p. 100.
*Drop in Blood Pressure under Arsenic. A. Touraine.—p. 103.
*Practical Points. H. Gougerot and others.—p. 104.

Recent Progress in Skin Disease and Syphilis.—Gougerot reviews the achievements during the war in this line, mentioning Sicard's rachialbuminimeter to measure the albumin in the cerebrospinal fluid. He says that arsenical treatment has modified syphilis so that it may enter the tertiary stage from the start; lesions of all three phases have been known to develop together of late. Syphilis represents a blending of immunity and sensitization, and there may be all forms of transitions between the complete, though retarded, secondary explosion and latent syphilis. This warns that the cure may be deceptive; several instances of supposed reinfection have proved to be merely delayed manifestations. "No new sign or method of treatment has been discovered, and the confidence in the Wassermann test is not so blind as formerly." Gougerot adds "We no longer count the cases of deaths and accidents from 914; among the more impressive was Leredde's patient dying with a purpuric syndrome after the twenty-third injection; Courtoix-Suffit's dying in the physician's office after the eighth injection, and the soldier, dying from paraplegia (Gougerot)." He is inclined to ascribe the mishaps mainly to toxic action from the arsenic plus symptoms from the accelerated "tertiarization" of the disease under the drug. In conclusion he reiterates that a syphilitic may be contagious even when he has no lesions or only tertiary manifestations. Also that a syphilitic may reinoculate himself, and that inherited syphilis does not immunize against new contagion.

Infestation with Lice as a Symptom of Disease.—Jeanselme has repeatedly noticed that the perfectly healthy may escape phthiriasis even when sleeping with lice-infested persons. The lice colonize by preference on the diseased, and hence severe phthiriasis should impel a search for serious, possibly latent disease.

Serodiagnosis in Skin Diseases.—Joltrain expatiates on the facility and reliability of serodiagnostic measures applied to leprosy, mycosis and other skin diseases, although his experiences to date with skin cancers have been conflicting.

The Herxheimer Reaction.—Milian explains anew that the inflammatory reaction in the syphilitic tissues under the influence of specific treatment, known as the Herxheimer reaction, is the cause of jaundice, albuminuria and other symptoms which have been mistakenly ascribed to direct toxic action from the medication.

Syphilitic Meningitis.—Bloch argues that what we have been calling "neurorecurrences" and "meningorelapses" are in reality the paroxysmal flarings up of an inadequately

treated meningovascularitis. When the Wassermann reaction persists positive after vigorous treatment, the possibility of this must be borne in mind. Local intraspinal medication has given good results.

Syphilis and Exophthalmic Goiter.—Lévy-Franckel was one of the first (1911) to report improvement or the cure of exophthalmic goiter under treatment for suspected or certain syphilis. The exophthalmic goiter may be the precursor of tabes, and he has accumulated data to confirm that syphilis may be responsible not only for exophthalmic goiter but also for various pluriglandular syndromes.

Raynaud's Disease and Syphilis.—Giroux regards Raynaud's disease as often merely a manifestation of syphilitic disease of the arterioles.

Drop in Blood Pressure Under Arsenical Treatment.—Touraine warns that the "nitritoid crisis" is the result of the depressing influence of the arsenic on the blood pressure, saying that it can be easily warded off with epinephrin. The amount should be graduated to the dose of the arsenical preparation. His formula is one fourth as many milligrams as of centigrams of the arsenic.

Minor Practical Points.—Among those mentioned are the danger from intraspinal treatment in tardy syphilis. Tzanck emphasizes that a subarachnoid injection is practically merely an intralymphatic injection, all the drug being soon refound in the thoracic duct. On the other hand, an axis cylinder that has been touched with syphilis is more vulnerable than under other conditions. At most, he endorses injecting the drug by the vein, withdrawing lumbar puncture fluid at the same time. With tenacious secondary meningitis, however, intraspinal injections, he declares, are harmless and effectual.

Presse Médicale, Paris

Dec. 3, 1919, **27**, No. 73

*Cystoradiography. F. Legueu and E. Papin.—p. 733.
*Stretching of the Liver with Gallstones. M. Goullioud.—p. 735.

Bladder Radiography.—Legueu and Papin express surprise that the technic for pyelography has not been applied more systematically to the bladder. They have been using this cystoradiograhy, as they call it, since their publication on the subject in June, 1912, but found no reference to this method in the literature until Kelly's work in March, 1913. They have injected air, oxygen, bismuth, etc., but have found thorium sulphate or nitrate the best substances for the purpose. Thorium nitrate forms a solution which is not irritating or toxic, does not stain, and is less expensive than silver salts, etc. If a radiograph is taken of the bladder filled with the fluid, and then again after the bladder is emptied, any diverticulum shows up plainly, and this may explain the failure of persevering treatment, when cystoscopy has failed to reveal it. In one case two diverticula were thus revealed which had long maintained suppuration. Six instructive radiograms are given to show the different aspects of various lesions. A large tumor projecting into the contrast fluid renders the shadow within its outlines much lighter. In some cases the ureter mouth was gaping and the contrast fluid spread up through the congenitally dilated ureter, sometimes even into the pelvis.

Elongation of the Liver.—Goullioud describes with illustrations what he calls the *languette hépatique*, or tongue-like projection of the liver, secondary to congestion and retention of bile from severe gallstone trouble, the heavy organs dragging on the liver, with extension to the liver of the processes of sclerosis. The corset may be an additional factor, but this localized hypertrophy of the right lobe of the liver has been found in men. It usually accompanies grave surgical gallstone disease and is an important sign of the latter. In any event, it should not be mistaken for the distended gallbladder.

Gazzetta degli Ospedali e delle Cliniche, Milan

Oct. 16, 1919, **40**, No. 83

*Magnesium Sulphate in Spasmophilia and Whooping Cough. G. Genoese.—p. 891.

Magnesium Sulphate in Spasmophilia and Whooping Cough.—Genoese gave intramuscular injections of a 25 per cent. solution of magnesium sulphate in four cases of severe spasmophilia and in four of severe whooping cough. No benefit from the injections was apparent and no purgative action followed. The drug increased diuresis, and he ascribes to its rapid elimination through the kidneys the lack of any appreciable effect on the nervous system.

Oct. 19, 1919, **40**, No. 84

Malaria during the War. P. Finizia.—p. 901. Conc'n in No. 85, p. 915.

Oct. 30, 1919, **40**, No. 87

*Eruption from Contact with Spoiled Grain. G. Romiti.—p. 941.

Eruption from Contact with Spoiled Grain.—Romiti reports several epidemics since 1915 of a papulous, eruptive dermatosis, with intense itching and high fever for from six to twelve hours. Only those persons were affected who had carried or otherwise handled grain subject to a special pathologic process, requiring the so-called scalding, or had handled flour from such grain, or clothing that had been in contact with it. In some cases the febrile eruption returned several times in succession, at intervals of three, five or seven days. Treatment was restricted to removal of the cause, hot baths and symptomatic measures.

Policlinico, Rome

Oct. 26, 1919, **26**, No. 43

*U Incision for Abdominal Wall. G. Ruggi.—p. 1253.
*Reflex Dysmenorrhea with Ozena. I. Dionisio.—p. 1262.
*Mercury by the Vein in Grave Infections. S. Mello.—p. 1263.
Calcium Salts in Local Tuberculous Processes. Silvestri.—p. 1266.
Prophylaxis of Goiter in Italy. G. Pighini.—p. 1267.

U Laparotomy Incision.—Ruggi says that he was the first to make a transverse abdominal incision (published in 1890), and he now lauds the advantages in certain conditions of a large reversed U incision, the arms starting 4 cm. above the middle of the inguinal fold, and the curving line crossing the abdomen about 6 cm. above the umbilicus. This allows a broad flap to be turned back on the pubis. He explores the abdomen thus widely opened up, proceeding from the sound portions to the more pathologic areas. It answered requirements to an unexpected extent in a case described in which there were two fecal fistulas left from a gunshot wound.

Reflex Action from Ozena.—As the ozena subsided under treatment, the complete cure of the associated disturbances confirmed their reflex character. They included headache, nocturnal enuresis, tenesmus of the bladder, and dysmenorrhea.

Mercury by the Vein in Grave Disease of the Blood.—Mello as a last resort in three cases of puerperal or typhoid or other fever injected 2 or 3 mg. of mercuric chlorid by the vein twice in one day, and then for two days 4 mg. twice, and the apparently moribund patients recovered.

Nov. 2, 1919, **26**, No. 44

*Pseudo-Ileus from Ureter Calculus. C. Frugoni.—p. 1285.
*Fontana Stain for the Pale Spirochete. L. Nardelli.—p. 1288.
Aneurysm of the External Iliac. A. Venturi.—p. 1297.
Serotherapy of Malta Fever. S. Spampinato.—p. 1299.

Pseudo-Ileus from Calculi in Ureters.—Frugoni reports three cases of this kind, the obstruction of the bowel stopping when the impacted calculus in the ureter was finally passed along. There is usually a history of more or less suggestion of kidney colics, and the cramps develop suddenly, diffuse or localized in colon or rectum, with tenesmus and pains suggesting a rectal tabetic crisis. The abdomen becomes distended and tender, and there is no passage even of flatus. A tendency to hydronephrosis clears up the diagnosis at once. Micturition is not modified but there is microscopic hematuria. The complete arrest of flatus and stools does not usually last more than two or three days, and then the symptoms subside as the calculus drops into the bladder or is expelled. In two of the cases reported his diagnosis saved the patients from a needless operation. The general aspect is less grave than with actual intestinal ileus; vomiting is rare and less insistent; the rectal tenesmus is accompanied by lancinating pains, and the meteorism is rapid and diffuse, without partial or segmental peristalsis.

Archivos Latino-Amer. de Pediatría, Buenos Aires

July-August, 1919, **13**, No. 4

Report of Child Welfare Section of Public Health Service of State of S. Paulo. C. Ferreira.—p. 321.
Annual Report of Pediatric Society. C. Pelfort.—p. 351.
*Multiple Fractures in Twelve Day Babe with Inherited Syphilis. S. Satanowsky.—p. 361.
*Infectious Purpura in Boy of Six. F. C. Garzón.—p. 369.
*Foreign Bodies in Children. J. C. Munyo.—p. 373.

Spontaneous Fractures in Young Infant.—Satanowsky describes a typical case of osteogenesis imperfecta which had entailed multiple and spontaneous fractures from the first day after birth and onward. The enlarged spleen subsided promptly to normal size under treatment for the inherited syphilis but the defective bones showed no change. Radiography shows less calcium salts than normal and that their distribution is irregular. The periosteum is not adherent to the bone below and the compact bone is much thinner than usual. At the age of 6 months the child was unable to sit up, and during a bath, the humerus fractured on both sides and the tibia on one, and the child died the next day, with fever. The ductless glands were of normal aspect.

Infectious Purpura.—In Garzón's case the boy of 6 presented a series of inflammatory foci in bone, extremely tender, but disappearing rapidly and spontaneously, and without a trace of fever at any time. The multiple accompanying ecchymoses and petechiae confirmed the presumptive diagnosis of infectious purpura. The child a few months before had required two operations for a traumatic abscess in the parietal region of the skull. The infectious purpura ran its course in a little less than a month.

Foreign Bodies in Children.—Munyo describes the extraction of a foreign body drawn into the trachea and three esophagus cases.

Brazil-Medico, Rio de Janeiro

Jan. 11, 1919, **32**, No. 2. Received Dec. 26, 1919

Bovine Babesiasis and Anaplasmosis. H. de Beaurepaire de Aragão.—p. 9.
Acquired Feeblemindedness. H. de Brito Belford Roxo.—p. 10. Concluded in No. 3, p. 17.

March 29, 1919, **33**, No. 13

Estimation by Opacity of Doses for Vaccine Therapy. A. Marques da Cunha and Cassio Miranda.—p. 97.
Syphilitic Fever. J. C. Ferreira.—p. 97. To be cont'd.
Phenomena after Experimental Injection of Nicotin. M. Ozorio de Almeida.—p. 101.

Gaceta Médica de Caracas

Oct. 15, 1919, **26**, No. 19

Treatment of Appendicitis. J. C. Rivas Morales.—p. 199.
*Cysts in the Liver. R. Soto G.—p. 200.

Liver Cysts in Venezuela.—As a contribution to the debated question whether hydatid cysts occur in Venezuela, Soto describes a case of a solitary nonparasitic cyst in the liver and remarks that the turbid contents and the site differentiate these solitary cysts from hydatid cysts. The solitary cyst is generally accompanied by other congenital anomalies, and always with anomalies in the liver itself. His patient was a multipara of 46, and the abdomen was opened on the assumption of gallbladder disease. There had been symptoms from the liver cyst for fifteen years, and four punctures recently had evacuated 1 or 2 liters of fluid resembling bile at first, and later purulent. He was unable to remove the capsule of the cyst, as he attempted, and merely drained it after suturing it to the lips of the incision.

Medicina Ibera, Madrid

Nov. 8, 1919, **9**, No. 105

*Operative Treatment of Prolapse of the Uterus. F. Luque.—p. 97.
Influenza at Bilboa in 1919. A. López.—p. 101.
Treatment of Osteomyclitis. A. M. Arquellada.—p. 113. Conc'n.

Prolapse of the Uterus.—Luque gives fifteen illustrations of different ways of correcting genital prolapse, and says that in the more serious cases the results are exceptionally dependable with Wertheim's method of utilizing the uterus itself to reenforce the floor of the pelvis. The bladder then lies on top of the uterus. Wertheim has lately modified his technic by pulling down the fundus of the uterus a little, which causes the cervix end to pivot up, and he sutures this cervix end to the sacro-uterine ligaments, thus holding the uterus slanting instead of horizontal, and the cervix at a point where it is impossible for it to work loose and sag down to the vulva.

Nov. 29, 1919, **9**, No. 108

*Accidental and Constitutional Psychoneuroses. E. Fernández Sanz.—p. 157.
History of Medicine in Spain. L. Lasbennes.—p. 159.
*Treatment of General Paralysis. G. R. Lafora.—p. 161.

Psychoneuroses.—Fernández expatiates on the difference in the outlook between what he calls constitutional and accidental psychoneuroses. The constitutional is continuous, with waves of aggravation and remission, while other psychoneuroses are intermittent, with relapses, separated by periods of latency. The constitutional group includes hysteric and psychasthenic psychoneuroses; the accidental group includes the cases of neuropsychic asthenia, anguish and simple depression. The prognosis is better with this latter group. He warns in speaking to patients to avoid the term "constitutional" in this connection as liable to depress them.

Progressive Paralysis.—Lafora reiterates that three years of experience have convinced him that general paralysis in the first six months is capable of complete remission under appropriate treatment. (His latest report was summarized in The Journal, Dec. 6, 1919, p. 1808.) The main thing now is to detect it during these first six months or better yet, before it has induced the classic symptoms. This is possible by systematic periodical exploratory lumbar puncture, and he describes two cases in detail to show the importance of this. The two syphilitic men of 36 and 49 presented an almost identical clinical picture, insomnia, a tendency to aphasia and absentmindedness but no hallucinations, etc. As only two years had elapsed since infection in the younger man, the diagnosis of cerebral syphilis seemed certain in his case, while progressive paralysis seemed equally certain in the other case, the symptoms not coming on until twenty-three years after infection. But the lumbar puncture fluid told another story, the findings showing general paralysis in the younger man and merely vascular syphilis in the other—all confirmed by the later course of the cases.

Prensa Médica Argentina, Buenos Aires

Nov. 10, 1919, **6**, No. 16

*Auricular Flutter. H. L. Caretti.—p. 157.
Activity of the Curare of the Amahuacas Indians. J. Guglielmetti and G. Pacella.—p. 160.
*Hematoma in Suprarenal Capsule. Bacigalupo and Perazzo.—p. 161.
*Brück's Precipitation Serochemical Test. Mazza and Bárriga.—p. 162.
Hepatoma in Young Infant. A. Casaubon and J. Bacigalupo.—p. 163.

Auricular Flutter.—Caretti gives several tracings from a case of auricular flutter in a man of 64. The auricular flutter was scarcely modified in the least by a vigorous course of treatment with digitalis, which suggests that the condition will probably merge into heart block before long.

Hematoma in Suprarenal Capsule.—The hemorrhage in the suprarenal in the 4 days' infant proved speedily fatal. Some injury during the birth process was evidently responsible for it as also in Delucca's two cases in newly born infants with difficult delivery.

The Globulin Precipitation Reaction.—Mazza and Bárriga report positive findings with the Brück globulin precipitation reaction, harmonizing with the Wassermann reaction in 78 per cent. of the 150 cases examined. They obtained a positive precipitation reaction with negative Wassermann only in two out of the 150. By estimating the results in less than twenty-four hours, the proportion of nonspecific reactions is much less.

Revista Médica del Uruguay, Montevideo

September, 1919, **22**, No. 9

Obstetric Manikins. J. A. Beruti.—p. 663. See abstract p. 140.
*Chronic Constipation. C. Robertson Lavalle.—p. 680.
*Partial Tetanus. A. Rodriguez Castro.—p. 691.
*Hydatid Cysts in Uruguay. Victor Zerbino.—p. 695.

Surgical Constipation.—Robertson applies this term to chronic constipation rebellious to systematic medical treat-

ment, and describes the various surgical measures required for different conditions. He warns that the tissues should be kept from drying out by copious injections of physiologic saline. This is particularly necessary with operations on the colon, as absorption of water from the colon is thus prevented. He emphasizes the paramount importance of postoperative treatment, insisting in particular on ample supplies of water. This tends to reduce vomiting after general anesthesia, which puts such a strain on the sutures. After fixation of organs he keeps the patients in bed with the feet raised 15 cm. and feeds abundantly to fatten, guarding against gas production and the use of purgatives.

Partial Tetanus.—The young child developed fatal cephalic tetanus after an injury of the palate from a splinter of wood it had thrust into its mouth. This is the third case of partial tetanus recorded in Montevideo during the last eleven years.

Hydatid Cysts in Uruguay.—Zerbino remarks that the hydatid cyst is one of the scourges of Uruguay and is a national disgrace, as this is one of the most easily exterminated of diseases. In the public hospital of Montevideo the number of cases has increased from 11 in 1896 to 165 in 1915. The total figures include 216 cases in children representing 4.34 per cent. of the hospitalized children; the adults formed 1.32 per cent. of the total hospitalized. Throughout the country the proportion approximates one hospitalized case per five thousand inhabitants. The statistics show that the disease affects children and the young predominantly, up to the age of 30 or 35. The liver and lungs were the seat of the lesion in over 60 and 21 per cent., respectively, in children, and over 54 and 23 per cent. in adults; the brain in 3.82 per cent. in children; none in adults. Cases in adults are probably listed as cerebral tumors, etc. The bones were the seat in 0.83 per cent. in adults; none in children. Multiple localizations were found in over 3 per cent. in children; none in adults. In 106 children with hydatid cysts, the cyst suppurated in nearly 19 per cent.

Acta Scholae Medicinalis Univ. Imp. Kioto

Sept. 1, 1919, **3**, No. 2, German Edition

*Action of Nicotin on Muscles. K. Okushima.—p. 151.
*Epinephrin and Heat Regulation. S. Kondo.—p. 169.
*Autolysis of Vitreous Body. Y. Hijikata.—p. 207.
*Sodium Oxalate, Citrate and Tartrate. S. Hara.—p. 213.
*Agglutinability of Vibriones. T. Toyoshima.—p. 233.
*Action of Gases on Muscle. A. Gohara.—p. 239.
*Action of Epinephrin, etc., on Skeletal Muscle. K. Okushima.—p. 261.
Histology of Corneoscleral Junction. K. Hiwatari.—p. 277.
*Influence of Thyroidectomy on Gestation. T. Ukita.—p. 287.

Action of Nicotin on Skeletal Muscles.—Okushima's research on frogs indicates that nicotin excites the motor nerve terminals. Its action on muscle substance is first stimulating and then paralyzing. It is able to check the paralyzing action of curare to a certain degree.

Action of Epinephrin on Heat Regulation.—Kondo found the influence of epinephrin on the temperature negligible except when it was injected directly into the brain. By this route even a small amount sends the temperature up at once, unless this effect is checked with antipyrin or by long fasting. Intracerebral injection of saline or olive oil induces a very gradual rise in temperature, as also the subcutaneous injection of peptone and certain other substances.

Production of Lactic Acid in Autolysis of Organs.—The beef vitrous body contains lactic acid, and the amount increases during autolysis.

Toxic Action of Sodium Salts of Oxalic, Citric and Tartaric Acid.—Hara's research on mice demonstrated that the toxicity of these salts does not parallel their calcium-precipitating power, but this latter seems to be responsible for their action in enhancing the narcotic effect of magnesium sulphate.

Agglutination of Vibriones.—Toyoshima warns that non-cholera vibriones are liable to be agglutinated with cholera serum, and he theorizes to explain the reason for this. Exact differentiation, he reiterates, requires the Pfeiffer test reaction.

Electric Test of Action of Gases on Muscle.—Gohara describes the effect of electric stimuli on surviving mammalian nonstriated muscle under the influence of gases. The organ studied was the rabbit spermatic cord, and the gas was carbon dioxid. The electric apparatus devised for the purpose is illustrated. The gas displayed a paralyzing action.

Action of Epinephrin, Amins and Amino-Acids on Skeletal Muscle.—Okushima reports that epinephrin and the aromatic amins stimulate the skeletal muscle in small doses but paralyze it in higher concentrations. The action seems to be exerted on the terminal motor nerves.

Influence of Thyroidectomy on Gestation.—Ukita expatiates on the vast field for research on endocrine functioning by acting on the various ductless glands during pregnancy, and watching the effect on the fetus and on the progress of gestation. Thyroidectomy early in gestation in rabbits confirmed the intimate relations between the mother and the fetus, and that the thyroid is an extremely important factor in the development of the fetus and the normal course of gestation. The latter was prolonged to twice the normal time; the young were small and weak, and the centers of ossification abnormal, while the fetal thyroid gland was hypertrophied, and the development after birth was not regular. It is evident that the thyroid of the fetus has some activity even in the uterus, the hypertrophy suggesting a compensating process. This article is in English.

Archiv für Kinderheilkunde, Stuttgart

May 17, 1919, **67**, No. 3-4

*Fate of Syphilitic Children. E. Müller and G. Singer.—p. 161.
*Acid Reaction of Blood in Relation to Albumin Requirement. Gertrud Fuhge.—p. 291.

Fate of Thoroughly Treated Syphilitic Children.—Müller and Singer review the experiences since 1909 when the first Welander home for children with inherited syphilis was inaugurated in Germany. They devote nearly 130 pages to the tabulated findings year by year in 214 children who have been inmates of the institution, and call special attention to eighty-four who have been kept under surveillance for two, four, nine or ten years. All this material is classified according to treatment and other features of the cases. The data demonstrate that far better results were realized by this prolonged systematic treatment than by other means, but the final judgment will be possible only when the children get to be 30, 40 or more years old. But even already it is evident that the most serious consequences of congenital syphilis can be essentially attenuated or even completely cured. The mortality differed widely in different years; of late the children seemed to succumb to the syphilis itself and not to intercurrent disease so much as formerly, especially the infants. The total mortality among 202 syphilitic children was 22.8 per cent. The Wassermann reaction was negative on the final examination of the sixty-nine children given the full course of treatment. The children were given usually from seven to nine courses of treatment as they lived in the institution for three or four years.

The Acid Reaction of the Blood and the Albumin Requirement.—Fuhge relates that on the prevailing vegetable diet, with little meat, examination of the urine of 150 children in different children's asylums, all on the same day, showed an alkaline reaction, almost without exception. Only on the days with meat was the reaction neutral or acid. Five healthy children were given calcium chlorid, aiming to make the urine acid on the common diet. This was accomplished with 2 or 3 gm. in boys of about 12. These experiences demonstrate that calcium chlorid acts as an acid in the metabolism. This was evident from the increased ammonia content of the urine. Nothing was observed to indicate that the preponderance of an acid or alkaline reaction affects the nitrogen requirement, but the fact that calcium chlorid behaves as an acid suggests caution in its prolonged administration to children.

Correspondenz-Blatt für Schweizer Aerzte, Basel

Nov. 20, 1919, **49**, No. 47

*Apparatus Alleged to Help the Deaf. E. Oppikofer.—p. 1769.
*Electric Accidents Affecting the Ear. F. Nager.—p. 1778.
Epithelioma of the Trachea. T. Hug.—p. 1783.
*The Protection Afforded by Influenza Masks. A. Lauterburg.—p. 1786.

Apparatus Claimed to Help the Deaf.—Oppikofer gives illustrations of his collection of twelve specimens of what he calls *schwindelhafte Ohrapparate*. He urges that similar collections should be in every ear clinic so that the deaf can see for themselves and have explained to them what frauds these "thermo-electric tympanums," audiphones, acoustiphones, electromagnetic microphones, etc., in reality are. The devices mentioned above cost, respectively, 75 francs, 20, 325 and 35 francs. Oppikofer declares in conclusion that these frauds not only obtain money under false pretenses but they are liable to do direct damage to the ear and cause the postponing of proper treatment in time for it to be effectual, and hence he thinks the state should forbid the advertising of such fakes. Some of the cantons in Switzerland have already imposed certain restrictions, but they are few and not always enforced. There is no federal legislation on the subject of quackery. Until all the states and neighboring states set energetically to work, these quacks that prey on the deaf will continue to reap their harvest.

Electric Injury of the Ears.—Switzerland has averaged from 50 to 100 serious electric accidents in the last few years and the number is increasing. Nager reports a case of injury of the ears from a live-wire accident, and summarizes four similar cases on record. Any part of the ear may be injured by the electric accident and the examiner afterward should bear this in mind as also the possibility of injury from the detonation alone, as the current is short-circuited. The detonation was regarded as the main factor in the personal case described, and the man was given 2,000 francs compensation for the unilateral cochlea injury.

Influenza Masks.—Lauterburg describes fifty-two sets of experiments which determined that the usual influenza masks are readily permeable for bacteria.

Nov. 27, 1919, **49**, No. 48

*Pharmacology of Circulation in the Lungs. P. Wolfer.—p. 1817.
*Rhinogenous Headache. E. Gallusser.—p. 1823.
*Hallux Valgus. H. v. Salis.—p. 1833.

The Pharmacology of the Circulation in the Lungs.—Wolfer describes some devices with which it is possible to study the effect of different drugs on the circulation in the lungs. The data thus recorded apparently demonstrate that the intrapulmonary circulation is independent of the greater circulation. The two seem designed to supplement, compensate, and balance each other. Different drugs act differently on the two circulatory systems. For example, epinephrin seems to passively and perhaps also actively dilate the vessels of the pulmonary circulation.

Rhinogenous Headache.—Gallusser emphasizes that some long unsuspected nasal disease, which has never given any recognized subjective or objective signs of its existence, may entail headache for which no cause can be discovered. He describes a number of cases of this kind and warns of certain features that might suggest the clue. The headache is generally in the frontal region, a sense of oppression, a heavy feeling in the whole head, with occasional paroxysms of severe pain. The severe pain usually develops on arising in the morning (from change of position) and wears off later, but the headache may come on very severe at any hour after sneezing, bending over or emotional stress. This is liable to give the pain a misleading neuralgic character. Another symptom is the pain on pressure of the internal angle of the eye, over the frontal sinus. The most violent pains also are sometimes promptly and completely relieved by cocain to the upper interior of the nose. This immediate relief by cocain calls for exploratory opening of the frontal sinus. One man of 48 had had headache on the right side daily for ten years, incapacitating him at times, but none of the numerous physicians consulted had ever detected any symptoms on the part of the nose. No treatment had given any relief and he had been exempted from military service on account of habitual headache. Tapping the right side of the skull and pressure on the roof of the right orbit were painful. The middle turbinate was unusually thick. To get a better view, Gallusser pushed this turbinate to one side, and the patient exclaimed at the relief this afforded. This encouraged high resection of the middle turbinate, opening the frontal ethmoidal cells and exposing the opening into the frontal sinus. Nothing pathologic could be detected, but the headache was cured once and for all. In another case long martyrdom from headache was cured by opening up the frontal sinus although nothing pathologic could be detected in it except that it was extremely sensitive to the probe. This woman of 44 tried to commit suicide on account of her headaches, which by exclusion had been long qualified as nervous. In neither of these two cases was any sign of suppuration found.

Treatment of Hallux Valgus.—Salis reviews his experience with 286 cases of hallux valgus and describes his successful conservative treatment of the milder forms.

Deutsche medizinische Wochenschrift, Berlin

Nov. 6, 1919, **45**, No. 45

*Protective Function of the Skin. E. Hoffmann.—p. 1233.
Effect on Health of System of Food Rationing Adopted in Denmark. M. Hindhede.—p. 1236; Reply. M. Rubner.—p. 1237.
*Effect on Growth of Lack of Minerals in Food. P. Grabley.—p. 1238.
*Nerve Grafting. R. Eden.—p. 1239.
*Intra-Abdominal Injection of Air for Roentgenoscopy. K. von Teubern.—p. 1242.
The Diagnosis of Meningitis. D. Kulenkampff.—p. 1243.
Experiences with F. F. Friedmann's Tuberculosis Remedy. O. Roepke. —p. 1244
Pain in Cuneiform Bones of Foot. H. von Salis.—p. 1249.
*The Treatment of Erysipelas. F. Bardachzi.—p. 1250.
By-Effects of Acetylsalicylic Acid. Friedemann.—p. 1251.
Health Resorts and Hydrotherapeutic Sanatoriums. L. Feilchenfeld. —p. 1251.
Reorganization of Medical Curriculum. J. Schwalbe.—p. 1252. Conc'n.

An Esophylactic (Protective) Function of the Skin.—Hoffmann has been much interested in Bruno Bloch's opinions on "Dermatology in Relation to Problems of Metabolism and Immunity," as expressed in a course of lectures delivered at the University of Zürich. He believes, with Bloch, that the skin has an important biologic function that has not been fully recognized. By virtue of this function the vital organs are protected to a great extent against disease germs. This he regards as one of the main points of contact between dermatology and general medicine. Bloch had been led to the consideration of this question by the results of the recent investigations on the allergetic reaction of the skin in trichophytosis, tuberculosis and syphilis. Bloch emphasizes that the skin plays the most important part in the phenomena of allergetic immunity and of hypersusceptibility, whereas in tetanus, diphtheria, etc., the blood is the carrier of the prophylactic forces. This may perhaps be compared to the protection afforded a country by its land and naval forces. The fact that when the skin is extensively affected in tertiary syphilis and lupus, the internal organs so frequently escape, and the part played by the skin in overcoming exanthematous infectious diseases, sustain this assumption. But more especially the recent investigations of the allergetic function of the skin, together with the undeniable therapeutic effect of general light baths, lead Hoffmann to believe that the skin must produce immunizing materials that exert a healing influence for, in view of the slight penetrability of the short-wave rays used in phototherapy, he can find no other explanation. Owing to its importance in connection with biology and general pathology, he reports in detail the various angles from which he has viewed the assumption of such a distinct function of the skin, thinking that the hypothesis would have at least heuristic value, that is, might incite others to research.

Effect on Growth of Lack of Minerals in Food.—Grabley remarks that all admit that the restricted war diet was the cause of many disturbances of growth and metabolism, but all are not agreed as to exactly what ingredients were lacking in this diet. Many emphasize the lack of variety, others the deficiency in fat and protein, others the absence of vitamins. Very few mention the metabolism of mineral substances, but this, Grabley thinks, is of vital importance. The normal functioning of the cells, as has been shown by the study of the cell nucleus, depends on the optimal isotonicity of the cell fluid. To insure this, necessary mineral sub-

stances must be present. Various deficiency diseases result partly no doubt from the lack of vitamins, but even more from the lack of mineral substances. Schiff ascribes edema to extensive damage to the cell structure which upsets the water balance in the body and causes faulty metabolism of mineral substances. Grabley holds that just the reverse is true; namely, that the faulty metabolism of mineral substances in the cell is due to the deficiency of these substances in the diet. The demineralization of the cell produces the water imbalance, causes extensive damage to the cells, interrupts cell functioning, and finally destroys the cell nucleus and the cell. Grabley cites in support of his views the conclusion reached by R. Berg, the physiologist and chemist, to the effect that hemophilia is due to a disturbance of the balance of mineral substances in the blood. Grabley accepts the theory that the sources of energy in the animal organism, in short, life itself, are derived from electrochemical and electrophysical processes. Purely organic substances and their solutions remain chemically and physically inactive until they are mixed with inorganic salts; then the chemicophysical and the electrolytic processes in the cell fluid begin; hence the importance of inorganic salts in the human dietary.

Nerve Grafts.—Eden reports an unsuccessful attempt at nerve grafting after a shell wound of the right arm. The wound healed but left radial paralysis. The radialis was laid bare and a defect 10 cm. in length was discovered. A corresponding segment of a popliteal nerve from an amputated limb was used to bridge the gap, the transplant being fixed by means of fine epineural interrupted sutures and embedded in healthy subcutaneous tissue at a safe distance from the scars. The wound healed promptly, but the after-treatment by means of electricity and massage was without result. Nine months after the original operation the region of the transplant was reopened. The transplant bore little resemblance to a nerve but looked more like a rough strip of connective tissue. The transition from the nerve to the transplant was gradual, so that the ends of the transplant could not be definitely located. Stimulation by means of a strong electric current brought no reaction. The transplant was therefore removed and the peripheral end of the nerve was grafted into the median.

Injection of Air Into the Peritoneum for Roentgenoscopy.—Von Teubern thinks this method of pneumoperitoneum has considerable value. The procedure is, however, somewhat painful, and its use will doubtless be confined to cases in which other, less painful methods have not accomplished the desired result.

Treatment of Erysipelas.—Bardachzi did not find colloidal silver preparations, radium, etc., effectual in the treatment of erysipelas. He believes that none of the specific methods are superior to conscientious symptomatic treatment. He recommends compresses moistened with dilute Burow's solution and laid on the affected parts, and prescribes acetylsalicylic acid several times a day. In all severe cases digitalis is indicated. The results of this treatment in 183 cases lead Bardachzi to believe that no specific treatment will accomplish more.

Münchener medizinische Wochenschrift, Munich

Sept. 19, 1919, **66**, No. 38

*Osteoporosis and Osteomalacia. Alwens.—p. 1071.
*Skin Reaction in Typhus. E. Friedberger and van der Reis.—p. 1075.
Agglutination in Typhus. V. van der Reis.—p. 1077.
Gunshot Wounds of the Ear. Haymann.—p. 1078.
Supernumerary Tarsal Bones. Baisch.—p. 1081.
Technic of Examination for Pale Spirochete. Oelze.—p. 1082.
Determination of the Wave Length of Homogeneous Roentgen Rays. T. Christen.—p. 1084.
Ultraviolet Phototherapy for Disabled Soldiers. Zimmermann.—p. 1085.
Isoviscous Physiologic Sodium Chlorid Solution. O. Kestner.—p. 1086.
Silver Salvarsan Sodium and the Wassermann Reaction. W. Schönfeld and G. Birnbaum.—p. 1087.
Spontaneous Pneumothorax in Pneumonia. P. Prym.—p. 1089.
A Fatal Case of "Luminal" Poisoning. E. Hueber.—p. 1090.
Influenza versus Lethargic Encephalitis. Von Sohlern.—p. 1091.

Undernutrition in Relation to Osteoporosis and Osteomalacia.—Twenty-six cases of a disease of the bones were observed at Frankfort-on-the-Main between March and June, 1919. The age limits were 19 and 72, 65 per cent. of the 23 women being of the climacteric and postclimacteric age. The women were of the poorer class, and 16 of the patients admitted their nourishment had been deficient; namely potatoes, turnips, thin soup, war bread and the small meat ration. Milk, eggs, cheese and butter were lacking. Most of the women weighed under 110 pounds. In many, emaciation was far advanced; 7 had had rickets, 15 presented curvatures of the spine. Some were confined to bed. Spontaneous fractures had occurred in 10 cases. Dragging the feet was common. Alwens describes these conditions at length and his diagnosis is osteoporosis from undernutrition (deficiency of protein, lime and phosphorus). The rapid development of the pathologic symptoms, the effects on the thorax and the spine, and the lack of typical pelvic changes were features differentiating the syndrome from osteomalacia, though the clinical picture suggested osteomalacia, and this may develop later. In osteoporosis Alwens recommends a diet of high caloric value, with special attention to the protein, calcium and phosphorus content. Phosphorus in 0.5 mg. doses, three times daily, taken with cod liver oil, was found helpful. Calcium lactate, 3.0 gm. daily, is also indicated. Epinephrin did not prove beneficial. Prompt, distinct and continued improvement usually followed treatment.

Specific Typhus Skin Reaction.—Friedberger and van der Reis relate that an emulsion of the bacillus with which the agglutination test is made in typhus induces a pronounced inflammatory reaction when injected subcutaneously in the healthy and in diseases other than typhus, but there is no reaction in typhus patients. The lack of the usual reaction is thus a sign of the presence of typhus. They call the bacillus used the Weil-Felix bacillus X 19. (The bacillus used commonly for the agglutination test is the proteus X.)

Zeitschrift für Geburtshülfe und Gynäk., Stuttgart

May 31, 1919, **81**, No. 2

Mesodermal Mixed Tumor in Pouch of Douglas. O. v. Franqué.—p. 285.
*Basal-Cell Cancers of the Uterus. E. Krompecher.—p. 299.
*Progress in Roentgen Technic. F. Winter.—p. 339.
Embryology of the Hymen. O. Küstner.—p. 353.
*Viability of Premature and Weakly Infants. H. Schmitt.—p. 382.
Estimation of the Fetus as a Living Being. F. Ahlfeld.—p. 394.
*The Limit of Viability of the Prematurely Born. F. Ahlfeld.—p. 400.
*Diseased Uterine Adnexa and the Appendix. O. Beuttner.—p. 406.
*Pregnancy Dropsy. W. Zangemeister.—p. 491.
*Heart Disease and Pregnancy. K. Kautsky.—p. 559.

Basal-Cell Uterine Cancer.—Krompecher's article is based on 216 cases of uterine cancer. He was surprised to find that 75 per cent. of them represented basal cell cancers. He classifies this material, with several plates, showing the histology and origin. The solid type formed 63 per cent., while types such as are found mostly on the skin were very rare.

Roentgen Technic.—Winter writes from the Munich gynecologic clinic to extol the progress realized in radiotherapy and radiotechnic with the introduction of tubes of the Coolidge type with which he has been working since May, 1916.

Viability of the Prematurely Born.—Schmitt relates that 316 children weighed only from 700 to 2,200 gm. among the 8,881 born at the Würzburg maternity hospital in ten years. The mortality before the end of the year in this small group was 78 per cent. The smallest child that survived weighed 1,100 gm., but it is absolutely exceptional when a child survives that weighs under 1,500 gm. Even those that weigh from 1,500 to 2,000 gm. have very feeble vitality so that at most 25 per cent. survive the first year. There is no special physical inferiority for which the small weight can be incriminated. With children over 2,000, the prospects are favorable for 50 per cent. surviving.

The Limit of Viability of the Prematurely Born.—Ahlfeld reviews the literature on the nineteen smallest and earliest born infants that have been recorded. The periods of gestation were from the twenty-fourth to the thirtieth week, and the weight ranged from 500 (the tenth day of life) to 1,000 gm. He tabulates the details, and concludes that 750 gm.

at birth can be accepted as the lowest limit possible for a child to survive.

The Uterine Adnexa and the Appendix.—Beuttner takes nearly ninety pages for his data and arguments against systematic appendicectomy as a routine supplement to operations on the adnexa. Microscopic examination of the appendix in eighty-seven cases in which this had been done showed that the appendicectomy had been actually indicated only in four of the cases.

"Pregnancy Dropsy."—Zangemeister discusses the course and the connection between hydrops gravidarum and kidney disease or eclampsia, as he studied it in 193 cases of "pregnancy dropsy." In the first place, he declares, the tendency to dropsy should be combated by avoiding ill ventilated and dusty air, chilling of the skin, constricting clothing, overexertion, excesses in eating and drinking, especially of salt, not lying in bed too long, and not taking drugs which might injure the blood or vessel walls. These measures are particularly necessary if there is any tendency to slight edema, and if there has been a tendency to dropsy in a former pregnancy. When a tendency to slight dropsy has become apparent, but there is as yet no rise in blood pressure and no albuminuria or preeclamptic symptoms, then bed rest and restriction of the intake of fluids generally suffices to banish the hydrops, but this is not permanent until the weight has gone down under increased diuresis. This of course does not cure the causal abnormal permeability of the capillary walls, but the restriction of intake of fluids helps this by relieving the load in the vessels. The patients bear this well if the intake of salt is reduced, and also of solid foods, to keep the thirst down and relieve the metabolism in general.

There does not seem to be retention of salt by the kidneys, but its harmful influence is manifest in other ways. He warns against digitalis as not required in the mild cases, and as liable to bring on eclampsia in the grave cases. He saw this occur in two cases, the blood pressure running up and the convulsions developing. Measures to induce sweating never did harm in his experience. The special benefit from them he ascribes to the different distribution of the blood which they realize. He warns not to attempt the sweating procedures if the blood pressure indicates impending eclampsia. Decapsulation of the kidney may be considered in extreme cases, but not with developed eclampsia. Venesection and lumbar puncture may be necessary, or evacuation of the uterus. "In established eclampsia, reduce the pressure on the brain, reduce the tissue hydrops as the cause of the brain swelling responsible for the pressure, and fight off the attacks of high blood pressure which start the convulsions anew, but the first thing is to empty the uterus."

Heart Disease and Pregnancy.—Kautsky emphasizes that a pregnant woman with mitral stenosis, on account of the increased area of the circulation, is kept constantly in conditions like those of a nonpregnant woman continuously at hard work, day and night. Fully 40 per cent. of the pregnancies with mitral stenosis terminate in spontaneous abortion or miscarriage. He bases his treatment on these facts, and especially on his repeated experience that the demands even of a normal, uncomplicated pregnancy are enough to upset the compensation with a valvular defect.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Oct. 4, 1919, **2**, No. 14

*Nervous Complications of Influenza. J. J. H. M. Klessens.—p. 970.
*Height and Weight of Children. C. J. van der Loo.—p. 976.
Remuneration of Sick-Fund Physicians. Vrendenberg.—p. 986.
*Cancer of Both Fallopian Tubes. T. B. Phillips.—p. 988.

Nervous Manifestations Complicating Influenza.—Klessens states that he encountered many pathologic nervous conditions associated with influenza, such as brachialgia, sciatica and persistent paresthesias. One patient gave evidence of encephalitic foci in the medulla oblongata, and transverse cervical myelitis occurred in another. Klessens ascribes the condition to one or more foci at the bulb. An apparent case of encephalitis pontis was noted. The leftsided paresis of the leg with exaggerated Achilles tendon reflex and diminished skin reflexes; the disturbances in hearing and the hypalgesia in the trigeminal region suggested a pons lesion. Another patient presented dizziness, deafness, nystagmus, and falling backward when the eyes were closed. Here the lesion may have been in the cerebellum, though the fact that the direction of the falling was not affected by the position of the head speaks against this assumption; in this case there had been a middle ear infection. The conditions found in one case—dizziness, nausea, nystagmus to the right, a falling sensation, and deviation to the right in walking—Klessens ascribes to a lesion of the cerebellum. A child of 8 presented an especially interesting case of a lesion of Purkinje's cells, caused by the toxins of the influenza virus. The nystagmus, the disturbance in speech, the static ataxia and the dysdiadokokinesia form a syndrome that points to the cerebellum.

Height and Weight of Children.—Van der Loo tabulates the relative height and weight of 598 children between 6 and 12. He found thirty-one "scrofulous" children who averaged 0.36 kg. less in weight than the others, and seventy-five weak children, who averaged 1 kg. less. In children of a given age there was a divergence of about 6 kg. in weight and 30 cm. in height. The taking of height and weight awakens rivalry and serves as an aid to parents and physician in bringing weak children up to standard. A weight more than 1 kg. below the average is an indication for a careful examination of the child. The height is not so significant as the weight, as the divergence is much greater.

Cancer of Fallopian Tubes.—Philips' patient, an unmarried woman of 44, was still menstruating regularly, and the bilateral presumably primary papillocarcinoma of the fallopian tube was discovered only by chance. For about a year she had had a whitish, foul-smelling discharge from the vagina. There was no admixture of blood, but she felt herself growing weaker and was losing weight, and there was slight pain in the lumbar region. She had been referred to the hospital for atresia of the vagina, and an occluding membrane was discovered in the vagina. The uterus could not be distinctly outlined but on each side a growth was palpable apparently arising from the ovaries. The growths were removed by a laparotomy on the assumption of bilateral hydrosalpinx.

Ugeskrift for Læger, Copenhagen

Nov. 27, 1919, **81**, No. 48

*Action of Small Doses of Roentgen Rays. Hjalmar Eiken.—p. 1849.

Action of Small Doses of Roentgen Rays.—Eiken has been experimenting with roentgen treatment in doses so small that the action of the rays seems to be restricted merely to a stimulating influence. Laboratory animals and fowls were treated in this way daily for months and then every third day up to a year, and none showed the slighest sign of injury therefrom. Their growth and procreation proceeded normally and their young procreated normally in turn. Similar experiments with animals inoculated with tuberculosis demonstrated that the reaction of the tissues to the tubercle bacilli occurred earlier and was more active than in the controls, the incipient foci healing. Applying these results to human beings, there seems a prospect of aiding the cure by this means in persons who display only a sluggish reaction, or the focus is located at a point where experience has always shown a torpid course. Without removing the clothing, the exposures were made for one minute from the front and from each side and for seven minutes from the back, and repeated every day or second day. The dose was 1/700 and 1/100 S. N. tablet. He gives the details of three cases of tuberculosis in which this treatment was applied. The stimulating action from it was unquestionable. The patients were 15 and 18 years old. In the superficial lesions the increased blood supply to the focus, the increased secretion and more pronounced demarcation were manifest, and then healing followed. One of the patients had tuberculous processes in lungs, cervical glands, in skin and in the tibia, with several fistulas. A total of 100 exposures were made, and all the fistulas and external processes healed. The bacilli disappeared from the sputum for a long time, but scanty bacilli have appeared in the sputum again recently.

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THE CLINICAL RÔLE OF THE FAT-SOLUBLE VITAMIN: ITS RELATION TO RICKETS*

ALFRED F. HESS, M.D.
AND
LESTER J. UNGER, M.D.
NEW YORK

In the last few years, the subject of deficiency diseases has become one of absorbing interest for both the laboratory investigator and the clinician. In order that the advances in this field may proceed on firm ground, it will be necessary that step by step we compare and correlate experimental results with clinical experience. Perhaps the largest amount of work has been carried out on scurvy, both in this country and abroad, and has brought forth results that coincide remarkably for animals and for man. All diets leading to scurvy in the guinea-pig produce scurvy in man; all antiscorbutics are potent for both species; all signs and symptoms of the disease are common in some degree to both guinea-pig and man. There is, however, one important difference, namely, that in man the disorder is a slow, markedly subacute process, whereas in the guinea-pig it is almost an acute disease. This does not mean that this animal is not suitable for the study of scurvy, but merely that it is a hypersensitive reagent, and therefore not well adapted for fine quantitative experiments.

We shall not dwell on scurvy at length, confining out attention rather to so-called deficiency diseases that have been less fully developed. We should like to say a few words in general, however, about antiscorbutic foodstuffs. There is a widespread impression among laymen, hygienists and physicians that the drying of foods or their subjection to high degrees of heat necessarily destroys their antiscorbutic potency. It is important to realize that, although holding good in most instances, these results are not based on a biologic principle, for we are approaching a time when dried foodstuffs probably will be made wide use of. It has been shown by Holst and Froelich, Cohen and Mendel, and others, that under certain conditions vegetables may be dehydrated and retain their antiscorbutic value for months or years. It is likewise true that milk may be dried and yet preserve by far the greater part of this accessory factor. In two cases we were able to cure infants of scurvy by means of milk that had been dried by the Just process, and to protect them as long as they were under observation, for at least three to seven months, by a dietary containing no further antiscorbutic food. It may be added that drying fixes the antiscorbutic principle, bringing it into a more permanent and resistant state, much as it does toxins and antitoxins. For example, milk that has been quickly dried by this method partially withstands subjection to 120 C. for one hour, whereas fluid milk loses practically all antiscorbutic virtue when heated to the same degree.

We shall not pursue this aspect of the subject further, but would point out that a most important factor, and one until recently entirely disregarded, is that of the original content of the foodstuff in antiscorbutic vitamin. Whether we consider vegetables or milk we cannot regard these foods as possessing a standard antiscorbutic value—not even in an approximate sense. It is therefore inexact and misleading, unless this limitation is borne in mind, to frame a table of the relative antiscorbutic content of the various foodstuffs. The milk will vary according to the fodder of the cows and again according to its age, especially if it has been subjected to pasteurization. The vegetables will vary according to their maturity and age previous to being cooked or dehydrated. Therefore, until improved methods are devised, we should endeavor to use young and fresh vegetables for purposes of dehydrating.

CAUSATION OF RICKETS

An investigation of scurvy naturally led to a consideration of a disorder which, from a clinical standpoint, has always been linked with scurvy. We refer to rickets. This is the most common chronic disorder among infants living in the temperate zone. It occurs more particularly among the poor, but is very common in moderate degree among the infants of the well-to-do. In an infant asylum with which we are connected, more than 90 per cent. of the infants show some degree of rickets. The theories as to its pathogenesis and etiology are manifold. Most of these may be grouped into one of two classes: those which place the onus on poor hygienic surroundings and those which regard the disorder as of dietetic origin. Under defective hygiene is included lack of sunlight, of fresh air and of exercise; the "domestication theory" of von Hansemann, the respiratory poison theory of Kassowitz. The dietary theory includes the fat deficiency, the alimentary intoxication theory, and newest of all, the vitamin deficiency. The last hypothesis was brought forward from a theoretical standpoint by Funk, and more recently has been sustained by Mellanby[1] as the result of experiments on dogs. The latter believes that he has shown that if dogs are deprived of the fat-soluble vitamin

* This work was carried out in part on a fund provided by the New York Foundation.

1. Mellanby, E.: Lancet **1**: 407 (March 15) 1919.

they develop rickets, whether they are allowed at large or kept in confinement. These conclusions of Mellanby have been accepted by Hopkins and Chick in a memorandum drawn up by a committee on accessory food factors appointed jointly by the Medical Research Committee and the Lister Institute.[2] This report considers the fat-soluble factor as synonymous with the antirachitic factor, and even constructs a table of antirachitic foods, arranging them in three different grades. This memorandum was prepared for the guidance of those engaged in the administration of food relief to famine-stricken districts.

This is the status of the etiology of rickets, now, almost 300 years since Glisson's classic description. You will see that there has been no advance, with the possible exception of the introduction of the vitamin hypothesis. The subject of rickets can be well studied on infants, owing to its great prevalence. But to our knowledge there has been no systematic study of a group of infants carried through for a long period. This is due in part to the fact that an investigation of this kind is impossible in the hospital, in the dispensary or in the home, but can be carried out only in an institution where the hygienic and sociological conditions are alike for the entire group, and where all factors are

Scorbutic Beading						Diet
Age (mos.)	Beading	Epiph.	Age (mos.)	Beading	Epiph.	
2	++	++	6	++	+	C.L.O (15gm. daily)
6	+++	++	7	++	+	
7	+±	+	8	±	±	O.J. added (15 c.c. daily)
9	+	+	9	±	±	

Chart 1.—Scorbutic beading: Two cases (I. M. and I. L.) demonstrating beading of the ribs of scorbutic origin. This sign developed in spite of a dietary that included cod liver oil, and decreased rapidly when orange juice (15 c.c.) was added; ± signifies the least and +++ the maximum degree of beading.

under absolute control. About a year and a half ago we undertook the study of rickets in about 100 infants cared for in a modern child-caring institution. These infants lived under excellent hygienic conditions, their nursing and care was the same, their food was prepared in a central diet kitchen, and they remained in the institution for the entire period of observation. Once a month they were examined for rickets. This included notation as to the size of the fontanel, the beading of the ribs, the enlargement of the epiphyses, the condition of the musculature, the eruption of the teeth, the static development, etc. They were placed on various diets—an abundance of fat and fat-soluble vitamin in the form of milk and cream; a deficiency of these substances, as in skimmed milk; an abundance of water-soluble vitamin as supplied by autolyzed yeast; or diets such as Mellin's Food or condensed milk. In all cases there was but one deficiency in the diet, which was adequate in quantity, that is to say, in its caloric content, and contained in every instance sufficient antiscorbutic foodstuff.

It is realized that a test of this kind should be carried out for a period of years, and that it is, therefore, premature to lay down rigid conclusions as a result of this work. However, after a period of observation of this length, it is possible to draw some conclusions. It is all the more important to discuss this question, as the laboratory results are absolutely at variance with the opinion of most clinical observers, who believe that rickets commonly follows overfeeding. In a study of this kind, what is to be the criterion of rickets? There is no delicate indication of what may be termed latent or subacute rickets, which can be recognized only by metabolism tests. But this mode of approach is handicapped by the fact that such tests generally can be carried out for only short periods, whereas the disorder itself is one of marked chronicity, with irregular periods of advance and of quiescence. Furthermore, they are so laborious as to permit of an investigation of only a small number of cases. After a preliminary study it seemed that beading of the ribs, especially in conjunction with the enlargement of the epiphyses, furnished the most reliable criterion of the course of the disease. We turned, therefore, to an intensive study of beading of the ribs.

It was found that six grades of beading could be distinguished, and these have been designated in the charts by means of plus signs. It may be thought that this empiric method would be very inexact. However, it was found that if the examinations were carried out always by the same person, remarkable uniformity could be obtained. We shall not weary the reader with a detailed discussion as to the clinical varieties of beading of the ribs, but shall report on this question at some other time.[3]

Physicians in general, and pediatricians as well, regard beading of the ribs as a pathognomonic sign of rickets. Some time ago in studying infantile scurvy we noted not only that there was marked beading in connection with this disorder, but also that very often the beading or rosary quickly became less or disappeared when orange juice or other antiscorbutic food was given (Chart 1). In other words, *there is not only rachitic but also scorbutic beading.* This conforms with observations in experimental scurvy. It was pointed out by Jackson and Moore, and has been noted by various other investigators, that beading of the ribs occurs in the course of the experimental scurvy of guinea-pigs. This has been referred to generally as "pseudorachitic" beading. In point of fact, it must be regarded as truly scorbutic, as it shows the various microscopic appearances of scurvy. As we have stated, this sign has its counterpart in infantile scurvy; to a less extent, the same is true of enlargement of the epiphyses. That beading of the ribs may be of scorbutic origin is of interest, from both a clinical and an experimental standpoint. Probably this fact is largely accountable for the confusion that existed between infantile scurvy and rickets, and led to the former being regarded as "acute rickets," previous to the publications of Barlow. It is owing largely to this sign that the diagnosis of rickets has been made so constantly in association with infantile scurvy; the data of the incidence of rickets in scurvy have been based mainly on the occurrence of the rosary. It may have brought some confusion also into the study of experimental rickets. We have encountered similar beading, with slight hemorrhages of the costochondral junctions, in the scurvy of dogs. In the light of this experience it should be

2. Hopkins, F. G., and Chick, H.: Lancet 2: 28 (July 5) 1919.

3. It may be said in passing that beading may be of various kinds —round or angular, that is to say, more cartilaginous or more osseous. It may be of a chronic nature—"residual"—resembling the enlargement of the epiphyses found in guinea-pigs that have been cured of scurvy. In order to make correct use of this sign it must be thoroughly studied and its modifications appreciated.

noted that three of the four diets that Mellanby made use of in his experiments on rickets in dogs contained no antiscorbutic whatsoever, and that the fourth dietary included only 3 c.c. of orange juice daily, a quota of antiscorbutic food that is insufficient. We do not, however, wish to imply that he was dealing with scurvy rather than with rickets.

Beading of the ribs may also come about as the result of a lack of the water-soluble vitamin. This

Date.	Wgt.	Font.	Cr-tabes.	Teeth.	Rosary	Epiph.	Diet.
6-18	5 ¾		+ +	0	0	0	
9-16	8 ¾	2-2		0	0	0	Milk (1 liter)
11-27	10 ¾			0	+ + +	±	
12-29	10 ¾	3-3		0	+ + +	0	Cereal, O.J. (15 c.c.)
2-4	10 ¾		+ +	0	+ + +	±	
3-2	11 ¾	3¼-3	+ +	0	+ + +	±	
4-1	11 ¾	4-4	±	0	+ + ±	±	
5-7	11 ¾	4-3		0	+ + ±	0	
6-6	11 ¾	3-3	±	0	+ + +	0	
7-12	11 ¾		±	0	+ + +	+	Spinach (30 gm.)
8-14	12 ¾	3-3		0	+ + +	+	
9-12	12 ¾			0	+ + +	+	C.L.O. (15 c.c.) - Spinach stopped
10-7	13 ¾	2½-2½		0	+ + +	+	
11-4	15 ¾	2-1½	±	0	+ +	+	
11-25	16 ¾	2-1½	±	0	+ ±	±	
1-4	17 ¾	2-1½		0	±	±	

Chart 2.—This infant (J. C.) was admitted when 1 week old and developed marked rickets on diet containing large amount of fat-soluble vitamin (milk and spinach); improvement in rickets and general condition when cod liver oil was given.

takes place less frequently than in scurvy and far less frequently than in rickets. This sign was noted in infants who were receiving only a small quantity of the water-soluble factor in their dietary, and who later were given considerable amounts of autolyzed yeast. In some of these cases there was an unmistakable sharp decrease in the rosary. It is interesting to note that beading of the ribs has been observed at postmortem examination in cases of infantile beriberi. Andrews[4] writes that among eighteen cases of infantile beriberi, a disorder brought about by a lack of water-soluble vitamin, he encountered three instances of beading of the ribs. He also has stated, in a personal communication, that these were the only instances of rickets that he encountered at necropsy in the Philippines. Probably beading does not occur with greater regularity in the course of infantile beriberi because most of the children die during the first two months of life. It becomes all the more clear that in a study of rickets, whether in infants or in animals, it is essential to have the diet complete, except for the one factor under investigation, and especially that it should contain adequate amounts of the antiscorbutic and of the water-soluble vitamin.

At the outset of our investigation, attention was directed to the influence of hygienic and nondietetic measures on the development of rickets. It was found that rickets can develop notwithstanding an abundance of fresh air. It occurred in the larger and in the smaller rooms of the institution, and developed in infants at the tuberculosis preventorium, an institution in the country where particular attention is paid to outdoor treatment. It was found likewise that a liberal allowance of light could not prevent the development of this disorder. Infants in glass cubicles were not spared more than those in the regular wards. With this question in mind, in the spring of 1917 five children were given daily treatments of violet ray, the mercury vapor quartz lamp being used for this purpose. Their entire bodies were exposed for twenty minutes, so that they soon became brown, as if well tanned by the sun. This therapy, which was carried out with regularity for three months in infants about 1 year of age, did not lead to a definite improvement in the rickets, nor did it benefit their general condition. Violet ray treatment cannot be considered the equivalent of heliotherapy. But the fact that rickets is exceptional in the arctic region, where there is a lack of sunlight for the greater part of the year, is a strong argument against its predominant influence.

4. Andrews, V. L.: Philippine J. Sc. **7**: 67, Sec. B, 1912.

INFLUENCE OF FAT-SOLUBLE VITAMIN

As we have stated, discussion as to the etiology of rickets centers at present about the fat-soluble vitamin. We shall therefore direct our attention to this aspect of the subject. This vitamin, as is well known, has been shown by McCollum and his co-workers, and by Osborne and Mendel, and others, to be present in abundance in animal fats—such as cream, butter and eggs—as well as in the leafy vegetables, but to be absent or almost absent in the vegetable oils. As far as has been demonstrated, it cannot be synthesized by the animal body.

In order to provide an adequate amount of this important dietetic factor, we placed a number of infants, during the first months of their lives, on large amounts of milk, in some instances giving cream in addition. By this means, if fat-soluble vitamin is the controlling influence, the development of rickets should have been prevented. In some cases, with this dietary, which it will be remembered included also orange juice, a very mild degree of rickets was observed, but in others marked signs developed. For example:

Case 1.—J. C., a baby admitted when 1 week old, without rickets, was given daily when 3 months old a quart of milk containing fully 3 per cent. of fat. By the middle of November when he was 5 months old, he had developed marked

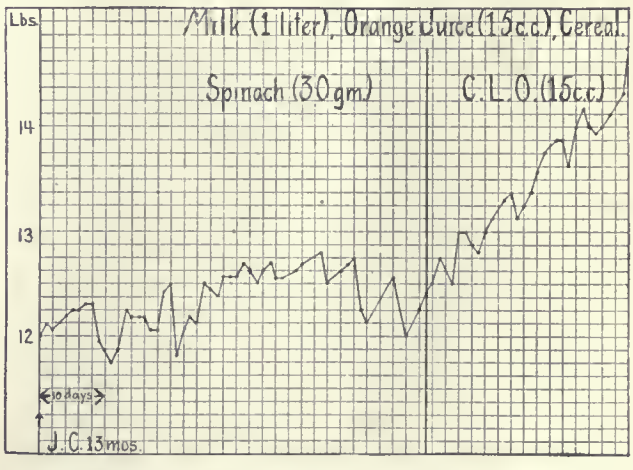


Chart 3.—Weight curve of case of marked rickets shown in Chart 2 (J. C.); inability of large amounts of milk and spinach to produce gain in weight; marked increase on addition of cod liver oil.

rickets. His general condition had improved during these months, he having gained 2 pounds in weight. Rickets persisted for ten months, in spite of this large amount of milk, and until cod liver oil was given in October (Charts 2 and 3).

Consider a case such as the following:

Case 2.—A well nourished baby, aged 2 months, was given a formula containing 24 ounces of milk; it received also orange juice and later some wheat cereal. Rickets developed

on this diet with all the typical signs. In the fall, when it was 10 months old, the rickets diminished without change of diet.

Rickets has developed in several instances on 24 ounces daily of protein milk (containing about 2.5 per cent. of fat) and even in nursing infants, whose mothers were on a diet that included a large quota of milk, butter and vegetables.

It is difficult to bring these observations into harmony with the hypothesis of a lack of fat-soluble vitamin. It may be suggested that the occurrence of rickets in these cases was due to a lack of absorption or utilization of the vitamin. This cannot be definitely gainsaid; analogy, however, does not support this explanation. We know, for instance, that however large the intake of raw milk may be in scurvy or in beriberi, a cure will result; in fact, the alleviation of symptoms may be stated to be in direct ratio to the milk consumption.

Mo.	S.M.	R.S.	E.L.	M.S.	C M
1	±	+±	±	±	+
2	+±	+		±	
3	+++	±	+	+	+±
4	+	+	+	±	+±
5	+	+	+	±	+
6	++	+	+	±	+±
7	++	+		0	+±
8	+	+	±	0	+±
9	±	±	±	(Home)	±
10	0	±	±		±
11	±	+	±		±

Chart 4.—These five infants received a diet that was complete in every particular except for the fat-soluble vitamin. It consisted of highly skimmed milk (Krystalak, 0.2 per cent.; fat, 180 gm.); sucrose, 30 gm.; cottonseed oil, 30 c.c.; autolyzed yeast, from 15 to 30 c.c.; orange juice, 15 c.c., and cereal. The monthly examinations of beading of the ribs represented by the plus signs below the heavy line refer to the period of fat-soluble vitamin deficiency; ± signifies the least degree of beading, and +++ the maximum. These cases show that beading decreased rather than increased in spite of this deficiency.

It should be understood also that these babies at no time had symptoms of indigestion — vomiting or diarrhea. It may be argued that the content of fat-soluble vitamin in the milk was small, owing to a deficiency of this factor in the fodder of the cows.[5] This suggestion is attractive, as it has been noted not only by clinicians, but likewise by pathologists, that cases of rickets are most numerous in the spring months and decrease in number and severity in the fall. This phenomenon, brought out sharply by Vogel and by Kassowitz, should be strongly emphasized; indeed, any explanation of the etiology of rickets, in order to be convincing, must explain the striking seasonal variations. This peculiar incidence stood out in relief in the course of the monthly physical examinations, as they proceeded from the spring to the fall. Without any change in the diet the rickets decreased in September or October. In view of this fact, animal experiments should be so planned that those of a curative nature bring about the cure in the spring, whereas those which are provocative should lead to the development of the disorder in the fall. We are willing to admit that milk must be different when secreted by cows on pasture than when the fodder contains almost no greenstuff. This does not, however, indicate that this change brings about the cure of rickets, and least of all that it is the fat-soluble vitamin that deserves the credit. It does not account for the large number of babies receiving an abundance of milk who develop rickets, while others taking a far less quantity of the same milk remain almost normal; nor for the cases, by no means infrequent, of well nourished breast-fed babies who develop the disease, in spite of the fact that the diet of the mother contains a large amount of the fat-soluble factor.

5. The subsidence of rickets depending on the nature of the fodder of the cows could be construed as follows: The cows are sent out to pasture about the middle of May. At first some of the vitamin goes to make up for the deficiency of their tissues in these factors, resulting from the stall-feeding throughout the winter. Somewhat later the vitamins are secreted to a large extent into the milk. We must furthermore allow two or three months for the subsidence of the rachitic signs for the improvement to become evident clinically. Reasoning thus, we account for the four month period—from the middle of May to the middle of September—the long interval between the time of the change to green fodder and its effect on the nutrition of the baby.

RESULTS OF TEST DIET

But let us approach the question from the other side. Do infants who receive very little fat-soluble vitamin in their diets become rachitic? In order to answer this question, five infants were put on a dietary that was complete in every respect except for a lack of this principle. The dietary was composed of 180 gm. of Krystalak, a commercial preparation of highly skimmed milk which, when diluted tenfold with water, has a fat content of less than 0.2 per cent. In its preparation the milk is first heated in a vacuum to 130 F. for fifty minutes and then dried by the Just process at a temperature of 212 F. for twenty seconds. This milk was sweetened with 30 gm. of sucrose. Fifteen c.c. of orange juice were added to supply the antiscorbutic vitamin, 30 c.c. of autolyzed yeast to furnish water-soluble vitamin, 30 c.c. of cottonseed oil to provide fat, and wheat cereal (cream of wheat) when the age of the infant required this addition. The babies were from 4 to 9 months of age, and somewhat below the average in physical development. They should have developed rickets if a lack of fat-soluble vitamin is the essential cause of this disorder. They have been on this diet for periods varying from five to nine months, have been weighed daily and examined frequently, and show no greater signs of rickets than the average baby in the institution—merely such minor manifestations as are rarely lacking (Charts 4 and 5). This result shows that this vitamin is not the much sought for antirachitic factor; that it cannot bear the same direct relationship to this disorder as do other vitamins to their specific diseases—we refer to scurvy and to beriberi. Even if rickets is in some degree influenced by a fat-soluble vitamin deficiency, there are more important and dominating factors that determine whether or not the disorder shall come to pass.

Mo.	S.M.	R.S.	E.L	M S	C M
1	0	+	±	0	0
2	0	±		0	
3	±	+	±	0	±
4	0	+	±	±	±
5	0	+	+	±	±
6	0	+	+	0	±
7	0	+		0	±
8	0	+	±	±	±
9	0	+	±	(Home)	±
10	0	+	±		±
11	0	+	±		±

Chart 5.—Epiphyses: The same five patients as in Chart 4, receiving minimal fat-soluble vitamin and illustrating enlargement of the epiphyses instead of beading of ribs. These cases show that according to this sign rickets did not develop on a lack of fat-soluble vitamin.

This test diet (minimal fat-soluble vitamin) is of interest from a point of view quite apart from rickets. As is well known, experiments carried out by Osborne and Mendel and by McCollum have shown that if rats receive no fat-soluble vitamin in their diet, they cease to grow and develop a disease of the eyes, termed xerophthalmia. A similar eye disease was reported some years ago in Japan by Mori,[6] and more recently by Bloch[7] of Copenhagen, as the result of a diet of skimmed milk

6. Mori, M.: Jahrb. f. Kinderh. **59**: 175, 1904.
7. Bloch, C.: Ugesk. f. Læger **79**: 309, 1917.

and a deprivation of milk fat. These laboratory and clinical reports have caused physicians and hygienists to take alarm and to utter vague warnings of the great danger that lurks in a diet deficient in fat-soluble vitamin. Very recently it has been suggested[8] that

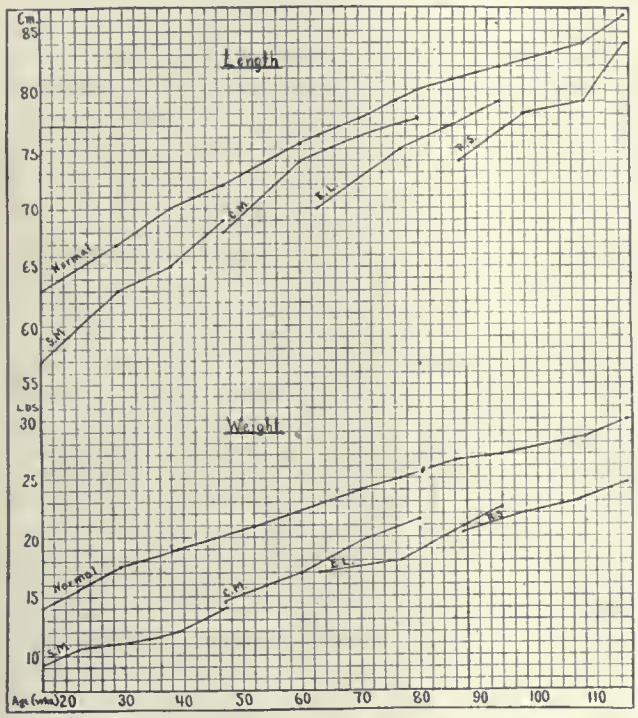


Chart 6.—Growth (minimal fat-soluble vitamin): Gain in length and weight (compared to the normal) of infants on the diet deficient in fat-soluble vitamin. This dietary led to no definite retardation.

many children may fail to grow normally because of an insufficient amount of this vitamin, which, compared to the water-soluble vitamin, is distributed so sparingly among the natural foodstuffs.

In view of these experiences and opinions, our infants were watched and examined with the greatest of care, and it will be well to report their condition in some detail. Their general appearance is decidedly good. One, about 2 years of age, who has been on the diet for the longest period, is up and about and has excellent color. The hemoglobin of the group averages between 80 and 90 per cent., and the red blood cells about 4,000,000 per cubic millimeter of blood. Their pulse, respiration and electrical reactions are normal. Roentgenograms of the heart show no changes, and of the bones shown no signs at the epiphyses resembling the lesions characteristic of rickets or of scurvy. Their growth in length has been normal, and their growth in weight slightly below the normal (Chart 6). In one case in which the gain had been slow, a larger amount of wheat cereal (cream of wheat) was given to note whether a food lacking in fat-soluble vitamin could bring about a gain. As will be seen in Chart 7, this addition of carbohydrate resulted in a prompt and definite rise in the weight curve. We may summarize our results by the statement that the only abnormal condition observed has been a mild retardation in gain in weight. How are these conclusions to be brought into harmony with the experimental and clinical results of others? It should be understood that this experience is not comparable to the feeding tests carried out on rats, for in these animals fat-soluble vitamin has been entirely excluded from the food. Our dietary was devised from the standpoint of rendering the deficiency no more stringent than might occur under clinical conditions. In this respect it may be compared to diets we encounter in cases of infantile scurvy, which are never completely devoid of the antiscorbutic factor. It is quite possible, furthermore, that the rat is more sensitive to this deficiency disease than is man, just as man is far more sensitive than the rat to a lack of antiscorbutic vitamin.

8. Pub. 59, U. S. Children's Bureau.

CLINICAL REPORTS FROM JAPAN AND DENMARK

But let us turn to the clinical reports from Japan[6] and from Denmark[7] to see whether we can harmonize or correlate our results. The former tells us that the disorder occurred in the summer time in conjunction with diarrhea; that it rarely occurs in children under 1 year or in those over 15 years of age, and that the diet consisted of "rice, barley, cereals, beans and other vegetables." These vegetables are not specifically mentioned. The cure was remarkably prompt when cod liver oil was given, in some cases marked improvement being observed in half a day, results resembling the cures of beriberi in man or polyneuritis in pigeons. Further details are not given as to the quantity or the exact ingredients of the diet, of the length of time it was taken, nor as to whether any other change was made when the cod liver oil was given. Olive oil was ineffective. The data are so fragmentary that it is almost impossible to express an opinion on this report. Much would depend on the kind of vegetables that were eaten whether legumes or of the leafy variety. It seems very probable that the caloric content of the food was insufficient, and that it was lacking in an adequate supply of protein.

The Danish report is much fuller and gives us an account of forty-nine cases of eye trouble that occurred in Copenhagen from 1912 to the end of 1916. This publication of Bloch's, which is in the Danish language, has been cited so frequently to show the danger to

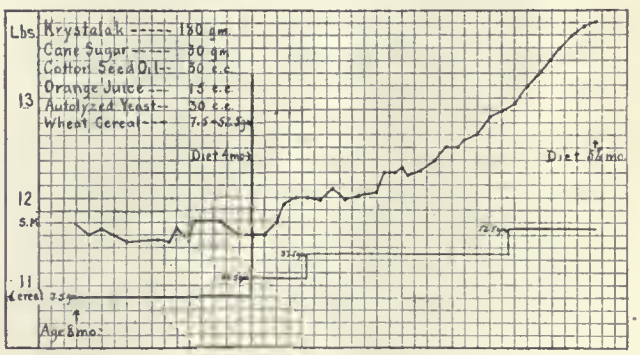


Chart 7.—Minimal fat-soluble diet: weight curve of one of the patients on a fat-soluble deficiency diet; evidence that gain can be brought about by adding cereal to the dietary without increasing the amount of fat-soluble vitamin; lack of gain therefore not due to the want of this growth factor.

infants of a deficiency of fat-soluble vitamin that it deserves careful reading and analysis. The infants were pale, flabby and very thin, with dry, scaly and shriveled skin. Of the forty-nine infants, twenty were between 6 and 12 months of age, fifteen from 2 to 6 months of age, and fourteen over 1 year. They suffered from what Bloch terms "psychic hyperesthesia," and would scream and twist and turn, and wanted to be let alone. The malnutrition was extreme in many

cases; for example, one baby of 9 months weighed 9 pounds, one of a year weighed 13½ pounds, another aged 2 years weighed 14 pounds. Their diet consisted of an indefinite amount of skimmed milk that had been pasteurized and cooked again in the home. Oatmeal gruel and barley soup constituted an important part of their dietary; one case is mentioned in which the baby had received nothing except oatmeal gruel and sugar. In no case were vegetables given, and in only one instance fruit juice, and then for only three days. A cure was obtained by means of cod liver oil, but in almost every instance breast milk or raw cow's milk was given in addition. It is very probable that some of this malnutrition was due to a lack of fat-soluble vitamin; it seems, however, equally true that other deficiencies played a more important rôle. These infants were partially starved and also received an insufficient allowance of antiscorbutic vitamin in the doubly heated milk. Scurvy is mentioned in only one instance, but in many others it must have been latent or subacute. It is therefore impossible to evaluate this report; it cannot, however, be used to illustrate the danger of fat-soluble vitamin deficiency. Animal experiments designed to elucidate this question would not be accepted if devised and carried out in this manner. What is true of this report will hold good of many of the nutritional experiences derived in the course of the war. The pictures are unavoidably confused and composite, rendering it most difficult to deduce valuable lessons from them. In most cases partial starvation is a basic factor, and infection plays a rôle. For example, the cases of scurvy reported from Austria—with large and numerous subcutaneous hemorrhages — resemble melena or purpura rather than true and uncomplicated scurvy. Similar conditions may occur in peace times. We have recently seen a group of infants who were suffering from a combination of deficiency diseases brought about by an insufficient caloric content of the food and a lack of antiscorbutic as well as of fat-soluble vitamin.

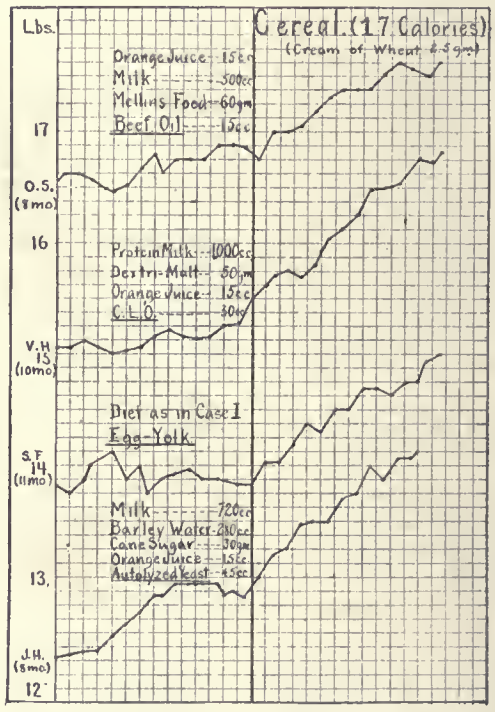


Chart 8.—Effect of cereal (cream of wheat, 2.5 gm., 17 calories) added to diet: four patients who had reached a stationary phase in weight; gains were brought about by small additions of cereal to a diet that was adequate in caloric content. The first three diets were unusually rich in fat-soluble and the fourth in water-soluble vitamin (autolyzed yeast). In the last case (J. H.) 4 gm. of dried cereal, equivalent to 28 calories of food, were added.

COMMENT

Our experience leads us to believe that except under exceptional circumstances—as in time of war—the danger to the infant and to the child from a deficiency of the fat-soluble factor is one not to cause great apprehension. It is true that this principle is by no means so widely distributed in nature as the water-soluble vitamin, but, on the other hand, infants seem able to thrive for long periods on very limited quantities, provided the diet is otherwise complete. The great danger arises from diets composed merely of cereal and water or perhaps an insufficient amount of buttermilk or skimmed milk.[9] It is probably true that a catastrophe will result if the incomplete diet is maintained for years, or even sooner in a susceptible individual, as is well known to be the case in scurvy or in beriberi. In formulating dietaries for infants and children, therefore, this food factor should be borne in mind and be regarded as an essential constituent.

There is a growing danger of attributing every unexplained growth impulse to the new, attractive but ill-defined vitamins—of their sharing with the secretions of the endocrine glands the fate of becoming the dumping-ground for every unidentified factor. It should be borne in mind that there are other little understood factors and food reactions. One of these is the peculiar and almost specific rôle that cereal plays in the nutrition of the infant. This phenomenon has been of especial interest to us for some time, and well illustrates the complexity of nutritional problems.

Not infrequently infants receiving diets which, according to accepted standards, should be adequate, fail to gain until cereal is given in addition. These babies usually are 6 months or more of age, and receive milk mixtures that should suffice to bring about growth. As the result of such experience, physicians add cereal to the milk diet when there is a failure to gain about the second half year of life. In order to obtain more precise information in regard to this interesting phenomenon, for which there is no satisfactory explanation, we studied a number of infants who had reached this stationary phase. It was found that in cases in which even cod liver oil no longer caused a gain, and in which egg yolk and beef drippings had failed, a small amount of wheat cereal (cream of wheat) brought about a decided increase (Chart 8). This result occurred whether the previous diet had been rich in fats, as just instanced, or contained a carbohydrate such as Mellin's Food (maltose and dextrin, Chart 8). In one instance, when large amounts of autolyzed yeast failed to stimulate growth, the wheat cereal was effective (Chart 8.) Another, a breast-fed baby aged 8 months which had not gained for three weeks, increased 6 ounces as soon as a small amount of cereal was given in addition to the nursings. These gains could not be due to an addition of any of the recognized vitamins, as diets rich in the antiscorbutic, water-soluble and fat-soluble factors were nevertheless enhanced in value by the cereal addition. Nor could it be the result of a simple caloric increase in food, for

9. A favorite food for very young and premature infants is buttermilk or the "Holländische Säuglingsnahrung," which consists of buttermilk (with a fat content about the same as that of skimmed milk), sugar and flour. Babies may thrive on this food, deficient in fat, from birth until the second half year of life.

the amount added was comparatively insignificant. Cooked cereal equivalent to only 2 or 3 gm. of the dry cereal frequently led to a gain of 2 or 3 ounces by the following day. These babies were receiving a high caloric diet. In one instance a quart of protein milk and 30 c.c. of cod liver oil were given, representing about 120 calories per kilogram of body weight (Chart 8). The simplest and most direct explanation of this reaction is that this carbohydrate brings about a more complete oxidation and thereby a better utilization of the food. However this may be, it illustrates the point that not everything which induces growth—and which does not conform to accepted standards—is a vitamin.[10]

CONCLUSIONS

It would lead too far afield to discuss the various theories that have been advanced to account for the occurrence of rickets, and, moreover, it would not be profitable at the present time, as the data are inadequate. There seem to be several causes at work, rendering the unraveling of the problem so difficult that there is a difference of opinion not only as to the particular dietary factor that is at fault, but even as to whether rickets is to be considered a disorder of dietetic origin. It should not be lost sight of that there is a prenatal factor involved. The fact that the negro infant, living side by side with the white in the larger cities and obtaining milk from the same source, develops rickets so frequently and so markedly, indicates that there are important influences to be reckoned with in addition to the food.

In considering the diet a most important question is whether the recent theory as to the vitamin origin of this disorder can be maintained and, more particularly, whether rickets should be attributed to a lack of the fat-soluble factor. We can obtain the clearest understanding of this aspect by comparing this disease to the well recognized and established deficiency diseases, scurvy and beriberi. What does the comparison show? In the first place, these two disorders are commonly accompanied by weakness and malnutrition; we do not encounter the strong, apparently healthy babies met in rickets. But of far greater moment is the fact that neither can be brought about by overfeeding. Rickets, as emphasized in the body of this paper, frequently develops in infants receiving too much milk rich in fat, protein and salts. It seems impossible to bring this fact into consonance with a deficiency disease, whatever may be its nature, using this term in the commonly accepted sense. Our study shows that the fat-soluble vitamin is not the controlling influence; that infants develop rickets while receiving a full amount of this principle, and that they do not manifest signs, although deprived of this vitamin for many months, at the most vulnerable period of their life. It is impossible to interpret the contrary conclusion which Mellanby came to as the result of his pioneer experiments on dogs, or to accept the term "fat-soluble vitamin" as synonymous with "antirachitic factor," as Hopkins and Chick would have us do. Clinical tests carried out with care must be accorded fully as much weight as laboratory investigations. The two methods of approach should be carried out side by side, and even the most thorough study on animals must be made to harmonize before it can be accepted as holding good for man.

Finally, this work seems to show that the danger to infants of a diet deficient in fat-soluble vitamin is slight, provided it includes sufficient calories, and otherwise is complete. They can maintain their health and vigor despite amounts of fat-soluble vitamin so small as rarely to be encountered in times of peace. In spite of the fact, therefore, that this vitamin is not widely distributed in nature, a disorder that may be termed "fat-soluble deficiency"—marasmus or xerophthalmia—is hardly to be apprehended from a clinical standpoint.

16 West Eighty-Sixth Street—162 West Eighty-Fifth Street.

10. This phenomenon is similar to that reported from Hopkins' laboratory by Winfield (Report 116, Local Government Board, 1918, p. 147). It was found that rats failed to grow on a milk diet when they were one-half to two-thirds full grown, and that "the addition of fresh milk alone produced no acceleration of growth." "With a diet of bread and milk, growth recommenced." Ferric ammonium citrate and a preparation of hemoglobin were added without result.

A CAMPAIGN AGAINST VENEREAL DISEASE IN THE ARMY OF OCCUPATION

DAVID M. DAVIS, M.D.
BALTIMORE

In the campaign against venereal disease, many measures which seem to give promise of good results are never tried on account of their impracticable nature in ordinary communities. During the occupation of a part of Germany by the United States Army, opportunity was given to test some of these measures, owing to the facts: first, that there were none of the ordinary legal obstacles now in the way; and second, that the army authorities were so deeply interested in keeping the venereal rate at a minimum that every facility for the work was made available.

This paper deals only with the means used and the results obtained in the Third Division during the first four months of the occupation.

During the summer of 1918, the Third Division had been almost constantly in action, making a splendid record for itself. Incidentally, an extremely low veneral rate had been maintained, as can be seen by reference to Table 1; and although it was felt that lack of exposure had had something to do with it, every one in the division was anxious to maintain the high standard in Germany.

The division started its march toward the Rhine from the vicinity of Bar-le-Duc on or about Nov. 16, 1918. From then until December 17, the troops were almost continuously on the move, and opportunities for exposure to venereal disease were almost as limited as during the period of battle. Division headquarters remained at Remich, Luxembourg, on the Moselle River, for several days just before December 1, and at this time, acting as division urologist, I submitted the following memorandum, which was an effort to foresee conditions as they would be after the occupying troops had settled down in their assigned areas:

The prostitution problem divides itself into two parts: (*a*) registered, and (*b*) clandestine prostitutes. From the police in Germany the names and addresses of all registered prostitutes can be obtained. They and the clandestines can be considered as operating: (1) on the streets; (2) in cafés, theaters and dance halls, and (3) in brothels. In order to cope with the situation, a definite policy must be laid down and followed. Should there be no army order on the subject, such a policy could with advantage be determined by a division order. The registered women are at once available. Shall they be interned, deported, or allowed to operate in

brothels which are placed out of bounds? The last alternative has the objection that it always leads to abuses and evasions. The clandestines must be met by regulating the streets, cafés, theaters and dance halls. For the streets, rules similar to those in force at Bordeaux, forbidding soldiers and officers to appear in the company of women, might be enforced. Dance halls may be closed or put out of bounds. Theaters may be closed, put out of bounds or allowed to operate under supervision provided no women are permitted to loiter about in them. Cafés may be put out of bounds. In German cafés the waiters are usually women, these usually clandestine prostitutes.

The venereal problem in Germany will be one of the utmost importance for the welfare of the soldiers and the reputation of the Army. Stringent measures will be necessary to maintain the extremely low venereal rate of the A. E. F. A definite policy, clearly outlined and enforced from the beginning, will be of great assistance in the solving of the problem.

A third army order on the subject was not issued, so each division proceeded to solve its own problem along the lines already laid down by general headquarters after the recommendations of the senior consultant in urology, which had proved so successful in France.[1] This program was as applicable in Germany as in France, although certain conditions peculiar to the occupied area required decision, some of which made possible more effective measures than had been practicable in Allied territory. This being the case, it is remarkable to note how in each division, practically identical methods were arrived at sooner or later. Third Division headquarters were established at Andernach-am-Rhein, Kreis Mayen, Dec. 16, 1918. The area assigned to the division coincided almost exactly with the Kreis Mayen. This "Kreis" had a population variously estimated at from 50,000 to 80,000 people. There were two larger towns, Mayen, of about 10,000, and Andernach, of about 9,000 inhabitants, and approximately twenty-five small villages, all occupied nearly or quite to the limit, by the division troops. The men were practically all billeted in the houses of the inhabitants and other suitable buildings. In the dwellings, sufficient space for the family was set aside, and the rest of the house was occupied by soldiers. This, of course, brought the soldiers and Germans into close, and at times intimate contact.

The Kreis Mayen occupies an area in the Coblenz plain, facing the Rhine River, including principally the valley of the Nette River, and a good deal of high mountainous country around the Laacher See. It also extends far enough to the southeast to touch the Moselle River for some distance. In Andernach and Mayen are a number of factories, such as food canneries, iron works and breweries. Between these towns, on the volcanic strata emanating originally from the Laacher See volcano, are numerous establishments for the manufacture of cement, together with large quarries to supply the stone for these cement factories as well as for other purposes. The remainder of the Kreis is given over to agriculture, with a number of vineyards along the Moselle. Railways connect Andernach and Mayen, Mayen and Coblenz, Mayen and Munstermaifeld, and Mayen and the territory to the southwest. The main Coblenz-Cologne line runs along the Rhine border of the Kreis, and the main Coblenz-Treves line along the Moselle border.

From this short résumé it will be seen that the problem concerned a community about half agricultural and half industrial, with two moderate sized towns, good railway connections, and lying from 15 to 25 kilometers from the city of Coblenz.

From the German officials it was learned that there were no registered prostitutes or recognized houses of prostitution in the Kreis. Amusement places were few and small, and the cafés also small and unpretentious, but numerous. During the war, many of the factories had been transformed for the manufacture of munitions. This had brought many girls to the towns to work in these factories, and had given them contact with the soldiers comprising the garrisons, and those working in the supply departments of the army. From German sources it was learned that while the district had been very free from venereal disease before and during the early stages of the war, the conditions described had brought about a notable increase during its last two years.

It will be noted that all of the prostitution to be combated was of the clandestine type. For this reason, none of the measures usual in the American Expeditionary Forces against houses of prostitution and segregated districts could be applied. The other parts of the program, however, were carried out as vigorously as possible. Prophylactic stations were established at every point occupied by soldiers. Prophylactic instruction at frequent intervals was insisted on, and line officers as well as medical officers took part in it. This included the customary admonition that continence was desirable from every point of view, statements of the nature and results of venereal disease, and a reminder that prophylaxis was insisted on to protect the innocent, not to encourage the guilty. Biweekly examinations for veneral disease were carefully made, the medical officers using complete company rosters and checking off by name so that no one escaped. The

TABLE 1.—RATE PER THOUSAND PER YEAR FOR THE DIVISIONS

Week	Total Cases	Cases Contracted in Area
Dec. 17, 1918	10.7	0.0
Dec. 24, 1918	10.7	0.0
Dec. 29, 1918	10.67	0.0
Jan. 5, 1919	22.88	0.0
Jan. 12, 1919	9.88	5.5
Jan. 19, 1919	15.6	6.9
Jan. 26, 1919	3.92	3.92
Feb. 5, 1919	2.9	2.9
Feb. 12, 1919	15.3	11.2
Feb. 19, 1919	9.5	5.8
Feb. 26, 1919	13.13	9.88
March 5, 1919	11.86	3.95
March 12, 1919	28.2	14.1
March 19, 1919	21.52	9.75
March 26, 1919	7.87	1.98
April 2, 1919	9.83	1.97
April 9, 1919	0.0	0.0

Average strength about 28,000.

sale of liquor was forbidden except between 5 and 7 p. m. Fraternization with Germans of either sex had been forbidden. The welfare organizations had comprehensive plans for the amusement of the men; but time was required to put them in operation. Meanwhile, a heavy drilling schedule kept the men busy during most of the few hours of daylight there were at that time of the year. Aside from closing one dance hall at Andernach, nothing further could be done except to await developments.

For nearly four weeks no case of venereal disease contracted in the occupied area came to light. Then a few cases were reported (Table 1). Questioning of

1. Bull 54, General Headquarters, A. E. F. Young, H. H.: Preventive Medicine as Applied to Venereal and Skin Diseases, J. A. M. A. 73: 1668 (Nov. 29) 1919.

the infected soldiers and the activities of the military police and intelligence sections provided evidence against several women as being sources of infection. These women were apprehended and turned over to the German authorities for internment and treatment for a period of three months. A general policy for dealing with venereal disease was soon developed. It is desired to emphasize the fact that this policy was modeled after that used in handling other infectious diseases, and was based on the principle of quarantine. Infected women were to be isolated by the Germans,

TABLE 2.—STATISTICS FROM DEC. 16, 1918, TO APRIL 1, 1919

New cases	101
Gonorrhea	69
Chancre or chancroid	32
Chronic cases treated in hospital	67
Gonorrhea	38
Syphilis	29
Chronic syphilities treated as outpatients	57
Number of women confined at present	37
Number of women paroled	6*
Number of women sent to Kloster Maria Trost	3
Number of women sentence suspended	6
Number of women acquitted	2
Number of women escaped	1
Total number dealt with	52

* Several more women were paroled during the week of April 1 to 8, 1919.

and infected men were to be isolated by the American authorities until declared cured, according to the best criteria available. Details of the hospital treatment of infected soldiers will be given later. The Germans had no adequate system tending to regulate prostitution. The towns were too small to attract the registered prostitutes or have a morals police. Provision was made for the treatment in hospitals at public expense of women afflicted with venereal disease; but very few had availed themselves of this privilege. Women known to be prostitutes were required by law to report to the burgomaster once a week, but no effort was made to control them, and this measure was a "dead letter."

All of the hospitals in the occupied area were being utilized to a greater or less extent by the Army authorities, and therefore no treatment center was available for the women. The German authorities, who showed no inclination to cooperate, and no interest in the fate of these unfortunate women, were content to place them, for the period of their confinement, in the ordinary jails. No medical treatment was provided, although some of the women were in the secondary stage of syphilis; and they were crowded in the jails. As soon as this state of affairs was discovered, medical treatment was ordered, and supplied. This was done ungraciously, and in Andernach had to be hastened by the trial and punishment of the burgomaster. The Germans were also informed that better accommodations must be found. A certain amount of space was found to be still available in some of the hospitals; but this was insufficient for handling the increasing number of women. Through the hearty cooperation of the commanding general, the chief of staff and the division surgeon, steps were taken to evacuate completely a German hospital at Niedermendig, then occupied by American troops. Wooden barracks were built to accommodate these men. As soon as this was accomplished, the confinement and treatment of all women apprehended was carried out at this center under the direction of a competent local physician. The costs in each case were borne by the village or town from which the woman came, according to a ruling of the landrat. General supervision was maintained by the American authorities, with whom rested the final decision as to noninfectiousness, and also the decision as to the parole of favorable cases.

The work of trying and ordering the confinement of infected women who had transmitted disease to or consorted with American soldiers was done by the inferior provost courts of the various localities. A clean cut case was required, and hearsay evidence, especially from German sources, was ruled out. It was found possible to apprehend over 50 per cent. of the women infecting soldiers, besides those taken in extemporized brothels, or elsewhere. All cases were reported at once to the division urologist and to the superior provost judge of the division. By frequent visits to the treatment center, it was possible to follow each case, and deal with it on its merits. In gonorrhea, three successive negative examinations constituted the criterion of noninfectiousness. In syphilis, patients were kept, even after the disappearance of lesions, until a thorough course of neoarsphenamin had been completed. When pronounced noninfectious, it was the general policy to parole all women who seemed to show an inclination to mend their ways. Others were held until the end of the period for which they were ordered confined, when, if still infectious, they were recommitted. Although well treated, well fed and well clothed in the hospital, all displayed the greatest anxiety to avoid a second sojourn there. Arrangements were made to confine in a German convent at Coblenz any incorrigible prostitutes who showed no evidence of disease. Only four cases fell in this class, and one woman succeeded in escaping and leaving the area before she was sent to the convent. One patient with disease, from a well-to-do family, was allowed to go to a hospital in a distant city for treatment, on her father's undertaking to be responsible for her safekeeping. All the other patients were treated at the treatment center, and it was not necessary during my service in Germany to apprehend a woman the second time.

The Germans were indifferent, or even hostile, to this program. The prevalent ideas were quite medieval, and it was generally considered that a policy of public persecution would be preferable. They were indignant because the Americans required the treatment of these women in the best hospitals, and because the regular hospital diet and good treatment for them were insisted on. Many of the women, however, responded in a very gratifying way to this good treatment, and to the efforts made to bear out the statement that we were trying to help them lead a respectable existence in the future. There was also evidence to show that the fact that all cases were rigorously followed up served as an effective deterrent, many German girls avoiding the American soldiers altogether.

This policy, supported by the hearty cooperation of all concerned, enabled women of all classes to be apprehended. They included semiprostitutes, such as café waitresses and the inmates of hastily organized brothels, factory girls, shop girls, and women and girls living at home. A large majority were found to come from the industrial, rather than from the agricultural, sections. It provided prompt treatment for all, and, it is hoped, reformatory influence for some of these unfortunate women. It made possible the extermina-

tion of all extemporized houses of prostitution through the prompt internment of all the inmates. It may have served as an object lesson to the German population in what we think are more modern, more rational and more effective methods of dealing with prostitution and venereal disease.

All soldiers found with acute venereal disease, or chronic venereal disease in an infectious form, were sent at once from their units to a field hospital, established in suitable German buildings, where they were treated in the venereal ward without pass privileges. Standard methods of treatment were used. Cases with severe complications and all cases of fresh chancre had to be evacuated farther back. Three successive negative examinations of fluid expressed by prostatic massage constituted the criterion of noninfectiousness in gonorrhea. The men were all tried by court-martial, according to army regulations, and any confinement given as punishment had to be undergone after they had left the hospital. In this ward also neo-arsphenamin treatment of all old chronic (noninfectious) syphilitics who could be discovered in the division was carried out.

The results of this campaign have to be estimated from the figures in the accompanying tables. Beginning in February, 1919, numbers of men went away, principally to France, on leave, and from these men came a considerable proportion of the cases of venereal disease. The only part of the campaign affecting this incidence was the prophylactic instruction. A large proportion of the men contracting disease on leave had failed to take prophylaxis for various reasons. Instruction was pushed very hard when this fact became known, printed posters being used freely to assist it. From the first half of March on, cases contracted on leave showed a gradual diminution throughout the Third Army, including the Third Division. In the occupied area, the number of cases contracted each week showed, after reaching its peak, a decline to a low figure. The total figures for the Third Army are lower than any ever previously reported elsewhere. It is not going too far to assign this good result to the energetic efforts made in the campaign which has been here described.

The effectiveness of the campaign is not ascribed to any one of the measures comprised in it. Throughout the American Expeditionary Forces it was shown that the problem was most effectively handled when every avenue of attack was utilized. Indeed, it seemed that each measure had a synergistic effect on the others used simultaneously with it; no doubt this was due to a conscious or subconscious effect on the mind of the individual soldier, who found an effort of the authorities, whenever he turned, to amuse and occupy him, to instruct him, to prevent his reaching prostitutes, to provide prophylaxis, to give him the best treatment in case all else failed to keep him from being infected, and to punish him for this infraction of discipline and public spirit. Every soldier, even the dullest, must have become aware at some time of the far-reaching schemes to take him home clean. It is at present impossible that such a campaign of quarantine could be made in a peace time community. Having been prosecuted, however, under such unusual conditions, its methods and results may well be of interest from a standpoint of social hygiene, since they show what can be accomplished when all elements of the problem are under control.

AORTITIS SYPHILITICA

C. F. HOOVER, M.D.
CLEVELAND

An editorial in a recent number of THE JOURNAL gives the impression that the diagnosis of aortitis is something very recent, and in practice rests on the development of subjective symptoms and the use of the roentgen ray and the Wassermann reaction. The following statement is made[1]: "It seems highly probable that in the aorta, just as in the central nervous system, definite lesions may be present without any symptoms whatever, and it would seem that some method of diagnosing syphilitic aortitis during the presymptomatic period must be devised." Such a statement comes as a great surprise to clinicians whose professional career extends over the past three decades.

The diagnostic signs of aortitis were clearly described long before the roentgen ray or the Wassermann reaction or the spirochete was known to the medical profession. Physicians who knew and built on the work of Huchard[2] must certainly share in the writer's surprise over the statement that the "presymptomatic period of aortitis is still wanting a method of diagnosis." If inaccurate percussion and palpation and auscultation are employed, then of course the roentgen ray affords the only dependable diagnostic method; but in the hands of an examiner who in a routine manner estimates the size and elasticity of the ascending aorta, just as the character of the arterial pulse is studied, the presymptomatic period of aortitis is diagnosed with fully as much accuracy as can be procured by aid of the roentgen ray and Wassermann reaction. Fortunately for the recognition of early aortitis, the ascending or first portion of the arch shares in the process in fully 95 per cent. of the cases, and in the majority of cases the pathologic changes are confined to this portion of the arch. This discussion of the subject will be limited to the first or ascending portion of the arch.

If only the ascending arch is diseased, without accompanying mediastinitis or encroachment on the lumen of a coronary artery, the patient's capacity for exercise will not be impaired, there will be no subjective symptoms of any kind, and the volume of the pulse, the pulse pressure, and the characters of the anacrotus and catacrotus will be normal. What is vaguely described in the editorial as "so-called pulsatory plethora, namely, a marked pulsation of the peripheral vessels," implies a very advanced and extensive lesion of the aorta. Such symptoms are the capillary pulse, large pulse pressure, celerity in the catacrotus, and pistol-shot tone in the femoral artery. These cases were described by several writers years ago as cases of "pseudo-aortic insufficiency." There was nothing "pseudo" about it; they were cases of genuine insufficiency of the aorta, but not insufficiency of the aortic valve. The large pulse pressure and capillary pulse were simply evidences of the ventricle compensating for a loss of elasticity in the aortic tube; hence the systolic blush in the capillaries and relatively low minimum diastolic pressure, for which the heightened systolic pressure compensated. The pistol-shot tone was due to the sudden arrest of an exaggerated excursion of the arterial wall. The so-called "pulsatory plethora" was evidence of a severe and extensive lesion of the aorta.

1. Syphilitic Aortitis, editorial, J. A. M. A. 73: 1615 (Nov. 22) 1919.
2. Huchard: Maladies du cœur et des vaisseaux, Paris, 1889.

The important case, from the standpoint of a practicing physician, is the early one with slight or no subjective symptoms on the part of the patient. It is the lesion of the ascending aorta, that part of the aorta which is very accessible and susceptible to very accurate criticism so far as its size and elasticity are concerned. Such are the early cases of syphilitic aortitis, which respond well to treatment and for this reason should be recognized by the examining physician. If the diagnosis is not made until "pulsating plethora," angina from functional ischemia of the myocardium, and the broad silhouette from the roentgen ray constitute the diagnostic evidences, then the therapeutic opportunity is lost.

Elastic, fibrous and muscular tissues form the wall of the aorta. The smooth muscle fiber is, however, the constituent which enables the aortic wall to withstand intra-aortic pressure. When the muscle fiber deteriorates, the aortic tube is elongated and dilated. This increment in size need be very little to give unequivocal evidences to physical examination. On one occasion the pulsating aorta was clearly visible and palpable 4 cm. to the right of the sternum. The necropsy revealed that the entire ascending arch of the aorta had a uniform circumference of 11 cm., which means a diameter of 3.5 cm.—less than the distance to which the aorta extended to the right of the sternum. The projection of the aorta against the anterior thoracic wall to the right of the sternum was due more to its elongation than to its dilatation. It is elongation of the ascending arch and not dilatation which renders the aorta so readily accessible after slight pathologic changes.

ELONGATION AND DILATATION

Now, what physical signs will elongation of the ascending arch of the aorta give? The visibility of the aorta to the right of the sternum depends not only on elongation and dilatation of the aorta, but on the size of the thoracic cage and volume of the lung. With a given size of aorta, the patient with a chest of large anteroposterior diameter will afford less evidence of the enlargement of the aorta to the right of the sternum than will the patient who has a chest cavity of small anteroposterior diameter. As a rule, by the time the aortic pulsation is visible to the right of the sternum, one is dealing with a severe aortic disease, which requires no particular skill in diagnosis and offers little prospect for improvement with the employment of therapy. It is very important that slight degrees of enlargement of the aorta should be detected by the physician, because it is only in the early stages that therapeutic results are satisfactory.

Percussion for aortic dulness to the right of the sternum should be done by the direct palpating method. If one employs mediate percussion in this vicinity, the sternum and neighboring ribs are included in the pleximeter. If percussion is to be of a definitive character, and the examiner is to define accurately the limits of a resistant body behind the thoracic wall, then the method of percussion must be one which will employ the smallest possible pleximeter area, and this is best accomplished by employing direct percussion with the extended finger. As a matter of routine, the examiner should percuss the intercostal spaces to right and left of the sternum, beginning at the first intercostal space on the right and continuing downward to the fifth, and percussing downward from the first intercostal space on the left until precordial resistance is encountered, which is usually on the third rib. If the aortic arch projects beyond the sternum at the second interspace, then the examiner will perceive increased resistance and diminished resonance in the second interspace to the right as compared with the second interspace to the left of the sternum; and comparisons should also be made between the resistance and resonance of the first, second and third interspaces to the right of the sternum. If this method of percussing is employed, the examiner will find that the projection of the aorta on the anterior thoracic wall, as determined by percussion, will not be inferior to the projection of the silhouette of the aorta as seen by the roentgen ray, and under some conditions the information gained by percussion is more dependable.

SYSTOLIC PULSATION OF THE ARCH

An increase in pulsatory expansion of the aorta during systole may be detected by palpating bimanually. The examiner places his right hand over the second interspace at the right of the sternum, and his left in the interscapular space at the left of the vertebrae. This method of palpation does not employ the tactile sense or vibratory sense of the palpating hand, but the muscular sense of the thoracoscapular muscles. But the muscular sense of the muscles which lead from the head to the neck and shoulders is much more delicate than the muscular sense of the thoracoscapular muscles, and for this reason I find it a very distinct advantage also to apply the ear over the second interspace to the right of the sternum. An expansile pulsation is very often perceived by this direct method of auscultation when by employing the hands the pulsation escapes detection. So if there is any reason to suspect an enlargement of the ascending or transverse or descending arch of the aorta, it is a good practice to auscult with the ear directly applied to the chest; and coincidently with the audible sound the examiner will often perceive over the aortic area during systole an anteroposterior expansion which will be imperceptible to the palpating hands.

Further evidence of enlargement of the ascending arch of the aorta is accentuation of the aortic second sound and the palpable diastolic impact perceptible at the second interspace to the right of the sternum. Accentuation of the aortic second sound depends purely on accessibility of the aortic tube due to its proximity to the anterior thoracic wall. Accentuation or increase in the intensity of the aortic diastolic sound does not depend on intra-aortic pressure. High aortic pressures do not give an accentuated aortic second sound unless there is increased accessibility of the aortic tube on account of elongation and dilatation of the aorta. When accentuation of the aortic second sound accompanies high aortic pressure, the accentuation is due to disease of the aorta and not to high pressure. If the first portion of the arch is elongated and dilated, the systolic pressure may be elevated or normal, but in either case we shall have accentuation of the aortic second sound in the second interspace to the right of the sternum. This accentuation means just one thing—increased accessibility of the first portion of the arch of the aorta.

We have very good contributory proof of this fact when there is traction of a normal aorta toward the right side due to retraction of the upper right lobe of the lung from chronic disease, as in fibroid phthisis. Under these conditions the aorta is displaced to the right by the receding right lobe, and the retraction of the upper right lobe of the lung also uncovers the arch

of the aorta. Under such circumstances, with a normal aorta and normal blood pressure, the aortic second sound will be greatly accentuated, and the accentuated sound may have exactly the same character as is frequently found in aortitis of the ascending arch.

PALPABILITY OF DIASTOLIC IMPACT

A palpable diastolic impact over the second interspace to the right of the sternum is perceptible in the adult only when there is increased accessibility of the arch. The diastolic impact is due to the arrest of a body in motion, and the body in motion is the column of blood within the aortic tube arrested by the closure of the aortic valve. This impact is transmitted as a vibration along the aortic wall to the examining hand.

The diastolic impact, I have observed, is best perceived by the part of the hand where vibratory sense is most acute, and that is over the end of the metacarpal bones. If one will apply a vibrating tuning fork over the finger tips and then over the ends of the metacarpal bones, it will be observed that the perception of vibration is much more acute over the ends of the metacarpals. One detects a diastolic impact through a sensory percept, which has been named pallesthesia, and it is very clearly differentiated from tactile sense and muscular sense. Correct palpation is very important. If the examiner will place himself at the right side of the patient and palpate the second interspace to the right of the sternum with the ends of the metacarpals, asking the patient to expire so as to render the aorta as accessible as possible, it will be found that only very slight dilatation of the arch of the aorta is required to make a diastolic impact clearly perceptible to the palpating hand.

LOSS OF ELASTICITY

Elasticity of the arch of the aorta greatly economizes the work of the heart in maintaining the minute volume flow of blood. Were the aorta not elastic, then the pulse would outlast the systole of the ventricle, for the duration of the pulse beyond the end of ventricular systole is due purely to aortic contraction. Should the aorta lose its elasticity, to compensate for the short duration of the pulse we should have a maximum systolic rise both in volume and in pressure, and a consequent lowering of the minimum diastolic pressure; but this modification of the pulse occurs only when the elasticity of the entire aorta is impaired, or at least when a very large portion of the aorta is involved. These are the severe cases which in former years were discussed in medical literature as pseudo-aortic insufficiency.

In this discussion I am dealing solely with elongation and dilatation of the first portion of the arch of the aorta, and that may be seriously diseased without modification of the pulse pressure or the duration of the arterial pulse. There is no physical sign ascribable to a loss of elasticity of the first portion of the arch of the aorta unless the root of the aorta is involved; and when the aortic ring and the first portion of the arch are diseased, the diastolic sound takes on a tympanitic quality. Now, an aortic second sound may be decidedly tympanitic and not accentuated, and this will occur when the root of the aorta is sclerosed and the aorta is not elongated and dilated. On the other hand, it is very common to find an accentuated second sound which is not tympanitic; and this will occur when the root of the aorta is not sclerotic, but when the remaining portion of the ascending arch is elongated and dilated. I have been able to confirm both these statements by pathologic examinations. Furthermore, the tympanitic quality of the diastolic sound is not at all dependent on the height of the aortic pressure. On one occasion I had a patient under observation who was subject to periods of arterial hypertonus. For about three days in the week the man would have a maximum systolic pressure of 350, and then there would follow an interim of three or four days in which the maximum systolic pressure would be only 150. The only way in which one could detect the rise in arterial pressure was by palpating the femoral artery and using the blood pressure apparatus. This patient had no enlargement of his heart and no enlargement of his aorta. During the periods of high blood pressure, the aortic second sound was not palpable, and the increase in its intensity was very slight and certainly would have escaped observation had I not been making comparative observations on the intensity and duration of sound during periods of hypertonus and interims of normal pressure. Furthermore, the aortic second sound during the periods of high blood pressure had not the least suggestion of a tympanitic quality.

MURMURS

A murmur during the cardiac systole is audible over the second interspace at the right of the sternum when the ascending arch of the aorta is dilated, and also when there is stenosis of the orifice without dilatation of the arch of the aorta. The mechanism of production of this murmur is identical in both instances. The murmur is produced by eddies in the blood stream due to the passage of a column of fluid from a vessel of smaller to one of a larger lumen. Stenosis at the orifice and dilatation of the aorta directly beyond the orifice supply these conditions. But there are other factors besides relative stenosis which are necessary for the production of a murmur. The murmur will depend not only on change in the lumen of the tube, but also on the conformation of the tube where transition occurs from a smaller to a larger lumen. When the change is very abrupt, as seen in instances of a rigid valve projecting like a diaphragm into an aortic lumen, the murmur will be very loud, and so may it be quite loud when there is an abrupt dilatation of the aorta beyond the orifice. But suppose the aortic ring is normal, the root is not dilated, and there is a moderate fusiform enlargement of the ascending arch as it joins the transverse arch; then there will be no systolic murmur because this conformation does not give sufficient velocity to the eddies within the stream which are responsible for audible sounds commonly described as murmurs. Should there be fusiform enlargement or the ascending arch of the aorta as it joins the transverse arch, one should be able to percuss an area of dulness to the right of the sternum, one should palpate a systolic impulse when the ear is applied to the thoracic wall, and one should palpate a diastolic impact and hear an accentuation of the aortic second sound; but the aortic second sound will not be tympanitic in quality, and one may hear no murmur during cardiac systole. Should the ascending arch and the root of the aorta be sclerosed but the valves remain competent, then there would be present the physical conditions essential for the production of a systolic murmur and a tympanitic aortic second sound; but the intensity of the sound and the palpability of the diastolic impact and the systolic impulse would all depend on the dilatation of the arch of the aorta beyond its origin.

DISEASE OF THE CORONARY ARTERIES

Diagnosis of disease of the coronary arteries is not made by direct examination, but inferentially, by the history one is able to procure from the patient. When the coronary arteries are involved in syphilitic patients, they commonly give a history of progressive functional ischemia, and, of course, the cases which do not respond to treatment may go on to nutritive ischemia with all its consequences—infarcts and myomalacia cordis. Early in the patient's coronary history he finds he has lost the ability to perform vigorous exercise, and gradually his exercise will be cut down, so that moderate walking on level ground will be sufficient to bring on myocardial pain. In the early stages of syphilitic disease of the coronary artery, when therapeutic measures are of value, the diagnosis of coronary disease is based on a patient's history and his ability to exercise and not on any direct physical findings.

MEDIASTINITIS

Syphilitic mediastinitis is a common accompaniment of syphilitic disease of the aortic wall. Substernal pain, inclusion of the laryngeal nerve, paroxysmal tachypnea, and pain on swallowing have all been observed. The only direct physical sign of syphilitic mediastinitis, quite apart from functional disturbances, is the location of a friction sound audible at the second interspace to the right of the sternum. In the few instances which have come under my observation, the friction was audible during cardiac diastole and followed the aortic diastolic sound. Disease of the coronary arteries and mediastinitis may occur when the disease of the aorta is not severe, and, in fact, when the aorta shows no evidences of modification in size or elasticity; and under these conditions, of course, the diagnosis is based on the impairment in function.

The diagnosis of aortitis based on physical findings, as described above, is very frequently made before the patient complains of symptoms which can in any way be ascribed to the heart or aorta. The therapeutic importance of making the diagnosis early is due to the fact that, if the physical signs are recognized soon enough, the use of adequate mercuric therapy will cause all of them to disappear. I have seen all the physical signs described above as traceable to enlargement of the arch of the aorta and to impaired elasticity disappear entirely under vigorous antisyphilitic therapy. When the disease has progressed to aneurysmal dilatation, or to the point at which diagnostic skill is no longer required to make the diagnosis, then therapeutic endeavors are in vain, so far as restoration of function is concerned, though it seems very probable that the progress of the disease may be arrested and the patient's life greatly prolonged when restoration to functional and anatomic integrity is no longer expected. Recovery from the evidence of sclerosis of the first portion of the arch of the aorta occurs only when the diagnosis is made quite early in the disease.

Contrary to the import of the editorial comment cited,[1] the medical profession does recognize its moral responsibility in making an early diagnosis of syphilitic aortitis. The early recognition of the lesion is due to the work of Fournier and Huchard, and is based on physical examination. It is very doubtful if men who followed the work of these great Frenchmen found themselves making the diagnosis of incipient syphilitic aortitis with any greater frequency after the roentgen ray and Wassermann reaction were added to our diagnostic resources than was the case prior to introduction of these diagnostic aids. The Wassermann reaction, *Spirochaeta pallida,* and the roentgen ray have all served to confirm and illuminate the work of these great clinicians, but bacteriology and pathology lagged many years behind the clinic in dealing cogently with syphilitic aortitis.

THE LABORATORY PROFESSOR AND THE MEDICAL SCIENCES IN THE UNITED STATES

CHARLES R. STOCKARD, M.S., PH.D.
Professor of Anatomy, Cornell University Medical College; Associate, Huntington Fund for Cancer Research; Consulting Anatomist, Clinic for Functional Reeducation of Disabled Soldiers, Sailors and Civilians; Consultant, St. Bartholomew's Hospital for Diseases of the Alimentary Canal
NEW YORK

In a recent number of THE JOURNAL, Professor Symmers[1] combined a discussion of the defects in the teaching of pathology, and the deficiencies of the "lay professor." The first portion of the article was devoted largely to the difficulties in obtaining pathologic material. In conclusion, however, the front was shifted and a still wider problem in medical education was briefly touched on. Dr. Symmers has, I believe, placed two eggs of quite different variety in the same nest. Neither may hatch a bird of beautiful plumage, yet there is little relationship between the two except that they were to be incubated by the heat of a single discussion. Doubtless the subjects are worthy of treatment apart.

I shall not ask the reader's indulgence on the subject of pathologic material for teaching, although ten years' experience in collecting anatomic material in the varying control of New York City leads one to feel that it would not be difficult to warm up to a sparkling degree on such a theme. My attention shall be limited entirely to the problems and conditions underlying the question of the "lay professor."

It should be understood that what I present is intended not solely as a reply to Dr. Symmers' brief treatment of this matter, but as an expansion or broader consideration of a condition which is of grave importance to medical education in the United States. The consideration should be as nearly unbiased as possible, since it is a question not of the welfare of individuals, but one of medical instruction and progress in a great country during a season of most rapid changes and developments.

There are objections to the expression "lay professor" since, in spite of its being apparently clever, it is not actually clear. It immediately introduces partizanship and prejudice into a case which in the end must stand on its merits alone. Judging from Professor Symmers' text, he would put outside of the profession anyone who had not followed the routine road of the medical curriculum in order to enter that branch of the profession to which he intended devoting his life's effort. This is in spite of the fact that the men of scientific education in the laboratories have often spent more time in their preliminary training, which always necessitates the completion of the college course, and in obtaining their doctorate, than the medical student need do. The time element is not of great importance; but men so trained would under Dr. Symmers' classification still be outside in spite of the value

1. Symmers, Douglas: Defects in the Teaching of Pathology, and the Lay Professor, J. A. M. A. **73**: 1651 (Nov. 29) 1919.

of their contributions to medical progress and practice. The profession would be limited to those having the legal status to practice it. To appreciate the full meaning of such a classification, may we look briefly at the recent medical past.

CONTRIBUTORS TO MEDICAL SCIENCE

A figure at once towers above all the rest, the son of a French tanner, a chemist by education and training, the father of bacteriology, the discoverer of the effective method of combating infectious diseases, he who disproved the idea of spontaneous generation, and laid the scientific basis for Lord Lister's aseptic surgery: Could anyone have so little regard for the history of medicine as not to include Louis Pasteur, the trained chemist, among the great leaders of the profession?

The phagocytic action of wandering cells in the animal body was discovered by a zoologist as a result of his earlier studies on the lowest invertebrates. When a young man he left his professorship of zoology at the University of St. Petersburg and spent his life in the Institut Pasteur constantly investigating the reactions of the organism to disease. Certainly few could deny that medicine is proud to claim the numerous contributions of that devoted investigator, Eli Metchnikoff.

Every medical man looks with pride on the record of the young zoologist who first stained and demonstrated the spirochete of syphilis after others had sought for years in vain. The investigations of the same man on the ameba of dysentery, and his final courage in sacrificing himself in order to facilitate such investigations when he was little more than 35, make all students of disease salute so noble a student as Fritz Schaudinn. A long list of other scientific men, without a medical degree, in Europe as well as is our own country, could readily be mentioned who have contributed most important discoveries as aids to diagnosis and the control of disease.

On the other hand, many of the great discoveries in medicine, as well as in pure science, have come from the medical men themselves, Harvey, Huxley, Haeckel, Ehrlich, and in our own country, Smith, Gorgas, Russell and others. But practical medicine, as well as other applied sciences, can ill afford to separate itself from the indispensable aid which the pure scientists in the laboratories have to supply. The primary thing to be kept in mind is, that when the laboratory man is a master in his field it matters not what his training may have been, whether medical or otherwise; he fully values and appreciates the bearing of his science in all its applications. As Pasteur stated it, "There is no greater charm for the investigator than to make new discoveries; but his pleasure is heightened when he sees that they have a direct application to practical life." Huxley estimated that the money value of Pasteur's discoveries on anthrax alone saved the world in sheep and oxen enough to cover the whole cost of the war indemnity paid by France to Germany in 1870.

In order to appreciate more fully what any applied science may expect to receive from the laity, we might look still further back in medical history. Out of the long record of materia medica there have come two so-called specific drugs for the treatment of disease. One of these, quinin, was discovered by savage laymen, the Indians of South America, while the exact credit for the discovery of mercury in the treatment of syphilis is difficult to place, but belongs to the profession. The race for the discovery of specific treatments after about 2,000 years of medical practice ends in a tie between the Indians of South America and the physicians of Europe.

Among the long used drugs of vegetable origin, valuable in the relief of disease, the laity had in their possession digitalis, nux vomica, opium and many more. Modern medicine is further aided in the use of many of these substances on account of the fact that their active constituents have been separated by the "lay" chemist in concentrated form.

One of the earliest and most important steps toward putting medicine on a scientific basis took place about 150 years ago when the celebrated Englishman, Jenner, then a young man not yet in the medical school and without a medical degree, was told by a Gloucestershire milkmaid that one could not have the disease smallpox after having had cowpox. Jenner found this opinion to be commonly held by the people of the county, and told a number of physicians about it. None of them at that time were interested in such knowledge. While Jenner was studying in London he lived two years in the house of John Hunter, and communicated to him this peculiar relationship between cowpox and smallpox; but Hunter was also apparently not interested, being absorbed in his own work. Jenner, however, was born with the creative temperament. He was a musician, wrote poetry, and was a keenly observing naturalist as shown by his studies of the hibernation of the hedgehog, and the habits of the cuckoo. The last study was communicated to the Royal Society. With true scientific inclinations he returned to Gloucestershire after having studied in London and began the first experimental work on immunity. The actual discovery was made by the milkmaids of Gloucestershire, but its meaning was appreciated by the young apprentice, Jenner, years before Dr. Jenner devised the method of vaccination which made it unnecessary to lead the person to the cow. And thus the history of medicine progresses, until today it is the proud recipient on which is bestowed electricity, the roentgen ray, radium, etc.

Two kinds of minds are valuable or really indispensable to medicine: one the discoverer, and it matters not who or where he may be; the other, the one who comprehends the significance of things. The latter is often rarer than the former; many knew what the milkmaids said about smallpox, but only Jenner appreciated its value; and in so doing he became one of the landmarks in the progress of civilization.

A subject becomes scientific when it has advanced to a stage at which its study depends on exact experiment. Physics and chemistry long ago arrived at this point, and biology has been developing on such a basis for more than thirty years. These are the fundamental sciences on which medicine must progress. They have already supplied a splendid foundation. Much of it was built by the professional physicist, chemist and biologist; the practitioner of medicine in many cases has comprehended the worth of the discovery and devised the technic by which it was applied to the treatment of disease. Has either party to the contract actually suffered from the shortcomings of the other? Should the two be divorced, or are either to be considered "lay" by the other? Only one answer is possible: Does the trained engineer teach the fundamentals of physics and chemistry to the engineering student or does the physicist and chemist? The latter; and with elementary scientific knowledge the young engineer builds with a better understanding of forces and materials.

PROGRESS OF MEDICAL EDUCATION IN THE UNITED STATES

With this fragmentary review of the parts played by extrinsic elements in the general growth of medicine, we may proceed to a consideration of the development of medical education in the United States which has led to the present conditions in American medical colleges. And finally an attempt will be made to suggest methods for the future improvement of the situation.

As late as the seventh and eighth decades of the last century it might be said almost without exaggeration that there were no actual working laboratories in the medical colleges of this country. There were only the smallest number of medical men devoting their time and talent to investigations in the fundamental medical sciences. In Europe, on the contrary, there were valuable investigations under way in almost every country, and the medical courses were in many universities already well arranged on an orderly scientific basis. One need only recall the purely scientific work being done by Huxley and other medical men in England.

In France, Pasteur was influencing the medical profession, and in Germany and Austria there were chemists, morphologists, physiologists and pathologists of historical prominence. While in this country there was no professional anatomist, zoology was just being born as a result of the arrival at Harvard of the Swiss naturalist, Louis Agassiz. Physiology was soon to begin on the return of young Bowditch from studies abroad. Chemistry in the medical college was taught by lectures and exhibits, or was included in the course of materia medica. Embryology was unknown to American medical men, who had not appreciated the simple necessity of understanding how the machine is built in order best to repair it. The essential apparatus for the study of histology was thought to be unnecessary extravagance, and pathology in its effort to arise labored under similar handicaps. The dissection of the human body was attempted on material either in a state of decay or mummified by medieval methods of embalming. This was of little consequence, however, since the actual knowledge of the subject was always to be harvested from that perpetual source of supply, Gray's textbook.

These and many other primitive conditions obtained when our fathers, and actually when some of us, wandered through that garden of knowledge then known as the medical curriculum. My own sire regrets the distinction of having obtained the degree of Doctor of Medicine from the University of Virginia after a single year's effort. Experiencing, however, a slight sense of hesitation in applying his knowledge to healing the sick, he came to New York and attended what many at that time considered the leading medical school of the country. After another year at the feet of pedantic preceptors he was again honored with the diploma of Doctor of Medicine. Such an experience even at that date was uniquely American. Another of my paternal relatives traveled to Vienna in order to obtain work in pathology which was then almost unobtainable in any form in this country. Many men of these schools are occasionally heard to criticize the modern course, since it does not begin at once by introducing the student to the clinic as in their day. They forget momentarily that in those good days there was little alternative to a start in the clinic.

After 1890, conditions took a decided turn and a rapid improvement began, due, in some degree at least, to the influence of a number of men who had studied abroad and become acquainted with the vastly superior state of affairs in the medical schools of Europe. Interest was at once developed in the fundamental medical sciences, and the necessity of greater knowledge and longer training was realized as qualifications for a successful career in the battle with disease.

The advance in scientific medicine based on the discoveries of vaccines and antitoxins made a better education of the physician not only necessary for the intelligent application of such treatments, but really essential for any one aspiring to add to the knowledge or discovery of similar remedies. Preventive medicine was born, but refused to grow in size, or develop in power, on nourishment other than studious effort and thoroughly scientific understanding.

This state of affairs came as a shock to many physicians and surgeons who had up to this late time combined with apparent success a daily practice of their profession with a professorship of anatomy, physiology or pathology. A few boasted of having filled one after another of these chairs on the road to their ultimate ambition, the professorship of medicine or surgery. Others taught a cluster of subjects—anatomy, physiology, etc.—and as Oliver Wendell Holmes expressed it, "he occupied not a chair at Harvard but a settee."

It now became evident, with some persuasion from the outside in certain instances, that the fundamental sciences on which medicine was to live and advance must be properly included and taught in the curriculum. *Where were the teachers and investigators in these sciences to come from?* The medical men of the country graduating before 1890 had not in all cases been sufficiently trained in the medical sciences to qualify them to teach and work in these subjects. At the same time, many prominent physicians and surgeons could not afford to sacrifice their professional practice. *The simple fact was that there were but few men trained in the medical schools available for these laboratory positions.* When one contemplates the schools of that time, how could there have been many such men? And this was the day that the call went out from the medical colleges to the universities of America for a supply of professional chemists, physiologists and morphologists to train the medical student in the sciences which must underlie the modern prevention and cure of disease.

Many men had been trained in the pure science departments of the universities, and as a matter of information, some of these had gone for their education to the universities solely on account of the fact that laboratory training was not then to be had in the medical schools. Many of these men with natural interests and inclinations toward the medical sciences responded to this opportunity to work in the medical colleges. They did not intrude themselves or come into these positions because there were no others to be had, but were invited, and entered solely through preference for the work and their interest in medical science. I know instances of chemists, physiologists and morphologists having had invitations which gave them the opportunity to choose between professorships in the universities or the medical college, with the salary equally short in both cases, but they chose the medical college. I know other examples of laboratory professors in medical schools having gone to chairs in the university. And I have known of one such case in which the medical college later urged the professor to come back to its department; but the invitation was declined. Men of ability usually choose the atmosphere in which they work most effectively.

At the present time the number of scientifically trained men in the medical laboratories is unusually large, and their record as contributors and teachers is far from discouraging. The American Association of Anatomists counts among its members the full time men of professorial rank in almost every department of anatomy in the United States. Of the full professors of anatomy there are forty-five with a medical school education, and twenty-seven have been educated in the universities. Among the professors with the degree of M.D., thirty-five are directors or heads of anatomic departments, while twenty-one of the non-medical professors likewise head departments. In this country there are seventeen assistant and associate professors of anatomy with the M.D. degree, and twenty-four men of similar rank who are doctors of philosophy or science. Therefore, of the professional anatomists, sixty-two have gone into the subject after receiving the medical degree, but only the smaller percentage of these have served as hospital intern or had any clinical experience other than that obtained during the last year of the medical course. The same, in general, is true of the European anatomists. As Dr. Symmers mentions, Guy's Hospital requires the anatomist to have passed the examination for a fellowship in the College of Surgeons. It must be known, however, that this is simply another examination: the candidate need never have served in a hospital or had clinical experience. I have met men studying on the continent for their fellowship examination, and it is largely a matter of cramming much like our state board and hospital examinations. The fellowship is sometimes taken by a chemist working in the laboratory merely to obtain the letters F.R.C.S., which mean much to some people.

After the medical graduate becomes a professional anatomist, his time and efforts are so completely devoted to the difficult task of learning the subject and problems of morphology, and the teaching of students, that interest in the practical aspects of medicine other than its educational phases is soon lost. It has been said in this country that the teaching of medicine is not a medical problem but an educational problem.

Fifty-one professional anatomists have received their morphologic training in the universities, and have developed an appreciation of the medical and surgical aspects of the subject through a contact with the clinics after becoming associated with the medical school.

In considering the members of the American Physiological Society, it is found that honors are equally divided as to the number of full professors from the medical school and scientific school groups. There are twenty-three professors of physiology with the M.D. degree, and twenty-three with either the Ph.D. or D.Sc. Of the assistant professors, ten have the M.D. degree and thirteen do not. Three of the professors of physiology, who were not educated in the medical schools, have filled with distinction the position of dean of three leading medical colleges, Johns Hopkins, Minnesota and Virginia.

The Bio-Chemical Society shows only three full professors and one assistant professor of chemistry in medical schools with the M.D. degree. There are twenty-two full professors and twelve assistant professors of chemistry with Ph.D. degrees in the medical colleges. The chemists are derived almost entirely from the scientific departments of the universities, and yet their recent contributions to the chemistry of metabolism and to exact medical diagnosis have been of the utmost importance. One of these Ph.D. professors of chemistry has recently filled the office of dean of Washington University Medical College most successfully.

In pharmacology the conditions are reversed, there being sixteen full professors and eleven assistant professors with the M.D. degree, and only four full professors without the M.D. degree. It would be unnecessary to compare the recent accomplishments of pharmacology with those of biochemistry.

The numbers of professors in physiology and chemistry are seen to be fewer than in anatomy on account of two facts: In the first place, in departments of anatomy the courses in gross and microscopic anatomy are frequently each in charge of a full professor or at least of an assistant professor. The second reason for low numbers in physiology and chemistry is that in some of the smaller schools the two subjects are taught under the direction of one professor. There are still a few settees among the furniture of the faculty room in the medical schools. In some cases this is due to lack of men, but more often to lack of money.

Finally, on a percentage basis the men of professorial rank with the M.D. degree are thus distributed in the different medical laboratories: Of anatomists, those having the M.D. degree constitute 55 per cent., of the physiologists 48 per cent. and of the medical chemists only 10 per cent.

All of the head pathologists have the M.D. degree, yet many of the pathologic laboratories contain, among their staff, men without the medical degree. Several leading professors of bacteriology in the medical colleges have had their initial training in the scientific schools and do not have the degre of M.D.

These different percentages of doctors of medicine in the various laboratories indicate that the earlier in the medical course a subject is given, and the less that subject is taught in the clinical years, the more surely will the student fail to develop a lasting interest, and never come back as a laboratory worker in the subject. At present, chemistry is taken earlier in the course and is less used in the instruction by the general clinician than the other laboratory subjects. Thus few, if any, doctors of medicine come back into the chemical laboratory. Even in England many of the leading physiologic chemists have not taken the medical course. A number of these men are of international distinction—Plimmer, Hopkins, Bayliss, Schryver, Armstrong, Harden, Dakin, Barger and others. Physiology is considerably more used and reviewed in the later years of the course, and so more medical men are found in this laboratory. Anatomic knowledge is employed still more throughout the course, and more than half of the professors have the medical degree. Pathology, being the science of disease, is available only in the medical college, and is used throughout the curriculum. Here, as one would expect, all of the heads of departments have the M.D. degree; but several of these have also worked in the scientific schools for a univeristy degree. As the clinical instruction throughout the country becomes more and more scientific, and involves still more physiologic knowledge and more chemistry, the attraction of these subjects for the medical student will no doubt improve.

At present we see, therefore, a considerable proportion of men trained in the fundamental sciences working in the laboratories of the medical colleges. Do these scientists have a sympathetic appreciation of the medical situation, and do they obtain a knowledge of actual medical or clinical problems? They do, in the

case of those worthy of their hire. The M.D. graduate shows that he has an interest in medicine by having come to the medical college to study. In the case of choosing for a professorship between two men of equal ability, the preference should be, and is, always given to the M.D. by the medical college.

TRUE SITUATION IN THE SCHOOLS

It may be well just here to consider some of Dr. Symmers' statements of the situation in medical colleges in the light of the foregoing review. He says: "There are schools in this country in which the teaching in physiology and of physiologic chemistry is entrusted to men who have received no systematic training in medicine." This is correct, but does not quite convey the idea that in almost all medical colleges physiologic chemistry is taught by such men, and that half of the departments of physiology are under their direction. If we depended on medical graduates it would be impossible to teach chemistry in the medical colleges, and half of the departments of physiology would find it difficult to obtain a suitable director. Has the physiology taught and contributed by Howell at Johns Hopkins and Lusk at Yale and in New York been less useful to medical students than that taught by any two men that have passed through a medical course in this country? Has the work in biochemistry of Mendel, Folin, Benedict or Van Slyke been inferior to that of one or four men with medical degrees? Who contributes the textbooks of physiology and biochemistry most used by the medical students in the leading colleges of this country? The same texts are frequently used in the medical schools abroad, and some have been translated into continental languages.

To quote again: "There are at least two representative schools in this country in which the chair of anatomy is filled by men neither of whom holds a degree in medicine." This does not fully describe the situation, since there are twenty-one heads of anatomy departments who do not have a medical degree, and thirty-nine who have. Only very few of the thirty-nine did more than finish the last year of medical college, so that they have had no hospital or clinical experience other than that obtained in the medical course. Dr. Symmers fears that the anatomist without the medical degree is too short-sighted an individual to be able to enliven his course by constant reference to points of surgical value. Old songs all have a mellow tune! Eighteen or twenty years ago by no means all of the medical colleges in this country had professional anatomists teaching the subject; to put it gently, they understood little anatomy. Thus, some physicians still have dim recollections of surgical points learned in the anatomy class. They might realize, however, that they failed to receive a conception or an understanding of the principles of development and structure which enter into the make-up of the human body. These principles of structure have an important medical as well as surgical value. The good mechanic must not only understand the structure of his machine but should know how it is built and what each part does. The human body deserves at least such knowledge of its parts. In teaching the anatomy of fractures and dislocations to thirteen classes of military surgeons, I found them all to realize that the same knowledge of anatomy was involved after the fracture or dislocation as before. As a fact, it isn't any more the surgical points of value than the anatomic points of value, when properly given, which enliven the course. The study of living models, which should begin on the first day, brings real life and interpretation into the modern anatomic course. It is probably best for the anatomists to teach anatomy and the surgeons surgery. Every one forgets the details, but the fundamentals of a subject are the laws which live in the mind of him who has known.

The teaching of embryology, Dr. Symmers says, "is commonly left to instructors few, if any, of whom are capable of vitalizing the intimacy between it and pathology, notably in the vast domain of tumors." Reversing the idea, the embryologist is often impressed by the inability of the pathologist to give logical interpretations, on account of a lack of first hand knowledge of embryology. Embryology is one subject that must be studied first hand in order to use it in deductive reasoning. There is a surprising number of able embryologists of international reputation teaching in American medical colleges, and Minot and Mall were their leaders.

"The teaching of histology is all too often entrusted to an assistant with the alphabetical distinction of a bachelor's degree in arts or science." This is a mistake in either the place or the time, as today in the United States a professor with one or two doctor's degrees generally gives the histology course.

How could any intelligent person, trained as a scientific investigator, camp for many years within the walls of a medical college, teaching a basic medical subject to students as well as doctors of medicine, without knowing what the problems of medicine and surgery must be? How could a medical student gather in so much during the last year or two of the course, that is, on supposition, beyond the grasp of the scientifically trained men who taught him during the previous two years? It should be comprehended that these laboratory men may learn first hand without a teacher. Every medical man does the same. Some students actually learn in spite of a teacher. The one great defect in the general school system as well as in the medical college is that the student is so rarely expected to learn for himself, he must be taught and too often from books. After all, however, it takes very simple mathematics to prove that the world would stand dead still but for the fact that each generation of students knows more than its teachers. This little *more* they learned for themselves, and this is the degree to which the generations push the world forward.

It must be realized that the men with the M.D. degree coming into the laboratories quickly lose touch with the clinical aspect of things in their effort to master and do creative work in the laboratory branch of their choice, while, on the other hand, the scientific man comes into the medical laboratory after being trained in his particular subject, and his effort for the first number of years is to acquaint himself with the medical bearing of things. Almost all such men that I know have studied general pathology and have attended systematically medical and surgical clinics for longer or shorter times.

Why is there this periodic excitement on the part of some clinicians and occasionally a pathologist, such as my friend Dr. Symmers, regarding the dangers to medical teaching and practice that might come from these men educated in the scientific schools? There is not an instance in history, so far as I have been able to gather, in which any harm has been done, and yet men of such training have worked in medicine for quite a long while in all the civilized countries of the world. The men who have aided in the past are not likely to

damage the future. But has the progress of medical education in this country been aided at all times by all the physicians themselves?

CHANCES FOR IMPROVEMENT

No man has been longer or more intimately connected with the development and progress of medical education in this country than Professor Welch. It is interesting to note that in organizing the School of Hygiene and Public Health at Johns Hopkins he has associated himself in the first place with another leader, Professor Howell, and has headed several of the chief departments of the school with men not of medical college training but of international reputation in their scientific lines. Public health and hygiene are certainly fields that should be entered by men of the medical profession.

How does a university choose its professors? In the case of a real university, by selecting the most eminent man available in the field, and certainly with little regard for his early college degrees. The remarkable progress in medical education has taken place since the better medical schools have adopted the same method.

Finally, what are the actual reasons why the medical schools do not produce a sufficient number of men for medical laboratory sciences? The first and most important reason is rarely mentioned, and that is, that the laboratories of the medical schools have not even yet been developed up to the university standpoint. The medical school is strictly on a college basis, the instruction is almost entirely by classes, and the departments are considered complete when the staff is sufficiently large to handle the routine curriculum courses. This is the college standard all over the world. Such a college is merely for educating the individual, and not for training and offering the atmosphere and opportunities for the mastery of a science and the investigation of its problems. This is the duty of the university. How do the great universities produce chemists, physicists and biologists? They accomplish this by conducting university departments of sufficient size to cover the chief phases of the subject, and by employing not one professor of chemistry in a department, but from four to six. Many schools of zoology have four, five or more men of distinction as professors in the laboratory, and here a student, already educated in college, can obtain a broad and thorough acquaintance with the problems of biology from men investigating its blind channels by observation and experiment.

In the second place, the usual routine inelasticity of the medical course causes the student to feel that he must not miss anything, and he is hurdled through with little opportunity to observe whither he is going. Now, it so happens that many of the medical colleges of England, and most of them on the continent of Europe, have more elastic arrangements; the student often spends longer in his actual medical education and almost always has an opportunity to ease up on the routine and become interested in some particular subject or branch of the medical organization. Then, particularly on the continent, the first condition comes into play. The laboratory departments of the medical school are developed on as complete a basis as the university departments, and there is not only one, but often four or five men of eminence working in the same laboratory of anatomy. This is often true even in the small universities, such as Freiburg, Würzburg and Jena. Therefore, the elasticity of the curriculum permits the best students to become interested in the fundamental sciences, and the development of the departments in the medical schools is sufficiently mature to allow them not only to care for such men, but also to attract many of the best to come.

In this country there have been only a few such laboratories in the medical schools; but these have worked. The one in particular which recommends itself to my mind was the laboratory of anatomy at Johns Hopkins as conducted by the late Professor Mall. There was more than one professor of eminence in the department, and it had developed on a university basis. This laboratory, through the personality and ability of Mall, was able to perform the miracle of transmutation. It appealed to the medical student who had come with the primary object of entering the practice of medicine, and convinced him that medicine cannot live by practice alone, but that new truths await discovery on which the progress of the profession depends. The laboratory flourished to such an extent that it has supplied the heads of the anatomic departments in eight medical schools and has exerted a profound influence on all the rest. The salaries offered to induce these men, usually poor, to come into anatomy were notoriously small; but under Mall's influence there was no hesitation to accept low living for high thinking. Few, if any, other medical laboratories can boast of such a record, and it was established in spite of conditions.

Mall was a medical graduate, but there were no "lay professors" to his eyes. There were only those who possessed a knowledge of their subject and could contribute discoveries in aiding its progress, and others lacking such qualities. The first group he considered valuable; the second was not. Only on such a classification can medical science and medical education be improved.

Another anatomic laboratory of university dimensions is developing in the University of Minnesota Medical School. There are now at least four full professors and several assistant professors, about half with and half without the M.D. degree, engaged in investigation and teaching in this institute. It is interesting to recall that a university trained physiologist is the dean of this college. When we have most of the medical schools of the country with laboratory departments developed to this extent, there will no longer be a scarcity of medical students coming into laboratory work. But on the contrary, not only will enough of them desire a scientific pursuit to man the medical laboratories, but medical men will compete for the chairs of biology and the natural sciences in the universities.

Medicine, as well as every other profession, needs masters in their field, and past history has shown that they can be relied on to extend the field and properly teach the subject. A school need not desire an eminent physician as professor of anatomy, since such a man would rarely be an eminent anatomist; nor need it desire an eminent chemist as professor of medicine since, again, such a man would not be an eminent physician. An engineering school does not select a successful engineer, or even a trained engineer, to teach the fundamental principles of either chemistry or physics to the students of engineering. A medical graduate who desires to teach physiology does not become a physician but must become a physiologist. As Bernard Shaw puts it, "It scarcely becomes a waiter to have a barrister for a son; neither does it become a barrister to have a waiter for a father."

The increasing opportunities for full time clinical teachers and investigators, along with the tendency to include a fifth clinical year in the medical course, are factors which will obviously tend to make it still more difficult to attract the medical graduate into the laboratory subjects.

Lastly, the question of university salaries is a vital one, but let us not be deceived into thinking that this is the only element involved in keeping medical men out of the laboratories. The conditions mentioned above are certainly of great importance. Proper salaries, however, will do much to put the laboratory teacher on a more efficient and dignified basis. There are still two opposing parties in the campaign for the "full time" clinical teachers, but there is a single fusion ticket which every one favors for the "full paid" laboratory teacher. The directing professor of a laboratory department in the leading medical colleges should receive a $10,000 salary, and other members of the department should be paid accordingly.

There must always be two parties to medical progress, the individual, it matters not who, contributing the fundamental discoveries, and the doctor of medicine, with a keen appreciation of the significance of things, to apply the discoveries in practice. The physician will appreciate the more keenly when he is trained by the best masters in the principles of the sciences which are certain to contribute the discovery.

HOSPITALS OF GREECE

CARL E. BLACK, A.M., M.D.
Major and Deputy Commissioner, American Red Cross Commission to Greece
JACKSONVILLE, ILL.

Reports received in Washington, prior to the sailing of the American Red Cross Commission to Greece, laid emphasis on the needs of the Greek hospitals, which were said to be overcrowded and short of supplies and equipment. Following up this information I made a careful study of the hospital situation as one of the first duties of the commission. The policy of detailed inspection was followed, and information secured at first hand regarding the situation.

The natural independence of the Greek character, and pride in Greek institutions, often masked the real need, and we discovered early that it was necessary to visit each hospital and to learn the actual conditions from personal investigation. The casual visitor was usually told by those in charge that, while there were many things they could use if they had them, they were getting along as well as the situation would permit. The true condition developed only after the establishment of mutual confidence. Some of our professional visitors, meeting well trained Greek physicians in charge of large hospitals, were at first led to believe that they had ample supplies and equipment. In one hospital we found 300 patients without proper beds or bedding, and the supply of drugs and other essentials was absolutely exhausted; and yet the pride of the officer in charge prevented him from feeling at liberty to acknowledge the real situation developed by the war. When later we sent a consignment of a few essentials, he was exceedingly grateful.

Another reason for making a personal investigation of each hospital was the criticism often heard of wholesale and indiscriminate distribution of supplies in other countries. The Greek commission decided that it would not be guilty of this error if it was possible to avoid it. Relief was administered only after a careful personal investigation by either the head of the department or some member of his staff, usually a physician, but if not, always an American trained nurse. The head of the department personally visited more than half of the hospitals to which relief was given, and many of them were visited several times.

Some well meaning friends in Washington and Paris thought that Greece had been in the war such a short time that there could be no great need for aid in Greece or in the Greek hospitals. The same argument made against aiding Greek hospitals would have applied equally well to France. These countries were not appealing to the American Red Cross as paupers and suppliants, but as our allies engaged in the greatest struggle of history and with the most desperate and unscrupulous combination of enemies ever met by the soldiers of peace-loving nations. It was just as much our duty to aid brave little Greece as brave big France. Both were prosperous, and in normal times able to meet their civic obligations. France had had many years of peace in which to develop her resources, while Greece had been almost constantly at war since 1912, and in addition had been torn asunder by internal dissensions and revolution, resulting from the disagreements between a pro-German king and a pro-Ally people. This struggle between the Venizelists and the Royalists was as much a part of the whole struggle of the Allies with Germany as was the Battle of the Marne.

The state of transportation and the difficulties arising out of the complicated control called for great patience and farsightedness in dealing with the problems. However, the assurance given to us by the officers of the national Red Cross, and the fact that the Greek government gave us free transportation of supplies from New York up to 300 tons a month, led us to believe that the first consignment of supplies ordered before leaving the United States would be in Athens on our arrival. Soon after we had made a preliminary survey of the situation, we began to send additional requisitions to Washington for the things we found absolutely necessary. The slow way in which supplies were received in Greece was no doubt due to conditions that could not be controlled, but it prevented the amelioration of much suffering and made impossible the saving of many lives.

We were assigned by the Greek government to the department of Mr. Jean Athanasaka, undersecretary of state for war, bureau of hygiene and sanitation, through whom we developed the lines of work which the American Red Cross could undertake for relief in Greece. This broad-minded and public-spirited official used every effort to forward our work.

The sudden cessation of hostilities in the Balkans was looked on by many who were not on the ground as another reason why American Red Cross assistance was no longer needed, in forgetfulness of the fact that it was impossible for the civilian, or even for the Greek government, to secure necessary supplies in the market, regardless of financial ability. Furthermore, while many citizens of Greece were rich, the government was poor. In fact, the Greek army was still intact, doing more or less active service in Russia, Asia Minor, Thrace, and Macedonia a year after the signing of the armistice; and the epidemics of influenza and of typhus kept a heavy burden on the hospitals.

CONDITIONS RESULTING FROM WAR

The war had wrought havoc with the Greek hospitals. Practically all the civilian hospitals had been converted into military hospitals. The epidemic of influenza was quite as widespread and severe in Greece as elsewhere. They had passed through epidemics of typhus in Macedonia, Epirus and the islands; and on looking back at the situation, it is easy to see why practically all of the hospitals had exhausted their reserves of equipment, stores and medicines. The richest and best equipped hospital in Greece had no adhesive plaster, gauze, roentgen tubes or cotton, not to mention many other hospital essentials, and during the six months following our arrival was not able to obtain these on the market. Many hospitals had no hypodermic syringes or needles, and no thermometers or anesthetics, and lacked many other necessary but less important items. As soon as relations of mutual confidence were established, we received almost daily, from both civilian and military hospitals, requests for the most ordinary, everyday supplies which they were unable to obtain from any other source than the American Red Cross.

There had been no adequate accumulation of stores since the Balkan wars for the day of need. The country was plunged into active participation in the world war by a blockade which made it impossible for her to import even the most essential articles. For the sake of the argument we might still admit that her wealthy citizens were financially able to supply all her needs; but however willing they may have been, to do this was impossible. The world's stock of hospital supplies was all in the hands of the Allies or the Germans. Under the circumstances, this meant that all the surplus available to allied or neutral countries was in the United States, where it was impossible for the private purchaser to buy them or to secure transportation for them. England and France had no surplus stocks to sell. The United States was supplying them. All the world's supplies were required for the Allied armies, and were under Allied control. Prior to her entrance into the war on the side of the Allies, Greece was practically shut off from the world's markets and got little or nothing; and after she entered the war she got only such portion as was necessary for keeping her army in the field and supporting her military hospitals, which was indeed a scanty allowance. There was no way in which the civil hospitals could be supplied, and at the time the American Red Cross arrived in Greece, practically all the reserve stores had been exhausted. In fact, it was this very situation which caused the Greek Red Cross, in May, 1918, to send an appeal to the American Red Cross, and which determined the national Red Cross in Washington to send a commission to Greece.

A second object in making inspections of Greek hospitals was a desire to acquaint the American public with modern Greece, the home of the father of medicine, Esculapius, and his great successor in the science of healing, Hippocrates. Greece has made a wonderful start in providing her people with hospital facilities. She is far ahead of any of her neighbors, owing to the keen intelligence and the widespread education of the Greek people; and the conditions of need we found were due to wars and epidemics, and not to a disregard and ignorance of the value of such institutions. We also hope that in view of our acquaintance for several months with this splendid little nation, the Greek people will be willing to accept a few suggestions by way of constructive criticism. I have left out of this general statement many details, but these will all be found in the reports of the commission to the national Red Cross in Washington. Accompanying these will be about 200 pictures of Greek hospitals and their personnel.

While most of the hospitals were originally intended to provide only for the poor, there is an increasing tendency to extend the service to all classes. Many of those, even in small communities, have excellent buildings, beautifully situated, often surrounded by well kept gardens, and showing a desire to make the surroundings attractive. Often the absence of the same attention to comfort and attractiveness on the interior is in sharp contrast to the surroundings. One is struck by the absence of evidence of active participation of the Greek Orthodox Church in the organization of their hospitals. There seem to be no orders of monks or sisters wholly devoted to the care of the sick. The development of hospitals has been left largely to lay initiative. On the other hand, almost every hospital has its chapel. What Greek administration has already done in building and equipping hospitals is an excellent illustration of the enlightened progress which this people has made. They have always kept in close touch with France, Germany and Italy, and the methods of organization and equipment used are largely drawn from these sources. This makes the situation more difficult for an American to understand. One sees little in Greece to show contact with England or America.

DATA COLLECTED

In making hospital inspections, we devised a brief form, in order to have the reports uniform. It was expected that these data would provide only the essential facts. This form gave the name, location, character, management, and superintendent, directress or matron; physicians, surgeons and specialists in charge; hospital records, training school, nurses employed and how trained, number of beds and whether free, paid, surgical, medical, children, obstetric, soldiers or special; the facilities offered by operating room, dressing room, laboratory, roentgen department and pharmacy; and remarks covering any other interesting and important facts.

Numerous conferences were held with members of the ministry, hospital officials, physicians and others. We always found them actively interested in developing their institutions.

One circumstance that seriously interfered with preparing detailed reports on the Greek hospitals was the rapidly changing conditions as the country passed from war to peace. Many temporary hospitals had been established. Practically all civilian hospitals had been converted into military ones, and the process of reorganization was rapid and involved constant changes in our data. For example, one hospital of about forty beds was twice taken over by the military and twice returned to its civilian management; was through two epidemics of typhus and one epidemic of influenza, and at the time of our second visit was again administered by the military authorities to provide hospital care for a second epidemic of influenza among the soldiers. While this is rather an extreme case, it illustrates one of the difficulties we encountered in estimating the value of a given hospital. It is hardly necessary to say that a civilian hospital that has passed through so many

changes of management within two or three years has little left with which to begin a normal civilian hospital life in a country so far away from the source of supply as Greece has been during and since the war.

HOSPITALS OF EASTERN MACEDONIA

This report would be incomplete without special mention of the hospitals in eastern Macedonia, which was the main scene of relief work by the American Red Cross. This district of Greece must be classed with Belgium and Serbia in the suffering that the war brought on its citizens. They not only suffered the natural privations and hardships due to being situated in the war area, but they had recently passed through two wars that had entailed great suffering. Prior to this, they had lived under Turkish rule, which gave them constant hardship from misgovernment; and during the long years in which the grasp of Turkey over her European territory was weakening, Macedonia was the scene of a fierce Bulgarian propaganda almost as devastating as war. The hatred of generations of conflict was around them. Thousands (150,000) were carried from their homes into Bulgaria, where they existed two years under a system of cruelty worse than slavery. Their cities and villages were burned and pillaged, and after the Bulgarians were driven out desolation reigned everywhere. This was the condition when we first entered eastern Macedonia at Kavala early in November, 1918. The deported population was just beginning to return. The military hospital of Kavala was a tobacco warehouse where tobacco crates took the place of beds. The sick were pouring in, but there was little or nothing we could do at that time to help them. The civil hospital had five typhus patients and no others. There was no other provision for the sick in a city which had claimed more than 40,000 inhabitants. Drama was a little better off, but not much. Her small civilian hospital had been taken over for military purposes, and when abandoned by the army was little more than a shell, without supplies or equipment, although this city of 25,000 inhabitants had not suffered to the same extent as some of her neighbors. Seres, formerly a city of 20,000, had suffered more than either Kavala or Drama, and her hospital was practically ruined, so far as service to the sick was concerned, until it was refurnished and its supplies replenished by the American Red Cross. The villages had suffered equally. The sick were on every hand, and there were no supplies or equipment for the most essential comfort.

In aiding these institutions, we encountered many serious difficulties. The long distance from Greece to America, and the great demands of other countries on American supplies, were great handicaps. The time consumed in getting supplies seemed intolerably long, and not infrequently when they arrived the quantities were altogether insufficient and many important things were missing. Much time was lost by the sudden decision to reorganize the work of the Red Cross in the Balkans and place the several commissions under a general commission for the Balkan states. Not only was time lost by this reorganization, but many supplies intended for Greece were diverted to other fields. No doubt, in some cases the conditions in other countries were more urgent; but more often the diversion of supplies was due to a misconception of the situation based on information from sources that could not have had sufficient and proper information.

CLASSIFICATION OF GREEK HOSPITALS

While the hospitals of Greece could naturally be divided into three classes, civilian, military and special, during the active progress of the war they were all military. During this stage the military hospitals were divided into permanent, temporary and civilian, taken over for military purposes. It was necessary for the government to establish purely temporary hospitals in addition to those taken over, and some of these could scarcely be called hospitals. For example, one so-called hospital was nothing more than a series of single walled tents in which more than 800 patients were lying on the ground with nothing but thin mattresses or blankets under them. These conditions were the best that could be had at the time. A number of hospitals, such as hospitals for the insane, were visited, but no attempt was made to study them in detail, as the extending of emergency relief was all that the American Red Cross could undertake.

We inspected and have reports on practically all hospitals in Greece, of which forty-seven were military (or being used for military purposes at the time) and fifty were civil, making a total of ninety-seven. Seventeen of those classified as military will return to civilian service as soon as the country is on a peace basis. These hospitals have beds for more than 20,000 patients. Practically all the military hospitals and the majority of the civilian were given substantial assistance by the Greek commission of the American Red Cross.

A word is due regarding the way in which our work has been received in Greece. As has been said elsewhere, we first met an attitude of pride in their institutions and a spirit of independence and reserve in seeking aid from the American Red Cross. We have rarely been made to feel that there was any disposition to impose on us in any way. On request they have stated their needs fairly and have accepted what we could give them in an attitude of delighted appreciation. The files of the Greek commission of the American Red Cross will show a large number of letters of appreciation from managers, physicians and boards of directors, of the most kindly and appreciative tone. Often the name of the "American Red Cross" will be found on the marble tablet containing the names of benefactors which is usually placed in the main hall of a Greek hospital.

CONCLUSION

The time for reorganization is at hand. Greece, which is a peace-loving country like America, is looking forward to a long period of peace when there will be opportunity to develop and improve her institutions, and we have had ample indication that she will then turn to her allies for suggestions and help. The previous leadership led her to provide only for the army and for the poor, with the result that in most of the hospitals the elements of comfort, cheer and social and moral improvement, which we consider so essential, are lacking. The vase of flowers, the screened window and porch, the dainty tray, the music, and many other things which come with the training, skill and human touch of the trained nurse will change these bare wards from couches of distress and suffering to homes where the sick may be surrounded by all the comforts of a home with the addition of all those touches of human sympathy which an educated and trained nurse instils. The three outstanding needs of most Greek hospitals are, modern sanitary appliances, fly screens, and proper

training schools for nurses. To meet this last need the American Red Cross will establish in Athens a training school for nurses on modern American lines. The splendid educational advancement of Greece along other lines makes her ready and, judging by many expressions made by her citizens, willing to accept new standards for her hospitals. It is in this that American influence can be of great service. Our constant visits to the hospitals and consultations with the managers, physicians, nurses and others interested have convinced us that there will be radical changes in the hospital ideas in the near future. In another chapter of this report will be found a brief detailed analysis of each hospital. In securing these data we have seen every department of almost every hospital in Greece, and we trust that the accumulation of data and the analysis of our findings may lead to a new understanding of what the hospital stands for in a community. During our inspections we uniformly made a list of the more essential needs of each institution, and in making our requisitions on Washington, Paris and the Balkan Commission for supplies, we based them on the actual conditions. Our great difficulty was to get the supplies most needed.

EMPYEMA AT THE CINCINNATI GENERAL HOSPITAL DURING THE INFLUENZA EPIDEMIC*

JOSEPH RANSOHOFF, M.D., F.R.C.S. (ENG.)
CINCINNATI

As a natural result of the pandemic of influenza of 1918-1919, there has accumulated a literature sufficiently extensive to form a library of moderate size. A large proportion of published papers deal with the subject of empyema; and since for the first time in the history of the disease, hundreds of thousands of men, in the prime of life, were congregated in the close quarters of army camps and camp hospitals, it is natural that the preponderance of articles should treat of the disease and its sequelae as observed under these conditions. This fact lends justification to a presentation of this study of empyema, based on experiences during the epidemic, in the surgical services of the Cincinnati General Hospital.

An apology might seem indicated for the incompleteness of many of the records, particularly the bacteriologic; but this is accounted for by the fact that there was a dearth of physicians in civil life and that at one time seventy of the nurses were ill with the disease.

From Oct. 1, 1918, to May 1, 1919, there were admitted to the Cincinnati General Hospital 3,688 cases of influenza, of which 625, or 16.6 per cent., proved fatal. Whereas this death rate from influenza appears high, it must be remembered that only the seriously ill sought admission to the hospital wards. Among these 625 deaths, five were in cases of empyema which came under our surgical care. Altogether, fifty cases of empyema were transferred from the medical to the surgical service, or were primarily admitted to the surgical service, though the latter was not often the case. In many of the 625 cases, empyema was recognized by exploratory aspiration, but was a small factor in the death rate. As was experienced elsewhere, a very large proportion of the patients died from the toxemia incident to the pulmonary complication, before the condition of the patient or the course of the empyema warranted surgical intervention.

In many of these quickly fatal cases, pleural effusion of greater or less extent was doubtless present. It was early recognized by the medical staff that influenza toxemia with moderate pleural effusion should be treated by aspiration alone, and that early surgical interference of greater magnitude was apt to be followed by speedy death, whether as a result of the interference or despite it cannot be determined. In our surgical services, aspiration in the cyanotic stage was practiced in only two cases, but both proved fatal. It was evident that the cyanosis was not the result of pulmonary compression from pleural effusion, but was caused by the toxemia due to hemolysis. In two cases, aspiration of small quantities of turbid fluid was followed by recovery.

That later interference in cases of empyema offers a better possibility of recovery is manifest by our series of forty-six cases in which operation was performed by incision, with three deaths in the hospital and one two days after release. The average stay in the hospital before operation was 14 9/10 days. Some of the patients were not admitted until a day or two after the inception of the disease, and it is therefore fair to assume as an average that at least sixteen days elapsed before operation.

The average age of the patients was 21.6 years, somewhat below the average in military camps; fourteen of the patients were under draft age. It might be inferred, therefore, that the low mortality rate in our series of empyema cases might be attributable to the lower average age of our patients, in accordance with the well known fact that metapneumonic empyema is much more tractable to surgical interference in young subjects than in those of more advanced years. Curiously enough, however, there were three deaths among the fourteen patients under draft age, their ages being 15, 16 and 5 years, respectively. On the whole, the age incidence of the disease in the civil practice of our hospital did not differ materially from that which obtained in the military and camp hospitals.

It may well be claimed that the type of empyema which prevailed in the influenza epidemic among the civil population differed in severity from that observed in military hospitals. It is regrettable that our bacteriologic examinations were not complete; the streptococcus alone was found in eight cases; the pneumococcus in seven; both streptococcus and staphylococcus in nine; and both streptococcus and pneumococcus were found in six cases.

The treatment instituted in all cases of empyema was that of drainage with immediate occlusion of the pleural cavity, after the manner I have previously described.[1] Because of it, or despite it, the mortality rate was only 9 per cent.; although certainly in two, and possibly in three of our cases, there was a double empyema, necessitating bilateral drainage. In none of these three cases, however, did the disease affect the two sides at the same time; there was an interval of from two to three weeks between the operations.

The mortality rate after empyema operations is ordinarily not considered very high, and yet we find that "in 299 consecutive cases observed in so excellent an institution as the Mount Sinai Hospital, during the period of ten years, the mortality reached the formidable

* Read before the Southern Surgical Association, New Orleans, Dec. 16, 1919.

1. Ransohoff, Joseph: A Simple Method of Draining Empyema, J. A. M. A. 66: 1196 (April 15) 1916

figure of 28 per cent."[2] The low mortality rate in our series (9 per cent. in forty-six cases, including some bilateral) warrants the publication of this report, and justifies in a measure the assumption, or perhaps presumption, that the method of treatment bore some relation to the favorable results.

The operations were for the most part performed under local anesthesia (in twenty-nine of forty-six cases), and whenever the intercostal space was ample, rib resection was not resorted to. In twenty-six cases rib resection was performed, and in twenty, intercostal drainage without rib resection. An ordinary drainage tube was used, with collapsible tube attached with or without a shield. There is always some danger of the shield's coming away from the rubber tube. One of our patients, a lad of 16, still carries such a shield within the thoracic cavity. He left the hospital forty-one days after operation, without the slightest discharge; the roentgen ray shows the shield in close relation to the chest wall. In most cases a tube was used without a shield, being introduced through an opening just large enough to permit its introduction. The incision was made at the most dependent point in order to assure efficient drainage; but not so near the posterior median line as to interfere with the free passage of the pus into a receptacle. The pus was, of course, never allowed to escape rapidly, and I am quite sure that the fluttering of the mediastinum, which is such an element of danger in rapid evacuation of the pleural contents, was thus avoided. The pleural opening and the outer incision were at once made watertight by sutures.

In only one instance did death occur on the table, and this in one of the extremely toxic cases referred to above. Irrigation with the chlorinated soda or other solution was not practiced in our cases during the early postoperative stage, although from military hospitals came paeans in praise of this procedure. In the later stages if the discharge continued, we resorted to the use of the Carrel-Dakin method with good results. As a primary measure, while the patients are still very weak, I believe that there is not a little danger connected therewith. It should always be borne in mind that in a considerable number of cases of empyema, particularly those following the insidious creeping pneumonias of influenza, subpleural abscesses, often of diminutive proportions, are discovered; it is because of the rupture of one of these abscesses that the pleurisy in reality develops. Injection of an irritating solution into the pleural sac is, therefore, always associated with the danger of irrigating the bronchial tree, the only tree for which irrigation is contraindicated. In not a few instances in which irrigation was practiced later, the fluid was expectorated by the patient and further irrigation had to be avoided. In only one of our cases did we have the unusual complication of septic peritonitis:

Briefly, the case was that of a medical student in a training camp, who, because of dislike of the surroundings in the military hospital immediately after the armistice, was discharged as well, although he had been ill for ten days. He entered the hospital with an empyema, streptococcic in character, and was operated on forty-four days after the inception of the disease. Three weeks later there developed what seemed to be a perforative appendicitis, for which a laparotomy was done. Streptococcic peritonitis was found; the appendical peritoneum was injected, though not more than the rest of the peritoneum, with plastic lymph and seropurulent effusion. An open pulmonary fistula necessitated the discontinuance of the Carrel-Dakin treatment. The patient recovered and left the hospital with a small cavity 266 days after his admission. He has since been sent by the government to Roswell, N. M., for tuberculosis.

The average duration of stay in the hospital after institution of drainage was forty-three days; at the end of this period twenty-nine patients left with the wounds entirely or practically closed and the rest with considerable drainage. This seemingly high average is due to three patients, remaining 96, 203, and 266 days, respectively.

In order to check the end-results in our cases, the patients were followed through the social service. One man died shortly after leaving the hospital; his condition at the time was very serious and he was released against the advice of the physicians. Eight who recovered could not be traced by the social service. Of the rest, one is being attended at the surgical clinic for a slight pleural fistula, three have reentered the hospital for secondary operations, while the remaining patients have been found by the social service to be in good health and at work.

We may, therefore, state that our results with occlusion drainage have been satisfactory. The hospital mortality rate was 9 per cent., including fatal issue in one patient removed against advice. I am not aware that equally satisfactory results have been published from any of the large military hospitals. In comparing results, it would be unfair to charge our good results to the method of treatment alone, since in the large airy quarters of our new permanent hospital better results are obtainable for the relief of respiratory affections than in the cramped quarters of hastily constructed military camps. This factor, however, is not alone responsible for our favorable statistics, since it is evident that the mortality rate of 16.6 per cent. for influenza per se in the Cincinnati General Hospital is only a little less than the average in military camps. It is almost needless to say that in the after-treatment of our drainage cases the patient was quickly advised and instructed in the use of forced expirations by means of Woulfe bottles, and in such thoracic gymnastics as would aid in the expansion of the lung.

CONCLUSIONS

Finally, if I were permitted to interpret the experiences which we have had at the Cincinnati General Hospital with empyema during the period of the influenza epidemic, and with its treatment, I would crystallize them in the following conclusions:

1. Empyema complicating influenza is in itself not responsible for death; too early operative measures should be avoided and should be limited to simple aspiration.

2. Operation not earlier than the end of the second week gives the best results. Rib resection is indicated only when sufficient space is not at command without it.

3. General anesthesia is not necessary in most cases, but in our experience does not increase the mortality rate of the operation.

4. The old methods of drainage should be given up for some type of the occlusion method, by which the entrance of air into the pleural cavity is prevented and the egress of pus facilitated. A suction apparatus attached to the tube is deemed unnecessary.

5. Flushing of the cavity with Dakin or other solution is unnecessary, except when defervesence does not occur, which indicates that spontaneous sterilization of the cavity is not progressing normally.

2. Moschcowitz, A. V.: Surg., Gynec. & Obst. 28: 537 (April) 1919.

6. The small pneumothorax which sometimes remains after the healing of a cavity, as has been demonstrated by the roentgen ray, is negligible, since it disappears spontaneously in a short time.

Twenty of the operations were performed by myself, the remainder by various attending surgeons of the hospital, to whom I am greatly indebted for carrying out the suggestions which I believed essential to securing so low a mortality in the treatment of our empyema cases.

The fact that we were enabled to trace end-results in all but eight of our cases shows one of the many advantages of an efficient hospital social service.

THE TREATMENT OF MUCOUS COLITIS*

W. A. BASTEDO, M.D.
Assistant Professor of Clinical Medicine, Columbia University College of Physicians and Surgeons
NEW YORK

The name mucous colitis (myxomembranous colitis) stands for a poorly understood clinical entity, and I shall therefore preface my remarks by a brief review of what is implied in the condition as I understand it. It may be defined as a condition characterized by the formation in the large bowel of great quantities of abnormal mucus. It should not be termed "colica mucosa" or "mucous colic," for colic occurs in only a small proportion of the cases. The disease may occur at any period of life from infancy to old age, and contrary to the prevailing belief, is encountered in males quite commonly as well as in females. It is probably hereditary to some degree, as I have found it repeatedly in parent and child, when I have usually noted in the roentgenogram the presence in each of the same type of redundant or looped colon, often with ptosis.

Though mucous colitis is of frequent occurrence, yet it appears to be infrequently recognized. The importance of its recognition is evident if we realize that, although at times the condition of the bowel may be merely incidental to more important lesions, it is often most prominently associated with serious states of physical debility or of mental instability. I would not say that it is a cause of these, but it does strikingly increase their manifestations, and its cure is not infrequently accompanied by their disappearance.

In severe mucous colitis the three outstanding manifestations are: abdominal pain, intestinal putrefactive toxemia and neurotic manifestations. Whether the patients are classed as suffering from colitis, or from neurasthenia or psychoneurosis, or from autointoxication, the mucous colitis must be treated or the patient will not be relieved of the other manifestations.

Usually, the patients seek a physician, not because of the colitis, but rather for persistent constipation, abdominal pain or distress, lack of physical energy, obstinate or recurrent headache, failure of physical or intellectual vigor, mental depression or complete nervous breakdown. Though they may have noticed strings of mucus in the stools, the patients commonly do not mention this unless interrogated. Hence, in a patient showing nervousness, depression of spirit, and lack of the usual forcefulness, it is well to search for a possible mucous colitis.

* Read before the Alumni Association of the University of Buffalo Department of Medicine, June 21, 1919, and the Medical Society of Atlantic County, N. J., Nov. 14, 1919.

DIAGNOSIS

As there is no distinguishing factor other than the mucus, the diagnosis rests on: (1) the observation by the patient of the passage of mucus, either as strings accompanying the feces or as a complete mucous stool; (2) the finding of the characteristic mucus in a stool submitted; (3) the detection of the characteristic mucus after a test dose of castor oil or a test colon irrigation, or (4) the observation through a sigmoidoscope of a dry mucous membrane in the upper rectum to which are clinging the heavy, tenacious sheets of mucus. If mucous colitis is sought for only when there is colic, many of the most important cases will be overlooked.

Mucus.—This is tenacious and appears mostly in yellow, brown or sometimes black jelly-like masses, or in more or less desiccated plaques, strings, ropes, or scablike membranes. The strings may be many inches in length, and on being teased out in water prove to be casts of the bowel, or broad ribbons. Patients sometimes mistake them for intestinal worms. The mucus adheres with great tenacity to the wall of the bowel, so that when encountered postmortem it is removed with difficulty, even with forceps; von Noorden reports that he was unable to drive it off with a strong stream of water from a hydrant. Hence, it is not uncommon to find blood spots on the expelled mucus, as if it had been torn away like a scab. As a rule, the mucus bears only a few leukocytes and is without fibrin. In some of the persistent cases I have frequently noted about the mucus an odor that is entirely different from that of the stools, slightly suggestive of dead fish just thrown up on the beach and before they have become offensively putrefactive.

Besides mucus there are occasionally found quantities of blackish or brownish, gritty, irritating intestinal sand. Some authors report the frequent presence of blood in the stools (Mummery found it in 60 per cent. of cases), but after thousands of examinations I can report that this is not usual, and occurs mostly when the scablike membranes come away. It is regularly present in cancer cases, and frequently with polyposis; but in these cases the mucous colitis is not the important feature.

Pathology.—The changes are indefinite; the colon sometimes shows very slight alterations or even rarely no recognizable lesion, but usually the mucous membrane is more or less damaged. In some of the colons removed at operation the mucous membrane of the cecum and ascending colon has revealed a universally distributed area of inflammation, and the whole wall of this part of the intestine has shown atony, dilatation and poor nutrition. In some cases Keith has demonstrated absence of the normal nerve elements of Auerbach's plexus with consequent cecal and colonic stasis. The colon is often redundant or looped, and there is sometimes laxity of the abdominopelvic walls with ptosis of the transverse colon and of one or both flexures, with perhaps a movable cecum. In the persistently toxic cases, pyorrhea alveolaris and gastric achylia are not uncommon findings. Rarely cancer of the colon, polyposis, diverticulosis or some other localized lesion may underlie the condition. Not infrequently the descending colon is found in a spastic state.

Pain.—In a large proportion of the cases a certain amount of discomfort is manifested at some stage of the disease. It may range in intensity from nothing more than a little soreness to paroxysms of the most distressing colic; its location may be variable or con-

stant, and in the latter event it has not infrequently led to a futile operation for some supposedly serious abdominal or pelvic lesion. At times, the whole colon, or a part of it, is found to be tender. The colic is the direct result of the attempt by the bowel to expel long-retained and clinging mucus; persistence of the attacks may be taken as an indication that not all the mucus has been liberated. The mucus, acting as an irritant, induces spasmodic contraction of a portion of the colon, and the pain is due to tension in the distended portion above this. The spasms do not produce the painful manifestations, for, as Hurst has shown, bowel pain comes from distention, not from contraction. The pain ceases after the reestablishment of the peristaltic reflex with dilatation below and contraction above.

It is to be remembered that pain of significant degree is lacking in some of the cases, and in many is absent for considerable periods. Yet even during the painless periods the symptoms are more manifest when the mucus is retained, and become less so following its expulsion.

Constipation.—In some cases several stools a day are passed, yet constipation exists, for the cecal cesspool seems never to be emptied. Constipation is not necessarily a condition of infrequent defecation, but is rather one of insufficient or retarded defecation (Hurst); colon irrigations have shown that there may be considerable cecal retention of putrefactive contents, though the bowels seem freely open.

Intestinal Putrefactive Toxemia. — Without doubt, the neurotic manifestations and the condition of mental and physical fatigability may in many instances be traced directly to a chronic toxemia caused by the absorption of harmful chemical substances formed in the bowel. And it is probable not only that the constipated bowel of mucous colitis favors bacterial proteolysis, but also that the damaged mucous membrane promotes the absorption of deleterious material. The subject of intestinal toxemia is too large to be dealt with here; it is important to remember, however, that quite often the treatment of mucous colitis involves extensive consideration of the associated toxemia. There may be mucous colitis without putrefaction of the colon contents, or there may be putrefaction of the contents without colitis, but the two conditions are often associated.

COMPLICATIONS

Occasionally we encounter bronchial asthma, urticaria, angioneurotic edema, or erythema, complications which suggest either protein sensitization as a result of absorption of minute amounts of unchanged protein through the diseased bowel wall, or the possible absorption of some chemical formed in the bowel. For instance, histamin is at times a product of intestinal putrefaction, and when absorbed in sufficient amounts is capable of producing asthma, urticaria and angioneurotic edema.

A phenomenon, usually associated with gastric atony and observed by me in a few cases, is tetany.

Nervous or Psychic Manifestations.—Many of these patients, though not by any means all, have a variety of nervous symptoms. These may range all the way from a simple impressionability and hypersensitiveness in insignificant matters to severe nervous breakdown or such mental instability, lack of self-control and irresponsibility of action as to bring the patient to the borderline of insanity. Indeed, it is often quite impossible to decide whether the mucous colitis or the psychoneurosis is the primary condition. Conspicuous in many are lack of self-confidence, absence of initiative, autosuggestibility, spells of discouragement, and fatigability, both mental and physical. Interesting are the phobias, such as the dread of visitors, of riding in a train, and of being alone at home or in the city streets. The colitis may begin with, or be aggravated by, a nervous strain, such as worry over money matters, over a wayward child, over a husband who drinks or over some skeleton in the closet, or by the assumption of social or business responsibilities that seem utterly beyond the patient's powers.

In a person of dominant type this onset of inability to cope with the daily responsibilities makes for discouragement, mental depression and fits of dejection. I have known strong men, physicians, lawyers, heads of great business, to be overcome by their feelings of helplessness and to burst into tears in my office. I have seen the president of a great concern weep while saying, "Doctor, I cannot face my directors at tomorrow's meeting." I have heard a medical school professor cry, "It's of no use my lecturing any more, I cannot hold the boys, I have lost my power." One patient, a strong man who had repeatedly put up a 100 pound dumb-bell as many as nine times, in the most doleful manner deplored the fact that he could not then get it up once. And each of these men, as the mucous colitis yielded to treatment, regained his old dominance and power. Sometimes such patients have slipped back again, and have been found to have a new access of the colitis.

What is the relation of the bowel trouble to the nervous system? Perhaps in some of the cases there is the same underlying cause for both the intestinal and the nervous symptoms. Among neurologists it is customary, however, to consider that neurasthenia or a psychoneurosis requires two conditions for its production, namely, an underlying mental deficiency, and a provocative factor the most pronounced of which is fatigue. Yet perhaps the underlying mental deficiency is not such an absolute requirement, for Féré says that "fatigue often provokes ideas of negation, persecution and disparagement," whereas Dubois remarks that "exaggerated fatigue may induce neurasthenic states in the best balanced individual." If, then, fatigue is the great provocative factor, may it not be that mucous colitis is one of the important producers of fatigue, either of itself or through the production of toxic substances? Certainly fatigue and fatigability are among the most striking accompaniments of mucous colitis, the patients being readily brought to a state of exhaustion by serious reading, by visitors, by responsibilities of any kind, or by physical exertion. In fact, they may feel fatigued even though they do nothing. So it is my belief that one of the important causes of these neurasthenic or psychoneurotic conditions is the fatigue or the fatigability which accompanies a mucous colitis.

Furthermore, as mucous colitis may induce fatigue or fatigability, so fatigue from other causes may increase the colitis. Therefore, one of my rules for such patients is "Never get tired, physically, mentally or emotionally."

PROGNOSIS

I have seen many patients in serious nervous states, who, after the cure of the bowel trouble, have ceased to be more than normally nervous; and because of the possibility or probability of such a happy result, I lay stress on the treatment of the bowel. I believe that

in a large number of these cases a cure is possible, but usually only after persistent treatment for a long time. And I believe that continued or repeated severity in the symptoms is often the result of neglect by the patient or the physician. The classification of the patient as a "neurasthenic" makes the outlook hopeless, for the physician then does nothing. The height of absurdity was reached by a speaker at a recent meeting of the Pennsylvania State Medical Association, when he said that "the prognosis is absolutely hopeless, the treatment is nil, and the sole prophylaxis would have been to sterilize the grandfather."

TREATMENT

In determining the method of treatment, two facts stand out prominently: (1) that retained mucus is harmful mucus, and (2) that the cure requires a long course of treatment. I am wont to tell my patients that a year is the minimum time in which a cure can be effected. The treatment is directed at the prevention of the accumulation of mucus, and at the removal of the associated conditions, such as colic, constipation, intestinal toxemia, disturbed gastric conditions, bad mental states and depressed general health. We shall take up, first, the treatment of the condition when there is no colic, or after the attacks of colic, and then the treatment of attacks of colic.

I. *Treatment in Cases Without Colic or After the Attacks of Colic.* — This is designed (*a*) to prevent accumulation of mucus; (*b*) to overcome constipation and intestinal toxemia, and (*c*) to improve the nervous and general health.

(*a*) To overcome accumulation of mucus, one of the best measures is a weekly purge with castor oil, or perhaps calomel and salts, or a purgative blue mass or calomel pill. This may be supplemented by colon irrigations every day or two for a week, and then every three or four days for two to several weeks longer, or once a week for longer periods of time. For this colonic lavage the patient should be on the left side for the first gallon of water in order to clean out the lower colon, and then on the back for the rest of the irrigation in order to enable the fluid to reach the cecum. Sometime preceding the lavage the bowels should be emptied, if necessary by an enema, in order to avoid carrying feces back to the cecum and to avoid starting up by the lavage the defecation reflexes which will prevent the passage of the water into the upper colon. The liquid used should be rather hot, and I regularly employ tap water, though occasionally sodium bicarbonate solution, a dram to the pint (sodium bicarbonate is changed to carbonate by heat). Physiologic sodium chlorid solution is not employed, because it makes the patient thirsty. The amount required is usually from 12 to 24 quarts, and it should be given slowly, with the reservoir about two feet above the patient. Frequently the putrefactive cecal contents are reached only after 4 or 5 gallons have been employed. If the irrigation does not bring out the mucus, this may be expelled one or several hours later. I always consider an irrigation a failure if no water is retained to be evacuated after the irrigation is finished, or if the water returns clear throughout; obviously, in such cases the liquid has failed to get past the spastic descending colon or sigmoid. Recently transduodenal lavage with 4 per cent. sodium sulphate solution has been employed with reported success. I have not used it for this purpose.

It is to be noted that when the mucus is readily discharged from the bowel the patient is safe; danger threatens when the mucus stays in and is not readily loosened and expelled. Many of the patients learn this fact, and when the mucus suddenly ceases to appear they will use every endeavor to clear out the bowel in order to avoid a renewal of their symptoms. Sometimes a cathartic taken the same night as an irrigation that seems unsuccessful may bring away great quantities of mucus that has apparently been softened by the irrigation water.

(*b*) The treatment of the constipation and intestinal toxemia is that of any form of constipation. There should be insistence on regularity of bowel movements, but restriction of the use of enemas and colon irrigations. I have seen patients who had come to think that any abnormal sensation could be removed only by enema or irrigation, and who had acquired the habit of using these several times a day. The diet must be ample, for in case of lack of food residue it will be necessary to keep increasing the laxatives. A diet containing bran, fruits and coarse vegetables may be effective, but in the beginning this is usually more harmful to the bowel than a mild tonic laxative. Exercise does not help to overcome constipation, except as it may result in increased appetite. There have been many athletes among my constipated patients. If there is ptosis of the abdominal viscera with laxity of the abdominopelvic walls (and these are exceedingly common), the patient should wear an inelastic binder for mechanical support, and should be put on exercise to help to strengthen the abdominal muscles. The patient should drink freely of water.

The best of laxatives is usually a softening and bulk-producing agent, such as liquid petrolatum, cascara agar, phenolphthalein agar, or small doses of milk of magnesia or salts. But these are not always effective and frequently must be supplemented by one of the tonic laxatives, cascara, rhubarb, aloes, senna, or senna with sulphur in the form of compound licorice powder. A measure of occasional value is the retention in the rectum over night of from 4 to 16 ounces of olive or cottonseed oil. In these chronic cases the drastic cathartics may be successful in getting out mucus, but should be employed only seldom. If such measures as these do not overcome the stasis and the toxemia, the question of surgery should be seriously considered.

Hemorrhoids are a bad complication, as they prevent the use of irrigations, enemas or such strong cathartics as castor oil. They may be treated by the nightly instillation into the rectum, by means of a soft rubber ear syringe, of 60 c.c. of warm olive or cottonseed oil to be retained over night.

(*c*) Improvement in the nervous and general health. The diet may have to be modified according to the conditions of the stomach and upper bowel (achylia, hyperchlorhydria, gastric atony, etc.), and to overlook these is to fail in the treatment; but, in general, at the outset the diet should be of the bland lactofarinaceous type. Later there may be a gradual transition to a coarser type with sufficient vegetable and fruit. But there should be at all times limitation in the amount of readily putrefactive proteins, as found in animal flesh, eggs, beans, peas and lentils, these being replaced, if possible, by much milk in the dietary. Of these proteins, in my experience, those of chicken and egg are most prone to produce putrefaction; and peas and beans are more harmful when dried than when

green. The coarse diet at the outset, as advocated by von Noorden, is likely to give rise to gastric disturbances, particularly flatulence, and it seems quite rational to assume that an excessive quantity of coarse, indigestible, fermenting food will do more harm to some of these damaged colons than any mild laxative drug. But in all cases the diet should be ample and its quantity insisted on, for these patients readily acquire the habit of undereating because of a suspicion that this, that, or the other article of food does not agree with them.

If there is any definite surgical condition in the abdomen, such as appendicitis, cholelithiasis, adhesions, bands or pelvic disturbances, it should be overcome. In persistent cases, some surgeons operate on the bowel itself: (1) For cleansing and medicating the colon; as by appendicostomy or cecostomy, for the purpose of permitting daily irrigations through the whole colon. But these must be continued for from six months to two years (Mummery), and the procedure is not, in my opinion, a valuable one. (2) For overcoming stasis or for the removal of diseased portions of the bowel, by plication of the cecum, ileosigmoidostomy, cecosigmoidostomy, partial colectomy and complete colectomy. The indications for radical surgery and the choice of surgical procedure I shall not attempt to discuss here.

Occupation, recreation and rest in proper proportion should be advised. The patients must not be allowed to coddle themselves. They should get up before breakfast and not lie in bed in the morning; they should recline when possible, at a later period in the day, perhaps best for one or two hours after the midday meal, and they should retire early. They should give less time than usual to social or business responsibilities or give these up entirely, and they should not receive too many visitors. They should avoid adding unnecessary responsibilities to the necessary ones; for example, in a schoolteacher, the taking of extra college courses on Saturday, and on Sunday the teaching of Sunday School; in a business man the devotion of his evenings to club committees or to study. They should not undertake reading of too serious a character. It is of paramount importance that, for the time being, patients give up their ambitions, whether social or otherwise. They must, however, have some recreation, preferably golf, horseback riding, bathing or other outdoor exercise, or attendance at games in the open air.

The great rule is that patients must never get unduly fatigued either physically, mentally or emotionally. I explain to them at the outset that they are temporarily handicapped, and therefore cannot do as much as normal people. On the other hand, I do not allow them to shirk all responsibility, but try to get them to do as much as lies well within their powers, encouraging them to attempt more and more till their full powers are restored. Some women with money take matters too easily and are prone to become chronic invalids, self-centered, hypochondriac, "hipped" on themselves, and leading useless lives. They go from one physician to another, or to sanatoriums, read numerous books about their disease and its treatment, and refuse to permit their ailment to be forgotten for a moment. These patients should be induced to avoid medical books and constant examination of their stools, and in every way they should be encouraged to use their faculties and their muscles in a sensible manner, neither too much nor too little. A wise nurse is a great help in managing the daily life of the female indolent patient.

General hygienic measures, such as cold spinal douches, or alternating cold and hot douches, cold morning baths, cold rubbings up and down the spine, calisthenics, and general massage, with very gentle abdominal massage, are of distinct advantage. A help in the treatment is a change of scene to get away from oversolicitous or nagging friends, or from the wear and tear of home or business. He was a physician of deep perception who replied to the inquiries of the overanxious wife: "Madam, your husband needs a rest. One of you must take a vacation." A visit to one of the spas may furnish rest and recreation away from business and friends and amid pleasant surroundings, with the advantages of hydrotherapy and perhaps the daily ingestion of laxative waters. It is well to remember that nervous people do not sleep or rest well in high, mountainous regions.

The use of tobacco and alcohol, and usually also of coffee, should be prohibited.

Bromids, in doses of from 1 to 2 gm. (15 to 30 grains) once or twice a day are indicated for a short time during the most nervous periods.

In severe cases the patient should be put to bed in charge of a competent nurse. It is bad practice, because of the effect of loneliness, to keep the patient in bed without an attendant.

II. *Treatment of Attacks of Colic.*—This resolves itself into measures (1) to relieve pain and neurotic symptoms, and (2) to promote evacuation of the mucus. These patients feel pain keenly and may writhe in the attacks of colic, and they may even throw themselves out of bed.

1. The pain and neurotic symptoms may be relieved by rest in bed, a large dose of bromid, 2 to 4 gm. (½ to 1 dram) by mouth, a hypodermic of atropin sulphate, 0.001 gm. (1/65 grain), with codein phosphate, 0.03 gm. (½ grain), and hot applications to the abdomen in the form of a hot water bag, electric pad, poultice or stupe, or a hot bath. On account of habit formation in neurotic subjects, morphin should not ordinarily be employed; but when the recurrence is not frequent and the attack is very severe, morphin may be the best remedy. To relieve the colic the best single drug is atropin; it is of no use for the cure of the colitis.

2. To promote the evacuation of mucus one may use (*a*) a large dose of castor oil by mouth. This acts by making vigorous peristalsis, which, coming from above the mucus, tends to separate this from above downward and to carry it onward, while at the same time it abolishes the spasmodic obstruction through the peristaltic reflex which produces dilatation below and contraction above. (*b*) Colon irrigations with tap water or a solution of sodium bicarbonate, a dram to the pint, should be given warm and at low pressure (2 feet). On account of the spasticity of the descending colon it may be impossible to get the liquid up into the colon at first, but persistence and gentleness may result in success. Irritants, such as silver nitrate, should not be employed in the already highly sensitive colon.

Often the combination of castor oil by mouth, codein and atropin hypodermically, and colonic lavage will be followed by relief and sleep. But if the attack is very severe and persistent, and especially if the irrigation is unsuccessful, it is a good plan to put the patient in the knee-chest position and to inject slowly into the

colon from one-half to one pint of warm olive oil or cottonseed oil, to be retained over night or as long as possible, a towel being placed over the anus and a rubber sheet on the bed as protection in case of leakage. This injection is often followed by the passage, a few hours later, of the oil and an abundance of mucus, with disappearance of the colic and no recurrence for a long time, if at all.

57 West Fifty-Eighth Street.

METHODS OF ADMINISTERING SALINE AND OTHER SOLUTIONS TO INFANTS AND CHILDREN *

JOHN AIKMAN, M.D.
ROCHESTER, N. Y

The administration of physiologic sodium chlorid and other solutions to replace fluids lost from the body is a valuable method of carrying certain cases over critical periods. Loss of fluid is more serious in children because of the vomiting that so often accompanies grave illness, and because of the difficulty of giving water by mouth. A relative acidosis may easily result, which in a few hours may greatly increase the gravity of the attack. The reduction of fluid is marked in cases with a history of numerous watery stools, characterized by a rapid loss of weight, hollow eyes, and drawn, pinched expression of the facies. It is my object here to present an outline of the several methods of administering fluids, and to discuss their relative merits.

The method of greatest service is that which will permit the introduction and retention of large amounts of fluid with the greatest ease to the operator and with the least danger and discomfort to the patient.

OUTLINE OF METHODS

1. *Administration of Fluid by Mouth.*—If a child can take and retain sufficient quantities by mouth, it is obvious that no other method is necessary, except for special indications, such as a great loss of blood as the result of hemorrhage.

2. *Rectal Administration.* — The introduction of fluids by rectum, either through enemas, return flow tubes, or by the drip method has been employed for some years with satisfactory results. If the fluid is properly introduced, there is no doubt that considerable absorption takes place. The method is objectionable in children, because of factors not encountered in adults. Unless the child is prostrated, he is apt to be restless, making the retention of the tubes very difficult. It takes considerable time to introduce the necessary amount of fluid, and the child is more or less disturbed thereby, which interferes with his rest. The fluid is apt to be promptly expelled, especially in diarrhea, and there is always some doubt as to the amount which has been absorbed. However, a great variety of fluids may be given by this method, and there is no special danger attached to the procedure.

3. *Hypodermoclysis.*—In children, especially very small children, small amounts of fluid can be quickly given by this method through a Luer syringe and an intravenous needle, or it can be given by gravity. We have often given fluid in several different areas at the same time. The procedure is very painful and causes restlessness, especially in older children. The amount that can be given is quite limited. While absorption is slow it is sure. It is safest to use physiologic sodium chlorid solution, although I once used a fresh solution of 1 per cent. sodium bicarbonate in two children over 5 years of age who were desperately ill with ileocolitis accompanied by vomiting and very frequent stools. No trouble resulted from repeated injection of fluid, and both children made an uneventful recovery; there is always danger that solutions of sodium bicarbonate will change in character and cause a slough. These cases were seen several years ago; under similar conditions today I would give physiologic sodium chlorid solution by another method that would better answer the indications and cause much less pain.

4. *Intravenous Injection.*—It is not necessary to mention all the fluids that may be given by this method. It is estimated that an amount equal to one sixtieth of the body weight can be introduced through the veins, but much more can be used if the loss of fluid has been extreme. Excretion of the fluid begins at once; if prolonged results are to be obtained, it is often necessary to give repeated infusions. The limited amount that may be given and the difficulty of entering the vein of a small child are the chief objections to this method. With proper technic the method is safe, but it will be acknowledged by any one who has tried it that it is difficult to make an intravenous injection on a small, active infant, especially into the veins at the elbow. In order to overcome this difficulty, other methods have been devised.

(*a*) Intrasinus Injection: In an infant with open fontanel this offers the best means of introducing fluid into the blood stream. The method was first studied by Tobler and was introduced in this country only a few years ago by Helmholz. By this technic, the fluid can be injected through the anterior fontanel directly into the superior longitudinal sinus. As the sinus lies from 2 to 5 millimeters from the skin, it can be easily entered if the fontanel is not closed; at the posterior angle of the fontanel the sinus is wider and deeper. The child is held prone on the table by an assistant, while the needle is introduced in the median line just in front of the posterior angle. If the child is quiet, it is very easy to withdraw blood or to introduce fluid; by means of a Luer syringe, rubber tubing and a three-way cock any amount of fluid can be given without removing the syringe. The needle should be short, and the long point usually found on intravenous needles should be filed away. If a glass syringe is attached before introduction of the needle, constant suction may be maintained for the purpose of discerning when the sinus is entered. If negative pressure is not produced, blood will not flow so quickly, while the operator may push the needle through the inferior wall of the sinus, blood flowing only when the needle is withdrawn. This accident may also be avoided if the needle be introduced at an angle, directed backward.

Any solution adapted to intravenous administration can be given in this way; with physiologic sodium chlorid, glucose and other mild solutions there is practically no danger. It is also an excellent method for transfusion of citrated whole blood in infants.

In cases with a closed fontanel, the external jugular vein can often be used successfully.

(*b*) Injection in the Femoral Vein: This method is practiced in this city by several physicians working

* Read before the Rochester Pathological Society, Nov. 19, 1919.

in the venereal clinics and has produced satisfactory results, especially in children. Arsphenamin may be given in this way to very small infants, and although repeated injections have been made on the same child, no serious complications and no cases of thrombosis have been reported.

While it is possible that the method was previously in use by others, it was introduced in this city some years ago by Dr. E. T. Wentworth, who elaborated the following technic, which has since been followed by himself and others:

If the injection is to be made into the right femoral vein, the operator should stand to the right side of the patient, and with the fingers of the left hand palpate the femoral artery as it passes under Poupart's ligament midway between the anterior superior spine of the ilium and the symphysis pubis. The fingers cover the artery while a medium-sized intravenous needle is introduced into the vein just to the left of the finger tips. The needle may be pushed straight in or at an angle directed upward and backward. A syringe is attached to the needle, and constant suction is maintained until a flow of blood shows that the vein has been entered; the syringe can then be removed and the fluid introduced by gravity. If a Luer-Kaufman syringe with a glass offset is used, the solution can be introduced immediately through the syringe itself.

By this method the intravenous administration to children of any age is greatly simplified; if arsphenamin can be given with so little danger, then certainly saline, glucose and other mild solutions can safely be used.

These modifications make the intravenous introduction of fluid comparatively easy; the child is disturbed only little, and a definite amount of solution may be given quickly, although the amount that can be given at one time is limited.

5. *Intraperitoneal Injection.*—This was first used in St. Bartholomew's Hospital and was introduced in this country by Howland. Blackfan and Maxcy have reported the successful employment of this method.

The instruments needed are a medium-sized intravenous needle, an infusion bottle and rubber tubing. The skin of the abdomen is carefully sterilized with tincture of iodin and alcohol. The skin and subcutaneous tissue are picked up between the thumb and forefinger, and the needle is introduced in an upward direction through the abdominal wall in the midline just below the umbilicus. Care must be taken to avoid piercing a distended bladder, and while there is also danger of puncturing the intestine, no record of this accident has come to my attention. In cases in which necropsy was performed there was found a small hemorrhagic area in the abdominal wall and peritoneum, but no injury of serious importance.

When the needle has passed into the peritoneal cavity, the solution is introduced by gravity. At first I used a Luer syringe; but later I found it much easier to employ the infusion bottle. I have always used warm physiologic sodium chlorid solution, of which from 100 to 250 c.c., in older children from 300 to 400 c.c., may be given every twelve to twenty-four hours, in fact, if no untoward signs develop, fluid may be given until the abdomen becomes slightly distended. However, the injection must be made slowly in all cases, and overdistention of the abdomen must be avoided. After the operation, the abdomen is covered with a sterile dressing. It has been shown by the phenolsulphonephthalein test and by necropsy that from 40 to 60 per cent. of the fluid is absorbed in one hour. The remaining solution acts as a reserve, the gradual absorption of which explains the more protracted improvement as compared to results obtained by other methods.

We had used the other methods at the Infants Summer Hospital, but this year we chose the intraperitoneal route for children who had lost large amounts of fluid by vomiting and diarrhea. It proved superior to all other methods because of the ease and rapidity of administration, the volume of fluid that can be given at one time, and the certainty that no fluid will be lost. The results from this treatment are remarkable; and although it has been used only in the most serious cases, the results have been most satisfactory.

The following case is reported to show that repeated injections may be made without injury to the intestine:

Rita C., aged 1 year, weighing 11¼ pounds, was admitted to the Infants Summer Hospital, August 18, with a history of vomiting and diarrhea for the previous ten days. She was born at eight months, the delivery being instrumental; the birth weight was 7¾ pounds. The child had been breast fed until the present illness when she was put on condensed milk.

On admission the child had a wasted appearance and was semiconscious. The physical examination revealed slight stomatitis, coldness of the extremities, weakness, and great loss of water from the tissues; the temperature was 101.6 F.; the pulse, 148. Stimulating treatment was at once instituted. On the first day she retained one-half ounce of rice water, vomiting all other fluids; on the second day seven stools were passed and very little fluid was retained. The feces contained blood and mucus. There was no improvement in the bowel condition on the third day, and the loss of fluid was producing great prostration. Since no results followed administration of fluid by rectum or the use of stimulants hypodermically, 100 c.c. of physiologic sodium chlorid solution were injected intraperitoneally, with favorable results. It was not until the thirty-fifth day of the disease that the child passed normal stools; even then the bowel condition was far from satisfactory. During this time there had been an average of seven mucous and bloody stools daily; in fact, many of the movements were thick mucus stained with blood. For days in succession she would take less than 1 ounce at a feeding, and vomited a great part of all fluid ingested. She failed to such an extent that it did not seem possible that she could live another day. The temperature ranged from 99 to 102.6, most of the time above 101 F. In all, ten injections of saline solution were made through the abdominal wall, ranging in quantity from 100 to 250 c.c., six being over 200 c.c.

The fluid carried the child over the critical days until the bowel condition began to improve. We had never before seen a child recover after so long and severe an illness. The recovery is evidence of the value of this method of treatment and of the safety with which repeated injections may be made through the abdominal wall.

SUMMARY

1. The administration of saline and other solutions is frequently of great value in carrying children over critical periods of illness, especially in diarrheas with marked loss of fluid.

2. When it is impossible to give fluid by mouth or rectum, intravenous or intra-abdominal injections are indicated. If puncture of the superficial veins proves difficult, the superior longitudinal sinus or the femoral vein may be selected.

184 Alexander Street.

Sanitation in Universities.—Environment plays an important rôle in disease causation and prevention. This is especially true of communicable diseases. It is most important to know and to regulate, so far as possible, the conditions under which students live, the food and water ingested, the air breathed, etc. The division of sanitation is therefore no minor part of a university health service, and ample provisions must be made for this branch of the work. The environment of the student, both on and off the campus, must be regulated and made as sanitary as possible.—John Sundwall, *Pub. Health Rep.*, Nov. 7, 1919.

Clinical Notes, Suggestions, and New Instruments

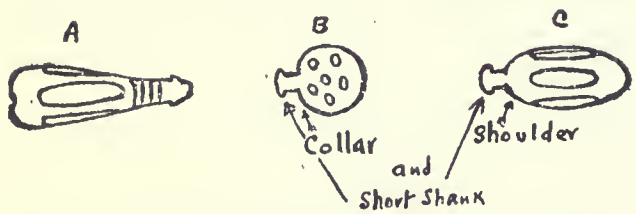
A NEW METAL TIP POSSESSING OBVIOUS ADVANTAGES FOR USE ON GASTRIC OR DUODENAL TUBES

B. B. VINCENT LYON, A.B., M.D., PHILADELPHIA
Chief of Clinic, Gastro-Enterological Department, Jefferson Hospital; Attending Physician, Methodist Episcopal Hospital

It is with reluctance that I am calling attention to a new tip for duodenal tubes because there are many excellent ones already on the market; but I feel sure that it will interest those members of the profession who are doing gastroduodenal work because it possesses certain definite advantages over any other type with which I am familiar. Perhaps I might better say that it does away with certain disadvantages common to nearly all others.

All duodenal tubes are swallowed rather easily by most patients, but many patients encounter temporary difficulty when the tub is withdrawn from the duodenal zone to the stomach, and more especially difficulty when it passes the glottis on its upward journey, at which time cooperative swallowing control is required on the part of the patient. This applies particularly to all tips of the olive or ball type on account of the shoulder or collar on the proximal side of the tip. They go down easily, but they are much more likely to "hang" at the glottis coming up.

To obviate this difficulty I have been trying out, during the past year, a tip quite similar to that designed by Rehfuss,



Three styles of tip for duodenal tubes: *A*, new style tip with no shoulder or collar and with a long and serrated shank; *B*, ball type tip with objectionable collar and short shank, and *C*, olive type tip with objectionable collar and short shank.

but of elongated pear shape instead of olive shape. The tip is ground down to a tapering proximal end of the same caliber as that of the rubber tubing. Therefore, in withdrawing this tip, all obstruction at the glottis is done away with. All patients, especially those well "tube broken" to many varieties of tips, are unanimously in favor of this one; and after all it is the patient who can furnish the best endorsement in such a matter.

The second advantage of this tip lies in the fact that its shank is slightly elongated and slightly serrated so that the rubber tubing, even when old, will stick closely to this tip under a stout pull without the necessity of its being tied and knotted with a silk thread. The latter point seems to me a very objectionable feature; for these knots instead of getting softer after boiling become distinctly harder, and I feel sure in many cases they traumatize the gastric or duodenal mucosa, especially in the latter zone where the tube may be left in situ for many days for feeding purposes, because the duodenal lumen is comparatively small and the peristaltic action vigorous.

The only duodenal tube with which I am familiar that does not possess the disadvantages I have just stated is the one designed by Jutte. This tube, I believe, is the easiest to pass to the stomach or duodenum, and I still continue to use it very frequently for such treatment as transduodenal lavage; but I do not like it for duodenal feeding because the perforations at the tip of the rubber tubing are so small that they frequently become obstinately plugged with the feeding mixtures. And for the same reason, I have discarded the use of this tube in diagnosis on account of the difficulty of aspirating many catarrhal residuums: and especially have I had difficulty in draining the biliary tract on account of the heavy viscosity of many biles.

Another point worth mentioning in gastroduodenal work is that the tube should be fitted with a glass window situated from about 8 to 12 inches from the proximal end, instead of with the metal connections in common use, so that the aspirated material may be inspected before it reaches the aspirating syringe, vacuum bottle or collecting vessel. By this means, material of special interest may be segregated for special study. This is of paramount importance in gallbladder and gallduct diagnosis.[1] A medicine dropper answers very well if the capillary tip is of the same caliber as that of the rubber tubing, or larger; or special small connecting glass tubes may be obtained from any physicians' supply house.

These tips may be obtained through the Physicians' Supply Company, Sixteenth and Sansom streets, Philadelphia.

1828 Pine Street.

CAUSTIC BURN OF THE EYE FROM INDELIBLE INK OR LEAD *

WILLIAM H. ELMER, A.B., M.D., ROCKFORD, ILL.

Though injuries to the eye from the introduction of indelible ink or indelible lead are not very rare, the recorded cases have not taken on the aspect of a caustic burn. Therefore this case is presented:

REPORT OF CASE

Oct. 13, 1919, Miss F. L., aged 20, waitress, complained of pain in her left eye, and said that some ink had entered it twenty-four hours before. She was unable to state how this had happened; she realized that something was wrong only by the symptoms she had suffered, and knew it was ink by the appearance of the eye.

Examination revealed R. V. 20/20, L. V. 20/30, tension 0, both eyes. The left lower lid was slightly swollen, and the palpebral and bulbar conjunctiva of the lower fornix was congested, chemotic, and stained an intense purple, the color of the common indelible pencil lead. The stain increased in intensity downward, and among the tarsal folds was a clean cut, almost black ulcer, as if a fragment of the lead had rested there and exerted its effect strongly at one point. With a probe, it was ascertained that the ulcer was quite deep, almost penetrating to the infra-orbital margin. Almost the entire conjunctival surface beneath the lower lid stained with fluorescein. The upper lid and underlying conjunctiva were negative. There was slight staining of the lower margin of the cornea; the iris was clear, and the pupil of moderate size, but it responded rather sluggishly to light. Examination of the media and fundus detected nothing further.

The eye was irrigated thoroughly with sterile water till the waste showed no color, and then as much as possible of some black granular matter on the ulcer was removed with wet applicators. Atropin, 1 per cent., and argyrol, 20 per cent., were used; and after the conjunctival sac had been filled with sterile petrolatum, a patch was applied and the patient was sent to the hospital for further attention. Petrolatum was used in the eye every two hours for the next day, at the end of which period, iritis was found to be setting in. Atropin was started immediately and used every four hours next day, with the petrolatum continued at two hour intervals. On the following day the pupil was well dilated; and the petrolatum having been discontinued for a short time, fluorescein showed epithelization to be taking place slowly; but the patient was complaining of pain over the left cheek bone, and there was intense tenderness over the left infra-orbital margin, and some swelling and redness. Nasal examination disclosed no indications of maxillary sinusitis, and further investigation by means of the roentgen ray was refused. Dry heat to the painful region was ordered, and atropin, argyrol and petrolatum were used three times daily. Slight adhesions that were forming were broken up with a

1. Lyon, B. B. V.: Diagnosis and Treatment of Diseases of the Gallbladder and Biliary Ducts: Preliminary Report on a New Method, J. A. M. A. 73:980 (Sept. 27) 1919.

* From the "Johnson Clinic."

probe. On the third day epithelization was complete except for the ulcer and a slight area around it, the pupil remained dilated, congestion was subsiding, and the pain and swelling over the cheek had improved. On the fifth day, there was no staining with fluorescein, congestion was slight, the purple stain was disappearing, and the complicating symptoms had vanished, whereupon the patient was discharged, to report at the office next day. The appearance at this visit was almost normal, the dilated pupil, slight congestion, and purple discoloration alone remaining, so she was ordered to use a boric acid eye-wash and argyrol, 20 per cent., once daily, and to report again a week later. When last seen, October 25, the eye appeared quite normal with 20/20 vision in each eye. A small scar was visible at the site of the ulcer, but there was no deformity from cicatricial contraction.

COMMENT

How this caustic substance could have entered the eye was not ascertained. Cosmetics for eyebrow and lid margin use might have been the source (and the patient was strangely reticent about the whole affair), but such accidents have been known to occur from pencil lead, though the effects have not been as violent as in this case. A case is quoted in a personal communication to me as having occurred from this source, the same purple stain having resulted, but with no ill effects and with complete recovery in twenty-four hours after use of 1:3,000 mercuric chlorid ointment.

The complicating pain and tenderness over the infra-orbital margin seem to me to have been due to a moderately severe periostitis from penetration of the irritant through the tissues.

DEMONSTRATION OF TUBERCLE BACILLI IN THE SPINAL CORD OF A PATIENT SUFFERING FROM TUBERCULOUS MENINGITIS *

HERMAN L. KRETSCHMER, M.D., CHICAGO

Urologist, Presbyterian Hospital; Genito-Urinary Surgeon, Alexian Brothers Hospital, and Assistant Professor of Surgery, Rush Medical College

REPORT OF CASE

History.—J. F. K., a private, aged 19, admitted to the medical ward of U. S. Army Debarkation Hospital No. 5, Feb. 2, 1919, stated that while on the transport that brought him back to this country from overseas he had an acute attack of bronchitis, which was associated with severe headache, and pains in the chest, back and bones. A few days prior to his admission to the hospital he had suffered considerably from gastric distress.

Physical Examination.—The patient appeared very restless and nervous, and seemed excitable. The head, neck and scalp were negative. The pupils were equal and reacted to light and accommodation. There was no increased intra-ocular tension and no rigidity of the neck.

Examination of the lungs disclosed a small area of impaired resonance at the base of the lower lobe of the left lung, posteriorly. At the end of inspiration, a few fine subcrepitant râles were heard. There was a small area of bronchophony. Examination of the heart was negative.

The clinical diagnosis made at this time was a left bronchopneumonia following influenza.

Clinical Course.—From the day of admission until February 4, there was no change in the patient's condition. February 4, he complained of slight pains in the back of the head.

Urinalysis made, February 3, revealed a specific gravity of 1.030, some albumin, but no sugar or casts. A blood examination made on the same day revealed 12,200 leukocytes.

February 5, the patient still complained of headache, and examination disclosed the presence of a slight amount of rigidity of the neck. As a result of this examination, a tentative diagnosis of tuberculous meningitis was made, and a lumbar puncture was immediately performed. The fluid withdrawn was slightly turbid. After the lumbar puncture, the headache was relieved.

Examination of the cerebrospinal fluid, February 5, gave a cell count of 222. Smears failed to show the presence of organisms, and the culture remained sterile. The Wassermann reaction of the spinal fluid was negative, and no tubercle bacilli were found in the smears. Examination of the blood disclosed 9,200 leukocytes.

February 7, a second lumbar puncture was performed. This time the fluid spurted from the needle and appeared to be under pressure. Thirty c.c. of fluid were withdrawn. Smears failed to demonstrate the presence of organisms, and the cultures remained sterile. No tubercle bacilli were found, and the Wassermann reaction was negative. No sugar was found in the fluid. Differential leukocyte count revealed 75 per cent. lymphocytes and 25 per cent. polymorphonuclears.

By February 8, the muscular rigidity had very materially increased, and Kernig's sign was present. February 9, the patient developed complete retention of urine, so that he was unable to void and had to be catheterized.

Urinalysis, February 9, demonstrated the presence of albumin in moderate amounts, and a few pus cells and a few casts. The urine showed a pure culture of *B. coli.*

February 10, the patient was very cyanotic and was confused a great deal, mentally. A lumbar puncture was performed, and 100 c.c. of fluid were removed. The cultures remained sterile, and no organisms were found in the smears. No tubercle bacilli were found, and the Wassermann reaction was negative.

February 11, the patient died.

Necropsy Findings.—Necropsy was performed two hours after death by First Lieut. Paul H. Christian.

When the brain was removed, a fair amount of clear straw-colored fluid escaped from beneath the meninges. A few fresh adhesions were found at the base of the brain; otherwise its appearance was normal.

Examination of the spinal cord revealed no adhesions between the cord and bony structures. When the meninges were removed, however, a few slight adhesions were observed between the cord, covering a space about 2 cm. in length, beginning at the lumbar enlargement and extending upward. In this area were also found slight subdural hemorrhages, and petechial hemorrhages were found in the cord substance.

The right lung appeared normal. The left lung showed evidences of resolution in one or two areas. In the upper lobe, posteriorly and near the base, there was a spot about 4 cm. in diameter that was undergoing resolution.

The heart was contracted, and there was no evidence of any inflammatory condition. The valves were apparently normal.

The liver, spleen, kidneys and pancreas presented no unusual pathologic condition. The bladder was dilated, and contained about 800 c.c. of fluid.

Postmortem diagnosis was bronchopneumonia undergoing resolution, and a tuberculous meningitis.

Microscopic Examination.—The section from the base of the brain showed great round cell infiltration of the pia, and this infiltration was especially marked about the blood vessels. There were also in the pia areas of granular necrosis, with much nuclear débris: these areas were occasionally surrounded by typical epithelioid cells. No giant cells were seen. Perivascular round cell infiltration was also seen in the cortex.

In the section from the lumbar portion of the cord there were dense, small round cell infiltration of the meninges, and large areas of caseation, surrounded by epithelioid cells. In the adventitia of many of the blood vessels in the pia, there was a definite formation of tuberculous tissue.

In the sections stained for acid fast bacilli, there were found a few typical acid fast bacilli in the sections from the cord. No bacilli were demonstrated in the sections from the brain.

The microscopic diagnosis was tuberculous meningitis.

122 South Michigan Avenue.

* From the Medical Wards of U. S. Army Debarkation Hospital No. 5, Grand Central Palace, New York.

Therapeutics

A Department Devoted to the Improvement of Therapy. A Forum for the Discussion of the Use of Drugs and Other Remedies in the Treatment of Disease.

USE AND ABUSE OF CATHARTICS*

(Continued from page 177)

CALOMEL CATHARSIS

Mild mercurous chlorid is the typical cholagogue cathartic, a term that might be applied to those agents that have a tendency to produce particularly dark or bile-colored bowel evacuations. That certain cathartics, notably calomel, have such action, is a well established clinical observation. Trouble arose when this foundation of fact was left behind and fancy was permitted to assign to these agents a special action on the liver. Nothing seemed more logical than this supposition, though, it appears, nothing is farther from the truth.

It took much investigation and controversy to establish the fact that only a small number of substances increase the secretion of bile and that this does not include any one of the cathartics. The cause of the dark color of the stools following the use of many cathartics is evidently a mechanical one, a more rapid sweeping of the contents out of the intestine, so that there is less time for reabsorption of bile and change in the color of bile pigment. In the case of calomel, to this must be added the fact that grayish-green stools occur even when no bile enters the intestine, owing to the formation of colored mercury compounds, such as sulphid and oxid. A third factor, which also might have something to do with the bile colored purging produced by calomel, is its preservative effect on bile pigment, demonstrable in the test tube, due to inhibition of putrefactive processes responsible for conversion of bile pigment into fecal pigment.

MODE OF ACTION

Calomel, being insoluble in the mouth and the stomach, passes through without affecting them in transit. Indeed, one of the chief advantages—as well as disadvantages—of calomel is its inoffensiveness to palate and stomach. It is one of the few purgatives that can be given in spite of nausea and vomiting. At times it stays in the stomach when nothing else will. On the other hand, the ease with which this subtle poison can be given invites its abuse, especially in children.

As soon as the calomel enters the intestine, it is attacked by the alkaline pancreatic and intestinal juices, which decompose it into mercury and yellow mercuric oxid. The latter dissolves slowly and incompletely in the alkaline intestinal fluid. The small quantity of mercuric ions thus liberated excites peristalsis and, at the same time, inhibits absorption of fluid. These effects are so much greater in the small intestine than in the colon that calomel is unreliable as a cathartic. The abnormal amount of fluid in the large intestine may be completely reabsorbed, giving rise to diuresis instead of catharsis, unless this reabsorption is inhibited by a saline purgative. Hence, administration of a saline cathartic in connection with calomel catharsis has come to be an established custom. As calomel acts slowly, requiring from ten to twelve hours, while the salines produce their effect in about two hours, the two agents are usually given with an interval of eight or ten hours between them: generally, the calomel at night, and the saline in the morning.

Unfortunately for its use as a cathartic, some of the calomel becomes absorbed, giving rise to the danger of mercurial poisoning, which is much more influenced by the length of time the mercury stays in the bowel than by the size of the dose: for, when the calomel is promptly swept out of the intestine, it is safe in almost any dose; while a small amount may lead to poisoning, if, by reason of intestinal obstruction or other delay in evacuation, the calomel becomes absorbed to any great extent. Another factor that influences absorption is the presence of solvents. Particularly objectionable is iodid, which, even when taken separately or previously, changes calomel into mercury (metalic) and mercuric iodid and readily dissolves the latter. This change results in a great increase in local irritation—wherever the calomel comes in contact with the iodid—and in greater absorption of mercury. Bromids and alkalis are less obnoxious in conjunction with calomel. Alkali, in the form of sodium bicarbonate, is frequently combined with calomel on the supposition that this increases the efficacy of the latter. The increase in solubility of calomel under the influence of chlorid or hydrochloric acid, under the conditions that prevail in the system, is so slight as to be of no toxicologic importance. An investigation by the A. M. A. Chemical Laboratory[1] showed that the combination of calomel with antipyrin becomes dangerous in the presence of sodium bicarbonate, as, in such a case, from one sixth to one fourth of the calomel may become converted into a soluble mercury salt. The idea that acid drinks, such as lemonade, should be avoided in conjunction with calomel has been shown to be erroneous.

CALOMEL POISONING

It is not necessary, in this place, to draw the picture of calomel poisoning. Suffice it to say that this condition affects most especially the two ends of the alimentary tract: the mouth and the colon, and that the kidney is next in order. In the mouth, it produces ulcerative stomatitis, which somehow is connected with the presence of teeth, especially carious teeth. Toothless infants do not develop it. The necrosis starts at the dental margin of the gums and where the teeth are in relation with lips, cheek and tongue. The fact that mercurial stomatitis is characterized by a pathologic condition similar to that of ulcerative stomatitis and Vincent's angina should render calomel contraindicated in the presence of these conditions. If a patient has ever been salivated, calomel should not be used again, for he is liable to show exceptional susceptibility. As mercurial colitis is characterized by a symptomatology and even a pathology much like that of dysentery, one should be cautious, when using calomel in dysentery or enterocolitis, not to confound the symptoms produced by calomel with those of the disease. In these

* This is the fifteenth of a series of articles on the pharmacology, physiology and practical application of the common laxatives and cathartics. The first article appeared October 18.

1. The Incompatibility of Antipyrin, Calomel and Sodium Bicarbonate, J. A. M. A. 56: 287 (Jan. 28) 1911.

conditions, its continued administration should certainly be avoided. As mercury has a great affinity for the kidney, calomel should not be employed, excepting with the utmost precautions, as a cathartic in kidney disease, unless it be in a syphilitic. In certain cases of nephritis, even a small dose of calomel may precipitate uremia.

As calomel is so unreliable a cathartic that it needs be associated with other purgatives to secure its evacuation, as it is liable to act as a poison, and as we have an abundance of satisfactory nontoxic cathartics, the use of calomel as a mere purge is unjustifiable. Of course, in a patient suffering from syphilis it might be the cathartic of choice. It might also be of special value as a purge in the presence of vomiting. Calomel should never be given without other indication than simple constipation. It is absolutely unsuitable for self-medication by the laity.

The main reason for its popular use as a purge is its alleged action as an intestinal antiseptic. That it is not an intestinal disinfectant is generally admitted, nor has its action as an intestinal antiseptic been definitely proved.

INDICATIONS

As calomel is so inoffensive to the stomach, it is the purgative *par excellence* in the presence of nausea or vomiting, provided one is certain that intestinal obstruction does not exist.

Calomel finds its classical employment in "biliousness," a syndrome that follows indiscretions in diet, whether it be excessive indulgence in food by a healthy person or mere relative excess in an invalid. This condition is characterized by yellowish coated tongue, fetid breath, anorexia, headache, lassitude, subicteric tinge of skin and conjunctivae, and highly colored, scanty urine. But the chief indication for it is believed to be the presence of clay-colored stools, whether there be constipation or diarrhea; and, for reasons given above, it will certainly change the color. Whatever the exact pathology of the condition, free purgation is usually followed almost immediately by amelioration of symptoms; and calomel-saline purgation is believed to be more efficient in this condition than the use of other evacuants. Indeed, its very efficiency is a danger: for it encourages the patient to continue in his overeating, knowing that he can escape the punishment or greatly mitigate it by his dose of calomel. This abuse of the digestive and eliminative organs cannot but lead in time to chronic degenerative changes, insidious in onset but incurable when present. How much better for an individual inclined to "biliousness" to limit his food intake to his digestive capacity than to gorge himself with food only to purge himself of the excess after it has commenced to harm his system. In view of the remarkably slight intestinal irritation produced by a therapeutic dose, calomel is often employed in summer diarrhea and in dysentery. In these conditions, castor oil is preferable, unless coexisting nausea or vomiting renders the administration of the oil impossible. For reasons previously given, it should be used merely as an initial course. Prolonged administration might increase the damage.

Calomel is employed, by many physicians in a routine manner, as the initial purge in acute febrile conditions of all kinds. Experience in such cases, both with and without calomel, does not demonstrate any difference in favor of those patients that had received calomel. One sees, on the other hand, every now and then—fortunately but very rarely—cases of mercurial stomatitis as the result of this practice, most commonly perhaps among patients who have had a succession of different medical advisers and a succession of "initial" doses of calomel. Hence, when one is not the first to be called on the case, it is best to omit the dose of calomel; and it would probably be just as well to omit this dose on the principle of *nil nocere* in other cases likewise.

ADMINISTRATION

So called "broken dosage" is, at present, the method of choice in the giving of calomel. The advantage claimed for it is a greater effect from a total small dose than could otherwise be obtained, each instalment coming in contact with fresh portions of solvent. At the same time, there is less danger of poisoning if the total dose is retained and absorbed, than if a dose of 0.60 gm. (10 grains) were given. Whether the total dose of from 0.06 to 0.12 gm. (1 to 2 grains) is given in portions of 0.006 gm. (1/10 grain), 0.010 gm. (1/6 grain) or 0.030 gm. (1/2 grain) at intervals of fifteen minutes, thirty minutes or an hour is chiefly a matter of convenience; though, it is claimed that, in the presence of vomiting, the smaller dosage and longer intervals serve best. The rule is sometimes given that the dose of calomel for children should be once or twice as many centigrams (1/6 grain) as the age of the child in years. In practice, however, but little difference usually is made between the dose for the child and the dose for the adult; for, in either case, only that portion of the dose becomes active that is dissolved; and this depends on the amount of alkaline digestive secretion, which is proportionate to the size of the individual. Nevertheless, some such rule as that given prevents the administration of large excess; provided, of course, the adult dose is not exceeded, which will be reached according to the rule at the age of 3 or 6.

Owing to the smallness of the dose and the heaviness of the calomel, a diluent is necessary in prescriptions for calomel powders. Sugar, sugar of milk, or sodium bicarbonate are the usual diluents.

	Gm.
℞ Mild mercurous chlorid	0.06
Sugar of milk	0.24

Mix and divide into four powders.
Label: One every half hour.

For children, sugar is the preferable diluent. However, the most elegant way of prescribing calomel is in the form of sweet tablets, each containing 0.006 gm. (1/10 grain) and up, which are now marketed by nearly all manufacturing pharmacists.

(To be continued)

Group Medicine.—The experience of military service will have rendered thousands of physicians familiar with methods of organization and accustomed them not only to the treatment of individual patients, but to coordination of work with other doctors. The return of these physicians to private life may well be occasion for stimulating the organization of medicine and for helping the institutions in which group medicine is practiced. Members of the medical profession, men who are concerned with public health work, or with the administration of hospitals and dispensaries, should not permit the leadership in developing medical organization to pass out of their hands. Group medicine is a necessary progressive step in the practice of medicine for the public service.—M. M. Davis, *Am. J. Pub. Health* **9**:362, 1919.

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SATURDAY, JANUARY 24, 1920

SPIROCHETE TRANSMISSION IN RAT-BITE FEVER

The demonstration that dangerous spirochetes may be present in rats and become the etiologic agent in the so-called rat-bite fever of man and animals is only a few years old.[1] Meanwhile the widespread distribution of the micro-organism in various parts of the world, including cities of the United States, has been ascertained by bacteriologic examination of rats caught at random.[2] The current belief is that the spirochetes find their way into the excretory ducts of the salivary glands and the tubules of the kidneys, and that the infection in true rat-bite fever comes through the saliva of the biting rodent. This assumption has been assailed of late, however, by a group of investigators at the Kitasato Institute for Infectious Diseases in Tokyo.[3] According to them, in the infected wild rat, albino rat and guinea-pig, the spirochetes of rat-bite fever, in the early stages of the infection, are detected principally in the blood; but after two weeks a large number appear in the connective tissues, and as time goes on this number is gradually increased. That is, this spirochete is always distributed numerously in the subcutaneous and submucous tissues of the eyelids, lips, bridge of the nose, and tongue, and is especially abundant in the reticular connective tissues of the vascular sinus surrounding the follicle of the tactile hair of the upper eyelids and lips. It is also usually, if not always, found abundantly in the capsules of the salivary and lymph glands, in the heart wall, in the adventitia of the aorta and large arteries within the visceral organs, and sometimes in the endocardium of the heart. It can also be detected in the spleen, the liver, the suprarenal glands, the kidneys, the parenchyma of the salivary and lymph glands, etc. The Japanese investigators assert that the spirochete is neither excreted through the saliva from the salivary glands nor mixed into the saliva through the normal mucous membrane of the mouth cavity from its submucous source. Furthermore, the excretion of the organism in the urine was found to be comparatively rare. The spirochete has never been detected in the intestinal contents of wild rats and guinea-pigs or in the bile of guinea-pigs.

How, then, are we to suppose that the spirochete finds its way into the organism that it attacks? The more recent experiments do not favor the view that this spirochetosis can spread by mere contact, or that its distribution is facilitated by such skin parasites as fleas and lice. Attempts to produce infection by instilling contaminated blood into the eyes of susceptible animals were unsuccessful in securing transmission through the intact conjunctiva; and the undamaged mucous lining of the alimentary tract also appears to be a barrier to the spirochetes introduced by mouth. The few positive infections may be attributed equally well to abrasions of the mucous membranes which permitted an invasion of the tissues.

To explain the exit of the spirochete from its source in the host, if it does not pass out through the saliva, Kusama, Kobayashi and Kasai[3] assert that the infected wild rat, and also the infected guinea-pig, usually become very irritable and furiously bite any objects coming in their way, often suffering an abrasion and even bleeding in the lips or gums. The spirochete is then given an opportunity to escape from the submucous tissue, or the circulating blood, through the defective point in the mouth. It becomes possible, therefore, that the spirochete may be thus transferred by the bite of an infected rat to the body of a healthy rat or even a human being.

1. Futaki, Takaki, Taniguchi and Osumi: J. Exper. Med. **23**: 249 (Feb.) 1916. Ishiwara, Ohtawara and Tamura: Ibid. **25**: 45 (Jan.) 1917.

2. The Cause of Rat-Bite Fever, editorial, J. A. M. A. **65**: 1285 (Oct. 9) 1915; Further Observations on the Cause of Rat-Bite Fever, ibid. **66**: 894 (March 18) 1916; Spirochetes and Rat-Bite Fever, ibid. **68**: 1482 (May 19) 1917; Experimental Rat-Bite Fever, ibid. **69**: 125 (July 14) 1917.

3. Kusama, S.; Kobayashi, R., and Kasai, K.: The Rat-Bite Fever Spirochaete with a Comparative Study of Human, Wild Rat and Field Vole Strains, Kitasato Arch. Exper. Med. **3**: 131 (Oct.) 1919.

LOW BAROMETRIC PRESSURE AND CHANGES IN CIRCULATION

Mountain climbing and likewise the more easy ascents to mountain heights by the modern alpine railways are not infrequently attended with symptoms of malaise. Experiences of this sort long ago emphasized the fact that high altitudes or low barometric pressure may interfere with the normal workings of the human machine. There was a time not long since when the physiology of altitude had little more than academic interest. The modern conquest of the air by man has brought about a new attitude. As the physiologic experts in military aeronautics have lately pointed out,[1] the purely scientific aspects of life under conditions of low barometric pressure are themselves deserving of careful investigation. The fact that altitude plays a part in therapeutics and forms a feature of climatology, as applied by medicine, furnishes another reason why the subject should be placed on a rational basis, while the coming into prominence of aviation, which requires

1. Manual of Medical Research Laboratory, War Department, Air Service, Division of Military Aeronautics, Washington, 1918, p. 7.

a man to ascend into the air as the bird, frequently to moderate and sometimes to great altitudes, furnishes a third reason why we should know what constitutes fitness for life in rarefied air.

Certain effects of transferring man to high altitudes are already well appreciated. The partial pressure of oxygen decreases as the barometer falls in ascending into the atmosphere. Consequently the eminent French physiolcgist Paul Bert predicted more than forty years ago that the blood of persons and animals living at high altitudes would be found to have a greater oxygen-carrying capacity than that of corresponding individuals living at lower levels. This prediction has frequently been verified. Thus, the red corpuscles charged with the function of binding and transporting oxygen vary in numbers at sea level between 4.5 and 5.4 millions per cubic millimeter; at Colorado Springs, altitude 6,000 feet, between 5.5 and 6.3 millions; and on Pike's Peak, altitude 14,110 feet, between 6 and 8.2 millions. The percentage of hemoglobin, the compound concerned in the oxygen transport, has simultaneously been shown to increase at Colorado Springs at least 10 per cent. on the average above the content at sea level; while at Pike's Peak an increment of 44 per cent. has frequently been noted. The percentage of oxygen capacity in the blood at sea level varies between 17 and 18.7; at Colorado Springs, 20 and 21.7; and on Pike's Peak, approximately 27.4. In general, for every hundred mm. fall in atmospheric pressure there is an average rise of about 10 per cent. in hemoglobin, and this rise is approximately the same for women and men.

The conventional records have been obtained from observations made after hours or even days of exposure to the effects of high altitude and lowered partial pressures of oxygen in the atmosphere. The aviator makes his transitions with incomparably greater speed. Mountain ascents, even when made passively by railway or motor, are slow—8,000 feet in an hour and a half or longer—as compared with altitude flights in an aeroplane. Can the aviator, who ascends with much greater speed and has already reached heights beyond that of the highest mountains on the globe, benefit from any compensatory physiologic reactions such as have been described? To this question the medical research laboratory of the air service at Mineola, N. Y., has contributed some answer.[2] The blood changes were studied in men subjected to lowered barometric pressures or to low oxygen, 10 per cent., for intervals not exceeding two hours. The changes in a pressure chamber were made at a rate that would be comparable to ascending in the air at the rate of 1,000 feet a minute. The altitudes employed were 425, 395 and 380 mm. of mercury, which are the pressures ordinarily encountered at 15,000, 17,000 and 18,000 feet, respectively. The blood changes were definite in thirty-five trials, or 78 per cent., of all examinations made by Gregg, Lutz and Schneider at Mineola. The majority of the men required between forty and sixty minutes for the increase to become definite; 13 per cent. showed a well defined increase within twenty-six minutes. In the experiments with 10 per cent. oxygen, 57 per cent. gave the increase in hemoglobin. In fifteen cases in which the erythrocytes and hemoglobin were determined, corresponding changes occurred in both; 66 per cent. were positive. The erythrocyte increase ranged between 3.8 and 20 per cent.; the hemoglobin, between 3.2 and 9.8 per cent. These results are not due to barometric pressure per se: they represent the response to lowered oxygen pressure in the environment, however this may happen to arise.

Obviously, under conditions of oxygen shortage, tissues may be better supplied with this element not only by an increase in corpuscles which carry it but likewise by a more efficient circulation. A more rapid blood flow also represents a form of compensatory reaction to the oxygen deficiencies at high altitudes; and it has been observed to occur quite independently of any added physical exertion or other extraneous influences, such as fatigue or cold. In general, it may be said that the heart works at an increased rate in all postures at the high altitude. The amount of increase in the pulse rate varies in different persons. Some men will show at the high altitude, such as 14,000 feet, an acceleration of only a few beats over the low altitude rate, while others show an increase of 10 or more beats per minute. Lutz and Schneider,[3] likewise working at the laboratory of the air service at Mineola, have found that the heart rate responds to slight changes in oxygen tension. The acceleration in the majority of men examined began between oxygen partial pressures of 113 and 128 mm., corresponding to barometric pressures of 542 and 610 mm. In at least 25 per cent. of all cases, the first response occurred at oxygen partial pressures of about 137 mm. or less, corresponding to a barometric pressure of 656 mm. (4,000 feet). The initial response occurred at about the same oxygen tension each time a person was exposed to a decreasing oxygen tension by the several methods used. The systolic blood pressure maintained its normal level in the majority of cases.

It is not easy to understand how compensatory responses in the nature of rapid increments in the number of red corpuscles, whereby the unit volume of blood can carry more oxygen than normally at a given oxygen pressure, occur in such short periods of time as those involved in an hour's flight. It can scarcely be supposed that the cells are created anew thus rapidly in the organism. There is little evidence that the increased number of corpuscles is due solely to an actual concentration of the blood by loss of water. For the present it seems more likely, as Schneider and

2. Gregg, H. W.; Lutz, B. R., and Schneider, E. C.: The Changes in the Content of Hemoglobin and Erythrocytes of the Blood in Man During Short Exposures to Low Oxygen, Am. J. Physiol. **50**: 216 (Nov.) 1919.

3. Lutz, B. R., and Schneider, E. C.: Circulatory Responses to Low Oxygen Tensions, Am. J. Physiol. **50**: 228 (Nov.) 1919.

Havens[4] have suggested, that the "rapid increase is brought about in part by throwing into the systemic circulation a large number of red corpuscles that under ordinary circumstances at low altitudes are sidetracked and inactive, and in part by a concentration resulting from a loss of fluid in the blood."

THE SAFEGUARD AGAINST BACTERIA IN THE UPPER AIR PASSAGES

It has been assumed, until quite recently, that healthy and intact skin and mucous membranes are practically impenetrable to bacteria that may lodge on them. The mechanical protection offered by the surface covering of the deeper tissues and vessels within them is, however, known to be lost when bruises or contusions destroy the outer layers or otherwise alter their normal continuity. Zinsser[5] has pointed out in this connection that the defense of the intact mucous membranes is by no means unassailable. While many kinds of organisms can be implanted on mucous membranes with impunity, a number of others may cause local inflammations thereon and may, furthermore, pass through them into the deeper tissues and thence into the general circulation. In illustration of this Zinsser states that gonorrhea is ordinarily a disease of implantation on a mucous membrane, and that diphtheria bacilli and streptococci give rise to a localized disease on the pharyngeal and nasal mucosae, the latter germs not infrequently penetrating from the initial point of lodgment on the mucosa into the deeper tissues and the blood stream, causing septicemia or bacteremia. Perhaps local physiologic or functional injury, such as congestion or catarrhal inflammation without demonstrable lesions, is sufficient to permit penetration by micro-organisms.

Latterly the membranes of the pharynx and adjoining regions of the nose and throat have become centers of great interest in the investigation of avenues of entrance for certain bacteria. The upper respiratory tract has been considered not only as a portal of entry but also as a site of persistence for the virus of some of the most serious diseases. Before the real significance and rôle of the mucous membranes there involved can be adequately comprehended, it will be necessary to learn much more than is now known regarding the factors that determine the survival of bacteria in the nasopharynx. An attempt in this direction has recently been reported by Bloomfield[6] from the Medical Clinic at the Johns Hopkins Hospital. Large numbers of an easily recognizable nonpathogenic organism, *Sarcina lutea,* were introduced on the mucous membranes. It was usually impossible, even after a short period of time, to recover the sarcinae swabbed in large amounts on the tongue, nasal mucosa, or into the crypts of the tonsils. Disappearance from the nose was somewhat slower than from the other sites; yet in only one instance could any of the organisms be recovered in twenty-four hours, and in no case after two days. Such findings testify to the tendency to rapid disappearance of the introduced foreign micro-organisms; and as the culture doses were vastly greater than those involved in any natural infection, the results, says Bloomfield, indicate the remarkable efficiency of the mechanism present in the upper air passages for disposing of the organism investigated in his studies.

There is reason to assume that this protective function of the areas involved is not necessarily simple or uniform in character. The possible flushing action of the secretions and the ejection of them in various natural ways from the nose and mouth represent mechanical factors. The possibility of chemical bactericidal action on the part of the secretions is also to be reckoned with. Finally, one must take into consideration biologic modes of resistance, such as phagocytosis or the effect of normal mouth bacteria on the invader. From his initial investigations with the single species mentioned, Bloomfield tentatively attributes the effectiveness in the disposal of the micro-organisms to a prompt and marked bactericidal effect exerted by the saliva and mouth secretions. This seemed to be independent of the bacteria normally present in the saliva. The reaction of the mouth secretions and mechanical cleansing played little if any part. It will be interesting to learn more about the safeguards against more virulent organisms and why they break down or fail in certain cases.

4. Schneider and Havens: Am. J. Physiol. **36**: 380, 1915.
5. Zinsser, H.: Infection and Resistance, New York, 1914, p. 13.
6. Bloomfield, A. L.: The Fate of Bacteria Introduced into the Upper Air Passages, Bull. Johns Hopkins Hosp. **30**: 317 (Nov.) 1919.

Current Comment

VACCINATION WITHOUT SCAR

An ancient joke relates that a "chorus lady," requiring vaccination, insisted that it be done so that the scar would not show. As a result, she took the virus in a spoon. It now appears that there may be another way of avoiding the scar without resorting to a spoon, viz., by hypodermic injection. During the last four years Major Goodall[1] of the Canadian Army has been experimenting with such a method. After using it on 6,000 soldiers and children he claims these advantages: (1) the absence of an open wound subject to infection; (2) the ability to dispense with dressings; (3) the high percentage of "takes"; (4) the comparative mildness of the local and systemic reactions; (5) the rapidity, and (6) the great ease with which it can be done in children. There were no accidents in his series. One man had a small slough which later healed over without any difficulty, and a few others had badly swollen arms. The advantages of such a method, if perfected and found reliable, are so obvious that it is not surprising that others have experimented with it in the past. Chauveau was probably the first, in 1886-1887, to show that it could be used in animals and in man. He tried

1. Goodall, J. R.: Am. J. M. Sc. **158**: 721 (Nov.) 1919.

it also intravenously. It would seem from the experiments of Kraus and Volk[2] that Goodall might have lessened the severity of his reactions by using one thousandth of the dose. As would be expected, only very small amounts of the virus are needed for the subcutaneous injection. Casagrandi and later Knoepfelmacher showed that enough of the virus passes through a Chamberland candle to permit the use of the filtrate for subcutaneous vaccination. The literature is summed up by Knoepfelmacher,[3] he was not satisfied at that time that the immunity conferred with this method would be as lasting as that with the old. In view of the importance of the suggestion, it is desirable that two questions be settled: first, whether or not the method actually produces an immunity, and second, the permanency of the immunity.

THE LESIONS OF TYPHUS FEVER

After death from typhus fever there are no constant characteristic lesions visible to the naked eye. The rash may have faded, and the organs, in uncomplicated cases, may show only congestion. It follows that an anatomic diagnosis of typhus fever can be made only on the basis of microscopic studies, if at all. Recent investigations summarized by Nicol[4] and extended by him through the systematic microscopic examination of material from a large number of cases of typhus fever in which death occurred in all stages of the disease, have shown definitely that typhus exanthematicus is to be regarded as a systemic disease of the smaller arteries and the capillaries. There are necrosis and proliferation of the endothelium, associated with perivascular infiltration of leukocytes and other cells, especially in the skin and the central nervous system, and, to a less degree, the myocardium and practically all the other organs. The medulla, particularly about the olivary bodies, seems to be a favorite seat for this process, which sometimes may pass into a hemorrhagic encephalitis. Usually these characteristic arteriolitic and periarteriolitic foci disappear if the patient survives, but small scars may result. The localization of the changes in the medulla and upper part of the cord would seem to explain such symptoms as disturbances of deglutition, respiration and circulation, and no doubt death often results from lesions in the central nervous system; in cases of sudden death, lesions of the myocardium may be the cause. In about half of the cases complications, chiefly pneumonia, appear to determine the fatal outcome. Of the secondary invaders, streptococci are the most important. The demonstration of a widespread, focal arteriolitis and periarteriolitis in typhus fever is of great interest and value not only because it gives a better insight into the nature of the disease and the causation of the symptoms but also in that it provides new and important means for recognition of the disease in isolated or obscure cases referred to the pathologist for diagnosis by postmortem examination. We know that typhus may occur in cities like New York; and in cases of death from what seems to be acute infection without any definite gross lesions, a thorough microscopic examination, with the vascular lesions of typhus in mind, would seem to be highly desirable.

2. Kraus and Volk: Wien. klin Wchnschr. **19**: 620, 1906.
3. Knoepfelmacher, W.: Handbuch der Technik und Methodik der Immunitätsforschung. Jena **1**: 682, 1908.
4. Abstr. Norsk Mag. f. Lægevidensk. **80**: 1359, 1919.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES—ITS CENTENNIAL

One hundred years have passed since the appearance of the first number of the *American Journal of the Medical Sciences*. Like the centenarians whose pictures appear in the daily press it is still going strong, with eyesight undimmed and digestion unimpaired. When interviewed as to the causes responsible for its long life it responded:

> The *Journal* has been instrumental in molding medical thought not only here but also abroad, for being, with one exception, the oldest medical periodical in the English language it has been able to play a leading rôle in bringing before the profession of other lands the medical contributions of this country. Those who today guide the destinies of the *American Journal* are keenly aware of the heritage that is theirs and the responsibilities that it entails. It will ever be their earnest endeavor to maintain the high ideals in medical journalism for which this publication has so long been conspicuous. . . . They aim to make the *Journal* of the future the same honest, scientific, helpful periodical that it has been in the past.

We congratulate this centenarian on its high ideals and its enviable record: It has recorded the achievements of a century of American medicine — something certainly to be proud of.

DIAGNOSTIC VALUE OF EXAMINATION OF THE SPINAL FLUID

Since Quincke first introduced lumbar puncture, a very considerable development has taken place in the methods of examining the cerebrospinal fluid obtained by this procedure. At present, as Solomon[1] points out, there are five methods of examination in common use. These are the Wassermann reaction, tests for an increase in albumin, tests for globulin, the colloidal gold test of Lange, and the cell count. As these different tests have been developed there has always been a tendency on the part of their discoverers to herald them as more or less specific in character. Since the opening of the Psychopathic Hospital in Boston, a large series of spinal fluids have been examined by these different tests, and Solomon's article summarizes the results of this experience. There are two main conclusions to be drawn from his work: first, that the Wassermann reaction in spinal fluid is pathognomonic of neurosyphilis, although it may occasionally be absent in such cases; and second, that the other tests mentioned are not pathognomonic tests but are indicative merely of some inflammatory process involving the central nervous system. The analysis of the results obtained at the Psychopathic Hospital makes it clear that, with the exception of the Wassermann reaction, none of these tests, either singly or in combination, are characteristic of any one disease. It does not seem to matter whether the process is a meningitis, an encephalitis, a tumor with sympathetic meningitis,

1. Solomon, H. C.: Nonconcomitance of Spinal Fluid Tests, Arch. Neurol. & Psychiat. **3**: 49 (Jan.) 1919.

inflammation following a vascular insult or a trauma, or a disease like multiple sclerosis. The result, so far as the changes in the spinal fluid are concerned, is essentially the same, namely, one or a combination of the reactions mentioned is produced. In one case, only pleocytosis may be present; in another case, the colloidal gold reaction may be positive and the other tests negative; in still other cases, combinations of these reactions occur. The examination of the spinal fluid is of such great value as a diagnostic aid that it is important that its limitations should be recognized. As Solomon points out, no spinal fluid can be said to be negative unless all of these different tests have been carried out. It is to be anticipated that further refinements in the examination of the spinal fluid will be developed; but it would seem from these studies that at the present time we can deduce from the examinations mentioned that a patient is suffering either from neurosyphilis or from some other inflammatory condition of the cerebrospinal system. In cases in which added elements like bacteria are present, the specific cause of the inflammation can frequently be detected; and this is true not only of acute infections but also of a large proportion of cases of tuberculous meningitis.

THE DIET IN PREGNANCY

In 1889, Prochownik recommended a "dietary for the purpose of avoiding the necessity of premature labor." He concluded that it is possible, through dieting the mother, to limit the weight of the child, and even retard the ossification of its bones. Unfortunately, his statements never seem to have been adequately confirmed. Recently Ehrenfest[1] analyzed the original paper of Prochownik. As a result, he believes that the author selected his cases in such a way that an especially favorable impression is produced. A survey of obstetric literature since Prochownik's original publication indicates that his views have received considerable attention, but the discussions are either quite neutral, or else the authors condemn Prochownik's views unqualifiedly. The few animal experiments available also offer no good evidence for the limited dietary. From the biologic point of view, present conceptions are that the fertilized ovum is an individual organism controlled by the placenta, an organ endowed with an active vitalistic function securing the substance essential for the development of the fetus from the maternal organism. It is also pointed out that the size of the fetus, including its general skeletal development, weight and length combined, is of more importance in the mechanism of birth than merely the weight alone. As a result of analysis from all these points of view, Ehrenfest concludes that the pregnant woman should not be permitted to eat to excess by responding, without restrictions, to the increased food desire created by the food demands of the fetus. It is his belief, however, that pregnancy causes an increased demand for food, which should be given in the form of nutritious, easily digestible substances. In the Prochownik diet, proteins are substituted for carbohydrates, and the water intake is greatly reduced. Obviously, such a diet must be very carefully controlled and supervised; since it may actually be responsible for toxemic conditions, far more serious than any increased weight of the fetus. The adoption of routine treatments on the basis of *a priori* reasoning alone is not scientific medical practice. The question is one capable of easy proof by scientific research in any good hospital.

1. Ehrenfest: Diet of the Mother During Pregnancy, Am. J. Obst. **80**: 441 (Oct.) 1919.

Association News

THE NEW ORLEANS SESSION

New Orleans and the American Medical Association

The *New Orleans Medical and Surgical Journal*, in its current issue, contains an editorial on the coming annual session of the American Medical Association, to be held in New Orleans, April 26 to 30. It says:

"Many remember New Orleans at the time of the 1903 meeting. The glamor of a Latin city, rough jeweled by modern civilization, set apart among the traditions of a people, still mourning its chapters of sad experiences of most a century and hard to rouse. The spirit of hospitality still alive, and ready to welcome, found a Crescent City full of kindness to those who traveled far to see and sense the Old Metropolis of the South.

"Our streets were none too clean; our hotels old fashioned and limited in number; our water supply of uninviting, muddy purity; our sewage still undisposed of in any sanitary fashion, and the vista of pleasant residences marred by unsightly cisterns, on which many households still relied for their potable and ablutionary water.

"Since 1903, yellow fever, plague and disastrous storm have visited New Orleans, and at last the fighting spirit of its people has been aroused.

"It will be a new New Orleans in 1920. To those who knew us of old, there will still be the landmarks where culinary feasts may satisfy epicurean appetites. The old French quarter still preserves its architecture and its traditions. The varying patois, argot, gombo and creole French may be heard, mingled with the Italian, which has easily been grafted in the quarter. The sightseers may still find the most of the sites of old New Orleans history, which has been much aided by the Historical Society, now exhibiting in the old Spanish Cabildo at Jackson Square.

"But leave the sentimental region and traverse the main streets of newer New Orleans and see how all has changed in these few years.

"A 'stroll on Canal Street' is a thing of the past—there is the same hurry and bustle as on State Street, or Chestnut Street, or Fifth Avenue, or Charles Street, in our Northern sister cities. Great buildings have risen, banks have stepped into the air; hotels have multiplied, streets have been paved; the sewage has been controlled; the drainage settled; and the faucet at the bath, or at the font, brings crystal water as sweet and alive as from a perpetual spring, furnished by our great Mississippi, which still rolls by and as ever fondly embraces our old and new city in its crescent fold."

Medicated Alcohol.—Pharmacists who hold a permit and have given bond are allowed to medicate alcohol and sell it for nonbeverage purposes in quantities not exceeding one pint, provided they first medicate it in accordance with any one of nine formulas specified by the commissioner of internal revenue, U. S. Treasury Department. Phenol, liquor formaldehydi and mercuric chlorid are the chief of these denaturing agents. The container of such medicated alcohol must bear a "poison" label. The sale by pharmacists of medicated alcohol for industrial purposes is prohibited. It is sold chiefly for rubbing purposes.—*Illinois Health News*, October, 1919.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPIALS, EDUCATION, PUBLIC HEALTH, ETC.)

ILLINOIS

Smallpox in East Moline.—The health authorities, January 12, unearthed a flagrant violation of health rules in East Moline, where six out of a family of eight were found to be suffering from smallpox without a physician in attendance.

Personal.—Dr. O. Alfred Olson, Rockford, is reported to have been arrested in a raid on communists in Rockford, January 8.——A committee of the Oak Park Physicians' Club, consisting of Drs. Arthur M. Corwin, Harry J. Stewart, Leslie W. Beebe, and Clarence E. Hemingway, January 15, cleared Dr. Thomas E. Roberts of charges that he had received remuneration for services as director of the American Red Cross Bureau in Oak Park.

Hospital Items.—Improvements costing about $700,000 are being made at St. John's Hospital Farm, near Riverton. The next building to be erected will be for crippled children. Other structures included in the plans are a home for mentally deficient girls, a hospital for those suffering from nervous diseases and a building to be used for convalescents coming from St. John's Hospital in Springfield.——Additional buildings which have been begun at the Alton State Hospital will represent an investment of $500,000 and will increase the capacity of the institution from 700 to 1,300.

Influenza.—Influenza is reported pandemic. The disease is of relatively mild type and few deaths are being recorded. ——At the United States Naval Training Station, Great Lakes, an order was issued January 14, prohibiting gatherings in buildings and barracks, and forbidding visitors. Up to noon, January 19, 578 cases of influenza had been reported, with fifty cases of pneumonia, and three deaths.——In Chicago influenza is said to be spreading at the rate of 1,000 new cases a day. Up to January 20, 4,095 cases had been reported, with thirty-three deaths, and 891 cases of pneumonia, with 159 deaths.——Hospitals are so overcrowded that operations with the exception of emergency operations are not to be performed during this crisis.——Health Commissioner Robertson has appointed a commission of pathologists to act with the department of health in this emergency, consisting of Drs. Ludvig Hektoen, Robert Zeit, W. Henry Wilson, Arthur I Kendall, David J. Davis, Edward O. Jordan, William A. Evans and C. St. Clair Drake.——There is a shortage of trained nurses, but the health commissioner believes that this condition will be alleviated if the recent graduates of the courses in home and public health nursing will accept positions.

Chicago

Sanitary District Health Activities.—At a meeting of the stock yards branch of the Chicago Medical Society, January 15, the activities of the sanitary district as a function in the health of Chicago were discussed by Dr. Willis O. Nance, president of the sanitary district.

China as a Field for American Activities.—The possibility of China as a field for American commerce, finance and industry were set forth in an illustrated lecture by Dr. E. H. Hume, head of the medical department of Yale-In-China, an institution maintained at Changena, at a banquet of the Yale Club of Chicago, January 10.

New Officers.—At the twenty-eighth annual meeting of the Chicago Ophthalmological Society, held in Chicago, January 19, the following officers were elected: president, Dr. Alfred N. Murray, Chicago; vice president, Dr. William R. Fringer, Rockford; secretary, Dr. Francis Lane, Chicago, and councilor, Dr. Ephraim K. Findley, Chicago.

Medical History of the War.—Three Chicago physicians are playing an important part in the preparation of the medical history of the world war. These are Drs. Casey A. Wood, Frank Billings and Harry E. Mock. The history will comprise about twenty volumes, will be encyclopedic in character, and it is promised, will be promptly issued. The first volume, which has to deal with the hospitals of the United States, was written by Dr. Wood, is now completed and is ready for press. Drs. Mock and Billings are preparing the history of reconstruction dealing with the rehabilitation of disabled soldiers.

Hospital Asks Millions of Dollars.—At a meeting, January 17, a five-year program of expansion for the Wesley Memorial Hospital became assured. This involves the addition of $10,000,000 worth of new buildings and the raising of an endowment fund of from $10,000,000 to $15,000,000. Sufficient funds have already been pledged to insure construction of the first of the four news buildings desired, which will be utilized as an addition to the nurses home. The second building will be a new section to the hospital proper which will add 1,200 beds to its capacity, a building for contagious diseases will next be erected and lastly a new power plant.

Banquet for Dr. Wood.—Dr. Casey A. Wood, the well known ophthalmologist of Chicago, has decided to retire from the practice of his specialty. The Chicago Ophthalmological Society gave a reception and banquet in honor of Dr. Wood on the occasion of its twenty-eighth annual meeting, January 19, at the Hotel LaSalle. Dr. William L. Noble presided as toastmaster, and the following responses to toasts were made: "Dr. Wood as the Ophthalmologist," by Dr. Lucien Howe, Buffalo; "Dr. Wood as Writer and Editor," by Fielding H. Garrison, Lieut.-Col., M. C., U. S. Army; "Dr. Wood as Professor of Ophthalmology," by Dr. Harold Gifford, Omaha; "Dr. Wood as Military Surgeon," by Dr. Walter P. Parker, Detroit; "Dr. Wood as Ornithologist and Comparative Anatomist," by Prof. Henry B. Ward of the University of Illinois. Brig.-Gen. H. S. Birkett, Montreal, dean of the Medical Faculty of McGill University, brought greetings from that institution. The society voted to confer honorary membership on Dr. Wood and the certificate was formally presented by Dr. Willis O. Nance. Dr. Heman H. Brown then presented Dr. Wood with a richly bound book containing the autographs of all persons present at the banquet. Dr. Wood left for his new home in Palo Alto, Calif, January 20, and expects to devote his energies to researches in comparative anatomy, working along special lines.——On January 17, the Society of Medical History was addressed by Col. Casey A. Wood on the subject "William Bailey, Author of the First Ophthalmic Treatise in English"; by Fielding H. Garrison, Lieut.-Col., M. C., U. S. Army, on "Medical Men and Music," and some remarks on the medical history of the war.

The Narcotic Problem.—At the monthly meeting of the council of the Chicago Medical Society, January 14, the committee on the narcotic problem, consisting of Drs. Joseph L. Miller, Whalen, Betz, Sceleth, Fowler and I. C. Gary, reported that the federal government, in the enactment of the Harrison Narcotic Law, had made no provision for handling the problems arising from its enforcement. Although a project is under consideration for delegating to the United States Public Health Service the institutional treatment and care of addicts, no appropriation has been made for this purpose, and therefore the state, muncipality, or the physicians of the city must handle this exceedingly difficult problem. Apparently very few municipalities have made any effort to meet the situation, and in the few that have undertaken it the effort has not been rewarded by a high degree of success. Under the law only two classes of addicts may be prescribed for, excepting in the course of a bona fide reduction cure. Persons suffering from an incurable disease such as cancer or tuberculosis may be given prescriptions by the physician directly in charge, for a sufficient amount of the drug for their immediate use, and "addicts suffering from senility or the infirmities attendant upon old age" may only be given the "minimum amount of narcotic in order to sustain life." Addiction is not recognized as an incurable disease. The chief problem, therefore, is handling the addict who does not come under these two classes. The law, as construed by the supreme court, holds it a crime for any one to furnish an addict with a narcotic merely to satisfy his craving for the drug. The only circumstances in which such a person may be given a narcotic is in the course of a reduction cure, and this should be carried out in an institution. Addicts, when the drug is withdrawn, fall into the sick class and should be handled as are other indigent sick individuals. The committee had conferred with the authorities of the Cook County Hospital to determine whether or not they were willing to resume the responsibility of caring for these indigent sick. They consented to undertake the work, and will establish a dispensary at the hospital to which all patients may be referred. After the patient has been restored to apparently good health, the social service department of the hospital will attempt to secure him a position

and to exercise such friendly care as is deemed advisable. The addict, not of the first or second class, who refuses to enter a hospital would be denied a prescription as is required by law. This plan then, leaves unsolved the problem of this class of addicts. A member of the committee has conferred with the secretary of the police force, who informed him that warrants could be issued for this group of addicts on the basis of disorderly conduct or vagrancy, and they could then be confined in the Bridewell where a cure could be given, and with Judge Olson who willingly offered the cooperation of the courts in carrying out this measure. The Internal Revenue Bureau has expressed its willingness to furnish an official to supervise the work. Under this agreement the county hospital will classify and act as a clearing house for all addicts and treat those who can be induced to take the cure. The committee recommended that the council of the Chicago Medical Society accept the offer of the Cook County Hospital, that a committee of the society be appointed to assist the hospital in carrying out the measure and that the Internal Revenue Bureau, Judge Olson, the superintendent of the hospital, and chief of police each be furnished with a copy of the plan. The council, on motion, concurred in the recommendations of the committee which was continued.

INDIANA

Medical Board Officers.—The state board of medical registration and examination at its meeting, January 13, elected Dr. James M. Dinnen, Fort Wayne, president; Dr. William A. Spurgeon, Muncie, vice president; Dr. William T. Gott, Crawfordsville, secretary, and Dr. Moses S. Canfield, Frankfort, treasurer.

New Officers.—At the annual meeting of the Indianapolis Medical Society, January 6, the following officers were elected: president, Dr. James H. Taylor; vice presidents, Drs. Maxwell A. Bahr and Robert E. Repass, and secretary-treasurer, Dr. Leslie H. Maxwell. The retiring president, Dr. Charles F. Neu, in his address urged that the society open headquarters in a home of its own, and the new president said that some action will be taken this year in this regard.

Personal.—Edgar C. Loehr, Noblesville, is seriously ill at St. Vincent's Hospital.——Dr. Aldine E. Morgan, for the last three years at the head of the Indiana State Soldiers Home, Lafayette, has resigned to accept a similar position in the Marion Branch, National Soldiers Home.——Dr. George S. Bliss, superintendent of the Indiana School for Feebleminded Youth, Fort Wayne, has resigned.——Dr. Martin L. Arthur, Patoka, has been appointed physician of Gibson County, succeeding Dr. Amos H. Rhodes, Princeton, resigned.——Dr. Hugh J. White, Hammond, has been appointed deputy coroner of Lake County.

MARYLAND

Personal.—Dr. John M. T. Finney, associate professor of surgery in the Johns Hopkins Medical School, has been invited to accept the chair of surgery at Harvard University, his alma mater, and has left for Boston to meet the directors of Harvard University.

Fund Complete.—Announcement has recently been made that the fund of $15,000 to complete the payment on the Medical and Chirurgical Faculty building, has been raised. This fund was started last summer by Sir William Osler, who sent a check of $1,000, expressing the hope that the sum would be raised before Christmas. The fund was completed Christmas eve.

Data Lost in Fire at the Johns Hopkins.—Valuable data and records, covering two years' research in the cause and effect of influenza, made by Dr. Thomas M. Rivers, an authority on this disease, and the laboratories of Dr. Bayne Jones and Dr. Lloyd D. Felton, containing apparatus and data of inestimable value, were destroyed in the fire which recently broke out on the top floor of the pathologic building in the Johns Hopkins Hospital group. The researches of these three physicians cannot be replaced in months.

Improvements at Johns Hopkins Hospital.—The work of repairing the pathologic building of Johns Hopkins Hospital, which was partially destroyed by fire recently, will be begun at once. Most of the damage done to the building was confined to the top floor. In addition to improving the pathologic building, the one-story structure used as a free dispensary, which has been inadequate, will be replaced by a modern structure, in keeping with the other buildings on the grounds. Plans have been prepared for the erection of a five-story dispensary on the same site, and the building will be erected within a short time.

Report of Fort McHenry Hospital (U. S. Army General Hospital No. 2).—This army hospital reached its full maturity in 1919. From Jan. 1 to Dec. 1, 1919, there were admitted to the post, 14,277 patients, of whom 13,048 have since been discharged or removed. There were 3,285 surgical operations during the year and all but eighteen patients passed through successfully. In July there were 419 operations and no deaths, and in March, 418 operations and only one death. It has cost approximately $3,000,000 to maintain the hospital during the year.

Psychiatric Ward at Marine Hospital.—A special ward for the treatment of patients suffering from war neuroses and mental disorders has been instituted at the Marine Hospital, Baltimore. Treatment is given to discharged members of the army, navy and marine corps under charge of the United States Public Health Service. The hospital covers District No. 4, comprising Maryland, Virginia and West Virginia. Asst. Surg. Henry E. St. Antoine has been placed in charge of the work and at present has about twenty-five patients in his care.

Dental Clinics in Schools.—Health Commissioner C. Hampson Jones has taken the first steps toward establishing municipal dental clinics in public schools in Baltimore. The work has been made possible through an appropriation of $5,000 provided in the 1920 budget by the board of estimates. The first move will be the rehabilitation of two volunteer clinics conducted previous to January 1, by students of local dental colleges, under the supervision of Drs. B. Merrill Hopkinson and B. Holly Smith of the oral hygiene council. Five clinics, including the two already established, will probably be conducted this year, under the supervision of the health commissioner, by young dentists who may receive pay for the work. Should five clinics be established, one of them will be for colored pupils and under supervision of colored physicians.

Social Service Department at Mercy Hospital.—A new social service department was opened at the Mercy Hospital, Baltimore, January 15, under the auspices of the National Catholic War Council, whose name it will bear. This department, with headquarters at the dispensary in Mercy Hospital, will see that the poor sick of the city are given every attention, either at the hospital or in their homes. Ex-service men who are in need of medical treatment will be especially welcomed. Every day from 11 a. m. to 2 p. m. all persons suffering from the ordinary diseases will be treated; from 1 to 2 p. m. daily there will be clinics for those suffering from eye, ear, nose and throat trouble or from children's diseases. On Tuesday, Thursday and Saturday, from 1 to 2, persons suffering from skin diseases will be treated. At the same hour on Monday and Friday afternoons, orthopedic patients will be treated. The nurses in charge will not only attend to those at the dispensary but will also visit the homes of the sick. In cases where children become orphans or cannot be cared for properly by relatives, they will be given medical attention at Mercy Hospital, before being admitted to institutions. Poor persons who are bed patients at the hospital will be visited at their homes after dismissal from the hospital by nurses, who will see that they are kept in good health. Special features of the dispensary are clinical laboratories and a roentgen-ray department. All persons admitted to this department will be treated free.

MASSACHUSETTS

Flattery Medal.—A bronze bas-relief medal given by Maurice Douglas Flattery to Harvard University in 1918, has just been received by the university authorities and will be awarded later "to the person the President and Fellows of Harvard may adjudge to have made a discovery in any branch of science that would result in the greatest good to humanity in the prevention of disease or conservation of health in the broadest sense." The gift is one of a series made by Mr. Flattery, and is based on securities valued at $7,500, the income from which is to be utilized for the annual award of a medal and $500 in cash.

MISSISSIPPI

Hospital Opened.—A thoroughly equipped hospital has been opened at Water Valley by Drs. Leonidas S. and George A. Brown, Water Valley.

Hospital Site.—The Mississippi Methodist Conference Hospital will be located at Hattiesburg, according to a

decision of the commission which had the duty of choosing between several towns that were competing for the location of the hospital.

Personal.—Dr. M. P. Winkler, Schula, has been appointed physician for the Belmont State Farm in Holmes County.——Dr. Clyde R. Stingily has succeeded Dr. T. R. Wilson as director of the state hygienic laboratory. Dr. Stingily had previously been connected with the laboratory for twelve years.

Public Health Association Meeting.—At the annual meeting of the Public Health Association held in Jackson, Dr. William H. Frizzell, Brookhaven, was elected president, and Drs. Thomas E. Hewitt, Liberty, Amite County, Paul G. Pope, Gulfport, and F. J. Underwood, Monroe, were elected vice presidents.

Epidemic Diseases.—Dr. C. L. Williams reports that he is investigating the outbreak of dengue fever at Woodville and is satisfied that the disease was brought there by a woman visitor from Porto Rico.——Dr. W. S. Leathers has sent C. M. Ship, state investigator, to Crowder to combat a smallpox epidemic.

Hygiene Department Established.—There has recently been organized at the University of Mississippi a department of hygiene under the auspices of the Interdepartmental Social Hygiene Board, Washington, D. C., and Dr. Elise McLaurin Rutledge, Memphis, Tenn., has been placed in charge of this department.

Support Compulsory Physical Education.—Dr. J. W. Provine, Clinton, president of Mississippi College; Dr. D. C. Hull, Meridian, formerly head of the Millsaps College, and Dr. Zeno Wall, Clinton, and other prominent citizens of Mississippi have accepted membership on the Mississippi Physical Examination Committee which is conducting a campaign to obtain the compulsory physical education legislation as approved by the state department of education.

New Officers.—The secretary of the Homochitto Valley Medical Society informs us of an error in the statement which appeared on page 1536 of THE JOURNAL, Nov. 15, 1919, in which Franklin County was omitted from the societies which make up the Homochitto Valley Medical Society. The vice presidents for these counties are: for Adams County, Dr. John W. D. Dicks, Natchez; for Amite County, Dr. Hiram K. Butler, Liberty; for Franklin County, Dr. Charles E. Mullens; for Jefferson County, Dr. George M. Barnes, Red Lick, and for Wilkinson County, Dr. Charles E. Catchings, Woodville. Dr. J. N. Ullman is secretary-treasurer of the society.——At the meeting of the Harrison-Stone County Medical Society at Gulfport, December 9, the following officers were elected: president, Dr. Edward C. Parker; vice presidents, Drs. Charles A. Sheeley, Gulfport, and George A. McHenry, McHenry, and secretary-treasurer, Dr. Daniel J. Williams, Gulfport.——At the meeting of the Jones County Medical Association held at the South Mississippi Charity Hospital, Ellisville, in December, Dr. Willie N. Blount was elected president; Dr. Ellison H. Williamson, Soso, vice president, and Dr. John R. Kittrell, Laurel, secretary-treasurer.——Washington County Medical Society at its meeting in Greenville, January 9, elected Dr. E. G. Martin, Benoit, president, and Dr. Woodson A. Stevens, Greenville, vice president.

MISSOURI

Smallpox in St. Joseph.—January 6, eleven cases of smallpox were reported in St. Joseph, making the total number more than fifty.

New Officers.—At the annual meeting of the Buchanan County Medical Society at St. Joseph, the following officers were elected: president, Dr. Louis G. Dandurant; vice presidents, Drs. Harry S. Conrad and Thomas M. Paul; secretary, Dr. Francis X. Hartigan, and treasurer, Dr. John M. Bell, all of St. Joseph.

Physicians' Building.—A fourteen-story building is to be erected at Eleventh and Cherry streets, Kansas City, to be used entirely by physicians and dentists. The building will cost about $1,250,000 and the project is said to be supported by the Jackson County Medical Society and Kansas City Dental Society.

New County Hospital.—The county court has called for an election in February on a proposition to issue additional bonds to the amount of $57,500 for the new county hospital that is to be erected in Fulton. The first bond issue of $75,000 carried by a large majority but it was found that this was not sufficient to complete the building.

Personal.—Dr. Major G. Seelig has been appointed professor of clinical surgery in the School of Medicine of Washington University, St. Louis.——Dr. H. T. Barnes, Nelson, has been appointed superintendent of the Confederate Home, Higginsville.——Dr. Joseph J. Bansback has been appointed director of the venereal disease clinic of St. Joseph.

Influenza or Winter Cholera.—A condition which has been called winter cholera has been prevalent in children of Kansas City for more than a month. The dominant symptoms are acute indigestion, attended by nausea and diarrhea. No report has been made thus far of the seriousness of the disease. Its appearance at about the same time that influenza is prevalent in other parts of the country suggests the possibility that the condition is the intestinal form of influenza.

Health Survey and Demonstration.—The United States Public Health Service has undertaken health surveys and demonstrations in several localities of the state whereby it is hoped to establish standards for child work in the school and home. The study will be confined to those communities which afford the best prospects of putting the work on a permanent self-sustaining basis. Dr. Carlisle P. Knight, U. S. P. H. S., is in charge, assisted by Dr. Lydia A. De Vilbiss. The state board of health, American Red Cross, Missouri Tuberculosis Association, boards of education, women's organizations and city officials are cooperating in this work and the staff is made up of specialists in the different branches of medicine, nurses, field workers and clerks. The purpose is to conduct a comprehensive field investigation and demonstration in child hygiene along modern, scientific lines. In addition to this it is planned to organize a division of child hygiene within the state board of health and to assist and encourage local child hygiene activities. As a first step, agents of the Public Health Service will make a house-to-house canvass in the localities selected, and physicians and public health nurses will make visits where there are children of preschool age. Birth registration will be stimulated, prenatal supervision will be provided whenever possible or desired, and a modern health crusade will be conducted in the schools by teachers, nurses and physicians with the active cooperation of the state tuberculosis association. Schoolchildren will be examined and where necessary, suitable treatment will be recommended. Each community will be asked to make the work permanent, particularly that part of the work which provides for a full-time health officer in each community, and for the regular examination and treatment of the children.

NEW YORK

Personal.—Dr. Malcolm F. Lent, formerly medical director of Stony Wold Sanatorium, Lake Kushaqua, has been appointed supervisor of tuberculosis of the state department of health.——Dr. Herman M. Biggs, state commissioner of health, was reappointed by the governor for a term of six years, January 12, and the appointment was unanimously confirmed by the senate on the same day.——Drs. Thomas M. Holmes, Delmar, and James H. Mitchell, Jr., Cohoes, have been appointed coroner's physicians of Albany County succeeding Drs. Charles E. Bailey and James E. McDonald.

Public Water Supplies.—In an investigation made by the state department of health of the sanitary quality of the public water supply of Syracuse the question arose as to the elimination of tastes and odors due to algae growths. It has been suggested that copper sulphate be applied at the upper end of the twenty-mile conduit followed by aeration at the distributing reservoir.——Chlorination plants have recently been installed for the treatment of public water supplies at Gloversville, Gouverneur, Saratoga Springs and Sulphur Creek.——The board of water officials is considering the installation of a coagulation and sedimentation basin to be operated under pressure in connection with the pressure mechanical filters now in use at Cobleskill.

New York City

Influenza Cases Increase.—The records of the health department show that for the period from January 12 to January 16, inclusive, there were 291 new cases of influenza reported as against 97 in the preceding week.

Drug Trafficker Gets Prison Sentence.—Dr. M. A. de Preta, who was convicted of writing 50,000 prescriptions for narcotic drugs for drug addicts, was sentenced by the federal court to four years imprisonment at Atlanta. Dr. de Preta was released on $20,000 bail pending an appeal which was entered.

New Hospital Building.—The Hospital for Deformities and Joint Diseases has purchased four parcels of real estate adjoining its present holdings. The new purchase forms a portion of the site on which a new $1,000,000 building is to be erected for the hospital.

Personal.—Dr. Hideyo Noguchi of the Rockefeller Institute for Medical Research has gone to Progreso, Mexico, and will then proceed to Merida, to carry on confirmatory studies of *Leptospira icteroides*, and to test on a larger scale the curative properties of his specific serum.

Society of Medical Jurisprudence Opposes Health Insurance.—At the 306th regular meeting the New York Society of Medical Jurisprudence the subject of compulsory health insurance was discussed from the legal and medical standpoints by the outgoing and incoming presidents of the society. The society went on record as opposing compulsory health insurance.

Vacancies in Montefiore Staff.—The medical director of Montefiore Home and Hospital for Chronic Diseases, Gun Hill Road (East 210th Street), announces that there will be vacancies on the resident medical staff. Applications in writing may be addressed to Dr. Sigfried Wacksmann, medical director of the hospital, or applicants present themselves in person between 10 a. m. and 12 m. daily.

Great Demand for Nurses.—The annual meeting of the directors of the Henry Street Settlement was held at the Cosmopolitan Club on the evening of January 7. It was shown that the demand for nurses was constantly increasing in all boroughs, and had never been greater than at present except during the influenza epidemic. The institution has trained 176 nurses for public health service including graduate and undergraduate students.

Proper Feeding of Undernourished Children.—The Bowling Green Neighborhood Association, organized five years ago for improving health, living, and recreation conditions in the Bowling Green district, has established an experimental restaurant where it serves three meals a day to needy children to bring about the proper feeding of undernourished children. This is part of an experiment in a six months' campaign to instruct parents in the proper feeding of children.

Rockefeller Aid to Canadian Medical Schools.—In response to many inquiries regarding the distribution of a portion of John D. Rockefeller's gift to medical education, Dr. George E. Vincent, President of the Rockefeller Foundation, has issued a statement explaining that no definite policy would be adopted regarding the disbursement of the fund until after conferences were held with a large number of Canadians representing all the important institutional and geographic interests of the Dominion.

Schick Test for Children Entering School.—The health department has made arrangements whereby children entering school for the first time in February next will receive circulars relative to the value of the Schick test. Parents will be urged to have this test performed either by the family physician or by the school medical inspectors. The bureau of laboratories of the department of health is instructing the medical inspectors of the bureau of child hygiene in the technic of making these tests.

Rockefeller Foundation Buys Plot.—The Rockefeller Foundation has purchased a plot of ground, approximately 500 by 200 feet, between Sixty-Seventh and Sixty-Eighth streets, just north of the site of the hospital of the Rockefeller Institute of Medical Research. The property was formerly owned by the Presbyterian Hospital, and is assessed at $100,000. While no definite statement has been made as to the use to which this acquisition is to be put, it is believed that it is to provide for a considerable extension of the institution's work.

Health Department Orders Study of Measles.—Because of the increase in the number of cases of measles in this city Dr. Copeland, health commissioner, has sent a letter to the division of laboratories, of which Dr. William H. Park is director, asking that a serious study of the disease be undertaken at once. During the ten days preceding January 12, 2,221 cases were reported to the health department; while at the present time from 200 to 300 cases are reported daily, Dr. Copeland states that the appearance of such a large number of cases at this time is unexpected as the disease is usually at its maximum in May.

Prohibition of Loud Noises.—At a recent meeting of the board of health a new section was added to Article 12 of the Sanitary Code which provides that automobiles and other motor vehicles equipped with gasoline or other internal combustion engine, shall be constructed so that the exhaust from such engine is made to discharge into a muffler or other device which will prevent loud or explosive noises; and no person having the management or control of any such automobile or vehicle shall suffer or allow the exhaust from such engine to discharge into the open air, or otherwise than into a muffler or other device which would prevent loud or explosive noises.

Czecho-Slovakian Fellows of Rockefeller Foundation.—The following four physicians from Czecho-Slovakia have joined those who are now studying American methods of administration in medical schools: Drs. Zdenek Bernard, a Bohemian, 29 years of age, a graduate in 1914 of the University of Prague, who is making a special study of the organization of hygienic work in factories and the latest methods of treating venereal disease; Dr. Hynek Pelc, a graduate in 1918 of the University of Prague and later attached to the sanitary service in Cognac, France; Dr. Jaroslav Hulka, a Bohemian and graduate from the University of Prague in the class of 1919, who will devote himself to tuberculosis problems, and Dr. Karel Driml, a graduate of the University of Prague in 1914, who specializes in bacteriology and gynecology. All of these physicians have had medical experience during the war, and one was wounded in line of duty. Eight Chinese physicians, eight Chinese undergraduate medical students, four Chinese nurses, eleven medical missionaries on furlough from China, four physicians from Brazil and one physician from Salvador are also studying in America under fellowships from the Rockefeller Foundation.

PENNSYLVANIA

Philadelphia

Medical Club Meets.—The annual election and reception of the Medical Club of Philadelphia was held at the Bellevue-Stratford January 16. The officers elected were, president, Dr. Francis X. Dercum; vice presidents, Drs. Barton Cooke Hirst and Levi J. Hammond; secretary, Dr. William S. Wray, and treasurer, Dr. Lewis H. Adler.

Hospitals to Unite.—The Women's Hospital and the Women's Medical College Hospital have decided to unite. Announcement was made January 16. Committees from both hospitals had been appointed to form plans for a platform of affiliation; they will be vested with advisory powers and will arrange for a combination of dispensaries and the establishment of a purchasing department.

Personal.—Dr. Charles D. Hart has accepted the appointment as member of the board of prison inspectors for the Eastern Penitentiary.——Drs. Alice Weld Tallant and Maud Kelly who served with the French Society for Devastated France, Dr. Marianna Taylor, St. Davids, Pa., Friends Reconstruction Unit, Dr. Caroline Purnell, Commissioner to France, from the American Women's Hospitals, Dr. Regina Downe, Dr. Mary N. McLauchlan and Dr. Edith T. Morehouse of the American Women's Hospitals, Dr. Marie K. Formad of the Women's Overseas Hospital, and Dr. Laura Hunt of the Red Cross were the guests of honor at the medical college luncheon at the Adelphia January 16.

CANADA

Smallpox.—Smallpox is reported to have broken out in Winnipeg, and the medical authorities of Manitoba have placed a ban on all travelers from the south who cannot produce satisfactory certificates of vaccination.——Smallpox is reported to have broken out in twenty-six new centers throughout the province of Ontario, and the province is still virtually under quarantine.

University News.—Prof. Clarence Moore has resigned the chair of biology in Dalhousie University, Halifax, N. S., and has been succeeded by Prof. Dowell Young of Cornell University.——President, Sir Robert Falconer of the University of Toronto in his annual report, states that while the attendance has increased, the staff has decreased. The staff in 1917-1918 numbered 413, while in 1918-1919 it was 369. The total registration of students is 3,356.

Personal.—Sir Robert Borden, premier of Canada, is now on his way to Florida suffering from the effects of his exertions during the world war. He expects to be away for about six months.——Dr. John Brown, Jr., Toronto, has been made head of the physiological department of the Y. M. C. A. of North America, succeeding Dr. George J. Fisher. His title will be Senior Secretary of the Physiological Department, Home Service Committee, of the Y. M. C. A.——Major Ambrose L. Lockwood, D. S. O., M. C., Brookville, Ont., is

leaving for the Mayo Clinic, Rochester, Minn. Major Lockwood was with the Royal Army Medical Corps from 1914 to 1919.——Dr. Archibald P. Knight, emeritus professor of biology, Queen's University, Kingston, Ont., will succeed Dr. Archibald B. Macallum, retired, as representative of the department of naval service on the biologic board of the dominion government. Prof. Robert F. Ruttan, McGill University, Montreal, has also been appointed a member of the board, to fill the place vacated by Prof. John George Adami, Montreal.——Capt. Baldur H. Olson, M.D., Balfour, recently resigned as medical superintendent of the Balfour Sanatorium, B. C. He is succeeded by Dr. Francis J. Kenny.

Plans for Queen's University Medical School.—A committee of the trustees of Queen's University at a meeting held, Jan. 3, 1920, unanimously agreed on plans for the reorganization and improvement of the medical school at Kingston. A full-time dean and an adequate number of full-time clinical professors are to be secured. The university expects to obtain entire control of the Kingston General Hospital. The hospital pathologic department will be further developed; a new system of records including a complete follow-up record will be installed, and a superintendent obtained who will be responsible for the medical administration of the hospital under the supervision of the university. It is estimated that the cost of rebuilding the hospital will be approximately $750,000, of which sum $550,000 is already assured. The expense of securing additional full-time clinical professors and the further development of the pathologic department will be approximately $35,000, making a total estimated expenditure of $785,000.

Hospital News.—A new psychopathic clinic has been opened in connection with the Winnipeg General Hospital with thirty-two beds. The administration of the department will be under Dr. Alvin T. Mathers.——The municipal hospital at Fort Rouge, Man., is to be enlarged at a cost of $1,000,000. It will be situated on the Red River, will have very extensive grounds and will be completed in 1921.——Seven new hospital districts are being established in Manitoba. They are Birtle, Deloraine, Melita, Pipestone, Souris, Ericksdale and Russell. The aggregate cost will be $200,000, authorized under the Manitoba Muncipal Hospital Act.——A children's pavilion in connection with the provincial sanatorium was recently opened by Premier Martin at Fort Qu'Appelle, Sask.——The amalgamation of the Protestant General Hospital and St. Luke's Hospital, Ottawa, is said to be not far distant. Both boards have approved of the scheme. When the hospital assets are transferred to the city of Ottawa, it is hoped to have a 500 bed hospital.

GENERAL

Society Meeting.—The annual meeting of the Mid-Western Section of the American Laryngological, Rhinological and Otological Association will be held in Colorado Springs, Colo., February 7.

Malaria.—A joint resolution authorizing the United States Public Health Service to cooperate with the states in the investigation and control of malaria and appropriating $500,000 for this purpose was introduced in Congress, January 7, by Senator Harris of Georgia, and referred to the Public Health Committee.

Restrictions on Cuban Travel Removed.—Surgeon-General Blue, U. S. P. H. S., announced, January 6, that all restriction on travel between the United States and Cuba had been removed. Restrictions had been placed on this travel on account of the arrival to the United States from Cuba of several people suffering from smallpox.

Bacteriologists Elect Officers.—At the annual meeting of the Society of American Bacteriologists held in Boston recently, Dr. Charles Krumwiede, Bronxville, of the New York health department was elected president; Dr. F. C. Harrison, president of McDonald College, Montreal, vice president, and Dr. A. Parker Hitchens, Indianapolis, secretary (reelected).

Deaths Following Eating Ripe Olives in New York City.—During the past week newspapers recorded the deaths of six persons in New York City from eating olives. The brand of olives at fault has not yet been stated nor are the details available. It is stated, however, that the deaths were probably due to poisoning with toxins of *Bacillus botulinus*, similar to deaths occurring in Canton, Ohio, and in Detroit, also following eating ripe olives.

Porto Rico Physicians Hold Meeting.—At the annual meeting of the Porto Rico Medical Association held in San Juan, December 19, 20 and 21, under the presidency of Dr. Jorge del Toro, the following officers were elected: president, Dr. Pedro Malaret, Ponce; vice president, Dr. Pedro Del Valle Atiles, San Juan; secretary, Dr. Agustin A. Langier, San Juan; treasurer, Dr. Jacinto Aviles Borrero, San Juan, and councilor, Dr. Rafael Lopez Sicardo, San Juan. It was decided that the next meeting of the Association be held at Ponce, Dec. 11 and 12, 1920.

Uniformity of Labeling.—The Committee on Agriculture of the United States Senate recently held hearings on the bill of Senator Calder of New York to bring about uniformity in labeling of food and drug products in interstate commerce. The bill was designed to eliminate the conflicting regulations made by the various states. In view of the fact that the Department of Agriculture has interposed objections to its practicability and has presented an opinion seriously questioning the constitutionality of the bill, it is probable that the bill will not receive the approval of the committee.

Mental Hygienists to Meet.—The third annual convention of the Mental Hygiene Society of the United States and Canada will be held in New York City, February 4-5, under the auspices of the National Committee for Mental Hygiene and the Committee on Mental Hygiene of the New York State Charities Aid Association. The mental hygiene lessons of the war are to be one of the chief subjects of consideration at the meeting, at which Major-Gen. Merritte W. Ireland, Surgeon-General, U. S. Army, will preside. Dr. Pearce Bailey will describe the examinations which were used to determine in advance whether or not the soldiers would bear the strain of war, and Dr. Thomas W. Salmon, medical director of the National Committee for Mental Hygiene, will describe methods whereby the procedures employed in dealing with mental and nervous diseases in the American Expeditionary Forces may be applied in civil life. At this meeting twenty-two states and Canada will be represented.

Association for the Advancement of Science.—The seventy-second meeting of the American Association for the Advancement of Science and the affiliated national scientific societies was held in St. Louis, December 29 to January 3, under the presidency of Dr. Simon Flexner, New York. A change in the constitution was made which changed the title of Section H from anthropology and archeology to anthropology and that of Section I from psychology and philosophy to psychology. On the evening of January 1, the presidential address on "Present Problems in Medical Research" was delivered. Among the officers elected were: Dr. L. O. Howard, Bureau of Entomology, Washington, president; Prof. E. L. Nichols, Cornell University, Ithaca, N. Y., general secretary; E. K. Strong, Jr., Carnegie Institute of Technology, Pittsburgh, vice president, Section I, psychology, and Dr. Joseph Erlanger, Washington University, St. Louis, vice president, Section N, medicine.

Bequests and Donations.—The following bequests and donations have recently been announced:

Home of the Merciful Seviour for Crippled Children, Rush Hospital for Consumptives, Children's Seashore Home, Chelsea, N. J., and Children's County Week Association, Philadelphia, each $1,000 and the residue of the estate after a few private bequests to the Episcopal Hospital, Philadelphia, for the maintenance of two free beds.

King's Daughters Memorial Hospital, Greenville, Miss, a donation of $5,000 from the Goyer Company, Memphis, Tenn., for the hospital building fund.

St. Peter's Hospital, Charlotte, N. C., a donation of $10,000 in memory of his grandson, Hamilton C. Jones, III, by W. A. Irwin, Durham. The donation is to be used to build an annex to the hospital, including a children's ward and maternity ward.

Grant Hospital, Chicago, $100,000; Alexian Brothers' and Michael Reese Hospitals, Chicago, each $5,000; United Charities of Chicago, $5,000, by the will of Mrs. Catherina Seipp.

Children's Memorial Hospital, Chicago, $10,000, the earnings of the Rummage Shop for the endowment of a bed in the hospital in memory of Dr. Walter Shield Christopher.

Bills in Congress.—Representative Henry T. Rainey has introduced in the House of Representatives a bill to provide for the care and treatment of drug addicts identical to that introduced in the Senate by Senator France of Maryland, Chairman of the Committee on Public Health and National Quarantine.——The Public Health Service is supporting a bill introduced by Hon. James E. Reed of Missouri for the purchase of a site and erection of a new hospital in St. Louis, to take the place of the old Marine Hospital which has been conducted under the auspices of the Public Health Service. An appropriation of $1,600,000 is requested, and it is reported that the donation of a considerable amount of land will be made to the Government by St. Louis interests in the event that the bill is passed.——The Public Health

Service is also interested in the purchase of the West Baden Hotel at West Baden, Ind., to be operated as a government hospital.——Senator Kenyon of Iowa has favorably reported the bill heretofore passed by the House of Representatives, "for the promotion of vocational rehabilitation of persons disabled in industry." The purpose of this legislation is to enable civilians who have been permanently disabled or injured in industrial pursuits, to learn trades in order to carry on gainful occupations. The measure is similar in character to that providing for soldiers who have been injured in the war. The bill provides for cooperation with the various states and requires that each state shall expend in the work the same amount as that expended by the federal government within that state.——A bill has been introduced by Representative J. S. Webster of Washington which will permit any Surgeon, Assistant Surgeon, or other medical officer of the Public Health Service who resigned for the purpose of entering the army or navy to be restored to his former position in the Public Health Service.

FOREIGN

Work of Zionist Unit.—The report of the American Zionist Medical Unit, a body of about fifty physicians and nurses which began to function in Palestine in 1918, under the leadership of Dr. Isaac M. Rubinow, New York shows that it has established three hospitals, six dispensaries, three bacteriologic laboratories, two training schools for nurses and has organized sanitary squads in Jerusalem, Jaffa, Haifa, Tiberias, and Safed. The unit has also inaugurated a campaign against the mosquito and malaria, and in four weeks the mosquito-infected cisterns of Safed were reduced from 35 per cent. to 5 per cent.

Stammering Children.—There are about 1,200 stammering children attending elementary schools in London. The London County Council, realizing that such children are handicapped in getting employment, is about to organize special classes for them before they leave school. The classes will be started in different parts of London, and teachers, specially qualified for dealing with speech defects, will be appointed. The traveling expenses of children attending the classes will be paid by the council. The children will receive about twenty lessons in speech training.

Help for Foreign Physicians in Need.—The *Ugeskrift for Læger,* Copenhagen, relates: "Committees have been organized in Denmark, Norway and Sweden to aid those suffering most from the war. The aim is to help where the need is greatest, namely, in Austria, in the Baltic countries and in Belgium, and also in Poland and in Germany. It is planned for colleagues to help colleagues or their families, that is, for physicians to help physicians, clergymen to help clergymen, and so on. The plan is to send parcels or money, a package of food, clothing, soap, etc., every week or second week until the end of March, or to offer to take children into one's home. The central committee supplies the addresses of those who have applied for aid, and the aid is extended through the committees or the Red Cross. By this arrangement it is insured that the parcels, etc., will reach the addressees and that there will not be duplication of efforts."

LATIN AMERICA

Organization of the Mexican Medical Association.—Dr. Rosendo Amor E., acting dean of the school of medicine of the National University of Mexico, has been making a trip through various states, organizing branches of the Mexican Medical Association. Branches have already been established at Querétaro, Celaya, Guanajuato, León and Aguascalientes. The officers of the Aguascalientes Society are the following: president, Dr. Francisco C. Macías; secretary, Dr. Manuel I. Rodríguez, and treasurer, Dr. Alfonso M. López.

The Medical Profession in Colombia.—In an editorial in the November issue of the *Repertorio de Medicina y Cirugía,* Bogotá, Colombia, attention is invited to the possible effect on the medical profession of that country, of the new conditions in other countries created by the war. Our contemporary is apparently in fear that the young physicians graduating by the thousand from European and American universities may go to Colombia "in search of peace, freedom and money." The *Repertorio* is especially alarmed at the migration from the United States which it terms picturesquely "the land of the voracious eagle, the stars and stripes" and lays stress on the presence of some American physicians in various Colombian cities and the number of patients who go to Panama to be treated by American physicians.

Government Services

Personnel of the Medical Department

For the week ending Jan. 16, 1920, the medical department of the Army contained 2,117 medical officers, including 1 major-general, 2 brigadier-generals, 167 colonels, 159 lieutenant-colonels, 515 majors, 798 captains and 475 lieutenants. The Medical Reserve Corps contained 4,413 officers, an increase of 65 over the previous week. These were distributed as 2 brigadier-generals, 74 colonels, 276 lieutenant-colonels, 1,257 majors, 1,829 captains and 975 lieutenants. The records of the general staff show 7,539 medical reserve officers as of Jan. 16, 1920. It is explained that these figures are not an absolutely accurate statement of the Reserve Corps as they include about 1,500 of the latest recommendations from which declinations have not been deducted, and do not include a number of recommendations which have been forwarded from the Surgeon-General's Office to the Adjutant-General's Office but which have not yet been acted on in the latter office.

MEDICAL OFFICERS, U. S. NAVY, RELIEVED FROM ACTIVE DUTY

CALIFORNIA
San Diego—Churchill, J. F.
San Francisco—Cummins, F. A.
Ryan, R. C.

CONNECTICUT
West Haven—Clarke, R. D.

ILLINOIS
Chicago—Burrows, L. A.

INDIANA
Corydon—Thomas, A. G.

LOUISIANA
New Orleans—Israel, J. P.

MARYLAND
Baltimore—Fear, R. D.

MICHIGAN
Detroit—Jackson, H. H.

MONTANA
Billings—Clarke, F. B.

NEBRASKA
Pawnee City—Flory, P. J.

PENNSYLVANIA
Philadelphia—Loftus, J. E.
Longaker, H. G.
York—Schellhamer, W. H.

VIRGINIA
Richmond—Emmett, J. M.

WASHINGTON
Edwall—Brugman, J. C.

Foreign Correspondence

PARIS

DEC. 18, 1919.

Award of Prizes by the Academy of Medicine

The Academy of Medicine held its annual meeting, December 16, at which the secretary, Professor Achard, read the names of those to whom the academy had awarded prizes for the year 1919.

The Adrien Buisson prize of 10,500 francs, which is given every three years to the originator of the best method of treating recognized diseases that in the present stage of medical science are regarded as incurable, was bestowed on Dr. Sacquépée, agrégé professor at the Ecole d'application de médicine et de pharmacie militaires du Val-de-Grâce, and on Dr. de la Vergne, of the government military bacteriologic laboratory at Strashourg.

The Théodore Herpin prize of 3,000 francs is given to the author of the best work on epilepsy and nervous diseases, and was bestowed on Dr. Fernand Netter of Paris.

The Henri Huchard prize of 6,300 francs was awarded to Dr. Clair of Paris for having eminently distinguished himself during the war of 1914-1918 by the care he gave to the sick and wounded.

The Berraute prize (a 3,092 franc 3 per cent bond) was bestowed on Dr. Paine, director of the institute for cancer research in Brompton, and on Dr. Albert Peyron, head of the military laboratory for cancer research in the Hôtel-Dieu, Paris.

The François-Joseph Audiffred prize (a 24,000 franc 3 per cent. bond) is to be given to the person, without provisions as to nationality or profession, who within a time limit of twenty-five years beginning with April 2, 1896, shall have discovered a curative or preventive remedy which shall be recognized by the Academy of Medicine as efficacious or sovereign in the treatment of tuberculosis. This prize was not awarded.

Death of Troisier

Dr. E. Troisier, physician of the Hôpitaux de Paris and agrégé professor of the Paris Faculty of Medicine, died

recently, after a short illness, at the age of 75. Troisier, who was born at Savigny, department of the Ardennes, April 6, 1844, was descended from a family of physicians. His classical study was done in the *lycée* at Reims. Later he came to Paris to study medicine. He was appointed hospital physician in Paris in 1879. He became agrégé professor the following year, at the same time as Joffroy, Landouzy and Raymond. In 1901 he was elected a member of the Academy of Medicine in the section of medical pathology, and for a time was the secretary of the academy. Troisier published a large number of works, some of which have remained classic. His researches on supraclavicular adenopathy in abdominal cancer (1886-1889) have proved to be of great value, and the enlarged supraclavicular gland that sometimes is seen in cancer of the stomach or of the intestine is named the Troisier ganglion after him. He also published researches on pulmonary lymphangitis (1874), cancerous lymphangitis (1874-1901), cancer of the thoracic duct (1897), metapneumonic pleurisy, and other conditions.

Medical Men in Chamber of Deputies

From the standpoint of industries and professions represented, the newly elected chamber of deputies presents quite a different aspect from the chamber of 1914. The number of industrials has almost doubled (fifty in place of twenty-six). The agriculturists are represented by fifty-two instead of nineteen. The legal profession, however, still has a large majority: 140, as compared with 148 who had seats in the chamber of 1914. The representatives of the medical profession have decreased. In 1914 they came right after the lawyers in the point of numbers, holding, as they did, fifty-four seats, whereas the new chamber has only forty-one, with the result that they are exceeded by the capitalists, the industrials and the agriculturists.

A Welfare Society of the Foreign Colonies in France

The Union des Colonies étrangères en France, founded for the purpose of rendering aid to the victims of the war, has just held its fourth general meeting, under the presidency of Walter Berry. Mrs. Edmun L. Baylies, president of the American Committee of New York, was also present. Since the war the union has founded and supported five schools in which crippled and disabled soldiers are trained for some trade or profession, among which schools was that of Maison-Blanche in Neuilly-sur-Marne (THE JOURNAL, Jan. 17, 1920, p. 193). The union has collected in gifts and assessments nearly 5,000,000 francs, and has given training to 7,000 men.

The Effects of High Altitudes

At the last meeting of the Academy of Sciences, Dr. Raoul Bayeux submitted an interesting communication in regard to scientific observations that he made during an ascent of Mont Blanc. According to Bayeux, the discomforts of high altitudes are caused by urinary intoxication. A large number of urinalyses made between Chamonix, the village at the foot of Mont Blanc, and Mont Blanc Observatory have shown that the toxicity of the urine increases rapidly among the inhabitants as the higher altitudes are reached. This toxicity is, however, notably decreased if oxygen is injected subcutaneously. Owing to such injections, Bayeux was able to spend eleven days on Mont Blanc at an altitude of 4,400 meters without suffering any ill effects.

Roentgenographic Examination of the Abdominal Viscera

At a recent meeting of the Société médicale des hôpitaux de Paris, Dr. Ribadeau-Dumas exhibited a number of roentgenograms of the abdominal organs (liver, spleen, kidneys, gallbladder) that were taken after the intra-abdominal injection of oxygen (induced pneumoperitoneum). Remarkably clear plates are thus secured. These injections were found to be harmless and caused no discomfort. Dr. R. Benisaude stated that he preferred to inject simply air with a syringe, and that a high degree of visibility of the abdominal organs is thereby secured. After the roentgenographic examination is over, all that is necessary to do in order to draw out the air is to press on the patient's abdomen. Benisaude has never seen any ill effects from these injections, unless it be an occasional slight painful sensation in the dorsolumbar region.

Diabetes and Exophthalmic Goiter

Dr. Marcel Labbé reported to the Société médicale des hôpitaux de Paris five cases of diabetes associated with exophthalmic goiter. All the different forms of diabetes were to be found associated with the exophthalmic goiter: simple alimentary glycosuria, diabetes without denutrition, diabetes with denutrition, and diabetes accompanied by acidosis, resulting in death during coma. But this diabetes has certain special features. The glycosuria seems to be less affected by diet than usual. The evolutionary stages of the disease coincide with those of the exophthalmic goiter. At times, crises in the exophthalmic goiter occur, accompanied by extreme tachycardia, pulsations of the goiter, and diarrhea, together with severe polyuria, an increase of the glycosuria, considerable azoturia (from 44 to 48 gm.) and acidosis. Moreover, it was found that acidosis is a very common complication in the diabetes of exophthalmic goiter patients. According to Labbé, the medicaments that act on the goiter act also on the diabetes. Iodin has been found particularly efficacious in treating the two syndromes. Dr. Sicard, however, opposes this view and thinks that iodin aggravates the symptoms of exophthalmic goiter.

LONDON

JAN. 3, 1920.

Sir William Osler

The death of Sir William Osler has cast a gloom over the whole profession. In spite of his years, his activities were so great and his outlook so fresh that we never regarded him as an old man. Great physician, great teacher, great scholar, great writer is how one would sum him up. To certain others, even in his own time, some of these terms can be applied with equal force; but to whom can they all be applied? The name of his great compeer of Cambridge comes to the lips, and we know enough to say (THE JOURNAL, Aug. 30, 1919, p. 706) that the comparison would not have been unwelcome to Osler. Though alike in all these qualities, Sir William Osler and Sir Clifford Allbutt differed much and in a way not easy to define. Osler's career was, of course, widely different, and he stood alone in his remarkable influence on medicine in two continents. He seemed to be medicine personified. He combined the backward glance at the achievements of the past with the forward glance of the latest investigations in a fuller measure than any other man excepting the venerable one referred to, with whom comparison seems unavoidable. Above all, there was his winning personality, his single-minded enthusiasm for knowledge, his kindliness to his fellow man, whether colleague, student or patient. No wonder, to use his own words, the benediction of friendship followed him like a shadow, and he had the sense of comradeship in work without the petty pinpricks of jealousies and controversies.

As all who read these lines are doubtless familiar with his earlier American career, I will begin with his arrival in England. His reason for leaving Baltimore he gave as follows (*Brit. M. J.*, Jan. 3, 1914): "I had had thirty-one years of uninterrupted hard work. William Pepper, my predecessor in Philadelphia, died of angina at 55. John Musser, my successor, died of the same disease at 53. I had had a good inning, and was glad to get away without a serious breakdown." The intellectual calm of Oxford, where he had ample leisure for his literary and educational work, was a welcome relief after his American life, which had become too strenuous. When in 1905 he succeeded Sir John Burdon Sanderson in the Regius Professorship of Medicine, he brought to a somewhat antiquated school an unrivaled experience of the most modern schools and an enthusiasm for reform. It was, indeed, an ideal appointment. He was then 55 and at the height of his fame. The school was small and in some ways cut off from the other activities of the university. He soon wrought a change. His breadth of learning and manifold activities provided links with other departments. He brought the academic teaching of medicine more fully into touch with practice. He helped to develop the departments of pathology and physiology. At the Radcliffe infirmary he greatly improved the clinical teaching, and combined practice with scientific research and academic exposition as had never been done before. Mainly through his efforts a new clinical laboratory was built. For his antiquarian interests and delight in books, Oxford provided an ideal home. He spent much of his leisure in the famous Bodleian library, of which he was a curator. Of the happiness of his life at Oxford he has often borne testimony. Then came the war and the great blow of the loss of his only son in the field. He bore up bravely and continued his work, immersing himself in all the additional duties which war hospitals provided. But the loss told heavily on him and it has been described as a mortal wound. His presidency of the Fellowship of Medicine was inevitable, for no man was more devoted to the ideal of linking up the English-speaking races or had done so much for it. The open hospitality of his house at Oxford to Americans and other travelers, and his helpfulness

to them will long be cherished as a memory by many. He was always responsive to the appeals of friends abroad, was anxious about wounded sons, and undertook long and fatiguing journeys. While called in consultation in Glasgow he was caught by the railway strike, and undertook a long motor drive from Newcastle to Oxford. He arrived ill. For three months he suffered from bronchitis and pneumonia of an ill-defined type. An operation for empyema became necessary just before Christmas and seemed to promise favorably, but he died suddenly, Dec. 29, in his seventy-first year. A large and representative gathering attended the funeral service, which took place at Christ Church Cathedral, Oxford. Among the chief mourners were Lady Osler, Dr. W. Francis, Mrs. Henry Chapin, Sir Archibald Mellock, Miss Emmons and Mr. and Mrs. Frank Osler. In the congregation were the vice chancellor; the senior and junior proctors; Sir Frederick Treves; Prof. G. H. F. Nuttall; Prof. Sir T. Clifford Allbutt; Sir Norman Moore, representing the Royal College of Physicians; Sir H. D. Rolleston, representing the Royal Society of Medicine; Colonel Harvey, representing the director-general of the army medical service; Sir George Perley, representing the high commissioner for Canada; Dr. W. Collier, representing the British Medical Association; Dr. E. J. Woods, representing the Association of American Physicians; Mr. E. Maclean, representing the American University Union in Europe; Lieut.-Col. G. W. Badgeron, representing the Academy of Medicine and the University of Toronto, and Col. J. G. Adami, chancellor of the University of Liverpool. The body was taken to London for cremation.

Panel Physicians Demand Increased Remuneration

The great increase in the cost of living—amounting to more than 100 per cent.—has led to an increase of physicians' fees. Recently the British Medical Association decided that medical fees should be increased by 50 per cent. The turn has now come of panel physicians who work under a fixed capitation fee of about $1.50 per insured person. The Insurance Acts Committee of the British Medical Association has decided that under present circumstances $3 is the lowest capitation fee that can properly be accepted for an effective service. A conference on the subject has been held between representatives of the association and Dr. Addison, minister of health. Sir Clifford Allbutt, president of the association, stated that the parallel to the present insurance practice was the club practice, in which the average capitation fee was $1. In some cases the service was poor, but in others expensive drugs were used and the service on the whole was not unsatisfactory. The club physician, however, did not entirely depend on his clubs for a living, and not infrequently this part of his work resulted in a loss. With the passing of the insurance act the capitation fee had to be regarded in the majority of cases as a sum which would provide reasonable remuneration for a physician whose insurance patients occupied the greater part of his time. They had now to consider: (1) the fall in the value of money, and (2) the increased demand on the physician and the improved standard of work. In his experience in consulting practice, a patient required an hour's time for work for which twenty years ago a quarter of an hour would have been ample. He also referred to the increased cost of medical training, and emphasized the need of a good standard of remuneration in order to attract young men of the best type.

In replying, the minister of health recognized that there were increasing demands for an improved standard of service and that an impetus had been given to these demands by the illustration afforded by the war of what could be done by medical science. As a remuneration, there was no possibility of hoping to satisfy extremists, but he would do his best for the fair-minded man with a proper professional standard. Whatever might be the ideal arrangement, regard must be had to the state of the public finances. He did not think that the case for a $3 capitation fee had been made out. A distinction must be drawn between the percentage increase of the wages of the laboring classes (which must almost inevitably go in actual expenditure on food) and the case, for example, of men in the civil service receiving an income more or less comparable with that of an average physician. There was a case for a substantial increase over the prewar fee, and the new fee must be one which would give a good average physician, fairly doing his duty, what he himself would feel would pay him.

Close of the Belgian Physicians' and Pharmacists' Relief Fund

A meeting of the constituents of this fund was addressed by Dr. V. Pechère, president of the Belgian National Relief Committee for Physicians and Pharmacists, which during the war distributed at Brussels the money received from the British and other funds. He told how during the war the Belgian committee many times tried to send to England its regular reports but were prevented by the Germans. At the end of August, 1914, when it heard of the destruction and the atrocities committed in eastern Belgium by the Germans, the committee tried to establish a committee to succor their *confrères sinistrés*. But it was difficult to get any exact information as to what had happened, because of the German regulations, which rendered traveling almost impossible. There was no postal service, much less telegraph or telephone. It was the beginning of the prison régime. The committee got by subscription in Belgium 180,000 francs, from foreign lands 100,000 francs, and from England $135,000. With this sum it was able to save 140 families, more than 400 persons. One of the reasons for help was the disappearance of the head of the family.

Operation Amid Flames

The king has decorated with the Albert medal Capt. Charles Hoskyn. On the occasion of a railway accident in France, a man was pinned down by the leg under heavy girders. The wreckage was on fire and the flames had reached his ankles. Captain Hoskyn crawled into a cavity in the flaming wreckage, released one of the man's legs, amputated the other, and assisted in bringing the poor fellow out alive, retaining hold of the main artery until a tourniquet could be applied.

The Cost of Tuberculosis

The annual report of the Local Government Board, just issued, deals fully with the work carried out on tuberculosis. The number of beds provided by local authorities in sanatoriums and hospitals has increased from 1,500 in 1911 to 7,038. The number of dispensaries provided has increased from thirty to 349. In addition, four large sanatoriums, containing in all 650 beds, will soon be available. The gross expenditure by local authorities on the treatment of tuberculosis from July 15, 1912, to March 31, 1919, is estimated to have exceeded $25,000,000. Efforts have been made to handle the cases of the tuberculous ex-soldier and sailor and the organization is on a better footing than while the war lasted. In addition, the board has approved of four training colonies where consumptives can be taught suitable occupations.

GUAYAQUIL

Dec 10, 1919.

Leishmaniosis in Ecuador

Dr. Alfredo J. Valenzuela V., professor of internal pathology at the University of Guayas, presented before the physicians and medical students of this city two cases of leishmaniosis confirmed bacteriologically by Dr. José D. Moral. The cases were very interesting because of their having been confirmed microscopically and having responded to the specific treatment.

Sanitary Conditions

For the last six months there has not been a case of yellow fever. Dr. M. E. Connor of the Rockefeller Foundation is continuing his campaign against the mosquitoes that carry yellow fever.

Dr. León Becerra, director of sanitation, in association with Dr. Connor has just began a campaign against hookworm disease, which is prevalent in this country.

Personal

After having accompanied General Gorgas and Colonel Lyster on their trip in Central America to study yellow fever conditions, Dr. W. Pareja, one of the quarantine physicians of this port, who also belongs to the Rockefeller Foundation, has returned to this city.

VIENNA

Dec. 18, 1919.

Effects of the War on General Health in Vienna

The five years of war, together with the deplorable tragedy of the few months of so-called peace, have had a most detrimental effect on the general condition of the population of this city. More than 2,000,000 people, over 30 per cent. of the entire population of this new state, are dependent on outside supplies of food and fuel, which in peace times were furnished in abundance, but now are lacking every day more and more. The striking feature in the life of the city is the scarcity, or rather absence, of young children on the streets. The birth rate from 1918 to 1919 was less than 30 per cent. of the figure for 1914. Another, most visible, feature is the leanness

of the people. Formerly, a certain stoutness of the middle-aged persons, especially the women, was noticeable. The vast majority of the population have lost over 15 per cent. of their weight, many even much more. This is due to the hardly credible reduction in the supply of food, with which the Viennese have to cope. The qualitative and quantitative food values are so low that the calculated minimum of calories of 2,300 a day is never reached by the ration allowed by the government to each inhabitant. Lately this figure fell to 1,270. The effect is the visible undernutrition of the population, especially of children and the aged. The official report of the board of health of Vienna states that in 1914 the mortality rate was 16.25 per thousand of population (33,258 deaths). In 1918 it was over 26 per thousand (52,492 deaths). In 1914, tuberculosis was responsible for 6,223 deaths; in 1918, the figure went up to 11,531. So far in 1919, more than 12,000 persons have died from this disease. Thus, aside from emigration, which has assumed such proportions that one can speak with truth of the flight from Vienna (everybody in a position to do so has moved elsewhere), the population is constantly decreasing because of natural causes. The last few years have furnished an experiment on a large scale as to the lowest amount of food with which life can be continued. It has been proved that 3,000 calories, the figures given neretofore, are incorrect. They are much too high, for the amount of food consumed by the general population here, though far below that margin, has kept us alive and fit for work to a moderate degree, at least.

The condition of the new-born and of children up to 4 years has been studied by Dr. T. Weiss, who has found that 90 per cent. of all children born in the last three years show more or less marked signs of rickets; especially is this true of those born after 1917. The weight of all young babes was from 15 to 20 per cent. under normal. The older children were up to 33 per cent. under normal, so that a 4 year old child looked like a 2 year old. Even the children 9 or 10 years of age look as if they were only 6 or 7. These figures pertain to the poorer and middle classes. Among the rich, children show a little more favorable condition, but there, too, the quality of the food has not been satisfactory, in spite of wealth, for good food was and is not as yet obtainable at any price. Even children of the wealthy are rickety, anemic and weakly, although in better shape than the children of the poorer classes.

The inadequate nutrition of adults could also be easily recognized in a large number of cases by signs of bone diseases rarely encountered in normal times. Thus osteomalacia was frequently seen in the hospitals, not only in females, but also in males. Cases of obstinate "rheumatism," of "backache," of "colds" were disclosed by exact investigation to be due to softening of bones, produced by lack of calcium in the system. The diet often was entirely lacking in fat, and consisted principally of vegetarian products—cabbage, beets, and similar vegetables, not used as an exclusive diet except in times of stress. Furthermore, so-called "hunger edema" has been often noted in hospitals. Patients came with general anasarca, which, however, soon disappeared on administration of food containing vitamins. A marked decrease of diseases of the digestive organs has been evident, especially as regards the inflammatory and catarrhal type; also gout and diabetes have been less frequent. Dermatoses and furunculosis have been very annoying lately; especially scabies has become a real scourge. Arrangements have been made in our general hospitals for antiscabies treatment on a large scale. Wilkinson's compound sulphur ointment is the universally adopted remedy, followed by a zinc application. The body of the patient is well rubbed with this ointment. He is then given a soap bath, which treatment is repeated three times within two hours. Meanwhile the linen and the clothing of the patient are disinfected by a vapor process. By means of this rapid cure, hundreds of cases are dealt with daily.

A frequent figure in hospitals as well as in the practitioner's office is the war invalid. The total figure for the crippled and disabled soldiers of the former Austro-Hungarian army is placed at 380,000, which includes the blind, the deaf, the diseased and the mutilated. Of this total, about 120,000 fell to the lot of the present Austrian Republic. Needless to say, the majority of these men are in the capital and demand the more or less constant care of skilled medical men. They take up a large percentage of the hospital beds. Therefore, an invalids hospital has been established, and the former military hospitals have been turned over to a committee for the care of war cripples and invalids. A special orthopedic hospital under Professor Spitzy is in full working order in Vienna, and is supplied with all the most up-to-date appliances for the care of the armless or otherwise crippled persons. A visit to Vienna just now would be worth while for the American physician. Aside from the food problem, which the American Mission or the American embassy here would no doubt help citizens of the United States to solve, life would be very cheap here, as one dollar is now equivalent to nearly 200 kronen, or forty times its peace value. The prevailing prices, however, are only twenty times those of peace times. There is a good deal of medical work to be seen and much to be learned here at present along the line of special plastic surgery, pediatrics, chemistry and general pathology. Details will be given in a following letter.

The conditions affecting the general practitioner are now undergoing a transformation. Owing to ideas creeping in from Russia and Hungary, where socialistic methods and institutions have to a large degree interfered with the physician and his work, certain changes seem inevitable. Thus, the socialization, that is, the absolute control by the state of the physician and his time, place and method of work, was at one time contemplated by our government. Only the unanimous opposition of the profession, which an almost universal organization made possible, has averted the danger thus far. But a strict and continuous watch over affairs is necessary.

BUENOS AIRES

DEC. 6, 1919.

New Plan for Medical Teaching

One of the changes made by the new national plan of studies in the laws relating to universities prescribes that no profession shall require more than six years of study. Though there was some doubt as to the legality of this provision since the right to legislate on these subjects belongs to Congress, this measure has been accepted. The board of directors of the school of medicine has just approved a plan of reforms according to which the study of medicine will take only six years. The plan to distribute the studies in five periods was rejected, the distribution in years being approved instead, with compulsory examinations. Several specialties will be studied now in a semester (really four months) instead of a year. In view of local habits the plan has not been received with much enthusiasm by the students who favor the seven years period heretofore in force. The age of retirement for professors has been fixed at 65 years. There has been proposed the establishment of several new chairs: infant surgery and orthopedics, and the branching off of pharmacodynamics and therapeutics.

Influenza in Young Children

The Society of Pediatrics has held a sort of miniature congress devoted to the study of the latest epidemic of influenza among infants. The various speakers called attention to the fact that the disease attacks also little children (Dr. Elizalde), and that the influenzal bronchopneumonias are less serious than those due to measles or whooping cough (Dr. Centeno). There have been observed some cases of miliary bronchopneumonia that simulated miliary tuberculosis (Dr. Bacigalupo). All agreed as to the worthlessness of the pneumococcic vaccine called haptinogeno neumo of Dr. Méndez.

The Rockefeller Foundation Commission

The University of Tucuman has asked—and its request has been successful—that the Rockefeller Foundation Commission send a medical commission to study malaria and its prophylaxis in the province of Tucuman.

Marriages

LUCIUS WILLIAM CASE, Pomona, Calif., to Miss Jennie M. Flanner of Jackson, Mich., at Pomona, January 1.

WILLIAM HENRY MACKAY, Philadelphia, to Miss Florence M. Gompers of Washington, D. C., December 25.

MALFORD WILCOX THEWLIS, Wakefield, R. I., to Miss Christiane Cherfils of Paris, France, December 10.

ROSWELL TALMADGE PETTIT, Ottawa, Ill., to Miss Dorothy Blatchford of Oak Park, Ill., January 16.

HENRY JACKSON, JR., Baltimore, to Miss Isabella Dove Lee of Chestnut Hill, Boston, January 3.

HAROLD FREDERICK LANSHE to Miss Elizabeth B. Taylor, both of Allentown, Pa., recently.

HARRY S. BERMAN, Detroit, to Miss Caroline Block of Gordonsville, Va., December 23.

Deaths

William Samuel Gottheil ⊕ New York City; College of Physicians and Surgeons in the City of New York, 1882; aged 60; a specialist in dermatology; professor of dermatology in the New York School of Clinical Medicine; a fellow of the New York Academy of Medicine; a member of the American Dermatological Society; dermatologist to the City and Lebanon hospitals, New York City; consulting dermatologist to Beth Israel, Washington Heights, Jewish Maternity, and Rockaway Beach hospitals, and the Hospital for Deformities and Joint Diseases, New York City; died January 7, from heart disease.

Wallace Edgar Sabin ⊕ Lieut., M. C., U. S. Army (retired), Anna, Ill.; College of Physicians and Surgeons in the City of New York, 1868; aged 74; contract surgeon, U. S. Army from December, 1869, until September, 1892, and from 1898 to 1908; commissioned first lieutenant, Medical Reserve Corps, July 7, 1908, and first lieutenant, Medical Corps, May 22, 1909, and retired by operation of law, June 7, 1909; a member of the Association of Military Surgeons of the United States; died at the home of his brother, January 10, from angina pectoris.

Charles Philip Pinckard, Chicago; Harvard University Medical School, 1889; aged 55; a member of the Illinois State Medical Society; a specialist in diseases of the eye; and one of the founders of the Chicago Ophthalmological Society; attending ophthalmologist to Michael Reese Hospital and the dispensary of that institution, and to the Home for Crippled Children; died January 17, from heart disease.

Hilary M. Christian ⊕ Philadelphia; University of Pennsylvania, Philadelphia, 1882; aged 61; professor of genitourinary diseases in his alma mater; a member of the genitourinary staff of the German Hospital; formerly clinical professor of surgery in the Medico-Chirurgical College of Philadelphia; died in the Presbyterian Hospital, Philadelphia, January 7.

Emma Valeria Pintard Bicknell Culbertson ⊕ Boston; Woman's Medical College of Pennsylvania, Philadelphia, 1881; aged 65; a member of the American Academy of Medicine; a specialist in surgery and gynecology; attending surgeon to the New England Hospital for Women and Children, Boston, since 1883; died in St. Petersburg, Fla., January 9.

Richard Justus Swoboda ⊕ Philadelphia; Medico-Chirurgical College of Philadelphia, 1906; aged 36; associate professor of chemistry and toxicology in Temple University, Philadelphia; for nine years a district physician under the department of health and charities; died January 3, from a nervous breakdown.

Byron H. Phelps, Corry, Pa.; Western Reserve University, Cleveland, 1871; aged 75; consulting surgeon to the Corry Hospital; formerly mayor of Corry and president of the local board of health; while crossing the railway tracks at Spartansburg, Pa., January 5, was struck by a train and instantly killed.

Britton Duroc Evans ⊕ Greystone Park, N. J.; College of Physicians and Surgeons, Baltimore, 1885; aged 61; medical director of the New Jersey State Hospital, Morris Plains; a medicolegal expert in insanity and mental diseases; once president of the Morris County Medical Society; died January 14.

Laura House Branson ⊕ Iowa City; State University of Iowa, Iowa City, 1885; aged 50; formerly a member of the staff of Mercy Hospital, Iowa City, and president of Johnson County Medical Association, and the Iowa Women's Medical Society; died at the home of her daughter in Oklahoma City, January 11.

John Willcheur Barnes, Columbus, Ohio; Cincinnati College of Medicine and Surgery, 1889; aged 56; formerly demonstrator of anatomy and later professor of practical anatomy in the Medical College of Ohio, Cincinnati; died January 1, from diphtheria.

Henry Neill Dickson ⊕ Paragould, Ark.; Vanderbilt University, Nashville, Tenn., 1889; aged 52; pathologist and physician to the Paragould Sanitarium; died in St. Louis, December 7, from peritonitis following rupture of the gallbladder.

Joseph Eugene Rolly Ellis, Grafton, W. Va.; Bellevue Hospital Medical College, 1895; aged 48; a member of the West Virginia State Medical Association; a veteran of the war with Spain; died December 22, from heart disease.

Dudley W. Stewart, Los Angeles; Northwestern University Medical School, Chicago, 1861; aged 83; a pioneer practitioner of Southern California; surgeon of United States Volunteers during the Civil War; died about January 1.

David S. Alverson, Vicksburg, Miss.; Memphis (Tenn.) Hospital Medical College, 1899; aged 44; a member of the Mississippi State Medical Association; was shot and killed, it is believed, by the husband of a patient, January 5.

Franklin Loder, Logansport, Ind.; Indiana Eclectic Medical College, Indianapolis, 1890; aged 55; died in St. Joseph's Hospital, Logansport, December 30, from the effects of poison, taken, it is believed, with suicidal intent.

George William Fox ⊕ Milwaukee; Rush Medical College, 1897; aged 44; a well known surgeon of Milwaukee; for many years a member of the staff of St. Mary's Hospital; died January 8, from bronchopneumonia.

Frank C. Stewart, Indianapolis; Hahnemann Medical College, Chicago, 1886; aged 66; a member of the Medical Corps of the Indiana National Guard during the war with Spain; died January 1, from paralysis agitans.

Albert Chenoweth, Bushnell, Ill.; Rush Medical College, 1872; aged 71; formerly a surgeon in the Army, serving with General Reno at the time of the Custer massacre; died January 2, from cerebral hemorrhage.

Arthur Joseph Lance ⊕ Portsmouth, N. H.; University of Vermont, Burlington, 1893; aged 49; a member of the American Academy of Ophthalmology and Oto-Laryngology; died January 4, from cerebral hemorrhage.

Oscar Wilhelm Carlson, Milwaukee; Hahnemann Medical College, Chicago, 1872; aged 76; a practitioner for fifty-four years; a veteran of the Civil War; a member of the staff of St. Mary's Hospital; died January 7.

Charles Freemont Darnall ⊕ Llano, Texas; Rush Medical College, 1882; aged 63; secretary of the Llano County Medical Society, and city health officer; died December 2, from chronic bronchitis.

Alfred Manic Sharrocks, Syen Chyun, Chosen, Korea; Cooper Medical College, San Francisco, 1899; aged 47; died in Rochester, Minn., December 25, from atrophic cirrhosis of the liver.

Monroe Jacob Holben, Slatington, Pa.; Hahnemann Medical College, Philadelphia, 1875; aged 69; a member of the town council of Slatington; died December 17 from neurasthenia.

Laris P. Torrence ⊕ Blakesburg, Iowa (license, Iowa, years of practice, 1886); aged 72; a practitioner for forty-five years; died in Ottumwa, Iowa, January 8, after a surgical operation.

Elbridge Olin Kinne, Syracuse, N. Y.; University of Michigan, Ann Arbor, 1878; aged 67; consulting physician to the Homeopathic Hospital; died January 4, from heart disease.

Charles Russell Cavanagh, Boston; Harvard University Medical School, 1892; a member of the Massachusetts Medical Society; died at his home, in Dorchester, Boston, recently.

John T. McClanahan, Boonville, Mo.; Eclectic Medical Institute, Cincinnati, 1874; aged 66; at one time a member of the state medical board of Missouri; died January 1, from paresis.

Lewis Calvin Emenhiser ⊕ Indiana Harbor, Ind.; Chicago College of Medicine and Surgery, 1915; aged 32; died in the Presbyterian Hospital, Chicago, January 2, from encephalitis.

Frank Merle Dryden, Chicago; University of Illinois, Chicago, 1919; aged 30; died in Wesley Memorial Hospital, Chicago, December 28, from septicemia following a carbuncle.

Henry L. J. Hille, Roaring Spring, Ky. (license, examination and twenty-three years practice, 1894); aged 69; died at the home of his son-in-law, January 3, from heart disease.

James E. Morrison, Boulder, Colo.; Hahnemann Medical College, Chicago, 1866; aged 85; for many years a practitioner of Paxton and Urbana, Ill.; died January 1.

Benjamin Sindel ⊕ New York City; Long Island College Hospital, Brooklyn, 1907; aged 34; assistant surgeon to the Gouverneur Dispensary; died January 7.

Carl Elias Dufft, Mount Vernon, N. Y.; College of Physicians and Surgeons in the City of New York, 1881; a well known vocalist; died January 9.

⊕ Indicates "Fellow" of the American Medical Association.

Claudius G. Barnett, Lewisville, Ind.; Medical College of Ohio, Cincinnati, 1877; aged 64; a member of the Indiana State Medical Association; died, December 28, from arteriosclerosis.

Francis Thornton Buckner, Kansas City, Mo.; Bellevue Hospital Medical College, 1865; aged 83; a Confederate veteran; died in a hospital in Kansas City, December 27.

Harry Wadsworth Dorman, St. Petersburg, Fla.; Western Reserve University, Cleveland, 1881; aged 67; for many years a practitioner of Ashtabula, Ohio; died January 4.

Homer Corbly Rice, New Freeport, Pa.; University of Pittsburgh, 1897; aged 50; a member of the Medical Society of the State of Pennsylvania; died December 24.

Ralph W. Connell, Omaha; Pulte Medical College, Cincinnati, 1882; aged 60; formerly health commissioner of Omaha; died January 3, from heart disease.

Edwin Alphonso Carpenter, Baileyville, Ill.; Rush Medical College, 1875; aged 73; a practitioner for 52 years; a veteran of the Civil War; died December 31.

Charles T. Morel de la Durantaye, Bourbonnais, Ill.; Ecole de Médecine et de Chirurgie, Montreal, 1888; aged 61; died January 5, from heart disease.

Daniel Heard Brook, Lieut., M. C., U. S. Army, Travis, Texas (license, Texas State Board, 1907); died December 22 from chronic interstitial nephritis.

Homer Andrew Bushnell, North Adams, Mass.; Albany (N. Y.) Medical College, 1905; aged 41; died in a sanatorium at Westfield, Mass, December 31.

Edward William McBirney, Willet, N Y.; University of the City of New York, 1875; aged 69; health officer of Cortland County; died December 19.

Ezra Albert Scammon, Columbus, Kan.; University of Michigan, Ann Arbor, 1867; aged 76; also a druggist; died December 30, from pneumonia.

Addison Marshall Clark, Youngstown, Ohio; University of Pennsylvania, Philadelphia, 1880; aged 62; died December 22, after a surgical operation.

Jennie Lind Phillips Thompson, Chicago; University of Illinois, Chicago, 1898; aged 51; died January 4, from cerebral hemorrhage.

John Pressly Logan, Ottawa, Kan.; Medical College of Ohio, Cincinnati, 1867; aged 77; died January 1, from cerebral hemorrhage.

Theophilus W. Hunter, Quitman, Ga.; Jefferson Medical College, 1876; aged 68; died in a sanitarium in Atlanta, December 13.

Frank A. Maguy ⊕ Chicago; Hahnemann Medical College, Chicago, 1890; aged 61; died December 29, from bronchial pneumonia.

W. S. Barton, Orangeburg, S. C.; Reform Medical College, Macon, Ga., 1860; aged 81; died November 23, from pleuropneumonia.

Franklin Bennett, Brooklyn, N. Y.; University of the City of New York, 1875; aged 70; died December 28, from pneumonia.

John Delmayne Hanson ⊕ Donaldsonville, Ind.; Tulane University, New Orleans, 1880; aged 70; died about January 5.

Edgar Henry Byers, Philadelphia; Jefferson Medical College, 1889; aged 54; died January 7, from a nervous breakdown.

Thomas E. Russell, Paducah, Ky.; University of Louisville, Ky., 1886; aged 58; died December 31, from paralysis.

John Milton French ⊕ Silsbee, Texas; University of Nashville, Tenn., 1903; aged 41; was found dead, December 11.

Leonora Elma Knerr, Indianapolis; Medical College of Indiana, Indianapolis, 1898; aged 68; died December 14.

Oscar M. Long, Columbia, Mo.; University of Louisville, Ky., 1892; aged 50; died December 29 from tuberculosis.

Almanzer Ronelson Howard, Canton, Ill.; Eclectic Medical Institute, Cincinnati, 1878; aged 59; died December 23.

James Hamilton Cummins, Newark, N. J.; Bellevue Hospital Medical College, 1890; aged 57; died December 4.

Howard Judson Denovan, Stettler, Alta.; Trinity Medical College, Toronto, 1892; aged 51; died November 16.

Abel Roberts Wilson, West Albany, Ala. (license, Lawrence County, Ala., 1885); aged 82; died December 22.

Frank Duncan, Paxton, Ill.; Hahnemann Medical College, Chicago, 1875; aged 71; died January 1.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

APOTHESINE

Report of the Council on Pharmacy and Chemistry

Apothesine is a synthetic drug for producing local anesthesia, made by Parke, Davis & Company. In the fall of 1917 the Council wrote to Parke, Davis & Company offering its aid in establishing the identity, purity, and therapeutic efficiency of this synthetic local anesthetic with the ultimate object of accepting the product for inclusion in New and Nonofficial Remedies should the facts warrant such acceptance. The Council's letter was never acknowledged. After Apothesine was put on the market the Council desired to accept it for inclusion in New and Nonofficial Remedies but, unfortunately, was unable to do so because some of the claims made for the product were not justified by acceptable evidence. The manufacturers were notified of the Council's desire to admit this product to N. N. R. and the wish was expressed that the company would either so modify its claims as to make the product acceptable under the Council's rules or else would submit evidence to the Council in proof of the claims made and thus permit the Council to revise its conclusions. Parke, Davis & Company were, apparently, either unwilling or unable to submit evidence that would sustain their claims; neither did they offer to modify the claims themselves. The product, therefore, is ineligible to inclusion in New and Nonofficial Remedies; it will, however, be listed in the "Described But Not Accepted" department of New and Nonofficial Remedies. The report on Apothesine that follows has been authorized for publication.

W. A. PUCKNER, Secretary.

Apothesine, "the hydrochlorid of diethyl-amino-propyl-cinnamate," is an efficient local anesthetic. It belongs to the procain rather than to the cocain type, that is, it belongs to that type which, while effective for injection anesthesia (especially when combined with epinephrin) is relatively inefficient when applied to mucous membranes. Apothesine may also be used for spinal anesthesia. Its absolute toxicity is less than that of cocain (as 20 is to 15, see table below) but about twice that of procain (as 20 is to 40, see table below). It is non-irritant, is easily soluble and makes a stable solution so that it may readily be sterilized.

The Council took exception to certain claims made by Parke, Davis & Company for their product on the ground that these claims were not supported by acceptable scientific evidence. One of the claims was that Apothesine is applicable in any case in which any other local anesthetic is used. This statement, made in many advertisements, is distinctly misleading as used. When applied to mucous membranes Apothesine is far inferior to cocain and to some other local anesthetics, yet the claim obviously suggests that Apothesine is an efficient substitute for any local anesthetic.

The manufacturers claimed, too, that Apothesine is as potent as cocain. The claim would lead the physician to think that Apothesine had the same anesthetic potency as cocain in solution of equal strength. This statement, so far as it refers to the drug when applied to mucous membranes, is not in accord with the facts and is true for injection anesthesia only when stronger solutions are used. The only support for the claim of equal efficiency appears to be the experiments with intracutaneous injections made by H. C. Hamilton[1] in Parke, Davis & Company's laboratory. These

1. The Comparative Values of Some Local Anesthetics by H. C. Hamilton, Detroit, Mich., from the Research Laboratory of Parke, Davis & Co., J. Lab. & Clin. M. 4: 60 (Nov.) 1918.

differed considerably from the results of Sollmann.[2] A further series of experiments were made by Sollmann to compare still further the diverse results previously reported by him and Hamilton. The latest series, while showing considerable variations in the susceptibility of different skin areas, especially toward Apothesine, demonstrated in every case that the efficiency of Apothesine is unmistakably lower than that of cocain, being at best one half. The series also showed that the potency of Apothesine was never greater than procain and averaged considerably below it.

Another claim made for Apothesine which the Council holds is not supported by evidence is that of superior safety. This claim is made on the basis of hypodermic injections in guinea-pigs carried out in the laboratory of Parke, Davis & Company. Such experiments prove little because of the fact—well known to laboratory workers—that the use of rodents in toxicity tests made by injecting a drug into the subcutaneous tissues does not give a reliable index of the relative toxicity of such a drug for man. This is due partly to the peculiar resistance of rodents to poisons and partly to the great importance of the rate of absorption. The organism destroys most local anesthetics so rapidly that the rate of absorption is more important than the absolute dose. The absorption from hypodermic injections into guinea-pigs differs, of course, from that in clinical accidents, especially where the drug has been applied to mucous membranes. One cannot, therefore, reliably estimate the degree of clinical danger on animals.

It has been shown that when toxicity tests of local anesthetics are made on cats these animals seem to respond to the drugs in a manner more closely approximating humans and it is a suggestive fact that the more toxic of local anesthetics, as shown by tests on cats, have been found the most dangerous in clinical use. The *absolute* toxicity of Apothesine has been measured by Eggleston and Hatcher[3] by the intravenous injection in cats. The fatal doses, in terms of milligrams per kilogram ranged as follows:

Alypin, Holocain	10
Beta Eucain	12.5
Cocain	15
Apothesine	20
Tropacocain	20—25
Stovain	25—30
Nirvanin	30—35
Procain	40—45

The *absolute* toxicity of Apothesine is, therefore, only a little lower than that of cocain, and is twice as great as that of procain. The *clinical* dangers cannot be predicted by either method, since clinical accidents depend, in most instances, on idiosyncrasies, or the technic of application.

DIAL "CIBA"

Report of the Council on Pharmacy and Chemistry

Dial "Ciba" has not been accepted for "New and Nonofficial Remedies" because, as the report which follows shows, unwarranted claims are made for the product. It is a definite new chemical compound which might be made eligible for N. N. R. if misleading therapeutic claims were eliminated. The Council directed that Dial "Ciba" be included with Articles Described but Not Accepted, so that physicians might be informed with regard to its character and properties.

W. A. PUCKNER, Secretary.

Dial "Ciba" is a hypnotic manufactured by the Society of Chemical Industry of Basle, Switzerland, and is sold in the United States by A. Klipstein and Company, Inc., New York. Chemically, Dial "Ciba" is diallylbarbituric acid and is, therefore, closely related to diethylbarbituric acid or barbital ("veronal").

The claims made for Dial "Ciba" are (1), that the "allyl" group in its molecule makes it more readily decomposed by oxidizing agents than barbital, which contains the "ethyl" group; (2) that because of this ease of oxidation, it is more readily decomposed in the body and more rapidly and completely eliminated, and (3) that because of its alleged rapid elimination, it is devoid of the after effects of barbital and other hypnotics.

The Council took up the substance in February, 1918, and referred the matter to the referee in charge of barbital preparations. The referee considered unwarranted the claim that Dial "Ciba" did not have the after-effects of other hypnotics due to its alleged total decomposition in the body. The American agents, A. Klipstein and Company, were informed of the referee's objections. Their attention was also called to the fact that, nothwithstanding the claimed absence of after-effects in one part of the advertising, other parts of the same advertising admitted certain post-hypnotic effects of the product. It was pointed out also that while it was claimed in one of the advertising circulars that lowering of the blood pressure is never observed after administration of Dial "Ciba," yet two of the authors quoted in the same circular definitely stated that a lowering of the blood pressure followed even small doses of the drug and these authors warn against this very danger in certain conditions.

A year later, a circular letter sent out by A. Klipstein and Company reiterated the claim that the asserted decomposition of Dial "Ciba" in the body prevents after-affects, the drug being still contrasted with barbital ("veronal"). In view of the reiteration of this highly improbable claim, the referee undertook to study the comparative action of Dial "Ciba" as compared with other hypnotics. It was found that the actions of Dial "Ciba" are not distinguishable, qualitatively, from those of barbital, there being no perceptible difference in the after-effects or in the nature of the side actions. In toxic doses, both caused profound depression with the temperature falling to that of the room (or about one degree above), the respiration being extraordinarily slow and shallow as one would expect with lowering of the temperature. There were also the same evidences of nausea that are so frequently seen after toxic doses of the various hypnotics of this group. In view of these results, the Council declared that it is unwarranted to claim freedom from after-effects for Dial "Ciba."

The Council held that the following statement is unwarranted:

"The therapeutic field for Dial 'Ciba,' as shown by tests on rabbits, is just as broad as the field for Diethylbarbituric Acid."

Tests on rabbits do not and cannot show the breadth of the therapeutic field for a hypnotic. The Council also declared the following statement improbable, and contrary to the evidence obtained by the referee:

"In dogs, the increase of dosage beyond the therapeutic dose to the point of death is decidedly in favor of Dial 'Ciba,' which required a larger dose [than diethylbarbituric acid] to produce death."

The referee's experiments on cats show that Dial "Ciba" is several times as toxic as hydrated chloral, and more than twice as toxic as diethylbarbituric acid (barbital).

Since the circular to which objection was made in 1918 was still being sent out in December, 1919, the Council held Dial "Ciba" inadmissible to N. N. R. and voted that report of its action in the matter be authorized for publication. The Council further directed that Dial "Ciba" be included with Articles Described but Not Accepted.

2. Comparative Efficiency of Local Anesthetics, V, by T. Sollmann, from the Pharmacological Laboratory of the School of Medicine, Western Reserve University, J. Pharmacol. & Exper. Therap. **11**: 69 (Feb.) 1918.

3. A Further Contribution to the Pharmacology of the Local Anesthetics by Eggleston and Hatcher, from the Department of Pharmacology, Cornell University Medical College, New York City, J. Pharmacol. & Exper. Therap. **13**: 433 (Aug.) 1919.

Diphtheria Carriers.—The person attending the patient should wear a double layer of gauze or other soft thin cloth across the mouth and nose as a face mask whenever near the patient so as to prevent the droplets containing the germs coming from the patient's mouth from entering and lodging on the mucosa of the mouth and throat of the attendant. Even though you may not contract the disease if the bacteria lodge in your throat, they may grow there and you may act as a carrier and thus spread the disease to others.—Keep Well Series No. 4, U. S. P. H. S.

Correspondence

"AMPUTATION ABOVE THE LEVEL OF ARTERIAL OBSTRUCTION IN ARTERIOSCLEROTIC GANGRENE"

To the Editor:—In THE JOURNAL, Dec. 6, 1919, p. 1760, Drs. Eisendrath and Bettman suggested that in arteriosclerotic gangrene (thrombo-angeitis obliterans) it would be advisable to amputate above the level of arterial obstruction, such obstruction to be determined by preliminary exposure of the femoral artery. It is recommended that the artery be ligated in its pulsating portion, and that amputation be performed at the same level. Reference is made to a case in which this was done, and diagrams show the presence of a thrombus in the common femoral artery and the point of ligation above the thrombus just below Poupart's ligament. In spite of the high amputation, there was some gangrene of the flaps.

This condition is one in which the surgeon after the operation frequently feels that whatever may have been the level he has chosen for the amputation, he has erred. If he obtains primary union without gangrene of the flaps, he wonders if possibly he has not made his amputation too high; and if gangrene of the flaps results, he thinks he should have amputated at a higher level.

In an amputation of the thigh below the hip, the question of a few inches more or less of stump is of extreme importance. It is generally conceded that amputation higher than 3 inches below the great trochanter is almost worse than useless from the standpoint of hip motion of an artificial limb, so that the surgeon should in every case make a strenuous effort to get a stump of satisfactory length. I have amputated in the middle of the thigh, and have been compelled to reamputate a few inches of stump because gangrene of the flaps did not leave sufficient skin to cover over exposed bone; but even after the secondary operation, the length of the stump was satisfactory. Sight is lost of the fact that this is a chronic condition affecting chiefly main trunks and their terminal branches, and that a fair collateral circulation is established before the patient is operated on. Were this not so there would frequently be complete gangrene of the leg, something I have never seen in this condition. The superficial femoral artery and its terminals, the anterior and posterior tibials, are often occluded, the deep femoral (profunda) rarely. It is this artery with its branches that will usually take care of the nourishment of a fair sized thigh stump. I am of the opinion that had the amputation in the case mentioned been a few inches lower, leaving the profunda (which in the diagram is free of thrombus) to take care of the circulation, no gangrene of the flaps would have occurred, and the patient would have had a serviceable stump, which today he probably has not; even if some gangrene of the flaps had occurred, the amount of limb that had to be sacrificed in a reamputation might still have been so small that the final result would have been good.

I have amputated below the knee, when there was no pulsation distal to the common femoral, and when permission to do a primary high amputation could not be obtained; in spite of complete occlusion of the anterior tibial with practically no bleeding from any part of the cut surface, I have frequently had satisfactory healing of the stump.

Primary union is something to be hoped for in these cases, but not expected as a routine. End-results count; and if for the sake of obtaining primary union without any gangrene of flaps we sacrifice length of stump when length is important, as in the upper thigh, the patient suffers.

That a thrombus from the femoral may extend into the iliac and thence to the iliac of the other side is, of course, a possibility. Dr. Eisendrath mentions such a case, but this complication must be so rare as hardly to enter into the formation of a judgment as to the proper level for amputation.

Bearing on the subject, I wish to refer to a case in which I recently operated for gangrene of the foot, with no pulsation lower than the common femoral. The patient requested amputation below the knee, with the understanding that if after doing this I thought it necessary to reamputate higher, I might do so. On amputation below the knee there was absolutely no bleeding. Both tibials were firmly occluded. I then amputated through the thigh about 8 inches below the hip and found the superficial femoral artery completely occluded. There was, however, some bleeding from branches of the deep femoral artery, not enough to make one sanguine of the result; but I preferred to chance it rather than go higher and get a useless stump. The result was all that could be desired, healing being by primary union. It seems to me that in these conditions it pays to give nature a chance, or, to put it another way, it pays to let the patient run a little extra risk.

LEO B. MEYER, M.D., New York.

THE PERCENTAGE OF NECROPSIES

To the Editor:—There were two interesting communications in THE JOURNAL, Dec. 6 and Dec. 27, 1919, by Drs. Francis Carter Wood and Joseph C. Doane, respectively, relative to the low percentage of necropsies performed in our large hospitals, following the interesting paper, Sept. 20, 1919, by Douglas Symmers. The following report for the year 1919 from the City and County Hospital, St. Paul, shows that there are some hospitals which have a fairly high percentage of necropsies: total number of deaths during 1919, 608; necropsies granted by the coroner, 29; by permission from relatives obtained by the superintendent, 61; by permission obtained from relatives through the house physician, house surgeon and assistant superintendent, 154; total number of necropsies performed, 244; percentage of necropsies performed, 40.1 + per cent.

G. B. Kramer, M.D., St. Paul.
Resident Pathologist, City and County Hospital.

ADDISONISM

To the Editor:—This affection has been included under the general term chloasma; yet though it may be a form of this, it is of so definite and specific a nature that it deserves to be considered as a special entity. In Sutton's "Diseases of the Skin," page 494, there is an illustration of this condition as an unusual type of chloasma. In this affection, as the name implies, certain portions of the face acquire a pigmentation akin to the bronzing of Addison's disease, but limited in its distribution and varying in its tint from light fawn to a dark tan. The characteristic feature of this pigmentation is its symmetrical distribution, most commonly limited to the cheeks on and external to the malar prominences. In well marked cases the pigment is also deposited in semilunar patches above the eyebrows, conforming to their lines and connecting in the median line with a central frontal patch, while from another patch in the center of the chin there extends a circumoral ring.

The local treatment does not differ from that for chloasma and need not be discussed, as the interest of this affection lies in its probable etiology.

I have assumed that we have here a pigmentation that is an expression of hyporenalism, and in a form by no means rare. On an average, three or four cases a year come under observation, and all thus far have been in females. Careful inquiry into the history of the last twelve cases shows that four of the patients were affected with hereditary syphilis; four with tuberculosis, at present latent; two showed evidence of malnutrition but no evident disease, and two were apparently healthy. Their ages ranged from 11 to 23 years, and the pigmentation had been present from six months to three years. The color is usually deposited slowly, but may appear somewhat suddenly, as in one instance in which it became apparent one week after a severe tonsillar operation. How long it may persist when left to nature I am unable to say, as all I have seen have come for the removal of the pigment.

The association of Addison's disease with tuberculosis is well established; but whether addisonism is due to actual

tuberculous deposits in the suprarenals or is the result of diminished function consequent on the toxemia has yet to be determined.

The syphilitic cases are interesting, as we have here an expression of pigmentation that is probably akin in its origin to the coppery pigmentation characteristic of the acquired disease. It seems highly probable that the pigmentation in acquired syphilis is wholly due to the disease inhibiting the normal secretion of the suprarenals.

In a leading article in THE JOURNAL, Nov. 29, 1919, attention was called to experiments that suggest that arsenic has a selective action on the suprarenals, and proof of this is afforded by the occasional occurrence of typical Addison's disease after arsphenamin injections. Color is further lent to this probability by the frequent appearance of increased pigmentation around syphilitic lesions in the arsenical treatment of syphilis.

ANSTRUTHER DAVIDSON, M.D., Los Angeles.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

RECENT LITERATURE ON SOCIAL MEDICINE AND SOCIAL INSURANCE

To the Editor:—I am wondering whether it is consistent for me to request of you references to the leading articles on social medicine and medical insurance which have appeared during the past year. Where can I find a good discussion of the work of the medical insurance act in England?

JOHN SUNDWALL, M.D., Minneapolis.

ANSWER.—The following articles on social medicine have appeared in current medical literature for the past year:

Wortman, J. L. C.: Reform in Social Medicine, *Nederlandsch. Tijdschr. v. Geneesk.* **2**: 1675 (Nov. 23) 1918.
Sand, Réné: Rise of Social Medicine, *Mod. Med.* **1**: 189 (July) 1919
Glaister, J. N.: A State Medical Service, *Lancet* **197**: 751 (Oct. 25) 1919.
Fairfield, W. E.: Business Evolution and the Future of Private Medical Practice, *Illinois M. J.* **36**: 250 (Nov.) 1919.

The following articles on health insurance have appeared in current medical literature in 1919:

Whalen, C. J.: Health Insurance, *Illinois M. J.* **35**: 1 (Jan.) 1919.
Stern, Isadore: Health Insurance, *Pennsylvania M. J.* **22**: 391 (March) 1919.
Hoffman, F. L.: Health Insurance and the Public, *Pennsylvania M. J.* **22**: 664 (July) 1919.
Rott, O. M.: Arguments Against Compulsory Health Insurance, *Northwest Med.* **18**: 81 (May) 1919.
Ballinger, J. R.: Compulsory Health Insurance, *Illinois M. J.* **35**: 9 (Jan.) 1919.
Fairhall, Joseph: Compulsory Health Insurance, *Illinois M. J.* **35**: 12 (Jan.) 1919.
Ochsner, E. H.: Compulsory Health Insurance, *Illinois M. J.* **35**: 3 (Jan.) 1919.
Verney, L.: Health Insurance in Different Countries, *Policlinico* (sez. prat.) **26**: 817 (June 29) 1919.
Lapp, J. A.: Health Insurance, Its Disadvantages and Advantages, *Pennsylvania M. J.* **22**: 661 (July) 1919.
Warren, B. S.: Health Insurance, Medical Profession and Public Health, Including Results of Study of Sickness Expectancy, Pub. Health Rep. **34**: 775 (April 18) 1919.
Harris, M. L.: National Health Insurance, *Illinois M. J.* **35**: 10 (Jan.) 1919.
Cunningham, W. P.: Health Insurance, Socialistic Subjugation of Medical Profession, *Delaware State M. J.* **10**: 8 (April-June) 1919.
Downing, A. F.: Study of Health Insurance in Relation to History of Two Countries Where It Has Found Most Favor, *Boston M. & S. J.* **180**: 433 (April 17) 1919.
Stanton, E. M.: Compulsory Health Insurance: Its Promises and Its Dangers, *Med. Rec.* **96**: 749 (Nov. 8) 1919.

In addition to the literature for the past year, the following articles and pamphlets will be of interest to the student of health insurance:

Social insurance pamphlets issued by the Council on Health and Public Instruction of the American Medical Association, 535 North Dearborn Street, Chicago:

Pamphlet I. Workmen's Compensation Laws, from the Report of the Judicial Council of the American Medical Association for 1915.

Pamphlet II. Social Insurance, the Report of the Special Committee of the American Medical Association for 1916.

Pamphlet VI. Medical Organization Under Health Insurance, by Dr. Alexander Lambert, New York.

Pamphlet VII. Statistics Regarding the Medical Profession, compiled by the Committee on Social Insurance.

Pamphlet XI. Social Insurance, Report of the Special Committee of the American Medical Association for 1919.

Reports of special commissions on social insurance. (These may be secured by writing to the secretary of the committee at the state capital).

Report of the Massachusetts Special Committee on Social Insurance, February, 1917, House Document 1850; Jan. 15, 1918, Senate Document 244, Boston.

Report on Health Insurance by the New Jersey Commission on Old Age Insurance and Pensions, 1917.

Report of the Wisconsin Special Committee on Social Insurance, January, 1919, Madison, Wis.

Report of the Social Insurance Commission of the State of California, Sacramento, March, 1919.

Report of the Health Insurance Commission of Pennsylvania, Harrisburg, January, 1919.

Health, Health Insurance and Old Age Pensions, Report of the Ohio Health and Old Age Insurance Commission, Columbus, February, 1919.

Report of the Connecticut Commission on Public Welfare on Social Insurance, Hartford, 1919.

Report of the Health Insurance Commission of the State of Illinois, Springfield, May 1, 1919.

The following pamphlets have also been issued:

FOR INSURANCE

Health Insurance Standards and Tentative Draft of an Act, American Association for Labor Legislation, 131 East Twenty-Third Street, New York City.

Health Insurance, Its Relation to Public Health, Bull. 76, U. S. P. H. S.

Social Insurance, address of Arthur Hunter, president of the Actuarial Society of America, reprinted from the Transactions of the Actuarial Society of America **17**, Part 2, No. 56.

Address of Governor Samuel W. McCall to the two branches of the legislature of Massachusetts, Jan. 4, 1917, Boston.

Sickness Insurance or Sickness Prevention, Research Report 6, National Industrial Conference Board, 15 Beacon Street, Boston.

Addresses and Papers on Insurance, by Rufus M. Potts, Insurance Superintendent, State of Illinois, Springfield, Ill.

Proceedings of the Conference on Social Insurance, Dec. 5 to 9, 1916, Bull. 212, U. S. Bureau of Labor Statistics, Washington, D. C.

AGAINST INSURANCE

Social Insurance, address delivered by William Gale Curtis at the Convention of National Association of Casualty and Surety Agents.

Compulsory Health Insurance, address before the legislative hearings in New York and Massachusetts, by Magnus W. Alexander, West Lynn, Mass.

Social Insurance, a Report of the Committee on Insurance of the Chamber of Commerce of the State of New York, New York Chamber of Commerce, 65 Liberty Street, New York.

Facts and Fallacies of Compulsory Health Insurance, an address before the American Association for the Avancement of Science, by Frederick L. Hoffman, LL.D., Statistician, the Prudential Insurance Company of America.

A Refutation of False Statements in the Propaganda for Compulsory Health Insurance by the Committee of the National Civic Federation, October, 1919. New York City, 33d Floor, Metropolitan Tower. Price, 25 cents.

Fallacies of Compulsory Social Insurance, by Edson S. Lott, President of the United States Casualty Company, 80 Maiden Lane, New York.

Arguments Opposing the Idea of Enacting a Compulsory Health Insurance Law in Illinois, by the Health Insurance Committees of the Illinois State Medical Society and the Chicago Medical Society, reprinted from the Illinois M. J. **35**, January, 1919.

For editorials, articles and correspondence on the working of the British Health Insurance Act, see the files of the *British Medical Journal* and the London *Lancet* from 1910 to date.

VLEMINCKX' SOLUTION

To the Editor:—Will you please send me the prescription for Vleminckx' solution as used by Dr. William A. Pusey for verrucae and described by him in an article under Clinical Notes, etc., in THE JOURNAL, Jan. 10, 1920, p. 97? I am unable to find the liquid described in any of my textbooks on the skin.

H. W. KENFIELD, M.D., Lawrence, Mich.

To the Editor:—Will you kindly inform me what Vleminckx' solution contains?

F. J. W., Freeburg, Mo.

To the Editor:—Will you kindly forward me the formula for Vleminckx' solution?

J. L. DACH, M.D., Reeder, N. D.

ANSWER.—This solution appears in the National Formulary. It is also known as Liq. Calc. Sulphurat., the solution of oxysulphuret of calcium, and as Vleminckx' Lotion. It is made thus:

Calcium oxid	165 gm.
Sublimed sulphur	250 gm.
Water, the completed mixture to make	1,000 c.c.

Shake the calcium oxid, mix it with the sulphur and add the mixture gradually to 1,750 c.c. of boiling water. Boil this mixture, with frequent agitation, until it is reduced to 1,000 c.c. and maintain this volume while boiling one hour, by the addition of water from time to time. Cool and strain

the mixture and having allowed the solution to become clear by standing in a stoppered bottle, decant the clear brown liquid, and preserve it in completely filled and well stoppered bottles.

"ALLEGED PLACENTAL FUNCTIONS"

To the Editor:—The editorial comment on "Alleged Placental Functions" (THE JOURNAL, Dec. 6, 1919, p. 1774) caused me to wonder whether any experiments had ever been made on the cow, which, being a herbivorous animal, eats the placenta immediately after its passage. It has always occurred to me that the cow must have good and sufficient reasons for doing this. L. C. AUDRAIN, M.D., Mazatlan, Mexico.

ANSWER.—It is generally known that rabbits, horses, pigs and cows eat the placenta. We are unable to find any references to experiments performed on these animals to demonstrate the effect that would follow if the animal should be prevented from eating the placenta. The subject is rather well summarized in THE JOURNAL, Jan. 3, 1920, p. 47. The United States Department of Agriculture, Bureau of Animal Industry, replies to the question, saying that one reason that leads certain animals to eat the placenta is an instinct to destroy this structure so as to leave no evidence of parturition. The eating is done as a matter of protection against predatory animals, and as an instinctive measure to keep such animals from locating the newly born young. It is also suggested that most animals are usually very hungry after parturition, and this perhaps explains why the placenta is eaten. On the whole, it may be said that the reason for eating the placenta has never been adequately demonstrated, and experiments on feeding placental tissue to human beings are very inconclusive.

TUBERCULOUS POULTRY

To the Editor:—Nov. 26, 1919, I bought a chicken (drawn) in a nearby market, and when it was dressed my attention was called to the size of the liver. On examination, both liver and spleen appeared to be tuberculous. A laboratory report shows tubercle bacilli from both organs. The chicken was sold for a spring hatched bird.

E. C. MCGEHEE, M.D., Stevenson, Minn.

ANSWER.—This phase of meat inspection has not been given special attention by the United States government or by most city departments of health, probably for the reason that a tremendous force would be necessary to inspect dressed chicken that came to the market. The transmission of tuberculosis from fowls to man is practically negative, owing to the fact that proper cooking renders the fowl, if affected, harmless. It seems likely that almost any housewife would notice marked tuberculosis in the livers of poultry being prepared for the table.

Chicago has a city ordinance, which reads:

No cased, blown, plaited, raised, stuffed, putrid, impure, unhealthy, or unwholesome meat, fish, bird or fowl shall be held, bought or sold or offered for sale for human food, in any place in said city. Every person or corporation who shall violate any of the provisions of this section shall be fined not less than twenty-five dollars nor more than one hundred dollars for each offense.

BLACK TONGUE

To the Editor:—What is the treatment of black tongue (nigrities linguae)? J. L. RAVITTS, M.D., Montezuma, Iowa.

ANSWER.—The cause of the condition is unknown. No pathogenic organism has been found to account for it. It usually disappears spontaneously in time. It may last for only a few weeks or a few months, or it may persist for years. Cleanliness and antiseptic mouth washes may be of service. Nothing is gained by scraping or destroying the elongated papillae. Such measures simply produce apparent benefit by getting rid for the time being of the cause of the blackness.

LEGAL DECISIONS ON BURNS FROM HOT-WATER BOTTLE

To the Editor:—I have a case coming up in court next June, in which it is alleged that a patient in my hospital was burned by a hot-water bottle. It is quite similar to the one published in THE JOURNAL, Dec. 27, 1919. I would appreciate it very much if you will refer me to other cases that have been published in which the supreme court decision is similar. X. Y. Z.

ANSWER.—Reports of decisions on similar cases were published in THE JOURNAL, March 8, 1919, p. 754; June 9, 1917, p. 1775; April 8, 1916, p. 1162, and Nov. 2, 1912, p 1650.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, Mar. 2. Sec., Dr. L. O. Sloan, Juneau.

CALIFORNIA: Los Angeles, Feb. 16-19. Sec., Dr. Chas. B. Pinkham, 906 Forum Bldg., Sacramento.

CONNECTICUT: New Haven and Hartford, March 9-10. Sec., Reg. Bd., Dr. Robert L. Rowley, Hartford. Sec., Homeo. Bd., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven. Sec., Eclectic Bd., Dr. James Edwin Hair, 730 State St., Bridgeport.

ILLINOIS: Chicago, Mar. 1-3. Director, Mr. Francis W. Shepardson, Springfield.

INDIANA: Indianapolis, Feb. 10-13. Sec., Dr. W. I. Gott, 84 State House, Indianapolis.

KANSAS: Topeka, Feb. 10. Sec., Dr. H. A. Dykes, Lebanon.

MAINE: Portland, March 9-10. Sec., Dr. Frank W. Searle, 776 Congress St., Portland.

MASSACHUSETTS: Boston, March 9-11. Sec., Dr. Walter P. Bowers, Room 144, State House, Boston.

NATIONAL BOARD OF MEDICAL EXAMINERS: St. Louis and Chicago, Feb. 18-25. Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia, Pa.

NEW HAMPSHIRE: Concord, March 11-12. Sec., Dr. Charles Duncan, Concord.

NEW YORK: New York City, Albany, Buffalo, Jan. 27-31. Asst. Professional Examinations, Mr. H. J. Hamilton, Albany.

VERMONT: Burlington, Feb. 10-12. Sec., Dr. W. Scott Nay, Underhill.

WYOMING: Thermopolis, Feb. 2-4. Sec., Dr. J. D. Shingle, Cheyenne.

PLUMBOPATHY

A Satire on Cults in Medicine

The editor of the Fresno (Calif.) *Republican,* some six months ago, evidently feeling in a pleasantly bitter mood, took his pen in hand and turned out the following comment on the new school of plumbopathy:

"PLUMBOPATHY

"We rise again to protest! Examinations were held in Fresno last night for plumbers' licenses. No one is permitted to practice plumbing in California without such a license. And all the examinations are in the complete control of the regular or plumbopathic school. This is a rank discrimination against the disciples of other plumbing faiths.

"The plumbopathic school, for instance, holds to the doctrine that air has pressure, and that an air outlet, properly connected, is therefore necessary behind every water seal, to keep the pressure on the two sides equal. Shall persons who do not believe in air pressure be deprived of their constitutional liberty to choose a plumber of their own suckopathic school, who will make the connections all the way to the sewer unvented, to increase the suction? The plumbopaths also believe that when the water stops running from a faucet, there is some obstruction in the pipe leading to that faucet. Shall we give them the legal right to exclude from practice the aeroplumbs, who teach that it is due to the wind blowing in the wrong direction? When the pipe joints leak, also, it is plumbopathic therapy to repack the screw threads with red lead. Shall this procedure be imposed on a householder who believes that they ought, instead, to be packed in ice, to contract the metal, and shall he be denied his liberty to call in a practitioner of the gelopathic school?

"Moreover, why should plumbers be examined on their practical knowledge of pipes and metals and joints, and of the legal requirements for installing them? These pipes and joints are not the ultimate Truth of plumbing. They are merely its proximate manifestations. On the plane of the Absolute, all Plumbing is Water. The ingress and egress of Water is the Supreme Significance of Plumbing. But water is no mere immediate Fact. It is derived from the melting snows of the Providential Mountains, or from the raindrops of the Heavenly Clouds. And these are but manifestations of the Force of the Sun. Therefore, considered absolutely, and not relatively, water is Sun, Helios. Shall the practitioners of Heliodic Science be required to divert their attention from these high contemplations to mere material pipes and wrenches, as a condition of treating errors of plumbing by Heliogenic absent treatment?

"We suggest that the dissenting plumbers and their potential customers form a League for Plumbing Freedom, to demand of the legislature equal recognition for all schools of plumbing, and especially to exempt from examination on the theory and practice of plumbing all persons who have conscientious scruples against such knowledge, and who believe that plumbing can be done better without it."

Presumably the powers that be could not see the matters in the same way that our editorial colleague sees it. So recently he has again dipped his pen in a well of gall and wormwood:

"UNJUST DISCRIMINATION

"We are moved once more to register our annual protest against the pending examinations for plumbers' licenses. It is seriously proposed that no one shall practice plumbing in Fresno unless he knows plumbing, and that his competency shall be established by examination before a sectarian board, all of whose members but one are orthodox plumbers, and that one is an educated physician.

"What chance has a graduate of the aeropractic correspondence school of plumbing before such a board? There should be a referendum to the people, on a law authorizing the aeropractors to license themselves, on such educational qualifications as they are able to come up to. What right have these orthodox plumbers to examine candidates on hydrostatics and sanitation, or to test their knowledge of pipes and fixtures, or their skill in installing and repairing them? The aeropractors have testimonials showing a lot of people who never had any orthodox plumbing in their houses, and are still alive. Is it not an interference with religious liberty to confine the practice, in Fresno, to the one sect which knows pipes, fixtures and sanitation, and does its work with trained skill and in accordance with the ordinances?

"It is not the rights of the aeropractors alone that are involved. Even they are relatively materialists. Since the purpose of plumbing is to remove stench, their technic is to let the wind blow it away, or to install electric fans to help out the wind, in closed places. But there are more spiritual practitioners of the plumbing art who demonstrate that there is no such thing as stench. Stench is a sensation; not a fact. Sensation is a function of the mind. And since stench is a disagreeable sensation, it may exist in the mind but not in Mind. The remedy, therefore, is to raise mind to Mind, by the perusal of the textbook on Spiritualized Sanitation. This proposed plumbing examination is an intrusion on the liberty of conscience of all disciples of the Spiritual Sanitarians.

"If there is to be any such arbitrary requirement, we submit that there should be provision for a certificate of conscientious objection for those who do not wish to comply with it. Otherwise we shall be discriminating unjustly in favor of educated plumbers, by requiring education of their competitors. An educational qualification is undemocratic, in a community in which there are more people who do not know plumbing than there are who do know it. Let the majority rule!"

May we add our mild protest to what our colleague has written. Plumbing should not be restricted to the few. We demand the right to use our own system of intensive mental plumbing. If our pipes freeze up and break and we want to give Nature a chance to heal the wound, we object to having Mr. Dingbat, on the floor below, come up and complain that the secretions are dripping into his baby's bed and the child cannot sleep. There is such a thing as individual freedom and justice in this world, and we propose to have it.

California June Examination

Dr. Charles B. Pinkham, secretary of the California State Board of Medical Examiners, reports the oral and written examination held at San Francisco, June 23-26, 1919. The examination covered 9 subjects and included 90 questions. An average of 75 per cent. was required to pass. Of the 80 candidates who took the physician's and surgeon's examination, 65, including 1 osteopath, passed, and 15, including 7 osteopaths, failed. Seventy-seven candidates were licensed by reciprocity. Two candidates were granted osteopathic reciprocity certificates. One candidate received a drugless healer license, and 9 candidates were granted licenses to practice chiropody. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Arkansas		(1918)	89.9
College of Medical Evangelists	(1919) 83.7, 86.8, 91.7, 91.9, *.		
College of Physicians and Surgeons, Los Angeles	(1919) 75, 75.7, 76.4, 78.9, 79.7, 82, 82.5, 82.9, 84.4, 84.7, 87.7, 88.2, 88.4, 88.5, 89, 89.7, 92, 92, *, *, *, *.		
College of Physicians and Surgeons, San Francisco		(1919)	76.8, 82.8
Leland Stanford Junior University	(1919) 81.8, 82.7, 82.9, 84.7, 84.9, 85.5, 88.3, 88.3, 88.8, 89.2, 95.1, 95.7.		
Oakland College of Medicine and Surgery		(1919)	83.5, 88.1
Northwestern University		(1918)	89.8
Rush Medical College	(1919) 79.5, 84.8, 89.5.		
University of Kansas		(1918)	*
Harvard University		(1916)	90.2
University of Michigan Homeopathic Medical School		(1918)	84.8
University of Minnesota		(1919)**	79.8
St. Louis University		(1919)	85
Columbia University		(1918)	93.1
Jefferson Medical College		(1918)	89.8
University of Pennsylvania		(1918)	83, 88
Baylor University		(1919)	90.1
Kyoto Perfecture Special Medical School		(1905)†	77
Nippon Special Medical School		(1910)†	75.3
National Homeopathic School of Medicine		(1907)†	75
National School of Medicine		(1897)†	90
McGill University		(1905)	88.9
University of Zurich		(1917)	80.7

FAILED

College of Physicians and Surgeons, Los Angeles (1918) 67.7, 67.9, 71.2.
College of Physicians and Surgeons, San Francisco (1918) 51.7, 62.4, (1919) 72.8.
Kentucky School of Medicine (1906) 65
Johns Hopkins University (1917) 70.9

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Hahnemann Medical College of the Pacific		(1904)	Alaska
Denver and Gross College of Medicine	(1905) Utah,	(1909)	Colorado
Howard University		(1904)	Dist. Colum.
Atlanta College of Physicians and Surgeons		(1905)	Georgia
Bennett College of Eclectic Medicine and Surgery		(1906)	Iowa
Chicago College of Medicine and Surgery		(1913)	Indiana
		(1918)	Illinois
College of Physicians and Surgeons, Chicago		(1903)	Oregon
		(1904)	N. Dakota
Hahnemann Med. Coll. and Hosp., Chicago	(1905),	(1917)	Illinois
Northwestern University	(1894) Illinois; (1906) Colorado, (1912) Illinois, Oregon.		Illinois,
Rush Medical College	(1894) Iowa, (1897) Illinois, (1904) Indiana, (1906) Illinois, (1913) Minnesota.	(1903)	Utah
University of Illinois		(1914)	Illinois
Eclectic Medical College of Indiana		(1903)	Indiana
Keokuk Medical College		(1907)	Iowa
State University of Iowa College of Homeo. Med.		(1903)	Iowa
State University of Iowa College of Medicine		(1893)	Nebraska
College of Physicians and Surgeons, Kansas City		(1898)	Minnesota
Kansas Medical College		(1906)	Kansas
University of Louisville	(1895) Oregon,	(1900)	Washington
		(1914)	Kentucky
Baltimore Medical College		(1908)	New York
Johns Hopkins University	(1905) Alabama,	(1914), (1915)	Maryland
Harvard University		(1903)	Mass.
Detroit College of Medicine		(1902)	N. Dakota
Univ. of Michigan Med. School	(1883) Minnesota,	(1890)	Ohio
	(1911),	(1917)	Michigan
University of Minnesota College of Med. and Surg.		(1906)	Minnesota
University of Minnesota Homeopathic Med. Dept.		(1903)	Minnesota
Eclectic Medical University, Kansas City		(1912)	Arkansas
Kansas City Medical College		(1905)	Kansas
Marion-Sims Beaumont Medical College		(1902)	Oregon
Marion-Sims College of Medicine		(1893)	Iowa
Medico-Chirurgical College of Kansas City		(1905)	Missouri
University Medical College, Kansas City	(1902),	(1907)	Kansas
		(1913)	Missouri
John A. Creighton Medical College	(1907) Oregon,	(1917)	Nebraska
Long Island College Hospital	(1893),	(1899)	New York
Cornell University		(1906)	New York
University of Buffalo		(1898)	Penna.
Eclectic Medical Institute		(1901)	Kansas
Starling Medical College		(1896)	Ohio
Willamette University		(1907)	Oregon
Jefferson Medical College	(1897) Washington,	(1910)	Utah
University of Pennsylvania	(1899) Penna., (1906),	(1911)	New York
Western Pennsylvania Medical College		(1901)	Penna.
Vanderbilt University	(1908) Montana, (1913) Iowa,	(1917)	Tennessee
University of Nashville	(1886), (1906) Montana,	(1909)	Tennessee
University College of Medicine, Richmond		(1900)	Washington
University of Vermont		(1907)	Washington

* No grade given.

** Granted M.B. degree in 1919 after completing four year course; will receive M.D. degree after completing his intern year.

† Credit allowed for years of practice.

Nebraska February and June Examination

Mr. H. H. Antles, secretary of the Nebraska Department of Public Welfare, reports the oral, written and practical examination held at Lincoln, Feb. 13, 1919. The examination covered 12 subjects and included 100 questions. An average of 70 per cent. was required to pass. Of the 52 candidates examined, 51 passed and 1 failed. Fourteen candidates were licensed through reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
John A. Creighton Medical College	(1917) 88, (1919) 78, 81, 81, 82, 82.5, 82.5, 82.5, 83, 83, 83, 83, 83, 83.5, 85, 86, 88.		
University of Nebraska	(1918) 82, (1919) 79, 79.5, 81, 82, 83, 83, 83, 83, 83, 83.5, 84, 84, 84, 85, 85, 85, 85.5, 86, 86, 86, 86, 86, 87, 87, 87, 90, 92, 92, * (1920) 85, 86.		
Columbia University		(1915)	82

FAILED

Loyola University (1917) **

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
University of Colorado		(1918)	Colorado
Chicago College of Medicine and Surgery		(1918)	Illinois

Hahnemann Medical College and Hospital, Chicago	(1906)	Illinois
Loyola University	(1917)	Illinois
Northwestern University	(1904)	Illinois
University of Illinois	(1915)	Illinois
Louisville Medical College	(1907)	Kentucky
Ensworth Medical College	(1910)	Missouri
National University of Arts and Sciences	(1917)	Missouri
University Medical College of Kansas City	(1900)	Missouri
Long Island College Hospital	(1915)	New York
New York University	(1896)	New York
University of Oklahoma	(1911)	Kansas
Dallas Medical College	(1903)	Texas

* Completed work of medical curriculum in 1918, degree to be conferred in February, 1920.
** No grade given.

The oral, written and practical examination held at Lincoln, June 30, 1919, covered 12 subjects and included 100 questions. An average of 70 per cent. was required to pass. Of the 11 candidates examined, 9 passed and 2 failed. Twenty-one candidates were licensed through reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
St. Louis College of Physicians and Surgeons		(1919) 85,	88
Lincoln Medical College		(1918)	88
Eclectic Medical College, Cincinnati	(1919) 84, 86, 86, 89.5.		
Jefferson Medical College		(1917) 85, (1919)	88
	FAILED		
Loyola University		*(1917)	76
Lincoln Medical College		*(1918)	75

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Leland Stanford Junior University		(1914)	New York
Bennett College of Eclectic Medicine and Surgery		(1905)	Illinois
Bennett Medical College		(1911)	Tennessee
Chicago College of Medicine and Surgery		(1915), (1917)	Illinois
College of Physicians and Surgeons, Cbicago		(1905)	Oklahoma
Hahnemann Medical College and Hospital, Chicago		(1907)	Illinois
Rush Medical College		(1892), (1916)	Illinois
Albany Medical College		(1870)	Illinois
Columbia University	(1900) New Hampshire,	(1913)	New York
Johns Hopkins University		(1912)	Maryland
Tufts College Medical School		(1909)	Iowa
Barnes Medical College		(1904)	Missouri
St. Louis College of Physicians and Surgeons		(1918)	Tennessee
St. Louis University		(1914)	Missouri
Washington University		(1917)	Missouri
Cleveland University of Medicine and Surgery		(1897)	Ohio
Medical. College of Ohio		(1890)	Minnesota
Meharry Medical College		(1909)	Missouri

* Fell below the required average in one or more subjects.

New Mexico July Examination

Dr. R. E. McBride, secretary of the New Mexico Board of Medical Examiners, reports that one candidate was licensed by examination, ten candidates were licensed by endorsement of their diplomas, and one candidate was licensed by reciprocity at the meeting held July 14, 1919. The following colleges were represented:

College	LICENSED BY EXAMINATION	Year Grad.
University of Oklahoma		(1919)

College	ENDORSEMENT OF DIPLOMAS	Year Grad.
University of Arkansas		(1916)
Hospital College of Medicine, Louisville		(1903)
University of Louisville		(1908)
Baltimore Medical College		(1892)
St. Louis College of Physicians and Surgeons		(1913)
St. Louis University		(1919)
Pulte Medical College		(1891)
Western Reserve University		(1910)
Meharry Medical College		(1912)
Medical College of Virginia		(1911)

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
College of Phys. and Surgs., Chicago		(1903)	Kansas

South Carolina June Examination

Dr. A. Earle Boozer, secretary of the South Carolina State Board of Medical Examiners, reports the written examination held at Columbus, June 10-12, 1919. The examination covered 19 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 39 candidates examined, 29, including 3 osteopaths, passed and 10, including 1 osteopath, failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Atlanta College of Physicians and Surgeons		(1912)	75
Atlanta Medical College		(1915) 88.9, (1917)	81.2
Emory University		(1918)	76.6
University of Georgia		(1917) 86.1, 86.2, (1919)	87.1
University of Louisville		(1917)	84.2
Johns Hopkins University		(1919)	92.1
University of Maryland		(1918) 79.6,	84.7
Boston University		(1919)	89
Harvard University		(1918)	88.1
Jefferson Medical College		(1919)	93.1
University of Pennsylvania		(1918)	89.4
Medical College of the State of South Carolina	(1919) 82, 84.4, 86.1, 87.2, 87.4, 87.6, 87.6, 87.9, 90.2, 91.2.		
University of Tennessee		(1915)	81.9
	FAILED		
Birmingham Medical College		(1915)	68
University of Georgia		(1906)	69.5
College of Physicians and Surgeons, Keokuk		(1877)	67.9
Leonard Medical School		(1911)	64.4
University of Oklahoma		(1915)	69.4
Med. Coll. of the State of South Carolina	(1901) 68.7,	(1911)	69
Meharry Medical College	(1909) 72.6	(1911)	*

* No grade given.

Social Medicine and Medical Economics

SOME FUNDAMENTAL DEFECTS INHERENT IN COMPULSORY HEALTH INSURANCE*

E. M. STANTON, M.D.
SCHENECTADY, N. Y.

The fact that the medical profession of New York State and of the entire country is a practically unanimous unit in condemning compulsory health insurance bills of the type proposed by the American Association for Labor Legislation is almost prima facie evidence that the great majority of practitioners realize more or less clearly that there is something fundamentally wrong with the project.

If we are to oppose compulsory health insurance we must be able to formulate our objections into definite terms, and it is my object in this paper to outline some of the more fundamental objections to compulsory health insurance. The time allowed will permit of my taking up only one or two of the defects which are inherent in the proposed legislation. I shall, however, attempt to show that some of the defects are so fundamental as to be inseparable from the entire problem of sickness insurance, be it intended for the rich or for the poor. I believe that it can be very clearly shown that when we talk about fire, life or marine insurance we are talking about insurance the value of which is self-evident to all who have studied the question; and, on the other hand, it should be equally clear that when we approach the subject of sickness insurance we encounter economic problems so entirely different from those encountered in standard insurance propositions that the very name of insurance is scarcely applicable in the field of so-called health insurance. In this connection, it is well to note that the so-called experts of the American Association for Labor Legislation have for at least six, and probably ten, years been struggling with the problem of trying to devise a workable bill, and that to date they have made a complete failure. This in itself should be at least presumptive proof that there may be something radically wrong with the materials with which they are trying to work.

STANDARD INSURANCE PROPOSITIONS

The proponents of compulsory health insurance tell us that fire insurance and life insurance are recognized as being of the very greatest economic and social value and that, therefore, health insurance is equally valuable. The fact remains, however, that up to the year 1919 sickness insurance has not been able to take its place alongside of fire and life insurance. There must be some good reasons why sickness insurance has always remained a weak sister in the insurance family, and I believe that it will be worth our while to spend a few minutes in trying to ascertain the

* Read before the Fourth District Branch of the Medical Society of the State of New York, Plattsburg, Nov. 18, 1919.

reasons why sickness insurance requires compulsion, 50 per cent. subsidies, and various other tonics to make it a going proposition.

In this world of ours the difference between a good and a bad bargain is usually determined by the returns one gets for the money spent; and in the ultimate analysis, insurance is not an exception to this general rule. The economic value of insurance is determined by the magnitude of the risk assumed and by the expected frequency of the event against which the insurance is carried.

Insurance against death is a typical example of insurance of unquestioned economic value. The death of the head of the family is an irreparable damage. The chances of this occurring in any given unit of time are small. For instance, between the years 20 and 42 the risk for any one year is less than 1 in 100. Term life insurance during the years of the average man's economic activity costs only about $1 a year for each $100 of protection.

Fire insurance is more universal than life insurance, and this is because from a purely economic point of view it is even more valuable than life insurance. In fire insurance the ratio between cost and protection is for the average risk about $1 premium per annum for $600 worth of protection.

Marine insurance is another form of universally recognized insurance. It is not necessary to go into the question of marine insurance rates, but it will be of interest to note that during the palmiest days of the Hun submarine when marine insurance was considered to have become almost prohibitive, the rates for this form of insurance were actually only one-quarter that which is normally necessary to charge in the case of the best risks insured under health insurance.

SICKNESS INSURANCE

The moment we turn to sickness insurance we find conditions absolutely different from those encountered in fire and life insurance. Death occurs but once in the experience of the insured, fires are rare, and the destruction is in most cases total. Sickness, however, is almost a regular incident in the life of a family.

The economic value of insurance decreases as the occurrence against which the insurance is carried becomes more frequent and the distribution more uniform. To illustrate this, suppose that each individual could count on being sick once a year. Then it would be the height of folly to attempt to carry yearly term sickness insurance because, from the very nature of things, the returns from this insurance could only be the amount of the premiums paid less the overhead costs of conducting the insurance. Stripped of superfluous detail, this is the insurance problem actually encountered by the so-called model bill of the American Association for Labor Legislation. The Illinois report shows that out of 215 families investigated by the Bureau of Labor Statistics, 212 had sickness during the year. It is therefore, I believe, self-evident that if the expectation of sickness in the average American working man's family is to be in the neighborhood of 98 per cent. per annum, there is then no question but that as a strict business proposition it would be better for each family to become its own insurer and thereby save the overhead expenses which are unavoidable with all forms of insurance.

At this point it might be well to note the fact that by far the best family health insurance policy yet devised is obtained by setting aside a certain portion of the family income as a savings bank account. The savings bank family health insurance policy is 104 per cent. efficient as compared with the 60 or 70 per cent. efficiency of the best private company sickness insurance and an estimated possible efficiency of about 85 per cent. for state controlled compulsory insurance.

If we dismiss the universal health insurance of the type proposed in the so-called model bills and turn our attention to the limited wage-earner type of compulsory health insurance as illustrated in such bills as the Davenport bill, we are at once confronted by certain definite facts. The chance of the individual worker's becoming sick during the year is not 1 : 100, or even 1 : 50, but, as shown by the Illinois report and other studies, approximately 1 : 5. This fact itself makes straight sickness insurance a very costly proposition. In fact, the ratio between cost and possible benefit is such as to make it scarcely an insurance question at all. The normal cost of insurance covering only loss of wages must, of necessity, be at a rate which makes it almost prohibitive and, I believe, scarcely justifiable as an insurance proposition in any but special circumstances.

For purposes of study we can take one of the best sickness insurance policies ever offered, which is that of the General Electric Mutual Benefit Association of the Schenectady works. The company contributes the overhead costs of maintaining this insurance. During the past six years the policy holders of this association who have been sick have received an average benefit of $18.54, and the average premium paid has been $3.83, which gives a ratio of premium to expected benefit of $1 premium to $4.84 benefit, with a maximum possible protection of $21.94 for each dollar paid as premium.

Owing to the fact that the compulsory insurance of the Davenport bill type covers different periods of sickness and loads a large share of the expense on the first week of illness, it can be readily shown that had the 5,276 who have received sick benefits under the General Electric Mutual Benefit Association been insured under the Davenport bill, they would have received only $2.24 in benefits for each dollar paid as premium. Even with the company paying one half of the premium the ratio would still be $4.84 for the General Electric Mutual against only about $4.48 for compulsory insurance. Any trade by which the working man of Schenectady gives up even a fraction of his present liberty for a return of a loss of 36 cents in benefits for each dollar paid for health insurance seems too preposterous for serious consideration.

EXCESSIVE COST OF COMPULSORY HEALTH INSURANCE

The question of excessive cost is really the root of practically all the difficulties encountered by the compulsory health insurance advocates. By excessive cost I do not mean that the total would be beyond the reach of the American working man if he were offered a really good value for the money spent. I have heard it said that compulsory health insurance will cost only from 2 to 4 per cent. of the workman's income. Figured on the $12 a week basis of the Davenport bill, the benefits could cost not less than 7 per cent. of the $12 a week wage; but this is entirely beside the question. The really important thing is that the insurance is itself so costly in proportion to the benefits that it is not a good buy for the working man. Consequently, for the workman himself to be compelled to pay for state controlled sickness insurance giving the benefits promised by the Davenport bill, or similar bills, is entirely out of the question. The American working man simply would not submit to any such form of compulsion. His business instincts are entirely too good.

The question of costs at once forced the compulsory health insurance advocates to some sort of subterfuge, and the scheme adopted is to attempt to bribe the working man by some sort of promise of something for nothing. In the case of the Davenport bill, this takes the form of compelling the employer to pay one half or more of the costs of the so-called insurance. To beguile the working man into accepting the

compulsion part of the program, even this promise of half for nothing is not sufficient, and the Committee on Health of the New York State Federation of Labor has adopted a policy of claiming that the total expenses for administering the benefits of the law will be only about one half what they must of necessity be if the benefits are actually to be given to the insured.

History is a long, long story; and in this story the policy of something for nothing has been tried many, many times always with the same results. Is there any reason to expect a different result when it is tried in the guise of compulsory health insurance?

THE PARTIES INVOLVED

There are really four parties directly interested in the compulsory health insurance proposition. They are the working man, the public, the employer and the medical and allied professions.

The working man is to get the something for nothing. The public is represented by the voters, and it is from the very first self-evident that it is useless to ask politicians to compel the public to pay the something which is to be given for nothing. The state might be induced to contribute a small part, but I am certain that every man in this audience will agree with me when I say that the proposition to make the public pay half of the cash and other benefits promised by such bills as the Davenport bill is too preposterous for serious consideration.

We still have two parties left, and the compulsory health bills do actually claim to select the employer to serve in the rôle of the something for nothing contributor.

The compulsory health insurance advocates tell us that compelling the employer to pay for health insurance is only a natural step from the principles of the compensation legislation. This is not true, because the compensation legislation compels industry to pay only for the direct damage done by industry. In order for compulsory health insurance of the Davenport bill type to give fundamental justice at least approximately one half of sickness must be due to industry. In this world of ours it is best to recognize facts as they are; and in this case the fact is that industry cannot properly be charged with one one-hundredth part of ordinary sickness.

The meaning of all this is self-evident. The so-called compulsory health insurance is not health insurance at all, but only a thinly veiled scheme for forcing charity on a portion of the community which neither requires nor desires charity. At the same time the people who ordinarily need charity—those chronically ill, the unemployed, the aged, the widow, the orphans—are not provided for at all. In fact, they will be much worse off; for the available resources of the community will have been used up in forcing charity on the man with the job. I believe that history will fail to show a single example of a law forcing charity on employed working men which has not worked out to the detriment of the working man and served ultimately to enslave him.

CONTROL BY EMPLOYERS

I wish now to call attention to another inevitable difficulty which was bound to confront the compulsory health insurance advocates the minute they undertook to finance, by means of a subterfuge, a scheme which could not stand on its own feet. The very minute you find a bill that says that the employer must pay one half or more of the costs of a measure you can be assured that somewhere in that bill you will find provisions giving the employer one half or more of the control of the machinery which will work the measure. This is so of the Davenport bill and will be so of all bills depending on an employer subsidy to furnish the something for nothing. It is the inevitable price that must be paid for the deception; and from what I know of employers I am perfectly certain that in the long run the employer will find some way of getting his money back with interest and that the price to be paid by the workman for this something for nothing will be actually greater, or I might say worse, than if the whole transaction were strictly honest from the beginning.

If we turn to the Davenport bill we find in Article 1, Section 3, exempted from the workings of the bill, "all those employees for whose benefit an employer, in the judgment of the industrial commission, maintains at his own cost and without resource to insurance, a system, fund, or plan, which guarantees to such employees benefits substantially the same as benefits they would receive if insured under the provisions of this system." Does any one here believe that this would mean health insurance? No, it would mean that our larger companies would be forced by the exigencies of the law to return to the long ago discarded plan of the company doctor with all the evils and dissatisfaction attendant thereon.

The company doctor is an old plan. We do not have to repeat history with this experiment, which has never been able to survive in this country, except in frontier camps and localities not yet adequately supplied with independent physicians.

The so-called Health Committee of the New York State Federation of Labor claims that ample provision is made for the democratic control of all locals by the employee members; but in Article 4, Section 60, of the Davenport bill we find that "each employer member shall have as many votes for representatives of employers on the board of directors as he employs workmen who are employee members of such fund." Also in Section 55 we find that the boards of directors shall consist of "not more than seven directors which shall consist of an equal number of directors representing employee members, and an equal number representing employer members, and one director in addition." It is not difficult to predict in advance who would really control these boards.

The remaining party that will inevitably be compelled to contribute liberally to the something for nothing, namely, the medical profession, is not represented on the boards at all. There has been considerable talk about minimum provisions to insure adequate protection for the medical profession, but in my opinion the ultimate fate of the medical profession will be determined not by any little details of amendments, but by the great underlying structure on which the legislation is based. Just as long as the entire structure of compulsory health insurance is built on a deception and a false promise of something for nothing, then unless history reverses itself and human nature changes, the medical profession will find itself called on to support the very foundations of a structure which from its birth was destined to be incapable of supporting itself. No possible good can come to the medical profession from getting mixed up in a scheme which from the very start is little else than a dishonest subterfuge.

CONCLUSION

The fact should be emphasized that the moment we are forced to admit that the burden of compulsory health insurance cannot be borne by the insured, then the problem automatically becomes one more related to charity than to insurance. By no stretch of the imagination can the machinery proposed for compulsory health insurance be conceived of as an efficient method for the distribution of charity. The great political army of directors, secretaries, clerks, inspectors and others who would be called into being by compulsory health insurance is entirely too inefficient and expensive a proposition to be substituted for our present scientific development of state medicine and management of the charity problem.

511 State Street.

Miscellany

LEON DAUDET AND HIS RECOLLECTIONS OF HIS MEDICAL COLLEGE

Among the deputies elected to the French chamber in November was Léon Daudet, who has written considerably on medicine in general, on the medical profession and, more particularly, on the celebrated physicians of Paris.

Daudet is a son of the noted author, Alphonse Daudet. Although Léon Daudet, the son, also has become an author, he was originally destined for the medical profession. For seven years he pursued his medical studies at the Paris Faculty of Medicine and passed all his examinations but did not support a thesis, which is an indispensable requirement for the degree of doctor of medicine. He had even been appointed, first extern and then provisional intern, at the Hôpitaux de Paris, but he did not achieve the full title of intern. He soon after broke off his relations with the Faculty of Medicine, and in 1894 he published a book, the mere title of which gives an insight into the mentality of its author. The title of his book was, "Les Morticoles" (The Morticulturists), that is, cultivators of death. This pamphlet was directed against the professors of the Paris Faculty of Medicine. The statement has been made that in this pamphlet, breathing violence and rudeness, as it does, Léon Daudet has given vent to the malice he entertained toward some of his former teachers who had not shown him all the consideration to which he felt he was entitled. Be that as it may, Daudet has recently called up his memories of his period of medical study in an interesting and more carefully prepared volume entitled, "Devant la douleur" (In the Face of Pain), in which the silhouettes of a great number of savants and well known physicians and surgeons pass in review, many of whom are no longer of this world: Charcot, Brouardel, who was a former dean of the Paris Faculty of Medicine; Bouchard, Brissaud, Potain, the great heart specialist; the surgeons Tillaux, Richet (father of the physiologist, Charles Richet), Lucas-Championnière, Péan, Doyen; the famous syphilologist, Alfred Fournier; the anatomists, Farabeuf and Poirier; the gynecologist, Pozzi; the embryologist and histologist, Mathias Duval; the military surgeons Kelsch and Villemin, and others. A number of living colleagues are also mentioned, among whom are Babinski and Professors Debove, Charles Richet and Albert Robin.

It is true that Daudet's recent book, also, is full of the exaggerations and the violent language that characterize the pamphleteer, and a number of the character sketches that he draws are in reality only caricatures; for example, when he refers to Péan beginning his day's work in the operating room: "The skilled wielder of the scalpel cuts off three legs, two arms, disarticulates two shoulders, trephines five skulls, removes as if it were child's play half a dozen uteri together with the adnexa, and takes out several pairs of ovaries. . . . At the end of two hours of this exercise he was dripping with blood and sweat. His hands, or, I should say, his paws, were as red as those of an assassin; his feet were soaked in life's red stream; yet, withal, he was as merry as a marriage bell. And why not? Had he not performed his function here below—to cut, to open, to resect, to bone and to eviscerate?" However, as in all caricatures, a certain basic truth can be discovered. It wasn't for naught that the students had nicknamed Péan "*le père coupe-toujours*" (Father Everet Cutting), and the regretted Professor Grasset once told me of having been present at one of these operative sittings, at which, on inquiring of Péan what his diagnosis was in the case of the patient who was about to be operated on, received from him the reply: "That is just what we are going to find out by opening the abdomen."

The critics have been very unjust to Léon Daudet in stating that he has ridiculed all the French representatives of the medical profession. Far from it. Daudet speaks in respectful, even affectionate, terms of Villemin, justly celebrated for his work on the contagiousness of tuberculosis. He refers to him as "a scholar possessing an admirable character in every respect." Of Professor Kelsch he says: "He combined with an irresistible medical instinct the highest scientific culture." Tillaux, the surgeon, he thinks, possessed "excellent heart qualities; was a sure practitioner and a man of unquestionable integrity." Farabeuf, the anatomist, was gifted with "genius and the power of exposition;" "was devoted to his work and to science in general;" was not open to flattery, and shunned all corrupt practices and intrigue; "rarely did ever a man despise more than he money and conventional honors." Daudet also seems to have carried away with him an exalted recollection of the service of Lucas-Championnière at the Hôtel-Dieu Hospital. This surgeon was the first in Paris to apply rigorously antiseptic and aseptic surgery. He operated without haste, always showing himself very considerate "of the limbs and tissues of his patients." Of Mathias Duval, professor of embryology, he says: "He was a very clear lecturer. One always had the feeling that he had left nothing unsaid that should have been said. His history of the development of the human ovum was most admirable." As regards character, he gave one the feeling of serenity combined with force, of possessing "a loftiness of spirit that held him aloof from corrupt practices and faculty intrigues, and caused him to flee from the clatter of voices and the bestowal of praise. . . . He was one of the most beautiful and noble characters that France has produced in the field of science."

But Professor Potain comes in for an even greater share of Daudet's admiration; in fact, his book, Devant la douleur, is dedicated "to the exalted memory" of Potain. Daudet enjoyed the privilege of knowing the celebrated clinician very intimately. "Providence," he says, "afforded me for several years the opportunity of direct contact with this great teacher, and allowed me to listen reverently to his advice and counsel." As a clinician he was extremely resolute. He spoke and acted like a man who had a sense of his own true worth. When called at the same time as Charcot to the bedside of Alphonse Daudet, who was suffering from a severe bronchitis, he recommenced the auscultation that his illustrious colleague had just finished without paying any attention to Charcot's remark: "But I have just finished— . . ." "Nowhere could one learn the pathology of the heart and the blood vessels, the premonitory signs of tuberculosis and of interstitial nephritis as one could in his class room. It was interesting to see him perform auscultation. He would listen long and intently at one spot; would wait some time and then begin again. . . . Not a murmur, nor a purr, not a triple sound, though never so slight, escaped him. His hearing was not outclassed even by Cooper's Indians." He was also a man of great kindness of heart, which inured to the benefit of his surroundings. On one occasion a convalescent patient, who was in very straitened circumstances, was preparing to leave Potain's service. Just as he was leaving, Potain slipped a 500 franc note in his hand, and having done so Potain beat a hasty retreat, as if guilty of theft, not waiting to hear the man's expressions of gratitude.

Daudet knew intimately also Professor Charcot, who was a friend of his father, Alphonse Daudet. He pays homage to the sagacity of the clinician, and praises his immense erudition and his genius as an observer. Charcot was an indefatigable worker who spent at times a great part of the night studying into some problem pertaining to pathologic anatomy, or in working out the details of some schema, such as his famous graphic representation of the diverse forms of aphasia. But—quite the contrary of Potain, all of whose intellectual forces were directed toward the alleviation of pain—Charcot seemed to assume a disdainful attitude toward therapeutics in general. "He considered the disorders of the human machine much as an astronomer views the movements of the stars." He was very dictatorial and could not endure contradiction. According to Daudet, whenever he thought that any one had presumed to contest any of his medical doctrines with respect to hysteria major, aphasia, multiple sclerosis, etc., he became furious and violent. The situation in which those studying under him found

themselves was not exactly comfortable. A certain amount of initiative, and a certain amount of originality, even, he would accord them, provided their initiative and their originality did not clash with the opinions and theories of the master. Any derogatory references to the doctrines that he had established were considered rank treason and were punished as such.

A NEW PRESERVATIVE FOR CADAVERS

The introduction of phenol (carbolic acid) in 1864 as a preservative for anatomic material, followed by glycerol in 1867 and by formaldehyd in 1890, revolutionized research in anatomy. The miracle wrought by these and other chemicals in rendering the dissecting room relatively odorless has been of incalculable comfort to students and teachers. However, none of these substances is ideal, and anatomists have continually sought for a substance which would not only preserve the delicate tissues without the production of odor, and be nontoxic and nonvolatile, but also be inexpensive, and not require renewal. Experiments recently reported by Myer (*Science*, Dec. 19, 1919, p. 570) appear to indicate that liquid petrolatum may be utilized as a preservative for cadavers. It extracts practically nothing from the tissues. It softens and later protects the epidermis which, after thorough impregnation with the substance, resists drying much better than if other preservatives had been used; and the eyelids, nose, digits, lips, ears and genitalia do not require such careful protection during dissection. Material stored in petrolatum for more than two years is practically odorless, and appears to be in identically the same condition as when immersed. On removal, the material need drain only a few minutes when it is ready for wrapping. The specific gravity of the oil is low, so that bodies readily sink in it. Inspection of the material in the tanks is easy. So long as there is sufficient oil in the tanks, all material is hermetically sealed and there is no subsequent loss from evaporation. The initial cost of the oil is not large and, since it can be used over and over, its use ultimately is economical. Fire risks are negligible. Phenol may be added to the oil if desired, although there appears to be no necessity for it.

HEALTH AS A DISEASE

"Avoid extremes" says an ancient proverb. The following editorial from the Gary (Ind.) *Times* applies the saying to the health faddist:

There is a great deal of truth in the satirical story of Jiggins, who had the health habit. Jiggins lived twenty years ago, and health was a disease with him. The Dallas *News* says that Jiggins took a cold plunge every morning. He said it opened his pores. After it he took a hot sponge. He said it closed the pores. He got so that he could open and shut his pores at will.

Jiggins used to stand and breathe at an open window for half an hour before dressing. He said it expanded his lungs. He might, of course, have had it done in a shoe shop with a boot stretcher; but, after all it cost him nothing this way. And what is half an hour?

After he had got his vest on, Jiggins used to hitch himself up like a dog in harness and do shadow exercises. He did them forward, backward and hind-side up.

He could have got a job as a dog anywhere. He spent all his time at this kind of thing. In his spare time at the office he used to lie on his stomach on the floor and see if he could lift himself up with his knuckles. If he could, then he tried some other way until he found one that he couldn't do. Then he would spend the rest of his lunch hour on his stomach, perfectly happy.

In the evenings, in his room, he used to lift iron bars, cannon balls, heavy dumb bells and haul himself up to the ceiling with his teeth.

He liked it.

He spent half the night slinging himself around his room. He said it made his brain clear. When he got his brain perfectly clear he went to bed and slept. As soon as he awoke he began clearing it again.

Jiggins is dead. He was, of course, a pioneer; but the fact that he dumbelled himself to death at an early age does not prevent a whole generation of young men from following in his path.

They are ridden by the health mania.

They make themselves a nuisance.

They get up at impossible hours. They go out in silly little suits and run marathon heats before breakfast. They chase around barefoot to get the dew on their feet. They hunt for ozone. They bother about pepsin. They won't eat meat because it has too much nitrogen. They won't eat fruit because it hasn't got any. They prefer albumin and starch to huckleberry pie and doughnuts. They won't drink water out of a tap. They won't eat sardines out of a tin. They won't use oysters out of a pail. They won't drink milk out of a glass. They are afraid. Yes, sir, afraid. Cowards!

And after all their fuss they presently incur some simple, old-fashioned illness, and die like anybody else.

Book Notices

ORGANIZATION OF PUBLIC HEALTH NURSING. By Annie M. Brainard. Cloth. Price $1.35. Pp. 144 with 11 illustrations. New York: Macmillan Company, 1919.

This, the first handbook of a contemplated series on the subject, bears the endorsement of the National Organization for Public Health Nursing. Written by a lay woman, the work gives a clear insight into organization and executive requirements for efficient efforts in its field. In addition to the presentation of general principles, special details and statistical data gained from experience are introduced. The scope of the manual is indicated in the table of contents: the need of organization; fundamental principles; forms of organization; the nurses' part in organizing; organizing public health nursing in a new community; boards of directors; committee on finance; committee on nurses; the supply committee; records and statistics; reorganization. The term "public health nurse" is defined as a generic term including district nurses, school nurses, factory nurses, tuberculosis nurses, child welfare nurses, and all nurses engaged in social or settlement work as distinguished from private duty or institutional nurses.

TEACHING THE SICK. A Manual of Occupational Therapy and Re-Education. By George Edward Barton, A.I.A., Director of Consolation House. Cloth. Price, $1.50. Pp. 163 with illustrations. Philadelphia: W. B. Saunders Company, 1919.

The lessons conveyed in this concise handbook were learned in the school of experience. The author is "self made," for earlier in life he won a victory over his own physical handicaps. No attempt has been made to produce a textbook on the reeducation of military and industrial cripples; the manual discusses broad principles, and special methods which may serve as illustrations. The modest desire is apparent to dispel prevalent misconceptions fostered by amateur enthusiasts, for in the mind of the author, occupational therapy presents two sides: one, education; the other and more important, therapeutics. It is not sufficient, then, that one be a craft teacher: one should have experience with pain, sickness and disability to qualify as a competent "occupational therapeutist." The treatise is worth reading for its good advice and many helpful hints.

LA TRICOMONOSIS INTESTINAL. Por el Dr. Edmundo Escomel, Delegado de la Facultad de Medicina, Paris. Paper. Pp. 78, with illustrations. Lima: Saumarti y Ca, 1919.

The author began his study of trichomoniasis in 1898. Recently he received a prize from the Academy of Medicine of Paris for this work. In this pamphlet he summarizes the history, distribution, pathogenicity, etiology, pathology, diagnosis, prognosis, clinical course and treatment of the disease. He claims to have demonstrated that the infecting organism, *Trichomonas intestinalis*, is pathogenic not only in the intestine but also in the vagina and gums, producing disorders which can be cured only after these organs have been treated with iodin.

Medicolegal

Parent Not Providing Medical Attention for Child

(State v. Barnes (Tenn.), 212 S. W. R. 100)

The Supreme Court of Tennessee reverses the judgment of the trial court and remands for further proceedings this case in which the trial court quashed an indictment which charged that the defendant unlawfully, wilfully and without good cause neglected and failed to provide for an infant child under the age of 16 years, according to his means, by suffering the child to sicken and die without proper treatment and medical attention. The supreme court says that it is the legal duty of the father to provide proper care, treatment, and medical attention for his child. If by reason of his breach of this duty the death of this child resulted, the father may be guilty of homicide. If one owes to another a plain particular and personal duty, imposed either by law or by contract, an omission, resulting in the death of the party to whom such duty was owing, usually renders the delinquent party guilty of a homicide. This proposition is very well established by authority. And this principle has been applied in cases of the neglect of the duty of a parent to care for his child, and to provide medical attention. As to whether a parent so neglecting his child is guilty of murder or of manslaughter would depend on the circumstances. If the neglect be wilful or malicious, it is probably a case of murder. If the omission is not malicious, and is a mere case of negligence, the parent is perhaps guilty only of manslaughter.

Power to Require Blood Test of Milk Dealers

(People ex rel. Schultz v. Hamilton, Commissioner of Public Safety, et al. (N. Y.), 177 N. Y. Supp. 222)

The Supreme Court of New York, Appellate Division, Fourth Department, reverses an order that denied the relator's motion for a writ of mandamus to compel the issuance to him of a license to sell milk in the city of Rochester, which he had been refused because he declined to submit to a blood test for the purpose of determining whether or not he had ever had typhoid fever or was a carrier of typhoid germs. His application for a license was made first to the health officer of the city, and, secondly, to the commissioner of public safety. The court says that it might be assumed that the regulation for a blood test was not harsh or unreasonable, that it was salutary, and that either the legislature or the common council, by appropriate enactments, could make such a provision applicable generally to milk dealers in the city. In fact, the relator so expressly conceded, and admitted that, if such an enactment did exist, by either the legislature or the common council, he would have no remedy. But neither the legislature nor the common council had so enacted. The sole statutory requirement for lawful trafficking in milk and cream in the city was the possession of a license issued by the health bureau of the department of public safety of the city. The regulation was one devised by either the health officer or the commissioner of public safety. The local health officers were the commissioner of public safety, as head of the department of public safety, and, under him, the health officer; but the power to make general orders and regulations for the preservation of life and health and the execution of the public health law was vested in the common council of the city. That the regulation sought to be maintained for a blood test was one of general application could not be doubted. It was not aimed at the suppression of a nuisance, nor to meet any emergency situation. There was no typhoid epidemic, present or imminent. There was no special reason for believing that the relator either had typhoid or was a carrier of typhoid germs. This case seemed, therefore, to fall squarely within the provisions of the statute, requiring legislation by either the legislature or the common council to be effective. Quite evidently the scheme of all the legislation was to require the concerted action and judgment of more than one individual as a prerequisite to general regulatory measures, leaving in the commissioner and the health officer a discretion only in the manner of applying in detail those general regulations. The commissioner and health officer were administrative officials. They had no power to legislate. They might determine facts and conditions which made applicable the general regulations, and might even prescribe regulations for carrying into effect the general enactments of the appropriate legislative bodies. The discretionary power vested in these officers by the city charter to grant or withhold licenses related only to the limited powers of those officers as defined above, and did not create in them a legislative discretion. However salutary and desirable this particular regulation might be, it could not be given force and effect until the appropriate legislative body had enacted it in a lawful manner. That power so to enact had not been and could not be delegated.

Descriptive Terms and Evidence in Abortion Case

(State v. Patterson et al. (Kan.), 181 Pac. R. 609)

The Supreme Court of Kansas affirms a judgment of conviction of the two defendants, physicians, who were convicted of manslaughter in the fourth and first degrees, respectively, the charge against them being that they had operated on a named woman to produce an abortion, thereby causing her death, while they asserted that the purpose of the operation was to remedy conditions brought about by a venereal disease from which she was suffering, and that she was not pregnant. The court says that complaint was made of a failure of the trial court to give an instruction to the jury under the section of the statute making it manslaughter in the second degree to administer a drug to a woman "pregnant with a quick child" with intent to destroy it, or to employ an instrument with that purpose, when the death of the child or mother resulted therefrom. But such an instruction would not have been proper under the information, which did not charge that the woman was "pregnant with a quick child," but alleged that she was "pregnant with vitalized embryo." The latter expression was not equivalent to that of the statute referred to. "Vitalized," merely means endowed with life. Any human embryo which is not dead is "vitalized." It is no less endowed with life before reaching the stage of development known as quickening than after. A woman is said to be pregnant with a quick child, or quick with child, when the motion of the fetus becomes perceptible, usually about the middle of the period of pregnancy. Not only was this condition not pleaded; it was not indicated by the evidence.

At a postmortem examination of the body of the woman, conducted by the defendants, the uterus was removed and placed in a jar of alcohol. At the trial they produced what they represented to be the same jar and contents, together with evidence that its appearance showed that the uterus was not that of a woman who had been pregnant. The court told the jury in substance that in order for the testimony of experts concerning the appearance of the uterus to have weight with them, they must first find from the evidence that no substitution had been made, that the organ produced was the one taken from the body, and that it had not been tampered with, but had been exhibited to the witnesses in the same condition as when first removed. This instruction was complained of, not as involving any incorrect statement of a principle of law, but as objectionable because it singled out for comment one particular feature of the testimony, and suggested to the jury that the court itself suspected substitution or alteration. But, granting that the specific reference to the question of the genuineness of the exhibit was open to the objection stated, it would not in itself justify a reversal of the judgment.

Several witnesses were permitted to testify that the woman had told them that she was pregnant, and was going to one of the defendants for an operation on that account. This evidence was objected to as incompetent, as being pure hearsay. But it has often been said by courts and text-writers that such testimony is admissible. Moreover, whether or not it was technically competent, the admission of evidence that the subject of the operation, who died as a result of it, had

stated that she was pregnant and was going to see the defendants on that account, was nonprejudicial because not inconsistent with the defense made, when the defendant's own version of the affair was that while the woman was really suffering from gonorrhea, and knew it, she had led her mother and neighbors to believe that she was pregnant, and that she was going to see the defendants on that account, her purpose being to conceal the fact that she had a venereal disease.

Evidence and Timeliness in Action for Malpractice

(Perkins v. Trueblood (Calif.), 181 Pac. R. 642)

The Supreme Court of California, in reversing a judgment that was rendered in favor of the plaintiff, and remanding the case for a new trial, says that the court below tried the case without a jury, and made its findings in favor of the plaintiff, which in substance were that the plaintiff broke his leg in March, 1912; that the defendant was employed to reduce the fracture; that the fracture not satisfactorily healing, the defendant separated the surfaces of the bone during the month of April, 1912, and again set the plaintiff's leg; that the defendant performed the latter operation negligently; and that by reason of this the plaintiff had suffered damage in the sum of $1,250. The defendant's appeal presented the question of the sufficiency of the evidence to support the findings and also the question of the correctness of rulings admitting evidence concerning the plaintiff's condition and the defendant's surgical treatment of him prior to April 9, 1912. While the court's findings rested the plaintiff's cause of action on the defendant's negligent resetting of the plaintiff's leg in April, 1912, nevertheless it would seem that the trial court proceeded on the theory, and correctly so, that the negligence ultimately found against the defendant was dependent in a measure on the condition of the plaintiff's leg at the time of and subsequent to the setting of the original fracture, which occurred in March, 1912. On this theory, evidence relative to the original fracture, its treatment and progress, and process of its healing, was admissible, to the end that it might be determined whether or not the methods resorted to by the defendant in resetting the leg on or after April 9, 1912, were of a nature which an ordinarily skilful surgeon would have given to a leg in such a condition.

Furthermore, this being the theory of the case and the judgment, it followed that there was no merit in the contention that the commencement of the action, wherein the complaint was filed on April 9, 1913, was barred by Subdivision 3 of Section 340 of the Code of Civil Procedure, requiring such actions to be commenced within one year.

Attention is called to the fact that, in spite of the great suffering and financial loss claimed to have been endured by the plaintiff for a period of ten months following the last treatment by the defendant, it affirmatively appeared that the defendant was not requested to give any further treatment, and that the plaintiff failed to place himself under the care of any other surgeon. Moreover, with regard to the fracturing again of the same leg in the same place, when, as the plaintiff testified, he did not fall over 12 inches, and there was no evidence of any circumstance preceding or attending the fall, the supreme court thinks that, in view of the fact that a person may snap a perfectly sound leg in a fall of 12 inches or less, the claim that the defendant's negligence was the proximate cause of the second fracture, found, to say the least, very slight support from the facts revealed by the record; and, on this analysis of the case, the supreme court finds it difficult to consider seriously the claims advanced by the plaintiff.

There was some evidence which tended to show that at the time of the fall and the second fracture the ends of the broken bone overlapped nearly one-half inch, and that there was no complete bony union prior to the treatment by another physician for the final fracture resulting from the fall. In the absence, however, of a showing that such a condition would have been at least improbable, had the leg received reasonably prudent and ordinarily skilful surgical treatment, it could not be said that the mere pathologic condition of the leg in and of itself sufficed to show negligence on the part of the defendant in resetting the leg. In the absence of evidence, it could not be assumed that he proceeded, if he proceeded at all, without ordinary care or skill.

Violation by Physician of Speed Law

(People v. Seidler (N. Y.), 176 N. Y. Supp. 677)

The Kings County, N. Y., court, in affirming a judgment of conviction, and of sentence of the defendant to a term of ten days in the county jail, for violation of the speed law, says that the defendant was a practicing physician, who admitted that he was operating his automobile at a rate of speed much in excess of the limit permitted by law, and on the hearing before the magistrate offered one excuse in extenuation of his act, and in this court submitted a different one. After the consequences of his act were forcibly impressed on him by his sentence, it was an easy matter for him to resort to the means which are available to a physician; but such carefully considered claims thus offered could have but little weight on this appeal. Were this his first violation of the speed law, an entirely different situation would present itself; but on five prior occasions he was arrested for similar violations in various parts of the city and by different officers. A physician has no rights on our highways superior to that of any other motorist. The law is no respecter of persons, and all must bow in obedience to it, and he who violates it does so at his peril. We can, however, readily understand that emergencies may occasionally confront a physician who may be called in a "life or death" case, wherein his haste to give relief can be partially excused or entirely overlooked. Such excuse, being ever present in the mind of a physician, may readily be used as a subterfuge to defeat the ends of justice. In this respect, reliance on the value of such form of defense must be placed on the magistrate hearing the evidence, who is in a position to gage properly its dependability. On the hearing in this case, the statements made by the defendant but vainly suggested extenuating circumstances, and the court properly disregarded them.

Society Proceedings

SOUTHERN MINNESOTA MEDICAL ASSOCIATION

Annual Meeting, held in Mankato, Dec. 1 and 2, 1919

DR. AARON F. SCHMITT, Mankato, in the Chair

Surgical Treatment of Bunions

DR. C. H. MAYO, Rochester: Several methods of treatment are resorted to according to the conditions present. The usual operation performed is one which I advocated many years ago. A curved incision is made convexly upward over the inner side of the joint. The skin is deflected downward, the bunion bursa is dissected forward and the joint is opened, the bursa being left attached to the inner surface of the first phalanx. One-quarter inch of the head of the articulating surface is removed by bone saw or large bone-biting forceps. This relaxes the extensor and the flexor tendons. The bony projection on the inner side of the head of the great toe is removed, and the bunion bursa is turned into the joint and held by sutures of catgut which also serve to straighten the great toe, thus removing the valgus. The wound is closed without drainage. If flatfoot complicates, the head of the bone should be preserved. The bunion bursa, the overgrowth of bone and the sesamoid bones should be removed, however. If the hallux valgus is marked, the tendon of the extensor hallucis longus should be lengthened about one-fourth inch. If the great toe is bent downward, the sesamoid bones can be removed with a knife or sharp pointed scissors, if they are grasped with strong tenaculum forceps. The sesamoid bones and the articulating surface should not be removed from the same foot. The patients should be up at the end of the first week, using the heel and outer side of the foot. In from fourteen to twenty-one days, a stiff soled shoe may

be worn. Instructions should be given to every patient as to the size and shape of shoes to be worn following operation.

Treatment of Second Stage of Labor, with Special Reference to Prevention of Injury to Child and to Pelvic Floor

Dr. Joseph B. De Lee, Chicago: Watchful expectancy and natural delivery will give the best results in the conditions in which the vast majority of births occur. The indiscriminate use of forceps, of pituitary solution and of forced delivery will do immeasurable harm. In primiparas and in multiparas, with rigid pelvic floor, I shorten the second stage artificially. When the head has reached the pelvic floor and the levator ani muscles have begun to stretch, I consider the advisability of interference. If the pains are strong, a few extra whiffs of ether or gas are given, and a deep episiotomy is made. The patient will then deliver herself; or if the pains lag, two or three drops of pituitary solution are given. Perineotomy is one of the most important parts of the prophylactic forceps, because it is intended to preserve the integrity of the pelvic floor, the subvesical fascia, and the urogenital septum; at the same time it prevents injury to the child's brain. The prophylactic forceps operation is a radical departure from time honored custom, but it has a sound scientific basis for recommendation. It also saves the woman the physical labor of a prolonged second stage. By relieving pressure on the child's brain, the occurrence of idiocy, epilepsy, etc., is lessened. Prophylactic forceps also prevent asphyxia, both in its immediate effects and its remote influence on the early life of the infant.

Intrathoracic Goiter

Dr. E. S. Judd, Rochester: Intrathoracic goiter is one in which the greater part of the thyroid enlargement is situated within the thorax. Substernal goiter is one in which there is a projection of only a part of the thyroid into the chest. This type occurs in nearly 50 per cent. of the goiters coming to operation, while the intrathoracic type occurs in only 5 per cent. Histologically, the intrathoracic goiter is an adenoma, associated in many cases with colloid or carcinoma. The hypertrophied gland of the exophthalmic type is never seen in the totally intrathoracic goiter. There may, however, be a substernal projection from the exophthalmic goiter. The intrathoracic tumor in the benign cases is definitely encapsulated, and can usually be enucleated from its capsule without serious difficulty if the proper treatment is used. The symptoms caused by intrathoracic goiter are mainly the result of pressure on the surrounding viscera. They differ from the symptoms of ordinary cervical goiter only in their intensity. Intrathoracic goiter may be thyrotoxic. The intrathoracic goiter may be recognized by the feeling of a recurring mass when the patient swallows, if pressure is made in the episternal notch with the palpating finger. A finger placed in the pharynx may also make the diagnosis. Ptosis and fixation of the larynx are points in the differential diagnosis. The roentgen ray is of great aid. The operative prognosis is good, except in cases of prolonged toxicosis. The first steps in the operation are the same as in cervical goiter. The thyroid vessels should be divided on one or both sides. The upper pole is then freed. The lateral veins are now divided. Then by making traction on the upper pole, and gradually freeing the intrathoracic part with the finger, the whole lobe may be turned over onto the trachea. If the goiter seems adherent, it may be enucleated by thrusting the finger deep into the adenoma. After the whole gland is lifted into the neck, the inferior thyroid vessels may be handled without difficulty. One should be prepared to perform tracheotomy during and for the first few days following operation. In 150 cases of substernal and intrathoracic goiter occurring at the Mayo Clinic in 1918, the symptoms were of the pressure type. The tumor was on the left side in eighty-one cases, on the right side in forty-five cases, and in the middle portion of the gland in four cases. In sixteen cases, the condition was bilateral. There were 141 adenomas, one hypertrophy associated with adenoma, four carcinomas, and two colloid goiters with small adenoma. Three of the tumors originated from aberrant thyroids.

Acute Perforations of Stomach and Duodenum

Dr. N. O. Ramstad, Bismarck, N. D.: Perforations of the stomach are more dangerous than those of the duodenum, because of the more infectious character of its contents and the tendency toward general dissemination throughout the abdomen. The prognosis depends mainly on the time which elapses between the rupture and the operation. Undoubtedly, a small number of patients with acute perforation recover temporarily under medical treatment, or the "let alone" plan, but the number is small compared with the recoveries following prompt and efficient operation.

Tuberculids in Recognition of Obscure Tuberculosis

Dr. J. H. Stokes, Rochester: While the tuberculous character of tuberculids may be regarded as still open to discussion, the demonstration of their constant association with tuberculosis is now so nearly complete that the occurrence of typical lesions of any one of the various types of tuberculids has a high diagnostic value in the recognition of obscure forms of systemic tuberculous infection. An analysis of a group of patients in the Mayo Clinic has suggested the close association which may exist between erythema nodosum and purpura, and the papulonecrotic tuberculid. The records of the clinic now include a necropsy in a case of erythema nodosum in which death resulted from miliary tuberculosis, and yet no evidence of the existence of any focus of infection other than the tuberculous could be identified. Tuberculids, because of their close association with lymph gland tuberculosis, are often of service in the identification of the tuberculous character of adenopathies, mediastinal glandular enlargements, tuberculosis of the uterine adnexa, etc. The occurrence of a partial positive Wassermann reaction in association with tuberculids, in the apparent absence of syphilis, has been noted. In a study of the diagnostic errors occurring in connection with tuberculids, it was found that only 17 per cent. were diagnosed correctly. Tuberculosis was not suspected from the cutaneous findings in any case; one third of the tuberculids were ignored as being insignificant; two thirds of the mistaken diagnoses were given as syphilis. Syphilis was most often suggested by scars, arthritis and myalgic pains with anemia; one fifth of the patients had sustained needless surgical procedures. The occurrence of false therapeutic effects, due to the action of arsphenamin, in these cases still further increases the possibility of a mistaken diagnosis. The appearance of a tuberculid in an otherwise seemingly healthy individual should be the signal for a searching clinical and roentgenographic examination for a focus of tuberculosis.

Modified Inguinal Hernia Technic

Dr. George Earl, St. Paul: I have never found any functional or anatomic objections to placing the cord completely under the external oblique muscle. This modified technic covers the cord only by the superficial fascia and skin from its exit at the region of the internal ring, but it is covered by nothing else as it goes over the pubic bone, a far more exposed region. There is less liability to strangulation of the cord than when a new external ring is to be formed from the external oblique. Reports from thirty-eight patients operated on show no complaint of pain from the lessened covering, and there have been no recurrences.

Conditions Contraindicating Operation with Stone in Kidney and Ureter

Dr. W. F. Braasch, Rochester: Probably 75 per cent. of renal stones are passed spontaneously. It is usually inadvisable to operate for stone in either kidney or ureter until at least from three to six months have elapsed since the onset of symptoms. Exceptions to the rule are: excessive and continued pain; evidence of cortical or perinephritic infection, and continued urinary retention; also, if the stone is evidently too large to pass. Conditions permitting the formation of multiple stones are usually surgical. Conditions may be such that operation with bilateral renal lithiasis is definitely contraindicated. Clinical evidence of a low renal function will usually contraindicate operation, when

the symptoms are not very acute or persistent. The operation may be justifiable with acute symptoms, even though the renal function is far below the normal. Removal of stone in the presence of chronic nephritis does not affect the course of the primary nephritis, and unless surgical conditions are urgent, operation is inadvisable. Stones occurring with a bilateral pyelonephritis, however, should be removed even though the symptoms are not urgent. When the opposite kidney is practically functionless or absent, the question arises whether operation on a single kidney or ureter is justifiable. Such operations are frequently done with success. Operation for stone in a polycystic kidney would be justifiable in selected cases. Coincident lesions in other organs are frequently noted. When the several conditions are surgical, that lesion which causes the most acute symptom would naturally necessitate operation first. Hypertrophy of the prostate coincident with renal lithiasis usually takes precedence in regard to operation. Pregnancy, when less than six months, offers no contraindication to operation, and it may be necessary to operate when the symptoms become acute, even in the latter months. As a rule, in the later period of pregnancy, it would be advisable to defer any operation. Attempts to dislodge the stone should not be made in the presence of acute impaction with continued obstruction, acute renal infection, intolerance on the part of the patient to the cystoscope, anatomic deformity, and when the stone is more than 2 cm. in diameter.

Modern Conceptions Regarding Radical Mastoid Operation

DR. HORACE NEWHART, Minneapolis: Every suppurating ear is a menace to the patient. The radical operation or one of its modifications is clinically indicated, with but very few exceptions, in all cases of chronic purulent middle ear discharge which are not permanently cured by persistent conservative treatment, including the removal of all possible causal factors in the nose and nasopharynx.

Surgical Treatment of Gummatous Osteitis of Skull

DR. A. W. ADSON, Rochester: In addition to specific treatment, local surgical treatment, consisting of the removal of the sequestrum, or dead bone, is necessary. After the removal of the sequestrum, wet dressings saturated either in boric acid or salt solution should be applied, and if epidermization is slow, skin grafting may be resorted to later.

Value of the Study of Blood Pressure in Typhoid

DR. J. W. ANDREWS, Mankato: Blood pressure findings are of great value in typhoid. In this disease, without complications, there is always a marked hypotension, the systolic pressure ranging from 100 down to 75 or 80 mm. of mercury. The more severe the case, the lower will go the systolic pressure, probably the effect of the typhoid toxins on the splanchnic circulation. Frequent blood pressure readings will serve in this disease as a guide to prognosis. The leukocyte count is always valuable. There is always leukopenia.

Diagnosis of Cardiac Disease

DR. J. S. GILFILLAN, St. Paul: One should not place too much dependence on a systolic murmur in the diagnosis of a valvular lesion, but should demand other evidence. When a lesion is suspected, the confirming murmur should be sought for at different times and under various conditions.

Publication on Employment of Children.—The Children's Bureau of the U. S. Department of Labor has just issued in the Children's Year Series a pamphlet called "The States and Child Labor." The publications in this series do not go to the general mailing list, but are mailed on request to any address on that list. This new pamphlet summarizes briefly regulations placed by the various states on the employment of children in certain types of occupation. It presents an easy reference to material otherwise only laboriously obtained, and is of such wide interest that it was decided to bring it to the attention of the general list. The pamphlet may be had by both physicians and the laity by addressing the Children's Bureau, Department of Labor, Washington, D. C.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Review of Tuberculosis, Baltimore

December, 1919, **3**, No. 10

*An Uncommon Case of Pleural Effusion. H. J. Howk and J. A. Herring, Mount McGregor, N. Y.—p. 585.
*Tuberculous Empyema. W. S. Duboff, Edgewater, Colo.—p. 590
*Further Attempts to Reduce Resistance of Guinea-Pig to Tuberculosis: Effects of Various Local Irritants. H. J. Corper, New Haven, Conn.—p. 605.
*Study of Clinical Activity. L. Brown, F. H. Heise, S. A. Petroff and H. L. Sampson, Trudeau, N. Y.—p. 612.
*Etiologic Studies in Tuberculosis. L. Brown, S. A. Petroff and G. Pesquiera, Trudeau, N. Y.—p. 621.
Types of Tuberculous Lesions Found at Necropsy in a Military Hospital. E. D. Downing, Denver.—p. 631.

An Uncommon Case of Pleural Effusion.—In this case the effusion seems to have been "locked up" by adhesions. The diagnosis was in doubt. The patient complained of pain, which was a most distressing symptoms up to the time when the fluid spread throughout the pleural cavity, and was completely and permanently relieved by that incident. Hence, the pain was probably due in large measure to the pressure of the accumulated fluid Evidently, bands of tissue, resulting from a prolonged pleuritis, held the fluid within strict bounds

Tuberculous Empyema.—Duboff's observations are based on a clinical study of twenty cases of tuberculous empyema.

Further Attempts to Reduce Resistance to Tuberculosis.—Using the macroscopic lesions of tuberculosis as an index of the acceleration of tuberculosis in the guinea-pig, Corper found that regional gland crushing, and the subcutaneous injection of virulent human tubercle bacilli in various sized doses, had no appreciable influence on the progress of the infection as compared with that obtained in control guinea-pigs. Lamp black injected subcutaneously, coincident with the tubercle bacilli, had a distinct retarding influence, while finely pulverized glass had a markedly accelerating influence, though not sufficient to be available for practical use in accelerating the guinea-pig diagnosis for the presence of tubercle bacilli in pathologic fluids.

Clinical Activity.—The object of this paper is to define clinical activity in such a manner that it may be of use in ordering the life and affairs of the tuberculous patient.

Etiologic Studies in Tuberculosis.—The danger of dust in rooms in a health resort, from telephone receivers, the danger of eating from utensils improperly cleansed, the danger from infected hands through handshaking or from knobs of doors, the danger of transmission by infected flies, at least in guinea-pigs, as a factor in causing tuberculosis has not yet been conclusively proved, and the experiments made by Brown et al. tend to belittle it. On the other hand, the danger of transmission of tubercle bacilli by kissing, or the transference of the tubercle bacilli to eating utensils, and thence, if not cleansed, to a second person, has been borne out. The authors express the hope that in publishing their experiments others may realize that the etiology of tuberculosis is not a closed book but one that contains many disconcerting and confused pages that need to be rewritten.

Archives of Dermatology and Syphilology, Chicago

January, 1920, **1**, No. 1

*Two Unusual Cases of Ringworm, One of Them Due to a Fungus (Trichophyton Rosaceum) Producing Pink Cultures. M. B. Hartzell, Philadelphia.—p. 1.
*Cases of Chronic Papular Itching Eruption of Axillae and Pubes (Fordyce) S. M. Withers, St. Louis.—p. 8.
*Statistical Study of Extragenital Chancres. H. W. Porter, St. Louis. —p. 15.
Precancerous Dermatoses: Further Course of Two Cases Previously Reported. J. T. Bowen, Boston.—p. 23.
*Serious Reactions from Salvarsan and Diarsenol Brands of Arsphenamin. Unusual Blood Pictures; Report of Fatal Case. J. E. Moore and F. E. B. Foley, Baltimore.—p. 25.
Clinical Study of Lichen Planus. G. D. Culver, San Francisco.—p. 43.
Spore Identification in Scrapings. R. W. Bachman, Allentown, Pa. —p. 50.

*Cases of Urticaria Probably Due to Syphilis. Clinical Report. L. Hollander, Pittsburgh.—p. 55.
*Universal, Exfoliative Dermatitis from Sodium Cacodylate. W. A. Pusey, Chicago.—p. 57.

Ringworm Due to Tricophyton.—In Hartzell's first case, apart from the excoriations, the eruption, as a whole, bore considerable resemblance to a slowly spreading superficial nodular syphiloderm for which it might very readily have been mistaken on superficial examination. In addition to the affection of the skin, the nails of the index, middle and ring fingers of the right hand presented marked evidence of disease. They were rough and lusterless, with ragged and broken free borders. In scrapings taken from the skin and the nails an abundance of mycelium, presenting the morphologic characters of the trichophyton was readily demonstrated. In the second case a diagnosis of syphilis had been made by a former medical adviser, a genito-urinary specialist of considerable repute, and three or four injections of arsphenamin had been given, without any effect on the disease. In scrapings removed from the diseased areas Hartzell found numerous mycelia.

Papular Itching Eruption.—Withers reports four cases. In one case a complete microscopic study was made of a section removed from the axilla. The pathologic changes consisted of an acanthosis with hyperkeratosis, edema, perivascular infiltration and changes in the sweat glands, with keratocystomas of the sweat glands. The clinical picture consisted of a chronic circumscribed pruritus of the axillae and pubes principally, accompanied by a lichenification with keratocystomas of the deep sweat glands.

Extragenital Chancres.—Porter adds to the previous statistics on extragenital chancres the cases seen at the Barnard Free Skin and Cancer Hospital and the Washington University Dispensary. From August, 1905, to August, 1919, 225 patients presented themselves at the Barnard Hospital dispensary with a chancre as the chief complaint, or with the chancre still in evidence. Of these, fifty-five had extragenital primary sores, giving the rather high percentage of 24.5 per cent., or a percentage over half again as large as the highest percentage quoted by Montgomery. At the Washington University Dispensary there are recorded 106 cases of chancre, of which twelve were extragenital.

Arsphenamin Reactions.—Four cases are reported by Moore and Foley of severe reactions to the salvarsan or diarsenol brands of arsphenamin with an unusual blood picture, characterized by leukopenia, eosinophilia and increase in large lymphocytes and transitional groups, together with other evidence of destruction of the bone marrow. In a fatal case of salvarsan poisoning there was found at necropsy a markedly aplastic bone marrow showing degenerated cells and absence of the more mature forms of the myelocytic series. The fatal case showed for the first time, so far as can be determined, approximately the same kidney lesion as that produced in experimental animals by Pearce and Brown.

Urticaria Probably Due to Syphilis.—Hollander claims that no cases of puriginous lesions have as yet been attributed to syphilis. In his two cases the finding of syphilis was incidental as the patients consulted him on account of local, edematous, evanescent, papular, wheallike, extremely itchy lesions, appearing and disappearing, which disappeared entirely under antisyphilitic medication.

Universal Exfoliative Dermatitis from Sodium Cacodylate.—Pusey's patient had psoriasis. He went to a sanatorium for treatment. He was given ten or twelve daily injections of sodium cacodylate, each three-quarters grain. A few days after the last injection a redness of the skin appeared, which quickly became universal and developed. When Pusey saw the man three weeks later he had a severe universal, dry, exfoliative dermatitis, quite similar in appearance to the Hebra type. The condition was absolutely universal. The skin was thickened, inelastic and red, and scaling profusely. On the hands and feet the process was particularly intense. There was extreme hyperkeratosis of the palms and soles, and the condition was only less pronounced on the backs of the hands and feet. There was a good deal of burning of the general surface, and there were tenderness and discomfort on surfaces exposed to pressure. He had been confined to his bed for two weeks previously, during which time he had shown an afternoon temperature of from 101 to 102 F. Under treatment improvement was very slow.

Arkansas Medical Society Journal, Little Rock

December, 1919, **16**, No. 7

Diagnosis and Treatment of Diseases of Gallbladder. W. R. Brooksher, Ft. Smith.—p. 135.
Is It Necessary to Resect More Than One Rib in Treatment of Suppurative Pleurisy? R. C. Dorr, Batesville.—p. 137.
Chronic Purulent Otitis Media. N. E. Frazer, Pangburn.—p. 139.

Boston Medical and Surgical Journal

Jan. 8, 1920, **182**, No. 2

Diagnosis of Lesions of Nervous System Produced by Violent Explosions in Close Proximity Without External Lesions. T. A. Williams, Washington, D. C.—p. 27.
*History of Epidemic Encephalomyelitis. F. G. Crookshank, London.—p. 34.

History of Epidemic Encephalomyelitis.—Clinical occurrences of the nature that we now ascribe to encephalomyelitis, or encephalomyelomeningitis, Crookshank says have been recorded in modern times for at least 450 years. In great part, these occurrences have been noted as incidental to major prevalences, known historically as the sweating sicknesses, the epidemic catarrhs, or influenzas and the like. Special prevalences of these occurrences have also been described as manifestations of special diseases. These special prevalences have usually appeared shortly before or shortly after major "influenzal" epidemics, or else in geographical proximity to endemic-epidemic and endemic-influtnzal prevalences. Epidemic encephalomyelomeningitis represents an intensive and specialized reaction that has the same epidemiologic relation to pandemic influenza as have the prevalences and epidemics of "septic" pneumonia, of gastro-intestinal illness, and of other maladies described as occurring before and after the wide diffusions generally referred to as pandemic influenza.

Bulletin of Johns Hopkins Hospital, Baltimore

December, 1919, **30**, No. 346

Henry Mills Hurd, the First Superintendent of Johns Hopkins Hospital. T. S. Cullen, Baltimore.—p. 341.

Journal of Cancer Research, Baltimore

October, 1919, **4**, No. 4

*Attempts to Obtain a Transplantable Tumor in Higher Species of Animals. F. C. Mann, Rochester, Minn.—p. 331.
*Chemical Composition of Blood in Cancer. R. C. Theis and W. S. Stone, New York.—p. 349.
*Spirotera Carcinomata and Their Relation to True Malignant Tumors; Cancer Age. J. Fibiger, Copenhagen.—p. 367.

Transplantation of Tumors.—Experiments are reported by Mann in which attempts were made to transplant tumors of the dog and cat. Transplants of a mammary carcinoma of a dog were injected into 134 dogs, and transplants of a fibroma of a cat were injected into thirty-two cats. A transplantable tumor was not obtained in either series of experiments, although a few transplants grew for a short time. The transplants of the fibroma which were made in the donor grew. The results obtained in these experiments, in which tumor was employed, are strikingly similar to the results of autotransplantation, and homotransplantation of normal tissue. The problem of developing a transplantable tumor in the higher species of animals is, it would seem, closely allied to the problem of making homotransplants of normal tissue grow.

Chemical Composition of Blood in Cancer.—Theis and Stone determined sugar and the nonprotein nitrogen constituents, except creatinin and creatin, in blood obtained from 189 patients suffering from a malignant or allied disease such as leukemia or Hodgkin's disease. They found that nonprotein nitrogen and urea nitrogen are, in general, low in the blood of cancer patients. Amino-acid nitrogen is slightly above normal. Low results are not so obvious when other pathologic conditions coexist. Nonprotein nitrogen and urea nitrogen of blood are consistently low in clinically malignant cases. Uric acid, except in cases with

kidney complications and in two cases of melanoma, is not abnormal in cancer blood. Blood sugar is not generally increased in cancer. In 26 per cent of these cases (diabetics and nephritics excluded) the figure was somewhat above the normal and in 13 per cent. it was below normal.

Spiroptera Carcinomas.—Fibiger claims that by transmission of *Spiroptera neoplastica* (*Gongylonema neoplasticum*) to black and white rats and white mice, the development of neoplasms can be induced in the fundus of the stomach, and in rats in the tongue also. These neoplasms possess exactly the same histologic structure as malignant epitheliomas (keratinizing squamous cell carcinoma) in man and animals. They grow invasively into connective tissue and muscular tissue, and produce metastases in lymph nodes, perineural lymph spaces, the lung and the peritoneum. They continue their growth whether or not the spiropterae (as observed in the tongue) disappear entirely or only partly. They are transplantable, and when transplanted grow invasively into organs and tissues. Neither the metastases nor the transplanted tumors contain spiropterae, which have no share in their development and growth. That these tumors are true carcinomas cannot be doubted, and the fact that they may occur in younger animals is no reason why they should not be classed among the true malignant neoplasms.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

November, 1919, **14**, No. 3

*Benzylcarbinol: A Local Anesthetic. A. M. Hjort and J. T. Eagan, New Haven, Conn.—p. 211.
Comparative Skin Irritant Properties of Dichlorethylsulphid ("Mustard Gas") and other Agents. P. J. Hanzlik, Cleveland, and J. Tarr, U. S. Army.—p. 221.
*Anaphylactoid Phenomena from Thromboplastic Agents. P. J. Hanzlik, H. T. Karsner and J. Fetterman, Cleveland.—p. 229.
*Paradichlorbenzene and Paradibrombenzene. T. Sollmann, Cleveland.—p. 243.
*Experiments with Carvacrol. T. Sollmann, Cleveland.—p. 251.
*Experimental Study of Action of Chloramines. B. Fantus, and M. I. Smith.—p. 259.
*Histamine and Pituitary Extract. D. Cow, Cambridge.—p. 275.
*Histamine and Pituitary Extract. J. J. Abel and D. I. Macht, Baltimore.—p. 279.

Benzylcarbinol.—Benzylcarbinol, or rose oil, an aromatic side-chain alcohol, Hjort and Eagan claim possesses local anesthetic properties which from laboratory studies seem to be superior to those of benzyl alcohol. The toxicity of rose oil, as determined on white mice and a dog, is about the same as that recorded by Macht for benzyl alcohol. Benzylcarbinol is more stable than benzyl alcohol, another point in favor of the former. The solubility of the rose oil is sufficient for its therapeutic use.

Anaphylactoid Phenomena from Thromboplastic Agents.—Hanzlik and his associates found that the thromboplastic agents rich in protein (thromboplastin and hemostatic serum) are distinctly harmful when injected intravenously and subcutaneously into guinea-pigs, producing anaphylactoid symptoms and injury to the circulation; and death with large doses of thromboplastin intravenously. Coagulen, which contains only traces of native protein, produced more pronounced anaphylactoid symptoms and also injured the circulation. The injurious effect of the thromboplastins and hemostatic serum the authors claim may be accounted for in part by trikresol (the preservative) and to a greater extent by the protein fraction. This does not appear to be true of coagulen which contains neither trikresol nor native protein. Caution is therefore necessary when employing these agents intravenously and subcutaneously. Kephalin appears to be relatively harmless as compared with the other thromboplastic agents studied.

Paradichlorbenzene and Paradibrombenzene.—The toxicity of paradichlorbenzene for earthworms, Sollmann says, suggests that it may be of value as an anthelmintic. Paradibrombenzene has similar chemical properties, but a somewhat different and less disagreeable odor, and would, therefore, be more suitable for internal administration Both compounds have a high toxicity for earthworms. Experiments were tried on dogs but this method is inconclusive. The substances deserve clinical trial when their toxicity has been more fully determined. So far, no toxic effects have been observed from oral administration, even of very large doses. Their absorption is probably very slight. In one experiment with paradibrombenzene, the absorption, judged by the bromin excretion, was only 3 mg. after the administration of 1 gm.

Experiments with Carvacrol.—Carvacrol is an isomer of thymol which can be produced at a low cost from spruce turpentine. It is said to be actively germicidal, and has been used as a counterirritant anesthetic against toothache. Sollmann says that from its composition, it seems probable that it might be used as an anthelmintic, especially against hookworm, in the place of the much more expensive thymol. The gastric administration of carvacrol to dogs, in doses up to 0.5 c.c. per kilogram (corresponding to about 30 c.c. per man) produced no toxic symptoms within three weeks. However, much smaller doses (0.1 c.c. per kilogram equivalent to 5 c.c. per man) apparently produced marked congestion of the small intestines, liver and kidneys. It is probably more irritant and toxic than thymol. This enjoins caution in its use. Sollmann is of the opinion that the drug seems to deserve clinical trial as an anthelmintic substitute for thymol. The administration, however, must be worked out cautiously. The routine should be the same as for thymol, and the dosage should be started considerably smaller, until the zone of safety has been determined.

Action of Chloramins.—Fantus and Smith studied the action of the chloramines on animal life. They found that unicellular animals are promptly killed by very dilute solutions of soluble chloramines. The chloramines are powerful irritants, causing inflammatory edema of the subcutaneous tissue, and even necrosis of the overlying skin on hypodermic injection, inflammation of mucous membranes on local application, and vomiting on oral administration. Chloramine-T depresses the central nervous system in the order of: brain, medulla, spinal cord. On intravenous injection, chloramine-T produces pulmonary edema, probably due to the chlorin in the molecule, as sodium p-toluene sulphonamine given intravenously does not produce such effect. The mechanism of the chloramine-T pulmonary edema is probably the same as that produced by chlorin gas inhalation described and studied by Schafer. The hemolytic power of chloramine-T is due chiefly to its alkalinity, as is shown by the fact that it is also displayed by chlorine-free sodium p-toluene sulphonamine. On the other hand, p-toluene sulphonamine, containing no dissociable alkali, is not hemolytic. Hemoglobin is changed to alkaline hematin by the first two bodies. Methemoglobin formation due to the chlorin in chloramine-T occurs; but merely to a slight degree, and was demonstrable only in the test tube. Dichloramine-T likewise is slowly hemolytic and slowly changes hemoglobin to methemoglobin in vitro.

Histamin and Pituitary Extract.—Cow says that if the uterus of the mouse is treated with histamine, it responds by relaxation, a response similar to that which the guinea-pig's uterus makes to epinephrin, while pituitary extract applied under the same conditions produces an increase in tonus. These results do not appear to bear out the hypothesis advanced by Abel that the plain-muscle-stimulating principles of histamine and pituitary extract are identical.

Histamin and Pituitary Extract.—Abel and Macht maintain that the uterus of the mouse and of the guinea-pig react in the same way toward pituitary extracts and salts of histamine, in the sense that both tracts of plain muscle respond to small and presumably comparable doses by contractions and increase of tonus, the uterus of the guinea-pig being the more sensitive of the two to minute doses of the two agents. Both tracts of plain muscle are easily paralyzed by comparable doses of pituitary extracts and of histamiue salts. An interesting parallelism, therefore, is shown to exist in the manner in which comparably weak solutions of the two agents stimulate both tracts of plain muscle to an equal degree, while equally strong solutions of the two agents paralyze both tracts. The rat's uterus presents certain anomalies in its reaction to both pituitary extracts and histamine as compared with the reaction of the uterus of

the mouse or guinea-pig to these agents. The hypothesis that histamine may be present in the posterior lobe of the pituitary gland in two forms (*a*) as a histamine compound (*b*) as free histamine in equilibrium with the compound is now being put to the test by the authors.

Kansas Medical Society Journal, Topeka

December, 1919, **19**, No. 12

Classical Amputations of Foot and Ankle. T. G. Orr, Rosedale. —p. 289.
Nontubercular Joints in Children. C. B. Francisco, Rosedale.—p. 291.
The Chancre. C. C. Dennie, Rosedale.—p. 292.
Significance and Treatment of Hematemesis. P. T. Bohan, Rosedale, Kan.—p. 293.
Arsphenaminized Serum Introduced Directly Within the Cranium. A. L. Skoog, Kansas City, Mo.—p. 295.
Obstruction of Common Bile Duct. M. T. Sudler, Rosedale.—p. 297.
Etiology of Influenza. H. R. Wahl, Rosedale.—p. 298.

Kentucky Medical Journal, Bowling Green

December, 1919, **17**, No. 12

Overseas Observations. I. Abell, Louisville.—p. 450.
Overseas Observations. D. Barrow, Lexington.—p. 455.
Treatment of Complicated Fractures. W. B. Owen, Louisville.—p. 459.
Early Diagnosis in Pulmonary Tuberculosis J. W. Scott, Lexington. —p. 462.

Maine Medical Association Journal, Portland

December, 1919, **10**, No. 5

What Has the Medical Profession Learned by Its Experiences in the Recent War? C. Frothingham, Boston.—p. 127.
Reflex Symptoms of the Upper Abdomen Caused by Chronic Appendicitis. R. W. Wakefield, Bar Harbor.—p. 134.
Psychopathic Persons. F. C. Tyson, Augusta.—p. 140.

Medical Record, New York

Nov. 29, 1919, **96**, No. 22

*Modern Medical Treatment of Chronic Ulcer of Stomach and Duodenum; Sippy Method. S. Weiss, New York.—p. 867.
Roentgen-Ray Diagnosis of Diseases of Thoracic Viscera. J. S. Diamond, New York.—p. 873.
Mentally Deficient Child with a Protracted Elevation of Temperature. G. D. Wolf, New York.—p. 880.
Treatment of Empyema in Army. C. Georg, Jr., and J. T. O'Neill, U. S. Army.—p. 883.
*Case of Retroversion with Unusual Symptoms. L. F. Herz, New York.—p. 885.

Modern Medical Treatment of Chronic Ulcer of Stomach and Duodenum.—Weiss says that medical treatment, properly used, with the new and more exact methods we now have for diagnosis and observation, will cure more chronic ulcers than surgery. Not necessarily because it is better treatment, but because it is always used first.

Case of Retroversion with Unusual Symptoms.—Herz's patient complained chiefly of extreme weakness in the legs when standing on her feet for more than five minutes at a time. She would be compelled to sit down or lean against some object from sheer weakness. She also complained of dysmenorrhea, with passage of clots. The pain preceded the onset of menstruation by two days, and was often so severe as to confine her to bed. Both the weakness and dysmenorrhea were of five years' duration. Headache and backache were absent. Vaginal examination showed a third degree retroversion. A curettage was first done, and then a Gilliam suspension. The dysmenorrhea disappeared very promptly. The menses were somewhat profuse for a few times. The feeling of weakness in the legs disappeared more gradually, but as the patient regained her strength after the operation, she soon overcame this former disability.

Missouri Medical Association Journal, St. Louis

January, 1920, **17**, No. 1

Intestinal Obstruction. H. S. McKay, St. Louis.—p. 1.
Principles of the Carrel-Dakin Treatment of Infected Wounds. H. E. Happel, St. Louis.—p. 2.
Multiple Infection. W. W. Duke and R. L. Diveley, Kansas City. —p. 4.
Centenary of Stethoscope. L. Clendening, Kansas City.—p. 9.
Kidney Injuries. H. M. Young, St. Louis.—p. 12.
Pseudo-Appendicitis. J. J. Link, St. Louis.—p 14.
Danger of Unguarded Use of Heliotherapy in Laryngeal Tuberculosis. N. Barlow, St. Louis.—p. 18.
*Adenoid Diphtheria; Report of Case. E. L. Myers, St. Louis.—p. 20.
Intrascrotal Hydrocele of Cord with Cryptorchidism and Hernia. Report of Case. E. D. Twyman, Kansas City.—p. 21.
Gastric Syphilis. Report of Case. H. D. McGaughey and J. I. Tyree, Joplin, Mo.—p. 21.

Adenoid Diphtheria.—In Myers' case the vault of the nasopharynx was filled with a yellowish white, thin membrane apparently covering an adenoid growth of immense proportions. Twelve hours after antitoxin examination, the postnasal space was absolutely clear of any membrane. Myers directs attention to the fact that a case may clear up in its nasal aspect as far as the diphtheria is concerned and the adenoid growth might be the only seat of the infection. A low temperature (97.6 F.) with a rapid pulse (160) shows a toxemia. Taken in connection with the physical depression, plus the finding of a membrane in the nasopharynx it undoubtedly points to diphtheric infection of the adenoid tissue.

Nebraska State Medical Journal, Norfolk

December, 1919, **4**, No. 12

Primary Sources of Infection. H. B. Lemere, Omaha.—p. 347.
Roentgen Ray Interpretation of Ethmoid Problem from Clinician's View Point. W. P. Wherry, Omaha.—p. 349.
Simple Office System for Measuring Astigmatism by Subjective Method. J. M. Banister, Omaha.—p. 352.
Types of Operation Suitable for Resection of Malignant Growths of Lower Sigmoid. J. E. Summers, Omaha.—p. 354.
Roentgen-Ray Diagnosis of Peptic Ulcer. O. E. Liston, Lincoln. —p. 358.
Comprehensive Examination of Stomach and Duodenum. J. W. Shuman, Sioux City, Ia.—p. 361.
Treatment of Acute Lung Troubles in Children. E. Mitchell, Grand River, Ia.—p. 364.
Condition of Birth Registration in Nebraska. W. F. Wild, Lincoln, —p. 366.
Climate in Treatment of Tuberculosis. M. Biesenthal, Chicago.— p. 372.

New Orleans Medical and Surgical Journal

December, 1919, **72**, No. 6

Control of Venereal Disease. W. Edler, New Orleans.—p. 309.
Id. P. J. Gelpi, New Orleans.—p. 317.
Pertinent, Constructive Health Activities O. Dowling, New Orleans. —p. 325.
Diagnosis and Treatment of Gastric and Duodenal Ulcer. J. E. Knighton, Shreveport.—p. 332.
Ureteral and Prostatic Calculi. E. P. Merritt, Atlanta.—p. 335.
Surgery of Gallbladder. M. J. Gelpi, New Orleans.—p. 338
Skin Diseases Among Porto Rican Troops. H. Goodman, New York. —p. 343.
Mechanism of Spontaneous Elimination of Yellow Fever from Endemic Centers. H. R. Carter, U. S. P. H. Service.—p. 347.

January, 1920, **72**, No. 7

Gastro-Intestinal Disease at Camp Beauregard. A. L. Levin, New Orleans.—p. 382.
Infectious Diarrhea. F. J. Kinberger, New Orleans.—p. 395.
*Picric Acid; A Preoperative Disinfectant. O. C. Cassegrain, New Orleans.—p. 398.
Prevention and Treatment of Influenza and Influenzal Pneumonia. G. A. Hogan, Birmingham.—p. 402.
*Evolution of Successful Treatment for Complicated Cases of Influenza. J. F. Points, New Orleans.—p. 408.
*Induction of Anesthesia and Analgesia by Oral Administration of Various Drugs; Report of Cases. A. Ficklin, New Orleans.— —p. 413.
Blood Pressure in Yellow Fever. J. B. Guthrie, New Orleans.— p. 420.

Picric Acid as Disinfectant.—The use of 5 per cent. picric acid solution is advocated by Cassegrain as a preoperative disinfectant, because it thoroughly disinfects and can be used with soap and water; it does not irritate the skin, and it is approximately 40 per cent. cheaper than iodin.

Emetin in Complicated Cases of Influenza.—Points endorses the value of emetin hydrochlorid as a cure for the complicated cases of influenza.

Induction of Anesthesia and Analgesia.—Ficklen endorses the production of anesthesia by the oral administration of 5 c.c. of chloroform and 20 c.c. each of ether and liquid petrolatum. The maximum effects last from one-half to three-fourths of an hour. After an hour the patient rouses easily. Vomiting occurs in a small proportion of cases. Alarming symptoms have never been observed. The effects of the drugs are intensified and prolonged by the administration of morphin.

New York Medical Journal

Dec. 27, 1919, **110**, No. 26

Scientific Basis of Drink Control: Scientific Study of Inebriety. L. D'Abernon, London.—p. 1053.
Quartz Ultraviolet Therapy and Kinetic Energy. D. McCaskey, New York.—p. 1058.
Deformities of Hand. A. B. Gill, Philadelphia.—p. 1061.

*Principles of New Method of Administering Digitalis. H. E. B. Pardee, New York.—p. 1064.
Gastrointestinal Symptoms in Disturbances of Thyroid. L. W. Kohn, New York.—p. 1066.
Problem of Reducing Mortality from Pulmonary Tuberculosis. S. A. Savitz, Philadelphia.—p. 1068.
Gonococcemia and Metastatic Gonorrhea. H. I. Goldstein, Camden, N. J.—p. 1069. To be concluded.
Local Anesthesia; Plea for Its More General Use. A. H. Noehren, Buffalo.—p. 1074.

Administration of Digitalis.—The points which Pardee emphasizes are: The initial dose must be sufficient to bring the patient to the stage of slight poisoning, which cannot be accomplished within a reasonable time unless we use doses larger than have been used ordinarily heretofore. If a continued digitalis effect is desired, it will not be obtained satisfactorily unless the patient is kept at a high level of saturation with the drug; his body must be nearly full, not nearly empty, or any failure to obtain good results cannot be interpreted as a failure of digitalis therapy. The nausea and vomiting which result from digitalis poisoning can be avoided if special case is used in observing the patient during the periods when he is receiving a daily dose which is above the average rate of 20 minims of the tincture a day at which the body can dispose of the drug. The variable susceptibility of different patients is an important thing to recoginze. The amount of digitalis which will cause the appearance of these early signs of poisoning bears a definite relation to the weight of the patient. On the average a total dose of 2 minims of the tincture to each pound of body weight will produce these early toxic signs. If a patient, whose susceptibility is greater than the average, should receive such a dose, he would certainly be in danger of fibrillation of the ventricular muscle, and death. Those patients whose susceptibility for digitalis is less than the average must also be borne in mind. Therefore, if the average dose is insufficient to produce clinical improvement, and has not caused the appearance of toxic signs, continue to give the drug, watching carefully for the signs of early poisoning and not stopping digitalis until they appear. The average rate at which the body disposes of the drug, Pardee found to be 22 minims of the tincture a day, but here, again, there are considerable variations from one individual to another, as low a rate as 10 minims and as high as 40 minims daily being encountered. In spite of this the dose of 10 minims, twice a day, beginning three or four days after an initial digitalization, will not bring any patient to the toxic stage again very quickly, even though he may dispose of the drug at a much slower rate than the average.

Jan. 3, 1919, **111**, No. 1

*Tubed Pedicle in Plastic Surgery. H. D. Gillies, London.—p. 1.
Palliative Treatment of Urethral Stricture. M. Stern, New York.—p. 4.
Diverticulum of Esophagus. Report of Two Cases, One Double. H. Arrowsmith, Brooklyn, N. Y.—p. 8.
Aseptic Catheterization of Urinary Bladder. A. L. Soresi, New York.—p. 10.
*Clinical Experience with Feeding of Solids to Nurslings. H. Lowenburg, Philadelphia.—p. 12.
Wood Alcohol Poisoning. S. D. Hubbard, New York.—p. 16.
Nasal Obstruction Due to Abnormal Action of Nasal Mucosa. M. S. Ittelson, Brooklyn.—p. 19.
Respiratory Gymnastics in Tuberculosis. H. C. Lane, Denver.—p. 21.
Gonococcemia and Metastatic Gonorrhea. H. I. Goldstein, Camden, N. J.—p. 22.

Tubed Pedicle in Plastic Surgery.—The tubed pedicled skin flap was devised by Fillies. A strip of skin, usually between 2¼ and 3 inches in breadth, is raised from the neck to form the pedicle, its upper and lower extremities being left untouched. The two edges of the pedicle are accurately sutured together, skin edge to edge, by a continuous suture. The pedicle, now tubed, lies like a sausage between base and extremity. In the course of about three weeks, considerable arterial and venous anastomosis has occurred in the pedicle. The flap may now be raised from the chest and sutured into position on the face, the pedicle being left in its tubed condition. It is obvious that the pedicle cannot become infected. It will stand a considerable amount of twisting and even kinking, and the blood supply of the flap is enormously improved. When the flap has taken root on the face, the pedicle may be divided and returned to the neck, or, as is more commonly the case, the pedicle is divided at its neck end, opened out until it remains flat, and spread on some other portion of the face. Once having placed the flap onto the face, it is possible to use the pedicle in a variety of ways and positions. Flaps of skin can thus be brought, by stages, from a long distance to the face. In other parts of the body which are the site of severe burns and contractions, larger flaps of skin may be used to relieve the disability by this method.

Feeding Solids to Nurslings.—The availability of solid foods to the nursing infant, a procedure commonly regarded as dangerous and unscientific, is discussed by Lowenburg. Of 128 patients, seventy-six, or more than one half, received solid food between the ages of six and eight months and thirty (about 25 per cent.) at the age of six months. None of these infants, except those suffering from severe diarrhea, received these prepared solids exclusively, i. e., milk in some form, either human or properly adapted cow's milk or both, was simultaneously fed. It is demonstrable, however, that the addition of these substances to the diet in early infancy is not only harmless but decidedly advantageous, and that less dependence need be placed on milk as an exclusive article of sustenance during this period of existence. In no case did vomiting occur as the direct result of beginning the administration of prepared solids. Diarrhea can be controlled absolutely and cured by the withdrawal of milk and milk foods and the substitution of properly prepared solids. Constipation is invariably relieved when the greater portion of the solid material fed is represented by green vegetables. The weight usually falls when milk is withdrawn entirely. The varieties of foods employed embraced all available and edible solids from either the vegetable or animal kingdom. Semisolids, such as cereals and soft eggs, were also included. No infant under 1 year of age was fed meat or fish. All varieties of cereals, eggs, potatoes, lima and string beans, spinach, peas, squash, carrots, beets, beet tops, swiss chard, boiled lettuce, stewed celery, baked apples, prune pulp, practically formed the group from which selection was made. Meats and fish have been used with good effect between the ages of 1 year and 18 months.

New York State Journal of Medicine

December, 1920, **19**, No. 12

*Diagnostic Methods in the Anemias. A. H. Sanford, Rochester, Minn.—p. 415.
*Treatment of Pernicious Anemia. L. Hamman, Baltimore.—p. 420.
Transfusion of Citrated Blood; Technic and Indications. R. Lewisohn, New York.—p. 431.

Diagnostic Methods in Anemias.—This paper was abstracted in THE JOURNAL, May 31, 1919, p. 1638.

Treatment of Pernicious Anemia.—Hamman's article may be summarized as follows: Pernicious anemia is inevitably fatal and treatment at best can but promote and prolong the remissions that characterize the natural course of the disease. There is not conclusive evidence to prove that one method of treatment brings on remissions more constantly than another, nor that it more surely prolongs remissions thus begun. We depend solely on clinical impressions derived from the observation of individual patients for our estimate of the value of treatment. Such observation teaches us that spontaneous remission may be in every way as satisfactory as remission following the use of any method of treatment. In pernicious anemia as well as in all other conditions for which we have only symptomatic or palliative treatment, success depends more on a judicious selection from among all available methods of treatment and their proper combination than on a onesided advocacy of a single method. Rest, feeding, arsenic, transfusion, the eradication of foci of infection and, perhaps, also splenectomy have a definite place in the treatment of pernicious anemia. But who shall say which feature of the plan of treatment is the potent influence?

South Carolina Medical Ass'n Journal, Greenville

December, 1919, **15**, No. 12

Some Impressions of Eastern Clinics. E. A. Hines, Seneca.—p. 643.
The Ophthalmologist as Contrasted with the Eye, Ear, Nose and Throat Man. E. S. Waring, Columbia.—p. 645.
*Case of Congenital Heart Lesion with Unusual Origin and Size of Pulmonary Artery. H. H. Plowden, Charleston.—p. 649.

Congenital Heart Lesion with Unusual Origin of Pulmonary Artery.—In Plowden's case, leading from the right ventricle into the left ventricle, through the interventricular septum at its upper end, was an almost circular opening, one-half inch in diameter. No pulmonary artery could be found leading away from the heart. The only openings into or out of the right ventricle were the tricuspid orifice and the opening from the right to the left ventricles. The entire thoracic aorta was removed. Coming off from the middle of the under surface of the transverse arch of the aorta an abnormal branch was found. It measured one eighth inch in diameter. This vessel was also cut off very short and in view of the absence of the pulmonary artery elsewhere, Plowden believes that this must be the abnormally placed vessel.

Southern Medical Journal, Birmingham, Ala.

December, 1919, **12**, No. 12

Wider Influence of Physician. L. S. Barker, Baltimore.—p. 719.
Medicine's Daily Debt to Roentgenology. J. S. McLester, Birmingham, Ala.—p. 735.
Application of Army Methods in Organization of Civilian Hospitals. S. McGuire, Richmond.—p. 739.
Tribute to Physicians of South Who Made the Supreme Sacrifice. F. K. Boland, Atlanta, Ga.—p. 743.

Southwest Journal of Medicine and Surgery, El Reno, Okla.

December, 1919, **27**, No. 12

Closer Cooperation Between Various Special Branches. J. Beck. Chicago.—p. 257.
A New Operation for Glaucoma. E. J. Curran, Rosedale, Kan.—p. 273.

Tennessee State Medical Association Journal, Nashville

December, 1919, **12**, No. 8

Pathologic Conditions of Nose and Nasopharynx as Predisposing Causes of Diseases of Middle Ear. L. M. Scott, Jellico, Tenn.—p. 275.
*Intestinal Obstruction. R. Caldwell, Nashville.—p. 281.
*Aneurysms: Report of Cases. E. B. Anderson, Chattanooga.—p. 286.
Inoperative Cancer and Other Conditions in Which Radium is Indicated. W. D. Haggard, Nashville.—p. 288.
Cathartic Medication. G. M. Niles, Atlanta, Ga.—p. 293.
Contracture of Bladder Following Chemical Cystitis. J. E. Hall, Nashville.—p. 295.

Intestinal Obstruction.—This paper was abstracted in The Journal, April 26, 1919, p. 1250.

Multiple Aneurysms.—Anderson reports a case of arteriovenous aneurysm of the subclavican artery, and one of multiple aneurysms causing severe hemorrhage. The patient had a four plus Wassermann reaction, and his entire arterial system was markedly sclerosed. His first aneurysm was a radial aneurysm. The next was an aneurysm of the hepatic artery, the third case on record. Then he had an aneurysm of the tibial artery.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

Dec. 13, 1919, **2**, No. 3076

Medicine and the People. T. C. Allbutt.—p. 763.
*Diagnosis and Treatment of Chronic Gastric Ulcer. B. Moynihan.—p. 765.
*Hypochlorhydria and Air Swallowing. Report of Cases. W. Russell.—p. 769.
*Indolent Sores on Fingers. R. W. Mackenna.—p. 772.
Severe Dermatitis During Treatment with Novarsenobillon. L. G. Leonard.—p. 773.
Pregnancy Complicated by Volvulus of Sigmoid Flexure, Causing Intestinal Obstruction. M. Donaldson.—p. 774.
Three Cases of Reconstruction of Thumb. P. J. Verrall.—p. 775.

Diagnosis and Treatment of Chronic Gastric Ulcer.—According to Moynihan, the results of the treatment of gastric ulcer by any system or by dietary or medicinal regimen, are vitiated by the lack of accuracy in the diagnosis of gastric ulcer. The most rational of all methods, in his opinion, is that introduced by Sippy, which appears to meet more combatantly those conditions in the stomach which must be controlled before an ulcer can have the chance to heal. It is based on a recognition of the fact that the reduction of the acid in the stomach is the first necessity. This is attained by dilution of food, alkalinization of the gastric contents every hour, and by the administration of fats. Chronic gastric ulcers undoubtedly heal under treatment or after the exercise of continued care in diet, but, Moynihan says, in the majority of cases they do not remain healed. Nevertheless, a really serious attempt to treat all cases of chronic gastric ulcer by medical treatment should be made. It is best to have no half measures. It is at least arguable that the necessity for surgical relief in many patients is due to a too perfunctory trial of medical treatment in the earlier attacks. The ideal would be to keep the patient under treatment until a roentgen-ray examination showed that the ulcer was healed. When a chronic gastric ulcer has refused to heal, or has recurred, after medical treatment, surgical treatment is neeessary. Moynihan discussed the various operative processes resorted to, as a rule, and expresses his preference for partial gastrectomy over all other operations because it does away with any chance of recurrence of the ulcer, it results in a complete and immediate freedom from all gastric troubles, and it banishes the danger—it may be large or small, but it certainly is real—of a cancerous change taking place in the base of the chronic ulcer.

Hypochlorhydria and Air Swallowing.—Russell restricts the term "air" swallowing to those cases in which the air is swallowed only when food is taken. The amount swallowed varies in individual instances, and consequently the degree of discomfort varies. It sometimes leads to visible distention; it may lead to pronounced neurosis or neurasthenia; it may act reflexly on heart and vessels, leading to functional angina pectoris. It may not only be associated with, but apparently may even be caused by abnormal gastric secretion, either hyperchlorhydria or hypochlorhydria. It is difficult to treat, and when once acquired the habit is difficult to break.

Indolent Sores on the Fingers.—An indolent sore on the finger of a nurse, a dental surgeon, or a doctor is all too often the precursor of a systemic spirochetal infection, and, as time is a factor of paramount importance, McKenna emphasizes the necessity of having serum from such a sore examined early, and, if need be, often, for the micro-organism of syphilis. He cites three cases in point.

Lancet, London

Dec. 13, 1919, **2**, No. 5024

Ambulatory Treatment of Fractures of Extremities; Tuberculous and Arthritic Disease of Joints. C. A. Hoefftcke.—p. 1058.
Empyema. R. Sevestre.—p. 1059
Teaching of Pathology T. T O'Farrell.—p. 1062.
Need for Schools of Psychiatry. C. H. Bond.—p. 1065.
*Treatment of Muscles by Artificial Stimulation. G. Cooper.—p. 1067.
One Hundred and Twenty Cases of Acute Appendicitis. C. P. G. Wakeley.—p. 1071.
*Dextrocardia, Complete and Incomplete. B. Parsons-Smith.—p. 1076.

Artificial Stimulation of Muscles.—Excluding the muscular dystrophies and injury due to trauma and toxins, Cooper believes that all muscular atrophy is of the disuse type—that is, it is caused by suspension of the normal function of contraction and relaxation. The condition and tone of a muscle are largely dependent on their function—interchange between the cell and surrounding lymph taking place during contraction and relaxation. Prevention of atrophy and restoration of atrophied muscles by rhythmic contractions is, therefore, a reasonable line of treatment. Artificial stimulation of muscle conserves the nervous energy of the patient, and in most cases of injury is the only method that can be employed. Of methods of artificial stimulation, electrical is the most valuable. Treatment by electrical stimulation is governed by the consideration of two factors: (1) The degree of contraction produced, and (2) the degree of pain caused by the stimulation. Pain is largely a matter of the length of waves employed and the uniformity of the interruptions. Apparatus devised to give a uniform type of interruption yields the best results. Fatigue is a toxic phenomenon due to accumulation of lactic acid. There is no risk of fatigue if a proper blood supply is ensured and a short interval allowed

between the contractions. Practical experience has demonstrated the value of artificial stimulation in restoring the condition of wasted muscles and in preventing atrophy.

Dextrocardia.—Smith reports four cases. In two cases the transposition not only affected the heart but also the liver and the stomach; in the other two cases the heart was transposed, but the liver and stomach occupied their normal positions. Smith points out that associated with complete transposition of viscera, dextrocardia does not incapacitate and is usually diagnosed by accident. Dextrocardia without transposition of viscera is of serious moment. Symptoms of incompetence are bound to appear sooner or later; these latter include dyspnea, palpitation, insomnia, faintness, pain, etc., and result from a general visceral overcrowding, the liver impeding the movements of the heart and the upper lobes of the right lung. Patients with dextrocardia without transposition invariably lay stress on the pains they experience both during effort and when resting; these pains, depending on the visceral overcrowding, are both local and referred local, when they denote pressure on the intercostal nerve or brachial plexus, referred when the vagus or its intracardiac endings suffer inordinate stimulation. Dextrocardia without transposition is usually if not always, complicated by actual malformation of the heart and great vessels. In one of Smith's cases it was considered that the ventricular septum was perforate. Likewise other congenital derangements may be present, pulmonary stenosis or atresia, transposition of great vessels, incomplete septums, patent ductus arteriosus, etc.

South African Medical Record, Cape Town

Nov. 22, 1919, 17, No. 22

Immunity Phenomena. T. J. Mackie.—p. 339.

Archives des Maladies du Cœur, etc., Paris

April, 1919, **12**, No. 4

*Orthostatic Bradycardia. R. Lutembacher.—p. 145.
Disappearance of Systolic Murmur of Mitral Insufficiency During Extrasystoles. G. Galli.—p. 170.

Orthostatic Bradycardia.—Lutembacher analyzes in minute detail a case of orthostatic bradycardia with intermittent arrest of conduction by the bundle of His. This was not due to nervous inhibition but to a specific endarteritis of the arterioles of the septum.

June, 1919, **12**, No. 6

*The Blood Picture in Scurvy. A. Benoit.—p. 241.
Manometer Tracings in Extrasystoles. H. Busquet.—p. 246.
*The Sphygmo-Oscillographic Cuff. A. Mougeot.—p. 250.
*Circulation in Paralyzed Limbs. Carpentier.—p. 259.

Blood Findings in Scurvy.—Benoit describes the blood picture found in sixty-three adults affected simultaneously with scurvy.

The Sphygmo-Oscillographic Cuff.—Mougeot expatiates on the advantages of the sphygmo-oscillographic method of studying the heart action with the pneumatic cuff and hydraulic counter-pressure according to Pachon's system. The cuff can be applied near or remote from the heart, and the tracings are easy to read even with a very weak pulse, and they are always strictly comparable.

Circulation in Paralyzed Limbs.—Carpentier reviews some recent publications on the arterial circulation in limbs affected with infantile paralysis and in progressive myopathy in adults. There seems to be an atrophy of the arteries but no vasoconstriction or obliteration.

Archives de Médecine des Enfants, Paris

December, 1919, **22**, No. 12

*Epidemic Meningitis. III. K. Lewkowicz (Cracow).—p. 617.
*Bronchiectasia in Children. A. D'Espine.—p. 653.
Varicella Eruption on Sunburn. P. Gautier.—p. 657.
Deficiency Diseases. J. Comby.—p. 659.

Vaccine and Serotherapy of Epidemic Meningitis.—Lewkowicz presents what seems to be conclusive clinical evidence that the lateral ventricles are the principal and essential seat of the infectious process, and that the meningococci spread from this hotbed through the entire subarachnoid space. The antiserum therefore, he declares, should be injected into the lateral ventricles from the very first and be reinjected daily, on alternate sides, or simultaneously on both sides every third day. The amount of the antiserum should be from 10 to 20 c.c. He urges the use of vaccine at the same time, from the very start. This tends to induce a general immunization which is a potent aid in the cure. He punctures the skull with a Götze grooved drill, 1.5 mm. wide, in a hand-drill. The needle is 1 mm. in diameter and 7 or 7.5 cm. long. A brass guide for the needle is introduced through the groove in the drill before the latter is drawn out. The brass guide inside the needle prevents obstruction with tissue. The tip of the needle is not sharp, as the only obstacle it has to force is the dura. The puncture is made anywhere along the top of the skull, 3, 4 or 5 cm. from the median line, pointing the tip of the needle toward the center of the skull. The depth of the puncture should be about 40 mm. for infants; 50 to 60 mm. for older children, and 60 to 75 mm for adults The fluid should not be injected until the needle is certainly in the ventricle. This is proved by the cerebrospinal fluid flowing from the needle and by the drop in tension as the antiserum spreads in the ventricles. It is important, therefore to have a manometer with three-way stopcock interposed between the needle and the syringe. The tension should not surpass 60 to 80 mm. mercury for older children and adults, and 40 or 50 for infants.

After the injection he leaves the needle in place for ten minutes to let the tension fall. Then he draws the needle half way out and leaves it for fifteen or thirty minutes, by which time the puncture canal has been plugged with a clot and there is no further oozing. In renewing the injections he trephines always at a point 1 or 1.5 cm. at least beyond the last points. His mortality was 36 per cent. in his last series of twenty-two cases, but analysis shows that a defective antiserum or a fulminating course from the start explained all the fatalities. In one instructive case the antiserum displayed a notably favorable action up to the twelfth day. Then the following injections, the sixteenth and seventeenth days, induced anaphylactic phenomena. Hence he warns not to give horse antiserum for longer than the thirteenth day, relying on the vaccine used from the start to carry on the work. In some mild cases the vaccine alone proved effectual, the blood serum showing an antibody content equal to that of the commercial antiserums. He explains how there is a constant current from the ventricles to the surface of the brain and of the spinal cord, the ventricles being the secreting area and the subarachnoid space the resorbing area. He has been applying this primary ventricle serotherapy since 1914, and has a total record of eighty-four cases.

Bronchiectasia in Children.—D'Espine has encountered three cases of bronchiectasia among the 4,916 children that have passed through the children's clinic at Lausanne in over nine years. One girl of 8 had a large area of dulness at the left base with signs of a cavity and bronchitis, and incurved finger-nails. She improved under treatment and a year later auscultation gave normal findings but the nails showed no change. The same deformity of the nails plus drumstick fingers was noted in one of the two other cases with necropsy.

Archives Mens. d'Obstétrique et de Gynécologie, Paris

October, 1919, **8**, No. 10

Cancer of Uterine Cervix. M. Forgue.—p. 517.

Bulletin de l'Académie de Médecine, Paris

Dec. 2, 1919, **82**, No. 38

*Pseudohermaphrodite. E. Schwartz.—p. 383.
*After Prepylorectomy. L. Pron.—p. 387.
*Crutch with Device to Lift Paralyzed Leg. G. Bidou.—p. 390.

Complete Masculine Pseudohermaphrodite.—Schwartz operated on a young widow for bilateral inguinal hernia. Her external genital organs were absolutely normal but the hernias proved to be testicles. He was careful to leave one of the testicles in place in this androgynoid.

Gastric Ulcer.—Pron reports the findings years after prepylorectomy for an old gastric ulcer. They show that the ulcer was the consequence and not the cause of the hypersecretion as the latter persisted unmodified after the ulcer region had been resected. The case teaches further the necessity for dietetic and medical measures being kept up for some time after operative treatment for old rebellious ulcers.

Instrumental Orthopedics.—Bidou gives an illustrated description of a device to be fastened to a crutch by which the hand moving a small lever controls an invisible wire passing over the shoulder and fastened to the knee or shoe, and thus lifts and lowers the paralyzed limb. With two of these crutches the paraplegic can soon learn to get about easily. Bidou emphasizes that the principles of this instrumental orthopedics can be applied to any motor impotency by studying and utilizing the motor capacity left in remote regions.

Bulletin Médical, Paris

Dec. 13, 1919, **33**, No. 55

Congenital Pathologic Conditions in the Heart. Apert.—p. 761.
Three Cases of Mitral Stenosis in One Family from Inherited Syphilis. Nathan.—p. 766.

Le Nourrisson, Paris

November, 1919, **7**, No. 6

*Buttermilk or Skimmed Milk in Infant Feeding. Marfan.—p. 321.
Twenty Years of a Well Baby Station. Bresset and Détré.—p. 340.
*Standard Weight Curve of Infants. A. Lesage.—p 351.
*The Wassermann Reaction in Children. F. Saint Girons.—p. 353.

Buttermilk and Skimmed Milk in Infant Feeding.—Marfan regards buttermilk as very useful in the transition from nothing but water to the ordinary food, for bottle babies under 5 months old with ordinary or choleriform diarrhea. It should never be given exclusively for more than two weeks, he says, nor in case of constipation, nor during the acute phase of the diarrhea, as water alone is called for during this stage; and buttermilk should never be given when there is fever. Several have reported cases of scurvy from prolonged buttermilk feeding. The buttermilk is made fresh, daily, in his service; the proportion of lactic acid is not over 5 gm. per liter. It cannot be sterilized alone, so it is made into a thin gruel with about 12 gm. of rice flour and 30 gm. saccharose to the liter, and the whole is cooked gently for twenty or twenty-five minutes, whipping it constantly with a cream whip. Cooked in this way it keeps well when distributed in bottles and heated to 115 or 120 C. But this sterilization is not required if the buttermilk is consumed within twenty-four hours, as in his service. When buttermilk is not available, condensed skimmed milk may be borne better than skimmed ordinary milk. Various substitutes more digestible than the butter in milk have been suggested, lipanin, cod liver oil, lard, olive oil, and coco oil, but these attempts are still tentative as yet.

Standard Weight Curve for Infants.—Lesage has computed the average from the standard weight curves published by Budin, Marfan and others. From this he has computed a standard normal range, adding 500 gm. to the average figure for the upper extreme, and subtracting 250 gm. for the lower. This range represents the normal, and the mothers are not frightened as is usual when the standard weight is given as a single figure. His own single figure average runs from 3,800 at the first month to 8,500 at the tenth.

The Wassermann Reaction in Young Children.—Saint Girons reiterates that a negative Wassermann reaction does not exclude syphilis in infants and children, and a positive reaction in children is not in itself alone a positive sign of syphilis. Even with positive reports from different laboratories, syphilis should be suspected, but in the absence of any other signs this cannot be accepted as positive proof.

Paris Médical

Dec. 6, 1919, **9**, No. 49

*Progress in Pediatrics. P. Lereboullet and G. Schreiber.—p. 433.
*Flaring Up of Inherited Syphilis in Acute Infections. V. Hutinel and L. Nadal.—p. 442.
*Pharyngospasm in Children. E. Weill.—p. 449.
*Hemophilia. P. Nobécourt.—p. 452.
*Familial and Hereditary Exophthalmic Goiter. P. Harvier.—p. 457.

Recent Progress in Pediatrics.—Lereboullet and Schreiber mention as important progress since the beginning of the war the founding of the chair of hygiene for young infants and of the puericulture school, both at the Paris medical school. They review recent publications all of which have been summarized in these columns, and refer to some society reports, including Lesné's case of septicemic sporotrichosis involving the brain in a boy of 4. Also Nobécourt's three cases of pneumococcus pleurisy in infants successfully treated with pneumococcus antiserum. Some commend and others denounce lavage of the pleura after pleurotomy; it is done by the Dakin technic. Spirometer exercises are recommended for children to shorten convalescence from purulent pleurisy. This latter, Comby affirms, is like a "hot abscess." The success of a single injection of an autovaccine in a 7 months infant with a diffuse suppurating skin disease was reported by de Pfeffel, but another infant showed only improvement, and finally severe glandular involvement and exacerbation of the preexisting eczema proved fatal. Five injections of the vaccine had been given in this case.

Rousing of Inherited Syphilis by Intercurrent Infection.—Hutinel and Nadal discuss the puzzling clinical pictures presented when measles, pneumonia, nephritis or other infectious disease is distorted by an underlying, possibly hitherto latent and unsuspected inherited syphilis. Some instructive cases are reported, including one in which during measles at 4, the inherited syphilis flared up in the form of cerebral hemiplegia. In another case a mild nephritis started a train of cerebral symptoms with coma for twelve hours. Simple infectious sore throat in another case roused an encephalitis with meningeal reaction, and in one young infant, recovering from cerebrospinal meningitis, hydrocephalus developed. In all these and in others after typhoid, prompt specific treatment tended to eliminate the puzzling element of the inherited syphilis affecting the various organs and especially the brain and meninges. Chorea in particular was rendered mild and soon thrown off when the inherited taint was combated.

Pharyngospasm.—Weill calls attention to the spasm in the pharynx liable to be induced by some insignificant lesion. It does not cause spontaneous pain but the children refuse to eat, and this acute pharyngism is quite a common cause of supposed lack of appetite. This may keep up for weeks or months, with transient intermissions. The child seems to lose the notion of eating. He is not only seldom hungry, but he seems to have forgotten all about eating. He accepts food and chews a mouthful, but does not swallow it, chewing it over and over. The spasm conditions are like those with erosion of the anus. The children affected were from 19 months to 9 years old. Sometimes catheterization breaks up the spasm at one sitting. Other cases may require two or three sittings with a few days' interval. He uses Bouchard rubber sounds, dipped in boiling water and then in glycerin, for the progressive dilatation. The child is then able to swallow at will. The spasm can also be combated with a cold water compress to the throat for thirty or forty minutes, and then massaging the throat. If the child shrinks from swallowing, the finger pressed on the trachea causes suffocation which starts a swallowing movement. These measures are not so certain as the sound. With a neuropathic tendency, success is sometimes attained by having a stranger feed the child, and sometimes it will soon be swallowing normally. In three cases the children had become so much debilitated that murmurs suggested heart disease. The children held the mouthful of fluid in the mouth and then let it drool away. They were convalescing from typhoid, and minute ulcerations were visible on the posterior wall of the pharynx. He touched the throat with cocain and compelled these children to swallow fluid in abundance, and all the symptoms subsided.

Hemophilia.—Nobécourt describes some typical cases, and reiterates that the most effectual treatment to date is fresh horse serum and subcutaneous injections of 3 or 4 c.c. of a solution of peptone, 5 gm. in 100 gm. of water containing

0.5 gm. sodium chlorid. Three or four of these injections are made at two or three days intervals, repeating the series every three or four weeks. This was kept up for two years in one of the cases and the benefit was pronounced, although, as he reiterates, it seems to be impossible to cure hemophilia. The best we can do is to attenuate it.

Familial and Hereditary Exophthalmic Goiter.—In Harvier's case the goiter developed at 12, and the young man's mother, grandmother and an aunt on both the maternal and paternal sides had presented exophthalmic goiter. His sister had escaped. The tremor in his case had been noted from early childhood.

Presse Médicale, Paris

Dec. 10, 1919, **27**, No. 75

*Acute Appendicitis. A. Gosset and J. Berger.—p. 753.
*Tattooing in Therapeutics. L. Dufourmentel.—p. 755.

Emergency Appendicectomy.—Gosset and Berger emphasize certain precautions desirable in operating in acute appendicitis, such as the warning that chloroform damages the liver which is already suffering from the pathologic storm. Spinal anesthesia is also dangerous, as the appendicectomy may require changes of position.

Therapeutic Tattooing.—Dufourmentel refers to tattooing in the effort to render scars, etc., less conspicuous by punctate injection of a coloring matter to bring the tissues to resemble the skin around. His experiments have shown that an indelible and nontoxic pigment for white is available in the oxid of antimony or white of antimony, Sb_2O_3, and for red in the iron oxids known as "earths," including ochre, and cadmium salts. The colors are mixed with alcohol and then diluted with distilled water, and a small area, not over 1 sq. cm., is covered with the pigment. This is pricked into the skin with a small instrument which has from three to six needles set close together. The other end of the instrument is finished with a spatula. The points should enter the skin for only half a millimeter, not deep enough to draw blood. When a drop of blood oozes, it washes out the color. India ink is used for black, and he has been gratified with the outcome of the black tattooing to fill in a gap in eyebrow or moustache. The results have also been truly excellent, he says, in cases of extensive white scars from burns in the face, tattooed with pink. The skin is washed off with ether and then with alcohol; iodin would interfere with the tattooing.

Dec. 13, 1919, **27**, No. 76

Inaugural Lecture of Clinical Medicine Course. L. Bard.—p. 761.
*Surgery of the Large Intestine. J. Okinczyc.—p. 763.
*Postoperative Fever in the Malarial. R. G. Brun.—p. 766.

Surgery of the Large Intestine.—In this fourth article, Okinczyc gives an illustrated description of some of the common indications for and the technic of operations on the cecum and colon.

Febrile Reaction to Operations on the Malarial.—Brun commends the practice of giving an intramuscular injection of 1 gm. of quinin for two or three days before an operation. This avoids confusion from the fever otherwise liable to develop after the operation.

Progrès Médical, Paris

Dec. 6, 1919, **34**, No. 49

Arguments for Parasitic Origin for Psoriasis. L. Bory.—p. 487.
*Purpura in Typhoid. C. Roubier and P. Brette.—p. 488.
*Chilblains. H. Roziès.—p. 490.

Purpura During Convalescence from Typhoid.—Both of the two patients recovered, confirming the favorable prognosis which is the rule with tardy purpura in typhoid. The blood coagulated normally and the erythrocytes were not unusually fragile. The outlook is very grave when hemorrhagic syndromes develop early in typhoid.

Chilblains.—Roziès describes in turn the various methods of treatment in vogue for the relief of chilblains, saying that the aim with all is to promote the circulation in the capillaries and modify the lymphatic predisposition. Local measures which aim to relieve congestion and pain include electric light baths, hot air jets, exposure to the sun, film treatment as for a burn, massage and gymnastics of the legs. For the latter, the reclining subject lifts his leg as high as he can, holding it with his hands and flexing and stretching the foot and the toes, keeping this up for five minutes, and repeating every hour, working thus each leg and each arm each time. This modifies the circulation effectually. For direct medication, Comby advises a tepid bath, then rubbing with spiritus camphorae and, on retiring, painting with iodized glycerin (equal parts). Among the other procedures described is Jadassohn's treatment with baths: The part is soaked for ten or fifteen minutes in water as hot as can be borne, adding boiling water until the skin is very red, and doing this three times a day, wiping the part carefully dry afterward. Roziès gives a long list of other procedures that the practitioner has at his disposal for treatment of chilblains.

Dec. 13, 1919, **34**, No. 50

The Blood Pressure and the Pachon Oscillometer. Paillard.—p. 497.
General Anesthesia by the Practitioner. Hartmann.—p. 499.
*Psychoses Cured by Intercurrent Infection. H. Damaye.—p. 501.

Psychosis Cured by Intercurrent Influenza.—In Damaye's two cases the psychosis was of the dementia praecox type, and had lasted eighteen months in one case and seven in the other. The mental condition returned completely to normal after an attack of febrile influenza in the first case and of infectious sore throat in the other. The patients were men of 20 and 23.

Policlinico, Rome

Aug. 3, 1919, **26**, No. 31

*Injection of Arsphenamin on the Fascia Lata. M. Trossarello.—p. 937.
*Filtrable Viruses. R. Ciauri.—p. 940.
Arteriovenous Aneurysm in Thigh; Two Cases. P. Perazzi.—p. 945.

Injection of Arsphenamin on the Fascia Lata.—Trossarello was much pleased with the advantages of injecting the arsphenamin on the fascia lata instead of into a muscle. In 60 per cent. of the thirty patients treated with this technic the injections were painless or nearly so. In 25 per cent. there was a moderate reaction, and in 15 per cent. a sharp, painful reaction. Those in this latter group were all in the tertiary stage of syphilis. There never was any suppuration or necrosis at the spot, and he advises this epifascial technic as preferable to the muscular when intravenous injections are not practicable.

Filtrable Viruses.—Ciauri marshals the data already accumulated in respect to filtrable viruses, and comments on the conflicting state of our knowledge to date. Is it possible that certain bacteria pass through a filtrable stage in some phase of their development, he asks, or are we to assume that some filtrable virus happens along and suddenly mobilizes the latent pathogenic properties of ordinarily harmless bacteria?

Aug. 10, 1919, **26**, No. 32

*Acceleration of Pulse with Physical Exertion. C. Minerbi.—p. 961.
Spontaneous Transformed into Artificial Pneumothorax; with Recovery. E. Curti.—p. 967.
Contract Sickness Insurance Practice. G. Loriga.—p. 970.

October, 1919, **26**, Medical Section No. 10

Multiple Sclerosis of Nervous System. P. Albertoni.—p. 361.
Case of Tabes with Gummas. A. Giannelli.—p. 381.
Result of Operations on Trunk Nerves. Boschi and Perrone.—p. 385.
Research on Sensibility to Vibrations. C. Frank.—p. 387.

Adaptation of the Heart to Physical Strain.—Minerbi reviews a large number of recent Italian contributions to the physiology of the heart, and the way in which it defends itself against overstrain within physiologic limits. Among others Giuffrè has demonstrated that not only mechanical and hydraulic factors cooperate in accelerating the heart beat during physical exertion, but psychic, volitional, factors also cooperate, and likewise chemical factors, from waste produced by the physical exertion, and nervous factors, from stimulation of the accelerators and inhibition of the vagus. Minerbi has called attention to the isolated increased tonicity reaction in the different cavities of the heart as a sign of their functional capacity. Much of the recent Italian work on the heart has been true pioneer research, he explains.

Rivista Critica di Clinica Medica, Florence

Sept. 20, 1919, **20**, No. 38

*Intestinal Parasites in Italian Troops. G. Garin.—p. 445. Conc'n.

Intestinal Parasites in Italian Troops.—Garin's extensive research failed to reveal any special tendency to intestinal parasites in the military, even after long service in the trenches. The proportion was about the same as in corresponding civilian groups. But helminthiasis seemed to afford a certain predisposition to typhoid and paratyphoid.

Annaes Paulistas de Med. e Cirurgia, S. Paulo, Brazil

September, 1919, **10**, No. 9

*Coccidiodes Immitis. A. M. Pedroso.—p. 193.
Relations Between Infant Feeding, Infection and Constitution. O. Chiaffarelli.—p. 204. Cont'n.

Coccidioides Immitis.—Pedroso gives nearly six pages of literature on coccidioidal granuloma, and describes a case diagnosed as blastomycosis from which he cultivated *Coccidioides immitis*. It is easily differentiated, he says, by the fact that its reproduction is by sporulation and never by budding, while blastomycetes always grow by budding and never by spore formation.

October, 1919, **10**, No. 10

*Case of Blastomycetic Dermatitis with Epileptic Seizures. J. Mendes Pereira and F. Jacobs.—p. 217.

Blastomycetic Dermatitis with Epileptic Seizures.—Mendes and Jacobs state that the number of cases of blastomycosis in Brazil is growing constantly larger as physicians are learning to recognize it. In a case reported, the previously healthy young married woman developed a skin lesion in the right parotid region treated at first for eczema. The glands around suppurated, and by the sixth month there was a severe epileptic seizure and again the seventh month, and after this mild seizures of the Bravais-Jackson type recurred almost daily. The aura was always in the right ankle and there was paresis of the leg. The diagnosis had been in turn eczema, gout, syphilis, tuberculosis, and leishmaniasis of the skin until the microscope revealed the blastomycetes. Iodid treatment was then pushed but no benefit was realized, and the epileptic seizures continued while the skin lesions spread, with death in less than a year from the first symptoms.

Brazil-Medico, Rio de Janeiro

Oct. 11, 1919, **33**, No. 41

Bovine Sarcosporidiosis in Rio District. H. G. Hasselmann.—p. 321.
Epidemic Poliomyelitis in Uruguay. V. Escardo y Anaya.—p. 322. To be continued.

Oct. 18, 1919, **33**, No. 42

Protozoan Parasites of Man in Paraná. C. Pinto.—p. 329.
*Treatment of Renal Dropsy. C. de Rezende.—p. 329.

Treatment of Nephritic Edema.—De Rezende comments on the rebellious nature of subacute and chronic parenchymatous nephritis; it usually resists all treatment unless it is of syphilitic origin. In a recent case a girl of 10 died in nine months from the first symptoms. In another case a youth of 16 had traveled far on the same road, and was bedridden from the enormous dropsy when he contracted influenza. After a week of a terrible struggle with the influenza, which had invaded the lungs, the diuresis increased and the renal dropsy melted away, the young man leaving the hospital without a trace of edema a month after the onset of the influenza. De Rezende quotes a similar case recently reported by Allbutt, with recovery after influenza. But Allbutt ascribes the recovery to his dietetic treatment according to Epstein's method, aiming to supply the system with an abundance of albumin to make up for the huge losses of albumin in the renal dropsy. De Rezende is convinced that the cure in these two cases was due to the intercurrent febrile disease which modified the osmotic tension in some way and broke up the abnormally inverted current of fluid from the blood into the tissues. In future cases of the kind de Rezende intends to apply treatment with injections of normal serum, by the vein or subcutaneously. This will supply the albumin to conform to Epstein's theory, while he expects that it will induce a salutary febrile reaction which will modify the physical or physicochemical conditions.

Juventud Médica, Guatemala

August, 1919, **18**, No. 195

Fracture of Vertex of Skull with Abscess; Recovery. R. Tejada Aguirre.—p. 117.
*Yellow Fever. A. Madrid.—p. 120. Cont'n.
Imperforate Anus: Two Cases. B. Aldana S.—p. 123.
Palliative Operation for Cancer of Bladder C. Estévez P.—p. 124.
Hemorrhagic Purpura. G. Valdés.—p. 126.

Yellow Fever in Guatemala.—In the course of this report of his experiences, Madrid states that three children, from 5 to 7, presented at first the same clinical picture as the adults, but ascarides issued from the mouth and anus, without feces. The children also presented convulsions, contractures and meningism, and one had vaginal hemorrhage. Most of the women had profuse uterine hemorrhages. One morning he was called to two adults presenting the identical clinical picture, sudden onset, high fever, pain in the stomach, and rapid pulse, but no albumin was to be found in the urine. The next day one still had fever, with intense albuminuria, and the diagnosis of uremic-hemorrhagic yellow fever was confirmed by the further course. The other patient's urine and temperature were normal, and quinin then conquered her simple malaria. Madrid extols the advantages from autoserotherapy in the twelve patients given a single injection of the autoserum. But he warns that after the fourth day there are no antibodies, and hence the procedure is futile after that date.

Revista Médica del Uruguay, Montevideo

October, 1919, **22**, No. 10

Scarlatiniform Eruption from Insect Bite. A. Armand Ugón.—p. 719.
Antecedents of Vulvar Cancer. C. Stajano.—p. 722.
When Therapeutic Abortion Is Decided on, the Physician Should Not Depute the Task to a Midwife. A. Turenne.—p. 747.

Semana Médica, Buenos Aires

Sept. 18, 1919, **26**, No. 38

*Chronic Pseudo-Appendicitis. J. R. Goyena.—p. 321.
Teaching of Clinical Gynecology. C. R. Cirio.—p. 323.
Prophylaxis of Tuberculosis. N. Lozano and C. Mainini.—p. 326; J. de Dios Alcatena.—p. 341.
*Sanatorium Unit. Añon Suarez.—p. 330.
*Myiasis. E. D. Cortelezzi.—p. 334.
Influenza. P. A. Etcheverry.—p. 339; A. Thomson.—p. 342.

Chronic Pseudo-Appendicitis.—Goyena tells of a case in which an emergency appendicectomy was done for an "abdominal mirage" from pneumonia. He thinks that in many of the cases recorded as "chronic appendicitis cured by appendicectomy," the cure was the result of the rest and hygiene during convalescence. A sign lauded as pathognomonic of appendicitis, the intense pain induced at the cecum when air is pumped into the rectum, was strongly positive in a recent case years after the appendix had been removed. In a large proportion of cases the disturbances return sooner or later after the appendicectomy, as they are the result of stasis in the cecum, and the appendix is not responsible for them. Simple medical measures may correct conditions revealed by radioscopy and other modern exploratory methods.

Sanatorium for the Tuberculous.—Añon Suarez gives an illustrated description of what he calls the ultra-economical sanatorium unit, and the arrangement of several such units to form a sanatorium of 768 beds with 80 beds to the hectare. A row of four units form an obtuse angle open to the sunshine, with back to the cold winds, and the other sets of four units parallel these, with ample space between.

Myiasis.—Cortelezzi reviews the literature and reports two cases in which the maggots of *Chrysomyia macellaria* were found in the ear or nasopharynx. In one case over 100 of the larvae were expelled from the ulcerated nose and pharynx after instillation into each side of the nose of 2 c.c. of benzin, and the pharynx had been touched with it.

Sept. 25, 1919, **26**, No. 39

*Univitelline Twins. F. A. Deluca and V. Widakowich.—p. 355.
*Sclerogummatous Dermatitis. A. Gutiérrez and S. Rosner.—p. 360.
General Plan for Prophylaxis of Tuberculosis. E. R. Coni.—p. 363.
*Disqualifications for Matrimony. A. Stucchi.—p. 368.
Importance of Early Diagnosis of Tuberculosis. J. F. Mieres.—p. 376.

Origin of Univitelline Twins.—Deluca and Widakowich discuss the evidence on the cause of twin pregnancies from

one ovum, and say that there is much to sustain the assumption that this results from fecundation of the ovum by a spermatozoon with two heads. This assumption is sustained further, they say, by the fact that twin gestation of the univitelline type occurs mostly in syphilized families. The spermatozoa in syphilitics are more often of the double-headed and other anomalous types.

Syphilitic Sclerogummatous Dermatitis.—The excrescences on the foot had been developing for five years, and the Wassermann test was negative; after excision of the extensive hardened areas and specific treatment, clinically normal conditions were restored. The Wassermann reaction became positive later.

Ultraprophylaxis of Disease.—Stucchi discourses on the tragedy and absurdity of the present laws which lay so much stress on matters of property and land ownership in relation to marriage, and yet pay no attention to the really vital matters, whether the contracting parties are bringing loathsome disease into the family they are founding. He discusses the arguments for and against the forbidding of marriage to the chronically diseased, and urges this "ultraprophylaxis" as necessary from the legal and social standpoints as well as from the biologic and medical.

Oct. 2, 1919, **26**, No. 40

*Tuberculin Treatment of Tuberculosis. II. F. Gómez Alvarez.—p. 393.
*Shock in Obstetric Practice. D. Iraeta.—p. 389.
Prophylaxis of Tuberculosis in Children. A. Casaubon.—p. 393.
*Antibodies in Hydatid Cysts. J. Bacigalupo.—p. 399.
Percutaneous Tuberculin Treatment of Tuberculosis. S. de Madrid.—p. 400.
Eugenics in the United States. V. Delfino.—p. 403.

Tuberculin in Minute Doses.—Gómez here continues his analysis of his experiences with almost infinitesimally small doses of tuberculin, as described repeatedly in THE JOURNAL in the last few months. He says that every one responds with a stimulation of the vital processes to injection of the bacillin, as he calls this many-million-times diluted tuberculin. This action is manifest within six or twelve hours. The reaction to tuberculin is always focal when there is a focus, the effect proportional to the dilution. This reaction may be in the form of an aggravation, from the production of lysins, or there may be marked improvement from the production of what he calls haptins. The latter denotes the beginning of the therapeutic action which terminates in immunity. By reducing the dilutions to the extreme limit, the lysin-producing phase is skipped, and we begin to realize at once the favorable, haptin-producing response. The ordinary tuberculin tests reveal merely that the subject is tuberculous. Tests with the tuberculin in this extreme dilution tell not only that the subject is tuberculous, but they locate the tuberculous lesion by the changes in the symptoms from it under the influence of the bacillin.

Obstetric Shock.—Iraeta remarks that the low blood pressure, subnormal temperature, exhaustion tachycardia, and syncopal condition sometimes noted after delivery should be regarded as typical shock, and be treated accordingly. Ether or chloroform may bring on acute insufficiency of the suprarenals in parturients with latent predisposition thereto, and hence he warns against the use of either, saying that nitrous oxid is free from this danger and should be preferred for obstetric cases. He quotes Bayliss' recommendations of gum injections preliminary to intervention, for persons predisposed to shock. The action of epinephrin, saline infusion, etc., is transient or unfavorable, but the Bayliss 6 per cent. acacia solution in physiologic saline increases the viscosity and osmotic tension while, he reiterates, there is no danger of anaphylaxis, hemoptysis or agglutination with it. The initial perfusion with 500 c.c. can be repeated in fifteen minutes and, if the blood pressure drops again, there are no contraindications to repeating the injections. Iraeta's practice in case of established shock is to give the intravenous gum injection and, if this is not effectual, he follows it with transfusion of blood. Warming up the patient is important; he has seen dogs in shock recover when warmed while the unwarmed succumbed. He warns against danger with intravenous injection of camphorated oil. His reliance otherwise is on inhalation of oxygen, reclining horizontal, and absolute repose.

Antibodies in Hydatid Cysts.—Agglutinins were found in the fluid of two hydatid cysts in the liver in a child who had died from typhoid.

Berliner klinische Wochenschrift, Berlin

Oct. 6, 1919, **56**, No. 40

*Duration of Ventricular Systole. Brugsch and Blumenfeldt.—p. 937.
*Gregersen's Modification of the Benzidin Test. I. Boas.—p. 939.
*Disturbances of Liver Metabolism. S. Isaac.—p. 940.
Tuberculous Peritonitis. W. Bloch.—p. 943.
Case of Acute Suppurative Thyroiditis. H. Höpfner.—p. 944.
*Two Superposed Infectious Diseases. S. G. Zondek.—p. 945.
Silver Salvarsan Sodium. Brubns and Löwenberg.—p. 948. Conc'n.

Proportionate Duration of Ventricular Systole.—That determination of the proportionate duration of the ventricular systole has, functionally, greater significance than the pulse rate, is the conviction reached by Brugsch and Blumenfeldt, after extensive research on the subject at the Berlin Charité. For the determination of the cardiac systole, phonocardiograms were made, recording the heart sounds. For control purposes, electrocardiograms were made simultaneously. The results of their investigations on healthy subjects showed that with increasing age there was a corresponding increase in the proportionate duration of ventricular systole (expressed as a percentage of the complete cardiac revolution). Sex, however, seemed to play no part. Although, in a general way, the proportionate duration of the systole increased with an increase of the pulse frequency, it was evident that no functional ratio existed. Especially significant was the finding that the proportionate duration of systole in healthy adults has a constant value after rest, and that the variation in different individuals is slight. The value as determined for both sexes in the age group 25-70 is from 33.5 to 37.5 per cent. (of the cardiac cycle); whereas pulse frequency varies from 50 to 78. The authors found further that in certain cardiac diseases; for example in aortic and in mitral insufficiency, the proportionate duration of systole increased with the severity of the disease, whereas in certain other heart diseases there was a decrease. The investigations must be carried further, but the authors feel that the marked diagnostic value of the determination of the proportionate duration of ventricular systole is already beyond question, and that it surpasses that of the pulse rate.

Modification of Benzidin Test for Occult Blood.—Gregersen has recently found that a frequent cause of failure in the application of the benzidin test is that too strong solutions of the reagent are used. Following Grundmann's idea, he reached the conclusion that many of the positive reactions in normal persons on a meatless diet may be explained by the fact that minimal traces of blood were mixed with the feces, which, because of the excessive sensitiveness of the reagent, produced positive reactions. Boas accepts the idea that the use of highy concentrated benzidin solution does lead to false diagnosis, and on that account approves, after careful trials, Gregersen's modification of the test. Gregersen uses a 0.5 per cent. benzidin solution, and instead of the easily decomposable hydrogen dioxid he employs barium dioxid, which is much more stable. Gregersen's method is described in detail, and Boas offers what he considers a further slight improvement. Boas admits, however, that in using the weaker solution very slight hemorrhages, though worthy of note, might go undiscovered.

Disturbances of Liver Metabolism.—The reason why the chemical processes in the liver have not awakened more clinical interest in the past is that disturbances in liver metabolism are difficult to determine. It has been difficult to differentiate between pathologic and physiologic phenomena, perhaps, because the pathologic phenomena are usually only quantitative shiftings. But Isaac thinks that these quantitative changes, while causing at first only partial changes of function, usually affect finally the action of the liver as a whole. The equilibrium of certain associated processes on which the normal metabolism of the liver depends may be only slightly disturbed, but in the aggregate a complex derangement of the liver functioning may thus be entailed. He finds that the most common cause of disturbance lies in

primary changes in carbohydrate metabolism, and illustrates this point by considering in detail various alimentary disturbances of glycogen metabolism. He shows how the liver may react in different ways to nervous and toxic stimuli, but that it is always a question of an exaggeration of some normal specific function.

Superposed Infectious Diseases.—Since the combined appearance of typhoid and dysentery is comparatively rare, Zondek reports several cases observed during the war. He has noted the tendency to consider such cases as atypical infections, whereas a more careful diagnosis revealed the presence of a mixed infection. Similar diagnostic errors might explain other so-called atypical diseases. Sometimes dysentery followed typhoid, sometimes the converse was true, if the statements of patients before entering the hospital may be accepted. The second infection began often during convalescence from the first. At other times the two infections ran parallel. The course of the dysentery offered nothing peculiar. Only one case was fatal. He mentions as significant that in one patient one week after defervescence of paratyphoid B, *B. dysenteriae* was found in the stool, though clinical symptoms did not appear until four days later. This finding evidences the fact that dysentery patients eliminate dysentery bacilli during the incubation period. Four paratyphoid patients eliminated *B. dysenteriae* during convalescence without showing clinical symptoms of dysentery at any time. It was often difficult to demarcate the typhoid from the dysentery, for typhoid, and especially paratyphoid, may often present a picture resembling dysentery. There was no evidence that the course of the typhoid was influenced by the dysentery. On the other hand, the dysentery was brought to an unexpected termination by the typhoid. However, paratyphoid B could not be shown to have any effect on the dysentery. Whether paratyphoid B was influenced by the dysentery could not be definitely shown, but the course of the paratyphoid B was short and uneventful. Paratyphoid A could not be shown to have been affected by a previous dysentery, but the course of the disease was lighter than usual.

During synchronous epidemics of typhus and recurrent fever about 1,000 typhus patients and 150 recurrent fever patients were treated. In twenty cases typhus followed recurrent fever. The severe and stormy course of the typhus was doubtless due to the preceding attack of recurrent fever, which had left the patient in a weakened physical condition and had doubtless damaged the central nervous system. In six cases the typhus set in after the first attack of recurrent fever. During the course of the typhus the spirochete of relapsing fever was not found in the blood. There was no second attack of the recurrent fever in these six cases, but the other patients with recurrent fever followed by typhus had two or more attacks of the former.

Correspondenz-Blatt für Schweizer Aerzte, Basel

Dec. 4, 1919, **49**, No. 49

*Smallpox and Vaccination. G. Sobernheim.—p. 1849.
Neuroses and Psychoses Among the War Interned. A. Repond.—p. 1858.
*Porphyrinuria with Paralysis. W. Löffler.—p. 1871.
Auscultation with Two Phonendoscopes. G. A. Römer.—p. 1879.

Smallpox.—Sobernheim expatiates on the importance of an early diagnosis of smallpox. The extremely fine granula found by Paschen in all the smallpox cases he examined requires great skill in the technic for its discovery, but it most certainly seems to stand in some relation to smallpox, as also Guarnieri's cell inclusions which can be refound in the rabbit cornea inoculated with pustule contents. This test also requires a complicated technic, but Paul's method is simple and rapidly instructive. With this, the scarified rabbit cornea is inoculated with contents of the suspected pustule or with secretions from nose or throat, and in thirty-six to forty-eight hours there is a macroscopic reaction, the cornea around remaining normal while minute elevations can be seen at the infected points. If the eyeball is placed for a short time in mercuric chlorid-alcohol, the cornea turns gray while the minute swellings show chalky white. This kind of reaction is seen only with smallpox or vaccine virus, but negative findings are not conclusive. With this and other tests, it has recently been demonstrated, he adds, that the virus is found in the nose and throat early in the disease, and that the disease can be transmitted by droplets, but no evidence of healthy carriers has been discovered as yet.

Porphyrinuria with Ascending Paralysis.—Löffler adds another to the fourteen cases of acute porphyrinuria on record; his case is the fifth with symptoms of acute ascending, lax, purely motor paralysis. No cause for the porphyrinuria could be discovered in the previously healthy farmer's daughter. It is curious that women formed 92 per cent. of all the cases of the acute toxic form, and 78.5 per cent. of the acute idiopathic form. Necropsy failed to reveal in his case any pathologic changes in brain, cord or peripheral nerves. The urine averaged 0.065 per cent. porphyrin; in one day's 400 c.c. urine there was 0.26 gm. In chronic porphyrinuria the range is from 0.17 to 0.57 gm. The porphyrin answered to all the tests, confirming that a single form of porphyrin is found in both the chronic and acute cases. The stools also showed the spectrum for porphyrin; this is the first time, he says, that it has been found in the stools in acute porphyrinuria. None could be detected in the blood. At first abdominal symptoms predominated, but after six weeks the paralysis developed and proved fatal in less than a week.

Schweizer Archiv. f. Neurol. und Psychiatrie, Zurich

1919, **5**, No. 1

*The Fulminating Acute Psychoses. C. Ladame.—p. 3.
Psychopathology of Arson. G. Bychowski (Warsaw).—p. 29.
Symmetrical Formations in the Hemispheres of the Brain in Man and Animals. Z. Jatschewa.—p. 56.
*Chemical Differentiation of Brain Tissues. E. Landau.—p. 68.
Psychomotor Inhibition in a Case of Chorea. R. Mourgue.—p. 70.
Feeding the Insane through Tube in the Nose. W. Boven.—p. 99.
*Congenital Malformation of Spinal Cord. V. Demole.—p. 107.
*Electric Motor Excitability of Stomach Wall. Bircher.—p. 122.
*Retrogasserian Section of Trigeminal Nerve. C. A. Perret.—p. 141.
*Nerve Anastomosis for Facial Paralysis. Id.—p. 141.

Acute Idiopathic or Fulminating Psychosis.—Ladame reserves this name for acute insanity, with a rapidly fatal termination, which presents a characteristic clinical course and histopathologic changes *sui generis*, indicating acute inflammation of the mass of the brain. The article is based on eight cases, and emphasizes particularly the intense motor restlessness and the rapid desiccation of the tissues and early cachexia, with signs of grave general nutritional disturbances, profound mental confusion and death in one or two weeks. He suggests that by combating nutritional disturbance at the start we might ward off the disease. The lipoids, especially the lecithin, seem to be mainly involved, and treatment should aim to arrest the disassimilation, which would remedy also the derangement of the water balance. This pychosis is rare, forming only 0.25 per cent. of the 3,181 insane at the Bel Air asylum. (Ladame's untimely death has recently been reported.)

Chemical Differentiation of Sections of the Brain.—Landau calls attention to the fine contrast staining obtained by the chemical reaction when a specimen is stained in turn with iron salts of a higher and lower valency. It is especially instructive for sections of the brain. He places them for a few minutes up to an hour in a 1 or 2 per cent. solution of ferric chlorid and then rinses and transfers to potassium ferrocyanid. If the stain is too deep, it can be decolored with ammonia and stained over again.

Congenital Luxation of the Atlas.—Demole found at necropsy of a woman of 30 who had never displayed any nervous symptoms, motor or sensory, that there was forward subluxation of the skull on the spine, and the spinal cord was crushed out of shape. He ascribes this luxation to flexion of the neck at the third month of fetal existence, for reasons which he describes, and comments on the way in which the fetal spinal cord adapts itself to such injuries. The atlas had grown to the axis beneath.

Electric Stimulation of Motor Functioning of the Stomach Wall.—Bircher reports experimental and clinical experiences with various forms of electricity applied to the vagus innervation of the stomach wall and also directly to the wall. The details in seventy-five clinical cases are tabulated. They

testify to the importance of the neurotic factor in ulcer. Another practical point learned is that when the surgeon is unable to discover any anatomic basis for the disturbances, electric tests will reveal pathologic conditions when such exist. The sensation from the electricity was always referred to the electrode on the skin, the stomach itself not apparently feeling it. The excitability of the stomach was tested directly in the operative cases. The threshold grows lower from the cardia to the duodenum, and the excitability is greatest opposite to or just below an ulcer.

Retrogasserian Resection of Trigeminal Nerve for Neuralgia.—Perret reports the excellent outcome over three years to date in a very severe case of trigeminal neuralgia treated by severing the nerve back of the gasserian ganglion. This entails ascending degeneration of the centripetal fibers of its sensory root, and cures the neuralgia, while there is no danger of the neuroparalytic keratitis liable after gasserectomy, as the sympathetic fibers passing to the ophthalmic nerve are left intact. The case is illustrated.

Grafting the Facial on the Hypoglossal Nerve Cures Facial Paralysis.—Perret's illustrations show the fine result realized in a case of total facial paralysis in a young woman by total end-to-end anastomosis of the hypoglossal and facial nerves. Seven years later no asymmetry can be detected and there is scarcely a trace of lagophthalmos. One half of the tongue showed a tendency to atrophy at first, but it grew less apparent, and speech is perfect. The only suggestion of associated movements is a slight fibrillary tremor in certain regions in the cheek but she can control even this when she is not tired.

Zeitschrift für Geburtshülfe und Gynäk., Stuttgart

July, 1919, **81**, No. 3

*Incipient Cancer or Atypical Epithelium? W. Benthin.—p. 593.
Adenomatous Sarcoma of Uterus. E. Froeschmann.—p. 623.
*Serologic Bile Test for Cancer. H. A. Dietrich.—p. 641.
*Operative Treatment of Adnexitis. K. Fraenkel.—p. 667.
The Patented Metal-Placenta Test for Pregnancy. O. Hürzeler.—p. 701.
Cylindromatous Sarcomas of Adnexa. E. Büchler.—p. 723.

Incipient Cancer or Atypical Proliferation of Epithelium?—Benthin gives photomicrographs of seven cases in some of which even microscopic examination of practically the whole uterus failed to decide for or against malignant disease

Bile Serologic Test for Cancer.—Dietrich has found that the natural hemolytic action of bile can be checked by addition of normal serum, but that serum from women with genital cancer allows the hemolysis to proceed unchecked. He proclaims this as a new biologic test for cancer, and reports that the findings with it were positive in 95 per cent. of forty-one cases of genital cancer in women, while they were positive only in 5 per cent. of the 121 noncancer women, and in these positive cases there were inflammatory processes. He explains the reaction as due to destruction of the albumins in the cancer serum, and declares that it is a useful guide not only in diagnosis but for the prognosis and in control of the results of operations and raying. He uses for the test a reliable element of bile, sodium taurocholate, in a 0.5 per cent. solution in physiologic sodium chlorid solution in a set of twelve tubes, ranging from 0.28 to 0.17 c.c. of the taurocholate and filled with the saline to 1 c.c. To each is added 0.01 c.c. serum, with a parallel set containing 0.01 serum from healthy subjects. After thorough mixing he adds to each, 1 c.c. of a 2.5 per cent. suspension of erythrocytes from umbilical-cord blood of newly born infants, caught in sodium citrate, 1:10, and thoroughly rinsed with saline, centrifuging three times. The reaction is estimated after thorough mixing and the tubes have been incubated at 37 C. for two hours. In the normal serum tubes there is no hemolysis, while in the cancer serum tubes hemolysis occurs. Dietrich reviews the literature on biologic tests of cancer, remarking that none have come near to standing the test of time except the miostagmin reaction and, possibly, Abderhalden's.

Operative Recurring Inflammation of Internal Genitals.—Fraenkel reviews the ultimate outcome in 1,305 cases of recurring inflammatory gynecologic disease at Frankfurt, all given medical treatment but ninety-seven. This operative group includes thirty-eight with radical abdominal total extirpation, and the final verdict is decidedly in favor of this from every point of view.

Aug. 2, 1919, **82**, No. 1, O. Küstner Festschrift

*Genital Prolapse. A. Martin.—p. 1.
*Significance of Pain in Pelvis. E. Opitz.—p. 9.
Gonococcus Vaginitis in Little Girls. R. Asch.—p. 28.
*Suprapubic Cesarean Section. P. Baumm.—p. 45.
*Ventrifixation of the Vagina. L. Fraenkel.—p. 59.
Delivery in Twilight Sleep. O. Schmidt.—p. 76.
*Chronic Ulcer of the Vulva. F. Heinsius.—p. 96.
*Origin and Treatment of Eclampsia. A. Dienst.—p. 102.
Reciprocal Relations Between Menstruation, Color of the Hair and Libido. A. Heyn.—p. 136.
Gynecologic Laparotomies; 491 Cases. W. Hannes.—p. 153.
Hematometra in Double Uterus. P. Becker.—p. 180.
Ileus from Postoperative Bands. P. Becker.—p. 190.
Fascia Grafts in Gynecologic Operations. G. Schubert.—p. 195.
*The Kielland Forceps. H. Küster.—p. 218.
Pregnancy and Tuberculosis. F. Heimann.—p. 237.

Treatment of Genital Prolapse.—Martin reviews the various operative methods that have been devised to cure genital prolapse, and remarks that even the best planned and best executed operations have some failures on their record. The general condition is an important factor. Infantile, thymus-lymphatic and constitutionally inferior tissues cannot always be relied on as a permanent support, even where the conditions at first seemed perfect.

Pain in Gynecologic Disease.—Opitz warns that even with unmistakable hysteria or neurasthenia there may be local causes for pains. Careful search for these causes will reduce more and more the number of cases of purely psychic pains, although never doing away with the latter entirely. Among the causes liable to be overlooked which may be responsible for pain are (1), clumps of ascarides entailing local spasm of the bowel; (2) enlargement of veins in the pelvis. The phlebectasia can sometimes be palpated. In several cases he was able to cure tormenting pains of long standing by ligation of the enlarged vein. Pain from this cause usually comes on when lying on the back. (3) Kinking or stenosis of a ureter or traction from bands is liable to cause pain; sometimes catheterizing the ureter may straighten it and put an end to the pain. (4) Pain in the sacral region may be due merely to fatigue of the dorsal muscles; this pain comes on in the course of the day and is relieved by repose. Or sacral pain may occur from stretching of the ligaments of the iliosacral joint, and the ligaments are found tender, especially in women with oblique pelvis. Massage, gymnastics and strengthening measures may help. (5) A further cause for pains may be found in retroperitoneal tuberculous glands. Kneise has cured several such cases by operation or tuberculin treatment. (6) One of the most frequent causes is abnormal movability of the cecum or sigmoid flexure, or their being bound down by bands. He has cured numbers of patients by correcting these conditions, especially the adhesions at the sigmoid flexure. These are particularly liable to cause disturbance during pregnancy and the puerperium. He has found these adhesions in 95 per cent. of the cases, but they do not always cause pain. In several cases he did not cut these bands at the laparotomy for other cause as they had never caused disturbance, but they began to make trouble later.

Opitz now has a record of large numbers of cases of pains in the left abdomen permanently cured for years by merely breaking up these adhesions at the sigmoid flexure or cecum; they are usually connected with—possibly extinct—disease in the genital organs, and the pains are generally mistakenly ascribed to displacement of the uterus. They persist after operative correction of the displacement, or are even aggravated by this as the traction is made greater. Ordinary rheumatism affecting the pelvis and sacrum may be responsible for the pains in some cases; the tonsils should be examined. He emphasizes further the importance of distinguishing between the stimulus that causes the pain and the brain that perceives it. By psychotherapeutic suggestion and general strengthening measures we may be able to reduce the acquired oversensitiveness of the central nervous system, and thus cure from another angle.

Suprapubic Cesarean Section.—Baumm has now a record of 223 cases of contracted pelvis in which delivery was by sectio suprapubica. The mortality was 2 per cent. in the clean cases and 13 per cent. in the febrile cases. In two cases the operation was repeated at a later pregnancy and in another case three times. The prospects for the children are the same as with the classic technic. In over 59 per cent. of the cases, the operation was extraperitoneal. The great advantage is that the whole operation can be concluded at once and the uterus sutured. This suprapubic technic should not be considered for febrile cases with fetid amniotic fluid, or with an interval of twenty-four hours since the escape of the fluid.

Ventrifixation of the Vagina.—Fraenkel reports two cases, and cites others from the records, of ventrifixation of the vagina in treatment of recurring prolapse after hysterectomy or with primary prolapse, leaving the sound uterus intact, or removing the diseased uterus. The operation is simple and easy and all are surprised at the effectual way in which it counteracts the tendency to prolapse, while it is not liable to interfere with pregnancy later.

Chronic Ulcer of the Vulva.—Heinsius has had four cases of extensive inoperable destructive ulcerative processes starting in the vulva, with multiple fistulas. Great relief was obtained from fixation to the abdominal wall of the sagging genital organs and bladder.

The Eclampsia Question.—Dienst announces that his experimental and clinical research has settled once for all that the blood in eclampsia contains an abnormally large proportion of fibrin-ferment. This excess of fibrin-ferment explains the edema of pregnancy, pregnancy kidney, and eclampsia as the various degrees of intoxication with fibrin-ferment, as he describes in detail. In many hundreds of blood specimens the findings were constantly concordant in the deficient production of antithrombin in the eclampsia and pregnancy cases, and the consequent overloading of the system with thrombin. He announces the constant finding of fibrin-ferment in the amniotic fluid as early as the second month in normal pregnant women, but in these normal women no free preformed fibrin-ferment was ever found in the blood plasma. For this and other reasons he assumes that the maternal placenta is the source of production of the fibrin-ferment. Treatment should aim to relieve the spasm of the blood vessels caused by the excess of fibrin-ferment. Small repeated doses of narcotics, as in Stroganoff's prophylactic treatment, accomplish this, while venesection lowers the blood pressure and starts up the circulation and the production of antithrombin in the liver. Leech extract may also aid in combating eclampsia, and rupture of the membranes may reduce the pressure so that the liver may have better circulation, and aid in combating the toxic action. As the placenta keeps producing more fibrin-ferment, it should be got rid of quickly. Nolf states that acid drinks promote production of antithrombin, and hence the pregnant should be encouraged to drink freely of lemonade, etc. The pregnant naturally crave acid drinks and foods. A fat-poor and albumin-poor diet tends to keep down production of fibrin-ferment. This has been evidenced in the lesser number of cases of eclampsia during the last few years on the restricted war diet. In conclusion, Dienst mentions the recovery from impending eclampsia in a case of the severest form of pregnancy kidney in which he gave lemonade in large amounts and two subcutaneous injections of antithrombin in the form of blood from a healthy pregnant woman near term.

The Kielland Forceps.—Küster reviews some recent publications on the Kielland forceps and his own experiences with it, his conclusion being that these forceps and the method of their introduction form the most important progress that has been realized in instrumental obstetrics for many years.

Norsk Magazin for Lægevidenskaben, Christiania

December, 1919, **80**, No. 12

*Cancer of the Rectum. P. Bull.—p. 1233.
Clinical Study of Influenza Pneumonia. R. Hatlehol.—p. 1310.
*Isolated Disease of Scaphoid Bone. E. W. Koritzinsky.—p. 1332.

Cancer of the Rectum.—Bull tabulates the details and outcome in 4 cases in which merely the malignant tumor was excised, 18 with amputation of the rectum, 2 with amputation of the sigmoid flexure, 13 with resection of the rectum, and 6 with resection of both rectum and sigmoid flexure. His historical sketch of the subject and his analysis of 71 personal cases of cancer of the rectum have convinced him that an exploratory laparotomy is practically indispensable, and that local anesthesia, especially sacral or parasacral anesthesia, offers many advantages and averts the danger of collapse and of complications on the part of the lungs. The tragic feature in treating cancer of the rectum is that the attempt to leave the anus continent often compromises the success of the intervention. He warns further that the only way to avoid gangrene of the intestine stump when it is drawn down is to ligate the superior hemorrhoidal artery above the mouth of the branch from the sigmoid artery. No action from roentgen or radium rays was apparent in the few cases rayed. Of the 39 who survived the radical operation, 17 lived for an average of eight and a half years, including six with survivals of from twelve to twenty years; 2 died from intercurrent disease after one and 2 after seven years and 16 of the others succumbed to metastasis or recurrence within five years. Two succumbed to peritonitis following an attempt to close the artificial anus. The permanent cures thus formed 30.8 per cent. of the 39 who survived the operation or 27.3 per cent. of the 44 operative cases.

Isolated Disease of Scaphoid Bone of Foot.—Koritzinsky reports a case of Köhler's disease, and compares it with the forty-nine cases on record. The prognosis is favorable; all the children outgrew the disease in from a year and a half to two years and a half, but recovery is materially hastened and suffering avoided by wearing a firm immobilizing bandage with a flatfoot insole. No operation should be considered. Sometimes the lesion is accompanied by a similar one in the patella, and it may be bilateral. The symptoms are pain and tenderness at this point, and the child steps on the outer edge of the foot. The lesion has usually a traumatic factor, but it may be merely a defect in development from some nutritional disturbance, like Kienböck's traumatic malacia of the os lunatum and Calve-Perthes' similar hip joint anomaly.

Ugeskrift for Læger, Copenhagen

Dec. 4, 1919, **81**, No. 49

*Functional Tests of the Heart. K. Secher.—p. 1891.
Grave Jaundice Early in Pregnancy. E. Hauch.—p. 1899.
Lethargic Encephalitis. K. Bierring.—p. 1899; Idem, J. C. Møller.—p. 1903.

Dec. 11, 1919, **81**, No. 50

Treatment of Diabetes in General Practice. H. C. Hagedorn.—p. 1939.

Functional Tests of the Heart.—Secher refers to tests that are simple enough for office and house practice. He commends in particular the Katzenstein, Rehfisch and Schrumpf methods. Schrumpf states that with a normal heart the pulse returns to its former beat in four minutes after slight exercise, such as bending the knees ten times. Katzenstein's test is the difference in pulse and blood pressure before and two minutes after digital compression of the femoral artery for two or two and a half minutes. A rise in blood pressure and slower pulse rate indicate normal condition. An abnormally high rise in blood pressure is found with arteriosclerosis and hypertrophy of the heart. No rise in blood pressure indicates weakness of the heart; if the pulse is not modified, the weakness is slight, but if the pulse grows faster the heart must be regarded as decidedly insufficient. A drop in blood pressure with accelerated pulse indicates severe insufficiency; it is proportional to the degree of each. This test can be applied to the reclining patient, and Secher's experience with it in fifty cases demonstrated its approximate reliability. In some cases it excluded organic heart disease, and the course later confirmed its findings. The Rehfisch test is by auscultation before and after bending the knees ten times; Bock's differential stethoscope eliminates the personal equation in estimating the findings. Bull expresses surprise that this stethoscope is not used more.

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THE SOCIAL TREND IN MEDICINE*

GEORGE DOCK, M.D.

ST. LOUIS

Before the war, a new era made itself known in many ways; but medicine, especially in the United States, either held aloof or, at any rate, did not actively face the facts. Many things included under the term socialization affected medical practice as well as medical study. In England, several years before the war, the new course affected the profession abruptly and without preparation in the form of the insurance laws. Because of the strong similarity with political tendencies in this country we should have taken more interest in that movement in Great Britain. I do not intend to enlarge on details now, but mention the incident as an illustration. As the editors of the *Revue de médecine* remark in announcing some changes in the plan of that sound and representative journal, "medicine is becoming less academic and speculative, but more physiologic and social."

INDIVIDUALISM AND DEMOCRACY

Many foreigners, including the most penetrating as well as the most sympathetic critics of our political life, have emphasized the great danger of our satisfaction with a low level of culture; while those who are not partial to democracy in general look on it as a necessary by-product, and one that might serve as a warning to other nations less advanced in personal liberty. Those of us who are believers in democracy and those who wish to excel in any way, especially in the so-called practical lines leading to financial success, value the boundless opportunity given to individualism in America and have long refused to heed the pessimistic assertions of those who see in these opposing but related tendencies — individualism and democracy —a serious menace to the national life.

The satisfaction with unbridled individualism has much to do with some of the things most shocking to an impartial observer, whether exchange professor or recent proletarian immigrant. In no other country called civilized is life held so cheaply, as shown by the indifference to homicide in all forms and to accidents of all kinds. Murderers go uncaught or, if caught, unpunished; lynchers, equally lawless, never give a thought to punishment, because they know it will not be meted out. Homicide is not the only neglected wrong. Thievery of all grades, be it that of the simple footpad or the embezzler of bank funds, of the payroll cash or automobile bandit, is equally undetected and unpunished. Life and property are not everything. Grade crossings of railroads, even in the most fashionable streets of large cities, resulting in many accidents, are but the logical companion-pieces to roads, such as no other civilized land has had since the end of the eighteenth century. It is characteristic of our fondness for exaggeration and mockery that we give to the worst of these the name of trails and of highways. Add to these dangers the smoke nuisance in almost all cities, the dirty streets and dirtier alleys, the unnecessary and wholly unprotested noise of the streets, which affect health and efficiency, and we have an outward form of civilization that must shock all contemporary visitors or future historians.

The practice of lynching seems to contradict the individualistic tendency so characteristic of the American people, but in fact it does not. The individualist is a strong and aggressive character who forces a way to success in spite of obstacles. There are, however, many persons who are too indolent and too lacking in initiative to become conspicuous; with little business of their own they have too much time to devote to that of others. From this and their suggestibility to evil, they form the mobs that, like some other low creatures, are always ready for mischief. The inertness of the officials whose business it is to apprehend malefactors is explained by the fact that such officials are chosen largely from the very element concerned in the violation of law or of peace. Even the higher officials, prosecuting officers and judges have the spirit of the mob rather than that of the guardians of the law and of the dispensers of justice. This explains why a policeman who actually sees a misdemeanor or felony will usually do nothing unless some bystander, especially the victim, promises to prosecute. It explains why prosecuting attorneys, the name illustrating the etymologic law "lucus a non lucendo," do not bring to justice those who ostentatiously violate medical practice laws, liquor laws, misbranding laws and many others. It makes clear why even federal officials, who have the function of enforcing food laws, try to base their legal actions on the testimony of physicians, dealing with more or less disputed chemical and physiologic questions, rather than on the plain legal phases of the case. Of course, another explanation is often given for all these derelictions of duty—dishonesty or graft—but that is not necessarily true. The test of war has shown that here, as in other countries, individualism is not essentially bad. On the contrary, the good which it accomplishes far outweighs the bad, and the latter can be kept down by education and the proper social adjustment. The passive, suggestible

* Read before the biennial international convention of Nu Sigma Nu, New York, Nov. 29, 1919.

spirit is always bad. In a weak state it makes slackers; in a strong one, it may produce efficiency, but is then a source of danger to its own country, as well as to others. For it, too, education is the remedy, but it must be a vigorous and definite education.

OUR LACK OF COOPERATION

One of the most glaring examples of lack of cooperation is shown in the state laws for medical licensure, or, in short, the medical practice laws. These laws have for their sole object the furnishing of well qualified physicians, and the exclusion of others. After hard work for nearly half a century, and less strenuous efforts for a longer time, the laws of most states act chiefly to prevent physicians from moving from one state to another, which, for climatic or other personal reason, one might prefer. In few of the states are the examinations so superior to others that the tests vary essentially from those in others. The citizenry does not care whether a physician has come from another state any more than in the case of a preacher, engineer or trolley driver. The quasi-excuse for such a state of affairs is that our form of government, the police power in relation to the states, etc., obliges us to submit to this absurd condition, which affects also such other details as marriage and divorce, taxation, etc. So far from being a valid excuse, this is only a confession of legal and political incapacity. It illustrates another fact in the case with which we make laws, although every one knows that whereas some of them—or some details, like the practice laws—are observed in certain respects as if gospel, others are dead letters from the time they receive the governor's signature! so much so, that hundreds are unknown even to those who have the duties of making, signing and enforcing them. As Kipling says of the American spirit:

> The cynic devil in his blood
> That bids him flout the law he makes;
> That bids him make the law he flouts.

The law officer, when accused of inertia, throws out a smoke screen by asking for still more laws.

Just as the country was getting into one of its frequent periods of financial and industrial depression, the war came; and although that form of intellectual dishonesty that calls itself idealism tried to keep us out, it was obvious from the beginning that we should have to fight for everything we had gained — life, wealth and honor, probably for civilization itself — with the certainty of losing something.

When war came, the weaknesses of the national fabric soon began to be disclosed. Notwithstanding our strong individualism and energy, our skill, ingenuity and industrial organization, the low average ability and lack of cooperation were seriously felt in many lines, and especially in those relating to the national security and the continuance of our traditional policies. And this proved to be true not only of such large matters as universal service and taking part in European politics, but in the more selfish questions of freedom of opinion and speech, of the use of spies and informers, of personal liberty in regard to wine and beer, and many questions of taste rather than of ethics or laws.

In spite of all these drawbacks we played an active part in the war, and one of signal honor in hundreds of ways. The experiences of the epoch can hardly be evaluated yet, but some of the lessons are already evident for those who wish to consider them.

PROBLEMS OF THE TIMES

At the beginning, when bodies and dollars were being poured out, there was the same pathetic confidence in a coming intellectual and moral renaissance as is doubtlessly always manifested when a nation goes to war. It was so in a less glorious war still within the memory of most people now living — the Spanish-American War. There was a general elevation of soul, even on the part of those who objected to the manner of beginning war, with high hopes of a mighty advance in all directions. It was assumed that with the courage of those who ventured all, with the self-sacrifice of the wives and families of the fighting men, a real and permanent exaltation above previous levels would take place in intelligence, in politics, in business and in public service.

Doubtless in individual cases there was a new birth or a moral exaltation that will continue; but in general we have fallen back into the old ruts, while some new traits, brought out or accentuated by the exertions or readjustments of the effort to win, have shown themselves to be even more threatening than the schemes of kaiser or German general staff.

One of the outstanding phenomena of the struggle was the important part played by experts, by men and women of scientific training, in medicine as much as anywhere. Medical men wholly prevented many of the plagues that in former wars decimated armies and devastated civil populations. They saved countless limbs that would have been amputated in previous wars; they restored minds unhinged by physical and mental shocks. The destructive pandemic of influenza that began before the end of the war and lasted long after hostilities ceased, may seem to lessen the credit due the medical service. This really emphasizes the value of medical science in the other cases mentioned. The misinformed sometimes assert that lessening of infectious disease in recent years is due to the advance of general and personal hygiene, but the truth is that each infection requires special measures, which can be taken only when the vital peculiarities of the infecting germ are known. Influenza in this respect is far behind many other diseases, such as diphtheria, smallpox, tetanus and typhoid fever, and it will probably require the labors of many investigators, working from various angles, to solve the problems of influenza and enable us to check its spread and danger. That the difficulties will be solved no one can doubt, and as in other cases, the necessary measures, no matter how costly, will be cheap in the end.

During the war, the resources of trained minds were so striking, the practical results in hundreds of directions were so real and so important, not only in medicine, but in every scientific line, physics, chemistry, physiology, bacteriology and serology, that one might have expected that those who accomplished such results would be hailed as the most precious and indispensable members of the commonwealth, and that they would be showered with everything necessary for their future work and material comfort.

But again history repeated itself: The men who accomplished the greatest destruction of life get all the glory and all the rewards possible, the physicists, physiologists, and the like return to their meager salaries and their poorly supported work. On all sides, while the struggle was on, it was asserted that since education had shown its value (with the imputation that it had not in dull times of peace) it would be easy to get the requisite financial means. That art and

science would no longer have to go after bread seemed almost an axiom.

Well, the war is over—for some purposes, such as selling beer, if not for others, such as digging coal—and what is the result? A few rare souls, as I said before, retain the exaltation they felt at first. The mass of the citizenry went back to the same old selfishness, the same indolence, the same indifference, the same carelessness. Many have gone backward physically and mentally, and show an intense ennui, a definite relaxation of physical and moral fiber. We see general lack of thrift and a widespread extravagance coupled with the desire for easy money, whether by raising to an exorbitant height the price of labor and commodities, or by the simpler methods of expropriation and printing of fiat money. The method of raising prices of labor or goods has been so successful in America that the Bolshevists of Russia must regret the danger and bloodshed they risked when they followed the cruder method.

We are at present too much engaged in keeping our heads above water to know how serious the danger is. When Germany began her gamble of Weltmacht oder Niedergang, it was clear that the downfall threatened, not only the reckless adventurers who struck the blow, but civilization itself. Nor must we think that the results still to come can be no worse than those that followed the break-up of the Roman Empire. Just as civilization is so much more complex in almost all lands, and populations are so much greater all over the world with a resultant accentuation of the struggle for existence, and just as the means of destroying life and property are so much more effective than before, so may the shock, the destruction and the period necessary for recovery be much greater than ever before.

Very instructive are the intellectual camouflages that have appeared but have excited little comment. When the draft began and the records as to the large number of illiterates were made public, much surprise was expressed. Yet the facts and figures were accessible to everybody and had frequently been set forth by economists and educators. Nor is it strange that in the year since the armistice was signed no serious effort has been made toward bringing the literacy, even among native Americans, up to the level of civilized Europe.

Before the war the United States was fondly spoken of as the "melting pot," and "Uncle Sam" was figured as a benign pedagog illuminating the soul of the benighted foreigners who throng to our shores. Since we found that the "melting pot" does not transmute the immigrant generation, we have no better way to improve it than by deporting it, without giving it time to learn English, or without getting the aid of the several hundred foreign language papers in setting forth our ideals, aims and laws. Much money was spent in propaganda to make bad Germans worse in their own country; very little to make Americans better in ours.

The great increase in the number of students at colleges and universities may be looked on as evidence of a desire for learning, but I am not at all certain that this is so. Large classes have been observed before, corresponding with times of financial stringency. Many people, and especially the families of salaried employees, find themselves now in that condition, and may furnish part of the number; others may be in affluence, and enter institutions of learning in order to get what social prestige may accrue from that association. Among the congratulatory notes in the press about large classes, little appears in regard to another side. Before the war, the colleges and universities in many instances had insufficient teaching forces. With the increased cost of living many teachers have gone into other vocations, and their places have often been filled by less capable persons. The change of vocation is interesting. The war not only emphasized the importance of the expert, but it also showed how men of talent can rapidly master new subjects and make themselves, as it were, experts in other, and sometimes unrelated, lines. Not only may an economist become a successful banker; a physician, a zoologist or a modern language instructor may become a leader or an administrator in some industrial line. Universities see the danger and are making praiseworthy efforts to increase funds for salaries; but in the meantime the large classes and overworked and underpaid teachers must get on as best they may.

Since the war, a curious lowering of entrance requirements has threatened university scholarship. For some years adherents have been gained for the belief that education means not so much mental discipline as the cultivation of branches that are not disagreeable to those who take them. So now it is proposed that, in place of giving the matriculant an opportunity of showing his acquaintance with Cicero and Plato, with geometry and history, he must be familiar with even lesser stars in the "movie" constellations, and be able to tell whether a certain low priced motor car is made in Detroit, Flint or Toledo. I have seen the possible results of this foreshadowed in my daily work. In speaking before certain kinds of patients I have long had the habit of using terms like "psyche" and "cor" when inquiring about functions of brain and heart, frequent objects of morbid introspection to such patients. In the last few years I find that either no one in the class, with two years of college work, recognizes the word, or if he does he is not willing to embarrass his classmates with an exhibition of such antiquated mental lumber.

So we are passing through an era in which many traditions, beliefs and customs are in the scrap-heap or the melting pot. Those that survive must be treated by people, many of whom have had their mental faculties exhausted or unbalanced by the fatigues and shocks of the long struggle. Reconstruction will be slow at best, and can be successful only if the whole subject is worked at with all possible knowledge. A century and a quarter ago, Lavoisier, one of the greatest geniuses of France, who had given many proofs of the practical value of the scientific mind, was condemned to the guillotine, with no good reason, according to sober views. His reprieve was asked for on account of his scientific eminence, but it was rejected on the ground that the republic "had no more need of savants." Let us be sure that in our time the same cannot be said, or even subconsciously supposed.

There are some reasons for an optimistic view in this respect. One is the continuation of the work of the National Research Council, one of the most valuable auxiliaries of the government produced by the stress of war. With Henry A. Christian at the head of the medical division we may anticipate solid results. Another is the reconstruction work carried out under the direction of the Public Health Service. There can be little doubt that a demonstration of the practical value of this work on a large scale will impress every one that provision must be made for the wrecks pro-

duced by industrial accidents—wrecks very often quite as much the result of devotion to duty as those produced by war. With such examples we can hope it will soon be impossible to say of Congress, as Edward Everett wrote to William Beaumont in 1834: "The great difficulty lies in the theoretical objection to the appropriation by Congress of money for any scientific or philanthropic purpose whatever."

PROBLEMS CONFRONTING PHYSICIANS

We as physicians are concerned in innumerable social problems, along with other intellectual workers and handicraftsmen. We also have our special problems, depending on the close relation of medical advances with general industrial and social questions. Some of these arise from the new conviction of the need of cooperation in many lines of activity, the struggle for the extension in every direction of trades unionism, the tendency to strike in various forms and especially on a large scale. Others arise from the many manifestations of conscious and unconscious socialism already present, with the promise of still more serious problems should the radical movement reach the stages reported, incorrectly in many respects and imperfectly no doubt in all, in Russia and Hungary. The fact that a strike may assume the proportion of a monopoly has recently been shown, but has barely been mentioned by those who should do so.

Without wishing or intending to pose as an oracle, let me touch on a few of the problems:

Health insurance, with its reliance on the medical profession for the most important part of the work, has been widely discussed and warmly advocated, especially by nonmedical people. On this question there is an enormous experience in other countries, and it would be well if we insist on a study of such experiences and an equally thorough study of the differences in conditions in those countries as compared to our own, before we encourage such a project or take part in making laws concerning it.

The little work of David McKail and William Jones, recently published by the Fabian Society, illustrates some of the weak points of such plans. As a review in the London *Nation* (Oct. 25, 1919) shows, the English insurance act "was forced on the medical profession without its acquiescence and without its voluntary help; the act was brought to birth amid a mass of bargaining and trickery, the spirit of which still hangs about its administration (after eight years)." These comments remind one of the conditions under which even the most meritorious changes of law are brought about, and recall the dishonesty associated with the passing and application of the Lever act. The British reviewer goes on to point out the lack of facilities, including hospital care, expert opinion and surgical operations, under the operation of the insurance act. We can see how, with our more scattered population, the conditions in our country are even more difficult than in Scotland. The crux of the argument for the new system is based on the cost of operation, while the most salient point in this depends on the elimination of motor cars and the reduction of physicians' salaries to half their present income. In other words, under socialization, as under the old system, the physician's welfare is the last consideration. The proposal illustrates the inconsistency as well as the lack of humor of soviets. Their cry is mines for miners, railroads for railroad unions; why not patients and pay for doctors?

The socialization of medical and sanitary measures has already made some headway in the United States. I think it may be said that this consists essentially in having all public medical and sanitary affairs in the hands of well-informed and capable men, at sufficient salaries, with adequate staffs, wholly free from the caprice or ignorance of politicians. As such matters are almost wholly neglected in most parts of the country, it should be possible to follow from the beginning a well-tried plan, such as was demonstrated practicable by our government in Panama, as well as in other places. Seeing how badly conducted are many public services, and how much harm could befall the country if the management of sanitation were as faulty as some other branches, we can only hope that a higher standard will be set before we embark on any new hygienic efforts.

The difficulty of making the public realize the economy of prevention of disease has in the past been the chief reason for general neglect of hygienic efforts, and for imperfect work in almost all parts of the country. We were not accustomed to consider the cost of foes like infection and filth, and the cost of sanitary officers, detention hospitals and compulsory care of dangerous invalids. In the last three years we have, almost without a murmur of protest, paid many times the former taxes in order to retain our moral and political freedom, and we all know that the price, extravagance included, was justified. To state it in another way: We spent many times more to kill or even disable, as by gas, a single enemy soldier, than we spend to keep our own population free from communicable disease; just as we spent many times more to maintain roads for ammunition than we ever have to facilitate bringing farm products to cities, or to get the country doctor to his patients. For the cost of a battleship we could eradicate malaria and typhoid fever from many localities where they still flourish. For sums that to a secretary of war would seem trifling, we could make it possible for every tuberculosis patient to get necessary treatment in any stage of the disease. For the price of a single battle we could see to the health of every schoolchild, and train all those in schools and colleges in proper hygienic lines. The cost of sanitation of work places would be a bagatelle. Of course, this could not be done under the old pork-barrel method of administration, or even according to the methods used in some lines, like aviation, in the war. But with a corps of experts, that could be formed now better than ever before, and a fund properly budgeted and honestly administered, a better return could be made than on any money ever spent by the country.

TRADE UNIONS AND MEDICINE

For a long time now the medical profession of the United States has been spoken of by some of its critics as a trade union. To be sure it has never adopted any of the methods so characteristic of trade unions in its relation to the rest of the population; and although it has had, for nearly twenty years, a very efficient organization, it has never used its power for any other purpose than some public welfare, and in particular has not attempted to gain financially or politically, either for the organization or for individuals. Under the circumstances it seems that the use of the term reflects as much on the trade unions as on the medical profession.

But the trade union movement is making rapid accretions, and in spite of the short-sightedness of

many leaders of American labor, should be given every opportunity for proper expansion. Teachers in schools and universities have formed unions. From the experience of other countries we may find pressure on physicians also to unionize. Before we do this we should remember that we are not merely craftsmen; we occupy a position comparable rather to that of policemen, firemen or soldiers. Any such allegiance as those exhibited even by the most conservative unions would be wholly at variance with our duties, as understood at all times and in all places by physicians.

When we see, especially, the harm that can be done by unscrupulous, dishonest or overambitious representatives of unions—harm not only to innocent fellow citizens, but to trade unionism itself—we can draw a lesson regarding one danger. There are others. Trade unions too often consider wages the main thing, the quality and quantity of work quite secondary. One can see a danger from this tendency, which may last longer than either the capitalistic or the feudal systems, in the case of teachers' unions. Few teachers are paid enough, but many are paid more than they earn. In the agitation for increased appropriations, I have not seen any recognition of this fact, nor any intention of requiring a higher standard of performance when salaries are made fairly commensurate with comfort. The same danger would threaten if physicians had unions. How rarely in any unionized trade does one see pride in a neat job, or any effort to get it. The controller is keen to detect any detail that might be the sole function of another union, and fines a plasterer, for example, if he knocks in a protruding nail with the handle of his trowel; but both workman and helper may loaf to their heart's content without remonstrance. So let us keep out of unions as long as we can, and if we are forced into them as a result of social evolution, let us try to retain our pride in a good job and remember that ours is a calling in which there is work to do all the time; and time for our own comfort must often be negligible.

But there is already a class struggle going on, and as usual at such a time, it is all the more dangerous because declarations of war have either not been formally made, or if so, they have been concealed by those who fear to face the verdict of contemporaries or posterity. The coal strike is an example of a new method of trades union struggle. Incidentally, it illustrates the mental inertness of the people. As soon as the government took its stand even the most judicious newspapers assumed that the strike was over, though even now the coal situation grows more serious. One is reminded of the courtiers who assured King Canute that the waves receded at the royal command. It would have been better to imitate those, who, when hungry and unable to fill their stomachs, obliterate the void by tightening their belts.

PHYSICIANS AS SERVERS OF HUMANITY

What stand should physicians take in this war? Having the highest example, one can decide without trying to go into the merits of the case. I should say physicians should take the same stand they all took in 1914, and some even after that time, in international war. They should serve humanity wherever possible. But this, of course, is when they act as individuals, so that, to take a very concrete example, in case of a strike affecting the lives and health of the community, as of miners, railroad hands or dealers in food, they should apply the counterstrike, as members of corporate bodies. If a hospital cannot get coal or food, then no one in the unions concerned should be admitted to the care of such a hospital. To do other than this would be a crime against the helpless, though the individual physician would be free to exercise his care wherever he could, and should help even those who call themselves his class enemies, when they are sick or wounded.

To do this may seem to require more charity than the twentieth century can afford. I do not think so. Let us hope, however, that instead of having to devote our talents to such work, we may soon enter another era, in which the only strife will be that for excellence. *Punch* not long since had a cartoon in which a great politician was posed as Hamlet, and quoting the bitter lines: "The time is out of joint;—O, cursed spite, that ever I was born to set it right!" This was a reflection of the soul of Hamlet, but other sentiments are more in keeping with the present time.

Class struggles of the most brutal kinds are not new. From time to time the so-called peasant wars sprang up as an expression of injustice, but the greatest insurrection before our time, the French Revolution, showed that after the main object was achieved communism and anarchy were not really profitable. Some centuries ago, the robber barons of Hohenzollern used to pillage their proletarian or bourgeois neighbors, and later successfully despoiled their neighbor princes, kings and emperors. No one now cares where they are. Their successful days seemed long and were in fact too long; but even if the present chaotic times last as long as the period of divine right of kings, it will be short as compared with biologic processes.

We have seen the dream of the Victorian poet realized in its most impossible part—we have seen the "airy navies grappling in the central blue." Why not hope that some other parts will be realized, that the war drums will throb no longer.

EFFECTS OF TYPHOID FEVER AND TYPHOID VACCINE ON PULMONARY TUBERCULOSIS*

E. E. CLOVIS, M.D.
AND
G. E. MILLS, M.D.
TERRA ALTA, W. VA.

Many of the older physicians and writers viewed the coexistence of pulmonary tuberculosis and typhoid fever as offering a grave prognosis; and as there are undoubtedly a large number of physicians who at present have the same views, a report of our experience gained during an epidemic of typhoid fever at this institution during the months of August and September, 1919, should be of value. That the diseases may coexist has been recognized for a long time; and unquestionably, it not infrequently occurs in private practice, unknown in the majority of instances to the physician, as the patient may have a healed tuberculous lesion of which he is often unaware. It is well known that the symptoms of one disease may closely resemble those of the other, as miliary tuberculosis is often mistaken for typhoid fever, and as pulmonary tuberculosis may begin with symptoms that may simulate the features suggestive of typhoid fever.

* From the State Tuberculosis Sanatorium.

No doubt this complication has occurred in several sanatoriums; but the available literature reveals only one reported epidemic,[1] which took place in the summer of 1917 at Trudeau Sanatorium, Saranac Lake, N. Y. Altogether there were fifteen cases in that series, eleven of which were being treated for pulmonary tuberculosis. The disease proved fatal with two of the patients who had had active tuberculosis prior to the typhoid infection, while the third active case showed no more advancement of pulmonary lesion than otherwise would have occurred. Of the remaining eight, the general condition of three remained unchanged, while in five it was improved.

There were sixteen persons infected during the epidemic at this institution, nine of whom were patients, and two former patients, who were employed as storekeeper and orderly, a foreman of construction, three laborers and a maid. As five of these were outside employees and were nontuberculous, they shall not be considered in this report.

HISTORY OF EPIDEMIC

CASE 1.—Aug. 4, 1919, a patient, D. C. B., who for several weeks had had a low grade temperature, developed a higher temperature than usual.

CASE 2.—One day later, August 5, a patient, F. C. M., who a month before had had an exacerbation of symptoms, had a chill followed by high temperature. This and the preceding patient were at first thought to have developed an acute tuberculosis.

CASE 3.—On the same day, August 5, a patient, I. Q., who had had a previous malaise, also vomited and had a slight rise in temperature.

CASE 4.—August 9, a patient, H. W., had a severe chill, followed by a high temperature. He had a complication of pulmonary tuberculosis and bronchiectasis, and not infrequently, when the lungs did not drain properly, had chills followed by fever.

CASE 5.—One day later, August 10, a patient, J. N. T., vomited and had a high temperature.

CASE 6.—On the same day, August 10, a patient, L. L., had a rise of temperature following a malaise of several days' duration.

CASE 7.—Four days later, August 14, T. D. M., a hospital patient who was having a temperature range of from 97 to 100.4, developed a higher temperature.

CASE 8.—On the same day, August 14, the storekeeper, D. N. R., whose pulmonary lesion was quiescent, had a rise of temperature.

CASE 9.—At the same time, August 14, a patient, S. H. H., who had been having a temperature range between 97.6 and 99.4, developed a higher temperature.

CASE 10.—August 20, L. J. H., a patient, had a moderate rise of temperature.

CASE 11.—Six days later, August 26, R. I. V., an orderly, who had had no contact with the former patients, developed a high temperature.

SOURCE OF INFECTION

Immediately after tentative diagnosis of typhoid fever was made, samples of milk, drinking water, ice, and water from a nearby spring, from which some of the patients had been drinking, were examined to determine the source of infection.

The supply of ice was obtained from a factory, the milk from our own dairy, and drinking water from springs on the mountain side, which at that time were very low, and from the spring to which reference has been made. This spring was located below and to the east of the hospital, and had been in use for several years. As two of the laborers who drank from the spring and not from the water supply in the buildings became ill of typhoid, the spring was at once suspected.

In the meantime the report of the bacteriologist was to the effect that all samples were in excellent condition except water from the spring, which showed the presence of *B. coli*.

This led to an investigation of our sewerage system. The main sewer was located to the south and across a ravine from the spring, but the sewer leading from the north wing of the hospital was located about 50 yards above and was supposed to be cemented and water tight. This part of the system was found to be almost completely obstructed and was opened with great difficulty, indicating that it had been in this condition for some time. On questioning those who had been drinking from this spring, we learned that a peculiar taste—that of creosote—had been noticed in the water for several days, and with one exception, all typhoid patients had been occasionally drinking this water. As we were using a creosote disinfectant in our lavatories in the hospital, it was sufficient proof that our sewage had contaminated the spring and that it was the source of our epidemic. As there were many changes made among the patients on the north wards of the hospital, we were unable to make a thorough investigation for the carrier.

REVIEW OF PATIENTS' PULMONARY TUBERCULOSIS AND TYPHOID FEVER

CASE 1.—D. C. B. (No. 1144), admitted May 8, 1919.

Tuberculosis.—Examination on admission: Chest: Marked dulness to fourth rib, both upper lobes, and to apex of base in back. Râles fairly active apex to base, and to lower angle of scapula back. Râles without cough. Condition far advanced. Sputum, positive. Diazoreaction negative. Temperature, from 98 to 99.4. Patient was substandard, and condition was slowly progressing at the time of the typhoid. Temperature, from 98 to 100. Sputum was positive prior to infection.

Typhoid.—Onset, August 4. Epistaxis. Widal test, positive. Diazoreaction, positive. Few rose spots. Delirium at intervals. Highest temperature, 105. On thirty-seventh day, relapse. Spleen palpable 2 inches below costal margin. Temperature returned to usual level on sixty-fourth day. Severe infection.

CASE 2.—F. C. M. (No. 1140), admitted, May 8, 1919.

Tuberculosis.—Examination on admission: Chest: Right, moderate dulness to fourth rib. Left, slight dulness, apex to third rib; thickened pleura with flatness left base. Right, râles on cough apex to fourth rib. Left, râles, apex to base without cough. Breath sounds very weak at left base. Condition far advanced. Sputum, positive. Diazoreaction, negative. Temperature, from 99.8 to 102.4. Patient was admitted to the hospital, where he remained until June 11. Transferred to cottage and continued to have occasional temperature from 99.2 to 99.4. Condition was slowly progressing at time of typhoid illness. Sputum persisted positive.

Typhoid.—Onset, August 5. Epistaxis. Two severe chills. Widal test, negative (only one examination). Diazoreaction, positive. Delirium at intervals for three days. Highest temperature, 104.4. Severe infection. On forty-eighth day, September 21, moved to his home. Temperature range at time of discharge, from 98 to 102. Two months later, in reply to inquiry, patient stated that his temperature had returned to the usual level and that other symptoms were practically the same as before typhoid.

CASE 3.—I. Q. (No. 1201), admitted, July 15, 1919.

Tuberculosis.—Examination on admission: Chest: Right, slight dulness at apex. Left, slight dulness to second rib.

1. Brown, Lawrason; Heise, F. H.; Petroff, S. A., and Wilson, G. E.: A Study of Effects of Typhoid and Antityphoid Immunization on Pulmonary Tuberculosis, Am. Rev. Tubere. **11**: 717 (Feb.) 1919.

Left, râles on cough to second rib; expiration prolonged at both apexes. Condition, incipient. Sputum, negative. Diazoreaction, negative. Temperature, normal. Patient had made slight improvement in general condition prior to typhoid infection. Sputum persisted negative.

Typhoid.—Onset, August 5. Severe vomiting. Widal test, positive. Diazoreaction, positive. Highest temperature, 103.2. Temperature fell to normal on thirtieth day. Moderately severe infection.

CASE 4.—H. W. (No. 1113), admitted, April 1, 1919.

Tuberculosis.—Examination on admission: Chest: Right, marked dulness to fifth rib. Left, slight dulness at apex. Right, râles without cough, apex to base. Left, râles on cough, apex to base front, and to lower angle of scapula back. Condition, far advanced pulmonary tuberculosis and bronchiectasis. Sputum, negative. Diazoreaction, negative. Temperature, normal. Patient had occasional exacerbations with chills and rise of temperature, but general condition had shown slight improvement at time of his typhoid illness. Sputum had persisted negative.

Typhoid.—Onset, August 9. Widal test, positive. Diazoreaction, positive. During first three weeks of illness had nine pulmonary hemorrhages, averaging 2 ounces. Highest temperature, 104,4. Temperature returned to normal thirty-seventh day. Severe infection.

CASE 5.—J. N. T. (No. 1047), admitted June 6, 1913.

Tuberculosis.—Readmitted, Nov. 18, 1918. Examination on admission: Chest: Right, marked dulness to fourth rib. Left, slight dulness to second. Right, râles to fourth rib on cough and to lower border of scapula. Left, râles on cough to second rib. Condition, moderately advanced. Sputum, positive. Diazoreaction, negative. Temperature, from 98 to 100. Patient was admitted to hospital, and after prolonged rest was moved to cottage. Discharged, June, 1916, as quiescent. November, 1918, was readmitted to hospital. Had severe hemoptysis. Improved and was moved to cottage in June, where he had onset of typhoid infection. Sputum persisted positive.

Typhoid.—Onset, August 10. Profuse epistaxis. Widal test, positive. Diazoreaction, positive. Few rose spots. Spleen, palpable under costal margin. Had two attacks of hemoptysis, following which, both lungs became congested. Delirium for three days and at intervals for two more. Small amount of blood in involuntary stool on twentieth day. Highest temperature, 105. Temperature returned to normal on thirty-ninth day. Severe infection.

CASE 6.—L. L. (No. 1216), admitted, July 31, 1919.

Tuberculosis.—Examination on admission: Chest: Right, slight dulness to second rib. Left, slight dulness at apex. Right, râles on cough at second rib. Left, râles on cough at apex. Condition, incipient. Sputum, positive. Diazoreaction, negative. Temperature, normal. Patient's general condition had slightly improved at time of typhoid illness. Sputum persisted positive.

Typhoid.—Onset, August 15. Widal test, positive. Diazoreaction, positive. Palpable spleen. Delirium for twenty-four hours. Highest temperature, 105. Temperature returned to normal on thirty-fourth day. Severe infection.

CASE 7.—T. D. M. (No. 951), admitted, June 4, 1918.

Tuberculosis.—Examination on admission: Chest: Right, moderate dulness to third rib. Left, slight dulness at apex. Right, râles on cough to fourth rib and to lower third of scapula in back. Left, râles at apex. Condition moderately advanced. Sputum, positive. Diazoreaction, negative. Temperature, normal. Patient had severe hemoptysis in September, 1918, followed by a marked extension of lesion with cavitation in right upper lobe, and since this exacerbation his pulmonary condition has been slowly progressing. Temperature, from 97 to 100.4, and sputum positive, prior to typhoid illness.

Typhoid.—Onset, August 14. Widal test, positive. Diazoreaction, positive. Palpable spleen. Highest temperature, 103. Temperature down to usual level, thirty-ninth day. Moderately severe infection.

CASE 8.—D. N. R., admitted, Sept. 29, 1914.

Tuberculosis.—Examination on admission: Chest: Right, marked dulness to fourth rib. Left, slight dulness at apex. Right, râles apex to base front; apex to lower border of scapula back. Râles on cough. Left, râles on cough to third rib. Condition far advanced. Sputum, positive. Diazoreaction, negative. Temperature, 100 plus. Patient improved and was discharged as quiescent, in June, 1916. Employed as storekeeper at time of typhoid fever. Sputum persisted as positive.

Typhoid.—Onset, August 14. Widal test, positive. Diazoreaction, positive. Highest temperature, 102.4. Temperature fell to normal, thirtieth day. Mild infection.

CASE 9.—S. H. H. (No. 1072), admitted, Feb. 7, 1919.

Tuberculosis.—Examination on admission: Chest: Right, slight dulness at apex. Left, moderate dulness to third rib. Right, râles to second rib. Left, râles to fourth rib. Râles only on cough. Condition moderately advanced. Sputum, positive. Diazoreaction, negative. Temperature, from 97 to 99. Patient's pulmonary condition had sightly progressed at time of typhoid fever. Sputum persisted positive. Temperature, from 97.6 to 99.4.

Typhoid.—Onset, August 14. Widal test, positive. Diazoreaction, negative. Highest temperature, 101.4. Patient had typhoid fever in childhood. Temperature returned to normal on twenty-third day. Mild infection.

CASE 10.—L. J. H. (No. 1153), admitted, May 21, 1919.

Tuberculosis.—Examination on admission: Chest: Right, moderate dulness to third rib. Left, moderate dulness to third rib. Râles, apex to base both lungs and middle scapula back. Râles mostly without cough. Condition far advanced. Sputum, positive. Diazoreaction, negative. Temperature, normal. Pulmonary condition had shown slight improvement, and general condition was very much improved before onset of typhoid fever. Sputum persisted positive.

Typhoid.—Onset, August 20. Widal test, positive. Diazoreaction, positive. Before onset, patient was given one injection of typhoid vaccine. Highest temperature, 103. Temperature returned to normal on fifteenth day. Mild infection.

CASE 11.—R. I. V., admitted, April 9, 1917.

Tuberculosis.—Examination on admission: Chest: Right, slight dulness to third rib; moderate dulness at base, and râles on cough to fourth rib, without cough at base. Condition moderately advanced. Sputum, negative. Diazoreaction, negative. Temperature, normal. Patient discharged in November, 1918, with case apparently arrested. Employed as orderly at time of typhoid illness.

Typhoid.—Onset, August 21. Widal test, positive. Diazoreaction, positive. Two injections of typhoid vaccine had been given prior to illness. Highest temperature, 104.2. Temperature became normal, twenty-seventh day. Seven days later a rise to 100.2 was noted. Thrombosis of left femoral vein. Temperature returned to normal on fortieth day. Severe infection.

TREATMENT OF PATIENTS

General Measures.—The typhoid patients were removed to the hospital and placed in well ventilated and screened rooms, and when their condition permitted, the beds were pulled out into an open ward and were covered with gauze netting. It is hardly necessary to state that the patients were requested to change the position in bed sufficiently often to prevent the occurrence of congestion and the development of bedsores.

Prophylaxis.—Strict measures were exercised in proper disinfection of dishes, bedclothing, sputum, urine and feces. All attendants were carefully instructed in the proper use of disinfectants.

Diet.—The high caloric feeding of Coleman was deemed advisable. In Table 1 an example is given of a day's menu with nourishments:

Substitutes of grape juice, baked potatoes, jello, bouillon, buttermilk and malted milk were given from

time to time. Four of the patients were so toxic for a few days that they were unable to take more than 1,500 calories in twenty-four hours; but as soon as possible they were increased to the daily average of 3,500.

Medicinal.—Five grains of salol were given every six hours. Ten drops of dilute hydrochloric acid were given three times a day after eating. Two drams each of aromatic cascara sagrada and glycerin were given every other night, alternating with a soapsuds enema.

Hydrotheraphy.—A tepid sponge bath was given three times a day followed by an alcohol rub. A cold sponge was given only when there was manifestation of nervous symptoms or extremely high temperature.

Convalescence.—Protracted bed rest was deemed essential in all the cases. Those whose pulmonary condition was quiescent prior to illness were kept at rest two weeks before they were permitted to sit up, and those with active trouble were kept at rest for a week longer. During this period, calories were increased and solid food was given as soon as possible in the individual case.

THE EFFECT OF TYPHOID FEVER ON PULMONARY TUBERCULOSIS

The conclusion of the effects on pulmonary tuberculosis in our series of eleven cases was made two months following convalescence. Of this number, four were classed as active with abnormal temperature prior to the typhoid infection, and all were far advanced.

TABLE 1.—MENU FOR A DAY

		Calorics
BREAKFAST		
Oatmeal gruel	5 oz.	167
Egg	1	80
Milk toast	1 slice (milk, 3 oz.)	164
Butter	10 gm.	75
Cream	2 oz.	120
Coffee		
Sugar (granulated)	5 gm.	60
NOURISHMENT, 10 A. M.		
Egg-nog	7 oz.	220
Total		886
DINNER		
Cream of potato soup	8 oz.	200
Milk toast	1 slice (milk, 3 oz.)	164
Custard	4 oz.	262
Milk	7 oz.	150
Coffee		
Sugar (granulated)	5 gm.	60
NOURISHMENT, 3 P. M.		
Lactose ice cream	4 oz.	390
Total		1,226
SUPPER		
Beef juice	6 oz.	46
Egg	1	80
Milk toast	1 slice (milk, 3 oz.)	164
Mashed potatoes	50 gm.	41
Cocoa	6 oz.	197
NOURISHMENT, 10 P. M.		
Lactose lemonade	6 oz.	360
NOURISHMENT, 1 A. M.		
Milk	7 oz.	150
NOURISHMENT, 4 A. M.		
Lactose orange albumin	6 oz.	390
Total		1,428
Total for 24 hours		3,540

Two of the four cases have continued to advance, and judging from a report received, the condition of the patient who had returned home has also advanced but in no case more rapidly than before the onset of typhoid. The remaining patient has shown a slight improvement in general condition.

Three of the total cases were classed as active without rise of temperature but with other symptoms, as cough, streaked sputum and pleurisy. Two of these patients have shown improvement in their general condition, while the condition of the other is unchanged.

Three of the remaining four cases were classed as quiescent, and the other as apparently arrested. Two of these patients have shown improvement in both pulmonary and general condition. One has shown improvement in general condition, while there is no appreciable change in the condition of the other.

With one exception, the patients were weighed as soon as they were able to be weighed, and it was found that eight had lost from 5 to 12 pounds and that one had actually gained 5 pounds, while the weight of the other remained the same.

EFFECTS OF TYPHOID VACCINE ON PULMONARY TUBERCULOSIS

In all, sixty-two patients were given three injections of typhobacterin. The inital dose consisted of 500 million bacilli, and the second and third 1,000 million each. The injections were given ten days apart, and the patients, who were on exercise, were requested to remain quiet for forty-eight hours. None were given vaccine if they were having abnormal temperature, or if there was a recent hemorrhage or streaked sputum. Of the total cases, nine were incipient, twenty-four moderately advanced, and twenty-nine far advanced. Of these, thirty-seven were classed as active, and twenty-five as inactive. A reaction was regarded as mild when there was a slight aching, malaise or pleurisy, or if the temperature did not exceed 100; as moderate when the temperature did not go above 101, and as severe when the temperature exceeded 101.

TABLE 2.—REACTION OF TUBERCULOUS PATIENTS TO TYPHOID VACCINE

	No Reaction		Mild Reaction		Moderate Reaction		Severe Reaction	
	No.	Per Cent.	No.	Per Cent.	No.	Per Cent.	No.	Per Cent.
Active	15	41	9	24	8	22	5	13
Inactive	13	52	8	32	4	16		
Total	28	45	17	27.5	12	19.5	5	8

It is interesting to note that a higher percentage of the inactive cases gave a mild reaction than the active cases. As was expected, the active cases gave a higher percentage of moderate and severe reactions than the inactive. The results obtained in our series of sixty-two cases are given in Table 2.

SUMMARY AND CONCLUSIONS

1. The coexistence of these diseases should require a high caloric feeding.

2. Prolonged bed rest during convalescence is advisable as a precautionary measure.

3. Typhoid vaccine gave severe reactions only in the active cases, but with no permanent bad effects.

4. Patients with inactive pulmonary tuberculosis may have typhoid fever without any detrimental effects on the pulmonary condition, while the general condition may often be benefited.

5. Patients with active pulmonary tuberculosis may have typhoid fever and recover without a more rapid advance in the pulmonary condition than would have occurred had they not had typhoid.

6. Pulmonary tuberculosis did not have any appreciable effect on the course of typhoid fever.

Health First Means Safety First.—When all employers realize that medical inspection of employees is quite as important as regular inspection of the machinery itself, we can look hopefully for a great reduction in the amount of accidents.—*Minnesota Health J.*, Nov. 20, 1919.

AN IMPROVED TEST FOR THE DETECTION OF GLUCOSE, ESPECIALLY IN URINE

WALTER S. HAINES, M.D.

GILBERT P. POND, M.D.

AND

RALPH W. WEBSTER, M.D., PH.D.

CHICAGO

Some years ago one of us (Haines[1]) introduced a test for sugar in the urine which has found wide acceptance by the profession. The solution suggested at that time contained copper sulphate, potassium hydroxid, glycerin and water in these proportions:

Copper sulphate	30	grains
Potassium hydroxid	1½	drams
Glycerin	2	fluidrams
Water	6	fluidounces

These proportions have been more or less changed by different investigators and transformed into the metric system. The method, used with this test solution, is generally known and consists in heating to boiling about 5 c.c. of the test solution and adding from 8 to 10 drops of the suspected sample of urine. If sugar is present, a brick-red cloud is formed which eventually settles to the bottom of the tube. This solution, if made with pure ingredients, keeps indefinitely and has been found to be relatively delicate and quite reliable.

It occurred to us that the original solution might be improved on in such a way as to increase its delicacy and also to permit of the performance of the sugar test by the ring or contact method. The modifications introduced by us enable one to detect with certainty amounts above 0.03 per cent. of sugar, which is about the upper limit of the so-called "normal" sugar of the urine. In other words, the delicacy of the test is increased so that sugar in pathologic amount will be indicated, but physiologic sugar will not be shown. While this test is not as delicate as the special solutions of Folin[2] and of Benedict and Osterberg,[3] yet this new Haines solution has the advantage over the latter solutions that it will show sugar only in pathologic amounts, while the other solutions mentioned will show sugar in practically every specimen of urine examined. It is, therefore, a clinical test in contradistinction to the others, which are too delicate for such purposes.

Owing to the increase of the specific gravity of the solution, by the addition of the larger amount of glycerin, the employment of the contact test becomes a matter of the greatest simplicity. However, one precaution must be taken before this test may be applied: Owing to the fact that the phosphates of the urine precipitate, when added to the alkaline copper solution, these interfering substances must be removed before the contact test shows in its most perfect manner; otherwise a confusing contact ring is observed, which might lead to possible errors in interpretation. This removal is accomplished by adding to the urine in a test tube 5 or 6 drops of a 5 or 10 per cent. solution of sodium or potassium hydroxid (or the official liquor potassii hydroxydi may be used), and allowing the phosphates to settle out or centrifuging or filtering if desired to hasten the process. For coarser clinical purposes the test may be used with urine from which the earthy phosphates have not been precipitated, and we have occasionally employed it in this way. If the sugar present is 0.1 per cent. or upward, the reaction with the untreated urine usually comes out quite unequivocally; but, if the amount of sugar is below 0.1 per cent., the removal of the phosphates is essential to obtain entirely reliable results. It was thought that this precipitation of phosphates at the point of contact could be averted by the addition of sodium citrate or Rochelle salt to the copper solution, but this was found to be ineffective, as the ring appeared, although slightly slower, even when as large amounts as 30 gm. of either of these salts were added to 100 c.c. of the copper solution.

The composition of the improved Haines solution is:

Copper sulphate	5 gm.
Glycerin	250 c.c.
Potassium hydroxid[4]	20 gm.
Distilled water to	1,000 c.c.

The copper sulphate is dissolved in a mixture of the glycerin, and an equal amount of water, with the aid of gentle heat. The potassium hydroxid should be dissolved in about 200 c.c. of water and added to the copper solution with constant stirring, the whole being made up to volume with distilled water. This solution keeps indefinitely, although with many of the specimens of glycerin now obtainable on the market a reduction may be observed. If, however, the solution be allowed to stand in a warm place for forty-eight hours, the clear supernatant fluid may be decanted or filtered from the precipitated cuprous oxid, without impairing its delicacy.

This solution may be used in the same manner as directed for the original Haines solution, but a much more delicate and beautiful reaction is obtained as follows: Heat about 5 c.c. of the copper solution to boiling in a test tube, remove from the flame, and hold at an angle of from 30 to 40 degrees. To this add, by means of a medicine dropper, from 10 to 20 drops of the urine, freed from phosphates as outlined above, in such a manner that a distinct zone of contact is formed between the copper solution and the urine. The tube is then placed in an upright position and the reaction noted. If sugar is present in quantities exceeding 0.1 per cent., a brick-red or yellowish ring will immediately appear at the junction of the two liquids. If the amount of sugar is less than 0.1 per cent. ranging down to 0.03 per cent., the ring will appear in from a few seconds to slightly less than a minute, the smaller quantities showing slower reactions with a tendency to a more yellowish color of the ring. In urines containing no pathologic sugar, no ring of any kind will be noted at the zone of contact.

In order to determine whether this new Haines solution offered any advantage, in the performance of a contact test, over other qualitative sugar test solutions, comparisons were made with the solutions of Benedict[5] and of Folin and McEllroy.[6] With the solution of Benedict, using the phosphate-free urine, a slight white contact ring was formed with normal urines, and with sugar-containing urine no distinct ring, indicative of sugar, was observed until the solution had stood for considerably longer than was neces-

1. Haines, W. S.: Med. Examiner **15**: 569 (Dec. 1) 1874.
2. Folin, Otto: J. Biol Chem. **22**: 327, 1915.
3. Benedict, S. R., and Osterberg, E.: Determination of Sugar in Normal Urine, J. Biol. Chem. **34**: 195 (April) 1918.
4. Or 14.3 gm. of sodium hydroxid.
5. Benedict, S. R.: J. Biol. Chem. **5**: 485, 1908-1909.
6. Folin, Otto, and McEllroy, D. S.: J. Biol. Chem. **33**: 513 (March) 1918.

sary with the Haines solution. When the solution of Folin and McEllroy was used with phosphate-free urine, the contact ring in normal urines was so marked that it could not permit of the use of this contact test.

This improved Haines test has the following advantages:

1. The reaction is concentrated to a single plane, thus increasing its visibility.
2. Only one heating is necessary, and there is no long standing before the reaction appears.
3. It will demonstrate pathologic sugar in amounts greater than 0.03 per cent.
4. It differentiates between pathologic and physiologic sugar.
5. It gives a clear-cut, decisive result in a minimum of time.

TUBERCULOSIS

A CITY PLAN*

C. V. CRASTER, M.D.
NEWARK, N. J.

It may be said "'tis not in mortals to command success," yet there may be some doubt in our minds whether in our past efforts to control tuberculosis we have quite deserved to succeed.

If we will look back fifty years into the history of medicine it will be clear that the clinical symptoms of tuberculosis, the case histories of the disease, and the pathology of the gray tubercles were intimately known. Austin Flint in America, and Trousseau in France had demonstrated the relationship between tuberculosis and the lack of fresh air and sunshine, sedentary occupations, and those conditions that are the result of careless and unclean habits found in congested areas of population. Furthermore, the infectivity of the human tuberculous lesion had been suggested by Villemin's experiments with guinea-pigs in 1865. Aitken, writing at this period, said, "The stabled cow, the rabbit, the monkey, the caged lion, tiger or elephant, are almost invariably cut off by tuberculosis affections."

Koch's brilliant discovery of the causative organism in 1882 served to place the seal of certainty on the theory of infectivity, but did not add to our knowledge as to the paths of infection or the manner in which infection might be conveyed.

A review of the yearly mortality from tuberculosis will show that throughout the civilized world there has been reported year after year a continuous decrease. The picture, however, is not comparable in extent with that seen in the number of deaths from epidemic diseases in general; the curve of decline is less abrupt, the grade gentle and in sharp contrast to that seen in scarlet fever, diphtheria, typhoid fever or in smallpox.

It may be said that in spite of the great decreases recorded in the mortality from tuberculosis in the registration area, the disease must be still prevalent to a degree resembling the widespread epidemics of contagion of earlier days. In spite of intimate knowledge, it is evident that our empiric methods have so far failed. Tuberculosis, "lingering like an unloved guest," by its very perversity calls for our utmost efforts for its eradication.

The draft examinations are too recent for us to forget the 82,000 young men who were reported as unfit for national service on account of tuberculosis. The experiments at Framingham have demonstrated that at least 2 per cent. of an average industrial community would be found after examination to be suffering from tuberculosis in some form or other, and they have left an increasing feeling that we are as yet ill informed as to the physical standing of communities. In the country at large it is estimated by the National Industrial Conference Board that 1 per cent. of the total population is tuberculous.

In looking at these enormous figures it is evident that the control of tuberculosis is still far from what it should be in the present state of our knowledge. Tuberculosis has been regarded as a disease that is the result of hereditary inclinations, and then again as a disease of a contagious and communicable nature; nevertheless there has been no decided decrease in the mortality figures. If tuberculosis were a communicable disease whose clinical symptoms were easily discoverable, the problem of control would be simple. It is more than this, however, for like the venereal disease it presents the twofold aspect of a communicable disease and a social problem so important as to require a complete readjustment of our views on the subject.

There is a factor in its persistence that has somehow escaped our notice. It may well be that this is the neglect of the social side, and that it is responsible for our failure to bring about good results that are more permanent in tuberculosis control. Support of this view is found in the acknowledged experience that the onset of the disease is largely dependent on unusual habits and manners of living which subsequently react in physical susceptibility. Probably too much emphasis has been placed on the contagious disease aspect and too little on the predisposing causes. The social factor is also strong in determining the opportunity for early advice and treatment. Society makes as yet no provision for sick pay, either for the patient or for the dependent family.

Tuberculosis will not persist when communities live right; when fresh air is regarded as a vital necessity, and when methods of living depart least from accepted standards of health. On the other hand, in this country there may be certain national and climatic conditions which bring about a susceptibility to tuberculosis. Our severe winters are probably responsible in part for the depressing influence of overheated dwellings. The craze for up-to-date bathrooms and plumbing may well have brought about the greater danger of the common wash basin. The old-fashioned ewer and basin in each bedroom, although inconvenient, certainly provided the more sanitary equipment for the home.

In outlining a city plan for tuberculosis control, modifications will be found necessary to meet local conditions. Any occupation or community life in which conditions are apparently predisposing toward tuberculosis will require special handling.

The city plan may be divided into certain definite lines of activity, as outlined in the accompanying tabulation. None of these separately can be considered more important than the others; the success of the whole will depend on the acceptance of the value of each.

CONTROL OF INFECTION

Reporting by Physicians.—In the control of infection it will be agreed that it is vitally important to know where the disease exists, for without this knowledge no supervision is possible. There is some doubt, how-

* Read before the New Jersey Anti-Tuberculosis Association, Paterson, N. J., Nov. 8, 1919.

ever, as to what shall constitute a good standard of reporting excellence.

If we accept the dictum that there are twelve persons with tuberculosis for every recorded death from the disease, a city with an annual total of 100 deaths from tuberculosis has probably 1,200 persons afflicted with the disease in various stages. The average duration of life of the tuberculous person is difficult to estimate since there are so many variations in bodily resistance to the progress of infection. If the average duration of life in a purely empiric way is stated as three years, then a city with this number of deaths should have about 450 reported cases annually.

If the number of reported cases in any community is three times as large as the number of deaths from tuberculosis, we probably have a fair measure of notification by physicians. In checking up the reporting of cases, much information is obtainable by comparing deaths with report files. Duplicate reports of cases by one or more physicians should be accepted and paid for. The physician has no means of telling whether his patient has been reported previously. Similarly a follow up system of all sputum examinations made by municipal laboratories affords much information as to

CITY PLAN FOR TUBERCULOSIS CONTROL

A. Control of infection...	Reporting by physicians Hospitals and sanatoriums Day camps and tents; field nurses Laboratory; enforcement of anti-spitting laws; milk supervision
B. Social progress.....	Publicity Social insurance Antituberculosis societies program Home visiting and relief
C. Economic improvement	Improved housing Industrial hygiene Open air school Vocational training Employment bureau
D. Associated activities...	Control of epidemics (measles, whooping cough, etc.) Convalescent homes Child hygiene Mental hygiene

accurate reporting. In this respect a policy of wise toleration that does not degenerate into the actual condoning of violations of the reporting law will prove an incentive to efficient reporting by physicians.

Nurses.—The services of the health nurse are too widely appreciated to require more than a brief comment. The importance of her work in the control of infection cannot be overestimated. The widest measure of success with the public depends as ever on the possession of tact and judgment, backed up by special training. I do not believe that a health nurse can give efficient service in a department unless her lines of action are specialized. An old adage still holds true: "Jack of all trades, master of none." It is only by special qualities of training and intelligence that a supervision of the tuberculous patient is possible which, apparently unobserved by the law abiding patient, is still there when occasion demands more drastic methods. The visiting nurse requires for the salvation of her patient the freest possible hand. Impossible tasks, such as the care of many patients, should not be attempted. It has been our experience in Newark that the best work is obtained when no more than 100 cases are assigned to each nurse. This number will generally bring about a fair return of intelligent interest in the patients, provided distances are not excessive.

When the number of nurses is limited and the patients requiring supervision are many, areas of greatest prevalence may be selected for intensive work. In any case, interest tends to be lost when patients are many and the distances between visits are great. Let me state here that the work of the tuberculosis nurse is a health function. Only under a municipal board of health can the best results be attained in obtaining the necessary cooperation with municipal departments, with hospitals and other social agencies.

Clinics.—Activities against tuberculosis must radiate from the dispensary clinic as a center. Dispensaries are not always located in ideal neighborhoods. If a choice is possible, areas where tuberculosis is most prevalent should be selected. It must not be forgotten that a long trolley ride to a dispensary will seriously dampen the enthusiasm of the most optimistic nurses or patients. To the clinic come the ambulant patients not under private treatment, as well as all exposed children. An attractive feature for children is the provision of free milk or other food, such as biscuits. Milk for the purpose may be provided from what is left of milk samples taken by department milk inspectors. Little children are frequently reconciled to the discomforts of a physical examination if a glass of milk is held in one hand and a cracker in the other. Special efforts to attract mothers with children to the clinic are frequently successful if free transport to and from a clinic is provided. In Newark a special ambulance donated by the Red Cross performs wonderful work in this way.

In providing the free distribution of necessary sick appliances in dispensaries, extreme generosity with regard to sputum cups, towels and disinfectants is a good policy. Patients sometimes complain of the difficulty of obtaining metal sputum cups from medical supply houses. A number of these may well be stocked in the dispensary and sold to patients at cost.

Centralization of effort will result if the examinations for state and county sanatoriums can be made at the municipal clinic. Very definite efforts can also be made by means of illustrations and literature to influence patients to undergo hospital treatment. There has been some effort to discourage the term "tuberculosis clinics" and to substitute the term "health clinics." This is in line with the present day application of tuberculosis psychology, and may be employed without any loss of efficiency.

Where there are large colored communities, a special clinic is desirable. Colored physicians and nurses of a high type can be obtained with little trouble for the staffs of these clinics, and the results will repay the added outlay.

Hospitalization.—In Koch's original monograph he drew particular attention to the low tuberculosis mortality experienced in those European countries where hospital beds were provided in large numbers for tuberculosis sufferers. A similar experience has been noted in this country. Bonney says: "The evidence thus far presented is quite overwhelming to the effect that the closed institutions are everywhere responsible for a material diminution in the tuberculosis mortality rate among the neighboring inhabitants." Among the important efforts against tuberculosis is a campaign for an adequate number of sanatorium beds. Some beds should also be provided in local hospitals for emergency

bedridden patients waiting for admission to the county institution.

Boards of freeholders will seldom act to provide increased accommodations unless a popular demand for them is made very clear, backed by the opinion of the local boards of health. Such a campaign is necessary in every county in this state. That the present accommodation throughout New Jersey is inadequate is evident. More than half the counties of the state have no sanatorium at all for tuberculosis patients, and in only one, Union County, does the accommodation equal the minimum of one bed for each death from tuberculosis.

Before, however, sanatoriums can accomplish their function of healing every class of the community, a considerable change must take place in the attitude of the tuberculosis sufferers toward these institutions. The tuberculosis sanatorium is commonly regarded as the final step before dissolution instead of, as it should be, the first step toward recovery. For this public view the representative tuberculosis institutions are not to blame. The sanatorium must admit every suitable patient for treatment. It is no one's fault that patients have been largely recruited from the riffraff of the saloon, and the down and outs of public lodging houses, who are generally as hopeless in prognosis as they are in the finer feelings of respectability. It is unfortunate that public opinion has been allowed to look on our sanatoriums as institutions for incurables instead of places for recuperation and recovery.

It is desirable that institutional traditions in tuberculosis sanatoriums be reduced to a minimum. Freedom and homelike surroundings are synonymous: all that is needed is to cure temperamentally as well as physically. It is only in this manner that the person in the early stage of tuberculosis can be persuaded to take hospital treatment. As an indication of what should not be done, only recently a visitor to a well known sanatorium before being admitted to the ward was required to be swathed in a white robe, cap and respirator. What an unforgettable vision he must have been to the highly neurotic tuberculosis sufferer.

Day Camps.—It has been the experience of many communities that patients will attend day camps who refuse all other kinds of outdoor treatment. The attractive features are greater freedom, less restrictive rules, food and free medical advice. The patients can go and return home every night. Such a camp can be established on vacant land owned by the city, and purchased with city funds or bought by private subscription. These camps are not expensive, and they give satisfactory return for the expenditure. The tent colony carried out in some cities is equipped for all purposes, and includes dining hall, cooking tent and special accommodations for men and women. The attraction in this plan is its elasticity. Only enough tents need be erected to meet prevailing demands. The opportunities are for education in the personal care and prevention of infection, for medical treatment, and for vocational training. In Newark, tents bought by public subscription and presented to the department of health are lent to patients for use in back yards or adjacent lots. The plan works well, but requires careful selection of patients granted the privilege.

Laboratory Facilities.—The use made by physicians of laboratory facilities will depend very much on rapid and consistent service. The laboratory must be fed by a good system of culture stations, preferably located in drug stores where supplies of sputum boxes may be obtained and where specimens may be left for collection.

Antispitting.—Spitting in public places should be regulated by an active propaganda. Public notices placed on road and traffic signs are effective reminders if sanitary inspectors are occasionally detailed on the streets to make arrests. The fine imposed for this offense should be a small one, the police proceedings being sufficiently deterrent in themselves. The fine in Newark is from $2 to $10. It is better to have a small fine collected than one so large that judges hesitate to impose it.

Milk Supervision.—It is contended that about 6 per cent. of all tuberculosis cases are of bovine origin. Where there is a raw milk supply, constant vigilance at the point of production is the only safeguard against tuberculosis. The tuberculin test of all cattle used for raw milk supplies must be insisted on. Careful watch on this type of dairy herd should be kept for plugged cattle and infected udders. The tuberculin test is usually required by municipalities annually, and it might well be made every six months. No new cattle should be allowed to be added to a herd before being tested. No local board of health should allow the sale of raw milk unless the supervision as outlined above is possible. The alternative is pasteurization of all milk supplies at the point of production.

SOCIAL PROGRESS AND RELIEF

There is no disease so closely connected with poverty and general distress as tuberculosis. All conditions found under these circumstances make for a more effective spread of infection. Intimate contact without regard to personal protection, filthy hands, food and china, and contaminated fingers are the supposed ways of spreading infection.

Much of the dirt, squalor and misery found in tenement life undoubtedly will favor infection with tuberculosis, but many of these unfortunates are themselves recruited from the ranks of the tuberculous. Improvement in the situation must come from every direction, and will be facilitated by an awakening of the people to the fact that clean habits and customs of living should be more a commonplace than an exception.

The pioneer work of the antituberculosis associations, national and state, in bringing the knowledge of the facts of tuberculosis to the public will always remain a wonderful tribute to patient and persistent effort. It is these associations alone that we must thank for the general recognition by the public of the gravity of the tuberculosis situation, as it is through their efforts that local boards of health have adopted more active methods to combat the disease. Where the tuberculosis association may well remain a valuable agency is in arranging plans for active public propaganda. There is much work for these associations to do along educational, social and economic lines. Their independence as citizen committees gives their efforts an appeal to public sympathy always timely and effective in results. What shall be done to relieve the poverty in tuberculosis is a question always demanding and receiving no satisfactory answer. Food, clothing and money for rent are constantly asked for, or at least obviously needed. These patients should not be poor and applicants for alms. Their poverty is due not to vicious habits, intemperance or crime, but to the effects of a disease which they surely would have been protected against if society had been properly organized. The tuberculosis victim can surely demand the

protection of the community, not in doles of charity but as sick pay, rightfully earned by labor for the community. How such a scheme of assistance should be carried out is still a matter of conjecture. Many authorities are in favor of state or national health insurance. Whatever objections may be brought against such a scheme, its advantages in tuberculosis are obvious and incontestable. Last year a bill was presented to the New Jersey legislature for the relief of tuberculous families, allowing each dependent adult $5 a week and each child under 14 years of age $3. This pension was not to be distributed through municipal poor and alms departments but by the state department of health. The bill was presented too late to be included in the appropriation bill, and will be redrafted and presented this year. Special legislation for relief covering tuberculosis alone is a logical procedure until a scheme for insurance against all disease hazards is adopted.

ECONOMIC IMPROVEMENT

Improved Housing.—It is because the problems of economic improvement are spectacular that the public has learned to attach much importance to them. The economic side appears more national in character and has a wider appeal than any other view. The housing situation is the same in most cities that have a tenement or slum population.

The poor and destitute always gravitate toward the cheap tenements. The cheap tenement is badly kept up, is persistently insanitary, and escapes the control of tenement house commissions and local boards of health by constant change of ownership. Dark, damp, ill ventilated rooms are tolerated because they are cheap, and the tenants, fearful of eviction, will not complain. Few boards of health have a staff sufficiently large to inspect continually the conditions in all the tenements within the municipal area. Such buildings may be sanitary one day and indescribably foul the next. The only logical method of control is to pick out the plague spots and center intensive sanitary work on them. A list of tenement houses of a suspicious nature is most useful for local boards of health to have on record. The tenement house commission of New Jersey has adopted a score card for tenement houses which shows at a glance the structural condition of any one tenement building. These score cards will be available to local boards of health and will be a valuable index of housing conditions in these tenements, pointing out the worst places for intensive health work.

It is clear, however, that these insanitary habits are not necessarily confined to the poor and destitute, for tuberculosis is found in all stations of life. As Ritter says, "We may improve the most insanitary house or room, and make it habitable for either sick or well; but if we neglect to improve the occupant or occupants of the house, our efforts will be of no avail. Sanitation of the house must go hand in hand with personal and family hygiene."

Poverty is not the cause of tuberculosis; more truly poverty may be called the result of tuberculosis, for the disease by its long drawn out clinical history and the resultant physical incapacity is but a graduation from poverty to distress and family destitution.

The greater number of tuberculosis victims end their sufferings amid conditions of want and family neglect. The sick person has outstayed his welcome, his relatives are all working and will not have him, and the meager dole of municipal or voluntary organizations makes him a human wreck most frequently beyond hope of salvage.

"The improvement in housing, the abolition of old tenement buildings, and the erection of new, light, sunny and well ventilated dwellings have been urged as the panacea that will exorcise the tuberculosis demon. This would be a worthy proposition if a similar change could be assured in the people thus translated from a bad to a good environment."

Ritter[1] supplies his own answer:

> Now if such a supposed or active tuberculous individual were suddenly placed in a most hygienic room with plenty of sunlight and fresh air, a complete change of his environment, how long would these improved conditions prevail? . . . Would the occupant improve in his new surroundings or would the room rapidly retrograde? In all probability in a very short time we would find this sanitary, hygienic surrounding and well aired room in a most insanitary condition.

Industrial Hygiene.—For the control of tuberculosis, many fads have held sway. The effect of dusty trades on the prevalence of the disease has perhaps been unduly emphasized. Giving all due credence to the harmful effect of foreign matter on lung tissues, there is insufficient evidence to show that mechanical injury to the lungs is the frequent precursor of infection. As Bonney[2] remarks:

> There are many other pursuits exhibiting a frightful mortality rate from tuberculosis in which inhalation of dust from any source cannot be regarded as a definite etiologic factor. . . . It is quite as reasonable to attribute the development of consumption to the effect of the ten or fourteen hours spent in the home as to the eight or ten passed in the workshop.

There are, it is true, trades and occupations which predispose to tuberculosis. Vast strides have, however, been taken in late years to improve the conditions in factories by the state department of labor. The effect of dust and fumes has been reduced to a minimum by effective mechanical devices, and there are few factories at this time in which dust is allowed to exist so as to be a serious hazard to health. The workers themselves with the aid of their trade unions are demanding better working conditions in factories and workshops. There is, however, much room for improvement in the working conditions of labor which only boards of health can properly supply.

The sanitary survey shows the diseases of occupation, the hours of labor and the special employment of women as subjects that can best be cared for by a bureau of industrial hygiene. At least diagnostic clinics are advised where expert advice may be obtained free or for a small charge.

ASSOCIATED ACTIVITIES

The importance of associated activities is evidenced by the control of epidemics bringing about a lessened prevalence of diseases such as measles and whooping cough. Child hygiene activities are important in protecting the mother, whose weak condition after childbirth or disease may well predispose toward tuberculosis. Convalescent homes for the treatment of hospital patients to insure good recovery before they return to their homes will surely be an added link in the chain of protection. Mental hygiene, our newest

1. Ritter: Bull. Chicago Tuberculosis Institute, 1916.
2. Bonney, S. G.: Pulmonary Tuberculosis and Its Complications, Philadelphia, W. B. Saunders Co., 1910.

health activity, will function to reduce the subnormal conditions harmful and prejudicial to the health of the family.

CONCLUSION

Finally, let me paraphrase a well known health motto:

"Freedom from disease is purchasable: within certain limits a community may by its own endeavors control tuberculosis in its midst."

51 Cypress Street.

THE SELECTION OF OPERATION FOR EXOPHTHALMIC GOITER *

W. E. SISTRUNK, M.D.
ROCHESTER, MINN.

Surgery, at the present time, gives a higher percentage of cures than any other measure in the treatment of exophthalmic goiter. For a number of years the mortality following surgical procedures has gradually decreased, largely because much has been learned regarding the selection of the type of operation which is safest in any given case, and because the greater number of patients are operated on earlier in the course of the disease than formerly, and at a time when they are better surgical risks. It is possible to operate by present day methods in a large number of consecutive cases of exophthalmic goiter without a death. There are, however, a few patients who fail to respond to preoperative medical treatment and who must be subjected to operation at a relatively high risk, in order to offer a chance for cure. Refusal to operate in this group of cases naturally diminishes the death rate. On the other hand, poor judgment in selecting the type of operation which is best and safest in a given case, and in advising operation in certain cases that are nonsurgical at the time, increases the mortality.

If the disease is left to run a normal course, it progresses in several different ways. In a few instances the onset is sudden, with rapid development of symptoms, and the progress is so quick that the patient soon becomes a poor surgical risk. In the greater proportion of patients, however, the onset of the disease is so gradual that in its incipiency it can scarcely be recognized save by one highly experienced in the diagnosis of hyperthyroidism. In such patients the symptoms gradually increase in number and severity, and an enlargement of the thyroid gland occurs. As a rule the disease reaches its height during the second six months of its course, and the patient passes through a period which usually is referred to as a crisis. During such periods all the symptoms become markedly exaggerated; the pulse rate is high, there is rapid emaciation and loss of weight, with extreme nervousness and mental irritability, and often vomiting and diarrhea; marked damage occurs to the vital organs, such as the heart, liver, and kidneys. Unless the disease proves fatal, the majority of patients improve greatly after a period of from one to several weeks, although as a rule they are never so well after having passed through a crisis as they were before. The amelioration of symptoms may persist for a period varying from a few months to several years, but in the majority of patients a second or even a third crisis eventually develops. With each crisis the damage to vital organs, especially the heart, liver, and kidneys, increases, until the patient finally suffers more from the symptoms produced by these degenerative changes than from the disease itself. In a third, but small group of patients, the disease runs a chronic course from its onset without the development of acute crises.

Fortunately and unfortunately, patients improve when treated medically: fortunately, because patients unfit for surgical treatment may improve to such an extent that they become fairly good surgical risks; and unfortunately, because a knowledge of the fact that improvement occurs under medical treatment leads many practitioners to use only medical measures in the management of exophthalmic goiter, apparently without fully realizing the sad state to which a large percentage of the patients thus treated will be ultimately reduced. Many patients who have been treated medically for a long period apply for surgical aid and are found to have such marked degenerative changes in their vital organs that it is impossible for surgery to effect a cure. Operation usually stops the progress of the disease even in this stage, but the damage to the vital organs cannot be repaired; it would be quite as reasonable to expect to cure patients with well pronounced nervous lesions from tertiary syphilis by means of antisyphilitic treatment.

It is often a perplexing problem to decide just how toxic a given patient is and how much damage has been produced by the disease, and for these reasons it is difficult to decide what operative procedures the patient will safely endure. Although the mortality is largely affected by the decision, no absolute rules can be given as to the selection of the best type of operation; each case must be judged on its own merits. A condition which in one patient would justify the performance of a thyroidectomy, in another patient would be counterbalanced by some other factor that would make the operation dangerous. There seems to be no way of elucidating all the possible conditions that may arise, as these can be recognized only by observers who are highly experienced in dealing with exophthalmic goiter.

In operating in such cases at the Mayo Clinic, certain factors are taken into consideration in selecting the type of operation. The ideal surgical procedure in exophthalmic goiter is partial thyroidectomy as soon as the first symptoms of the disease appear and it can be definitely proved, by metabolic tests, that hyperthyroidism is present. At this stage of the disease, a primary thyroidectomy can usually be performed with a very low death rate, and many such patients are restored to normal health. The percentage of patients operated on during the early stage of the disease is steadily increasing, and an increase in the percentage of cures will result.

It cannot be denied that certain patients improve and apparently recover under medical treatment. However, in the beginning of the disease it is impossible to distinguish between the patients who may fall in this group and those who are destined to suffer severe damage as the disease progresses. Great responsibility is assumed, therefore, by advising medical treatment in early cases, in which thyroidectomy might prevent the severe conditions and in many instances the death of patients who would fail to improve under medical treatment.

The metabolic rate is a definite index to the degree of hyperthyroidism in a given patient at a given time. It is of very great value as a diagnostic aid in the early stages of exophthalmic goiter, when studied in con-

* From the Mayo Clinic.

junction with the symptoms and general appearance of the patient. As a rule, the clinical picture presented by the patient, the metabolic rate, and the pulse pressure run hand in hand, the symptoms increasing and decreasing as the metabolic rate varies. However, patients do not always present the same clinical picture while carrying similar metabolic rates; for instance, one patient with a rate of + 50 per cent. may be in a crisis and extremely ill, while another with the same rate may show a very different clinical picture and be a fair surgical risk. Some persons seem to develop a certain tolerance to increased metabolism. We occasionally see a patient who, although carrying a safe metabolic rate, must be classified as a bad surgical risk. Later, the same patient, while carrying the same rate, may present a different clinical picture and stand the operation which previously was considered unsafe. In all instances in which a high metabolic rate is associated with symptoms indicative of a high-grade toxemia, such as nervousness, irritability, cardiac dilatation, high pulse rate, loss of weight and strength, nausea, vomiting and diarrhea, the condition must be looked on as serious and nonsurgical. The metabolic rate gives no indication of the amount of damage which may have been done previously; it can be used only partially as a means of deciding on the best type of operation to be performed. We make a careful selection of the type of operation for patients with a rate above + 40 per cent., and we hesitate to perform a primary thyroidectomy in patients with metabolic rates 60 to 70 per cent. above normal. In the majority of such patients without marked cardiac damage, and who, except for this high rate, would seem good risks, we perform a preliminary ligation as a means of testing their ability to stand any operative procedure without the precipitation of an acute hyperthyroidism. If a mild reaction follows the ligation, a thyroidectomy is performed after seven or eight days; but if the reaction is severe, it is best to do a second ligation and to wait three or four months before performing a thyroidectomy.

Certain patients, after having had the disease for some months, present themselves for treatment because of increased symptoms. As a rule they have lost weight and probably are losing weight at the time. Such patients will usually be found to have high metabolic rates. If the loss of weight and general strength has been marked, and especially if the patients are highly nervous and irritable, we have found that a thyroidectomy is performed with considerable risk because in these cases a crisis may be precipitated by even a slight surgical procedure. In such instances we usually perform two superior polar ligations, under local anesthesia, at one operation or at intervals of seven or eight days, and wait for three or four months before performing a thyroidectomy.

Patients who consult us during acute crises are considered extremely dangerous surgical risks, and we prefer to treat them by means of rest, fluids and careful nursing until the crisis is passed and there is a gain in weight, with a corresponding subsidence of the pulse rate, the nervousness, and mental irritability. The metabolic rate usually drops considerably following a crisis; therefore, patients who have just passed such a period are not likely to be thrown into an acute hyperthyroidism by a thyroidectomy; but on account of the marked degenerative changes in their vital organs and the weak, degenerated heart muscles, the operation may prove a dangerous procedure. In such patients we have usually found it safer to perform two superior polar ligations, under local anesthesia, seven or eight days apart, thus preparing the way for thyroidectomy several months later.

In a few patients who seem to be risks for any surgical procedure and who fail to respond to medical treatment sufficiently to warrant an operation, we occasionally are able to perform two ligations at intervals of from seven to eight days after having made one or two injections of quinin and urea hydrochlorid solution or of hot water, into the thyroid gland. Such injections seem to lessen the tendency to excessive reaction following ligation.

It will be noted that ligation is performed with two ideas in view: first, as a means of testing patients who seem fit surgical risks for thyroidectomy but concerning whom there is enough doubt to make ligation the safer procedure, and second, as a means of preparing patients for thyroidectomy.

Patients who are being tested and who stand a ligation well can, in the majority of instances, stand a thyroidectomy. The reaction following the ligation of one superior pole, performed under local anesthesia, is similar to, but much less marked, than that which occurs when a thyroidectomy, instead of a ligation, is done. This reaction consists of an increase in the pulse rate and temperature, vomiting, nervousness, and mental irritability; it usually begins within a few hours after the operation has been performed, gradually increases, and reaches its height within from thirty-six to forty-eight hours. In exceptional cases it may be so marked as to produce death from an acute hyperthyroidism in from one to four days following operation. As a rule, however, it begins to subside after from forty-eight to seventy-two hours and, in a few days, the patient is in a state similar to that present before the operation. In cases in which the reaction following such a ligation is marked we perform a second ligation, and later a thyroidectomy.

When ligation is done with an idea of preparing patients for thyroidectomy, the superior pole is ligated on each side, under local anesthesia, at intervals of seven or eight days, and the patient is allowed to wait for three or four months before a thyroidectomy is done. During this period there is usually a marked abatement of symptoms and an increase in weight averaging about 21 pounds for each patient, while the general improvement is such that a thyroidectomy may be done with comparative safety. As a matter of fact, in some of these cases the surgeon hesitates to recommend a thyroidectomy; but experience has shown that hyperthyroidism may recur in from one to five years unless a thyroidectomy is done.

The degree of improvement which follows thyroidectomy depends largely on the extent of damage to the vital organs at the time of operation and on the amount of thyroid tissue which is removed. If the damage to organs has been extensive, it is impossible to restore the patient to normal health; the operation usually stops the hyperthyroidism and great improvement follows, but the organs do not return to normal. In doing a thyroidectomy on a patient with exophthalmic goiter, we have found that in order to bring the metabolic rate to nearly normal it is necessary to remove all of one lobe, the isthmus, and the greater portion of the other lobe, leaving a piece of gland tissue probably not larger than one half or one third of a normal sized lobe. If not enough thyroid tissue is removed, and this may be proved by metabolic tests,

the patient may be benefited, but will continue to have symptoms of hyperthyroidism. In a few patients, the remaining portion of the thyroid gland hypertrophies and the symptoms recur. In either case, if the metabolic rate indicates a degree of hyperthyroidism which seems incompatible with good health, we reoperate and remove a portion of the thyroid tissue which was left at the first operation.

LETHAL DOSE OF ROENTGEN RAYS FOR CANCER CELLS *

FRANCIS CARTER WOOD, M.D.
AND
FREDERICK PRIME, M.D.
NEW YORK

Within the last few years, and especially since the introduction of the Coolidge tube, much has been accomplished in the establishment of suitable dosage for the therapy of superficial and benign skin lesions with the roentgen ray. The lethal dose for cancer cells, however, has not, so far as we are aware, been accurately determined for filtered rays of short wave length such as are now used for deep therapy. The experiments described below were, therefore, undertaken in 1916, with tissue growing in culture as well as in the living animal.

There is a distinct advantage in the use of animal tumors, as they furnish an easily reproducible standard for biologic calibration of the output of any roentgen-ray machine and of the effects of filters, while human material is extremely variable in its resistance to the rays, ranging from the basal-cell epitheliomas, which often yield to a single erythema dose, to the chondrosarcomas and fibrosarcomas, which are much more resistant than healthy tissue and in many instances cannot be influenced by any quantity of roentgen ray which does not endanger the life of the patient.

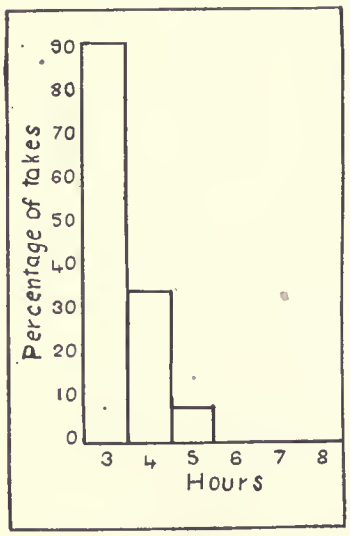


Fig. 1.—Results of exposure of mouse sarcoma 180 in vitro to one-fourth dose of roentgen ray, 85 kilovolts strength, at 23 cm. distance, with 3 mm. aluminum filter.

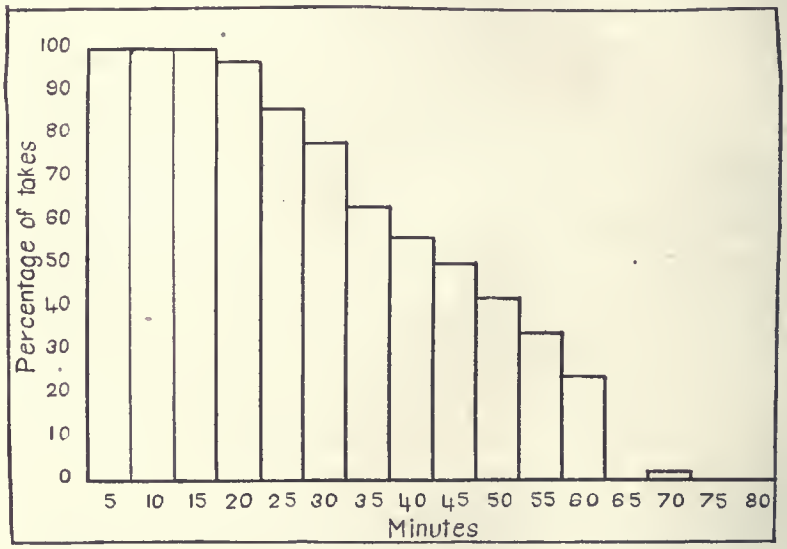


Fig. 2.—Results of exposure of sarcoma 180 in vitro to roentgen ray, 85 kilovolts, 5 milliamperes strength, at 23 cm. distance, with 3 mm. aluminum filter.

The difficulty of accurately measuring the dosage of roentgen ray compelled the repetition in 1918 and 1919, of much of the previous work; but the ultimate figures are quite concordant with the preliminary ones, the slight differences being largely attributable to a more efficient transformer which was substituted for the one first used, and to the more accurate measurement by ionization methods of the roentgen-ray output.

In most of the investigations which have previously been made on tissues under these conditions, very soft rays were used, the penetration of which was limited, so that a large dose could not be given the deeper tissues without destruction of the skin, as was well shown by the experiments of Wedd and Russ.[1]

Quite recently, Kimura[2] published an account of a number of radiation experiments, but in all his series he also used very soft unfiltered rays, with a spark gap of from 4 to 8 cm. Such soft roentgen rays have, as just stated, a practical therapeutic value only on superficial growths, the penetration being very slight; and the general tendency at present is to use highly filtered rays with a spark gap of from 8 to 9 inches, representing a terminal voltage across the tube of from 80 to 90 kilovolts. When low voltage is used, the effective roentgen-ray output from a tungsten target tube is small, the K radiation appearing only when about 70,000 volts are applied to the tube terminals, while a much higher yield is apparent with from 80 to 95 kilovolts.

Since this work was completed, German journals have been received containing reviews of a monograph by Krönig and Friedrich,[3] unfortunately at present available only in abstract, and also two papers by Seitz and Wintz.[4] Both groups of investigators used ionization apparatus to measure the dosage of roentgen ray, and report that they have determined the carcinoma

* From Columbia University, George Crocker Special Research Fund, F. C. Wood, M.D., director.
* A preliminary report of some of this work was read before the American Association for Cancer Research in March, 1918, and published in the Journal of Cancer Research 4: 49 (Jan.) 1919.

1. Wedd, B. H., and Russ, S.: The Effect of Roentgen and Radium Radiations upon the Vitality of the Cells of a Mouse Carcinoma, J. Path. & Bacteriol. **17**: 1, 1912.
2. Kimura, Noriyoski: The Effects of X-Ray Irradiation on Living Carcinoma and Sarcoma Cells in Tissue Cultures in Vitro, J. Cancer Res. **4**: 95, 1919.
3. Krönig and Friedrich: Physikalische und biologische Grundlagen der Strahlentherapie; review in Fortschr. a. d. Geb. d. Röntgenstrahlen **26**: 208, 1919.
4. Seitz, L., and Wintz, H.: I, Grundsätze der Röntgenbestrahlung des Gebärmutterkrebses und des Karzinoms im allgemeinen; die Karzinomdosis, München med. Wchnschr. **65**: 89, 1918; III, Die Röntgenbestrahlung der Genitalsarkome und anderer Sarkome und ihre Erfolge; die Sarkomdosis, ibid., p. 527.

and sarcoma "dose." These determinations were, it is stated, made on human carcinoma and sarcoma, and the dose was determined by Krönig and Friedrich as "the amount causing shrinkage of a carcinoma nodule." This is slightly less than a skin erythema dose, employ-

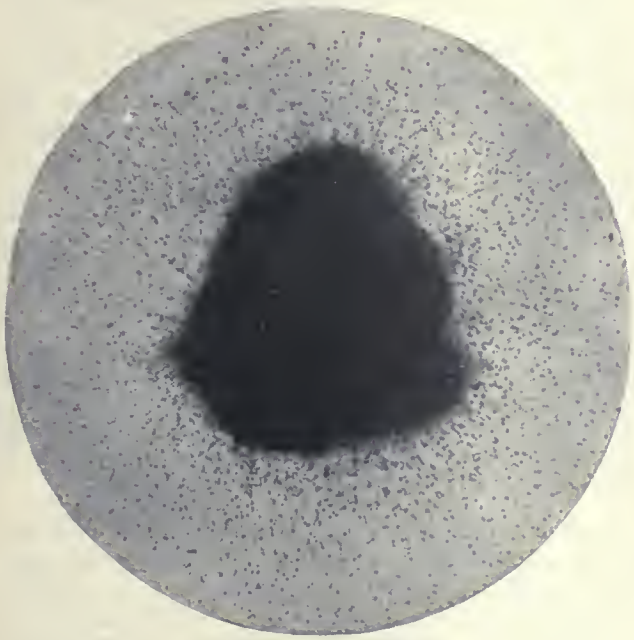


Fig. 3.—Tissue culture, sarcoma 180, exposed to four erythema doses of roentgen ray.

ing as they did 1 mm. of copper as a filter. Seitz and Wintz, using 0.5 mm. of zinc as a filter, found that the "carcinoma dose" is about 20 per cent. more than this. Such quantities of roentgen ray are about those which have for many years been known to be capable of causing the temporary disappearance of metastatic skin nodules of carcinoma of the breast with fair frequency. They are far below the amount required to affect primary growths of the same type. The latter authors state also that tumors vary in their susceptibility, a fact long known to every roentgenologist. They give their "sarcoma dose" as from 60 to 70 per cent. of that for a skin erythema; but their experience is confined to a few cases, and a wider knowledge will probably bring a realization of the fact that many sarcomas resist enormous doses of roentgen ray.

While the accurate estimation of roentgen rays with pastils of barium platinocyanid is difficult, if not impossible, they were, nevertheless, employed to furnish a rough approximation of the erythema dose. Graduated exposures over small areas were then made on the skin of the back of several patients, and the erythema dose for this region was obtained. This gives a universal biologic calibration of the amount of roentgen ray produced. The scale readings of a very sensitive galvanometer connected with an ionization chamber were then determined, and all conditions of current, voltage, distance, etc., were accurately recorded. With each series of experiments the apparatus was adjusted so that the same galvanometer deflections were again obtained. This is the easiest, simplest, and only satisfactory way with which we are acquainted of measuring the roentgen-ray output from a tube; and even though the results are probably not absolutely accurate, they are close enough for clinical work. The usual factors recorded, such as milliamperes through the tube, and the spark gap, give rise to errors, often as much as 20 per cent., with the same transformer and tube, owing to fluctuations in the commercial current supply and variations of an unknown sort in the transformer and its regulating connections. It was found necessary to install a storage battery to heat the tube filament, instead of the usual low voltage transformer, as fluctuation on the line caused the tube to give off very irregular quantities of roentgen ray as measured in the ionization chamber, even when the variations in the milliamperage through the tube were slight.[5]

Our intention was to establish on easily transplantable mouse tumors the lethal dose of roentgen rays of moderately short wave length produced from a tungsten tube at a voltage which gave an ample yield of energy including the K series of lines and the short wave length region above it, the softer components of the general radiation being removed by a filter of 3 mm. of aluminum. This is the filtration most generally used for deep therapy, although, since its employment was suggested by Elihu Thompson in 1896, no scientific determination has been published showing exactly the thickness most effective on cancer tissue. Our experiments show no practical difference due to length of exposure. If one-fourth the dose is given for four times as long, the lethal quantity is the same (Fig. 1).

The same tumors were used in these as in previous experiments undertaken in this laboratory with radium instead of roentgen ray,[6] i. e., mouse sarcoma 180, Crocker series, and mouse carcinoma 11, Crocker series. In addition, mouse embryo kidney was used, this offering a normal tissue as a check on the biologic effects of the rays. Sarcoma 180 is a rapidly growing, large cell sarcoma with but little interstitial tissue. It almost never undergoes spontaneous recession. Carcinoma 11 is a breast carcinoma of a medullary type, occasionally receding.

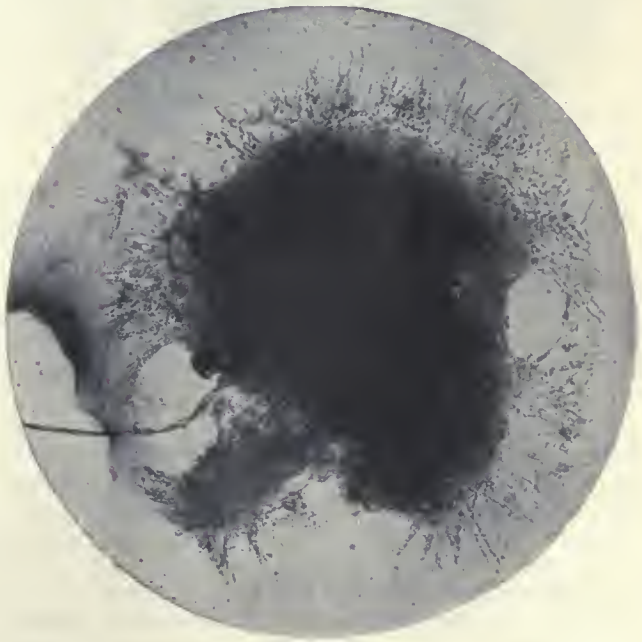


Fig. 4.—Tissue culture, mouse embryo kidney, exposed to three erythema doses of roentgen ray.

In order to avoid the errors due to random fluctuations which occur when too small a number of animals

5. We are indebted to Prof. William Duane of Harvard University for valuable advice in connection with the ionization apparatus, which is of his design (Duane, William: J. Cancer Res. **4**: 72 (Jan.) 1919).

6. Wood, F. C., and Prime, F.: The Action of Radium on Transplanted Tumors of Animals, Ann. Surg. **62**: 751, 1915.

is used, from fifty to seventy-five animals, and often more, were inoculated in each series of experiments.

The tumors and the kidney tissue were removed under rigid aseptic precautions and cut into small pieces, averaging about 0.001 gm. in weight. These were moistened with a drop of Ringer's solution and placed in hollow slides divided by a small ridge of paraffin, on one side of which was the tissue and on the other a drop of Ringer's solution to prevent any drying of the tissue while undergoing treatment. The slides, which had been ringed with petrolatum, were then sealed by a cover glass, from 0.15 to 0.18 mm. in thickness, and another paraffin ring.

At the end of each exposure, half of the tumor tissue was inoculated into mice, and from the remainder in vitro growths in plasma were made. Control tumor series were made at the same time from unrayed tissue, and these also were inoculated into mice and grown in vitro. For the in vitro cultures a mixture of mouse serum and chicken plasma was used. Blood was drawn with a syringe from the heart of a mouse,



Fig. 5.—Tissue culture, mouse carcinoma 11, exposed to four erythema doses of roentgen ray.

without killing the animal, and the serum, after being allowed to separate, was diluted with Ringer's solution in the proportion of one part of serum to two parts of Ringer's solution, and to this mixture was added chicken plasma, one part to seven of the serum solution. The piece of tissue to be grown, either control or radiated, was placed in the center of a cover glass, and a drop of the serum-plasma mixture was added and spread out evenly with a needle; the cover glass was then inverted over a hollow slide which had previously been ringed with petrolatum, and in the bottom of which there was a drop of Ringer's solution, and the slide was finally ringed with paraffin. The series was incubated at 37 C., and observations were made at the end of twenty-four hours.

With the type of rectifying transformer employed, eleven minutes were required to produce an erythema reaction on the skin of the back of a human being at a distance of 23 cm. from the anticathode of a Coolidge tube, with 3 mm. of aluminum as a filter, while 5 milliamperes of current were used with a 21 cm. spark gap, an amount equivalent to five Holzknecht units measured at skin distance, or twenty at half the distance. That such pastil readings have no biologic value may be judged from the well known fact that the color produced varies with the wave length of the roentgen ray used. For example, when the ionization chamber is employed, the deflections with the tube running as above were 160 mm. without a filter, and 55 mm. with 3 mm. of aluminum. In other words, the energy as measured by the ionization was as 1 to 3. A skin erythema was produced in ninety seconds and in eleven minutes, respectively, or in a proportion of about 1 to 7, while the pastil at 21 cm. required six minutes to reach teinte B with unfiltered rays, and eleven minutes with the filtered, a proportion of less than 1 to 2. Hence, statements like the one made by Wetterer[7] that carcinoma is injured by a dose of three Holzknecht units is not only vague in form, but untrue unless the very softest rays are employed.

The pastil readings were finally made on a Cox radiometer, the Hampson and Holzknecht apparatus being found less satisfactory for our purposes. This, therefore, was the quality and quantity of roentgen ray used in the exposures, the time alone being varied.

SARCOMA

When sarcoma tissue was inoculated into mice immediately after exposure, it was found that when roentgen ray had been given for five, eight and ten minutes (a dose insufficient to produce erythema on human skin), and for twelve, fifteen and eighteen minutes, there was no appreciable difference in the number of tumor takes in mice or in the rate of growth between the control and treated tissue. In tissue that had been exposed for twenty-five minutes or longer, a gradual change was noticed; there was a decrease in the number of tumor takes and also in the rate of growth, which was much retarded, until after sixty minutes of roentgen-ray treatment there were no takes except in one instance. In the series which had been exposed to the action of the roentgen rays for seventy minutes, one tumor, out of forty-four inoculations, appeared at the end of four weeks. Similar "escapes" were noted in the studies on the radium lethal dose, published in 1917.[8] There were no growths, however, among the grafts which had been treated for sixty-five minutes, nor among those treated for eighty minutes. It would seem, therefore, that in the majority of cases an exposure of between fifty-five and sixty minutes, or five or six so-called erythema doses, is usually sufficient to destroy the proliferative power of the cells of sarcoma 180, but not always, as is shown by the one growth appearing after four weeks, though the exposure in this case was from ten to fifteen minutes longer than was ordinarily required to kill all the cells. The percentage of grafts which grew after exposure to roentgen ray is graphically shown in Figure 2. As half the tumor particles did not grow after forty-five minutes, the broad assumption is permissible also that half the cells in the tumor would be killed by such exposure; it is, however, impossible to prove this.

SARCOMA TISSUE CULTURES

The tissues which were grown in plasma showed most interesting pictures. At the end of twenty-four hours there was a profuse growth in both the treated and the control tissue, which reached its maximum in

7. Wetterer, Josef: Handbuch der Röntgentherapie, nebst Anhang, Ed. 2, Leipzig, O. Nemmich, 1913, p. 177.

8. Prime, Frederick: Observations on the Effects of Radium on Tissue Growth in Vitro, J. Cancer Res. 2: 107 (April) 1917.

about forty-eight hours. There was but little difference in the extent or character of the growth, whether irradiated or not, and even in the tissue which had been treated with roentgen ray for forty-five minutes there was always a profuse outgrowth of cells (Fig. 3). These outgrowths were carefully removed, and some were fixed in Zenker's fluid and stained with Delafield's hematoxylin, while the rest were inoculated into a series of mice. Tissue treated up to twenty-five minutes grew as did the controls; whereas after twenty-five minutes of irradiation the number of takes and the rate of growth diminished, until after forty-five minutes' exposure no growth occurred. Of the sections which were stained, some were studied just as they were fixed, and others were cut in serial sections. Mitotic figures in the nuclei were found to be very scarce, though some of the treated tissue in which no mitoses were found grew well. The finding of mitotic figures was not, therefore, always an indication of the power of the tissue to grow when inoculated into mice. The probability is that as cells are much more sensitive in the mitotic phase, only those in the resting stage survived and were able to grow.

CARCINOMA

When mouse carcinoma tissue was exposed to roentgen ray in the same fashion, the results were slightly different. The tissue planted in vitro never gave rise to such profuse growths as arose from the sarcoma and kidney tissues (Fig. 5). The tissue was perhaps slightly more susceptible to the influence of roentgen ray than was sarcoma, and after an exposure of twenty minutes showed a diminution in its growth rate and in the number of takes when transplanted into other animals. An exposure of fifty minutes was required, however, before most of the tissue was killed, and even then there were two belated growths which appeared after the third week, showing that it is impossible, even when small pieces of tissue are treated, always to be sure of killing every cell, even though five erythema doses are given (Fig. 6). It should be remembered that neither roentgen ray nor radium kills the cells subject to its influence in a rapid manner. No doubt many of the cells exposed functionate for a few days, and spread out in culture in ameboid movements even when a dose which will ultimately be lethal has been administered.[9]

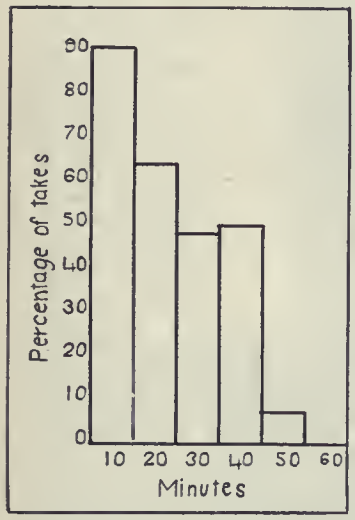


Fig. 6.—Results of exposure of carcinoma 11 in vitro to roentgen ray, 85 kilovolts, 5 milliamperes strength, at 23 cm. distance, with 3 mm. aluminum filter.

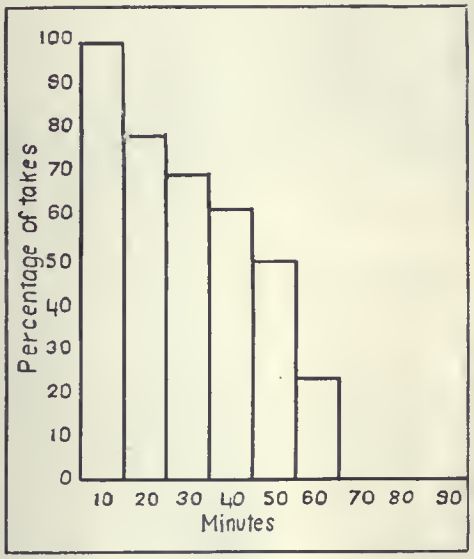


Fig. 7.—Results of exposure of sarcoma 180 in vivo to roentgen ray, 85 kilovolts, 5 milliamperes strength, at 23 cm. distance, with 3 mm. aluminum filter.

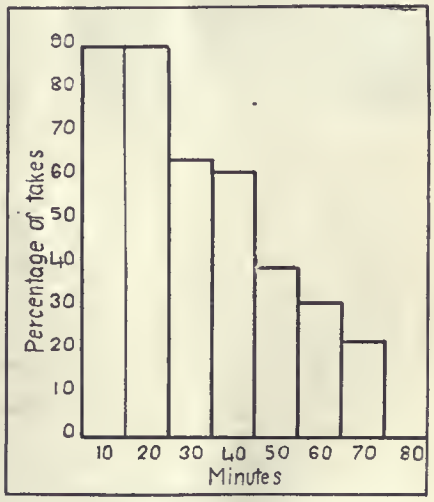


Fig. 8.—Results of exposure of carcinoma 11 in vivo to roentgen ray, 85 kilovolts, 5 milliamperes strength, at 23 cm. distance, with 3 mm. aluminum filter.

NORMAL CELL CONTROLS

When mouse embryo kidney was used, the embryos were removed by operation as near term as possible. The kidneys were excised from the embryos and then treated in the same way as was the tumor tissue, except that no animal inoculations could be made. With this tissue there was a profuse growth, chiefly of connective tissue, in all the in vitro cultures which had been exposed to roentgen ray even up to forty-five minutes; beyond this, however, no growth took place (Fig. 4). No noteworthy difference could be observed between the treated tissue and the controls, except that after an exposure of twenty minutes to roentgen ray the growth was not quite so profuse as in the controls. There is, therefore, but little difference in the roentgen-ray sensibility of rapidly growing normal connective tissue cells and that of sarcoma cells. Clinically, fibrosarcoma is much more resistant than granulation tissue, while lymphosarcoma is more sensitive; hence, in estimating the radiosensibility of human tumors the histologic type should always be known.

TUMORS EXPOSED IN THE ANIMAL

In order to determine whether the effect of roentgen ray on these tissues was influenced by the removal of ionization products and by a constant supply of fresh food to the cells, such as occurs when the tumor remains in the host, a number of mice bearing well developed tumors of sarcoma and carcinoma were enclosed separately in a small box and exposed to similar doses of filtered roentgen ray over periods varying from ten to ninety minutes. At the end of the treatment, the animals were killed, the tumors were removed under the usual aseptic precautions, and fragments from the portion of the tumor nearest the tube were inoculated through a hollow needle into a series of mice. The only difference in filtration was, therefore, the use of a millimeter or so of skin, instead of the thin cover glass used in the in vitro tests. It was found that fragments of sarcoma 180 which had been thus exposed for ten or fifteen minutes showed good

9. Prime, Frederick: Action of Radium on Embryo Heart Muscle, Proc. New York Path. Soc. **16**: 56, 1916.

growth when transplanted into other mice; but after the animal bearing the tumor had been irradiated for twenty minutes there was noticed a slowing in the growth rate of the tumor after inoculation, which gradually increased until after sixty minutes there was no growth at all (Fig. 7).

When carcinoma 11 was exposed in vivo and then transplanted into other mice, it was found that slightly longer exposures to roentgen ray than in the case of sarcoma were required before any effect was shown on the growth of the tumors after inoculation. After sixty-five minutes' exposure the appearance of the tumor was delayed, but showed fair growth; and it was not until after an exposure of seventy minutes that no growth resulted (Fig. 8).

CONCLUSIONS

1. Approximately four erythema doses of roentgen ray, given continuously and filtered through 3 mm. of aluminum, are required to kill mouse carcinoma, and five to kill mouse sarcoma exposed in vitro; but occasionally some cells may escape the effects of even six doses.

2. Approximately six erythema doses of roentgen ray are required to kill sarcoma cells in vivo, as compared to five required to kill the same cells in vitro; and approximately six erythema doses are required to kill carcinoma cells in vivo, as compared to four required to kill the same cells in vitro.

3. The in vitro outgrowth from sarcoma tissue after four erythema doses of roentgen ray produced tumors when inoculated into mice.

4. At least five erythema doses of roentgen ray are required to kill carcinoma and sarcoma cells in tissue cultures, and at least four to kill embryonic connective tissue cells in cultures.

5. The amount of in vitro growth is no indication whether the tumor cell is or is not capable of proliferating in the animal body. The growth observed after lethal doses is evidently due to the slow action of the rays, which permits cells potentially dead to wander out into the medium and to complete a division process before their growth momentum is finally checked.

6. Absence of mitotic figures after roentgen ray treatment is not an indication of lack of ability of the cells to grow in the animal body.

7. The practical conclusion which may be drawn from these observations is that the amount of roentgen ray necessary to kill all the cells of a rapidly growing, very cellular, and highly malignant sarcoma or carcinoma in man is between five and seven erythema doses of filtered roentgen ray when the tumor is on the surface of the body. Every centimeter of tissue that covers the tumor makes an additional amount of roentgen ray necessary. For example, when slices of fibroid uterus are used as absorptive material, the galvanometer deflections show that at a depth of 2 cm. 19 per cent. more roentgen ray is required; at 5 cm. depth, 47 per cent. more, and at 10 cm. depth, 65 per cent. more. While many tumor cells may possibly be slowed in their progress and mitotic forms killed at such depths, it is doubtful whether all can be destroyed. The basal-cell tumors and the lymphosarcomas are, as is well known, much more susceptible to radiation. Small, superficial, metastatic carcinomas are also, in some instances, more susceptible than is the primary tumor.

1145 Amsterdam Avenue.

DISLOCATION OF THE CARPAL SCAPHOID AND SEMILUNAR BONES

SAMUEL KLEINBERG, M.D.
NEW YORK

Dislocation of the carpal bones is a rare occurrence. A review of the literature shows that only very few cases of dislocation of the carpal bones have been reported. Inquiry among my orthopedic colleagues revealed that many of them had not seen a single case, while others had seen one or at most two cases during their entire experience. Fracture of the scaphoid, however, has been seen frequently, and there are a fairly large number of cases reported.

The two cases described below are reported, first, because of the rarity of the condition, and secondly, because a good functional result was obtained in the one case by operative removal of the dislocated bones, and in the other case by conservative treatment alone.



Fig. 1 (Case 1).—Dislocation of scaphoid and semilunar of left wrist, lateral view.

REPORT OF CASES

CASE 1.—*History.*—H. B., a laborer, aged 21, fell from a fifth story window and injured his left wrist. It was impossible to obtain a history of the position of the hand at the time of injury. I first saw the patient about seven weeks after the injury. At that time, he complained of pain, swelling and disability of the left wrist, hand and fingers. The left hand and wrist were moderately swollen, the swelling being especially marked over the front of the wrist, where a mass of bone was easily palpable. This mass was directly under the skin, and was freely movable in the lateral but not in the vertical direction. The styloid processes of the ulna and radius were in proper relationship. There was no tenderness or discoloration of any part of the wrist. The back of the wrist was moderately swollen, and palpation did not reveal any hollow. There was no voluntary motion in the wrist, but there was a passive flexion of about 20 degrees, and a few degrees of abduction and adduction. The fingers were not swollen but were in a flexed position, and their motion was much restricted. Forced extension of the fingers was painful. The grip was so weak that the patient could not hold even a light object. There were no sensory disturbances in the hand or wrist. The color of the hand and fingers was normal. The radial and ulnar pulses were present, and were easily palpable.

Examination.—A lateral roentgenogram of the wrist showed a dislocation of the scaphoid and semilunar bones upward and forward to a position anterior to the ulna and radius, as shown in Figure 1. The scaphoid was entirely above the radiocarpal joint line, while at least two thirds of the extent of the semilunar was above this line. The lower pole of the semilunar was also fractured. It is interesting to note

that these bones were entirely separated from the radius and other carpal bones: they had evidently torn through the ligamentous and muscular tissue in front of the wrist joint, and had become entirely subcutaneous.

Treatment and Results.—On account of the very marked displacement of these dislocated bones from the wrist joint, we considered that reduction by manipulation would be impossible, and that the best treatment would be the operative removal of them. Accordingly an anterior vertical incision was made over the wrist joint and the lower part of the forearm. The bones were found embedded in the subcutaneous tissue, and were surrounded by what appeared to be a fibrous capsule which had evidently been formed about them since their dislocation. None of the flexor tendons or the nerves on the front of the wrist joint were exposed.

Figures 2 and 3 are roentgenograms taken after the operation and show the appearance of the wrist minus the scaphoid and semilunar bones. This patient has been receiving baking, massage, manipulation of the wrist and exercises, and the function of the wrist and hand is rapidly improving. The mobility of the fingers has gradually increased, and he is now able to grasp and hold a 5-pound dumb-bell. The progress in the improvement since the operation has been continuous, and encourages us in the belief that the function may ultimately be normal. This is especially interesting in view of the serious disturbance of the wrist joint by removal of two of its component bones.



Fig. 3 (Case 1).—Lateral view of left wrist after removal of dislocated scaphoid and semilunar.

CASE 2.—*History.*—M. O., man, aged 35, was thrown from an automobile, injuring his right wrist. Immediately following the injury the wrist became moderately swollen, painful and tender. The fingers were held flexed and were greatly restricted in their mobility. This man had suffered so many other and more serious injuries at the time that very little attention was paid to the wrist until several weeks after the accident, when the persistent swelling, tenderness, pain and disability led to the taking of a series of roentgenograms. It is interesting to note that a roentgenogram of the wrist was taken a few days after the injury, a diagnosis of Colles' fracture was made, and reduction was attempted.



Fig. 4 (Case 2).—Dislocation of semilunar of right wrist.



Fig. 2 (Case 1).—Anteroposterior view of left wrist after removal of dislocated scaphoid and semilunar.

Examination.—Our roentgenograms show very definitely, as is seen in Figure 4, that the semilunar bone had been dislocated forward. The bone appears as a three-quarter moon, distinctly separated from and in front of the os magnum. It is rotated so that its inferior surface points downward and forward, and the superior surface points backward and upward instead of directly upward. The posterior border of the semilunar points downward, and the posterior half of the bone is in front of the os magnum. The upper articular surface of the os magnum almost touches the radius. The dislocation is not so complete as in the preceding case. In fact, it is only a partial dislocation or subluxation.

Originally the wrist was very much swollen and tender, and examination was not satisfactory. Several weeks after the injury when the swelling had subsided, palpation revealed a mass on the front of the wrist, and what was more interesting, a hollow in the middle of the back of the wrist. These findings are pathognomonic of dislocation of the carpal semilunar. There was a great deal of stiffness and pain in the wrist and fingers, and also numbness in the latter. Manipulation of the fingers was very painful There was some voluntary motion in the wrist and fingers, which increased as the swelling subsided.

Treatment and Results.—Manipulative reduction under an anesthetic was refused. In fact, as the motion was increasing, and the disability became less pronounced, it was felt that conservative treatment would yield a good result. The treatment consisted in baking, massage, gentle manipulation and graduated exercises. The improvement has been slow but continuous, until at the time of this report the patient has almost perfect use of the hand and fingers.

The patient lacks as yet the normal strength of the wrist and hand, but he can write and perform all the finer motions of the fingers. There is at present no disturbance of sensation. There is no pain in the hand, except occasionally, and then it is not severe. However, it is important to remark that the pain did last for many months, and very much longer than in the first case in which the dislocated bones were removed.

1 West Eighty-Fifth Street.

THE TOURNIQUET

A MODIFICATION OF AN INSTRUMENT EMPLOYED BY THE GERMANS IN THE LATE WAR

P. E. TRUESDALE, M.D.
FALL RIVER, MASS.

After the Germans had evacuated the Saint Mihiel salient, a metal tourniquet of unusual design was found in one of their advanced post surgical hospitals by Lieut.-Col. J. M. Flint and Lieut. A. Dayton.

The instrument was made on the principle of the clamp: both arms were of rounded steel and covered with rubber tubing. It was given to me for trial in Mobile Hospital No. 39, and I had the opportunity to use it many times. At first the tourniquet was found to be unsatisfactory because the construction of the handles was clumsy, and the blades separated widely when tightened over the limb, thus failing to control bleeding. In order to obviate this, it was necessary only to cross the arms of the instrument during compression.

There were two sizes, one for the arm and one for the thigh. When properly applied I found this tourniquet simple to adjust, safe in its effect on the tissues, definite in its control of bleeding, and very adaptable for the purpose in operations on the upper and lower extremities.

AUTHOR'S MODIFICATION OF GERMAN TOURNIQUET

The instrument was sent to the office of the chief surgeon, and I did not see it again. However, the principle of the design was readily recalled, and I had one made by Codman and Shurtleff of Boston, as shown in Figure 1. It is the German instrument modified in several details that I found unsatisfactory. The arms of the new instrument are heavier and so shaped as to pass over the thigh more readily and to cross in closing about the limb (Fig. 2). The joint is strongly made, and the handles are given a direction which brings them nearly parallel when the tourniquet is applied. An oblong slot is made in the center of one handle, through which passes the adjustment screw. This part of the instrument is slightly curved so that when the thumb nut is firmly adjusted with the tourniquet in position, the adjustment screw may be shifted forward releasing compression, and back again for renewed control of hemorrhage, should that be necessary (Fig. 3). The fact that this release of compression can be made without releasing the thumb nut gives one an opportunity in a simple manner to examine the stump quickly for vessels that have not been ligated, or momentarily to allow blood to enter the limb during other operations that are more prolonged.



Fig. 1. Modified tourniquet.

NECESSITY OF CONTROLLING HEMORRHAGE

Surgeons in all periods of history have sought the most efficient means of restraining hemorrhage. From the exigencies of war have come the multiplicity of measures and apparatus of which we have knowledge. When one realizes that three fourths of those who die on the battle field perish from hemorrhage directly, or from shock as a result of excessive loss of blood, it is evident why the problem has demanded the utmost thought and consideration in all ages.

Tourniquets employed in civil practice are almost without exception the products of war, or ideas which have arisen from the study of military surgery; and now that the greatest war of all times is passing into history, it is logical that surgical thought should become more accurately focused on the causes of surgical failures in the field and on a study of the principles thus learned so far as they apply to surgery in civil life.

It is common knowledge that nature stops hemorrhage from small vessels and not infrequently from arteries of large caliber. This is brought about by the natural process of retraction of the severed ends into the surrounding cellular tissue, and by contraction of the circular fibers so as to diminish the caliber of the vessel. In bleeding from vessels of large size, this process is not sufficient. The blood then becomes coagulated in the cellular sheath. By diminishing the area of the sheath and producing increasing pressure on the open artery, the flow of blood is retarded, allowing coagulation to continue both within and without the artery, thus closing the end of the vessel.

It is well to remember that air favors coagulability of the blood and contraction of the vessels. Thus, internal hemorrhage from vessels of moderate size is more often fatal than bleeding from vessels of the same size which are near the surface of the body. Syncope delays hemorrhage from superficial vessels, but it may recur on the return of normal blood pressure, so that such liability should not be overlooked.

It is generally known that in full flight a bullet may divide an artery like a knife, and fatal hemorrhage may ensue, and that when a large vessel is divided by a sharp instrument the loss of blood is massive, continuous and usually fatal unless the bleeding from the artery is promptly blocked by clotting of the blood between the vessel and the skin. Then pressure causes cessation of hemorrhage as just described. On the other hand, the immediate loss of blood may be only slight when complete division of the vessel is produced by a projectile, or by a spent ball tearing its way through the vessel walls. When an artery thus divided contracts, its torn intima is brought together at several points, thus aiding the formation of a blood clot. MacLeod[1] remarks:

> A considerable artery may be fairly cut across and give no further trouble beyond the first gush of blood which takes place at the moment of injury. In such cases the vessel contracts and closes itself. If only half divided, as it is apt to be by a shell or the quick passage of a ball, then the hemorrhage will be in all probability fatal.

1. MacLeod, G. H.: Notes on the Surgery of the War in the Crimea, London, John Churchill, 1858.

DEVELOPMENT OF THE TOURNIQUET

Among the artificial methods of arresting hemorrhage, the tourniquet has been employed almost universally since the French surgeon, Morel, first applied his own invention of it at the siege of Besançon. It consisted of three parts: (1) a yard and a half of strong worsted, an inch broad; (2) a pad of leather, tightly stuffed with horsehair having a loop on one side of the band to slide through, and (3) a piece of strong leather having two apertures an inch apart through which the band or ligature is passed. This tourniquet was made on the principle of creating the maximum pressure over the vessel by the use of a pad, instead of a strong general pressure around the limb as produced by a rubber bandage or elastic ligature. The latter was the method commonly used by the American forces in the recent war. All other tourniquets in use are simply modifications of the original instrument of Morel. Petit's tourniquet was the Morel appliance with a screw adjustment, a strap, a buckle and a compress. In addition there was a clamp, or horseshoe tourniquet, Dupuytren's compressor, Chariere's tourniquet, Skey's, Moore's, Tyrell's, Lambert's, and the like.

The field tourniquet employed in the Civil War was a sort of "garrot" or "Spanish windlass" and did not differ materially from that used in former wars. S. D. Gross[2] thus wrote on this topic:

> It is not necessary that the common soldier carry a Petit's tourniquet, but every one may put into his pocket a stick of wood 6 inches long and a handkerchief or a piece of thick compress and be advised how, when and where they are to be used. By casting the handkerchief around the limb and placing the compress over the main artery he can by means of the stick produce such an amount of compression as to put at once an effectual stop to the hemorrhage. This simple contrivance, which has been instrumental in saving the lives of thousands, constitutes what is callel the "field tourniquet." A pipe, knife or ramrod may be used if no special piece of wood is at hand.

The tourniquet of Petit was widely employed in civil practice, and is still used today in many French hospitals.



Fig. 2.—Side view.

DISADVANTAGES OF MOST TOURNIQUETS

Whenever a wounded soldier was brought to our operating room in France with a tourniquet firmly applied, I was apprehensive always about the vitality of the limb and its capacity to resist infection. I believe that this feeling was shared by most surgeons who were operating in the advanced zone of the army. This attitude prevailed among surgeons of the Civil War, for Prof. Charles A. Lee[3] stated that a brigade surgeon who was at the Battle of Bull Run, where more than 2,000 were wounded, informed him that the use of the field tourniquet was so frequently followed by mortification and loss of the limb that he had come to the conclusion that it was far safer to leave the wounded to nature with no attempts to arrest the flow of blood, than to depend on the common army tourniquet.

The firm application of a tourniquet for more than an hour usually meant trouble of some sort, either an intolerable degree of pain, imperfect retraction of the muscles after amputation, phlebitis, infection or gangrene, so that in some areas on the western front anything more than the temporary use of the tourniquet to control profuse bleeding was prohibited. Many of the tourniquets which I had occasion to observe on wounded soldiers were too tight or too loose or very difficult to release without removing the appliance entirely.

ADVANTAGES OF THE METAL TOURNIQUET

The metal tourniquet obviates the dangers incurred by the use of the elastic band, the elastic ligature or the various forms of a windlass control. Simply by shifting forward the adjustment screw, releasing the compression and allowing blood to enter the limb for a few seconds, at short intervals, this tourniquet may be carried effectively and without danger for many hours. It is obvious that the ordinary soldier could not be burdened with this instrument, but it could go with the stretcher bearers and be provided in every advanced dressing station.

The same principles govern the use of compression for restraining hemorrhage in war as in civil surgery where some form of the elastic ligature is the appliance now most popular in use. When applied, such a tourniquet is generally too tight or too loose, the degree of compression depending on the strength and will of the individual adjusting it. Its application should be the last thing done before the incision is made, and it should be released as soon as the main vessels are taken up by hemostats. But the tourniquet is frequently put on before the surgeon is ready to operate, and once applied it is easily forgotten during the exigencies of an operation. A nurse can be instructed readily in the management of the metal tourniquet, and in operations other than quick amputations she will release the compression for ten seconds every ten minutes by shifting the adjustment screw forward, and the operation may proceed for from one to two hours with only slight inconvenience to the operator and complete safety to the vitality of the limb. The duties of the nurse in the management of the tourniquet are definite, and the same degree of reliance can be placed on her intelligence for this purpose as we have learned to accord her in the administration of anesthesia.

The metal tourniquet should be sterilized with the other instruments. With the prepared area extended to Poupart's ligament and the gluteal fold, the instrument is placed in position within the sterile field and over a folded towel which encircles the thigh. Immediately before the operation is begun, the leg is elevated and firm compression made by adjusting the thumb nut. Further management of the clamp has been referred to above. Rubber tubing may be used on the arms of the instrument, if desired.

Secondary hemorrhage, the bane of the surgeon in operations involving infection of the tissues contiguous to the larger vessels of the extremities, is not altogether a historic vision. It is relatively uncommon, but none

2. Gross, S. D.: Military Surgery, Philadelphia, J. B. Lippincott Company, 1862.
3. Lee, C. A.: A Description of the Elastic Tourniquet, New York, George F. Nesbitt & Co., 1862.

the less dreaded by surgeons of today, as it was by those of former times. Arterial ulcerations still occur as a result of erosion from mechanical irritation, compression for sequestrums in fractures, osteomyelitic foci, and prolonged contact with rigid draining tubes. Hemorrhage from these causes has no tendency to be arrested spontaneously.[4] When secondary hemorrhage occurs from a large vessel, little can be done in time to save life unless a surgeon is near by. Under such circumstances the average nurse can accomplish little with the elastic tourniquet. Before the patient is exsanguinated, the nurse must act swiftly with a simple and trusty instrument of compression. On such occasions the speed with which adequate compression can be applied decides the issue between life and death.

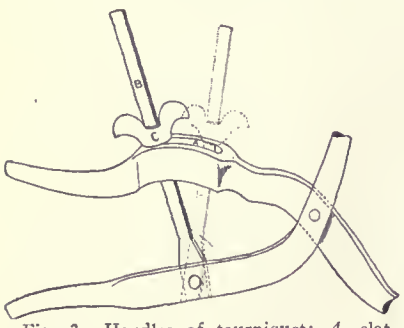


Fig. 3.—Handles of tourniquet: *A*, slot through which adjustment screw *B* passes; heavy lines represent adjustment screw holding clamp in position of compression with thumb nut *C* set; broken lines represent adjustment screw shifted and compression released.

"Simplicity, not complicity, of surgical instruments on service," though not a modern expression, is as truly the object to be aimed at today as it was many years ago when urged by Sir John Hall, inspector general of hospitals in the British army.

IODID AND BROMID PASTES AS USED IN ROENTGENOGRAPHY

PRELIMINARY REPORT

ROBERT F. SCHANZ, M.D.
FORT WAYNE, IND.

Since Cameron[1] found that watery solutions of the iodids of sodium and potassium could be successfully used as opaque mediums in roentgenography, it has also been found at the Mayo Clinic that the bromids can be used to the same advantage. At present from 12 to 25 per cent. solutions of these salts are being used for cystograms and pyelograms. Similar solutions can also be used to great advantage for the injection of chronic tracts, sinuses, cavities and fistulas. A thin, watery solution, however, is difficult to retain long enough to obtain good roentgenograms.

With the idea of finding a suitable medium for injection purposes, I undertook a systematic study of various pastes for the incorporation of iodin and bromin containing substances. Organic compounds such as iodoform, eosin and erythrosin, which contain either iodin or bromin, are inferior to the simple inorganic salts.

IODIN OR BROMIN CONTENT OF VARIOUS COMPOUNDS

Table 1 expresses the percentages of iodin or bromin in the various substances used.

Theoretically, iodoform containing three atoms of iodin in each molecule should be opaque even in more dilute solutions. Practically, this is found to hold good, as a one-third molecular solution of iodoform in ether casts a shadow of the same density as a molecular solution of either potassium or sodium iodid. Owing to the fact, however, that it is insoluble in water and only sparingly soluble in fixed oils, it cannot be used to advantage. Iodoform emulsions can be prepared, but do not prove satisfactory.

Thymol iodid (aristol) was also found to be inadaptable on account of its insolubility and low iodin content (46.1 per cent.).

Water soluble salts of erythrosin (tetra-iodofluorescein), even though each molecule contains four atoms of iodin, are unsuitable for use on account of their relatively low percentage of iodin and because of their high cost. This also serves to show that complex organic compounds of high molecular weight contain a lesser percentage of iodin or bromin than simple inorganic salts, in spite of the fact that the former contain more halogen atoms per molecule.

Eosin is too low in bromin and too expensive to be used in stronger solutions.

The inorganic salts of bromin and iodin are superior to their organic compounds in every way. From the standpoint of opacity, the iodids are better than the bromids because iodin has an absorption value considerably higher than that of bromin. It follows that the iodids can be used in weaker solutions and consequently cause no more irritation than the stronger bromid solutions.

At present the bromids cost considerably less (68 cents a pound) than the iodids ($4.05 a pound).

STRENGTH OF PASTES USED

When comparing various substances as to their absorption values, molecular solutions are used. For routine use, percentage solutions are preferable.

In the test tube, an alcoholic solution of iodin crystals, less than 5 per cent. in strength, does not cast a well defined shadow. For this reason a solution of an iodid should contain more than 5 per cent. of combined iodin to be sufficiently opaque. Thus, a 10 per cent. aqueous solution of sodium iodid contains 8.46 per cent. of combined iodin and casts a good shadow.

For the injection of chronic sinuses, etc., it is well to keep well above these limits. Iodid pastes can be made to vary from 15 to 30 per cent., and bromid pastes from 25 to 40 per cent. in strength. For routine use, a 15 per cent. iodid or a 25 per cent. bromid paste is sufficient.

TABLE 1.—PERCENTAGE OF IODIN OR BROMIN IN VARIOUS SUBSTANCES USED

Potassium iodid (KI)	contains 76.4% iodin
Sodium iodid (NaI)	contains 84.6% iodin
Iodoform (CHI_3)	contains 96.8% iodin
Dithymol-iodid ($C_{20}H_{24}O_2I_2$)	contains 46.1% iodin
Potassium bromid (KBr)	contains 67.1% bromin
Sodium bromid (NaBr)	contains 77.6% bromin
Eosin ($C_{20}H_8O_5Br_4Na$)	contains 47.6% bromin

PREPARATION OF PASTES

A serviceable paste should have these characteristics:

1. It should be nonirritating.
2. It must be thick enough at body temperature, to be retained when injected.
3. It must be free from small lumps as often it is desirable to pass it through a medium sized needle.
4. Its base should be water soluble so that it can be easily washed from an injected area.

4. Keen, W. W.: Surgery, Its Principles and Practice, Philadelphia, W. B. Saunders Company **5**: 86, 1909.

1. Cameron, D. F.: Aqueous Solutions of Potassium and Sodium Iodids as Opaque Mediums in Roentgenography: Preliminary Report, J. A. M. A. **70**: 754 (March 16) 1918.

5. It should be easily prepared and preserved.

I prepared pastes of starch, dextrin, acacia, Irish moss and tragacanth. Of these, the following were found to be serviceable:

The corn starch is suspended in the water and is then placed on the water bath. It is stirred continuously until a thick paste forms. The glycerin is then mixed in thoroughly. Glycerin forms a glycerid of starch and also prevents the surface film from forming when the paste cools. Now 15 gm. of an iodid or 25 gm. of a bromid are added. These go into solution readily without the addition of more water.

TABLE 2.—STARCH PASTE

Corn starch	10 gm.
Glycerin	16 c.c.
Water	100 c.c.

To preserve the paste and to render it unfit for bacterial growth when harbored in a tract, 0.5 c.c. of pure phenol or 1 c.c. of a volatile oil, such as oil of thyme, is incorporated. To help the surgeon in following out the tract at the time of operation, the paste is colored a deep blue with a solution of methylene blue.

The moss is first well washed in cold water. It is then placed in a beaker, the water is added, and the whole is placed on the water bath for fifteen minutes. It must be stirred frequently. The resulting mucilage is strained

TABLE 3.—IRISH MOSS PASTE

Irish moss	3 gm.
Glycerin	6 c.c.
Water	100 c.c.

through muslin and the glycerin is added. This mixture is then heated on the water bath until a thick, jelly-like paste is formed. Then the iodids or bromids and the phenol are incorporated as in the starch paste. This paste seems difficult to color.

The water is added to the tragacanth, and the mixture is stirred thoroughly and allowed to stand for twenty-four hours. Then the glycerin is mixed in. It is heated on the

TABLE 4.—TRAGACANTH PASTE

Tragacanth (powdered No. 1)	5 gm.
Glycerin	8 c.c.
Water	100 c.c.

water bath for about thirty minutes. This is sufficient to make a thick jelly-like paste. Then one proceeds as in the other pastes.

SUMMARY

1. The simple inorganic salts of iodin and bromin are better and less expensive than the complex organic compounds.

2. The starch paste is the most economical, is quickly prepared, and is very serviceable. If carefully prepared, it is free from lumps.

3. The pastes made from tragacanth or Irish moss are more elegant but are more difficult to prepare. The air bubbles found in these are driven off by heat.

3. All of these pastes are nonirritating, are easily injected, and can be removed from the injected area at once by a stream of warm saline solution, if desirable. In the latter respect they possess a decided advantage over oily preparations.

4. They are retained long enough to permit good roentgenograms to be made. If the opening of a tract or sinus is plugged with cotton after the paste is injected, the latter can be retained until operation.

5. The pastes can be sterilized in the autoclave before the phenol is added and can then be put into collapsible tubes for future use.

THE TONSIL IN RELATION TO INFECTIOUS PROCESSES*

DAVID JOHN DAVIS, M.D.
CHICAGO

Some years ago when I became engaged in the study of focal infections, interest centered largely round joint and various rheumatic lesions, and the tonsil was receiving first consideration as the probable responsible focus and portal of entry. It early became clear that in order to justify many of the charges made against the tonsil, and to solve even some of the numerous problems arising in connection therewith, we were in great need of intensive studies on certain phases of the bacteriology and pathology of these organs. Even more, perhaps, than studies designed to relate infectious lesions in various localities to the tonsil as a focus, we needed fundamental studies on the bacteriology and pathology of these organs in normal persons. I wish here to present briefly certain studies along these lines.

DISTRIBUTION OF LYMPHOID TISSUE

An interesting point appears in connection with the distribution of lymphoid tissue in the throat and gastrointestinal canal in relation to the bacterial flora. It is well known that lymphatic nodes are so distributed as to protect the body against the absorption of dangerous matter from certain well-recognized sources. Indeed, lymphoid tissue occurs, generally speaking, only in those localities where such absorption is occurring. So we have the clusters of glands at the hilum of the lungs, in the mesentery, in the axillary and inguinal regions, etc.

In the alimentary tract from the lips to the rectum there are two localities where striking accumulations of lymphoid tissue appear, namely, in the region of the throat, and in the lower small intestine, especially about the ileocecal valve and appendix. The intervening localities, like the stomach, duodenum, etc., have lymphoid tissue, but it is irregularly distributed and far less in quantity. *A priori,* this would indicate excessive absorption of dangerous matter in the localities where lymphoid tissue is abundant, and as a matter of fact this appears to be true; for in the throat and in the region just above and below the ileocecal valve we find normally the greatest number and variety of bacteria. This can readily be shown by making smear and culture preparations at intervals along the alimentary canal. If one should represent the amount of lymphoid tissue along the canal by one curve, and the number of bacteria normally present by another, the two curves would in general parallel each other. Beginning at the mouth, the curves would rise rapidly, attaining a maximum in the pharynx; they would then descend in the region of the esophagus and stomach, only to rise again in the small intestine, gradually approaching another maximum about the ileocecal valve, and then decending somewhat toward the rectum, where many of the bacteria die.

PROTECTIVE MECHANISM OF LYMPHOID TISSUE

In the throat, the palatine tonsils represent the greatest single accumulation of lymphoid tissue, while in the intestine, the agminated follicles of Peyer and the appendix represent the same. The significance of these accumulations appears to be that of a protective mech-

* From the Department of Pathology and Bacteriology, University of Illinois College of Medicine.

anism against various products of absorption, bacterial and other.

In these two localities, not only is the normal bacterial flora more highly developed, but here occurs the greatest number of infections: in the throat streptococcus, pneumococcus, meningococcus, staphylococcus infections, the viruses of numerous exanthems and other diseases; in the lower intestine, typhoid, paratyphoid, dysenteries, tuberculosis, appendicitis, etc. In the intervening localities, relatively few infections occur. The pathogenic organisms attack primarily the lymphoid structures or, at any rate, the parts rich in lymphoid tissue. It would appear that in many instances these organisms become adapted to grow in lymphoid tissue—in other words, to attack the very mechanism which the body has apparently designed for protection against bacteria. Striking examples of this are the hemolytic streptococcus infections in the tonsil and typhoid infection of Peyer's patches. Lymphoid tissue thus may not be equally protective against all bacteria. In certain infections this mechanism breaks down entirely, and instead of being protective it furnishes a fertile soil for invasion. It is on account of the prevalence of certain infections in this tissue that it may be of advantage to remove this mechanism, or a part of it, as is done in tonsillectomy and in appendectomy.

SURFACE AREA OF THE TONSILS

Another point of importance in connection with tonsil infections is the surface area involved, since this is one factor in determining absorption of bacteria and their products. The epithelial surface of the tonsils is many times increased on account of the branching crypts penetrating deeply into the organ. We have attempted to measure the total surface, and find that roughly in an average tonsil of 2 by 1.8 by 1 cm., the entire epithelial surface would amount to about 25 sq. cm. This is only an approximation. Tonsils vary markedly in size, as also in the number and size of crypts; in hypertrophied tonsils, the surface would be far greater than this. Furthermore, the surface epithelium is loose and spongy, the round cells penetrating the layers even to the surface, giving rise to the well known epithelial structure of the crypts, interpreted and spoken of as a physiologic wound. While the extent and nature of the surface are important factors in any infectious process, it is not usual for all parts of the tonsils to be involved equally. When making smears and cultures from the individual crypts in a given tonsil, one is struck by the variation in the number and the kinds of bacteria from them. Some swabs may be sterile, others may contain many bacteria; in microscopic sections of diseased tonsils certain parts of the organ, or more often certain crypts, may show marked exudation and change, other parts or crypts revealing little or no significant alterations.

PLASMA CELLS

The distribution of plasma cells in the body is suggestive in connection with infections of lymphoid tissue. Generally speaking, these cells in the body are indicative of chronic inflammation or irritation, and most writers regard them as pathologic cells, at least when found in appreciable numbers. They accumulate in masses about centers of chronic inflammation, and in general are characteristic of granulation tissue. They appear in many low-grade inflammations of the skin and mucous membranes.

The tonsils and crypts become infected at birth or within a few hours thereafter. Even pathogenic organisms very early appear, *Streptococcus pyogenes* having been noted as early as ten hours after birth. The flora of the infant mouth is largely streptococcal.

Using the local accumulation of plasma cells as a possible criterion of the absorption of bacteria or their products, I studied the time of appearance and the distribution of plasma cells in tonsils. About 240 pairs were examined for these cells. As a routine, the methyl green-pyronin stain of Pappenheim was employed. One hundred and eighty pairs had been extirpated from children and adults, and about sixty pairs came from necropsies on subjects of various ages ranging from fetuses to the very aged; seventeen were from infants less than 3 months old.[1]

The results briefly were as follows: These cells are not found in tonsils of the fetus or of the new-born. They make their appearance regularly about the second or third week, and are always found thereafter. In children several months old they are constantly found, usually in abundance. They are present throughout life and even to very old age (88 years) regardless of the anatomic condition of the tonsil. In pathologic tonsils, and especially in hypertrophy, they are very numerous. They occur under the epithelium of the crypts along the strands of connective tissue, and clustered about small blood vessels.

In view of the rôle that these cells play in general pathologic processes, and since they occur so regularly in tonsils a short time after the entrance of bacteria, one is led to suggest that their presence here indicates a chronic infection focus where absorption of irritating products is constantly occurring. Aschoff has noted the same facts in connection with the appendix. Along the entire gastro-intestinal canal, too, one observes large numbers of plasma cells under the mucosa and, especially in the region of lymphoid follicles. These facts are quite in harmony with the observations made by Adami and others on the more or less constant penetration of the mucosa by organisms and termed "subinfection." No doubt many bacteria are constantly passing through the alimentary wall into the lymphatics and blood stream, there to be disposed of in different ways. To these bacteria and their products after penetrating the epithelium, the plasma cells probably offer the first barrier or line of defense. In the sense, therefore, that the term subinfection has been used in connection with the condition of the so-called normal tonsil, or in the sense in which Aschoff uses the term "chronic inflammation in the appendix," we may regard all tonsils as chronically inflamed a short time after birth. One should, however, interpret rationally such findings in tonsils; and when the terms are used as above they should not necessarily convey the idea of a dangerous or serious pathologic state requiring surgical intervention. Nor should they be interpreted as a focus of infection in the sense in which that term is now commonly used.

BACTERIAL FLORA OF TONSILLAR CRYPTS

The statement is often made that the flora of the tonsils and the crypts is abundant and varied. This does not appear to be true. By no means will any or every germ that enters the tonsil live and develop there. Recently, in our laboratory, Miss Sexsmith tested the viability of a number of organisms in the crypts. After

1. Further details are given by the author in the Journal of Infectious Diseases **10**: 142, 1912.

careful cultures of a crypt for control purposes had been made, a few drops of a live bacterial suspension were injected into it by means of a curved blunt needle. Daily cultures then were taken of the crypt. *Bacillus prodigiosus* after injection gradually became less numerous, and at the end of the fourth day had completely died out. Injection of *B. pyocyaneus,* a pathogenic chromogen, caused a slight reaction in the throat lasting a day or two. The organisms gradually diminished in number, and by the fifth day had disappeared. *B. coli* will likewise disappear in the course of a few days. It is evident from these data that certain bacteria, even those well adapted to grow in certain parts of the body, will not flourish in the tonsillar crypts. In other words, it is not proper, as has been done, to look on the tonsil crypts as a cluster of culture tubes set in the upper part of the alimentary canal, growing numerous varieties of bacteria and discharging them into the lumen. As we shall see, the flora of the tonsils is a highly specialized one, restricted quite definitely to a few varieties.

From the anatomic structure of the tonsils, one might expect organisms requiring varying degrees of oxygen tension to thrive here. A few years ago I reported some work on the so-called actinomyces-like bodies often found in the crypts.[2] Since then, further work has confirmed the observations made at that time. These bodies are found in 30 per cent. or more of tonsils, and are composed of three kinds of organisms evidently growing together in symbiosis: fusiform bacilli, spirochetes and streptococci. The fusiform bacilli grow under anaerobic conditions, and in the crypts develop into a cluster of filaments, forming a central stalk about which the fusiform rods are arranged perpendicularly, closely resembling the structure of a test tube brush. Scattered throughout this growth are very large numbers of spirochetes, actively motile. The streptococcus forms in these masses have recently been studied in detail by Pilot and myself. There are hemolytic and nonhemolytic varieties. The hemolytic are aerobic and quite like the varieties that occur commonly in the throat. Many of the nonhemolytic streptococci from these granules are distinctly anaerobic when first cultivated. They exhibit a green halo on blood agar plates, and if the initial cultures are not made anaerobically they will not appear. After a few transplants under aerobic conditions, however, they will adapt themselves to grow equally well in the presence of oxygen. This anaerobic property of the green strains is very definite and is readily discernible in the first series of cultures. According to Holman's classification they belong to *Streptococcus mitis* and *Streptococcus salivarius* varieties. They are not highly virulent for rabbits, being comparable in this respect to the ordinary *Streptococcus viridans* of the buccal mucosa.

Fusiform bacilli.—B. fusiformis occurs in the crypts either in the granules as above described, singly or in small, loose, irregular clusters. In either form they are probably found in all tonsils at some time or other. They appear quite like the bacilli occurring about the teeth. I am inclined to the view that the crypts are the normal and usual habitat of these bacilli. From here they readily infect the mouth, especially the teeth, when these are not properly cleansed or are decayed or pyorrheic.

The possible relation of these bacilli to the infections included under the term Vincent's angina is interesting. A preparation from a Vincent lesion is indistinguishable from one made from a tonsil granule. On the tonsil, Vincent's angina often begins about the mouth of the crypts, and may involve the sides. The question arises whether or not the fusiform bacilli of the tonsil crypts are a common source of the organisms in Vincent's angina, the crypts serving as the primary breeding grounds for them. These bacilli, together with streptococci, are a common cause of brain abscess resulting from bronchiectatic cavities in lungs, where these bacilli find favorable conditions for development. Presumably they pass down to the bronchi from the tonsils or teeth. Brain abscesses have followed tonsillectomy.

Streptococci.—Some years ago when studying the bacteriology of extirpated tonsils from certain cases of chronic infection, I noted a striking difference between the surface flora and the crypt flora of tonsils.[3] On the surface the predominant organisms were of the *Streptococcus viridans* type, whereas the predominant organisms in the crypts of the same tonsil were as a rule hemolytic streptococci. The exceptions were few. The difference was so striking that at first I attributed great significance to this point, since the hemolytic varieties are so much more virulent as a rule than the green varieties. Later I found that most tonsils, regardless of the associated condition, contained a similar flora. Hypertrophied tonsils especially, but also others that show no noteworthy pathologic condition, reveal the same distribution of the varieties of streptococci on the surface and in the crypts. Pilot in our laboratory recently also examined 100 tonsils, extirpated chiefly for hypertrophy, though many were normal in size. Hemolytic streptococci were found on the surface in 61 per cent.; they comprised usually less than 10 per cent. of the total number of bacteria. In the same throats from which these tonsils were removed, cultures taken just before extirpation yielded 43 per cent. positives. Crypt cultures yielded 97 per cent. positives, and in almost all the hemolytic variety was greatly predominant. Furthermore, in another series of twenty-four normal persons, cultures from the throat and pharynx yielded hemolytic streptococci in 58 per cent.; in nineteen persons without tonsils, cultures similarly made gave positive results in 15 per cent., and in these persons were found either bad teeth or tonsil remnants.

It appears from these results that the crypts are an almost constant source of hemolytic streptococci, and this location may be considered in a way their normal habitat. We have not been able to find that any other part of the body so constantly harbors them. The throat, as we have known for a long time, is their chief source and habitat in the body, and it would now appear that the crypts of the tonsils usually supply the throat with these organisms. From the throat they may be distributed to various parts of the body by contact and otherwise. Or they may be transferred to other persons through the usual channels by which respiratory diseases are transmitted.

In the isolation of streptocicci from crypts of tonsils, certain technical points should be kept in mind. In extirpated tonsils the organ should be cut lengthwise with a sterile, sharp knife; and then with a sterile forceps the crypts may be opened, more incisions being made if necessary, and cultures taken with a platinum

2. Davis, D. J.: J. Infect. Dis. **14**: 144, 1914.

3. Davis, D. J.: The Pathology and Bacteriology of the Faucial Tonsils, etc., J. Infect. Dis. **10**: 148, 1912.

loop from the depths of several crypts. It is necessary to do this for the reason that one crypt may be practically sterile and an adjacent one may contain many streptococci. This is not the rule, however; hemolytic streptococci when present at all are usually found in all or nearly all the crypts. Cultures of both tonsils should be made, since the organisms may be found on one side and not on the other. In tonsils from fresh postmortems the technic is essentially the same, and one finds the organisms commonly in such material.

In making cultures from tonsils in situ, certain difficulties are encountered. A small elongated loop of heavy wire should be inserted deep into several of the crypts, turned from side to side when in position, then carefully removed without touching other structures, and at once plated on blood agar. The green streptococcal colonies are usually present with the hemolyzers under these conditions, often in large numbers, since they are carried away on the wire from about the mouths of the crypts, where they are found abundantly. Excepting in acute infections of the tonsils, the cheesy or purulentlike material that exudes from the tonsillar crypts on pressure is no more, indeed is less, apt to contain hemolytic streptococci than the empty crypts. Much of the fluid material expressed from tonsils, enlarged or otherwise and commonly called pus, is not purulent when examined microscopically.

In conclusion, this point deserves emphasis: Nearly every one is harboring typical hemolytic streptococci in his tonsils which have not been differentiated from strains that cause serious infections, pneumonias, etc. Presumably such infections may or may not cause arthritis, iritis and other so-called focal infections; but finding them in the tonsil may mean nothing in relation to a possible systemic disease. Should one find abscesses or other definite pathologic lesions in the tonsils, a bacteriologic examination may be of value in determining the cause of an associated condition.

SUMMARY

In order to understand clearly the genesis of certain diseases, it is necessary to study intensively a suspected focus of infection, like the tonsil, in both normal and infected persons.

Lymphoid structures attain two maxima of distribution: one in the throat and another in the region of the ileocecal valve and appendix; these maxima correspond in general to the normal distribution of bacteria in the alimentary canal. At these points also the greatest number of pathogenic micro-organisms attack the body.

Plasma cells appear shortly after birth (therefore after infection) under the mucosa, and their presence probably indicates chronic absorption of infectious and other material.

Certain organisms injected into the crypts of the tonsils disappear in a few days. The flora normally found in the tonsils is a restricted one.

Actinomyces-like granules, composed of fusiform bacilli, streptococci and spirochetes growing together, appear as more or less normal inhabitants of the crypts. Here may be an important source of *B. fusiformis* in certain infections about the mouth caused by this organism.

In the tonsil crypts, *Streptococcus hemolyticus* is almost constantly found. This focus is one source of these organisms in the throat and adjacent structures. This fact must be considered in making throat cultures and in a study of the problem of hemolytic streptococcus carriers.

TWO UNUSUAL CASES OF PYELONEPHRITIS

PAUL W. ASCHNER, M.D.
NEW YORK

There is considerable divergence of opinion as to the surgical indication in cases of unilateral pyelonephritis. Recently the pendulum of opinion has swung toward conservation of the diseased kidney, decapsulation and nephrotomy being advocated as the procedures of choice. Some have taken a middle ground and are guided by the bacteriology of the urine obtained from the involved organ by means of the ureteral catheter. They choose nephrotomy for bacillary infections (such as *B. coli* and *B. pyocyaneus*), and reserve nephrectomy for coccus infections (such as staphylococci and streptococci). If it is remembered that in any infection the reaction of the human organism to the invading bacteria has an importance at least equal to that of the type of micro-organism, it follows that no hard and fast rule of this kind is to be relied on.

The decision must be made, rather, on the basis of the patient's clinical condition, on the estimation of his natural powers of resistance, and on the margin of safety. It is apparent from an examination of the pyelonephritic kidney with its diffusely infiltrated parenchyma and miliary foci of suppuration that the operation of decapsulation and nephrotomy cannot effectually remove or drain the infected tissues. The most it can accomplish is relief of tension and engorgement. Here the surgeon places his reliance on the patient's natural powers of resistance to bring about a resolution of the inflammation. The operation does not remove the focus, does not protect against extension and metastasis (the other kidney may become secondarily infected through the blood stream), and moreover exposes the patient to secondary hemorrhage, to recurrence of infection, and frequently to the dangers of a difficult secondary nephrectomy. A decision necessitating the weighing of these factors requires the nicest of clinical judgment. Primary nephrectomy is by far the safer procedure in patients showing evidence of severe septic absorption and of renal insufficiency with nitrogen retention, and in patients whose illness has been of long standing with resulting loss of weight and strength. In these patients, whose margin of safety is small, it is life which must be conserved first, and without delay.

With the object of illustrating these principles, two unusual cases of pyelonephritis are reported.[1]

REPORT OF CASES, WITH COMMENT

Case 1.—*History.*—A man, aged 53, admitted, July 20, 1919, had experienced some difficulty in starting the urinary stream for two months. Urination had been painful and frequent, especially at night. There was no hematuria. Five days before he had suffered complete retention of urine and had been catheterized every eight hours. For the last two days he had complained of nausea and vertigo, and had vomited once.

Examination.—The patient, admitted at night, was a pasty looking, anemic man with a distended bladder, and a moderately enlarged prostate. A soft catheter was readily passed by the intern: 20 ounces of turbid urine were obtained, and the catheter left in situ. The urine showed a trace of albumin, many leukocytes, a few red cells and granular casts. Blood chemistry showed urea nitrogen, 46.2; incoagulable nitrogen, 96.9; uric acid, 5.5, and creatinin, 1.4. There

1. From the Surgical Service of Dr. Howard Lilienthal, Mount Sinai Hospital, presented before the Section on Genito-Urinary Surgery, New York Academy of Medicine, Dec. 17, 1919.

were evidences, therefore, of nephritis and azotemia. The systolic blood pressure was 140, and the diastolic, 90. Fundus examination was negative.

Clinical Course.—Twenty-four hours after admission and the insertion of the indwelling catheter, the temperature had risen from 99 to 104 F., and the urine had become bloody so that a phenolsulphonephthalein test could not be made. The next morning, fever persisting, permanent drainage was stopped and catheterization at intervals was substituted. The patient continued a febrile course (101 o 103 F.) and complained of dysuria and frequency. At each catheterization a residual of several ounces of very purulent, foul urine was obtained. On the fifth day, the temperature was 104.4, and uremic symptoms appeared. The patient rapidly became disoriented, delirious and unmanageable, with involuntary urination and defecation, so that special nurses were required. Hot packs, colonic irrigations and diuretics were instituted. Although the output was increased by forcing fluids, the urine showed a great deal of pus, anl was not improved by frequent bladder irrigations. The blood chemistry now showed (July 27) urea nitrogen, 56, and incoagulable nitrogen, 117. The phenolsulphonephthalein test showed only 15 per cent. excretion in two hours. Blood count demonstrated leukocytes, 19,000, and polymorphonuclears, 84 per cent. A blood culture was negative.

The cystoscopic examination revealed intense cystitis, marked trabeculation, enlargement of the middle lobe, and very marked enlargement of the lateral prostatic lobes projecting into the posterior urethra. Because of trigonal edema and the prostatic enlargement, ureteral catheters could be passed only for 1 cm. No indigocarmin was seen coming from either ureter during thirty-five minutes' observation.

A roentgenographic examination revealed no renal or ureteral lithiasis, but multiple fine concretions were seen in the prostate.

For a few days there was improvement, the temperature coming down to 99; but it rose again to 103, and the uremic symptoms became more marked. There had been slight tenderness in the left costovertebral angle which now became marked, and the lower pole of the left kidney became palpable. August 5, the left ureter was catheterized, purulent urine obtained, culture of which showed *B. pyocyaneus* and *Staphylococcus albus.* The ureteral catheter was left in situ and drained 30 ounces of purulent urine in twenty-four hours. The systemic symptoms progressed, nevertheless; chills and fever appeared, and the azotemia increased, the blood now showing urea nitrogen, 71; incoagulable nitrogen, 176, and creatinin, 5.3, the danger point having been reached.

August 8, cystoscopy demonstrated a clear urine from the right kidney, and I decided to explore the left kidney, as there seemed no doubt that it was the seat of an acute pyelonephritis which was endangering the life of the patient. Under gas and oxygen anesthesia the left kidney was rapidly exposed through the lumbar route. It was found enlarged to half again the normal size, congested, flea-bitten in appearance, and without gross abscess formation. In view of the very evident septic and toxic condition of the patient, a nephrectomy was performed. On sectioning the ureter, I found it bifid. The wound was closed with drainage.

The specimen showed an acute diffuse infiltration of the cortex and pyramids in a kidney with a bifid ureter and double pelvis.

Although loath to do so, I placed a permanent catheter in the bladder to avoid retention and its effects on the remaining kidney. The immediate results were striking. The temperature came down to 101 in forty-eight hours, and to normal on the sixth day. The uremic phenomena disappeared in twenty-four hours; the urinary output rose from 40 to 80 ounces a day, the fluid intake remaining the same.

Two weeks later (August 22), phenolsulphonephthalein test showed first appearance in forty minutes, and 10 per cent. excretion in two hours. Suprapubic cystostomy was performed with procain. Nine days later (August 31), the phenolsulphonephthalein appeared in twenty minutes, and 19 per cent. was excreted in two hours. Blood chemistry showed urea nitrogen, 25; incoagulable nitrogen, 60; uric acid, 1.6, and creatinin, 1.4. With gas oxygen anesthesia suprapubic prostatectomy was performed, the adenoma with its numerous sandy concretions being readily enucleated. The suprapubic wound healed in three weeks. A phenolsulphonephthalein test, December 6, showed first appearance in ten minutes, and excretion of 42 per cent. in two hours.

The history of this case presents a number of interesting features: 1. The sudden appearance of virulent infection apparently precipitated by the indwelling catheter. 2. The presence of numerous concretions in the prostatic adenoma. 3. The infection of a kidney showing congenital anomaly. I did not allow my curiosity to tempt me to make a pyelogram of the healthy kidney. It may or may not be anomalous, and anomalous kidneys are more prone to infection than normal ones. 4. The picture of uremia produced by the unilateral pyelonephritis and its immediate disappearance after removal of the offending organ. 5. The excellent functional result, the patient now having a better phenolsulphonephthalein excretion that at any previous observation.

CASE 2.—*History.*—A man, aged 42, who had been ill for two years, stated that his urination had been frequent for many years, at times every half hour, and that it had been accompanied by burning. About two years before he had begun to have gastric symptoms and had lost weight. There had been fulness and nausea after meals and occasional vomiting of food eaten four or five hours previously. A gastro-enterologist made roentgenographic examinations and diagnosed the condition duodenal ulcer (the appendix had been removed seven years before). About a year before he had noticed that the urine was turbid, and he had had fever and chills for a few days. He had had several attacks since. Only twice had there been severe pain, referred to the epigastrium and back, and lasting about twenty-four hours. Since that time urination had been frequent (every one to one and one-half hours), and there had been pain at the tip of the penis. Occasionally there had been a dull ache in the right lumbar region. He had been recently under the care of a urologist who had treated him ten times with some instrument for disease of the verumontanum. While under this therapy he had been having attacks of fever and chills.

Examination.—On examination at my office the patient appeared pale and thin and had apparently lost considerable weight. The urine showed pus. There was definite tenderness in the right hypochondrium, and here a mass was felt, probably the kidney. There was no tenderness in the back. A preliminary diagnosis of right renal calculus with infection was made, and the patient referred to the hospital. He came to the hospital four days later, having been in bed with fever and chills. Here we found the same physical signs.

Cystoscopy detected no obstruction in either ureter. The left side yielded clear urine, and phenolsulphonephthalein injected intravenously appeared in nine minutes; the right side yielded a urine containing clumps of pus cells, and phenolsulphonephthalein appeared in fourteen minutes. Wassermann reaction and blood culture were negative. Bladder urine showed *B. coli,* but ureteral urine yielded no growth. Total phenolsulphonephthalein was 48 per cent. and blood chemistry was normal (urea nitrogen, 16.8; incoagulable nitrogen, 38.8; uric acid, 4.0, and creatinin, 1.4).

Roentgenoscopy of the stomach and duodenum was negative. A roentgenogram of the genito-urinary tract showed no stones in either kidney, but three shadows were seen in the right lower ureteral region. Stereoscopic plates with opaque catheter in place showed these to be extra-ureteral shadows. A pyelogram made with 15 per cent. sodium bromid as the opaque substance showed an enlarged pelvis and calices, but no irregularity in form.

Treatment and Results.—November 6, as fever persisted and as leukocytosis of 20,000 with 90 per cent. polymorphonuclears was present, it was determined to expose the right kidney. Just before operation a catheter was again passed up the right ureter and a specimen of purulent urine obtained for culture.

Under gas and oxygen anesthesia the usual lumbar incision was made, and an enlarged kidney was found high up under the diaphragm. It was readily freed and delivered, and showed under the capsule several minute areas of infiltration. The organ was congested, and softer than normal in consistency. Decapsulation was performed, the kidney split longitudinally, and a soft phosphatic stone (not seen in roentgenograms) removed from the pelvis. The cut surface of the kidney showed a few areas of infiltration in the pyramids, a specimen of which was excised for pathologic examination. Two mattress sutures of catgut were placed, one near each end of the wound to control bleeding, a dressed tube was introduced into the pelvis, two packings were placed in the perirenal space, and the wound was closed in layers. A small tube drain was placed in the muscle layers.

The culture on the right ureteral urine collected just before operation was reported "anhemolytic streptococcus." This was somewhat of a surprise, as the bladder urine had shown *B. coli*. If I had known this finding at the time of operation, I should have been induced to perform a nephrectomy at once. The section removed from the cut kidney surface showed purulent infiltration.

After operation there was little change in the clinical picture, the temperature reaching 103 F. in the afternoons. On the fourth day, the patient became drowsy and apathetic, was almost constantly nauseated, and the next day began to vomit small amounts of yellowish fluid at frequent intervals. Blood chemistry now showed urea nitrogen, 65; incoagulable nitrogen, 98; uric acid, 5.0, and creatinin, 2.4.

In view of the progressing evidences of sepsis and uremia, it was decided to perform a secondary nephrectomy on the seventh day. November 13, under gas and oxygen, the wound was opened and considerable pus found in the muscle layers. The kidney, which was easily freed and delivered, showed several large areas of purulent infiltration and infarction. It was quickly removed, and the wound loosely packed with gauze. The operation was completed in twenty minutes.

There was another chill after operation, and the patient's condition was poor. The vomiting which was present before nephrectomy increased in frequency and amount and was not relieved by lavage or change in position. The vomitus was thin and yellowish brown. The abdomen was distended, but soft throughout. The picture was that of an acute postoperative gastric dilatation; at least, so we thought.

On the second day, the wound was dressed and found dry and clean. A transfusion of 400 c.c. of blood was made by the Unger method. The symptoms continued, however, the temperature rose to 105, and death occurred on the third day after nephrectomy.

Examination of the wound, which was wide open, revealed a small amount of serosanguineous fluid exuding from it. The wound was free of blood and there was no communication between the perinephric space and the peritoneal cavity. When the peritoneum was opened, greenish yellow pus was found among the intestinal coils and especially in the pelvis. The left kidney was normal except for cloudy swelling. The culture of the pus showed anhemolytic streptococci and colon bacilli.

I was present at the examination and saw a layer of fat and granulation tissue between the perinephric space and the peritoneal cavity. In the peritoneal cavity were no omental or other adhesions. Most of the pus was in the pelvic pouch. As there was no evidence of any peritoneal injury, it would appear that the peritonitis was either metastatic or that it had occurred by extension. Of the two possibilities, the metastatic origin appears more likely. I believe that the vomiting which set in on the fourth day after nephrotomy marked the onset of the peritonitis—in other words, the peritonitis was already present when the nephrectomy was performed. My belief is that a primary nephrectomy would have saved this man as it did the first patient.

103 East Eighty-Fourth Street.

Clinical Notes, Suggestions, and New Instruments

TRANSPOSITION OF VISCERA WITH MULTIPLE MALFORMATIONS

W. B. TOY, M.D., AND A. G. ELLIS, M.S., M.D., BANGKOK, SIAM.

Transposition of viscera, partial or complete, is an uncommon but not a rare condition. Malformation of organs, especially of the heart and its great vessels, is still more often found. An unusual combination of the two in an infant from the obstetric department of the Siriraj Hospital, Bangkok, appears worthy of record.

REPORT OF CASE

Clinical History.—Nang Nien, a Siamese woman, aged 27, came to the hospital for her third confinement. The personal histories of the patient and her husband were negative. Her two previous labors had been normal. The first child died at 3 years from chronic diarrhea; the second was still living. Physical examination of the woman gave no evidence of disease. The child was in the left occipito-anterior position, and no abnormal symptoms occurred during pregnancy. Labor came on at full term and was quite easy, lasting three hours. The child was of good size, well formed and well nourished, and was apparently normal. Respiration began spontaneously, but cyanosis developed. This condition increased in intensity until death, which occurred five hours after birth, apparently from heart failure.

Postmortem Findings.—The subject was a boy in whom cyanosis, especially of the head and trunk, was pronounced.

Abdomen: The position of the abdominal organs was largely the reverse of normal. The colon occupied the left side. The rectum and sigmoid were distended by meconium, the sigmoid forming a loop that extended to the right of the midline just above the pelvis, but which was chiefly on the left side. The cecum and caput coli were slightly below and to the right of the splenic flexure of the colon; they lay anterior to the other structures, with the appendix projecting downward. The segment of the colon corresponding to the ascending and transverse portions was coiled posterior to the cecum, between the midline and the splenic flexure.

The liver was large, occupying the entire width of the abdomen, the parts on each side of the median line of the body being approximately the same in size and shape. The fissure for the umbilical vein and the quadrate and spigelian lobes were to the left of the midline of the organ; the gallbladder was to the right. Conditions as a whole would not warrant the assertion that the liver was on the left side of the body, although a further suggestive point was that the suprarenal on the left side resembled the right in shape and was adherent to the under surface of the liver.

The stomach was on the right side, where it occupied the same relative position as it normally does on the left.

No trace of a spleen could be found.

Thorax: The thymus gland was a short, thick organ, approximately 5 cm. long, 6 cm. broad, and 1 cm. thick. The left was slightly the larger of the two lobes. The pericardium and heart were on the right side to the same degree that those structures are normally on the left.

The heart appeared of the usual size. The sides were reversed, the inferior and superior cavae emptying into the auricle on the left, the pulmonary veins into the auricle on the right side. One large vessel emerged from the base of the ventricles and continued as the aorta. It had the usual three branches from the arch and a normal right bronchial artery. Through a small incision made into each ventricle near the apex, a probe passed from each cavity into the aorta. Through an opening in the interventricular septum apparently 1 cm. in diameter, the probe could be passed from one ventricle to the other. A pulmonary artery was not present.

The right pleura contained 100 c.c., the left 40 c.c. of serum. A decision as to transposition of the lungs was impossible

because each had four lobes of the same relative size. The lung on the right side was slightly smaller, but the difference might very well have been due to the greater amount of pleural fluid on that side. Both lungs were expanded throughout.

As it was considered desirable to preserve the entire body as a specimen of transposition, the heart was not further opened, and only the liver was removed in order to expose the stomach. No other abnormalities were noted.

Anatomic Diagnosis.—Transposition of viscera; absence of pulmonary artery; patent interventricular septum; four-lobed lung each side; absence of spleen; bilateral hydrothorax; cyanosis.

COMMENT

Of the conditions present in this child, the rarest is absence of the pulmonary artery. As literature on the subject is not available, we report the case without statistics.

PULMONARY ANTHRAX: REPORT OF A CASE

W. R. BROOKSHER, JR., M.D., AND J. A. BRIGGS, BINGHAMTON, N. Y.

Intern, City Hospital, and Pathologist, Kilmer Memorial Laboratory, Respectively

It is believed that the rarity of true pulmonary anthrax warrants the report of the following case.

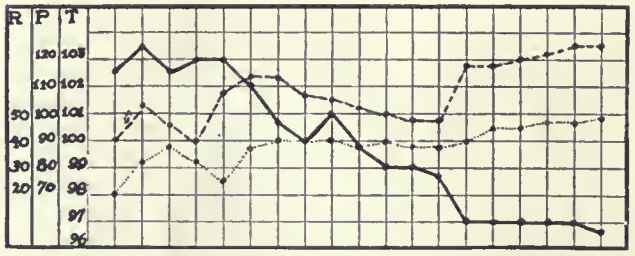
REPORT OF CASE

History.—M. P., a Pole, aged 36, a worker in the tannery of a local shoe manufacturing concern, was recommended from the factory dispensary to the service of Dr. D. C. O'Neil, through whose courtesy the case is reported. The tentative diagnosis was bronchopneumonia. A complete history was not obtainable, but the salient feature was that the patient had been suffering for one week previously with a sore throat and a pain across the right chest. It was discovered that the patient had been handling "green" hides in the tannery for some time before the onset of symptoms, but the exact period was not ascertained. There had been no treatment of any sort, and the patient was sent to the hospital from the dispensary immediately after examination.

Physical Examination.—The patient was well developed and well nourished and apparently in good physical condition. The skin was moist and relaxed, with no visible lesions of any kind; a moderate cyanosis was observed in the buccal mucous membrane and at the finger tips; there was no irregularity of the pulse rate, the volume and tension being about normal, the sphygmomanometer reading was: systolic, 118; diastolic, 78; the radial arteries were readily compressible and not thickened; respiration was most difficult, and it was this dyspnea which first attracted attention to the possible seriousness of the attack. Ordinary examination of the throat and pharynx revealed no pathologic condition other than a slight congestion of the mucous membrane. Smears were not taken. A thorough examination of the chest presented no evidences of a pneumonitis—there was no dulness, no increase of fremitus, nor any discoverable abnormalities other than numerous coarse, moist râles over the entire surface of both lungs. There was no apparent cardiac involvement, hypertrophy was not evident, and the valvular sounds were clear and distinct. There was no distention or rigidity of the abdomen, and no points of tenderness were found. The extremities were normal. Bowel evacuations had been regular, and there had been no urinary disturbances. Prolonged coughing spells, productive of considerable pinkish, frothy mucus, seemed by their intensity to annoy the patient more than the more evident dyspnea. The diagnosis depended, therefore, more on the notation of the subjective, rather than by elicitation of any objective, signs.

Clinical Course.—On admission, the temperature was 101.3 F., pulse rate 92, and respiration rate 20. General treatment was instituted, embodying heat to the affected side of the chest, a mild mercurous chlorid series followed by oleum ricini, with the administration every four hours of 2 grains of caffein sodiobenzoate and 10 grains of potassium citrate. During the night it was noted that the patient perspired freely with a rise of the temperature to 103.2, the pulse and respiration rate being 102 and 32, respectively. On the following day the patient appeared fairly comfortable except for some slight nausea with emesis in the early afternoon. In the evening, the cyanosis and dyspnea were noticeably greater, and on account of the fact that anthrax bacilli had been detected in the sputum, the patient was transferred to an isolation ward and 50 c.c. of antianthrax serum were given intravenously, supplemented by hypodermic injections of $\frac{1}{100}$ grain of atropin sulphate with 10 minims of epinephrin (adrenalin) chlorid (1:1,000 solution) every three hours. The expectoration became more profuse, and gross blood was apparent. The patient slept well during the night, took his nourishment well, and showed no untoward effects of the serum. There was, in fact, an appreciable improvement, respiration became less laborious and the cyanosis was less marked. During the following day, the orthopnea, previously slight, became exaggerated, the respirations were increased to 40 per minute, and the pulse rate rose to 118, while the temperature dropped to a normal level. In the early morning of the fourth day in the hospital, the respirations were even more labored and the pain in the right chest was reported as more severe. Cyanosis increased, the extremities became cold, the temperature reached 97, and the pulse was weak and irregular with a rate of 128. Although vigorous stimulation was resorted to, the patient died; necropsy was refused.

Laboratory Findings.—Routine urinalysis on admission was negative and the blood count revealed 15,000 leukocytes, the increase being principally of polymorphonuclear neutrophils.



Temperature, pulse and respiration ratio (four hour intervals): solid line, temperature; broken line, pulse; dotted line, respiration.

A count made two days later gave 20,200 leukocytes, with the same relative differential. On admission the sputum was typed for pneumonia, and it was then that many large, nonmotile, gram-positive bacilli, morphologically resembling the anthrax bacillus, were discovered. To confirm or deny the suspicion, a blood culture was taken, the culture medium being glucose agar. Colonies were numerous at the end of twenty-four hours and the same bacillus was found in pure culture. A suspension was injected intraperitoneally into a guinea-pig and a rat; the pig succumbing in twenty-four hours and the rat twelve hours later. On necropsy of the animals there was noted the characteristic enlargement of the spleen, with distended capsule and with softened, dark and congested stroma; the liver and kidneys showed the same changes; the lungs were edematous; the peritoneal fluid was slightly blood-tinged; in the pig, hematuria was an additional symptom. From the blood of each animal the organism was recovered in great numbers, and sections of the two spleens showed the organism distributed throughout, surrounded by areas of minute hemorrhages. The forty-eight hour agar culture showed the typical tuft hair appearance of the colonies under the low magnification. In gelatin stab culture, the growth proceeded as in spicules diverging from the uppermost portion of the stab, and after forty-eight hours the gelatin about the top of the stab became liquefied. The growth in broth was evidently rapid, but the bacilli showed a tendency to sink, leaving clear broth at the top. In all smears made from culture mediums, spore formation was readily demonstrated by contrast staining, while the capsule was especially well defined in the smears made from the blood of the infected pig and rat by the Romanowsky blood stain. Hemolysis was noted in the blood

plates. The continuance of sputum typing proved the presence of a pneumococcus of Type IV, although the sputum was contaminated by numerous staphylococci and streptococci. A corroborative second sputum examination and blood culture from specimens taken the morning before death yielded essentially the same results.

CONCLUSIONS

1. Pulmonary anthrax infection can be diagnosed only on positive laboratory findings; sputum examinations and blood cultures are the means employed.

2. Early diagnosis is essential, and it would seem that vigorous treatment by intravenous administration of anti-anthrax serum offers the only hope of recovery.

3. Pulmonary anthrax may appear without the evidences of a violent pneumonia and yet prove fatal as a result of a decided clinical toxemia.

Therapeutics

A DEPARTMENT DEVOTED TO THE IMPROVEMENT OF THERAPY. A FORUM FOR THE DISCUSSION OF THE USE OF DRUGS AND OTHER REMEDIES IN THE TREATMENT OF DISEASE.

USE AND ABUSE OF CATHARTICS*

(*Continued from page 249*)

PURGATIVE PILLS

Purgative pills are among the "best sellers" in drug stores. This popularity attests to at least some measure of merit; and it must be admitted that pills are a simple, convenient, inoffensive and economical means for obtaining cathartic action. However, these very advantages also contribute to their great abuse, and cause them to lead all other purgatives as creators of the cathartic habit. Because of this, as well as because exact adjustment of dose by the physician and its gradual reduction by the patient are not as readily accomplished with pills as with other administration forms, prescriptions for purgative pills should not be given to patients unless there are positive indications for them. The triad of the careless routinistic doctor, the ignorantly "counter-prescribing" druggist, and the blatantly advertising proprietary pill promoter is responsible for having made a large number of persons "colonic" cripples — life-long slaves to pills.

INDICATIONS

Purgative pills are convenient for occasionally stimulating bowel evacuation in bed patients. There can hardly be an objection to such employment. But the habitual use of pills is justifiable only when the patient's constipation is hopeless so far as cure is concerned. This condition may exist in the toothless aged, who cannot or will not use artificial dentures, and who, therefore, do not eat enough coarse food to stimulate the bowel to proper function. It also exists in the multiparous woman, who has sacrificed the integrity of her abdominal muscles to her progeny and who, by reason of insufficiency of abdominal pressure, demands an increase in the motor activity of her intestinal musculature, which, unaided, is not equal to the task.

Sedentary habit, on the other hand, is no justification for purgative pill enslavement, unless heart disease or other physical defect renders a sufficiency of muscular exercise impossible. The attempt to purchase freedom from some of the ills of sluggish habits of life by the habitual use of "liver" pills should be depreciated; other important organs besides the bowel functionate below par in the sedentary person.

When it is a question of the use of the crutch or not walking at all, we choose the crutch as the lesser of the two evils — and so it is with purgative pills. In case chronic use becomes a necessity, pills are superior to all other administration forms of cathartics, chiefly on account of their convenience.

PILL ECONOMY

To minimize as much as possible the use of purgative pills, patients should be directed to use a pill at the end of any day on which they have not had bowel evacuation. The patient will then not take the pills oftener than once every other day; and, not as often, should a spontaneous tendency to bowel movement manifest itself. Thus the patient will have a thorough bowel evacuation at least every other day.

The important thing is to fit the patient as exactly as possible with the agent or agents best suited for him and in the smallest dose required by him. There is no sense in prescribing too mild a pill, and having two or three of these taken for an indefinite time, when one pill of exactly the required strength might as well be prepared. This is one of the chief objections to ready-made pills, even though they be official.

PRINCIPLES OF PILLS CONSTRUCTION

While *curare cito, tuto et jucunde* is our aim, simple prescriptions must be preferred to complex prescriptions, provided they produce as good results. The more complex the remedy, the more unmanageable and liable to unforeseen complications does it become. Nowhere is the principle of simplicity in prescribing more sinned against than in connection with cathartic pills.

The two chief reasons for combination are: mutual reinforcement, and the antagonizing of undesirable side effects. Mutual reinforcement is best obtained by what might be called *"heterotopic synergism,"* i. e., the cooperation of agents affecting different functional subdivisions of the organ to be acted on, whereby a result may be obtained with smaller dosage of each of the ingredients than if they were employed uncombined.

FUTILITY OF THE A. S. B. COMBINATION

A good example of an attempt at "rational" combination for both these effects is the "A. S. and B." pills (Pills of Aloin, Strychnin and Belladonna, N. F.).

Nothing may seem more logical than to add to the aloin some strychnin for the purpose of increasing the irritability of the motor neurons on which the aloin is to act; nor might it seem that anything would be more suitable to counteract the reputed tendency of aloes to produce griping than the powerful antispasmodic, belladonna. Unfortunately, by utilizing them in pill form at the same time, they cannot possibly act together, because of the different speed and duration of action of the three agents. Aloin is slow in action, requiring from ten to twelve hours — that is why it is generally given at bedtime. Strychnin and atropin, on the other hand, are rapidly absorbed and rapidly excreted, having but a brief duration of action. No experienced clinician would expect either of these

* This is the sixteenth of a series of articles on the pharmacology, physiology and practical application of the common laxatives and cathartics. The first article appeared October 18.

alkaloids to act for more than four hours. By the time the aloin gets its action in, the alkaloids have long since left the system by excretion into the urine.

To put these theoretical considerations to the experimental test, more than thirty volunteers in a class of medical students were given two pills each to be taken with an interval of about a week. One of these contained aloin; the other, the same dose of aloin and some extract of belladonna in the quantities found in the A. S. and B. pills. Strychnin was omitted, to reduce the experiment to its simplest terms. The pills were called No. 1 and No. 2 pills, and the experimenters did not know which of these contained the belladonna. They were asked to distinguish its presence by difference of action. The majority could not notice any difference whatever; a few thought the belladonna-containing pills were the ones that produced more griping; a few, that the simple aloin pill acted more disagreeably. Clinical use of the official *Pills of Aloes,* containing 0.13 gm. (2 grains) each of aloes and of soap, as compared with similarly extensive use of the A. S. and B. pills, did not demonstrate any greater tendency to griping displayed by the one than the other.

Admitting that the number of observations in the experiment just noted is too small for positive deductions — it ought to be repeated over and over again and would be quite as instructive as some of the animal experiments performed by medical students — the results, as they stand, support the theoretical deductions based on the relative time of action of the ingredients. After all, griping is a matter of size of dose, sensitiveness of individual, and condition of enteric contents rather than of name of drug.

It is gratifying, therefore, that the *Compound Laxative Pills* (U. S. P. VIII) similar in composition to the A. S. and B. pill, with the no doubt uncalled-for addition of ipecac, were deleted from the present pharmacopeia. However, these pills as well as the *Compoud Pills of Aloin, Strychnin and Belladonna,* N. F., containing some extract of cascara, in addition, are still extensively used.

Rather popular at the present time also are the unofficial *"Cascara Compound Pills,"* commonly called "Hinckle's Pills," each containing:

	Grain
Cascara	¼
Aloin	¼
Resin of podophyllum	⅛
Extract of belladonna	⅛
Strychnin sulphate	1/60-1/120
Oleoresin of ginger	⅛

One wonders whether they are popular because their formula is not contained in the U. S. P. and N. F.— it has been said facetiously that the best way to destroy the popularity of a preparation is to make it official. Efficiency is, of course, granted to these as well as to all the other aloes pills, no matter what their composition. The question is as to the desirability of such ridiculous polypharmacy.

OBJECTIONS TO COMPOUND CATHARTIC PILLS

The official compound cathartic pills are no less objectionable. The chief objection is that they contain a considerable amount of calomel, and that people may buy them freely in drug stores and use them indefinitely, not knowing that they are poisonous. Every now and then cases of calomel poisoning can be traced to the compound cathartic pills, taken by some misguided layman for the benefit of his "liver." In drug stores the desirable custom existed quite generally of dispensing the *Vegetable Cathartic Pills* of the National Formulary — also known as "Compound Cathartic Pills, Improved"— when people called for compound cathartic pills without a prescription.[1] The "improvement" consists in the substitution of podophyllum and leptandra for the calomel and gamboge, and in the addition of extract of hyoscyamus and oil of peppermint, so that the "improved" pills boast of ten different ingredients: aloes, extract of colocynth, cardamom seed, resin of scammony, soap, extract of hyoscyamus, resin of jalap, extract of leptandra, resin of podophyllum and oil of peppermint. Eight ingredients are far too many to meet the demands of scientific combination, namely, that each ingredient improve the action in a demonstrable manner. No one, so far as is known, has even attempted to render this demonstration for either of these pills; and while some of the ingredients might conceivably reinforce each other, that which has not been demonstrated has no existence in science. In this demonstration, aloes and each of the other ingredients would have to be compared when given separately and when combined with each other in all possible different variations. This would require, with eight ingredients, more than fifty different sets of experiments, each of which should probably include from fifty to 100 observations. Until such a demonstration proves otherwise, these combinations must be considered utterly unscientific.

(To be continued)

1. These "improved" pills were deleted from the pharmacopeia at its last revision. It is to be regretted that the others did not meet the same fate, for they are even more objectionable.

Treatment of Malaria.—The subcommittee on medical research of the National Malaria Committee consisting of Drs. Charles C. Bass, New Orleans; William Krauss, Memphis, Tenn.; William H. Deaderick, Hot Springs, Ark.; George Dock, St. Louis, and Charles F. Craig, Col., M. C., U. S. Army, presents the following as a standard method of treatment of malaria for the purpose of curing the patient of his infection and recommends its general use by the medical profession. It is believed that this treatment will, in the great majority of cases, prevent relapses in the patients themselves and also prevent transmission of the infection to others. This opinion is based largely on the results of the treatment by this method, under average conditions, in the homes, of a large number of persons infected with malaria. For the acute attack, 10 grains of quinin sulphate by mouth, three times a day, for a period of at least three or four days, to be followed by 10 grains every night before retiring for a period of eight weeks. For infected persons not having acute symptoms at the time, only the eight weeks' treatment is required. The proportionate doses for children are: under 1 year, ½ grain; 1 year, 1 grain; 2 years, 2 grains; 3 and 4 years, 3 grains; 5, 6 and 7 years, 4 grains; 8, 9 and 10 years, 6 grains; 11, 12, 13 and 14 years, 8 grains; 15 years or older, 10 grains. It is not claimed that this is perfect or even the best treatment in all cases, but it is our belief that it is a good and satisfactory method for practical use to prevent relapse and transmission of the infection to other people. In a circular letter from Senior Surgeon Henry R. Carter, U. S. P. H. S., secretary of the National Malaria Committee to health officers of states in which malaria prevails the belief is expressed by the committee that a general adoption of this method of treatment by the physicians who treat malaria will result in freeing a large number of malaria patients from infection, so that they will neither themselves suffer from relapses (of infections incompletely cured), nor be sources of infection to mosquitoes and thus to other people. This would result in a very great diminution of malaria throughout the country. If this treatment meets with approval, it is suggested that it be brought to the notice of physicians in the malarious sections of the various states and that such other measures be taken as may be feasible for its general adoption.

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SATURDAY, JANUARY 31, 1920

THE DEBATED THEORIES OF SUPRARENAL FUNCTION

In a series of contributions published in recent years from the Laboratory of Physiology in the Harvard Medical School, Cannon and his co-workers have developed certain hypotheses with respect to the functions of the suprarenal glands. They have submitted experimental evidence that the suprarenal medulla is stimulated to secrete by emotional excitement, pain and asphyxia—conditions known to be accompanied by activity on the part of the sympathetic nervous system. In natural existence, Cannon argues, these conditions would commonly be associated with more or less struggle; and the visceral changes, including suprarenal secretion, which were said to accompany the emotional states, would be useful in great muscular effort. Both the sympathetic system and the suprarenal medulla were thus interpreted to play a part in important bodily adjustments.[1] This was quite different from the view that the suprarenal acts to detoxicate harmful products in the body, or the assumption that secreted epinephrin is destined to lend tonus to certain bodily structures. Cannon has designated his view of the association between suprarenal activity and the function of the sympathetic division of the autonomic nervous system in bodily emergencies as the "emergency theory."

Cannon's views have met with criticism from several sources. In this country, Stewart and Rogoff at the Western Reserve University have insisted that there is no increase of suprarenal secretion in the emotional excitement represented by fear, rage and pain, or in asphyxia. In France, Gley and Quinquaud also have denied that a true epinephrinemia exists. Unless it can be demonstrated that there is actually an augmented suprarenal secretion in the conditions postulated, the emergency theory fails.

More recently, Cannon[2] has subjected the work of his opponents to a severe criticism, besides adding new evidence for the tenability of his earlier contentions. Heretofore, epinephrin has as a rule been tested for in blood removed from the body. It has been found, however, that when the heart is completely denervated it becomes an organ highly sensitive to epinephrin, and hence can be employed to demonstrate an increment of suprarenal secretion in the circulating blood. The denervation is accomplished by severance of the vagus nerves and removal of the stellate ganglions in experimental animals. By the use of this procedure, which seems to avoid the defects charged to the older more clumsy methods of blood removal and testing, Cannon has duplicated his earlier findings.

For the present, therefore, it would seem that the burden of proof is again thrown on the shoulders of those who deny the tenability of Cannon's emergency hypothesis. The statement made in THE JOURNAL[3] that suprarenal secretion is not a necessity, at least under ordinary conditions of existence, still seems to be valid. As Cannon remarks, thus far no reliable evidence has been brought out by any investigator that there is any secretion whatever of the suprarenal glands under quiet, peaceful conditions. He does contend, however, that in times of great emotional stress or under circumstances which cause pain or asphyxia, epinephrin is secreted. This has been the foremost item under debate. Epinephrin is regarded as an aid, not a physiologic essential. Excitement, pain or asphyxia are, in natural existence, commonly associated with violent struggle for self-preservation. Under such circumstances, says Cannon further, the operation of the sympathetic division of the autonomic system, together with the aid which epinephrin affords, will muster the resources of the organism in such a way as to be of greatest service to such organs as are absolutely essential for combat, flight or pursuit. He concludes that the emergency theory of the suprarenal medulla is the only one which thus far has any experimental support.

1. Cannon, W. B.: Bodily Changes in Pain, Hunger, Fear and Rage, New York, 1915.

2. Cannon, W. B.: Studies on the Conditions of Activity in Endocrine Glands, V, The Isolated Heart as an Indicator of Adrenal Secretion Induced by Pain, Asphyxia and Excitement, Am. J. Physiol. **50**: 399 (Dec. 1) 1919.

AN INTERPRETATION OF THE CREATINURIA OF INFANCY

Normally, the urine of the adult male never contains creatin, although the closely related substance creatinin is a never-failing component of the urine as well as of the blood. Healthy women excrete creatin at times.[4] Infants and children, on the other hand, exhibit a creatinuria regularly on normal diets and under normal conditions of health. The reason for this peculiarity of metabolism in the adolescent period has never been discovered, although various hypotheses have been advanced in explanation. Thus it has been suggested that creatinuria is associated with acidosis. These two phenomena doubtless are concurrent at times; yet this fact does not demonstrate a causal rela-

3. Is Epinephrin Indispensable to Life? editorial, J. A. M. A. **73**: 192 (July 19) 1919.

4. Creatin and Creatinin in Blood, editorial, J. A. M. A. **69**: 648 (Aug. 25) 1917; The Significance of Creatinuria, ibid. **69**: 1008 (Aug. 25) 1917.

tion between them. It would be difficult to imagine that the acid-base equilibrium, on the upset of which a true acidosis in the body depends, should be so continuously disturbed as the normal continued output of urinary creatin in childhood would demand. There is no justification in assuming for the early period of life a continuous depletion of the fixed alkali of the blood, such as the modern definition of acidosis would demand. The carefully conducted investigations of this subject recently undertaken by Gamble and Goldschmidt[5] at Johns Hopkins University show, furthermore, that variations in the acid-base intake have no effect on the creatinuria of infants. We conclude with these investigators, therefore, that there is today no satisfactory evidence that acidosis per se is a factor in the production of creatinuria.

When creatin is fed to adult man it may not reappear in the urine unless the amount introduced is a considerable one. Ingested creatinin is excreted again almost quantitatively; at any rate, it can be recovered or accounted for to a far greater extent than can ingested creatin. It may be, therefore, that the adult can utilize or assimilate creatin, although this is not true of creatinin. In the infant or adolescent child, however, the fate of ingested creatin seems to be better established. According to the latest evidence,[5] small amounts even of ingested creatin lead to an increase of the creatinuria of infants. When a diet rich in protein is given, the elimination of the ingested creatin may be practically complete. This fact has an important bearing on another hypothesis regarding the genesis of creatinuria which relates the phenomenon to the size of the protein intake. It has been observed that wide differences exist in the output of creatin by infants when the excretion on high and low protein diets is compared. Thus, Denis and Kramer[6] of the Massachusetts General Hospital have asserted that the amount of creatin found in the urine of children is directly dependent on the intake of protein, being high when large quantities of protein (creatin-free) are ingested, and decreasing and in some cases disappearing entirely when the child is fed a diet of an extremely low protein content.

Gamble and Goldschmidt[7] have called attention to the fact that experiments on high and low protein diets in infancy have usually involved feeding larger or smaller quantities of milk. Until lately the existence of creatin and creatinin in this secretion has generally been overlooked.[8] The new experiments of Gamble and Goldschmidt indicate that whereas the creatin excretion of infants bears a relation to the quantity of milk fed, this concerns the nonprotein rather than the protein constituents of the secretion. Pending further investigation of the subject, it seems logical to assume that as milk, the customary staple food of infancy, contains creatin; and as this substance, for some as yet unknown reason, is not destroyed readily in the adolescent organism, the ingestion of creatin is a large factor in the creatinuria of infancy. Whether the dietary intake of creatin is sufficient to account so well for the creatin excreted in the urine in other periods of growth remains to be ascertained by further research.

5. Gamble, J. L., and Goldschmidt, S.: A Study of Creatinuria in Infants, I, Relation of Creatinuria to Acidosis: The Elimination of Ingested Creatine and Creatinine, J. Biol. Chem. **40**: 199 (Nov.) 1919.
6. Denis, W., and Kramer, J. G.: The Influence of Protein Intake on Creatine Excretion in Children, J. Biol. Chem. **30**: 189 (June) 1917.
7. Gamble, J. L., and Goldschmidt, S.: A Study of Creatinuria in Infants, II, Relation of Protein Intake to Urinary Creatine, J. Biol. Chem. **40**: 215 (Nov.) 1919.
8. Denis, W., and Minot, A. S.: The Non-Protein Nitrogenous Constituents of Cow's Milk, J. Biol. Chem. **38**: 453 (July) 1919; Non-Protein Nitrogenous Constituents of Human Milk, ibid. **39**: 47 (Aug.) 1919.

THE DEATH OF TISSUES AND THE LIFE OF PROTOPLASM

Until a few years ago, it was assumed that the life and development of tissues and their constituent cells are bound up with the body as a whole. Body cells had not been "cultivated" in vitro in the way that has become familiar in the growth of micro-organisms of various sorts. The pioneer experiments of Harrison[1] showed the possibility of cultivating tissues outside of the body by the demonstration that embryonic tissue of the frog, transplanted into coagulable lymph, will develop normally. Subsequently Carrel and Burrows[2] succeeded in cultivating outside of the body adult tissues of mammals. These possibilities have since been demonstrated repeatedly by various investigators in different parts of the world. Not only normal but also malignant tissues have thus been grown in culture.

At first, before the experimental technic was developed to its present stage of perfection, the life of the tissue cultures outside of the body was brief. It was measured in days or weeks. When Carrel[3] announced, in 1912, that fragments of connective tissue had been kept in vitro in a condition of active life for more than two months, the problem of senility and death were put in a new light. Are they preventable occurrences due to the accumulation of waste or the lack of nutriment or some other remediable or avoidable factor? As Carrel remarked in connection with these earlier observations, it is conceivable that the length of life of a tissue outside of the organism could greatly exceed its normal duration in the body, because elemental death might be postponed indefinitely by a proper artificial nutrition.

Colonies of infusoria like bacteria proliferate indefinitely. Woodruff has shown that the protoplasm of paramecia is capable of seemingly endless reproduction, without the sexual device of "renewal of youth" by conjugation. Likewise, the connective tissue cells now appear to have the power of multiplying indefinitely in a culture medium, as do micro-organisms. A strain of

1. Harrison, R. G.: Proc. Soc. Exper. Biol. & Med. **4**: 140, 1907; Harvey Lectures, Philadelphia, 1907-1908; Anat. Record **2**: 385, 1908; J. Exper. Zool. **9**: 787, 1910.
2. Carrel, Alexis, and Burrows, M. T.: Cultivation of Tissues in Vitro and Its Technic, J. Exper. Med. **13**: 387, 1911.
3. Carrel, Alexis: On the Permanent Life of Tissues Outside of the Organism, J. Exper. Med. **15**: 516, 1912.

connective tissue cells first cultivated by Carrel in 1912 at the Rockefeller Institute of Medical Research, New York, is still very active after more than seven years of life outside the body in vitro.[4] Its rate of activity has not decreased during this period, despite more than a thousand transplantations that fragments of it have undergone. Such facts place the regenerative capacities of protoplasm in a new light; they likewise lend further interest to the broader problems of tissue culture and conservation, and bring us measurably nearer to the possibilities of controlling or modifying tissue growth by understanding its laws.

Current Comment

"INFLUENZA"

Presumably, the recent recrudescence of influenza in several of our larger cities, including Chicago, Baltimore and New York, has had something to do with the Congressional action appropriating a half million dollars to control influenza.[5] The devastation caused by the great epidemic of a year ago, while still fresh in the minds of many, was, nevertheless, already beginning to be forgotten especially by those whose homes were untouched by the disease. Fortunately, there is reason to believe that the present prevailing sickness in most instances does not approach either in extent or in virulence the violent infections of last year's epidemic. The percentage of deaths is considerably lower and the number of persons affected probably far below the number affected at that time. Further, the distinction between the serious condition occurring during the last epidemic and milder infections, such as common colds, grip, tonsillitis, sinusitis, rhinitis and coryza, is not absolutely clear. During an epidemic it is too easy and convenient to refer to all such conditions as that which the epidemic concerns. As has been repeatedly stated, local flare-ups of such sequelae were common following previous epidemics. Many physicians have written regarding preventive and therapeutic measures, evidently under the impression that some specific methods may have been worked out. It is doubtful whether such measures exist and also whether they will be discovered in time to demonstrate their virtues in connection with the present conditions. This is especially true when we consider that the bacteriology of these infections varies in different parts of the country and that different persons react in different ways to different bacteria. Health authorities, physicians and the public should not, therefore, "view with alarm" the present morbidity. Perhaps when the excitement of the hour has passed and the statistics are collated, they will reveal that the death rate from pneumonia of this year is not much greater than it was in winters previous to the great epidemic. In the presence of illness the physician and patient will do well to rely on the ordinary preventive measures against acute infections, on good hygienic care and time-tried symptomatic treatment. Particularly important is early rest in bed; moreover, the patient should remain in bed until well after the symptoms have disappeared and the temperature returned to normal.

4. Ebeling, A. H.: A Strain of Connective Tissue Seven Years Old, J. Exper. Med. **30**: 531, 1919.
5. General News, this issue, p. 334.

COMPETITORS IN UNPOPULARITY

The physician is not the only scientific man who is made the sport of the pseudo-scientist or the disappointed layman. The *Scientific American,* under the heading "Our Unpopular Weather Man," draws a pertinent comparison in an editorial that is so good that we quote it in full:

> Who, in all history, ever suffered unpopularity more widespread and more undeserved than the weather man? When his prophecies hit the mark, this is taken as a matter of course, and tomorrow will forget today's success. But his occasional failures—especially if rain comes when he had given his sanction to our plans for an outing—such impardonable failures are recorded in indelible writing, with illuminated capitals to impress the event on the memory.
>
> And, strangely enough, in this atmosphere of unforgiving criticism, the charlatan weather prophet still flourishes, and with blatant self-confidence foretells to a congregation of believers the weather for each and every day next year or the year after, or any other year. Old myths, negated anew by each year's experience, seem to have a charmed life, proof against the bullets of obvious fact. The scientific weather man, in modesty, forbears to predict anything but the immediate future—tomorrow, and perhaps the day after. Beyond this lies uncertainty. He hopes, indeed, for a future development of his science when, aided by more complete equipment, he may be able to give at least an approximate indication of more remote events. As yet, however, this is but a pious hope.
>
> But the charlatan is not encumbered with any such impediments of modesty. It is just as easy to foretell the weather a hundred years ahead as a hundred hours or minutes—it is even easier, for there will be none to call you to account if you miss the mark.
>
> In this the popular attitude is much the same as in the matter of medical attention. The doctor's successes are soon forgotten; his inevitable failures—for the foe is in the end invincible—are burnt into the memory. And those who are most vociferous in their criticism of the bona fide physician faithfully plying his science, are commonly the first to turn to the charlatan for aid in the time of trouble. Truly, they receive their reward.
>
> The harm done is perhaps not so very great. The physician goes on his rounds regardless of undeserved fault-finding; and the weather man continues to publish his bulletin day by day, undisturbed by criticism.
>
> Yet our sense of justice impels us to plead: In mercy, good people, be charitable, and remember that the weather man only *foretells,* he does not make the *weather.*

The weather man, like the physician, deals with factors which, while as old as the universe, are still but little understood and are of bewildering complexity. It is because of this complexity that empirics in medicine and in meteorology flourish. But the quack doctor has a vast advantage over the quack weather forecaster. The charlatan weather prophet has about an even break in the chances of guessing right; the medical charlatan has many more chances of getting credit for curing the patient. For in how large a percentage of all ailments, serious and trivial combined, does the patient get well without treatment or even in spite of treatment? In one other respect the science of meteorology has an advantage over the science of medicine: there are not a thousand-and-one meteorological

cults each based on its own bizarre conceptions of the climatic universe, each with its following of enthusiastic ignoramuses and each convinced that scientific meteorology is a snare and a delusion and a deep-laid scheme on the part of the meteorologists to deprive a free people of their inalienable rights to have whatever kind of weather they want. No, much as we sympathize with the weather man, we still feel that he has a tremendous advantage over the medical man. The cocksureness of ignorance will, of course, command a hearing in meteorology as it does in the realm of medicine. The conservative prognostications of the scientific man never make the appeal that is carried by the blatant assurance of the quack. But science goes on the even tenor of its way and the public, when it has something serious at stake, will continue to rely on the reports of the weather bureau and the ministrations of scientific medicine.

UNIVERSAL MILITARY TRAINING

The Committee on Military Affairs of the United States Senate has recommended for passage the Wadsworth army bill and retained the clauses providing for compulsory universal military training. The vote in the committee was nine to two in favor of the bill, which probably means that the bill will pass the Senate. As amended, the bill provides for training periods of four months for each young man, to be taken between the ages of 18 and 21. Opportunity will be given twice each year, making six periods from which the young man may select. While such a brief training period as four months is by no means sufficient, the bill is to be commended, for, after the value of the training becomes appreciated, its duration will probably be extended.

THYROIDECTOMY IN PREGNANCY

It is well known that women with myxedema seldom become pregnant. As myxedema represents the highest grade of hypothyroidism, and the milder grades are not incompatible with pregnancy, anything that throws light on the effects on pregnancy of the removal of the thyroid is not without clinical interest. Many years ago, Halsted in his classical experimental work on the thyroid gland showed that in dogs from which the gland had been partly removed pregnancy might result in the birth of puppies whose thyroids were from twelve to twenty times larger than normal. No particular attention was attracted by these somewhat startling observations, although one or two later observers working on pathologic conditions of the thyroid experimentally produced have reported conflicting results. The question has recently been restudied by Ukita,[1] who performed thyroidectomy on pregnant rabbits. His two main conclusions are that the removal of the thyroid in the rabbit greatly prolongs the period of gestation, and that it produces definite developmental changes in the young. The period of gestation was in some instances twice the normal. The young resulting from these pregnancies were undersized, showed by pathologic and roentgen-ray study delayed ossification of the bones, and also showed hypertrophy of the thyroid gland which was associated with the microscopic appearances of a degree of function more active than is normal in the newly born. These observations recall the fact that a relationship between the activity of the thyroid and sexual functions has long been recognized by clinicians. It is well known that enlargement of the gland frequently takes place during menstrual periods, and commonly takes place during pregnancy. The relationship of the thyroid to physical and mental development as exemplified by sporadic and endemic cretinism is also a thoroughly authenticated clinical fact. The experimental observations of Ukita would seem to be particularly suggestive in their bearing on the possible relationships between the milder grades of hypothyroidism and hyperthyroidism in women, and the development of children born of such mothers. They suggest that the function of the thyroid gland may exert some influence on the duration of pregnancy. Is it possible that some cases of delayed birth are due to hypothyroidism in the mother? May premature delivery be associated with the milder grades of hyperthyroidism? Investigations along these lines should prove interesting.

1. Ukita: Acta scholae med. univ. imp. Kioto **3**: 281, 1919; abstr. J. A. M. A. **74**: 213 (Jan. 17) 1920.

EFFECT OF WAR ON GROWTH OF CHILDREN IN DIFFERENT SOCIAL GROUPS

It is an old adage that "death is no respecter of persons"; perhaps it may be said in analogous sense that war is no respecter of classes. High and low, rich and poor—all social groups have suffered from its ravages, often in unexpected ways. In many respects, war tends to bring humanity nearer to a common level. An interesting illustration has lately been published by the Munich pediatrician Pfaundler[1] regarding the effect of war conditions on the growth of children. During prewar days, in the measurements of adolescents of school age, differences associated with unlike social status of the parents were clearly discernible from the available statistics. Thus, as a rule the children from homes of the professional classes exhibited a noticeably larger body weight and height than those of the same age born of parents in the so-called working classes. The exigencies of the last five years—particularly the shortage of suitable foods—have affected the growth of children of school age in general in the central countries of Europe. For example, at the age of 6 years Munich girls and boys have grown on the average 3 cm. less in height and 1 kg. or more in weight than was the case in the same city before the war. The average decrease in gains is, however, more conspicuous in the children of the professional group than in those from the less well-to-do classes. Six-year old boys of the latter were only 0.2 kg. behind the prewar average for their category, whereas the other group of boys were 1 kg. lighter in weight than were their equals in age in 1914. As Pfaundler interprets this, since the children of the poor are as a rule smaller and lighter than those of the well-to-do, the war has tended to level the classes from a somatic as well as other standpoints.

1. Pfaundler, M.: Ueber Körpermasse von münchener Schulkindern während des Krieges, München. med. Wchnschr., Aug. 1, 1919, No. 31, p. 859.

Association News

THE NEW ORLEANS SESSION

To New Orleans by Boat

Dr. H. W. E. Walther, New Orleans, chairman of the Subcommittee on Transportation of the Local Committee of Arrangements for the New Orleans session, April 26 to 30, desires to assist in the getting up of boat parties to go to New Orleans. He wishes to get into communication with local medical organizations in cities located in the Mississippi River Valley as well as in seaport cities on the Gulf of Mexico and the Atlantic Coast. He offers his services in order that organizations may be effected at different points of parties of sufficient numbers to justify chartering boats for the trip. Whenever such groups can be assembled, efforts will be made to induce steamship companies to arrange for these excursions. Letters to Dr. Walther should be addressed to the Headquarters of the Local Committee on Arrangements, 1216 Maison Blanche Building, New Orleans, La.

From Baltimore to New Orleans

Dr. Ira J. Haynes, P. O. Box 24, Richmond, Va., is interested in arranging a party to go by boat from Baltimore to New Orleans. The itinerary under consideration contemplates touching at Old Point Comfort, Va., Charleston, S. C., and a twelve-hour stopover in Havana, the boat being scheduled to arrive in New Orleans early on Monday, April 26, in time for the opening meeting of the House of Delegates.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

COLORADO

Personal.—Dr. Charles D. Spivak, Denver, left for New York, December 28, to join the other members of the joint distributing committee of the Jewish war sufferers relief work, and expected to sail for Europe, January 2.

Tuberculosis School Incorporated.—A number of physicians of Colorado Springs filed an affidavit, January 1, for the incorporation of the Colorado School of Tuberculosis, the purposes of which are described as follows: "To furnish without pecuniary profit to its members, opportunity for special advanced study in tuberculosis to physicians and others through the medium of regular courses of instruction and institutions, and laboratories and other agencies devoted to investigation, treatment and cure of the disease."

New Officers.—At the annual meeting of the Medical Society of the City of Denver, Dr. Arnold S. Taussig was elected president; Dr. William A. Sedwick, vice president; Minnie C. T. Love, secretary (reelected), and Dr. Franklin P. Gengenbach, treasurer (reelected), all of Denver.——El Paso County Medical Society at its annual meeting in Colorado Springs, December 10, elected Dr. Clarence R. Arnold, president; Dr. George B. Gilbert, vice president; Dr. Claude E. Richmond, secretary, and Dr. Omer R. Gillette, treasurer, all of Colorado Springs.

GEORGIA

New Laboratory for Fort McPherson.—The War Department announced, December 29, that plans and specifications for a new permanent department laboratory building to be erected at Fort McPherson, Atlanta, had been prepared.

Tributes to Service Men.—December 19, the members of the Georgia Medical Society of Chatham County who had served in the army and navy were given a supper at the Hotel DeSoto by the society.——At the annual banquet of the Fulton County Medical Society, January 8, the members of the organization who were in the military service during the war were the guests of honor. Dr. Elmore C. Thrash, Atlanta, the retiring president, acted as toastmaster, and the president-elect, Dr. Walter B. Emery, Atlanta, delivered the principal address on the subject of loyalty.

New Officers.—At the annual meeting of the Georgia Medical Society of Chatham County, held in Savannah, December 16, Dr. William H. Myers was elected president; Dr. Lawrence Lee, vice president, and Dr. Everett L. Bishop was reelected secretary-treasurer, all of Savannah.——Walker County Medical Society, at its annual meeting held in Lafayette, elected Dr. Robert M. Coulter, president; Dr. James P. McWilliams, vice president, and Dr. John H. Hammond, secretary, all of Lafayette.——At the annual meeting of the Clarke County Medical Club, held in Athens, December 12, Dr. Ralph M. Goss was elected president; Dr. Allen C. Holliday, vice president, and Dr. James C Holliday, secretary-treasurer, all of Athens.

ILLINOIS

New Officers.—St. Clair County Medical Association at its annual meeting held in East St. Louis, January 8, elected Dr. Henry A. Cables, East St. Louis, president; Dr. Lee D. Applewhite, East St. Louis, vice president; Dr. Charles W. Lillie, East St. Louis, secretary (reelected), and Dr. Adolph E. Hansing, Belleville, treasurer. The association authorized the formation of a branch in Belleville.

Hospital Staff Election.—At the annual meeting of the staff of Passavant Hospital, Jacksonville, January 5, Dr. Henry C. Woltman, Jacksonville, was elected president; Dr. Tully O. Hardesty, Jacksonville, secretary; Drs. Walter L. Frank, Jacksonville, and David W. Reid, Jacksonville, members of the medical board, and Dr. Charles E. Cole, Jacksonville, dean of the training school for nurses.

Chicago

Antispitting Drive.—The city ordinance against spitting on sidewalks took on new life last week on account of the prevalence of influenza. Nearly 500 people were arrested for violation of the ordinance, January 22, alone.

Laboratory Workers Form Union.—There has been formed recently in Chicago a Scientific Laboratory Workers' Union, No. 16,986, American Federation of Labor. This includes fifteen members, physicians, chemists, and bacteriologists of the Bureau of Laboratories of the Chicago Department of Health.

Personal.—Dr. John A. McGill has been elected president, and Dr. William F. Dickson, second vice president of the Illinois St. Andrews Society.——Dr. Margaret R. Otis was struck by a street car, January 20, and seriously injured.——Dr. H. Gideon Wells spoke before the Geographical Society of Chicago, January 23, on "Roumania in War and Peace."

Arrested for Morphin Selling.—John Brady, said to be known to morphin addicts as the "dope king," was arrested, January 24, charged with violation of the Harrison law. According to the policeman, Brady had at that time fifty packages of morphin which he was peddling at $5.00 each.——The office of Dr. Edmond D. Converse was raided, January 22, and the doctor is said to have been charged with illegally prescribing morphin for drug addicts.

Internists Elect Officers.—At the fifth annual meeting of the Chicago Society of Internal Medicine, held January 26, Dr. Peter Bassoe was elected president and Dr. Clifford H. Grulee, vice president, and Dr. Charles A. Elliott was reelected secretary-treasurer. Dr. Hugh McGuigan discussed "Some Points of Interest in the Action of Chlorine-Containing Anesthetics and Hypnotics;" Dr. Frank Smithies described "Late Cardio-Respiratory Manifestations of Gassing in Returned Soldiers," and Dr. Anton J. Carlson spoke of "The Effects of Mass Starvation as Observed in Central and Eastern Europe, and the Practical Problem Involved in the Victualling of These People."

Influenza and Pneumonia.—The new cases of influenza are now beginning to decrease. During the twenty-four hours ended at 5 p m., January 26, there were 166 deaths from influenza and pneumonia, and new cases of influenza numbered 616, and the new cases of pneumonia, 367. For three days of last week, there were more than 2,000 new influenza cases a day.——After a conference with the superintendent of the State Bureau of Registration the health commissioner announces that hospitals will be permitted to accept women with grammar school education for nursing courses, and furthermore that the bureau will cooperate in the establishment of a two years' training course for nurses.——In the seventy hospitals of Chicago there are at present

said to be 831 cases of pneumonia and influenza.——There are 1,454 empty beds in hospitals, this being due mostly to shortage of nurses which has prevented many institutions from working to capacity.

KANSAS

Public Health Laboratory Reopened.—The secretary of the state board of health announces the reopening of the Public Health Laboratory at the School of Medicine, Rosedale, under the direction of Dr. Donald R. Black, Kansas City. At this laboratory free examinations will be made of smears, and the gonococcus infection, and the Wassermann test given.

New Officers.—At the annual meeting of the Central Kansas Medical Society, held in Russell, December 17, Dr. Frederick S. Hawes, Russell, was reelected president, and Dr. Leo V. Turgeon, Wilson, secretary-treasurer. Wilson was elected as the next place of meeting.——Douglas County Medical Society at its annual meeting in Lawrence, January 2, elected Dr. Carl Phillips, Lawrence, president, and reelected Dr. Charles E. Orelup, Lawrence, vice president; Dr. Joshua R. Bechtel, Lawrence, secretary, and Dr. Elijah M. Owen, Lawrence, treasurer.——At the December meeting of the Bourbon Medical Society held in Fort Scott, Dr. Robert Aikman, Fort Scott, was elected president; Dr. Claud F. Young, Fort Scott, vice president; Dr. John C. Lardner, secretary, and Dr. Millard F. Jarrett, Fort Scott, treasurer.

MARYLAND

Personal.—Dr. H. Warren Buckler, Baltimore, has been placed in charge of the division of medical inspection of schools of Baltimore.——Dr. Edwin W. Schultz, Johns Hopkins Medical School, has gone to Leland Stanford Junior University to give a course of instruction in experimental pathology.

New Officers.—At the annual meeting of the Allegany-Garrett County Medical Society at Cumberland, January 12, Dr. George O. Sharrett was elected president; Dr. J. Kile Cowherd, vice president; Dr. Herbert V. V. Deming, secretary, and Dr. F. Garnett Cowherd, treasurer, all of Cumberland.

Influenza Increasing in Baltimore.—According to reports from the health department, influenza is on the increase in Baltimore, there having been eighty-seven new cases reported in the last twenty-four hours (January 24), while there were but thirty-three reported for the previous twenty-four hours. However, the disease is not epidemic in Baltimore and the health department does not see any reason to fear a recurrence of the havoc of 1918.

Smallpox Invasion Feared.—Owing to reports that smallpox is spreading through the lower part of Delaware, Dr. John S. Fulton, Baltimore, secretary of the state board of health, is taking precautions against allowing the disease to get over the boundaries into adjoining counties on the eastern shore of Maryland. These counties are subject to infectious invasion unless the Delaware authorities take a strong stand in the matter of intertravel in cooperation with the Maryland authorities. Dr. Fulton is considering a plan of revaccinating all persons who visit Delaware and return to the state.

Memorial Ward Opened.—The Hospital for the Women of Maryland, January 25, opened the Davis-Whitridge Memorial, a new section in the medical and surgical department, which will be used for women in moderate circumstances. The ward has been installed by the hospital to memorialize the work of Mrs. Andrew H. Whitridge, who has been connected with the hospital for ten years and was vice president of the board and Mrs. Francis A. Davis, who for fourteen years had been treasurer. The ward will contain eight semiprivate rooms and will be located on the third floor of one wing. Nurses' quarters and a chart room are attached to the ward.

United States Army General Hospital No. 2 to Go.—The rapid evacuation of Fort McHenry, both by the transfer of patients to other army hospitals and by their recovery, points to an early closing of the fort as an army hospital. There are 158 patients awaiting the arrival of a government hospital train to take them to General Hospital No. 31 at Carlisle, Pa. Col. Henry Page, commanding officer at the fort, has received orders for his transfer to the command of General Hospital No. 21 at Denver, the transfer to occur February 15. Colonel Page's successor in the command of the fort has not been named. Since December 1, about 1,040 men have been discharged from the hospital.

MISSOURI

Antivaccination League Organized.—An antivaccination league was organized at St. Joseph, January 16, by 100 persons, mostly women. The meeting voted that, despite the order of the health board that all schoolchildren must be vaccinated or must stay out of school thirty days, they would send their children to school and refuse to allow them to be vaccinated under any circumstances.

Venereal Disease Clinic.—A venereal disease clinic was opened at St. Joseph on January 17, in Community Hall, starting with forty-six patients. Several months ago, an effort was made to have the clinic financed by the city and operated by the city board of health, but the city could not find the necessary money. The local Red Cross chapter then gave $5,000, which insures an equal amount from the Chamberlain-Kahn fund. The clinic is under the management of a committee of seven—three of the Red Cross, the three members of the city board of health and one member of the Buchanan County Medical Society.

St. Louis

New Head of Hospital Staff.—Dr. Hanau W. Loeb has been appointed chief of staff of the Jewish Hospital staff succeeding Dr. Herman Tuholske, resigned. This new position will not interfere with the work of Dr. Loeb as dean of the University of St. Louis Medical College.

Kentucky Visitors.—At the meeting of the St. Louis Medical Society, January 27, Dr. Louis Frank, Louisville, read a paper on "Blood Studies in Connection with Surgery" and Dr. Granville S. Hanes, Louisville, one on "Local Pain and Other Symptoms Associated with the Infection of the Anal Tissue." Prior to the meeting, Drs. Frank and Hanes were guests of honor at a dinner at the University Club.

NEW MEXICO

Communicable Disease.—The health department reports at least 100 cases of smallpox of mild character in Tularosa.——An outbreak of scarlet fever is reported at Ojo Caliente.

Venereal Clinic Opened.—January 5, a free clinic for venereal disease was opened at Santa Fe under the auspices of the state board of health. Similar clinics are to be opened at Deming and Albuquerque.

State Laboratory Opened.—The state laboratory, which is being provided jointly by the state board of health and the University of New Mexico at Albuquerque, was opened, January 15, in charge of a trained technician.

New Officers.—At the annual meeting of the Bernalillo County Medical Society, held in Albuquerque, December 3, the following officers were elected: president, Dr. Cowan C. Meachem, Bernalillo; vice presidents, Drs. John R. Van Atta, Albuquerque, Arno Klein, Albuquerque; secretary-treasurer, Dr. Frank E. Tull, Albuquerque, and corresponding secretary, Dr. George S. McLandress, Albuquerque.

NEW YORK

New York City

Influenza on Liner.—The Spanish liner *P. de Satrustegui* from Barcelona, which reached Quarantine, January 17, had aboard thirty-one patients with influenza among 414 steerage passengers. The patients were all removed to Swinburne Island, and the vessel was fumigated.

New Tuberculosis Association Organized.—The antituberculosis work in New York City has been taken over by a new organization, the New York Tuberculosis Association, Inc., with Dr. James Alexander Miller, president; Mr. Homer Folks, vice president, and Dr. John S. Billings, Jr., director.

New Regulations in Regard to Quarantine Periods.—At a recent meeting of the department of health, the following regulations governing the isolation of persons affected with an infectious disease and amending Section 89 of the Sanitary Code were adopted:

For the purpose of these regulations, the minimum period of quarantine shall be as follows:

a. Diphtheria: Twelve days from onset.
b. Scarlet Fever: Thirty days after the onset of the first symptoms.
c. Cerebrospinal meningitis: Fourteen days from the onset.
d. Acute anterior poliomyelitis: Three weeks from the date of onset.
e. Typhoid Fever: Until ten days after the patient's temperature reaches normal.

Wood Alcohol Poisoning Reportable.—At a meeting of the board of health, held, December 31, the following amendment

to the Sanitary Code, making wood alcohol poisoning reportable to the health department, were adopted:

It shall be the duty of the manager or managers, superintendent, or person in charge of every hospital, institution, or dispensary in the city of New York to report immediately to the Department of Health the name, age, and address of every occupant or inmate thereof, or person treated therein, affected with wood alcohol or wood naphtha poisoning; and it shall also be the duty of every physician in said city to make immediately a similar report to the Department of Health relative to any person found by such physician to be affected with wood alcohol or wood naphtha poisoning.

Influenza Becomes Epidemic.—The tabulations of the health department, January 23, show that during the preceding twenty-four hours 1,332 new cases of influenza were recorded, and 406 new cases of pneumonia for the same period. Since January 1, when the outbreak officially is reckoned to have begun, there has been a total of 3,096 cases of influenza and 3,336 cases of pneumonia. Comparison with the figures of Oct. 4, 1918, which is taken by the department of health as the day of that epidemic corresponding to January 23 of the present outbreak, shows that while about the same number of new cases were reported on these dates, the number of deaths reported was about twice as large as on the former date. A conference of the directors of the health department bureaus and the sanitary superintendents of the various boroughs was held and all department administrative details of the attack on the epidemic were arranged. The main headquarters of the department of health will remain open twenty-four hours of the day and seven days a week until the epidemic has passed. The board of estimate, on the request of Health Commissioner Copeland, has appropriated $80,000 of special revenue bonds to the health department as an emergency fund with which to fight the epidemic. The department of health is not recommending the use of vaccines in combatting the epidemic.

OHIO

Service Physicians Banqueted.—The eleven physicians of Knox County who served during the world war were guests of honor at a banquet given by the Knox County Medical Society, January 13, at Mt. Vernon.

New Interest in Health Matters.—Public health affairs at Canton have taken on new life. Sentiment has been created in favor of adequate health protection so that $29,630 has been allowed by the city council as a budget for the first six months of the year, or $17,630 more than the last budget allowed. Applications are being received for chief medical officer, two physicians as full-time health officers, one chief nurse, four public health nurses, four food and meat inspectors, one chief of laboratory, one assistant veterinarian and one assistant clerk in the health office.

Personal.—Dr. James H. Lowe, for twelve years health officer of Piqua, has been reelected for a term of two years.—— Dr. Guy T. Goodman, Mansfield, for nine years a member of the board of health and city health officer has resigned.—— Dr. Ulysses G. Murrell, Wilmington, has been appointed registrar of the state bureau of vital statistics succeeding Dr. John E. Monger, Greenville, resigned.——Dr. Delbert J. Miller, Alliance, sustained a fracture of the jaw, and a number of cuts and bruises of the face and head when his automobile was struck by a train at a grade crossing.

Supervision of Hospitals.—The State Department of Health of Ohio has organized a bureau of hospitals and the bureau is now working out plans for carrying out the provisions of the new law enacted by the state legislature with reference to the supervision of hospitals. The latter are required to make reports to the state, and forms for the report have been prepared. Annual reports covering work done during 1919 will be filed, March 15. Under a resolution adopted by the legislature, the department is also undertaking a general survey of the hospital and dispensary facilities of the state, and these institutions are being registered as the first step in the study.

Organization Under New Health Law.—Columbiana, Warren, Morrow, Geauga, Pike, Auglaize, and Belmont counties are the first in the state to place their new general district health organization in operation. Columbiana county reports a budget of $10,000; Morrow, of $6,750; Warren, of $4,600; Pike, of $5,500, and Geauga, of $5,000, Columbiana, Morrow and Pike counties will receive the maximum state subsidy of $2,000 while the state aid for Warren County will amount to $1,600 and of Geauga County to $1,700. Columbiana and Morrow have appropriated $3,000 each for a health commissioner's salary and will probably be able to obtain whole-time officers. The other counties have made appropriations which will provide for parttime commissioners.

Protection Against Water-Borne Diseases.—Ohio is said to share with Massachusetts the place at the top of the list of states with sanitary control of public water supplies, with a score of 97 per cent. This protection has been effected by laws providing for state inspection and approval of all water supply projects and for state examination and supervision of supplies in use, allowing for all sources of possible danger. The state department of health shows that all but fifty of the 300 public water supplies of the state are of unquestionable purity; that only about 10 per cent. of the four million people served by public water supplies use water from doubtful or unsafe sources, and that only ten communities, with a population of 100,000, use water definitely classed as unsafe.

PENNSYLVANIA

Mont Alto to Be Enlarged.—The state has purchased several hundred acres of land contiguous to the department of health sanatorium at Mont Alto, and now controls virtually all the properties abutting the institution.

Board Has No Authority to Revoke Licenses.—Under a ruling made by Deputy Attorney General Swoope, January 9, the board of medical education and licensure has no authority to revoke the license of a medical practitioner who has been convicted of an offense while in practice, sentenced to the penitentiary and released on bail pending an appeal. It has no power to revoke either in the case of one convicted of repeated offenses or of one who has escaped conviction through legal technicalities until the appellate courts have passed on the appeal.

New Officers.—Allegheny County Medical Society at its annual meeting in Pittsburgh, January 13, elected Dr. John J. Buchanan, Pittsburgh, president; Drs. George C. Johnston, Pittsburgh, Thomas A. Miller, Bellevue, Robert W. Allison, Wilkinsburg, Gustav F. Berg, Pittsburgh, and Glenn M. Pierce, McKeesport, vice presidents; Dr. William H. Mayer, Knoxville, secretary, and Dr. Elmer E. Wible, Pittsburgh, treasurer.——Erie County Medical Society at its annual meeting, January 6, elected the following officers: Dr. Katharine H. L. Wright, Erie, president; Dr. John A. Darrow, Erie, Dr. Charles C. Kemble, Erie, vice presidents; Dr. James T. Strimple, Erie, secretary, and Dr. James E. Croop, Erie, treasurer. ——Dauphin County Medical Society at its annual meeting in Harrisburg, January 6, elected the following officers: president, Dr. Hewitt C. Myers, Steelton; vice presidents, Drs. Richard F. L. Ridgway and John W. MacMullen, Harrisburg, and secretary, Dr. Charles M. Rickert, Millersburg.

Philadelphia

Personal.—Mayor Elect Moore has announced that Dr. Norman H. Taylor will be appointed as assistant director of health under Dr. C. Lincoln Furbush.

Influenza at Navy Yard.—One hundred cases of influenza developed at the League Island Navy Yard between January 21 and 23. There are no malignant symptoms, but every care is being taken to prevent its spreading. Social centers and meeting places at the navy yard have been closed.

Women's College Drive.—The campaign of the Women's Medical College, Pennsylvania, to raise $250,000 was opened, January 8. It is intended that part of this fund, if raised, will finance a department of preventive medicine. Sixteen thousand one hundred and eighty-seven dollars were pledged on the first day of the drive.

Third Smallpox Outbreak.—Following the discovery of two cases of smallpox in the northwestern section of the city, 1,500 persons within the boundaries of Thirty-First and Huntingdon and Thirty-Second and York streets were vaccinated, January 22. These cases were also traceable to the Georgetown, Del., area for both the man and his wife had paid a visit to Dagesboro, fourteen miles south of Georgetown. Up to January 23, 4,447 persons had been vaccinated following the three outbreaks.

City Prepared to Fight Influenza.—Should the emergency arise and influenza return to this city in epidemic form, the health department is preparing to meet it. The director asks that all cases be reported to the health bureau and laboratory tests are being made of all cases so far reported, that the exact nature of the malady may be determined. Four hundred beds at the Philadelphia General Hospital have been prepared and provisions made for an extra corps of physicians and nurses. The president of the traction

company has been requested to forbid overcrowding of cars and to insure proper ventilation. A bulletin has been issued by Dr. Walter S. Cornell, chief medical inspector of schools, that will reach every child in the public schools.

TENNESSEE

Negro Hospital for Bristol.—Funds are being raised to erect a $25,000 hospital for colored people at Bristol. It is proposed that the hospital be in charge of local colored physicians and that it be conducted on a cooperative basis.

Personal.—Dr. Robinson Bosworth, St. Paul, Minn., has given his services to Memphis for a few months, working in cooperation with the city health department in a campaign against tuberculosis.——Dr. Rufus P. Sullivan, Cleveland, has been elected physician of Bradley County.——Dr. James B. Cox, Huntington, has been reelected health officer of Carroll County.——Dr. John R. Thompson, Nashville, has been reelected health officer of Davidson County

Society Meetings.—At the eighth annual meeting of the Tennessee Academy of Science at Nashville, November 28, the following officers were elected: Dr. William F. Glenn of Vanderbilt University, Nashville, president, and Prof. C. F. Gordon of the University of Tennessee, Knoxville, editor.——At the joint meeting of the Nashville Academy of Medicine and Davidson County Medical Society, January 6, Dr. William C. Dixon was elected president; Dr. Samuel M. Bloomstein, vice president, and Dr. John Witherspoon, secretary (reelected).——Childs County Medical Society at its annual meeting in Pulaski, January 2, elected Dr. George D. Butler, Pulaski, president; Dr. William H. Cole, Minor Hill, vice president; Dr. Charles A. Abernathy, Pulaski, secretary, and Dr. George C. Grimes, Pulaski, treasurer.—— At the annual meeting of the Mountain City Academy of Medicine and Surgery (colored), Chattanooga, the following officers were elected: president, Dr. Clarence F. Bass; vice president, Dr. Lewellen L. Patton; secretary; W. B. Davis, and treasurer, R .W. Allen.

TEXAS

Venereal Disease Clinic Discontinued.—The venereal disease clinics at Dallas and Galveston were closed, January 1, on account of lack of funds.

Personal.—Dr. Azariah W. Parsons, formerly chief surgeon of the Mexico national railroad in the city of Mexico, has located at Corpus Christi.—— Dr. William E. Huddleston, who has been taking graduate work in England has returned to Galveston.——Dr. Ethel M. Lyon Heard, Austin, has been appointed physician for women at the state university, Austin.

Hospital Items.—The City Hospital at Yoakum is being erected under the supervision of L. Harrington Company, architects. The cost will be $60,000.——Construction work is in progress on a new hospital at Taylor which is being built by Drs. Edmund Doak, Eric W. Stromberg and Thomas D. Vaughan, Taylor, and Dr. John H. Vaughan, Liberty Hill.

New Officers.—The Fourth District Medical Society at its annual meeting in Coleman, December 2 and 3, elected Dr. Samuel N. Aston, Coleman, president, and Dr. John M. Nichols, Bangs, secretary-treasurer. Ballinger was selected as the place of meeting for 1920.——North Texas District Medical Association met in Fort Worth, December 9 and 10, and elected Dr. Martin L. Wilbanks, Greenville, president; Dr. Marquis E. Gilmore, Fort Worth, vice president; Dr. David L. Bettison, Dallas, secretary (reelected), and Dr. Sidney J. Wilson, Fort Worth, treasurer. Waxahachie was selected as the next place of meeting.——Physicians of Eastland organized a medical society, January 9, to be known as the Medical Society of the City of Eastland, electing Dr. Herbert B. Tanner, president, and Dr. Edward C. Ferguson, secretary-treasurer.——Dallas County Medical Society at its annual meeting held, December 11, elected Dr. William T. Baker, Dallas, president; Dr. Henry B. Decherd, Dallas, vice president, and Dr. William W. Fowler, secretary-treasurer.

CANADA

Fight Venereal Diseases.—Preliminary organization has been completed for carrying out the campaign against the venereal diseases by the federal provincial boards of health of Canada. Dr. Charles A. Hodgetts, Ottawa, has been appointed chairman of the Ontario organization, and Dr. Robert R. McClenahan, Hamilton, secretary. Drs. John G. Fitzgerald, Toronto; Frederick Etherington, Kingston; Douglas G. Storms, Hamilton; Frederick W. Luney, London, are on the committee.

Guards Up Against Influenza.—The federal department of health reports that there is no information available that influenza is anywhere epidemic in Canada. All the provincial boards of health are on the watch for the disease. Especially is Ontario taking strict precautions against an invasion, and has already opened a register for physicians and nurses who will be prepared to join in any campaign toward controlling the malady.

Hospital News.—The General Hospital and the Western Hospital, Montreal, are going to amalgamate. It is hoped to make the combined hospitals the greatest institution in Canada, and a hospital act is being brought into the Quebec legislature to ensure the success of the scheme. It has been found no longer possible to finance the institutions separately and by the new arrangement financial aid is looked for from the province.——Toronto is going to have a new Reception Hospital. The site has been definitely decided on and is to be the old grounds of Trinity University. Efforts were made to have this hospital located near the General Hospital but without success. It has to be built by the city, but the administration is under control of the province.

GENERAL

Medical Officers for Poland Obtained.—Gen. Robert E. Noble has requested us to announce that the fifty medical officers required for duty for the Red Cross in Poland have been obtained, and that no further applications will be considered.

Addition to Hospital Site.—Senator Spencer of Missouri has introduced a joint resolution permitting the expenditure of $350,000 for the purchase of 26 acres of land contiguous to the Walter Reed General Hospital, Takoma Park, Washington, D. C.

Anesthesia Research Organization.—The National Anesthesia Research Society has been organized with the avowed purpose of collecting data and of prosecuting original research in the science of anesthesia. The research committee is headed by Dr. F. Hoeffer McMechan, Avon Lake, Ohio.

Sickness Insurance Discussed.—At the twentieth annual meeting of the National Civic Federation held in New York City, January 29 and 30, among the topics for discussion were "Compulsory Sickness Insurance and a Substitute for It." Frederick L. Hoffmann, a member of the committee of foreign inquiry, who has just returned from five months' study of the operation of the British National Health Insurance act, reported his findings.

Bill for Construction of Hospitals for Soldiers.—Senator France of Maryland introduced, January 24, a bill endorsed by the Public Health Service for the appropriation of $78,000,000 for the construction of hospitals for soldiers who are beneficiaries of war risk insurance. In connection with this legislation Senator France said:

> It is imperative that we should have legislation providing hospital facilities for diseased and disabled soldiers in the world war. Up until this time provision made for the treatment of these soldiers has been most inadequate, and many men who should be receiving treatment in hospitals are deprived of proper care because of neglect to provide hospital facilities.

It is estimated that at the present time the government is in need of hospital accommodations in the amount of 7,200 beds for general medical and surgical cases, of 12,400 beds for tuberculous cases and 11,000 beds for nervous and mental cases. The actual facilities of the Public Health Service at the present time are not in excess of 7,200 beds. Members of the American Legion have been making earnest protests because of the failure of the government to provide for proper care of our soldiers in hospitals. Throughout the West in many cities, tuberculous soldiers and those suffering from nervous and mental diseases are unable to secure any accommodation in government hospitals. An identical bill will be introduced in the House of Representatives.

Tariff on Scientific Instruments and Apparatus.—The subcommittee of the Senate Committee on Finance has completed its hearings and will meet, February 2, for final action on a bill placing a tariff on surgical and dental instruments and scientific and laboratory apparatus. The House of Representatives passed the bill fixing the tariff on these articles at 45 and 60 per cent., respectively. No opposition was made to this bill and it is likely that the committee will approve the house bill, which is designed to encourage the manufacture of these articles in the United States and avoid the danger of foreign competition. Representing the government

were Dr. W. F. Hildebrand of the bureau of standards; Lieut.-Col. M. A. Reasoner of the field medical supply depot, and Col. F. F. Russell, Army Medical School, and representing chemical and scientific societies were Mr. H. C. Parmalee and Dr Charles H. Herty.

Bequests and Donations.—The following bequests and donations have recently been announced:

Pennsylvania Hospital, Philadelphia, $1,000 and the residue of his estate in equal shares to the Jewish Maternity Hospital, Philadelphia; Jewish Seaside Home, Atlantic City, and National Farm School, Doylestown, by the will of Dr. John Moss, Jr.

Methodist Hospital, Philadelphia, $1,000 by the will of Louise M. Pepper.

St. Vincent's Orphan Asylum, Tacony, Pa., $1,000 by the will of Herman Buchborn.

Methodist Episcopal Church of northwestern Iowa as a site for a two-hundred bed hospital, a 280 acre tract at Sioux City, valued at $100,000, donated by Dr. William Jepson.

Campaign Fund of the Woman's Medical College of Pennsylvania, for the endowment of a scholarship in memory of his mother, Elizabeth Agnes Moore Deaver, a donation of $5,000 by Dr. Harry C. Deaver, Philadelphia.

Wichita Falls, Texas, for the endowment fund of a new hospital, a donation of $50,000 by J. A. Kemp.

Medical Department of the University of Pennsylvania, Philadelphia, for the establishment of a chair of gynecology, a bequest of $50,000 by the estate of Dr. William C. Goodell.

Senate Appropriates Half Million Dollars to Combat Influenza.—The Senate has passed a joint resolution appropriating $500,000 to be used by the Public Health Service in combating influenza. The resolution directs the Public Health Service to investigate influenza and allied diseases in order to discover their causes and prevent their spread. It requires the allotment of money to universities, colleges and other research institutions for scientific investigation. The Public Health Service is accorded the privilege of making selection of such institutions. A forceful debate occurred in the Senate prior to the adoption of the resolution, Senator King of Utah opposing the resolution and objecting to the "constant encroachments of the Public Health Service organization." He said: "We will soon have the United States furnishing doctors, nurses and hospitals for all the people, with the result of hundreds of millions of dollars being taken annually from the people." The resolution originally provided for an expenditure of $1,000,000. Senator France in charge of the resolution acquiesced in the amendment, reducing the amount to $500,000. The resolution now goes to the House of Representatives.

League of Red Cross Societies.—The International Red Cross Committee has issued a call for the first convention of the general council of the League of Red Cross Societies, to be held in Geneva, March 2. The league was founded in Paris, May 5, 1919, by the national societies of the United States, Great Britain, France, Italy and Japan, with which the societies of many other countries have since joined. Control is vested in a general council composed of representatives of all member societies, but in the intervals between the regular meetings this control is exercised by a governing board of fifteen members, of which Henry P. Davison, American Red Cross, has been elected chairman. At a preliminary conference in Cannes, April, 1919, the establishment of a bureau of health with a director, advisory council and permanent staff was recommended. The tentative program includes an intensive campaign against typhus fever, the extension and development of child welfare work, and the encouragement of worldwide adoption of definite programs for establishment of public health laboratories, for compulsory registration of vital statistics, and for the control of tuberculosis, venereal diseases and malaria. The permanent headquarters of the league are at 9 Cour de St. Pierre, Geneva, Switzerland.

Cumming, Surgeon-General, U. S. Public Health Service.—As we go to press the newspapers announce that the President has nominated Dr. Hugh S. Cumming as Surgeon-General of the U. S. Public Health Service to succeed Surgeon-General Rupert Blue, whose second term expired January 13. Born at Hampton, Va., August 17, 1869, Dr. Cumming was graduated M.D. from the University of Virginia in 1893, and from the University College of Medicine, Richmond, in 1894. He was commissioned assistant surgeon May 25, 1894, passed assistant surgeon five years later, attained the rank of surgeon March 15, 1911, of senior surgeon Nov. 8, 1918, and was appointed assistant surgeon-general March 6, 1919. Dr. Cumming's professional interest has been mainly in the field of preventive medicine and quarantine. Prior to the war, he was for some years stationed at the Hygienic Laboratory in Washington, before which time he had seen many years of service as chief quarantine officer at San Francisco and other ports. He is a frequent contributor to the literature of sanitary science and has made intensive studies of pollution of watersheds with special reference to the shellfish bearing areas, the results of which are embodied in public health bulletins issued by the government. At present he is on duty at Constantinople in connection with a concerted campaign for the control of typhus fever. During the war Dr. Cumming was detailed for special duty with the Navy Department.

Midwinter Conference on Public Health and Legislation.—The annual Midwinter Conference on Public Health and Legislation will be held Thursday, March 4, 1920, in the South Parlor, Auditorium Hotel, Michigan Avenue and Congress Street, Chicago. The program will be as follows:

Morning.—

1. Call to Order, 9:30 a. m.
2. Chairman's Address, Dr. Victor C. Vaughan, Ann Arbor, Mich., chairman, Council on Health and Public Instruction, American Medical Association.
3. Secretary's Report, Dr. Frederick R. Green, secretary, Council on Health and Public Instruction, American Medical Association.
4. "Standardization of Public Health Activities," Dr. George E. Vincent, president, Rockefeller Foundation.
5. "Standardization of State Public Health Organizations," Dr. Charles V. Chapin, commissioner of health, Providence, R. I.
6. "Standardization of Municipal Health Organization," Dr. Allen McLaughlin, Assistant Surgeon-General, U. S. Public Health Service.
7. General Discussion, opened by Dr. C. St. Clair Drake, commissioner of health, Springfield, Ill., and Dr. Ennion Williams, commissioner of health, Richmond, Va.

Afternoon, 2 p. m.—Symposium on "Health Education of the Public."

1. "Health Education in the Public Schools—Thirty Years' Experience in Michigan," Dr. Victor C. Vaughan, Ann Arbor, Mich.
2. "Health Education and Activities in College and Universities," Dr. John Sundwall, director, Students' Health Service, University of Minnesota, Minneapolis.
3. "Health Education a Function of Municipal Health Department," Dr. Haven Emerson, New York.
4. "Health Education a Function of State Health Department," Dr. W. S. Rankin, secretary, state board of health, Raleigh, N. C.
5. "Health Education a Function of the Federal Government," Dr. Charles V. Bolduan, director, Division of Public Health Education, U. S. Public Health Service.
6. Discussion opened by Dr. John M. Dodson, Chicago: Prof. W. B. Owen, superintendent, Chicago Normal College.

FOREIGN

American Hospital in Poland.—A new hospital has been opened at Vilna, Northwest Poland, by the American Red Cross.

Congress for History of Medicine.—The Société française d'histoire de la médecine has organized an independent congress for the history of medicine and pharmacy, to be held at Antwerp, Aug. 7 to 12, 1920, at the same time as the Kermesse and the festival of the seventh Olympiad. Among the principal subjects appointed for discussion are medical iconography and epigraphy; medical bibliography, and a chapter from the history of public charities (hospitals, etc.) in every country.

Personal.—Dr. Paul Sabatier, Toulouse, and Pierre Paul Emile Roux, Paris, have been elected honorary members of the British Royal Association.——Dr. Hanz Gertz of the Physiological Laboratory of Karolinska Institut, Stockholm, has been awarded the Jubilee Prize by the Swedish Medical Association for his work on the functions of the labyrinth. ——Dr. Harold Pringle, lecturer on histology and assistant in physiology in the University of Edinburgh, has been appointed professor of physiology in Trinity College, Dublin, succeeding the late Sir Henry Thompson.

Memorial for the Interns of Paris Hospitals.—In memory of the interns and former interns of the hospitals of Paris who gave their lives for their country, a memorial service was held in turn recently in the Roman, the Protestant and the Jewish places of worship. A monument is to be erected to perpetuate their memory. It will stand near the entrance of the Hotel-Dieu, and bear the names of all the interns and ex-interns who died for France. Subscriptions for the monument are to be sent to M. Arnette, 2, rue Casimir-Delavigne. The Société médicale des hôpitaux started the subscription list with 1,000 francs.

Interallied Graduate Course on Tuberculosis at Paris.—This course of lectures on various phases of the organized fight against tuberculosis has been organized by the Ecole interalliée des hautes études sociales, 10, rue de la Sorbonne. The lectures are held Tuesday afternoons at 5:30. Calmette will speak on tuberculosis in the invaded regions; Rist, on the partisans of compulsory declaration; a member of the lower house, on legislation on tuberculosis; Mlle. Chaptal, on private works, and others on the stand of labor in regard

to declaration, on the work of the Red Cross, the climatic resorts of France, etc.

Semicentennial of the "Correspondenz-Blatt."—With 1920 the important Swiss weekly, the *Correspondenz-Blatt für schweizer Aerzte*, enters on its fiftieth year. Instead of the previous book page, 7 by 9½ inches, it appears in a new form, the pages about 10 by 13 inches. This change is made, it is stated, principally on account of the advertisers. The name of the weekly is also changed to the *Schweizerische medizinische Wochenschrift*, but the editors, publishers, and the principles of the journal remain the same. It always publishes the reports of the various medical societies in both German and French Switzerland, and the original articles are published indiscriminately in German or French. In its new dress it falls into line with the weeklies of Germany and Austria.

Death of Severin Jolin.—The death of the newly appointed president of the Swedish Medical Association is reported, Prof. Severin Jolin, incumbent of the chair of chemistry and pharmacology at Stockholm and since 1917 at Upsala. He has published numerous works on chemistry and pharmacology and on the newer remedies, and was the representative of Sweden at many international scientific gatherings. To him is ascribed in large part the high standard of the Swedish Pharmacopeia as he has taken an active share in the revision of the different editions. Several years of research on the thyroid, especially on its iodin content, led him to the conclusion, in 1906, that iodin is not an indispensable element in the thyroid, but is merely stored there when there happens to be an excess of iodin in the body.

Deaths in the Profession.—In Italy, Dr. **Antonio Riga,** aged 87, of Riga's disease fame. He described it in 1881 as pseudomembranous sublingual frenulitis. Riga's disease is now defined in the dictionaries as cachectic aphthae.—— Dr. **H. Gerber,** professor of laryngology at the University of Königsberg.——Dr. **V. Mucha,** formerly director of the Vienna general hospital, aged 76.——Dr. **O. Tunmann,** professor of pharmacognosy at the University of Vienna.—— Dr. **B. Baginsky,** privat-docent of ear, nose and throat diseases at the University of Berlin.——**Sir Thomas Richard Fraser, M.D.,** Edinburgh, 1862; F.R.C.P., Edinburgh, 1869; formerly president of the Royal College of Physicians, the Medico-Chirurgical Society, the Royal Medical Society, Edinburgh, and the Association of Physicians of Great Britain and Ireland; president of the England Plague Commission from 1898 to 1900; died at his home in Edinburgh, January 5.

The International Health Resort Congress at Monaco.—Great preparations are being made for the Congress for the Expansion of Climatic, Mineral Springs and Baths, and Sea-Bathing Health Resorts which is to be held at Monaco in April. All the Allied and friendly nations have been invited to participate, and preparations have been under way for this congress since early in 1916. It aims to acquaint the world with what these countries have to offer in the way of health resorts, and an exposition in connection will open April 20 and continue into 1921. The exposition will comprise a section for historical objects of interest in this line, a scientific and therapeutic exposition of the various spas, etc., a section of views and data for tourists, a moving picture section, and an industrial and commercial exhibit. There are in fact to be six separate congresses: (1) hydrology and geology; (2) hygiene and climatology; (3) thalassotherapy; (4) spas, seaside and mountain health resorts; (5) mountain climbing (alpinism); (6) touring.

Honors for American Women Physicians in France.—The *Journal officiel* for Dec. 22, 1919, gives a list of seven American medical women honored by the French government with the Gratitude of France medal. Four are said to have served with the utmost devotion at the Hôpital des dames américaines at Luzancy "where the populace had not had any surgical care during the preceding four years of the war": Dr. Charlotte Fairbanks (from St. Johnsbury, Vt.) "performed more than 500 operations and tended the people with extreme devotion;" Dr. Inez A. Bentley (from Kings Park, N. Y.) "by her incessant efforts maintained the equipment of the medical and surgical wards and served as subdirector of the hospital;" Dr. Mary L. Evans (from Middletown, Conn.) "rendered most devoted services to the people" as bacteriologist, director of the laboratory and pharmacy of the hospital, as also Dr. Mary MacLachlan (from Middletown, Conn.) director of the hospital and dispensary. The official list includes further Dr. Mary E. Lapham (from Highlands, N. C.) of the American Red Cross "for her untiring efforts in organizing and conducting a clinic at la Rochelle;" and Dr. Jay Manwaring (from Norwich, Conn.) "for the medical services rendered by her for two years to the people of thirty villages in the Château-Thierry region." All the above were silver medals. A bronze medal was awarded further to Dr. Edith (Elizabeth?) Mercelis (of Montclair, N. J.) who "helped to organize and conduct a number of *œuvres* for the benefit of France." The list is reproduced in the first issue of the *Presse médicale* for 1920.

LATIN AMERICA

Influenza in Cuba.—It is reported from Havana that there are over 6,000 cases of influenza in that city.

Dr. Leiva Returns to Bogatá.—Dr. Leiva Pereira has returned to Bogatá after several years of absence. During the war he volunteered his services in French hospitals and has been decorated by the French government. He was also decorated by the American Ambulance which went to France at the beginning of the war, where Dr. Leiva demonstrated and applied an apparatus he had devised for treatment of fracture of the humerus.

Deaths in the Profession.—Our exchanges mention the death, October 22, of Dr. **Pedro Maria Ibañez,** one of the founders of the Academia Nacional de Medicina of Bogatá, a leader in the progress of science in Columbia, and author of numerous works, including a history of medicine in Colombia.——From Vera Cruz is reported the death of Dr. **Esteban Rojo,** a Cuban physician who had lived in Mexico for more than thirty years, three of whose sons are physicians.

The Recent Earthquakes in Mexico.—According to a letter just received from a Vera Cruz physician, the recent earthquakes caused untold damage and suffering in that region. The trepidation still continues and hills and mountains keep on falling down or breaking apart. San Miguel, a very high peak not far from the Orizaba volcano, broke apart some three kilometers in its center, giving origin to a new volcano which spurts enormous quantities of boiling water that destroys everything in its path. So far fifteen towns have been destroyed by this water. At Jalapa the victims exceed 10,000 and the wounded are also very numerous. Many oil wells are flowing unchecked, and measures will have to be taken to prevent a conflagration. Physicians were among the first to render assistance throughout the territory affected. The representative of the White Cross at Vera Cruz furnished all the medical supplies he had on hand to treat the emergency cases.

Death of Dr. Liceaga.—Dr. Eduardo Liceaga, one of the most prominent physicians and sanitarians of the western continent, died, January 15, at his home in Mexico City. He was for many years president of the national public health service, and had to his credit the stamping out of yellow fever, practically throughout Mexico. He also established the Pasteur Institute of Mexico City, the Maternity Home and Children's Hospital and was responsible for having brought the sanitary service of that country to a high degree of excellence before the recent disturbances began. In recognition of his many services to the cause of medicine in Mexico, he was appointed honorary president of the Mexican Medical Association on its organization, a few months ago. Dr. Liceaga was well known in this country, having attended many medical and sanitary meetings and participated actively in the various international sanitary conferences held in Washington. He was also a member of the International Sanitary Bureau of Washington since its foundation until his resignation as head of the Mexican Public Health Service. Dr. Liceaga was the author of numerous contributions on sanitary subjects, especially yellow fever.

CANAL ZONE

New Society Officers.—At the one hundred and sixtieth meeting of the Medical Association of the Isthmian Canal Zone held at Ancon, December 19, the following officers were elected: president, Dr. Wallace E. Hubbard; vice president, Dr. Cornelius D. Briscoe, and secretary-treasurer, Dr. Nathan B. Kupfer, all of Ancon.

Civil Service Examination.—The United States Civil Service Commission announces open competitive examinations for physicians in the Panama canal zone service to be held, February 18 and March 17. These positions are open to men and women, with a beginning salary of $200 a month, increasing to $300 or more. Applicants must be unmarried, must have had at least one year of graduate hospital experience, and must be between 22 and 31 years of age, unless entitled to preference because of military or naval service.

Government Services

Health Conditions of the Army

The weekly summary of health conditions in the army for the week ending January 16 indicates a higher admission rate and noneffective rate than previously, due to the prevalence of epidemics of mild influenza, complicated in some cases also by pneumonia. The disease was especially prevalent in Camps Grant, Custer, Dodge and Fort Sheridan. Among the American Forces in Germany fewer cases of influenza were reported than for the previous week, while pneumonia and measles showed a slight increase.

Report of Surgeon-General of the Public Health Service

Surgeon-General Blue points out that the United States Public Health Service, through new legislation, has had its work extended to include a division of venereal diseases, a reserve for the Public Health Service and certain activities under the War Risk Insurance Act. The service has outlined an "After the War" program to increase sanitation, to prevent epidemic and other diseases, and to raise the standard of physical health. The program calls for the active cooperation of federal, state and local health authorities, as well as volunteer health agencies. The Division of Scientific Research has made investigations of many diseases, sanitation and sewerage and the pollution of navigable streams and lakes. It has also studied rural sanitation, interested itself in the prevention of the spread of trachoma and, through the hygienic laboratory, controlled the sale of viruses, serums and antitoxins. Special studies have also been devoted to pellagra. Industrial physiology was studied with the assistance of Dr. Frederick S. Lee, who is in the reserve corps, and special educational courses were given by consulting hygienists, C. E. A. Winslow and E. R. Hayhurst. Throughout the report appear the names of well known hygienists and sanitarians whose services have now been made available through the passage of the reserve act. Special sections of the report are devoted to the hygienic laboratory, the domestic quarantine division, extra-cantonment zone sanitation, maritime quarantine, sanitary reports and statistics, also to public health education, marine hospitals, venereal diseases, etc.

Under the heading "Needs of the Service," it is pointed out that most important is the provision of an adequate building for the bureau in Washington. During the past two years the service has experienced the greatest expansion in its history and now occupies space in several widely separated buildings.

He also requests much increased appropriation in order to carry into effect the extensive "After the War" program to provide for additional publicity for public health education.

A pleasing feature of the report is the statement of the names of the personnel of the various divisions, giving credit to those whose united efforts have made the growth of the service and its efficiency possible.

Government to Sell Medicines and Hospital Supplies to Hospitals and Institutions

The director of sales of the War Department has announced that the Surplus Property Division, Office of the Quartermaster General of the Army, will offer for sale quantities of drugs, surgical instruments, surgical dressings, and hospital equipment. The fixed prices will be materially below present market quotations. State and municipal hospitals, free clinics and similar institutions will be entitled to purchase for a period of thirty days, beginning Jan. 29, 1920, and ending Feb. 29, 1920. The materials to be sold were bought by the War Department for use during the war and have been declared surplus because the quantities on hand are in excess of the Army's present requirements. A list of materials, showing the quantities available, location, price and other necessary information may be obtained from any Zone Supply Officer or from the Surplus Property Division, Munitions Building, Washington, D. C. The prices quoted are f.o.b. point of storage. A certified check, cash or liberty bonds, amounting to 10 per cent. of the total purchase must accompany all orders together with shipping instructions when purchase is made by other than state, county, or municipal institutions. A ninety-day credit will be granted to purchasing agents of state, county, or municipalities when requested and no deposit is required by them. All other purchasers will be required to make payment in full before the materials are delivered.

The sale of narcotics will only be made to the classes of persons who have registered and paid a special tax as required by the Harrison narcotic law. Any hospital, institution, or purchasing agency representing charitable organizations in different cities or counties may purchase the entire quantity of any one or a number of items and may resell, issue or divide any portion with other hospitals or charitable institutions. The government, however, will not permit the resale of any of the articles at prices above those paid to the government except that handling charges may be added.

Orders may be made through the nearest of the following Zone Supply Offices: Army Supply Base, Boston, Mass.; 461 Eighth Avenue, New York; 21st Street and Oregon Avenue, Philadelphia; Coca Cola Building, Baltimore, Md.; Transportation Building, Atlanta, Ga.; Army Building, 15th and Dodge Streets, Omaha, Neb.; Fort Mason, San Francisco, Calif.; 17th and F Streets, Washington, D. C.; Newport News, Va.; Jeffersonville, Ind.; 1819 W. Thirty-Ninth Street, Chicago, Ill.; 2d and Arsenal Streets, St. Louis, Mo.; Audubon Building, New Orleans, La.; San Antonio, Texas; New Cumberland, Pa.; Columbus, Ohio; or to the Surplus Property Division, Munitions Building, Washington, D. C.

Foreign Correspondence

LONDON

Jan. 10, 1920.

Sir William Osler

The great gap in the profession made by the death of Osler is manifest in the pages of tribute in the journals by the leaders of the profession. The finest is by the man he affectionately called his "brother Regius of Cambridge"—a kindred spirit as suggested in the previous notice. Writing in *Nature* (a scientific journal) Sir Thomas Clifford Allbutt speaks of Osler bringing to Oxford, "as gifts from the new world, an openness and simplicity of mind and conversation, a frankness and generosity of temper, a freedom from the frost and weight of custom, and a pioneer's command of affairs, which made him as delightful a fellow worker as he was clear-sighted and effectual. Oxford took him to her heart as her own; there as one of her own he rested. And if Osler had not also to capture Great Britain, as he captured Oxford, it was because Great Britain was already his mistress. Indeed, there was not a school of medicine in the Old World where his presence was not almost as well known and his friendship as precious as in the New. It was characteristic of him that a few days later he obtained leave from Oxford to spend some months in Paris, during which he regularly attended the clinics of the great hospitals at 7:30 a. m., like an ordinary student. Of his contributions to knowledge it is as hard to make a list as it would be for Socrates. They were many, no doubt, but consisted even more in his insemination of other minds, in personal teaching and influence on his disciples. His great textbook had many and almost singular merits. It was always helpful in any quest to turn to it, because, if but in a word or the turn of a sentence one perceived that the latest and best researches, if not presented in detail, were known to the author. Thus the work was not a provider only but also to the wise an indicator. Perhaps his most original and valuable researches were in the field of the diseases of the spleen and blood; but he made eminent contributions also to the study of the infections of the heart, of angina pectoris, of malaria, and of many minor maladies. But, the most modest of men, his conversation was always of the good work of others, silent on his own."

In the *British Medical Journal*, Sir Humphrey Rolleston, president of the Royal Society of Medicine, pays a personal tribute: "Perhaps the most remarkable of his many gifts was that of rapidly making and then permanently retaining friendships. To see him speak to, and place at his ease as naturally his equal, a young man somewhat in awe of a famous leader of his profession, seemed an easy matter in his hands, and no doubt was the outcome of a wonderful sympathy that never failed, and at the same time was never

obtrusive or other than natural in a very human man. This made him the same age as his companion, and indeed, much as he loved old men, he delighted in meeting the young. To a mother in terrible distress for the loss of a son in the war he was the gentlest of comforters. In spite of his bravery he was never the same after his only son was killed. There was no trace of the wall between the generations that the years so often build up, and probably few ever realized how strange this was. His encouraging and stimulating attitude to young men made Oxford a Mecca to which there was a constant flow of pilgrims, especially from Canada and the United States, all certain of welcome. Annoyance, irritability or personal feeling of any kind was impossible to imagine in connection with his sunny temperament; that this was part of his philosophy of life is obvious in his charming address "Aequanimitas," and his attitude to his professional brethren finds expression in another address on "Unity, Peace and Concord." Though a shrewd judge of character, neither his opinion nor the reason for it, if unfavorable, was given unless there was some urgent reason, and then the man's surroundings were blamed or a semi-humorous phrase settled the question without further affecting reputation. His literary style was epigrammatic, with apt illustrations, attractive from its classical flavor, and with the distinction conferred by his easily discernable personal touch. This was the feature of his popular textbook, so remarkable for its up-to-date picture of our science. His output was enormous, and it was a puzzle how with innumerable engagements outside and an open house, very rarely without its complement of visitors, he found time to read and work. To see him examine a case was a lesson in thorough clinical observation and not least because the patient's interest was not forgotten in that of the case."

A pathetic incident is the fact that the Collection of Essays in celebration of Osler's seventieth birthday, presented by friends and pupils on both sides of the Atlantic, arrived at Oxford only two days before his death and were never seen by him. His body, which rested overnight in Christchurch Cathedral, Oxford, close by the monument of Richard Burton, one of the great dead to whom he was devoted, was brought by road to London for cremation. The family desired that the ceremony should be strictly private. Lady Osler, her sister, the late Sir William's brother, and the physicians and nurses were present. The ashes were placed in an urn and taken back to Oxford. They will probably be sent to Canada for burial, but a final decision has not yet been taken.

State Rewards for Medical Discoveries

An important report has been issued by a joint committee of the British Medical Association and of the British Science Guild, which has been considering the question of awards for medical discoveries. The committee defines medical discoveries as being: (1) the ascertainment of new facts or theorems bearing on the human body in health and on the nature, prevention, cure or mitigation of injuries and diseases; (2) the invention of new methods or instruments for the improvement of sanitary, medical and surgical practice, or of scientific and pathologic work. The reasons given for rewarding medical discoveries are the encouragement of medical investigation and the discharge of a moral obligation incurred by the public for its use of private effort. The various possible types of rewards are cited as: titles and honors given by the state, by universities and other public bodies; prizes and medals; patents; promotion and appointments; pecuniary rewards by the state. Concerning the general principle of assessment, the committee hold that, in the interests of the public, all medical discoveries should if possible receive some kind of acknowledgment or recompense. But in view of the variable conditions, nature and effects of particular investigations, it will often be difficult to assess the kind of recompense suitable. In the first place, a distinction should be drawn between compensation and reward. By compensation is meant an act of justice done to reimburse losses; by reward an act of grace in appreciation of services. The following different cases should be considered: A. Discoveries involving pecuniary or other loss either by direct monetary sacrifice or by expenditure of time, or by diminution of professional practice, without corresponding pecuniary gains. An example is that of Jenner, who occupied himself so closely with the investigation of vaccination that he lost most of his medical practice and also a considerable sum in expenses. This was fully acknowledged by Parliament, which granted him $150,000. B. Discoveries that have increased the professional emoluments of the investigator by enhanced practice or other means. Such are frequently improvements in surgical operations or medical treatment, which leads to increased practice. Another case is that of serums, etc., which may have been protected and put on the market. Here compensation cannot be demanded, and pecuniary rewards are generally unnecessary. On the other hand, honors are often and justly bestowed for such work. C. Discoveries that involve neither gain nor loss to the investigator. This class includes most of the good and sometimes great clinical, pathologic and sanitary discoveries. Here also compensation can scarcely be demanded, and honors are already often given, but pecuniary awards should sometimes be bestowed as an act of grace when the value of a discovery greatly exceeds the emoluments of the investigator. This principle should hold even for men who are directly paid for undertaking the research, especially when such payment is (as usual) small and the discovery great. Special attention is drawn to: (1) men who have refused lucrative posts to complete researches; (2) men who have refused to protect their work for fear of limiting its application, and (3) men who have carried out investigations for governments for little or no payment, on patriotic grounds.

In the public interest, the committee insists on these principles: 1. No medical discovery should be allowed to entail financial loss on him who has made it. 2. Compensation or reward should be assessed as equal to the difference between the emoluments actually received and those which a successful clinician might have received in the same time. Additional reasons for this are that few medical discoveries are patentable, and they seldom give good grounds for promotion or for administrative appointments in the public services. Whether a particular discovery shall receive large or small assessment will depend, in addition, on these considerations: 1. Width of application. For example, the work of many of the older anatomists, physiologists, and parasitologists, of Pasteur and of investigators of immunity, have affected most recent discoveries. Discoveries on widespread diseases, such as the work of Lister, Laveran or Koch, are often more important than those on more limited maladies. 2. Difficulty of the work done. The solution of a difficult problem requires more study and also more time and cost, and therefore deserves more recompense than a chance observation. 3. Immediate practical utility. A strong plea can be made for state remuneration in cases of this kind unless they come under Class B. Curiously, they never receive it, and academic recognition is also often not forthcoming. 4. Scientific importance. Discoveries not of practical utility may become so at any moment and should be included in the scheme if sound and of wide application.

During the last few years, the British government has disbursed an annual grant of about $300,000, under the Medical Research Committee, for subsidizing investigations authorized by the committee and carried on by workers selected by it. This grant does not remunerate discoveries already made, but proceeds on the principle of payment for prospective benefits. The principle of payment for benefits already received should also be followed, as in other countries. Payment for prospective benefits is good business only when some return is almost certain. Hence subsidizing researches most frequently deal with simple and straightforward questions, admitting of immediate experimental reply. But most of the greatest medical discoveries were built on a much more speculative and uncertain basis by men who neither sought nor received subsidies—such men as Jenner, Sims, Simpson, Lister, Koch, Laveran, Bancroft, Manson, Bruce, Mackenzie. Surely the state should encourage this class of investigation also, because it costs the state nothing in the doing and seems to achieve the greatest results. This can be done only in one way—by payment. There are at present in this country hundreds of physicians and others who have the knowledge, the brains and the opportunity for private independent discovery, without subsidies, but who do not attempt it because medical research work does not pay even when brilliantly successful. They should be brought into the fold of research by the offer of a reward when they succeed.

Fatal Anthrax from Japanese Shaving Brushes

The contraction of anthrax from shaving brushes imported from Japan has been reported before in THE JOURNAL (Dec. 13, 1919, p. 1849). The Ministry of Health now announces that several other cases have occurred, two of which have been fatal, and that in a substantial proportion of the cases the infection was from new brushes recently imported from

Japan. The government is taking steps with regard to further importation. The ministry recommends the following process to any person who has any doubt as to a shaving brush, but does not suggest that it is a certain safeguard against infection: Thoroughly wash the hair of the brush with soap and warm water to which a little washing soda has been added, rinse in warm water, and then immerse for one hour in a solution of liquor formaldehydi. The disinfecting solution should be at a temperature slightly above the body heat. After removal the brush should be allowed to dry before use. Care should be taken not to allow the hair to come in contact with the hands.

Research Work at the Zoological Gardens

The prosectorium at the Zoological Gardens, used for research in comparative anatomy, has been reconstituted, and Professor Leiper of the London School of Tropical Medicine has been appointed director. As temporary lieutenant-colonel in the army he worked out the life history of *Bilharzia haematobia*. Since the days of Owen and Huxley the bodies of animals which die in the Zoological Gardens have been used for research in comparative anatomy. A succession of distinguished prosectors and many well known surgeons and zoologists have added to knowledge of the higher vertebrates by work at the gardens. Shortly before the war, the work was extended so as to include routine pathologic investigation into the causes of death.

PARIS

Dec. 24, 1919.

The Example Set by the United States in Matters of Hygiene

Though the war caused great sorrow and brought many afflictions, it has brought also some blessings. It facilitated the exchange of ideas between the allied nations and thus led to a better acquaintanceship and a closer union. This is particularly true with respect to the United States and France. During the progress of the war numbers of Frenchmen were put in a position to appreciate American methods and institutions. In matters of public hygiene, especially, the United States exerted a salutary influence. At the sixth annual meeting of the Société de médecine publique et de génie sanitaire, which was held recently in the Institut Pasteur, Prof. S. M. Gunn, assistant director of the Rockefeller Foundation Commission, reported the results of the hygienic crusade that was undertaken by the commission in the schools of the department of Eure-et-Loire, which followed the plan adopted for the schools of the United States. The success of this campaign has been so encouraging that the commission hopes to be able to put this branch of public health work on a permanent footing in all of France.

Similarly, various plans for reforming hygienic instruction in the medical schools owe their inspiration to the work done in the United States. For example, it is coming to be recognized that hygienic instruction must consist of two distinct stages: first, an elementary course which all students must pursue, and second, an advanced elective course for older students. Dr. Paul Courmont, professor of hygiene at the Lyons Faculty of Medicine, has already introduced these two courses. Dr. Léon Bernard, professor of hygiene at the Paris Faculty of Medicine, thinks that, following the example of the United States, a series of courses in hygiene should be established to prepare specialists in hygienic work. He advocates the following three courses: (1) a course preparing candidates for the special duties of public health officers (director of public health, state [departmental] inspector, marine public health officer); (2) a course preparing candidates for the special duties of medical inspector of schools, and (3) a course preparing for the duties of dispensary physician and director of antituberculosis sanatoriums, to be followed by a term as assistant in such establishments.

The Campaign Against Charlatanism

The Société de médecine publique et de génie sanitaire, in view of the fact that a form of charlatanism that is dangerous to public health is practiced by a number of physicians and by certain pharmacists and industrials, has given formal expression to the opinions that it entertains in the matter: 1. Certain forms of charlatanism practiced by various doctors of medicine are detrimental to the medical profession, and for that reason it would be well to take up the matter with the Union des Syndicats médicaux. 2. The Société de médecine legale, which has appointed a committee to study into the various forms of charlatanism in vogue, should be asked to determine just what the legal status is of certain establishments that pompously assume the name of "institutes," and certain anonymous personalities who affirm to be able to cure all diseases within an improbable time limit should also be investigated. 3. The Service de la répression des fraudes should be requested to take more energetic action against vendors of pharmaceutical products and hygienic apparatus when it can be shown that the merchandise in question is sold under false pretenses. 4. It would be well to prohibit the publication, in any journal, of advertisements of any pharmaceutical products other than those approved by a competent commission or council composed in part of members of the Syndicat des pharmaciens et des droguistes.

Ceremonies Held at the University of Paris

The council of the University of Paris has decided to hold special exercises each year in celebration of the reopening of the school. This year it was only natural that the event should take the form of memorial exercises in honor of our dead heroes. The services that the University of Paris rendered during the war were also called to mind. The ceremonies were held in the large amphitheater of the Sorbonne, at the conclusion of which the rector of the university conferred the title of doctor honoris causa on Sir Frederic Pollock, English counsellor at law; Dr. Brachet, professor at the University of Brussels; Vito Volterra, Italian senator, dean of the faculty of science in Rome; M. Nyrop, professor at the university of Copenhagen, and H. G. Greenich, dean of the school of pharmacy in London. Previously, only one title of doctor honoris causa had been granted by the University of Paris, and was conferred last year at this time on President Wilson, by reason of his having been president of the University of Princeton.

The university has decided to hold special religious services in memory of its faculty members and its students who died for their country.

Action in Memory of the Physicians Who Died for France

At the instance of the Paris Faculty of Medicine, all faculties and schools of medicine, all medical and scientific organizations, and all student associations have decided to solicit subscriptions for a fund to be used in exalting the memory of the 1,600 physicians and medical students who died for their country. In every regional center of school or faculty, and in the principal groups of professional societies committees are to be appointed to take charge of the propaganda and to receive subscriptions.

The amount so subscribed will be used: 1. For the publication of an elaborate work containing the names of the heroes and the citations that have been accorded them; this book will be put on sale and the proceeds will revert to the subscription fund, copies of an edition de luxe being given to those who subscribe forty francs or more. 2. For the erection in Paris (near the Faculte de médecine) of a monument that shall be in keeping with the important services rendered during the war by the medical corps as a whole. An appeal is made to all French physicians, to the physicians of allied countries, to the families of these dead heroes, and to all those who, during the war, became indebted to the physicians for their life and health. Subscriptions may be sent to Dr. Bongrand, trésorier général du Comité, 6, rue Villaret-de-Joyeuse, Paris-XVII.

Marriages

Carl Ashton Broaddus, Lieut., M. C., U. S. Navy, to Miss Virginia Courtney Henshaw of Carolina County, Va., at Washington, January 15.

Joseph Anthony Pessolano, Philadelphia, to Miss Florita Marie de Dominicis of Albany, N. Y., at Philadelphia, November 19.

Edward H. Moriarty, Mt. Clemens, Mich., to Miss Estella Doyle of Chatham, Ont., January 13.

Sidney Kallaway, Philadelphia, to Miss Ella M. Lee of Shamokin, Pa., December 3.

Henry Melvin Lee, to Miss Clara Harris, both of Minneapolis, December 27.

Deaths

John Van Rensselaer Hoff ⊕ Colonel M. C., U. S Army (retired), Washington, D C.; one of the most distinguished officers of the Medical Corps and leader in the movement by which the medical department became a staff corps; died in Walter Reed Hospital, Washington, D. C., January 14, after a surgical operation for septic gall bladder. Colonel Hoff was born at Mount Morris, N. Y., April 11, 1848; the son of Brevet Colonel Alexander H. Hoff, Medical Department, U. S. Army, and Eliza Van Rensselaer. He was graduated from Albany, N. Y., Medical College, in 1871, and also from the College of Physicians and Surgeons in the City of New York in 1874. In the same year he was appointed First Lieutenant and Assistant Surgeon, U. S. Army, in 1879 he was promoted to Captain, and Assistant Surgeon, and to Major and Surgeon in 1891. He organized the first detachment of the hospital corps in the Army at Fort Reno, I. T., in 1887, and the first company of instruction hospital corps, at Fort Riley, Kan., in 1891. He was also recommended for brevet and medal of honor in the Sioux Campaign in 1890 and 1891. He served through the war with Spain as chief surgeon in Porto Rico, and there organized and was president of the superior board of health and board of charities. He was chief surgeon of the China relief expedition in August, 1900. Colonel Hoff was a member of the faculty of the Army Medical School in 1901 and 1902, serving during the same period as president of the Association of Military Surgeons of the United States. In 1901 he was commissioned Lieutenant-Colonel, and Deputy Surgeon General, and in 1905, Colonel, and Assistant Surgeon General. In the latter year he was detailed as observer with the Russian Army in the Russo-Japanese War; in 1906 he was chief surgeon of the Department of Missouri, in 1907 and 1908 chief surgeon of the Philippines Division, in 1909 chief surgeon of the Department of the Lakes, and from 1910 until his retirement for age in 1912, chief surgeon of the Department of the East, and Eastern Division. Since his retirement, Colonel Hoff has lived in Washington, and for a considerable time was editor of the *Military Surgeon*.

Edward Chauncey Register, Jr., Lieut.-Col., M. C., U. S. Army; Medical College of Virginia, Richmond, 1908; aged 35; died at Tarnapol, Poland, January 3, from typhus fever. He graduated from the Army Medical School in 1911; was commissioned First Lieutenant, M. C., in the same year, promoted to Captain in 1914; to Major, May 15, 1917; and to Lieutenant-Colonel, June 12, 1918. His military service included a tour of duty in the Philippine Islands and China, and he also was a member of the punitive expedition into Mexico. In July, 1919, he was assigned to duty with the American Expeditionary Forces in France, his special work being the repatriation of German prisoners; he went to Poland in December with the American-Polish Relief Commission organized for the purpose of stamping out typhus fever, and in his letters reported a shocking and tragic condition of affairs in that area, with scarcity of fuel, clothing and food.

Frederick James Russell, Thiells, N. Y.; Tufts College Medical School, Boston, 1897; aged 46; a member of the Medical Society of the State of New York; for eight years a member of the staff of the Massachusetts School for Feeble-Minded, Waverly, then for three years superintendent of the Vermont School for Feeble-Minded, Brandon, an institution which he organized, and for the last year superintendent of Letchworth Village, Thiells; was operated on for brain tumor at the Neurological Institute, New York City, October 21, and died, December 21.

Clarence Jeptha Edwards, Abbeville, La.; University of Louisville, Ky., 1883; aged 61; a member of the Louisiana State Medical Association; for several years president of the board of health of Vermilion Parish; once a member of the state senate; for several years coroner of Vermilion Parish, and at the time of his death president of the school board of the parish; for several years editor and proprietor of the Abbeville *Meridional,* died, January 14, from heart disease.

John Robert Bosley ⊕ Lieut.-Col., M. C., U. S. Army (retired), New York City; Johns Hopkins University, Baltimore, 1901; aged 43; a graduate of the Army Medical School in 1904; who entered the Army soon after his graduation and was promoted to Captain, April 23, 1908; to Major, July 1, 1916, and to Lieutenant-Colonel, May 15, 1917, and was retired, Dec. 31, 1917, on account of disability in line of duty; died, January 8, from diabetes.

Ernst Fred Tiedemann ⊕ St. Louis; Washington University, St Louis, 1880; aged 58; associate professor of bacteriology in his alma mater; professor of pathology and bacteriology in Beaumont Medical College and Marion-Sims Medical College in 1900 and 1901; pathologist to St. Mary's Infirmary and the Jewish Hospital, and consulting pathologist to the St. Louis Mullanphy Hospital; died, January 15, from an overdose of morphin.

Michael Behrman ⊕ Visalia, Ky.; Medical College of Ohio, Cincinnati, 1903; aged 38; a member of the American Academy of Ophthalmology and Oto-Laryngology; formerly secretary of the Covington Board of Health; died in his room in the Palace Hotel, Cincinnati, January 12, from the effects of a gunshot wound of the head, believed to have been self-inflicted while he was despondent on account of illness.

Leon Brayton Harris, Saginaw, Mich.; University of Michigan, Ann Arbor, 1909; aged 33; a member of the Michigan State Medical Society; formerly coroner of Saginaw County; who was commissioned Captain, M. R. C., U. S. Army, and honorably discharged, July 14, 1919; died in the Saginaw General Hospital, January 12, after an operation for appendicitis.

James Rhines ⊕ Laurium, Mich.; Michigan College of Medicine and Surgery, Detroit, 1902; aged 42; who was commissioned First Lieut., M .R. C., U. S. Army, and was honorably discharged, Jan. 9, 1919; assistant physician to Mohawk Mining Company, and physician to Ojibwa Mining Company; died in Rochester, Minn., about January 10.

Taylor E. Raines ⊕ Concordia, Kan.; Hahnemann Medical College, Chicago, 1891; aged 67; formerly secretary and president of the state board of medical registration and examination, and president of the local board of health; one of the first health officers of Cloud County; died, January 12, from spinal disease.

Henry Josef Kreutzmann, San Francisco; University of Erlangen, Germany, 1880; aged 64; a member of the Medical Society of the State of California; formerly professor of gynecology and obstetrics in the San Francisco Polyclinic; while returning from a hunting trip, January 14, died on the train, from heart disease.

Joshua Restord Weeks, Brooklyn; University of the City of New York, 1877; aged 64; surgeon of the Second Infantry N. C. N. G. in 1877 and 1878; local surgeon of the Houston and Texas Central Railroad from 1892 to 1894; died, January 12, from cerebral hemorrhage.

Milton A. Hengst, Birdsboro, Pa.; Jefferson Medical College, 1878; aged 75; a member of the Medical Society of the State of Pennsylvania, and for ten years president of the board of health of the borough of Birdsboro; died, January 10, from cerebral hemorrhage.

Leonard Charles Mead ⊕ Yankton, S. D.; Rush Medical College, 1884; aged 63; for nearly thirty years superintendent of the State Hospital for the Insane, Yankton; a member of the American Medico-Psychological Association; died in that institution, January 10.

Frank Lawrence Cochrane ⊕ Brooklyn, N. Y.; College of Physicians and Surgeons in the City of New York, 1900; aged 44; died, January 16, from the effects of a gunshot wound of the brain, self-inflicted, it is believed, while despondent.

Charles L. Wilson, Mansfield, Mo.; Missouri Medical College, St. Louis, 1888; aged 63; for twenty-five years head of the St. John's Hospital Dispensary, St. Louis; died at the home of his sister in Santa Cruz, Calif., January 2, from cerebral hemorrhage.

John Joseph Alderson ⊕ Chicago; Northwestern University Medical School, Chicago, 1885; aged 68; once president of the West Side branch of the Chicago Medical Society; vice president of Grace Hospital; died, January 21, from rheumatic endocarditis.

Charles Albert Church ⊕ Millbury, Mass.; University of Vermont, Burlington, 1884; aged 60; while driving across the tracks of the New Haven Railroad near Northbridge, Mass., January 13, was struck by a train and almost instantly killed.

George W. Rhoads, Shelbyville, Ill.; Jefferson Medical College, 1866; aged 88; for forty-eight years a druggist of Shelbyville; a veteran of the Civil War; died, January 14.

⊕ Indicates "Fellow" of the American Medical Association.

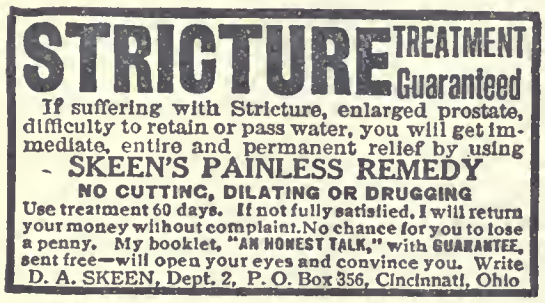
The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

SKEEN'S STRICTURE CURE A FRAUD

Postal Authorities Deny the Use of the United States Mails to a Mail-Order Quack

For some years a concern in Cincinnati, which has gone under the names "D. A. Skeen" and "The D. A. Skeen Co." has advertised a mail-order treatment that was "guaranteed"



Typical advertisement of the Skeen Stricture Cure.

to cure stricture or enlarged prostate. The overworked fraud-order department of the Post Office finally got around to this piece of quackery and has put it out of business by denying to the concern and its manager the use of the United States mails.

In July, 1919, George B. Poole—who was really the D. A. Skeen Co.—was called on by the federal authorities to show cause why a fraud order should not be issued against his business. When the case first came up for hearing, Poole and his attorney, Alfred G. Allen of Cincinnati, offered evidence in an attempt to defend the concern against the Government's charges. Later, Poole and his counsel, in correspondence with the federal officials, intimated that, rather than have a fraud order issued, the business would be discontinued. As a result, the Government offered to withhold further action, providing Poole would execute and file an affidavit to the effect that the business had been discontinued and would not be resumed any time in the future and that the postmaster at Cincinnati would be directed to treat all mail sent to the D. A. Skeen Co. as "refused." After leading the federal authorities to believe that this disposition of the case was desired, Poole refused to submit such an affidavit. As a result, the Government issued a fraud order against Poole and the D. A. Skeen Co.

The extracts that follow are taken from the memorandum of Judge W. H. Lamar, Solicitor for the Post Office to the Postmaster-General recommending the issuance of a fraud order.

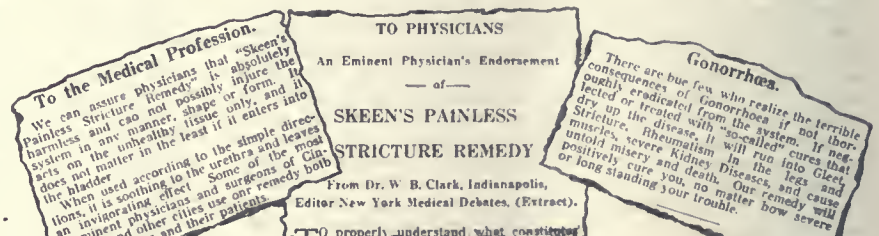
"The scheme in substance is to falsely represent to persons that a certain treatment known as 'Skeen's Painless Remedy,' sold by respondents through the mails for use according to directions, will cure any case of Stricture or Prostate Gland trouble, and all Genito-Urinary diseases and conditions, and other serious troubles which affect persons, regardless of the cause from which the disease or diseased condition arises, their seriousness or the length of their standing; and by means of such representations and promises obtain remittances of money in payment for said treatment. It appears from the evidence that the business done in pursuance of this scheme was started as early as 1885 by one David A. Skeen, who, according to Mr. Poole's testimony, had the treatment made up under a prescription of one of the 'oldest and best known physicians in the South,' although he could not give the name of this physician, nor was there anything in the records of respondent's business to show that they have had such a prescription. Skeen himself was not a physician and knew nothing of the cure or treatment of diseases, or the effect of drugs on the human system, but depended solely on the remedy prepared from this alleged prescription to cure some of the most serious diseases with which persons can be afflicted. Skeen died in 1914. George Poole, the present manager and principal owner of the business, settled his estate, continued the business and incorporated the same under the name The D. A. Skeen Company. George B. Poole, who is the president of this concern, is 65 years of age. He is not a physician and does not employ or consult a physician in connection with the treatment of persons who deal with him through the mails. He did not consult any competent authority to ascertain whether it was safe and legitimate to treat these various diseases and conditions before continuing the business, but in order to induce the public to take this treatment placed advertisements in a large number of papers which have a general circulation through the mails and employed literature of the most misleading character for the purpose of having persons buy the remedy."

The memorandum then quotes a number of typical advertisements used by Poole in obtaining purchasers for the Skeen "treatment." The stuff was analyzed in the Bureau of Chemistry of the Department of Agriculture and the analysis was submitted to the postal authorities in a report of Dr. Lyman F. Kebler, who has done much valuable work in aiding the Post Office in protecting the public against mail-order medical swindles. Dr. Kebler's report showed that the product was essentially a solution of ferric chlorid dissolved in alcohol and water:

Alcohol	45 per cent.
Solution of ferric chlorid	1.7 per cent.
Iron sulphate	.07 per cent.
Flavored with sassafras, etc.	

The memorandum continues:

"The evidence shows that this treatment consisting of one combination of drugs cannot reach and remove the serious diseased conditions which respondent urges can be permanently cured by the use of this remedy. The representations and promises above quoted and others appearing in respondent's advertising literature have been repeatedly shown to be false and fraudulent by the testimony of medical experts skilled in the science of the treatment of diseases and diseased conditions who have frequently been called upon to testify in similar medical mail order cases before the Post Office Department, and such testimony was adduced in this case and is a matter of record herein. This testimony was given by highly experienced and well qualified physicians and is based not only upon their actual experience in the treatment of these diseases, but also upon certain well established physiological, anatomical and therapeutical facts with which they are familiar. The testimony shows that each of the numerous diseases and diseased conditions treated by these respondents with this one remedy may arise from many and varied causes, and in order to successfully treat such diseases and diseased conditions it is necessary first to ascertain the cause or causes thereof, and then



Of course, the Skeen concern issued an advertising booklet. Here are miniature reproductions of portions of some of the pages in this booklet. The "Endorsement" of the Skeen "cure" by the "Eminent Physician" of Indianapolis occupied two pages of the booklet. We only have space for the heading.

intelligently apply a suitable treatment which will reach and remove such cause or causes, and in order to effect a cure the superinducing cause must be found and treated, that different causes often require different treatment and that no one treatment can or will cure all cases, and might not cure any."

Judge Lamar then quotes the evidence of the witnesses called by the Government in the case and concludes:

"This and other testimony in the case very clearly indicates the falsity of the representations made by these respondents in order to market their treatment. It leaves no doubt as to the inability of the remedy to relieve and cure the various diseases and diseased conditions for which it is recommended. It shows that these conditions in question may arise from various causes each of which may require for its removal different treatment; that none of the drugs which compose the treatment used, either separately or in combination can, unless by chance, reach and remove the principal cause which produces the condition, and hence cannot effect the promised cure. The return of the postmaster at Cincinnati, Ohio, shows that about the time of the issuance of the citation in this case from 15 to 20 pieces of mail were received daily at that office addressed to The D. A. Skeen Company and delivered.

"I find that this is a scheme for obtaining money through the mails by means of false and fraudulent pretenses, representations and promises, and I therefore recommend that a fraud order be issued against The D. A. Skeen Company, and G. B. Poole, Manager, at Box 356, and 22 Opera Place, Cincinnati, Ohio."

The fraud order was issued December 3, 1919.

Correspondence

"HIGH PROTEIN DIETS AND NEPHRITIS"

To the Editor:—In THE JOURNAL, January 10, p. 107, the following editorial statements appear under the above title:

"We may accept these observations . . . without admitting their wider significance in the etiology of human nephritis. . . . It must be remembered that the diets used by Newburgh were potentially acid in character, and certain to produce an acid urine in a species adjusted and accustomed to secrete an alkaline fluid under a free choice of food. Until such experiments are successfully duplicated under conditions in which the normal reaction of the renal secretion is not tremendously altered and the accessory factors in the diet are known to be adequate, the incrimination of the high protein diets in connection with nephritis must be considered with judicial reserve."

The writer of the editorial refuses to admit that the experiments in question bear on the problem of the cause of human nephritis because the renal injury might, in his opinion, have been produced by the acid character of the diets or by the absence of some essential food factor.

Neither of these objections is justified by the facts. Even though the writer of the editorial states that the diets were certain to produce an acid urine, the data show that such was not the case. A careful review of my notes discloses the fact that, without exception, the urines of the rabbits eating both the casein mixture and the soy bean diet were alkaline to litmus.

The second objection offered implies that the nephritis might be an expression of a deficiency disease. Here, again, a "judicial consideration" of the data will show that such a view is untenable. In the case of the casein experiments it will be noted that two groups of animals were used. Each group was fed a diet made up of a mixture of milk, water and carrot, to which casein was added. The first group of rabbits received 15 gm. of casein daily in this way; the second group, 30 gm. The first group failed to develop nephritis. How, then, can the nephritis which was found in the second group be attributed to a lack of something in the diet, when the latter group received everything which the first group did, and in addition, fifteen more grams of casein daily?

When we come to the soy bean experiments we also find sufficient evidence to prove that the nephritis was not caused by the absence of something in the food. The investigators who have made a special study of the vitamin content of foods have compared the growth curve of animals eating foods whose vitamin content was to be tested, with the normal growth curve. On the basis of such studies, a food which permits normal growth is accepted as one whose vitamin content is adequate. In the soy bean experiments, two groups of young animals were used. One group was used as a control; the other group was fed the beans. All other conditions were identical for the two groups. The controls, after living on the stock laboratory diet for seven months, had an average individual weight of 2,415 gm. Their kidneys were normal. The group of young animals eating soy beans averaged 2,179 gm. at the beginning of the experiment. Three months later, their average individual weight was 2,497 gm. Still another group of rabbits eating soy beans weighed 2,382 gm. at the beginning of the experiment and 2,780 gm. three months later. The animals living on soy beans gained weight at more than the normal rate in both instances. Evidently, then, the nephritis produced by the soy beans cannot be attributed to a lack of something in the diet.

L. H. NEWBURGH, M.D., Ann Arbor, Mich.

"THE ACUTE ABDOMEN"

To the Editor:—Anent the controversy of your correspondents (Dr. M. W. Lyon, Jr., THE JOURNAL, Dec. 20, 1919, p. 1897, and Dr. Ramsay Spillman's rejoinder, Jan. 3, 1920, p. 47) will you please allot me some of the valuable space of THE JOURNAL to shed additional light on the moot point, "acute abdomen."

I want to call attention to the fact that William Henry Battle, senior surgeon to St. Thomas Hospital, London, whose name is identified with the incision so extensively employed in operations for appendicitis, delivered an oration before the Medical Society of London, ten years ago, entitled "The Acute Abdomen." Under this very caption, "The Acute Abdomen," the first edition of his monograph, 250 pages, appeared, dedicated to students and surgical dressers, which, having been exhausted in 1914, went into a second edition.

Perusal of this book, "The Acute Abdomen," which bids fair to become a classic, might answer the hypercritical Dr. Lyon, and perhaps explain to Dr. Spillman the *fons et origo* of the purity of the terminology, "The Acute Abdomen," which he credits to Dr. Gibson.

Comment of the editor has it that "scientific medicine demands scientific phraseology." Be that as it may, there is also an art of medicine to be considered; and to give expression thereto, it is meet to draw such metaphor as "the acute abdomen," which visualizes a clinical picture, the syndrome of which is common to a host of acute ailments peculiar to the abdomen. As for terminology — the essence alike of science and art — both are daily enriched by new coined words. Thereafter, common usage is authority for their sanction and thereby establishes its precedence over pedantry. Why muse with Homer or risk being judged hypercritical, when browsing amid the bookshelves of a modern library would have led "to pastures new"—"The Acute Abdomen" of ten years' growth.

MARTIN W. WARE, M.D., New York.

"STANDARDIZATION OF LABORATORY TESTS"

To the Editor:—Reference to the standardization of the Wassermann test was made in two recent numbers of THE JOURNAL (Dec. 6, 1919, p. 1773, and Dec. 20, 1919, p. 1897). In neither of these was mention made of research work which is now being conducted at the University of Pennsylvania and the Polyclinic in Philadelphia under the direction of John A Kolmer, and which represents, no doubt, the best attempt which has as yet been made to standardize this important test. The results of this work will, I am informed, appear in a series of about twenty papers in the

American Journal of Syphilis. The first two articles of this series were published in the January, 1919, number of that journal. To date, six papers have appeared. It is expected that the balance will appear during the course of this year. All laboratory workers who make the Wassermann test will be greatly interested in the results obtained by the Philadelphia investigators.

HENRY ALBERT, M.D., Iowa City.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

"PNEUMO-STREP-SERUM"

To the Editor:—Mulford & Co. are advertising a serum called pneumo-strep-serum, one of their advertisements appearing in the *Journal of the American Public Health Association* for January, 1920. Is there really anything in the claims which they put forth in this advertisement which should lead men to use a combined serum of this kind? A hasty reading of this advertisement by medical men would induce them to believe that this serum was the very mithridate of pneumonia.

Your opinion of the subject will be thankfully received.

GEORGE W. GOLER, M.D.,
Health Officer, Rochester, N. Y.

ANSWER.—This advertisement is in the form of an announcement, with large head lines "Announcing the Production of Pneumo-Strep-Serum." It informs the physician that reports from army camps indicate that various streptococci are frequently associated with pneumococci as causative factors in pneumonia. The advertisement features a picture showing the method of injecting cultures into a serum-producing horse. It suggests to the physician that "when it is determined that the pneumonia is complicated by the streptococcus, the conjoint use of Antipneumococcic Serum Polyvalent and Antistreptococcic Serum Polyvalent is indicated." The advertisement then goes on to say that "the difficulties and inconvenience of separate injections" may be avoided by the use of this new preparation, which is prepared "by injecting horses simultaneously with the fixed types I, II and III of pneumococcus, also some strains from group IV pneumococcus, and 15 key strains of streptococcus." This serum, the manufacturer says, "therefore possesses the combined advantages of antipneumococcic and antistreptococcic serums." It is also claimed that "it contains antibodies against all the various strains of pneumococcus and streptococcus employed." Finally, it is stated that "by standardization against type I pneumococcus, it is equally as potent against type I pneumonia as the type I and polyvalent antipneumococcic serums."

The advertisement by going beyond our present knowledge carries misleading inferences, a few of which may be mentioned. It takes for granted that the therapeutic value of antipneumococcus and antistreptococcus serums is settled. The fact is that the different varieties of such serums are still in the experimental stage. The serum against pneumococcus type I has received perhaps the most favorable comments, but available evidence based on the experience in the army camps during the war does not leave a very large margin on which to predicate any claims for effective specific action even by this serum. Of the other serums of the class mentioned in the advertisement not one warrants the inferential claim of specific value. Again, the advertisement conveys the impression that pneumonia generally is a mixed infection, but that is not the case, especially when it concerns the classical lobar pneumonia caused by some variety of the pneumococcus, and, after all, that is the kind that the physician is called on most frequently to treat. The advertisement assumes a power of antibody-production by the horse that has not been demonstrated. Fundamental facts in immunology indicate that a horse injected with so great a variety of antigens is not able freely to produce all the corresponding antibodies. Even if the serum of horses injected with a single variety of pneumococcus or streptococcus can acquire specific therapeutic value in human infections with that organism—which has not been demonstrated conclusively—there nevertheless would be little chance that a horse injected simultaneously with the fixed types one, two and three of pneumococcus, also some strains from group four pneumococcus and "15 key strains" (whatever that may mean) of streptococci could yield a serum of such manifold specific virtues as inferred by the advertisement.

The basic question involved in the inquiry is whether or not the medical profession should take its therapeutics from the manufacturers of therapeutic products. The medical profession has, for its own protection and information, created a body that is competent to determine the probable scientific value of therapeutic agents. That body is the Council on Pharmacy and Chemistry. Had the "Pneumo-Strep-Serum" of Mulford's the virtues with which the advertisement inferentially endows it, this product would have been accepted by the Council on Pharmacy and Chemistry for inclusion in New and Nonofficial Remedies. It has not been so accepted although many other biologic products of the same manufacturer have been. It is to be regretted that such journals as the *American Journal of Public Health, Military Surgeon, Southern Medical Journal, Journal of Laboratory and Clinical Medicine*—among many others—should permit the use of their pages for such purposes when they could easily protect themselves and their readers by securing accurate information concerning such products from the Council on Pharmacy and Chemistry. If there is one field in which reliable information and unprejudiced scientific opinion should prevail it is in the therapeutics of biologic products. At the present time, too many manufacturers are advertising these products without any regard for scientific fact or rationality, and too many physicians accept therapeutic instruction concerning these products from those commercially interested.

Miscellany

THE PHYSICIAN AND THE PROHIBITION LAW

Internal Revenue Regulations 60, regulating the manufacture, sale, transportation, importation, exportation, delivery, purchase, possession and use of intoxicating liquor under the national prohibition act providing for the enforcement of the eighteenth amendment of the constitution, have just been issued by the commissioner of internal revenue.

Previous regulations provided for the enforcement of the war time prohibition law.[1]

LIQUOR DEFINED

Liquor is defined to include alcohol, whisky, brandy, rum, gin, beer, ale, porter and wine, and, in addition, any spirituous, vinous, malt or fermented liquors, whether medicated, proprietary, patented or by whatever name called, containing one-half of one per cent. or more of alcohol by volume, which are fit for use for beverage purposes. This definition includes homeopathic potencies, attenuations and dilutions. It does not include denatured alcohol or denatured rum or medicinal and other alcoholic preparations unfit for use as beverages.

PHYSICIAN DEFINED

The word "physician" is defined as meaning any person duly licensed to practice medicine and actively engaged in the practice of medicine in the state in which licensed. It does not include osteopaths and chiropractors. Pharmacists are any persons licensed under the laws of any state to compound and dispense medicines prescribed by a duly licensed physician and who are actively engaged in the practice of such profession.

CONDITIONS UNDER WHICH LIQUORS MAY BE USED

Under the conditions provided, intoxicating liquors may be made, transported, sold and used in the manufacture of medicinal preparations in accordance with the formulas prescribed by the U. S. Pharmacopeia, National Formulary,

1. THE JOURNAL A. M. A., Jan. 19, 1918, p. 186; Feb. 9, 1918, p. 410; March 2, 1918, p. 645; July 5, 1919, p. 121; Oct. 4, 1919, p. 1080; Oct. 25, 1919, p. 1304; Nov. 15, 1919, p. 1544.

or the American Institute of Homeopathy, which are unfit for use for beverage purposes:

1. In the manufacture of patented, proprietary and other medicines which are unfit for use for beverage purposes.
2. By retail druggists and pharmacists in the compounding of medicinal preparations unfit for use for beverage purposes, and for dispensing on physicians' prescriptions.
3. By physicians in the practice of their profession.
4. By hospitals and sanatoriums for medicinal and scientific purposes.
5. In manufacturing industrial establishments for first aid treatment.

Alcohol may be used for medication by druggists or pharmacists for laboratory purposes, by dentists and veterinarians in the course of their practice, and by any college, university or institution of learning in any laboratory for scientific research, and in any hospital or sanatorium.

Alcoholic medicinal preparations fit for use as beverages may be used by retail druggists in compounding prescriptions of physicians, by hospitals and sanatoriums for medicinal purposes, and by physicians in the practice of their profession.

WHO MAY SECURE PERMITS

All persons desiring to manufacture, sell, furnish, prescribe, purchase, possess or use intoxicating liquor must procure permits. Persons procuring liquor for medicinal purposes on prescription of physicians holding permits to prescribe are not required to have a permit themselves. Permits to prescribe intoxicating liquor do not confer authority other than to prescribe, that is, a physician holding a permit to prescribe liquor for his patients in his practice is not authorized thereby to manufacture or sell intoxicating liquors.

APPLICATIONS FOR PERMITS

Applications for permits must be made on Form 1404, in triplicate. All three copies must be signed by the applicant, the original being sworn to before a notary public. All three copies must then be forwarded to the federal prohibition director in charge of the administration of the law in the state. The director may issue a permit, such permit being in triplicate, and having the same serial number as the application. One copy of the permit and the application are returned to the applicant.

Full names must be signed to each application. The permit when granted must be conveniently and permanently filed so that it is readily accessible at any time. Any person holding a permit, who moves his place of business (as a physician changing his location) may surrender his copy of application and permit to the director and have a new one issued with the change of location.

Permits issued prior to Jan. 17, 1920, must be renewed as the commissioner may direct, but holders of such permits may continue to operate under them until their new applications are acted on.

Permits issued prior to August 31 of any year will expire on December 31 of that year.

BONDS

Bonds in duplicate must be filed with the application, except that unless otherwise required by the commissioner, no bonds need be filed by physicians, dentists or veterinarians asking for permits to use intoxicating liquor in the course of their practice, or hospitals and sanatoriums.

DELIVERY OF LIQUOR

Whisky and brandy, bottled in bond, for medicinal purposes may be delivered on receipt of permits on form 1410 to hospitals or sanatoriums or to physicians holding permits to purchase liquors for medicinal purposes, or to wholesale or retail druggists or pharmacists.

PERMITS TO PURCHASE

Any person entitled to procure intoxicating liquor must submit an application to purchase on Form 1410. This application, when approved by the director, becomes a permit. The applicant must describe the intoxicating liquor in detail, and must give the quantity in gallons of each kind of intoxicating liquor on hand at the time of the application and the quantity in gallons previously received by him during the current calendar year. The application must also show the name and address of the vender, the purpose for which the liquor is to be used, the serial number of the permit held by the applicant, and the address covered thereby. All applications must be sworn to and must be made in triplicate. If transportation is required, one or two additional copies must be made. All copies are forwarded to the director for approval. All permits to purchase expire in ninety days after the date of approval.

HOMEOPATHIC AND ECLECTIC PHYSICIANS

Physicians of the homeopathic and eclectic schools, after obtaining a permit to use alcohol or homeopathic potencies, attenuations and dilutions in the course of their practice, may procure such preparations from homeopathic pharmacists. One month prior to the current quarter of the calendar year, each homeopathic or eclectic physician may file an application on Form 1410 in triplicate, for the total quantity of alcohol or homeopathic potencies, attenuations and dilutions which he desires to purchase during the following quarter. This application, when approved, becomes a blanket permit to purchase goods for ninety days. It must state the name of the homeopathic pharmacist from whom the physician desires to purchase these preparations. No physician may receive in excess of 15 gallons of alcohol or alcoholic preparations during any one year.

U. S. P. AND N. F. PREPARATIONS

Distilled spirits and wines may be used in the manufacture of medicinal preparations in accordance with U. S. Pharmacopeia and National Formulary or the American Institute of Homeopathy, provided they are unfit for beverage purposes. They must contain no more alcohol than is necessary, and must contain in each fluidounce a dose of recognized therapeutic value.

Preparations included in the U. S. Pharmacopeia and National Formulary which are fit for beverage purposes will be regarded as intoxicating liquor and subject to the same restrictions.

DENATURED ALCOHOL

Alcohol may be denatured by any one of the following seven formulas:

1. Mercuric chlorid, 1:2 000; mercuric chlorid, 0.8 gm.
2. Hydrochloric acid, 60 c.c.; alcohol, 64 c.c.; water, 300 c.c.
3. Mercuric chlorid, 1½ grains; hydrochloric acid, 2 drams; alcohol, 4 ounces.
4. Formaldehyd, 2 parts; glycerin, 2 parts; alcohol, 96 parts.
5. Phenol (carbolic acid), 1 dram; tannic acid, 1 dram; alcohol, 1 pint; water, 1 pint.
6. Alum, ½ ounce; formaldehyd, 2 drams; camphor, 1 ounce; alcohol and water, 1 pint.
7. Liquor cresolis compositus (U. S. P.) 10 c.c.; alcohol, 1,000 c.c.

SALE OF DENATURED ALCOHOL

Retail druggists may sell alcohol medicated as above in quantities not to exceed one pint for other than internal use, without physicians' prescriptions, to persons not holding permits, provided that in each case the container bears a poison label. Alcoholic medicinal preparations, not for use for beverage purposes, may be sold by retail druggists on physician's prescription, provided the name of the druggist appears on the prescription in the physician's handwriting. Prescriptions may not be issued for more than one pint of such liquors at any one time. Refilling of such prescriptions is forbidden. Pharmacists may refuse to fill such prescriptions if they have reason to believe that physicians are prescribing for other than medicinal purposes or that a patient is securing, through one or more physicians, quantities of intoxicating liquor in excess of the amount necessary for medicinal purposes, which shall not be more than one pint to the same person in ten days. Physicians may not prescribe liquor for their own personal use.

PRESCRIPTIONS FOR LIQUOR

Pharmacists filling prescriptions for intoxicating liquor must, at the time of filling, endorse on each prescription, over their signature, the word "cancelled," together with the date on which the liquor is delivered. Such prescriptions must be kept in a separate file. Once a month each druggist must send to the director a list of prescriptions filled by

them, showing the names of the physicians, the names of the patients, and the total of liquor dispensed to each patient during the month. Retail druggists selling intoxicating liquors, whether on a physician's prescription or otherwise, must pay special tax as liquor dealers and must keep such tax stamp conspicuously posted.

ADMINISTRATION OF LIQUOR BY PHYSICIANS

Distilled spirits, wines and alcoholic medicinal preparations fit for use for beverage purposes may be administered by physicians to their patients for medicinal purposes, when such liquor is necessary to afford relief for some known ailment, and when delay in procuring the liquor through a retail pharmacist on prescription might result in loss of life, aggravation of the ailment, or intense suffering. Physicians may obtain no more than six quarts of liquor during any calendar year to be administered to their patients only in quantities necessary to afford relief at the time of administration. They may not sell or furnish such liquors to any persons. The total amount of liquor administered to any one patient by one or more physicians may not exceed one pint in ten days.

HOSPITALS AND SANATORIUMS

Persons conducting bona fide hospitals or sanatoriums, engaging in the treatment of persons suffering from recognized disease or ailments (except treatment of alcoholism), may administer liquors to patients in necessary quantities on prescription of the hospital or sanatorium physician. Such physician shall issue a separate prescription for each patient, but a separate prescription for each dose is not necessary unless prescribed at irregular intervals. All such prescriptions must be in duplicate, both copies signed by the physician, and must show the name of the hospital or sanatorium, the date of issue, the name of the patient, the kind of liquor prescribed, the directions for use, and the amount to be administered during any given period.

ALCOHOL FOR EXTERNAL USE

Tax paid alcohol procured by hospitals or sanatoriums may be issued to attendants for rubbing purposes on prescriptions issued by the hospital physician. Denatured alcohol may be issued to attendants in quantities not exceeding one pint, without a prescription.

HOSPITAL REPORTS

Hospitals or sanatoriums must report at the end of each month to the director, sending one copy of each prescription, and must keep the other copy filed chronologically at the hospital. Hospitals or sanatoriums are forbidden to sell or furnish liquors or alcohol to other persons.

INSTITUTIONS FOR ALCOHOLICS

Bona fide hospitals or sanatoriums engaged in the treatment of alcoholism may obtain liquors and alcoholic medicinal preparations for use in the treatment of chronic alcoholism, but only when the tapering off method is used, or when the dosage is steadily reduced until the patient, within a reasonable time, such as four weeks, has lost the craving for alcoholic stimulants. Such liquor may be administered to patients only in necessary quantities and only under the direction of a duly qualified physician employed by the hospital. Such institutions must keep three records, the first containing the name and residence of the patient, age, date of entry and departure from the institution, and the condition for which he is treated. A serial number will be given to each patient when admitted. The second record will show the serial number of the patient, condition for which treated and the amount of liquor furnished him during the period treated. A copy of this record will be forwarded to the director each month, the serial number being used in place of the name of the patient. The third will show the quantity and kind of liquor on hand the first of each month, the quantity received during the month, the quantity dispensed to patients, the quantity used in compounding legitimate medicinal preparations, and the quantity on hand at the end of the month. A transcript of this record will be sent to the director each month.

USE OF LIQUORS IN EMERGENCIES

Intoxicating liquors may be administered in case of accident, shock or other emergency, only by a physician, nurse or other person in charge of first aid stations in manufacturing, industrial and other establishments. Such establishments must keep a record in duplicate, and must transmit a copy each month, showing the amount on hand, the amount received and the amount dispensed, with the date and the name of each person to whom dispensed and the amount on hand at the end of the month.

DENTISTS

Dentists may use alcohol for professional purposes in quantities not to exceed six quarts a year. Applications for permits to use alcohol for such purposes must state the purposes for which it is intended.

LABORATORIES

Alcohol may be used for legitimate laboratory purposes, such as chemical, biologic, bacteriologic and clinical, provided its use is nonbeverage, and that it is of such a nature as effectually to preclude diversion of the alcohol for unauthorized purposes. Applications for permits from laboratories will be treated separately on their merits on account of the varied nature and multiplicity of such laboratories.

PRESCRIBING OF LIQUOR BY PHYSICIANS

Physicians who have filed applications on Form 1404 and who obtain permits to prescribe intoxicating liquor may prescribe such liquors for persons on whom they are in attendance, if, after careful physical examination, or in cases in which such examination is impracticable on the best information obtainable, the physician believes that the internal or external use of such liquor as a medicine is necessary, and will afford relief from some known ailment.

No prescription may be for more than is necessary for the person for whom it is prescribed, and in no case shall it exceed one pint in ten days for the same person by one or more physicians.

Physicians are not permitted to write prescriptions for liquor for their own use, or to use any liquor procured on prescriptions written by them. Prescriptions may be filled only by a pharmacist and may not be refilled.

PRESCRIPTION BLANKS

All prescriptions must be made on Form 1403, and must contain all the data called for. If the physician does not possess any such forms, and delay may result in loss of life or intense suffering, he may prescribe without the use of Form 1403, but his prescription must contain all the information called for. Blank prescriptions on Form 1403, issued by the commissioner in book form, serially numbered, may be procured without cost by any physician holding a permit. Not more than one book shall be issued to a physician at a time.

Prescription blanks are printed with stubs attached, the stub being a duplicate. All prescriptions must be in duplicate, both copies signed by the physician. After the last blank has been used, the book containing the duplicates must be returned to the director. Any unused, mutilated or defaced blanks must be returned with the book.

In case of prescriptions written on other forms in an emergency, duplicate copies must be returned to the director at the end of the month. Prescription blanks must be used in the order of the serial numbers printed thereon.

PHYSICIANS' RECORDS

Physicians prescribing intoxicating liquors must keep on Form 1402 an alphabetical record showing every such prescription issued by him, giving the date, the amount and kind of liquor prescribed, the name of the patient, the ailment for which prescribed, the directions, and the amount and frequency of the doses.

LIABILITY

No special liability is incurred by physicians, hospitals or sanatoriums for special tax for administering intoxicating liquors in cases of emergency.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, Mar. 2. Sec., Dr. L. O. Sloan, Juneau.

CALIFORNIA: Los Angeles, Feb. 16-19. Sec., Dr. Chas. B. Pinkham, 906 Forum Bldg., Sacramento.

CONNECTICUT: New Haven and Hartford, March 9-10. Sec., Reg. Bd., Dr. Robert L. Rowley, Hartford. Sec., Homeo. Bd., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven. Sec., Eclectic Bd., Dr. James Edwin Hair, 730 State St., Bridgeport.

ILLINOIS: Chicago, Mar. 1-3. Director, Mr. Francis W. Shepardson, Springfield.

INDIANA: Indianapolis, Feb. 10-13. Sec., Dr. W. I. Gott, 84 State House, Indianapolis.

KANSAS: Topeka, Feb. 10. Sec., Dr. H. A. Dykes, Lebanon.

MAINE: Portland, March 9-10 Sec., Dr. Frank W. Searle, 140 Pine St., Portland.

MASSACHUSETTS: Boston, March 9-11. Sec., Dr. Walter P. Bowers, Room 144, State House, Boston.

NATIONAL BOARD OF MEDICAL EXAMINERS: St. Louis and Chicago, Feb. 18-25. Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia, Pa.

NEW HAMPSHIRE: Concord, March 11-12. Sec., Dr. Charles Duncan, Concord.

VERMONT: Burlington, Feb. 10-12. Sec., Dr. W. Scott Nay, Underhill.

WYOMING: Thermopolis, Feb. 2-4. Sec., Dr. J. D. Shingle, Cheyenne.

THE HOUSE OF CALVARY HOSPITAL

ROBERT J. REILEY
Architect
NEW YORK

The House of Calvary Hospital is devoted to the care and treatment of men and women suffering from cancer and is in charge of Catholic sisters of the Dominican order. The hospital was located for many years in Perry Street, New York; but when this property was taken by the city in connection with the opening of a new street, it was decided to move to a less congested portion of the city and to erect a building to accommodate about eighty patients. The new site was selected with regard to the importance of having light and air on every side and at the same time of being readily accessible from the center of the city by the existing lines of transportation.

The management desired to maintain as far as possible the atmosphere of the home about the hospital, and this



Fig. 1.—House of Calvary Hospital.

influenced the architect to select the colonial style of architecture, as it is probably more typical of our American home life than any other. The building is laid out on what is known as the pavilion plan, that is to say, the main wards are located in wings connected with a central building. In this case the pavilions are placed at right angles to the central building so that they may run approximately north and south, in order to obtain both morning and afternoon sun in all of the main wards. At the south end of each pavilion is a solarium for the patients occupying that ward, and at the north end an open balcony for use according to weather conditions.

Figure 2 shows the arrangement of rooms and wards on the main floor. The second floor is similar in general arrangement and is devoted to women patients. The third floor contains in the easterly end of the building the roentgen-ray room and the surgical department, comprising a seven bed ward, and sterilizing, wash up, etherizing, operating and recovery rooms. The westerly wing is devoted to the sisters' apartments, and in the central part of the building are a few private rooms for women patients. Owing to the

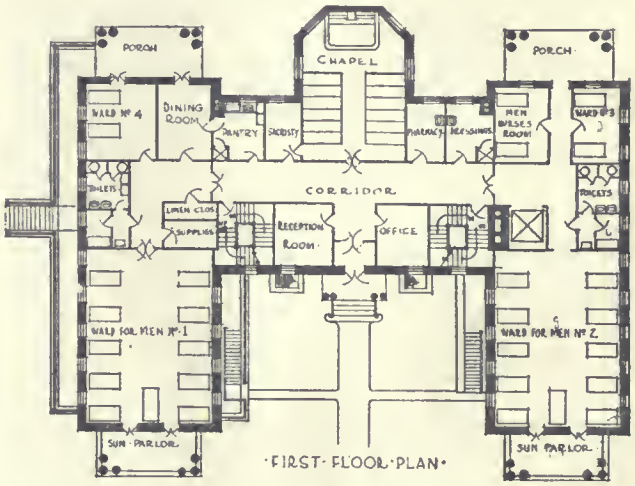


Fig. 2.—First floor plan.

special character of the work of this hospital, a room for changing dressings is placed on each floor and a small gas incinerator is part of its equipment.

The building is constructed of fireproof materials throughout; the columns, floor beams and girders are of steel, the floor construction of concrete, and the partitions of terra cotta blocks. Not only is the building itself fireproof, but an effort has been made to eliminate the danger from a fire in the contents of the building. This danger is that of smoke, and more particularly the panic caused by the smell of smoke. With this in mind, each floor of the building has been subdivided, and the passage of smoke from one floor to another has been prevented by enclosing the stairs and elevator shafts. On once entering the stair enclosure on any floor one may proceed downstairs and out of the building without reentering any of the corridors, thus insuring a smoke free exit.

One of the problems encountered in hospital construction has been the difficulty of obtaining a satisfactory material for use on the floor. In this case, in the wards and corridors it was decided to use linoleum cemented to the concrete underflooring with an interlining of felt. This material has many points to commend it, as it is sanitary, noiseless, and comfortable; but it is necessary to have the concrete thoroughly dried out before it is laid and to equip the beds and other heavy furniture with large feet or casters. Tile floors are used in the operating, sterilizing and etherizing rooms and in the toilet rooms; wood floors in the reception room, office and nurses' rooms, and cement floors, treated to prevent powdering or dusting, in the service portions of the hospital.

The building is heated by hot water; but an auxiliary steam heating system was installed so as to provide a means of rapidly heating the operating room, especially in the spring and fall when the general heating plant might not be in operation. This system also supplies steam for the laundry and sterilizing rooms. While natural ventilation is made use of as far as possible, artificial ventilation has also been installed. The building is cleaned by means of a stationary

vacuum cleaning plant placed in the basement but controlled from every floor. An electric push button is located beside each bed to light the nurses' signal, the elevator and dumb waiters are electrically controlled, and in general all practical labor saving devices have been adopted.

477 Fifth Avenue.

Texas June Examination

Dr. M. F. Bettencourt, secretary of the Texas State Board of Medical Examiners, reports the written examination held at Austin, June 24-26, 1919. The examination covered 12 subjects and included 120 questions. An average of 75 per cent. was required to pass. Of the 82 candidates examined, 80 passed and 2 failed. One hundred and thirty-one candidates, including 1 nongraduate and 32 osteopaths, received physicians' and surgeons' licenses by reciprocity. The following colleges were represented:

College	Year Grad.	No. Licensed
PASSED		
Georgetown University	(1909)	1
Hahnemann Medical College and Hospital, Chicago	(1919)	1
Tulane University	(1916, 1), (1919, 4)	5
Johns Hopkins University	(1914)	1
St. Louis University	(1919)	1
Washington University	(1918)	1
Columbia University	(1918)	1
Jefferson Medical College	(1919)	1
Meharry Medical College	(1919)	1
Baylor University	(1919)	18
University of Texas	(1918, 1), (1919, 48)	49
FAILED		
Kansas City College of Medicine and Surgery	*(1919)	1
Baylor University	(1919)	1

College	Year Grad.	Reciprocity with
LICENSED BY RECIPROCITY		
University of Alabama	(1914)	Alabama
Arkansas Industrial University	(1897)	Arkansas
College of Phys. and Surgs., Little Rock	(1911)	Oklahoma
College of Physicians and Surgeons, Los Angeles	(1915)	California
Denver and Gross College of Medicine	(1905)	Colorado
Denver College of Medicine	(1899)	California
George Washington University	(1906)	Utah
Howard University	(1916)	Missouri
Atlanta College of Physicians and Surgeons	(1913)	Georgia
Atlanta Medical College	(1915)	Georgia
University of Georgia	(1910), (1912)	Georgia
Bennett Medical College	(1911), (1915)	Illinois
College of Phys. and Surgs., Chicago	(1909), (1910), (1912)	Illinois
Northwestern University	(1904) Illinois, (1917)	Mass.
Rush Medical College	(1914), (1918)	Illinois
University of Illinois	(1912), (1916)	Illinois
Medical College of Indiana	(1897)	W. Virginia
Drake University	(1913)	Iowa
College of Phys. and Surgs., Kansas City, Kan.	(1900)	Kansas
Hospital Coll. of Med., Louisville	(1901), (1902), (1905)	Kentucky
Kentucky School of Medicine	(1906)	W. Virginia
Kentucky University	(1904)	Nebraska
Louisville Medical College	(1891)	Oklahoma
University of Louisville	(1911)	Tennessee
Tulane University	(1893), (1905), (1918) Mississippi, (1916), (1918) Louisiana.	
Baltimore University	(1902)	Nevada
Maryland Medical College	(1911)	Maryland
Harvard University	(1918), (1919, 2)	Mass.
Detroit College of Medicine	(1904)	Michigan
Saginaw Valley Medical College	(1903)	Michigan
American Medical College	(1907)	Missouri
Columbian Medical College	(1899)	Kansas
Kansas City Coll. of Med. and Surg.	(1917), (1918), (1919, 2) Arkansas.	
National University of Arts and Sciences	(1913)	Missouri
Northwestern Medical College	(1893)	Kansas
St. Louis University	(1913)	Illinois
St. Louis Coll. of Phys. & Surgs.	(1904) Missouri, (1917)	Oklahoma
University Medical College of Kansas City	(1909)	Kansas
Washington University	(1905) Kansas, (1914), (1917)	Missouri
Lincoln Medical College	(1901)	Nebraska
Dartmouth Medical School	(1901)	New Hamp.
Coll. of Phys. & Surgs. of the City of New York	(1883)	Dist. Colum.
University and Bellevue Hosp. Med. Coll.	(1899)	New Mexico
University of the City of New York	(1886)	Wisconsin
Eclectic Medical Institute	(1884) Illinois, (1898)	Missouri
University of Oklahoma	(1913), (1915)	Oklahoma
Jefferson Medical College	(1900) Indiana, (1903)	Arkansas
Chattanooga Medical College	(1904) Georgia, (1906)	Oklahoma
Meharry Medical College	(1906) Arkansas, (1915)	Tennessee
Memphis Hospital Medical College	(1906), (1908), Oklahoma, (1903), (1909), (1913) Arkansas.	
University of Nashville	(1905)	Arkansas
University of Tennessee	(1905) New Mexico, (1918)	Tennessee
Vanderbilt University	(1914, 2), (1916, 2), (1917, 2) Tennessee, (1916) Oklahoma.	
College of Physicians and Surgeons, Dallas	(1905)	Oklahoma
Southern Methodist University	(1915)	Oklahoma
University of Texas	(1916) Missouri,	Mississippi
University of Vermont	(1899)	Vermont
University College of Medicine, Richmond	(1899)	Virginia
University of Virginia	(1915)	Arkansas
McGill University	(1907)	Maine

* Graduation not verified.

Illinois June Examination

Mr. F. C. Dodds, superintendent of registration, Illinois Department of Registration and Education, reports the written and practical examination held at Chicago, June 16-20, 1919. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 226 candidates examined, 201 passed and 25 failed. Twenty-six candidates were licensed by reciprocity. The following colleges were represented:

College	Year Grad.	No. Licensed
PASSED		
University of Colorado	(1913)	1
Chicago College of Medicine and Surgery	(1916), (1917, 3)	4
Chicago Hospital College of Medicine	(1918)	11
Chicago Medical College	(1886)	1
Hahnemann Med. Coll. and Hosp. Chicago	(1916), (1919, 9)	10
Loyola University	(1916, 3), (1918, 3), (1919, 40)	46
Northwestern University	(1914), (1918), (1919, 80)	82*
Rush Medical College	(1919)	26†
University of Illinois	(1918), (1919, 8)	9
Harvard University	(1919)	1
St. Louis University	(1918, 2), (1919, 4)	6
University of Nebraska	(1919)	1
Dartmouth Medical School	(1900)	1
Meharry Medical College	(1918)	1
University of Utrecht	(1913)	1
FAILED		
Bennett Medical College	(1910, 2), (1914)	3
Chicago College of Medicine and Surgery	(1916), (1917)	2
Chicago Hospital College of Medicine	(1915, 2), (1918, 3)	5
Illinois Medical College	(1910)	1
Jenner Medical College	(1916, 2), (1917)	3
Loyola University	(1918)	1
Northwestern University	(1919)	1
Leonard Medical School	(1907)	1
Meharry Medical College	(1902), (1913), (1915, 2), (1916, 2), (1917), (1918)	8

College	Year Grad.	Reciprocity with
LICENSED BY RECIPROCITY		
Hahnemann Med. Coll. and Hosp., Chicago	(1901)	Iowa
University of Illinois	(1913), (1915)	Wisconsin
University of Louisville	(1910), (1916, 2)	Kentucky
Johns Hopkins University	(1904) Wisconsin, (1911)	Maryland
	(1915)	New York
University of Maryland	(1904) Missouri, (1912)	Maryand
Harvard University	(1911)	Vermont
Detroit College of Medicine and Surgery	(1917)	Michigan
National University of Arts and Sciences	(1918)	Missouri
St. Louis University	(1916), (1918)	Missouri
Washington University	(1906), (1917)	Missouri
University of Nebraska	(1908)	Nebraska
New York Homeopathic Med. Coll. and Flower Hosp.	(1910)	N. Dakota
Western Reserve University	(1914)	Ohio
Meharry Medical College	(1916)	Missouri
Marquette University	(1914), (1916)	Wisconsin
University of Heidelberg	(1915)	Maryland
National University, Athens	(1904)	Indiana

* Sixty-five of these candidates received limited licenses, pending completion of their hospital internship.

† Twenty-five of these candidates received limited licenses, pending completion of their hospital internship.

Iowa September Examination

Dr. Guilford H. Sumner, secretary of the Iowa State Board of Medical Examiners, reports the written examination held at Des Moines, Sept. 16-18, 1919. The examination covered 8 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 12 candidates examined, 11 passed and 1 failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Loyola University	(1919)	88.7
Rush Medical College	(1919)	93.1
University of Illinois	(1918)	90.7, 91.5
Tufts College Medical School	(1910)	80.1
Barnes Medical College	(1901)	76 8
St. Louis University	(1919)	90.5
University of Nebraska*	(1919)	89.5
Eclectic Medical College of the City of New York	(1906)	90
University of Pennsylvania	(1919)	88.1, 93.2
FAILED		
Loyola University	(1918)	69.7

* Finished work of medical curriculum, November, 1919; will receive M.D. degree in February, 1920.

Iowa Reciprocity Report

Dr. Guilford H. Sumner, secretary of the Iowa State Board of Medical Examiners, reports that 31 candidates were licensed by reciprocity at the meeting held Nov. 18, 1919. The following colleges were represented:

College	Year Grad.	Reciprocity with
LICENSED BY RECIPROCITY		
Birmingham Medical College	(1909)	Alabama
Chicago Coll. of Med. and Surg.	(1909), (1917, 3)	Illinois
Hahnemann Med. College and Hospital of Chicago	(1905)	Illinois

Northwestern University	(1915), (1917, 2)	Illinois
Rush Medical College	(1917)	Illinois
Medical School of Maine	(1907)	Maine
College of Phys. and Surgs., Boston	(1916)	Maine
University of Michigan Medical School	(1918)	Michigan
University of Minnesota Medical School	(1918)	Minnesota
Kansas City Hahnemann Medical College	(1914)	Kansas
St. Louis College of Physicians and Surgeons	(1907)	Illinois
St. Louis University	(1909), (1915), (1919)	Missouri
University of Missouri	(1904)	Wisconsin
John A. Creighton Medical College	(1905)	Nebraska
	(1907) Oklahoma, (1917, 2)	Nebraska
University of Nebraska	(1911), (1917)	Nebraska
New York Homeopathic Medical College and Hosp.	(1889)	New Hamp.
Ohio State University College of Med.	(1917)	Ohio
Western Reserve University	(1913)	Ohio
Milwaukee Medical College	(1907)	Wisconsin
University of Edinburgh	(1912)	Kansas

Book Notices

ON GUNSHOT INJURIES TO THE BLOOD-VESSELS, FOUNDED ON EXPERIENCE GAINED IN FRANCE DURING THE GREAT WAR. 1914-1918. By George Henry Makins, G.C.M.G., C.B., President of the Royal College of Surgeons of England. Cloth. Price, $5.50. Pp. 251, with 64 illustrations. New York: William Wood & Co., 1919.

This book presents, first, reports on the primary treatment of wounds by various surgeons working at the casualty clearing stations in the British Army, and, secondly, a series of case reports collected from hospitals on the lines of communication and during a service of five months at a base hospital in London. The author discusses several of the important conditions affecting the frequency of injuries to blood vessels. He states that the existence of a contusion of the arterial wall is not readily determined in the absence of ocular demonstration, as obliteration of the peripheral pulse may equally denote a contused lateral wound, complete severance or, as shown by explorations, no appreciable lesion at all. He recommends Bayliss' 6 per cent. gum arabic solution except in very acute hemorrhage, in which case he advises whole blood to replace the blood lost. Observations are presented which oppose the view that actual dilatation of the heart may be present in subjects of arterial wounds. Rather a want of tone in the heart muscle accounts for the outward displacement of the cardiac apex. This condition, Makins states, is similar to that observed in the unwounded at the front and diagnosed "disordered action of the heart." Pronounced cardiac systolic murmurs were observed frequently in thirty-seven out of 180 cases of arterial lesions. Eighteen were arteriovenous, and nineteen pure arterial wounds. The development of arterial hematoma and the various kinds of aneurysms and aneurysmal varix are described in detail. The author says that patients who have suffered a recent hemorrhage should not be operated on; while they may seem to be in good condition, they may fail to recover from the anesthetic and die within a few hours. Local anesthesia and careful hemostasis are indicated. Operation was of value when vasomotor and secretory disturbances were present. Mobilization of the nerve trunks accompanies operation, as it prevents secondary vascular changes in many cases. Observations tend to show that trophic changes are due not to vascular injury alone but to associated nerve injury. One new practical point which has been proved in this series is that the vein also should be ligated, following ligation of a main artery. To leave the vein viable diminishes the residual blood pressure maintained by the collateral circulation, and predisposes to gangrene. When suture is impossible in a main artery, the circulation may be maintained by means of a Tuffier tube, which may be gradually obliterated by a blood clot, giving the collateral circulation a chance to become enlarged. Much better results were obtained from the treatment of blood vessel injuries after ligation of both artery and vein and improved initial treatment of the wound. The result of injuries of the blood vessels illustrates the sinister influence of interference with the blood supply to a part on the development of anaerobic gangrene. The reader will be disappointed by the lack of emphasis on operative technic, and the absence of detailed description. The review of the cases illustrates the difficulty of following up cases in the army, and shows the necessity for a better system of postoperative observations.

Medicolegal

Liability for Erysipelas—Touching Reputation

(Hanson v. Thelan (N. D.), 173 N. W. R. 457)

The Supreme Court of North Dakota, in affirming a judgment for $300 damages in favor of the plaintiff, says that he, a boy 16 years old, sustained a fracture of his right leg between the knee and the ankle. Both bones were fractured. The boy was placed in a hospital under the care and in charge of the defendant. There was some testimony in the record that for about three days the defendant applied ice packs to reduce the swelling. Then he set the bones and enclosed the leg and foot in a plaster cast. The boy complained of suffering pain, and in about a week the cast was cut open and the leg was tightly bandaged with cloths. Three weeks later these bandages were taken off, and a board was placed under the leg and foot; they were wrapped in bandages, and a weight and pulley were attached. About two weeks after that these appliances were removed, and a shoe was laced on tightly, next to the bare foot, with some cotton batting inserted, and a weight and pulley were attached. Prior to the attaching of the last mentioned appliances, there were sores or bruises on the foot. Some two weeks later, the shoe was removed, after the boy had complained of suffering, and the foot was then black and blue. Three days after that the defendant put some salve on these sores. A physician from Bismarck came and examined the boy, and stated that erysipelas might be expected. The boy became quite ill, and was removed to a hospital at Bismarck, where erysipelas developed, and where he became very ill for many days, and remained for seven weeks. The main question in the record was whether the erysipelas developed from the method of treatment accorded by the defendant, and whether the defendant was derelict in his duty in that regard. The defendant contended that the evidence was insufficient to warrant the verdict for the reason that there was no direct evidence in the record that the condition of erysipelas was brought on the plaintiff by any act or omission of the defendant; also that the plaintiff by his own conduct in going out when the fracture was mending contrary to the instructions of the defendant, and otherwise disobeying instructions given by the defendant, precluded any recovery.

The law is now well settled that the physician owes to his patient the duty to exercise reasonable and ordinary care, diligence and skill such as are ordinarily possessed by physicians practicing in similar localities in the same general line of practice. It is equally well settled that the patient must not have contributed to his injury in any degree; that he must conform to all reasonable directions of his physician—otherwise he cannot recover. In other words, in an action against a physician for breach of his professional duty to his patient, the patient cannot recover if he has not conformed to all reasonable directions of his physician, or if his conduct has contributed to the injury on which the action is based. Under the evidence in this case, the court is of the opinion that the question of the defendant's negligence and of the plaintiff's contributory negligence were fairly questions for the jury. With reference to the contention that there was no direct or positive evidence to show that the resulting erysipelas was proximately caused by the acts of the defendant, the court is satisfied from a consideration of the testimony of the laymen, in connection with the expert testimony of two physicians for the plaintiff, that there was no error in submitting the question of the defendant's negligence to the jury. There was some evidence that the manner in which the shoe was bound to the foot was not proper, and that it was not examined sufficiently regularly or often, although the expert evidence in this regard was not strong.

The defendant asserted that his good reputation as a physician was at stake, and that this court should not condemn him as an incompetent or careless practitioner, on the record herein. It does not follow that this judgment so rendered, or its affirmance, does so condemn the defendant. Surely

physicians and surgeons are liable to make mistakes and to err in the performance of their duty to the patient occasionally, just the same as any other profession or any other trade. For a physician or a surgeon to assert that he is infallible and never makes a mistake is to place his ability and learning above the usual and ordinary run of human experience.

Recovery Allowed for Professional Services

(Brooks v. Aldrich et al. (R. I.), 107 Atl. R. 100)

The Supreme Court of Rhode Island, in overruling the defendants' exceptions and remitting this case with instructions to enter judgment on a verdict for $4,000 in favor of the plaintiff, says that the action was brought by the plaintiff against the executors under the will of one Benedict to recover for personal services alleged to have been rendered to Mr. Benedict at his home and at the plaintiff's office daily, including week days and Sundays, day and night, for medicines, medical advice, and for treatment by the plaintiff's assistant and under his direction, by electric massage, etc., during the period from Sept. 1, 1909, to April 20, 1915, exclusive of the months of July and August in each year; also for services rendered during July and August, 1912, in going to Europe at the request of Mr. Benedict and there performing services of the same nature, and $1,500 for expenses actually incurred by the plaintiff on that trip; the total amount due the plaintiff being alleged to be $13,150 and interest. Mr. Benedict was a bachelor, who died in April, 1915, at about the age of 78. The plaintiff was a physician who specialized in treatment by electricity, Swedish movement and massage. For many years he had been an intimate friend of Mr. Benedict, and had treated him for various troubles during that time, or up to 1899, when the plaintiff moved to New York State, but testified that he returned in 1909 at the request of Mr. Benedict, for the purpose of taking care professionally of the latter during the remainder of his life, Mr. Benedict having promised, if he would do so, to provide generously for the plaintiff in his will. As no legacy was left to the plaintiff by Mr. Benedict, this suit was brought to recover from Mr. Benedict's estate for the value of the services rendered to him. The trial of the case required eight days, and the defendants in presenting their defense were properly allowed considerable latitude in the presentation of testimony. The defense was a denial of the amount and value of the services claimed to have been rendered, and payment. Prior to 1899, when the plaintiff moved away, Mr. Benedict paid him usually each month for services rendered. From 1909 until the death of Mr. Benedict there was much evidence to support the plaintiff's claim of a different arrangement. During this period the plaintiff rendered professional services to Mr. Benedict. No charge was made on his books therefor, and the defendants, although it appeared that Mr. Benedict was a man of very careful business habits, were able to produce but two receipts for small amounts showing payments to the plaintiff. Without referring in detail to the testimony, there was sufficient evidence, if believed by the jury, to warrant the verdict. The substance of one group of the defendants' exceptions was objection to the testimony of the plaintiff as to the reasonable value of his services; but the defendants took nothing by these exceptions. The plaintiff was qualified to give his expert opinion, and the fact that he was an interested party had a bearing on the weight to be given to his testimony, but not on its admissibility.

Suicide as Evidence of Insanity

(Wallace v. United Order of Golden Cross (Me.), 106 Atl. R. 713)

The Supreme Judicial Court of Maine says that the presumption of sanity must be entertained in the absence of proof, and when the record is silent. This presumption is not overthrown by the act of committing suicide. Suicide may be used as evidence of insanity, but, standing alone, it is insufficient to establish it. Insanity cannot be predicated simply on the act of self-destruction; for human experience has shown that sane men have taken their own lives.

Killing of Insured Physician on National Guard Duty

(Interstate Business Men's Accident Association of Des Moines, Iowa, v. Lester (U. S.), 257 Fed. R. 225)

The United States Circuit Court of Appeals, Eighth Circuit, in affirming a judgment in favor of Mrs. Lester for the full amount of an accident insurance policy issued by the defendant association on the life of her husband, says that the policy insured him "while he is engaged in the occupation of a physician and surgeon . . . in case of death effected directly and independently of any other contributing, concurring or intervening cause, by external violent and accidental means." When the insurance was taken out, in January, 1913, and at the time of his death, Dr. Lester was engaged in the practice of his profession at Walsenburg, Colo. He was also a member of the national guard of that state, holding the rank of major, and assigned to the medical corps. When the governor called the national guard into service during the strike of the employees of the Colorado Fuel & Iron Company, Dr. Lester jointed his company as a part of its medical corps. On the morning of April 29, 1914, he visited a number of his patients in Walsenburg, professionally. He then went with a small detachment to a point a few hundred yards from the city; the force having been sent out to reconnoiter and resist, if necessary, the activities of strikers who were in the foothills or mountains near the town. The lieutenant of this force was wounded. Dr. Lester had just finished dressing his wound, and was down on his hands and knees in a railroad cut observing some men through his field glass, to decide whether they were strikers or soldiers. He was shot, and died almost instantly. Was he at the time of his death "engaged in the occupation of a physician and surgeon"? Was his death effected wholly by "accidental means"? This action on the insurance policy turned wholly on these two questions, which are answered in the affirmative. The defendant insisted that the language of the policy, when fairly interpreted, confined Dr. Lester to the practice of his profession in the ordinary walks of civil life; that, when he joined his company in the military service to which it was called, he changed his vocation and become, instead of a physician and surgeon, a soldier; but the court does not think this position could be sustained without disregarding the facts. His service with his company was temporary. He was called out to meet an emergency. While the service lasted for some months, it was a side issue. It was known that it would be temporary, and was to be considered as answering a call to suppress a riot, or any other temporary engagement. This measured the term of the service; but the court must look at the character of the service also. Dr. Lester was in no way engaged in the military activities of his company. His services were those of a physician and surgeon. He continued to practice his profession at Walsenburg, as well as attend to the needs of his company. The authorities are uniform that such temporary changes do not constitute a change of occupation within the meaning of insurance policies. To constitute such a change there must be an abandonment of the vocation specified in the policy and the adoption of some other calling. If such temporary activities are to destroy the protection of insurance, it must be by an express provision in the policy. So far as vocation is a factor in determining the hazard, it is based on the average of the whole class. A physician practicing his profession in the congested districts of a large city will be exposed to many hazards to which a physician in a small country town will not be subject. All of these matters, however, are embraced in the general average of hazards of the class of physicians and surgeons. If one individual at one time is exposed to a largely increased hazard, as Dr. Lester was on the occasion of his death, others will be exposed to hazards falling greatly below the average. These are factors on which the insurance is based. Nor is it true that simply going into an environment of greatly increased hazard, with conscious knowledge of such hazard, will cause injury or death which results therefrom not to be accidental within the meaning of such policies as this one.

Social Medicine and Medical Economics

ADVERTISING IN RURAL PUBLIC HEALTH WORK

An Account of Some Methods Used Successfully in Lee County, Mississippi

CHAILLOS CROSS, M.D.
State Director of Rural Sanitation, Mississippi State Board of Health
GEORGE G. HAMPTON, M.D. (Senior Field Director of Rural Sanitation, Mississippi State Board of Health); FRED C. CALDWELL, S.B., M.D. (Senior Field Director, International Health Board), and CLARKE H. YEAGER, M.D. (Senior Field Director, International Health Board)
TUPELO, MISS.

Preventive medicine has been given a tremendous impetus by the experiences of the late war; but if work of this nature is not pushed energetically while the interest still lives, the old apathy will return. Public health work is a business and will yield the greatest results if business methods are used. This applies equally well to the internal organization and to the means used to secure public cooperation, without which the work is impossible. Various forms of public health work have been carried on long enough to develop good internal organization and to construct excellent programs, but these often fail in securing their maximum success because public sentiment is not behind them.

In the ordinary lines of business it is well known that many firms which manufacture a superior line of goods never grow, while others whose products are no better, or even of inferior quality, have an enormous development, owing to the wise and extensive use of advertising. In this way the public is informed of the particular merits of the firm's goods, and a demand for them is created even in the most remote communities. With this idea in mind, the Department of Rural Sanitation of the Mississippi Board of Health decided to use advertising methods in its health campaign in Lee County.

To be successful, the methods employed in advertising must be adapted to the people whom it is desired to reach. Mississippi is essentially a rural state with a population of approximately 2,000,000 and with no city of more than 25,000 people. Most of the county seats are cities of from 3,000 to 10,000, and the other communities vary in size from a mere cluster of houses to towns of 800 inhabitants. The population is about evenly divided between white and black.

Individualism is strong among the white population, for there have been no foreign accretions, at least since the Civil War. The native American cannot be coerced. Any change from the old customs and habits of life demanded by outside authority constitutes for him a violation of personal rights and liberty. When the national government first enforced the laws to protect the cattle against the Texas fever, several of the dipping vats in this county were dynamited. But once convinced, the native American becomes a willing co-worker. He can be more easily led if the natural leader of his community is first persuaded. These strategic men usually live in the towns, where most of the progressive people are to be found. Between these towns there is often jealous rivalry, but a community or county spirit has never been well developed.

Public health work in this state had its inception ten years ago and is still in its infancy, although developing rapidly.



Exhibit at fair.

It remained for us to plan in Lee County a campaign that would educate the people along health lines, and at the same time develop a community and county spirit, which are telling, or even indispensable, factors in developing permanent health work. A county with a boosting spirit will not permit disease to run unchecked after the first enthusiasm of a health campaign has died down. The program which we outlined to the progressive business and professional men of the county at once won their backing.

As in every other community, the finances were not unlimited, and every dollar had to be stretched to the utmost. The methods employed in the campaign were adaptations of means used in other lines of business to interest prospective customers and make them buy. From the first, we let no opportunity slip to bring our work to the attention of the people. Articles were written for the local newspapers, attractive signs were placed in prominent places, and stereomotorgraphs showing pictures of our work were placed in conspicuous positions in the windows of business houses in Tupelo, the county seat and headquarters of our organization. The arrival of a circus in the city afforded an excellent opportunity for publicity, for, without any expense, we

were able to place a sign on one of the elephants, advertising our work. Though utilizing every opportunity that thus presented itself, in carrying forward our campaign we relied mainly on our original advertising devices, a description of which may prove interesting.



Advertising the health campaign at the circus.

THE PUBLIC MEETINGS

As would naturally be expected in a community of intense individualism, we encountered serious opposition when we began our work in the county. Petitions were circulated against us in every district. We wanted the people to feel that we were really their friends and not the representatives of some unknown arbitrary force that had come to change their methods of living. We knew that nothing could be more potent in overcoming their distrust and suspicion than well planned public meetings, in which the people might become acquainted with the workers and the work that was being done.

GOOD ROADS, GOOD HEALTH, GOOD CITIZENSHIP
HEALTH THE COUNTY'S BEST ADVERTISEMENT
HEALTH OUR GREATEST ASSET
TAKE THE RIGHT ROAD TO HEALTH
CLEAN UP AND KEEP CLEAN
A LITTLE PRECAUTION MAY ADD YEARS
COLLECT YOUR THREE SCORE YEARS AND TEN
SLEEP WITH YOUR WINDOWS OPEN
A SANITARY PRIVY A LIFE SAVER
EVERY HOME PROPERLY SCREENED AND CLEAN
YOU ARE NOT GERMPROOF, WAKE UP
BREATHE THROUGH YOUR NOSE
FLIES, HOW LONG SHALL WE EAT TOGETHER?
WHEN ONE IS SICK, KEEP OTHERS AWAY
MEDICAL INSPECTION FOR SCHOOLCHILDREN
DON'T DEPEND ON SOME ONE ELSE
COVER YOUR MOUTH WHEN YOU COUGH
WASH YOUR HANDS BEFORE HANDLING FOOD
DISEASE PREVENTION COSTS LESS THAN CURE
CARELESS SPITTING SPREADS TUBERCULOSIS
SHARE THE ROAD; YOU CANNOT BE HEALTHY ALONE
BUY NOTHING IF NOT SANITARY
PROTECT OTHERS FROM DISEASE AND DEMAND PROTECTION
DECLARE WAR ON FLIES AND MOSQUITOES
WHY TRAVEL WITH DISEASE?
BETTER MILK, BETTER BABIES, BETTER CITIZENS
THE COUNTY DE SOTO WAS SEEKING
COUNT THE COST OF SUPPORTING THE MOSQUITO
HEALTH DEMANDS COMMUNITY COOPERATION

A few of the sentences used on mile post signs.

The ordinary public health meeting is not exceedingly popular. We therefore decided to use moving pictures to secure larger crowds to whom we could explain the advantages of the sanitary measures we were advocating. The films were used simply as a means of entertainment and not necessarily to teach health subjects, although we realize that a moving picture that will educate, and at the same time furnish enjoyment, would be the ideal. Such films are rare, but in the near future we shall be able to describe one that we are now producing.

A Delco representative readily consented to furnish the lighting system, the moving picture projector, and films if we would pay only the return charges on the films. Inasmuch as the lighting system was mounted on a Ford truck, we were able to hold such meetings in the most remote communities. A phonograph, which a local dealer lent to us, was also a part of our equipment. In the course of time we found it to our advantage to arrange for a supply of films from a film exchange in a neighboring city, and to use a truck belonging to the state board of health and equipped with a Delco system.

The results were remarkable, for instead of scant crowds, our audiences varied from 100 to 500 in size. Several times the crowd was so large that we were compelled to hold the meeting outdoors. But the most pleasing result to us was the changed attitude of the people toward us throughout the county. It was necessary only to announce in a church or school that one of our meetings was to be held, and the place of meeting was filled at the appointed hour.

BULLETINS AND HEALTH SEALS

Intensive health work is necessarily a slow process, and in a county of 28,000 people several months must elapse before every home is surveyed. In order to stimulate interest and promote health education in every home in the county throughout the progress of our work, a weekly bulletin was published and widely distributed in the county.



Mile post sign.

Another type of bulletin was published monthly for distribution throughout the state. This was a challenge to citizens of other counties to awake to the necessity for health campaigns in their communities, such as is now in progress in Lee County.

One of the health posters of the American Medical Association has been adapted to local conditions, and a seal

printed to be used on all mail of the department of rural sanitation. The state board of health, several of the Mississippi schools, and some of the local business men have agreed to use them on all of their correspondence.

Both of these means of advertising have a double purpose, for in addition to keeping interest alive in Lee County, they have been useful in arousing the interest of other counties in public health work.



Warning at approach to curve.

EXHIBITS AT LEE COUNTY FAIR AND STATE HEALTH OFFICERS' MEETING

At the Lee County fair, although our booth was located on the second floor among the educational displays, it was visited by more people than any other one exhibit. The bare walls of the booth were covered with white cloth, and ferns, green trimmings and a phonograph added to the attractiveness of the display.

The visitor was shown first the living hookworm under the microscope and then the two sources of human infection, poluted soil and vegetables. Two bottles of milk, one infected with typhoid bacilli and the other pure, were shown to demonstrate that there is no apparent difference caused by this dangerous contamination. The fact that both typhoid fever and hookworm disease are spread by the careless disposal of human excreta was forcibly explained, and then the sanitary privy that we were advocating was demonstrated. Infant welfare and malarial charts formed part of the exhibit. On leaving, the visitor was given literature and asked to register so that we might send him further information concerning the progress of the work. More than 8,000 visitors came into the booth. The register showed that these people came from seven different counties. Demands have since come to us for the same type of campaign in several of the neighboring counties.

During the state health officers' meeting at Jackson, a similar exhibit was demonstrated. Several new features were added, among them a miniature section of Lee County, showing the road signs, next to be described, and an educational feature illustrating the equipment which we take to our community meetings in the county. This exhibit received favorable comment from men prominent in health work throughout the United States, and has endeared us to the people of Lee County.

THE MILE POST SIGNS

A design for a mile post sign was prepared, such as the one in the illustration, with a top board for advertising the county as a model health county and giving the number of miles to the cities on that road, and featuring a health sentence. On the lower part of the sign there is space for two business advertisements. The design with specifications was submitted to various sign painters for bids, and the lowest bidder secured the contract. The plan was then placed before the business men with a price for advertisements such that the cost of the two would just cover the cost of the sign. They grasped the idea so eagerly that we soon had demands enough to place a sign on every mile of road in the county and to place a warning sign on both approaches to every dangerous turn. We were compelled to turn some advertisers away.

THE COUNTRY NEEDS YOU	KILL EVERY FLY
PRECAUTION PAYS	BUILD SANITARY PRIVIES
DON'T FLIRT WITH DEATH	POLLUTE NOT THE SOIL
ESTABLISH GOOD HABITS	FILTH, FLIES, FEVER
DON'T MORTGAGE YOUR LIFE	DEMAND CLEAN MILK
PREVENTION BEATS CURING	SAFETY IN SANITATION
PROLONG YOUR LIFE	WHY BE SICK?
AVOID CONTAGIOUS DISEASES	KEEP CLEAN
KEEP A LEVEL HEAD	DEMAND SANITARY SCHOOLS
COLDS ARE CONTAGIOUS	

A few of the sentences used on danger signs.

Once the idea and its significance were appreciated by the people of the county, we had no trouble at all in persuading the chamber of commerce to place an arch over each entrance to the county. On one side of the arch were the words "Welcome to Lee County, the model health county" and on the other "Come again to Lee County, the model health county," The chamber of commerce also agreed to place sixty signs at important cross roads to explain why the health campaign was in progress in the county.

To increase the public interest in these signs a contest was held to secure the best possible health sentences for



A sign at an important cross road.

the mile posts. The business men were approached and readily agreed to furnish the three necessary prizes. Sentences were received from men, women and children from one end of the county to the other. Incidentally, it may be of interest to note that the first prize was won by the daughter of the first man in the county to complete the needed sanitary improvements on his premises.

By means of these signs we have not only boosted county pride and spirit, aided visitors, and advertised our merchants,

but through the old familiar didactic method of repetition we have driven home to the people of the county the need for, and the methods of, preventing disease. The whole county looks on the signs as a county effort, and the health campaign as its own.

RESULTS OF PUBLICITY

In a county which was originally hostile to our work, with the exception of a few progressive citizens in the city of Tupelo, we have in three months been able to accomplish the following:

1. To make a health survey of 2,712 homes, learn the diseases with which they have been afflicted during the last five years, and locate each accurately on a health map of the county so that future work will be more easy.
2. To examine 8,907 people for hookworm and furnish treatment to each person found infected.
3. To construct 827 sanitary privies, which will minimize the spread of filth diseases.
4. To distribute more than 30,000 pieces of literature.
5. To vaccinate 200 people against typhoid.
6. To make 600 inspections of business houses.
7. To make complete physical examinations of 1,100 schoolchildren.
8. To control an epidemic of scarlet fever.
9. To contribute to the county a vision of what may be accomplished by community effort.
10. To secure cooperation of the public such that a permanent department of health can and will be established next year.

CONCLUSIONS

1. Advertising is an American method and wins Americans.
2. Advertising is invaluable in rural public health work.
3. Carefully planned advertising can be carried on at practically no expense to the health officials.
4. Such methods produce the maximum results in securing the backing of business men.
5. Wise advertising educates the community along health lines.
6. Such advertising as we have described unifies a community and gives it an aggressive spirit.
7. It can be done.

AN EARLY VENTURE IN INTESTINAL SURGERY

The modern surgeon who is inclined to note with pride the achievements in his field perhaps does not realize that even some of its most technical developments were duplicated long ago. Frederick Smith, in his work 'The Early History of Veterinary Literature and Its British Development," quotes a statement by Harward, made in 1673, concerning the repair of intestinal wounds:

"Then if there be any torn along the guts, or else jagged, that may not be stitched together for it will not grow, neither will that which is black, cold, and dead, in which case thou must do this. First, lay the two broken ends that should grow together the one a little over the other in your hand; then cut them both off at once with a pair of scissors, so that the new cut ends may be joined close together, but first cut the two broken ends off close to the mid-rise (mesentery) and cast them away, then with a fine needle and thread, or silk, stitch the two cut ends together so that they may gently meet and not be strained. Begin first to stitch at the mid-rise (mesentery) and round about the gut till you come to the same place again and then make fast your thread. But in this stitching remember this that as you must not draw your seam too hard for fear of crushing that tender skin, neither must you leave it too slack for fear the dung issue out, for if you miss either way you are sure to fail in your cure. When you have stitched the gut ends together with a fine and thick (close) seam and wiped away the blood and dirt clean, then anoint it with hog's grease and the juice of Comfrey mixed. This done put the guts into the belly and stitch up the breach, first the inner side (peritoneum) then the middle (muscles) and then dress with moulten butter and stitch up the outermost skin as is taught before, and use the beast as in the former cure, only do this more, that is, give him the juice of Comfrey in strong ale or beer to drink, and if he dung and stink in two or three days, there is no doubt of the cure. But in both these cures be sure of good help and be quick at thy work and be careful withal."

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

December, 1919, **80**, No. 6

*Incidence of Malignancy in Diseases of Gallbladder. **J. F. Erdmann**, New York.—p. 618.
*Control of Venereal Disease in Detention Home for Women in Times of War and Peace. P. Findley, Omaha.—p. 623.
*Value of Detention as a Reconstruction Measure. **C. C. Pierce**, Washington, D. C.—p. 624.
*Pioneering in Venereal Disease Control. **A. J. McLaughlin**. Sioux City, Ia.—p. 636.
*Detention and Treatment of Infected Women as a Measure of Control of Venereal Disease in Extracantonment Zones. W. F. Draper, Richmond, Va.—p. 542.
*Safety Factors in Team Work of Operator and Anestbetist. **J. J. Buettner**, Syracuse.—p. 646.
*Some Adjuncts which Promote Efficiency in the Use of Local Anesthesia. R. E. Farr, Minneapolis.—p. 653.
*Surgical Barrage. C. W. Moots and E. I. McKesson, Toledo, Ohio.—p. 661.
*Advantages of Nitrous Oxid-Oxygen in Labor. **C. E. Turner**, Columbus, Ohio.—p. 670.
Postoperative Analgesia. B. Van Hoosen, Chicago.—p. 677.
*Prophylaxis of Gestation. A. B. Davis, New York.—p. 682.
*Prenatal Care. S. J. Goodman, Columbus, Ohio.—p. 689.
*Care of Bowels During Puerperal Period; Further Report. R. McPherson, New York.—p. 698.
*Method of Placing Sutures in Immediate Repair of the Perineum. W. D. Porter, Cincinnati.—p. 701.
*Median Episiotomy in Primiparous Labors. **J. A. Harrar**, New York.—p. 705.
Problem of Hemorrhage in Obstetric Cases. **A. H. Bill**, Cleveland.—p. 708.
*Inversion of Uterus. H. W. Yates, Detroit.—p. 712.
*Cystic Ovary. F. Reder, St. Louis.—p. 719.

Malignancy in Diseases of the Gallbladder.—This paper was abstracted in The Journal, Oct. 25, 1919, p. 1307.

Control of Venereal Diseases.—This paper was abstracted in The Journal, Oct. 18, 1919, p. 1238.

Detention as a Reconstruction Measure.—This paper was abstracted in The Journal, Oct 18, 1919, p. 1238.

Pioneering in Venereal Disease Control.—This paper was abstracted in The Journal, Oct. 18, 1919, p. 1238.

Venereal Diseases in Extracantonment Zones.—This paper was abstracted in The Journal, Oct. 18, 1919, p. 1238.

Team Work of Operator and Anesthetist.—This paper was abstracted in The Journal, Oct. 18, 1919, p. 1238.

Efficiency in Use of Local Anesthesia.—This paper was abstracted in The Journal, Oct. 18, 1919, p. 1238.

Surgical Barrage—This paper was abstracted in The Journal, Oct. 18, 1919, p. 1238.

Advantages of Nitrous Oxid-Oxygen in Labor.—Having used this analgesic for some years, Turner offers five good reasons for its value: 1. The entire second stage is practically painless. 2. There is no exhaustion. 3. The postpartum psychoses are greatly lessened. 4. There are fewer lacerations of the mother's soft parts, especially of the perineum. 5. Healthy babies are delivered. Convalescence is rapid; this, of course, depends to some extent on the nature of the delivery. Involution takes place promptly, and the patient's recovery is uneventful. The function of the breasts is not disturbed by the use of gas-oxygen. Ordinarily the patient takes gas-oxygen very readily. The uterine contractions push the head farther and farther down into and through the pelvis, and it is finally born without much pain. In fact,

labor is in all respects normal. As a rule, the multipara, who has experienced the older methods of delivery, is better satisfied when delivered with the aid of gas-oxygen.

Prophylaxis of Gestation.—This paper was abstracted in The Journal, Oct. 25, 1919, p. 1307.

Prenatal Care.—This paper was abstracted in The Journal, Oct. 25, 1919, p. 1307.

Care of Bowels During Puerperal Period.—This paper was abstracted in The Journal, Oct. 18, 1919, p. 1239.

Method of Placing Sutures.—This paper was abstracted in The Journal, Oct. 18, 1919, p. 1239.

Median Episiotomy in Primiparous Labors.—This paper was abstracted in The Journal, Oct. 25, 1919, p. 1307.

Inversion of Uterus.—This paper was abstracted in The Journal, Oct. 25, 1919, p. 1307.

Cystic Ovary.—This paper was abstracted in The Journal, Oct. 25, 1919, p. 1307.

American Journal of Physiology, Baltimore

Dec. 1, 1919, **50**, No. 3

*Respiratory Volumes of Men During Short Exposures to Constant Low Oxygen Tensions Attained by Rebreathing. M. M. Ellis, New York.—p. 267.
*Alveolar Air and Respiratory Volume at Low Oxygen Tensions. B. R. Lutz and E. C. Schneider, New York.—p. 280.
Compensatory Reactions to Low Oxygen. H. W. Gregg, B. R. Lutz and E. C. Schneider, New York.—p. 302.
*Reactions of Cardiac and Respiratory Centers to Changes in Oxygen Tension. B. R. Lutz and E. C. Schneider, New York.—p. 327.
*Experimental Studies of Ureter; Cause of Ureteral Contractions. Y. Satani, Baltimore.—p. 342.
*Effects of Increasing Intracranial Pressure in Rabbits. L. M. Moore, Berkeley, Calif.—p. 352.
Distribution of Nonprotein Nitrogen in Cases of Anaphylaxis and Peptone Poisoning. K. Hisanobu, Tokyo, Japan.—p. 357.
Effect of Quinin on Nitrogen Content of Egg Albumen of Ring Doves. E. H. Hebre and O. Riddle, Cold Spring Harbor, L. I.—p. 364.
Nose Licking Reflex and its Inhibition. S. J. Meltzer and T. S. Githens, New York.—p. 377.
*Infra-red Radiant Energy and the Eye. M. Luckiesh, Cleveland.—p. 383.
*Activity in Endocrine Glands; V. Isolated Heart as Indicator of Suprarenal Secretion. W. B. Cannon, Boston.—p. 399.
Effect of Work and Heat on Hydrogen Ion Concentration of Sweat. G. A. Talbert, Baltimore.—p. 433.
Effect of Physical Training and Practice on Pulse Rate and Blood Pressures During Activity and During Rest. P. M. Dawson, Madison, Wis.—p. 443.

Effect of Low Oxygen on Respiratory Volume.—The respiratory volumes of twenty-nine men during the reduction of oxygen tension by rebreathing and during short exposures to constant low oxygen tension following the period of rebreathing were studied by Ellis in connection with the sea level respiratory volumes. An increase in the respiratory volume was noted at the end of the fifth minute of rebreathing, at an average of 18.1 per cent. oxygen (approximately equivalent to 4,000 feet altitude) in twenty-three of the twenty-nine subjects. The respiratory volume during the first ten minutes of the exposure to constant low oxygen tension, varying from 5,000 to 21,000 feet equivalent altitude, was greater than the sea level volume in thirty-two of the thirty-six subjects. The respiratory volume of seventeen of the thirty-six subjects fell during the first ten minutes of the exposure to constant low oxygen tension to a volume lower than that moved during the reduction of oxygen by rebreathing although still greater than the sea level respiratory volume. This fall in respiratory volume during the first ten minutes of exposure to constant low oxygen tensions was correlated apparently with compensations to low oxygen advantageous to the subject. The return to sea level oxygen tension was followed by a prompt return to the sea level respiratory volume.

Alveolar Air and Respiratory Volume at Low Oxygen.—Twenty-four men were taken to 352 mm. pressure in a low pressure chamber at a rate equivalent to an ascent of 1,000 feet per minute. In these cases the average alveolar oxygen tension fell 66 per cent. and the alveolar carbon dioxid fell 24 per cent. The average carbon dioxid tension was definitely lowered at 656 mm. (4,000 feet) which indicates that the onset of increased breathing had occurred. The lowest carbon dioxid tension occurred about five minutes after 380 mm. was reached, when the reduction was equivalent to an ascent of 1,000 feet per minute. Both oxygen and carbon dioxid alveolar tensions responded quickly to rapid successive reductions of barometric pressure to 428 mm.

Reaction of Medullary Centers to Low Oxygen.—According to Lutz and Schneider the cardiac and respiratory medullary centers in man respond quickly to changes in the partial pressure of oxygen. A decrease in oxygen stimulates while an increase in oxygen inhibits the action of these centers.

Experimental Studies on Ureter Contractions.—The experiments reported on by Satani showed that distention of the ureter lumen causes the development of contractions, which increase to a certain limit with an increase in pressure. The chemical composition of the kidney secretion may also effect the development of ureteral contractions by means of a reflex action. The viscosity of the fluids which pass through the ureter lumen affects the contractions only to the slightest degree. Solid bodies, such as a calculus, however, produce vigorous tonic contractions. Satani concludes that the peristalsis of the ureter should be referred not to one, but to several factors, which act mainly in cooperation, but which vary in value under various conditions.

Increase in Intracranial Pressure in Rabbits.—Increasing the intracranial pressure in rabbits 20 mm. of mercury (272 mm. of water) or more, Moore says, results in accelerated respiratory movements followed by their cessation, slow heart beat, vasoconstriction, dilatation of the pupils, spasms of asphyxiation, and finally death within from one to three minutes unless artificial respiration is used or the pressure is released. Moderate degrees of pressure, 15 mm. of mercury (200 mm. of water) or less, cause increase in the rate of heart beat, vasoconstriction and a rise in body temperature. The pressure symptoms and death following "heat puncture" operations were found only when an opening was left in the cranium; and, by comparison with the symptoms attending artificially increased intracranial pressure and clinical cases of brain lesions, seem to be due to the same cause. The cause of death, and the preceding symptoms, when the intracranial pressure is raised, appears to be stimulation followed by paralysis of the principal bulbar centers.

Infra-Red Radiant Energy and Eye.—The work reported on by Luckiesh was prompted by the recently developed opinion that eye glasses, especially in the industries, should not transmit infra-red radiation. The data presented in this paper do not directly reach the root of the problem but they are of considerable importance. Energy quantities and densities in the eye mediums are established and should aid the physiologist who is interested in the question. This paper is confined purely to the physical aspects of spectral energy distribution in illuminants, of the absorption by the eye mediums, of optical laws, of luminous efficiency of illuminants, etc.

Action of Suprarenal Secretion.—Results reported by Cannon present the first indication that under quiet, peaceful conditions there is no suprarenal secretion or a secretion so slight as not to affect the denervated heart, an extremely sensitive indicator. These observations prove that suprarenal secretion is not a necessity, at least in times of serene existence. Adrenin is secreted, however, in times of great emotional stress and under circumstances which cause pain or asphyxia. The function of the suprarenal medulla is to be looked for under conditions which rouse it to action. Excitement, pain or asphyxia are self-preservation. Under such circumstances, as has been emphasized in the presentation of the emergency theory, the operation of the sympathetic division of the autonomic system together with the aid which adrenin affords will muster the resources of the organism in such a way as to be of greatest service to such organs as are absolutely essential for combat, flight or pursuit. It appears, therefore, that the emergency theory of the suprarenal medulla is the only one which thus far has any experimental support.

American Journal of Roentgenology, New York

November, 1919, 6, No. 11

Roentgen-Ray Study of Abdominal Organs Following Oxygen Inflation of Peritoneal Cavity. W. H. Stewart and A. Stein, New York.—p. 533.
Nontraumatic Epiphyseal Separations. W. A. Evans, Detroit.—p. 543.
Coccidoidal Granuloma. W. B. Bowman, Los Angeles.—p. 547.
Two Cases of Xeroderma Pigmentosum with Malignancy of Eyeball Successfully Treated by Roentgen Ray. G. W. Grier, Pittsburgh.—p. 552.
Open Method of Surgery in Deep-Seated Recurrent Cancer Preparatory to Roentgen and Radium Therapy. E. G. Beck, Chicago.—p. 559.
Relative Absorption of Rays by Skin, Fat and Muscle, as Compared with Various Thicknesses of Aluminum. G. Warner, Chicago.—p. 559.
Technic of Radiotherapy. P. Eisen, Chicago.—p. 559.
Late Results of War Injuries to Chest. H. J. Walton, Baltimore.—p. 568.
Analysis of 1,300 Cases Referred for Gastro-Intestinal Study, with Special Reference to the Importance of Chest Examination of Such Cases. T. A. Groover and A. C. Christie, Washington, D. C.—p. 571.
Roentgenographic Findings in a Series of Chests Examined at a Base Hospital in France. F. F. Borzell, Philadelphia.—p. 573.
Malignant Disease of Lungs, Its Early Recognition and Progressive Development, as Studied by Roentgen Rays. G. E. Pfahler, Philadelphia.—p. 575.

Boston Medical and Surgical Journal

Jan. 15, 1920, 182, No. 3

Origin of Intrapelvic Treatment of Stump After Supravaginal Hysterectomy for Fibroid Tumor of Uterus. J. R. Goffe, New York.—p. 53.
*Result of Treatment of Neurosyphilis (General Paresis and Cerebrospinal Syphilis).—H. C. Solomon, Boston.—p. 60.
Potency of some French Digitalis Preparations. S. A. Levine, Boston.—p. 64.
Hysteria. D. Nathan, Norristown, Pa.—p. 66.
Acute Nephritis by Absorption of Household Disinfectants (Credin). H. A. Jones, Howard, R. I.—p. 68.

Result of Treatment of Neurosyphilis.—A review four years or more after the dismissal from the hospital of ten cases of neurosyphilis who were reported as aided by antisyphilitic treatment is made by Solomon. Nine of these patients were committed as insane, the remaining case was diagnosed general paralysis but not necessarily commitable. Eight cases were diagnosed general paralysis, two as cerebrospinal syphilis. The diagnosis of cerebrospinal syphilis was changed from general paralysis in one of these two cases only because the case cleared up under antispecific treatment. The mental symptoms were those of paresis. Of the eight cases diagnosed general paralysis, five patients are now living at home. Three are apparently entirely well; two, while not well, are able to care for themselves and live a normal life in the community. Two are dead and one is in a hospital. One of the two who died had a fair remission with economic efficiency for eighteen months and had all laboratory reactions negative at one time. The one who was in a hospital had a remission of three years' duration. Two cases were diagnosed cerebrospinal syphilis (nonparetic), but with marked mental symptoms. One patient left the hospital apparently entirely normal and with negative laboratory signs. He has been lost from view. The other is now serologically negative and mentally normal after four years. Of eight cases diagnosed general paralysis, three patients are apparently entirely well after four years; two are well enough to live outside and care for themselves; one had a remission of more than three years' duration, and is now in a hospital; two are dead, having had a remission of eighteen months each. Of two cases diagnosed cerebrospinal syphilis with mental symptoms, one patient is lost from observation, the other is mentally normal and serologically negative. This report leads the author to feel that it is possible to render help in a portion of cases of general paralysis or cerebrospinal syphilis with mental symptoms, and that intensive, systematic treatment will change the prognosis of general paralysis.

Florida Medical Association Journal, St. Augustine and Jacksonville

December, 1919, 6, No. 6

The Qualified Nurse. J. E. Boyd, Jacksonville.—p. 113.
Treatment of Ectopic Gestation. T. Truelsen, Tampa.—p. 116.
Some Differences in Therapeutic Response Between Caucasian and Atro-American. G. M. Niles, Atlanta.—p. 118.

Journal of Orthopedic Surgery, Lincoln, Neb.

January, 1920, 2, No. 1

*Anatomy of Snapping Hip. F. W. Jones, London.—p 1.
Roentgenograms of Case of Tuberculosis of One Hip Associated with Congenital Dislocation of Other Hip. A. R. Jones, London.—p. 4.
*Stripping of Os Calcis. A. Steindler, Iowa City, Iowa.—p. 8.
Treatment of Fractures of Femur from an Orthopedic Point of View. J. P. Jones, Camden, Ala.—p. 13.
Time Element in Reconstructive Surgery. R. W. Johnson, Jr, Baltimore—p. 33.

Anatomy of Snapping Hip.—A clinical study of two cases convinced Jones that the structure which infringes on the trochanter and causes the snap is the tendon developed on the deep surface of the gluteus maximus muscle. This tendon constitutes the insertion of the gluteus maximus to the gluteal ridge of the femur and it was apparent that in the two cases studied the tendon was in an abnormal state of development. That the tendon was the offending structure in these two cases was confirmed by the fact that stitching it down to the whole length of the great trochanter put a stop to the production of the snap.

Stripping of Os Calcis.—The operation which Steindler first described in 1917 consists mainly in the subperiosteal stripping of the muscular attachments to the anterior surface of the os calcis. The operation does not intend to do more than to free a muscle bound claw foot or hollow foot from the strain of contracted musculature of the sole of the foot. Any deformity arising from abnormalities of the skeleton must be taken care of by additional bone operation. In some cases this operation had to be accompanied by osteotomy of the tarsus in order to overcome the cavus deformity of the skeleton. In a series of other cases dropping of the first metatarsal and retraction of the big toe was overcome by Sherman's procedure, that is, by severing the extensor of the big toe beyond the metacarpal phalangeal joint and fastening the tendon to a point proximal to the head of the first metatarsal.

Medical Record, New York

Dec. 6, 1919, 96, No. 23

Teaching Function of Hospital, with Especial Reference to Gynecology. G. G. Ward, Jr., New York.—p. 909.
Internal Secretions. E. D. Friedman, New York.—p. 916.
*Physical Examination of Applicants for Industrial Positions; with Results of Three Hundred Examinations C. Scheffel, Brookline, Mass.—p. 925.
Sugar Treatment of Tuberculosis. Report of Cases. A. Sterling, Philadelphia.—p. 927.
Forces of Nature. B. Lemchen, Chicago.—p. 928.

Physical Examination of Applicants for Industrial Positions.—Of 300 applicants examined by Scheffel fifty-one presented gross defects. Among these were: enlarged inguinal glands, 13 cases; heart murmurs, 4 cases; ankylosed finger joints, 5 cases; partially amputated fingers, 8 cases; destroyed tendon function, 3 cases; defective vision, 11 cases. In addition to these defects there were thirty-three applicants who had been in this country from four to eleven years who could not read the English alphabet to have their eyes tested by the ordinary Snellen's test type. The scope of these examinations extended from head to foot in a general way, but record was kept only of those defects related to the performance of the duty required of the applicant in case he was accepted for employment. The mentality of all applicants was carefully surveyed with the view of eliminating feebleminded, imbecile and degenerate types. None was found in this series of examinations.

Dec. 13, 1919, 96, No. 24

Special Factors in Management Favoring Normal Development of Child H. L. K. Shaw, Albany.—p. 951.
Respiratory Tract as a Portal of Entry in Infectious Diseases. I. W. Voorhees, New York—p. 956.
Malingering in Relation to War Neuropsychiatric Conditions, Especially Hysteria. J. F. W. Meagher, Brooklyn.—p. 963.
*Serum Treatment of Epidemic Poliomyelitis Occurring in Dubuque, Iowa, During Summer of 1918. J. J. Rowan, Jr., Dubuque, Ia.—p. 972.
Results of Focal Infections as Seen in Ophthalmology and Otolaryngology. B. D. Ravdin, Evansville, Ind.—p. 975.

Dec. 20, 1919, **96**, No. 25

Theory and Practice of Proteal Therapy. H. S. Williams, New York. —p. 997.
"Group" Medicine—The Medicine of the Future. J. R. Pennington, Chicago.—p. 1010.
Eye and Ear Symptoms in Basal Cranial Injuries. L. D. Brose, Evansville.—p. 1012.
Modern Treatment of Tuberculosis. R. C. Kirkwood, Albuquerque. —p. 1015.
Modern Urologic Advances and Their Effects on Renal Surgery. A. G. Rytina, Baltimore.—p. 1018.

Serum Treatment of Epidemic Poliomyelitis.—Among the eighty-five cases of epidemic poliomyelitis which occurred in Dubuque, ten patients died, a mortality of 12 per cent. Seventeen were not treated with Rosenow's serum; of these eight died, a mortality of 47 per cent. Sixty-eight patients were treated with the serum, and of these two died, a mortality of 3 per cent. In the two fatal cases conditions were such that curative effects of the serum could not be expected. The ages of the patients ranged from 2 weeks to 18 years. The average age of the untreated group was 4.8 years, and the average age of those treated was 4.7 years. The great majority of patients in each group were less than 6 years of age The disease was about evenly distributed between boys and girls. There was no lull in the epidemic between the treated and untreated groups. The crest of the wave of the epidemic occurred seven days after the serum treatment was begun. There was no difference in the severity of the early symptoms in the two groups of cases. The differences in mortality and incapacity would seem, therefore, in Rowan's opinion to be attributable to the good effects of the serum.

Military Surgeon, Washington, D. C.

December, 1919, **45**, No. 6

Early Experience in the War. J. A. Blake, U. S. Army.—p. 626.
Some Early Problems of Medical Department, A. E. F. S. H. Wadhams and A. D. Tuttle, U. S. Army.—p. 636.
Importance of Physical Therapy in Military and Civil Practice. W. S. Bainbridge, U. S. N. R. F.—p. 663.
Army Medical Museum. C. F. Craig, U. S. Army.—p. 679.
Varicocele as Applied to Men in Navy P. J. Reel, U. S. N. R. F. —p. 690.
Pathologic Service of the A. E. F. L. B. Wilson, Rochester, Minn. —p. 694.
Malingering. J. Catton, San Francisco.—p. 706.

Modern Hospital, Chicago

December, 1919, **13**, No. 6

How Cambridge City Hospital Overcame Financial Handicap. J. J. Weber, Chicago.—p. 452.
Some Small Communities and What Their Hospitals Mean to Them. M. K. Chapin, Chicago.—p. 455.
Public Hospital Planned to Minimize Depreciation. A. S. Kendall, Boston—p. 461.
Management of Contagious Disease Hospitals. D. L. Richardson, Providence.—p. 469.
Bringing the Christmas Spirit into the Hospital. H. A. Leonard, New York.—p. 473.
Beautiful Music Brightens Christmas in the Hospital. D. D. Lash. —p. 480.
Soldiers in French Hospital Celebrate Peace Christmas. M. J. Robinson, Dallas, Texas.—p. 491.

Northwest Medicine, Seattle, Wash.

December, 1919, **18**, No. 12

Standard British Method of Treating Fractures of Femur at Close of War. F. J. Fassett, Seattle.—p. 255.
Orthopedic Surgery in American and British Hospitals. D. K. Allen, Salt Lake City.—p. 258.
Surgical Injuries of Scalp, Skull and Brain. J. L. Stewart, Boise, Ida. —p. 260.
Injuries of Knee Joint. M. T. Smith, Wallace, Ida.—p. 263.
Pott's Fractures. J. W. Mowell, Olympia, Wash.—p. 265.
Industrial Injuries; Prevention of Loss and Restoration of Function. A. Gottlieb, San Francisco.—p. 267.
Osteomyelitis and Its Classification Roentgenographically. H. B. Thompson, Seattle.—p. 270.

Philippine Journal of Science, Manila

May, 1919, **14**, No. 5

Bacteriologic Phases of Cholera Carrier Problem. J. A. Johnston, Manila.—p. 459.
Philippine Raw Materials for Glass Making. T. Dar Juan and V. Elicano, Manila.—p 465.
*Cystolithiasis Among Filipinos in Association with Dietetic Deficiency. R. G. Padua Manila.—p. 481.
Growth of Hevea Brasiliensis in Philippine Islands. H. S. Yates, Manila.—p. 501.
Biologic and Systematic Study of Philippine Plant Galls. L. B. Uichanco, Los Banos.—p. 527.

Cholera Carrier Problem.—The researches of Schöbl and of Panganiban on cholera carriers in guinea-pigs have shown that food plays an important rôle in the appearance and the disappearance of the vibrios in the feces. The normal period for recovery of the cholera vibrios from artificially infected guinea-pigs has been definitely established to be approximately fourteen days, after which time they can no longer be found. In Bilibid prison, the cholera carriers were given hexamethylenamin and, following Schöbl's experiments with ox bile in guinea-pigs, 0.65 c.c. of ox bile, three times a day, for two days; after an interval of five days the treatment was repeated. Those persons negative after the treatment were released from quarantine. Inspissated beef bile was used. It was not supposed that the bile would cure the carrier condition, but that it would cause more vibrios to enter the intestinal tract from the gallbladder.

Cystolithiasis with Dietetic Deficiency.—The results of Padua's investigation show that a relation apparently exists between the general dietetic inadequacy and deficiency among Filipinos and the incidence of phosphatic calculi, in contrast with the reported predominance of uric acid and urate calculi in Europe and in the United States. Of ten cases of cystolithiasis which he particularly studied since this investigation was undertaken, nine patients not only gave a history of having had beriberi, but exhibited actual signs referable to the disease. Although the clinical data of all but two of the other forty-eight cases are, as a whole, obscure with respect to the history of nutritional disease, still they indicate that the majority of the patients were undernourished and underdeveloped.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

December, 1919, **24**, No. 233

Special Tube Stand for Rapid Roentgen-Ray Stereoscopic Work. C. E. Holland.—p. 218.
*An Inherited Abnormality. C. F. Oddie.—p. 227.
*Unusual Fracture of Os Calcis. C. J. Glasson.—p. 228.
Detection of a Difficult Foreign Body. A. Marsh.—p. 229.
Simultaneous Fluoroscopy in Two Planes. H. C. Gage.—p. 230.

An Inherited Abnormality.—Oddie's patient, a boy aged 14 years, had one-jointed fingers on both hands. His mother had similar hands, and four of her nine children were similarly affected, the other five being normal.

Unusual Fracture of Os Calcis.—Glasson's patient had a fracture of the upper and posterior surface of the os calcis with displacement of the fragment, the forward end to the inner side. There was a transverse oblique fracture from the anterior portion to just in front of the posterior third of the upper surface, with dislocation forward of the lower segment. The tendo Achilles was not broken through, though some strands attached to the upper and posterior point of the os calcis were broken, lifting the fractured piece upward.

British Medical Journal, London

Dec. 6, 1919, **2**, No. 3075

Surgical Tradition. Historical Review. J. Tweedy.—p. 731.
Fracture Dislocations of Ankle. Pott's and Dupuytren's Fractures. R. P. Rowlands.—p. 735.
*Normal and Morbid Conditions of Testes from Birth to Old Age in One Hundred Asylum and Hospital Cases. F. W. Mott.—p. 737.
*Mumps in Adults. G. MacLeod.—p. 742.

Normal and Morbid Conditions of Testes.—Mott examined postmortem an emulsion of the brains of a successive series of 100 cases of general paralysis of the insane by dark-ground illumination, and found the spirochete present in 66 per cent. His assistant, Mr. Geary, examined by dark-

ground illumination the seminal fluid obtained postmortem from the vesiculae seminales of fifty cases of general paralysis, also an emulsion of the testicles; spirochetes were not once seen. This result, Mott says, indicated that the seminal fluid of a paralytic is, in all probability, noninfective at the time he is suffering with this disease. The family history of fifty-four male tabetic or taboparalytic patients showed that they had 151 children alive, seventy-five who were born alive but died in early infancy, and fifty-two born dead or miscarriages. This offered a striking contrast to the family history of twenty-five female tabetic or taboparalytic patients, ten of whom were sterile; the remaining fifteen had ten children alive, ten who were born alive but died in infancy, and fifty-one miscarriages or stillbirths. In the latter case both father and mother were syphilitic, and in the former the father in most instances married when the spirochete was no longer circulating in the lymph stream of the body, but was confined to the specially closed lymphatic system of the brain and spinal cord, the periadventitial sheath of the vessels and perioneuronal spaces which contain the cerebrospinal fluid. Mott also makes a detailed report of the results of the examination of the development of the testis from birth to puberty; normal spermatogenesis in cases of death from shock caused by severe injuries; the testes of a large number of general paralytics, of twenty-two cases of dementia praecox and of six cases of imbecility and idiocy.

Mumps in Adults.—Among the 694 cases of mumps in adults, analyzed by Macleod, orchitis has been the most frequent complication occurring in 140, or 20 per cent., of the cases. Relapses were met with in seventeen cases. All the above cases were in adult males from 18 to 40 years of age; seventeen were second attacks and one man claimed to have celebrated his third attack.

Dec. 20, 1919, **2**, No. 3077

Evolution of the Surgeon and His Training. W. T. Thomas.—p. 803.
*Chronic Intestinal Stasis in Children. G. Taunton.—p. 806.
Health Resorts for Diagnosis and Treatment of Chronic and Functional Diseases. E. P. Weber.—p. 809.
Tick Fever in Palestine. F. D. Nicholson.—p. 811
*Erythema Nodosum and Tuberculosis. E. Ward.—p. 811.

Chronic Intestinal Stasis in Children.—In discussing the treatment of this condition, Taunton says, that in children prevention should be the first aim. The maintenance of the correct posture comes before all else. Should there be at any time from any cause a tendency for the symmetrical posture of rest to be assumed it must be checked. Rest, physical exercises, tonics, change of air, must all have their appropriate use. When stasis already exists, and the symptoms of autointoxication are recognized, should careful examination point to a congenital cause, such as an appendical control, an operation is called for. There should be no delay; the earlier it is done the less will development be interfered with by the toxemia, the less risk will there be of an acute attack of appendicitis intervening prior to the operation, the more easy will it be to break the habit of absorbing poison which the bowel has acquired, and the fewer advantitious bands and membranes will have formed in conjunction with this form of control. In the acquired form operative interference should be avoided, if possible, but each case must be judged on its merits. Nasal obstruction must be dealt with, and a free airway established through the nose. Liquid petrolatum should be given before each meal to act as a lubricant and render the passage of the food more easy. Opening medicine, in the form of aperients, purgatives, cathartics, etc., should be avoided, except in the form of an occasional dose for some special reason. Agar-agar mixed with semisolid food is useful when the point of stasis originates at the sigmoid, and is most marked there. An abdominal support which keeps out of the pelvis the sagged portions of the bowel in which stasis exists is of the greatest use. An hour's rest in the recumbent position in the middle of the day will often help in a wonderful manner. Should these means fail or not suffice after due trial, operative measures will be necessary. However successfully the bowel has been freed from all controls, means must be taken to prevent the original cause or causes from becoming operative again. Attention must be paid to the nonoperative treatment where indicated, and always liquid petrolatum should be given for from six months to a year. Those portions of the bowel where stasis existed will tolerate delay from custom, and, having acquired the habit of absorption, both the custom and the habit have to be broken; in the same way, after the enucleation of tonsils and removal of adenoids, it is necessary to break the habit of mouth breathing, and unless that is done nasal breathing will not be resumed although the airway is patent.

Erythema Nodosum and Tuberculosis.—Although Ward does not suggest that tuberculosis is the only cause of erythema nodosum, he points out that a similar cutaneous manifestation may be due to many different poisons, one of which is that of tuberculosis. Moreover, the constitutional peculiarity which gives rise to this skin reaction seems to be inherited, as are other peculiarities—such, for instance, as the well known disposition to epidermolysis bullosa after slight injuries. Out of 4,000 cases of tuberculosis and contacts under annual observation, Ward has not yet noticed any other skin condition (apart from the well recognized tuberculides) which is definitely connected with tuberculosis. It has been stated that lupus erythematosus is attributable to tuberculosis, and Ward has seen a few cases of this disease, but not more than would be accounted for by coincidence; not more, for instance, than the cases of lichen ruber planus, which no one suggests is due to tuberculosis.

Dec. 27, 1919, **2**, No. 3078

Some War Diseases. H. Davy.—p. 837.
Mitral Stenosis in Soldiers. T. F. Cotton.—p. 840.
*Apparent Spontaneous Rupture of Normal Spleen. W. W. Shorten.—p. 844.
*Relation of Pfeiffer's Bacillus to Influenza. S. Wyard.—p. 845.
Pregnancy Complicated by Volvulus of Pelvic Colon. V. Bonney and E. C. Bridges.—p. 846.

Apparent Spontaneous Rupture of Spleen.—Shorten reports the case of a soldier, aged 43 years, who while walking was seized with pain in the region of the umbilicus, so severe that it caused him to fall to the ground. He vomited, and the pain subsided sufficiently to allow him to walk to his billet. He endeavored to carry on his duties, which were light, but the pain became worse. His medical officer came to the conclusion he had colic and gave him a dose of castor oil, which he immediately vomited. As the pain was getting steadily worse he was sent to the hospital. The diagnosis of rupture of an abdominal viscus was based on the marked abdominal tenderness and the boardlike rigidity of the abdominal muscles and free fluid in the abdominal cavity, but there were no localizing symptoms. The abdomen was opened in the middle line above the umbilicus; a large quanity of fluid and clotted blood escaped on opening the peritoneum. The liver was found normal, but on passing the hand into the splenic region a large quantity of clot was displaced and free bleeding was found to be going on. A large rupture in the spleen was felt. When the splenic vessels were grasped, the bleeding stopped. The splenic vessels were isolated and ligatured with linen thread and the spleen was removed. The wound was sutured with linen thread. The spleen was normal in size and weight; the tear, which extended from the convex surface to the hilum, divided the organ into two equal portions. There was no stripping of the capsule to suggest that at first there had been subcapsular hemorrhage, later tearing through the capsule. It was clear that the tear in the spleen and capsule were present from the first, allowing of free intra-abdominal hemorrhage. Microscopic examination showed the spleen to be normal. The patient recovered. Four weeks after the operation he was apparently in the best of health.

Relation of Pfeiffer's Bacillus to Influenza.—No agglutination of either one of three typical strains of Pfeiffer's bacillus was obtained by Wyard with serums removed from fifty-nine cases of influenza, whether those cases were or were not complicated by bronchopneumonia, and whether they

were in the first, second, third, fourth or fifth week of the disease. Attempts were made to discover antibodies by means of complement fixation tests, but in no case was the complement fixed.

Glasgow Medical Journal

December, 1919, **10**, No. 6

Sores, Analogous to Veld Sores and Barcoo Rot, Appearing Among Soldiers Working in Blue Clay and In Chalk. D. D. Logan.—p. 257. To be continued.
With the 1/1st Lowland Field Ambulance in Gallipoli. G. H. Edington. —p. 262.

Lancet, London

Dec. 20, 1919, **2**, No. 5025

Evolution of Disease. W. A. Lane.—p. 1117.
Psychotherapy in Ordinary Practice. W. A. Potts.—p. 1123.
*Hysterical Sleeping Attacks. H. Carlill.—p. 1128.
*Occasional Manifestations of Malaria. D. W. C. Jones.—p. 1130.
*Treatment of Recurrent Malaria. H. Fraser.—p. 1134.
*Congenital Dislocation of Hip: Method of Dealing with Refractory Cases. A. H. Tubby.—p. 1135.

Hysterical Sleeping Attacks.—Carlill reports the case of a young man, aged 19 years, who, since early childhood, had been liable to go off to sleep at any time and without any feeling of fatigue. He had never been a week free from this. Except for enlargement of one of the turbinate bones, examination revealed no evidence of organic disease in any system. The boy's physical health was good. He was not addicted to bad habits. The Wassermann reaction was negative both in serum and in cerebrospinal fluid, and the fluid was in all other respects also perfectly normal. Carlill was confident that the attacks were hysterical, due to his own suggestion; in other words, the patient hypnotized himself. His head was roentgenographed and he was told that the real cause of his illness had been discovered, and that an operation for the removal of a piece of thickened bone was necessary in order to effect a complete and permanent cure. Carlill trephined the skull in the right parietal region and removed the disk of bone. The dura mater was healthy and was left alone. The bone was normal. Directly the patient regained consciousness, he was shown the piece of bone and given it to feel, and he was told how successful the operation had been. From the date of the operation his sleeping attacks ceased entirely and he admitted that he was absolutely cured. He did not relapse. The patient has remained perfectly well since his operation eighteen months ago.

Occasional Manifestation of Malaria.—Twenty cases are reported by Jones to demonstrate that malaria has a place, though a small one, among the hemorrhagic diseases. Instances are given of bleeding from the mucous membranes of the alimentary, respiratory and urinary tracts, into a solid organ like the spleen, and into the eye. Two cases of arthritis were observed in this series, one with effusion into a knee joint. Jones insists that hemorrhage of any kind occurring in a malarial subject should be regarded as an indication for treatment with quinin. Malarial subjects should be advised to take a calomel purge followed by quinin by the mouth immediately on feeling the slightest headache or malaise; by this method it appears that recurrences can frequently be aborted. To assist clinical diagnosis of the infection, the presence of areas of hyperalgesia over the distribution of the eighth cervical and first dorsal, the seventh dorsal and the lumbar segments, or some of these, may be taken as a good rough indication that the patient is suffering from malaria, provided that trench fever infection can be excluded.

Treatment of Recurrent Malaria.—Fraser claims that no man can have a relapse of malaria during the period that he swallows 15 grains of quinin sulphate in solution once daily. Smaller doses are not sufficient, and it is better to give the amount in one dose rather than in divided doses. Fifteen grains of quinin taken daily can do no harm to any man infected with malaria parasites. If a relapse occurs, the man is either not swallowing or not absorbing the quinin. It has not been determined how long the continuation of treatment is necessary. It was not found practicable to continue the treatment beyond twenty-eight days in hospitals or concentration camps for malaria. It is advisable to continue the treatment for as long as possible. In the absence of treatment or in cases inadequately treated relapses are observed. In these cases, 15 grains of quinin sulphate in solution should be given twice daily for five days and thereafter 15 grains once daily. The first dose should be given when the temperature is falling—that is, in the sweating stage. No patient suffering from a relapse without complications, who is treated in this way, will show a rise of temperature subsequent to the fourth day. No importance is attached by Fraser to the use of tonics, such as iron and arsenic.

Congenital Dislocation of Hip.—Tubby claims that in congenital dislocation of the hip the ilio-psoas muscles and tendons undergo important changes in direction. As the combined muscle tendon crosses the brim of the pelvis, it is displaced outward and it passes closely beneath the anterior inferior spine. It then winds outward and backward to its insertion, compressing the capsule about its middle, and this is responsible for the hour-glass shape of that structure, so often seen in cases of congenital dislocation in children more than 4 years of age. As age advances, the ilio-psoas muscle and tendon become more hypertrophied and thick; they compress the capsule of the hip-joint more closely about its middle, and the latter becomes not only hour-glass shaped, but its anterior wall is so folded inward and backward as to obscure the entrance to the acetabulum like a curtain. This constriction of the middle of the capsule is by no means an insuperable obstacle to reduction in early life. As time passes, however, the narrowing or hour-glass contraction of the capsule increases. By continuous narrowing, the aperture leading from the outer portion of the distended capsule into the true acetabular cavity may be reduced to a small button-hole. The cavity is thus obliterated, its site being covered over by the outspread attachments of the anterior layer of the capsular ligament. In these cases Tubby makes a crucial incision of the capsule and divides the contriction of the capsule and the ilio-psoas tendon. With a little traction on the limb, the caput femoris slips easily into its socket. The crucial incision into the capsule is then closed by suture, and the limb is put up in plaster in the fully abducted position. The result has been entirely successful. Tubby has been able to advance the age for operative reduction of the hip from 7 years onward, until the latest successful case occurred in a girl, aged 15 years.

Dec. 27, 1919, **2**, No. 5026

Mental Personality: Its Integration and Disintegration. H. Campbell. —p. 1181.
*Primary Hydatid Disease of Brain. N. B. B. Fleming and G. W. Bury.—p. 1186.
Epidemic Influenza in Australia. H. L. Kesteven.—p. 1189.
*Boiled Vegetables for Use of Diabetics. P. J. Cammidge.—p. 1192.
*Treatment of Tuberculous Abscess by Aspiration. Z. P. Fernandez. —p. 1193.
Removal of Large Cervical Tumors Occupying Vagina By Laparotomy. J. F. Peart.—p. 1194.
*Carcinoma of Ovary In a Girl Aged Nine Years. H. M. Gerson. —p. 1195.
Suppurating Hydatid Cyst of Liver. R. L. Ley.—p. 1195.

Primary Hydatid Disease of Brain.—Fleming and Bury make a detailed report of a case of this kind occurring in a soldier. A diagnosis of cerebral tumor was made. As the operation was about to commence, breathing ceased, but the pulse and all reflexes remaining normal, artificial respiration was resorted to, and a left subtemporal decompression was performed. The patient did not take a normal breath for four and one-half hours and without the administration of any anesthetic whatsoever. The condition of increased intracranial pressure had existed for a considerable time before the operation, and the anesthetic had further increased the pressure and so paralyzed the respiratory center beyond recovery. The patient died. At the necropsy, on slicing the left cerebral hemisphere, a unilocular cyst, equal in size to a large orange, escaped from the ventricle. The cyst had apparently no attachments to anything in the ventricle; the appearance of the cyst was typical of a hydatid. The cyst

was found to have bulged into and greatly distended the left ventricle, causing pressure on the surrounding parts, particularly the internal capsule, lenticular nucleus, and optic thalamus. It is the authors' opinion that the parasite had come via the choroid plexus. On dissecting the right hemisphere three calcified nodules one-sixth of an inch in diameter were found embedded in the middle frontal convolution. Nothing else abnormal could be found in the brain. The fluid in the cyst and the fluid obtained from aspirations of the left ventricle were found to contain hooklets and scolices, proving it to be due to *Tenia echinococcus*. The calcified nodules were examined, and a report of "amorphous calcified material" was returned. In spite of this, however, the authors submit that they were calcified nodules of *Tenia cysticercus*.

Boiled Vegetables for Diabetics.—Very little experimental work appears to have been done on the composition of the material resulting from the treatment of vegetables with three changes of boiling water. It has been generally assumed that any vegetable of low carbohydrate value is rendered practically carbohydrate-free, while vegetables of high carbohydrate content, and particularly root vegetables, should not be used. With a view to throwing some light on the question and discovering which are the best vegetables to employ for the purpose, a number of experiments were carried out by Cammidge. From these experiments it is clear that three boilings are not sufficient to render all vegetables carbohydrate-free, and that the amount of carbohydrate originally present is no guide in selecting those best suited for the preparation of a starch and sugar-free product such as may sometimes prove useful instead of actual fasting for children or persons who have severe cases of diabetes. It would seem that celery, rhubarb, spinach, sliced turnip and sliced carrot can probably be relied on and are the best to use for the purpose. Even when thrice boiled vegetables are not quite free from carbohydrate, the percentage is so much reduced that from four to thirty times as much of the thrice boiled as of the once boiled material will contain the same amount of carbohydrate.

Aspiration of Tuberculous Abscess.—Given an early diagnosis, Fernandez claims that treatment by aspiration will frequently arrest the course of a tuberculous abscess and effect a complete cure. Delay in diagnosis and treatment by incision not infrequently end in disaster.

Carcinoma of Ovary.—In the case cited by Gerson, an exploratory laparotomy had been performed, a provisional diagnosis of tuberculous peritonitis having been made. The right ovary and tube were found involved in a growth and were removed; no secondaries were observed at the time. Within a few weeks after operation a lump was noticed in the left iliac region, and on the presumption that the left ovary was involved, a second laparotomy was performed, which revealed a malignant growth of the left ovary and multiple secondaries in the omentum. The case was considered inoperable. The patient died two weeks later. Microscopically, a large papillary carcinoma, tubular and cystic, consisting of polygonal and cubical cells, was found in the left ovarian mass. Secondary carcinoma were found in the vagina and external os, the submucosa of the bladder, and the subserosa of the great omentum. A noteworthy fact was that no secondaries were found in the kidney on the right side, from which the corresponding ovary had been removed at the first operation.

Medical Journal of Australia, Sydney

Nov. 22, 1919, **2**, No. 21

Leukocytes in Trench Fever and Allied Obscure Pyrexias. W. K. Inglis.—p. 431. To be cont'd.
*Cases of Functional Disease of the Nervous System. A. C. Fraser. —p. 436.

Cases of Functional Disease of the Nervous System.—Fraser reports a case of hysterical contracture of the hand, one of psychasthenia, hysterical tremor and fits (shell shock), complicated by angioneurotic edema, and one of hysterical amblyopia. The patient made a complete recovery.

Nov. 29, 1919, **2**, No. 22

Rational Aspect of Cardiac Affections. S. Pern.—p. 453.
Leukocytes in Trench Fever and Allied Obscure Pyrexias. W. K. Inglis.—p. 454. Concluded.
Superacute Pulmonary Edema Complicating the First Stage of Labor. S. M. Verco.—p. 462.

Dec. 6, 1919, **2**, No. 23

*Digestive Disorders of Artificially Fed Infants. S. Harrison.—p. 475.
*Infant Mortality. W. F. Litchfield.—p. 479.
Food Factor in Gastro-Intestinal Diseases. R. D. Luker.—p. 481

Digestive Disorders of Artificially Fed Infants.—That every baby is a law unto himself in capacity, digestive power and assimilative process is a point emphasized by Harrison. Psychic and material individuality are as characteristic of infancy as of adult life. General guiding principles are essential, but no rigid hard and fast rules can be laid down to fit every case, for the baby is a living entity and not a machine with standardized parts. One must study, examine and handle each baby personally if success is to be attained.

Infant Mortality.—From a study of the infant mortality statistics of Australia and New South Wales, Litchfield concludes that during recent years there has been some agency in operation that has reduced very considerably infant mortalities. This has been widespread and uniform in its manifestation. Its influence has extended to the second, third and fourth years of life, and it has operated by diminishing the number of deaths from infective processes, especially those affecting the bowels and lungs in young children. It has been independent of public health measures and welfare schemes and there has been no great change in the habits of the people during the period of its occurrence. The only thing Litchfield can attribute it to is a widespread but obscure climatic effect.

Archives Médicales Belges, Brussels

August, 1919, **72**, No. 8

*Gases of Warfare. H. Fredericq.—p. 105.
*Sarcoma of the Stomach. H. Koettlitz.—p. 136.
Diaphragmatic Hernia; Two Cases. A. Colard.—p. 144.
*Clinical Examination in Diseases of the Nervous System. M. Molhant. —p. 149; Idem. R. Marchal.—p. 222.

Gases in Warfare.—Fredericq says that now that the censorship is a thing of the past, he is free to write a general review of this subject based on personal observation and experiences and those of others, as well as on the strictly censored literature. He remarks that the use of gases is not a new thing in warfare. "The Inquisition in striving to influence the heretics of Dauphiné used the gases from the combustion of green wood as a means of collective asphyxiation. In 1845 General Pellissier resorted to the same means in reducing the rebellious Arabs in Algeria, but he was denounced for this in the French legislature. The Japanese also used toxic gases, produced in a more scientific manner, in their campaign against the Russians in 1905." Fredericq says further that German documents which fell into the hands of the Allies showed that shifting of the wind, sweeping the gas back on them, did great damage to the Germans themselves in May, 1915, and on other occasions. The Germans did not have the advantage of the world weather reports, as the Allies' newspapers did not publish meteorologic reports during the war.

Sarcoma of the Stomach.—Koettlitz reports a case of gastric sarcoma with chylous ascites and involvement of the pancreas. He compares this case with the few on record; Gosset's compilation in 1912 included only 171. As metastasis is rare and as the sarcomas are often pedunculated, operative treatment offers considerable chances for a cure. His patient refused intervention for forty-five days after the tumor and achylia had been diagnosed, and the growth then was inoperable.

Disease of the Nervous System.—From the standpoint of the general practitioner, Molhant gives the pathogenic interpretation and diagnostic value of the clinical signs with disease of the nervous system. The clinical exploration in these cases differs so fundamentally from other clinical cases

that the physician often feels at a loss. This first instalment of his article is accompanied with thirty-three illustrations.

Marchal expatiates on the importance of an early diagnosis in these cases, so that the patient can be referred to a specialist in time for treatment to be effectual. He says that it does not take more than two minutes to test the pupil, tendon and skin reflexes and automatism when a patient complains of more or less vague pains and tendency to paresis of a member.

Bulletin de l'Académie de Médecine, Paris

Nov. 25, 1919, **82**, No. 37

The Milk Shortage in Paris. Pinard.—p. 359. See Paris Letter. —p. 118.
*Measurement of Speed of Heart Action. Lapicque.—p. 366.
*Malta Fever from Cheese. L. Bernard and H. Meunier.—p. 368.
*Resection for Gastric Ulcer. J. Abadie.—p. 370.
*Treatment of Hemophilia. P. Emile-Weil.—p. 374.

Measurement of Speed of the Heart Impulse.—Lapicque announces from his further study of chronaximetry that in the normal heart the functional velocity of the bundle of His is always in a given ratio to the functional velocities of the different cavities of the heart. The variations from this ratio offer a new mode of research on the heart in pathologic conditions, and to study the effects of drugs.

Malta Fever from Cheese.—The cheese made from goats' milk was the only possible source that could be discovered in the case of undulant fever in western France.

Gastrectomy for Ulcer.—Abadie declares that all the arguments against gastrectomy in opposition to palliative operations fall flat now that experience is confirming the comparative harmlessness of gastrectomy. It puts an end definitely and permanently to all disturbances from the stomach and menace of malignant disease later. There is no other field of surgery that is more useful from the practical standpoint as, other things being equal, it transforms a long suffering invalid into a normal, vigorous producer.

Serum Treatment of Hemophilia.—Emile-Weil reported in 1907 a very severe case of hemophilia since early childhood in a man of 26, much improved by injection of human or animal blood serum. These injections were kept up afterward for five years, 20 c.c. of serum every two months, and there have been no hemophilic hemorrhages since, the blood coagulating in a nearly normal manner. Six other patients have been treated by the same continuous method, and five have been freed from recurring hemarthroses, hematuria, etc., but the blood in none is quite normal. In the sixth patient the improvement was less and there have been some recurring hematomas. There never were any serious anaphylactic phenomena in any of the cases, but slight symptoms were sometimes apparent; in one not until after the sixteenth injection, and then none again. Others had them after the first injection and not afterward, slight joint trouble or urticaria, with fever, never anything serious.

Bulletin Médical, Paris

Dec. 20, 1919, **33**, No. 56

*Adjuvant Medication in Syphilis. F. Balzer.—p. 779.
Dangers of Criminal Abortion. P. Guéniot.—p. 782

Dec. 27, 1919, **33**, No. 57

Inaugural Lecture in Dermatology Course. L. M. Pautrier.—p. 801.
Nervous Symptoms from Retroparotid Space. F. Bonnet-Roy.—p. 807.

Adjuvant Medication in Syphilis.—Balzer urges the necessity for treating superposed infections, and fighting to ward off sclerosis, and to arrest incipient tabes and paretic dementia. Serotherapy might aid in overcoming the barriers which sclerosis interposes to protect the persisting foci of spirochetes. Attempts to strengthen the organism and reenforce the defences are also in order. Measures to stimulate leukocyte production, and organotherapy might be considered. Measures that have been found useful in the chronic pathologic conditions entailed by syphilis might prove far more effectual if used early, before these conditions had become so firmly entrenched. He thinks this adjuvant medication has been neglected too much to date.

Bulletin de la Société Médicale des Hôpitaux, Paris

Nov. 28, 1919, **43**, No. 34

*Tracheobronchial Glandular Disease. H. Méry.—p. 999.
*Diagnostic Sign of True Herpes Zoster. Sicard.—p. 1000.
*Syphilis and Tuberculosis. E. Marino (Buenos Aires), and M. J. C. Mussio-Fournier (Montevideo).—p. 1002.
*Determination of Blood Pressure. M. Villaret and Dufour.—p. 1006.
*Tuberculin Reaction in the Pregnant. Nobécourt and Paraf.—p. 1013.
Missing Xiphoid Appendix in Inherited Syphilis. Queyrat.—p. 1015.

Diagnosis of Tracheobronchial Glandular Disease.—Méry refers to some recent clinical experiences in which the radiologic and the necropsy findings were absolutely superposable. This comparing of the clinical and radiologic findings is one of the most instructive modes of research.

True Herpes Zoster.—By this term Sicard means the form that confers immunity and never recurs. He says that the aspect of the skin after the eruption has healed is characteristic, as definite and permanent minute scars are left on the patch of skin affected. This does not occur with the zosteriform type of herpes. This latter form is often the prelude to irritation of a spinal root from compression. Hence herpes zoster in adults should be regarded with suspicion until it has established its identity by the scars left.

Syphilis and Tuberculosis.—This communication from South America emphasizes the unsuspected frequency of inherited syphilis as a predisposing factor in the status lymphaticus, in asthenia and in more or less complex endocrine derangement. Even when no signs of inherited syphilis can be detected, tentative specific treatment is justified, and it may transform conditions previously refractory to all treatment. This is particularly indicated when the parents are robust and free from alcoholism, tuberculosis, malaria and lead poisoning, which might explain the degeneracy of their children. Tuberculosis so often develops on a basis of syphilis, that inherited syphilis should be suspected, particularly in the masked cases. Tentative specific treatment in addition to the usual treatment for the tuberculosis may induce such improvement that the organism then can throw off the tuberculosis.

The Blood Pressure.—Villaret and Dufour apply the Pachon oscillometer cuff to the upper arm, the Laubry sphygmophone to the bend of the elbow as usual, and palpate the radial pulse, all at the same time. They thus combine the oscillometer, auscultation and palpation methods, each acting as a control of the others, and the findings are recorded on a single chart. They describe a simple method for calculating a constant to express the coefficient of the different findings. It has confirmed the modifications in the normal blood pressure during digestion and in the erect position.

Loss of Immunity During Pregnancy.—Nobécourt and Paraf applied the tuberculin skin test weekly to 100 women during the last half of pregnancy and after delivery. This showed that pregnancy and parturition may induce an inability to react to the tuberculin test—a tuberculin anergy like that noted in certain infectious diseases, especially measles. This reduction in the sensitiveness to tuberculin usually corresponds to a parallel reduction in the immunity. This state of anergy—especially pronounced after childbirth—may explain the aggravation in tuberculous processes which is so apt to follow delivery.

Journal de Médecine de Bordeaux

Dec. 10, 1919, **90**, No. 23

*Substitute Action in Neurology. A. Pitres.—p. 511. To be cont'd.
With the French Surgical Ambulance in Russia. A. Baudrimont. —p. 522. Cont'n.

Replacement or Vicarious Action in Neurology.—Pitres analyzes the facts known to date in regard to substitute function in nerves after war wounds, and shows the errors which correct interpretation enables us to avoid.

Lyon Chirurgical

July-August, 1919, **16**, No. 4

*The Sequels of Sprains of the Knee. L. Tavernier.—p. 345.
Fistula into Bronchus from War Wound. J. L. Roux-Berger.—p. 364.
*Ossification in the Eye. L. Bussy.—p. 368.
*Old Cartilage Graft in Skull. A. Policard and J. Murard.—p. 378.

Sequels of Sprains of the Knee.—In this general review Tavernier discusses the various indications with the different sequels of a sprain of the knee. For dislocation of a meniscus, he opens the joint transversely, and sutures the lateral ligament with the knee half flexed, and immobilizes, and has had invariably good results, the patients able to run and jump. But there is a sideward movement when the knee is half flexed, not in other positions. Some do not notice it at all; those who do notice it may complain that the knee is weak. He shows that all the consequences of a sprain of the knee can now be effectually combated with some of the new or older operations. They have proved their harmlessness and efficacy in correcting the serious infirmity liable to be entailed by a sprain.

Ossification in the Eye.—Bussy discusses the mechanism of the bone formation sometimes observed in an atrophied eye or stump of an eye.

Fate of Cartilage Implant in the Skull.—At necropsy thirty months afterward, the cartilage implant was found fastened to the skull around with connective tissue, but there was no direct union between cartilage and bone. This fibrous soldering answered the purpose here, but it might not be strong enough to stand much movement of the parts. The perichondrium seems to protect the cartilage graft against being resorbed. In this case there had been very little resorption.

Lyon Médical

November, 1919, **128**, No. 11

Influenza and Tuberculosis. C. Roubier.—p. 531. Conc'n.
*Uterine Cancer. H. Violet.—p. 544.
Germany Since Its Defeat. B. Lyonnet.—p. 568. Conc'n.

Remote Results of Operations for Uterine Cancer.—Violet reviews the present status of 32 women from six to ten years after an operation for cancer of the uterus. Three of the women have been lost track of, but 9 are in good health to date; 10 succumbed to recurrence and 4 to postoperative peritonitis or hemorrhage. He says he does not know of an instance of uterine cancer treated with radium that has escaped recurrence for longer than three years. He would restrict radium to the inoperable cases, and to use supplementary to a radical operation, or in the attempt to render the cancer operable.

Paris Médical

Dec. 13, 1919, **9**, No. 50

*Depth in Radiology of the Heart. Vaquez and Bordet.—p. 465.
*Arsphenamin Jaundice. E. Chabrol and A. Khoury.—p. 467.
*Vitamins and Growth. Houlbert.—p. 473.
Seven Cases of Typhoid in One Family; No Water Contamination. Apert and Cambassédès.—p. 476.

The Depth Index in Radiology of the Heart.—Vaquez and Bordet report from study of 1,000 cases that when the depth index is normal, while the diameters of the heart are exaggerated, the right cavities are pathologically enlarged, as a rule. When the reverse occurs, that is, the index is exaggerated while the diameters are normal, the left ventricle is often pathologically enlarged in the depths. Or else the heart is displaced, which is easily determined. The depth index is the difference between the profile of the apex as marked on the screen directly and then again after the tube has been moved 10 cm. to the left. With a distance of 60 cm. from the focus to the screen, the normal difference between the two profiles, the subject standing, is from 7 to 14 mm. The expansion of the chest does not modify the findings. The findings with this index always corresponded to the clinical findings in the case.

Arsphenamin Jaundice.—Chabrol and Khoury present an array of clinical data and emphasize the importance of a predisposition on the part of the liver as a factor in the toxic jaundice from arsphenamin. Several of their cases show the extra vulnerability of the liver from a pregnancy, tendency to gallstones, and hereditary cholemia. Antecedents of this kind call for special caution in administering a drug with a reputation for inducing jaundice. One of the longest and best known types of hemolytic jaundice is that induced by arseniuretted hydrogen. How else except by toxic action can we explain the jaundice which develops in 20-year old syphilis after a course of ten or twelve injections of arsphenamin?

Vitamins and Growth.—Houlbert has been studying the action of vitamins on the division and multiplication of cells. Two of three chickens of the same hatching were fed on polished rice, wheat and barley, all sterilized, and twice a week a little cod liver oil was given them to ward off polyneuritis. Cell division was found completely arrested in the sexual and hematopoietic glands examined in one chicken at the fortieth day. The other was then kept on the same diet, but a few drops of a vitamin were added to the feed, and the chicken began to thrive at once. When killed the thirty-second day it was evident that the endocrine glands had pursued their normal evolution after the primary arrest of the forty days of the deficiency diet.

Presse Médicale, Paris

Dec. 17, 1919, **27**, No. 77

*Prophylaxis of Tuberculosis. A. Calmette.—p. 773.
*Spirochetal Bronchitis. Najib Farah.—p. 774.

Prophylaxis of Tuberculosis.—Calmette insists on the importance of some of the more recent acquisitions in our knowledge of tuberculosis, such as that the tuberculous with occult or latent lesions may suddenly begin to eliminate tubercle bacilli in their glandular excretions or their dejecta. This intermittent elimination by these occult carriers is very common, but is seldom recognized. He reiterates further that no person and no animal contracts tuberculosis, no matter how unhygienic the environment, unless virulent tubercle bacilli have been brought into this environment by some human or animal continuous or intermittent spreader of these bacteria. All our efforts therefore should be predominantly directed to ward off this importation of the bacilli, especially frequent importations and on an extensive scale. Every one who reacts to the tuberculin test—even though apparently entirely healthy—is an intermittent spreader of germs, the more dangerous because unsuspected. They are the ones who disseminate contagion even in the remotest regions of the world. It will always be difficult to discover these intermittent sowers of bacilli, either human or bovine. But every person or animal reacting positively to the tuberculin test should be regarded with suspicion, and young children and young domestic animals in localities still free from infection should be guarded against them, and against contamination of milk and food, by hands, towels, flies and street and other dust. The reservoirs of virus in open tuberculous cases in man and animals are the source of the massive and frequent contaminations which entail phthisis even in adults. To guard their environment against them requires insight and science on the part of physicians and veterinarians, and training in hygiene for all interested, either because they have to live with the sick or fear loss of their herd.

Spirochete Bronchitis.—Farah reports gratifying results in ten cases of Castellani's spirochetosis in which intramuscular injections were given of iodin in an oil vehicle. There has been no relapse in any of the cases since May, 1918. From five to ten daily injections were given, followed by another series at two or three days' interval. By the fifth injection there were scarcely any spirochetes to be found. One of the patients had had the spirochetosis for eight years. No other member of the family had contracted the disease in any instance, confirming the slight contagiousness. The same treatment apparently proved equally effectual in his two cases of monilia bronchitis.

Revue de Chirurgie, Paris

May-June, 1919, **38**, No. 5-6

*Toxicity of Crushed Muscle. P. Delbet and others.—p. 309.
*Varicocele. O. Jacob.—p. 352.
*Sporotrichosis from Surgical Standpoint. P. Moure.—p. 366.

Toxicity of Crushed Muscle Tissue.—Delbet and his four co-workers injected 213 normal animals with crushed tissues, macerated and filtered, taken from 121 other animals. This extensive research on 114 rats, sixteen dogs, sixty-eight guinea-pigs, thirteen frogs, one cat and one rabbit has con-

firmed the assumption that crushed and devitalized tissues generate the toxins which bring on shock. In war wounds and in peace crushing injuries the main thing is to clear out all the devitalized tissues before they get the chance to poison the whole system. Some of the animals displayed remarkable resistance to the injections while others succumbed at once. Those that succumbed, he noticed, were the carnivorous animals while the herbivorous guinea-pigs and rabbits were the most resistant. He accepts this as a hint to drop meat from the diet but otherwise feed patients abundantly before and after operations, mostly with vegetables. Soldiers who had been eating much meat seemed to develop traumatic shock more readily than others, while those from rural districts, accustomed to a more vegetarian diet, seemed more resistant to traumatic shock.

Operative Treatment of Varicocele.—Jacob has had no recurrence in the 237 cases of varicocele in which he resected from 6 to 8 or 15 cm. of the anterior spermatic veins, close to the inguinal canal. The peripheral stumps were then tied together and drawn up by the ends of the ligature into the superficial inguinal ring where they were fastened to the pillars of the ring.

Surgical Importance of Sporotrichosis.—Moure emphasizes that sporotrichosis does not require surgical treatment, but that its localizations and clinical symptoms are liable to deceptively simulate other pathologic conditions for which operative measures would be imperative. He declares that the textbooks on pathology should devote some space to this mycosis as well as to syphilis and tuberculosis, to avert blunders from its nonrecognition. It should be looked for in all subacute and chronic suppurations, to prevent needless and often harmful operations. If not convenient to make cultures or test for agglutination, nothing is easier than to give a tentative course of iodid treatment. Under this, sometimes, old suppurations which have resisted all surgical interventions may melt away as if by magic. He advises testing the tolerance, as about 10 per cent. of patients are more or less intolerant of iodids. He gives a daily dose of 2 gm., gradually increasing to 4, 6, 8 and 10 gm. The useful dose is from 4 to 6 gm., and potassium iodid, sodium iodid and iron iodid might be associated, adding the syrup of bitter orange peel, and supervising the antisepsis of the bowel. The dose should be fractioned and taken with meals, and the treatment kept up for at least a month after the apparently complete cure of all the lesions. If surgical measures are required for osteitis with sequesters, it is better to defer them till after the iodid has been taken for some time.

Revue Médicale de la Suisse Romande, Geneva

October, 1919, **39**, No. 10

Influenza in 1918. C. Krafft.—p. 465.
*Simplified Serologic Test. J. Golay.—p. 493.

Simplified Serologic Test.—Golay's technic differs from Noguchi's in a number of minor points which, he says, increase its precision while materially simplifying the technic, as he describes. In 150 persons tested, the reaction was positive in 100 per cent. of the syphilitics and was negative in 100 per cent. of the nonsyphilitics.

November, 1919, **39**, No. 11

*Actinomycosis of the Brain. N. Sagredo.—p. 505. Begun in No. 10, p. 478.
Influenza at Children's Clinic, Geneva. Reh and Schiff.—p. 517.

Actinomycosis of the Brain.—Sagredo reports two cases of metastasis in the brain from actinomycosis in lungs and pleura, and compares with them twenty cases he has compiled from the literature. The lesion is generally an abscess, but it may develop as a tumor or it may induce merely meningitis. The pus with actinomycosis is peculiarly thick and is liable to form false membranes, like those of membranous croup, as occurred in the ventricles in one of his cases.

Gazzetta degli Ospedali e delle Cliniche, Milan

Nov. 16, 1919, **40**, No. 92

*Effect of Occlusion of Pancreatic Duct. E. Bernucci.—p. 996.

Nov. 20, 1919, **40**, No. 93

Poisonous Mushrooms. G. Ferri.—p. 1013.

Effect on Peristalsis of Occlusion of Pancreatic Duct.—Bernucci gives twelve sets of radiograms showing the progress of the food in stomach and bowel after the pancreatic duct had been ligated or had become obstructed from other cause. The experiments were made on dogs. The effect was most marked on the progress of fat foods, less marked with protein foods, and scarcely any effect was seen on carbohydrates. These effects are analogous to those from ligation of the common bile duct, but they are not so pronounced as with the latter. With obstruction of the pancreatic duct, the stomach is the segment of the digestive tract that feels the retarding effect most.

Policlinico, Rome

Nov. 23, 1919, **26**, No. 47

*Vitamins in Urine. G. Gaglio.—p. 1381.
Acetonemia in Children. E. Modigliani.—p. 1382. Conc'n.
Red Cross Welfare Work for the Tuberculous. C. Baduel.—p. 1395.
*Treatment of Purulent Pleurisy. E. Pittarelli.—p. 1396.

Vitamins in Urine.—Gaglio writes from the Pharmacology Institute of the University of Rome to confirm his previous announcements (May 25, 1919) that pigeons with pronounced polyneuritis from being fed with polished rice recovered from the otherwise fatal polyneuritis when they were treated with human urine, two or three times a day in doses of 3 or 4 c.c. of the urine, slightly condensed in the water bath. "The effect was more decisive," he adds, "than Funk realized with extract of rice hulls, which resulted in his assumption of the hypothetical vitamins."

Aspiration of Pus from the Pleura.—Pittarelli gives an illustrated description of his aspirator which, automatically and simultaneously presses and aspirates, so that the pressure inside the pleura is not modified in the least, the whole proceeding independently of the intrathoracic pressure. The double-ended syringe has a tube and needle at each end. The two plungers are worked simultaneously by a thumb-screw in the center. One thus aspirates while the other forces in air or fluid. A disinfecting fluid can thus be sent through the pleura until it comes away clear. The only inconvenience is the necessity for introducing the two needles.

Nov. 30, 1919, **26**, No. 48

*To Reveal Latent Malaria. A. Dazzi.—p. 1413; Idem. T. Silvestri.—p. 1418.
*Serous Traumatic Peritonitis. G. Aboulafage.—p. 1427.
Metal Stand for Needle for Intravenous Injection. A. Cerioli. p. 1429.

Means to Reveal Latent Malaria.—Dazzi reports trials of various means that have been proposed to induce a malarial paroxysm in suspects, and states that a subcutaneous injection of 1 mg. of suprarenal extract best answers the purpose. No quinin was allowed for five days before, and the blood was examined before, twenty and sixty minutes afterward, and the next day. It does not induce a malarial attack, but it drives out the parasites into the blood at once and up to an hour, but by the next day none may be found. The epinephrin induces also a marked reduction in the size of the spleen, commencing at once and continuing for several hours.

Silvestri prefers strychnin for the purpose; from 1 to 3 mg. by the mouth daily. The simplicity and efficacy of this provocative measure commend it, he declares, the febrile attack developing not later than the third or fourth day.

Traumatic Serous Peritonitis.—The circumscribed peritonitis followed a contusion and the abdomen had to be tapped several times, the child dying of cachexia in a month, although the viscera seemed normal.

Rivista Critica di Clinica Medica, Florence

Oct. 18, 1919, **20**, No. 42

*Progress in Organic Nervous Disease. F. Schupfer.—p. 493. Conc'n.

Recent Progress in Organic Disease of Central Nervous System.—Schupfer states that no light has been thrown on the pathology of the frontal lobes nor on aphasia, apraxia and epilepsy by the war experiences, but the war wounds of the cerebellum have confirmed the latest acquisitions of science, especially in regard to centers in the cerebellum

controlling the action of both the acting and the antagonist muscles. It was learned further that wounds of the spine were not so grave in the cervical region as lower down. If eschars, infection of the bladder and pleuropulmonary complications can be warded off, there may even be notable improvement. The difference in the gravity of the lesion as it is high or low is explained by the wider space for the cord in the spinal canal in the cervical region.

Archivos Españoles de Pediatría, Madrid

October, 1919, **3**, No. 10

*Malta Fever in Children. J. Aguilar Jordán.—p. 577.
*Calcium Balance in Children. C. S. de Los Terreros.—p. 595.
Scrap of Bone in Rhinopharynx. A. Martin Calderin.—p. 606.

Malta Fever in Children.—Aguilar Jordán reiterates that no drugs have proved effectual in treatment of Malta fever. Vaccines and antiserums seem to offer promise of better results, although in his own experience they have proved disappointing. He has been quite successful with antityphoid autovaccine therapy in children, since 1913, and thinks that improved technic will aid in vaccine treatment of Malta fever. The experiences with it in Italy lately by Caronia and others have been most satisfactory, as duly reported in these columns.

Calcium Balance in Children.—De los Terreros explains that calcium and its compounds have a much wider sphere of action in children than has been suspected till recently, not only in rachitis and tuberculosis, but in spasmophilia, epilepsy, true hypotrophy, neoplasms, etc. The loss of calcium balance is comparatively common in children. It should be suspected in any one of the above conditions, and be investigated by analysis of the urine and stools, study of endocrine disturbances, the blood count, chemical analysis of the blood, and radiography of the bones.

Crónica Médico-Quirúrgica, Havana

October, 1919, **45**, No. 10

Reminiscences of Youth. J. Santos Fernández.—p. 277.
*The Reflexes During Sleep. J. de Jesús González.—p. 285.

The Reflexes During Sleep.—González in long series of tests on children of different ages found the skin, tendon and sensory reflexes abolished during sleep. Even the reflexes peculiar to sleep disappeared likewise when the slumber grew more profound.

Medicina Ibera, Madrid

Nov. 22, 1919, **9**, No. 107

*Cholesterol as Factor in Immunity and in Production of Agglutinins. T. Morató and G. Villanueva.—p. 137. Conc'n.
*Treatment of Spindle-Cell Osteosarcoma. C. Calderón.—p. 139.
Useful and Harmful Coughs. G. Triviño.—p. 140.

Cholesterol and Immunity.—Morató and Villanueva found that cholesterol mixed with typhoid vaccine and injected into eighteen rabbits seemed to hasten and enhance the production both of antibodies and of agglutinins. The addition of the cholesterol also seemed to reduce the general reaction to the antityphoid vaccine. They also cite further some recent research by others testifying to the benefit from administration of cholesterol in toxi-infections in which the cholesterol content of the blood is below the normal figure. Among others mentioned is Iscovesco's favorable experiences in tuberculosis, Revillet's in exophthalmic goiter, and Monziol and Castel's in malaria. The latter declare that cholesterol tends to render the cells more susceptible to the action of quinin.

Treatment of Sarcoma.—Calderón advised disarticulation of the hip joint in the case of a youth with a spindle-cell osteosarcoma on the leg. The parents refused to consent to such a mutilating operation for "merely a little bunch on the leg," and they asked to have the bunch cut out and the bone scraped. He refused to do this, confident that it would merely whip up the malignant disease. The parents found another surgeon more complaisant, but the curetting hastened the course and death speedily followed. He urges others to resign a case rather than do such unscientific and injurious operations as curetting in these circumstances.

Memorias do Instituto Oswaldo Cruz, Rio de Janeiro

1918, **10**, No. 2

*Entameba Found in Snake. A. Marques Da Cunha and O. Da Fonseca.—p. 95.
Microscopic Floating Life of Sea Coast of Brazil. Idem.—p. 99.
*Scientific Trip down Paraná River. A. Lutz H. C. de Souza Araujo and O. da Fonseca, Jr.—p. 104.
*Experimental Research on Influenza. A. Marques Da Cunha, O. de Magalhães and O. da Fonseca.—p. 174.
Brazilian Protozoa. A. Marques da Cunha.—p. 192.
Flagellate Parasites in Frogs. C. Ferreira Pinto.—p. 194.
Brazilian Oestridae. A. Lutz.—p. 118 (of Part 2).

The "Memorias."—The last half of this 167-page issue contains full translations of the articles in the first half. All the translations are in English except two in French. There are fifty-seven pages of fine plates accompanying the article on the entameba and the report of the scientific mission to study the mosquitoes and pathology of the Paraná district.

Experimental Influenza.—The experiments on monkeys, guinea-pigs and other animals at the institute confirmed that the filtered virus was able to induce influenza in animals. The intense and prolonged rise in temperature after the inoculation is accepted as the criterion of the reaction to inoculation of the animals with blood and filtered sputum from influenza patients. The period of incubation, the immunity conferred by the first inoculation, and the absence of any reaction when the filtrate had been heated or treated with phenol, testified that the hyperthermia was the work of a living agent and not a toxic fever. Virulent filtrates heated and phenolized seemed to display a curative action. Antohemotherapy is often effectual, which testifies further to the presence of the virus in the blood, as also the precipitation reaction between the sputum filtrate and convalescents' serum. There is no fixation reaction between human serum and the filtrate of the influenza sputum.

Observador Médico, Mexico

Nov. 15, 1919, **1**, No. 5

Autogenous Vaccine Therapy. T. G. Perrin.—p. 91. Conc'n.
*The Abderhalden Test for Cancer. F. Solorzano A.—p. 100.

The Abderhalden Test for Cancer.—Solorzano applied Abderhalden's technic to the urine in eleven cases of cancer, and obtained a positive response in seven.

Plus-Ultra, Madrid

August, 1919, **3**, No. 14

*Abnormal Metabolism of Nucleins as Cause of Gouty Diathesis and Diabetes. Obdulio Fernández.—p. 65.
Recent Progress in Blood Diseases.—p. 68; in Obstetrics and Gynecology.—p. 72; in Ophthalmology.—p. 89; in Therapeutics.—p. 93; in Instruments, etc.—p. 97; in Venereology.—p. 106; in Heart Disease.—p. 116.
Vaccine to Ward off Complications of Influenza. A. Salvat.—p. 69.
*Thyroid Deficiency. J. Collar y Jiménez.—p. 77.
*Lumbar Fistulas of Renal Origin. M. Serés.—p. 80.
*The Factors in Hydromineral Treatment. Rodriguez Pinilla.—p. 90.
*Influence of Uranium on the Blood. F. Más Magro.—p. 110.

The Nucleins in Pathogenesis of Gout and Diabetes.—Fernández presents arguments in favor of the assumption that both arthritism and diabetes are the result of defective metabolism of nucleins or of their immediate derivatives.

Thyroid Deficiency.—Collar gives the history of two children with congenital myxedema, the photographs showing the great improvement realized under a year of thyroid treatment begun at the ages of 4 and 11. The thyroid extract was taken regularly two or four times a day. The treatment was not begun till 18 in another case in which the symptoms of thyroid insufficiency had developed at the age of 10. Under fifteen months of thyroid treatment the girl grew taller, and the breasts and genital organs developed; menstruation became regular and free from headache. Among the symptoms were albuminuria and tendency to somnolency and chilliness, and she never perspired even during the summer. Slight or partial insufficiency of the thyroid is hard to differentiate, as it appears under so many different aspects, especially a tendency to obesity, to transient edema not located by gravity, appearing in the arms, hands and legs and in the lower lids, especially in the morning. The voice also may be weak, from infiltration of the

vocal cords. The tendency to somnolency and to chilliness is also a prominent symptom, and there are often vasomotor disturbances, numbness in the fingers, etc. The hairs in the outer half of the eyebrow may drop out, and there is usually constipation and headache in connection with menstruation, and neuralgia is common. There is very little perspiring, except possibly in the hands; the sweat here contrasts with the cold clamminess.

Fistulas Into the Kidney.—Serés has operated in three cases for renal fistulas in the lumbar region, and describes the etiology, complications, and preferable operative technic for such lesions from suppuration or calculi in the kidney. Functional tests of the kidney showing normal conditions demonstrate an extrarenal origin for the fistula; they are indispensable in any event as they reveal whether the kidney is worth saving or not.

Crenotherapy.—This classic term for treatment by water from mineral springs deserves more general adoption, although the term "spa treatment" includes much more than the waters. The repose, change of scene and diet are important adjuvant factors, Rodríguez emphasizes. He adds that crenotherapy cannot be classed as physiotherapy, like sunlight, heat, electricity and exercise. Although the waters are a natural agent given by Nature, yet their action is physicochemical, not physical alone, and each spring is an individual, a living thing, as is evident by the loss in its potency when carried away from its source. The mineral water acts more like a ferment; comparatively small amounts accomplish great transformation, while physical agents act proportionately to their quantity.

Influence of Uranium on the Blood.—Más Magro reports the results of extensive experimental research on the action of uranium on the blood-producing organs. A subcutaneous or intraperitoneal injection of a 2 per cent. solution of uranium acetate in rabbits and guinea-pigs caused an epithelial nephritis with death the sixth or seventh day. This is the effect of the minimal lethal dose. When death occurs in three hours and a half, the blood shows coagulation, thrombosis, precipitation and agglutination. Uranium thus does not induce death directly.

Progresos de la Clínica, Madrid

September, 1919, **7**, No. 81

*Operations for Pulmonary Tuberculosis. L. Morales.—p. 97. Conc'n.
*Chemical Analysis of the Blood. F. Poyales.—p. 108. Conc'n.
*Nutritional Derangement and Rachitis. P. Pereda y Elordi.—p. 117.
Peripheral Facial Diplegia from Influenza. W. López Albo.—p. 141.

Operative Treatment of Pulmonary Tuberculosis.—Morales concludes from his review of the various surgical measures that have been applied in pulmonary tuberculosis, that there is every reason to call in the surgeon where the disease is progressing in spite of well-planned and systematic medical treatment. No attempt should be made to resect the lung itself or open a cavity, as these interventions are extremely grave under these circumstances and the result doubtful; at most, a very large cavity might be opened up under very special circumstances. Procedures to ensure the collapse of the lung favor the natural healing processes, and among them paravertebral thoracoplastics gives fine clinical results, but phrenicotomy, he affirms, is the simplest measure and has good effects to its credit. It is indispensable, he reiterates, that the disease must be confined to one lung. He describes the technic for phrenicotomy, saying that it is harmless, never causing disturbance in the respiration or heart functioning nor dyspnea. Under local anesthesia, through an incision 10 cm. long at the outer margin of the sternocleido muscle, the phrenic nerve is exposed and severed.

Practical Analysis of the Blood.—Poyales describes various simplified procedures for chemical analysis of the blood, all within the reach of the general practitioner. His numerous references are all to American works.

Nutritional Disturbances and Rachitis.—Pereda's profusely illustrated account of his experience with debility and rachitis in children teaches anew that the osteoporosis which follows deprival of calcium in the food is not rachitis, and never runs into rachitis, so long as there is not chronic intoxication of digestive origin. When this autointoxication is corrected, then conditions right themselves, if this occurs in time to ward off irreparable lesions. The whole cause of true rachitis he traces to defective digestion of fats, aided perhaps by a relative congenital intolerance. Treatment should not include calcium, as there is enough in ordinary food for the infant's requirements.

Repertorio de Medicina y Cirugía, Bogota

November, 1919, **11**, No. 2

*Shock after Delivery. N. Buendía.—p. 57.
*Case of Pseudohermaphrodism. Martin Méndez S.—p. 68.
Criminal Responsibility of the Insane. A. Gaitán U.—p. 72. Conc'n.

Shock After Delivery.—Buendía refers to a set of symptoms after abortion and normal delivery which seem to form a state of shock, although the loss of blood was not excessive and no operative measures had been attempted. It seems to be more frequent in tropical than in temperate climes, and in women who have borne a number of children; those inclined to neuropathies are predominantly affected. He describes six cases of this "essential postpartum shock," with its profound depression of the circulation and respiration, and partial or total loss of consciousness and sensibility. Hypodermic injection of epinephrin proves so effectual that it throws light on the etiology.

Pseudohermaphrodite. — Méndez gives an illustrated description of another instance of blunder in sex, the androgynoid being unmistakably of male sex, although baptized and brought up as a girl.

Revista Médica de Chile, Santiago

November, 1919, **47**, No. 11

*Anomalies in Bile Ducts. J. Alvarado.—p. 813.
Syphilitic Disease of Orbit and Skull. C. Charlín C.—p. 816. Cont'n.
*Congenital Luxation of Hip Joint. E. Diaz Lira.—p. 840. Conc'n.
*Puzzling Case of Ovarian Cyst. G. Lachaise.—p. 853.
*Italian Method in Treating Ectropion. Italo Martini.—p. 855.
Vagotony in Syphilities. Prado Tagle and C. Garcés.—p. 860.
*Typhus. A. Atria.—p. 867. Conc'n.

Anomalies in Course of Bile Ducts.—Alvarado describes two cases in which the cystic duct lay behind the hepatic and parallel to it, and emptied into it from the rear.

Congenital Luxation of Hip Joint.—Díaz reviews the present status of treatment of this condition in Chile and especially in the children's hospital at Santiago, studying in particular the causes of failures. Perseverance and patience are needed here more than anywhere else, he remarks, quoting in conclusion Amunátegui's saying that orthopedics is the most ungrateful of specialties, as it takes so extremely long to get results.

Puzzling Ovarian Cyst.—Lachaise diagnosed an extrauterine pregnancy from the fluctuating tumor reaching above the umbilicus and not changing its position, while he could palpate the fetal head. Laparotomy showed a large ovarian cyst, fastened by adhesions, and a myoma which had been mistaken for the fetal head. There was no sign of pregnancy.

Treatment of Ectropion.—Martini had always been disappointed with the results of plastic operations on the eyelids until he applied the Italian method of a pedunculated flap. In a case reported the woman never complained of disturbances in the arm, while the outcome was highly satisfactory.

Typhus Fever.—Atria is chief of the bacteriology section of the Public Health Service, and he closes his report on the recent typhus epidemic by reiterating that the diagnosis of typhus must be based on the clinical picture, the negative findings with tests for typhoid, and the character of the epidemic. The Nicolle biologic reaction is useful only in experimental research and not for the clinical diagnosis.

Revista de Medicina y Cirugía, Havana

Oct 25, 1919, **24**, No. 20

*Edema of Larynx as Complication. D. Hernando Seguí.—p. 495.

Edema of Larynx as Complication.—Seguí discusses the possible primary causes of edema of the larynx, from syphi-

lis, drinking scalding fluids, trauma, such as a kick in the neck in football, kidney disease, neurotic edema or laryngeal urticaria, and iodid edema. The latter is more common than generally recognized, and is liable to cause fatal asphyxia if potassium iodid is given when the lumen of the larynx is already somewhat obstructed by pathologic infiltration. He warns expressly against iodid when there is the least tendency to edema. Whatever the cause, treatment should be with absolute repose, opium and bromid to quiet the cough, very cold or very hot applications around the neck, and spraying the larynx with a suprarenal-cocain solution, preparing for the tracheotomy which may become necessary. He advises the intercrico-thyroid operation as easy, rapid and harmless; only in case of chronic disease, with secondary edema, the tracheotomy had better be lower. Angioneurotic edema calls for rapid derivative measures and disinfection of the bowel; edema with chronic nephritis indicates a purge, theobromin, and suppression of salt in the food.

Nov. 10, 1919, **24**, No. 21

*Cough from Reflex from the Ear. G. M. Landa.—p. 528.
Sterilization According to the Pharmacopeia. H. González Arrieta.—p. 530.

Reflex Cough from Impacted Cerumen.—Landa was unable to find any cause for the spasmodic cough in the young child except signs of eczema and excess of wax in one ear. There was no further coughing after the ear had been cleared out. The cough resembled whooping-cough, but it occurred only during the daytime. The nerve connection readily explains the irritation of the external laryngeal nerve from pressure by cerumen on nerve fibers in the ear.

Semana Médica, Buenos Aires

Oct. 9, 1919, **26**, No. 41

*Brain Complications of Otorrhea. B. S. González.—p. 407.
Dyspnea with Heart Disease. L. J. Facio.—p. 419
*The National Tuberculosis Sanatorium. E. R. Coni.—p. 421.
Diluted Vaccine Therapy of Typhoid. P. H. Dedomenici.—p. 433.

Complications of Otitis.—González emphasizes the necessity for referring a patient with otorrhea to a specialist without wasting time on ordinary measures, relating a case in which the practitioner tried various measures for over two weeks before sending the patient to the ear surgeon. By that time the cerebral abscess had reached an inoperable stage. Sixteen illustrations are given of the necropsy findings in the brain. The anatomic specimens in this case, the brain, meninges and temporal bone, form an object lesson on the danger of delay in cases of otorrhea. The set is to be kept together in the museum, so that it can be studied in preparing monographs on pathologic conditions in this region.

The National Sanatorium at Cordoba.—Coni took charge of this sanatorium in June, and this is his formal detailed report of its condition and of his work there during his less than three months' incumbency. His resignation accompanies the report; the deficiencies and disorganization discouraged him too much to continue his work there.

Oct. 16, 1919, **26**, No. 42

Military Anthropology. J. W. Howard.—p. 449.
Chronic Hemorrhagic Nephritis. H. L. Carcetti.—p. 453
*The Symbiotes. J. P. Garrahan.—p. 462.
Functional Reactions of the Aconitins. J. A. Sánchez.—p. 468.
Sanatoriums for the Tuberculous in Argentina. E. R. Coni.—p. 472.
Tuberculosis in Mountainous District. J. F. Mieres.—p. 473.

The Symbiotes.—Garrahan describes with much detail Portier's theory of the symbiotes, the reunion of symbiotic micro-organisms in the mitochondria apparatus in the cell. Portier declares, "Le symbiote est l'organe de la synthèse."

Siglo Médico, Madrid

Nov. 15, 1919, **66**, No. 3440

The New Tubes for Roentgen Work. B. Navarro Cánovas.—p. 977.
Repression of Mendicancy. G. Marañón.—p. 980.

Nov. 22, 1919, **66**, No. 3441

*Serotherapy of Anthrax. F. Murillo.—p. 1001.
*Transformation of Sanatoriums into Villages. J. Sixto.—p. 1004.
Diagnostic Tests for Syphilis. D. T. Morató Cárdenas.—p. 1005.

Serotherapy of Anthrax.—Murillo comments on the "extraordinary frequency of anthrax in Spain, and the fact that it is so seldom fatal, notwithstanding the gravity of the lesion." He estimates that there must be from 2,000 to 3,000 cases in Spain every year. It has been given as the cause of death in from 0.56 to 1.09 per thousand of the total deaths since 1904. Several hundreds of patients have been treated with an antiserum, made at the Instituto de Alfonso XIII, with very favorable results. Sheep and horse antiserum have given the best results to date, except the experiences with normal beef serum recently reported from Argentina with a death rate of only 1.5 per cent. in the first series of 200 cases and of 11.6 per cent. in a later 172 cases. The average thus was 4.5 per cent.

Village for the Tuberculous.—Sixto urges that a model village be planned for the tuberculous instead of a merely hospital or sanatorium existence. Each family would have its own house, some member of the family serving as the attendant of the tuberculous. He calculates that the expense would be about a third more per bed than in the sanatorium, but the advantages would outweigh this. The tuberculous would take advantage of treatment at an earlier stage if they did not have to be separated from their family.

Berliner klinische Wochenschrift, Berlin

Sept. 29, 1919, **56**, No. 39

Silver Salvarsan Sodium. Bruhns and Löwenberg.—p. 913. Cont'd.
*The Biology of Lymphocytes. S. Bergel.—p. 915.
Artificial Arm after High Amputation. R. Zuelzer.—p. 919.
War Diet in Relation to Rachitis. A. Japha.—p. 921.
Flour from Lupine Seeds. A. Alker.—p. 923.

The Biology of Lymphocytes.—As the result of his experiments on guinea-pigs and rabbits, Bergel has reached, in regard to the classification of lymphocytes, certain conclusions that are at variance with the doctrines of Ehrlich. The investigations of Ehrlich brought him to the conclusion that the polymorphonuclear, neutrophil leukocytes and the mononuclear, basophil lymphocytes were, by reason of their different morphology, genesis and staining characteristics, to be regarded as distinct cell types. Bergel had shown previously that the lymphocytes contain a fat-splitting ferment. This finding strengthened Ehrlich's conception of two distinct cell types, as it gave proof of a functional difference. The knowledge of the presence of the ferment made it easier to understand biologically and clinically the lymphocytosis regularly observed in many conditions; for example, it explained the increase in the lymphocyte count brought about by a diet rich in fat, and also the part the lymph nodes play in the assimilation of fats. On the other hand, Bergel finds that the lymphocytes should be viewed more comprehensively than Ehrlich viewed them; that is, Bergel would classify functionally as lymphocytes the mononuclear cells and also the transitional forms that are characterized by a crescent-shaped (but never polymorphous) nucleus and by a nongranular basophil protoplasm, for the reason that such cells may develop from or into typical lymphocytes. Bergel claims to have shown that also the small lymphocytes have ameboid motility and phagocytic power for fats. He thinks he has proved by means of oil and lipoid injections that these substances exert an elective chemotactic influence on the lymphocytes within the vessels and attract vastly more mononuclear lymphocytes than polymorphonuclear leukocytes. The lymphocytes thus migrate out of the vessels, seize the fat globules with ameboid protoplasmic processes, and digest them or pass them on to the lymph nodes and the spleen.

Correspondenz-Blatt für Schweizer Aerzte, Basel

Dec. 11, 1919, **49**, No. 50

*Influence of Ovaries on Glycemia. C. Baillod.—p. 1897.
*Blood-Platelet Extract by the Mouth. W. Jost.—p. 1909.

Influence of Ovaries on Sugar Content of Blood.—Baillod concludes from his clinical and experimental research that whereas injection of epinephrin in physiologic conditions raises the sugar content of the blood to a certain extent, this reaction is more intense and occurs more rapidly in the absence of ovarian functioning.

Action of Blood-Platelet Extract by the Mouth.—Jost reports that the blood platelet extract known as coagulen is absorbed by the digestive tract. Given by the mouth, it aids materially in shortening coagulation time. It thus helps to combat a tendency to hemorrhage, but in urgent cases the subcutaneous and intravenous routes should be used at the same time.

Deutsche Zeitschrift für Chirurgie, Leipzig

January, 1919, **148**, No. 1-2

*Pathogenesis of Steeple Skull. A. Rieping.—p. 1.
Incarcerated Hernia. J. Dubs.—p. 52.
Abnormally Large Foramina in the Skull. R. Pamperl.—p. 91.
Access to Projectile in Front of Second Cervical Vertebra. Remmets.—p. 111.
*U Clamps for Fractures. Remmets.—p. 118.
*Isolated Fracture of Acetabulum. Kreglinger.—p. 129.

Pathogenesis of Steeple-Skull.—Rieping gives an illustrated description of an infant born with extreme oxycephaly. The details of twenty-one particularly pronounced cases of steeple-skull from the records are tabulated, and the possibility of various methods of operative intervention is discussed. His case confirms that oxycephaly is the result of a displacement of the primary ossification center of the frontal and parietal bones toward the coronary suture. This entails the premature growing together of the latter. It may be inherited, with other malformations.

Clamps for Fracture.—Remmets' clamps are shaped like a very broad U, the pointed tips triangular to ensure a perfect hold. The ends of the bone are held in place with forceps like veterinarians' hoof-tongs, the handle resting on the table, and the clamp is driven in with a holder and hammer. The limb can be moved cautiously from the very first, and only a light dressing is required. The staple can be applied through a small incision in the skin. He has used these staples in twenty-seven cases, some of which are illustrated to show the fine results realized.

Fracture of the Acetabulum.—Kreglinger's experiences testify that with early diagnosis and proper treatment the outlook is favorable for permanent healing without special deformity.

Münchener medizinische Wochenschrift, Munich

Sept. 12, 1919, **66**, No. 37

Composition of the Blood in Arid Climates. Grober.—p. 1043.
*Devitalized Tissue and Gas Gangrene. S. Weil.—p. 1046.
Serologic Reactions in Syphilis and Carcinoma. E. Fränkel—p. 1047.
*The Colloidal Gold Reaction. H. Eicke.—p. 1049.
Best Technic for Sending Specimens for Early Diagnosis of Syphilis. E. Hofmann.—p. 1050.
Terminology for Various Types of Bacteria Carriers. H. Dold.—p. 1052.
Treatment of Acute Appendicitis. A. Krecke.—p. 1052.
Splint for Fractured Femur. A. Nussbaum.—p. 1056.
Pathologic Bone Conditions from Undernutrition. F. Eisler.—p. 1057.
Chemotherapy in Trichophytosis. K. Taege.—p. 1058.

Composition of the Blood in Arid Climates.—At the congress of German internists, held in 1911, the supposed beneficial effect of arid climates on renal and respiratory diseases was discussed. The supporters of the view that a dry climate is beneficial based their belief on the assumption that in arid climates the increased secretion by the sweat glands and the kidneys brought about an increased excretion of waste material. For this reason, they argued, an accumulation of urinary constituents in the blood—enough to induce uremia—could not take place. This made it desirable to study the blood in arid climates. Grober was chosen for a three months' study of the question, and on the advice of expert geographers southern Tunis in northern Africa was selected for his investigations. Belad el Djerid, or the date palm country, the latitude of which is 34 north, was the exact spot chosen. To the south lies the Sahara Desert; to the north, extensive salt marshes, dry in summer. The mean winter temperature is 12 C. (53.6 F.) the summer temperature ranges usually between 30 and 40 C. (86 and 104 F.), the maximal temperature being, however, above 50 C. (122 F.). The minimal temperature is slightly below freezing. It hardly ever rains, and even cloudy days are rare. Rain is often absorbed by the dry atmosphere before it reaches the earth. Through government aid (the country is a French protectorate), religious and superstitious scruples were overcome and 200 subjects were secured. Many were rejected because of intestinal parasites, malaria and syphilis. The records of only seventy-nine of the healthiest subjects were taken. The primitive inhabitants, the Berbers, and Arabians were selected in preference to others, as they had been exposed longest to the climatic conditions. No peculiar difference in form or staining characteristics of the red and white blood corpuscles were noted. Blood specimens had to be from finger pricks, other means being prohibited on religious grounds. The average results of the blood tests were: erythrocytes, 6,300,000; hemoglobin, 99; specific gravity: whole blood, 1.057, blood serum, 1.026; refractometric determination of albumin, 8.5; solids, 22.24 per cent. The red cell count was much higher than among Europeans. Hemoglobin was also slightly increased. The rest of the values are not significant. Grober therefore reaches the conclusion, which he regards as important from chemical, pathologic and physiologic standpoints, that even under extraordinarily low humidity conditions, such as were found in Tunis, the blood preserves its usual composition. The assumption that in arid climates there is an increased excretion from the blood of urinary constituents by way of the sweat glands is therefore refuted. This does away then, he thinks, with the supposed indications for sending kidney patients to arid climates.

The Significance of Devitalized Tissue in Gas Gangrene.—Weil found that a small fraction of the ordinary lethal dose suffices to cause the death of guinea-pigs when the causative agent of gas gangrene is introduced into crushed or torn muscle tissue, whereas in healthy tissue the growth of the causative agent is checked at once. This proves that healthy tissue has a marked defense reaction that is lacking in damaged tissue. The conclusion would therefore seem justifiable that a slight gas gangrene infection in a crushed or lacerated war wound would develop rapidly and practically unhampered. The spread of the infection does not depend alone on the number of gas bacilli but also on their virulence, or ability to form toxins. The virulence of the bacillus may be an inherent quality of a given strain before entering a wound, or the high virulence may be developed within a wound, owing to the presence of torn tissue. The pathologic-anatomic picture of the infection produced by the Fraenkel strain was practically the same in animals whether the causative agent was introduced in torn or in healthy tissue. It was found that the bacillus of malignant edema could cause edema and also be a gas producer, which verifies clinical experience. Weil's experiments, furthermore, proved conclusively that gas gangrene serums have slight or no protective value if the seat of the gas infection is in devitalized tissue, and that serotherapy must be supplemented by surgical measures if gas gangrene is to be avoided or combated.

Clinical Importance of the Colloidal Gold Reaction.—The main difficulty with the colloidal gold reaction, Eicke finds, is the preparation of the colloidal gold. The trouble lies in the extreme sensitiveness of colloidal gold to chemical influences; even the alkalinity of the glass may give the solution a bluish tinge and render it useless from the start. Another frequent cause of failure is that fresh, doubly distilled water is not used. The colloidal gold reaction furnishes an interesting proof of the baneful effect of exceedingly slight impurities in water. The main value of the colloidal gold reaction is that it gives us a means for the early diagnosis of neurosyphilis. At the Rudolf Virchow Hospital, Berlin, it has established the syphilitic origin in many obscure cases. In one case of optic neuritis, the etiology was baffling. The personal and family history was negative. The blood Wassermann test was negative, but the colloidal gold reaction gave the typical curve of cerebrospinal syphilis. The patient, who was seriously ill, was at once given specific treatment with good results. If it should prove possible to simplify the preparation of the colloidal gold, this reaction might be regarded as ideal and would be of the greatest value to medicine.

Wiener klinische Wochenschrift, Vienna

Nov. 6, 1919, **32**, No. 45

*The Peripheral Arteries in Cardiac Insufficiency. Wiesel and Löwy.—p. 1083.
Vessel Changes in Influenza. O. Stoerk and E. Epstein.—p. 1086.
Hexamethylenamin by the Vein in Acute Arthritis. F. Deutsch.—p. 1086.
Subcutaneous Injection of Nucleins. P. Habetin.—p. 1091.
*Old Irreducible Hernias. L. Schönbauer.—p. 1093.

Pathology of the Peripheral Arteries in Acute and Chronic Cardiac Insufficiency.—Wiesel has long asserted that many of the clinical symptoms which are commonly ascribed to failure of the heart muscle, or traced to nervous, vasomotor influences, have in reality their origin in pathologic changes in the peripheral or outer arteries. The clinical symptoms in impaired circulation frequently could not be explained by postmortem anatomic findings. Often in serious cases the heart was found practically unimpaired. On the other hand, postmortems of elderly persons had revealed that chronic disturbances of circulation do not always accompany atrophic hearts. Wiesel and Löwy admit that anatomic findings alone do not suffice to give an absolutely clear picture of the causes of disturbed circulatory function, but they think their findings in twenty cases that came to necropsy may form a basis for further research. Arteries from various parts of the organism were examined histologically, and the findings showed pathologic conditions in at least all the chronic cases of impaired circulation. The degree to which the circulation was impaired also corresponded in a general way to the various stages in the disease of the arteries. The disease affects primarily the middle coat and spreads later to the elastic coat, the intima being rarely invaded. This is the main feature differentiating the disease from arteriosclerosis; nor were atheromatous patches found in the media, such as are found in the intima in atherosclerosis. The process that Wiesel and Löwy describe is purely degenerative and not inflammatory. The starting point may possibly be the vasa vasorum, of which they found some indications. Recovery is not excluded, but they regard the changes within the vessel walls as ordinarily permanent. They characterize the various stages of the degenerative process as follows: (1) foci of edematous infiltration in the tunica media; (2) separation of the muscular fibers so that they present a ragged appearance; (3) along with changes in the nuclei, muscular degeneration, evidently the result of faulty nutrition; (4) formation of necrotic foci; (5) restorative processes: muscle formation, atypical fiber layers, long muscular fibers in annular muscle; (6) evidences of cicatrization and calcareous infiltration in the tunica media.

Irreducible Hernias of Long Standing.—Schönbauer says that the main difficulty and the chief danger that is encountered in any attempt to reduce by a radical operation a large hernia of long standing is that during the course of time the abdominal space has become much retracted, so that there is no longer room for the intestine. If by dint of much work the hernia is reduced, serious abdominal distention is likely to follow, which will frequently result in the diaphragm being pushed upward, possibly to the third rib. This condition may have fatal consequences. If reduction of the hernia is extremely difficult, he thinks it is better to resect a portion of the intestine, up to three meters. If this is not done and incarceration results, it may be necessary to remove an even greater portion. He describes two fatal cases; the hernias were of twelve and thirty years' standing. Death occurred from crowding of the lungs in one case, plus incipient peritonitis in the other.

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*Raying after Cancer Operations. P. M. van der Haer.—p. 1058.
*Pituitary Diabetes. J. Koopman.—p. 1071.
*Case of Gastric Syphilis. W. F. Suermondt.—p. 1076.

Postoperative Raying.—Van der Haer relates that there has been recurrence in only one of his twenty cases of mammary cancer in which the site of the cancer was exposed to the roentgen rays after its removal. In twelve the interval since has been three years and in all it has been over two years.

Organotherapy in Diabetes.—Among the arguments in favor of the assumption that more than one endocrine organ may be involved in the production of diabetes, Koopman mentions that the suprarenals have sometimes been found diseased in diabetes; that the reaction to phlorizin is often exceptionally severe in exophthalmic goiter, suggesting involvement of the thyroid; that this excessive reaction is not observed after partial thyroidectomy, and that the tolerance for carbohydrates is abnormally low with exophthalmic goiter. Müller has reported a case of the latter given thyroid treatment; sugar appeared then in the urine and the patient died in diabetic coma. Such facts suggest some participation of the thyroid in the etiology of diabetes. The pituitary also may be involved: Diabetes has been observed in 40 per cent. of the cases of acromegaly, but acidosis and coma are extremely rare in such cases. Steiger could find only five cases in his compilation in 1917. In one of Stadelmann's two cases, after death in coma, the pituitary was found diseased but the pancreas was apparently sound. In Steensma's case, the girl had diabetes and a tendency to obesity; radiography showed abnormal conditions in the sella turcica; carbohydrates could not be tolerated, but pituitary treatment gave good results.

Koopman has encountered two cases of pituitary diabetes which he describes in detail, calling attention to the absolute intolerance of albumin in both. The first patient, a man of 40, had no glycosuria after 100 gm. of bread, but after 50 gm. bread and 50 gm. meat there were 38.6 gm. sugar, and after 100 gm. bread and 50 gm. meat, 69.2 gm. sugar. The roentgen findings in the pituitary region were normal and the Wassermann reaction negative. But after three days of tentative pituitary treatment, no sugar appeared in the urine after ingestion of 200 gm. bread and 50 gm. meat, and even when this meat ration was doubled, only 16.4 gm. sugar was found in the urine The patient during a whole year presented glycosuria whenever the meat ration was increased, while carbohydrates did not increase the sugar content. Whenever the pituitary treatment was interrupted, sugar appeared in the urine by the second day. Acetone and diacetic acid were never observed after the very first. The second patient presented much the same picture, but radioscopy was not available. The glycosuria was brought under control with pituitary treatment but the man wearied of it in two months and of the restriction of meat, and dropped the whole, dying three months later in coma. In conclusion Koopman extols the Allen fasting treatment of diabetes as probably destined to be "the" treatment, and points out that a trial of this may aid in the differentiation of this pituitary form of diabetes. In any event, the trial can do no harm. The classic method of estimating the tolerance does not give an insight into the metabolism in diabetes; the sugar content of the blood is more instructive than that of the urine. If a special susceptibility to albumin is discovered, the pituitary should be thought of.

Syphilis of the Stomach.—In Suermondt's case there was nothing to suggest syphilis in the woman of 47 who had had stomach symptoms for seven years, ascribed to ulcer: local pain, worse at night, and occasional vomiting, but no blood in vomit or stools. After a few mouthfuls she always felt as if the stomach was full. The roentgen findings were interpreted as plastic linitis, but the operation revealed syphilitic changes in the small contracted stomach and in the liver. Under specific treatment the outline of the stomach grew larger and there was no further vomiting. Six roentgenograms taken at intervals during the six months show the characteristic findings before and after treatment.

Ugeskrift for Læger, Copenhagen

Aug 21, 1919, **81**, No. 34

Surgical Treatment of Chronic Gastric and Duodenal Ulcer. Pers.—p. 1343.
Noguchi's Leptospira in Etiology of Yellow Fever. V. Jensen.—p. 1355.
Case of Gonorrheal Phlebitis. H. Boas.—p. 1358.

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RELATION OF THE DEVELOPMENT OF THE GASTRO-INTESTINAL TRACT TO ABDOMINAL SURGERY*

W. J. MAYO, M.D.

ROCHESTER, MINN.

THE RELATION OF ANATOMY TO PRESENT DAY SURGERY

The late Corydon L. Ford, professor of anatomy at the University of Michigan Medical School, was justly considered the greatest teacher of anatomy of his time. I well remember the three years in which I studied anatomy under him, and the impression he made on the students by his clear and forceful presentation of this ordinarily dry subject. He was then a man past middle life; he wore a beard, shaved the upper lip, and because of a congenital clubfoot he walked with a decided limp by the aid of an ivory-headed cane. I speak of these physical factors because they were part and parcel of the man in relation to his teaching. He presented anatomy not alone as a fundamental science which it was necessary to master for the purpose of laying a foundation for clinical medicine, but as a living thing to be considered in almost every professional act. He was closely in touch with the clinical issues of his time, and with anatomy he taught most valuable lessons in physiology and pathology, so that the student gained knowledge of his subject in its relation to his work. The university courses in surgical anatomy were excellent, yet Ford taught us more surgical anatomy than we learned in these special courses, and he also taught us medical anatomy, in order that we might see the patient from the anatomic standpoint, and recognize pathologic deviations from the normal in the early stages. We were drilled in the use of Holden's "Anatomical Landmarks"; I have spent many hours with this little book, going over the living body that I might learn the relation of the external to the internal.

As volunteer assistant I had the further privilege of demonstrating anatomy at the University of Michigan, and the fascination for anatomic detail in relation to medicine and surgery has remained with me. My seat companion was the late Franklin P. Mall, afterward professor of anatomy at Johns Hopkins, and the most distinguished anatomist of his time. Mall was a choice spirit, an anatomist of the research type. On one occasion in showing me the manner in which the heart, by its peculiar twisting contraction, empties all the blood from its cavities as one would wring a cloth, he remarked that a cavity like the bladder cannot empty itself to the last drop by contractions alone. He said that anatomy since Ford's time had dealt too much with abstract matter. Mall's observation has an important bearing on catheter cystitis, an infection of a small amount of residual urine in an overstretched organ.

During my active experience in surgery, working with many different assistants, I have not always been impressed with their knowledge of anatomy, although all have possessed a fair knowledge of pathology. At times it would seem that they were more familiar with minute pathology than with anatomy. Miscroscopic histology and pathology, while not overdone, have been allowed to overshadow anatomy and gross pathology—these the surgeon or internist must see with his own eyes if he is to do his best work. It is a question in my mind whether, generally speaking, anatomy is as well taught today as it was in my student days; whether it is taught with a view of instilling in a man a love for the subject, or merely as a foundation for medical practice. I believe this tendency is correctly interpreted by teaching anatomists of the type of Jackson and others, who are taking steps to remedy the existing defects by the better balancing of anatomic teaching. This is also true of the teaching of present day pathologists.

In surgery of the abdomen especially, a wide knowledge of embryology and anatomy is essential. In the olden time when operations were done in late periods of pathologic conditions, and were destructive rather than reconstructive because it was necessary to save life and it was too late to save function, one could fully appreciate the answer of the distinguished surgeon who originated excision of the hip when asked concerning the anatomic details of the operation: "Damn the anatomy; stick close to the bone." Today the bulk of surgery is not done for gross defects but for pathologic conditions which have not deviated from the normal to such an extent that destructive surgery is necessary, but are still in condition for reconstruction. It has been said that the anatomist never made a good surgeon: that it was the pathologist who made the surgeon. This is true only of the vanishing German type. The surgeon of tomorrow must follow in the footsteps of such men as Deaver; he must be an anatomist and a physiologist, and living pathology must hold a greater place in his mind than the pathology which has been developed from the mortuary and has dominated medicine for the past generation.

For many years I have been interested in elucidating problems of surgery of the abdomen. Clinical diag-

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nosis has been notoriously unreliable, and the postmortem does not show the chronic disease from which the patient was sick during life, but rather the particular complication from which he died. Always, when I have faced a new problem in this field, I have gone back to embryology, anatomy and physiology in order to gain an idea of the meanings of those pathologic deviations which we are called on to treat. It may not be out of place at this time to outline sketchily some of the anatomic and physiologic principles that have grown up with the surgery of the abdomen, and on which depends the explanation of many phenomena that could not otherwise be understood.

From the time the food passes through the pharynx until it enters the rectum we have comparatively little control over it. Some control is exercised in the esophagus and even in the fundus of the stomach so that by initiating retrograde movements, retching, and so forth, some food may be ejected. The same is true in the sigmoid; but even in it the control at best is but partial and indirect. The biologists have pointed out that the theory of the three blastodermic membranes is a working rule and not a law, having many exceptions; but at least it leads to logical thought. To a certain extent this is also true of the idea of the derivation of the gastro-intestinal tract from the fore, middle and hind guts. Yet these primitive derivatives, while not as exact in the present day human body as might be desirable from a purely scientific point of view, have great value as outlines for the student.

From the foregut come the stomach, the duodenum down to the common duct, the liver and the pancreas, all organs which prepare food for digestion but do not themselves absorb. The stomach does not absorb even water, although it will take up certain chemicals and poisons, alcohol, for instance. The derivatives of the hindgut likewise absorb nothing except certain chemical substances, and rectal feeding, as spoken of in its ordinary sense, does not exist: it is simply a means whereby material placed in the rectum is quickly carried by what Bond calls "mucous currents" back into the derivatives of the midgut for absorption. The so-called colon tube passes out of sight through the anus, coiling in the rectum, and but seldom passes the rectosigmoid barrier. The derivatives of the foregut have their blood supply from the celiac axis. The derivatives of the midgut, in which absorption takes place, are supplied from the superior mesenteric artery, while the inferior mesenteric artery supplies the derivatives of the hindgut as far down as the rectum, and very largely the rectum also, although the rectum and anal canal obtain a small supply from the middle and external hemorrhoidals because of their origin from the cloaca and the proctodeum.

Rosenow's work on the specificity of bacteria shows that bacteria that have been cultivated in certain soils, in the gallbladder, for example, when placed in the circulation, are peculiarly attracted to the organ to which they have been acclimated. That is, strains of bacteria derived experimentally from a gallbladder will more often set up a cholecystitis than if they were derived from some other organ. This is true along so many lines connected with the vascular system that we must admit at least the possibility that the blood supply is to a certain extent specific and that organs exercise some peculiar chemotaxis which physiologically and pathologically directs certain substances of the blood content to them. How else can we explain the rapidity with which phenolsulphonephthalein is eliminated through the kidneys? And recent work in physics suggests that the attraction may be a physicochemical one. Very delicate instruments appear to show that each organ has its own electrical reactions and polarity, suggesting that cancerous growths can be recognized in this way.

Embryologically the first portion of the duodenum ends, not at the pylorus but at the common duct, and the duodenum above the common duct embryologically is a part of the stomach and a vestibule to the small intestine; like the stomach and other acid-containing organs, it is extremely liable to ulceration. Ulcers of the duodenum occur more commonly in men than in women, possibly because the first portion of the duodenum in women is more nearly horizontal, naturally permitting of a higher alkaline level for the bile and pancreatic juice, and thereby reducing the liability to ulceration. In animals with bilocular stomachs the division between the two stomachs is at the incisura of the human stomach, and the physiologic activity of the pyloric half of the stomach, especially at the incisura, is quite evident on roentgen-ray examination, although the musculature composing the primitive sphincter has disappeared.

The termination of the absorbing intestinal area in the transverse colon near the splenic flexure embryologically marks the end of the absorbing area. It is interesting to note that, although the proximal half of the large intestine has no marked anatomic differences from the left half, in the embryo villi are to be found in the right half which are similar to the villi of the small intestine, although they disappear as development proceeds. An observer, watching with the roentgen ray the churning back and forth in the head of the colon sees that the greater part of this activity is proximal to the location of the cecocolic sphincter which exists in the ascending colon of some of the lower animals, and that physiologic contractions are most marked in this situation. Retardation of the passage of food through the intestinal tract has its origin in embryologic physiology. Muscular control by means of sphincters, delay by means of the valvulae conniventes which also present larger exposed surfaces for absorption, delay by sacculations, as in the large intestine, and mechanical delays, such as the high attachments of the splenic flexure which necessitate muscular activity in order to pass the food refuse into the nonabsorbing part of the large intestine and render the descending colon physiologically empty, are examples. The rectosigmoid is a most remarkable mechanical device for retardation of food end-products. Since nature is most sparing of waste, even of water, in the terminal half of the large intestine, especially the sigmoid, the fluids are gradually squeezed out of the refuse and passed by reverse currents back into the proximal half of the colon for absorption.

Rotation has great surgical significance. In the embryo and in many lower animals throughout life the stomach hangs with its lesser curvature facing ventrally; and embryologically the lesser curvature is the anterior wall of the stomach. Rotation turns the stomach and pancreas on their right sides. The pancreas, embryologically an intraperitoneal organ, loses its posterior layer of peritoneum, which becomes fused behind with the fascia. This explains why, in the type of acute pancreatitis and fat necrosis which might be picturesquely called "perforation," the pancreas may involve the fat behind the peritoneum as well as the intra-abdominal fat; why occasionally, in traumatism,

pancreatic secretions escaping into the lesser cavity of the peritoneum may penetrate into the omentum and form a collection of fluid in what is known as the omental bursa, reopening the cavity which in fetal life exists between the layers of the omentum before they are fused as high as the transverse colon.

The position of the duodenum is altered by rotation and its third portion becomes retroperitoneal, a fact of great importance in connection with operations on the right kidney. Unless care is exercised in performing a nephrectomy in cases in which there is chronic inflammation around the pelvis, and especially in malignant disease, the duodenum may be injured, and immediately or a few days later a fistula form from which the patient may die unless it is repaired anteriorly by a transperitoneal operation. Very scanty mention of this accident is found in the literature, but I have reported several cases of this character. Unless careful dissection is made, this retroperitoneal portion of the duodenum also may be injured in the removal of cancers of the ascending colon.

Rotation as it affects the intestinal tract is also of great surgical importance. The large intestine, having its origin on the left side of the body, passes to the right and does not reach its normal situation until after birth. The late peritoneal attachments are often described as veils or adhesions, and are given unwarranted credit for causing trouble. Failure of rotation or partial rotation will cause the physical signs of an appendicitis to appear at whatever point the rotation of the head of the colon is interrupted. The attachments of the large intestine to the right side are not only late and less close than those on the left, but also, since the cubic capacity of the right lower thorax is less than that of the left lower thorax, because of the liver, the right kidney normally lies lower than the left. The nephrocolic ligament may be called on to bear much of the weight of the head of the imperfectly attached colon which acts like the car attached to a balloon, and may, by traction, drag the kidney down. We think of the large intestine as having a short mesentery; but as a matter of fact, it has a very long mesentery on the inner side, which is the only side of importance, as the blood vessels, lymphatics and nerve supply are always to be found in the inner long leaf which follows the colon during its migration. The outer peritoneal attachments which hold the colon in place laterally may, therefore, be divided without encountering any structures of importance, and the large intestine, on its long inner leaf of mesentery, can be drawn out of the body for easy manipulation and operation. There is one exception, that is, the attachments of the splenic flexure are derived from the omentum and contain a blood vessel which must be tied. Some years ago I called attention to this method of mobilizing the large intestine, which is based on these anatomic facts and very greatly aids in operations on the colon.

The small intestine, originating in six primary convolutions on the right side, has its mesenteric attachment from left to right, from above downward, passing behind the umbilicus. This is the reason why in obstructive and other disturbances of the small intestine, unless localized by involvement of the peritoneum, the pain is referred to the vicinity of the umbilicus, although the cause of the pain may be in a loop of intestine at a distance. In picking up a loop of small intestine, it is sometimes difficult to determine which direction is up and which is down. Monks, in a beautiful piece of work, has shown how this can be done with facility. If a loop of intestine drawn out of an abdominal incision is held by an assistant, and the surgeon, grasping the intestine with the fingers on one side and with the thumb on the other, passes down to the bottom of the mesentery, and finds that his fingers and thumb still grasp the root of the mesentery as started above, the direction is up and down; but if the position is reversed at the base, then the direction is the opposite. In picking up a piece of small intestine one should be able to recognize the part of the bowel from its appearance. The upper jejunum is thick and wide, the mesentery is thin, and the vessels are large, long and straight, having but one or two primary arcades close to the base. In the lower ileum the intestine is thin and the mesentery thick, the fat sometimes following the vessels a little way up along the intestinal wall. The vessels are smaller, shorter, and there are a number of arcades, sometimes two, three or four, in the adjacent mesentery. Attention to these details makes ready differentiation possible.

The study of the peritoneum is profitable to the surgeon. The resistance of the peritoneum to infection is an inherited faculty. The meninges and pleura have less resistance. In the earthworm (common angleworm), the food, in its progress through the primitive gastro-intestinal canal, is admitted into the coelom, or body cavity, which is the forerunner of the peritoneum, for direct absorption. The contaminated peritoneum before infection takes place usually needs no drainage after mechanical cleansing; drainage often does harm rather than good. The slowly acquired special resistance of the pelvic peritoneum of women to infections in the course of countless generations of suffering from puerperal and other infections, is well known; and the mortality rate of operations involving the pelvic peritoneum, such as resections of the rectum for cancer, is much less in women than in men.

Let me repeat that the teaching of anatomy, as related to constructive surgery rather than to the destructive surgery of the past, should be based on the needs of the surgeon of today, to enable him to cope with the diseases of today. If I were to write a book (I have no intention of inflicting one on the medical public), I should take up the fascinating story of embryology, anatomy and physiology in relation to the work of the surgeon of tomorrow, the story of the anatomy of the living to enable us to treat the pathology of the living during the early stage of deviation from the normal physiologic state.

COORDINATION OF THE FUNCTIONS OF THE GASTRO-INTESTINAL TRACT

The two most primitive functions of a living body are maintenance of nutrition, and reproduction; and nature has thrown about these functions the greatest possible number of safeguards. First, the body must be nourished, and second, new life is to be brought into being. This is as true of the simple cell as of the most complex organism. The more ancient the organ, the greater its resistance. The small intestine has an enormous resistance to disease and seldom is the seat of neoplasm. The testicle, which is the primitive reproductive organ, has a long heredity and freedom from disease. On the contrary, the ovary, which is descended from the testicle is, like other less ancient organs, such as the stomach, the rectum and the large intestine, a frequent seat of neoplasm.

Methods of control over the visceral functions were established before man had a central nervous system; these controls are still independent of it. It might even be surmised that the attempt of the central nervous system to gain control over visceral and other functions previously established may have to do with neurasthenia, especially its visceral manifestations. Starling well says that those internal secretions which he calls hormones precede all types of nervous systems in visceral control. One is perhaps justified in looking on the sympathetic as the more primitive nervous system and in believing that the means whereby the central nervous system is attempting to gain this control over the vegetative functions is through the autonomic nervous system.

The liver, entirely separated from all its connections, can be made to secrete bile, and the kidney similarly to secrete urine. For that matter, the entire viscera have been completely separated experimentally from the nervous system and even lifted out of the body, and by appropriate mechanical connections made to live and function for some hours. The central nervous system, we find, has more or less control of those organs which have been added more recently, especially organs of convenience, such as the fundus of the stomach, into which a quantity of food may be placed rapidly for elaboration, as the magazine of a coal stove may be filled. The sigmoid and the bladder also have temporary storage function; but in other respects the central nervous system, beyond initiating action, plays a small part in vegetative life.

The growth of the central nervous system in relation to the organs of special sense is interesting. First, the sense of taste, which made the selection of food possible; second, the sense of smell, which enabled the primitive stoma to be turned toward food, and third, the sense of hearing, which was placed in the middle of the head because danger threatens from behind as well as in front. The sense of sight came during the rapid development of all the higher cerebral faculties, and direct pathways were established between the eye and all parts of the brain, so that the sense of sight overshadows in importance the other special senses. Even memory in most persons has its basis in visual phenomena. The relatively short heredity of the central nervous system accounts for its instability.

It is interesting to note that the sympathetic nervous system is in close relation with the endocrine glands, and that the importance of the internal secretion of an organ may be estimated by the closeness of its relation to the sympathetic system. The pituitary, one-half sympathetic and one-half gland, the suprarenal, with its similar association, and the thyroid, are examples; the spleen has no internal secretion of great importance, and only small connection with the sympathetic system.

Still another form of control is found in the primitive character of the nonstriated muscle. These fibers have the power of originating motion independent of a known nervous system. A little piece of the wall of the small intestine will contract for hours when placed in Locke's solution and properly stimulated. Many visceral functions are dependent on the nonstriated muscle. We are indebted to Keith for revelations with regard to the curious nodal system which acts to collect the impulses that have their origin in the primitive fibers of the nonstriated muscle. This has been most carefully studied with reference to the heart. The heart-beat starts in the sinu-auricular node, is diffused through the auricular musculature, and is passed by the muscle-band of His to the ventricles, timing the ventricular beat. Keith's nodes are composed of a curious type of primitive muscle-cell with some fine fibers from the autonomic nervous system which evidently were added later. These nodes are in effect the controlling ganglions of the action of the nonstriated muscle in organs. Keith has pointed out the situation of eight nodes, four located and four not fully identified, through which control is maintained. When food passes through the pharynx, all direct control is at once lost, and here is situated the first node. The cardia is a true sphincter and normally is closed. The food passing through the esophagus arouses contractions in the nonstriated muscle of the esophagus; these impulses are carried to the second node, which relaxes the cardiac orifice. Failure to relax the cardiac orifice results in that curious condition called cardiospasm from which many persons suffer and starve for years, and often die from obstruction supposed to be due to cancer. If we have knowledge of the nature of the disease, cure is easy and certain. The third node is not at the pylorus as one would think, but at the termination of the primitive foregut near the common duct. It is interesting to note that, as pointed out by Ochsner, there are remnants of a prehistoric sphincter at this point. Disturbances of this node produce the condition called pylorospasm, which accounts for many gastric disturbances masquerading under different names. This node is also concerned in chronic gastric atony and some of the phases of acute dilatation of the stomach. The fourth node is near the duodenojejunal juncture and is concerned normally in peristalsis and in segmentation or pendulum movements of the small intestine, and abnormally in producing gastromesenteric ileus. The fifth node is at the ileocecal juncture and is concerned with many of those phenomena about which Lane has written so interestingly under the general head of ileac stasis. The sixth node is near the middle of the transverse colon, and through its control of antiperistalsis prolongs the retention of food products for absorption in the right half of the colon. The seventh node is in the rectosigmoid region, and disturbances in the function of this node are probably responsible for the giant colon of Hirschsprung's disease. The last, or eighth, node is concerned with rectal control.

It may be said that wherever nonstriated muscle exists, the power of originating contraction exists. The intestine, like the heart, has two beats. The first, called the peristalsis, beats once or twice to the minute. The second, as pointed out by Mall, is the heart of the portal circulation and beats from eighteen to twenty times a minute, forcing the blood to the liver. In the pregnant uterus, the beat of the nonstriated muscle is recognized as the uterine contractions of pregnancy. Keith points out the part played by the nodes in controlling peristalsis, and suggests that they act like a block system on a railroad, and control food progress by controlling sphincters.

The endocrine glands secrete substances which Starling has called hormones; they act through the blood stream and form a most interesting chapter in visceral control; they are closely allied to the sympathetic nervous system, and are often found in glands of double function or glands that at one time have had an external as well as an internal secretion. The gonadial

secretion derived from the interstitial cells of the generative organs controls sex characteristic even when the genital elements are absent. The relation of the external pancreatic secretion dealing with the digestion of fats, starches and proteins has only an indirect connection with the tissue of Langerhans, which has to do with sugar metabolism. The thyroid in the king scorpion is a reproductive gland, and the thyroid function in the human being is closely connected with puberty, in the female, with the pregnant state. Types of life are found in which the thyroid functioned through the digestive tract, and the foramen cecum at the base of the tongue in man marks the site where this secretion was at one time discharged into the intestinal canal. In the present stage of human development, the thyroid is entirely an organ of internal secretion; but through its influence on other endocrine glands, it assists in maintaining reproductive and digestive functions.

The pituitary gland probably corresponds to the strainer gland in the fish stage, and in the course of development was left within the skull instead of on the side of the pharynx. It contains elements derived from the pharyngeal mucosa, and many of its tumors show pharyngeal heredity. Is it possible that this gland, which is so important in the growth of the body, is favorably affected through improved circulation by the removal of diseased adenoids and tonsils? Certainly one often sees a child of slow development, after an operation for removal of tonsils and adenoids, make a most striking physical and mental gain. The coccygeal body (gland of Luschka) has no known function, but it is connected with that stage of development in which the primitive hind or tail gut was part of the neurenteric canal. These prenatal vestiges may be the source of dermoids or neoplasms of peculiar nature, not infrequently malignant, lying in the hollow of the sacrum behind the rectum and eroding the bone. Some theorists have called the external vestigial remnants of the neurenteric canal the posterior umbilicus, and believe that the sequestration dermoids so frequently found in the lower sacral and coccygeal midline have this origin. Keith points out that the internal secretions of the five important endocrine glands, pituitary, suprarenals, gonadial, pineal and thyroid, control racial characteristics of the three great divisions of man, Caucasian, Negro and Mongol.

The sympathetic nervous system was a later development, and correlates visceral action. It stimulates the function of endocrine glands, and is in turn stimulated by their secretions. To the great English physiologist Gaskell we owe our knowledge of the involuntary nervous system. His first work on the visceral nervous system was published in the early eighties. Gaskell pointed out that certain small-calibered medullated nerves pass from the anterior horns of the spinal cord to the great sympathetic ganglion of the thorax and abdomen, which connects the central nervous system with the sympathetic. These connecting nerves enable emotions originating in the central nervous system to influence the sympathetic ganglion. From the sympathetic ganglion small nonmedullated fibers pass directly to their distribution forming the sympathetic nervous system. Gaskell also showed that there are nerves of the same kind which have visceral functions arising from the cranial nerves, and he called these parasympathetics. They are composed of the vagus nerve, the fibers in the third, seventh and ninth cranial nerves, and the pelvic nerve from the sacral plexus. The parasympathetics are small-calibered medullated nerves with ganglion cells near their distribution, as in the heart itself and in the plexuses of Auerbach in the wall of the intestine. Neither the sympathetics nor the parasympathetics are under the control of the will, and when distributed to the same organ they follow Sherrington's law in that they are antagonistic.

Langley, who contributed much to this work, called the combined sympathetic nervous system (thoracic and lumbar ganglions) and the parasympathetic (cranial and pelvic) the autonomic system. American physiologists, especially Cannon and Crile, have contributed largely to this work. Gaskell pointed out that the sympathetic ganglions develop widespread reactions to stimuli which exercise inhibitory control over the vegetative system independent of the will, and inhibit the parasympathetics. The cerebrospinal nervous system produces conscious and accurate action of the striated muscle system, but has no control, and only indirect effect, on the nonstriated muscles. Langley, Crile, Cannon and Brown have made practical application of Gaskell's discoveries, showing how the fibers derived from the sympathetic ganglions, acting for defense, produce the most widespread and sudden effect when excited by emotions such as fear or anger. The digestive tract is temporarily deprived of function; the heart action and respiration increase in rapidity and strength, the glands of internal secretion, especially the suprarenals and thyroid, are activated, and sugar reserves in the liver and body generally are thrown into the blood stream to enable greater muscular action.

It is interesting to note that the nerves of Gaskell from the anterior horns of the spinal cord to the sympathetic ganglions are direct, and it is only those nerve fibers derived from the sympathetic ganglions themselves that pass to the various organs to produce the widespread effects spoken of, with the exception of the suprarenal gland, which receives fibers from the cord en route. The suprarenal contains within itself true nerve cells, as though at one time a start had been made for a different type of control from that which was afterward developed through the sympathetic ganglions. The parasympathetics of Gaskell, as related to the gastro-intestinal viscera, are composed of the vagus nerve derived from the bulbar division of the parasympathetics, and the pelvic nerve from the sacral plexus. When the emotions, which acting through the sympathetic system cause the sudden necessity for instantaneous use of all the body reserves, have passed away the vagus nerve comes into action and causes the heart to beat more slowly, and reduces respiration. The digestive tract, the stomach, intestine, liver and pancreas, which have been temporarily inhibited by the sympathetic fibers from the solar plexus, are stimulated to function through the vagus parasympathetic acting as a motor nerve through the plexus of Auerbach, and the pelvic parasympathetic motor nerve again permits conscious control of the bladder, sigmoid and rectum, which had been inhibited by the sympathetic fibers from the inferior mesenteric ganglion. One may well believe, however, that while these functions are checked by the sympathetic and are caused to resume action by the parasympathetics, control of their normal activities goes back to the nonstriated muscles, and the internal secretions which were the earliest forms of control. The gastro-intestinal tract is, therefore, largely con-

trolled in its functions by the nonstriated muscle and by chemical substances acting through the blood. The sympathetic ganglions act to inhibit these functions temporarily to produce rapid catabolism and spend reserves prodigally. The parasympathetics set in motion the interrupted anabolic activities and maintain reserves for future emergencies.

It may seem that these well known anatomic and physiologic details need no reiteration, and yet in my association and teaching of younger men in the profession I find that while they may know these facts, they often fail in their interpretation of them. The interpretation of the interesting phenomena which I have cited may not be correct in given instances; but if by "near-right" theories a dry subject may be made to live, the means will be justified and the strain on our memories will be less. We must not forget that memory training is the Confucian method which certainly has not led the Chinese in the paths of progress. Facts do not change. The interpretation of facts constantly changes, and new interpretations of old and new facts are the source of progress. Only as we are doubtful of our interpretations can we hope to advance scientifically.

EPIDEMIC (LETHARGIC) ENCEPHALITIS

CLINICAL REVIEW OF CASES IN THE PACIFIC NORTHWEST *

WILLIAM HOUSE, M.D.
PORTLAND, ORE.

"Westward the star of empire wends its way" setting an example that is followed with celerity by the humble but none the less busy germ. Most great epidemics have originated in the crowded centers of Europe or possibly of Asia and thence have traveled westward. On reaching the United States they have developed first on the Atlantic seaboard, within a few weeks or months have traveled to the Middle West, and within a year have invaded the Far West. The great epidemic of poliomyelitis[1] was reported in Sweden in 1905, visited the eastern part of the United States in 1907 and 1908, and came to the Pacific Northwest in 1909 and 1910, that is, between one and two years after it was reported in epidemic form in New York, Massachusetts and in general throughout the East. It had been preceded by cerebrospinal fever by two years. Later, less extensive epidemics of cerebrospinal fever traveled the same way. In 1916 and 1917 poliomyelitis was again epidemic in the Pacific Northwest following similar epidemics in the East, but the disease was much milder and cases were fewer than in 1909 and 1910. Influenza was several months in traveling from the crowded portions of the East to the West, and we had well written accounts of it as it was witnessed in the army camps of the East months before it visited the Northwest.

Epidemic encephalitis proves no exception to the rule. According to Bassoe[2] it first appeared in Austria in 1917, reached France and England in 1918, and in the fall of the same year came to the United States. By the spring of 1919 cases were being reported throughout the Middle West. It reached the Pacific Northwest in October, 1919, appearing almost simultaneously in Portland, Seattle and Tacoma. Winslow[3] of Seattle presented a paper which was written in the latter days of October at about the same time that I first saw cases of the disease in Portland. At a meeting of the Portland City and County Medical Society, Oct. 29, 1919, I reported four cases of this disease, two of which had already been fatal, and I have since (to December 10) examined nine more patients whom I regard as indisputably having this disease and at least four more in whom the diagnosis was open to some doubt. In each of these doubtful cases I saw the patient only once, and I do not know the later course or history.

EPIDEMIOLOGY

Except for the statements already made indicating that the disease occurs in mild epidemics, there is no hint of the method of spread. One of the most curious coincidences that I have ever witnessed occurred among my first five patients, three of whom dated their first symptoms definitely to October 12, and these three patients were separated by a distance of miles and knew nothing of one another. No two cases have occurred in the same household. None of my patients gave a history of preceding influenza, but several of them had low blood pressure and were in poor physical condition at the time of onset, suggesting that whatever the infection, the soil has to be prepared. I am convinced that the disease is not contagious in the ordinary sense of the word, and that there is no reason for quarantining patients other than keeping them isolated in their rooms away from the rest of the household, a precaution which can do no harm and may result in good.

TYPES OF THE DISEASE

Most writers say that the invasion of epidemic encephalitis is slow and deliberate. This is true in some of the cases, but by no means in all. I think I have been able to identify two types of invasion, one of which is rapid and the other slow.

Type One.—The slow type is far more common than the rapid, having occurred in ten of the thirteen cases. In this type the predominating symptoms from the beginning were double vision, slight mental confusion, at times mild delirium, followed by other symptoms which depended apparently on the particular cranial nuclei involved. After a week or ten days, the patients appeared to improve and then developed the so-called lethargy to which the disease owes its name. During this week most of them suffered from insomnia and were given some form of sedative by the attending physician. With the development of the lethargic stage, of course nothing of that kind was required.

Type Two.—This is more interesting in a way than the first type, largely because the manifestations are more dynamic. In this type, the patients complained of some head pain followed by a rapidly developing delirium, which was acute and attended by hallucinations of sight and hearing of the most vivid character.

One patient, a professor, conversed with imaginary friends and acquaintances and delivered lectures to his classes day and night for four or five days. During this time he was

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* Read before the Oregon Association of Public Health Officers, Dec. 8, 1919.

* Owing to lack of space, this article is abbreviated by the omission of historical data and a discussion of the etiology of the disease. The complete article appears in the author's reprints.

1. House, William: Acute Anterior Poliomyelitis, Northwest Med. **2**: 259 (Sept.) 1910.

2. Bassoe, Peter: Epidemic Encephalitis (Nona), J. A. M. A. **72**: 971 (April 5) 1919.

3. Winslow, Kenelm: Epidemic Lethargic Encephalitis (Nona) in Seattle, Northwest Med. **18**: 209 (Oct.) 1919.

unable to identify his wife or the nurse, his physician and other visitors, though when asked who a visitor was and then told the name he would say, "Oh, yes I know you, you were here this morning," or something of that sort. He was tractable, could be induced to calm himself, and gave no serious trouble to those who attended him. In rational moments, he spoke of the "hallucinations" from which he suffered and understood that they were unreal, though he mingled fact and fiction at all times. His temperature rose to 104.6 F., gradually subsiding at the end of a week, when it became practically normal. The apathetic condition did not develop until the tenth day. Throughout the illness he complained of pain in the back of the neck and back of the left ear, which was deep seated and at first thought to be due to neuritis of the occipital group of nerves. After the beginning of the apathetic stage, this pain became more troublesome, making him restless at night, and he was sensitive to touch throughout this region.

Another patient with the same group of symptoms was delirious for ten days, lost his way about the house, and talked almost incessantly, yet when spoken to declared he felt well and insisted that he must return to his work, that of salesman, because of the holiday rush.

A third patient, a woman, aged 23, suffered from the most vivid hallucinations and was so violent that she had to be restrained in a sanatorium whence she was dismissed at the end of a week, quiet though still sick. Double vision and lethargy were present. The further history of this patient is unknown to me except that she is living.

It seems to me that these two types of invasion suggest the probability that the infection may attack the brain at different points. It has been thought that the invasion is from the nasopharynx and that the germ attacks the pons and the surrounding tissues. Such an invasion would produce a reaction in a region which would cause motor nerve palsies and the type of symptoms noted in Type 1. But there is no reason that I can see why the disorder may not equally well attack the anterior part of the brain in the region of the ethmoid. In that case, there would be signs of frontal lobe irritation which would naturally produce delirium, such as was witnessed in the three cases already discussed. This delirium was of a type such as I have seen in paresis, in cocainism and in at least two cases of rabies, in both of which necropsy revealed intense congestion and hyperemia of the anterior portions of the brain.

It is interesting to note that in two of these cases there was absence of double vision and the basilar symptoms described in the first group.

INDIVIDUAL SYMPTOMS

If I were to evaluate individual symptoms in the order of their frequency and importance, I should say that lethargy or apathy is not the most characteristic symptom. Instead I should select:

Euphoria.—This is the most striking symptom of the disease. A feeling of well-being was present in greater or less degree in every patient whom I examined. Notwithstanding unmistakable signs of grave illness, the patients seemed not to be worried by it. When asked how they felt, the patients almost invariably answered "pretty well." An Italian patient up to a few hours before his death invariably said, "Fine, fine, too many doctors," and since he had at least half a dozen he showed keen discriminating power. One patient who could not swallow and who had to be fed said she felt "pretty good," although she knew that talking was difficult and that in a way she was helpless. Even the delirium was never particularly unpleasant, seeming instead to be of a rather happy type. With convalescence, euphoria was replaced by mild depression in a majority of cases.

Apathy.—This is a better term than lethargy as descriptive of the tendency to quiescence. It begins apparently from ten to twelve days after the onset of symptoms. The patients were never fully asleep. Their expression was blank, their attitude somewhat rigid, and in at least two cases they lay in bed with the hands flexed in a typical parkinsonian attitude. I was early impressed with the fact that the patients really were not somnolent, an idea that I have since found had already been recorded by Bassoe. Indeed, they were extremely wakeful. They lay in bed with eyes downcast or closed, face muscles rather blank and expressionless, seemingly oblivious to what went on around them. But without exception it was possible to rouse them quickly by a spoken word. Their answers were all but monosyllabic, and they then immediately lapsed into the preceding stuporous condition. They took food when offered, sometimes muttered a little, their bodies were slightly rigid, and most of them complained more or less of muscular twitching and jerkings which might be anywhere in the body.

Double Vision.—This was present in eleven cases. It was a vague kind of trouble. One patient first complained that while driving a team of horses he had never seen the automobiles so crazy, all of them wanted to run over him. It was four days before he was able to describe this difficulty of sight as double vision. This double vision was present in all eleven cases during the first week, and seldom lasted more than four or five days. This point alone should differentiate the disease from tuberculous meningitis, in which double vision seldom appears before the end of the second or the beginning of the third week. The origin of the double vision in encephalitis has not been made entirely clear. Any of the oculomotor nuclei may be involved, but I was unable definitely to determine which nerve was at fault in any except one case. In that there was distinct weakness of the right sixth nerve accompanying well-marked facial, that is, seventh nerve, palsy. In the other cases I thought there was weakness perhaps of all of the oculomotor nerves. I thought the patients were unable to move the eyeballs in any direction as freely as healthy persons are able to move them. When the eyes were directed either to the left or to the right, there was no fault in the action of the muscles except that the patients found it difficult to hold them in these positions. The tendency was for the eyes to rotate back to the middle line. Nystagmus was absent. The condition suggested not a true lesion of any particular nerve, but generalized weakness of all of the nerves. In other words, there was general ophthalmoparesis rather than ophthalmoplegia. Now, since this symptom in the main lessened or disappeared after the acute stage of the disease, it seems probable that it was due to some toxic effect or possibly to generalized pressure rather than to definite hemorrhagic or inflammatory lesions of the nuclei. The positions of the images were variously such as to suggest involvement of the third, fourth and sixth nerves in different cases; but my impression is strong that the patients did not automatically converge the eyes as in ordinary focusing, though they were able partially to overcome the difficulty by an effort of will.

Nerve Changes.—Other Cranial Nerves: No patient exhibited any symptoms of involvement of the first

nerve. I examined the fundi in six cases and could detect nothing wrong with the second nerve. Ophthalmoscopic examination was difficult because of small pupils, ptosis and delirium, and fundus changes may have escaped detection. The seventh nerve was involved, causing paralysis of the muscles of expression in one case, and in this case alone could I demonstrate distinct weakness of the sixth nerve and possibly also of the fourth. The eighth nerve escaped involvement unless such auditory hallucinations as were witnessed could be attributed to it. This is not likely, as most auditory hallucinations are cortical in origin.

Fifth Nerve: Among initial symptoms in three cases was distinct pain in one cheek bone and in front of the ear. This was a dull, heavy ache accompanied by tenderness on pressure. I am at a loss to know whether this pain was due, as seems possible, to congestion or to other disturbance around the gasserian ganglion or to a lesion of the bone itself. One patient suffered from quite severe pain in the postcervical region, the origin of which may have been either in the suboccipital nerves or periosteal, that is, in the occipital bone or possibly even in the vertebra, for he was tender in these regions. Two others complained of pain in the mastoid region unattended by any demonstrable lesion of the ear drum or auditory canal. The similarity in the disturbances of the cheek bone and back of the ear is evident, but leaves doubt as to whether they were due to subacute neuritis or to osteal changes. I incline to think that all of these pains were neuritic in origin; and if this be true, the fifth nerve is involved in a considerable proportion of all cases.

Ninth and Tenth Nerves: Perhaps this was the most interesting case of the series:

A woman, aged 30, became ill with delirium and double vision. When I saw her at the end of the first week, she was wakeful, sitting up in bed. Her temperature was 102 F. and pulse rate 160. Her respirations were shallow and irregular, and her skin extremely cyanotic. There was a suggestion of exophthalmos, and I at first thought she was suffering from toxic hyperthyroidism. Her physician, Dr. R. C. Yenney, who had known her for years disagreed with me. He also said that clinically he was able to exclude any pulmonary or cardiac lesion. While one was talking to her, her eyes would close sleepily for from ten to fifteen seconds, during which time one could almost see an increase in the cyanosis. Then she would waken with a sudden start, take a few breaths, answer questions, and repeat the performance. This continued for four or five days, at the end of which time she died, apparently as a result of paralysis of the cardiac and respiratory centers.

Twelfth Nerve: This case of twelfth nerve involvement was observed:

A woman, aged 37, walked into my office, sat down, and assumed the characteristic parkinsonian attitude and seemingly went to sleep. She had visited a number of physicians, one of whom had told her husband, so he said, that she was hysterical and should get up and go about her business. I sent her home and to bed in charge of a practical nurse. She remained quiet and passive except as she was troubled by muscular twitchings. At the end of two weeks, she suddenly lost the power to swallow, found difficulty in speaking, and her body gradually became slightly rigid. She was removed to a hospital and fed through a nasal tube for several days, a method which seems better than the passing of a tube through the mouth. She remains in this rigid condition and I fear will die. Notwithstanding all these symptoms her mind is quite clear, she recalls my visits, and if they are brief reports to her husband the next day, presenting a mental state which seems almost incredible when one considers the gravity of her physical condition. She has escaped few of the symptoms which characterize the disease save the early febrile stage, and even that may have been present unobserved.

Temperature Changes.—I did not see most of the patients until the end of the second week. Temperatures were reported between 101 and 103 F. in most of the cases during the first week. In the violently delirious case it rose to 104.6 only once. Two patients appeared to have been afebrile, and both of these pursued mild but characteristic courses to recovery. Fever subsided at the end of a week or ten days in most cases, though in two there was a recrudescence during the third week.

Rigidities.—In several patients the attending physician called attention to some stiffness of the neck which he thought suggested meningitis, but this rigidity was entirely different from the type found in meningitis. It was slight, easily overcome by the patient, and gave rise at most to a sense of discomfort. One patient was said by the nurse to be growing very stiff and rigid, but as a matter of fact there was no real rigidity. The muscles were more in a state of "waxy flexibility," the knee jerks were but slightly increased and ankle clonus was absent.

Skin Eruptions.—One patient during the third week of illness developed a discrete eruption consisting of about twenty pinhead sized petechiae distributed over his arms, shoulders, chest and forearms. These disappeared and were followed by two fresh crops after intervals of a week. This eruption may be of importance since it suggests the possibility that epidemic encephalitis is not a local cerebrospinal disorder but a general constitutional disease. It is not unreasonable to assume that the petechiae were due to the same agent that produced the pathologic changes in the nervous system.

Other Organs.—Involvement of viscera was conspicuous by its absence. The heart and lungs functioned normally except in two instances in which their nerve centers were involved. Only one patient had to be catheterized. There were no bedsores and no other complications.

Spinal Fluid.—Spinal puncture was done in six of the thirteen cases. In all, the fluid was germ free both in cover slip preparations and in culture. The cell count was 6, 26, 27, 46, 50 and 105, the last having occurred in the markedly delirious case described.

Leukocyte Counts.—These were made in only three of the twelve cases, and showed from fifteen to twenty thousand cells in each which corresponds in the main with the observations of others.

DIFFERENTIAL DIAGNOSIS

In typical cases the diagnosis should present no difficulty. The possibility of brain tumor and syphilis are reasonably well excluded by the relatively rapid onset and the presence of fever. Tuberculous meningitis was suggested in some of the cases, but tuberculous meningitis is commonly a childhood disease, and the paralytic phenomena are late and not early manifestations, which is true also of the delirium. Epidemic cerebrospinal fever was suggested in one case by a consultant, but I thought it could be eliminated on clinical grounds, and certainly it was promptly eliminated by spinal puncture. In the delirious cases without double vision, the onset was not unlike that

of other acute infectious diseases, and several days were required before a diagnosis could be made. Ptomain poisoning was a diagnosis made in three cases by the attending physician. All of these patients vomited for a day or two, and all attributed the vomiting to eating canned food. But as other members of the family had partaken of the same food and escaped, it seems to me that the diagnosis was not well founded. Throughout the literature many cases are being reported of cranial nerve palsies following influenza. I think it will be found that most of such cases are really cases of epidemic encephalitis.

PATHOLOGY

There has been only one necropsy among the four fatal cases, and I unfortunately did not see this. Such information as is obtainable from other writers indicates that the lesions are an increase in the cellular elements in the pia-arachnoid and cerebrospinal fluid, that throughout the brain, especially in the gray ganglions and at the base, there is a diffuse perivascular and round cell infiltration with minute hemorrhages not accompanied by necrosis. No organisms have been isolated.

PROGNOSIS AND COURSE OF THE DISEASE

Bassoe had five deaths among twelve cases. Sachs had three fatalities in one group of thirty cases, and five in a second group of fourteen cases. So far four of the thirteen patients whom I have seen have died, and one other is still in danger. Of those patients that appear to have recovered fully, one was in bed five weeks and two weeks later was still weak and tired, though able to be up about the house. Another, whose case had been diagnosed before I saw him as tuberculous meningitis, was able to come to my office in the sixth week. One whose case definitely developed in the second week of October is still bedfast and mentally confused. Of those cases that were fatal, one patient died during the second week, two patients during the third, and the remaining one in the fifth week.

TREATMENT

The treatment must of necessity be symptomatic. Every effort should be made to reduce bodily expenditures to the lowest degree. The patients have to be encouraged to eat, and should be given an abundance of fluid and semisolid food. We are feeding one patient with a nasal tube, finding this easier than to use the ordinary stomach tube. I have given some of my patients salol or hexamethylenamin; but such treatment is empiric.

Selling Building.

Luminous Marking of Ophthalmologic Instruments.—Dr. Alfred Cowan, Philadelphia, writes: The employment of self-luminous paint in place of ordinary paint for marking optical instruments used in the dark room is an improvement. The ordinary letterings on such instruments as electric ophthalmoscopes, the meridians on trial frames, optometers and phorometers, retinoscopic trial cases, etc., are extremely difficult, if not impossible, to see in the dark room. This is all made easy by the application of self-luminous instead of the usual paint. I have had my instruments so lettered, and find that all the old difficulty has been eliminated. It is not necessary to turn on the light to see the marks, and the axes of the trial frame or the numerals on the lenses are just as plain in the total darkness as in daylight. There seem to be several grades of this paint on the market, the better kind, of course, giving greater satisfaction.

THE SIGNIFICANCE OF SOME GENERAL BIOLOGIC PRINCIPLES IN PUBLIC HEALTH PROBLEMS*

RAYMOND PEARL, Ph.D.
BALTIMORE

In the year 1917 there were expended in cities of the United States having 30,000 or more inhabitants, for the general purpose of safeguarding and promoting public health, something over 120 millions of dollars. This included about 78 millions for current expenses, and about 42 millions for permanent improvements, the latter expenditure being essentially in the nature of capital outlay. These expenditures represent the interest on roughly two and a half billions, which, even in these piping times, must be conceded to be a large sum of money. Such an annual outlay of 120 millions is not a large one when reckoned per capita of the population involved, amounting to rather less than $4 per person per year. In the aggregate, though, it is large enough fairly to raise the question as to whether those who pay the money are getting its worth in return. To propound such a question does not per se imply any carping spirit. It may be prompted simply by an honestly inquiring frame of mind, such as that which leads any sensible person to examine into his other and more apparently personal investments. Nor does an honest examination of the fundamentals of public health work imply in the slightest degree any criticism of those public servants who disburse these large sums of money. They are, by and large, sincere and earnest persons trying to do their best. The point which wants examination from time to time is that which relates to the underlying principles of public health work. Why is it done at all? Are all phases of it equally worth doing?

The motives which have led, by gradual but ever larger steps, to the expenditures of such vast sums of money to the end of improving the public health have been various, partly conscious and partly unconscious. Perhaps the chief motive finds its roots in the most fundamental of individual biologic instincts, that of the prolongation of the individual life to the greatest possible extent. With the development of general knowledge and intelligence about medical and hygienic matters, it became clear to any thinking person that two factors of high importance, to say the least, in the determination of his own individual expectation of life were: on the one hand, the kind of environment, particularly in respect of sanitation, in which he had to live; and on the other hand, the behavior, in respect chiefly of personal hygiene, of the people with whom he had to associate. The relative importance of these two factors in determining how long the average citizen was likely to live has progressively increased, at a rather alarmingly rapid rate, with the ever-increasing urbanization of the population. So long as John Doe and Richard Roe lived on widely separated farms, it mattered little to Richard if John's well came to harbor typhoid bacilli. But when both John and Richard got their drinking water from the same city reservoir, it was of vital concern to both if this supply became contaminated. Again, it was a matter of relative indifference to John if Richard had phthisis and freely exer-

* Papers from the Department of Biometry and Vital Statistics, School of Hygiene and Public Health, Johns Hopkins University, No. 9. Read before the American Society of Naturalists, Dec. 30, 1919, in a symposium on "Some Relations of Biology to Human Welfare."

cised the inalienable expectorationary rights of every freeborn citizen, so long as he could keep a mile or so away in the business of tilling his acres. But the case took on a very different aspect when both had to go to and from work in the same street car and sit side by side at the same factory bench. Then John wanted Richard coerced in respect of his personal habits. It is to attain such ends as these that we permit ourselves, if not with enthusiasm, at least with passable equanimity, to be taxed so that the great expenditures I have described may be made for public health purposes.

THE TEST OF SUCCESS OF PUBLIC HEALTH PROGRAMS

Man is easily seduced by *a priori* reasoning. Any program which can be shown to be logical, and which on a basis of logic alone seems calculated to yield desired results, will be embarked on by the vast majority of human beings with furious ardor. Only long afterward does it occur to any considerable number of people to try whether or not in fact, as distinct from logic, the program is yielding the results it was expected to. Few realize the literally awful dangers of logic. Every college student, at least, should be compelled as a prerequisite to graduation to read F. C. S. Schiller on the subject.

Now, the underlying ideas of almost any public health program are so seductively logical that it is only in the most recent times that any one has attempted in any systematic and strictly objective way to see what the program is in actual fact accomplishing. As so very often happens, it appears that there are some discrepancies between what logically ought to happen and what actually is taking place in public health work. In a broad way, the purpose of public health measures is to reduce the death rate by reducing the incidence of disease. In respect of only four causes of death can the program be regarded as having been conspicuously successful when carried out according to the *a priori* logic of the situation. These four are smallpox, typhoid fever, yellow fever, and malaria. Wherever there is a properly organized and vigorous public health service, these are now negligible causes of mortality. A fifth disease, diphtheria, might be thought worthy of inclusion, but from a public health standpoint the case is different. The great achievement with diphtheria has been in the direction of the cure, not the prevention of the disease. But what of other causes of death? In this country more people die of pulmonary tuberculosis than from any other single cause. The causal organism of this disease is perfectly well known. Yet what of its death rate? Pearson has for some years been studying pulmonary tuberculosis. In a paper recently published,[1] he brings up to date his results on the course of mortality from this disease in England during the last seventy years. Let me state his conclusions in his own words:

> From '65 to about '95 there was a continuous and rapid fall in the *corrected* phthisis death rate, and also in the percentage which the deaths from phthisis were of all deaths. I further indicated that from 1895 onwards there had been a check to this rapid fall and that the curves seemed to indicate that an actual rise in the phthisis death rate might in the near future be reasonably anticipated. This view was rendered still more probable when I plotted the returns for 1910 to 1914.

He now presents diagrams down to 1918, and reaches this cautious conclusion:

> On the whole, it is risky to form a very definite judgment; but having regard to the female phthisis death rate and to the percentage of the phthisis death rate on the general death rate, war difficulties do not seem to me sufficient to obscure the general trend of our graphs (as indicated before the war), namely, that somewhere about 1915 the fall in the phthisis rate which had been less rapid since 1895 would cease altogether and probably be followed by a *rise*. The next five years will show whether this be true or not. We should expect a fall in the phthisis death rate immediately, but on the average the value will remain higher than that of 1915.

Studies, as yet unpublished, which my colleague Dr. W. T. Howard has made of the phthisis death rate in Baltimore during the past ninety years, lead to substantially an identical conclusion.

I have recently[2] arranged the statistically recognized causes of death in an organologic classification. The results show that, comparing the two quinquennial periods, 1901 to 1905 and 1906 to 1910, the death rate from all causes assignable to the alimentary tract and associated organs concerned in metabolism fell only 1.8 per cent.

FUNDAMENTAL CAUSE OF HIGH DEATH RATES

Such results as these indicate that we are far from having attained that degree of knowledge of the causal factors in the incidence of morbidity and mortality which alone can make possible effective control. Careful study of the matter has convinced me that frank recognition and intensive investigation of the fundamental biologic factors in the problems of public health are essential to further real progress toward their solution. Time is lacking to go here into the reasons which have led to this conviction. What I shall try to do rather is to illustrate my meaning by a concrete example, not perhaps of great importance in itself, but significant as indicating the desirability of considering certain general biologic principles in dealing with public health problems.

The influenza epidemic of 1918 was unprecedented in its severity. Serious as had been earlier outbreaks of this disease, no one of them, so far as records exist, ever approached, not to say equaled, the 1918-1919 pandemic in destructiveness. If one, however, took the trouble to examine the statistics of mortality of last year's epidemic with some care, it became at once apparent that there existed an extraordinarily high degree of variation in respect of the magnitude of the death toll which different communities paid. Not only was there great variation in the rates of mortality incident to the epidemic, but also different communities exhibited marked diversities in respect of every other measurable characteristic of the epidemic, such as: (1) the general form of the mortality curve measuring the degree of explosiveness of the outbreak; (2) the maximum peak mortality rate; (3) the dates of the several mortality peaks; (4) the number of distinct mortality peaks; (5) the time elapsing between the several peaks of mortality, and, (6) the total duration of epidemic mortality.

This observed variation in the characteristics of the mortality induced by the epidemic in different localities seemed to me to constitute one of the most fundamental problems of the epidemic, and about a year ago

1. Pearson, Karl: The Check to the Fall in the Phthisis Death Rate Since the Discovery of the Tubercle Bacillus and the Adoption of Modern Treatment, Biometrika **12**: 374, 1918.

2. Pearl, Raymond: Certain Evolutionary Aspects of Human Mortality Rates, American Naturalist, to be published.

I undertook an intensive investigation of the facts in about forty large American cities for which data were available by weeks.[3] This study is still in progress, but certain definite results have been obtained[4] which I should like briefly to discuss here.

The problem presented itself in clean-cut form. Why did there exist such an extraordinary degree of variation between these cities in the force of the epidemic? The epidemic was universal in its distribution, certainly in large cities. Yet some showed only a relatively slight effect of its presence in their mortality curves, while others were visited with the most appalling destruction of life. An appropriate means of attacking the problem was ready at hand in the method of multiple correlation, a method which combines certain of the most essential epistemological advantages of the experimental method with the advantage of using historical statistical records.

The most obvious point to test first was whether the differences between the several cities in the explosiveness of outbreak of the epidemic (this being the first of its biometric characteristics studied) could be accounted for by the ordinary demographic and environmental differences existing between them. An analysis of the facts relative to geographic location, age constitution of the population, density of population, and rapidity of growth of population in recent years showed immediately and conclusively that these factors had absolutely nothing to do with the variation in the epidemic. Furthermore, unpublished observations on the restrictive and repressive measures used in various communities, such as prevention of public gatherings and compulsory wearing of masks, show that none of these measures had the slightest influence on the course or severity of the mortality. Plainly the search for factors causative of the variation in epidemic mortality must be directed to channels other than those.

In a further attack on the problem, attention was turned to the normal death rates of the several cities; that is, the death rates from various causes which prevailed in these cities before the outbreak of the epidemic. The results were startling. It was found, first of all, that there was a very high correlation between the explosiveness of the outbreak of epidemic mortality and the normal death rate from all causes in the same community. This correlation was made even higher by correcting for, by making constant the chief environmental and demographic differences in the several cities.

In the make-up of the death rate from "all causes," a very small number of diseases play a preponderant part. For example, phthisis and the pneumonias alone account for rather more than a quarter of all deaths organologically classified. Approximately ten causes of death are responsible for over 65 per cent. of the total mortality. These facts at once suggest that the next step in our analysis is to find what particular causes of death are responsible for bringing about the observed high correlation between the rate for all causes and the explosiveness of the epidemic. A somewhat systematic survey along these lines was made by the method of multiple correlation.

Without going into details here, the general outcome may be thus set forth: It was found that the explosiveness of outbreak of influenza epidemic mortality was correlated to high degree, after correction for various environmental and demographic differences, with the three great causes of death, namely, tuberculosis of the lungs, organic diseases of the heart, and acute nephritis and Bright's disease, which are primarily dependent on the functional breakdown of one or another of the three fundamental organ systems of the body, the lungs, the heart and the kidneys. Explosiveness of outbreak of the epidemic mortality was only slightly or not at all correlated with the normal death rate from infectious diseases, such as pneumonia, endemic influenza itself and typhoid fever. Further unpublished studies have shown that the total excess mortality from the epidemic, measuring the total number of people who died, is highly correlated with our index of explosiveness of outbreak.

From a broad biologic point of view, these results seem to me to have great significance. The investigations of Pearson, as well as unpublished studies of my own, now unfortunately destroyed but susceptible of repetition, have shown with the greatest force and clearness that the incidence of pulmonary tuberculosis is determined to a very large, if not a paramount, degree by constitutional or hereditary factors rather than by environmental factors. Organic diseases of the heart, and acute and chronic nephritis are recognized by the medical profession as primarily "organic" diseases, in which the constitutional factor is regarded of relatively great importance as compared with such diseases as pneumonia or typhoid fever. Our biometric analysis demonstrates that populations particularly subject to these constitutional diseases were the populations which were least able to withstand the onslaught of an especially virulent epidemic.

The conclusion stands near at hand, not proved but strongly indicated by the evidence now available, that the primary factor in causing the observed variation between different communities, in respect of reaction to the influenza epidemic, was the biologic constitution or organic fitness of the people making up the populations of these communities. Communities in some degree organically unsound, as indicated by relatively high normal death rates from phthisis, organic heart diseases, and nephritis, were less able to meet successfully the attack of a vicious epidemic invader than were those in which these biologic conditions did not exist.

BIOLOGIC NATURE OF PUBLIC HEALTH PROBLEMS

The whole investigation seems to me to illuminate and throw into strong relief the essential point at which this paper is aimed. The great outstanding problems of public health are really broad biologic problems, which can never be satisfactorily solved until they are looked at on this basis, nor until ascertained general biologic principles have due consideration in their study. In particular, it must be recognized that heredity imposes a hard and fast limitation on the effectiveness of palliative or control measures in public health. What is particularly needed, as an essential and integral part of the science of the etiology of disease and of public health doctrine, is a basic collection of organized and digested facts regarding the inheritance of the diatheses of various important diseases, notably phthisis, the pneumonias, and heart and kidney affections. Such a body of knowledge can be acquired in only one way: by the slow, laborious, painstaking

3. Weekly Health Index, Bureau of the Census.
4. Pearl, Raymond: Influenza Studies, I, On Certain General Statistical Aspects of the 1918 Epidemic in American Cities, Pub. Health Rep. 34: 1743 (Aug. 8) 1919.

accumulation of data regarding family histories by specially trained field workers, and the searching analysis of such records by biologists and clinicians thoroughly trained in quantitative methods of research. Investigations of this sort on tuberculosis are being actively prosecuted in my department of the School of Hygiene and Public Health of Johns Hopkins University with the support of a grant made for the purpose by the National Tuberculosis Association. It is hoped that means will be found shortly for extending this type of work to other diseases.

Broadly speaking and with some notable exceptions, the medical man has no real understanding whatever of heredity in the sense that the modern geneticist knows it. He has an infinitely less firm grasp on the matter than his forebears a century ago had. They appreciated in some degree at least the importance of the constitutional factor in the causation of disease and acted in accordance with that appreciation. Then came the wonderful development of bacteriology, which had, among its many desirable results, the unfortunate one of swinging the pendulum of medical thought far off the sound general biologic pathway. Pearson has had the good sense and the moral courage to point out in characteristically vigorous terms the consequences of the domination of too narrowly bacteriologic doctrines, so far as one particular disease, pulmonary tuberculosis, is concerned.

Whatever of blame there may be in this departure from the path of sound scientific development in the broad sense attaches by no means solely to the medical profession. The biologist is as much or more at fault. Immured in the depths of his laboratory cultivating his particular narrow specialty, he has tended to behave as though biology as a science had no concern with the problems of life. He recognizes, if compelled by cross-examination to do so, that the pressing problems of mankind—social, political, medical, public health, and all the rest—are fundamentally biologic problems. But his behavior, except in the rarest instances, does not indicate that it has ever occurred to him that if the scientific method means anything at all, he of all men should not only be able, but should also regard it as his highest privilege and duty, to contribute from that portion of the storehouse of ascertained scientific fact and principle of which he is custodian and trustee to the sound solution of these problems. If I seem to speak warmly and feelingly on this subject, it is because nearly fifteen years' experience in two of the great applied biologic sciences has led to deep convictions in my mind on this subject. When I see millions of dollars literally thrown away each year on charitable and public health activities—which every trained geneticist, if he but used the analytic powers of his mind to the same good purpose that he does in his laboratory, could demonstrate to be futile, because of the limitations which known facts of heredity place on these well-meant endeavors—I am appalled and disheartened at the spectacle science permits to be made of itself.

In less pessimistic moments, however, one finds real encouragement in the fact that, as I believe, times are slowly but steadily changing for the better in this regard. More and more it is being recognized that an intelligent interest in human and vital problems need not necessarily and automatically subject an otherwise orthodox biologist to the scorn and contumely of his professional colleagues. And furthermore, all sorts of people, business men, labor leaders, administrators and politicians, are beginning to realize vaguely that science, and particularly biology, has discovered and knows some general principles which might, and probably practically would, be of use to them in trying to solve their problems. The biologist has made the mistake of not letting other people realize, and perhaps indeed of not himself clearly realizing, how much he is able to contribute of sound usefulness to the intellectual, social and moral welfare of mankind, as well as to his purely physical well-being. With the development of consciousness of profession, which is taking place ever more rapidly, it is confidently to be expected that his council will be more often asked, heard and heeded than has been the case in the past.

THE TEACHING OF THERAPEUTICS

HOBART AMORY HARE, M.D.
Professor of Therapeutics, Materia Medica and Diagnosis, Jefferson Medical College of Philadelphia

PHILADELPHIA

I am writing this paper because I am hopeful that it may direct attention to what is a crying fault in medical education today, namely, the neglect of teaching students how to treat patients for the alleviation or cure of disease. I am hopeful that some good may come of it because the Council on Pharmacy and Chemistry of the American Medical Association for years past has been endeavoring to inform physicians regarding the use of proprietary products and to persuade them to prescribe drugs, proprietary or not, intelligently.

The work that the Council has done is, of course, praiseworthy in intent, and is good as far as it goes in one line, to wit, to improve medical practice among graduates; but the prime difficulty lies in the teaching of practical therapeutics to the undergraduate and to the hospital intern. This embryo practitioner in almost every medical school has no training in pharmacy, little or no training in the use of the official names of drugs or of their doses, and no training whatever in the fact that doses of different sizes, although they be of one drug, may be useless, useful or harmful, or become so after some days. He, therefore, enters practice utterly at sea when he is called on to write a prescription.

I have known of eye drops to be ordered by the quart, oleoresins mixed with aqueous solutions, powerful alkaloids, such as strychnin, put in a mixture with potassium iodid, whereby nearly all the strychnin went into the last dose, and a host of other errors too numerous to mention. I have seen a thousandth of a grain of arsenous oxid given three times a day to an adult, and a grain of atropin put in each pill; and no druggist exists who, if diplomacy did not restrain him, could not humiliate almost every physician whose recipes come to his shop. Because the medical man knows nothing of the bulk of drugs or the most efficient vehicles, or excipients, he takes the easiest way out of his dilemma and orders products already prepared, which products are often the result of much experience and scientific pharmacy.

The remedy for all this is to have every student make in a pharmacy laboratory at least one representative of each class of preparations official in the Pharmacopeia and the National Formulary. I believe that

this is done in only one school of medicine in the United States.

The young graduate, having had no experience or teaching as to doses, naturally uses doses that some commercial laboratory names. He may have been taught "doses," but he has no idea that small doses of digitalis may be useful in one case, whereas almost toxic doses may be absolutely essential in another, and so loses the patient that needed the large dose. He uses the compound mixture of licorice as a vehicle in a case of profuse bronchorrhea or threatened pulmonary edema, not knowing, or forgetting, that its most active ingredient is antimony, which is absolutely contraindicated.

When he becomes an intern in a hospital, he learns one thing of great importance, namely, that the chiefs who prescribe little and "let the patient get well" often obtain the best results; or if he is on a surgical service, the entire drug therapy may be in his hands, and the chief often boasts that he "knows nothing about drugs and don't want to." On the medical side in large hospitals he will find a hospital formulary from which mixtures are made up by the gallon with all sorts of drugs, and contradictions, with widely varying doses of the ingredients; but there is a standard dose of the whole mess whether it be for a young girl of 16 weighing 100 pounds or an old rounder weighing 200 pounds. Not only this, but these mixtures go by names which often do not mention the most active ingredient or, worse still, go by numbers, so that the order on the treatment card reads: "No. 23, dessertspoonful t. i. d."

The fault does not stop with internship. Never having been taught practical therapeutics, the man steps into practice a fair mark for the loquacious traveling salesman who places him in the vocative by being familiar with what he ought to know. Some years ago, telling a distinguished ex-President of the Association that a patient was getting acetphenetidin, I found he did not know it was phenacetin. When he was told that the first term was the official one, he laughed and admitted that he had asked a student what he would use in a given case, and the reply was "phenol." The clinician "long" on pathology but "short" on therapeutics then informed the astonished youth that "phenol was no doubt very good, but carbolic acid was better."

PROPER METHOD OF TRAINING THE STUDENT

The remedy for the state of affairs just described is in teaching and experience when a student. This, in my experience, which is a fairly large one, is best accomplished by having the student, in his course, not only taught doses by rule of thumb, but also given the opportunity to prescribe for suppositive or actual cases, and to see the results of his order, both as to the prescription itself and as to its effect on the patient. Under the direction of an assistant professor the whole class may attend a therapeutic conference, or quiz, on the treatment of a given class of diseases, and during the conference several of the men who advise plans of treatment are called to blackboard to put in black and white what they have suggested. When they have finished, the instructor, who has continued his quiz in the meantime, criticizes the pharmacy, the doses, the form, the combinations, the therapeutics and the quantity in the whole prescription, as well as the Latin.

The number of occasions on which such criticisms lead to howls of delight at the discomfort of the man at the blackboard may be subversive of discipline, but all hands remember how John Jones wrote for nitrohydrochloric acid, iodid of potassium, tincture of gentian and tincture of iron in a quart of water, particularly if the mixture is prepared forthwith.

This large class teaching is driven home by a junior teacher taking the class in sections and having it spend one or two hours a week for several weeks writing prescriptions, for suppositive cases, which are then criticized, and the writer asked to give his reasons for using each remedy.

The regular medical ward classes should emphasize therapeutics; and, in addition, clinical, not laboratory, pharmacology should be taught. This is done by demonstrating a case of auricular fibrillation both at the bedside and with the electrocardiograph, and then giving full doses of digitalis, a second demonstration revealing the effects. So, too, the mode of action of atropin in partial or complete heart block is demonstrated, and the effects of nitrites in lowering pressure are taught by seeing a patient today with high pressure and again at the next visit with a reduced pressure. Any number of these therapeutic demonstrations can be made by the regular ward class teacher, and made still more useful if a demonstrator of clinical pharmacology who can use the polygraph and electrocardiograph is given proper hours. By this means the student is taught how drugs act and how various doses act, entirely apart from the didactic lectures on therapeutics or the general therapeutic clinics given by the head of the department, who deals of necessity with principles and practice.

FAULTS IN PRESENT METHODS

All this seems so obviously practical that the question arises, "Why is it not done?"

The answer is that there is not time. If there is not, why not? There is not time for two chief reasons. The first is that the student is taught too much of the special part of the specialties, many of which he will never attempt to practice; and unless he takes a postgraduate course after several years in general practice, he ought not to try to practice. At present the young graduate can talk learnedly of the difference between paralytic and concomitant squint or about the Bárány test, but is stumped when told to write a recipe for diarrhea.

The second reason is that the laboratory of pharmacology has drowned practical therapeutics, and has done it so effectively that in most schools literally no bedside therapeutics as a separate branch is taught, the original chair of therapeutics being filled by a laboratory pharmacologist who in some instances is not even a doctor of medicine, or if he has the degree of M.D. has never practiced a day in his life or even been an intern in a hospital. When he attempts to tell students bedside facts, it is as if he were an astronomer trying to teach a sailor how to navigate a ship without ever having been to sea. As he lacks bedside experience, he teaches, for example, that the best treatment of fever is a combination of the cold bath and coal tar antipyretics, when every one who practices knows that this is a great error. It is enough to bring the gray hairs of Dr. Simon Baruch, the great apostle of hydrotherapy, in sorrow to the grave, and if carried out will bring many patients there.

Valuable time which should be spent at the bedside learning how to use drugs is employed in having students carry out pharmacologic technic in a course of six or eight weeks or their equivalent. It is safe to say that not one man in a thousand who takes this course becomes a pharmacologist or learns to be an efficient technician. What the student needs is not to do the experiments himself but to see them done by a man so well trained that results are produced that make a demonstration that really demonstrates the fact to be remembered. I can see no more reason for making a group of students, designed to be practitioners, make bungling experiments with a Kronecker-Bowditch heart apparatus than I can for their performing amputations and visceral operations on dogs or cats with the idea that they will become good surgeons; indeed, there is less reason. One cannot make a man who has no music in his soul a violinist in a six weeks' course, and probably it is safe to say that the majority of excellent physicians have not the qualities which produce original contributions to medical knowledge.

NEED FOR THE TEACHING OF PRACTICAL THERAPEUTICS

To quote Sir George Makins,[1] in an address to the Medical Society of Manchester:

> A survey of these considerations should exert a definite influence upon the determination of the nature of the course of education best suited to the development of the doctor upon whose efficiency the happiness and health of the nation so largely depends. It is clear that for the great bulk of the profession a path must be found by which advances in science are utilized for the perfection of the art of medicine, but it cannot be possible to elevate every medical man to the position of an apostle of pure science . . .
>
> All men are not endowed with a truly scientific spirit; the power of evolving great principles is reserved to the few, and even the correct appreciation and application of those which have been laid down is not a faculty universally enjoyed. Again, the power of reasoning, the possession of initiative and invention, and the facility of developing technical skill, are qualities very unevenly distributed amongst the class of man who adopts medicine as his profession. The reasons which lead to his choice are by no means always governed by the degree of aptitude he possesses for the calling he decides to follow. To some the science of medicine appeals; some adopt medicine from the lofty motive of desiring to benefit mankind; some boys are born to succeed to a family practice; some become students of medicine because the choice coincides with that of a friend; in some business capacity is nil; in others it is the mainspring of the future career and dominates all other feelings or aspirations. Lastly, in not a few instances the initial choice has never been made the subject of serious thought or consideratiin.

My point is not that there should not be teachers of pharmacology. On the contrary, there should be, because it is only by the efforts of these men that the scientific or investigative side of therapeutics can be advanced and the errors of empiricism corrected. Their existence develops those who have the talent, initiative, the power of proper deduction and the love of investigation, and their methods of thought and mode of study are examples of the highest type of medical man; but in their enthusiasm they should not forget that 999 of their pupils want to know how to make the sick well and do not want to know by personal experiments on dogs the effect, for example, of cutting the animal's sympathetic on the action of cocain on the eye. If this is to be taught, let the pharmacologist make the experiment and demonstrate the result.

It may be said that I do not know whereof I speak; but I do, for I was once a pharmacologist myself. In the eighties I worked in laboratory pharmacology, and taught it too, as a somewhat long list of titles in the Index Catalogue will show. I am not an iconoclast, and no one rejoices more than I do that the only pharmacologic laboratory in the United States in 1886 has been followed by two score of such laboratories from which a wealth of wonderful work has originated; but it is *postgraduate work*. I am pleading that hours now used otherwise may be employed to teach not only the theory but also the practice of therapeutics. When this is done, the work of the Council on Pharmacy and Chemistry will be helped to its completion; for when the practitioner knows how to prescribe, he will not tolerate the commercial concern that poses as his teacher.

The closing paragraph of a recent editorial[2] has a bearing on this subject. I have substituted the word "pharmacologist" for "physiologist," and "pharmacology" for "physiology":

> It is quite possible that, as has been suggested, we are approaching the time when there will be two types of persons connected with each clinical department, namely, the clinical pharmacologist, whose chief work will he the intensive study of selected groups of cases and the instruction of students in the application of the principles of pharmacology to the elucidation of disease, and the clinician, whose chief function will be the care of the patient and the instruction of the student in the practical methods of diagnosis and treatment. Obviously, some arrangement already exists in some of our better schools. In institutions in which full time medicine has been introduced, there has been a distinct effort to appoint as heads of the clinical departments men of the investigative type. One question that Addis' discussion raises is whether in our enthusiasm for laboratory research we have not overlooked the importance of purely clinical investigation and of the type of physician that naturally tends toward this.

At present an attempt is made to make pharmacologists out of men who are going to practice medicine. A real pharmacologist is a highly educated man in physiology and chemistry, an investigator, a discoverer, and by rights a leader in the higher realms of therapeutics—one who should teach medical students how drugs can be studied and should be studied in the laboratory, and to determine fundamental facts about remedies. But to try to train the general run of students, who will never have a laboratory, to be pharmacologists without first teaching elementary practical therapeutics is somewhat like a great opera singer trying to make every one a great singer, or as if one should attempt to make his infant son sing before he tried to teach him to walk. The use of instruments of precision necessary for the study of drugs, if taught at all, should be at the bedside. I repeat what I said above: The lack of training as to what to do, what not to do, and when to do, as to remedies, is one of the weak spots in medicine today. I firmly believe that if the present generation of students is properly taught practical therapeutics, the chief labor of the Council on Pharmacy and Chemistry will be an accomplished fact, for the right way will be the easiest way. Let us first make good physicians and from these may be sifted out those who can and want to become laboratory pharmacologists.

1. Makins: Brit. M. J. 2: 590 (Nov. 8) 1919.

2. The Teaching of Clinical Medicine, editorial, J. A. M. A. 74: 35 (Jan. 3) 1920.

THE EFFECT OF FOOD RESTRICTION DURING WAR ON MORTALITY IN COPENHAGEN

M. HINDHEDE
COPENHAGEN, DENMARK

As I have already pointed out,[1] the blockade placed the people of Denmark in a very serious situation. We had been importing more than half of our bread cereals and a very considerable amount of corn and oil cakes for the use of domestic animals. While Denmark had only half as large a supply of rye and potatoes per capita as Germany, Denmark had proportionately twice as many domestic animals. The reason for this advantageous state of affairs was that the committee which had charge of proportioning the crops between man and animals (April 4, 1917) was converted to the newer ideas on nutrition.

1. No attention was paid to the protein minimum; it was held that this minimum was so low for man that it could not be reached, provided sufficient calories were furnished.[2]

2. While fat was regarded as a very valuable addition to the dietary, it was not considered as being necessary.[3]

3. Bran was considered to be a very valuable food, one which was well digested by man.[4]

As research had also shown that man can retain full vigor for a year or longer on a diet of potatoes and fat and for half a year or more on a diet of barley and fat,[5] reliance was placed on our potatoes and the large barley crop, which was given to man and not to the pigs, as heretofore, with the result that the pigs died of starvation, but the people received sufficient nutrition. Furthermore, we ate all our bran ourselves. We not only ate whole rye bread, but we mixed all our wheat bran with the rye flour and were able to bake good bread in this way. The Germans were unable to bake good rye bread. Their bread was too sour and too soggy. We were fortunate in having had more than a hundred years of experience in this direction. Our principal foods were bran bread, barley porridge, potatoes, greens, milk and some butter. Pork production was very low; hence the farmers ate all the pork they raised, and the people of the cities and towns got little or no pork. Beef was so costly that only the rich could afford to buy it in sufficient amount. It is evident, therefore, that most of the population was living on a milk and vegetable diet. As the potato and barley dishes were not "to Mr. Sorenson's liking" (Danish expression) to the same degree as meat, "he" ate less than before, and hence often lost weight.

The Danish food regulation was a most interesting problem for me. It was a low protein experiment on a large scale, about 3,000,000 subjects being available. What was the result? What was the effect on the health of the people? What was the death rate? At a later time I hope to be able to report on the death rate for both sexes, at different periods of life and from various diseases. In the accompanying table I give some data on the numbers of deaths per 10,000 population in Copenhagen, between the ages of 25 and 65 years.

Food restrictions were initiated in March, 1917, and by October, 1917, they had become very severe. Therefore, my calculations embrace a year beginning and ending October 1. I could not continue my studies after October, 1918, because of the epidemic of influenza then existing. The death rate, as is known, has decreased in the last decades, as the result of a fall in the rate for epidemic diseases and tuberculosis. The cause of these diseases being known, we are able to combat them successfully. The deaths for all other diseases have been practically the same since 1900 or even earlier than this. Placing the average for the period from 1900 to 1916 (109) at 100, the variation (ratio) is small, from 93 to 107, until food regulation began. During the year of severe regulation, it fell to 66, a decrease of 34 per cent. It would seem, then, that the principal cause of death lies in food and drink. It must be remembered in this connection that we took the cereals and potatoes from the distillers so that they could not make brandy, and one half of the cereals from the brewers, so that the beer output was reduced one half. Is it possible that this reduction in the output of alcoholic beverages is wholly responsible for the lower death rate? This question cannot be answered; but beyond a doubt while the lessened alcohol consumption is a great contributing factor to the lowered death rate, it is not the only one. The death rate for women has also been lowered 17 per cent. in the four year period 1910-1914. It is difficult to imagine that women consumed so much alcohol that this reduction in the death rate among women is to be charged solely to greater abstention from alcoholic beverages.

NUMBER OF DEATHS PER TEN THOUSAND MEN BETWEEN THE AGES 25 AND 65

Year	All Diseases	Epidemic Diseases and Tuberculosis	Other Diseases	Ratio
1900	152	46	106	97
1901	151	41	110	101
1902	131	30	109	100
1903	142	34	108	99
1904	137	36	101	93
1905	148	41	107	98
1906	144	33	111	102
1907	145	31	114	105
1908	152	35	117	107
1909	142	31	111	102
1910	135	26	109	100
1911	148	32	116	106
1912	138	30	108	99
1913	130	28	102	94
1914	133	27	106	97
1915	134	26	106	97
1916	145	35	110	101
1917	123	33	90	83
1917-1918*	99	27	72	66

* From Oct. 1, 1917, to Oct. 1, 1918.

The death rate for Denmark for the year October, 1917, to October, 1918, was 10.4 per thousand. It never had been lower than 12.5 (1913, 1914). A difference in the death rate of 2.1 per thousand for a population of 3,000,000 means a saving of 6,300 lives. Hence, the saving of lives in Denmark as a result of the allied blockade was considerable.

This result was not a surprising one to me. Since 1895, when I began my experiments with a low protein diet (mostly vegetarian), I have been convinced that better physical conditions resulted from this standard of living. It may be said that a vegetarian diet is a more healthful diet than the ordinary diet. As the

1. Hindhede, M.: Ugesk. f. Læger **81**: 183 (Jan. 30) 1919; abstr. J. A. M. A. **72**: 1198 (April 19) 1919.
2. Hindhede, M.: Skand. Arch. f. Physiol. **30**: 97, 1913; **31**: 259, 1914.
3. Hindhede, M.: Skand. Arch. f. Physiol. **30**: 78, 1913; published in German in 1919. Research was begun, Aug. 25, 1916. By April 4, 1917, after nine months' experience with a fat free diet, we were convinced that adults could live without fats, provided they were given greens.
4. Hindhede, M.: Skand. Arch. f. Physiol. **33**: 59, 1915.
5. Hindhede, M: Skand. Arch. f. Physiol. **35**: 294.

result of extensive studies in this field I am convinced that overnutrition, the result of palatable meat dishes, is one of the most common causes of disease.[6] I agree with McCollum[7] that:

> Lactovegetarianism should not be confused with strict vegetarianism. The former is, when the diet is properly planned, the most highly satisfactory plan which can be adopted in the nutrition of man . . . The only successful combination of natural foods or milled products for the nutrition of the animal are: (*a*) combinations of seeds or other milled products, tubers and roots, either singly or collectively, taken with sufficient amounts of the leaves of plants; (*b*) combinations of the foodstuffs enumerated under (*a*), taken along with a sufficient amount of milk to make good their deficiencies.

I wish to call attention to the unusual amount of bran consumed by the people of Denmark during the period of food restriction. In other countries, for example, Germany, Holland and Norway, the question was discussed whether grain should be milled to yield 70, 80, 90 or 94 per cent. of bolted flour. We not only milled our rye to 100 per cent. but, profiting by previously made experiments, we added all our wheat bran to the whole rye bread; and as we added also 24 per cent. of barley meal (milled to 95 per cent., only the coarsest shells being removed) we had more than twice the amount of bread we would have had if we had milled only to 70 per cent. As the difference in digestibility was only 9 per cent. (94—85) we got about twice the amount of digestible bread. And, be it emphasized, we could bake good bread with this mixture. People entered no complaints; there were no digestive troubles, but we are accustomed to the use of whole bread and we know how to make such bread of good quality. If further proof were needed, this war experiment on such a large scale has demonstrated that bran is excellent food.

These findings agree with those of Osborne and Mendel.[8] These investigators found that bran is a very good food for rats, and that mixed with white flour it can take the place of meat and eggs. Their results lead me to conclude—if I may be permitted to apply results obtained on rats to human beings—that: As bran can replace meat and eggs, man should eat whole bread and not so much of the more costly foods. Mendel concludes contrariwise: As people eat enough of meat and eggs, "no practical advantage on this score can be expected by converting the entire grain into flour." In my opinion, Mendel not only overlooks the economical question, but also that there are good reasons for believing that a diet composed mostly of meat, eggs and white bread—a common diet of the well-to-do—is far from being a healthful diet. Even in the case of rats, a meat diet seems eventually to be harmful. Although rats can thrive quite well on a meat diet—which man cannot do—the young of meat fed rats seldom survive.[9] The fact of the matter is that it is claimed that rats, like human beings, will not choose an exclusive meat diet from natural instinct. That statement does not, however, apply to the rat. Watson says, on the basis of his numerous experiments on rat feeding: "I have never seen a young rat which would look at porridge or milk if meat was available." I have seen "human" rats who would not eat porridge when beefsteak was available! And we know that beef, in large amount, is not good food for either man or rat.

While not all readers will agree with what I have said, no one can dispute the fact that the people of Denmark have no cause to regret that during the war their diet consisted mostly of milk, vegetables and bran. If Central Europe had adopted a similar diet, I doubt that any one would have starved. It seems to me, however, that the German scientists, as represented by Rubner, have not learned anything from the war. Rubner[10] writes about the "necessity of bringing the supply of live stock up to the prewar basis. . . . From what I have stated, it follows that meat products must again form an adequate proportion of our diet."[11] Rubner wants an abundance of meat in order that the people can be "aufgefüttert." I do not agree with him. The people must first have bread, potatoes and cabbage in sufficient quantity, and then some milk. Meat is the last requirement to be met. If the people must wait until pigs and cattle have sufficient food, they will die of starvation one year before they can get an abundance of meat.

Laboratory for Nutrition Research, Copenhagen V.

6. Hindhede, M.: Moderne Ernahrung, Berlin, W. Vohach, 1915; 12. Beretning fra Hindhedes Kontor for Ernæringsundersøgelser, Copenhagen, Jakob Lind, 1919.
7. McCollum: The Newer Knowledge of Nutrition, pp. 52, 81.
8. Osborne, O. T., and Mendel, L. B.: J. Biol. Chem. **37**: 557 (April) 1919.
9. Watson, Chalmer: The Influence of Diet on the Structure of the Tissues, Edinburgh, 1910.
10. Rubner: Schädigung der deutschen Volkskraft durch die feindliche Blockade. Denkschrift des Reichsgesundheitsamtes, Berlin, 1919.
11. "Nothwendigkeit der Wiederherstellung des Viehbestandes. . . . Aus dem gesagten folgt, dass die Fleischnährung wieder den entsprechenden Anteil an der Ernährung nehmen muss."

LOCAL ANESTHESIA IN NEUROSURGERY

WITH SPECIAL REFERENCE TO ITS VALUE IN EVULSION OF THE SENSORY ROOT OF THE GASSERIAN GANGLION

CHARLES E. DOWMAN, M.D.
ATLANTA, GA.

Those of us who were so fortunate as to participate in the medical and surgical work in France during the recent war are often asked the question, "To what extent have the principles and practices evolved by military surgery benefited civil medicine and surgery?"

Without attempting to answer such a broad question, I wish to discuss briefly the use of local anesthesia in neurosurgery, with special reference to its application in the operative relief of trifacial neuralgia, believing that the routine use of local anesthesia in the war wounds of the central and peripheral nervous systems is responsible for its wider application in neurosurgical problems of civil life.

Local anesthesia has been used in certain selected neurosurgical operations for many years, and is therefore in no sense a method which originated during the recent war. For example, Thomas and Cushing[1] reported the removal of a brain cyst under cocain anesthesia after four previous operations under general anesthesia had been abandoned on account of excessive hemorrhage due, presumably, to the fulness of the vessels, produced by the anesthesia. They say:

> Although the undertaking was premeditated, in consequence of our previous unfortunate experience in administering general narcosis to this patient, we must confess to surprise at its successful accomplishment. Contrary to all expectations, the dura proved to be insensitive to such manipulations as were

1. Thomas, H. M., and Cushing, Harvey: Removal of a Subcortical Cystic Tumor at a Second Stage Operation Without Anesthesia, J. A. M. A. **50**: 847 (March 14) 1908.

necessary to open it freely. Only when it was put under tension or displacement was any discomfort occasioned, otherwise it seemed to be absolutely free from sensitivity.

The more general application, however, in the use of local anesthesia in operations for cranial and brain injuries as the result of war wounds was urged by Colonel Gray of the British army in 1917. Also in developing the technic which was responsible for the reduction of the operative mortality from 60 or 65 per cent. to less than 30 per cent. in head injuries with dural penetration, Cushing adopted the routine use of local anesthesia as one of the important steps in the operation.

In a very extensive experience as chief of a neurosurgical team working in the forward area during the St. Mihiel and Argonne offensives, I became thoroughly converted to the use of local anesthesia in brain and spinal cord operations. The advantages were so numerous and the disadvantages so few that I could see no reason why the practice should not be adopted more generally in the operations for neurosurgical conditions as encountered in civil practice.

Since returning to civil practice, therefore, I have used local anesthesia as a routine procedure in all neurosurgical operations, excepting those on children and on extremely nervous adults whose cooperation could not be relied on.

As an illustration of the variety of these operations, this type of anesthesia has been used successfully in subtemporal decompressions, cerebellar decompressions, drainage of brain abscess, elevation of depressed skull fractures, explorations for tumors and cysts through extensive bone-flap operations, laminectomies for spinal cord tumors, peripheral nerve operations, and operations on the gasserian ganglion for trifacial neuralgia.



Fig. 1.—Massive infiltration of scalp and subcutaneous tissues.

With the exception of those cases in which there is evidence of greatly increased intracranial pressure, the routine administration of one-third grain of morphin hypodermically thirty minutes before the operation has been practiced. When the brain is under greatly increased pressure I have felt that it might perhaps be unwise to administer morphin on account of the fact that the medullary centers may already be more or less embarrassed by the increased pressure. Such patients have therefore been given sodium bromid, 20 grains, four times daily for several days preceding the operation. In this connection I was interested to learn in a recent conversation with Sachs of St. Louis that he gives as a routine a preliminary injection of morphin, one-eighth grain, in all brain operations, regardless of the presence of increased intracranial tension, and sees no reason why this practice should be dangerous. In handling brain injuries in France we gave morphin, one-half grain, thirty minutes before operation, and experienced no ill effects from its use. In these cases, however, we seldom had the problem of increased pressure to deal with, as contused brain had already escaped through the open dura, thereby preventing to a certain degree the same pressure effect on the brain mass that occurs in traumatic cases with skull and dura intact.

The type of local anesthesia used is a massive infiltration with 0.5 per cent. procain, to each ounce of which have been added 15 minims of epinephrin (adrenalin) chlorid solution (1:1,000). This solution is best made up immediately before each operation. For the sake of convenience the powdered procain may be kept in capsules, each capsule containing 5 grains of the drug. The contents of one such capsule added to 2 ounces of boiling water, plus the addition of 30 minims of epinephrin solution, will give a sterile 0.5 per cent. procain-epinephrin solution of sufficient quantity for the average operation. In extensive operations, however, I have used as much as 6 ounces of such a solution and have never noticed any toxic effects from the drug. Formerly I used a 1 per cent. solution, but later experience has convinced me that the 0.5 per cent. strength is equally as satisfactory. The infiltration is made by a long needle and Luer syringe of at least 20 c.c. capacity, the point of the needle extending just through the scalp above the galea. As the infiltration progresses, the scalp is raised by the underlying fluid and the needle can be further inserted during the injection along the line of the proposed incision. The scalp proper cannot be successfully injected. The infiltration is now extended under the galea and into the muscles in those regions in which muscle is present. If sufficient solution is used and at least fifteen minutes allowed to elapse before the incision is made, the patient does not complain of any pain whatsoever. As a rule no further use of the solution is necessary, provided the initial infiltration has been massive enough. The skull can be entered painlessly, and for ordinary incisions and manipulations the dura seems to be absolutely free from sensitivity. It is well known that the brain itself is devoid of painful sensations; after a painless opening has once been made, therefore, all necessary intracranial manipulations can be done without conscious perception on the part of the patient.

To one who has experienced the manifold trials that attend the average extensive operation of a neurosurgical nature under general anesthesia, and then has noted the conspicuous absence of such trials in patients anesthetized locally, the advantages of the latter method are most marked. In spite of the numerous methods devised for the control of scalp hemorrhage, this is almost always a most troublesome and dangerous factor in brain operations under general anesthesia.

The entire cranial circulation is greatly congested, which gives trouble not only in the scalp but also within the skull, where frequently there will be a persistent oozing from even the smallest vessels, the eventual control of which requires the most painstaking and time-consuming attention. Even after the control of such oozing has been effected, there is great danger of later oozing, with the formation of postoperative hematoma. With the use of local anesthesia, the epinephrin proves an effective hemostatic, so that very few clamps are required. Furthermore, instead of the tremendous congestion giving rise to troublesome hemorrhage most difficult to control, the brain circulation is normal, and such bleeding as might occur is easily and quickly controlled with little or no tendency to postoperative oozing.

The average extensive brain operation under general anesthesia is usually productive of more or less shock. The prolonged anesthesia and the loss of blood are perhaps the greatest factors in producing shock. The anesthesia is usually prolonged because of the great trouble in controlling the hemorrhage. Eliminate

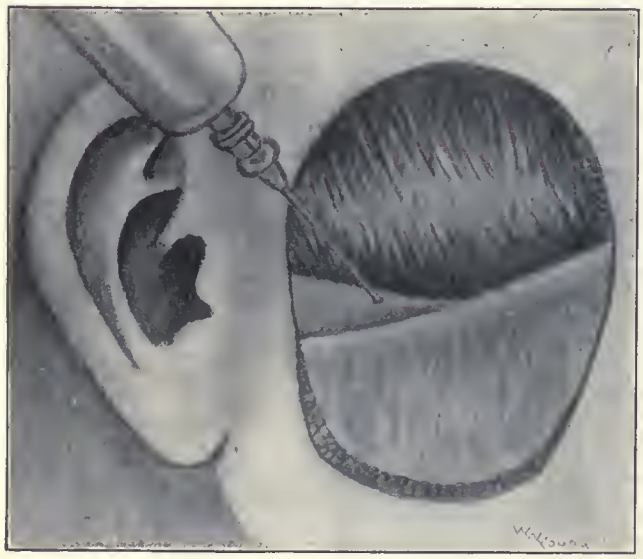


Fig. 2.—Infiltration of the periosteum of the zygoma before resection.

the one, and you thereby eliminate the other. Under local anesthesia these operations are much more quickly done, and the patient rarely ever shows evidence of shock. I have turned down an extensive bone flap and had my patient leave the table with the same pulse and blood pressure as before the operation. I have never had a similar experience with general anesthesia.

There are a certain number of patients (when first seen by the neurosurgeon) whose intracranial pressure is so great as to allow of a very narrow margin of safety in the performance of a simple subtemporal decompression. This margin is undoubtedly made narrower by a general anesthetic. Local anesthesia in such cases permits the safe performance of palliative operations.

As already mentioned, local anesthesia is not applicable to children, or to adults who are very nervous or who are in a condition of noisy delirium or turbulent restlessness. In such patients, any operation under local anesthesia is inadvisable.

Although the dura covering the vertex and lateral surfaces of the brain is insensitive to incisions and careful manipulation, those portions of dura at the base of the brain where there is considerable attachment to the bone are more likely to be sensitive. For this reason, during operative procedures in these regions under local anesthesia, infiltration of the dura is sometimes necessary in order to manipulate it without producing painful sensations.

LOCAL ANESTHESIA IN TRIFACIAL NEURALGIA

Perhaps the most satisfactory operation in neurosurgery is that for the permanent cure of trifacial neuralgia. In the hands of those who are thoroughly trained in neurosurgical technic, the operative mortality in this class of patients should be nil. It is, however, one of the most difficult operations in surgery, and should not, in my opinion, be attempted by the average general surgeon.

Without discussing the many interesting features of trifacial neuralgia, I wish simply to mention the use of local anesthesia in the radical operation for this condition as an illustration of the value of the method in neurosurgical procedures. I have had the opportunity during the past few months of demonstrating the advantages of evulsing the sensory root of the gasserian ganglion under procain anesthesia over similar efforts on etherized patients, and therefore feel justified in being somewhat enthusiastic on the subject.

After a preliminary hypodermic injection of one-third grain of morphin (one-half hour before operation), a massive infiltration of 0.5 per cent. procain-epinephrin solution (according to the method mentioned above) is made in the region of the proposed incision. If the approach of Cushing is selected, the infiltration should begin just over the temporal root of the zygoma and extend as high as the level of the upper border of the pinna, and forward to the posterior border of the frontal process of the malar bone. After thorough infiltration of the skin, the needle should be inserted into and through the underlying temporal muscle so that the solution may be brought into contact with the periosteum of the skull. The skin flap is now reflected downward until the periosteum of the zygoma is exposed. In order to insure a painless resection of the latter, a thorough infiltration of the periosteum can now be done before the subperiosteal resection of the zygoma is attempted. If the fascia and muscle have been sufficiently infiltrated, the incision through these structures and the removal of sufficient underlying skull can be accomplished without pain.

It has been my experience that the dura can be gently retracted and the middle meningeal artery exposed and clipped as it emerges from the foramen spinosum without discomfort. As the mandibular branch of the ganglion is exposed, however, the patient will complain of pain. This should be anticipated by asking the patient to mention the expected painful sensation as soon as it is noticed, with the assurance that after this no further pain will be experienced. As soon as the foramen ovale is reached, the operator has an excellent guide and should then infiltrate the ganglion by inserting the needle into the third branch, injecting the nerve, and further inserting the needle along the nerve directly into the ganglion. One c.c. of solution is usually sufficient completely to anesthetize the ganglion.

From now on the operation can proceed without further pain, the third and second branches and then the ganglion itself exposed, and the sensory root evulsed without any discomfort whatsoever to the patient.

Although I prefer the Cushing method of approach, and have always adopted it, I see no reason why the excellent operation of Frazier could not be done equally as satisfactorily under local anesthesia. The infiltration, should the Frazier approach be adopted, must

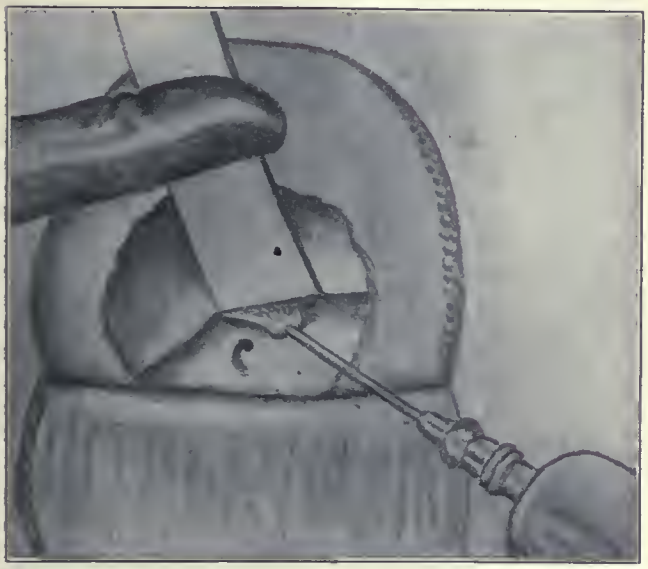


Fig. 3.—Infiltration of the gasserian ganglion, the third branch being used as a guide after exposure of the edge of the foramen ovale.

extend higher, and it should not be necessary to infiltrate the periosteum of the zygoma, as this bone is not resected.

There are two very distinct advantages in the use of local instead of general anesthesia in the performance of this operation:

The first is the marked difference in hemorrhage. The constant presence of venous bleeding in the average operation of this nature requires the repeated insertion and withdrawal of small cotton pledgets, thereby permitting the operator short intervals in which to expose the ganglion and thus necessarily prolonging the time of the operation. This bleeding, provided the middle meningeal artery has been satisfactorily dealt with, is entirely venous. (I have never understood the logic of doing a preliminary ligation of the external carotid artery in these operations—a method practiced by many surgeons, it seems.) There is no doubt that during a general anesthesia, there is a definite venous and capillary engorgement in the brain and meninges which gives rise to the above-mentioned troublesome and time-consuming hemorrhage. With the patient anesthetized locally there is a marked absence of such oozing, and as a consequence the operation proceeds without interruption, the exposed field is much clearer, there is less mopping, and the average time consumed considerably less than when the patient is etherized.

The second distinct advantage is the absence of the relatively tense dura. This is present when the patient is under the influence of a general anesthetic and interferes with the free exposure by dural retraction until cerebrospinal fluid is removed, either by nicking the dura as practiced by Frazier, or by doing a lumbar puncture as practiced by Sachs. Under a local anesthetic, the dural retraction is easy and safe without this preliminary removal of spinal fluid, which therefore does not escape until the sensory root is exposed and evulsed.

CONCLUSION

I cannot but feel that the routine use of local anesthesia in this as well as in other operations of a neurosurgical nature allows a broader margin of safety than that offered by the use of general anesthesia. If this is true, our patients should be given the benefit of the difference. My own experience in this direction has been so uniformly satisfactory that I do not hesitate in recommending the more extensive use of local anesthesia in this special class of surgical operations.

THE SURGICAL TREATMENT OF GUMMATOUS OSTEITIS OF THE SKULL*

A. W. ADSON, M.D.
ROCHESTER, MINN.

Gummatous osteitis occurs in late syphilis and involves the outer table of the skull alone, or the outer and inner tables with the dura and the brain. While the gumma may be an isolated condition, it is more likely to be associated with numerous lesions on the skull. In making an examination of these lesions, it will be found that there is a destruction of the superficial tissues with necrosis of the bone, which gives the peculiar moth-eaten appearance characteristic of this disease and affords a means of diagnosis, by roentgen ray, before the skin has broken down.

Aside from the specific treatment of syphilis, it is necessary that certain surgical measures shall be



Fig. 1 (A 211775).—Necrotic gummatous ulcer of the frontal bone, which healed in six months after treatment had been administered. At first the necrotic bone had been perforated with a gimlet, with only slight results; later the skin edges were fresbened and the entire sequestrum removed.

applied to the necrotic ulcers of the skull, namely, draining the suppuration, removing the sequestrum,

* From the Surgical Section on Neurology, Mayo Clinic.
* Read before the Southern Minnesota Medical Association, Mankato, Dec. 2, 1919.

or dead bone, and stimulating granulation and epidermization over the denuded areas. Several cases have been observed at the Mayo Clinic in which the skin has been elevated over a fluctuating mass varying in size from 0.5 to 4 cm. If the fluctuating area is opened,



Fig. 2 (A 248101).—Necrotic ulcer of the frontal bone due to gummatous osteitis.

a sequestrum and pus are usually found, surrounded by roughened edges of bone. In the older lesions these fluctuating masses will open spontaneously, and pour out thick, yellowish pus, which is caused by necrosis of the superficial tissues and destruction of bone. The necrotic bone at first is very white and does not bleed when touched; but on exposure to air, it becomes discolored, and a foul-smelling necrotic ulcer of the skull follows. The ulcers do not respond to specific treatment or local applications, unless the sequestrum has been removed. The necrotic areas may persist for years until sufficient necrosis takes place to loosen the sequestrum, when granulation follows (Fig. 1).

In reviewing the literature, I found very little relative to the local treatment of this condition. Dr. C. H. Mayo,[1] in 1914, discussed the treatment of dry, exposed bone by gimlet perforation in an effort to stimulate granulation. He stated that when granulation begins to take place through these small openings, flakes of bone loosen up and come away, and in time the surface is one granulating area. Dr. Lydston,[2] in 1915, described a case of syphilis of the cranium and spine, in which he explored one of the gummas of the skull, removing the necrotic tissue with a ronguer until living bone was reached.

The point under consideration is that in cases in which dry bone, or necrotic, suppurative bone is exposed, as in gummatous osteitis, granulation does not take place until the sequestrum has been completely removed, regardless of the depth of the sequestrum. A child on whom I operated for brain abscess developed a wound infection, resulting in a retraction of the skin edges, and exposure of the parietal bone over an area of about 9 by 6 cm. Various dressings had been applied with little success, when accidentally the child bumped her head, loosening the outer table of the exposed bone, which we then proceeded to lift off, thereby exposing the bleeding surface between the two tables of the skull. As soon as this was done, granulation immediately followed and the wound healed without skin graftings (Figs. 2 and 3).

In four cases of gummatous osteitis, I have since applied the same principle, that is, elevating and freshening the skin margins and removing all the necrotic bone with a chisel to a depth at which bleeding is profuse. As a rule, if the necrotic bone is removed down to the diploe, no further procedure is required. When the inner table is involved, this also should be removed. If all necrotic bone is not removed at the primary operation, it is advisable to have the patient return promptly for further operative treatment. After the removal of the sequestrum, wet dressings saturated either in a boric acid solution or in physiologic sodium chlorid solution should be applied, and if epidermization is slow, skin-grafting may be resorted to. The postoperative course of four patients operated on in the Mayo Clinic for gummatous osteitis has been entirely satisfactory.

In the first case, the patient presented a history of gummatous osteitis of eighteen months' duration. At a primary operation, numerous gimlet holes were made through the necrotic bone, producing very small buds of granulation; later, the necrotic bone was removed by the use of a chisel; this was followed by a subsequent operative procedure, when small areas of dead bone that were missed at the primary operation were removed. The patient experienced no postoperative complications, and the wound healed completely in six months.

In the second case, multiple gummas of the skull were present; the largest measured 9 by 6 cm. These were treated by removing the sequestrum and freshening the skin edges;

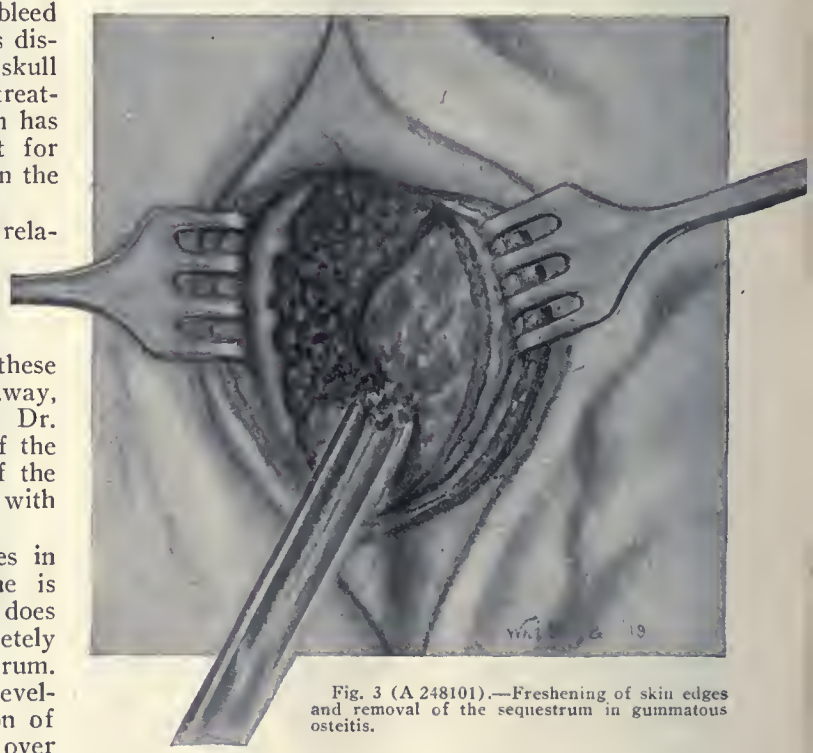


Fig. 3 (A 248101).—Freshening of skin edges and removal of the sequestrum in gummatous osteitis.

the smaller gummas were left undisturbed. This patient's convalescence was entirely uneventful and the wound healed in three months (Fig. 4).

In the third case, a single necrotic area of the frontal bone had been present for three years. This was treated by removal

1. Mayo, C. H.: Preparation of Dry Bony Areas for Skin-Grafting, Ann. Surg. **60**: 371, 1914.
2. Lydston, G. F.: A Unique Case of Syphilis of the Cranium and Spine, with Remarks on Syphilitic Bone Dystrophy, Med. Rec. **87**: 43, 1915.

of the sequestrum; at the time of the patient's dismissal the wound was in good condition and covered with granulating tissue.

In the fourth case, the patient presented a large fluctuating mass which involved the right half of the frontal bone and



Fig. 4 (A 229080).—A healed gummatous area, 9 by 6 cm., of the vertex, after the removal of the necrotic sequestrum.

was associated with an involvement of the septum. The mass was drained and the necrotic bone removed.

Local surgical treatment of gummatous osteitis depends on the size of the gumma and on whether or not the skin has been broken. In cases of very small gummas, it is unwise to open the fluctuating areas; if the gumma is 1 cm. in diameter or larger, it should be opened, the sequestrum removed, and the roughened edges curetted. In the larger exposed necrotic suppurating areas all necrotic bone should be removed, the skin edges freshened, and wet dressings applied. Specific treatment should be given in conjunction with local treatment.

The principle applied to gummatous osteitis of the skull with reference to removal of the sequestrum, or dead bone, may also be applied to areas of exposed bone in nonsyphilitic cases, since granulation will at all times be hastened by removal of the outer table of the skull.

Wood Alcohol.—The wood alcohol used in the United States is obtained chiefly from the destructive distillation of wood—hard wood, birch, beech, maple, oak, elm and alder being those most frequently used. The chief uses to which it is put are for the denaturing of grain alcohol; for various purposes in lines of common manufacture (especially as a solvent in the preparation of shellac, varnish, dyes, etc.) as an ingredient in medical and pharmaceutical preparations; in the chemical industries and as a fuel and illuminant. Only within recent years has wood alcohol become so dangerous to life and sight. Formerly it was a dark, bad smelling, bad tasting fluid which no one was tempted to drink. Later, a process was developed by which this color, smell and taste are removed. Wood alcohol, when purified in this way, looks, smells and tastes like grain alcohol, and may thus be easily substituted for it by unscrupulous persons.—*Illinois Health News*, October, 1919.

A CASE OF SYPHILIS OF THE ANTERIOR HORNS

GEORGE M. GOODWIN, M.D.
Assistant Attending Physician, Medical Division B, Saint Luke's Hospital
NEW YORK

History.—J. R., a Spaniard, aged 25, a clerk by occupation, admitted to the outpatient department, Oct. 15, 1919, gave a history of his present illness of six months' duration. The chief complaint was weakness; he complained especially of weakness of the legs. When he awoke in the morning, walking was difficult and his legs felt stiff. The stiffness diminished during the day with exercise of the muscles. Continued walking tired him a great deal, and when tired he was likely to stumble. He had no pain and he was not conscious of any sensory disturbance or mental trouble. There was no bladder or rectal difficulty; and he had no trouble in swallowing. He had lost 20 pounds in the past two years, but for the past six months his weight had been stationary.

He admitted having had gonorrhea, but denied symptoms of syphilis. Just before the onset of the present illness, he had had an abscess of the right forearm. This was incised and took six months to heal. The past history was otherwise negative. As far as he knew, no other member of his family had suffered from any similar trouble.

Physical Examination.—The patient was thin, and stood with the head bowed slightly forward. The clavicles were prominent, the scapulas were of the winged type. There had apparently been contractures of the muscles of the feet with resultant pes equinus. This interfered with the patient's gait. The general musculature was poorly developed, and there was distinct atrophy of the leg muscles. The posterior aspects of the calves, especially of the left, had become flat. There was a general fibrillary contraction of the muscles. This was most marked in the muscles of the shoulder girdle, but was present in nearly all the muscles after continued voluntary contraction and subsequent fatigue. In this way it could be induced, particularly in the biceps, triceps, glutei, and hamstring muscles. These contractions were visible on inspection, but could be demonstrated better by stethoscopic auscultation over the fibrillating muscles. Over the smaller muscles the sounds resembled those of the fetal heart.

The superficial reflexes were present: the knee, elbow and wrist jerks were absent. There was no ankle clonus, or Babinski reflex. There was no pupillary light reaction: the eye grounds were negative. Touch and temperature discrimination was unimpaired.

Results of the examination of the heart, lungs and abdomen were negative. The blood pressure was 120 and 80.

DIAGNOSIS

This case presented the symptoms of muscular atrophy and muscular fibrillation. Muscular fibrillations occur in conditions in which there is a degeneration of the cells of the anterior horns of which the motor nerves are the axons. The diseases with which it is associated are: chronic bulbar paralysis, syringomyelia, amyotrophic lateral sclerosis, and progressive spinal or neuritic muscular atrophy.

The absence of bulbar symptoms and the retention of sensory discrimination ruled out the first two of these diseases. While cases are described of amyotrophic lateral sclerosis in which exaggerated reflexes and spasticity as the result of disease of the lateral columns occurred late or not at all, the condition is probably very unusual.

The picture here seemed to correspond most accurately to that of progressive muscular atrophy, although the predominance of the atrophy in the leg muscles

suggested the Charcot-Marie-Tooth type of progressive neural atrophy.

The results of the laboratory investigations in this case were: The blood Wassermann reaction was +. The spinal fluid showed a ++++ Wassermann reaction, a cell count of 80 with 92 lymphocytes in the smear, a positive globulin reaction, and a colloidal gold curve of the taboparetic type (2 2.5 2.5 3 2.5 2.5 1.5 0.5 0.5).

In the face of this evidence it was apparent that this patient was suffering from a syphilitic lesion of the anterior horns. In our own experience this has been a very rare manifestation of cerebrospinal syphilis, but the question arises as to what percentage of cases of progressive spinal atrophy will resolve themselves into this class with the application of the newer diagnostic tests for neurosyphilis.

TREATMENT

The patient is now under treatment with arsphenamin intravenously and auto-arsphenamized serum intraspinally. He has had two such treatments with a diminution in the muscular fibrillation. The final result from the treatment will be reported later.

125 East Fifty-Seventh Street.

Clinical Notes, Suggestions, and New Instruments

HITHERTO UNDESCRIBED DISLOCATION OF THE PATELLA ENDWISE

JOHN W. PERKINS, M.D., KANSAS CITY, MO.
Chief Surgeon, University Hospital

Elbert B., aged 16, single, laborer at freight house, while running across the dock, Aug. 15, 1919, tried to jump over a truck but struck his right knee just above the patella smartly against the handle. He was unable to flex or extend his leg, and was immediately in considerable pain.

When examined a short time after the accident, there was found a slight abrasion of the skin 2 inches above the patella. The patella was dislocated, projecting directly toward the front of the joint, apparently endwise. Effusion into the joint was prompt and considerable. In twelve hours it was sufficient to distend the joint so that the dislocated patella was not apparent to sight.

The roentgen ray disclosed the patella dislocated in such a way that the upper end was found down between the condyles. The lower end projected forward, held by the taut patella tendon. The long axis of the patella was at right angles to its normal axis. The upper part had evidently been torn away from its attachment to the tendon of the quadriceps extensor. The leg was held in a rigid position, slightly flexed. Attempts at further flexion were extremely painful.

Under an anesthetic, an attempt was made to reduce the dislocation by manipulation. With the muscles thoroughly relaxed, the leg was flexed on the thigh, when the patella was found to return apparently to its normal place between the condyles. When the leg was extended, the patella was found in its former dislocated position. It was evident that in flexing the leg the patella was forced farther down between the condyles and turned completely over so that the anterior surface became posterior, and the posterior surface anterior. The upper end could not be dislodged from its position by any manipulation of the blood-distended joint. After two or three attempts had been made, reduction by manipulation was abandoned.

A second roentgenogram was then taken, which revealed the same position as before. The patella remained with its upper end pressed down between the condyles and the posterior surface facing downward.

Operation was performed the following day at Wheatley Provident Hospital by my assistant, Dr. L. B. Miller, assisted by Dr. H. H. Owens. The knee joint was opened by a longitudinal incision outside the patella. About 8 ounces of old blood were removed from the joint. The tendon of the quadriceps extensor was found torn loose from the upper part of the patella, and the patella was found endwise between the condyles, with the upper end directed backward toward the popliteal space. The patella was dislodged by relaxing



Dislocation of patella endwise; ligamentum patellae taut.

the quadriceps extensor muscle and hooking the finger under the patella so as to drag it upward into its normal situation, where it remained. No attempt was made to close the rent in the tendon of the quadriceps extensor. The wound was closed, and the patient made an uneventful recovery. When seen one month after the accident, he could flex the knee to a right angle and extend it to within 5 degrees of a straight line.

Cases of outward dislocation of the patella on or outside the condyle of the femur are not uncommon, and I have also seen rotary dislocations in which the patella is caught edgewise between the condyles. But an independent dislocation of the patella endwise I have neither seen before, nor can I find any reference to one in the immediate literature.

1005 Campbell Street.

AN INSTRUMENT FOR ILLUMINATION AND SUCTION IN CERTAIN SUPRAPUBIC OPERATIONS *

ERNEST M. WATSON, A.M., M.D., BUFFALO

The difficulty encountered in obtaining satisfactory illumination within the vesical cavity in certain suprapubic operations has been experienced at times by many engaged in this field of work. From the position of the bladder, deep in the pelvis, and the tendency of the pelvic viscera to encroach on the rather limited operative area, suitable illumination from above the wound cannot always be obtained. This is particularly true as regards an adequate and continued view of the base and deeper portions of the bladder cavity.

In an effort to provide a means to overcome this rather annoying handicap to many otherwise quickly executed operative procedures, an instrument has been devised to aid in illuminating the bladder cavity, and in addition to remove by suction the urine and a certain amount of blood which accumulates therein. This instrument has been found useful during the past two years in certain suprapubic work.

In suprapubic prostatectomy, many feel that a direct view of the intravesical prostatic enlargement is not always essential, and from the nature and position of the illuminator when in place, its usefulness in this procedure is limited. In practically all other operative work on the bladder performed suprapubically, however, it may be used to advantage. In simple suprapubic cystotomy, in resection of portions of the bladder wall for ulcers, new growths, etc., as well as in the resection of diverticula and in transplantation of the ureters, its use is often a distinct aid.

The composite instrument is composed of a hollow sheath with a perforated tip (on the order of the cystoscope with the Brown curve), into which is fitted an obturator. This is inserted into the urethra and passed through into the bladder after the patient has been placed on the operating table. A strip of adhesive plaster across the thighs of the patient and attached to the instrument keeps it in place. The obturator is then withdrawn, and the hollow illuminating and evacuating tube is passed into the sheath and securely fastened. By a suitable stopcock any urine is withdrawn and the bladder filled with water, antiseptic fluid or air, as may be desired, preparatory to the suprapubic cystotomy. By an electric cord attachment the current is now turned on, and the bladder is outlined by distention and illumination.

After the stay sutures are placed in the bladder wall, the fluid or air is allowed to escape through the instrument, and thus any undue soiling of the operative field is avoided. When the bladder is opened, there is placed a tightly fitting perforated cap over the light within the bladder, which serves as a protection to the bladder mucosa from any heat generated by the lamp.

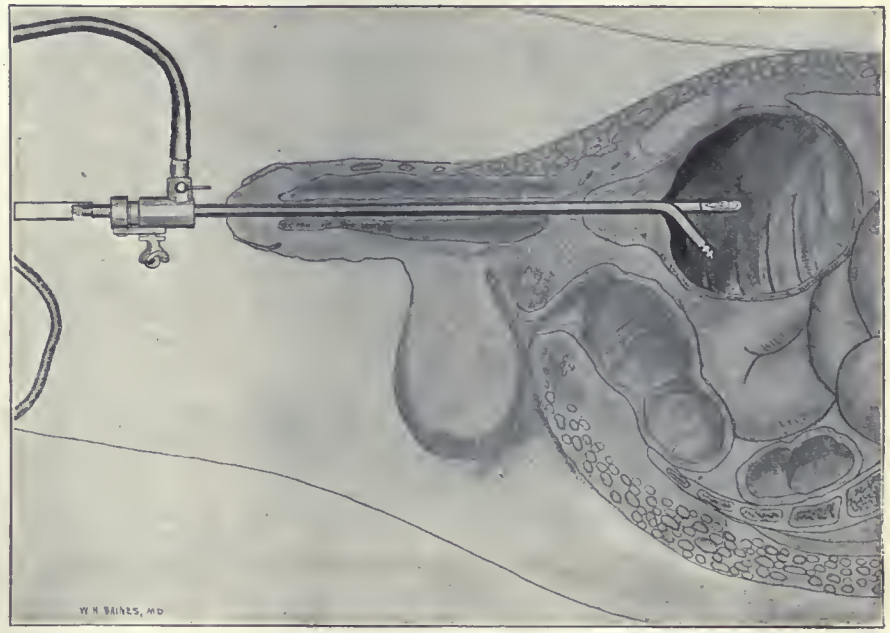


Fig. 2.—Longitudinal section of pelvis, with instrument in position.

The lamp filament is of adequate illumination to give a brilliant light for hours when it is burned in the air. When the bladder is opened a suction pump (the type that is usually found in any operating room is satisfactory) is attached by heavy rubber tubing to the evacuating nozzle of the instrument, and a gentle suction established. This is usually sufficient for removing all of the urine and much of the blood accumulating within the bladder. Several tips have been devised as suction terminals varying in size, shape and the number of openings.

The accompanying illustrations convey a clear idea of the form and method of use of this device.

469 Franklin Street.

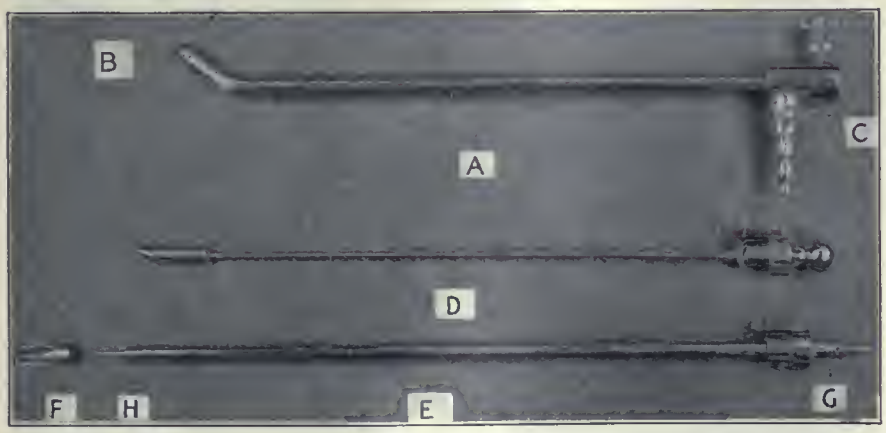


Fig. 1.—Apparatus: *A*, hollow instrument sheath; *B*, perforated tip for intake of fluid; *C*, stopcock for regulating or closing suction; *D*, obturator which fits into sheath (*A*); *E*, hollow evacuating and illuminating tube which fits into sheath (*A*); *F*, perforated cap which fits over light (*H*); *G*, light attachment for electric cord; *H*, light.

* From the Department of Urology, University of Buffalo Department of Medicine, and the Urological Service of the Buffalo General Hospital.

Malaria Control.—Needless expenditure of public funds may be averted in cases where such funds are limited to malaria control—where it is not the purpose to eradicate the mosquito merely as a pest. Assuming that November 1 was the date determined as that of ultimate mosquito infectibility, and it was desired to recommend the safe time at which to discontinue oiling or other larvicidal measures, allow eighteen days for complete transformation from the larval stage, and twelve days for the adult mosquito to become infective, a total of thirty days to be counted back from the date of ultimate infectibility. The date to be named for the safe discontinuance of operations against the mosquito as an infecting agency would then be October 1.—*Pub. Health Rep.* **34**:1972 (Aug. 29) 1919.

THE SHORT CALIPER SPLINT

ROBERT F. PATTERSON, M.D., KNOXVILLE, TENN.

The short caliper splint herein illustrated was developed by me while in charge of the orthopedic service of the U. S. Army base hospital at Fort Sam Houston, Texas. It has proved to be uniformly useful in (*a*) ununited fractures below the knee; (*b*) weak union, to guard against mishap, and (*c*) tuberculous or other disease of the ankle or joints of the foot when it is desired to take the weight off of the foot. The splint is intended for the treatment of ambulatory cases.



Short caliper splint: front view, in use, and back view.

The right angled portion at the lower end is inserted into the hole in the shoe, as in the application of the long caliper splint. The shoe is now pulled on until the heel lacks about 1 inch of coming in contact with the bottom of the shoe. Next the leather cuff is snugly laced up, and following this the shoe is laced as tightly as can be comfortably borne, after the weight has been borne on the splint. The heel should now just clear the shoe, or rest lightly on it, depending on how much weight it is desired that the foot carry.

If the leg is tender, the cuff can be lined with a pad of saddler's felt glued in place. Ordinarily the patient soon becomes accustomed to the appliance, and prefers no lining except moleskin.

It will be seen that the principle is the same as that of the long caliper, except that this splint takes its bearing surface, as in the case of an artificial leg, from the head of the tibia and fibula, and to a less extent from the entire surface of the leg beneath the cuff, owing to the shape of the leg.

This appliance has these advantages over the long caliper in fractures below the knee: (*a*) It its inconspicuous, and can be worn under the trousers; (*b*) it leaves the knee free and thereby prevents stiffness due to immobilization of this joint, and (*c*) in addition to removing the weight from a fractured bone, it acts as an effectual splint through the medium of the close fitting leather cuff, reinforced by the side irons.

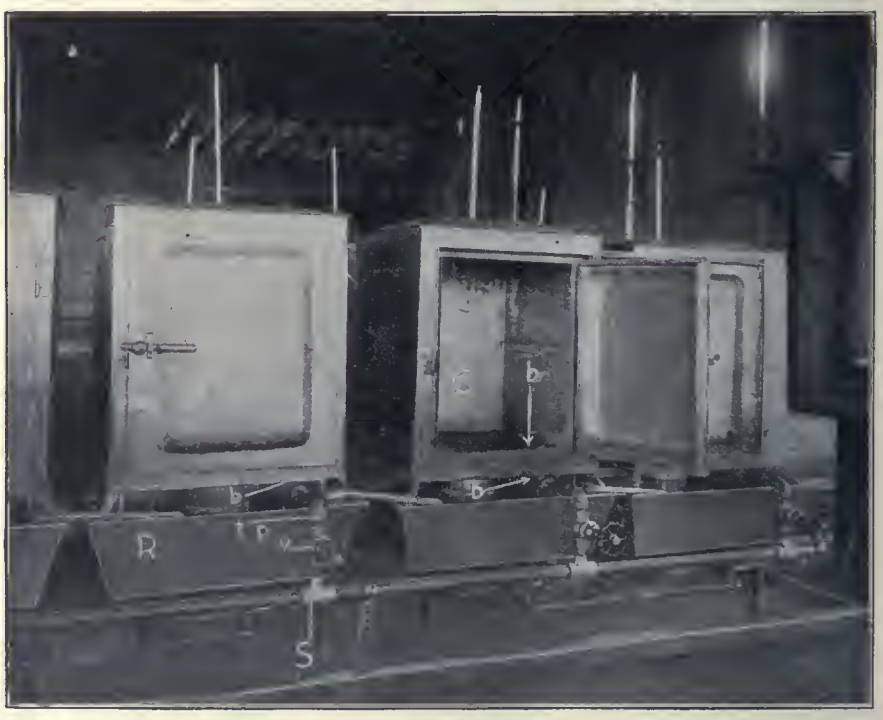
AN IMPROVED DEVICE FOR ARNOLD STERILIZATION *

WILLIAM H. BARNES, A.M., BERKELEY, CALIF.

Large classes in bacteriology necessitate the provision of a good deal of modern and efficient equipment. One of the difficulties with which we have had to contend is the provision of a sufficient number of usable sterilizers, particularly gas heated sterilizers. Although we have enough when they are all in running order, keeping them in good repair has given rise to no little trouble and expense. The gas backfires, and burns in the air chamber of the burner where the air and gas are mixed. This gives less heat units per unit of gas consumed, and results in the production of soot, which collects on the support below and which is scattered about the room. The reservoirs require frequent attention lest they become dry and burn out, notwithstanding the fact that in our laboratory they are filled automatically by siphons, an arrangement devised by Professor Hall.[1] The siphons occasionally clog or become empty and fail to maintain a constant water level.

The device here described, which was installed recently in our laboratory, eliminates these difficulties, reduces the cost of maintaining the process of sterilization, and shortens it.

This device, which is shown in the accompanying illustration, consists of a separate one-half inch pipe (*t p*), with a steam valve (*v*) carrying live steam from a central source, supplied by the main line steam pipe (*S*), to the main compartment (*C*) of each Arnold. A small opening, one-half inch in diameter, is cut in the base (*b*) of the main compartment (*C*), and the tapping pipe (*t p*) is made with an elbow to turn vertically upward into the opening just below the perforated shelf. When the steam is turned on, the temperature immediately rises to 99 or 100 C., never going above 100 C. This result obtains because the compartment (*C*) of the Arnold is not air-tight, and thus the steam cannot be confined under pressure. Part of the condensed steam falls into the reservoir (*R*) below, thus requiring that it be drained instead of being filled with water. Drainage is accomplished very easily by a connection with a nearby drain pipe.



An improved device for Arnold sterilization.

* From the Department of Pathology and Bacteriology, University of California.

1. Hall, T. C.: Automatic Water Level for Arnold Sterilizers, J. Bacteriol. 3:7 (Jan.) 1918.

With this device, we have established an efficient method of Arnold sterilization which combines cheapness, cleanliness, expediency and safety. It is economical because there are no burned out Arnold sterilizers to be repaired, the live steam from a central supply source is cheaper than gas, and there are no gas plates to burn out and be repaired. It is clean because there are no burners to backfire and thus no soot to be spread about. It is expedient because the required temperature is obtained within one minute instead of requiring fifteen or twenty minutes as with the gas heating method. Last, but not necessarily least, there is no danger from fire or overheating in case the Arnold becomes dry, as it is liable to do when in charge of a careless student.

For these reasons, we feel that we have a more efficient device than the old type of gas heated Arnold.

THE VALUE OF BACTERIAL VACCINES IN IMMUNIZATION AND THERAPY

A. M. MOODY, M.D., CHICAGO

During such an epidemic as is now in progress, many physicians become panicky and jump at anything that seems to give promise of preventive and curative possibilities. As a result, commercial houses and laboratories are reaping a financial harvest through the sale of products which could do no good and may do harm. Thus vaccines are being used by many physicians without a proper understanding of the action of such forms of treatment.

In THE JOURNAL last week was an editorial on "Influenza" which calls attention to the prevailing impression regarding specific preventive and therapeutic measures in this disease. It says: "It is doubtful whether such measures exist and also whether they will be discovered in time to demonstrate their virtues in connection with the present conditions. This is especially true when we consider that the bacteriology of these infections varies in different parts of the country and that different persons react in different ways to different bacteria." These statements, I believe, should be discussed more fully, as they have an important bearing on vaccine therapy and preventive measures in other diseases of known and questionable bacterial etiology.

Bacterial vaccines consist of suspensions of killed bacteria in salt solution, oil (lipovaccines) or water, usually with a small amount of preservative, phenol or tricresol, added. There are two kinds: "stock" and "autogenous."

Stock vaccines are those made from laboratory strains of bacteria isolated from patients some time previously. Many of these strains have been grown on artificial mediums for several years.

Autogenous vaccines contain the organisms isolated from the disease process present in the patient for whom the vaccine is made.

GENERAL POINTS ABOUT VACCINES

1. A vaccine is never an emergency form of treatment: it is not indicated in acute, generalized infections.

2. Autogenous are undoubtedly better than stock vaccines for therapeutic purposes:

(*a*) They contain a growth of the strain of organisms causing or at least associated with the trouble.

(*b*) They are freshly prepared.

(*c*) Their antigenic properties are greater.

(*d*) Their toxic properties are less.

(*e*) Organisms isolated and made into a vaccine as soon as possible after being removed from the human body usually have greater immunizing properties.

3. As a rule, vaccines prepared four months or more prior to the time when needed should not be used:

(*a*) Their antigenic or immunizing properties are low.

(*b*) Their toxic properties are high (*a* and *b* can best be demonstrated in *B. coli* and *B. typhosus* vaccines).

(*c*) They may split up even to the point at which they are devoid of either antigenic or toxic properties and are practically inert.

4. There is a question as to their specificity. Many authorities and clinicians believe that bacterial vaccines are specific in their action, that is, they cure the disease in question by the production of specific immune bodies. There are also those who go to the other extreme and believe that vaccines are absolutely valueless as therapeutic agents. Some of the former use vaccines for every disease caused by bacteria. It is probable that neither of these groups is wholly correct, since there is sufficient proof that certain diseases of bacterial origin are markedly improved following the injection of some protein material foreign to the particular specific bacteria in question. On the other hand, there is ample evidence that specific bacterial antigens in a limited number of subacute and chronic infections are valuable and do yield excellent results.

5. Vaccines when indicated should not be used to the exclusion of other forms of medical, surgical or general management. It is a mistaken idea that a vaccine used alone is a cure. A vaccine should be considered as an adjuvant and used always in addition to other forms of therapy and management indicated in the case in question.

6. According to my experience, vaccines are of value in the treatment of: (*a*) furunculosis and localized abscesses; (*b*) acne vulgaris; (*c*) colon bacillus pyelitis and cystitis; (*d*) chronic gonorrhea and gonorrheal rheumatism; (*e*) chronic bronchitis, and (*f*) bronchial asthma of bacterial origin.

7. Vaccines have very little value if any in: (*a*) infections of bone and rigid walled cavities; (*b*) intestinal tract infection, or (*c*) infections of the uterus and adnexa.

8. They are contraindicated in (*a*) acute infections and infectious diseases; (*b*) septicemia and pyemia during acute stages; (*c*) malignant endocarditis, etc.

PERTINENT QUESTIONS ON VACCINES

It is necessary, then, to ask oneself several pertinent questions:

1. *By what method or through what channels does a given vaccine produce results?* It is supposed, and to some extent known, that foreign protein substances or cells introduced into the body of an animal will be destroyed by something within the fluids, tissues or leukocytes of that animal. Undoubtedly this substance is of the nature of a ferment. It is known that repeated injections of certain of these bodies, as certain types of bacteria, will raise the power of the animal's resistance to this particular type or cell so that large numbers may be introduced without harmful results. Furthermore, these substances seem to be specific for this particular organism. Such an animal is then considered to be immune to this type of infection.

2. *Does immunization against one organism increase the resistance to other types of infection?* There is evidence in the literature of such an occurrence, more particularly in respect to closely related organisms, as in the colon-typhoid group. This, however, varies so greatly in different persons that a positive statement cannot be made.

3. *Can all persons be so immunized?* They cannot, and this is one reason for the development of bacterial disease at a time when, according to our present knowledge, resistance should be greatest.

4. *Are all strains and types of bacteria suitable for immunizing purposes?* They are not, because many bacteria are incapable of producing any reaction on the part of the host to produce specific bodies capable of destroying these organisms. The Pfeiffer bacillus (according to Victor C. Vaughan) is one example of such an organism.

5. *How long does it take immunity or increased resistance to certain organisms to develop?* It takes from eight to ten days to several weeks and sometimes longer.

6. *How long does a given increased resistance last?* This is known to vary within very wide limits from a few weeks to years. In the streptococcus and pneumococcus group, certainly, increased resistance is of very short duration and of a low degree.

TREATMENT WITH VACCINES

In the treatment of conditions in which vaccines are indicated, a good rule to follow is to begin with a dose small enough to avoid a generalized reaction, and gradually increase

this dose to the point at which perhaps only a slight local reaction occurs. At first one may give the injections every day to determine what is the proper dose for the patient being treated. When this point is determined, one should continue to give increasing doses at three or four day intervals until one is giving at each injection not more than one billion organisms. Massive doses of killed organisms are likely to be quite toxic and próduce harmful rather than beneficial results. As a matter of fact, under such conditions it is possible to lower greatly the normal resistance of the person treated.

It must be remembered also that the body cells of persons with acute infections are quite sensitive to foreign protein injections. This is important, and physicians using vaccine therapy should bear it in mind and treat such patients with caution.

In prophylactic immunization, especially against typhoid, persons with chronic malaria, tuberculosis, bronchitis, nephritis, etc., are quite likely to react so severely to the ordinary injection that harmful results not infrequently follow.

SUMMARY

Vaccines undoubtedly are of value in increasing resistance against the development of certain diseases. They have curative properties in some chronic conditions, which have been enumerated. Before applying this method, the physician should be sure that the organism used is the actual cause of the condition in question. Immunity against the majority of bacterial diseases at best develops rather slowly, is rarely great, and is usually of short duration. Vaccine therapy is never an emergency form of treatment and therefore should not be used during an epidemic.

5 South Wabash Avenue.

THE DIAGNOSIS OF PRIMARY SYPHILIS BY CULTURE

Fred W. Baeslack, M.D., and William E. Keane, M.D., Detroit
Pathologist and Urologist, Respectively, St. Mary's Hospital

The physician engaged in extensive venereal practice is at times confronted by patients presenting a lesion of the foreskin or penis which, on account of previous medication, such as the use of calomel ointment, calomel dusting powder, burning with acids or escharotics, or the use of antiseptics, no longer presents the typical appearance of a chancre.

An attempt to make a diagnosis by means of the dark field usually fails, as the employment of the agents indicated above eliminates *Spirochaeta pallida* from the superficial tissues of the chancre, so that even the application of a suction cup does not yield serum which discloses the spirochete on dark-field examination.

In the course of study on the cultivation of *Spirochaeta pallida,* it was found that this organism can be grown from human tissue directly, when small pieces of such tissue are planted on horse serum medium. This medium consists of normal horse serum, free from preservatives, diluted with sterile distilled water in the proportion of 3:1. The diluted serum is put into ordinary test tubes, which are closed with rubber stoppers, previously sterilized. The tubes are filled to within an inch of the top, stoppered, and heated to 60 C. for one hour in a water-bath. The following day the temperature is brought to 70 C. for one hour, and the next day the medium is heated at 70 C. until it takes on the consistency of syrup. The tubes are then stored in the refrigerator. The heating on the three successive days not only gives the medium a semisolid consistency, but also drives the air from the medium, so that it is under a partial vacuum.

Whenever the location of the suspected sore permits, the tissue is removed by circumcision; otherwise a thin slice of tissue is removed with a razor from the edge of the lesion. The tissue is then planted, and is pushed into the medium from one half to two thirds of the length of the tube.

The tube, if taken from the refrigerator, should be warmed to body temperature before the implantation is made.

If the lips of the tube are thoroughly heated so that the surface of the medium begins to boil, the air above the medium is sufficiently rarefied to permit replacing the rubber stopper without difficulty after inoculation.

The inoculated tubes are incubated at 37 C. from three to five days, when a few drops of the medium near the tissue are removed with a pipet to a slide for dark-field examination.

Owing to the action of other organisms introduced with the tissue, the serum above the tissue may become liquefied, and the stopper blown out because of gas production by some of the bacteria. Nevertheless the spirochetes will be found in large numbers in symbiosis with these organisms, and can be detected under the dark field by their characteristic motility.

Tissues from such doubtful cases have been planted as late as twenty-four hours after removal. These tissues had been kept, wrapped in gauze, in the ice box for that length of time, and yielded positive cultures, when repeated dark-field examination of the scrapings of the fresh tissue itself were negative.

While the occasion for the procedure outlined may be rare, it will be found worthy of trial, especially since *Spirochaeta pallida* seems to remain in a viable state in the tissues for at least twenty-four hours after removal. The observation of patients, with late developments of syphilis, who never had specific treatment because the initial lesion was removed by circumcision without being recognized as specific, led us to the procedure outlined above.

Such tissues, placed in a small quantity of bouillon and the tube sealed, could no doubt be forwarded to laboratories equipped to do the necessary bacteriologic work.

Therapeutics

A Department Devoted to the Improvement of Therapy. A Forum for the Discussion of the Use of Drugs and Other Remedies in the Treatment of Disease.

USE AND ABUSE OF CATHARTICS *

(*Continued from page 325*)

PURGATIVE PILLS

ALOES

When prescribing a purgative pill, all that is really necessary is to order a sufficient dose of aloes. On account of its reliability, the fact that it does not lose its efficiency on prolonged use, and the relative smallness of its dose, aloes is the practically universal ingredient of cathartic pills. It is, therefore, worth while to study the peculiarities of this drug somewhat more closely.

As the odor is repulsive and the taste intensely bitter, aloes is unsuitable for administration other than in pill form. Its liquid preparations are therefore of no practical importance. Because of their nauseous odor, even its pills are disagreeable unless coated. When extemporaneous pills are prescribed, the mass should always be put into gelatine capsules.

Mode of Action.—It is a curious fact that the glucosids of which aloes is composed are inactive until they become decomposed into sugar and anthraquinon bodies, such as emodin, on which the activity of aloes depends. It is evidently because of the necessity for this change, which occurs in the intestine, that aloes is so slowly acting a purge. From eight to twenty-four hours may elapse before the effect occurs. Hence, it is generally administered at bedtime; though, as the active ingredient of so-called "dinner-pills," it is sometimes given with meals, whether before or after probably does not matter.

* This is the seventeenth of a series of articles on the pharmacology, physiology and practical application of the common laxatives and cathartics. The first article appeared October 18.

The conversion of the glucosids of aloes into the active bodies is favored by alkalis, including soap, and probably also by bile. This is the reason for the presence of an equal amount of finely powdered soap in the official pills of aloes, which contain 0.13 gm. (2 grains) of each of these ingredients. It is also believed that the activity of aloes is increased by iron salts; this is ascribed to their oxidizing tendency. Aloes is frequently prescribed in combination with iron in the treatment of anemia, as it at one and the same time antagonizes the constipating tendency of the iron and the tendency to constipation in the anemic patient. For this purpose a small dose of aloes, say from 0.005 to 0.010 gm. (1/12 to 1/6 grain) might be added to each one of Blaud's pills (pills of ferrous carbonate).

Aloes is a peristaltic stimulant acting chiefly on the colon. It is capable of producing purgation, when applied to raw surfaces or when given hypodermically. However, being a local irritant, it produces too much pain and inflammation to be useful as a hypodermic cathartic. When taken by a nursing woman, it may act as a purge to the babe.

Aloes has the reputation of causing collateral pelvic congestion, for which reason some consider it unsuitable for patients with hemorrhoids. However, this contraindication is certainly not absolute. Many persons who have hemorrhoids take it not only without harm but with actual benefit in the prevention of acute inflammatory disturbances by securing regular and sufficient bowel evacuation. Constipation and violent purgation must alike be avoided by the person with hemorrhoids. Patients suffering from an acute inflammatory complication of hemorrhoids are distressed by any bowel evacuation, and this distress is the greater as the evacuation is more profuse. Such patients do not tolerate active purgation of any kind, and perhaps least of all that produced by aloes.

On account of the pelvic congestion which aloes is assumed to cause, aloes is believed to be of value in amenorrhea, and to be shunned in excessive menstruation, tendency to uterine or other genital hemorrhage, and in pregnancy. While ordinary doses of aloetic pills fail when used as abortifacients, it is advisable to bow to popular prejudice, and to use for pregnant women some other cathartic, such as cascara sagrada or sodium phosphate.

Dose and Administration.—When aloes is to be used for the purpose of increasing colonic irritability in a case that is not considered one of hopelessly incurable constipation, it is best given as a "dinner pill," with meals. When it is thus given, the unit pill of aloes of 0.10 gm. (practically 2 grains, the size of the official pills) is likely to be larger than necessary, and half a dose or less may suffice. Such pills might, for instance, be thus prescribed:

	Gm.	
℞ Powdered aloes	1|50	gr. xxiii
Powdered soap	1|50	gr. xxiii

Mix. Make a mass, and divide into 30 capsules.
Label: One three times a day after meals.

If this daily dose be insufficient, the patient may be directed to use two or three of these pills, as required, and to return for another prescription when the quantity prescribed has been consumed. After regularity of bowel evacuation has been secured by means of such pills for a week or two, one dose a day is dropped weekly or monthly, as the case may permit, provided the desired effect continues; and, in this way, the cathartic habit may be avoided.

When failure of faithful and repeated trial renders it apparent that the patient seems incurably constipated, then it is best to give him a prescription for pills of sufficient size to secure a thorough evacuation when one daily dose is taken. Such a pill is to be administered at bedtime on the day the patient has been without bowel movement. The patient may be encouraged to make an attempt at stool daily after breakfast. This, as will be seen, makes for economy in pill consumption, and expresses, at the same time, our reluctance to permit the patient to rely entirely on the action of the pills. The patient, however, should also understand that a thorough bowel evacuation every other day is entirely sufficient for most individuals.

There is little actual need for concentrated aloes preparations, as the dose of aloes usually required is sufficiently small to permit the preparation of pills of proper size. This is evidently the reason why purified aloes and the extract of aloes (which has twice the strength of aloes) were deleted from the present pharmacopeia. *Aloin,* which is a mixture of pentosids, is often active in so small a dose, average 0.015 gm. (1/4 grain), that inert powder has to be added to it to make a pill of proper size. In such a case, aloin is obviously of no advantage, as we must pay the manufacturer for removal and waste of perhaps 90 per cent. of material from aloes, most of which is far from being inert. Aloin presents advantage only in a case that would require an aloetic pill of excessive size. For such a one, a pill of aloin of 0.1, 0.2, or even 0.3 gm. may have to be prescribed.

(To be continued)

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

ANTIRABIC VACCINE (see N. N. R., 1920, p. 272).

The Gilliland Laboratories, Ambler, Pa.

Pasteur Anti-Rabic Voccine.—The virus is prepared in accordance with the general method of the U. S. Public Health Service. One-fifth of an inch of dried cord, emulsified in 0.6 Cc. of 60 per cent. glycerine containing 0.3 per cent. trikresol is supplied. This is diluted with 2.5 Cc. of sterile physiological solution of sodium chloride which is supplied at the time of injection. The treatment consists of twenty-one to twenty-four doses, and are sent separately each day by Special Delivery. The first day dose is cord, dried 8, 7 and 6 days respectively; the second day is cord, dried 5 and 4 days respectively, and daily afterward, cords, dried 3, 5, 4, 3, 3, 2, 2, 5, 5, 4, 4, 3, 3, 2, 2, 4, 3, 2, 2 days to completion of treatment.

PNEUMOCOCCUS VACCINE (See New and Nonofficial Remedies, 1920, p. 286).

The Gilliland Laboratories, Ambler, Pa.

Pneumococcus Voccine Immunizing.—Contains Types I, II and III, respectively, in equal proportions, preserved by three cresols 0.25 per cent. Marketed in packages of four syringes containing 250, 500, 1,000 and 2,000 million killed pneumococci per Cc.; also in packages of four ampules containing 250, 500, 1,000 and 2,000 million killed pneumococci per Cc.

STAPHYLOCOCCUS VACCINE (See New and Nonofficial Remedies, 1920, p. 288).

The Gilliland Laboratories, Ambler, Pa.

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SATURDAY, FEBRUARY 7, 1920

LIFE, DEATH—AND BACTERIA

The desire to prolong human life requires no defense, nor is it difficult to understand. Death is rarely a welcomed visitor in the human household; and it is quite natural that thinking minds should have occupied themselves with the possibility of averting death. As Jacques Loeb has remarked, the efforts to prolong life have resulted merely in a diminution of the chances of premature death. Modern preventive medicine has succeeded in warding off many menaces to life by conquering some of the dangerous infectious diseases and even threatening contagions. At best, however, by such accomplishments each person is merely guaranteed with greater degree of probability that he may enjoy the full usual duration of life. Death is not averted.

The students of some of the lower forms of animal life have found much encouragement for the belief that protoplasm is, in a sense, immortal. The biologist Maupas[1] had come to the conclusion, thirty years ago, that the unicellar organisms which he investigated could not continue to multiply endlessly by the method of fission which represents a common mode of reproduction in these forms. They reach a certain size, then divide in two, whereupon each fragment continues to grow to full size and then divides again. Maupas asserted that the race ran out after a time unless by the sexual process of conjugation some new strain of protoplasm was introduced into the organism. The observations of Woodruff[2] at Yale University indicate, however, that if the food and environmental conditions are suitable, reproduction may proceed an indefinitely long time without conjugation. Beginning in 1907, this American biologist has patiently followed the development of isolated infusoria through literally thousands of generations which have developed with the usual regularity without any protoplasmic contribution from other individuals of the species. Similar experiences have recently been reported by Metalnikow,[3] who conducted his experiments in Russia. The evidence from such sources suggests that fundamentally the living cell has an inherent capacity for renewal and multiplication indefinitely. In this sense, protoplasm appears to be immortal.

For higher forms of life, comparable results also have been reported suggesting, as was indicated recently in The Journal,[4] that elemental death might be postponed indefinitely if a suitable nutrition could be attained continuously for the cells. Carrel's prolonged growth of connective tissue fragments outside of the body indicates this. Are we to assume from these diverse facts that, in the words of Loeb, death is not inherent in the individual cell, but is only the fate of more complicated organisms in which different types of cells or tissues are dependent on each other? Metchnikoff was responsible for the widespread impression that foreign organisms in the guise of certain intestinal bacteria are responsible for premature senility and death. The hope of averting old age has been encouraged by the advice to exclude the alimentary offenders from the body through a suitable regimen. Until recently the question as to whether life without bacteria is actually possible might have been seriously debated; but Loeb and Northrup[5] have succeeded in raising aseptically nearly a hundred successive generations of fruit flies grown on sterilized food and themselves free from bacteria. Yet these animals all arrived at old age—and died.

Can it be that the metabolism itself of a complex organism determines the ultimate onset of death? Do the chemical processes in some groups of cells produce compounds detrimental to others, or does the transformation of materials gradually consume some essential substance which is not replaced? The scientist knows that the rate of a chemical reaction ordinarily is hastened when the temperature is raised, and decreased when it is lowered. Accordingly, Loeb[5] has reasoned that if the duration of life is the time required for the completion of certain chemical reactions in the body, the duration of life may be doubled or trebled when the environmental temperature is lowered. The test of the hypothesis has been made on the aseptic flies in which the danger of accidental death by infection is excluded. The results show that the influence of temperature on the duration of life of the fly is the same as the influence of temperature on the velocity of a chemical reaction, since a lowering of the temperature by ten degrees results in an increase in the duration of life by two or three hundred per cent., and the same figure would be obtained if we investigated the effect of temperature on the time required to complete a chemical reaction.

1. Maupas, E.: Recherches expérimentales sur la multiplication des infusoires ciliées, Arch. de zool. expér. **6**, 1889; Le rajeunissement karyogamique ches les ciliés, ibid. **7**: 1889.

2. Woodruff, L. L.: A Five-Year Pedigreed Race of Paramaecium Without Conjugation, Proc. Soc. Exper. Biol. & Med. **9**: 121, 1912; On So-Called Conjugating and Nonconjugating Races of Paramaecium, Jour. Exper. Zool. **16**, 1914.

3. Metalnikow, S.: L'immortalité des organismes unicellulaires, Ann. de l'Inst. Pasteur, **33**: 817 (Nov.) 1919.

4. The Death of Tissues and the Life of Protoplasm, editorial, J. A. M. A. **74**: 327 (Jan. 31) 1920.

5. Loeb, J.: Natural Death and the Duration of Life, Scient. Month. **9**: 578 (Dec.) 1919.

Such are the facts. Fortunately or unfortunately, our higher organisms cannot endure a lowered temperature; hence this device for prolonging existence cannot be requisitioned by man. In any event, death still appears as the natural result of life if the latter is to be conceived as the time required for the completion of a chemical reaction or series of such reactions. The problem of prolonging life thus appears to consist either in finding an antidote to the harmful products that gradually accumulate as the result of the body's metabolism, or in replacing that substance responsible for youthful condition and gradually destroyed in growth—or in both. At any rate, the bacteria no longer have the odious distinction of being the sole enemies of human longevity.

THE VOLUME OF THE BLOOD

The old practice of bloodletting was based, in many instances, on a desire to relieve what was supposed to be a condition of plethora. Even at the beginning of the Christian era in the days of Celsus, however, it was recognized that venesection should not be practiced indiscriminately. Precisely what criteria should be employed is not very clear; yet it is stated in De Arte Medica, Libri Octo:

> The determining factor (i. e., in bloodletting) is neither the age nor the pregnant state of the patient, but rather the degree of physical strength. . . . There may arise, in connection with the operation of venesection, a number of questions which are likely to puzzle an inexperienced physician and perhaps lead him into error. . . . Is it not the very essence of our art, not merely to consider the factors of age and the pregnant state, but also to form an estimate of that other and more important factor, viz., the patient's strength, and then to decide whether it is, or is not, great enough to bear the loss of blood?[1]

Strictly speaking, the assumed plethora which gave occasion for venesection assumed an increased amount of blood in the body. Modern research has indicated, however, that the volume of the circulating fluid tends to be maintained fairly constant in spite of influences tending to alter it. Pearce[2] has remarked that the "plethoric" conditions formerly thought to be appropriate for bloodletting were presumably in many instances cases of chronic hypertension in which there is, so far as is now known, no actual increase in blood volume.

There are, nevertheless, circumstances in which alterations in the quantity of the circulating medium actually occur. The regulatory and compensatory reactions of the organism whereby the exchange of fluids between blood and tissues should lead to an unaltered equilibrium is not always perfect. Thus the assertion that the effective volume of the blood is reduced in shock has been made frequently of late.[3] The treatment of hemorrhage involves consideration of the restoration of blood volume. The methods for estimating the volume have been indirect and difficult for clinical application. Many years ago, Bischoff[4] applied Welcker's method of direct determination of the hemoglobin extracted from the entire body of two decapitated criminals, thereby concluding that the blood volume constitutes one thirteenth of the body weight. Such postmortem methods would obviously not carry us far in the study of the changing conditions of disease and therapy. Today one may still find values ranging from one twenty-first to one eighth of the body weight given for the blood volume of man.

Owing to the efforts of Van Slyke and Salvesen,[5] a technic has been simplified to bring it more conveniently within the range of clinical possibility. With this, Salvesen[6] found in experiments conducted in the Hospital of the Rockefeller Institute for Medical Research, New York, an average blood volume of 3,888 c.c. in six healthy persons ranging in age from 23 to 37 years. The extreme values represented one fourteenth and one nineteenth of the body weight, with an average of 5.95 c.c. per hundred grams. It will be interesting to learn the results of applications of this technic to the study of blood volume variations in disease. The data already obtained give some indications of what may be involved in current modes of venesection, of the limits of transfusion and infusion, and of other factors concerned in the modification of the circulating medium of man.

SPREAD OF THE SPIROCHETE OF INFECTIOUS JAUNDICE

Modern medicine has taught the importance of knowing the parasites of the animals that live in close contact with man. The louse, the flea, the mosquito and the rat are not merely disagreeable pests which disturb our comfort or damage our property; they are the often unsuspected carriers of harm—the hosts of invisible foes of mankind. Scarcely five years have elapsed since the Japanese investigator Inada and his colleagues discovered that *Spirochaeta icterohaemorrhagiae* is the cause of Weil's disease, to which the name "spirochetal jaundice" may now properly be applied. This discovery was made opportunely, as epidemic jaundice became prevalent among some of the troops of the allied nations early in the war. The rat was found to be a carrier of the parasite; and as the disease reported among soldiers of practically all nations engaged in combat was found most frequently

1. Quoted from Védrènes' version (Paris, 1876) of Celsus, in Buck, A. H.: The Growth of Medicine, New Haven, Conn., Yale University Press, 1917, p. 152.

2. Pearce, R. G., cited by Macleod, J. J. R.: Physiology and Biochemistry in Modern Medicine, St. Louis, C. V. Mosby Company, 1918, p. 86.

3. Improved Methods of Treatment of Shock, editorial, J. A. M. A. **74**: 106 (Jan. 10) 1920.

4. Bischoff, T. W. L.: Ztschr. wissensch. Zool. **7**: 331, 1856; **9**: 65, 1858.

5. Van Slyke, D. D., and Salvesen, H. A.: The Determination of Carbon Monoxid in Blood, J. Biol. Chem. **40**: 103 (Nov.) 1919.

6. Salveson, H. A.: The Determination of Blood Volume by the Carbon Monoxid Method, J. Biol. Chem. **40**: 109 (Nov.) 1919.

at the front, the rat-infested environment permitted an interpretation of the probable etiologic factors.

Spirochetal jaundice is not confined to Japan or to the fields of Flanders. As might be expected, the rat in other parts of the world has given evidence of infestation with the spirochete of this disease. Lyons, Marseilles, Barcelona, Tunis, Algiers and New York have already given scientific proofs of the same danger in their midst. London is the latest city to furnish new evidence of the widespread occurrence of the parasite in wild rats. Foulerton[1] has examined more than a hundred of these rodents at the Department of Hygiene in University College, and found at least 4 per cent. infected with the spirochete of jaundice.

The worldwide distribution of reservoirs of this spirochetal disease must now be recognized. This makes it more imperative than ever to learn the mode of transmission to man. Although spirochetal jaundice in man has been caused by rat-bite, direct infection in this manner can be excluded in practically all instances, in contrast with what happens in the genesis of rat-bite fever due to *Spirochæta morsus-muris*.[2] Foulerton has pointed out that although it is not quite certain whether the spirochete of jaundice has been identified in the intestinal contents of the healthy rat, it has been found in the feces of infected guinea-pigs; and its presence in the feces in cases of spirochetal jaundice in man may be assumed. He adds that the presence of the spirochetes in considerable numbers in the urine of rat-carriers is quite sufficient to insure a wide distribution in rat-infested areas. The possible rôle of insects as accessory or alternative factors in spreading infection cannot be excluded. However, as Noguchi[3] has recorded a case in which the urine was actively pathogenic as late as four weeks after the onset of the disease, the convalescent stage of which commences usually at about the fourteenth day, the urine of human patients must still be looked on as a source of possible danger.

1. Foulerton, A. G. R.: The Protozoal Parasites of the Rat, with Special Reference to the Rat as a Natural Reservoir of Spirochacta Icterohaemorrhagiae, J. Path. & Bacteriol. **23**: 78 (Oct.) 1919.
2. Spirochete Transmission in Rat-Bite Fever, editorial, J. A. M. A. **74**: 250 (Jan. 24) 1920.
3. Noguchi, Hideyo: The Survival of Leptospira (Spirochaeta) Icterohaemorrhagiae in Nature, Observations Concerning Microchemical Reactions and Intermediary Hosts, J. Exper. Med. **27**: 609 (May) 1918.

PHYSICAL DEFECTS AS REVEALED BY THE WAR

In the history of nations there are few instances in which an exhaustive survey of "the physical, mental and temperamental health" of a large group of the population has been made without selection. The medical examination made necessary by the drafting of millions of young men for the exigencies of the recent war has furnished statistics of a unique value which will afford an opportunity for an evaluation of the physique of mankind on a scale never approximated in any comparable degree. We have heard much of late regarding the imperfections of the new race of young citizens and the large incidence of defects which have been revealed by the war-time medical examinations. It should be remembered, however, that many of the shortcomings were of minor importance to the well-being or working capacity of the individuals concerned. The army regulations have presented a standard of physical perfection far beyond that necessitated by the requirements of comfortable and useful existence. Many recorded defects were noteworthy from a military standpoint alone.

Against the criticisms of the national health and physique of American boys we may now cite the outcome of the study made of the records of about 2,500,000 men by Major Davenport and Lieutenant-Colonel Love for the Medical Department of the United States Army.[1] In the total population examined there were found 468 men defective per thousand examined. This means that over half of the men were found to be without any physical or mental blemish significant enough to be recorded. About two fifths of all the defects were of a mechanical sort, involving bones and joints. The second place is taken by sense organs, followed by tuberculosis and venereal disease. Many of the defects were remediable; some of the diseases were curable. The army experts assert that fully 90 per cent. of the defects found were not of such a nature as to interfere seriously with the man's performing services of the highest order in civil life.

It is to be regretted that the various countries in which recruits were examined under the draft could not have adopted some uniform system of examination and classification. Recently Comrie[2] analyzed the defects exhibited by 10,000 recruits in a district in Scotland which contained both rural and urban population. The most striking facts brought out are that approximately 50 per cent. of the recruits examined were qualified for the most strenuous kind of physical work. Among the other 50 per cent., about two fifths were capable of fairly strenuous work, a little less than this proportion were capable only of clerical duty, and about one sixth were either postponed or rejected. Although the system of classification adopted by the United States differed materially from that adopted in Great Britain and it is difficult to make an accurate comparison of the two countries as to the relative efficiency of their man power, certain points may be discussed to advantage.

A comparison of the cause of the rejections among the Scottish and American draft registrants is difficult not only on account of the different systems used but also because American statistics show extraordinary variations in different states. It is true, of course, that Comrie's figures are probably not applicable to the entire United Kingdom, though it is doubtful whether the great divergence would exist there that exists in a

1. Davenport, C. B., and Love, A. G.: Defects Found in Drafted Men, Scient. Month. **10**: 1 (Jan.) 1920.
2. Comrie, J. D.: Lancet **2**: 957 (Nov. 29) 1919; abstr. J. A. M. A. **74**: 61 (Jan. 3) 1920.

country with the extent and climatic variations of the United States. There would doubtless be material differences in the causes of disability in different parts of the United Kingdom as there are here. Taking diseases of the thyroid gland as an instance, it is noted that among Comrie's Scottish recruits only 0.5 per cent. were rejected on account of goiter. These figures are comparable to those from some of our states. Indeed, in Maine only 0.3 per cent. of the recruits were rejected for thyroid disease. On the other hand, 6.2 per cent. were rejected in the District of Columbia; and in other states, Missouri and Wisconsin, for example, the percentage rejected for disease of the thyroid was high. Great discrepancies are found in connection with other diseases. It is hard to understand, for example, why only 1.07 per cent. of the Scottish recruits were rejected for pulmonary tuberculosis, while in one American state 23 per cent. of the recruits were rejected for this reason. One is forced to the conclusion that such an enormous difference in such a prevalent disease cannot be due to local variations in the incidence of the disease but must be due to variations in the methods of examination and in the interpretation of physical findings.

These figures of Comrie serve to call our attention once more to the fact that a considerable proportion of the male population is suffering from defects, many of which are preventable. Comrie's figures show that the proportion of men capable of the more strenuous forms of military duty progressively diminishes from 77 per cent. at the age of 18 to 30 per cent. at the age of 40. The American figures published so far do not touch on this particular aspect of the situation, but there is no special reason to believe that the general principle is any different in the United States than it is in Scotland. There is always danger, particularly if this country does not adopt some form of conscription, of forgetting the valuable lessons which were learned as the result of the wholesale examinations made by the draft boards and by the boards of medical officers at the camps. The particular point of view that is emphasized by these results is the necessity for a much wider application of individual preventive medicine than has heretofore been deemed necessary. The day is past when preventive medicine consisted merely in attention to water supplies, sewerage and general sanitation. The education of the public in the principles of correct living and the periodic examination of supposedly healthy individuals must become part of our creed as physicians if any great progress is to be made in the prevention of disease. While the necessity for community hygiene continues and still needs developing in many quarters, it has been clearly demonstrated that general sanitation will carry us only so far, and that the preventive medicine of the future must be concerned with the individual much more than has the preventive medicine of the past. The nineteenth century was the century of communal hygiene; the twentieth must be the century of individual hygiene.

Current Comment

SOME PUBLIC HEALTH PROBLEMS IN CENTRAL EUROPE

Only he who is blind to the tendencies of the times will fail to see the progress being achieved by that movement for public health which has been described in a measure as the socialization of medicine. Comparatively few of the long desired activities in the direction of preventive medicine have received governmental support in an authoritative way. The public health agencies carefully guard us as a nation against the attack of many infectious diseases, but most of the efforts to advance human welfare receive their initiative in the work of the individual or groups of persons organized for the common good. The war has been an impetus to put into operation many health projects that were making only slow advance in the self-satisfied days of peace. Nation-wide plans for health betterment and the conservation of human life have been launched. In England a ministry of health has at length been made a reality. It is interesting to learn, from the words of an expert, what the pressing problems of public health are in the reconstruction period of the defeated countries. In an address before the new Prussian parliament of which he has become a valued member, Professor Abderhalden[1] of Halle, widely known in this country as an energetic physiologist, has discussed the current needs with great frankness. Foremost is the desirability of improving the physiologic status of the child population. It has been undernourished physically and mentally. The mortality in childhood has increased greatly, and this ordinarily happy period of life has been robbed of its joys. One of the new plans proposed to counteract the situation aims to send children away to tolerant neutral countries for recuperation—a novel suggestion. The transport of curable tuberculous children to Switzerland, where milk is available, is included in the suggestion of a medically supervised adolescence. The improvement of the living conditions, and in particular the dietary, of the working people is likewise urgently recommended to the governmental authorities. In some regions the lack of abundant rations of a suitable sort has led to decreased output. The campaign against venereal disease seems to be needed as never before in central Europe. The freedom from governmental restraint which comes to all incipient revolutionary democracies is always liable to be attended with license of conduct. Our own national dangers from the venereal menace are by no means trivial; but, added to tuberculosis and undernutrition, the venereal diseases furnish an exceptionally serious problem. The worst features of alcoholism are expected to disappear in the United States with the establishment of permanent, nation-wide prohibition. A few months under the new regimen ought to furnish indisputable evidence as to its hygienic worth. Abderhalden sees a threat of great harm ahead for his country when once the routes of

1. An account of the address is given in the Münchener medizinische Wochenschrift, Oct. 3, 1919, No. 40, p. 1156.

trade are restored so that alcoholic drink can be imported or the possibility of its manufacture restored. How temperance is to be instituted in the midst of a nation which craves the return of alcohol will prove to be a problem of singular difficulty for legislatures and ministries to solve.

UNIVERSAL MILITARY TRAINING

The Wadsworth army bill, having been reported from committee, now approaches final consideration and action by the senate. Great interest has developed in the universal training feature of this bill, on which we commented last week.[1] Physicians are interested in this feature from two points of view: first, as it concerns the creation of an active medical reserve corps, and second, in its relation to the physical development of the young men of the nation. If we are to give actual field training to all of the young men of our country in future years, it will be necessary that they be physically examined before going into active training, that their health be guarded during the period of training, and that they receive periodic examination during subsequent years, so as to determine their fitness for service if need demands. At the same time as these young men are trained, it will be necessary to train the medical reserve officers who are to take care of them under military conditions. From the general point of view, the matter is one that affects the health of the entire nation. In the first place, physical examination of these young men will disclose certain defects which may be corrected, thus prolonging their lives. The period of physical training in the field will bring about increased physical stamina, which will mean a better type of man. Those who saw the results of military training on the physical condition of our selective service army need no argument as to the beneficial effects of such training. Increased stature, more erect carriage, greater muscular ability and elimination of superfluous adipose tissue were distinguishing signs of those who had had even brief periods of such training.

1. Universal Military Training, Current Comment, J. A. M. A. 74: 329 (Jan. 31) 1920.

THE RELATION OF DIABETES INSIPIDUS TO DISEASE OF THE HYPOPHYSIS

The etiology of diabetes insipidus was for a long time shrouded in mystery. It was known that the disease was associated in many instances with injuries involving the base of the brain and with pathologic lesions occurring in that region. It was a notable fact that syphilitic lesions involving the basal region were particularly likely to be associated with diabetes insipidus. It is only in recent years, however, that a relationship between this disease and disturbances of the function of the pituitary body has been seriously considered. As studies of pituitary disease have progressed, it has been noted that polyuria is a not infrequent symptom. In dystrophia adiposogenitalis, this symptom may be pronounced; in acromegaly, both polyuria and glycosuria may be present, and in certain types of infantilism associated with pituitary disease, the passage of large quantities of urine may be an outstanding feature. It has been noted, too, that tumors in the neighborhood of the hypophysis which exert pressure on this gland can be associated with the clinical picture of diabetes insipidus. As Pagniez[1] points out, it was only in 1913 that it was first demonstrated that the administration of pituitary extract has a decided effect in controlling the urinary output in some of these cases. Since that time a number of observers have confirmed this observation, although the administration of pituitary extract has not invariably been successful in this regard. In many of the cases the effect has been of a more or less temporary nature. Experimental work, such as that done by Harvey Cushing in this country, has likewise shown a relationship between the pituitary gland and the excretion of urine. Damage to the pituitary gland during operative procedures may result in polyuria, and ablation of the gland in animals likewise results in polyuria. These observations all tend to show that there is a definite relationship between the syndrome that we call diabetes insipidus and disease of the hypophysis, particularly the posterior lobe. The exact mechanism of the process is not yet clear. The importance of such a relationship, however, has a bearing on diagnosis, and suggests the careful roentgenographic examination of the skull in cases of this nature. Therapeutically, it suggests the administration of pituitary extract as a curative measure.

1. Pagniez: Presse méd. 27: 746, 1919.

YEARS AND POWERS

The recent death of Field Marshal Sir Evelyn Wood at the age of nearly 82 recalls that the great war has furnished many contradictions of the prevalent impression that men who are subjected to severe strains and stresses in life, under a heavy burden of responsibility, are likely to break down and either suffer from nervous exhaustion or else die when comparatively young. Sir Evelyn Wood was a veteran of the Crimea; he was wounded in the assault on the Redan some sixty-five years ago, yet he took an active part in the organization of the British army during the recent war. He had served through the Indian mutiny with great distinction, receiving the Victoria Cross for bravery, served through the Ashanti war in South Africa as well as the Kaffir war and then the Zulu war, spent six years in Egypt in the strenuous post of commander of the forces in the lines of communication under Lord Wolseley, and after his retirement from the army as field marshal was active as the chairman of the Association of the City of London for organizing a territorial force. A great many distinguished military leaders have been noted for longevity. Von Moltke, who went through the strain and stress of the Franco-Prussian War fifty years ago, lived, like Sir Evelyn Wood, to be well beyond 80. Though Lord Roberts, the great English general, had been so disabled that his life was despaired of as a young man, he obtained the Victoria Cross for bravery, had been wounded a number of times, went through the Boer war, and yet was so far from exhaustion at 80 that the English government entrusted to him a large measure of responsibility for the mobiliza-

tion and organization of the fighting forces on the western front. He died of pneumonia not far behind the lines in France, quite as any younger man might have done. Among the French, Clemenceau and Foch are conspicuous examples of what older men accomplished in the great emergency. The idea of exhaustion as a source of pathologic development and especially of such lack of nervous control as has been called nervous breakdown has not, therefore, been wholly confirmed by the war's experiences. It might confidently have been expected that the demands made on the human organism would surely cause collapse. However, unless there was definite predisposition, personal or hereditary, to the occurrence of serious nervous symptoms, these do not seem to have developed either in military or civil conditions in spite of the intense strain to which the war subjected many people. This was particularly true with regard to men who were well on in years when the war broke out. The war has shown that both men and women can stand more than was believed possible. It has also demonstrated that the powers of men are maintained to a greater age than has usually been conceded.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

New Officers.—Washington County Medical Association at its annual meeting in Springdale, January 17, elected Dr. Richard T. Henry, Springdale, president; Dr. Ephraim G. McCormick, Prairie Grove, vice president; Dr. Nina V. Hardin, Fayetteville, of the University of Arkansas Infirmary, secretary, and Dr. William H. Mock, Prairie Grove, treasurer.——Sebastian County Medical Society at its annual meeting in Fort Smith, January 17, elected Dr. William R. Brooksher, Fort Smith, president; Dr. Dred R. Lorente, Fort Smith, secretary, and Dr. Rufus F. Parks, Bonanza, treasurer.

COLORADO

Cancer Campaign.—Dr. Charles A. Powers, Denver, chairman of the Colorado committee of the American Society for the Control of Cancer, states that the committee has privately secured funds which will enable them to send the little booklet called "What We Know About Cancer" to the physicians of the state.

Course in Public Health Nursing.—The University of Colorado announces a four months' course in public health nursing under the joint auspices of the University of Colorado extension division, and the Colorado Fuel and Iron Company, to be held in Minnequa steel works and hospital, with field work in Pueblo and mining camps, from March 1 to June 21. The course consists of lectures and class recitations and field work. The tuition fee is $25 for the course.

CONNECTICUT

Personal.—Dr. Thomas Eben Reeks, New Britain, has resigned as deputy commissioner of public health and director of the bureau of preventable diseases.

Society Meetings.—Waterbury Medical Association at its annual meeting, January 12, elected Dr. Edward W. Goodenough, president; Dr. Michael J. Lawlor, vice president; Dr. George A. Gosselin, secretary, and Dr. George O. Robbins, treasurer.——New Britain Medical Society recently gave a dinner in honor of its members who served in the United States Army or Navy during the war.

Mental Hygiene Division Established.—The department of health of Connecticut has established a division of mental hygiene and has appointed Dr. William B. Terhune, New Haven, director of that division. The Connecticut state department of health is the first in the United States to establish a division for the supervision of the care, and the enforcement of the laws, relative to the mentally afflicted.

Sanatorium Opened.—The state tuberculosis commission has issued a statement that the sanatorium at Crescent Beach for the treatment of bone and glandular troubles is opened for the receiving of patients. There are accommodations for fifty-eight patients. With a view to having every patient examined on admission, the state has been divided into districts and a physician designated to make examinations in each district. Dr. William M. Stockwell, Hartford, will make examinations for Hartford County, Dr. Cole B. Gibson, Meriden, for New Haven County, and Dr. Hugh B. Campbell, Norwich, for the eastern part of the state. Dr. Edward J. Lynch, Shelton, will have charge of Fairfield County. The examinations in Litchfield County will be conducted by Drs. Lynch, Stockwell and Gibson.

IDAHO

Health Progress.—More than $400,000 will be expended in the next biennium for improvements at the various state institutions. Two department hospitals will be erected at a cost of $140,000, one in the northern and the other in the southern part of the state.

Smallpox.—The state bureau of public health on January 7 asked the municipal and county officers to pass regulations requiring all children who attend school to be vaccinated for smallpox. The disease is present in twenty-six of the forty-four counties of the state.

ILLINOIS

Personal.—Dr. E. Bruce Godfrey, Springfield, has accepted a position in the Red Cross service, and expects soon to leave for his new field of work in Roumania.

Influenza.—February 1 and 2, only fifty-three influenza and six pneumonia cases were admitted to the hospital at Great Lakes, and no deaths were reported, February 2. This brings the total number of cases up to 1,403.

Sanatorium Burns.—Fire destroyed the main building of the Edwards Sanatorium, Naperville, February 1. The patients were removed to other buildings of the institution without casualty or panic. The loss is covered by insurance.

Grant for Therapeutic Research Work.—Northwestern University Department of Chemistry has received a grant of $3,500 from the interdepartmental social hygiene fund of the United States government for the purpose of supporting research leading to the development of new metallo-organic compounds which may prove of therapeutic value in the treatment of syphilis of the central nervous system. A plan of cooperation has been worked out between the Universities of Wisconsin, Minnesota, Illinois and Northwestern whereby all pharmacologic work will be done by the first named institution and the synthesis of new compounds by Minnesota, Illinois and Northwestern in cooperation.

Illegal Practitioners Fined.—James A. Savage of Danville was arrested by the Department of Registration and Education of the State of Illinois, for practicing medicine without a license. He was found guilty by a jury and given a jail sentence of ninety days and fined $50, the jail sentence to be suspended provided Savage secures a state license or quits practicing. In passing sentence, Judge Partlow stated that the people had a right to ask any man practicing medicine or healing to secure a state license; that the law required it and, therefore, there was no other way around it. ——Mrs. Antoinetta Bolstepa of 2929 South Shields Avenue, Chicago, was arrested by the Department of Registration and Education of the State of Illinois for practicing midwifery without a license and was fined $25 and costs. She promised to discontinue practicing in the future.——Frances Wesolowski of Blue Island was also arrested by the department and fined the minimum amount for practicing midwifery without a license.

Chicago

Influenza.—During the twenty-four hours ended February 2, only 802 cases of influenza were reported, with eighty-nine deaths from influenza and sixty-nine from pneumonia.

Vienna Thanks Chicago.—Dr. Carl Beck, secretary and manager of the Vienna Relief Fund, has received from Dr.

Adolph Lorenz, Vienna, a letter acknowledging the receipt of 250,000 crowns, to be distributed for food and clothing. Since the date of that letter, $35,000 have been cabled to Vienna from Chicago.

Drive for Augustana Hospital.—Final arrangements for a campaign to raise $700,000 for the Augustana Hospital between February 16 and 26 were provided at a meeting of the executive committee, January 30. Chief Justice Harry Olson is chairman, and Mrs. John A. Christianson vice chairman of the committee.

Postponement of Meeting.—Owing to the epidemic of influenza, the joint meeting of the Minneapolis Academy of Ophthalmology and Otology the Milwaukee Oto-Laryngological Club, the Chicago Oto-Laryngological Society, and the Chicago Ophthalmological Society planned for this month has been indefinitely postponed.

Visiting Nurse Association.—The thirtieth annual meeting of the Visiting Nurse Association of Chicago was held, January 30, under the presidency of Mrs. Joseph M. Cudahy. The treasurer reported a balance of $30,317 in the treasury. During the year ten new nurses were added to the staff. Mrs. Cudahy was reelected president.

Institute of Medicine.—At the meeting of the Institute of Medicine of Chicago, January 30, at the City Club, Dr. Victor C. Vaughan of the University of Michigan, Ann Arbor, presented a paper on "Remarks on the Chemistry of the Protein Molecule in Relation to Infection," and Dr. Karl K. Koessler spoke on "The Relations of Proteinogenous Amins to Medicine."

Robert Koch Society Meeting.—The thirty-seventh meeting of the Robert Koch Society for the Study of Tuberculosis was held, January 29, under the presidency of Dr. Ethan A. Gray at the City Club. Dr. Edwin B. Tuteur spoke on "Neglected Opportunities in the Therapy of Tuberculosis;" Dr. James A. Britton on "Tuberculosis and Occupation," and Dr. Wilson Ruffin Abbott on the "Value of the Diagnostic Clinic to a Community."

Cook County Staff Appoints.—The following appointments are announced to the attending staff of the Cook County Hospital as a result of the competitive examination given by the Cook County Civil Service Commission: Diseases of children, Drs. Julius H. Hess, M. L. Blatt, Stanley Gibson, Walter F. Winholt, August Strauch and May Michael; laryngology, Dr. Samuel Salinger; ophthalmology, Drs. E. Findlay, G. F. Suker and C. G. Darling; gynecology, Drs. C. Culbertson, C. W. Barrett, H. Schmitz and W. J. Woolston; nervous and mental diseases, Drs. G. B. Hassin, L. J. Pollock, S. Krumholz and I. L. Meyers; obstetrics, Drs. D. S. Hillis, F. H. Falls, H. F. Lewis and W. G. Lee; pathology, Drs. H. G. Wells, E. R. LeCount, D. J. Davis and J. P. Simonds; skin and venereal diseases, Drs. J. S. Eisenstaedt, E. J. Zeisler, E. A. Oliver and A. W. Stillians; surgery, Drs. D. C. Straus, R. T. Vaughan, D. N. Eisendrath, V. C. David, R. W. McNealy, P. Oliver, K. Speed, H. Jackson, K. A. Meyer, W. R. Cubbins, G. L. Davenport, F. G. Dyas, F. A. Besley, G. G. Davis, H. McKenna, H. M. Richter.

INDIANA

Smallpox.—During the first twenty-four days of the year, 133 new cases of smallpox were reported to the Evansville board of health.——The state board of health is supporting the local health board of Evansville in its action taken in excluding from school those children who have not been vaccinated against smallpox.

Personal.—Dr. Lewis R. Thompson, Lafayette, who recently accepted a position in the Public Health Service in the Philippine Islands, has been selected to establish and superintend the new marine hospital in Manila.——Dr. Carleton B. McCulloch, Indianapolis, has announced his candidacy for the democratic nomination for governor.

Admits Illegal Practice.—A. W. Van Bysterweld, Warsaw, appeared in Circuit Court, January 19, and pleaded guilty to the charge of illegal practice of medicine and was fined $25 and costs, and released on his promise to leave the state. He contended that he was not a physician but a chemist. It is said that he has been convicted on several occasions on similar charges.

Health Board Operates at Loss.—The Indianapolis board of health operated during 1919 with a deficit of approximately $75,000, or $3,000 greater than the deficit in 1918. This deficit was due principally to increased salaries and cost of supplies. During the year the hospital handled more than 10,000 patients. The appropriation available to the health board during 1920 is about $327,000, and the budget will be revised in an endeavor to keep the expenditure within the appropriation.

War Service Gives Credits.—The treasurer of the Indiana State Board of Medical Registration and Examination announced, January 23, that hereafter service in the medical department of the Army, Navy or Marine Corps may be accepted as time credits for the examination to practice medicine in the state. The first examination under the new ruling will be held at the state house, Indianapolis, February 10, 11 and 12.

Influenza.—The city of South Bend has appropriated $1,000 for use of the Visiting Nurses Association in combating influenza. The crest of the epidemic seems to have passed, as less than 100 new cases were reported, January 27.——Mishawaka is said to have had seventeen deaths due to influenza since January 1.——The total number of cases of influenza in South Bend is reported to have been about 2,100, with forty-seven deaths from influenza and pneumonia.——The city council of Fort Wayne, January 23, appropriated $10,000 to be used in the fight against influenza.

New Health Divisions.—Plans for the working of the two new divisions of the state board of health include the holding in each congressional district of public meetings at which the work of the divisions will be discussed. The tuberculosis division will have a director, assistant to the director, and two nurses, who will hold meetings throughout the state aiming at prevention rather than care and cure of patients suffering from the disease. The infant hygiene division will be similarly organized and will hold similar meetings; it will deal only with children of 5 years of age or younger, and will endeavor to encourage knowledge of prenatal hygiene.

MASSACHUSETTS

Home for Incurables.—The Northwestern Deaconess Association has assumed control of the Cullis Home in Roxbury and will conduct the institution exclusively for the care of persons afflicted with cancer and other incurable diseases. The institution will be known hereafter as the Palmer Home.

Out-Patient Medical Society.—At the first clinical meeting of the Out-Patient Medical Society of Massachusetts General Hospital, Boston, held January 22, Dr. Paul D. White discussed "Practical and Modern Teaching of Heart Disease," and Dr. Richard H. Miller spoke on "Errors and Shortcomings in Diagnosis."

Campaign Against Cancer.—In the campaign against cancer free diagnosis of pathologic specimens is offered to the profession of the state by Harvard Commission for Cancer Research through the commissioner of health. Pathologic specimens should be sent to the director of the state diagnosis service, Cancer Commission, Medical School of Harvard University, Boston.

Tuberculosis League.—The Massachusetts Tuberculosis League is reorganizing to carry through a more intensive campaign for the prevention of tuberculosis. This is in accordance with the plans of the National Tuberculosis Association, which is planning to raise more than $7,000,000 throughout the country for financing the greatest drive for health education undertaken in the world's history.

Personal.—Dr. William R. P. Emerson, Boston, lectured on child nutrition in eight schools in Chicago and at the Art Institute in that city on January 22, 23 and 24.——Dr. Sylvester E. Ryan, Springfield, has been nominated by the governor as a member of the state public health council, succeeding Dr. William J. Gallivan, Boston, resigned to accept the position of director of the tuberculosis sanatoriums of the state.——Dr. Richard C. Cabot, Boston, has been appointed professor of social ethics in Harvard University.

Free Medical Lectures.—The annual course of free public lectures given at the Harvard Medical School, Longwood Avenue, at 4 p. m., on Sunday afternoons was inaugurated, February 1. The following is the schedule of lectures:

Feb. 1—Dr. Richard M. Smith, Boston. Child welfare.
8—Edwin H. Place, Boston. Smallpox and vaccination.
15—Dr. Harold C. Ernst, Boston. Protection against infection in diseases other than smallpox.
22—Dr. Kurt H. Thoma. Diseases of the teeth in relation to systemic disturbances.
29—Dr. Frederick T. Lord, Boston. Pneumonia.
Mar. 7—Dr. Percy G. Sales, Boston. Some aspects of alcohol.
14—Dr. W. T. Boyle. New conceptions of the structure of matter.
21—Dr. Cecil K. Drinker, Cambridge. Health and industry.
28—Dr. Channing Frothingham, Boston. Some points of interest to the public in regard to medical education as brought out by the recent war.

Plainfield Health Clinic.—A few years ago a summer resident of Plainfield conceived the idea that an annual lecture and demonstration on some health topic by a representative of the state department of health would assist in teaching certain fundamentals necessary to personal and community health. This plan has developed into a midsummer health clinic to which children, no age limit, may be brought for physical examination and for advice. Troublesome temporary teeth are extracted, children are vaccinated on request of a parent, mothers are instructed in the proper care and feeding of infants and growing children and concerning the correction of physical defects. Following the clinic session, those children requiring further examination and treatment are transported to a hospital for necessary special advice and treatment.

MARYLAND

Election.—At the regular meeting of the Baltimore County Medical Association, January 21, the following officers were elected: president, Dr. John W. Harrison, Middle River, and secretary, Dr. George S. M. Kieffer, Morrell Park.

Personal.—Dr. William H. H. Campbell, Owings Mills, was injured recently by falling on the ice.——Dr. John M. T. Finney, Baltimore, has declined the offer made him by Harvard University and will continue his connection with the Johns Hopkins Hospital and Medical School.

Typhoid Rate Low.—Despite the fact that conditions in the new annex of Baltimore city are more favorable to the spread of typhoid fever than in the older part of the city, Baltimore during the year just passed, had the lowest death rate from typhoid fever in its history. There were sixty deaths during the year from this disease, and of these fifty were among white persons and the remainder among negroes.

Eudowood Sanatorium to Expand.—Extensive improvements will be made during the present year to Eudowood Sanatorium, Towson, according to reports of the officers submitted at the annual meeting of directors in Baltimore, January 26. The greatest need is a nurses' home, which the woman's board will erect at a cost of from $25,000 to $30,000. Plans also will be considered for additional private rooms to the Victor G. Bloede Hospital, for an additional medical building, supplied with roentgen-ray laboratory, dental equipment and a medical library, for an additional infirmary and other improvements. Work on these will be begun as soon as weather permits. Dr. Henry Barton Jacobs, Baltimore, president of the board of directors, told of the excellent work accomplished since the institution was established, and emphasized the need for more beds for advanced cases.

Influenza on Increase.—During the week ending January 31, influenza has increased rapidly in Baltimore. January 30 the greatest number of new cases developed, 452 being reported for a period of twenty-four hours, making 1,386 cases reported to the city health department since the beginning of the present outbreak. The cases are well scattered, virtually every section of the city being affected. The severe symptoms of the outbreak of 1918 are absent, the death rate continues low, and many of the cases reported as influenza are nothing more than "ordinary colds" Pneumonia also continues on the increase, the new cases reported in one day being lobar pneumonia, twenty-three; bronchopneumonia, twenty-one; with eight deaths from lobar pneumonia and one from bronchopneumonia.——The state board of health received reports of 516 new cases in the counties for a period of twenty-four hours on the same date. Montgomery County took the lead reporting 324 cases; Prince George's County had 153, and Frederick County, eighty-three cases.——From Camp Meade came reports of 122 cases. Camp officers reported fourteen new cases for the day. Twelve cases have been reported from Fort McHenry Hospital. A small epidemic of influenza has broken out at Edgewood Arsenal, the disease having been brought to the reservation by chemical warfare troops.

MISSISSIPPI

Physician Found Guilty.—In the case of Dr. Fletcher E. Lee, Petal, charged with manslaughter as the result of performing a criminal operation, the jury is reported to have brought in a verdict of guilty, January 27.

New Officers.—At the annual meeting of the Lauderdale County Medical Association held at Meridian, January 10, Dr. Julian T. Bailey, Meridian, was elected president; Dr. Thomas G. Cleveland, Meridian, vice president, and Dr. Hiram C. Sheffield, Meridian, secretary.

Work of State Laboratory.—In the annual report of the work of the state hygienic laboratory for the biennium ended June 30, 1919, it is shown that 30,707 specimens were examined, thirty-eight patients who had been bitten by rabid dogs were treated free of charge, and 101,243 c.c. of antityphoid vaccine were distributed to the people of the state.

Need of Home for Feebleminded.—The Mississippi Society for Mental Hygiene in a recent bulletin urges the need of an institution for the feebleminded, as an economic proposition to save lives and property destroyed by feebleminded when allowed to be at large. The hospital mental efficiency bill to be considered by the next legislature establishes a Mississippi school and colony for the feebleminded and provides a plan for a chancery court to commit feebleminded individuals to this institution. The bill carries an appropriation of $200,000.——In two orphanages in Mississippi with a population of 2,080, forty-one children were found so defective mentally that they could never be made self-supporting citizens

NEW YORK

Influenza.—Madison Barracks at Sacketts Harbor has been quarantined against influenza. The measure is precautionary, as only one case of the disease has thus far developed.——Influenza has broken out among the inmates of Sing Sing prison, and so many are ill that the prison schoolrooms have been turned into an auxiliary hospital to care for the patients. The prison is in need of nurses and special facilities.

New York City

Fire in Hospital.—A fire recently occurred in the administrative part of the Lenox Hill Hospital, but was promptly controlled. The loss is estimated at $5,000.

Influenza on Liner.—The Cunard Line S. S. *Kaiserin Auguste Victoria,* sailing from New York, January 17, arrived in Plymouth, England, with sixty cases of influenza aboard and reported one death from the disease during the passage.

Red Cross Starts Health Service.—The New York County chapter of the American Red Cross has organized within the chapter a new department of health service the object of which is to strengthen existing public health agencies. George R. Bedinger is acting director of the new department.

Personal.—Dr. Jacques Loeb of the Rockefeller Institute for Medical Research has been elected president of the American Society of Naturalists.——Dr. Abraham Jablons has been appointed medical inspector in the bureau of hygiene of the department of health.——Dr. James MacFarlane Winfield, for many years professor of dermatology in the Long Island College Hospital, has resigned.——Dr. Rudolph Matas, professor of general and clinical surgery at Tulane University, New Orleans, was elected an honorary member of the New York Academy of Medicine at the annual meeting, January 15.——Dr. Sigmund Pollitzer has been elected a corresponding member of the French Society for Dermatology and Syphilis.——Dr. William Golden Mortimer has been elected director of the ophthalmologic department of the new throat, nose and lung hospital, and designated special surgeon to the throat, nose and ear department.

The Influenza Epidemic.—January 30, the health department reported 5,532 new cases of influenza and 831 cases of pneumonia, an increase of 831 cases of influenza and a slight increase in the number of cases of pneumonia over the preceding day. From the onset of the epidemic there have been recorded 30,000 cases of influenza and 6,031 cases of pneumonia, with 545 deaths from influenza and 1,696 from pneumonia. It is believed that the epidemic has not yet reached the peak. The disease is, however, manifestly milder than in 1918. To meet the acute shortage of nurses, the health department is opening an emergency training school for nurses at 505 Pearl Street, where no charge will be made for the training The police department, cooperating with the sanitary squad of the health department, has placed officers in the elevated and subway stations to serve summonses on those who spit or carry lighted cigars in forbidden places

Death Rate for 1919.—The death rate of New York City last year reached the lowest level ever recorded since the establishment of accurate vital statistics fifty years ago. The rate for the year was 12.39 per thousand as compared to 16.71 in 1918, and 13.94 for the five year period 1913 to 1917, inclusive. Generally speaking, where two persons died fifty years ago out of every thousand population, only one

died during 1919. This tremendous reduction in the death rate is the direct result of preventive measures on the part of the sanitary officials. The diseases in which the rate was lowered were typhoid, malaria, smallpox, measles, scarlet fever, whooping cough, diphtheria, tuberculosis and diarrheal diseases of children. The lowest annual infant mortality rate recorded in the history of the city of New York was in 1917, when the rate was 88.8 per thousand children born. The second lowest rate was in 1918, when, with a birth registration of 138,046, there were 12,657 infant deaths and an infant mortality rate of 91.7 per thousand children born. For the first forty-five weeks of 1919, the infant mortality rate, based on a thousand births, was 86 as against 91 for the corresponding period in 1918, and 89 in 1917.

NORTH CAROLINA

New Officers.—At the annual meeting of the Wake County Medical Society held in Raleigh, January 8, Dr. Clarence A. Shore, Raleigh, was elected president; Dr. James M. Harper, vice president, and Dr. William C. Horton, Raleigh, secretary-treasurer.

Hospital Items.—The North Carolina General Hospital has been incorporated and has let the contract for a $40,000 five-story building to be located at Wilson.——The new Carpenter-Davis Hospital, Statesville, was opened, January 9, by Drs. Forest A. Carpenter and James W Davis, Statesville

County Health Work.—At present twenty-two counties, which include 38 per cent. of the population of the state, have provided for whole-time health officers. Of these fourteen have county health departments conducted in cooperation with the state board of health, and in addition to these, Bertie, Vance, Beaufort, Union and Harnett counties have made appropriations and asked for cooperation from the state board of health. There are also eight counties with whole-time health officers or health departments conducted independently and without cooperation or coordination with the state board of health.

OHIO

County Health Board Activities.—Seventeen of the eighty-eight counties of the state have already filed health budgets with the state department of health. Eight of these districts have reported the appointment of health commissioners and have the new health machinery in operation under the Griswold laws.

Hospital Items.—The erection of a new state hospital for the insane to be located on a farm of 1,000 acres in northeast Ohio, and the sale of the present Cleveland State Hospital, have been recommended by the state board of administration to the governor.——Bids for the erection of a municipal hospital in Youngstown have been received by the municipal hospital commission.

Personal.—Dr. Roy L. Pierce, Mount Gilead, has been selected health commissioner of Morrow County.——Dr. Fred W. Upson, Conneaut, was operated on for intestinal obstruction at Mount Sinai Hospital, Cleveland, January 17.——Dr. John A. Burnett, Hamilton, has been appointed physician for the public schools of Hamilton.——Dr. J. Milton O'Neal, New Concord, has been elected health commissioner for Muskingum County.

Summer Course in Medicine.—The school of medicine of Western Reserve University has announced that it will institute for graduates a summer course in medicine. A two months' course will be given in medicine and surgery. The facilities of the medical school, of Lakeside, St. Vincent's, City and Mount Sinai hospitals will be utilized, the latter by special arrangement. The courses have been planned to occupy all of the time of those in attendance, and will be largely clinical in character.

Emerson Addresses Academy.—Dr. Haven Emerson, New York City, who is conducting a survey of hospital facilities in Cleveland for the hospital council, delivered an address at the meeting of the Cleveland Academy of Medicine, January 16, on "The Cleveland Hospital and Health Survey —Its Object and Scope." The report of the special committee recommending the employment of a full-time executive secretary for the academy with an increase in the scope of activities of the organization was presented by Dr. George E. Follansbee, Cleveland.

Fighting Trachoma.—By recent action of the general assembly, the state department of health has been provided with funds to support an extended campaign against trachoma. The work will be done in cooperation with the U. S. Public Health Service and local health authorities. The tentative program calls for a series of intensive campaigns in individual counties, rather than for a general effort in all sections at once. Clinics will be established, schoolchildren will be examined and treated if necessary and educational measures will be undertaken.

Cincinnati

List Goes to Minneapolis.—Dr. Walter E. List, assistant superintendent of the Cincinnati General Hospital resigned, December 22, to accept the superintendency of Minneapolis City hospitals. He left for his new position, January 15.

New Officers.—At the annual meeting of the Cincinnati Academy of Medicine, January 5, the following officers were elected: president, Dr. H. Kennon Dunham; vice presidents, Dr. Arthur L. Knight and Clement C. Fihe; secretary, Dr. Otto J. Seibert; treasurer, Dr. Alex G. Drury.

Provision for Medical Journal.—Provision for the establishment of a journal for the medical department of the University of Cincinnati was made by the will of Dr. Christian R. Holmes, which sets aside a fund of $25,000 for this purpose, payable to the trustees of the university in annual instalments of $5,000. If the publication of the journal is not commenced within a year of Dr. Holmes' death the bequest is void.

Fund for Medical Research.—As a permanent memorial of Dr. Christian R. Holmes, his friends have inaugurated plans to raise a fund of $1,000,000 for medical research, the endowment to be known as the Christian R. Holmes Medical Research Fund.——The Carnegie Corporation has made a gift of $250,000 to the medical college of the University of Cincinnati, as a tribute to Dr. Holmes' services to humanity and to endow a chair in his memory.

PENNSYLVANIA

Personal.—Dr. Robert B. Mackey, Waverly, has been commissioned major, M. C., Pa. N. G., and assigned to duty with the Thirteenth Infantry.——The commission of Capt. Robert F. Trainer, M. C., Pa. N. G., Williamsport, expired, Dec. 19, 1919.

Public Health Nurses Organize.—At a meeting of the public health nurses at the state dispensary, Williamsport, January 5, organization was effected of the Public Health Nursing Association, whose membership includes the state nurses located in the city, the nurses from the various industrial plants, the school nurses and others.

Influenza in the State.—Director Charles W. Sheldon, Tioga, district supervisor and medical director of the state department of health, reports a total of 1,500 cases in Williamsport and outlying districts. The death rate has been small, but an appeal for nurses has been sent to Harrisburg. ——In Scranton, thirty cases of influenza and one death were reported, January 29.——More than sixty cases of influenza, with several deaths, have been reported at York.

Society Meeting.—The ninety-fifth annual meeting of the Franklin County Medical Society was held in Chambersburg, January 20, and the following officers were elected: president, Dr. Joseph P. Maclay, Chambersburg; vice presidents, Drs. Samuel B. Thomas, Waynesboro, and William E. Holland, Fayetteville; secretary, Dr. John J. Coffman, Scotland (reelected); assistant secretary, Dr. Samuel D. Shull, Chambersburg, and treasurer, Dr. Frank N. Emmert, Chambersburg.

Philadelphia

Personal.—Dr. J. Blair Spencer, lieutenant in the naval reserve force during the war, has been appointed chief physician in the bureau of charities and correction in the department of welfare.——Dr. Henry N. Speer has been commissioned first lieutenant, M. C., Pennsylvania Reserve Militia, and assigned to duty with the First Infantry.

Health Clown Lectures.—Cho-Cho, the health clown who entertained Philadelphia schoolchildren several months ago with health talks, gave four lectures in the city, January 28 and 29, under the auspices of the Woman's Medical College of Pennsylvania. These were arranged to give the students and nurses an opportunity to study his methods.

Influenza.—While there is no fear of a grip epidemic, every precaution is being taken. One hundred and six new cases of mild influenza were reported, January 29. Since

the beginning of the year there have been only twenty-three deaths from pneumonia. Of the forty patients at the Philadelphia Hospital, many were discharged as convalescents, January 29, and only four new cases brought in. Of the deaths since the first of the year, two occurred during the week ending January 2; two in the week ending January 9; five in the week ending January 16; three in the week ending January 23, and eleven in the week ending January 30. There has been a slight drop in the number of daily cases reported.

RHODE ISLAND

Health Officer Reelected.—Dr. Charles V. Chapin, who has served the city of Providence for thirty-six years has been reelected superintendent of health for a three-year term.

New Officers.—At the annual meeting of the Kent County Medical Society, December 4, Dr. Frank B. Smith, Washington, was elected president and treasurer; Dr. Benjamin F. Tefft, Jr., Anthony, vice president, and Dr. J. Fulgence Archambault, Arctic, secretary.

Society Honors Associate.—The Kent County Medical Society gave a reception and banquet, December 4, in honor of Lieut. Philip C. Means, Apponaug, who recently was discharged from the military service, and is about to move to California. Dr. H. Barton Bryer, Natick, presided as toastmaster.

Physician Surrenders for Jail Term.—Dr. Frederick O. Balcom, Providence, convicted in the United States District Court in November, 1918, of violation of the espionage act, surrendered, December 2, to the United States marshal and was taken to the Providence County Jail to serve a sentence of one year. It is said the violation consisted in speaking privately against the sale of Liberty Bonds and the enforcement of the draft act.

Low Death Rate.—Figures recently published show that the death rate in Providence in 1919 was 13.22 per thousand. Notwithstanding the fact that there were in the early part of the year, 230 deaths from influenza and quite an excess from pneumonia, the death rate for the year was considerably lower than that of any year since registration began in 1856. Nearly every cause except diphtheria, cancer and Bright's disease showed a decrease. The death rate from pulmonary tuberculosis was the lowest ever recorded and that for pneumonia the lowest since 1877. The deaths from summer diarrhea and other causes of infant mortality were far lower than ever before. Typhoid fever caused only nine deaths.

WISCONSIN

Personal.—Dr. Otto A. Fiedler, Sheboygan, has been reappointed a member of the state board of health.——Dr. John B. MacLaren, Appleton, has been appointed a member of the federal committee on sanitation of the Wisconsin Industrial Commission.

State Health Board Meeting.—At the annual meeting of the state board of health in Madison, January 20, the following officers were reelected: president, Dr. William F. Whyte, Madison; secretary and state health officer, Dr. Cornelius A. Harper, Madison; assistant secretary, L. W. Hutchcroft, Madison; and the appointment of Dr. Frank F. Bowman, Madison, as deputy state health officer for the Southern Wisconsin District was confirmed.

New Officers.—At the annual meeting of the Brown-Kewaunee County Medical Society held at Green Bay, January 7, Dr. William E. Fairfield was elected president, Dr. Henry P. Rhode, vice president, and Dr. Arthur J. McCarey, secretary-treasurer, all of Green Bay.——Milwaukee County Medical Society at its annual meeting, January 13, elected the following officers: president, Dr. Alfred W. Gray, Milwaukee; vice presidents, Drs. Wilbur L. LeCron, Milwaukee, and Charles A. Fidler; secretary, Dr. Oscar S. Lotz, Milwaukee, and treasurer, Dr. Joseph P. McMahon, Milwaukee.

Physician Not Fined.—Dr. Francis W. Starr, Stanley, who was chronicled in THE JOURNAL, January 3, as having been fined $25 for having broken the rules of the state board of health regarding public funerals over remains of persons dying from contagious disease, writes that he was not fined; that an overzealous district health officer had him arrested on a technicality; that he pleaded guilty and the court did not see fit to fine him; furthermore, that the court was so thoroughly convinced that the arrest was unwarranted that it did not impose court costs; that the district attorney asked that no costs be assessed on his account, and finally that the county sheriff put in no claim for costs.

CANADA

Personal.—Dr. Frederick E. Watts, Toronto, has returned from overseas and resumed the practice of surgery.——Col. David W. McPherson, Toronto, commanding the Ontario Military Hospital, England, has returned to Toronto.

University News.—The county of Middlesex, in which is situated the city of London, is being asked by the Western University, London, Ont., for financial assistance. Somewhere between $60,000 and $80,000 is expected and will be applied to either the arts building or for dormitories.

Hospital News.—The city hospital governors of Hamilton and St. Catherines, Ont., will ask the Ontario government to increase their governmental grant from 7 cents a day for children and 30 cents a day for adults to 30 and 75 cents, respectively. It costs on an average $2.87 a day per patient to run these hospitals.——Representatives of all hospitals in Ontario receiving government grants met in Toronto the past week, the object being to seek increased grants from municipalities and the government. They will endeavor to secure a sliding scale of grants which will go up or down as the cost of maintenance rises or falls.

GENERAL

New Academy Officers.—At the annual meeting of the Sioux Valley Eye and Ear Academy held in Sioux City, January 20, the following officers were elected: president, Dr. James E. Reeder, Sioux City, Iowa; vice president, Dr. Frank I. Putman, Sioux Falls, S. D., and secretary-treasurer, Dr Lorenzo N Grosvenor, Huron, S D.

Mortality in 1918.—According to the mortality statistics of the census bureau for 1918, issued February 2, the death rate in the United States for that year was the highest on record, showing 1,471,367 deaths for the year, representing a rate of 18 per thousand population in the registration area with an estimated population of 81,868,104. Of the total deaths, 477,467, or more than 32 per cent., were due to influenza and pneumonia.

Red Cross Bureau of Disaster Preparedness.—This bureau was created by the American Red Cross for the purpose of mobilizing the resources of community, state and nation, for immediate relief in the event of disaster. The record of one disaster a month for every month of fourteen years makes preparedness an imperative need. A loose leaf disaster relief guide book is being issued, and plans have been outlined for instituting a vigorous campaign for disaster preparedness in every locality, so that when an emergency comes the Red Cross will be ready on the instant to meet the situation.

American Red Cross Special Reserve Fund.—At a meeting held Nov. 19, 1919, the executive committee of the American Red Cross voted to set apart from the securities donated to the Red Cross war fund a sum representing $10,000,000 in market value of those securities on this date as a special reserve, subject to such reinvestment as may be determined by the executive committee from time to time, and the income from which shall be available for the general purposes of the Red Cross. The principal sum is to be maintained always up to the full amount of $10,000,000, and it is not to be drawn on except to meet an emergency for which the other resources of the Red Cross at the time are inadequate.

Personal.—It is reported that Dr. William H. Kingston, Hogansburg, N. Y., and Joseph N. Meddill, Jaroso, Colo., who have been working with the American Red Cross in Siberia, were captured by bolshevists, January 25.——Drs. George C. Shattuck, Boston, chief medical secretary and Thomas R. Brown, Baltimore, chief of medical information and medical publication of the League of Red Cross Societies, have gone to Geneva.——Dr. Edouard Rist, physician in chief of the department of tuberculosis at the Laennec Hospital, Paris, has been appointed chief of the division of tuberculosis of the League of Red Cross Societies.——Lieut.-Com. Joel T. Boone, M. C., U. S. Navy, has been assigned to duty as director of the bureau of naval affairs at headquarters of the American Red Cross.

Fraternity Election.—At the annual convention of the Phi Delta Epsilon fraternity which has twenty-five chapters among class "A" medical schools, held in Philadelphia, the following officers were elected: grand consul, Dr. Nathan

Blumberg, Philadelphia; deputy grand consul, Dr. David W. Kramer, Philadelphia; vice grand consuls, Drs. Leo. S. Schwartz, New York City, Frank M. Chesner, Philadelphia, Samuel Nadel, Boston, Jacob Greenberg, Baltimore, Louis Bothman, Chicago, and George Piness, Los Angeles; grand chancellor, Dr. Benjamin E. Spiegel, New York City; grand scribe, Dr. Monroe E. Greenberger, New York City; grand historian, Dr. Murray B. Gordon, New York City; grand marshall, Dr. August C. Schwenk, New York City, and editor, Dr. Aaron Brown, New York City.

Bequests and Donations.—The following bequests and donations have recently been announced:

Methodist Episcopal Hospital, Philadelphia, $25,000, the income of which is to be used in the establishment and maintenance of five free beds by the will of Thomas Bradley.

Georgia Medical Society $1,000 for the establishment of the William Mears Library Fund in memory of an ancestor who came from England to Savannah in 1735, by the will of Dr. J. Ewing Mears, Philadelphia.

Bryn Mawr, Pa., Hospital, $50,000, by the will of Mrs. A. J. Cassatt.

Home for Incurables, Philadelphia, $10,000; Methodist Hospital, Philadelphia, $5,000; Frankford, Pa., Hospital, $500, by the will of Marian L. Ellit.

Episcopal Hospital, Philadelphia, $1,000 by the will of Florence W. Holbrook.

Hospital for Crippled Children, Baltimore, $1,000 by the will of Mrs. Joseph L. Johnston.

Reinstatement of War Risk Insurance.—Announcement is made by Director R. G. Cholmeley-Jones of the Bureau of War Risk Insurance that the provisions still apply for reinstatement of lapsed or canceled insurance, within eighteen months from date of discharge, on payment of only two months' premiums provided the insured is in as good health as at the date of discharge or expiration of the grace period, whichever is the later date, and so states in his application. The provision that discharged service men are permitted to reinstate at any time within three calendar months following the month of discharge by merely paying the two months' premiums, without making a formal application or a statement as to health is also still in force. The provisions for reinstatement do not protect a man until he actually reinstates. If he waits, he may not be in as good health as he was at the time of discharge and consequently may not be able to secure reinstatement.

Appropriation for National Research Council.—The Carnegie Corporation of New York has announced its purpose of giving $5,000,000 for the use of the National Academy of Science, and the National Research Council. It is understood that a portion of the money will be used to erect in Washington a suitable home for the two beneficiary organizations, and that the remainder will be placed in the hands of the academy to be used as a permanent endowment for the council. The council was organized in 1916, as a measure of national preparedness and during the war its efforts were confined chiefly to assist the government in the solution of pressing war-time problems which involved scientific investigations. Since the war it has attempted to stimulate and promote scientific research in agriculture, medicine, industry and in every field of pure science. The council is based on forty of the great scientific and engineering societies of the country which elect delegates to its constituent divisions.

Appropriation to Public Health Service.—Congress has met the urgent need for additional hospital accommodation and equipment in the Public Health Service by appropriating $4,000,000 available for immediate use. These funds will be used in hospitals occupied by war risk insurance patients. An additional $500,000 is appropriated for expenditure at government hospitals located as follows:

Deming, New Mexico	$20 000
Alexandria, La.	25,000
Houston, Texas	10,000
Perryville, Maryland	75,000
Greenville, S. C.	75,000
Cape May, N. J.	10,000
Hoboken, N. J.	10,000
Dansville, N. Y.	10,000
St. Louis, Mo.	5,000
New Haven, Conn.	25,000
West Roxbury, Mass.	50,000
Helena, Mont.	100,000
Boise, Idaho	75,000
East Norfolk, Mass.	10,000

The sum of $15,000 is provided for the propagation and sale of viruses, toxins and analogous products. This same appropriation bill forbids the Public Health Service to use any of its funds for advertising in newspapers or magazines hereafter.

FOREIGN

New Year Honors.—The list of British new year honors includes the elevation of Sir Bertrand Dawson, physician-in-ordinary to the king and dean of the medical faculty of the University of London, to a peerage.

Defective Children in England.—The chief medical officer of the board of education reported that of 533,400 children outside of London physically examined in 1918, 259,000, or 48.5 per cent., were found to be defective.

Physicians in Egypt Raise Their Fees.—The *Presse médicale d'Egypte* is a fortnightly journal published at Cairo, now in its eleventh year. A recent issue states that the physicians of Cairo recently voted at a meeting, called by Dr. Comanchos Pacha, to advance the fees to twice that of the figure before the war. About sixty physicians attended, and the resolution stated that the time had come for physicians in Cairo to follow the example in this respect of their confrères in Alexandria and in Europe.

Italian Orthopedics Congress.—Our Italian exchanges mention that the X Congresso di Ortopedia was held recently at the Rizzoli Orthopedic Institute at Bologna, and great interest was aroused by Albee's description of his bone-grafting operation in Pott's disease, with demonstration. The main themes appointed for discussion were prostheses and treatment of pseudarthrosis, introduced by Dalla Vedova and Palagi. Prof. V. Putti presided at the meeting, and Francioni delivered an address on the morphologic evolution of the human organism during the first years of life.

Health Congress in Brussels.—The Royal Institute of Public Health announces that it will hold a congress in Brussels from May 20 to 24, inclusive, under the patronage of the king of the Belgians. The council has invited delegates from the British universities, municipal corporations, and other bodies interested in public health, and has taken steps through the British division of the American University Union in Europe to extend a like invitation to the universities, municipal corporations and public health associations of the United States.

Typhus Fever.—To aid in combating the serious outbreak of typhus fever in Esthonia, where 15,000 cases have been reported, Col. Edward J. Ryan of the American Red Cross has obtained the services of twenty physicians of the French health service for a period of two months.——Typhus fever is reported to be making increased ravages in eastern Galicia, where it is said there are more than 100,000 cases of the disease, with a mortality of about 10 per cent.——The Swedish consul at Reval reports that there are 4,600 cases of typhus fever among Russian soldiers at Narva, 3,500 cases at Wesenberg, and 2,000 cases at Ziegelkoppel.

Medical Congress in Palestine.—The *Nederlandsch Tijdschrift* relates that the first large conference of the Jewish physicians in Palestine was held recently at Jaffa. Out of the seventy Jewish physicians in the country, forty were in attendance. The medical problems of Palestine were the main topics for discussion. The meeting was presided over by Dr. Mase of Jerusalem, and Dr. Puchowsky delivered the opening address. A resolution was adopted urging the necessity for nationalization of the medical service, and a committee of five was appointed, including Drs. Beham, Goldberg and Norman, to collect data and outline plans. A greeting was sent by telegram to Dr. Max Nordau, who was elected an honorary member of the Palestine Medical Association.

Near East Relief.—The Near East Relief is a body incorporated by act of Congress to provide relief and to assist in the repatriation, rehabilitation and reestablishment of suffering and dependent people of the Near East and vicinity, to provide for the care of orphans and widows, and to promote the social, economic and industrial welfare of those who have been rendered destitute or dependent by the vicissitudes of war. At present 168 orphanages are being operated in Armenia by this organization, and there are more than 82,000 workers in the industrial establishment. About 500 workers are now in the field, including 26 physicians, 76 nurses, 7 mechanics, 15 industrial experts, 16 agriculturists, 197 relief workers, 19 teachers, 34 secretaries, 7 engineers and 45 army officers. The principal centers of activities are Aintab, Adana, Konia, Smyrna, Marsivan, and Samaun, in Asia Minor; Aleppo and Beirut in Syria; Jerusalem in Palestine; Bagdad and Moussoul in Mesopotamia; Erivan, Batum, Tiflis, Alexandropol and Baku in the Caucasus; Tabriez and Teheran in Persia, and Constantinople in Turkey.

Government Services

Disease Conditions in the Army

During the week ending January 23, influenza and pneumonia prevailed to some extent in nearly all the camps and stations in the United States. In most of the camps the epidemic had reached its peak and was beginning to decline. Among the American forces in Germany, influenza and measles continue to be reported, but there also the number of deaths from pneumonia shows a marked decrease. Conditions in the American forces in Siberia are reported excellent.

Increased Pay Under New Army Bill

Medical officers of the Army, Navy and Public Health Service are given a 10 per cent. annual increase in the Army-Navy Pay Bill which is being urged for passage in the Senate by Chairman Wadsworth of the Senate Committee on Military Affairs. The bill gives a 20 per cent. increase to members of the female Nurse Corps of the Army and Navy. The bill also contains a special provision whereby the federal government furnishes transportation for the wife, children and dependents of officers when ordered to make a permanent change of station. Heretofore it has always been the custom to furnish transportation to officers and enlisted men but not to their families.

Foreign Correspondence

LONDON

Jan. 10, 1920.

Notification of Epitheliomatous and Chrome Ulceration

A physician attending a patient whom he believes to be suffering from poisoning by lead, phosphorus, arsenic or mercury, or anthrax, or toxic jaundice, contracted in a factory or workshop, is already required to notify the case to the chief inspector of factories. An order has now been made extending the obligation to (*a*) epitheliomatous ulceration due to tar, pitch, bitumen, crude oil, paraffin, or any compound, product or residue of these substances, and to (*b*) chrome ulceration, due to chromic acid or ammonium, sodium or potassium bichromate or any preparation of these substances, occurring in a factory or workshop. The following explanatory statement is added by the factory department of the Home Office (the department of the government which deals with home affairs):

1. Epitheliomatous Ulceration: In general ulceration of the skin, this term is used to define a raw surface forming on the skin, which in industrial employment is not infrequently set up by the substances handled. Under appropriate treatment, at no matter what age, such ulceration usually heals quickly and, should it recur, will again heal with rest and treatment. In the case of those handling the substances named, however, especially when over 35 years of age and having worked for about ten years or more in operations exposing them to dust or liquids, the ulceration may not heal but spread over the skin and extend downward. This form of ulceration occurs with relative frequency on the scrotum. It is then to be regarded as epitheliomatous and to be notified. The only treatment is operation, which should be performed as early as possible.

2. Chrome Ulceration: If chrome compounds and their solutions remain in contact with the broken skin (and sometimes, with a very sensitive skin, in the absence of an obvious broken surface), they give rise to either a general eczematous ulceration or a circumscribed ulcer known as a "chrome hole." Both these conditions when definitely ulcerative are reportable. Recurring attacks of epitheliomatous and of chrome ulceration should be reported when they appear in a fresh place.

Conflict Between the Friendly Societies and the British Medical Association in Australia

A struggle has been going on for many years between the friendly societies of Victoria and the physicians. The conditions under which lodge physicians worked were considered unsatisfactory, particularly as to remuneration, which averaged yearly per member (including wife and children) about $3.25, and sometimes was as low as $1.50. There was no income limit, and some of the richest men availed themselves of this low rate. To ameliorate these conditions, the profession organized until more than 90 per cent. became members of the Victoria branch of the British Medical Association. In December, 1913, a conference was held between the physicians and lodge representatives, and in July, 1914, another conference at which a subcommittee was chosen; but war broke out, and the matter was postponed. In March, 1917, the matter was revived, and various conferences were held without reaching any agreement. The lodge physicians, therefore, to the number of 98 per cent., tendered resignations taking effect from Jan. 31, 1918. During this year various efforts were made by the state government to effect a settlement on behalf of the Friendly Societies Association by proposals of arbitration. But the council of the British Medical Association contended that the rate to which they agreed—$5 in the town and $6.25 in the country—was a concession to the less remunerated classes, and that the physicians themselves were the only persons to decide what the concession should be and to whom it should be granted. Consequently the council refused all proposals to arbitrate, in spite of threats of the state parliament. The parliament appointed a royal commissioner to investigate the dispute. In his finding he granted virtually all that the physicians had asked. Both sides offered to accept this finding, but the council insisted that the medical institutes, which had been established since the resignations had been submitted in order to supply medical attendance, should be abolished. This the friendly societies refused on the grounds that it would be an interference with their legal rights to establish institutes and that their members are bound by legal agreement to support the institutes for three years. Thus a deadlock was reached. The medical attendance furnished by the institutes does not appear to be satisfactory to the societies. Nineteen have recently agreed to turn down the institutes and to accept only British Medical Association physicians for their medical officers. The societies have requested parliament to appoint whole-time state health officers to whose duties shall be added attendance on friendly society members. They have also resolved to send a representative to England to secure 100 physicians to act as medical officers with a tempting offer of $5,000 a year, with extras for midwifery and surgery. The council has written to the *British Medical Journal* asking it to assist them in preventing an influx of physicians from England. The *Journal* has responded by an article to this effect.

PARIS

Dec. 31, 1919.

Personal

The Académie de médecine has recently reorganized its bureau. Following the usual custom, Professor Laveran, formerly vice president, has assumed the duties of president for the year 1920. Dr. L. G. Richelot, hospital surgeon and agrégé professor of the Faculté de médecine of Paris, was chosen vice president for the year 1920, and Dr. Achard, also of the Faculté de medicine of Paris, was elected secretary for the year.

Dr. F. Lejars, professor of clinical surgery of the Faculté de médecine of Paris, has been elected president of the Société de chirurgie for the year 1920.

The Next International Conference of the Red Cross

The International Committee of the Red Cross has settled on Sept. 1, 1920, as the date for opening the tenth international conference of the Red Cross, which will hold its meetings in Geneva. It is planned to have a ten day conference. Among the subjects that will be brought up for discussion are: the experience gained during the late war; the mutual relationship of the Red Cross societies, and the extended development of the Red Cross societies in their peace and war activities. An executive committee has been put in charge of the preparations for the conference.

The Antagonism Between Epinephrin and Quinin

Drs. A. Clerc and G. Pezzi recently communicated to the Académie des sciences the results of their researches, which go to prove that there is an antagonism between the action of quinin and that of epinephrin, but that nevertheless there is no absolute opposition in the different modes of action of the two substances. There is complete antagonism in the cells of the bulbar center of the pneumogastric nerve, for epinephrin stimulates and quinin paralyzes this nerve. There is also antagonism with respect to cardiac action, epinephrin

having a stimulating and accelerative effect and quinin acting as an inhibitor and depressant. There is even antagonism in regard to arterial pressure: epinephrin produces hypertension and quinin hypotension. But epinephrin causes hypertension by a cardiac and vascular action combined, whereas quinin produces hypotension by overcoming the vasoconstrictive action common to the two substances, although in a different degree.

Even allowing for the vasoconstrictive mode of action which is common to the two substances, the antagonism between them is nevertheless noteworthy. While epinephrin acts as a stimulant of the sympathetic nervous system, quinin must be accorded a sedative action, which makes possible new therapeutic applications.

The Reorganized Strasbourg Faculty of Medicine

In a previous letter (THE JOURNAL, Nov. 8, 1919, p. 1456), I gave some general information concerning the University of Strasbourg. I can now add a list of the names of those who have been appointed on the new medical faculty:

Professor of embryology, Dr. Ancel (of the Faculté de médecine of Nancy); professor of histology, Dr. Bouin (of the Faculté de médecine of Nancy); professor of pathologic anatomy, Dr. Masson (of the Institut Pasteur of Paris); professor of biophysics, Dr. G. Weiss (of the Faculté de médecine of Paris); professor of physiologic chemistry, Dr. Nicloux (of the Faculté de médecine of Paris); professor of pharmacology and experimental medicine, Dr. Ambard (of the Faculté de médecine of Paris); professor of clinical surgery, Dr. Sencert (of the Faculté de médecine of Nancy); professor of clinical dermatology, Dr. Pautrier; professor of neurology, Dr. Barré; professor of otorhinolaryngology, Dr. Baldenweck; professor of clinical ophthalmology, Dr. Duverger (of the Ecole de médecine of Limoges); professor of legal medicine, Dr. Chavigny (of the Ecole d'application de médecine et de pharmacie militaires du Val-de-Grâce); professor of anatomy, Dr. Forster (formerly privat-docent of the Faculté de médecine of Strasbourg); professor of clinical medicine, Dr. L. Bard (of the Faculté de médecine of Geneva); professor of clinical medicine, Dr. Blum (formerly privat-docent of the Faculté de médecine of Strasbourg); professor of clinical surgery, Dr. Stolz (formerly privat-docent of the Faculté de médecine of Strasmourg); professor of clinical psychiatry, Dr. Pfersdorff (of the Faculté de médecine of Strasbourg); professor of gynecology and obstetrics, Dr. Schickele (formerly privat-docent of the Faculté de médecine of Strasbourg); professor of hygiene and bacteriology, Dr. Borrel (of the Institut Pasteur of Paris).

Apartments for Large Families

The municipal council of Paris has recently asked the administration to take up with the national government and with the Sociétés d'habitations à bon marché the question of according certain special privileges to families having more than four children; namely, the right of priority in the matter of securing low-priced apartments, and a reduction in rent in proportion to the number of children, it being understood that the national government, the department or the commune is to bear the burden of such reduction.

LIMA

Dec. 31, 1919.

Sanitary Victory

The yellow fever epidemic which began about the middle of this year, in the northern part of Peru, has just been officially declared as having come to an end. An active sanitary campaign directed at first by Mr. H. Hanson and afterward by Drs. Gastiaburú, Quirós and Almenara deserves the credit for its eradication. Some interesting studies have been made about *Leptospira icteroides,* which may throw new light on the etiology of this disease. Cultures of *Leptospira icteroides* have been made at the hygienic laboratory of Lima. The number of cases during the epidemic amounted to more than 200, with a mortality rate of 40 per cent.

Infant Welfare

There has been organized during this month the Sociedad protectora de la Infancia, under the presidency of Mr. Miguel Echenique, a well-known philanthropist, and Dr. Rodolfo Neuhaus, a pediatrician. In order to secure public support there was organized a "child and flower day" which produced several thousand soles (a sol is about half a dollar). This will be employed to install the association headquarters in addition to an office of public assistance for children. People interested in this society can obtain further data from the secretary, Lima, Peru, Apartado 987.

University Changes

During the whole second semester of this year there has taken place a true university revolution caused by the desire of the students to introduce reforms in the methods of teaching. This conflict has become so serious in the School of Medicine that it was necessary to discontinue the classes during the present year with the natural loss to those coming up for examination. As a result of the support rendered by the government to the justified demands of the students, there have been changes affecting about one third of the personnel. Among the new professors in the School of Medicine are included Drs. Anibal Corvetto, Edmundo Escomel, Constantino Carvallo, Jr., Carlos Monge, Carlos Morales Macedo, Enrique León García, and Carlos Enrique Paz Soldan. In addition, the students will be represented directly in the directing council of the university, having elected as their representatives Drs. Enrique Paz Soldán and José Antonio Encinas.

Important Visit

Active preparations are being made to welcome Dr. W. J. Mayo and his associates. The Society of Surgery and the Faculty of Medicine have appointed commissions to receive them and attend to their comfort. This visit will be very important from the standpoint of better scientific relations between North and South America.

LIÉGE

Dec. 15, 1919.

The Technic of Appendectomy

Referring to the various objections that can be made to the numerous incisions proposed for appendectomy, and especially to the Jalaguier and the Lennander incision, R. Danis described at the recent meeting of the Société belge de chirurgie certain recent modifications of the McBurney incision, with a view to securing more solid and less visible cicatrization, and, at the same time, more constantly direct access to the appendix, no matter what its position may be. He discussed in detail the question of the direction and the localization of the skin incision.

The end of the appendix is located on a line drawn from the right iliac spine to the left pubic spine, at a point about 3 cm. external to the former. An incision made at the level of this line gives regular access to the cecum. Whether the meso-appendix is long or short, the cecum can easily be made to appear in the wound, and the appendix will always be in the field if its position is normal (laterocecal or retrocecal), the base appearing first, at the moment the head of the cecum is drawn up through the wound.

The author made the following remarks in connection with the location of the incision: The vertical incision comes in contact with a great many nerve fibers, for example, the ends of the lower dorsal nerves, which are directed obliquely downward and inward, and thus produces a large area of anesthesia between the cicatrix and the median line, which lasts for several months and causes the patient great discomfort. The more obliquely the incision is made, the less extended the area of anesthesia becomes. Danis gave an illustration of the good effects of rotating the incision by referring to a cardboard, which, when held perpendicularly to the rays of light, casts a broad shadow, but as it is held less and less perpendicularly the shadow grows smaller and smaller until it becomes a mere line. The suppression of the anesthetic shadow, that is to say, the gradual decrease of the zone of anesthesia, is the indication for the direction of the incision. In short, the author advises a very oblique incision, inclined toward the horizontal, and located much lower than the McBurney incision.

The Treatment of Pleural Suppurations

At the same meeting of the Société belge de chirurgie, Janssen reported the good results that he had secured in cases of chronic pleural suppuration by pleurectomy, either with or without thoracectomy. He communicated seven interesting observations, and drew the conclusion that every pleural suppuration of from two to three months' standing requires an operation. Fistulous sequelae, he finds, relate back to various causes: (1) an osteitis of the ribs; (2) the persistence of pleural or pulmonary projectiles, or (3) a pus pouch formed by the pleura itself. In decortication of the lung, the author adopts the technic recommended by

Delorme. He has found it to give perfect end-results. Pulmonary function is restored to almost its normal value. Roentgenography is sometimes serviceable in order to determine before the operation the factors on which a good functional result may be based, namely, as to how far advanced the sclerosis of the lung is; what the thickness of the encapsulating membrane may be, and what the prospects are for an easy removal. The general principles that should guide the operator during the course of intervention are as follows: 1. Any adhesions that bind down the lung, and also the parietal layer of the pleura should be completely removed—a total pleurectomy. 2. Intervention should be by a route that will cause the least possible mutilation: resection of one or two ribs, the trap-door incision as recommended by Delorme. 3. Account should be taken as to whether the pulmonary sclerosis is too far advanced. If such is the case, in addition to the pleurectomy a more or less extended resection of the chest wall should be done. 4. At the end of the operation, the thoracic cavity should be closed by a tight suture, only one drain being left to assure irreversible drainage, that is to say, allowing fluids from within to pass out but preventing the entrance of air into the thoracic cavity. As for postoperative treatment, drainage should not be kept up longer than is necessary, and early active mobilization of the lung should be carried out, the patient being required to take breathing exercises on the second or third day after surgical intervention.

The Venereal Peril

As in all countries that took part in the war, the enormous increase in venereal disease is causing considerable anxiety in Belgium. On account of the spread of syphilis, more especially, the Société médico-chirurgicale du Brabant has addressed a communication to the department of hygiene with a view to realizing three desiderata: 1. An increase in the number of laboratories placed gratuitously at the disposal of the medical corps, for example, the location of a laboratory in each canton for the purpose of carrying on, in aid of physicians, such researches as should prove indispensable for the correct treatment of syphilis. The laboratries might later extend their field of activity so as to include gonorrhea, tuberculosis and all diseases caused by microorganisms, and thus become valuable scientific centers accessible to all practicing physicians. In this way they would contribute much toward raising the standard of medical efficiency and would inure to the advantage of public health in general. 2. The appointment of syphilologists to be placed at the disposal of the physicians of each canton for such time as should be deemed necessary, with a view to having these specialists examine into and elucidate the difficult cases, in order that the local physicians might gain a thorough knowledge of modern therapeutics as applied to venereal disease. 3. The gratuitous distribution to physicians for the use of patients in straitened circumstances of all specific remedies needed for the treatment of venereal disease on the sole condition that twice a year they should send in a statistical report of the patients treated.

The society also passed a resolution to the effect that a law should be drafted prohibiting the publication in other than scientific journals of advertisements dealing with venereal diseases.

The Etiology of Arthritis

At the meeting of the Société belge de biologie, Cohen introduced an interesting communication on the subject of the pathogenic agent in arthritis. In the blood of a patient afflicted with a very severe type of arthritis to which he succumbed shortly afterward, he found, in 1916, a diplococcus resembling a gonococcus and a meningococcus but differentiating itself from these by the fact that it grew exclusively on a blood medium. In the complement-fixation test the blood serum of this patient was strongly positive for this microbe, and also for the gonococcus and certain meningococci. This microbe has not been found since in the latest researches bearing on the blood of rheumatic patients; but in twenty-eight cases of arthritis presenting no acute or recent gonococcic infection he found that the blood serum of twelve patients was strongly positive for this microbe, the gonococcus and certain meningococci.

Industrial Diseases Among Coal Miners

At a recent meeting of the Académie royale de médecine, Herman presented an important communication on the subject of an industrial disease that it has been decided to call "maladie du brai," or pitch disease. Among workmen engaged in the manufacture of coal dust briquets, for which pitch is used as a binding material, certain cutaneous and ocular symptoms have been discovered that are sufficiently characteristic to give to the disease a definite industrial stamp. In such factories there is one place that is especially dangerous on account of the air being so heavily laden with dust. That is where the pitch is broken up, pulverized and mixed with the coal dust. In the room in which the malaxation of the "dough" takes place and where the briquets are molded and subsequent operations are performed, the workmen are not exposed to any danger, for here the work is done within closed vessels and with dampened material, so that the dust is thus kept down.

Prophylaxis of the affection must look toward the suppression of the dust, which can be accomplished only by substituting a machine method for the present hand method of breaking up the pitch and transporting it in wheelbarrows to the pulverizer. The best way would be to transfer the contents of the railway car to the mixer, raising as little dust as possible, from which point on the manufacture of coal dust products would be harmless. Keeping down the dust by means of fans and spraying does not seem practicable.

Until a radical solution is found, it behooves the individual workmen to take such precautions as they can: 1. Clothing should be worn that is tight fitting at the neck, the wrists and the ankles. Tight-fitting goggles might well be worn over the eyes, and protecting ointments might be used on the exposed portions of the body. 2. Daily shower baths and careful attention paid to the skin would help. 3. Workmen who have already been affected should be temporarily removed from the dust zone. 4. The work day, eight hours at the most, should be divided into two parts, with long enough time between to allow the workmen plenty of time to wash up thoroughly and get rested after their trying and wearisome toil.

Bayet, also, has been making a study of arsenical poisoning in coal miners. He finds that this is much more widespread than is commonly supposed. He has shown that this form of poisoning menaces and afflicts thousands of workmen that were not thought of as being exposed. This finding is all the more significant since the arsenic that is the cause of these accidents comes from a substance that is universally used—perhaps the most universally used of any substance in industrial labor—namely, coal. The workmen most exposed are those who handle tar and its derivatives, distillers of tar, tarrers of bolts and crossbars, workmen who manufacture tarred paper, lamp black, crayons and various composites; those who handle oils and greases, crude paraffin, asphalt and bitumen; those employed in coke furnaces and in gas plants, and, we may probably add, workmen engaged in the manufacture of anilin dyes. In this connection, we may take a retrospective look and recall the cancer found so frequently among the chimney sweeps in England when they used to climb down into the chimneys. This was a typical form of cancer, which in the light of present discoveries may be regarded as of arsenical origin. This special pathology of the coal industry, the symptoms of which were known although the etiology remained obscure (the coal poisoning of Manouvrier), may henceforth be classified among the industrial diseases against which we are thus forearmed. We owe it to the important studies of Bayet that this has been brought about.

These studies deserve to be brought to the attention of all those who are interested in social medicine. The difficulties that are encountered in every country when attempts are made to introduce prophylactic measures against epithelial cancer among workers in pitch are well known. In England, where, since 1910, the question has been carefully considered, the results obtained are still unsatisfactory, as may be seen by the increased incidence of epithelial cancer noted during the period from 1914 to 1918.

Marriages

GEORGE HERMAN ANDERSON, Seattle, to Miss Ruth Weisdorfer of Burlington, Kan., at Chicago, January 10.

PAUL WEGEFORTH, Coronado, Calif., to Mrs. Lillie Holbrook, at San Diego, Calif., January 19.

THURMAN GILLESPY, Wheeling, W. Va., to Elizabeth Pyatt Bonsted of Philadelphia, December 24.

HARRY JULIUS ISAACS to Miss Edith Lippert, both of Chicago, recently.

Deaths

B. Holly Smith, Baltimore; College of Physicians and Surgeons, Baltimore, 1883; aged 61; a graduate of the Baltimore College of Dental Surgery in 1881; president of the Faculty and professor of oral surgery in the Baltimore College of Dental Surgery; chairman of the oral hygiene council of Maryland; chairman of the executive council of the National Association of Dental Faculties; once president of the Baltimore Dental Club; an extensive contributor to the literature of oral surgery; died, January 22, from heart disease.

Lewis White Callan ⊕ New York City; University of Pennsylvania, Philadelphia, 1901; aged 42; captain, M. C., U. S. Army, and in charge of the ophthalmic department of the base hospital at Fort McHenry, Md., and discharged, April 6, 1919; a member of the American Ophthalmological Society, and New York Academy of Medicine; ophthalmic surgeon to the New York Eye and Ear Infirmary, and St. Bartholomew's and Lying-In hospitals; died, January 21, from pneumonia.

John Donnington Bartlett ⊕ Major, M. R. C., U. S. Army, Grass Range, Mont., formerly of Galesburg, Ill.; Rush Medical College, 1905; aged 39; at one time health officer of Galesburg; who became of unsound mind while serving with the Expeditionary Forces in France; was brought home, placed under treatment at U. S. General Hospital No. 28, Fort Sheridan, Ill., and then committed to the Watertown State Hospital; committed suicide by strangulation, January 12

Benjamin Pitcher Brodie ⊕ San Francisco; Michigan College of Medicine, Detroit, 1884; aged 60; for many years a surgeon of Detroit; physician to St. Mary's Hospital; attending surgeon to Harper Hospital and Consulting surgeon to the Woman's and Solvay hospitals; chief surgeon of the Grand Trunk system, and Detroit United and Detroit Shore Line railways; died in the Southern Pacific Station, San Francisco, January 23.

George Brown Beach, Scranton, Pa.; Jefferson Medical College, 1886; aged 54; a member of the Medical Society of the State of Pennsylvania; captain, M. R. C., U. S. Army, with service in France, where he obtained the Croix de Guerre, and a citation from the commanding general, and was discharged, June 2, 1919; died in the West Side Hospital, Scranton, December 31, from meningitis.

Albert Woelfel ⊕ Chicago; University of Leipzig, Germany, 1902; aged 48; for several years instructor in physiology, and for a time in charge of the physiological laboratory in the University of Chicago; managing director of the Physicians Radium Association of Chicago; died, January 31, from pneumonia following influenza.

Charles Shivers Heritage ⊕ Glassboro, N. J.; University of Pennsylvania, Philadelphia, 1893; aged 48; president of the Gloucester County Medical Society in 1917; a specialist in diseases of the eye, ear, nose and throat; president of the Glassboro Loan and Building Association; died, January 4, from nephritis.

Luella M. Schneck, Indianapolis; Medical College of Indiana, Indianapolis, 1895; aged 52; a member of the Indiana State Medical Association; for five years a member of the staff of the Fletcher Sanitarium, and physician to the Indiana Girls' School, Clermont; died, January 21, from heart disease.

Norris Cameron, Indiana, Pa.; Jefferson Medical College, 1880; aged 63; formerly local surgeon of the Pennsylvania system, at Pitcairn, Pa.; burgess of Pitcairn from 1894 to 1897, from 1910 to 1913; for several years director and president of the First National Bank of Pitcairn; died, January 11.

Leander Erastus Maddox, Montpelier, Ind.; University of Michigan, Ann Arbor, 1875; aged 68; for several years a druggist; president, cashier and director of the First National Bank of Montpelier; at one time a member of the local school board; died, January 15, from valvular heart disease.

Curtis Elmer Kelso ⊕ Lieut., M. R. C., U. S. Army, Thomasboro, Ill.; University of Illinois, Chicago, 1905; aged 38; on duty at Fort Oglethorpe, Ga.; died in the Post Hospital, Fort Oglethorpe, January 8, from narcotic poisoning.

⊕ Indicates "Fellow" of the American Medical Association.

Justin F. Simonds, Riverdale, Md.; Castleton (Vt.) Medical College, 1851; aged 93; a pioneer practitioner of Iowa; surgeon of United States Volunteers during the Civil War, and from 1902 to 1904 examiner in the United States Pension Bureau, Washington, D. C.; died, January 3.

Thomas Francis Conneen ⊕ Portland, Me.; Bowdoin Medical School, Brunswick and Portland, Me., 1901; aged 45; city physician of Portland in 1907, and then appointed medical examiner (coroner) of Cumberland County; died, about January 22, from cerebral hemorrhage.

Alexander H. Koerner, Woodsfield, Ohio; University of Maryland, Baltimore, 1886; aged 61; a member of the Ohio State Medical Association; president of the Monroe County Medical Society; died in the State Hospital, Columbus, Ohio, January 6, from septicemia.

Albert Earl McCallin ⊕ Wisconsin Veteran's Home, Wis.; Wisconsin College of Physicians and Surgeons, Milwaukee, 1906; aged 53; head surgeon at the Wisconsin Veteran's Home; died from thrombosis, January 17, after operation for duodenal ulcer.

Estes Paine ⊕ Major, M. C., U. S. Army; University of Texas, Galveston, 1906; aged 39; formerly surgeon of the Norfolk and Western Railroad; at Bassetts, Va.; died in the Walter Reed General Hospital, Takoma Park, D. C., December 9.

Charles Milton Buchanan ⊕ Tulalip, Wash.; National University, Washington, D. C., 1890; aged 51; a physician in the United States Indian Service and a worker among the Puget Sound Indians for twenty-four years; died in Seattle, January 18.

Robert Samuel Bentley ⊕ Chicago; Northwestern University Medical School, Chicago, 1899; aged 44; a member of the Illinois State Medical Society; was shot and killed, January 27, by a patient, who claims that the shooting was accidental.

David S. McConnaughey, Wayland, Iowa; College of Physicians and Surgeons, Keokuk, Iowa, 1867; aged 82; a veteran of the Civil War; president of the Henry County Medical Society in 1914; died, January 7, from senile debility.

Daniel Webster Hopkins, Havre de Grace, Md.; University of Maryland, Baltimore, 1877; aged 65; for several terms a member of the city council, and at the time of his death public health officer; died, January 16, from heart disease.

Charles Milton Lenhart, Zanesville, Ohio; Miami Medical College, Cincinnati, 1886; aged 56; a member of the Ohio State Medical Association; surgeon to the City and Good Samaritan hospitals, Zanesville; died, January 17.

Stanley Nelson Insley ⊕ Grayling, Mich.; Trinity Medical College, Toronto, 1894; aged 49; president of the county society; division surgeon for the Michigan Central Railroad; died, January 7, from pernicious anemia.

Michael Washington Hurst, Talmage, Pa.; University of Pennsylvania, Philadelphia, 1861; aged 81; a member of the Medical Society of the State of Pennsylvania; died in the General Hospital, Lancaster, Pa., January 13.

Adam E. Focht, Great Bend, Kan.; Hahnemann Medical College, Chicago, 1885; St. Louis College of Physicians and Surgeons, 1896; aged 60; a member of the Kansas Medical Society; died, January 8, from heart disease.

Isaac C. Smith, Peel Tree, W. Va.; Kentucky School of Medicine, Louisville, 1876; aged 67; a member of the West Virginia State Medical Association; died from heart disease, January 15, while making a professional call.

Miles Clinton Bristol ⊕ Bay City, Mich.; Long Island College Hospital, Brooklyn, 1894; aged 52; for two terms health officer of Bay City and coroner of Bay County; died, January 21, from carcinoma of the larynx.

John G Koch, Petersville, Pa.; Jefferson Medical College, 1865; aged 77; a member of the Medical Society of the State of Pennsylvania; died, January 8, from the effects of a fracture of the hip two weeks before.

Benjamin W. Cabell, Hampton, Va.; College of Physicians and Surgeons, Baltimore, 1891; aged 55; a member of the Medical Society of Virginia; died in the Dixie Hospital, Hampton, January 13, from nephritis.

Thomas J. Harcourt, Somerville, Ohio; American Eclectic Medical College, Cincinnati, 1889; aged 82; for more than fifty years a practitioner of Tusculum, Cincinnati; a veteran of the Civil War; died, January 15.

Henry A. Minor, Macon, Miss.; University of Virginia, Charlottesville, 1857; aged 83; once president of the Missis-

sippi State Medical Association; died in an infirmary in Hattiesburg, Miss., January 19.

LeRoy J. Beebe, Yakima, Wash.; University Medical College of Kansas City, Mo., 1909; aged 38; house physician at St. Elizabeth's Hospital; died, December 29, four days after an operation for appendicitis.

Robert Pooler Myers, Claremont, Calif.; Savannah, Ga., Medical College, 1860; aged 80; a member of the Medical Society of Hawaii, and for several years a resident of Honolulu; died, January 1.

Agnes Mary Browne, Oakland, Calif.; College of Physicians and Surgeons, San Francisco, 1918; aged 46; died in St. Luke's Hospital, San Francisco, January 13, from myocarditis after a laparotomy.

Alonzo F. Kramps ⊕ Chicago; Rush Medical College, 1895; aged 54; for many years a member of the staff of the St. Elizabeth's Hospital; died, January 30, from pneumonia following influenza.

John Austin Kane ⊕ Brooklyn; Harvard University Medical School, 1902; aged 41; attending physician to the Angel Guardian Home; a specialist in pediatrics; died, January 23, from pneumonia.

Henry Hopson Wilcox, Montague, Mass.; Cornell University, New York City, 1906; aged 38; a member of the Massachusetts Medical Society; died in Des Moines, Iowa, December 23.

Andres Buckham MacLean, Centralia, Wash.; University of Toronto, 1906; aged 45; a member of the Washington State Medical Association; coroner of Lewis County; died, January 12.

Russel Ross Marble, Hastings, Neb.; University of Michigan, Ann Arbor, 1902; aged 48; died in the Mary Lanning Hospital, Lincoln, January 16, from pneumonia complicating diabetes.

William Pell Ballance, Los Angeles Harbor, Calif.; Washington University, Baltimore, 1873; aged 67; for several years a practitioner of Alaska; died, January 5, from heart disease.

Daniel Kuhn ⊕ St. Louis; Washington University, St. Louis, 1865; aged 82; for more than half a century a practitioner of St. Louis; a specialist in pediatrics; died, January 14.

John Clark Patterson, Batavia, Ill.; Northwestern University Medical School, Chicago, 1872; aged 70; died in the Presbyterian Hospital, Chicago, January 11, from pneumonia.

William Cicero Sessoms, Brewton, Ga.; Atlanta (Ga.) Medical College, 1892; aged 53; died at the home of his father in Stedman, Ga., January 8, from cerebral hemorrhage.

Daniel W. Maxson, Galveston, Texas (license, Kansas, 1901); aged 82; for many years a practitioner of Toronto, Kan.; died, January 14, at the home of his son in Galveston.

Oliver Harrison Martin, De Pere, Wis.; Rush Medical College, 1874; aged 85; for more than thirty years a practitioner of Kewaunee, Wis.; also a druggist; died, January 8.

William H. Wagner, York, Pa.; Jefferson Medical College, 1881; aged 67; director of health during the smallpox epidemic in 1900; died, January 3, from aneurysm of the aorta.

Albert William Knott, Montrose, Colo.; Washington University, St. Louis, 1906; aged 43; a member of the Colorado State Medical Society; died, January 2, from tuberculosis.

George Henry Sanborn, Shawnee, Okla; University of Vermont, Burlington, 1899; aged 46; a member of the Oklahoma State Medical Association; died, about January 7.

Henry William Morgan, Nashville, Tenn.; Vanderbilt University, Nashville, 1875; aged 66; formerly dean of the dental department of his alma mater; died, January 17.

James Ramsay Flood, Momence, Ill; Jefferson Medical College, 1866; aged 81; for many years a practitioner of Chicago; died, January 9, from valvular heart disease.

Charlotta Yhlen Olsen, Philadelphia; Woman's Medical College of Pennsylvania, Philadelphia, 1873; aged about 70; died in Pasadena, Calif., January 14, from heart disease.

Edward Morris Price, Brooklyn, L.R.C.P., London; L.R.C.S., England, and M.R.C.S., England, 1879; University of Brussels, Belgium, 1884; aged 62; died, January 13.

George Nelson Vail, Parker, Kan.; University of Michigan, Ann Arbor, 1869; aged 79; a member of the Kansas Medical Society; died, January 6, from cerebral hemorrhage.

George Harvey McMichael ⊕ Buffalo; Niagara University, Buffalo, 1888; aged 63; a specialist in the treatment of alcoholism; died, January 18, from angina pectoris.

Edward L. Blanding, Chicago; Jenner Medical College, Chicago, 1906; aged 55; also a pharmacist; died in Lakeside Hospital, Chicago, January 25, from pneumonia.

John Whiten Merry, Mount Ayr, Ind.; University of Michigan, Ann Arbor, 1869; aged 76; died in the Jasper County Hospital, Rensselaer, Ind., January 1.

Joseph J. McKinney, Rifle, Colo.; St. Louis College of Physicians and Surgeons, 1909; aged 48; died in Pueblo, Colo., January 2, from pernicious anemia.

William S. Brabham, St. Louis; Meharry Medical College, Nashville, Tenn., 1898; aged 50; a colored practitioner; died, November 14, from cerebral hemorrhage.

Milton Hall Leonard, New Bedford, Mass.; University of the City of New York, 1879; aged 63; visiting physician to St. Luke's Hospital; died, January 14.

Josephus S. Graham ⊕ Tuckerman, Ark.; Bellevue Hospital Medical College, 1889; aged 54; died in Hot Springs, Ark., January 16, from angina pectoris.

Arthur F. Schulz, Chicago; Dearborn Medical College, Chicago, 1907; aged 41; was found dead in a hotel in Milwaukee, February 1, from pneumonia.

Robert Kells Hackett ⊕ Major, M. C., U. S. Army, Los Angeles; Tulane University, New Orleans, 1899; aged 49; died in San Francisco, January 1.

William A. Pease, Otsego, Wis.; (license, Wisconsin, 1899); aged 83; a member of the State Medical Society of Wisconsin; died, January 6.

Orlando S. Wood, Omaha; Hahnemann Medical College, Philadelphia, 1860; aged 87; died at the Home of Hope, Florence, Neb., January 10.

Bruce Frary Halsey, Medina, N. Y.; University of Louisville, Ky., 1901; aged 43; died, January 5, from pneumonia, at a sanatorium in Buffalo.

John Devin Kelly, New Haven; University of the City of New York, 1880; aged 73; died in Hamden, Conn., January 9, from angina pectoris.

John Joseph Walsh, Scranton, Pa.; Jefferson Medical College, 1886; aged 58; died, December 31, as the result of an automobile accident.

Willard Channing Brown ⊕ Detroit; University of the City of New York, 1881; aged 62; died, October 18, from acute nephritis.

William P. Sydnor, Burgess Store, Va.; Washington University, Baltimore, 1874; aged 78; died, September 19, from senile debility.

Samuel Freeman ⊕ Trenton, N. J.; University of Pennsylvania, Philadelphia, 1899; aged 43; died, January 13, from pneumonia.

John Henry Gifford ⊕ Fall River, Mass.; Harvard University Medical School, 1884; aged 61; died, December 14, from myocarditis.

Henry K. Cunningham, La Plata, Mo.; College of Physicians and Surgeons, Keokuk, Iowa, 1874; aged 84; died, January 7.

Thomas Walter Clarke, Philadelphia; Hahnemann Medical College, Philadelphia, 1896; aged 46; died, January 8, from nephritis.

Alfred Hall Perrie ⊕ McKendree, Md.; Baltimore Medical College, 1895; aged 48; died, January 14, from heart disease.

Steven H. Hurst, Laconia, Ind.; University of Louisville, Ky., 1889; aged 63; died, January 13, from heart disease.

William Clarence Benjamin ⊕ Hornell, N. Y.; University of the City of New York; 1887; aged 60; died, January 9.

William Lawton Eyers, New York City; Bellevue Hospital Medical College, 1892; aged 74; died, January 17.

George Augustus Sigler, Indianapolis; Bellevue Hospital Medical College, 1879; aged 73; died, January 18.

Pasquale Monaco, Chicago; University of Naples, Italy, 1910; aged 59; died, January 22, from influenza.

Orson Hyde Crandall, Quincy, Ill.; Eclectic Medical Institute, Cincinnati, 1867; aged 93; died, January 17.

Lamont H. Ross, Lewisburg, Pa.; University of Buffalo, N. Y., 1892; aged 53; died, January 9.

John Hood, Baltimore; University of Michigan, Ann Arbor, 1858; aged 81; died, December 26.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

GRALE'S FRUIT LAXATIVE

"Grale's Fruit Laxative" put out by the Grale Packing Co., Roselle, N. J., is advertised under the claim that it contains no drugs:

"Grale's Fruit Laxative contains only figs, dates, raisins and prunes, a few simple herbs and bran. NO DRUGS AT ALL."
". . . this is a *food—not a drug*. . . ."

The preparation was submitted to the A. M. A. Chemical Laboratory for the purpose of determining whether or not the claim that the stuff contained no drugs was justifiable. The laboratory report follows:



"Grale's Fruit Laxative" is a soft, brown solid with an odor and taste suggestive of figs and prunes. Chemical examination indicated the presence of an emodin-bearing drug, or its extractives, in considerable amounts. This was shown by further tests to be neither aloes, cascara nor rhubarb. Microscopic examination revealed the presence of ground senna in the mass. Since senna is a well known drug of recognized therapeutic activity, the declaration on the label of Grale's Fruit Laxative that the preparation contains no drugs is false.

DIONOL—THE GLORIFIED PETROLATUM

An Indiana physician sends us in a batch of leaflets detailing the marvels of "Dionol" and thus comments:

"I received the enclosed in the mail today and I am puzzled, perplexed and astounded. I had formed the opinion that the profession was getting better; that it was more scholarly than formerly when the two course school was still in existence and any one could matriculate; that it was no longer possible for a 'patent medicine' manufacturer to palm off his wares on us. After reading this stuff and realizing that such methods must be remunerative, I am deeply humiliated. Is it possible that educated physicians respond to this kind of advertising? Or has some one perpetrated a joke on me? If the profession can be thus successfully exploited one can no longer wonder at the following which every new 'ic' and 'ism' acquires."

It is a pity that the medical profession generally does not react to the Dionol and similar advertising as does our correspondent. As the concern continues to do business, the presumption is that at least some physicians are using Dionol. As was pointed out in THE JOURNAL of Jan. 26, 1918, Dionol seems to be a glorified and esoteric form of petrolatum. The exploitation of Dionol is based on the following theory: (1) The brain is a generator of neuro-electricity, (2) the nerves are the conductors of this electricity, (3) the nerve sheaths are the insulators, (4) wherever there is local inflammation the nerves are short circuited, due to a breaking down of the insulation resistance of the nerve sheaths, (5) this results in "an escape of neuro-electricity," (6) Dionol coats the nerve sheaths with a nonconducting layer and this restores the insulation and "stops the leak."

Whether this ingenious theory was invented to lend an air of verisimilitude to an otherwise bald and unconvincing tale and give a "reason for being" for Dionol or whether Dionol was first invented and it became necessary to evolve a theory that would give some plausibility to the claims made for this etherealized petrolatum, we are unable to say. In any case the theory and the product are exploited together.

Among the material sent in by a correspondent are some "Dionol Case Reports." Neither the names nor the addresses of the physicians making these reports are given, but the company states that they may be had "on request." One special "report" is featured under the heading "Infected Wound. Striking Results After United States and French Government Army Surgeons Failed" is signed "Dr. W." It is dated July 19, 1919. A few months ago the Dionol Company was sending out this same testimonial with the full name and address of the "doctor" giving it. Investigation showed that the "doctor" in question was an osteopath whose specialties, according to his advertisement in his local newspaper are "Catarrhal Deafness and Hay Fever, Acute and Chronic Diseases"! In this connection it is worth noting that investigation of some of the earlier testimonials sent out by the Dionol concern and alleged to have been given by "doctors" showed that the gentlemen in question were "drugless healers."

As a "true indication of the value which the medical profession is placing on Dionol" the Dionol Company has published the names of some physicians who, it is alleged, have used the preparation. Here, arranged geographically, are some of the "prominent physicians throughout the country" who are said to have had "remarkable success" with Dionol:

BALTIMORE, Md., Dr. O. N. Duvall.
BOSTON, Mass., Dr. A. H. Flower.
CHICAGO, Ill., Dr. Frank W. Klocke.
DETROIT, Mich., Dr. W. A. Bullock.
DETROIT, Mich., Dr. P. L. Lathrop.
DETROIT, Mich., Dr. C. G. Morris.
DETROIT, Mich., Dr. E. A. McCosh.
DURAND, Wis., Dr. R. G. Healy.
DRYDEN, N. Y., Dr. M. L. Briggs.
GOSHEN, Ind., Dr. R. L. Starkweather.
GRAND RAPIDS, Mich., Dr. L. R. McCready
MINERAL WELLS, Texas, Dr. R. H. Lindley.
MOUNDVILLE, Mo., Dr. G. Schaff.
MUSCOGEE, Fla., Dr. A. J. Johnson.
OKLAHOMA CITY, Okla., Dr. G. S. Pettit.
PITTSBURG, Pa., Dr. H. J. Dorrance.
PITTSBURG, Pa., Dr. J. E. Johnston.
SEDAN, Kans., Dr. F. W. Wells.
SOUTH BEND, Ind., Dr. H. A. Fink.
SPRINGFIELD, Ill., Dr. Emery Ennis.
WILMAR, Minn., Dr. Oscar Zahr.

HYPNO-BROMIC COMPOUND

A physician in Vermont writes:

"This is simply a word of inquiry—and of possible warning to other practitioners—regarding a preparation known as Hypno-Bromic Compound manufactured by H. K. Wampole & Co. This compound is dispensed by druggists without prescription and contains in each ounce:

"Cannabis indica	1	gr.
"Morphin	¼	gr.
"Potassium bromid	48	gr.
"Hyoscyamus	1	gr.
"Chloral hydrate	96	gr.

"I have at the present time three young women who are addicts to this preparation as the result of thoughtless prescriptions from physicians. This mixture evades the working of the Harrison Act and may be dispensed freely at the discretion of the druggist and, as a result, these three cases of mine have been able, by visiting the various drug stores in town, to keep an ample supply on hand at all times."

"Hypno-Bromic Compound" is more than an unscientific mixture; it is a dangerous product and should not be sold indiscriminately over the drug counter. Before the Harrison Narcotic Law went into effect, "Hypno-Bromic Compound" contained half a grain of morphin sulphate to the ounce instead of its present one-fourth grain. Physicians remember that Section 6 of the Harrison law contains a joker—put over by the "patent medicine" interests—that exempts proprietary remedies containing one-fourth of a grain of morphin or less to the ounce from the restrictions of that Act. While it is illegal for a physician to write a prescription which contains morphin, no matter how small the amount, unless he conforms in all ways to the requirements of the Harrison Narcotic Law, "patent medicine" concerns can sell indiscriminately nostrums containing morphin up to this amount and the public can buy them without let or hin-

drance. No reputable druggist would sell a layman over seven hundred grains of chloral hydrate or two grains of morphin or eight grains of extract of cannabis indica, without a prescription, yet, the druggist may hand over 8 ounce bottles of Hypno-Bromic Compound which contain 768 grains of chloral hydrate, 2 grains of morphin sulphate, 8 grains of extract of cannabis indica, 8 grains of hyoscyamus and 384 grains of potassium bromid! Physicians who prescribe such products as Hypno-Bromic Compound and druggists who indiscriminately sell such stuff are disgracing two honorable professions.

Correspondence

RECOGNITION OF A GREAT MEDICAL CAREER

To the Editor:—In our country there are few formal means for recognizing in any public way the services of a great physician or a great teacher. In the older countries such services have been recognized by the bestowal of honors, or nobility or grants of money, or by other official means which call attention to the services rendered. In our country no recognition through official orders may be given, and we are glad to have it so, because, admirable as such prizes are when worthily bestowed, they become too often the playthings of political favor or of personal privilege.

In the case of Dr. Christian R. Holmes, whose death the medical profession deplores, action has been taken by the Carnegie Corporation of New York to give notable recognition of his services to the science of medicine and to medical education. Immediately after his death the Carnegie Corporation appropriated $250,000 to the University of Cincinnati for the endowment of a chair of clinical medicine to bear forever the name of the Christian R. Holmes Chair of Medicine. The information concerning this action was conveyed to the University of Cincinnati in the following telegram signed by Hon. Elihu Root, chairman of the board:

> The trustees of the Carnegie Corporation of New York at their meeting held this day have appropriated the sum of two hundred and fifty thousand dollars which they tender to the Medical Department of the University of Cincinnati to endow the chair of clinical medicine in honor of Christian R. Holmes and to bear his name. This action is in recognition of Dr. Holmes' great service to medical education.

Every man who is interested in the progress of the medical profession and who knows of the intelligence and devotion that Dr. Holmes gave to his work will feel a sense of satisfaction at this recognition. Philanthropists and endowed foundations that give money for the promotion of science and education generally attach to their gifts conditions which require the institution or individual to raise additional means. In this instance the Carnegie Corporation makes no conditions but tenders this money generously and heartily, to commemorate the service of a physician of Cincinnati to his city, to his state, and to the nation. It is a fine thing for a great foundation to make such a hearty and spontaneous tribute to the service of Dr. Holmes. In the opinion of the corporation, he has rendered a notable service to medicine and to medical education. A dozen years ago, medical teaching in Cincinnati was in the same condition as in all our great cities; the work was carried on oftentimes unselfishly, sometimes from professional motives; but in the main, medical teaching was a by-product of medical practice. Dr. Holmes was a member of that group of American physicians and surgeons who helped to bring about a new conception of medical teaching and to lift our medical schools free from commercialism. Through his efforts and those of other men equally devoted, there is in Cincinnati a medical school, a part of a university, having high standards and scholarly outlook. There was built through Dr. Holmes' exertion one of the great public hospitals of the world, planned after a study of all the hospitals of Europe and America. This hospital, although a municipal hospital, is under the control of the University of Cincinnati College of Medicine, and politics has been completely eliminated from its management. The medical school stands adjoining the hospital, and together they offer most admirable clinical opportunities for medical students. The University of Cincinnati College of Medicine promises to be one of the great medical schools of the world. To have wrought this work with such farsightedness, such scientific sincerity, and with such success as Dr. Holmes did, was to render a notable service to medicine and to medical teaching, and it is this service which the Carnegie Corporation desired to honor.

Other men in Cincinnati worked for the same ideals and contributed to the same purpose. Dr. Holmes would be the first to wish that they might receive full credit. His service would have been impossible without their support and cooperation, or without the consistent and able support of President Dabney of the University of Cincinnati. The Carnegie Corporation of New York forgets none of these things, but the trustees felt sure that every physician and every teacher who has wrought in the medical schools of Cincinnati will agree that there should be a special testimonial to him whose leadership and whose devotion have resulted in such fruitful results for his city and for his country.

HENRY S. PRITCHETT, New York.
President, Carnegie Foundation for the Advancement of Teaching.

THE MEDICAL RESERVE OFFICER

To the Editor:—Referring to the interesting article by Dr. Louis J. Hirschman in THE JOURNAL, January 3:

Individual injustices regarding rank were inevitable in the rapid expansion of the Medical Corps to about fifty times its original number. Correction of errors was under way when the war ceased; but military machinery moves slowly, and deliberate action was necessary to avoid fresh errors.

So far as the limitation of medical rank to major and of line rank to colonel, the M. C. duties corresponding to higher rank are very different and require long military experience. A fairly adequate supply of experienced men was available in the regular establishment, and subordinate positions requiring mainly professional skill could be filled from civilian life. In the line, duties at least as far as colonel are a logical and fairly simple extension of those of lower ranks for which the regular army could not have provided without undue promotion of immature officers. An adequate supply was available among national guard officers of long experience, while civilian physicians who had had any kind of military experience fitting them, for example, to conduct a base hospital, were very few.

For raw material, trained at camps, the medical profession had a distinct advantage in rank compared with any other class. All entered at least as first lieutenants, while most line officers graduated as second lieutenants. Many of the former were captains and majors, while the few line officers who entered active duty as majors were instances of influence or native ability. So far as I can judge, even the rank on discharge at the end of war averaged higher for medical men than others, not even excluding national guardsmen of long antebellum experience.

The limitation of rank in the (reserve) medical corps was abrogated fairly early in the war, both in theory and in practice, and did not at the beginning apply to such national guard surgeons as were eligible to the rank of lieutenant colonel (division surgeon). The profession actually received a good many commissions higher than the majority, at least one brigadier-generalship; and in another year of war, a still better showing would have been made.

The implication that the reserve surgeon would have been better off either as to proficiency, efficiency or personal comfort under amateur superiors, is, so far as my experience and observation goes, entirely contrary to fact.

The general complaint of surgeons from civilian life who served in the war depends not on the matter of rank but on the essential differences between civilian and military regulations and customs. How far the latter can be modi-

fied to suit men from civil life in a great military emergency is a problem too complicated to discuss here, and I am rather inclined to believe that Mahomet will have to go to the mountain instead of trying to get the mountain to come to him.

The problem would have been solved to a large degree practically if, instead of thinking so much about rank, men who were only temporarily in military service had continued to think of themselves as physicians, had limited their conception of rank to necessary authority, and had not carried it into strictly professional matters, as the establishment of diagnoses, arbitrary regulation of therapeutics and claiming of right to operate, but had demanded and practiced the spirit of professional loyalty supposed to pertain to their life work.

A. L. BENEDICT, M.D., Buffalo.

COMPULSORY HEALTH INSURANCE

To the Editor:—In THE JOURNAL, Jan. 24, 1920, p. 271, Dr. E. M Stanton opposed the principles of compulsory health insurance on the grounds that the burdens of such insurance cannot be borne by the insured. In so doing, in my opinion, he made a very good argument in favor of compulsory health insurance.

It is precisely because modern scientific medicine, as practiced today, is too expensive for any except the very rich that some system must be evolved to diminish the expense to the individual.

If Dr. Stanton seriously believes that the wage earner in general receives adequate medical attention under the present system he is, naturally, opposed to any form of health insurance. A few physicians who emphasize the fact that prolonged illness in persons of limited income almost universally leads to the support of the individual either by the state or by charitable institutions believe that health insurance will diminish the demands made on charity.

Health insurance will decrease the demands made on charity because it will cause: (1) the distribution of the economic loss due to enforced idleness as a result of illness, and (2) a diminution in preventable illness which will occur as a consequence of earlier diagnosis and treatment.

Unless it is believed that we are accomplishing everything possible toward the prevention of disease, there is no excuse for opposition to a measure which is proposed in the effort to afford earlier and better medical care for a large percentage of individuals in a given community. Criticism to health insurance should at least suggest the alternative.

Dr. Stanton quotes the General Electric Mutual Benefit Association as "one of the best sickness insurance policies ever offered," and prefers it to the Davenport bill. Unfortunately, not all workmen can be employed by the General Electric Company or by the Ford Motor Company, which also makes excellent provision for sick or injured employees. It is precisely because it is desirable to give every employee the protection that is now given by certain of the more progressive industrial corporations that compulsory health insurance has been advocated.

If the General Electric Company has the best plan of sickness insurance, by all means let us advocate such a plan. If universal care of the community by the state board of health is preferable to any form of insurance, then it should be favored. But let us not oppose constructive legislation for the benefit of the sick unless we can offer something better.

Private practice and organized charity, together with the excellent state organizations for public health, do not today solve the problem of medical care for the wage earner, as the records of any charitable organization will clearly demonstrate.

A. C. BURNHAM, M.D., New York.

The Public's Help.—No big step in social progress is possible without the active sympathy of large masses of the community, and in this respect the movement for improving the national health has the greatest support.—Brend.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

SURRENDER OF WAR TERM INSURANCE

To the Editor:—I desire some information about war risk insurance. Will the Bureau of War Risk Insurance refund all or part of the premiums paid after discharge from the service to any one who wishes to discontinue his insurance? I wrote the bureau and asked this information, but received an evasive answer along with advice that I had better reconsider my decision on account of the numerous advantages, etc., etc. The letter was a "ready made" one, like all correspondence of the bureau, my name and address being merely inserted to fit the contents.

I was honorably discharged from service late in 1918, and hoping to be able to convert my policy into a standard government peace time policy, I paid my war time premiums regularly and faithfully each month as due, up to and including September, 1919. I was continually annoyed by notices from the bureau that my policy had lapsed, in spite of the fact that I had receipts for premiums and was paid up to date and continued to receive receipts month by month. I wrote the bureau three or four times asking an explanation, and each time had to wait from four to six weeks for a reply which, as usual, dodged my question and enumerated the many advantages of holding on to one's policy, etc., etc. Then the bureau sent five different premium receipt-notices, also a few lapse notices sprinkled in, to the address of my beneficiary, in a far away land across the sea. Note, I had already received, and was then receiving, correspondence from the bureau at my correct address in America. Their very latest stunt was to address me by my first and middle name only, making a surname out of my middle name, and reduplicating the initial of my middle name. By extraordinary intelligence on the part of the local post office, the letter reached me safely. I cannot think but that the Bureau of War Risk Insurance is a marvel of inefficiency. For this reason, and because I was financially unable to convert my policy, I became thoroughly disgusted, and wished I had dropped my insurance when I was discharged. So in October, 1919, instead of paying a premium as usual, I wrote and asked the bureau the question I have asked you. Under date of November 24, they answered as I described. Perhaps you can give me the information I desire, since I cannot get it from the bureau.

M.D., Ind.

ANSWER.—Our correspondent's letter was referred to the Bureau of War Risk Insurance, which replies: "A man who kept up his insurance after discharge has received full value for the premiums paid in that he has received protection for the time covered by his premiums. The war term insurance has no surrender value except an amount equivalent to the unearned premium paid in. A premium notice is sent to each policy holder as a reminder that the premium should be paid. If it has been paid already, the notice should be disregarded. In some instances, premium notices may be forwarded after the premium payment has been received, but before it has been posted to the insured's account." The director of the bureau states that he does not feel that a clerical error, even though annoying, should cause a man to demand his insurance policy or allow it to lapse. Government life insurance is backed by all the resources of the United States government, and is not only the safest but the cheapest insurance with similar benefits obtainable. Our correspondent is also requested to communicate directly with Mr. R. W. Emerson, Assistant Director of War Risk Insurance, who will make a special investigation of his case.

FILARIASIS—TROPICAL DISEASES

To the Editor:—1. Please let me know what is the latest treatment for filariasis.

2. What is the best book on tropical diseases?

A. C. VIEIRA DA CUNHA, M.D., Recife, Brazil.

ANSWER.—1. Drug treatment of filariasis, according to Manson and others, is uniformly disappointing. The drugs that have been recommended in the treatment of this disease are gallic acid or benzoic acid in large doses, glycerin, the tincture of ferric chlorid, decoction of mangrove bark, chromic acid, quinin, sodium salicylate, ichthyol, *Nigella sativa*, thymol, and methylene blue. R. G. Lee (*Crónica méd.-quir. de la Habana* 44:15 [Jan.] 1918) reported excellent results in eighteen cases of filarial hematuria treated with potassium iodid. Leonard Rogers (*Lancet* 2:604 [Oct. 4] 1919) found that repeated injections of safe doses of sodium antimonyl tartrate, 1:50 solution, produced diminution of filarial embryos in the peripheral blood. Jeanselme (*Bull. Acad. de méd.* 81:156 [Feb. 4] 1919) and Deschamps (*Bull.*

Acad. de méd. 81:655 [May 20] 1919) have reported radical cures after intravenous injections of arsphenamin. Special treatment will naturally depend on the manifestations in a given case. Lymphangitis with fever requires rest, elevation of the affected part, ice or cooling lotions or warm fomentations locally, opium or morphin when necessary to relieve pain, mild aperients, and if tension is great, pricking or scarifying of the swollen area. Lymph scrotum should be kept scrupulously clean, powdered, suspended and protected against irritation or injury. Chyluria demands absolute rest, elevation of pelvis, restriction of fluid and food—especially fats—and gentle purgation. In elephantiasis of extremities, elastic bandages, massage and elevation of the part are indicated. Any or all of these conditions may necessitate surgical interference for the relief of an incapacitating amount of discomfort or frequent inflammatory attacks with fever.

2. There are several excellent texts on tropical medicine, among which are:

Manson, Sir Patrick: Tropical Diseases, Ed. 5, Pp. xxiv+937, New York, William Wood & Co. 1914.

Castellani, Aldo, and Chalmers, A. J.: Manual of Tropical Medicine, Ed. 2, New York, William Wood & Co., 1913.

Stitt, E. R.: The Diagnosis and Treatment of Tropical Diseases, Ed. 2, pp. xiii+534, Philadelphia, P. Blakiston's Son & Co., 1917.

Handbuch der Tropenkrankheiten, herausgegeben von Prof. Dr. Carl Mense, Ed. 2, Leipzig, J. A. Barth, 1913.

Traité pratique de pathologie exotique, publiée en fascicules sous la direction de MM. C. Grall et A. Clarac, Paris, J. B. Baillière et fils, 1910-1913.

EUPAD AND EUSOL

To the Editor:—Please publish the formula for preparing eusol. This preparation was extensively used by the medical officers in the British army in France.

F. P. SALLEY, M.D., Union, S. C.

ANSWER.—In 1915, Prof. Lorrain Smith and co-workers published a report on the "Antiseptic Action of Hypochlorous Acid and Its Application to Wound Treatment" (*Brit. M. J.* **2**:124 [July 24] 1915) wherein they described (1) a powder consisting of an intimate mixture of equal parts by weight of boric acid and chlorinated lime ("bleaching powder") to which was given the name "eupad"; (2) a solution prepared from the same ingredients as those of eupad, which was termed "eusol." This solution may be made in either of two ways:

(*a*) Twenty-five grams of eupad are shaken with 1 liter of water, allowed to stand for a few hours, and then filtered through cloth or filter paper.

(*b*) To 1 liter of water add 12.5 gm. of chlorinated lime ("bleaching powder"), shake vigorously; then add 12.5 gm. boric acid powder and shake again. Allow to stand for some hours, preferably overnight, then filter, and the clear solution is ready for use.

In the foregoing formulas (of Smith et al.) for eusol, commercial chlorinated lime was employed, which contained about 25 per cent. available chlorin, whereas the official chlorinated lime is required to assay 30 per cent. in both Great Britain and the United States. Therefore when the official product is used a smaller quantity should be sufficient, namely, 10 gm. of chlorinated lime U. S. P., instead of 12.5 gm. of the commercial product. The name "eusol," we understand, is a contraction of the words "Edinburgh University solution."

LITERATURE ON ELECTRIC SHOCK

To the Editor:—Please give me the titles of literature bearing on burns, death, etc., from electric shock.

GLENN E. WRIGHT, M.D., Woodstock, Ill.

ANSWER.—References to the literature on electric shock were published in THE JOURNAL, March 15, 1913, p. 851, and Feb. 27, 1915, p. 763.

The following titles have since accumulated:

Ingalls, H. A.: Remote Effects of Electric Shock, *New Mexico M. J.* **15**: 185 (Feb.) 1916.

Kirmisson, E.: Brulures multiples par l'électricité; hémoglobinurie; morte rapide à la suite de convulsions, *Bull. et mém. Soc. de chir. de Paris* **42**: 1887, 1916.

Bayliss, W. M.: The Dangers of Electrical Currents, *Nature* (London) **100**: 24, 1917.

Micremet, C. W. G.: Death from Electric Shock from Incandescent Bulb. *Nederlandsch Tijdschr. v. Geneesk.* **2**: 1951 (Dec. 1) 1917; abstr. THE JOURNAL, March 2, 1918, p. 661.

Tornaghi, E.: Polyneuritis Following Electric Shock from Live Wire, *Brazil Med.* **31**: 175 (May 26) 1917; abstr. THE JOURNAL, July 28, 1917, p. 393.

Lewis, D.: Electric Burn Causing Necrosis of Skull, *Ann. Surg.* **67**: 149 (Feb.) 1918.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, Mar. 2. Sec., Dr. L. O. Sloan, Juneau.

CALIFORNIA: Los Angeles, Feb. 16-19. Sec., Dr. Chas. B. Pinkham, 906 Forum Bldg., Sacramento.

CONNECTICUT: New Haven and Hartford, March 9-10. Sec., Reg. Bd., Dr. Robert L. Rowley, Hartford. Sec., Homeo. Bd., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven. Sec., Eclectic Bd., Dr. James Edwin Hair, 730 State St., Bridgeport.

FLORIDA: Jacksonville, March 16. Sec., Homeo. Bd., Dr. Geo. A. Davis, East Port.

ILLINOIS: Chicago, Mar. 1-3. Director, Mr. Francis W. Shepardson, Springfield.

INDIANA: Indianapolis, Feb. 10-13. Sec., Dr. W. L. Gott, 84 State House, Indianapolis.

KANSAS: Topeka, Feb. 10. Sec., Dr. H. A. Dykes, Lebanon.

MAINE: Portland, March 9-10 Sec., Dr. Frank W. Searle, 140 Pine St., Portland.

MASSACHUSETTS: Boston, March 9-11. Sec., Dr. Walter P. Bowers, Room 144, State House, Boston.

NATIONAL BOARD OF MEDICAL EXAMINERS: St. Louis and Chicago, Feb. 18-25. Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia, Pa.

NEW HAMPSHIRE: Concord, March 11-12. Sec., Dr. Charles Duncan, Concord.

VERMONT: Burlington, Feb. 10-12. Sec., Dr. W. Scott Nay, Underhill.

NEW FEATURES IN SANATORIUM ARCHITECTURE

Hospital and sanatorium architecture is in a very fluid state, owing in part to the development of fresh air treatment of tuberculosis and to the rapid multiplication of sanatoriums

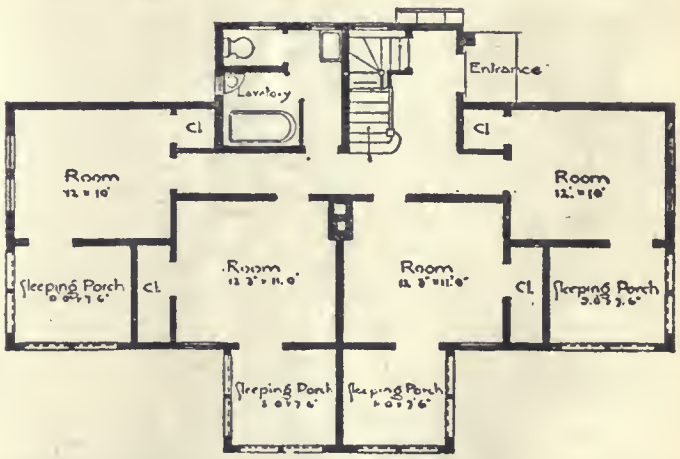


Fig. 1.—Typical floor plan of a two-story, eight-room cottage. There are a toilet and bath on each floor, and a closet and sleeping porch to each room.

and hospitals. The main point of recent advance is the recognition that while the grouping of patients in large wards promotes economy of administration, it lessen privacy and homelikeness. This is an important consideration, particularly in cases requiring treatment extending over long periods of time, and also in the handling of acute respiratory conditions. We have recognized that the old grouping *en masse* of patients was not best. The formation of cubicles by hanging sheets between beds will no doubt arouse the ingenuity of hospital architects to devise more permanent arrangements to produce the desired protection. The public and the profession have been educated as to the value of fresh air. It is a well recognized fact that the good accomplished for the consumptive patient by sanatorium treatment is directly to his general condition and only indirectly to his lesion. Many existing institutions appreciating this fact are opening windows, putting cubicles around certain patients, and using piazzas and roofs for convalescent patients.

It is in the architecture of new institutions, however, that we look for the greatest advance. Facilities must be furnished for providing patients with fresh, cool air, and also with warmth when they are fed, bathed or dressed. The sleeping porch, an American invention, has become practically universal in tuberculosis sanatoriums. Prior to 1900, the few existing tuberculosis institutions followed the hospital idea of rooms or wards; but with the development of the

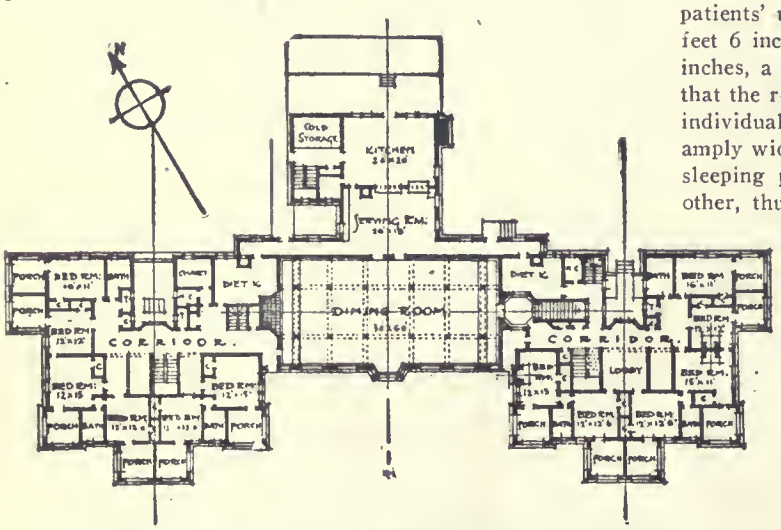


Fig. 2.—Plan of principal floor, main building; patients' suites grouped around dining room, office, kitchen, service room and storage. Each suite consists of bedroom, closet, sleeping porch and bathroom.

sleeping porch and cottage buildings at the Trudeau Sanatorium, sanatorium architecture became an entity. Following this, the nation-wide campaign against tuberculosis was organized and there was rapid development of local and state sanatoriums. The apparent necessity for lower cost of building and administration led to the adoption of the so-called "lean to" or King shack plan for ambulant patients.

In 1905, the idea of the individual room and sleeping porch was elaborated in the erection of several eight-room, two-story cottages at the Cragmor Sanatorium, Colorado Springs. A typical floor plan of these cottages is shown in Figure 1. It is quite simple as applied to a small building.

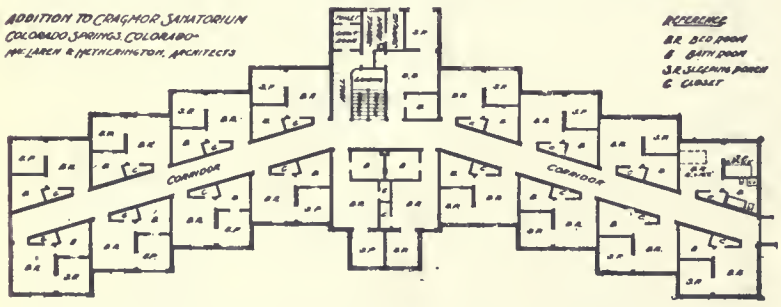


Fig. 3.—This addition will be connected with the existing building by a corridor so as to utilize the kitchen service. The jog in the wall gives each inside room two outside fronts and secures privacy for the sleeping porch. Each unit opens directly on the corridor.

The arrangement was satisfactory from an administrative standpoint as well as from that of the patient, and it was later carried into effect in a large three-story building, the principal floor of which is shown in Figure 2. This building, in addition to suites for patients, contains dining room, offices, kitchen, service room and storage. The arrangement provides for each room a bath, a closet and a sleeping porch that opens on two sides. As a still further development of this idea a new building, the ground floor plan of which is shown in Figure 3, is to be erected adjoining the main building (Fig. 2) in order to receive direct service from the kitchen. The new addition will be built 30 feet to the southwest of the existing building, and will be connected to it by a closed corridor 6 feet 6 inches wide. It will be three stories high. On the ground floor will be located the laboratory, roentgen-ray department, physician's offices and four patients' units. The center of the first floor is taken up by a large sitting room with closed porch, a diet kitchen and chart and service rooms. The second floor is composed exclusively of patients' units. Each unit consists of a room 12 feet by 10 feet 6 inches, a sleeping porch 10 feet 2 inches by 8 feet 9 inches, a bathroom, and a clothes closet. It is to be noted that the rooms are well ventilated and that each room has an individual sleeping porch open on two sides. The doors are amply wide to permit the beds being moved in and out. The sleeping porches are so arranged as not to overlook each other, thus insuring privacy. Each suite has its bathroom. The plan is an attempt to give patients the privacy and comfort they have in their homes, along with fresh air and the care and supervision that can be provided only in an institution.

Wyoming June and October Examination

Dr. J. D. Shingle, secretary of the Wyoming State Board of Medical Examiners, reports the written examinations held at Cheyenne, June 23-25 and Oct. 6-8, 1919. The examinations covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 19 candidates examined, 11, including 1 osteopath, passed, and 8 failed. Sixteen candidates were licensed by reciprocity. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
George Washington University	(1906)	77
Chicago College of Medicine and Surgery (1916) 75.7,	(1918)	78.6, 79.1
College of Physicians and Surgeons, Chicago	(1897)	83.6
Northwestern University	(1906)	81.2
College of Physicians and Surgeons, Keokuk	(1887)	75.3
Kansas City University of Physicians and Surgeons	(1919)	84.5
St. Louis University	(1914)	85.1
University of Nebraska	(1916)	85.4
FAILED		
Chicago Hospital College of Medicine	(1918)	66
Loyola University	(1917)	65.2
Barnes Medical College	(1903)*	73.2
Kansas City University of Physicians and Surgeons	(1919)	58.1
Marion-Sims College of Medicine	(1896)	64.6
St. Louis Coll. of P. & S. (1918) 45,	(1919)*	68
St. Louis University	(1906)	63.2

College	Year Grad.	Reciprocity with
LICENSED BY RECIPROCITY		
University of California	(1910)	California
Bennett Med. Coll.	(1910)	Minnesota (1912) Illinois
Hahnemann M. Coll. & Hosp., Chicago	(1909)	Illinois
Loyola University	(1916)	Illinois
Northwestern University	(1904)	Illinois
Rush Medical College	(1916)	Illinois
University of Kansas	(1917)	Kansas
Detroit Coll. Med. and Surg.	(1916)	Michigan
St. Louis Coll. Phys. & Surgs.	(1917)	Tennessee
University of Nebraska	(1918)	Nebraska
Eclectic Medical Institute	(1891)	Penna.
Homeopathic Hosp. Coll., Cleveland	(1883)	Nebraska
Western Reserve University	(1918)	Vermont
Medico-Chirurgical Coll. of Phila.	(1907)	Vermont
University of Virginia	(1911)	Michigan

* Failed at both June and October examinations.

New Hampshire September Examination

Dr. Charles Duncan, secretary of the New Hampshire State Medical Board, reports the written examination held at Concord, Sept. 11-12, 1919. The examination covered 11 subjects and included 80 questions. An average of 75 per cent. was required to pass. One candidate, an osteopath, took the physician's and surgeon's examination and passed. Ten candidates were licensed by reciprocity. The following colleges were represented.

College	Year Grad.	Reciprocity with
LICENSED BY RECIPROCITY		
University of Illinois	(1918)	Illinois
Medical School of Maine	(1895)	Mass.

Harvard University	(1910) Rhode Island, (1915, 2), (1916)	Mass.
Tufts College Medical School	(1917), (1919)	Mass.
Cornell University	(1917)	New York
University of Vermont	(1915)	Vermont

Illinois September Examination

Mr. F. C. Dodds, superintendent of registration, Illinois Department of Registration and Education, reports the written and practical examination held at Chicago, Sept. 22-25, 1919. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 78 candidates examined, 53 passed and 25 failed. Twenty-eight candidates were licensed by reciprocity. The following colleges were represented:

College	Year Grad.	No. Licensed
PASSED		
George Washiogton University	(1917)	1
Howard University	(1915)	1
Bennett Medical College	(1910), (1914)	2
Chicago College of Medicine and Surgery	(1916)	1
Chicago Hospital Coll. of Med.	(1915), (1918, 8), (1919, 3)	12
College of Phys. and Surgs., Chicago	(1904)	1
Loyola University	(1916), (1917), (1919, 11)	13
Northwestern University	(1915), (1918), (1919)	3
Rush Medical College	(1914), (1919, 8)	*9
University of Illinois	(1919)	1
Medical College of Indiana	(1904)	1
Harvard University	(1919)	1
St. Louis University	(1919)	1
University and Bellevue Hospital Med. Coll.	(1915)	1
University of Buffalo	(1919)	1
Leonard Medical College	(1907)	1
Jefferson Medical College	(1919)	1
University of Pennsylvania	(1918)	1
Meharry Medical College	(1915)	1
FAILED		
College of Phys. and Surgs., Chicago	(1901)	1
Chicago Hosp. Coll. of Med.	(1915, 2), (1918, 4), (1919)	7
Jenner Medical College	(1910), (1917)	2
Loyola University	(1916)	1
Ensworth Medical College	(1903)	1
Homeopathic Medical College of Missouri	(1904)	1
National University of Arts and Sciences	(1916), (1917)	2
Washington University	(1903)	1
Chattanooga Medical College	(1909)	1
Meharry Med. Coll.	(1915, 2), (1916), (1917), (1918, 2), (1919) 7.	
Western University	(1913)	1

College	Year Grad.	Reciprocity with
LICENSED BY RECIPROCITY		
Bennett Medical College	(1912)	Nebraska
Chicago College of Medicine and Surgery	(1916)	Missouri
Indiana Medical College	(1907)	Indiana
Indiana University	(1911), (1914)	Indiana
Keokuk Medical College	(1901)	Iowa
University of Louisville	(1909) Indiana, (1917)	Kentucky
College of Phys. and Surgs., Baltimore	(1912)	W. Virginia
Johns Hopkins University	(1913)	Mass.
University of Maryland	(1910), (1916)	Maryland
Detroit College of Medicine and Surgery	(1914)	Michigan
University of Michigan Medical School	(1908)	Michigan
University of Minnesota	(1915)	Minnesota
National University of Arts and Sciences	(1914)	Missouri
St. Louis University	(1914),(1915),(1917, 2)	Missouri
Washington University	(1915), (1916), (1917)	Missouri
Columbia University	(1916)	New York
Eclectic Medical College, Cincinnati	(1917)	Ohio
Medical College of Ohio	(1896)	Ohio
Jefferson Medical College	(1918)	Delaware
University of Pittsburgh	(1911)	Peona.

* Eight of these candidates received limited licenses, pending completion of their hospital internships.

Arizona October Examination

Dr. Ancil Martin, secretary of the Arizona State Board of Medical Examiners, reports the written examination held at Phoenix, Oct. 7, 1919. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 20 candidates examined, 17 passed and 3 failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
College of Physicians and Surgeons, Los Angeles	(1918)	82
Chicago Homeopathic Medical College	(1892)	86
College of Physicians and Surgeons, Chicago	(1908)	85.6, 87.6
Northwestern University	(1900) 90.9, (1915)	84.8, 89.4
Rush Medical College	(1914)	91.5
Indiana University	(1918)	87.7
Johns Hopkins University	(1914)	84.6
University of Maryland	(1917)	78.8
Harvard University	(1918)	82.7
Detroit College of Medicine	(1900)	84.
University of Minnesota	(1913)	82.5
St. Louis University	(1911)	81.7
Eclectic Medical Institute	(1905)	81
University of Tennessee	(1915)	80.2
FAILED		
American Medical College	(1892)	60.5
Albany Medical College	(1898)	62.8
Memphis Hospital Medical College	(1893)	69.1

Book Notices

THE FUTURE OF MEDICINE. By Sir James Mackenzie, F.R.S., M.D., F.R.C.P., Consulting Physician to the London Hospital. Cloth. Price, $3.40. Pp. 238. New York: Oxford University Press, 1919.

Scattered through the numerous writings of Sir James Mackenzie are many opinions concerning various aspects of medical education and practice. These statements, most of them critical or suggestive, have been collected, amplified and arranged in orderly sequence and go to make up the present volume. The motif of the book is that the opportunities for investigative work in medicine of the future lie not with the hospital physician or the laboratory man but with the general practitioner. He alone, Mackenzie contends, can learn to appreciate at their true value the symptoms of disease; he is the one best qualified to study the effects of drugs and other remedial agents on sick human beings; he is the only one who by force of circumstances is permitted to observe disease in its incipience and to discover methods of prevention; he is the one who, relying not on instruments of precision or on supposedly accurate laboratory tests or reports of specialists but rather on his well-trained five senses and his judgment ripened by years of experience, learns to recognize such disease with a certainty and an acumen denied to others. Many illustrative examples are cited, drawn largely from Mackenzie's well-known productive investigations on diseases of the heart. There is so much of truth in what he says, so often with sure touch does he locate the disease spot in our system of education or of practice, so keenly does he lay bare our own personal weakness and so clearly does he point out the way of reform—for his criticisms are constructive as well as destructive—that one must perforce be stimulated and benefited by the reading of the book. But one cannot always agree with him. His condemnations of hospital physicians, bacteriologists and other specialists, laboratory experts, and instruments of precision are too sweeping. The truth of many statements, taken even with the context, may well be questioned; many should be viewed rather as expressions of opinion than as demonstrable facts. One gets the impression of a limitation of the field of vision in the author, a certain provincialism that might not have been had he had a wider acquaintance with the world's medical literature, a more extensive practical acquaintance with great medical men and methods in hospitals and laboratories in the metropolis and in lands other than his own, and if all this had happened early in his medical career. Was it not Samuel Johnson who said you might make a good deal out of a Scotchman if you caught him when he was young? We owe much to Sir James Mackenzie; he is deservedly a leader in British medicine; we welcome his advice and criticism; but we do wish he did not leave on us the impression that he feels that the whole medical world is out of joint and that he seems born to set it right.

THE CONDENSED CHEMICAL DICTIONARY. A reference volume for all requiring quick access to a large amount of essential data regarding chemicals, and other substances used in manufacturing and laboratory work. Compiled and Edited by The Editorial Staff of the Chemical Engineering Catalog. F. M. Turner, Jr., Technical Editor, D. D. Berolzheimer, W. P. Cutter, and John Helfrich, Assistant Editors. Cloth. Price, $5. Pp. 525. New York: The Chemical Catalog Company, Inc., 1919.

This book is stated to be "a reference volume for all requiring quick access to a large amount of essential data regarding chemicals and other substances used in manufacturing and laboratory work." The book has evidently been compiled by engineers rather than by pharmaceutical chemists, since the information which might appeal to physicians is unreliable. As illustrations of the numerous misstatements found throughout the work, these may be instanced: The strength of the U. S. P. hydrocyanic acid is given as 10 per cent.—an unpardonable error; that of U. S. P. hydrobromic acid as 40 per cent.; the statement is made that cascara bark loses its cathartic properties on being kept for one year; that magnesium sulphate is soluble in alcohol; that monobasic

sodium phosphate is described in the U. S. Pharmacopeia; also the formula given for homatropin hydrobromid is not the generally accepted one. A number of substances well known in modern medicine, such as procain (novocain), stovain and arsphenamin (salvarsan) are not described, while substances that have no place in rational therapeutics, such as horseradish, tonga, sunflower and trailing arbutus, are described as medicines. The technical uses of barium sulphate are described, but its use in roentgenologic diagnosis is not mentioned. The book is of little value to physicians. It might have been of some value to them if it had been critically edited and if the pharmacologic actions of drugs had been briefly stated. In the tabulation of "uses" as printed, no extra space would have been required to insert such words as "emetic," "cathartic," "diuretic," etc., in addition to the single word "medicine."

The Errors of Accommodation and Refraction of the Eye and Their Treatment. A Handbook for Students. By Ernest Clarke, M.D., F.R.C.S., Ophthalmic Surgeon to the King George Hospital. Fourth edition. Cloth. Price $2.50. Pp. 243, with 92 illustrations. New York: William Wood & Co., 1918.

This is the fourth edition of this admirable book, the first edition having been published fifteen years ago, based on lectures delivered at the Central London Ophthalmic Hospital and the Medical Graduates' College. For an established ophthalmologist the book is of little value, as without a knowledge of the fundamentals that it contains he would hardly be competetent to practice this specialty. But for medical students preparing to practice ophthalmology, it is of very practical value. A thorough knowledge of the optical properties of the eye, the different forms of ametropia, the mechanism of accommodation, and the methods of refraction are the first essentials to be mastered before one should attempt to deal with the pathology and treatment of eye diseases. The author has arranged these various subjects in a logical way, and, omitting nonessentials, presents the subject matter clearly and concisely. There can be nothing essentially new or original in a treatise of this kind, so that the merit it deserves is due to the author's happy arrangement of the text and the clear elucidation of the subject, which makes it a work of real value to the student of ophthalmology.

War Surgery from Firing-Line to Base. By Basil Hughes, D.S.O., M.A., M.B., and H. Stanley Banks, M.A., M.B, Ch.B., with Special Chapters by Lieut.-Colonel L. F. Smith, C.M.G., R.A.M.C., and Miss C. Bilton, R.R.C., Q.A.I.M.N.S., and an Introduction by Colonel Sir T. Crisp English, K.C.M.G., F.R.C.S., A.M.S., Consulting Surgeon to the British Forces in Italy. Cloth. Price, $9. Pp. 623, with 373 illustrations. New York: William Wood & Co., 1919.

This is a brief description of the treatment of the wounded from the onset to the time they leave the base hospital. There are lengthy chapters on the bacteriology and pathology of war wounds and the newer methods of treatment, especially those developed by the British. There are several chapters devoted to regional surgery. General anesthesia is advocated for all head operations, instead of local anesthesia as introduced by Gray and extensively used by the British surgeons. Chest injuries were handled more conservatively than was the practice in the American service. Flap amputation is recommended in preference to the guillotine method in all cases, but the wounds are left open for delayed primary or secondary suture. Numerous photographic and roentgenographic illustrations have been included.

Der Kroff der Weissen Ratte. Breitag zur vergleichenden Kropfforschung. Von Prof. Dr. Th. Langhans und Prof. Dr. C. Wegelin. Paper. Price, 14 francs. Pp. 131, with 13 illustrations. Bern: Paul Haupt, 1919.

This publication is the outcome of one part of the work of the Swiss goiter commission, which has conducted extensive investigations in the attempt to explain the high goiter rate of Switzerland. Wilms and Bircher have reported that white rats which drink "goiter water" often show goiter comparable to that of man. Langhans and Wegelin find that white rats kept in goitrous districts often show hyperplasias of the thyroid, the histologic changes of which they describe in detail; but they were unable to establish that this change depends on "goiter water" or any other single factor. They conclude that it is best explained "through the direct action of one or several goiter poisons on the thyroid;" but they do not determine the nature of these hypothetic "goiter poisons." They do find, however, that minute doses of iodids protect the rats from goiter.

Medicolegal

Legal Quarantine of Diseased Prostitute

(Ex parte Brooks (Texas), 212 S. W. R. 956)

The Court of Criminal Appeals of Texas dismisses a writ of habeas corpus, and remands to custody the relator, who sought to secure her release from custody under an order issued by the director of sanitation in the United States Public Health Service who was also the chief health officer of the city of Houston, which order stated that the relator had been examined and was infected with syphilis and was ordered into quarantine at the municipal farm, there to be detained until released by order of the health officer. The court holds wholly unsupported and negatived by the facts the contention that the health officer had no right or power to act in the premises because he held two offices in derogation of the provisions of the state constitution. Nor was there anything suggested by the statement of facts which supported the contention that the farm was not a suitable place for such patients, was too remote from the city and transportation and the friends of the relator. Nor was anything presented for decision by the contention that there had been numerous tests given the relator since her confinement, and that some of them showed positive and some negative results. If she was free from syphilis or gonorrhea, she might present her application for a writ of habeas corpus to the local courts, and if free therefrom might be discharged. The courts will understand that the health officers have no right or power to hold in quarantine citizens who do not show the presence of some of the diseases named in Chapter 85 of the Acts of the Fourth Called Session of the Thirty-Fifth Legislature. It was claimed that the relator was denied treatment at the hands of other physicians than the city health officer, by the terms of the act; but the court finds nothing in the statute, or facts adduced and agreed to, to support such contention. The court has carefully examined all of the contentions of the relator, and holds them to be without merit.

The legislature has the power to declare that prostitution is a source of communicable diseases, and that its suppression is a public health measure, and to direct, by enactment, that reasonable steps be taken, in the manner, and with the latitude necessarily accorded to the enforcement of sanitary and health statutes, to suppress it. The discovery in patients of the diseases at which the provisions of Chapter 85 are directed is confided to the medical profession, and the care and treatment is of necessity in the hands of the members of the same noble fraternity. There is nothing in the act which prevents or forbids any suspect, or persons detained, from perfect freedom of treatment by any reputable physician while in the custody of the officials charged with the enforcement of the law; and nothing which deprives any persons so confined for treatment of a speedy hearing at the hands of the court if there is oppression or detention without cause. The object of the law is not punishment for the unfortunates who are afflicted with these maladies, so easily transmitted and so fearful in results, but the well-being of these and the remainder of the people.

In this case the relator was shown to be a married woman, with a hard-working husband and four children, the youngest being 18 months old; but she declined to live with them, stating that she preferred the life of the streets. Testimony was adduced showing numerous bestowals of carnal favors on soldiers and other persons, and also that the relator was afflicted with gonorrhea and syphilis. The court thinks the provision of the act that such patients should be confined

for treatment until declared cured by official pronouncement is not unreasonable, unjust or arbitrary. The court's attention was not called to any authorities holding this or other similar acts violative of any of the provisions of the state constitution, or discriminatory, arbitrary or unreasonable.

Communications Privileged and Not Privileged

(Arnold v. Ft. Dodge, D. M. & S. R. Co. (Iowa), 173 N. W. R. 252)

The Supreme Court of Iowa, in this personal injury case, holds that, where the defendant examined as a witness a physician who had aided another physician in the treatment of the plaintiff at the hospital immediately after his injury, questions which the defendant propounded to the witness as to what the plaintiff had told him as to the circumstances of the accident were properly excluded, on the ground of privilege under the statute, the physician being deemed to occupy at the time the relation of physician to the plaintiff as his patient. Nor was the privilege waived by the plaintiff by his testimony on cross-examination. Testimony thus given by the plaintiff on cross-examination is not deemed voluntary, and is therefore not a waiver. But it was different when inquiry was made of the witness as to conversations had with the plaintiff after the professional relation had ceased. Objection was made to this line of examination on the same ground as before, and this objection was also sustained. But the latter ruling cannot be approved. The defendant had a right to inquire into conversations had after the termination of the professional relation. These in the statutory sense were not confidential. The record, however, did not disclose in any way what the testimony of the witness would have been if the questions had been permitted; and the error therefore was not a reversible one.

Not Required to Keep Copy of Prescription

(Friedman v. State (Tenn.), 213 S. W. R. 418)

The Supreme Court of Tennessee reverses and dismisses this case in which defendant Friedman was convicted for the reason that he "did unlawfully distribute and dispense and prescribe morphin, without keeping a duplicate of the prescription as prescribed by law." The court says that he was not a salesman of the drug mentioned, but was a practicing physician. He prescribed morphin for a habitual user, after attending the patient, but kept no copy or duplicate of the prescription. A question to be decided was whether Acts 1913 (1st Ex. Sess.) Chapter 11, required him to do so. That portion of the act bearing on this subject reads:

"Physicians who shall dispense or distribute any of the aforesaid drugs provided by this act shall keep a duplicate of all prescriptions issued by them for a term of two years, and said duplicate shall be subject to inspection by any of the officers named in the preceding paragraph." Section 2.

It will be observed that it is not all physicians who are included within the provisions of this act. It is only physicians "who shall dispense or distribute any of the aforesaid drugs provided by this act, who shall keep a duplicate of all prescriptions issued by them for a term of two years." The act thus limits the number of physicians included within its terms. It is plain and unambiguous, and there is no room for construction. Therefore the court holds that the defendant did not violate this section of the act when he failed to keep a duplicate of the prescription, because he did not dispense or distribute the drug. The court is unable to comprehend how the defendant could be deemed a dispenser or distributor of the drug merely because he failed to preserve a duplicate of his prescription. The offense was not for issuing the prescription, because the defendant complied with every requirement of the law in that respect. The offense charged was failure on his part to keep a duplicate of the prescription, which he was not required to do under a proper construction of the act.

Counsel for the state ingeniously argued that the statute should be given the construction insisted on for the state, because of supposed conveniences to the agents of the state who check up the sale of habit forming drugs. The court may well admit the conveniences suggested, but a sufficient answer in law is that the statute does not include them. Therefore it could not matter in this case what meaning was to be attributed to the words "dispense" and "distribute," because the defendant was in no sense a party to a dispensation or distribution of the drug because he failed to keep a duplicate of his prescription. It was the prescription furnished the druggist on which he acted, and not a duplicate in the hands of a physician.

The case of *Hyde* v. *State*, 131 Tenn. 208, 174 S. W. 1127, is in no sense in conflict with this opinion. In that case Dr. Hyde issued a prescription without attending the patient. It was held that the prescription made him an aider and abettor in the sale, although the alleged patient was not in existence.

Requirements in Action for Malicious Prosecution of Lunacy Proceeding

(Borton v. Woodward et al. (Idaho), 182 Pac. R. 916)

The Supreme Court of Idaho, in reversing a judgment that was rendered in favor of the plaintiff and in directing that a new trial be granted, in this action brought to recover damages for the alleged malicious prosecution of a lunacy proceeding, holds, to begin with, that such an action is not barred by the Idaho statute which limits to two years the time within which actions may be brought to recover damages for an injury to the person, or for libel, slander, assault, false imprisonment, etc. Then, taking up the contention that such an action would lie only where there had been a malicious prosecution of a criminal or civil action, the court says that, while there are authorities which go to the extent of so holding, the modern and better rule is to the effect that an action for malicious prosecution will lie against one who has maliciously and without probable cause instituted lunacy proceedings against another. But in a trial on the merits in a civil or criminal case, or in a lunacy proceeding, the question of probable cause is not passed on by the court, judge or jury; nor is it the criterion of the decision or verdict. The decision is on the merits and, if the defendant wins, it simply means that the plaintiff has not proved his case by the preponderance of the evidence or beyond a reasonable doubt. Therefore the verdict or decision has no logical bearing on the question of probable cause, and is not even admissible in evidence on that issue.

In this case it was shown that, prior to the making of the accusation, two reputable physicians, who had attended the plaintiff and thus had had recent opportunity to examine him and to judge of his mental condition, told one of the defendants, and he told the other, that the plaintiff was insane. It was also shown that, on an occasion when the plaintiff was before the Idaho state medical board, an applicant for a license to practice medicine and surgery, his conduct was such as to excite the suspicion of those who observed it, including one of the defendants, as to his mental balance; also, that shortly prior to his arrest on the insanity charge it came to the knowledge of the defendants that he had written prescriptions which were referred to in the record as "freakish," one of which was for strychnin in doses which, had one of them been taken by the patient for whom it was intended, would have proved fatal; another was for an eye wash which, had it been applied, would have ruined or destroyed the eyesight. On the lunacy hearing, the commission of physicians appointed to examine him reported that he was suffering from paranoia, but recommended that he be not restrained. The court concludes that the plaintiff did not sustain the burden of proof incumbent on him, and that no court or jury could reasonably find from the evidence that, in making the lunacy accusation against him, the defendants acted without probable cause. It was true that there was evidence which would justify a finding of malice, but want of probable cause cannot be inferred from malice.

The certificates of admission to practice medicine in other states, offered by the plaintiff and admitted in evidence by the trial court over the defendants' objection, were not admissible in the absence of evidence tending to show his

intention to engage in the practice there. They did not prove a right of the plaintiff to practice medicine in Idaho. They were not legitimate evidence of damage to his business; nor were they any evidence of damage to his reputation or his feelings. While not legally relevant or material, they were exceedingly prejudicial. They served to inject into the case a question of whether the refusal of the medical board to admit the plaintiff to practice in Idaho was right or wrong and prejudiced the defendants, as one of them was a member of the medical board and also filed a complaint against the plaintiff for practicing medicine without a license, acting under the orders of the medical board.

Not only does the court find no proof of want of probable cause in the evidence submitted by the plaintiff, but it holds that the defendants' motion for a nonsuit should have been sustained, though, since they did not rest on the motion, but introduced evidence, it was waived. And, since the defendants did not ask for a directed verdict at the close of the evidence, it was not incumbent on the supreme court to dispose finally of the case on this appeal. Costs were awarded to the defendants.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Ophthalmology, Chicago

December, 1919, **2**, No. 12

Treatment of Chronic Dacryocystitis. W. L. Benedict and R. A. Barlow, Rochester, Minn.—p. 843.
Six Meter Stereoscope. H. J. Howard, Peking, China.—p. 849.
Immediate Capsulotomy in Extraction of Senile Cataract. A. G. Bennett, Buffalo.—p. 854.
Paralysis of Accommodation Due to Focal Infections. C. A. Veasey, Spokane.—p. 858.
Accommodation in Lensless Eye. A. E. Davis, New York.—p. 860.
Assistants in Smith's Cataract Operation. A. E. Lister, London. —p. 865.
Tests for Determining the Sighting Eye. P. Dolman, Mineola, N. Y. —p. 867.

American Journal of Public Health, Boston

January, 1920, **10**, No. 1

Administrative Handling of Narcotic Addict: It's Benefit and Dangers. E. S. Bishop, New York.—p. p. 1.
New Specifications for Health Officers. M. Knowles and M. R. Scharff, Pittsburgh.—p. 8.
Public Health in Eastern Macedonia. P. D. White, Boston.—p. 14.
Preventive Medicine and War. M. P. Ravenel, Columbia, Mo.—p. 22.
Experimental Study of Efficacy of Gauze Face Masks. W. H. Kellogg, Sacramento, Calif.—p. 34.
Study of Toxicity of Diphtheria Bacilli Isolated from Immediate Contacts. F. W. Hachtel and M. S. Bailey, Baltimore.—p. 42.
Privy as Public Health Problem. L. L. Lumsden, Washington, D. C. —p. 45.
Development of State Departments of Health in Relation to Health Insurance and Industrial Hygiene. A. B. Wadsworth, Albany, N. Y.—p. 53.
Health Hazards of Nonpoisonous Dusts: Résumé of Recent Investigations. E. R. Hayhurst, Columbus, Ohio.—p. 60.
*Relative Importance of Milk Infection in Transmission of Certain Communicable Diseases of Man. E. K. Kelley and S. H. Osborn, Boston.—p. 66.

Importance of Milk Infection in Disease Transmission.—These studies are based on investigations by the district health office of the Massachusetts State Department of Health from 1915 to 1918, inclusive. Many of the conclusions tentatively formulated in a study by one of the authors (Kelley) three years ago are strengthened by this study, based on more complete epidemiologic data. It is believed that when the total aggregate of cases reported is considered, milk, while a dangerous factor and one of potential significance, does not assume any great quantitative factor as a channel of infection, provided prompt investigations are instituted as a routine procedure of all cases occurring on milk producing and milk handling premises. Milk, as a source of diphtheria, is practically negligible. Scarlet fever, though much more frequently transmitted by milk than is diphtheria, is milk borne in only a very small percentage of instances, as compared with other sources of infection. Milk borne typhoid is a more serious epidemiologic problem, 496 cases out of a total of 6,331 typhoid cases being attributed to this cause, or 7.7 per cent. Increased pasteurization ought to greatly decrease the percentage of frequency of milk borne cases. Although pasteurization plants have greatly increased in Massachusetts during the past four years, the relative proportion of total cases traced to milk, compared to the total cases reported, has remained about the same.

Boston Medical and Surgical Journal

Jan. 22, 1920, **182**, No. 4

Prostatism. F. L. Keyes, New York.—p. 79.
Difficulties in Diagnosis of Meningitis. H. W. Dana, Boston.—p. 84.
*Blood Plasma Chlorids versus Renal Function. W. C. Rappleye, San Francisco.—p. 89.
Institutional Control of Diphtheria. F. A. Finnegan, Boston.—p. 93.
*Two Cases of Fetal Asphyxia. C. J. Kickham, Boston.—p. 94.

Blood Plasma Chlorids versus Renal Function.—The blood plasma chlorids were determined by Rappelye in 104 patients showing no obvious evidence of compromising physical disease, the blood being drawn twelve hours after the preceding meal. No relationship could be established between the chlorid values and the blood urea nitrogen, rate of elimination of phenolsulphonephthalein, blood pressure readings or urine specific gravity. A small group of cases of so-called essential vascular hypertension seemed to show an elevated renal threshold for sodium chlorid. Attempts to lower the threshold have given no conclusive results.

Fetal Asphyxia.—In one of the cases reported by Kickham, the patient was on her way to the bathroom when she "felt something." This proved to be the new-born child, but the head had remained in the vagina. The infant was in a state of pallid asphyxia but with the fetal heart still audible. Efforts at resuscitation proved futile. The child died without breathing. In the second case, the woman had a precipitate birth of twins, having had only one sharp pain. One fetus was still within its amniotic sac, which had not ruptured, although the entire sac was outside of the vulva. The sac was ruptured at once, attempts were made to resuscitate the baby, but it died without breathing.

Canadian Medical Association Journal, Toronto

January, 1920, **10**, No. 1

Scope of Federal Department of Health. P. H. Bryce, Ottawa.—p. 1.
Constitutional Symptoms and Focal Infections of Genito-Urinary Tract. D. W. MacKenzie, Montreal.—p. 11.
Tuberculosis of Kidney and Ureter. W. Jones and R. Pearse, Toronto. —p. 28.
Indications for and Results of Transfusion. E. C. Levine, Montreal. —p. 34.
Spasmophilia (Infantile Tetany). L. M. Lindsay, Montreal.—p. 43.
Wounds of Chest. N. B. Gwynn and H. E. MacDermot.—p. 50.
Problem of Mentally Defective in Province of Quebec. G. S. Mundie, Quebec.—p. 63.

Colorado Medicine, Denver

January, 1920, **17**, No. 1

Workings and Improvements of Harrison Antinarcotic Law. A. G. Dingley, Denver.—p. 4.
Indications for Operative Treatment in Cranial Fractures. O. M. Shere, Denver.—p. 9.
*Splenic Anemia in Children. J. W. Amesse, Denver.—p. 12.

Splenic Anemia in Children.—A case of Banti's disease is reported by Amesse, occurring in a boy, aged 6 years. A splenectomy was done and the boy recovered. He has gained 20 pounds in weight, eats and sleeps well, and gives every promise of living out the natural span of life. An interesting feature in the case was the fact that the boy's mother, who was only 16 years of age when he was born, gave a clear history of an obscure disease, accompanied by pronounced anemia from her birth to her twelfth year. She was transfused from the husband at the time of the boy's birth for a puerperal hemorrhage without benefit.

Endocrinology, Los Angeles

October-December, 1919, **3**, No. 4

*Rôle of Pineal Gland in Pediatrics; Review of Literature. M. B. Gordon, Brooklyn.—p. 437.
Coöperation by Internist and Surgeon in Treatment of Exophthalmic Goiter. H. Lisser, San Francisco.—p. 454.

Early Synostosis of Epiphyses with Dwarfism in Pubertas Praecox. K. H. Krabbe, Copenhagen.—p. 459.
*Rational Therapeusis of Exophthalmic Goiter. I. Bram, Philadelphia. —p. 467.
*Hypophysial Diabetes. J. Koopman, The Hague, Holland.—p. 485.

Rôle of Pineal Gland in Pediatrics.—A review of the literature has convinced Gordon that it is exceedingly difficult to arrive at any conclusive opinion as to the functional activity of the pineal gland. There has been nothing substantial brought forward to show that it possesses an internal secretion. The experimental work has failed to prove that it possesses a function, and no experimental studies are so complete as to allow comparison with the very striking syndrome seen clinically. If the views of Horrax and others that the pineal gland controls the inhibition of sex growth were true, then pineal feeding should postpone adolescence, but observations by Dana and Berkeley and by McCord produced the opposite. On the other hand, if the feeding results of McCord are correct, then the extirpations of Dandy and Horrax ought to have brought overwhelming evidence of a pineal function. In the final analysis, Gordon says, it seems justifiable at the present time to state that our knowledge of the function of the pineal is more problematic than accurate.

Rational Therapeusis of Exophthalmic Goiter.—Bram claims that careful nonsurgical management is capable of completely and permanently curing the great majority of cases of hyperthyroidism. The occasional exception not responding to nonsurgical measures is not an instance of genuine exophthalmic goiter but is one of malignant degeneration of the thyroid gland, a case of toxic symptoms superimposed on a long standing nontoxic goiter, or a case brought to the clinician's attention in a moribund condition. Bram, in unison with others interested in thyroid therapy, does not hesitate to conclude that he has been able to cure every case of primary exophthalmic goiter in which a fair degree of cooperation was obtainable; this was accomplished in from six months to two years, depending on the exigencies of the case treated. Strict individualization of the case in hand is the dominating principle of treatment. The proper medical attendant, the proper social atmosphere, and the right kind of dietic, hygienic, medicinal, psychotherapeutic, electrotherapeutic and other measures properly applied for the required length of time should yield a permanent cure.

Hypophysial Diabetes.—While proof is lacking that the two cases reported by Koopman are cases of hypophysial diabetes, he believes it is probable that the hypophysis played an important part in them, as good results were obtained from the administration of hypophysis extract. Three times daily, a tablet corresponding to one tenth of the fresh gland of the cow was given. The effect was striking. The third day of the onset of the treatment 200 gm. of bread and 50 gm. of meat were tolerated without glycosuria. The fourth day 100 gm. meat and 200 gm. bread gave rise to a glycosuria of 16.4 gm. After a fortnight the protein tolerance was 200 gm. of meat. It has not been possible to increase this.

Illinois Medical Journal, Oak Park, Ill.

January, 1920, **37**, No. 1

Value of Military Surgery in Civilian Practice. G. W. Crile, Cleveland.—p. 1.
Artificial Pneumothorax. E. A. Gray, Chicago.—p. 7.
Attempt to Control Influenza in Illinois. J. J. McShane, Springfield. —p. 17.
Placental Hormone, a Physiologic Galactagogue. B. Van Hoosen, Chicago.—p. 22.
Pelvic Inflammations. H. N. Rafferty, Robinson.—p. 24.
Midwife Practice; An Anachronism. R. W. Holmes, Chicago.—p. 27.
Foundation Fund of Tristate District Medical Society in Outline. H. G. Langworthy, Dubuque, Ia.—p. 31.
Application to Civil Practice of Therapeutic Principles Established in Treating War Injuries to Thorax. J. L. Yates, Milwaukee.—p. 33.
Reciprocal Relation of Wisconsin with Her Neighbors. J. M. Dodd, Ashland, Wis.—p. 36.
Gunshot Wounds of Chest. J. F. Van Paing, Chicago.—p. 40.
*Enuresis in Adult Female; Surgical Treatment. F. C. Schurmeier, Elgin.—p. 43.
*Application of Pure Cocain for Nasal Anesthesia. A. H. Andrews, Chicago.—p. 48.

Surgical Treatment of Enuresis in Adult Female.—In one case, cited by Schurmeier, that of a young woman, aged 21 years, he performed the simple operation of freeing the urethra through the tunica propria, approximately five-eighths inch deep, gave the meatus urinarius one half turn and sutured with interrupted fine silkworm. Four hours after the operation, the patient was catheterized and every eight hours afterward, for four days. She was now able to void urine with but slight discomfort. The urine was kept bland. She left the hospital at the end of two weeks with fairly good control over the urinary mechanism. Nine months passed, and the patient was greatly encouraged and anxious to have a second operation, which was calculated to make the surgical procedure 100 per cent. successful. Schurmeier performed the second operation. The urethra was freed as in the previous operation, a three-fourths turn was made and it was stitched as far back as possible, in the new position the urethra now had. The external closure was made as in the previous operation. The patient was catheterized four hours later, and every six hours thereafter for a few days; then the intervals were lengthened, until on the sixth day the patient was able to urinate in the normal way. After two weeks the patient left the hospital. She had good control over the urinary mechanism more than four years after the operation.

Use of Pure Cocain for Nasal Anesthesia.—The method Andrews has adopted is as follows: First, apply to the part to be anesthetized pencils of cotton saturated with from 1:1,000 to 1:5,000 solution of epinephrin. These pencils should be left in position for from five to eight minutes. After their removal, a small pledget of cotton is wound on an applicator and dipped in water or epinephrin solution. The excess of fluid is removed from the pledget by touching it to a towel. The damp pledget is then dipped into the powdered or flake cocain, and a small amount of the cocain is rubbed gently over the desired area. Removal of the excess of fluid from the pledget is important, for if the pledget is too wet, the fluid will run off into the remaining dry cocain and cause it to crystallize. If profound anesthesia is to be produced, a second application can be made after two or three minutes. Ordinarily, anesthesia is sufficient for examination or operation to be commenced immediately after the second application. The advantages claimed for the method are: It is safer than cocain solutions. The contracting effect of the cocain powder on the blood vessels seems to prevent its absorption. The anesthesia is more prompt, more profound, and more lasting. The small amount of cocain required is advantageous both from the standpoint of safety and economy. From one-fourth to one-half grain of flake cocain is sufficient to anesthetize both side of the septum for a submucous resection.

Iowa State Medical Society Journal, Des Moines

January 15, 1920, **10**, No. 1

*Chronic Nephritis in the Young. W. L. Bierring, Des Moines.—p. 1.
Pathology of Intestinal Obstruction. M. J. Kenefick, Algona.—p. 5.
Symptoms of Intestinal Obstruction. W. A. Rohll, Waverly.—p. 7.
Treatment of Acute Intestinal Obstruction. W. W. Bowen, Fort Dodge. —p. 9.
Hereditary Syphilis. C. L. Barewald, Davenport.—p. 14.
Laboratory Service of Divisional Laboratories. L. A. Fritze.—p. 16.

Chronic Nephritis in the Young.—The ages represented by Bierring's cases are 11, 15, 18 and 23 years, respectively. The onset in each instance was gradual and insidious; the distinctive subjective symptoms were severe headache, nausea, vomiting, polyuria, loss of weight and strength; albuminuria with casts, in a urine of low specific gravity; cardiac hypertrophy and arterial hypertension prevailed as the clinical signs. In the oldest patient a marked peripheral arteriosclerosis was present. A preceding acute nephritis could not be established in any of the cases. The familial tendency was noted in three cases. In one case the father died at 33 years of age of a sudden death similating apoplexy, in a second case the mother died at 32 years of age of nephritis, and in the third case examination of an aunt of the patient, 31 years of age, and an uncle, 40 years of age,

revealed a condition of chronic nephritis with hypertension, death occurring in each instance from cerebral hemorrhage. Only two of the four patients remained under observation long enough to permit instituting any definite plan of treatment. Active eliminative measures, rest, restrictions in diet, with vasomotor relaxants, produced some improvement in symptoms, but apparently did not influence the course of the disease or avert the fatal outcome. Necropsies were not permitted.

Kansas Medical Society Journal, Topeka

January, 1920, **20**, No. 1

Lethargic Encephalitis. A. L. Skoog. Kansas City.—p. 1.
Etiology of Recent Influenza Epidemic. R. H. Major, Rosedale.—p. 4.
Physician and Health Officer. W. H. Wells, Coffeyville.

Journal of Parasitology, Urbana, Ill.

December, 1919, **6**, No. 2

North American Myxosporidia (in Fish). H. B. Ward, Urbana.—p. 49.
*Experiments with Steam Disinfectors in Destroying Lice in Clothing. R. H. Hutchison, Washington, D. C.—p. 65.
Two New Proteocephalidae (in Fish). E. C. Gaust, Peking, China.—p. 79.
Resistance to Desiccation of Intermediate Host of Schistosoma Japonicum Katsurada. W. W. Cort, Baltimore.—p. 84.
*Mouse Oxyurid, Syphacia Onvelata, as a Parasite of Man. W. A. Riley, Minneapolis.—p. 89.
Dioctophyme Renale in Dogs. G. B. Wislocki, Boston.—p. 94.
Sarcosporidiosis in an East Indian. S. T. Darling, San Paulo.—p. 98.
Concentric Bodies, Probably of Parasitic Origin, in the Australian Sea Mullet, Mugil Dobula. J. B. Cleland, New South Wales.—p. 102.

Destroying Lice in Clothing.—The observations reported by Hutchison show that if the penetration of steam is sufficient to produce a temperature of 75 C. (167 F.) in the center of a barracks bag (or other load of infected goods) all eggs and active stages of body lice will be destroyed. If the disinfectors are operated efficiently on the time schedule now employed (viz., a 10 inch preliminary vacuum; 15 pounds steam pressure for fifteen minutes, reckoned from the time the steam is turned on; followed by a 10 inch drying vacuum), the requisite temperature (75 C.) is attained in every case. By efficient operation is meant (1) the maintenance of a full head of steam so that the 15 pounds pressure in the disinfector is produced within five minutes, thus allowing at least ten minutes for exposure; (2) overloading must be guarded against; (3) the individual bundles must not be rolled too tightly. Little, if any, shrinkage of woolen goods is caused by this treatment. There is, of course, some wrinkling, but these wrinkles are not permanent and may be remedied by pressing.

Mouse Oxyurid in Man.—The parasite described by Riley was found in the feces of an American-Bohemian child living in Zamboanga. She was one of a family of five, all of whom were heavily infested by the worm in question. From the available data, it was evident that the food of the child and of others of the family had been grossly contaminated by mice or rats. This accounts for the infestation by one of the commonest nematode parasites of these rodents. Incidentally, it furnishes circumstantial evidence in favor of the view that *Hymenolepis nana* of man and *Hymenolepis murina* of rodents are one and the same species, as has been claimed, on morphologic grounds, by various investigators.

Michigan State Med. Society Journal, Grand Rapids

January, 1920, **18**, No. 1

Treatment of Infected Wounds with Demonstration of the Carrel-Dakin Technic. C. B. Gardner, U. S. Army.—p. 1.
Case of Bilateral Cavernous Sinus Thrombosis from a Carbuncle on Nape of Neck in Latent Influenza. L. B. Stegman, Battle Creek.—p. 9.
Treatment of Septic and Injured Joints. F. C. Kidner, Detroit.—p. 16.
Nontuberculous Pleurisy. J. S. Prichard, Battle Creek.—p. 20.
Résumé of Series of Cases of Ectopic Gestation and Ruptured Graffian Follicle. C. D. Brooks and W. R. Clinton, Detroit.—p. 22.
Commoner Clinical Types of Acute Pulmonary Edema and Their Treatment. W. H. Marshall, Flint.—p. 23.
Address Delivered at Fiftieth Anniversary of Detroit Academy of Medicine, Dec. 9, 1919. W. P. Manton, Detroit.—p. 26.
Value of Ophthalmoscope in Diagnosis and Prognosis of Systemic Disease. D. E. Goodwin, Houghton.—p. 31.
Importance of Physical Findings in Late Syphilis. Case Report. A. M. Crance, Bay City.—p. 33.
Gunshot Wound of Bladder. B. H. Van Leuven, Petoskey.—p. 35.

Military Surgeon, Washington, D. C.

January, 1920, **46**, No. 1

*Nonspecific Immunity. V. C. Vaughan, Ann Arbor, Mich., and G. T. Palmer, Springfield, Ill.—p. 1.
Organization, Function and Operation of an Evacuation Hospital. E. C. Cutler, M. C., U. S. Army.—p. 9.
Physical Reconstruction in Army Hospitals. H. M. Evans, M. C., U. S. Army.—p. 33.
Air Medical Service and the Flight Surgeon. L. H. Bauer and W. MacLake, M. C., U. S. Army.—p. 40.
British Ambulance Trains. F. L. Pleadwell, M. C., U. S. Navy.—p. 51.
Case of Penetrating Wounds of Chest at Base Hospital. H. McCulloch and W. Fischel, M. C., U. S. Army.—p. 59.
Mumps: Its Etiology, Mode of Transmission. C. Wesselhoeft, M. C., U. S. Army.—p. 63.
Paraffin-Wax Treatment of Burns, with Special Reference to Mustard Gas Burns. J. S. Taylor, M. C., U. S. Army.—p. 83.
Series of One Hundred and Fifty-nine Mastoid Operations at Fort Riley. P. D. MacNaughton and G. W. Swift, M. R. C., U. S. Army.—p. 94.
Mastoid Operation Under Local Anesthesia; Report of Four Cases. E. D. Twyman and A. A. S. Giordano.—p. 101.

Nonspecific Immunity.—Is there any scientific evidence of the possibility of the development of a nonspecific bacterial immunity, or increased resistance to infection, is the question discussed by Vaughan and Palmer. The basis of their remarks is, in the main, the work done by the late Victor C. Vaughan, Jr., and first reported as early as 1905. The authors believe that it is an established fact that an increased tolerance to the protein poison can be established, that it is nonspecific and that no antibody is generated. Further, it is evident that a nonspecific bacterial immunity, never reaching a degree comparable with that attainable in toxic immunity, but certainly affording protection beyond that usually present, is secured by repeated introduction of the protein poison into the body. Vaughan and Palmer do not believe that this nonspecific immunity prevents infection with a newly imported virus, but that it mitigates the effects of this infection in some instances so markedly that no symptoms are recognizable, while in others its effects are shown only in the lower death rates among those possessing it. Animal experiments have shown that nonspecific immunity is of low grade. It protects quite securely against the minimum lethal dose of the culture, rarely against twice this amount, but beyond this it usually fails. However, this specific immunity, which the nonspecific form has enabled the individual to attain, may protect against from eight to twelve times the minimum lethal dose.

Minnesota Medicine, St. Paul

January, 1920, **2**, No. 1

Measure of Mentality. A. Sweeney, St. Paul.—p. 1.
Acute Mastoiditis. J. D. Lewis, Minneapolis.—p. 15.
Roentgen-Ray Examination in Eye Injuries with Foreign Body Localization. C. A. Donaldson, Minneapolis.—p. 18.
Mastoiditis, Acute and Subacute; Results in a Series of Operated Cases. H. I. Lillie and R. A. Barlow, Rochester, Minn.—p. 23.
Tuberculosis Work in Rural Communities. S. A. Slater, Worthington, Minn.—p. 25.
Organization of Military Hospitals; General Considerations with Reference to Treatment of War Wounds A. DePage, LaPanne, Belgium.—p. 29.

New Jersey Medical Society Journal, Orange

January, 1920, **17**, No. 1

Underlying Causes of Narcotic Habit. A. Lambert, New York.—p. 1.
Physicians in Selective Draft of State of New Jersey. H. B. Costill, Trenton.—p. 5.
Significance of Cardiac Pain. G. H. Lathrope, Newark.—p. 9.
Modern Heart Methods; A Valuation. H. Wallace, Montclair.—p. 13.

Pennsylvania Medical Journal, Athens, Pa.

January, 1920, **23**, No. 4

Medical Profession and New Workmen's Compensation Act of Pennsylvania. F. L. Van Sickle, Olyphant.—p. 182.
Sanitary Disposal of Sewage and Trade Wastes. C. A. Emerson, Harrisburg.—p. 186.
Application of War Surgery to Industrial Practice. D. Hinton, Philadelphia.—p. 188.
Proposed Health Insurance Legislation. J. B. Andrews, New York. p. 193.
Has Medical Profession Adequately Met Its Responsibilities? G. E. Tucker, Hartford, Conn.—p. 197.
Cost of Adequate Medical Service Under Health Insurance. J. A. Lapp, Chicago.—p. 201.
Medical Problems in Pennsylvania. J. B. McAlister, Harrisburg.—p. 216.
Sickness Problem and Workmen's Health Insurance. J. B. Andrews, New York.—p. 219.

The Sickness Problem. Is Social Insurance the Remedy? L. K. Frankel, New York.—p. 224.
Vaccine Therapy in Genito-Urinary Infections. J. L. Laird, Philadelphia.—p. 227.

Psychobiology, Baltimore

May, 1918, **1**, No. 6

Methods of Studying Controlled Word Associations. M. W. Loring, Baltimore.—p. 369.
Methods of Using Balanced Magnet Chronoscopes. K. Dunlap, Baltimore.—p. 445.
Influence of Distribution of Brightnesses Over Visual Field on Time Required for Discriminative Responses to Visual Stimuli. H. M. Johnson, Cleveland.—p. 459.

Rhode Island Medical Journal, Providence

January, 1920, **3**, No. 1

Advances in Surgery of Extremities During War. M. S. Danforth, Providence.—p. 1.
Child Welfare, Yesterday and To-Day. E. M. Gardiner, Providence.—p. 10.
Erythema Multiforme Following Diphtheria Antitoxin. D. L. Richardson, Providence.—p. 13.

Surgery, Gynecology and Obstetrics, Chicago

January, 1919, **30**, No. 1

Joint, Nerve and Other Injuries in War Surgery. R. Jones, Liverpool, England.—p. 1.
Care of Wounded Man in War. S. Bowlby, London, England.—p. 13.
Relation of Cancer to Prolongation of Human Life. W. J. Mayo, Rochester, Minn.—p. 22.
*Surgical Treatment of Exophthalmic Goiter. G. W. Crile, Cleveland, Ohio.—p. 27.
The Acute Abdomen. J. B. Deaver, Philadelphia.—p. 30
Empyema; Pathogenesis and Treatment. A. V. Moschcowitz, New York.—p. 35.
Physician and Surgeon in the Industrial Era. O. P. Geier, Cincinnati.—p. 44.
*Five Hundred Cases of Injuries of Peripheral Nerves at U. S. Army General Hospital No. 11. C. H. Frazier and S. Silbert, Philadelphia.—p. 50.
*Chronic Trigonitis in Female. H. E. Lindeman, New York.—p. 64.
Deeper Structural Changes Arising from Varicose Ulceration. D. H. Morris, New York.—p. 72.
*Recurrent Internal Hernia Following Gastro-Enterostomy. R. C. Bryan, Richmond, Va.—p. 82.
Case of Colloid Adenocarcinoma of Bladder. S. S. Barringer, New York.—p. 86.
Technic of Inguinal Herniotomy. E. P. Quian, Bismarck, N. D.—p. 88.
Improved Wire Splint for Congenital Clubfeet. A. J. Dalton, St. Joseph, Ill.—p. 92.
*Methylene Blue in Diagnosis of Acute Perforating Gastric and Duodenal Ulcers. H. L. Baker, Chicago.—p. 93.
New Wight-Harloe Empyema Shield and Closed Method of Applying It. J. S. Wight, and R. Harloe, New York.—p. 94.
*Rupture of Uterus with Peritoneal Encystment. S. B. Blakely, Binghamton, N. Y.—p. 95.

Surgical Treatment of Exophthalmic Goiter.—The conclusions presented by Crile as to the surgical treatment of exophthalmic goiter are based on his personal experience in 2,250 thyroidectomies of which 1,169 were for exophthalmic goiter; of the latter, 660 cases, or 56 per cent. were ligated. No patient was rejected for operation unless he or she was in the state of dissolution. In the last series of 331 thyroidectomies, 116, or 35 per cent. were first ligated, and no case was rejected. Among the 116 ligations there was only one death. The patient was in the early stage of dissolution and was delirious when the ligation was made. The downward course of this case was not arrested. The series of 1,169 thyroidectomies for exophthalmic goiter began with operations under ether alone, and with no special precautions. The mortality rate in these early cases was 16 per cent. After the adoption of anociation-nitrous oxid-oxygen and local anesthesia with the anesthetization of the patient in his room—the mortality rate fluctuated between 2 and 5 per cent, until by the adoption of a new system of management the mortality rate for all goiters among the last 331 thyroidectomies dropped to 0.6 per cent This number includes one series of 206 consecutive thyroidectomies without a fatality and 182 thyroidectomies for exophthalmic goiter with two fatalities, a mortality rate of 1.1 per cent. The new system of management consisted of the adoption of nitrous oxid-oxygen, the use of local anesthesia, the multiple stage operation, the exclusion of the psychic factor, and the application of the principle of carrying the operation to the patient. The operative procedures are graded according to the severity of the disease. In moderate cases the entire operation may be completed at one seance. In more severe cases the thyroid activity is diminished by preliminary ligation with the patient in bed, under nitrous oxid-oxygen analgesia and local anesthesia. In extremely grave cases it may be necessary to diminish the thyroid activity by multiple steps—ligation of one vessel; ligation of the second vessel; partial lobectomy; complete lobectomy—allowing intervals of a month or more between these stages, the length of each interval being determined by the degree of physiologic adjustment. If, during the operation, the pulse runs up beyond the safety point, the operation is halted, the wound dressed with flavine, and the operation completed after a day or two when conditions have again become safe. In some cases, even though the thyroid has been resected, it is advisable to dress the unsutured wound with flavine and make a delayed suture in bed the following day under analgesia. In certain cases lobectomy is performed while the patient is in bed and under nitrous oxid analgesia and local anesthesia. Crile insists that psychic control of the patient on the part of the surgeon, the intern, the anesthetist, and the nurse is required throughout to diminish the intense drive. An anociated regimen should be prescribed for the preoperative, interoperative and postoperative periods. The preoperative and the postoperative management are of almost equal importance to that of the operation itself. If, after the operation, the temperature becomes excessively high, with greatly increased pulse and respiration, the patient is packed promptly in ice. To avoid the effects of too sudden a withdrawal of thyroid secretion, thyroid extract is given the night before a lobectomy.

Peripheral Nerve Injuries.—The principles which governed Frazier and Silbert in dealing with their cases are summarized as follows: Liberation or neurolysis has been given preference in the absence of a complete anatomic division or a neuroma in continuity when after excising all scar tissue and laying bare the nerve sheath there is a quick response to faradism. Resection and suture are essential whenever neurolysis is contraindicated. Resection must be carried centrad and distad until healthy scar-free fasciculi are exposed. In bridging defects, the nerve transplant must not be employed until advantage has been taken of every other reasonable measure: to wit, nerve stretching, immediate or continued (as with sutures through bulbs), mobilization, transposition as of ulnar and musculospiral nerves, and, in exceptional instances, lateral implantation suture, such as implanting the ulnar or musculospiral nerves into the median. When these fail, a nerve transplant is justifiable, the autotransplant being the first choice, and homotransplant (preserved in liquid petrolatum, or 50 per cent. alcohol) the second choice. For autotransplant, the musculocutaneous or sural nerves of the leg, the radial or internal cutaneous nerves of the arm, may be selected on the basis of convenience. In nerve suture it is equally important to know what one ought not to do. In this category we include suture at a distance, the flap operation, bilateral anastomosis (as recommended by Hofmeister), and tubulization Sharp, clean dissection, careful hemostasis, the approximation of healthy fasciculi, without undue tension, represent the tripod on which the success of nerve suture rests. Tendon transplantation should be employed when suture fails and is particularly appropriate in residual palsies of the posterior interosseous, with inability to extend wrist or fingers, and anterior tibial palsies with resulting foot drop. The after-treatment should include (*a*) enforced fixation for a period of from four to six weeks with gradual straightening of the limb, (*b*) massage and galvanism until voluntary movement returns, (*c*) exercises varied according to the muscles involved and with a view of sustaining the interest of the patient.

Chronic Trigonitis in Female.—Lindeman reports the favorable results he has obtained from the injection of 2 per cent. quinin and urea hydrochlorid in the treatment of these cases.

Recurrent Hernia after Gastro-Enterostomy.—In the case reported by Bryan there was a hernia of the jejunum posterior to the gastrojejunostomy. At operation the intestines were simply pulled back.

Methylene Blue in Diagnosis of Gastric Ulcer.—Baker reports four cases in which he gave the patient 3 grains of methylene blue, dissolved in an ounce of water, for the purpose of making easier the location of the ulcer. In all, ten cases have been observed where methylene blue has been used.

Rupture of Uterus; Peritoneal Encystment.—The interesting features of Blakely's case are numerous attempts (7) to produce abortion; a traumatic rupture of the uterus with extrusion of a four months' fetus into the general peritoneal cavity followed by general peritonitis; recovery from the peritoneal infection, healing of the uterine tear, encysting of fetus, formation of a vaginal fistula; removal of a large portion of the fetal skeleton with indistinguishable soft parts five months later through the vagina; ultimate recovery.

Virginia Medical Monthly, Richmond

December, 1919, **46**, No. 9

Gastric and Duodenal Ulcers. C. R. Grandy, Norfolk.—p. 219.
Surgical Treatment of Gastric and Duodenal Ulcer. S. H. Watts, University.—p. 221.
*Case of Restoration of Bile Passage. J. D. Collins, Portsmouth. —p. 227.
Epidemic Lethargic Encephalitis; Etiology and Pathology. B. R. Tucker and S. W. Budd, Richmond.—p. 228.
Some Unique Facts Pertaining to the Medical Profession and the World War. B. C. Keister, Roanoke.—p. 232.

Restoration of Bile Passages.—In a case of complete obstruction of the common bile duct, Collins dissected out the tract of the fistula through the abdominal wall to the skin which remained from a previous operation. This fistulous tract became a well organized tube of connective tissue about one-quarter inch in diameter. A section of a No. 12 French soft rubber catheter was inserted into the open end of the fistulous tube for a distance of 2 inches. This was secured with one catgut stitch. Four inches of the rubber tube projected beyond the end of the fistulous tube. At a point opposite the margin of the liver a stab wound was made into the duodenum. The fistulous tube with the rubber tube projecting from its distal end was turned into the lumen of the intestine and the stab wound was closed with a pursestring suture. The intestine was then drawn up and sutured after the manner of the Witzel operation. The anastomosis was further strengthened by suturing over it a tag of omentum. The abdominal wound was closed without drainage. Recovery was quick and uneventful. The rubber tube was passed on the sixteenth day. A search through the literature disclosed only two cases where this method of repair was adopted, and both were unsuccessful.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

Jan. 3, 1920, No. 3079

Gunshot Fracture of Femur. A. Bowlby.—p. 1.
*Clinical Types of Abdominal Tuberculosis. K. W. Monsarrat.—p 5.
Sphenoidal Empyema and Epidemic Cerebrospinal Fever D. Embleton.—p. 7.
Sterility in the Male. K. Walker.—p. 10.
Significance of Position of a "Contraction Ring" in Extreme Pelvic Contraction with Vertex Presentation. C. D. Lochrane.—p. 11.
Cases of Rhinoplasty and Cheiloplasty. R. Parker.—p. 12.

Clinical Types of Abdominal Tuberculosis.—Monsarrat discusses tuberculosis of the ileum, cecum and rectum, and cites cases to illustrate the methods of treatment. He says that when tuberculous disease, either of the ileum or large bowel, is associated with definite intestinal obstruction, operation is always necessary, and the choice lies between exclusion by anastomosis and excision. If the obstruction is acute, exclusion by anastomosis is to be preferred; if the obstruction is subacute the exact local condition must decide. A mass that is easily isolated is better removed. When such tuberculous bowel lesions are not associated with obstruction, or with an obstruction that is chronic and capable of relief by aperient, the advisability of operation will depend on whether the bowel disease is or is not the sole demonstrable lesion in the body. If the lung is also affected it will probably be wiser to decide against operation. With regard to disease of the rectum, he knows of no actual evidence that a remedy is to be found in the establishment of an artificial anus. In one instance, this procedure added to the patient's discomfort without obvious benefit to the rectal condition. When the rectum is affected above the peritoneal reflection, and is associated with abscess, evacuation of the abscess by the intraperitoneal route is to be recommended, but except for the treatment of this complication, operation has no service to offer. Lastly, in selected cases, operation gives good results in limited tuberculous disease of the mesenteric lymph nodes. According to the extent and stage of the focus, this will take the form either of enucleation or of excision of the mesentery involved, together with the associated portion of intestine.

Indian Journal of Medical Research, Calcutta

July, 1919, **7**, No. 1

*Occurrence of Intestinal Protozoa in British and Indian Troops in Mesopotamia. C. L. Boulenger.—p. 1.
*Coma as a Cause of Death in Diabetes. D. McCay.—p. 22.
*Treatment of Diabetes in India. D. McCay.—p. 81.
*Pathology of Experimental Rabies. J. W. Cornwall.—p. 148.
*Pharmacodynamics of Quinin. II. Some Effects of Quinin on Kidneys, Suprarenals and Spleen of Healthy Rabbits. J. W. Cornwall.—p. 160.
*Pathogenesis of Deficiency Diseases. No. III. Influence of Dietaries Deficient in Accessory Food Factors on Intestine. R. McCarrison. —p. 167.
*Influence of Scorbutic Diet on Suprarenals. IV. R. McCarrison.—p. 188.
*Monkey Plasmodium (P. Semnopitheci); Experiments in Malaria. R. Knowles.—p. 195.
*Association of Bacillus of Hoffmann with Diphtheria in India. R. Knowles.—p. 203.
*Cultural Methods of Gonococcus. G. C. Maitra.—p. 219.
Studies in Ankylostomiasis: A. Criticism. C. Lane—p. 223.
Technic of Levitation Methods. C. Lane—p. 228.
*Presence of Acid-Fast Bacilli in Blood of Lepers K. R. K. Iyengar. —p. 235.
Standardization of Bacterial Suspensions. H. C. Brown—p. 238.
Possible Spread of Schistosomiasis in India. S. Kemp and F. H. Gravely.—p. 251.

Intestinal Protozoa in Troops in Mesopotamia.—The total number of persons examined by Boulenger was 1,378. The cases consisted of acute dysenteries (i. e., with blood and mucus in the stools), colitis and diarrhea, as well as a number of convalescents passing more or less normal stools. The following parasites were found: *Endameba dysenterica* was found in 201 cases; *Endameba coli* in 264 cases; *Giardia (Lamblia) intestinales* in 133 cases; *Trichomonas intestinalis* in 111 cases; *Chilomastix* (tetramitus) *mesnili* in sixty-eight cases; and *Coccidun* (isospora) in eight cases. Only one outbreak of bilharziosis occurred among the troops in Mesopotamia up to August, 1918, seventy-one of the Indian personnel of a general hospital having become infected with *Schistosoma hematobium.* The results of an investigation of the Arab population of Mesopotamia showed that the disease was common throughout the country, both in the Tigris and the Euphrates districts: the average infection by *Schistosoma hematobium* was approximately 20 per cent. of the male Arabs examined. The mollusk *Bullinus contortus,* known to be the second host of the parasite in Egypt, was found in Mesopotamia, but does not seem to be of common occurrence in that country.

Coma as Cause of Death in Diabetes.—An analysis of the blood was made by McCay in practically all cases of diabetes, with or without albuminuria, all cases of kidney diseases with or without uremia, and also in a large number of perfectly normal individuals. The absence of any well marked signs of acidosis, either during the course and treatment of diabetes, or even in the terminal coma, raised the authors' suspicions that the coma, as a terminal phenomenon in the type of diabetes prevalent in India, was not identical with diabetic comas as seen in Europe. Other considerations pointed to the probability of the coma being uremic. He could find no essential difference between the chemical condition of the blood in patients with uremia and in patients dying in coma who had been suffering from diabetes, except for the presence of hyperglycemia in the latter, and this, he

says, can hardly be regarded as a cause of coma. Again, the outstanding feature of these dying diabetics was the great increase in the nonprotein nitrogen of the blood. Acetone, urea, phosphates, etc., may be increased to a greater or less extent, but the signs of acidosis are far too slight to enable one to ascribe the coma to any ill effects caused by a meager retention of acetone bodies in the blood. McCay, therefore, arrives at the conclusion that the functional derangement of the kidney that accompanies diabetes is the all important factor in producing the necessary conditions of the blood that lead to coma and death.

Treatment of Diabetes in India.—The treatment of diabetes in India, McCay says, resolves itself into the treatment of diabetes levis, or the milder forms of the disease met with in European countries. On the whole, it is even a less serious and less fatal condition than the ordinary diabetes levis of Europe as it does not present the same tendency to progress or to become complicated with severe acidosis and diabetic coma. McCay has not met with a single case, among the hundreds treated or seen by him, in which proper dietetic measures failed to clear the urine of sugar and keep it clear.

Pathology of Experimental Rabies.—Owing to the growth of the rabies organism in the central nervous system, Cornwall claims that irritative stimuli pass along the splanchnic nerves to the suprarenals and liver and give rise to the discharge into the blood stream of an excess of sugar. There may or may not be an accompanying excessive secretion of epinephrin. Much damage is caused both to the kidneys and to the suprarenals by toxic agents in the blood derived from the growth of the rabies organism in the central nervous system.

Pharmacodynamics of Quinin.—Cornwall presents evidence that quinin administered to healthy rabbits intravenously and intramuscularly over a period of eight or nine months causes damage to the cellular elements of the suprarenals and kidneys. There is also evidence that the rate of disintegration of red blood cells in the spleen is increased.

Pathogenesis of Deficiency Disease.—Dietaries deficient in accessory food factors McCarrison found give rise in pigeons and in guinea-pigs to congestive and atrophic changes in all coats of the bowel, to lesions of its neuromuscular mechanism, to impairment of its digestive and assimilative functions, and to failure of its protective resources against infection. The functional perfection of the gastro-intestinal tract is dependent in considerable measure on the adequate provision of accessory food factors derived from fresh fruit and vegetables. Certain gastro-intestinal disorders in the human subject—of which three examples are referred to—may owe their origin to the long continued subminimal supply of accessory food factors.

Influence of Scurvy Diet on Suprarenals.—According to McCarrison, a scorbutic diet gives rise in guinea-pig to (1) an increase in size and in weight of the suprarenals; (2) a marked diminution in the epinephrin content of these organs; (3) hemorrhagic infiltration of the suprarenals, usually circumscribed in extent and situated around the periphery of the suprarenal cortex; and to (4) degenerative changes in the cellular elements of the suprarenal cortex and medulla. The impairment of suprarenal function occurs before clinical evidences of scurvy manifest themselves.

Hoffmann Bacillus and Diphtheria in India.—The bacillus of Hoffmann was found by Knowles in 30 per cent. of cases of diphtheria; in 11 per cent. of diphtheria carriers, showing the true Klebs-Loeffler bacillus; in only 0.4 per cent. of healthy throats among European children during an epidemic; and in only 5 per cent. of the throats of 103 Indians in the absence of any epidemic. The bacillus of Hoffmann was met with (a) before, (b) with and (c) after the presence of the true Klebs-Loeffler bacillus in the same throat. While the two organisms appear to be entirely different as regards morphology, cultural reactions and pathogenicity to animals, yet it is suggested by Knowles that there is a symbiotic relationship between them that the rarity of the bacillus of Hoffmann in India may be associated with the relative rarity of diphtheria in epidemic form. Reverse conditions hold in temperate climates.

Cultivation of Gonococcus.—Maitra claims that the gonococcus is best cultivated under reduced oxygen tension. Primary cultures grow equally well on Loeffler's blood serum or urine agar with egg yolk provided a fair amount of purulent exudate is used. Subcultures grow better on Loeffler's blood serum. Bacterial yield can be augmented by adding fresh serum, preferably human serum. Human serum, heated to destroy its bactericidal properties, gives no advantage over fresh serum in promoting growth of gonococcus: probably the vitamin content is destroyed to some extent by heating.

Acid-Fast Bacilli in Blood of Lepers.—Acid-fast bacilli, agreeing morphologically with the leprosy bacillus, were demonstrated by Iyengar in a considerable proportion (7) of blood films made from forty lepers. The presumption is that these are present in the blood itself, although there remains the possibility of their having been derived in the process of venipuncture. The skin, however, at the site of puncture showed no sign of leprous affection. The possibility of the presence of acid-fast bacilli in the reagents used has been excluded by the use of the blood of healthy persons as controls. Iyengar suggests that examination of the blood may be used with advantage as a routine method of diagnosis in cases of suspected leprosy. It is possible that this examination may sometimes afford evidence of the affection when the ordinary method of examination has failed.

Indian Medical Gazette, Calcutta

December, 1919, **14**, No. 12

Recent Researches on Hookworm Infection in Indonesia. S. T. Darling.—p. 446.
Surgical Problems and Difficulties in the Tropics. D. J. Harries.—p. 453.
Tetanus. A J. Norcnha.—p. 455.
Generalized Vaccina in Burma. S. Rama Iyer.—p. 459.
Case of Ruptured Abdominal Wall. Gokulananda De.—p. 460.

Japan Medical World, Tokyo

Dec. 14, 1919, No. 313

Physiologic and Pathologic Examination of Nerves and Muscles of Domestic Fowl Suffering from So-Called "Polished Rice Disease." K. Paguchi.
Action of Epinephrin Against Glycogen Ferment and Diastase. H. Maruyama.
By-Effects of Mercurials in Treatment of Syphilis, Especially Appearance of Albumin and Casts in Urine. S. Ishiwara.

Dec. 21, 1919, No. 314.

Chemically Separated Human Serum Albuminous Substances and Their Precipitation Reaction. K. Taguchi.
Antipyretics that Can Be Used in Treatment of Phthisis. H. Uchida.

Journal of Mental Science, London

October, 1919, **65**, No. 271

Psychiatry One Hundred Years Ago: Problems of To-Day. B. Pierce.—p. 219.
*Goiter and Psychoses. N. R. Phillips.—p. 235
*Cytology of Cerebrospinal Fluid in Mental Disease. G. L. Brunton.—p. 249.

Goiter and Psychoses.—That the rôle played by goiter in the psychoses is more extended than is indicated, is the theme of Phillips' paper. Of 200 patients examined by him, the actual proportion of goiter was 12 per cent. No less than seventeen of these patients suffered from manicdepressive insanity or from the melancholia of involution, i. e., 70 per cent. of the whole number. Of the remaining seven, four were cases of dementia praecox and three were cases of paranoia. Phillips believes that those cases show that the nature of the psychosis is, in some degree, determined by the form of the functional disturbance of the thyroid gland, e. g., hyperthyroidism is usually associated with states of excitement, agitation, etc. (manic-depressive insanity), whereas hypothyroidism is more often associated with states of apathy and indifference (dementia praecox).

Cerebrospinal Fluid in Mental Disease.—In the examination of the cerebrospinal fluid as an aid in the diagnosis of mental disease, Brunton finds that Alheimer's method is the best for the cytologic examination. The cells of the great-

est diagnostic importance are the plasma cell, the phagocytic and the endothelial cell, and the lymphocyte in excess. A high cell count, with an excess of lymphocytes together with the presence of plasma cells, is strong evidence of a parasyphilitic lesion.

Journal of State Medicine, London

December, 1919, **27**, No. 12

Predisposing Causes of Pulmonary Tuberculosis. L. S. T. Burrell. —p. 353.
The Welsh Sanitary Section: Its Work on Active Service. D. L. Williams.—p. 361.

Journal of Tropical Medicine and Hygiene, London

Dec 15, 1919, **22**, No. 24

Cases of Elephantiasis of Scrotum, and Others. W. E. Masters. —p. 221.

Lancet, London

Jan. 3, 1920, **1**, No. 5027

Surgery of Heart. C. Ballance.—p. 1.
Aims of Welsh National Medical School. E. L. Collis.—p. 6.
*Serum Diagnosis of Syphilis. F. C. Lewis.—p. 11.
*German Bullet Embolus. H. J. B. Fry.—p. 13.
*Malaria and Insanity. A. T. W. Forrester—p 16
Bone Deformities of Renal Dwarfism H. Barber.—p. 18.
*Improved Technic for Staining Sputum for Tubercle Bacilli. A. Distaso.—p. 19.
Resection of Rectum for Cancer. P. Lockhart-Mummery.—p. 20.
*Direct Infection in Tuberculosis E. Ward.—p. 22.
India Rubber Wound Drains. A Edmunds.—p. 25.
Actual Cautery in Gastric Ulcer. J. Kirkland.—p. 26.
Gunshot Wound of Larynx with Impacted Foreign Body. J. Walker Wood.—p. 27.
*Enteric Cyst Causing Intussusception. C. W. G. Bryan.—p. 28.

Standardizing Serum Diagnosis of Syphilis.—The method suggested by Lewis for the standardization of red blood cells and complement is as follows: The blood is collected, defibrinated, washed and deposited in the usual manner. The deposited red cells are then mixed with three or four times their volume of physiologic sodium chlorid solution. A 25 or 50 gm. specific gravity flask is weighed accurately (*a*) dry and (*b*) filled with physiologic sodium chlorid solution. This solution is then thrown out and replaced with the heavy suspension of red cells and is reweighed. In these weighings the usual precautions are taken, such as the accurate filling of the flask, and the weights are taken at 60 F. This latter is accomplished by immersing the specific gravity bottle, solution and suspension in a water bath at 60 F. The relative weight of the red blood cell suspension against physiologic sodium chlorid solution at a constant temperature is thus calculated, and this can be utilized as a basis for the further dilution of the suspension. This method is not a true specific gravity method. Lewis has found that a relative volume weight of 1.0040 is a suitable dilution for use, and that the minimum hemolytic dose of complement based on such a suspension of red blood cells gives a good range of results in weak positive, positive and strongly positive cases.

A German Bullet Embolus.—This case is recorded by Fry as a remarkable instance of the migration of a rifle bullet in the venous blood stream. There was a small oval wound of entry one-half inch below the left anterior superior iliac spine. The bullet entered the vascular system by gouging the posterior aspect of the left external iliac artery and penetrating into the lumen of the left internal iliac vein, causing an arteriovenous aneurysm of these vessels. From this position the bullet was carried up the common iliac vein and the inferior vena cava. It passed through the chambers of the right side of the heart, through the pulmonary valve into the left branch of the pulmonary artery where it impacted as an embolus in one of the branches supplying the lower lobe of the left lung, thereby causing two infarcts in this lobe. For a week, the patient's general condition remained good. Ten days after its receipt the wound was almost healed, but gangrene of the left leg was complete and the leg was therefore amputated below the knee. Finally, the patient became delirious and he died in coma, one month after the receipt of the wound. The case is discussed in detail.

Malaria and Insanity.—Forrester states that in Macedonia malaria was reckoned as the biggest factor in the causation of mental disease among the troops. Indeed, the admission rate of the latter was almost an exact parallel of the malaria curve. Altogether, during ten months, there were 116 admissions to the mental department, each patient giving a positive malarial history. In thirty-two cases the mental symptoms were in association with an actual attack of malaria, and in eighty-seven cases the mental symptoms were the result of repeated attacks.

Improved Technic for Staining Sputum for Tubercle Bacilli.—It is claimed by Distaso that his method overcomes some of the difficulties and raises the percentage of positive results by at least 25 per cent., besides affording a film which is restful to the eye and easy of manipulation. It takes less time in execution than the ordinary method. The method allows for twice the usual amount of sputum, secures the easy solution of the tough mucopurulent pellets, and gives an even film and a very transparent counterstain. A thick portion of the sputum or several mucopurulent pellets are selected and transferred to the slide. One drop of 5 per cent. sodium hydroxid solution is added and the sputum emulsified, with the aid of heat, into a transparent gelatinous mass, which is spread evenly and set to dry in the incubator. When perfectly dry, it is immersed in fuchsin, warmed to incubator temperature, and allowed to remain in the incubator for fifteen minutes. It is then washed in equal parts of Esbach solution and water, decolorized with 25 per cent. nitric acid until faintly pink, and then washed in water, in 60 per cent. alcohol, and then again in water. The counterstain used is malachite green one part of saturated alcoholic solution in nineteen parts of water, for from thirty to sixty seconds, and the slide is rinsed and dried.

Direct Infection in Tuberculosis.—As bearing on the subject under discussion Ward cites the case of a girl, aged 20, living on an isolated farm, who developed acute tuberculosis and died within three months after the onset of the disease. Taking a history in the usual way, there did not seem to be any likelihood that she had been in contact with another case of tuberculosis, but on examining, among others, a brother, who seemed breathless, and an aunt staying in the house, who had a cough, both showed physical signs of pulmonary tuberculosis. The aunt's sputum contained tubercle bacilli; the brother refused to send his sputum away for fear the result might interfere with his dairy work. Apart from a home examination, Ward says, these two cases would never have been discovered.

Enteric Cyst Causing Intussusception.—In Bryan's case. the cyst was situated in the antimesenteric wall of the ileum close to the ileocecal valve. It filled the lumen of the intestine, two thirds being in the ileum and one third in the cecum. The intussusception occurred in the terminal portion of the ileum. Two operations were performed, owing to the condition of the patient during the first operation. This was terminated hastily with a later anastomosis between the cecum and ileum, the cyst having been punctured and emptied. At the second operation the cecum, six inches of ileum and the lateral anastomosis performed at the first operation together with the cyst, were excised and an end to end anastomosis was made between the colon and ileum. The patient, aged 6 years, made a complete recovery.

Practitioner, London

January, 1920, **104**, No. 1

Grave Familial Jaundice of Newly Born. H. Rolleston.—p. 1.
Medicolegal Notes. J. Collie.—p. 8.
Venereal Diseases as We See Them To-Day. J. E. R. McDonagh. —p. 14.
Case of Intramine Dermatitis. A. R. Fraser.—p. 40.
Four Cases of Foreign Body in Esophagus. H. L. Whale.—p. 42.
Sycosis Barbae. H. C. Semon.—p. 48.
Varieties and Treatment of Retroversion of Uterus A. A. Bourne. —p. 59.
*An Undiagnosed Disease Probably of Infectious Nature. C. F. O. White.—p. 70.
Method of Draining the Stomach when the Pylorus is Not Obstructed. D. M. Macleod.—p. 73.

Undiagnosed Disease.—The four patients seen by White presented the same symptoms, slight elevation of tempera-

ture, never exceeding 100 F. and of only one day's duration; a rash consisting of flat circular papules, rarely vesicles or blebs, not fading entirely on pressure, the size of a pea and slightly larger, first most pronounced on the wrist and forearms and then beginning to appear on the chest, thighs and legs. Later, White saw many more such cases, from six to eighteen every day. The onset was usually sudden, with severe frontal headache, giddiness or actual fainting while on parade, the patients all being soldiers on duty in India, and members of a recently arrived English regiment. Severe pruritus was a prominent symptom in about one half the cases. White was unable to arrive at a diagnosis.

Archives Mens. d'Obstétrique et de Gynécologie, Paris

November, 1919, **8**, No. 11

*Preferable Incisions for Laparotomies. E. Rouffart.—p. 577.
*Radium Treatment of Cancer of Uterine Cervix. P. Degrais.—p. 623.

The Laparotomy Incision.—Rouffart devotes nearly fifty pages to arguments for and against the various incisions in vogue, describing nine longitudinal or slanting incisions and three transverse methods. In his compilation of 1,506 new cases of the transverse incision, eventration developed only in 0.33 per cent. and in these cases there had been suppuration in the abdominal wall in all but one. Suture of a median longitudinal incision should always be reenforced with muscle tissue from the rectus. Other longitudinal incisions compel section of nerves to such an extent that the nutrition of the tissues is seriously compromised. All his arguments sustain the superiority of the transverse incision whenever practicable for gynecologic and obstetric laparotomies.

Radium Treatment of Cancer of Uterine Cervix.—Degrais declares that curietherapy, as he calls it, is emerging from the empiric stage. When surgery is impotent, then radium has a unique rôle, also in preparing cancers for operation and as a sequel to operation. He uses doses ranging from 27 to 200 millicuries, with filters of from 3/10 mm. platinum to 1 mm. silver, with exposures of from forty-eight to seventy-two hours. He gives no figures, but adds that there is scarcely a single case in which some benefit from the radium was not apparent.

Bulletin Médical, Paris

Dec. 6, 1919, **33**, No. 54

*Jaundice in Secondary Stage of Syphilis. L. Giroux.—p. 739.

Jaundice in Secondary Stage of Syphilis.—Giroux remarks that testing the fragility of the blood corpuscles explains the hemolytic origin of the jaundice, anemia and enlarged spleen, without disturbance in the general health, which are sometimes observed in the secondary phase of syphilis. The jaundice may be due to hemolysins in the blood, but in either case the disturbance is mild and subsides in a few weeks or months, as also the jaundice after arsphenamin treatment. The nature of the latter is being disputed just now, as also the indications for treatment. Some advise to suspend, others to push the arsphenamin when jaundice develops. Sicard says that an increase in the urea content of the blood under arsphenamin should warn of impending jaundice.

Bulletins de la Société Médicale des Hôpitaux, Paris

Nov. 21, 1919, **43**, No. 33

*Muscle Signs with Pulmonary Tuberculosis. P. Halbron and others. p. 973; Idem. P. Sainton.—p. 980.
*Necropsy after Induced Pneumothorax. R. Burnand.—p. 983.
Cancer of Face Simulating Actinomycosis. J. Nicolas, M. Favre and Massia.—p. 988.
Corrugated Senile Skin in Child of Two. Variot and Cailliau.—p. 989.
Signs of Latent Tracheobronchial Glandular Disease. P. F. Armand-Delille.—p. 995.

Muscle Signs of Pulmonary Tuberculosis.—Halbron and his co-workers examined 157 patients and fifty-two healthy controls for the abrupt local contraction of the trapezius and other muscles when the margin was suddenly pinched. This has been cited as a sign of a chronic tuberculous process in the lung on that side. The contraction across the muscle feels like a cord, and Lévy even contends that the absence of this *corde musculaire* or myo-edema excludes tuberculosis, or at least an active process. The myotonic reaction in the trapezius occurs normally on both sides; it is significant only when it is exaggerated on one side. The reflexes on percussion of the deltoid, pectoralis and supraspinatus are more pronounced on the diseased side. These muscle signs were pronounced in from 81 to 96 per cent. of the tuberculous examined, usually the active cases. The findings were positive only in 10 per cent. of the presumably healthy controls. These muscle signs are especially useful in dubious cases, and in suggesting a tuberculous origin for emphysema and chronic bronchitis. The reaction does not always correspond to the side with the most extensive lesions, but to the most active. Sainton greases with petrolatum the thumb and forefinger for pinching the muscle, and states that the myo-edema never lasts for more than eight to twelve seconds. It occurs most pronounced and persistent in typhoid, in chronic pulmonary tuberculosis, and in lead poisoning, and is a sign of impregnation of the organism with toxins. Lion reported positive findings even with intoxication from stenosis of the pylorus.

Necropsy after Induced Pneumothorax.—Necropsy showed the complete cure of the tuberculous cavity in the lung treated by induced pneumothorax for thirty months. Death was due to intercurrent influenzal pneumonia in the other lung. Slight tuberculous lesions in the latter had healed likewise. The healed tuberculous lesions were of the torpid, cheesy type. Burnand's experience indicates that the minimum period for effectual collapse therapy in advanced cases is two or three years. He adds further that fourteen of his twenty pneumothorax patients passed unscathed through intercurrent influenza; six died.

Journal de Chirurgie, Paris

November, 1919, **15**, No. 4

*Pseudarthrosis of the Forearm. C. Dujarier.—p. 333.
Treatment of Compound Fracture of Lower End of Femur. G. Picot.—p. 351.
Treatment of Arthritis of the Ankle from War Wounds. P. Chutro.—p. 364.
*Mechanical Correction of Fractures. R. Bonneau.—p. 371.

Treatment of Pseudarthrosis of Forearm.—Dujarier obtained consolidation in 32 of his 36 cases of pseudarthrosis of the radius; in 16 of 19 of the ulna, and in all of the 15 cases in which both bones were involved, that is, a total of 90 per cent. successes. Sixteen illustrations show his technic. A bone and periosteum graft from the tibia was used to bridge large gaps. In 3 cases he cut the graft longer than the gap but the part that extended beyond the gap was cut thin and thus these ends embraced the stump, while the stumps rested on the thick cylinder between. In 3 cases the graft had been taken from the front of the tibia, and the tibia fractured later. He now chisels off the flap always from the internal aspect of the tibia, and sometimes cuts two flaps, a shallow and a deep one.

Correction of Displacement of Fractured Bones.—Bonneau's illustrations show his method of pulling up one stump into place with wire, and pushing the other stump down into place with a metal rod, both fastened to a standard bridging the lesion.

Paris Médical

Dec. 20, 1919, **9**, No. 51

*Roentgen Findings with Gastric Linitis. P. Carnot.—p. 481.
Sévere Chlorotic Form of Trichocephaliasis. G. Mouriquand and Bertoye.—p. 486.
Short-Circuiting the Intestines for Chronic Stasis. V. Pauchet.—p. 489.

Gastric Linitis.—The symptoms may include stenosis of the cardia or insufficiency of the pylorus, or both, in addition to the rigidity of the stomach wall and the shrunken size of the organ.

Presse Médicale, Paris

Dec. 24, 1919, **27**, No. 79

*Leg Sign of Pyramidal Tract Disease. J. A. Barré.—p. 793.
*Complementary Factors of Growth, Etc. R. Thiébaut.—p. 795.

Pyramidal Sign.—Barré describes a leg sign of derangement in the pyramidal tracts which is more constant and instructive, he says, than any other sign known to date. The patient lies face down on bed or table, and the legs are flexed at the knee. He is told to hold the legs in this vertical position, but he is unable to do this in case of paresis from pyramidal disturbance, and the leg gradually sinks down more or less, although the muscles of the thigh can be seen contracting in order to keep the leg upright. This "leg maneuver" is negative with paralysis of hysteric or peripheral origin, and even with cerebellar disease, if the pyramidal tracts are intact. All other signs of pyramidal lesions are indirect, but this is direct, and the disappearance of the sign in the course of paraplegia indicates the return of volitional control.

Complementary Factors of Growth.—Thiébaut applies this term to what Collum and Davis call the secondary factors of growth and balance, and theorizes that they are indispensable to the action of diastases. The latter depends on the special distribution of the electrons on the surface of the colloidal substances. When the complementary factors are lacking, the molecular constitution of the colloidal mediums in which the diastases work becomes so modified that the diastases are unable to perform their specific function.

Revue Médicale de la Suisse Romande, Geneva

July, 1919, **39**, No. 7

The Organized Fight Against Venereal Diseases. M. Muret.—p. 309.
Influenza with Pulmonary Tuberculosis. R. Burnand.—p. 315.
*Sterilization by Roentgen Exposures of Ovaries. R. Guillermin. p. 326.
Cure of Tetanus under Chloral and Sodium Persulphate. T. Reh. —p. 337.

Sterilization by Roentgen Exposures of the Ovaries.—Guillermin declares that exposures to the roentgen rays form the simplest and least harmful means for arresting ovarian functioning in women with pulmonary tuberculosis. Even menstruation may have a decidedly unfavorable action on tuberculosis, inducing congestion and whipping up hemoptysis, so that there is every reason to suspend the functioning of the ovaries in such cases, to say nothing of the menace from a pregnancy. Bezançon long ago called attention to "these tuberculous women killed by their menstrual periods." In two cases he suppressed menstruation by fourteen and by four exposures. In the first case the menopause was complete; in the other there was merely arrest of menstruation, but this put an end to the monthly periods of fever and the recurring congestion, and this patient soon considered herself completely cured. The condition of the lungs in the other case also has materially improved.

Gazzetta degli Ospedali e delle Cliniche, Milan

May 15, 1919, **40**, No. 39

Treatment of Epidemic Meningitis. L. Nelli.—p. 377.

May 18, 1919, **40**, No. 40

*Chest-Head Percussion Sign. P. Busacchi.—p. 385.
*Resection of Intestine for Obstetric Injury. E. Cartolari.—p. 386.

Chest-Head Percussion Sign.—Busacchi applies his left hand flat to the parietal region of the subject seated with trunk bare and head bent forward. He then taps lightly with the percussion hammer on the posterior wall of the thorax. The shock from the light blow of the hammer is felt by the palm held against the head. He calls this the thoracocephalic phenomenon, and describes the characteristic modifications in it with pleurisy or pneumonia, or other conditions impeding transmission of the vibrations.

Obstetric Injury During Embryotomy.—After embryotomy on a dead seven-months fetus, a loop of intestine appeared at the vulva, perforated at several points. It sagged through the lacerated posterior fornix, and the uterus was likewise torn. A laparotomy showed that a long stretch of bowel had been torn from its mesentery, and Cartolari resected 2.3 meters of the small intestine, joining the ileum to the cecum after vaginal hysterectomy. Recovery was prompt and uneventful.

Pediatria, Naples

December, 1919, **27**, No. 12

*Diphtheria of Nose and Ear in Infant. L. Spolverini.—p. 785.
*Congenital Cysts in Neck. C. Romano.—p. 790.
Results of Artificial Feeding at Well Baby Clinic. A. Borrino.—p. 805.

Diphtheria of Nose and Throat in Young Infant.—The infant was only 30 days old, and the coryza and otitis seemed amply explained by the syphilis of the parents. The mother's statement that the discharge from the nose had been mixed with blood and had kept up for ten days, worse at night, led to bacteriologic examination. This revealed diphtheria bacilli in both the nose and ear secretions. No case of diphtheria was known in the environment. Spolverini comments that this case suggests that chronic otitis media in young infants may be the work of diphtheria bacilli more often than hitherto suspected. There was nothing about the otitis in this case to suggest the diphtheric origin.

Congenital Cysts of the Neck.—Romano gives the details of six cases in which he operated. Three of the patients were young adults, the dermoid cyst first becoming manifest at 8, 10 and 25, and gradually increasing in size. In the three children the cysts were serous and multilocular, and they had increased in size slowly from a small bunch noted early in two of the cases. The cysts in the third child formed a mass on one side of the neck as large as the head. The infant was only 10 days old when Romano aspirated the contents of each of the six cysts forming the mass. The fluid returned, requiring repeated aspiration, and finally some of the cysts suppurated. Aspiration of the contents and irrigation with a weak solution of tincture of iodin finally completed the cure, and by the time the child was 4 months old the neck was symmetrical in aspect except for the series of small scars. In the boy of 12 the multilocular cyst was not very large and it was easily enucleated, but in the child of 2 the cyst mass was larger than its head, and was suppurating when first seen. Adhesions hampered the operation, and success was realized only after repeated evacuation, drainage and disinfection of the cavity and fistula. If the cysts do not interfere with breathing and eating, he advises to postpone the intervention until the child is a few years old.

Policlinico, Rome

November 9, 1919, **26**, No. 45

*Atropin Test in Diagnosis. L. Siciliano.—p. 1317.
Hexamethylenamin in Typhus Fever. B. Coglievina.—p. 1319.
Syphilis, Eugenics and War in Relation to Preventive Medicine. F. De Napoli.—p. 1322.
Primary Tuberculosis of Kidney: Nephrectomy. C. Solina.—p. 1335.
Two-Way Irrigator for the Bladder. E. Pirondini.—p. 1338.
Local Treatment of Anthrax. G. Conforti.—p. 1339.

Nov. 16, 1919, **26**, No. 46

Pathogenesis and Treatment of Acetone Intoxication in Children. E. Modigliani.—p. 1349.
Medicosocial Lessons from the War. G. Breccia.—p. 1365.

Diagnostic Significance of Pupil Reaction to Atropin.—Siciliano explains how instillation of atropin in the eye throws light on the state of the general sympathetic system and muscle tone. The various elements of the dilatation of the pupil: the maximal dilatation, the difference in the lumen before and after, the duration of the effect, the rapidity with which it subsides, and the curve of the subsidence—all these may differ with varying conditions in the sympathetic system, etc., and the charted findings have diagnostic significance.

Riforma Medica, Naples

July 12, 1919, **35**, No. 28

*Echinococcus Cysts of the Spleen. A. Cardarelli.—p. 565.
*Diffuse Phlegmonous Gastritis. R. Secchi.—p. 569.
*Hyperexcitability of Muscles in Tuberculosis. P. Verrienti.—p. 571.
Present Status of Typhus Fever. A. Lustig.—p. 573.
*The Negri and Lentz Bodies in Rabies. R. Giurato.—p. 577.

Hydatid Cyst of the Spleen.—In the case described, a dull ache and occasional violent pains in the left flank were explained by an elastic tumor beneath the costal arch. Cardarelli put one hand on the back, the other hand on the front, over the tumor, and pushed suddenly, from one hand to the other and back again. He has always noticed that

when the tumor seems to show the movement from the front hand more, then the tumor is in or near the spleen, while it is in or near the kidney if the movement is transmitted better from the rear. This sign pointed to the spleen in this case, and the good general condition during the eighteen months, the absence of fever, of urinary and all other functional disturbances, and the fact that the descending colon lay to one side of the tumor, confirmed this assumption, and suggested a hydatid cyst. He has witnessed four cases of severe by-effects from exploratory puncture with a Pravaz needle, one proving fatal, consequently he punctured with an aspirating apparatus, without wasting time on medical measures. The fluid showed an active cyst, but there was 1 gm. and more of albumin in the 800 c.c of fluid. He accepts this as a sign that the cyst is dying, and will continue this aspirating treatment, ready to operate at need. In another case, aspiration once a month for a year cured completely, and the cyst has never returned. But as a rule he advises surgical intervention if the cyst returns.

Diffuse Phlegmonous Gastritis.—The man of 39 died the seventh day from the first sudden onset of stomach symptoms, violent pain and vomiting, soon accompanied by fever and chills. The vomiting stopped the fourth day, and diarrhea developed. Pus and epithelial cells were found in the vomit; the stomach region was tender, and the man lay in bed bent over forward. Necropsy confirmed the diffuse phlegmonous gastritis with streptococci. Surgical intervention should be considered in the circumscribed form, and Mikulicz reported a cure in one diffuse case.

Muscle Signs in Tuberculosis.—Verrienti describes the hyperexcitability of the muscles impregnated with the tuberculous toxins. It can be rendered manifest even early in the disease by light finger-finger percussion of a muscle or tendon, which can then be felt contracting under the fingers. Sometimes a group of muscles contract and lift the scapula, or twist the arm, etc. The rise in temperature after physical exertion is probably from absorption of the toxins liberated by the muscles during the exercise. The heart muscle and the fibers in the vessels feel the toxic effect like other muscles.

The Negri and the Lentz Bodies in Rabies.—Giurato states that recent research has confirmed anew that these bodies are not parasites but only products of cell reaction.

Anales de la Facultad de Medicina, Montevideo

September-October, 1919, **4**, No. 9-10

*Echinococcus Disease in Cattle. J. Llambias.—p. 585.
*Bone Implants in Tuberculous Bone and Joint Disease. C. Robertson Lavalle.—p. 599.
*Early Operation for Gastric and Duodenal Ulcer. H. García Lagos.—p. 609.
*Adenoids and Tonsils in Children. P. J. Martino.—p. 627.
Partial Epilepsy in Child. W. Piaggio Garzón.—p. 692.
The Deep Posterior Aponeurosis of the Leg. R. Bastos Peltzer.—p. 698.

Echinococcus Disease in Cattle.—Llambias describes with illustrations a multilobular echinococcosis he has been studying in some cattle in Argentina.

Bone Implants in Tuberculous Joints.—See abstract below.

Early Excision of Gastric and Duodenal Ulcers.—García has had 59 operative cases under long surveillance out of the 683 cases of gastric ulcer he has treated in the last ten years. He has gradually become convinced that early operative intervention is the only treatment for cases in which there have been two or three attacks. If the crises are very severe or occur often, it should not be delayed. In old cases, gastro-enterostomy is all that can be done, but the surgery of tomorrow, he reiterates, will be early excision of the ulcer. His 59 patients had been suffering for many years, and there were complications in 5 (fatal in 4), but all the others were cured by the gastro-enterostomy except 2 with fatal pneumonia or embolism, one with peptic ulcer, and one with cancer later. In 26 of the 59 cases the ulcer was in the duodenum.

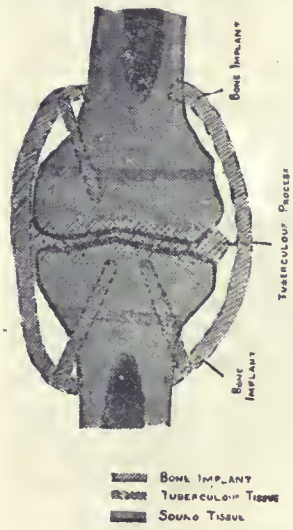
Adenoids and Tonsils.—Martino states that tonsillectomy in the period 1900 to 1910 was very seldom followed by grave operative complications, but since then the literature shows that the number of cases of severe postoperative hemorrhage and death has been very large, both in adults and in children, as the operations have become more radical. He contends that for physiologic reasons, as well as on account of the operative dangers, tonsillectomy should not be done on children; the infected crypts should be emptied and disinfected. He insists that the actual cautery should never be used, as this obliterates the outlet to the crypts.

Anales del Inst. Modelo de Clín. Méd., Buenos Aires

January-December, 1919, **4**

New Remedies for Habitual Constipation. Fernández Martinez.—p. 1.
*Bone Implants in Treatment of Tuberculous Joints. C. Robertson Lavalle.—p. 8.
Clinical Forms of Cholelithiasis. L. Agote.—p. 17.
*Serologic Test for Suppuration. I. L. Ymaz Apphatie.—p. 31.
*Radioscopy of the Stomach. E. V. Merlo.—p. 46.
Pathogenesis of Congenital Syphilis. J. C. Navarro.—p. 80.
McDonagh's Works on Syphilis. C. Pillado Matheu.—p. 90.
The Cilia of the Epithelium in Cutaneous Tumors. P. Rojas.—p. 110.
*Displaced Sternum Sign with Thoracic Tumors. R. Novaro.—p. 134.
The Wassermann Reaction Outside of Syphilis. E. Lorentz.—p. 153.
Cretinism from Inherited Syphilis. R. Novaro and J. Ortuño González.—p. 173.
*Vacuum Drainage of the Chest. A. Galindez.—p. 177
*To Induce Crystallization of Hemoglobin. J. Lacoste.—p. 189.
Diffuse Sclerosis of the Brain. L. Merzbacher.—p. 201.
*Defensive Ferments. H. Damianovich.—p. 210.
*Suppurating Hydatid Cysts in Liver. H. J. Petty, Jr.—p. 217.
Gastric Chemistry with Cholelithiasis. R. Novaro and J. Ortuño González.—p. 221.

Bone Implants in Treatment of Active Tuberculous Process.—Robertson declares that the method he describes opens a field for conservative surgery to aid the natural processes of repair. He does not excise the tuberculous tissue in the knee, for example, but inserts two strips of bone from the tibia, implanted in sound tissue on each side of the joint. The ends of the bone strips are buried in the sound bone above and below the diseased joint, which they bridge on each side. Sometimes he drives pegs slanting through the sound bone into the epiphysis, traversing the cartilage but stopping short of the tuberculous lesion. He keeps up extension in a cast for three months and begins with extension and traction for two weeks before supplying the implants, to render conditions more favorable for them. They induce a reaction osteitis which starts processes of repair, and they supply material for the repair. The implants should be chiseled out, never sawed, as the bone sawdust clogs the openings in the bone and prevents the growing in of new vessels. No foreign body, thread or wire, should touch the implants. The ends of the latter should fit into the subcortical tissue, beneath the periosteum, but not extending to the marrow cavity. The osteitis induced by the end of the implant in the epiphysis may block the circulation to the tuberculous tissue and compel its atrophy. The pegs traversing the cartilage serve to drain away venous blood. The side implants in his cases grew in six months from the size of a toothpick to that of a rib. The patient can get up after three months, a light plaster cast still immobilizing the joint. When roentgenograms and palpation fail to reveal anything left of the lesion, he removes the subcutaneous side implants, and in ten or twelve days afterward begins massage. The osteitis serves as revulsion and the general health shows promptly the benefit from this.



Bone implants with tuberculous arthritis.

Serologic Reaction with Suppuration.—Ymaz has been working for ten years to produce a stable suspension of leukocytes which could serve for the serologic diagnosis of hidden suppuration. He reviews the research by others in this line, and describes a simple technic with which he obtains aseptic pus (from a turpentine abscess) in an

isotonic vehicle, and the whole keeps perfectly for an indefinite time. The precipitation reaction and the zone of contact reaction with this reagent were relatively negative in thirty-eight healthy controls and relatively positive in the five cases of suppuration tested.

Radioscopy of the Stomach.—Merlo gives thirty-two radiograms of the stomach and discusses the interpretation of the findings, especially the differentiation of organic and spasmodic stenosis.

Sign of Neoplasm Inside the Thorax.—Novaro recalls that Pitres demonstrated the displacement of the sternum toward the side containing a pleural effusion. The lung on the other side has to work extra hard, and this extra expansion forces the xiphoid appendix toward the other side. Novaro calls attention to the inverted displacement when there is a tumor in pleura, lung or mediastinum. The infiltration around the tumor and the tumor itself force the xiphoid appendix over toward the sound side. He gives the roentgen and necropsy findings in three cases which establish the reliability of this sign which, he says, might be called the inverted Pitres.

Suction Drainage.—Galíndez describes the technic with which he has successfully drained by aspiration in cases of cysts in the lungs, bronchial fistulas and purulent pleurisy.

Hemoglobin Crystals.—Lacoste lakes the blood clot with a small quantity of blood serum and carbon bisulphid, or ether, in excess, triturating in a mortar. A thick drop of the filtrate (through paper) is kept in the moist chamber until crystals form. He gives thirteen photomicrographs showing the characteristic crystals with different species of animals.

The Enzyme Reactions in Immunization.—Damianovich states that the oxydases in the blood were in larger proportions in patients with infectious diseases than in others, among 100 persons tested. In rabbits, the enzymes which cause oxidation processes increased in notable proportions when the animals had been inoculated with diphtheria or other infection.

Hydatid Cysts in the Liver.—Petty usually reaches the cyst through the pleura after resection of the ninth or tenth rib, suturing the diaphragmatic to the pleural pleura, leaving the diaphragm exposed. He describes his technic in detail. Forty-eight hours after evacuation of the cyst he applies the Dakin-Carrel treatment, and begins heliotherapy in a week. In his six cases of the kind, the cure was complete in thirty-six days on an average with this treatment; without the Carrel-Dakin procedure the average was fifty-nine days.

Archivos Brasileiros de Medicina, Rio de Janeiro

July, 1919, **9**, No. 7

*Impending Eclampsia. R. Pacheco.—p. 541.
Sewerage System of Rio. Belmiro Valverde.—p. 567.

Eclampsism.—Pacheco applies this term to the condition just preceding eclampsia, and tells how to detect it in time and thus avert disaster. He declares that it is not enough to examine the urine for albumin. The specific gravity and the chlorid content in the twenty-four hours urine are the true index of the condition. The blood pressure should be taken whenever the pulse is hard and the output of urine reduced. The pulse curve is typical in this stage of hypertension, the prelude to eclampsia. This characteristic sphygmographic record differs in three features from the normal tracing: in the slope of the ascending line; in the plateau instead of the usual peak between the ascending and descending line, and in the almost total absence of the elevations of secondary waves. Pacheco gives the findings in over fifty pregnant women, all free from albuminuria, but with urine of a specific gravity of 1.010 or below. The arterial pressure was constantly high in all these cases and the pulse was of the characteristic type, confirming the imminence of eclampsia. Only this group of fifty were found among 300 pregnant women examined in the course of almost a year's research. The women found to be threatened with eclampsia were kept on milk alone; in the extreme cases only water was allowed. Injections of sugar solution were useful to reduce the concentration of the blood and promote diuresis. Venesection two or three times a month, withdrawing not more than 100 or 120 gm. of blood at a time, helped to reduce the blood pressure and get rid of toxins. Purges and enemas aided in improving the general condition. A tendency to jaundice usually accompanied this precursor stage, and it promptly subsided under small fractioned doses of calomel, cascara, etc. Diuretics should be accompanied by total or partial restriction of salt, and no meat at all should be allowed. This article was awarded the Durocher prize by the Academia Nacional de Medicina. Pacheco's attention was called to eclampsism by the case of a young pregnant woman whose urine was free from albumin on repeated examination. Slight edema and slight headache one day led to investigation of the urine for the specific gravity, which was found 1.006, and large amounts of albumin suddenly appeared in the scanty urine. Convulsions followed the same day, and proved fatal in seven hours.

Archivos de Ginecopatía, Obstet. y Ped., Barcelona

September, 1919, **32**, No. 9

*Scabies and Osteomyelitis. C. Martí Cabot.—p. 205.
Treatment of Hysteria. R. del Valle y Aldabalde.—p. 208.
*Mentally Abnormal Children. E. Fernández Sanz.—p. 214.
*Fracture of Femur. F. Criado Aguilar.—p. 221.

Scabies and Osteomyelitis.—Martí reports a case of osteomyelitis in a child who had been having scabies for three months. The case teaches anew that a mild pathologic condition, like scabies, may open the portal to fatal infection. The extensive osteomyelitis required radical and persevering operative measures.

Mentally Abnormal Children.—Fernández describes the various measures required for three great groups of mentally abnormal children, the mentally backward, the mentally backward with some active psychopathy, and the abnormal children not mentally backward.

Fracture of the Femur.—Criado denounces extension as unreliable even for adults and much more so for restless children. His method of applying a cast to insure that the leg is exactly the length of the sound mate has already been described in these columns, when published elsewhere (Oct. 11, 1919, p. 1168).

Archivos Latino-Amer. de Pediatría, Buenos Aires

September-October, 1919, **13**, No. 5

Benefit from Albumin Milk in Two Cases of "Decomposition." J. P. Garrahan.—p. 405.
Atrophic Cirrhosis of Liver in Syphilitic Infant. L. Belloc and S. Satanowsky.—p. 413.
Hydatid Cyst in Lung Spontaneously Evacuated. V. Zerbino.—p. 417.
Chorea of Mental Form. V. Zerbino.—p. 419.
*Gallop Sound in Acute Nephritis in Children. L. Morquio.—p. 424.
Atresia of Anus and Rectum. M. Armand Ugón.—p. 429.
*Diphtheric Paralysis without Diphtheria. M. Ponce de Leon.—p. 434.
Jellification of Spinal Fluid with Xanthochromia in Child with Tuberculous Meningitis. J. A. Bauzá.—p. 440.
Emulsion of Cod Liver Oil in Malt Extract. L. Morquio.—p. 446.

Gallop Sound in Children.—The gallop sound in the precordial region in the two cases described cleared up the diagnosis by suggesting acute nephritis. The child of 4 had no other symptoms except slight pathologic findings in the urine, and all promptly returned to normal. The child of 14 presented symptoms of endocrine insufficiency when the discovery of the gallop sound called attention to the kidneys. The acute nephritis in this case proved rapidly fatal. The circumstances in these and in other cases cited suggest that toxic action on the myocardium is responsible for the gallop sound in these cases, by weakening the heart action and thus entailing compensating dilatation.

Polyneuritis of Diphtheric Origin without Apparent Diphtheria.—Ponce de Leon reports another example of generalized polyneuritis, without pain or sensory disturbances, entailing merely general paresis in the child of 8. No cause for the polyneuritis could be discovered but certain features of it suggested diphtheric paralysis, and although the throat was apparently normal, diphtheria bacilli were cultivated

from it and under antitoxin rapid recovery ensued. The case teaches the wisdom of antitoxin treatment in dubious cases of the kind.

Boletín de Medicina y Cirugía, Guayaquil

August, 1919, **17**, No. 123

Modern Treatment of Syphilis. M. Peñaberrera E.—p. 111.
The Danger from Tuberculosis. B. Huerta.—p. 113.
*Sugar Treatment of Tuberculosis. J. D. Escolar.—p. 114.
Healing of Fracture under Lane Plate. J. E. Verdesoto.—p. 118.

September, 1919, **17**, No. 124

Influenza at Paris. P. P. Eguez B.—p. 127.

Sugar Treatment of Tuberculosis.—Escolar has applied the Lo Monaco method of daily injection of a sugar solution in tuberculous patients, but found the results very disappointing.

Gaceta Médica de Caracas

Oct. 31, 1919, **26**, No. 20

Treatment of Typhoid Fever. A. Machado.—p. 211

Prensa Médica Argentina, Buenos Aires

Nov. 20, 1919, **6**, No. 17

*Multiple Primary Cancer of Lymph Glands. M. Aberastury.—p. 169.
Diffuse Phlegmon of Scalp after a Fall. A. Marciano and A. Artusi.—p. 173.
Proposed Changes in Medical Curriculum. G. Aráoz Alfaro.—p. 173: Id. J B. González.—p. 176.

Primary Cancers of Lymph Glands.—Aberastury's patient was a healthy farmer of 70 who suddenly developed a chill and pains in the chest. In a month he noted a tumor near the umbilicus and another later in the right supraclavicular fossa. These tumors were hard and knobby. A number of lumps developed at other points, all hard, round and indolent, and the asthenia was extreme, although the man seemed well nourished, and there was no fever. By exclusion, the glandular lesions were assumed to be metastases from some hidden cancer, but the nine photomicrographs given show that the multiple lesions were all primary endotheliomas of the lymph glands. Aberastury knows of only seven cases on record approximating this.

Dec. 10, 1919, **6**, No. 19

*Chronic Parametritis. C. A. Castaño.—p. 193.
Myositis Simulating Aukylosis of Jaw. A. Sacco.—p. 194.
*Percussion in Pleurisy in Children. E. Martinez Zuviría.—p. 195.
Testimony in Case of Induced Abortion. E. Catalán.—p. 196.
Arrhythmias. P. M. Barlaro.—p. 196. Cont'n

Chronic Parametritis.—The two cases described by Castaño were of the type with atrophy to which Freund first called attention. The persisting pain is evidently the result of compression of nerves from the sclerosis in the connective tissue. There is a history of untreated syphilis in both his cases, and in addition to specific treatment, he has ordered massage to promote the circulation and ward off atrophy of the internal genitals, and gymnastic exercises of the bicycle type. He is also applying hot air, and is considering diathermy and ovarian treatment. Pulvermacher has recently reported benefit from rectal injection of iodized paraffin, the latter acting on adhesions. He mixes 5 gm. of paraffin at 75° C. with 90 gm. of liquid paraffin. When cooled to 45 C., he adds 10 or 15 drops of tincture of iodin. The syringe is heated in boiling water and the mixture is injected about 6 cm. above the anus.

Diagnosis of Pleural Effusion in Young Children.—Martínez found normal resonance in the chest of the child of 2½ with ordinary percussion, but when the percussion was extremely gentle, the child sitting up without support, except for its hands, dulness was found in the entire left side of the chest, and puncture in the ninth interspace released an effusion. The coexistence of a vesicular murmur was misleading at first.

Revista Española de Medicina y Cirugía, Barcelona

November, 1919, **2**, No. 17

*Double Operation for Gangrenous Hernia. G. Estapé.—p. 595.
*Symptom of Hyperthyroidism. G. Marañón.—p. 598.
*Radiocardiometer. B. Navarro Cánovas.—p. 600.
Pathology of the Skin in Relation to Patbologic Brain Conditions. E. de Oyarzabal.—p. 604.
Electrocardiography in Pathologic Conditions. R. Dargallo.—p. 607.

Treatment of Gangrenous Hernia.—Estapé opens up the hernia as usual, but if he finds evidence of gangrene he packs gauze around it and makes a vertical incision some distance above, at the margin of the anterior rectus, and hunts for the afferent and efferent portions of the loop forming the hernia. He then makes an anastomosis between them, with a button, and sutures the incision. He then returns to the gangrenous herniated portion of the loop and fastens it to the skin, amply protected with gauze. When this bowel sloughs open he treats it until the loop is harmless and the fistula heals, which takes about twenty-eight or thirty days. This procedure applied in two cases gave excellent results. The course of the feces was reestablished from the start, while, after draining, the gangrenous loop healed naturally. He warns that fresh gloves should be taken at each step of the operation, and emphasizes the necessity for operating a strangulated hernia within twenty-four hours to ward off gangrene. Two illustrations show the technic with inguinal hernia.

Vasomotor Symptom of Hyperthyroidism.—Marañón found in ninety-two of 100 cases of hyperthyroidism that rubbing the skin in the neck lightly with the fingers made it turn very red in the region of the thyroid, a much brighter red than could be elicited by rubbing the skin in the same way elsewhere. This vasomotor reaction may be more pronounced in the milder cases, and is more distinct in the nervous, in women, in the young, at the menopause, and in persons inclined to sympatheticotony rather than vagotony. He has not seen any mention in the literature of this induced localized erythem in the thyroid region; it may be a uniform or irregular redness, and there may be slight swelling of the red patches.

Radiocardiometer.—Remigio Dargallo comments on the lack of accuracy in estimating the size of the heart unless the very complicated orthodiagraphy method is used. He has found that the ratio between the diameter of the heart and the widest diameter of the chest is almost constant in health. The normal heart forms 42 per cent. of the chest diameter; 33 per cent. of the remaining diameter lies to the right and 25 to the left. When the subject reclines, the heart spreads out a little, so these figures are modified to 44, 35 and 21. He gives an illustration of a chart scale marked off in hundred squares, in perspective, the different rows of squares corresponding to different sized chests, with the squares corresponding to the normal heart area marked. This radiocardiometer is made of transparent celluloid, and by laying the scale on the chest or on the screen, with the row of squares just corresponding to the diameter of the individual chest, it is easy to see any encroachment of the heart shadow beyond the area it should normally occupy.

Revista de Medicina y Cirugía, Havana

Dec. 10, 1919, **24**, No. 23

The Algias of Psychasthenics. J. M. Govantes.—p. 549.
Diabetic Gangrene. R. Grau San Martin.—p. 551.

Revista de Medicina y Cirugía Prácticas, Madrid

November, 1919, **125**, Nos. 1577-1580

Drugless Treatment of Tuberculosis. J. Codina Castellví.—p. 161 and 193.
*Intermittent Occlusion of Intestine in the Pregnant. D. F. Villanueva.—p. 233.
Pathology of the Skin in Relation to Disease of the Spinal Cord. Eusebio de Oyarzabal.—p. 264.

Intermittent Ileus in the Pregnant.—Villanueva states that autointoxication was pronounced in the two pregnant women with intermittent ileus he has recently encountered, and he ascribes it to spasmodic contraction from toxic action. In both, uncontrollable fecaloid vomiting preceded and accompanied the intermittent occlusion of the bowel, and one of the women died the fifth day after induced premature delivery. The other woman was treated at the fifth month with measures to arrest the tendency to spasm of the bowel and cure the autointoxication, and she was thus tided along until term, and parturition was physiologic. The main reliance was on two or four injections of morphin, with atropin, hot enemas, with a little milk by the mouth and scraps of ice.

Revista de Psiquiatría, Lima

October, 1919, **2**, No. 2

Clinical Study of Tabes in a Young Man. E. Odriozola.—p. 92.
*Disturbances after Ovariectomy. R. Mendoza M.—p. 97.
The Various Causes of Sudden Death. F. Quesada.—p. 108.
The Nervous Disturbances of Influenza. H. Valdizán.—p. 113.
The Mental Development of the Child. H. F. Delgado.—p. 130.
*Psychopathography. H. Valdizán.—p. 175.

Nervous and Mental Disturbance After Ovariectomy.—Mendoza summarizes nine cases in which the artificial menopause induced unusually severe nervous disturbances and change in character. No benefit was realized from organotherapy in most of the women. In the most refractory cases an element of hysteria or neurasthenia was manifest. One woman of 40 had attacks of unconsciousness, besides the usual phenomena of the menopause; no benefit was obtained from ovarian treatment but under ergot for a time conditions gradually returned to normal. Headache, insomnia, neuralgias and pain in the lumbar region were common.

Psychopathography.—This is a short story written by a young man with paralytic dementia. It is reproduced as a specimen of psychopathography.

Semana Médica, Buenos Aires

May 1, 1919, **26**, No. 18

What the Medical Course Should Be. G. Aráoz Alfaro.—p. 447.
Opening Lecture on Clinical Epidemiology. F. R. Torres—p. 457.
Potassium Iodid for Radiography of Fistulas. C. Heuser.—p. 462.
What the Preparatory Course and Requirements Should Be for the Medical, Dental and Pharmacy Courses. Ubaldo Fernández.—p. 463.

Oct. 23, 1919, **26**, No. 43

*Splenectomy for Banti's Disease. A. Ceballos.—p. 479.
Fatal Case of Lethargic Encephalitis. R. Rivas Jordán.—p. 483.
The Radium Institute. C. A. Castaño.—p. 484.
Treatment of Diphtheria. C. E. Pico.—p. 486.
*Benzol in Leukemia. M. E. Pignetto.—p. 489.
Case of Genital Neurasthenia. J. de Pereira Rego.—p. 492.
Case of Senile Arteriosclerosis and Amaurosis. Id.—p. 500.

Splenectomy in Banti's Disease.—In Ceballos' three cases the disease was in the third or ascitic stage; the patients were three men between 22 and 28. The easiest mode of access was with the patient lying on his right side, his back at an angle of 45 degrees with the surface of the table. The left arm, in extreme abduction, is raised toward the head, which raises the base of the thorax and the stretched muscles. The surgeon stands at the patient's right. With his right hand he can pivot out the spleen; as it lies on the abdominal wall, the vessels in the pedicle can be easily seized and adhesions to the diaphragm broken up more readily than from the left side. If the spleen is excessively large, it might be wiser to ligate the artery in the pedicle and wait for the organ to atrophy rather than remove it at once.

Benzol in Leukemia.—Pignetto reports two cases of myelogenous leukemia in which marked improvement followed benzol treatment. The first patient was a woman of 45; the erythrocytes increased from 2,000,000 to 5,000,000 by the eighty-third day, the hemoglobin from 60 to 88 per cent., while the leukocytes dropped from 600,000 to 7,500. She took 2 gm. benzol daily at first and increased to 5 gm. without any signs of intolerance except at first and toward the last, compelling brief suspension of the treatment. A total of 256 gm. was thus taken. She kept well for three months after the close of the course of treatment, and then returned to her home in the country and further details are not known. The second patient was a woman of 55, and the leukemia subsided somewhat under roentgen exposures three times a week for a month, the leukocytes dropping from 200,000 to 120,000. Then increasing weakness and other symptoms compelled abandonment of the exposures, and benzol was given, a total of 150 gm., with improvement as in the other case. It has persisted during the two years to date, with nothing left of the leukemia except the anemic complexion. This patient takes arsenic for twenty days each month.

Siglo Médico, Madrid

Nov. 29, 1919, **66**, No. 3442

*Acute Colitis in Children. Bravo y Frias.—p. 1025.
*Serodiagnosis of Syphilis. T. Morató Cárdenas.—p. 1030.
*Bacteriologic Prognosis in Typhoid. L. Ruiz de Arcaute.—p. 1033.

Dec. 6, 1919, **66**, No. 3443

Personal Prophylaxis of Venereal Diseases. E. Mañueco Villapadierna.—p. 1049.
Inherited Syphilis and Tuberculosis. E. Mariño and J. C. Mussio-Fournier.—p. 1052.
Necropsy of Burned Child. M. Bermejillo.—p. 1054.
Grave Suprarenal Insufficiency During Influenza; Two Cases. M. Clemente—p 1057

Acute Colitis in Children.—Bravo found in his 50 cases last summer in children from 1 to 5 years old, that the streptococcus was mainly responsible, alone or associated with the colon bacillus. The colitis accompanied or followed streptococcus lesions elsewhere, or became associated with a streptococcus lesion of the skin. Pyelonephritis frequently followed the colitis, which emphasizes the share of the colon bacillus in the process. In 35 per cent. of the 50 children, a febrile bronchitis just preceded the colitis, but 2 children developed it at the same time as other members of the family were having influenza. Only 2 of the total 50 were breast-fed; the majority were eating at the family table, and the premature use of meat, eggs and cheese may have afforded a predisposition.

Serodiagnosis of Syphilis.—Morató states that the Sachs-Georgi test gave findings that paralleled the Wassermann test more closely than any other of the various serologic tests applied.

Bacteriologic Prognosis of Typhoid.—Ruiz de Arcaute refers to some recently published cases in which the total absence of agglutination and of bacteria in the blood coincided with a promptly fatal course. He warns that even the most apparently typical necropsy findings do not justify the absolute diagnosis of typhoid unless the stools have been examined.

Deutsche medizinische Wochenschrift, Berlin

Oct. 9, 1919, **45**, No. 41

Regenerative Processes in Man. A. Bier.—p. 1121. Cont'n.
The Friedmann (Turtle) Strain of Tubercle Bacilli. G. Schröder.—p. 1124.
Proteus X_{19} and Complement Fixation in Typhus Fever. W. Steiner.—p. 1126.
The Avoidance of Untoward Results of Arsphenamin Administration. C. Stern.—p. 1127.
*Tuberculosis of Mesenteric Glands. E. Gehrels.—p. 1128.
Increased Incidence of Osteomalacia. F. Partsch.—p. 1130.
*Cryptogenetic Pernicious Anemia. I. Zadek.—p. 1133.
Effects on Brain of Ligation of the Carotid. Gruber and Werner.—p. 1134.
Hygiene and Social Hygiene. H. Selter.—p. 1136.
Congenital Nevus and Acquired Gigantism of the Left Leg. W. Lehmann.—p. 1137.
Malaria in Asia Minor. H. Flebbe.—p. 1138.
Present Problems and Aims of Sexology. A. Kronfeld.—p. 1140.
The Terms "Constitution" and "Heredity." A. Edel.—p. 1141.
Enlargement of Salivary Glands in Soldiers. W. Blumenthal.—p. 1141.

Tuberculosis of the Mesenteric Glands.—Primary tuberculosis of the mesenteric glands, Gehrels finds, is not so well known as the secondary form, in spite of its greater importance. The diagnosis of the primary form is important because it is so often confused with surgical diseases, especially appendicitis. The disease is produced by tubercle bacilli entering from the intestine. The bovine type of bacillus is common. The favorite site of the disease is the lymph glands of the ileocecal region. Children are more frequently affected than adults, which is owing to the greater permeability of the intestinal mucosa. Abdominal pains, usually localized in the ileocecal region, are the most important initial symptom. Acute symptoms often resemble those of tuberculosis of the peritoneum. Fever is usually present at the onset. Insatiable hunger (bulimia) and denutrition, accompanied by secondary anemia, are characteristic symptoms. The intestinal disturbances vary and are not typical. Blood in the stool points rather to tuberculosis of the intestine. He adds that two roentgenograms of the abdomen should be taken several days apart for purposes of comparison. The most important clinical complication is ileus. The lack of abdominal distention and the abdominal sensitiveness to pressure help to differentiate the disease from appendicitis, which it resembles in its earlier manifestations. Tuberculosis of the mesenteric glands is more amenable to treatment than any other form of tuberculosis: forced feed-

ing, change of climate, artificial heliotherapy, deep abdominal roentgenotherapy, and tuberculin injections. Surgical intervention is indicated only when long continued internal treatment has failed. Mesenteric abscesses may demand an operation. Various types of operation are to be considered: radical extirpation of the diseased glands, excochleation, abscess puncture, and explorative laparotomy in diffuse conditions in which assailable glands are not readily recognized.

The Therapy of Pernicious Anemia of Unknown Origin.—That it is a long and weary road that both physician and patient have to travel before cryptogenetic pernicious anemia can be cured, Zadek readily admits; in fact, an absolute cure is exceedingly rare. He has, however, by his mode of treatment been able to effect marked improvement in seventeen cases. He orders rest in bed until remission occurs, which usually requires from four to six weeks. The patient may then be allowed to sit up for longer periods each day. The diet should consist mainly of milk, vegetables, cereals and fruit; twice a week, boiled meat (no sausage or smoked meat); cheese and eggs in small quantities; reduced liquid intake (no soup). As medication he advises: three times daily by mouth, 20 drops of hydrochloric acid; after an early supper, 20 gm. of animal charcoal in wafer form; every second day subcutaneous injections of a thoroughly neutralized 1:100 solution of sodium arsenate, beginning with one scale unit of the Pravaz syringe and increasing one unit at a time up to 1 c.c.; in exceptionally severe cases up to 2 c.c. For one or two weeks injections of the same quantity are given; then they are decreased down to 0.1 c.c. again. Weekly intravenous injections of neo-arsphenamin in increasing doses: 0.15, 0.3 up to 0.45 gm., for from four to six weeks are given. Daily, alternating gastric and intestinal lavage is done. For the gastric lavage, which is given mornings before breakfast, from 12 to 15 liters of lukewarm water are used, to which 3 gm. of sodium salicylate or phenyl salicylate have been added. The intestinal lavage is usually given evenings (in the genucubital position) with a chamomile decoction, or, if there is a tendency to constipation, a soapsuds enema is used. The lavages are usually kept up until the arsenic treatment is discontinued, but often for weeks, and occasionally for years. Zadek states that the outlined treatment is certain, in a few weeks, to bring about an extended remission.

Deutsche Zeitschrift für Chirurgie, Leipzig

February, 1919, **148**, No. 3-4

*Oblique Inguinal Hernia. G. Ledderhose.—p. 145.
*Restoration of Eyelashes. J. F. S. Esser.—p. 199.
*Operative Treatment of Cardiospasm. R. Pamperl.—p. 206.
*Bulging of Carotid Artery. P. Deus.—p. 228.
Snapping Hip. K. Propping.—p. 251.
*Dislocation of the Atlas; Recovery. T. Naegeli.—p. 269.
*Retrograde Herniotomy. Kinscherf.—p. 276.
*Foreign Bodies Impacted in Esophagus. L. Zindel.—p. 281

Indirect Inguinal Hernia.—Ledderhose devotes over fifty pages to this study of the structure of external and encysted inguinal hernia, its mode of development, especially the congenital type, the recurrences after herniotomy, the relations with the omentum, various anomalies such as a lipoma in the inguinal canal, and the features, the microscopic in particular, which differentiate the direct and the indirect types. The minute findings in twenty operative cases are recorded.

Operations to Restore Eyelashes.—Esser gives an illustrated description of the method he has applied in a number of cases to restore missing lashes, by taking a strip from the eyebrow to suture to the edge of the lid. He first slits both eyebrow and eyelid lengthwise, and sutures the near lips of each together, forming thus a kind of tunnel lined with skin. When this has healed, he sutures the other lips together, the upper part of the eyebrow and the lower part of the eyelid, covering up the other suture. Then an incision is made through both, just below the hairs in the eyebrow and just above the hair strip that was first sutured to the upper lip of the lid. This leaves the eyelid with a strip of hairs. The various steps of the operation in two cases are illustrated; they are not cited as very successful cases.

Operative Treatment of Cardiospasm.—Pamperl reports two cases of inveterate cardiospasm in which he opened the stomach and stretched the cardia for half an hour until he could work four or five fingers of one hand through it. Notwithstanding this unprecedented stretching of the cardia and the excellent immediate results after the operation, the cardiospasm now displays a tendency to return. The contrast meal four months later showed a distinct retarding of the passage through the cardia, even when there was no disturbance in swallowing. By the tenth month this was more pronounced, and the patient feels that the food tarries above the stomach when she is excited. The other patient seems to be subjectively cured although the bismuth suspension does not pass entirely at once into the stomach. Even with this possibility of return of the cardiospasm, he regards this stretching method, without cutting the cardia, as the preferable technic when systematic efforts at dilatation with sounds from the mouth have failed to relieve. He tabulates the fine results realized with this dilatation from below in sixteen cases on record, comparing with it eight cases in which various surgeons applied other operative measures.

Spontaneous Dilatation of the Carotid Artery.—Deus describes three cases of bulging of the carotid simulating an aneurysm and requiring operative intervention. He compares with these the few cases on record of suture of the carotid artery for aneurysm. There was only one fatality in the list.

Forward Dislocation of the Atlas.—Naegeli reports the tardy paralysis and final recovery in a case of forward luxation of the atlas from a fall on the head from a load of hay. The case affirms anew the importance of prolonged repose in such cases, with the spine and neck immobilized in plaster. Only solid growing together of the parts ensures a permanent cure and wards off tardy complications.

Retrograde Herniotomy.—Kinscherf applies this term to an operation through the inguinal canal to reach the obturator hernia in sound tissue, above the incarcerated portion of the loop.

Impacted Foreign Bodies in the Esophagus.—Zindel has encountered thirteen cases of this kind in the last thirteen years. The esophagus was incised in five cases as the coin or set of false teeth could not be released. In two cases there was hemorrhage the fourth or fifth day after the operation, fatal in one child. The attempt to push the soft or smooth foreign body down into the stomach failed in only one case; in this, a cherry stone had caught at a stricture left from an old caustic erosion.

Wiener klinische Wochenschrift, Vienna

Nov. 13, 1919, **32**, No. 46

*Carcinolytic Organic Acids. E. Freund and G. Kaminer.—p. 1105.
Circumscribed Cutaneous Edema in Diseases of the Abdomen. O. Hans.—p. 1107.
Variable Parasite Findings in Malaria. R. Reitler.—p. 1108.
Onychodystrophy After Typhus Fever. H. Grossfeld.—p. 1109.
Curability of Cancer. A. Fraenkel.—p. 1110.

Cancer-Destroying Organic Acids.—Previous research by Freund and Kaminer had shown that normal blood serum and normal tissues contain an organic fatty acid having power to destroy carcinoma cells. They have not succeeded as yet in establishing the exact formula of this fatty acid, so they refer to it as the "normal" acid, since it is the protective substance of normal cells. Carcinoma serum and carcinoma tissue, they find, do not contain this "normal" acid, but they do contain an unsaturated fatty acid that counteracts the effects of the "normal" acid, and thus forms a protective substance for the carcinoma cells. This acid they term the "carcinoma" acid. They have therefore come to regard the conflict between the human organism and the invading neoplasm as a conflict between two opposing substances. They admit that questions pertaining to the nature and origin of the "carcinoma" acid may be more important, but from the therapeutic aspect the analysis and production of the carcinolytic "normal" acid is also important, for they believe that if the "normal" acid can be produced in sufficient quantities, the growth of carcinoma cells can be at

least checked. Comparing the neutralizing properties of the two acids, they find that at least ten times as much "normal" acid as "carcinoma" acid is required to neutralize a given alkali. This, they think, explains the fact that concentrated solutions of "normal" acid, derived from horse serum, while they had some effect on epitheliomas, proved in the end no match for the much stronger "carcinoma" acid. Concentrated solutions of the "normal" acid being difficult to produce other than in small quantities, they conceived the idea of replacing it by a synthetic product. Starting with an analysis of the "normal" acid, they claim to have discovered the series of acids to which the "normal" acid belongs; namely, the saturated dicarboxylic acids. They have tested the action of various members of this series on carcinoma cells, and find that, while certain members exert a cytolytic action on these cells, others do not; for example, oxalic acid and malonic acid were not effective, whereas succinic acid was effective. Again, adipic acid and pimelic acid were not effective, whereas suberic acid was effective. This finding in itself is significant, that within a series of acids some members are cytolytic and some are not. Acids of many other series were tried; none of them proved to exert a cytolytic effect on carcinoma cells. Freund and Kaminer admit that they are still far from synthetic production of the required substance, but think that having found the series of acids to which it doubtless belongs, the way for further progress is clearly mapped out.

Zentralblatt für Chirurgie, Leipzig

Dec. 6, 1919, **46**, No. 49

Aneurysm of External Iliac Vein. E. Kreuter.—p. 977
*Toxicity of Aseptic Crushed Tissues. T. Naegeli.—p. 981

Toxicity of Aseptic Crushed Tissues.—Naegeli injured the muscles of the thigh and pelvis in some guinea-pigs by pounding, and in others excised a scrap of muscle tissue or a kidney, and reimplanted them after an interval. The results confirm the toxicity of damaged tissues even when aseptic, and the importance of promptly clearing out all devitalized tissue. Mice injected with 1 c.c. of urine from a patient with a necrotic process nearly all died in from one to five days.

Zentralblatt für Gynäkologie, Leipzig

Nov. 29, 1919, **43**, No. 48

*Zinc Chlorid in Treatment of Uterine Hemorrhages. H. Hellendall.—p. 969.
*Reinfusion of Blood Lost from Tubal Abortion. E. v. Arnim.—p. 971.

Zinc Chlorid in Treatment of Uterine Hemorrhage.—Hellendall reports a case which warns against this method of treating uterine hemorrhage as it entailed complete occlusion of the cervix. Hematometra followed, with paroxysms of pain compelling supravaginal amputation of the uterus.

Reinfusion of Blood from Tubal Abortion.—Von Arnim relates that in twelve of a recent series of 135 operative cases of extra-uterine pregnancy, she reinfused into a vein from 300 to 1,000 c.c. of the woman's own blood, diluted with an equal amount of physiologic sodium chlorid solution with a little sodium citrate. The blood was scooped or soaked up from the abdominal cavity and passed through a funnel over some gauze as a filter. From the filter the blood passed into a receptacle containing the salt solution. The women recuperated from their moribund condition surprisingly fast. By the next day the pulse was good and full, the lips red, and strength was rapidly regained. The reinfusion caused intense cyanosis in one of the women, and attacks of pain in the chest with dyspnea and a chill in two others. Toxic action from the dying blood might explain these by-effects. Nothing suggesting edema in the lungs was evident in the one fatal case, the woman succumbing to peritonitis. This was the only fatality in these twelve reinfusion cases. The reinfusion consequently should be attempted only when the hemorrhage is recent. No case is known of embolism from reinfusion. No woman should be allowed to bleed to death after an operation for extra-uterine pregnancy, she affirms in conclusion, without having reinfusion attempted at least.

Zentralblatt für innere Medizin, Leipzig

Dec. 13, 1919, **40**, No. 50

*Recent Works on Pharmacology. C. Bachem.—p. 929.

Recent Works on Pharmacology.—Bachem reviews recent German literature on the action of drugs, old and new. One writer extols strychnin for its prompt efficacy in circulatory disturbances from paralysis of vessels, as in shock, collapse from poison, etc. The daily subcutaneous or intravenous dose of 3 or 4 mg. acts rapidly and does no harm. Silver salvarsan is extolled by some as the most potent treatment for syphilis yet known, but angioneurotic by-effects seem to occur more frequently than with other salvarsan preparations, according to some. Hoffmann has compiled cases of drug eruption transmitted by the mother's milk, bromid, salvarsan and acetylsalicylic acid eruptions. Instances of this are not so common as generally assumed. Several cases of poisoning from hydrocyanic acid are mentioned; it was inhaled in exterminating vermin. Fühner advocates as an antidote subcutaneous injection of a 5 per cent. solution of sodium thiosulphate (hyposulphite). Another writer warns that injections of caffein seemed to favor gas gangrene.

Mededeelingen v. d. Burg. Geneesk. Dienst, Java

1919, No. 7

Report on Dysentery Epidemic. E. P. Snijders and R. Pratomo.—p. 1.
*Breeding Places of Mosquitoes. N. H. Swellengrebel and J. M. H. Swellengrebel-de Graaf.—p. 39

Breeding Places of Mosquitoes.—Swellengrebel and de Graaf here report further research on the requirements of different species of mosquitoes for their breeding places. The different species seem to be constant in their habits but these habits differ in different species. They assert that their comprehensive and minute research in Java has apparently established that it is hopeless to attempt to do away with the breeding places for the larvae of the dangerous anophelines of the ubiquitous hill or shade-preferring kinds. They are not particular as to their breeding places, and general sanitation seems at present the only means of combating their larvae. The ludlowi, however, is so exceptionally dangerous, that special measures against it might be considered, including the doing away with its salt-water breeding places. This does not offer much hope of success, however, in view of the fact that if the more favorable breeding places are destroyed, the ludlowi might be driven to utilize other breeding places.

Hygiea, Stockholm

Nov. 16, 1919, **81**, No. 21

Formation of Corpora Lutea in the Ovaries. A. Westman.—p. 865.
*Treatment of Leg Ulcer. H. I. Schlasberg.—p. 880

Leg Ulcer.—Schlasberg emphasizes the importance of excluding syphilis and tuberculosis before treating a varicose ulceration. One woman with a positive Wassermann reaction had been treated for two years on the assumption that the ulcer was a syphilitic lesion. When this assumption was disregarded and treatment applied as for any varicose ulcer, the lesion soon healed. His method is to soften and cleanse with Burow's solution for three or four days. Then he applies a plaster, 24 gm. solution of lead subacetate and 136 gm. lead plaster mixed and spread on a 2,000 sq. cm. cloth. This plaster should extend 2 cm. beyond the edge of the ulcer. The leg is then wound with a bandage from ankle to knee. The bandage is taken off every day, and if there is much secretion the plaster is renewed; otherwise the plaster may be left, but not for longer than three days. In two weeks healing is evident and is soon complete, while there has been no interference with the earning capacity, and no impairing of the circulation as when the elderly have to stay in bed. This method has been applied to 21 men and 29 women in the last seven years. The ulcer was over three years' standing in 20 cases, and one to three years in 19. The area covered by the ulceration ranged from 3 by 2 to 15 by 13 cm. The lesion took from sixteen to 197 days for the complete cure. Recurrence is known in 6 cases, in from three to twelve months, but these patients had not followed the advice to wear the bandage for a time after the ulcer had healed.

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TUBERCULOSIS AS A FOCAL DISEASE *

EDWARD JACKSON, M.D.

DENVER

It is sometimes important to get a new point of view for those serious problems that are most constantly with us. Like moving from one house to another, it brings to light things that have been forgotten, and loses others that were constantly in evidence. If we can do this with regard to tuberculosis, if we can bring out old facts that have been neglected and see them with a new significance, if we can lose some of our misconceptions that have been too constantly with us, hiding the real significance of what we observe, it may be a profitable use of our time.

GENERAL AND FOCAL DISEASES

A focal infection is an infection of some part of the body, localized by the defensive reactions of the tissues. Tuberculosis is the sum of the defensive local and general reactions of the organism against the tubercle bacillus, and the sequels of such reactions. We have commonly thought of tuberculosis as a chronic general disease.

In a sense we have no such thing as local disease in the human body. Injury to the smallest and most distant part produces general reactions of the whole organism, whether the injury be mechanical, chemical, or due to bacterial invasion or simply to strong emotion. That is what our connecting nervous and vascular mechanisms are for. Any imperfection or excess of such reactions, and also their most perfect adaptation to their purpose, constitute disease. They reach every part of the body. A professional colleague administered an ill-advised remedy to his daughter, resulting in her death. Three months later he pointed out on each of his finger-nails the transverse furrow which marked the influence of the nervous shock on every epithelial cell that had been in a certain stage of development.

What we call general diseases exhibit their characteristic changes only in certain portions of the body, as scarlet fever or measles in the skin and mucous surfaces, or typhoid in the intestinal lymph glands. Away from these regions of acute disturbance, physiologic function is carried on much as in health. Just as in France during the war, beyond the sound of the guns and out of the region of air attacks, the life of the community and the production of food continued along the same lines as it had in the years before the German assault on civilization. At certain points war disorganized everything, destroyed everything, substituted its activity and accumulations for those of peace. The whole nation felt the effect of war; but its characteristic and obvious changes were localized. These were foci of war, and in quite a similar sense we speak of the foci of disease—of focal infections.

Every focus of infective disease is a point of attack and defense, of armed aggressive force. The opposing forces may be for the time accurately balanced, may sink into a state of siege, or only keep up the minor exchanges of trench warfare; but there is always present the aggressive disposition and the possibility of attack intended to annihilate all defense, and carry the warfare into new fields, there to produce a similar devastation. That is the nature and significance of every focal infection.

The typical tubercle is a typical focal infection. It is created by the reaction of the invaded tissue to the injurious influences of a colony of tubercle bacilli, sufficiently numerous and sufficiently virulent to establish themselves in that particular locality, and make their influence felt. It exhibits all grades of pathologic achievement, from massing of leukocytes and the proliferation of fixed tissue cells required to resist invasion, through degenerated epithelioid and giant cells to fatty, cheesy and calcareous masses of cell débris. It is a lesion preeminent in the length of the siege that the invading bacilli can withstand, maintaining their vitality to sally out when conditions become more favorable, and plant new colonies; thus to repeat the same process in other parts of the body. The single tubercle with these characteristics is the organic basis of tuberculosis; the essential feature of the disease, the one that all cases have in common, and the entity complete in itself. Tuberculous organs or regions are areas in which multiple foci have been massed.

The other phenomena that have been grouped in our minds to form the clinical picture of tuberculosis are occasional, incidental and temporary. They belong with coincident infections and complications, or are connected with a certain stage or particular locality of the focus of tuberculous invasion.

HISTORY OF TUBERCULOSIS

The history of our knowledge and recognition of tuberculosis is peculiar. Typhus and typhoid fevers, absolutely distinct diseases, were long confused. "Abdominal typhus," "typhus exanthématique" are terms that still remind us of the period when efforts were made to distinguish between them. Gonorrhea, syphilis and chancroid were all regarded as one disease. The terms "French measles" and "German measles" commemorate the classing with measles of a roseola or rötheln. One dysentery was classed with

* President's address, read before the Medical Society of the City and County of Denver, Jan. 6, 1920.

another, as though they were the same disease, and not in some respects strongly opposed to one another. They still are called dysenteries in loose phraseology; much as the "gutta serena" of older writers embraced whole classes of affections of the deeper tunics of the eye.

But with tuberculosis quite the opposite was the case. Phthisis was one disease, scrofula another, Pott's disease and coxalgia were quite independent. Pulmonary hemorrhage, pleurisy, cold abscess, and lupus were not thought of as having any essential in common, or with meningitis, or chronic pyelitis, or recurring vitreous hemorrhage.

Only when the causative bacillus was recognized and studied, and established as pathogenic, did the finding of it with these different clinical manifestations connect them up into the general modern conception of tuberculosis. So much does locality modify these manifestations, that it never had occurred to the students of disease that they all were of one and the same origin.

When I studied medicine, scrofula was one of the most important, confused and obscure conditions described in the textbooks, and among the first to confront the young practitioner. It was suspected then, as was known a few years later, that it was nine-tenths tuberculous, and one-tenth other confusing chronic conditions. But it had come down to us from Hippocrates as a distinct pathologic diathesis, or constitutional disease resting on a diathetic tendency, for which there was as much prospect of discovering a specific cause as there was for syphilis or tuberculosis. The anatomic investigations of Virchow had only added to the confusion.

Hip joint disease, clinically recognized and studied for 2,000 years, had then been subjected to the microscopic investigation that identified the tubercle. In 1779 the famous surgeon, Percival Pott, had published "Remarks on That Kind of Palsy of the Lower Limbs Which Is Frequently Found to Accompany a Curvature of the Spine." This condition had been followed back toward its etiology far enough to recognize in it the ubiquitous tubercle. The tubercle itself had risen to due prominence in connection with pulmonary tuberculosis through the work of Bayle and Laënnec almost 100 years ago. And sixty-four years ago Villemin had shown that it was infectious.

Koch's discovery of the bacillus caused the rapid crystallization of our present views regarding tuberculosis; but the importance of the latent focus of infection, and its bearing on our theory of etiology and treatment are still not fully appreciated. Even the author of "Cellular Pathology" failed to recognize that what he called "caseous hepatization"—the tuberculous infiltration of Laënnec—was but the débris of the bacteriocellular tuberculosis battle.

THE TYPE LESION IN THE EYE

The single tubercle is the typical lesion of a focal infection; each is complete in itself. The crowding of many tubercles into one larger mass has always tended to obscure the real character of the disease, by raising issues and causing symptoms that were incidental and nonessential; it has tended to draw attention away from the smaller fields of the vital struggle in which the real battle of defense against the invader was being fought. But a single tubercle usually is not recognized in the living body. Generally a large number of single tubercles developed in the same region, as in a lymph node or a lobule of the lung, have been spoken of as the focus of infection.

Much that applies to the single tubercle applies to the larger mass; but a better insight into the nature of the disease began with the anatomic study, the microscopic analysis of the single tubercle; and there are important lessons still to be learned by the study of the evolution of such a lesion, and the careful noting of the symptoms it causes during life. There is one place in the body where such a study is possible, the background of the eye; and when the opthalmoscope has been properly and persistently employed in this investigation, we shall have learned some very important facts with regard to the pathology of tuberculosis. The tubercle present in the ocular fundus varies in dimensions, being 0.1 to 1 mm. or larger. It can be watched often from its beginning to its complete involution. It may be recommended as a subject for study to all who are interested in tuberculosis.

Choroidal tubercles, as a late symptom in tuberculous meningitis or general miliary tuberculosis, were recognized early in the use of the ophthalmoscope. The first report regarding them was made by Manz in 1858. But when they appear in these cases, the patient is nearing the fatal termination of his disease; and only their initial stage became familiar to ophthalmoscopists. If carefully looked for they may be found within a few days of the end, in 50 per cent. of these cases. About fifteen years ago, Stock, experimenting with rabbits, found that tubercles of the choroid, beginning with much the same picture already familiar in the human eye, ran a course that ended in patches of choroidal atrophy, similar to the patches of choroidal atrophy even more familiar in human eyes.

The same series of changes has now been followed out in human eyes, by numerous observers. The connection with tuberculosis in other parts of the body has been noted. The focal reaction of such lesions after subcutaneous injections of tuberculin has been watched. It is established that a certain proportion, and probably a large proportion of the patches of choroidal atrophy found in our routine ophthalmoscopic examinations, are patches of atrophy left by the healing of focal infections of tuberculosis. These atrophies show destruction of the normal tissue, pigment massing, ultimate thinning of scar tissue, sometimes hyaline change or even ossification; but no cheesy or calcareous débris.

More recently still we have come to identify tuberculous focal infections in the retina. For thirty odd years the clinical picture of recurring hemorrhage from the retinal vessels into the vitreous has been recognized as an important ocular condition, causing temporary and sometimes permanent blindness. Ligation of the common carotid has been done for it, sometimes apparently followed by the desired result, but more often by failure.

We know now that many of these hemorrhages, probably all in a distinct clinical group, are due to tuberculous focal infections in the retina. The hemorrhages in some cases are not massive, causing blindness and shutting off the view of the basic lesions with the ophthalmoscope, but are small enough to permit the watching of the causative lesion. In the Colorado Ophthalmological Society we have had the opportunity of watching several of these cases for periods running one, two or three years; and the observations are full

of interest, because of the light they throw on the focal infections of tuberculosis in general.

The retinal tubercle is generally clearly connected with a blood vessel: either an artery or a vein, but more frequently the latter. The vessels thus involved vary from 0.01 to 0.1 mm. in diameter. In the beginning the vessel appears normal, except that at the seat of the lesion it is covered by a yellowish white or grayish white, rounded cloud, with an indefinite margin. This area reaches its full size in a very few days. On either side of the tubercle the appearance of the vessel may remain about normal, or may change slowly. The arteries commonly show little alteration, except that the perivascular sheath may become visible as white lines parallel to the blood column. The veins are more likely to become dilated in limited portions, which may be several millimeters in length. Such a dilated portion may have three or four times the diameter of the normal vein at either end of it; and the dilated part may end quite abruptly. It is as though that part of the venous wall had been weakened by some noxious influence exerted on it, while other parts of the wall remained healthy.

After many days or several weeks, newly formed vessels are seen on the surface and periphery of the tubercle, attended with some increase in the size of the mass and more clouding of its edges (added exudates). The vascularity includes all sizes of vessels from swollen capillaries (which are easily distinguishable with the ophthalmoscope) to vessels almost as large as the trunk on which the tubercle is located. Then, very gradually the reddish gray area shrinks, becomes lighter in color, less vascular, and more transparent so that the fundus red shows through. Finally, the lesion fades away completely, leaving the vessels, the choroid and apparently the retina in the same condition as before the attack. This fact of complete resolution of some retinal foci of infection seems of great importance in its bearing on the possibility of complete healing of tuberculous lesions elsewhere in the body.

More frequently, the stage of peripheral vascularity and exudate does not go on to complete resolution. The gray mass becomes whiter but not transparent. It extends in certain directions, developing into a band or connecting bands of brilliant white fibrous tissue, on the surface of which stand out sharply a reduced number of blood vessels, often still quite tortuous. This condition, known as retinitis proliferans, appears to be quite permanent. It has been observed many years after the original focal infection and period of hemorrhage.

The development of such masses of white fibrous tissue generally, perhaps always, follows hemorrhage. Hemorrhage is at first quite absent from these retinal lesions, although in most cases the loss of vision caused by hemorrhage is the first thing that brings the patient under observation. This is extremely interesting when we remember the long controversy in which many famous names were marshaled in support of the view that hemoptysis was the cause of phthisis. It seems always to be present in cases of retinal tuberculosis; and it is probable that in a majority of cases, massive hemorrhage occurs, arresting attention by great reduction of vision.

The hemorrhage is first observed several days or weeks after the first retinal lesion. In Finnoff's case, which was seen very early on account of corneal lesions and eye strain, the first hemorrhage was found at about the fourth week. From the time they begin they continue to recur so long as the disease remains active, often for many months or years. The tendency to the formation of white fibrous tissue is closely connected with the occurrence of relatively large hemorrhages. Hemorrhage, so far from being the cause of the disease, is one of the defensive resources of the organism, although very disastrous to sight when occurring in this situation. I have twice seen it occur within forty-eight hours after therapeutic subcutaneous doses of tuberculin.

The focus of infection may occur in any part of the eye. In the skin of the lids it has the varied characters of lupus, and in the conjunctiva almost as wide a variety. In both of these structures the lesion is apt to depart rather widely from the typical tubercle; both here and in tuberculosis of the lacrimal passages it is generally difficult, and sometimes impossible, to distinguish the bacillus by the usual staining methods. I would suggest that in these lesions the search be carried on with the help of other than the Ziehl stain. In the cornea, a nonvascular tissue, tuberculosis generally appears as an extension from the anterior chamber, iris or ciliary body. Occasionally the focus has seemed to be originally in the substance of the optic nerve, although much more commonly in the neural sheaths.

UNRECOGNIZED TUBERCULOUS INFECTIONS

From what has been observed in the eye, the part of the body most completely open to observation, the statement seems justified that the tuberculous focus of infection may be found, and may first attract attention, in any organ or tissue of the body. This is generally admitted. What is not generally appreciated is the fact that tuberculous focal infections do occur and pass unrecognized in other parts of the body more frequently than they do in the lungs, lymph glands, spine and hip joint, where they are generally recognized.

The great obstacle to the recognition of a tuberculous focal infection where we are not looking for it has been the fact that there was no tuberculosis where we expected to find it. In one case of ocular tuberculosis, failure to react to tuberculin tests and the absence of any signs of the disease in lungs, bones, joints or notably enlarged glands was supposed by a competent internist to rule out tuberculosis. But a few months later the opening of the skull for organic brain disease revealed a tuberculous meningitis. The diagnostic use of tuberculin is known to fail us sometimes in pulmonary and general miliary tuberculosis. We must admit that its negative showings do not rule out a tuberculous focus of infection in some other part of the body, where such a focus would be less likely to be thought of.

It may be that Naegeli's statistics, showing that, up to the age of 18, 97 per cent. of all persons coming to necropsy have suffered from some focus of tuberculous infection, do not apply generally, and exaggerate the prevalence of such infections. However, only a belief in some such prevalence will eliminate a large number of errors of diagnosis in the direction of failure to recognize such lesions.

When, a few years ago, I had tuberculin given for a chronic choroidal lesion, the reaction of pain and swelling in the metatarsophalangeal joint of the great toe helped to confirm the diagnosis; it revealed a lesion that otherwise would have escaped attention, or its

significance would never have been thought of by the patient. Probably this "confirmation" would have left the diagnosis of tuberculosis subject to a great deal of skepticism on the part of doubting colleagues. But such skepticism would hardly have stood up against the severe tuberculous pleurisy that this patient developed with a new focus in the choroid six years later.

My experiences with tuberculosis have disposed me to look widely for its foci of infection, and accept its great chronicity and prolonged latency or arrest. A woman was supposed to have phthisis in her early twenties, and early death was anticipated. One of her brothers and a sister had died of the disease. But her husband, a farmer, got her a horse and buggy which were always kept for her own use. She scandalized her country neighbors by the amount of time she spent driving about. She always had a cough; and when she died at over 75 years of age, necropsy revealed cavities, calcareous and cheesy nodules, and other foci which were active.

Early in my general practice, I assisted at a necropsy of a patient who died of phthisis; the attending physician explained to us that he expected to find in one kidney the evidence of a tuberculous infection that he had diagnosed as a kidney lesion more than twenty years before. We found there the calcareous and cheesy masses, with active tubercles. Another patient had suffered and apparently recovered from a tuberculous pleurisy ten years before the onset of discoverable pulmonary symptoms that ended three years later in death from phthisis. If there is one lesson of my professional life that stands out more strongly than any other, and which seems to deserve all the emphasis that can possibly be put on it, it is that an enormous number of tuberculous focal infections occur in persons not considered tuberculous by themselves, their friends, or even their physicians.

Perhaps not every one is tuberculous; but successful diagnosis requires that every one presenting symptoms which might arise from a tuberculous focal infection should be assumed tuberculous until the contrary is proved. Above all, we must get away from the error of letting family history, recent exposure, favorable conditions of life, or apparent recent health, influence our judgment of the probabilities of the existence of a focus of tuberculous infection somewhere within the body. All these things are invoked to prove that a lesion is not tuberculous; and they all tend to prevent the recognition of unusual or minor infections.

PATH OF INFECTION

Some very practical points are connected with this conception of tuberculosis as a focal infection. It has often been asked whether the lesion was primary or secondary, and on the answer to this it was sought to decide the plan of treatment. Excision of tuberculous foci in glands, bones, conjunctiva or eyeball has been fairly tried, sometimes with results a little better than those of nonoperative treatment, but in some cases with results distinctly worse.

There has been at times, and in certain people, an almost hysterical fear of the "contagiousness" of consumption, leading to folly and inhumanity in the treatment of those manifestly suffering from phthisis. Health regulations have been ruthlessly enforced by officials who carried in their own persons the active lesions or the latent focal infections of tuberculosis. Such fear and such regulations have been based on suppositions regarding the channels by which tuberculosis is usually transmitted and enters the human body.

When we come to examine the facts, it becomes evident that we know very little about the path of infection. Two portals of entry have received much attention, the respiratory tract and the alimentary canal. But the facts that stand prominently forth in all the accumulated literature are: The tubercle bacillus gets entrance to the body usually long before any of the effects of its presence are recognizable, and often makes itself known first in the interior of the eye, in the head of the femur, or the bodies of the vertebrae. It has been known to enter the body without giving the slightest evidence at the point of entrance.

Possibly when the first manifestations are in a chain of lymph glands, as in the neck or mesentery, these point correctly to the portal of entry. But at the point of entrance there is no evidence of disease; primary tuberculosis of the tonsils or of the mucous lining of the intestine is of extreme rarity. In the great mass of cases the involvement of these surfaces is manifestly late and secondary.

Even in the lungs the evidence of lesion at the point of entrance is contradictory and inconclusive. In the human being, pulmonary tuberculosis is always discovered after the essential lesion has reached an advanced stage of evolution; or it is recognized after the lesion has run its course, broken down and is discharging bacilli. In animal experimentation there are great gaps between the inhalation of the bacilli, and the finding of lesions in the lung. With lupus, in many respects an aberrant form of tuberculosis, the beginning and course of the lesions ally it with internal focal infections rather than suggest that it is an initial lesion.

Only in the wartlike lesions that follow slight injuries to the hands of postmortem workers, and a few cases of tuberculosis of the conjunctiva, is the preponderance of evidence in favor of lesion at the site of entrance. There is just one case on record of tuberculous ulcer of the cornea following lesion from the nail of a tuberculous child.

The evidence we now have indicates that the point of entrance plays little part in determining the location of the primary focus of infection, unless possibly when this is some lymph gland. The bacilli find their way into the circulation without provoking reaction; and in some favorable situation, some point of lowered resistance, establish a colony, a focus of infection. The possibility of the development of such a lesion, and of its subsequent power for extension and general harm, lies in insufficient resistance of the body tissues.

IMMUNITY

The great majority of human beings, at least those living under the conditions of civilization, harbor tubercle bacilli at some time in their lives, just as every country that has attained a social organization harbors anarchists. It may be wise and right to reduce and keep down the infection to a minimum. But for the mass of us the only effective defense that stands between health and a generalized, acute miliary tuberculosis is a certain amount of tissue resistance, of tissue immunity; and it is toward understanding and building up this resistance that the war on tuberculosis must be more and more directed, if it is to be successful.

Some things we know about it: the value of outdoor living, sunshine, rest, alimentation, a cheerful disposition toward the events of life, the value of injecting a specific provocative (tuberculin), when this is not

furnished in sufficient quantity by the focus of infection. But surely there is a great deal more to be learned about this immunity; there is an immense field of labor for the medical profession, in forcing on the community the importance of the facts about it that we already know, and it is the duty of our civilization to see that by legal enactment, by social custom, by individual example, by universal teaching in our educational system, our knowledge is applied in the life of the people.

CONCLUSIONS

Briefly, we have learned that:

The different forms of this focal infection are one disease—the unity of tuberculosis.

A very large proportion of those who suffer such infections never suffer the conditions that were formerly recognized as tuberculous—phthisis, scrofula, bone disease, etc.

At its point of entrance, the tubercle bacillus very rarely provokes any reaction or excites a noticeable lesion.

Foci of infection are established within the bodies of a great many people, where they are kept in check by tissue resistance.

The overcoming of tuberculosis is chiefly a matter of building up and sustaining immunity by wise and careful living.

318 Majestic Building.

Resolutions on Use of Vaccines in Influenza.—At a meeting of the sanitation committee of the Allegheny County Medical Society, a resolution was adopted to cooperate to the fullest extent with the Department of Public Health of Pittsburgh with whose action this committee is in complete accord. Another resolution provided that the committee indorse a request suggested by Major Davis that all physicians in the city of Pittsburgh report their cases of influenza. The committee announces its position with reference to the use of prophylactic vaccine in connection with the present possible epidemic of influenza as follows: 1. There is no evidence to show that any of the so-called prophylactic vaccines which have been used will prevent influenza. 2. No physician or other person has a right from the data on hand to guarantee protection to any individual because of the administration of a prophylactic vaccine for influenza or pneumonia. 3. It is possible that the antipneumococcus vaccine has value in the prevention of pneumonia. 4. Prophylactic vaccination to be protective should be completed before exposure to the disease.—*Bulletin Allegheny County (Pa.) Medical Society.*

A MODIFIED TECHNIC IN OPERATION FOR OBLIQUE INGUINAL HERNIA

WILLIAM A. ANGWIN, M.Sc., M.D.
Commander, M. C., U. S. Navy
GREAT LAKES, ILL.

This modification of standard technic for the operative cure of oblique inguinal hernia has been developed over a period of time. It is a product of gradual evolution, in which the basic features are classical; but by a successive adaptation and combination of features that in my experience and observation have been found desirable, the classic has undergone changes and variations. The results have proved quite uniformly successful and satisfactory.

DETAILS OF TECHNIC

STEP 1.—After the patient comes to the operating table, the site of the operation is twice painted with 5 per cent. picric acid in 95 per cent. alcohol. The landmarks of the operative field are located: the anterior superior spine of the ilium, pubic spine, middle of the base of the penis, Poupart's ligament, and the external inguinal ring. An incision is made through the skin and superficial fascia parallel to and about three-fourths inch above Poupart's ligament, extending from the external ring upward and out to about one inch beyond midline of Poupart's ligament. Superficial vessels are caught up and ligated. Vessels liable to be severed are the superficial epigastric and superficial external pudic arteries and veins. This incision exposes the aponeurosis of the external oblique and the external ring (Fig. 1). The aponeurosis should be well cleaned by wiping back the superficial tissues to Poupart's ligament below and about 1¼ inches above the incision. Care must be taken not to injure the ilio-inguinal nerve, which sometimes emerges through the aponeurosis above the external ring. The wound is thoroughly dried before the next step.

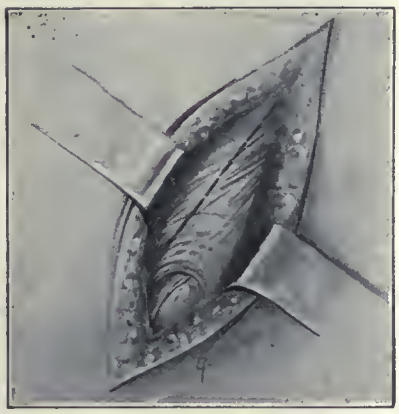


Fig. 1.—Exposure of aponeurosis of left external oblique, showing line of incision not entering the external ring. Ilio-inguinal nerve emerging through external ring.

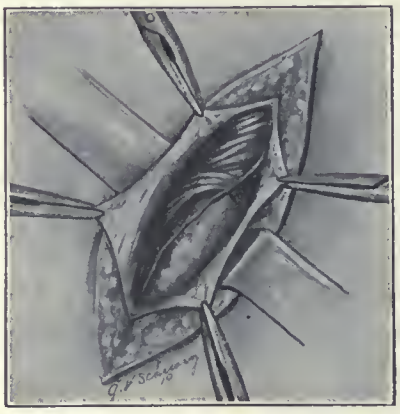


Fig. 2.—Incision has been made in aponeurosis, exposing internal oblique muscle, cord and ilio-inguinal nerve.



Fig. 3.—The internal oblique and transversalis muscles have been pulled upward, and peritoneum is caught with forceps; cord not disturbed.

STEP 2.—An incision is made through the aponeurosis of the external oblique muscle, beginning about one-fourth inch above the external ring and continuing upward in the direction of the fibers of the aponeurosis or slightly across them toward Poupart's ligament to a point just beyond the internal ring (Fig. 2). By cutting slightly diagonally across the fibers, the exposure of underlying structures is facilitated. With the handle of the knife the inside of the aponeurosis is cleared first downward along the shelf of Poupart's ligament from the internal ring to the pubic spine, then upward exposing the internal oblique muscle, the internal ring, the conjoined tendon and the sheath of the rectus. Care must be taken not to injure the ilio-inguinal nerve

lying either along the cord or on the internal oblique muscle, or the iliohypogastric nerve which sometimes comes through the internal oblique muscle low down. Generally it is found in the upper external angle of the wound (Fig. 6).

Step 3.—The handle of the knife is then placed between the conjoined tendon and the cord, and separates those structures and the muscles up to the internal ring.

Step 4.—The internal oblique and transversalis are put on the stretch and a retractor is inserted to pull those muscles upward, exposing the peritoneum above the internal ring. This frequently bulges like a sac (Fig. 3).

Step 9.—The free borders of the internal oblique and the transversalis are caught together in two forceps and turned upward, exposing the posterior surfaces of these muscles, to which is sewn, at about three-fourths inch from the free border, the upper edge of the cremaster muscle, continuous small plain catgut being used (Fig. 7). This covers the cord down to a new ring just above the spine of the pubes. One should avoid catching the ilio-inguinal nerve in this suture.

Step 10.—The free borders of the internal oblique and transversalis muscles and the conjoined tendon are now

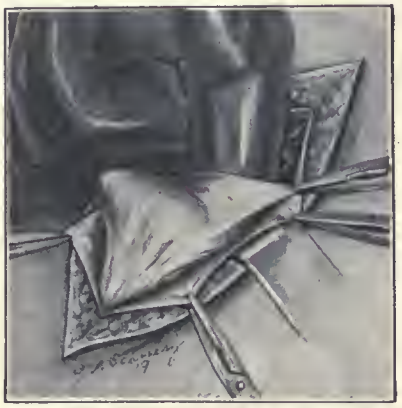


Fig. 4.—The peritoneum has been incised; the finger enters the sac from above downward; neck of sac is about at crook of finger.

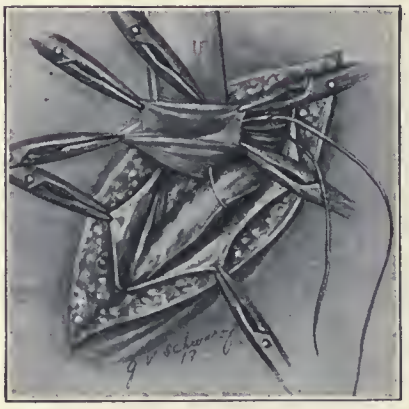


Fig. 5.—Sac being tied off well above neck, above incision in peritoneum. (This illustration represents a very small sac which has been split to its tip.)

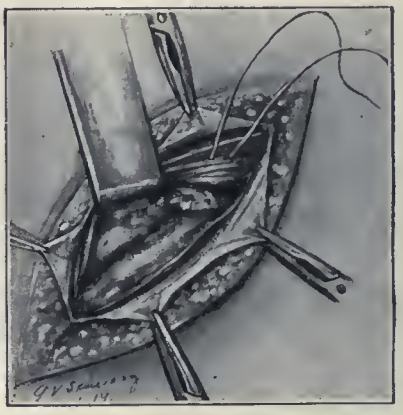


Fig. 6.—Dislocation upward of ligated peritoneal opening. The iliohypogastric nerve is shown in the upper angle of the wound lying on the internal oblique; it is frequently injured by suturing.

Step 5.—The peritoneum is caught up and incised between two forceps. This incision is made in the peritoneum proper above the neck of the hernial sac, which can now be located by viewing it from above and by the insertion of a finger into the sac. This one step has greatly facilitated the search for the sac; in fact, no search is needed.

Step 6.—The finger is inserted into the sac from above, and the sac is freed from surrounding tissues by gauze dissection (Fig. 4).

Step 7.—The sac is then ligated by transfixion in the usual manner, but the ligature surrounds the opening in the peritoneum, thus insuring absolutely the removal of every vestige of the sac (Fig. 5).

Step 8.—The neck of the sac, or rather the pucker of peritoneum, is dislocated upward beneath the internal oblique and transversalis, the ends of the tie-off ligature being passed through those muscles about three-fourths inch above the internal ring (Fig. 6). The cord has not been disturbed nor removed from its bed.

united to the shelving portion of Poupart's ligament by chromic catgut or kangaroo tendon, substantial bites of the muscle being taken (Fig. 8). The sutures are tied without undue tension. The cord emerges over the pubic bone beneath the lowest suture. The two nerves mentioned should be avoided; frequently the iliohypogastric is quite low enough to be caught. The lowest suture should also include the external edge of the sheath of the rectus for strength, especially when the conjoined tendon is defective.

Step 11.—The aponeurosis of the external oblique is brought together with plain catgut, if necessary, reinforced by imbrication. The external ring has not been molested. It is sometimes advisable to make it smaller by one or two sutures.

Step 12.—The superficial tissues are closed by any of the usual methods.

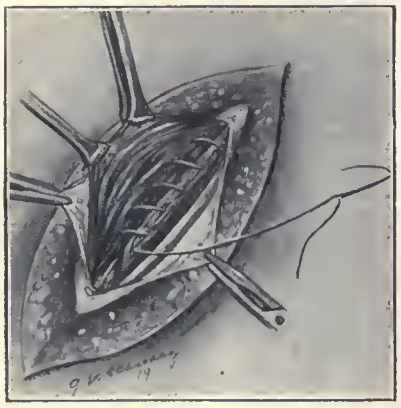


Fig. 7.—Free borders of the internal oblique and transversalis muscles are caught together and everted, exposing posterior surface; upper edge of cremaster is sutured to posterior surface of transversalis about three-fourths inch from the border; the cord is buried beneath the cremaster.



Fig. 8.—Free borders of internal oblique and transversalis muscles are sutured to shelf of Poupart's ligament.

Advantages of the Technic

This method results in:

1. Easy and unmistakable location of the sac.
2. Assurance of the absolute removal of the entire sac *well above its neck.*
3. Removal of peritoneal pucker from the area of weakness by dislocating it upward beneath solid muscle.
4. Strong repair of the muscular and aponeurotic coverings.

U. S. Naval Hospital.

Keep the Farmer Well.—A large part of the land in the richest sections of the South, and to a less extent in the North as well, is today partially or wholly unproductive on account of being overrun with malaria, with a consequent loss of millions of dollars. Every case of malaria or other efficiency reducing disease means that the output of food is appreciably reduced and that the shortage is immeasurably increased.—*Bulletin*, State Board of Health of Rhode Island, August, 1919.

SPINA BIFIDA OCCULTA IN A CHILD WITH INCONTINENCE OF URINE AND FECES

IMPROVEMENT IN VESICAL CONTROL AFTER OPERATION *

JEROME S. LEOPOLD, M.D.
NEW YORK

The great majority of cases of spina bifida occulta have been noted in early adult life; its presence in childhood is uncommon enough to warrant the publication of a report of an instance that came under my observation.

According to Brickner,[1] "spina bifida means bifid spine, and that individual has a spina bifida who has a cleft in the spine whether or not there is a protrusion of the spinal structures." The term "spina bifida occulta" was first employed by Virchow in 1875, when he reported a case of spina bifida with the lesion concealed beneath the skin.

Since reading Brickner's article it has been our routine procedure to have roentgen-ray examinations made of the spine in all children presenting partial or complete incontinence of urine. As a result, the positive diagnosis in the case here reported was promptly arrived at. It is our firm conviction that not a few cases of enuresis in children are due to spina bifida occulta.

REPORT OF CASE

History.—E. F., girl, aged 6 years, admitted to the A. Jacobi Division for Children of the Lenox Hill Hospital, May 1, 1919, was born after normal labor, birth weight unknown. She was artificially fed; the first tooth appeared at 7 months. The patient talked and walked when 1 year old. She had had varicella and measles, and had always been irritable and "nervous." Eight months before the tonsils and adenoids had been removed. An older brother had had chorea, and had always been irritable, and now had nocturnal enuresis. The mother was poorly developed and of a nervous temperament. She had had no miscarriages. The father had syphilis ten years before (four years before the birth of our patient) for which he received treatment at this hospital.

The present illness started about one year prior to admission, when the patient was 5 years old. She began to lose bladder control at various times. Interference with vesical function gradually became more constant, and was soon accompanied by rectal incontinence. These symptoms became progressively worse, so that at the time of admission to the hospital there was almost complete loss of control both of the bladder and the rectum. There had been no remissions or intermissions. The patient had suffered no injury, nor was there a history of any illness to which the present complaint could be referred. The child was well advanced at school, and played and talked with other children in a normal fashion.

Examination.—On admission to the hospital, the child was fairly well developed, weighed 36 pounds, and the general condition was good. The general physical examination was negative.

Nervous system: The knee jerks were very active. There was no ankle clonus, and no Babinski phenomenon nor other abnormal reflexes. The superficial abdominal reflexes were present. No sensory and no motor disturbances were discovered after a very thorough examination, in which the patient coordinated well.

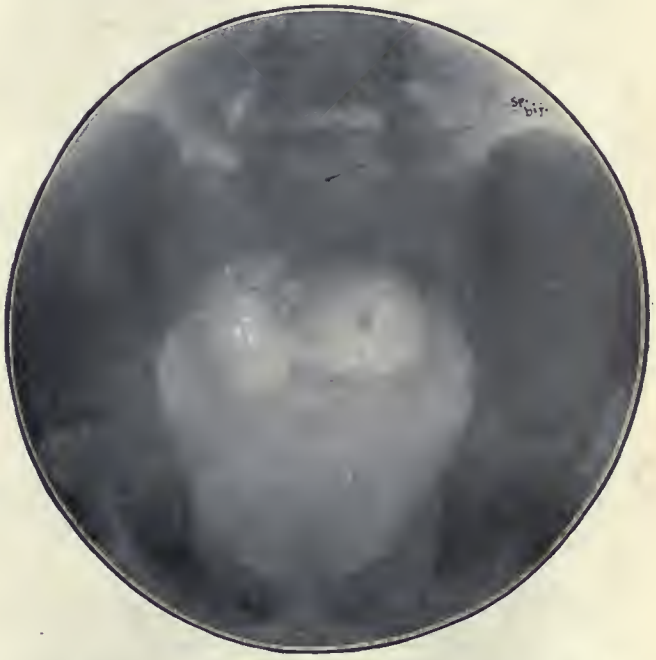
Back: There was a fairly well marked, compensated left lateral scoliosis with some asymmetry of the left chest-wall, posteriorly. Over the upper part of the right buttock, just to one side of the median line, there was a small blind pocket or dimpling of the skin. Hypertrichosis, often associated with spina bifida occulta, was absent. There were no trophic disturbances.

The Wassermann reaction of the blood and the Schick test were negative. The von Pirquet reaction was positive. The urine was negative. The blood examination on admission was: white cells, 8,000; polymorphonuclears, 40 per cent., and lymphocytes, 60 per cent.

Roentgen-ray examination by Dr. W. H. Stewart disclosed a typical spina bifida, the upper arches of the sacrum being lacking, as shown in the accompanying illustration.

The chief points of interest in this case were: (1) the history of one year's duration of loss of bladder and rectal control; (2) the blind pocket or dimple in the skin over the sacrum, and (3) the positive roentgen-ray findings.

The history of incontinence together with the presence of a small dimple in the skin just over the sacrum made us very certain that we were dealing with a case



Spina bifida of the sacrum, with a distinct cleft in the first sacral arch and the absence of the remaining sacral arches.

of spina bifida occulta. The roentgen-ray examination, which showed a distinct cleft in the first sacral arch and the absence of the remaining sacral arches, confirmed the diagnosis.

According to C. H. Frazier,[2] symptoms in spina bifida occulta may be present at birth, but more often they do not appear until early adult life, when the membranous band between the cord and the epidermis begins to compress or pull on the cord and nerve roots. There may be present motor, sensory or trophic disturbances in the lower extremities. Incontinence of the bladder and rectum are often present. At times there are defects and malformations in other parts of the body.

In this connection it may be of interest to mention that Brickner divides cases of spina bifida occulta into these groups: (1) with external signs and with symptoms; (2) with external signs without symptoms; (3) without external signs with symptoms, and (4) with-

* From the A. Jacobi Division for Children of the Lenox Hill Hospital.

1. Brickner, W. M.: Am. J. M. Sc. **155**: 473 (April) 1918.

2. Frazier, C. H.: Surgery of the Spine and Spinal Cord, New York, D. Appleton & Co., 1918.

out external signs without symptoms. According to this classification, our patient comes under Group 1, since there were present external signs (dimple) with symptoms of incontinence.

In some reported cases of spina bifida occulta with symptoms of disturbed sphincteric control, and in others with severe trophic disturbances in which lipomatous tumors and hernias of the cauda equina were found, operative procedures have been of great benefit. At times, simple separation of the membranous bands between the cord and epidermis has resulted in relief of all symptoms.

Course and Treatment.—During a period of three weeks' observation in the hospital, the patient manifested loss of bladder and rectal control, practically daily. In view of the fact that the disturbed sphincteric control had been increasing progressively during the year's illness, an exploratory operation seemed advisable. Accordingly, three weeks after admission to the hospital, operation was performed by Drs. Willy Meyer and W. M. Brickner. A semicircular incision was made through the skin and subcutaneous tissue over the sacral region. The incision started at the level of the first sacral vertebra, curved to the right, and ended at the last sacral vertebra, so that the concavity was toward the median line. The skin flap was reflected, and the incision was extended upward in the right paravertebral line to the last lumbar vertebra. The fascia over the sacral ligaments was divided in the median line and retracted. A small amount of fatty tissue was removed from the field. Examination then revealed the cleft in the laminal arch of the first sacral vertebra. Furthermore, the remaining sacral arches were practically absent, the defect increasing in diameter as the exposure was extended toward the anus. The operative field consisted of a view of the posterior aspect of the body of the sacrum, the sacral canal being exposed to view.

The laminal arch of the fifth lumbar vertebra was resected with bone forceps to obtain better exposure. No advantage was gained by this procedure, as the spinal canal ended at the fifth lumbar-first sacral intervertebral space, and it was decided that to open the spinal canal would be of no avail. The condition was judged to be beyond surgical relief. The fascia was sutured with chromic catgut, the subcutaneous layers were sutured with plain gut suture, and the skin was closed with silkworm gut.

The findings at operation corroborated the roentgen-ray examination in a very precise manner. While the bony defect was easily recognizable, the nerve lesion, if there was such, was not discovered.

In this case there was no hernia of the cauda equina, and no fatty tumor.

Postoperative Course.—During the four weeks following operation, while the patient remained in the hospital, there was no incontinence of urine or feces. She was then sent home, and for one week she had complete control of the rectum and bladder. After that period, however, she lost control of the rectum, and this condition has persisted up to the last report, which was five months after the operation. For some unexplained reason, however, the patient since operation has retained full control of the bladder function.

In view of the operative findings, it is difficult to see how the operation could have had any effect. One can only advance the suggestion that possibly the fixed scarlike dimple in the skin over the bifid spine resulted in a tug on the membranous posterior wall of the sacral canal and thereby affected some of the roots of the cauda equina concerned with vesical function. If this was so, the separation of this puckered area from the underlying sacral canal, as carried out at operation, may have had the described effect on bladder control.

701 Madison Avenue.

MESENTERIC, OR ENTEROGENOUS, CYST

CHARLES STANLEY WHITE, M.D.
WASHINGTON, D. C.

The infrequency of the mesenteric, or enterogenous, cyst and the obscurity of the symptoms are indicated by citing the statement of Miller,[1] that but thirty-five cases were reported up to 1913, and in none of the cases was the diagnosis made prior to operation or necropsy.

The etiology remains clouded, diverse views still obtaining, chiefly expressed as dilatations of mesenteric lymphatics and sequestration of the enteric canal. Briefly stated, the histologic characters differ somewhat; the cyst wall is devoid of mucous membrane in several of the reported cases, and these have fostered the opinion that the growth is entirely mesenteric. In the majority, however, the lining of the cyst bears a close resemblance to the epithelium of the intestine, even to the extent of containing villi and muscle fibers. The tumor is invariably congenital and situated at the mesenteric attachment of the small intestine. By some it is believed to be an erratic development of Meckel's diverticulum.

The symptoms are those of a movable tumor or intestinal obstruction and frequently an amalgamation



Fig. 1.—Intimate relation of cyst to intestine.

of the two entities, and it is because of its protean characteristics that the proper interpretation of the symptoms is not easy. So frank are its manifestations of obstruction that any other diagnosis is impossible in some instances, while, on the other hand, a movable tumor in any quadrant of the abdomen forces the conclusion that we are dealing with a floating kidney,

1. Miller: Bull. Johns Hopkins Hosp. 24: 316, 1913.

ovarian cyst, enlarged gallbladder or pedunculated uterine tumor. So variable are the symptoms that few remain which are pathognomonic.

REPORT OF CASE

A boy, aged 4 years, was first seen in December, 1914, and at this time no diagnosis was made. Dr. E. P. Copeland



Fig. 2.—Cyst detached.

assumed charge of the patient and later reported the case.[2] It is with his permission that the following paragraphs are incorporated here:

"In December, 1914, approximately a year before my first examination, the patient became suddenly ill in the night, with an attack characterized by extreme nausea and severe vomiting and the appearance of a rounded tumor in the hypogastrium, simulating a distended bladder. The vomiting, to judge from the description, was simply bile-stained gastric juice and at no time stercoraceous. The tumor was elastic, but not especially tender to touch. There was no history of previous disturbance in the regularity of the bowel, as to constipation or diarrhea. Fever was not present.

"The physician called at the time had evidently made a diagnosis of intussusception and had completed plans for an immediate removal to the hospital for operation. Returning a few hours later for the patient, he had been, as could be well imagined, much surprised to find that the mass had spontaneously disappared and the patient recovered.

"After this initial appearance, these attacks had recurred at varying intervals, seldom less than three weeks and on several occasions as long as six weeks. They had varied in the severity of associated symptoms and likewise in duration, seldom, however, lasting over two days. The tumor had invariably appeared first over the region of the bladder, sometimes larger, sometimes smaller, moved about the abdomen spontaneously, and finally disappeared. Its appearance had always been associated with nausea and vomiting, and its disappearance with a pronounced paroxysm of abdominal pain. Following the first attack there had been some tendency to constipation, but the bowels had been kept freely open by the daily employment of mineral oil by mouth. The diet had been well regulated, and in the intervals the patient had quickly recovered lost weight. Ordinarily the child was quite normal, played actively, and appeared in good health. No prodromal symptoms had been observed.

"At the time of the first examination, I found the patient in bed lying on his back, thighs partially flexed. The attack was several hours old, and there was still some nausea. Presenting in the hypogastrium was a smooth tumor about the size of an orange, elastic, but not tender to touch, and dull on percussion. It was palpable by rectal examination and suggested strongly a distended bladder. The mass was, however, freely movable, it being possible, without undue force, to manipulate it about the entire abdomen. There was a fairly well-pronounced beading of the ribs. The pulse rate was rapid, but regular. The temperature normal. A leukocyte count gave 11,500. The von Pirquet and Wassermann tests were negative. No further significant facts were observed.

"Under restricted feeding and large enemas slowly administered, the mass spontaneously disappeared. An examination of the abdomen subsequently was absolutely negative."

The roentgenologist made an exhaustive roentgen-ray study, and concludes his report in this manner:

"Finding: A tumor mass the size of a large orange is palpated in the right upper quadrant. The bismuth injection showed the mass to be redundant descending colon. Visualized palpation reduced the tumor."

Dr. William Gerry Morgan, in March, 1917, examined the patient and found a movable tumor, with intermittent attacks of intestinal obstruction. At this time the hemoglobin was 83; red cells, 5,950,000; white cells, 11,600; polymorphonuclears, 67.5 per cent.; lymphocytes, 18 per cent. The urine contained albumin, indican, urea, 3 per cent., casts and excess of urates.

Dr. Francis Hagner saw the child in consultation, and suggested a possible cyst of the urachus.

On operation, April 4, 1917, an enterogenous tumor of the ileum was found about the size of a baseball. It was impos-

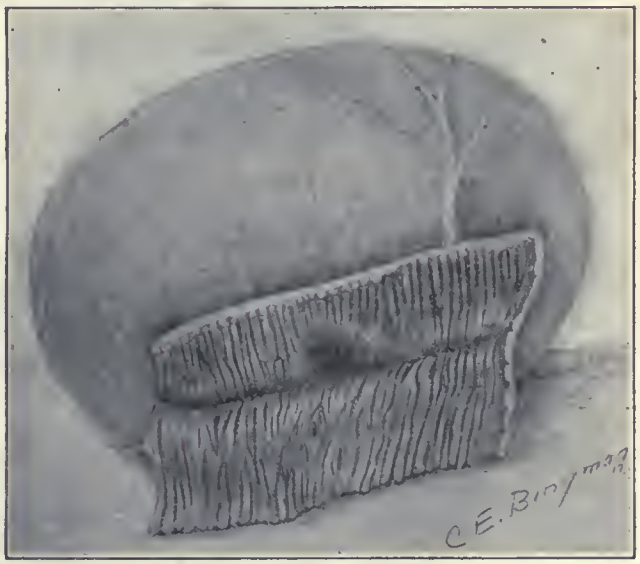


Fig. 3.—Interior of cyst.

sible to shell it out, and the only feasible operation was resection of the bowel. The child made a smooth recovery and has been well since.

Dr Lindsay reported as follows:

"Large cyst with membranous attachment, taken from the mesentery. On gross section, wall of cyst and mesentery have thickness of 0.5 cm. Cyst wall resembles similar sections of thickened intestine or stomach wall. There is a blood clot adherent to the wall internally directly opposite

2. Acker, G. N., and Copeland, E. P.: Transient Abdominal Tumor in a Child of Five Years with Redundant Colon, Am. J. Dis. Child. **12**: 602 (Dec.) 1916.

the mesenteric attachment. Sections in regions of blood clot show muscular and fibrous tissue with a hemorrhagic area corresponding to the clot. The surface is covered with a layer of fibrin containing blood cells and a narrow layer at one point in outline resembling the intestinal mucous membrane, though gland elements are not present. Sections at region of mesenteric attachment show quite well preserved layer of mucous membrane, long villi and deep crypts being definitely recognized. Beneath this is a layer of muscle. None of the sections show evidence of malignancy."

COMMENT

The symptoms were consistent with the conditions found at operation. The tumor, while not communicating with the intestinal canal, probably varied in size at times owing to the torsion produced on either side when it rotated on an axis parallel with the intestine; and the same torsion was responsible for the enteric obstruction. It may well be compared to a hammock which had been turned over, twisting its supporting ropes.

The conspicuous and significant symptoms were the resilient, freely movable tumor with intestinal obstruction of an intermittent type, a low leukocyte count, sudden onset and rapid recovery in each attack, and the age of the patient, 6 years. The roentgen ray was of no aid, but on the contrary was misleading, as the dilated colon noted in the roentgenologist's report was undoubtedly small intestine, filled by bismuth through an incompetent ileocecal valve.



Fig. 4.—Relative thickness of cyst wall.

911 Sixteenth Street.

Cleansing Arsphenamin Apparatus.—DR. JOHN B. DONALDSON, Lorain, Ohio, writes: After giving arsphenamin or neo-arsphenamin injections I always disconnect the rubber tubing and run hot water through it for a few minutes as well as washing the glassware; but I have noticed that if the connected outfit is allowed to stand with distilled water in the arsphenamin side, quite a yellow tinge develops in the water. This indicates that there may be sufficient arsphenamin or neo-arsphenamin in the container and tubing to decompose and produce a toxic reaction at the next administration unless thorough washing is done. I have recently run sterile distilled water through the outfit before using as an extra precaution. It is to be inferred that we clean the intravenous outfit before sterilizing it; but the point I wish to bring out is that the thoroughness with which it is done is more necessary than I had supposed.

THE MYENTERIC NERVE NET

A DISCUSSION

G. K. DICKINSON, M.D.
JERSEY CITY, N. J.

From biologic studies it must be inferred that the sole reason for life—vegetable, animal and human—is to continue the species, and that man's superior brain and body are for the purpose of better protecting the germ plasm as well as for social life, the pleasure of work and the joy of mental effort. We worship the mind and its products, and outwardly we suppress the instincts begotten by Nature. We might be deprived of all but the essentials, circulation, digestion and reproduction, and yet maintain the race as do the lower animals. Man lives but to propagate.

These primitive essentials, all important for life and its perpetuation, are carefully secluded and separated from the outward man, which is under the control of a wilful and highly developed nervous system: such intercommunication as exists being entirely beyond the control of the mind. The actions and functions of these three sets of organs are largely autonomic, and in the history of all time it is noted that they are the oldest.

The biology of the kinetic systems of the heart and genitalia have been well stated, but not that of the enteric system.

EMBRYOLOGY OF ENTERIC SYSTEM

About the end of the second week after fecundation, the first evidence of the stomach is found, the development of the intestine following out a definite plan of evolution. As in early life we have the stomach without the intestine, so in early fetal life we have the stomach first; then from it extends progressively the intestinal tube down to meet the hindgut. It has been evolving since the beginning of life and has felt the influence of conditions which tend to modify as well as create, so that the digestive apparatus, as a result of evolution, is the simplest and most perfect, the tissues entering into its structure being still primitive. Evolution invariably develops simplicity of structure and function in the end; and in this instance there is no exception, but a wonderful demonstration of the relation of simple tissue to the essential needs of a highly developed animal.

In the 10 mm. embryo the circular muscular layer of the intestine is first demonstrated, the longitudinal layer appearing in the 75 mm. embryo. Between these two layers from the mesenchyme is developed a syncytium out of which further develops the intestinal tract. On the inner side can be seen the spindle cell muscle extending to the circular layer, and on the outer side similar cells extending to the longitudinal layer. In this mesenchyme develop all the other tissues which go to form the structure of the intestinal wall: blood vessels, lymphatics, fibrous tissue and nerve net.

Early in embryonal life there bud out ventrally from the spinal ganglions prolongations which become the sympathetic plexus. From it, cells migrate farther inward to the intestinal tract to enter its structure. From the hind brain (the intestine being close to it in early life) there wanders a nerve which also passes to the intestine and through its walls, terminating in numerous gray ganglions approximated to the longi-

tudinal layer. Because of the wanderings of this nervous structure it is later called the vagus.

As the intestine grows from above downward, it passes by an accumulation of nonstriated fibers, which eventually go to the skin and subdermal tissues. Part of this dermal muscular mass is picked up by the intestine and carried down with it, later to be found at the three sphincter points: pylorus, ileocecal and internal anus.

We have a third type of muscular tissue developed in the intestinal tract. To understand it, we must go back again to biology. In the nine months during which the egg grows into the mature child, all the changes and steps which life has undergone in eons are recapitulated. Morphologically and histologically, we see in the developing fetus much that can be found in the lower forms of life; and by studying low life we often come to a better understanding of conditions in the human.

In the sponge, we have evidence of muscular action. The microscope discovers no nerve tissue, but a muscle cell which is neuromuscular, having the properties of irritability, contractility and conductibility. It will receive an impression, contract, and call on neighboring muscular tissue also to contract. In forms higher up, such as the anemone and starfish, we find end organs which receive impressions and filaments that look like nerves running to the muscular cell. Somewhat higher in the scale we find ganglions, so that we have a nerve ganglion connected with muscle resulting in more efficient action. This type of nerve is called neuroid.

From the processes of development and from microscopic demonstrations one would judge that the neuroid fibers developed from the muscular. Certainly with this type of muscular tissue there is a great deal in common. Keith has discovered in the intestinal tract this primitive type of neuromuscle, particularly noticeable at points of polarization: the cardiac end of the stomach, pylorus, ileocecal region and large intestine. This neuromuscular tissue is difficult to differentiate from nerve tissue.

Through the entire intestinal tract, from the beginning of the smooth fiber muscles in the esophagus to the rectum, we find a definite close mesh of what has been called nervous tissue, discovered by Auerbach and named for him. It is slender, flattened, covered by endothelial membrane and connected with the ganglions which are the termination of the pneumogastric and the terminal filaments of the sympathetic nerves. It is also connected with the neuromuscular tissue of Keith.

The deductions from Keith's work are that this plexus, or nerve net, is really a modified muscular tissue, a syncytium retaining its connections from early embryonal life, that it developed in the mesenchyme and from the mesenchyme, that it did not migrate in with the sympathetic nor with the pneumogastric nerve, and that it differs from other nervous tissue histologically, chemically, embryologically, biologically, and in innervation and staining properties.

It is analogous, if not similar, to the nerve net of the heart, which is connected with and activated by the sinu-auricular node and the bundle of His, which we know stimulate the heart action through the Purkinje fibers.

It can be seen that in the intestinal tract we have developed conditions which will permit of slow and conservative adjustment to the vegetative processes demanded of it; that we have three types of muscular tissue which are serving a different purpose, three types of nervous tissue, all coordinating and cooperating, yet independent.

PHYSIOLOGY OF THE INTESTINE

The physiology of the intestine is that of its component parts. We have, as stated before, three types of smooth muscular cells in the body, and chemically and embryologically we note the difference. In the skin, in the structures which have developed from the wolffian body and the duct of Mueller, and in the sphincters of the intestine, we have the dermal type; in the remainder of the intestine, in the heart and in the spleen, the second type; and in the neuromuscular tissue of Keith, the third. All of these have different biologic properties and physiologic actions.

All cell activity is maintained by the electrolytes circulating in the blood. The sodium in particular has the property of developing electrical forces, especially in the type of muscle cell we have under consideration. The calcium electrolyte controls the effect of the sodium salt, if too active. The several muscle cells react differently to this physicochemical process, and all tissue of this type is constantly contracting and relaxing as a result of this stimulation. It is termed embryonal because early in embryonal life, before there is any nerve tissue formed, the primitive muscle cells are contracting and relaxing. This is seen in the cardiac tube and in the primitive stomach, and biologically we find the same conditions existing in lower forms of life.

As the content of the stomach, acid in reaction, passes into the duodenum and encounters an alkaline fluid, it effervesces and becomes frothy. This increases the amount of distention and acts as an irritant to the muscle cell. Myogenic contractions occur, contractions which are independent even of the nerve net. They are slow, not forceful, and do not produce marked anemia of the substance. Then there is gentle relaxation; this process is repeated until apparently fatigue of muscle ensues; then it stops and is taken up elsewhere in the intestinal tract. This is the rhythmic movement of the physiologist. If the distention is greater, the nerve net is called into action and we have initiated the peristaltic wave, first noted by Cannon and best explained by Sherrington. In the body, when the flexor muscle is called on for action, there is an inhibitory effect thrown on the extensor in order that the flexor may act. This is true also in the intestine. If a contraction is to be instituted in any part, induced by the net, as the flow of nerve energy is always peripheral, toward the anus, there will be a relaxation of the muscles distal to the point of contraction, thus enabling the intestinal content to be more easily pushed forward.

There are times when not only the circular but also the longitudinal fibers are brought into action. This produces a peculiar motion which is termed the pendulum. The neuromuscular cells are pace makers and tonus givers. Contractility is not their only function. They serve better to transform nerve energy into muscle action at certain points. The tonus just distal to each point of polarization in this type of muscle cell is always increased. Irritability and contractility are greater. Peristaltic waves are more pronounced. A section removed from the duodenum or upper ileum

shortens itself and curls over on the edges more than a section taken farther down. Placed in proper fluid, it will retain its rhythmic contractions much longer.

In the upper intestinal tract it is a wise provision, because there the enzymes are abundant and imperfectly mixed and proper digestion and chemical changes cannot occur. The tonus is poor in the lower part of the intestine in order that there may be delay and sufficient absorption of the chyme before it passes over into the large intestine.

The tonus of the large intestine is produced by the polarization of the terminal ileum. In all animals, particularly in those that eat vegetables, the cecum has a direct ratio to the stomach in importance. It is here, in the colon, that we have instituted absorption of fluids which control dehydration and calcium metabolism. The appendix as well as the cecum is highly provided with nerve net, the pneumogastric ganglions and smooth muscle fibers, controverting in this the prevailing sentiment that the appendix is degenerating.

The sphincter muscle is a law unto itself. The pneumogastric muscle has no effect whatever on it. Irritation of the sympathetic nervous system causes its contraction, and the only thing that will open the sphincter is the passing down of a proper peristaltic wave.

The sympathetic nervous system inhibits the activities of the intestine with the exception of the sphincters. When irritated, out of the chromaffin bodies we have secreted epinephrin, the hormone of the sympathetic nervous system, and all activity of the intestinal tract is quieted. It becomes flaccid, its tone is diminished, and there is distention of its lumen from its gassy content. This may be for a period of rest, or it may develop a pathologic condition when long continued.

The vagus is the motor nerve of the intestine. Biologically and physiologically it is a nerve of wondrous action, connecting up the different vegetative viscera, keeping up a proper activity and tonus. In some of the lower animals it is the activating nerve to the electrical organs, and we can appreciate how the electrical discharges down through this nerve (because all nerve force is electrical) to the ganglions, which are distributed through the entire erve net, can induce so much tone and action.

There are times when this becomes very evident, in conditions which are known as peristaltic unrest, when the bowels are moving rapidly and continuously. If they contain gas, the noises are audible. Wave follows wave. Then, perhaps suddenly all is quiet. Again, there may be times when the sympathetic nervous system closes the sphincter, the pneumogastric nerve producing a peristaltic condition almost choreic, when for hours or days there will be a tremendous churning of the intestines. Gradually it will quiet down, the sphincter will open, and there will be the usual passage on of content.

There is a wave, appreciated only by delicate instruments, which runs down the entire length of the intestine. The veins of the intestine, as they pass through the fibrous tissue into the mesentery, are provided with valves, as are the lymphatics. Every time the intestine contracts, the blood is forced into the veins and up to the liver. Mall has studied this action very carefully, and considers that the intestine is the heart or circulatory organ of the liver, and the lymphatic system of the intestinal tract. In order that there may be circulation of blood and of lymph when the intestine is apparently quiescent, this wave, which comes down the entire length of the intestinal canal, acts and is a reminder of the primitive heart.

PATHOLOGIC CONDITIONS

In 1705, Hook published a work in which he suggested that it may be possible to discover the motions of the internal parts of the body by the sounds they make. Cannon, it is said, used to retire with his stethoscope on his abdomen, going to sleep listening to the sounds and studying them. Some of our writers state that auscultation of the abdomen is valueless and nothing important is heard or discovered; but I have made it a point for a number of years to auscultate every abdomen that has any enteric process. Generally, little of value is heard; but there are times when conditions are noted which are of immense importance. Conditions of peristaltic unrest are not understood except through auscultation. Simulations of intestinal obstruction can be differentiated only in this way. The atonic state of the intestine, so common in women, will give us sounds that are a clue to the condition existing.

When there seems to be a true ileus, when we have a case of "acute abdomen" in which we suspect obstruction, frequent auscultation is of much value. As soon as we hear a tinkle, then we should feel quite sure that an operation will be demanded, or if on putting the ear just above the pubes, we hear the heart sounds as distinctly as at the epigastrium, there should not be an hour's delay. It is possible that by frequent and studied observation of the sounds of the abdomen more points of importance may be discovered.

The myenteric net, being partly nerve tissue and partly neuromuscular, and being indirectly connected with the nervous system, is completely autonomic. It is a separate nervous system, controlled to a certain extent and kept within bounds of energy action by the sympathetic nervous system on the one side and by the motor nerve, the vagus, on the other. Most of the work the intestine is called on to perform is accomplished through the nerve net. Stimuli coming to it from the intestine, and chemical irritations of the mucous membrane to the terminal filaments of nerve there, may pass up to the submucous plexus and then on to the myenteric net.

The activities of this net are more pronounced and more easily induced when put on a stretch—an inheritance from its ancestors in lower life. If the intestine is exposed to the air, there follows a rapid evaporation of the carbon dioxid from the contained fluids (carbonic acid being the hormone of the nerve net, the same as epinephrin is of the sympathetic, and as cholin, a derivative of lecithin, seems to be of the vagus). Without the carbonic acid in the substance of the intestinal wall, there is inactivity of the nerve net, a paretic condition lasting indefinitely, and an inability to contract against the gases formed in the intestinal lumen, working toward the condition surgically known as ileus.

The intestine is a mesial organ. It is very long, and in its development it takes on convolutions, the large intestine passing over to the right and descending, ordinarily becoming attached to the posterior wall without a mesentery, the cecum being found at the brim of the pelvis. In this region there are perhaps more defects of development than in any other part of the body. Sometimes it is an overgrowth of cecum, allowing it

to drop deeply into the pelvis, with the production of a certain amount of drag and disturbance of the sensitive polarized area at the terminal ileum.

The intestine is held in position by embryonal bands, some passing over to the colon and giving it support, others passing up on the mesentery of the terminal end of the ileum. The cecum is generally free. The stress of the upright position may occasionally convert this normal fibrous tissue into pathologic tissue, later contracting, and in its contraction disturbing the relations of the intestine and apparently interfering with its action.

The roentgenologist in viewing the upper abdomen discovers dilated duodenums, and the surgeon also has noted the frequency of this condition. Both find a correlation between it and that which disturbs the tissues at the ileocecal region, whether bands or ptosis. Every case of ceco-appendicular deformity, so called chronic appendicitis, met in my experience, has been associated with dilated duodenum, disturbed gastric action and gastric flatulence, often associated with a type of cholecystitis, and not infrequently with a spastic condition of the descending colon.

It is curious to look back into the history of this region and see how at one time we regarded these bands and attachments as being primarily pathologic. Only a year or two before the war, Lane was removing the entire colon for what he called not an anatomic but a physiologic perversion: mutilating surgery which seems today quite unnecessary; for certainly very few colectomies now take place, and those who used to exhibit their long tubes now keep them in their darkest closet.

Before attempting to relieve a person of distressing symptoms by operative means which may be mutilating, we should try to gather in our minds with great accuracy the conditions which may be the origin of the trouble, and to know the component parts of the myenteric net and their functions, as well as their pathology.

One forceful thing was recently brought out by Crile, namely, that sturdy exercising in the open, building up the musculature of the body, making it stronger by feeding it more oxygen, had a very evident effect on the intestine. Consequently there must also be some effect on the neuromuscular tissue and the nerve net.

CONCLUSION

A few generations ago the physician occupied the whole field, both medicine and surgery; then gradually the specialties developed. As medicine grew, the result of animal experimentation and growth of other sciences, specialties grew, so that now we have an overgrowth of specialization, with a tendency to build a trench around each. In all these years we have been taught of the microcosm and the interrelation of tissues; yet in our active work we practically forget it. The time has come when we must accede to the overlapping, and in our practice as well as in our writings begin to knit the different specialties together, so that practice and study may not be warped by a biased point of view. The working out of this paper was greatly embarrassed because of the fact that the embryologist paid little attention to histology, and neither he nor the histologist to physiology. Comparative anatomy was seldom referred to, yet a knowledge of them all is necessary for a proper understanding of the architecture and function of the myenteric nerve net.

280 Montgomery Street.

INTRATHORACIC HODGKIN'S DISEASE: ITS ROENTGEN DIAGNOSIS

HARRY WESSLER, M.D.
Adjunct Attending Physician and Associate Radiographer, Mount Sinai Hospital
AND
CHARLES M. GREENE, M.D.
NEW YORK

The typical case of Hodgkin's disease with its enlargement of external lymph nodes is readily recognized as such clinically. The disease assumes at times, however, clinical types which may deviate from the usual form. Uncertainty of diagnosis may then arise, especially in the cases in which external lymphomas are poorly developed or absent. We have especially in mind the cases of abdominal Hodgkin's disease, or the splenomegalic form, in which the diagnosis may remain in doubt for some time unless external lymph nodes are available for section.



Fig. 1.—Mediastinal tumor type.

In view of the known frequency of involvement of the intrathoracic lymph nodes it is not unnatural to suppose that an examination of the chest might furnish some clarifying data in these doubtful or atypical cases. When we take stock, however, of the means at our disposal for the recognition of intrathoracic Hodgkin's disease, the limitations of the ordinary physical examination become apparent. Usually only the large tumor-like masses in the chest, by their size and location, are calculated to produce symptoms and physical signs, and even these may remain latent. Further, these signs and symptoms may furnish by themselves no clue to the nature of the disease, as they are common to all forms of mediastinal or pulmonary new growth. We have accordingly availed ourselves of the roentgen-ray examination in the study of twenty-five cases of Hodgkin's disease in order to determine the frequency of intrathoracic involvement and especially to ascertain whether the roentgenogram offers anything characteristic which may be of help in the diagnosis of doubtful and atypical cases.

In the first place, changes within the chest in cases of Hodgkin's disease are found with great frequency. Thus in the twenty-five cases reported, distinct evi-

dence of enlargement of the intrathoracic nodes or involvement of other lymphatic tissue was invariably found in the roentgenogram. It should be emphasized at this point that by enlargement of the bronchial nodes is to be understood, not the adenopathy normally and



Fig. 2.—Infiltrative type.

regularly found in adults, but rather an alteration in the size, shape and density of the shadows which leaves no doubt as to the existence of disease.

TYPES OF INTRATHORACIC HODGKIN'S DISEASE

The changes which we have noted on the chest plates of cases of Hodgkin's disease may be classified under four types, the significance and frequency of which will be indicated.

1. *Mediastinal Tumor.*—Thoracic Hodgkin's disease may appear on the roentgen plate typically as a mediastinal tumor. Large massive shadows are seen extend-



Fig. 3.—Isolated foci in right and left lungs; large bronchial nodes and paratracheal nodes.

ing outward from the mediastinum into the lungs; they have smooth or lobulated borders and show little or no evidence of the individual component lymph nodes (Fig. 1). Such shadows were present in eight of the cases. By themselves they offer nothing characteristic of Hodgkin's disease and cannot be distinguished from other mediastinal growths, such as lymphosarcoma.

2. *The Infiltrative Type.*—In this form of Hodgkin's disease the lymphomatous tissue appears to invade the neighboring lung very much as a malignant neoplasm (Fig. 2). It is doubtful whether this is a true invasion of the lung; it is not improbable that in this form of the disease there is a diffuse transformation of the intrapulmonary lymphoid tissue into granuloma. However, on the roentgen plate the borders of the apparently infiltrating mass are indistinct and irregular and appear to grow into the lung. This is an infrequent form of the disease, and it occurred in only four cases.

3. *Isolated Nodules or Metastases in the Lung.*—In a small number of cases there are seen in the pulmonary fields, and having no connection with the mediastinum, circular or oval shadows of moderate density. They are usually small, from one to several centimeters in diameter. By themselves, they are not to be distinguished from metastatic new growths in the lungs (Figs. 3 and 4).



Fig. 4.—Large right bronchial nodes; small isolated deposits in right upper lobe and in left lower lobe; large substernal thyroid.

The invariable presence, however, of lymphomatous masses at the roots of the lungs, next to be described, usually renders possible their recognition as a form of Hodgkin's disease. This type was found in four cases, always in association with one of the other forms of the disease. In accordance with the commonly accepted belief, these shadows do not represent true metastases, but are rather autochthonous foci developing in preexisting pulmonary lymphoid tissue.

4. *Discrete Nodes at the Roots of the Lungs.*—The most common form of Hodgkin's disease of the chest is the analogue of the external glandular enlargement and consists, like it, of masses of more or less discrete nodes at the roots of the lungs. It was present in seventeen cases. On the roentgenogram it provides, in typical cases, some points of distinction from other forms of adenopathy.

The shadows extend often for a considerable distance from the roots of the lungs, and individual nodes or groups of nodes retain their outline. It is characteristic of the shadows that they are faint; and in

this respect they differ from those of new growth and tuberculosis. They are particularly distinguishable from the latter by an absence of caseation and calcification. Tuberculous nodes, when they have achieved the size of those found at the hilum in Hodgkin's disease, are invariably cheesy, and the shadows are irregular and of great density. For this reason, large lobulated shadows at the roots of the lungs which are faint and homogeneous raise a strong presumption of Hodgkin's disease, a presumption which will be strengthened if there are found outlying deposits in the lungs, such as were described under Type 3. The various groups of nodes may be involved, the bronchial, bifurcation or bronchopulmonary (Figs. 4, 5, 6 and 7). Of greatest interest, however, is an involvement of the right paratracheal nodes which occurs so frequently in Hodgkin's disease as to acquire a major importance in the diagnosis. It occurred in no less than fourteen cases, either alone as a solitary manifestation of intrathoracic disease or, as was usually the case, in association with the other forms of the disease previously described (Figs. 3, 5 and 7).



Fig. 5.—Large lymphomatous mass at the root of the right lung; very large paratracheal nodes; case clinically simulated splenic anemia.

ENLARGEMENT OF PARATRACHEAL NODES

Enlargement of the paratracheal nodes is such a relatively rare phenomenon in intrathoracic disease as to warrant a slight digression at this point. Normally there is found on the right side of the trachea, just above the eparterial bronchus, a small group of lymph nodes. Owing to their deep situation, when they become enlarged they cannot be felt by palpation, nor do they produce physical signs. A moderate enlargement of these nodes, however, becomes noticeable on the roentgenogram by the production of a characteristic shadow. It is remarkable that the paratracheal nodes rarely participate in the enlargement of other groups of intrathoracic nodes. In a large number of cases of pulmonary and mediastinal new growths which have come under our observation, the paratracheal nodes were involved only once, and in this case they were only slightly increased in size. In pulmonary tuberculosis in adults in whom the bronchial nodes are usually affected, we can recall perhaps two or three cases of many thousands in which the paratracheal nodes were involved. In infants and children, on the contrary, these nodes are more often affected by the tuberculous process, and they may then achieve a considerable size and give rise to dyspnea and stridor.

In Hodgkin's disease, these nodes appear on the plate as an oval shadow situated always to the right side of the trachea, in the upper mediastinum and below the



Fig. 6.—Large masses of nodes at both roots, on the left side extending beyond the left border of the heart; small paratracheal nodes.

sternal end of the clavicle. It varies in size from that of an almond to a hen's egg, and it is homogeneous in density.

We believe that the great frequency of involvement of these nodes in Hodgkin's disease, occurring in more than 50 per cent. of our cases, and its great rarity in other diseases with which it may be confused, may be of value in the diagnosis of obscure cases. We have in mind particularly those cases of splenic and abdominal Hodgkin's disease in which external glandular enlargement does not appear prominently in the clinical picture. A case of this type is illustrated in Figure



Fig. 7.—Large paratracheal nodes; lymphoma at the right root; small isolated foci in the right upper lobe.

5, in which the enormous spleen overshadowed the few cervical lymph nodes and simulated a splenic anemia.

The paratracheal nodes may be involved relatively early in the disease. On the other hand, they may persist after treatment when practically all other lymph nodes have receded. In a recent case, in which a small

recurrence developed at the angle of the jaw several years after apparent cure by roentgen-ray treatment, the plate showed the paratracheal nodes enlarged to the size of a walnut.

CONCLUSIONS

1. A large percentage of the cases of Hodgkin's disease have demonstrable intrathoracic lymphomas.
2. Although the roentgenogram in some cases presents nothing characteristic, in a considerable number a distinction from other forms of new growth or glandular enlargement can be made.
3. There is a frequent and unique enlargement of the right paratracheal group of nodes which occurs only rarely in other diseases.
4. In doubtful or atypical cases of Hodgkin's disease, the roentgen-ray examination of the chest may help to establish the diagnosis.
5. Roentgen-ray examination of the chest should be performed in all cases, before they are pronounced cured after treatment.

30 West Seventieth Street—1 East One Hundredth Street.

HEMOLYTIC STREPTOCOCCI IN THE NORMAL THROAT AFTER TONSILLECTOMY *

H. B. VAN DYKE, S.B.

CHICAGO

The rôle of hemolytic streptococci, especially as secondary invaders in such diseases as influenza, lobar pneumonia and measles, has been constantly emphasized in the reports of civil and military medical observers during the last two years. Hence it is a matter of importance to learn of the distribution of these organisms in normal throats under various conditions.

While most observers believe that the tonsils are often the site of growth of these organisms in normal throats, some maintain that even in normal throats the tonsils are practically always infected with hemolytic streptococci. There have recently been a number of reports of the incidence of hemolytic streptococci in normal nontonsillectomized throats as well as in throats after tonsillectomy. However, the results of many of these observations do not have much comparative value because of the failure of the investigators to include technical details in their reports. In 1906, Ruediger[1] found hemolytic streptococci in about 59 per cent. of normal throats, and Smillie[2] in 1917 reported very nearly the same proportion (50 per cent.). Since 1917 there have been many reports. Fox and Hamburger,[3] and Levy and Alexander[4] found that about 15 per cent. of recruits and about 83 per cent. of men who had been in service for some months were *Streptococcus hemolyticus* carriers, as shown by throat cultures. Surface smears from the tonsils and throats under various conditions have shown hemolytic streptococci to be present in normal throats in varying proportions of cases: Seventy per cent. were found positive by Irons and Marine;[5] 6 per cent. by Cumming, Spruit and Lynch;[6] 28 per cent. by Nichols and Bryan;[7] 22.5 per cent. by Opie and his co-workers;[8] 44.5 per cent. by Blanton, Burhams and Hunter;[9] 47 per cent. by Simmons and Taylor;[10] 58 per cent. by Pilot and Davis;[11] and 57 per cent. by Tongs.[12] Blake[13] reports that in the absence of streptococcus epidemics less than 10 per cent. of normal men in army camps harbor hemolytic streptococci in their throats, but that this proportion is increased by from 300 to 400 per cent. during streptococcus epidemics. It has also been shown that only cultures of the crypts of excised tonsils may reveal the organisms. Nichols and Bryan[7] obtained positive crypt cultures in 75 per cent. of excised tonsils. Pilot and Davis[11] found that while hemolytic streptococci could be detected by surface swabbings of the tonsils in 61 per cent. of their cases, crypt cultures of the same hyperplastic tonsils after excision showed 97 per cent. to be infected by the organism. Similarly Tongs[12] pointed out that surface cultures of unexcised tonsils showed hemolytic streptococci in 60 per cent. of the cases, and that crypt cultures showed the organism in 83 per cent. of the same tonsils. Hence it is probable that in normal tonsils and throats hemolytic streptococci occur in even higher proportions than have been indicated.

The proportion of hemolytic streptococci in normal throats after tonsillectomy has been reported as being 13 per cent. by Nichols and Bryan;[7] 23 per cent. by Simmons and Taylor;[10] 15 per cent. by Pilot and Davis;[11] and 5 per cent. by Tongs.[12] All investigators who have examined throats after tonsillectomy agree that such throats harbor far fewer hemolytic streptococci than nontonsillectomized throats. I wish to report some observations on the incidence of hemolytic streptococci in the throats of tonsillectomized individuals in good health (Table 1).

TECHNIC

All throat cultures were thus made: A sterile cotton swab was gently but thoroughly rubbed against the walls of the tonsillar spaces, over the pharyngopalatine arch and the posterior wall of the pharynx, and at once used to inoculate an enrichment broth. This consisted of from 5 to 6 c.c. of plain broth (made with 15 gm. of Fairchild's sugar-free culture peptone, 5 gm. sodium chlorid, and distilled water sufficient to make 1,000 c.c.), to which had been added from 6 to 8 drops of defibrinated goat's blood. The organisms were cultivated for twenty-four hours in the enrichment broth, after which surface smears were made on 1.7 per cent. agar containing about 10 per cent. of defibrinated goat's blood, and shake cultures were prepared by

* From the John McCormick Institute for Infectious Diseases.

1. Ruediger, G. F.: Streptococci from Scarlatinal and Normal Throats, J. Infect. Dis. **3**: 755, 1906.
2. Smillie, W. G.: Studies of Beta Hemolytic Streptococci, J. Infect Dis. **20**: 45 (Jan.) 1917.
3. Fox, Herbert, and Hamburger, W. W.: The Streptococcus Epidemic at Camp Zachary Taylor, Ky., J. A. M. A. **70**: 1758 (June 8) 1918.
4. Levy, R. L., and Alexander, H. L.: Predisposition of Streptococcus Carriers to the Complications of Measles, J A. M. A. **70**: 1827 (June 15) 1918.
5. Irons, E. E., and Marine, David: Streptococcus Infections Following Measles and Other Conditions, J. A. M. A. **70**: 687 (March 9) 1918.
6. Cumming, J. G.; Spruit, C. B., and Lynch, Charles: The Pneumonias: Streptococcus and Pneumococcus Groups, J. A. M. A. **70**: 1066 (April 13) 1918.
7. Nichols, H. J., and Bryan, J. H.: The Tonsils as Foci of Infection in Streptococcus Hemolyticus Carriers, J. A. M. A. **71**: 1813 (Nov. 30) 1918.
8. Opie, E. L.; Freeman, A. W.; Blake, F G.; Small, J. C., and Rivers, T. M.: Pneumonia at Camp Funston, J. A. M. A. **72**: 108 (Jan. 11) 1919
9. Blanton, W. H.; Burhams, C. W., and Hunter, O. W.: Studies in Streptococcus Infections at Camp Custer, Mich, J. A. M. A. **72**: 1520 (May 24) 1919.
10. Simmons, J. S., and Taylor, R. E.: Bacterial Carriers in the Upper Respiratory Tract, J. A. M. A. **72**: 1885 (June 28) 1919.
11. Pilot, I., and Davis, D. J.: Hemolytic Streptococci in Faucial Tonsil and Their Significance as Secondary Invaders, J. Infect. Dis. **24**: 386 (April) 1919.
12. Tongs, M. S.: Hemolytic Streptococci in the Nose and Throat, J. A. M. A. **73**: 1050 (Oct. 4) 1919.
13. Blake, F. G.: Relation of Streptococcus Hemolyticus Carriers to Streptococcus Epidemics in the Army, Ann. Otol., Rhinol. & Laryngol. **28**: 361 (June) 1919.

inoculating and plating at 45 C. tubes of blood agar of similar composition. Like Tongs,[12] I found a somewhat larger proportion of hemolytic streptococci by the shake method than by the surface smear method. The plates were cultivated and observed for forty-eight hours. Organisms from hemolytic colonies when present were inoculated into plain broth, made as described, and after twenty-four hours' cultivation were again plated in blood agar by the shake method to observe the purity and hemolytic action of the strain. At the same time the staining

TABLE 1.—EXAMINATION FOR STREPTOCOCCUS HEMOLYTICUS

Case No.*	Age	Occupation	Time Since Removal of Tonsils	Result of Examination**
1†	25	Medical student	6 months	+β
2	31	Physician	3½ years	+α′
3†	23	Medical student	8 months	+β
4	24	Medical student	9 years	+α′
5	24	Medical student	2 months	—
6	26	Physician	3 months	—
7	24	Housewife	4 months	+α′
8	26	Medical student	7 months	—
9	24	Medical student	2 months	+α′
10‡	29	Physician	2 years	—
11	25	Medical student	11 years	—
12	27	Physician	6 months	+α′
13†	26	Physician	6 months	+β
14	26	Physician	6 months	+α′
15	25	Medical student	10 months	+α′
16	25	Physician	3 years	—
17	26	Physician	2½ years	+β
18	25	Physician	3½ years	—
19	24	Physician	2½ years	—
20†	23	Medical student	10 months	+α′
21	21	Medical student	1 year	+α′
22	23	Medical student	2 years	—
23	23	Medical student	—	—
24	24	Physician	7 months	—
25	33	Physician	5 years	+α′
26	22	Clerk	—	+β
27	24	Medical student	2 years	—
28	20	Formerly a sailor	1 year	—
29	31	—	2 years	—
30†	24	Medical student	9 days	—
31	22	Medical student	6 months	—
32	24	Medical student	7 months	—
33	25	Medical student	8 months	+β
34	11	School-girl	2 months	—
35	12	School-girl	2 months	—
36	26	Physician	4 years	+α′
37†	12	School-boy	2 weeks	+β
38	7	School-girl	3 months	+β
39†	24	Medical student	7 months	+α′
40	24	Medical student	2½ years	+α′
41§	22	—	5 years	+α′
42	28	Medical student	2 years	—
43	23	Medical student	1¼ years	+α′
44	27	Physician	2 years	—
45	27	Physician	6 months	—
46	16	Student	7 years	—
47	22	Medical student	9 years	—
48§	23	Medical student	12 years	—
49†	22	Student	8 years	—
50	21	Student	10 years	—
51	20	Student	4¼ years	—
52	22	Student	3 years	—
53	24	Student	15 years	+α′
54	21	Student	5 years	—
55	19	Student	7 years	+β

*Cases 7, 34, 35, 38 and 55 were female, all others were male. The general condition of all was good.

** In this column +β indicates presence of streptococcus hemolyticus β; +α′ presence of S. hemolyticus α′ and — negative results.

† Throat somewhat inflamed.

‡ Lingual tonsil present.

§ Some regeneration from tonsillar remnants.

reactions and morphology of the broth cultures were studied. From the same broth cultures, blood agar slants of 1.7 per cent. agar containing about 5 per cent. of defibrinated goat's blood were inoculated and kept at a temperature of 37 C. for twenty-four hours, after which they were sealed with paraffin and corks and placed in an ice-box for later use in fermentation tests.

The hemolytic streptococci found were gram-positive organisms which in broth formed chains of from five to sixty cocci, each strain forming chains of approximately the same length. Definite differences in the size of the individual cocci were common. On blood agar were noticed chiefly two types of colonies: one markedly hemolytic, the individual colonies being surrounded after twenty-four hours by a hemolytic zone from 2 to 4 mm. wide, and another considerably less hemolytic, its surrounding hemolytic zone being less clear and usually only about 1 mm. wide. Microscopic examination of these colonies under low power revealed the fact that, while all of the corpuscles in the hemolytic zone of the first type of colonies were completely hemolyzed, hemolysis was not quite complete in the hemolytic zone of colonies of the second type, and at the same time the corpuscles which were not hemolyzed were little discolored. The first type of colony resembled that described by Brown[14] as the colony of the Beta (β) type of hemolytic streptococcus, the second resembled Brown's[14] Alpha prime (α′) type of hemolytic streptococcus. The organisms are so designated. After cultivation in the enrichment medium almost always there was a great preponderance of either the Alpha prime or the Beta type of organism when either was present.

FERMENTATION TESTS

In the performance of the fermentation tests, one loopful of a twenty-four hour broth culture of hemolytic streptococci from preserved blood agar slants was transferred to from 1 to 2 c.c. of the carbohydrate broth (plain broth as described, to which was added, each to the amount of 1 per cent., 5 per cent. litmus solution and carbohydrate). No raffinose was available. Observations were made over a period of eight days, although the fermentation reaction was practically always plain after three days. Twenty-one strains were tested by the fermentation reactions, and the results are illustrated in Table 2.

TABLE 2.—RESULTS OF FERMENTATION REACTIONS

Number of Strains	Glucose	Lactose	Maltose	Mannite	Plain	Saccharose	Salicin	Inulin
8	+	+	+	—	—	+	—	—
13	+	+	+	—	—	+	+	—

COMMENT AND CONCLUSIONS

In the series of tonsillectomized throats of individuals in good health it was found that in nine, or 16.4 per cent., there were markedly hemolytic streptococci. In sixteen, or 29 per cent., of the throats were the less markedly hemolytic streptococci resembling Brown's[14] Alpha prime type. Thirty, or about 55 per cent., of the throats examined revealed no hemolytic streptococci. There seemed to be no significance in the time elapsing between the removal of the tonsils and the bacteriologic examination of the throat for hemolytic streptococci. In several of the cases the Beta type of hemolytic streptococci was present in the absence of clinically visible changes in the throats. The fermentation reactions of these streptococci were typical of hemolytic streptococci. According to the classification of hemolytic streptococci by fermentation reactions as suggested by Holman,[15] the organisms tested would be divided into two groups, *Streptococcus anginosus* (fermenting lactose but not mannite and salicin) and *Streptococcus pyogenes* (fermenting lactose and salicin but not mannite).

The method employed in this work differs from that of most investigators in that a routine preliminary cultivation of the throat cultures in blood broth was made. While some reports mention streptococci whose

14. Brown, J. H.: The Use of Blood Agar for the Study of Streptococci, Monograph 9, Rockefeller Institute for Medical Research, 1919.

15. Holman, W. L.: Classification of Streptococci, J. Med. Res. 34: 377, 1916.

hemolytic action is incomplete (Alpha prime type), none give very definite data on the proportion of such organisms. The Beta type of hemolytic streptococcus is probably the type referred to by most authors as hemolytic. Hence my findings, namely, that 16.4 per cent. of the tonsillectomized throats harbored markedly hemolytic streptococci, while higher than those of Tongs[12] and lower than those of Simmons and Taylor,[10] agree quite closely with the observations of Nichols and Bryan,[7] and Pilot and Davis.[11]

THE REHABILITATION OF A MEDICAL RESERVE FOR THE ARMY*

SANFORD H. WADHAMS, M.D.
Colonel, M. C., U. S. Army

AND

ARNOLD D. TUTTLE, M.D.
Colonel, M. C., U. S. Army

WASHINGTON, D. C.

The United States Army is now facing what may appropriately be characterized as a period of critical transition. Demobilization of the vast war machine built up during the past two years has been more or less successfully accomplished.

The permanent personnel of the regular establishment would welcome a speedy return to a peace time basis and the development of a military organization capable of functioning efficiently. In one of the hearings before Congress, not long ago, some one tritely remarked that nearly every permanent officer these days is carrying about in his pocket an army reorganization bill — the figment of his own fertile imagination. It is to be hoped and confidently can be predicted that the Congress, by avoiding the "extremists," will hit on a happy medium and enact a law that will permit the army to develop along the lines which the experience gained in the world war has demonstrated will best meet the needs of our national ideals. What is most earnestly to be hoped for is a law which will provide the framework of a real military policy—that will-o'-the-wisp which has always eluded us. Even an imperfect plan is better than none at all. Nations, like individuals, require a goal at which to aim. As a nation we have for a moment had a vision which has fired us to supreme effort. Are we going to lapse back into the old habit of drifting with the current, or are we going to remember the thousands of young men we have left behind in France and turn our thoughts to a constructive program which, if it does not keep us out of wars in the future, will at least prevent the needless sacrifice inseparable from our chronic state of unpreparedness?

Diligent efforts are being made by our national legislators to get at the meat of the nut and formulate a basic military law embodying as many as possible of the good features developed by our experience in the world war, and eliminating, or at least trying to eliminate, such defects as have been demonstrated.

"In time of peace prepare for war" still holds good. We fervently hope that the present generation has seen the last of war on a big scale. Nevertheless, we are not prepared to admit that the millenium has arrived or that an army's usefulness, in spite of its *raison d'être,* terminates with a war, although a study of our military history would indicate that that belief is very generally held. An individual applying the same reasoning would discontinue all life insurance on recovery from a dangerous illness on the theory that all risk of death had passed. From out the welter of the past few years the one fact which must have been impressed on the mind of every American is the utter folly of ignoring the basic principles of national preparedness and national defense, and calmly awaiting a declaration of war before attempting even to assemble, train, equip and properly classify and distribute the enormous number of men called to the colors. Such a policy pursued long enough will certainly result in our undoing. We cannot always hope to find some other nation willing to step into the breach and hold off the foe for years while we fumble and grope, legislate and investigate, waste human lives because we have no clothing or blankets, and spend billions of dollars without visible result in a belated and frenzied rush to prepare. Constructive legislation is rendered increasingly difficult after each war. War loans place a heavy burden of taxation on the citizen, and therefore public expenditures must be curtailed. For many years before the late war, army appropriations were rather less than 10 per cent. of the interest now being paid on our war debt. Tax payers grumble but accept the situation philosophically, never pausing to analyze the matter sufficiently to see that a more generous and broad-minded treatment of the question of national defense in the past would in all probability have obviated the necessity of raising billions on billions of money to prosecute the war just ended.

Today all branches of the military service are confronted with important and pressing problems, on the wise solution of which our national safety in the future may rest. It is proposed in this paper to present two of these problems which, while of moment to the whole military establishment, are vital to the Medical Department.

FIRST PROBLEM: ESTABLISHMENT OF ADEQUATE REGULAR MEDICAL CORPS

The Regular Medical Corps must be recruited up to its full authorized strength. More than 700 vacancies now exist. Under present conditions of pay and promotion, an Army commission seems destined to go begging. Compared with the rewards now enjoyed by his brother practitioner in civil life, the career of his military prototype is one of relative renunciation. It is freely granted that service conditions must be made much more attractive for the embryo military officer. As a result of legislation probably to be enacted during the present session of Congress, in the matter of increase in pay and allowances and speedier promotion (Captain after three years' service), it is believed that we may soon be able to hold out to prospective candidates sufficient inducement for them to join the regular corps. An additional incentive, the details for the practical application of which are now being studied and developed in the Surgeon-General's Office, and which was recently commented on editorially in THE JOURNAL,[1] will be a provision whereby properly qualified men in Class A medical schools, on

* Note, Jan. 16, 1920.—Time mellows all things. Since completion of this article, sentiment among the Medical Reserve seems to have undergone a very decided change for the better, if the number of applications for commission now pouring into the War Department can be accepted as a criterion. At this date a total of 8,000 Medical Reserve officers have already been enrolled, and in addition there are about 4,000 applications on hand awaiting action.—The Authors.

1. Securing Officers for the Army Medical Corps, editorial, J. A. M. A. 73: 1845 (Dec. 13) 1919.

the termination of their fourth year of study, can be offered internships, carrying pay, in our larger military hospitals—this with a view to affording them opportunity, while finishing their hospital year, of gaining an insight into the different phases of military life and thus making the appointment a stepping stone to a commission in the regular corps. Furthermore, the day may not be as remote as one might at first think when we shall have to resort to some form of governmental subsidy for the education of such medical students as may elect military careers on the termination of their classical courses, and decide to qualify as medical officers of the army under the financial assistance provided for them by the government. With the Medical Corps of the permanent establishment up to its full authorized quota, our peace time obligations can be met.

SECOND PROBLEM: ESTABLISHMENT OF AN ADEQUATE MEDICAL RESERVE

The second and more important problem has been made the title of this paper. The number of names on the present roster of the Medical Reserve Corps is far from satisfactory. From our experience in the recent war, it is obvious that it must be built up in time of peace to a point far beyond that ever achieved by us in the past.

What are the prospects? Under present conditions we are constrained to confess that they are not very bright. Let us briefly review some of the causes which lead us to entertain such a pessimistic conclusion.

During the war there were enrolled in the army approximately 30,000 medical officers from civil life. Prior to his discharge, each officer was requested to signify his desire with regard to accepting a commission in the Medical Section of the Officers' Reserve Corps on the inactive list. Excluding some 1,500 officers still in temporary service, the latest figures at hand reveal that only 5,000 medical officers from civil life who saw active service during war at home or abroad have so far elected further affiliation with our army reserve. Of this number, when appointments were eventually sent out, about one third declined and returned the commissions offered them. To be exact—to date (Dec. 1, 1919) 3,787 acceptances and 1,261 declinations have been received.[2]

In one representative list of declinations taken at random from the files of the Surgeon-General's Office and containing 327 names, the commissions sent out but declined were: two in the grade of lieutenant-colonel, fifty-five major, 181 captain, and eighty-nine first lieutenant. (In this connection it is of interest to note that approximately one sixth of these commissions offered but declined were in field grades.) From the foregoing, it will be seen that thousands of experienced medical officers have been discharged and returned to their practices in civil life, leaving behind them in the minds of their former military associates no question of doubt as to the keenness of their desire for an absolute divorce from the military service. Many have left us with nothing but an expression of the bitterness in their hearts. Dissatisfaction over their lot while serving with the colors is common.

In justice to them it should be said that while combat activities were on, they served bravely and patiently even while smarting under what appeared to be injustice and lack of appreciation. With their duty to the country fulfilled in fullest measure of devotion, a wave of revulsion swept over many of those about to be discharged. Immediately following the armistice, universal discontent and dissatisfaction became rampant among the reservists. Some spared no pains to voice their indignation and disgust at the lot which fell to them during the war and the situation in which they found themselves when the armistice anticlimax overwhelmed them. Disappointed, their sole aim was to get out of the army as quickly as possible and forget it.

In the matter of securing initial commission and subsequent promotion, "political influence," "wire pulling" and "peanut politics" were openly charged. As one man put it, "Why shouldn't a man become disgusted when he was made to realize that 'pull and bull' won out over patriotism and efficiency in the matter of securing commissions and promotion."

While in some respects the foregoing typical statements are somewhat far fetched, the basic causes of the discontent now pervading the ranks of our ex-reservists are clearly understood and deeply deplored by those in the regular service. There is a psychologic and pecuniary foundation that requires no further discussion here. The fact remains that a commission in the Medical Section of the Officers' Reserve Corps at this time seems to be unattractive to the majority of physicians in civil practice.

Even among those who do not harbor any ill feeling over their treatment in the army during the war—and they, we feel confident, constitute the majority—a statement frequently heard is that commissioned status on the reserve list as now provided for carries with it no special prestige or advantage, but on the contrary, certain restrictions or obligations that the average medical man in civil life prefers not to assume. Furthermore, he will tell you it was amply demonstrated in the recent war that when the country needed medical officers they promptly responded, no matter what the personal sacrifice may have been, and that they all continue to remain sufficiently loyal and patriotic to respond in the future to any call of the nation for aid in time of actual hostilities. At any rate, he is "fed up" on the army and turns a deaf ear toward any proposition which would necessitate any further interest in it.

Many of them cite or dwell at length on the fact that the older officers—in point of service—of the Reserve Corps who joined the colors at the beginning of the war found themselves after several years of faithful and efficient service returning to their homes junior in rank to medical officers who had not joined the reserve in time of peace and did not do so until the war was well along. In fact, the recriminations now being directed at this phase of the civilian medical practitioners' military service have a very considerable basis in fact and constitute the crux of the whole question. How this situation arose will not be discussed here. It is well, perhaps, to point out that the administrative difficulties of hastily expanding a corps of about 400 officers to one of 30,000 under the confusion of rapid preparation for war are very great.

When it is borne in mind that the public is apathetic in time of peace toward any measure of military preparation, and that it had been impossible to secure legislation outlining a military policy to meet such an emergency, it it not surprising that mistakes and injustices occurred. They always have occurred and they always will occur until such time as a definite plan for the mobilization of the nation can be worked out

2. See Footnote, p. 450.

and put into effect before the emergency is on us. It is illuminating and extremely significant to observe that the reserve officer places this item of relative rank high up among the desiderata meriting consideration, and accords to it practically as much importance as does the regular army man. This is a psychologic factor which must be given due weight in attempting to devise a corrective for the condition now existing.

For purpose of illustration let us assume that in time of emergency two practitioners in the same community volunteer their services. Both receive commissions as first lieutenants and both perform equally meritorious service. When their services are no longer required, both return to their homes to resume practice; one, however, is now a lieutenant-colonel, while the other is still a first lieutenant. If it happens that the latter is the older and had become a member of the Reserve Corps before the war, attended camps of instruction, etc., his feelings can be better imagined than described. Obviously there must be something radically wrong with any system which can permit such injustice to occur.

A just promotion policy had not been formulated in time of peace. Moreover, such a policy could not have been worked out for the reason that we had no basic military policy on which our war effort was to be built. Such a policy can be elaborated and enacted into law only by the government, and this each succeeding administration has failed to do. It is one of the saddest commentaries on this lack of a policy providing for preparation in time of peace that so many of those splendid medical men serving at the front with combat troops during the war receive little or no recognition in the way of promotion for hard and dangerous duty well done. Many of them rendered brilliant service throughout all the battles participated in by the American Expeditionary Forces and found themselves still in their original grades when the war ended. Others, firm in the belief of the holiness of the cause, made the great sacrifice. Undying glory and honor have been brought to the medical profession. While it was a great privilege to have been permitted to serve, we shall have failed in our simple duty if we do not attempt to profit by the lessons of the war.

Not once but hundreds of time have we been told by medical officers that this subject of relative rank in the home community carries great weight with them.

It is a safe assumption that the Medical Officers' Reserve Corps as now constituted and conducted does not offer any alluring inducements to the thousands of experienced men who are returning to civil life with valuable military experience. We can ill afford to lose their sympathetic cooperation, their interest, and the knowledge they acquired in following the devious ups and downs of a military career during the past two years. And in this connection it cannot be too strongly emphasized that the Medical Corps of the Army can achieve progress in the cause of medical preparedness only as it works in cooperation with the civil medical profession of the country. The war has shown us that the problems of the former are likewise the problems of the latter. The time has passed when any country can hire men to fight its battles, and other men to salvage the human wastage of war. It is well that both the medical officer of the army and his civilian brother should meditate on this aspect of the nation in arms.

If we adhere to generalities and assume that inequality of promotion and consequent disturbance in relative rank had more than anything else to do with bringing about the existing disaffection, where lies the remedy? How can the Reserve Corps be made an instrument for preparing the civil practitioner to assume his military obligations with efficiency and justice to himself? Radical changes are necessary. As to that, the civil medical profession and the medical officer of the army are well aware. It remains, therefore, to determine on a remedy.

PROPOSED REORGANIZATION OF THE RESERVE

The Medical Corps of the Army sponsored the inauguration of the Reserve Corps idea in this country at the time when General Robert Maitland O'Reilly was Surgeon-General of the Army. Its pioneer work in having the bill of 1908 enacted was later emulated by other branches of the military and naval services. Existing legislation governing the Reserve Corps, while sound in principle, is far from satisfactory and needs amendment in a constructive fashion. Therefore, if we are again to have a happy, contented, well-balanced and proficient reserve, cooperating and working in close harmony with its parent organization, the Medical Corps of the Army must again step out and propose the establishment of a reserve system which will embody the results of experience under the original reserve act prior to and during the war, retaining its good features and eliminating its defects. Among the latter we are disposed to accord lack of provision for promotion first place.

Our proposition calls for the assistance and cooperation of the general staff at the War Department, since many of the features desired could be put into effect by that body without further recourse to Congress; but where the latter course is necessary, the enactment of such simple legislation as will permit us to arrange the list of Reserve Corps officers just as is done with officers of the Regular Corps. How can this be accomplished?

FIRST STEP: A LINEAL ROSTER FOR RESERVE OFFICERS

Place all medical reserve officers on one lineal list and thereby establish (among themselves) relative rank, just as is done in the case of officers in the regular establishment. All officers are to be commissioned in grades from colonel down to and including first lieutenant and arranged on the list in order of their rank and subsequently promoted according to seniority. The proportion between the various grades should be the same as now authorized for the Regular Medical Corps. (Present legal allowances in Medical Corps are: colonels, 3.16 per cent.; lieutenant-colonels, 5.42 per cent.; majors, 23.7 per cent.; captains and lieutenants, 67.72 per cent.)

After readjustment in rank of those now in the reserve, and of such former members of the reserve as may rejoin under this new scheme has been made as described below, all original appointments to the reserve, in peace or war, and irrespective of the age or professional standing of the applicant, shall be made only in the junior grade—that of first lieutenant—the new appointee to take his place on the lineal list at the foot of that grade. This provision would place a premium on early enrolment in the reserve and a penalty on temporizing or great delay. Once commissioned in the reserve, a young medical man's relative position on the list is established and he will always have precedence on the *peace time list* over

those subsequently joining. Let the recruit begin at the bottom while he is young, preferably just out of medical school.

However, some exceptions to this rule would have to be provided for. Any officer of the Regular Medical Corps or of the National Guard who resigns his commission or is discharged under honorable conditions should be admitted to the reserve list in the grade and with the corresponding lineal rank he held in those forces when discharged. Such increments should be carried as extra files until they can be absorbed in the annual readjustment.

In this connection it should be remembered that a medical man cannot hold two commissions. If he is a member of the reserve he must resign in order to accept a commission in the National Guard. By doing so he will create a vacancy in the reserve, to be filled by the promotion of those below him on the lineal list. If he subsequently resigns from the National Guard and desires to resume a reserve status, he should be recommissioned in the reserve in the grade and take his place on the list in the same position he would have occupied had he not left it.

HOW TO INAUGURATE THE ROSTER

1. At any time within one year after the passage of the proposed act, admit to this newly created Medical Section of the Officers' Reserve Corps, on their own application and in the highest grade occupied by them, all medical officers who served during the world war and are eligible for reserve commissions.

2. Equitably distribute the number of various grades as legally authorized, computed on the total number of officers enrolled in the Reserve Corps.

3. Redistribute grades for purposes of promotion annually, based on the total strength of the reserve at the end of each calendar year.

In the initial adjustment, it shall be provided, however, that the minimum number of field grades authorized shall not fall below the reserve on a million men, i. e., 7,000 medical officers. This proviso would permit us to start off with a reserve list of at least 221 colonels, 379 lieutenant-colonels, 1,659 majors, and the balance in captains and lieutenants. For a reserve enrolment of 14,000 medical officers, our allowance would be 442 colonels, 758 lieutentant-colonels, and so on.

With the foregoing minimum allowance in field grades, every reservist could be assured of receiving a commission in the highest grade held by him during the war; and on recommendation of the Surgeon-General, many of those not suitably rewarded by promotion during the war could now be promoted. In fact, it would assure nearly every junior officer an extra grade. As additions to the reserve were made and the list grew, there would, of course, occur a corresponding increase in the higher grades, thus creating an opportunity for further promotion.

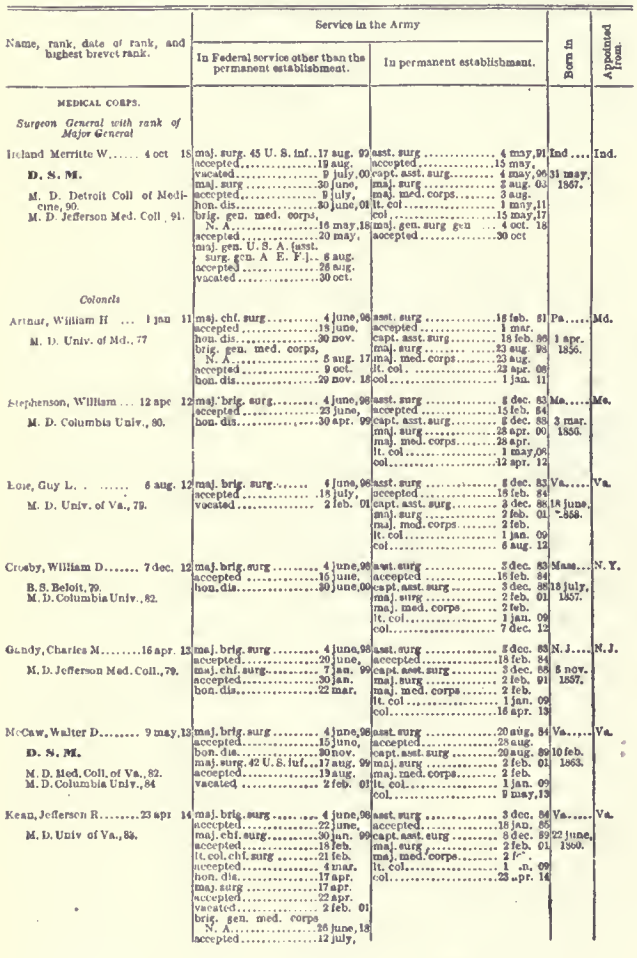
In the annual redistribution, should there be found in any year an excess of officers in the field grades, no demotions would be made, but further promotions to those grades would be suspended until the extra files had been absorbed either by eliminations in the grades showing the surplus or by additions at the bottom of the list, or by a combination of the two. In accomplishing the initial adjustment, the relative rank in each grade should be arranged, by recommission if necessary, and preferably in the order of age of the individual, with the result that older men would be placed above the younger in each grade. While this is not essential, it is highly desirable and is a good principle to follow for the reason that it would stimulate a constant flow of promotion for those officers below them on the various lists; whereas with younger men at the top, considerable blocking of promotion will result. In other words, a young man remains on the list longer than an older man, with the result that the latter passes off it without enjoying a vacancy in the grade occupied by the former. It is believed that this primary readjustment could be equitably and fairly brought about in a methodical manner to the satisfaction of all concerned. Of course, some compromise would be necessary. Only one man could be No. 1 in each grade. Some man would have to be content with remaining for the time being No. 221 on the list of colonels, and another one No. 379 on the list of lieutenant-colonels and so on down—to use an army phrase—to the "goat" lieutenant, the last man who joined the reserve.

SECOND STEP: SUBSEQUENT OPERATION OF THE ROSTER

Now let us assume that what we might term the war-time or readjustment phase in the evolution of the new Reserve Corps has been accomplished as described above. Under the proposed scheme there may have been enrolled, let us say, 20,000 of our ex-war reservists. But to take a concrete example, assume only that the 7,000 officers noted above constitute the Medical Reserve Corps when the list is first established and printed. In other words, we would have 221 colonels, 379 lieutenant-colonels, 1,659 majors, and 4,741 captains and lieutenants (any increase above the 7,000 taken as an example would result in a proportionate increase in the various grades just given). After the lapse of one year, no further initial appointments in the higher grades would be made. From that time on, all appointments would be made in the lowest grade, or that of first lieutenant, and the applicant so appointed would, according to the date of his commission, take rank on the lineal list at the foot of first lieutenants. Promotion thereafter would be made just as in the regular corps, by seniority as vacancies occur. These vacancies in the various grades would be created, for example, by death, by discharge for cause, by resignation, or when the reservist reaches the age of 64 years. This is the retiring age for regular officers, and is favored over the 59 maximum now prescribed for reserve officers. The period of one year suggested above is not arbitrary, but it is evident that a time limit must be fixed before the expiration of which all ex-medical officers must have decided whether or not they wish to hold a commission in the Reserve Corps. This period would be the time required for bringing before the medical profession of the country the approved plan for the reorganization of the Reserve Corps.

Removal of a colonel from the list through the operation of any of the reasons given above would immediately result in the promotion of the senior lieutenant-colonel, the senior major, and the senior captain. Promotion to captain would be made after three years' service, and would not depend on vacancies. One point that we particularly desire to make clear here is that through the operation of such a list as proposed by us an officer on the reserve list is in line for promotion, and would be promoted as vacancies occur, irrespective of the fact that perhaps he had never served

a single day on active duty. Under this scheme, every man takes his place on the list and is considered eligible for promotion exactly as is every other officer on that list. No limitations should be placed on eligibility for service in grades. Appointed as first lieutenant, we see no reason why an officer should not after the lapse of twenty or more years, provided he has made a faithful effort to keep up with the progress of medico-military science, be fully capable of performing the duties of a colonel, in which grade he would probably find himself at that time if this plan is accepted. The point that we particularly desire to make clear is that under this



1918. MEDICAL DEPARTMENT. 29

Name, rank, date of rank, and highest brevet rank.	Service in the Army: In Federal service other than the permanent establishment.	Service in the Army: In permanent establishment.	Born in	Appointed from.
MEDICAL CORPS.				
Surgeon General with rank of Major General				
Ireland Merritte W..... 4 oct 18	maj. surg. 45 U. S. inf..17 aug. 02 accepted.....19 aug. vacated.....9 july, 00	asst. surg.....4 may, 91 accepted.....15 may. capt. asst. surg.....4 may, 96	Ind....	Ind.
D. S. M.	maj. surg.....30 june,	maj. surg.....2 aug. 03	31 may,	
M. D. Detroit Coll of Medicine, 90.	accepted.....9 july,	maj. med. corps.....3 aug.	1867.	
M. D. Jefferson Med. Coll., 91.	hon. dis.....30 june, 00	lt. col.....1 may, 11		
	brig. gen. med. corps, N. A.....16 may, 18	col.....15 may, 17 maj. gen. surg gen ....4 oct. 18		
	accepted.....20 may, maj. gen. U. S. A. (asst. surg. gen. A. E. F.)..6 aug. accepted.....26 aug. vacated.....30 oct.	accepted.....30 oct		
Colonels				
Arthur, William H ... 1 jan 11	maj. chf. surg.....4 june, 98	asst. surg.....18 feb. 81	Pa.....	Md.
	accepted.....18 june,	accepted.....1 mar.		
M. D. Univ. of Md., 77	hon. dis.....30 nov.	capt. asst. surg.....18 feb. 86	1 apr.	
	brig. gen. med. corps, N. A.....5 aug. 17	maj. surg.....23 aug. 98 maj. med. corps.....23 aug.	1856.	
	accepted.....9 oct.	lt. col.....23 apr. 08		
	hon. dis.....29 nov. 18	col.....1 jan. 11		
Stephenson, William ... 12 apr 12	maj. brig. surg.....4 june, 98	asst. surg.....6 dec. 83	Md....	Md.
	accepted.....23 june,	accepted.....15 feb. 84		
M. D. Columbia Univ., 80.	hon. dis.....30 apr. 99	capt. asst. surg.....6 dec. 88 maj. surg.....28 apr. 00 maj. med. corps.....28 apr. lt. col.....1 may, 08 col.....12 apr. 12	3 mar. 1850.	
Lone, Guy L. . ..... 6 aug. 12	maj. brig. surg.....4 june, 98	asst. surg.....6 dec. 83	Va.....	Va.
	accepted.....18 july,	accepted.....15 feb. 84		
M. D. Univ. of Va., 79.	vacated.....2 feb. 01	capt. asst. surg.....3 dec. 88 maj. surg.....2 feb. 01 maj. med. corps.....2 feb. lt. col.....1 jan. 09 col.....6 aug. 12	18 june, 1858.	
Crosby, William D..... 7 dec. 12	maj. brig. surg.....4 june, 98	asst. surg.....5 dec. 83	Mass....	N. Y.
	accepted.....16 june,	accepted.....16 feb. 84		
B. S. Beloit, 79.	hon. dis.....30 june, 00	capt. asst. surg.....3 dec. 88	18 july,	
M. D. Columbia Univ., 82.		maj. surg.....2 feb. 01 maj. med. corps.....2 feb. lt. col.....1 jan. 09 col.....7 dec. 12	1857.	
Gandy, Charles M.....16 apr. 13	maj. brig. surg.....4 june, 98	asst. surg.....5 dec. 83	N. J....	N. J.
	accepted.....20 june,	accepted.....15 feb. 84		
M. D. Jefferson Med. Coll., 79.	maj. chf. surg.....7 jan. 99	capt. asst. surg.....3 dec. 88	5 nov.	
	accepted.....30 jan.	maj. surg.....2 feb. 01	1857.	
	hon. dis.....22 mar.	maj. med. corps.....2 feb. lt. col.....1 jan. 09 col.....16 apr. 13		
McCaw, Walter D..... 9 may, 13	maj. brig. surg.....4 june, 98	asst. surg.....20 aug. 84	Va.....	Va.
	accepted.....15 june,	accepted.....28 aug.		
D. S. M.	hon. dis.....30 nov.	capt. asst. surg.....20 aug. 89	10 feb.	
	maj. surg. 42 U. S. luf..17 aug. 99	maj. surg.....2 feb. 01	1863.	
M. D. Med. Coll. of Va., 82.	accepted.....19 aug.	maj. med. corps.....2 feb.		
M. D. Columbia Univ., 84	vacated.....2 feb. 01	lt. col.....1 jan. 09 col.....9 may, 13		
Kean, Jefferson R.....23 apr 14	maj. brig. surg.....4 june, 98	asst. surg.....3 dec. 84	Va.....	Va.
	accepted.....22 june,	accepted.....18 jan. 85		
M. D. Univ of Va., 83.	maj. chf. surg.....30 jan. 99	capt. asst. surg.....6 dec. 89	22 june,	
	accepted.....18 feb.	maj. surg.....2 feb. 01	1860.	
	lt. col. chf. surg .....21 feb.	maj. med. corps.....2 f[illegible]		
	accepted.....4 mar.	lt. col.....1 [illegible]n. 09		
	hon. dis.....17 apr.	col.....23 apr. 12		
	maj. surg .....17 apr.			
	accepted.....22 apr.			
	vacated.....2 feb. 01			
	brig. gen. med. corps N. A.....26 june, 18			
	accepted.....12 july,			

A page (reduced) from the official Army Register, 1918.

scheme a reservist may never see any active service—except such attendance at camps of instruction as he may elect—yet a steady flow of promotion is assured.

THIRD STEP: PUBLICATION OF A SEPARATE MEDICAL RESERVE SECTION OF THE OFFICIAL ARMY REGISTER

The War Department now publishes annually a compilation known as the Official Army Register. This contains the names, records, etc., of all officers of the regular army. During the war its publication was suspended, the last prewar register being issued in December, 1915. The publication of this register was resumed for the year 1918.

For those readers who have never seen an issue of this document, we might add that it is a paper covered book 9 by 6 inches and for the 1918 issue, containing the records of 10,596 officers, is 1½ inches thick. For desk and ready reference purposes, this is a handy and convenient size.

With the Medical Reserve Corps organized and conducted on a lineal list basis as proposed above, the publication annually of a separate Medical Reserve section of this official Army Register is essential. In other words, we would have issued annually the present official Army Register, one volume of which would contain the names and records of "Officers of the Regular Establishment," and one or more volumes to contain the names of officers of the Medical Reserve (no volume should exceed 10,000 names). While true that the medical officers in the National Guard are prohibited from holding a commission in the Medical Section of the Officers' Reserve Corps, they nevertheless form part of our national reserve. There would be no objection to the publication of a separate register for these officers; but as their strength, based on past records, would probably never exceed an aggregate of 1,000 medical officers (the maximum number in 1916 was only 800 officers) there is no reason why their names, rank, National Guard assignments, military record, etc., should not be incorporated in the volume, immediately following the names of officers of the medical section, Officers' Reserve Corps. In this event the proper title for the register should read:

"OFFICIAL ARMY REGISTER"
(RESERVE MEDICAL OFFICERS)

instead of:

"OFFICIAL ARMY REGISTER"
(MEDICAL SECTION—OFFICERS' RESERVE CORPS)

We see no reason why each section of the Officers' Reserve Corps should not also publish a register. For example, we would propose that there be one register also for reserve infantry officers, another register for reserve quartermaster officers, and so on to cover all of the reserve officers enrolled by the army.

We would pattern the preparation of this register of reserve officers very much after that now being used for officers of the regular establishment. To make the register generally useful we would, however, embody certain changes therein. For example, we would arrange all officers under their different grades with their relative rank in each grade indicated by serial numbers. The first page of the register would start with the colonels and be headed by the name of the officer who was number one on the list of colonels. Colonels, of course, would be followed by a list of lieutenant-colonels and so on down to the junior lieutenants.

As for the regular register, the record would show for each officer, in the first column the name, rank, date of rank, military awards, and college and university degrees with date of these. In the second column could be shown the military service, such as dates of the various commissions, etc.

In the third column could be shown the home address, specialties or nature of practice in which engaged, hospital appointments, officerships in societies, etc. In the fourth column, place and date of birth and in the fifth, state from which appointed (the foregoing all to be shown in the first section of the register).

In another section of the same register could be shown a table of the distribution by states, this to be followed by casualties, showing by name, resignations, deaths and discharges during the year. This could be followed by insertion of histories of organizations and

such other items of historical data as would prove of general or official interest. This might well include a brief history of the organizations and operations of all the sanitary organizations utilized during the world war but which have now gone out of existence.

Schedules of pay tables of the army should follow this, and lastly the general alphabetical index of all the names contained in the register. Basic laws affecting the reserve corps should be inserted in fly leaf.

This register would prove a very useful document. It would make an excellent reference record, something that we now sadly lack. During the war, regular officers in charge of large projects knew absolutely nothing of the make-up of the Medical Reserve Corps. The possession of a copy of this register would have proved invaluable to them in making selections and assignments. Every officer in the reserve should be furnished a copy of this register annually. In that way he would become acquainted with the names, relative rank and location of other reserve officers, particularly those in his own or nearby communities. It could also be placed on sale at the Government Printing Office at cost price, and made available for libraries, medical societies, etc., which would be interested in having copies for reference.

Reference to the register would definitely fix the lineal rank of every officer whose name is borne thereon just as is now possible for officers of the regular establishment. Another thing, as the years went on it would be a complete record of a man's service from the time he joined, when his name was away down on the list of lieutenants, to the present when perhaps he might be well up on the list of colonels. "Know ye one another!" So much for the book.

FOURTH STEP: TRAINING OF RESERVE OFFICERS

The training of reserve officers will be discussed in brief and only because it has some relationship to our scheme and will require careful consideration if it is adopted. If a young man joins the reserve today as a first lieutenant, and as the years go by is successively promoted through the grades of captain, major, etc., until twenty-five years hence, let us say, he is a colonel on the list, and may have attained that rank without ever having had a single day of active duty—should we remain content to let the matter rest there? Most emphatically, No! We believe that no reservist would accept promotion to a higher grade without at least making a faithful effort to keep abreast of the medico-military requirements of the grade in which he would have to serve were he suddenly ordered out in time of war to join the colors. In fact it will be necessary to *require* of all reservists some attention to training or instruction, and eliminate those who fail to attach any great importance to that end of their military status. It is safe to assume that any fair minded and conscientious reservist would demand instruction in the event that the war department did not provide and require it. But in imparting this instruction by no means should reversion to the old order of things be permitted. However, the entire subject of training of our forces has not yet been developed, and any ideas that we might advance now would be premature until we become familiar with the basic fabric on which our reorganization is to be built. In a general way, however, we might add that the Medical Department desires to maintain two schools, one at Washington which will be known as the Medical Department Technical School and in which will be taught strictly professional work, and another one to be established at some camp not yet selected and to be known as the Medical Department Field Service School, where instruction in all field matters will be given. In addition to these two schools, Medical Department personnel will also have the option of access to training camps, particularly those in which combined maneuvers are held.

At the Medical Department Field Service School we hope to maintain complete exhibits of all Medical Department units, sanitary devices, etc., with sufficient trained personnel always on hand to demonstrate their uses. For example, among many other exhibits one should be able to see there a sanitary train in operation, an evacuation hospital complete and ready to function, and at times a standard hospital train. When our educational program has been placed on a firm foundation, we should permit all reservists largely to follow their own inclination and elect the time, place and character of the course which they desire to take. With a large reserve list, all the men on it, by means of suitable questionnaires sent out at stated intervals, will be encouraged to elect the kind of work they desire to follow if called into active service. Some would elect administrative work, others mobile base or evacuation hospital instruction, and still others duty with combatant organizations.

A complete pamphlet on all Medical Department training resources should then be compiled and distributed among reserve officers. We should make these instruction centers so attractive and a residence therein so interesting that the reservist, instead of spending all of his vacation in the mountains or at the seashore, would take a part at least at one of these centers. They should be open for attendance by these officers the year round, barring, of course, climatic conditions where necessary. Then say to the reservist: "The door is open, come as often and stay as long as you like." To meet the expense item, there should be written into any basic training law a provision that any reserve officer proceeding from his home by the most direct route to the training center he elects is automatically (under his commission) placed on active duty and entitled to the legal traveling expenses, pay, etc., during the time that he is proceeding to, remains at, and is returning from the training center; the authority for such pay and allowance while under instruction not to exceed that for one month in any calendar year, but to be cumulative up to four years. This clause would enable the reservist, if he so desired, to attend the instruction center for four months on full pay once every four years or for two months every two years, in the event that he did not care to spend his annual monthly vacation in this manner.

Herein we are attempting only in a general way to state how we believe training, particularly for reserve medical officers, should be developed and encouraged. Any plan adopted would necessitate the incorporation of many details that need not be recited here. For example, at some of the centers there would necessarily have to be some check made on the attendance. A man would probably be required to write direct to the center beforehand and receive permission to come at a certain time, in order that he might be assured of accommodations.

Furthermore, we would reduce didactic instruction to an absolute minimum. Instruction should be by demonstration and actual working exhibition of the specialty in which the reservist is interested. Going through squads right, squads left, right hand salute,

left hand salute, and lining up with mess kits should be relegated to the background. Of course the reservist recruit, the man just out of college, who knows nothing of soldiering would need some instruction along these lines. In fact, he would probably be the first to suggest it. Nevertheless, we want to emphasize the fact that this feature of his instruction should be carried on only long enough to give him an insight into military requirements and to help him to adapt himself to military customs. With it, he can save himself needless embarrassment when called to the colors; without it, he would only be adding to his troubles in such a contingency.

Another point to be emphasized is avoidance of taking up too much of the student officers' time with paper work. For those men particularly interested in it, every opportunity should be extended to familiarize them with this subject; but for the average reservist we would urge very little of this work. If successful in developing our proposed Medical Service Corps, we should always in the future have an ample number of trained officers to carry on this work in hospitals and other sanitary formations and free medical officers from the necessity of devoting their time to this phase of what has heretofore been an irksome task.

FIFTH STEP: PROMOTION IN TIME OF WAR

As predicted above, for a long time to come at least we shall hope that this question will not cause us any great concern. Let us put our house in order by establishing our peace-time list on a methodical and equitable basis. The matter is briefly treated in a subsequent paragraph; but here it is desired to emphasize the urgent necessity of devising some system of promotion in time of war to protect the interests and reward the reservists who have had years of service on the peace-time list.

The adoption of our peace-time list would form a foundation for and greatly facilitate the equitable distribution of promotion in war. It is safe to assume, however, that selective promotion will always prevail in time of war. Also at this time if the excellent principle followed in the recent war is adhered to, the medical officers of the Regular Corps, Reserve Corps, and National Guard become part of the combined or greater U. S. Army. The minute they enter on active service, all National Guard and reserve officers are recognized as being on the same footing as the regular officers, and lose their reserve and National Guard identities.

All new appointments to a war army should be made only in the lowest grade—that of first lieutenant. All promotions into the higher grades of the combined army should be made from one of three lists mentioned—i. e., the former regular list, the former reserve list, and the former National Guard list. For purposes of equalizing promotion as far as possible we would have all men who are promoted to a higher grade in the U. S. Army during war time automatically create vacancies in the other lists when they leave them. "On paper" only this would result in double promotions and enable seniors on the list who are not in a position to render service that attracts attention and results in selective promotion to enjoy at least some promotion as a result of their relative position on their own lineal list. It is only natural in war time that promotion shall go to the man on the ground. To that extent there is a considerable element of chance. The man who is immediately available and who has demonstrated his fitness for a larger task will naturally be selected, even though another man of equal or greater ability is known but not immediately available.

On the declaration of war, no further appointments to the Medical Reserve Corps or National Guard would be made. All commissions would be made in the U. S. Army. All officers on the regular, reserve or National Guard lists retain the permanent rank held during peace time on those lists, but automatically become members of the "Medical Corps, U. S. Army," the great war time pool which recognizes no distinction such as regular or reserve. All new appointments to the U. S. Army during war are to be made in the grade of first lieutenant, all selective promotions to be temporary and made in that army. Assuming that all men on the regular, reserve or National Guard lists are proficient, they should enjoy a normal flow of promotion during war time even though they may not be singled out for selective promotion. To effect this and remedy a fault recognized during the last war, every time a man is promoted to the combined war list let it be assumed for purpose of computation only that he has temporarily created a vacancy in his old lineal list and that it results in the promotion of the seniors in each grade on that list below him. In other words, this scheme would result in "double" promotion.

SIXTH STEP: REVISION OF TABLES OF ORGANIZATION AS THEY AFFECT MEDICAL DEPARTMENT DISTRIBUTION

This does not require any legislation—it is strictly a matter for adjustment by the General Staff at the War Department, and on recommendations made by the Surgeon-General it is now receiving consideration by that body. Unquestionably, inequality of promotion has been indirectly influenced in the past by disproportionate and unfair distribution of grades in existing tables of organization. During the war, whenever the question of promotion for a medical officer arose, it seemed extremely difficult to convince the deciding officer that promotion in the Medical Department had absolutely no connection whatever—as far as legal allowances were concerned—with any table of organization. Medical Department allowances are computed only on the total authorized enlisted strength of the army, and are expressed in one aggregate which, in turn, by the same law is proportionately distributed in the various grades. As mentioned above, tables of organization for Medical Department personnel concern only the War Department—not Congress—and represent merely an effort to foresee and provide for the needs of the specific unit concerned. In other words, they show the proper distribution of the legal allowance of medical personnel and provide for the army by congressional enactment. Quite the contrary situation exists for the line of the army, the basic organization of which is prescribed by Congress in terms of tables, plus certain allowances for a detached officers' list. Heretofore, the Medical Department has attempted to parallel the line system by recommending tables of organization for essential units and then pooling for general distribution and assignment as needed, the officers remaining after the requirements of these tables have been met. The Medical Department "pool" is analogous to the line detached officers' list. Previous tables of organization recommended by the Medical Department have not provided a proper proportion of officers in the higher grades for units serving

with an expeditionary force. This faulty distribution has resulted in throwing into the pool a relatively large and disproportionate number of officers in the field grades—in other words, the higher rank has been reserved for officers in the home territory to the corresponding disadvantage of officers serving in the theater of operations.

An effort is now being made by the Surgeon-General to remedy this condition by effecting a more harmonious equalization in distributing the grades authorized for all Medical Department officers and noncommissioned officers borne on the tables of organization. Any man serving in an expeditionary force should have an equal chance for promotion with those in the home territory. This parity can be maintained only through proper distribution of the legally authorized grades. Places with higher rank must be authorized for our officers who are serving at the front. Furthermore, by authorizing a fair proportion of higher grades in tables of organization for the Medical Department, army, division and other commanders will be automatically relieved of the handicap of which many of them complained during the late war: this with reference to their inability to recommend promotion of a man in their own command simply because a place apparently did not exist for him in tables of organization. This left many vacancies that were never filled, and denied to reservists the promotion to which they were legally entitled. If a generous commander, in an effort to reward meritorious service, recommended a medical officer for promotion, he stood a good chance of losing his services because of the necessity of transferring him elsewhere where a place for him under tables of organization could be found. In accordance with the principles enunciated above, the more important changes proposed in tables of organization now under consideration are: division surgeon to be a colonel; each battalion surgeon to be a major; sanitary train commanding officer to be a colonel; field hospital battalion commanding officer to be a lieutenant-colonel; medical laboratory section of sanitary train to be in charge of a major; evacuation hospital (750 beds) to have one colonel, two lieutenant-colonels, seven majors and twenty-six captains and first lieutenants, a total of thirty-eight; mobile surgical hospital (250 beds), one lieutenant-colonel, two majors and sixteen captains or lieutenants, total nineteen; base hospital (1,000 beds), one colonel, two lieutenant-colonels, seven majors, twenty-nine captains and lieutenants, total thirty-nine; convalescent camp (1,000 beds), one colonel, two lieutenant-colonels, two majors, twelve captains and lieutenants, total seventeen; camp hospital, one lieutenant-colonel, three majors, eight captains or first lieutenants, total twelve; hospital train, one major, three captains or first lieutenants.

CONCLUSION

In our opinion the methods now prescribed for enrolling, classifying, training, promoting and calling to active service the medical reserve of the country are far from satisfactory. The organization of the reserve must be revamped and based on more scientific principles. The plan we are proposing may not be ideal, but we offer it as an effective means for betterment. Discussion of any of the features of our proposition, particularly with reference to constructive suggestions for improving existing or prospective conditions, in the columns of this journal or by correspondence direct with the writers, is invited. If this article results in concentrating a little more thought at large on this very important phase of our national preparedness, the principal object of the writers will have been accomplished.

Surgeon-General's Office.

THE BROAD TAPEWORM IN MINNESOTA

FURTHER FACTS AND CONSIDERATIONS

W. S. NICKERSON, S.D., M.D.
LONG LAKE, MINN.

The recent article by Riley[1] is important in calling attention to the frequency of occurrence of the broad tapeworm in Minnesota, and especially in putting on record evidence of two more cases of native infestation by *Dibothriocephalus latus*. I desire to call attention to some other facts overlooked or not considered in the paper of that author.

NATIVE FOCI OF INFESTATION

Four clear-cut cases of native infestation have been reported. The first of these is the case of Dr. O. W. Parker of Ely, Minn., reported by me in 1906.[2] This, Riley refers to as "the only recorded case . . . not clearly explicable on the theory that the parasite was an importation."

The second case was that of Dr. Olaf A. Olson of Minneapolis, demonstrated by me before Section F. (Zoology) of the American Association for the Advancement of Science in Minneapolis (1910) and briefly reported in 1911.[3] As this report did not appear in a medical journal, it seems to have been unnoticed by physicians. Riley, who evidently intended to give full credit to my work, has also overlooked it. Under these circumstances I may be excused for quoting a part of it here.

> This case occurred in a woman who was born and has always lived in Hennepin County, Minn., never having been out of the state except once for a visit in North Dakota. While there, she ate dried and smoked fish (otherwise uncooked), and it was soon after her return home that she experienced symptoms attributed to the tapeworm. The infection must therefore have occurred in America and from the eating of American fish.

The other two cases are those reported by Riley.[1] We have, therefore, four unquestionable cases on record in which the patient acquired the parasite in this country—in three of the cases definitely in Minnesota, in the other either in Minnesota or in North Dakota.

Stiles[4] says that "it is probable that immigrants will infect the fish in some of our lake regions." The case of Dr. Parker (reported in 1906) demonstrated that this had already occurred before the publication of Stiles' prediction.

Riley claims that the general view of medical men is that "there is very little evidence at present to justify an assumption that native foci of infection exist in this country." However true this may have been in the past, it must be said that for the future any such view

1. Riley, W. A.: The Broad Tapeworm, Dibothriocephalus Latus, in Minnesota, Additional Records, J. A. M. A. **73**: 1186 (Oct. 18) 1919.
2. Nickerson, W. S.: The Broad Tapeworm in Minnesota, J. A. M. A. **46**: 711 (March 10) 1906.
3. Nickerson, W. S.: Some Data Concerning Dibothriocephalus Latus in America, with Report of a Second Case of Infection Acquired in the United States, Science **33**: 270 (Feb. 17) 1911.
4. Stiles, C. W.: Osler's Modern Medicine, **1**: 568, 1907.

on the part of physicians can no longer be justified on the ground of lack of evidence, but instead must be attributed to their lack of knowledge of the facts. In reality, the case of Dr. Parker was enough to establish absolutely the existence of one focus of infection in America. As the number of reported cases becomes greater, more definite knowledge will be gained concerning the extent and number of such foci.

FREQUENCY OF DIBOTHRIOCEPHALUS LATUS INFESTATION IN AMERICA

Riley quotes Stiles[4] as stating that over thirty cases have been recognized in the United States, chiefly among foreigners. In 1911 [3] I reported:

> I have collected from physicians reports of the occurrence of the fish tapeworm (*Dibothriocephalus latus*) of man in sixty-five cases, fifty-one of which were in Minnesota. But six of these have been previously mentioned in literature. The hosts in two cases were Swedes, in one a Japanese, in two native-born, and the others with few if any exceptions were Finns.

From my experience in collecting these instances I feel certain that Riley's belief that "there are sections of Minnesota in which it is by all odds the commonest of the large tapeworms of man" is absolutely correct. It may be further stated that this condition will be found in any region, whether in Minnesota or elsewhere, which has a predominance of Finnish immigrants in its population. Furthermore, I feel certain that any desired number of cases within reason could be obtained. The number reported was sufficient to establish the prevalence of the worm in Minnesota, and its special frequency among Finns. I did not continue the search for more cases.

I very much doubt that it is more abundant in Minnesota than in several other states in which the sources of the population and the conditions of life are essentially similar. It is quite possible that an equal amount of study of helminthologic conditions in adjacent states might show *D. latus* as abundant there as in Minnesota.

THE PAUCITY OF PARASITOLOGIC EVIDENCE IN HUMAN CASES

It is worthy of note that none of the four known cases of native infestation with *D. latus* was reported by the physician who treated the case, and in neither of the cases which I reported were the special significant facts secured by the attending physicians until at my request they made secondary investigations. I wish to recognize fully the courtesy of these gentlemen in getting these facts for me; but the essential and significant point is that the facts were brought to light only through the cooperation of a physician and a parasitologist. It seems a safe assumption that, had it depended on attending physicians to obtain the evidence, no case of native infestation would have been recorded and relatively few cases of *D. latus* infection would have been reported. And what is true of this human parasite is probably equally true of many or most other species. For parasitologic data our main reliance must be on parasitologists. Physicians have small interest in parasitic cases beyond relieving their patients from the unwelcome guests; and most of them have very meager knowledge of the parasites removed. All tapeworms are alike to them, and any data based on their determinations (diagnoses) are therefore of doubtful value. It is probably not overstating the case to say that helminthologic determinations made by physicians who have not also been trained as zoologists are of no greater value than diagnoses of intra-abdominal conditions (for example, appendicitis) made by zoologists who have not also had a medical training.

As people suffering from parasites very naturally and properly go to physicians for treatment, it follows that few cases of animal parasitism in man come to the attention of parasitologists. Thus is explained the paucity of data on human parasitology in this country, and also the questionable accuracy of many of these.

PARASITOLOGISTS AS CONSULTANTS

Few physicians realize that about as much study and experience are required to make a competent parasitologist as to make a competent physician; and competence in one field no more implies competence in the other in one direction than in the reverse. To be both physician and parasitologist is as rare as to be both physician and lawyer. In view of these facts and of the greatly increased rôle which animal parasitism has been shown in recent years to play in the causation of human disease, it becomes important that cooperation between these two classes of scientific workers be brought about. The physician who has to treat a case of human parasitism needs the benefit of consultation with a parasitologist, although in most cases it would be no more necessary for the consultant to see the patient than it would for the pathologist who diagnoses a tumor removed at operation. But the proper diagnosis of the case is dependent on the report of the specialist in both cases, and the degree of special knowledge required is equally great. The importance of a reliable diagnosis is generally recognized in the tumor case but not in the parasite case.

A difficulty in securing to the physician such consultation arises from the fact that parasitologists are not as numerous nor so easily accessible as pathologists—just as cases calling for their services are probably not as common as those calling for the services of the pathologist. This difficulty may, however, be overcome. The zoologists of the Bureau of Animal Industry in Washington are ready at any time to make determinations and reports of human or other parasites sent them. Furthermore, in most state universities and in many other universities, colleges and agricultural colleges there is some competent member of the zoological department who would be willing to make determinations of human parasites and give any needed suggestions or advice at little or no charge.

STATE PARASITOLOGISTS

It would seem best, however, that the state university should be made a central clearing-house for all such cases within the state. Some member of the department of zoology should be appointed or recognized as state parasitologist on whom would fall the task of receiving, classifying and reporting on human parasites sent him. Notices should be sent out to physicians giving directions for preserving and forwarding specimens accompanied by proper data and offering them the benefit of free determinations and any needed suggestions. In this way opportunity would be provided for the gathering of useful knowledge which is now lost and statistics so gathered would have the advantage of reliability. Physicians would receive helpful direction and suggestions as to possible sources of infestation, prophylaxis and problems for investigation.

The main question is, Can physicians be made to realize their need for such aid as I have suggested, and will they take enough interest in the matter to send in the specimens?

Clinical Notes, Suggestions, and New Instruments

REPORT OF A CASE OF SEVERE HEAD TETANUS WITH RECOVERY *

KENNETH M. LEWIS, B.S., M.D., NEW YORK
House Physician, Roosevelt Hospital

This case is presented as one not uncommon in the services of large hospitals today, and as showing the ready response to antitoxin even after the onset of symptoms.

History.—A Finn, aged 36, admitted at 2 p. m., Nov. 8, 1919, to the service of Dr. Evan Evans, nine days previously, while returning from work late at night, had been waylaid by several men, beaten about the head and robbed. When he regained consciousness next morning he found he had a large laceration of the left ear and scalp. The wound was sutured at a nearby hospital, but tetanus antitoxin was not administered, so far as could be ascertained. He returned to the same hospital during the following week for dressings. On the seventh day a friend noticed that the left side of his face was flattened; on the eighth day the flattening was more marked and the patient had difficulty in opening his mouth. On the afternoon of the ninth day he presented himself to the emergency department of the Roosevelt Hospital.

UNITS OF ANTITOXIN ADMINISTERED

Date	Subcutaneous	Intravenous	Intraspinal
Nov. 8	3,000 (2 p. m.)	8,000 (4:30 p. m.)	5,000 (5 p. m.)
Nov. 9			5,000 (10 a. m.)
Nov. 9			5,000 (4 p. m.)
Nov. 10			4,000 (2 p. m.)
Nov. 18	1,500		

Physical Examination.—There was a complete left facial paralysis of peripheral type and marked trismus, the patient being able to open his mouth not more than 1 cm. There was a deep laceration, 4 cm. in length, at the posterior aspect of the left ear and scalp, which had been closed with five horsehair sutures. There was a small amount of foul smelling, purulent discharge, and a diffuse redness and swelling around the wound. The pupils were equal, regular, and reacted sluggishly to light. The neck showed moderate opisthotonos. The superficial abdominal reflexes were present; there was a moderate Kernig reaction; the knee jerks were hyperactive but equal; Babinski reflex was + +; there was no ankle clonus, paralysis or stiffness. The temperature was 99.2 F., respirations 20, and pulse 80.

Laboratory Findings.—Urine tests were negative except for a trace of albumin. The blood showed: white blood cells, 14,000, with 81 per cent. polymorphonuclears; red blood cells, 5,000,000; hemoglobin, 75 per cent. (Sahli); Wassermann reaction negative. Bacteriologic: On the morning following admission, two stab cultures were made in glucose agar tubes from the deepest part of the wound. After twenty-four hours of incubation, growth had occurred along the stab, with the formation of gas. Smears from the culture showed numerous long, slender, gram-positive bacilli with a large clear spore at one end, which morphologically were *B. tetani.* There were also small, gram-negative bacilli present in large numbers. These were later identified as *B. coli.* Inoculation was made direct from the original stab culture into the root of the tail of a white mouse. The mouse died in fourteen hours with marked stiffening of the extremities.

Treatment.—1. General Measures: The accompanying table gives the number of units of antitoxin administered. It can be seen that the greater part of the antitoxin was given by the intraspinal method. In addition to this, 1,500 antitoxin units were applied locally to the surface of the wound for two weeks. The diet consisted of fluids, such as milk, cocoa and eggnog with the addition of large amounts of sucrose and lactose.

2. Local Measures: At the time of admission the sutures were removed and the wound opened wide. The following morning the wound was washed with hydrogen peroxid, then with 3.5 per cent. tincture of iodin, followed by 1,500 units of antitoxin, and a dry dressing was applied. The local treatment was not started until the culture had been taken. The wound was dressed each day with the foregoing routine. The injection of antitoxin along the course of the left facial nerve was taken into consideration, but was abandoned on the advice of Dr. Park of the New York board of health.

Clinical Course.—November 8, the patient was admitted.

November 9, he was stuporous, and complained of pain at the site of the intraspinal injection; trismus was complete; opisthotonos was more marked; no vertebral motion was possible.

November 10, the Kernig and Babinski reflexes were more marked and the knee jerks more active. There was bradycardia; pulse from 50 to 60.

November 11, the knee jerks were less active, with the left greater than the right. The Babinski reflex was maximal. Herpes simplex appeared on the lips and the external nares. The patient complained of being stiff all over.

November 14, trismus and opisthotonos were decreasing and the neck was not so rigid. The knee jerks were feeble, with the left greater than the right. Kernig's sign and bradycardia were still present.

From this time on the patient began to show a gradual diminution in the signs. The trismus and opisthotonos gradually decreased in severity. The knee jerks, however, again became very active on November 15, and remained so in decreasing proportion until November 25. The Babinski and Kernig reflexes became negative, November 17, and on this day the neck and back were freely movable. The facial paralysis did not show signs of returning function until November 22; December 1, the facial paralysis was still present but there was daily increase in function, and the trismus had entirely disappeared. The wound was allowed to heal by granulation with frequent dressings and became entirely closed by Jan. 1, 1920. At no time during the course of the disease was there a local or general convulsion, and the patient did not seem especially sensitive to external stimuli. There was a slight fever on the second day, but none subsequently. The patient was finally discharged, with a slight remnant of the facial paralysis but with no other symptoms.

* From the Medical Wards of the Roosevelt Hospital.

ACUTE VERONAL (BARBITAL) POISONING: REPORT OF A CASE

S. J. TAUB, M.D., CHICAGO

History.—Mrs. G. E., a married white woman, aged 28, had been accustomed to using from 10 to 20 grains of barbital almost every night during the last two years following a hysterectomy for fibroids. Her health had been good except for attacks of nervousness and insomnia. Three days previous to my visit, she ate some shrimp salad in a restaurant and became suddenly ill two hours later, with nausea, vomiting, abdominal pains and diarrhea. On advice of her husband that night she took 50 grains of barbital, purchased in the form of 5-grain "veronal" tablets, in order to get some sleep. The vomiting was much less but the diarrhea continued through the night and the patient felt stuporous, drowsy and very weak. During the next day she took 100 grains of barbital again in order to sleep off the effects of what she called ptomain poisoning from eating shrimp salad.

Examination.—I saw her the evening of the same day, Dec. 24, 1919. She was in bed and appeared seriously ill; she was in a stuporous condition and answered questions very slowly. Her voice was very faint and had a prolonged, drawling expression. There was some confusion but no disorientation. The face had an ashy gray hue and the lips were very pale.

The nails were cyanotic and she complained of being very cold. The temperature was 97.5, pulse 52, and respiration

12. The pupils were dilated and reacted to light and accommodation. The tongue was heavily coated and the breath fetid. The heart was regular in action and slow (52). The skin was cold and dry, and it presented a slight yellowish hue.

The patellar, triceps and biceps reflexes were very sluggish. Sensibility for pain, touch, heat and cold was about normal. On attempting to walk to the bath room, she staggered and had to be assisted. There was a marked ataxia of both the lower and upper extremities. She could not hold anything in her hands.

Treatment and Result.—The patient was immediately given an ampule of camphor in oil, 1 c.c., into the deltoid muscle. An attempt was made to pass a stomach tube, but this was impossible because of the patient's poor condition. Strychnin, 1/30 grain, every two hours, alternating with atropin sulphate, 1/100 grain, was given by mouth. Heat was applied externally to keep up the body temperature.

December 25 the patient was somewhat improved, although the diarrhea continued and she felt very weak. Lethargy and drowsiness persisted and she slept at intervals but was easily aroused. The ataxia had not disappeared.

There was typical hematoporphyrinuria, December 25, which persisted for three days, until December 28. After the fourth day, December 26, she was able to sit up in a chair, but the ataxia persisted until December 29, the end of one week.

1204 East Forty-Seventh Street.

REPORT OF CASE OF INTUSSUSCEPTION WITH GANGRENOUS APPENDIX IN EIGHT MONTHS OLD BABY

Robert K. Buford, M.D., Hansford, W. Va.

History.—A well nourished girl, aged 8 months, referred by Dr. G. S. Hartley, while sitting up in bed playing, commenced crying with severe abdominal pain, which was evidently of paroxysmal character, and was followed by vomiting. The child became pale and listless. The bowels had moved three times during the day; the last stool was normal and contained no blood. On palpation of the abdomen, a tumor mass was found in the right hypochondriac region. The body assumed a position of opisthotonos following another sudden paroxysm of pain. Rectal examination was negative. Blood and mucus, but no fecal matter, were obtained by enemas. A diagnosis of intussusception was made and the baby was brought to the Sheltering Arms Hospital within thirty-six hours after the onset, and I saw her, in consultation with Dr. Hartley, and confirmed his diagnosis. A tumor mass was demonstrated by fluoroscopic examination.

Operation and Result.—A right rectus incision was made under ether anesthesia. An ileocecal intussusception was found, the ileum being invaginated into the cecum, which was pushed up into the ascending colon. The appendix was gangrenous throughout. The involved intestines were injected but showed no gangrene. There was some free fluid, serous in character, in the peritoneal cavity. The blood supply of the obstructed intestine was not impaired. The intussusception was reduced by a slow general milking process; the appendix was removed and the wound closed in the usual manner without drainage. The operation was performed in twenty minutes, and the baby was awake before leaving the table.

Postoperative treatment consisted in the prevention of reverse peristalsis, and in stimulation, nourishment, and combating intestinal toxemia. Plain morphin sulphate was given as indicated, beginning with 1/120 grain and in increasing quantities every hour until 1/16 grain was reached. Then as a routine measure, this drug was continued in doses of 1/16 grain every four hours for the first seventy-two hours. The toxins were counteracted by proctoclysis and hypodermoclysis of physiologic sodium chlorid and 5 per cent. glucose solutions, respectively.

No nourishment was given by mouth for the first thirty-six hours, after which time, breast milk was fed every two hours in one-half ounce feedings. This was continued until the morning of the fourth day, when the child was put to the breast and allowed to nurse ten minutes every four hours until the mother began menstruating. Artificial feeding was then resorted to until the subsidence of all menstrual phenomena; at alternate periods it was given all the distilled water it would take.

The wound healed by first intention and the baby was discharged from the hospital three weeks after operation.

Therapeutics

A Department Devoted to the Improvement of Therapy. A Forum for the Discussion of the Use of Drugs and Other Remedies in the Treatment of Disease.

USE AND ABUSE OF CATHARTICS*

(*Continued from page 393*)

PURGATIVE PILLS

PODOPHYLLUM

Podophyllum was introduced by the "eclectics" during the period when these practitioners endeavored to substitute drugs of "kindly" action for those drugs, used by the "regular school," that were harsh and dangerous when employed without the necessary admixture of brains. Calomel was anathema to them, and not without cause. So they hunted for a substitute for this drug, and believed they had found it in podophyllum, which came to be known as the "vegetable calomel."

One of the points in which podophyllum resembles the mild mercurous chlorid is the comparative insolubility of its resinous active principles in the acid stomach and their solubility in the alkaline intestinal secretions. As in the case of calomel, its action seems to be especially exerted on the upper portion of the small intestine. Thus, Ringer quotes some dog experiments by Anstie in which it was found that, after injection of an alcoholic solution of resin of podophyllum into the peritoneal cavity, the small intestine, especially toward the lower end of the duodenum, was extremely congested; and, in some instances, the lower part of the duodenum was extensively ulcerated. The large intestine was but slightly engorged. Although the injections were poured into the abdominal cavity, the peritoneum itself was not at all inflamed, even around some unabsorbed granules of the resin.

Mode of Action.—Podophyllum is an irritant to skin and mucous membranes. It tends to act as a purgative even when applied to ulcers or raw surfaces, or when given hypodermically, though the local irritation produced precludes its practical employment in this manner. It must be classified as a drastic cathartic in view of the fact that overdosage produces gastro-enteritis. A sufficiently small dose, from 0.003 to 0.006 gm. (1/20 to 1/10 grain) of the resin, produces merely laxative effect; in doses of 0.008 to 0.030 gm. (1/8 to 1/2 grain) this resin is an active purge. A single dose of 0.05 gm. (1 grain), or a daily dose of 0.10 gm. (1 1/2 grains), as a general proposition should not be exceeded. Excessive dosage may produce bloody and slimy stools, especially in children. It may occasion, even in medicinal doses, considerable colic and sometimes nausea. Podophyllum has little tendency to produce after-constipation. Hence it is suitable for prolonged use.

* This is the eighteenth of a series of articles on the pharmacology, physiology and practical application of the common laxatives and cathartics. The first article appeared October 18.

Unfortunately, it is a rather uncertain cathartic, a dose, adequate to purge one person violently, being inoperative in another. Its dosage, therefore, should be small at first and gradually increased as necessary. Likewise does the time required for action vary from a few hours to twelve or twenty-four hours or more. Combination with some other agent, such as aloes, might rectify some of these defects.

Indications.—Podophyllum is worth a trial in cases of "biliousness," especially those of the frequently recurring type, in which the repeated administration of calomel would be contraindicated because of danger of mercurial poisoning. The syndrome of "biliousness" need not be present in its full evolution. Thus, certain types of sick headache are relieved by agents of this class better than by anything else. So may certain cases of periodically recurring attacks of indigestion. As podophyllum cannot possibly act as an antiseptic—an action that, as we have seen, is doubtful in case of calomel—a more suitable explanation for the special value of the "cholagogues" in "biliousness" than that based on the theory of antiseptic action might be built on Alvarez'[1] theory of "reverse peristalsis." He believes that the syndrome of biliousness is produced by a focus of excessive irritability in a lower portion of the digestive tube, for instance, a chronically inflamed appendix, which upsets the normal gradient of irritability that should become progressively less as we proceed from above downward. Now it is not unreasonable to assume that some of these purges, with special action on the upper portion of the small intestine, might, by increasing the irritability of the duodenum and jejunum, restore the previously upset "gradient of forces." This is merely offered as a working hypothesis for experimentation. It cannot as yet be even dignified with the term theory.

Method of Administration.—The resin of podophyllum is the only preparation of this drug that should be employed. The name "podophyllin" has been applied to this mixture of alcohol-soluble and water-insoluble principles. In view of the desirability of limiting the ending "in" to pure principles, the use of this word in the present popular sense is unscientific, and should be abandoned. Let us remember that habits of speech produce and reflect habits of mind.

Resin of podophyllum may be prescribed in the form of a 1:60 alcoholic solution (1 grain to the dram), one or two drops of which may be given on a lump of sugar to children, three or four drops to adults. It is usually given in the form of pills. However, the nicest way of giving it is in the form of tablet triturates, each containing 0.0006 gm. (1/100 grain), one or two of which may be given every hour for from four to ten doses.

COMBINATION OF ALOES AND PODOPHYLLUM

As podophyllum is one of the slowest of all cathartics in action, combination with rapidly acting purgatives is irrational, as is also the case with aloes. On the other hand, combination of podophyllum with aloes impresses one as rational, not only because of similarity in time required for action, but also because of difference in point of chief attack. An experiment should be devised—and might easily be performed by classes of medical students—to test the question whether we have in such combination a real case of heterotopic synergism. Should a patient present a combination of the special indications for these two cathartics, they might be suitably combined in one pill. The National Formulary contains a formula for such a pill under the name, *Compound Pills of Aloes and Podophyllum*, each of which contains:

	Gm.	
Aloes	0.065	gr. 1
Resin of podophyllum	0.0325	gr. ½
Extract of belladonna leaves	0.016	gr. ¼
Extract of nux vomica	0.016	gr. ¼

For reasons given in a previous article, the last two ingredients might as well be omitted. Not only are they useless, but they might do harm, the belladonna by producing dryness of the mouth, and the nux vomica by increasing the reflex excitability and "nervousness" in neurasthenics. But why give the patient a "hand-me-down" article at any time, when he comes to us for individual measurement and fit? Not only is this not best for the patient, but it is even worse for the physician. By getting into the lazy habit of prescribing ready-made preparations, he loses in aptitude and power of devising combinations of his own. How miserably dependent we become when we practice prescribing according to formularies will be painfully evident to the routine C. C. pill and A. S. and B. pill prescriber, who might desire to reform. But it is worth the effort; and the attempt to get out of the rut should be made before a sclerotic condition of habits of thought and action have made such a change impossible.

(To be continued)

1. Alvarez, W. C.: The Syndrome of Mild Reverse Peristalsis, J. A. M. A. **69**: 2018 (Dec. 15) 1917.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

CHLOROXYL.—Cinchophen hydrochloride.—Phenylcinchoninic acid hydrochloride $C_6H_5C_9H_5NCOOH.HCl$. The hydrochloride of 2-phenyl-quinoline-4-carboxylic acid.

Actions, Uses and Dosage.—The same as that of cinchophen (see New and Nonofficial Remedies, 1920, p. 224) Phenylcinchoninic Acid (Cinchophen) and Phenylcinchoninic Acid Derivatives.

Manufactured by Eli Lilly and Co., Indianapolis, Ind. U. S. patent No. 1,306,439 (June 10, 1919; expires, 1936).

Chloroxyl Tablets 5 grains.—Each tablet contains chloroxyl 0.325 Gm. (5 grains).

Chloroxyl is a yellow crystalline powder with an astringent, slightly bitter taste. It is insoluble in water, ether or chloroform, but slightly soluble in alcohol.

When dry, chloroxyl melts at about 223 C.

Accurately weigh about 2 Gm. chloroxyl, add 250 Cc. half-normal volumetric sodium hydroxide solution and heat on a boiling water bath for one hour. Determine the excess of sodium hydroxide by titration with half-normal hydrochloric acid volumetric solution, using phenolphthalein as indicator. Chloroxyl contains not less than 12 per cent. nor more than 12.8 per cent. combined hydrochloric acid (each Cc. sodium hydroxide solution is equivalent to 0.00912 Gm. HCl).

Dissolve 2 Gm. chloroxyl in 10 Cc. solution sodium hydroxide: heat to boiling, and while hot add acetic acid until no further precipitate is formed. Cool, decant the supernatant liquid and wash the precipitate with distilled water until it is free from acetic acid. Dry the precipitate at 100 C. This precipitate responds to the U. S. P. tests for phenylcinchoninic acid.

Inexpensive Breakfast Food.—DR. J. G. GRANT, Akron, Ohio, writes: Most people are now interested in reducing the high cost of living. For those who use wheat breakfast food, I have a suggestion, after having tested this plan more than a year: Buy wheat from a farmer or dealer and grind it in a coffee mill or food grinder. For two dollars I bought a spice mill, which is larger than a coffee mill. This food is excellent and many times cheaper than that sold in packages.

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SATURDAY, FEBRUARY 14, 1920

EFFECTS OF QUININ ON THE TISSUES

There are circumstances in which the vigorous action of adequate quantities of quinin in the circulation is highly desirable. The alkaloid itself is rather insoluble; but some of the salts of quinin are fairly soluble, and are absorbed with considerable readiness from the gastro-intestinal canal. The Pharmacology of Useful Drugs,[1] issued by the American Medical Association, makes it seem probable that too much importance has been attached to the influence of the degree of solubility of the salts of quinin on their absorption, and too little attention to the selective capacity of the gastro-intestinal tract for absorbing them. In the United States, in contrast with European countries, quinin sulphate is the salt generally prescribed, although the hydrochlorate is decidedly more soluble and ought to be preferred. However that may be, numerous endeavors have been made to secure more effective quinin therapy, particularly in malaria, by modes of administration other than the usual oral path.

Baccelli first suggested the intravenous injection of solutions of salts of quinin when the symptoms of malaria are so severe as to threaten grave peril to the patient. Subcutaneous or intramuscular injection has also been recommended and frequently employed, particularly in critical cases. Despite the use of care in giving such treatment, much discomfort and pain may be caused; and even if aseptic precautions are studiously applied, a considerable amount of induration if not actual abscess formation is likely to occur at the site of injection. Most therapeutists recognize this danger and warn against it.

That tissue necrosis is produced by strong solutions of quinin salts need not be a surprise when it is recalled that for more than half a century the substance has been regarded by toxicologists as a protoplasmic poison capable of destroying various forms of animal and vegetable cells. The suggestion has at times been made that, because of the observed tissue damage following intramuscular injections, this mode of administration should be abandoned. A recent experimental inquiry by Colonel Dudgeon[2] of the British Army Medical Service on the effects of injections of quinin into the tissues throws new light on the actual conditions developed by the procedure. It had been suggested that in order to avoid the untoward results, intramuscular medication should be carried out only with dilute solutions. Dudgeon points out, however, that injection of quinin in solutions so dilute as to avoid edema and tissue necrosis is not of practical utility in man. Concentrated preparations of quinin produce more intense necrosis than do dilute ones; but when the latter are such as to be of therapeutic value, they also excite the tissue changes at the site of infection.

A concentrated solution of quinin is absorbed rapidly from the tissues even in patients who are moribund. Dudgeon insists on the necessity of realizing that tissue necrosis—spreading edema and local blood destruction—are produced by the solvents frequently employed for quinin administration; and the effects are only slightly inferior to those excited by the quinin salts and the alkaloid. No advantage was gained by the addition of oil or by injecting the alkaloid dissolved in alcohol or ether. Necrosis of blood vessels in the area of injection is a common result. This leads, according to Dudgeon, to hemorrhages into the tissues. Extensive damage of these sorts in the neighborhood of an important nerve trunk may result in nerve palsy.

It may be that a choice between disadvantages will dictate the continuance of intramuscular injections of quinin. If so, the limitations and dangers of their use in practice need to be appreciated clearly and specifically. Daily doses administered for periods of a week and more in the gluteal region—a favorite site of injection—are not unknown. Such cases have been found, further, to retain only fragments of healthy tissues in the muscular tracts involved. Hence one can appreciate the force of Dudgeon's warning that repeated intramuscular injections of quinin should not be given into the same area of muscle or tissue directly adjacent, because otherwise permanent injury of muscle or nerves may result.

1. Hatcher, R. A., and Wilbert, M. I.: Pharmacology of Useful Drugs, Chicago, American Medical Association, 1915.

2. Dudgeon, L. S.: On the Effects of Injections of Quinin into the Tissues of Man and Animals, J. Hyg. **18**: 317 (Oct.) 1919.

THE MENTAL CONDITION PRECEDING SUICIDE

It is a curious but well substantiated fact, commented on some time ago in The Journal,[3] that there are fashions in suicide just as there are in almost every other human activity. Indeed, the fashion changes not only with regard to the methods employed for terminating existence, but also in the whole attitude of peoples toward suicide. In the days of the ancients, suicide was not regarded as a crime. The Stoic school of philosophy taught that every person had the right to decide whether or not to continue in this life.

In the United States alone about 10,000 persons annually terminate their existence by self destruction.

3. The Style in Suicide and Homicide, Current Comment, J. A. M. A. **73**: 1367 (Nov. 1) 1919.

This large number of deaths naturally brings up the question of the prevention of suicide, which in turn leads to a consideration of its causes. Since self destruction is no longer countenanced by public opinion, the number of suicides has decreased considerably, and it is safe to assume that persons seldom resort to the procedure unless they are mentally abnormal or unless there are strong reasons of an unpleasant nature. Certain psychiatrists, Forbes Winslow, for example, have held that invariably persons who commit suicide are mentally abnormal; but there is little doubt that this view is not correct. In the case of criminals, particularly, there is evidence of deliberate suicide by persons perfectly capable of understanding the nature of the act. The fact remains, however, that in existing circumstances the majority of those who take their own lives are mentally abnormal. Recently Brend,[4] in discussing the mental condition preceding suicide, has shown that probably 50 per cent. of all such persons are definitely insane, and that most of these are suffering from melancholia, chronic alcoholic insanity, or the hebephrenic form of dementia praecox. The statistics from certain European army hospitals indicate that patients suffering from psychoses, particularly those of the manic-depressive type, are much more likely to commit suicide than patients suffering from neuroses. Neurotic persons frequently discuss suicide and express fear that they will do away with themselves, but they hardly ever reach the point of actually attempting self destruction. Figures quoted by Brend show that among 3,700 patients suffering with neuroses there were only one suicide and two unsuccessful attempts, whereas among 3,000 patients suffering from psychoses there were three successful suicides and 105 unsuccessful attempts. It is tolerably clear, therefore, that a considerable proportion of all suicides occur in mentally abnormal persons.

The question of the prevention of suicide is intimately associated with the early detection and treatment of insanity. At present, agencies for the early detection and treatment of insanity are conspicuous chiefly by their absence. This is true not merely in the United States but throughout the world. Some progress has been made in combating this condition by the establishment of psychopathic hospitals and by the educational efforts of bodies like the National Committee for Mental Hygiene and its allied state committees; but material progress will not be made until the public has been educated to a more acute appreciation of the importance of the early detection of mental disease, and until the facilities for the early treatment of mental cases under voluntary commitment to a hospital for the insane have been widely extended. It is quite certain that more widespread education in mental hygiene would result in a reduction in the number of suicides.

4. Brend, W. A.: The Mental Condition Preceding Suicide, Practitioner **103**: 1401 (Dec.) 1919.

AMEBIC DYSENTERY IN THE UNITED STATES

Scarcely thirty years have elapsed since Osler[1] published what is believed to be the first report in this country of a case of dysentery in which amebas were found in the stools. Not long afterward, Lafleur[2] reported another case and demonstrated the living parasites. Welch remarked on this occasion that it was the second case of dysentery reported on this continent and the first exhibit of the organism before a medical society in this country.

We have been inclined to regard intestinal amebiasis as something belonging to the tropics and foreign to the United States. The disorder has consequently been expected only in persons who have recently returned from tropical countries. Nevertheless, amebic dysentery has been by no means unknown in the Southern United States, and sporadic cases have been reported from time to time in New England, as well as in the Eastern, Central and Western states. In 1909, Patterson[3] collected records of the disease in twenty-four states, many of them in the Northern sections of the country. Since then practically all of the states have been shown to harbor patients with amebiasis.

Although this type of dysentery has rarely been epidemic in temperate climates, occasional outbreaks have been known to occur, as for example in the German army in East Prussia in 1901.[4] More recently, the special examinations of the feces of very large numbers of persons for intestinal parasites have directed attention anew to the possibility of the existence of amebiasis in this country to an extent formerly unsuspected. Instructive instances have been furnished by the division of parasitology of the California State Board of Health.[5] As a result of a circular letter to forty-five hospitals at points widely distributed throughout the state, a total of fifteen cases of amebic dysentery was reported from eight of these institutions. Out of seventeen cases there were at least six in which the disease seems to have been contracted in California. If a necessarily cursory survey brought to light such a number of cases, it can scarcely be doubted that amebiasis is more prevalent than the identified instances directly indicate.

The situation is complicated further by the undoubted existence of carriers who reveal absolutely no dysenteric symptoms, yet harbor the parasitic organism in some form. Although the motile stages of *Endameba dysenteriae* are very sensitive to change and cannot readily withstand conditions outside of the hosts, this

1. Osler, William: On the Amoeba Coli in Dysentery and in Dysenteric Liver Abscess, Bull. Johns Hopkins Hosp. **1**: 53 (May) 1890.
2. Lafleur: Demonstration of Amoeba Coli in Dysentery, Bull. Johns Hopkins Hosp. **1**: 91 (Sept.) 1890.
3. Patterson, H. S.: Endemic Amoebic Dysentery in New York, with a Review of Its Distribution in North America, Am. J. M. Sc. **138**: 198, 1909.
4. Strong, R. P.: Amebic Dysentery, cited in Osler's Modern Medicine **1**: 489.
5. Cort, W. W., and McDonald, J. D.: Amebic Dysentery in California, J. Infect. Dis. **25**: 501 (Dec.) 1919.

is not equally true of the cysts of the organism. When the latter are voided with the feces, they are apparently very resistant. They survive for considerable periods in water; and this fact is important in relation to the spread of amebiasis. Ordinary bacterial examination of water will not reveal the presence of endamebic cysts. The water may carry contamination to garden produce as well as directly into the drinking supply.

The California investigators, Cort and McDonald,[5] have pointed out that countries with long, dry seasons or those with long periods of temperature below the freezing point will find in natural conditions a considerable check on the distribution of amebiasis. However, conditions might occur in almost any country at almost any time under which there would be sufficient moisture and a high enough temperature to make possible the transfer of the cysts in a viable condition from one person to another. On the other hand, as Cort and McDonald further point out, California is unique in having certain conditions favorable to the spread of amebic dysentery. Within the state are large numbers of people from countries where the disease is prevalent, many of whom are undoubtedly carriers. A large majority of these raise garden produce, or become cooks and domestic servants. The state also has extensive irrigated areas that are seldom, if ever, visited by a freezing temperature for a considerable period. California is also uniquely situated with respect to the introduction of the disease. Yearly there have come in a large number of immigrants, the greater part of whom have settled in the state. These immigrants have come principally from Japan, China and India, where intestinal protozoa are common.

WHAT IS SO-CALLED SCIENTIFIC DRINK CONTROL?

The legal controversies and the debates that have been initiated by the enforcement of nation-wide prohibition in the United States have unexpectedly emphasized that many of the essential facts regarding alcohol and its action are not yet known to science. This is surprising, in view of the extent to which alcohol has been and still is being consumed by man. Nevertheless, it is true that there exist scarcely any manuals which may be referred to by the general reader for authoritative statements of unbiased expert opinion regarding a subject of such widespread interest. Most of the evidence is tinged either with the prejudice of the temperance fanatic or the insidious propaganda of ex parte influence.

The markedly lowered death rate from alcoholism following the legal prohibition of alcoholic beverages in one of our largest American cities was recorded recently in The Journal.[1] In Great Britain the lessened number of convictions for drunkenness following the decreasing sale of alcoholic drinks during the war period has frequently been cited. It is becoming evident throughout the civilized world that either the most objectionable results of drinking must be eliminated by some sort of reform or else the prohibition wave is certain to sweep beyond the shores of the Atlantic. Thus the problem of drink regulation has been brought into new relief. The chairman of the Central Control Board for Liquor Traffic in England, Lord D'Abernon,[2] has thus expressed the hope of the reformers who face the alternative of liquor suppression:

> If by the method of regulation on physiological principles we can secure adequate results for the health and sobriety of the nation, these results will be attained with less apparatus, with less risk of creating alternative evils, with less loss of revenue, with less disturbance of trade and less abrupt violation of the habits of the community.

Prohibition as a national possibility has still for the most part to demonstrate its results and its limitations in this country. It is a new social experiment on a huge scale. Meanwhile we may do well to examine judicially the scientific basis of some of the proposals of those who would regulate rather than prohibit the liquor traffic. Aside from the irritant action of concentrated solutions on the mucous membranes, the pharmacologic or toxicologic effects of alcohol depend primarily on the concentration which it attains in the circulating blood. The Advisory Committee of the Central Control Board in London, including scientists of recognized talent, has directed the investigation of the comparative effect of identical doses of alcohol in dilute or concentrated solutions, respectively. The outcome showed that with dilute solutions the maximum level of alcohol in the blood is lower than when the drug is taken in concentrated form.

The bearing of this on the difference between alcohol in the forms of beer, wine and distilled liquor is obvious. But it was further demonstrated that the same amount of alcohol taken in the form of beer was decidedly less intoxicating than spirits diluted to contain the same dose of alcohol in equal volume. The reason is not demonstrated; but since beers contain ingredients other than alcohol, it is presumably allied to the well known fact that alcohol taken with foods is absorbed more slowly than when it is drunk on an empty stomach. The cocktail and analogous drinks are thus condemned on physiologic principles.

Lord D'Abernon, who presumably speaks with the authority of large groups of conservative Britons, has also discussed the plan of discontinuity of drinking hours—a device, somewhat comparable to the preferment of dilute alcoholic beverages, intended to decrease the evils of drunkenness simply by diminishing the amount of liquor drunk at one time. Experience in Great Britain has unexpectedly disclosed that restricted

1. Prohibition and the Death Rate, editorial, J. A. M. A. **74**: 109 (Jan. 10) 1920.

2. D'Abernon: The Scientific Basis of Drink Control, Address at the Autumn Conference of the Society for the Study of Inebriety, Oct. 14, 1919; Brit. Jour. Inebriety **17**: 73 (Jan.) 1920.

hours for liquor traffic do not accomplish the end sought.

The oxidation and elimination of alcohol proceed at only a moderate rate. According to Mellanby's experiments, the quantity of alcohol included in 2 pints of beer—about 45 c.c. of alcohol—requires an interval of three or four hours before it is completely burned or excreted. Superimposing an extra dose of alcohol within the interval brings the risk of inebriation. Lord D'Abernon points out that no benefit will result, therefore, through drinking less concentrated alcoholic beverages at intervals curtailed and regulated by law, if liquors of high alcoholic content can be consumed within the limited period.

We are told that it is more important to regulate how a nation drinks than how much it drinks. One may accept the principles of the use of drinks of low alcoholic content and the regulation of drinking hours, perhaps so as to make them coincide more nearly with meal hours, as the essential conditions for any promising system of drink control short of prohibition. But it remains to be demonstrated that rationing beer, or restricting the opening hours of the saloon, or any other governmental system short of the elimination of the liquor traffic, will accomplish for human welfare what is expected of prohibition in the United States. Nowadays scientific experiments are being conducted on a national scale.

Current Comment

NEW TARIFF ON DYE PRODUCTS

An event of uncommon interest to the medical profession is the amendment adopted by the subcommittee of the Senate Finance Committee to the bill placing a duty on dyes imported into the United States. This amendment places a tariff of 45 per cent. on the higher saccharids, adonite, arabinose, dulcitol, galactose, inosite, inulin, levulose, mannitol, mannose, melizitose, raffinose, rhamnose, sorbitol and xylose. Prior to the war these chemicals came exclusively from Germany. Their manufacture in this country started as a result of stoppage of importations. Medical officers of the army succeeded in having these chemicals manufactured in the United States, and this protective tariff will, it is believed, save this industry and permit its future development. The tariff was advocated by Professor Stieglitz, chairman of the Committee on Synthetic Drugs of the National Research Council, by Colonel Reasoner, in charge of the field medical supply depot at Washington, and by Colonel Russell of the Army Medical School. Colonel Russell said:

"Many of the rare sugars are used in bacteriology in the differentiation of various disease-producing micro-organisms. It is a well established fact that certain bacteria as, for example, the bacillus of typhoid fever, use certain sugars and from them produce acids and other products which we can measure or detect if present only in small amounts; some organisms, such as the colon bacilli, produce not only acid, but gas, which is caught in a fermentation tube, measured and analyzed. The differentiation of the real from the pseudo-organisms of diphtheria and some other diseases depends on sugar fermentations and on animal experiments.

The quantities used in any one test are quite small but a large variety, and a good supply of the principal sorts is indispensable, and we should not be satisfied to rely in the future on other countries for products of such fundamental importance, but should aid the growing industry which is now being organized in the United States.

SPEAKING OF GLANDS—

Although the glands of internal secretion have been a source of interest to the medical profession for some time, it is only recently that the attention of the lay public has been called to these structures. During the recent illness of one of our noted statesmen, widespread discussion of one of these glands was common, even in polite society. The subject was considered from every possible point of view, and it is doubtful whether there is any well-informed person today who has not some vague idea of the functions of this particular structure. Later, sensational newspapers made much of the discovery—if it should be called such—of the Frenchman Voronoff, that the interstitial cells of the testes might be used to stimulate growth, and as the newspapers would have it, perpetuate youth. Little has appeared in scientific literature concerning this point. However, Macht [1] has just reported that feeding of prostate gland tissue to tadpoles resulted in stimulation of the metabolism, hastening metamorphosis, with the further result that the size of the tadpoles was not diminished, but in many cases actually increased. This effect was produced by feeding the desiccated prostate of the ram, the bull and also that of human origin. It has been known for some time that feeding of thyroid tissue also hastens metamorphosis. In the case of the thyroid, however, there is a shrinkage or dwarfing in the size of the tadpoles as contrasted with the observation that prostate feeding produces increased size and more rapid growth. Controlled experiments made with other desiccated glands fail to produce a similar effect. We are thus beginning to gain an inkling of knowledge regarding certain growth-producing factors of the human organism. One may yet see "gland fathers" and "gland mothers."

WHAT IS THE MATTER WITH ARKANSAS?

Arkansas evidently still elects to be the dumping ground for quacks, charlatans and half-baked medical practitioners coming from schools not recognized in the majority of states. A legislative effort was made recently to secure a new practice act by which this could be prevented, but the bill was killed. Instead of having a single board with a reasonable minimum standard of educational qualifications for those who are to obtain the legal right to treat human disorders, Arkansas has at present divided the authority among six different boards. It now has not only a regular board of medical examiners but also a homeopathic board, an eclectic board, an osteopathic board, a chiropractic board and an optometry board. Any other cult

1. Macht, D. I.: On the Effect of Prostate Feeding on the Development of Tadpoles, J. Urol. 3: 411 (Oct.) 1919.

seeking recognition could doubtless easily secure it in the wide open and generous state of Arkansas. Through the eclectic board in Arkansas, a low grade so-called eclectic medical school in Kansas City, the Kansas City College of Medicine and Surgery, not recognized in Missouri—its home state—continues to exist, since its graduates have easy entry into Arkansas. Through the existence of the several boards, others may prey on the public of Arkansas without first obtaining reasonable qualifications of preliminary and medical education. How long are the people of Arkansas going to stand for such flimsy protection against ignorance and incompetence? Do they appreciate the fact that they themselves are and will be the sufferers?

DEATHS FOLLOW THE EATING OF RIPE OLIVES

The death of six persons in Memphis, Tenn., following the eating of ripe olives, with a fatal prognosis in a seventh case, are reported in the General News department in this issue. Investigation has already revealed the fact that these deaths were due to *Bacillus botulinus*, the olives being packed by the "cold pack" method. The brief report thus far available indicates that the food product in question was a part of a salvaged stock and that the olives when found possessed a noticeably pronounced foul odor. Deaths have previously been reported from the same source in Canton, Ohio, Detroit and New York, and wide prominence has been given to the fact that all of these deaths followed the eating of ripe olives. And yet there will no doubt continue to be persons who will eat noticeably spoiled food, just as there are persons who attempt to outrace railroad trains over grade crossings, persons who step off moving street cars backward and some who refuse vaccination against smallpox.

COMMERCIAL DOMINATION OF BIOLOGIC THERAPEUTICS

The danger of commercialized therapeutics has been enormously increased by the introduction of biologic products. These substances offer a rich field for the commercially minded, first, because of the remarkable results which seem to have followed the use of certain products of this type; second, because the field is new and the mode of action of these substances not readily understood and, third—and most important—because, by the very nature of the problems involved, few physicians are well informed concerning them. The influenza epidemic of last year was widespread and fatal in character. It stimulated earnest research in methods of prevention and cure. We were all in a frame of mind to grasp at any straw. Here and there some worker would cry "Eureka"—only to be disappointed when his product was actually put to the test. However, there were more than enough manufacturers ready to place any product on the market with specious claims that could not be positively denied. Vaccines, serums, proteins—all were advanced with such glowing statements as to their properties that only those physicians who kept their feet firmly on solid ground could resist the appeal. Now we have had another epidemic—mild, it is true—but the memories of last year make the average physician ready to accept anything which promises hope, and the manufacturers—"make hay while the sun shines." Physicians have been and are being deluged with literature on the prophylaxis and treatment of influenza. So far as we know, few publications have contained any word of warning on these matters. One exception has just come to notice: the *Medico-Military Review*, a semimonthly mimeographed publication sent to medical officers of the Army by the Surgeon-General's Office. This says:

> You Are Reminded that so far a comprehensive analysis of results obtained by the use of monovalent and polyvalent vaccines in the prevention of influenza has not demonstrated their value. Much carefully controlled experimental work is now being carried out on this subject both in civil institutions and in the Army, and any worthwhile advances will be reported in the *Review* from time to time. If a prospective vaccine is developed, it will be prepared at the Army Medical School for general distribution and all medical officers will be duly notified. The general use of the present commercial polyvalent protective against influenza is not considered desirable. Numerous telegrams and other requisitions are being received for influenza vaccine. In view of the fact that no prophylactic influenza vaccine is available, such requisitions should be discontinued.

Association News

ELECTIONS BY BOARD OF TRUSTEES

Council on Pharmacy and Chemistry

At the annual meeting of the Board of Trustees held at the headquarters of the Association, February 6, Drs. F. G. Novy, Ann Arbor, Mich.; G. W. McCoy, Washington, D. C., and George H. Simmons, Chicago, were elected members of the Council on Pharmacy and Chemistry.

Editorial Boards of Publications

The following were elected members of the editorial boards of the special journals published by the Association as indicated: Dr. Joseph L. Miller, Chicago, *Archives of Internal Medicine;* Dr. Fritz B. Talbot, Boston, *American Journal of Diseases of Children;* Dr. Frederick Tilney, New York, *Archives of Neurology and Psychiatry,* and Dr. Samuel T. Orton, Iowa City, to fill the unexpired term of Dr. August Hoch, deceased, *Archives of Neurology and Psychiatry.*

THE NEW ORLEANS SESSION

Hotel Reservations for the New Orleans Session

The chairman of the Local Committee on Hotels, Dr. J. J. Wymer, 1216 Maison Blanche Building, New Orleans, urges those who plan to attend the annual session of the Association at New Orleans, April 26 to 30, to make hotel reservations promptly. (For hotel headquarters see The Journal, Jan. 10, 1920, p. 110.) The Committee on Hotels will gladly assist those who do not secure reservations at the hotel of their choice to arrange for comfortable lodgings.

By Boat to New Orleans

The schedule of the Southern Pacific Steamboat Line announces a boat to leave New York on Saturday, April 24, and to arrive in New Orleans at 9 a. m. Wednesday, April 28. The boat will lie at the Canal Street Pier, New Orleans, until Saturday, May 1. Passengers may make arrangements so that they may occupy state rooms for the three days on which the sections meet. In this way, they will be assured of comfortable lodgings while at New Orleans.

Dr. Ira J. Haynes, P. O. Box 24, Richmond, Va., who is arranging parties to go by boat to New Orleans, reports that already he has received a number of inquiries indicating interest in the proposed excursion, and wishes to learn as promptly as possible how many desire to join these parties in order that definite arrangements may be completed. Tentatively, he estimates that the time necessary for the round trip by boat will be about, but not over, two weeks; that the cost of the trip will be practically equivalent to railroad fare and the cost of sleeping car accommodations and meals. If the demand warrants, one party will sail from New York and another from some point on Chesapeake Bay. The latter will stop at Old Point Comfort and Havana. The plans are that these boats shall arrive at New Orleans on Tuesday afternoon in time for the General Meeting, the opening meeting of the Scientific Assembly, and the passengers will occupy their state rooms during the time of the annual session. While in New Orleans, breakfast may be obtained on the boat.

Pullman Sleeping Cars May Be Parked at New Orleans

Physicians from different points are planning to charter Pullman coaches which will be parked practically in the center of the city so that they may be occupied during the time of the annual session. This use of Pullman coaches is common at the Mardi Gras and other large gatherings in New Orleans. It provides reasonably comfortable lodgings at moderate rates. Parties starting from different points may charter a Pullman car and retain it throughout the session, in this way being assured of comfortable accommodations on the going and returning trip as well as while in New Orleans. The terms, including the charges, may be obtained from the railroad ticket office at the point from which such parties will start for New Orleans.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

Baby Clinic at Little Rock.—The United Charities Association, Little Rock, has opened a baby clinic at the Armory City Park, where a nurse is in attendance from 1 to 3 p. m. to instruct mothers on the care of babies. On Wednesdays from 1 to 2 p. m. babies will be weighed and examined by the physician in charge. When babies are too ill to be brought to the station the nurse will visit the home.

Hospital News.—Governor Brough has issued a proclamation calling on the people of the state to support the campaign for raising $300,000 for the erection of a children's hospital in Arkansas. Plans for the hospital have been completed. It will be of fireproof construction throughout. The site for the hospital has not been selected.——Through the cooperation of the city and the Medical Department of the University of Arkansas, the free dispensary in the Isaac Folsom Clinic Building, Little Rock, has been reorganized and reopened. A pharmacy, a laboratory and a roentgen-ray department have been installed, and a clinical clerk has been employed.

ILLINOIS

Cost of Influenza.—The state director of health estimates that the influenza-pneumonia epidemics of 1918 and 1919 have cost the people of Illinois more than $125,000,000. The value of the life of an adult is placed at $3,000 and that of a child at $500. During the year ended June 30, 1919, there were 223,683 cases of influenza and pneumonia, with 25,222 deaths.

Chiropractor Serving Jail Sentence.—Mrs. Emma Calvin of Monticello is now serving a jail sentence for violating the medical practice act. Mrs. Calvin is a member of the Illinois Association of Chiropractors, and the secretary of the association, with headquarters at Joliet, has sent out a letter to other chiropractors urging that Mrs. Calvin be supplied with reading matter during her incarceration.

Personal.—Dr. Albert R. Trapp, Springfield, is reported to be seriously ill with pneumonia.——Dr. Charles E. Dorr, Worden, was recently attacked on the street by a coal miner and sustained fractures of the nasal and one of the malar bones.——Dr. William H. Grayson, Granite City, the oldest member of the Tri-City Medical Society, was the guest of honor at a banquet given by that organization, January 23.

What Medical Freedom Advocates Want.—The advocates of "medical freedom" propose the following as a section of the bill of rights in the contemplated new constitution of the state of Illinois: "The free exercise and enjoyment of the profession and practice of the art of healing, without discrimination shall be forever guaranteed; and no person shall be denied any of his opinions in the field of that art; but liberty of conscience hereby secured shall not be construed to dispense with sanitation in the sense of cleanliness, or excuse acts of licentiousness, or justify practices inconsistent with the peace and safety of the state. No person shall be required to obey, or to pay taxes to support, any practitioner or any system of healing against his consent, nor shall any preference be given to any school or system of healing."

Chicago

Joint Meeting.—At a joint meeting of the Chicago Medical Society and Chicago Pathological Society held February 11, papers were read by Dr. Harry Gideon Wells, on the "Pathological Characteristics of Tumors in Mice, and Their Relation to Human Tumors," illustrated by lantern slides, and by Dr. Maude Slye, on "The Inheritability and Biological Characteristics of Tumors," illustrated by charts.

Indictments.—Indictments were returned by the Federal Grand Jury, January 21, against William H. Sage, former head of the narcotic division of the Internal Revenue Bureau, Dr. Joseph A. Greaves and Hyman Cohen, proprietor of the William H. Sage Drug Co., charging them with violation of the Harrison Narcotic Law.——Dr. Anna B. Schultz is reported to have been arrested, January 23, charged with writing wholesale prescriptions for liquor.

MAINE

Work of State Laboratory.—More than $36,000 was saved to the people of Maine during 1919, through 10,000 free tests made by the diagnostic laboratory of the state department of health at Augusta, of which Dr. Herbert E. Thompson, Augusta, is director and Mrs. Ruth Patten is biologist. Of these tests 5,837 were made for venereal disease; 1,063 for diphtheria; 1,827 for tuberculosis; 380 for typhoid; 243 for malignancy, and the remainder for miscellaneous conditions.

New Officers.—At the fifty-first stated meeting of the Cumberland County Medical Society, Dec. 12, 1919, Dr. Francis J. Welch, Cumberland, was elected president; Dr. Daniel Driscoll, Cumberland, vice president, and Dr. Erastus E. Holt, Jr., Cumberland, secretary-treasurer.——York County Medical Society held its ninety-ninth annual meeting in Biddeford, January 7, and elected Dr. Frank W. Smith, York Village, president; Dr. Paul S. Hill, Saco, vice president; Dr. Arthur L. Jones, Old Orchard, secretary, and Dr. Carl G. Dennett, Unity, treasurer.

Venereal Disease Clinics.—Five free clinics for persons suffering from venereal disease who are unable to pay for treatment have already been established in the state. These are at the Augusta Health Center with Dr. George A. Coombs, in charge; at the Mason Dispensary, Portland, with Dr. Gustav A. Pudor, in charge; at the Eastern Maine General Hospital, Bangor, with Dr. Harrison J. Hunt, in charge; at the Bath Health Center, with Dr. Langdon T. Snipe, in charge, and at Dr. Miner's hospital, Calais, with Dr. Walter N. Miner in charge. Clinics will soon be in operation at Rockland and Waterville.

Public Health Work.—Under the direction of Dr. Leverett D. Bristol, Augusta, commissioner of health, a new era of public health work opened in Maine this year when the state was divided into eight health districts with a full-time district health officer in each district. With one exception the new district officers were physicians, qualified both by general practice and by previous health work in their various communities. The new officers are Dr. Clarence F. Kendall, Biddeford; Dr. James W. Loughlin, Damariscotta; Dr. Guy H. Hutchins, Presque Isle; Dr. Edward P. Goodrich, Lewiston; Dr. John F. Stevens, Millinocket; Dr. Henry D. Worth, Bangor, and Alton S. Pope of Waterville.——Legislation went into effect, January 1, providing that a local health officer, either for full or part time, shall be employed by

every community or group of communities in Maine, and such appointments are slowly being made in the different towns, subject to the approval of the commissioner.

MARYLAND

New Officers.—The Caroline County Medical Society at its annual meeting elected Dr. Stephen S. Stone, Ridgely, president, and Dr. John R. Downes, Preston, secretary-treasurer.

Personal.—Dr. George F. Sargent has purchased property near Towson, which he will open as a sanatorium.——Dr. William E. Martin, Harrisonville, who has been ill has recovered and resumed practice.——Dr. Ida M. Kahn of China, in charge of the first woman's hospital at Nanchangfu, and for two years in charge of a hospital for women at Tientsin, spoke at a meeting at the Y. M. C. A. in Baltimore, February 8, on her work in China.

Hospitals Crowded.—Baltimore hospitals, with one exception, are crowded to their capacity with patients. The only hospital whose public ward is not crowded is the Johns Hopkins, the largest in the city. Dr. William L. Moss, Baltimore, president of the Maryland Hospital Conference Association, sounded a warning to the community in reviewing the situation, as the condition is growing more critical every day, with the danger from the spread of influenza and pneumonia. At the office of the supervisors of city charities, where patients may be designated to the free wards, it was said that the situation never had been so serious. The closing of the two colored wards at the Maryland General Hospital because of a shortage of nurses constitutes another serious problem in the hospital situation, as it affects the care of the colored patients.

MISSOURI

Porter Addresses Academy.—Dr. John L. Porter, Chicago, delivered an address before the Kansas City Academy of Medicine, February 13, on "Differential Diagnosis of Chronic Joint Diseases."

Personal.—Dr. Emmett McD. Bridgford, Santa Fe, is reported to be critically ill.——While a grand jury at Kansas City, January 15, was considering criminal charges against him, Dr. John W. C. Boone, Kansas City, is reported to have shot and wounded the husband of the woman who had preferred the charges.

License Suspended.—For soliciting patronage through agents in violation of the medical practice act, the state board of health is said to have suspended the license of Dr. Oscar A. Young, Excelsior Springs, for a period of one year from Nov. 10, 1919. Dr. Young appealed to the circuit court of Clay County which sustained the action of the board.

NEW YORK

State Aid for Tuberculous.—The legislature has been asked to appropriate $1,000,000 for state aid to tuberculous patients. The bill proposes to license boarding houses in the country for the care of tuberculous patients, and to assure medical supervision and proper sanitary conditions.

Personal.—Dr. Thomas B. Carpenter, Buffalo, has been appointed director of laboratories of the department of health of Buffalo to fill the place of Dr. William G. Bissell, deceased.——Dr. George R. Little, Schaghticoke, has been elected and Dr. Stanton P. Hull, Petersburg, reelected a member of the board of directors of the Rensselaer County Tuberculosis Association.

Semicentennial of Society.—The semicentennial anniversary of the Jenkins Medical Society was celebrated at the New York Athletic Club, January 8. Dr. Henry Moffat, Yonkers, presided as toastmaster, and addresses were made by a number of prominent physicians of New York City. The membership of the society is made up of physicians of Mount Vernon and Yonkers.

Postgraduate Course at Albany.—A course in infectious diseases and public health will open at the Albany Medical College, March 4, and sessions will be held each Thursday until the last week in April. An additional day will then be devoted to practical demonstrations, and thereafter the class will be in session on Thursdays and Fridays until June 18. The course will be in charge of Dr. Charles C. Duryee, Schenectady, to whom all communications and applications should be made.

Appropriation to Fight Influenza.—A call on the legislature, February 2, for an appropriation of $50,000 to combat the influenza epidemic, met with instantaneous response. From January 23 to February 2, there were reported to the state department of health, 799 cases of pneumonia, with 139 deaths, and 5,850 cases of influenza, with twenty-one deaths. Advices received at the department of health indicate that influenza is prevalent in rural districts and in Syracuse, Jamestown, Poughkeepsie, Mount Vernon and Albany.

New York City

Venereal Disease Lectures.—During the month of December, audiences totaling 3,400 men and women attended forty-three lectures on venereal diseases given under the auspices of the division of lectures of the bureau of public health education.

County Society Discontinues Prosecution of Illegal Practitioners.—Owing to the expense incident to this work the Medical Society of the County of New York has taken action discontinuing the collection of evidence and the prosecution of cases of unlawful medical practice. Hereafter all cases of unlawful practice which, in the opinion of censors, require investigation or prosecution, will be reported to the police department of the city and the district attorney for action.

Establish and Protect Priority to Medical Discoveries.—At a meeting of the section on historical medicine of the New York Academy of Medicine, February 4, a committee composed of Dr. Robert T. Morris, Dr. Thomas L. Stedman and Dr. A. L. Soresi suggested the creation of a special medical board that should establish and protect the priority of ideas relating to medical subjects. This board should correspond to the patent office; it should patent in its name all new surgical instruments and pay a royalty to the inventors, much as publishers deal with writers of medical books.

Associated Physicians of Long Island Elect.—At the twenty-second annual meeting of the Associated Physicians of Long Island, January 31, the following officers were elected: president, Dr. Henry Goodwin Webster, Brooklyn; vice presidents, Drs. Harris A. Houghton, Bayside, Hugh Halsey, Southampton, and Joshua M. Van Cott, Brooklyn; secretary, Dr. James Cole Hancock, Brooklyn, and treasurer, Dr. Edwin S. Moore, Bay Shore. Following the scientific session a dinner was served at the Montauk Club, after which addresses were made by Father John L. Bedford, Brooklyn; Hon. Walter C. Burton, postmaster, Brooklyn, and the Hon. Regis H. Post, ex-governor of Porto Rico.

OKLAHOMA

Tuberculosis Clinic Organized.—Under the direction of Drs. William E. Lamerton, Julian Field and the public health nurse of Garfield County. Enid has opened a free tuberculosis clinic.

New Officers.—At the annual meeting of the Central Oklahoma Medical Association held in Enid, January 20, Dr. William H. Rhodes was elected president, and Dr. Harry F. Van Dever, secretary-treasurer, both of Enid.

Personal.—Dr. Francis B. Fite, Muskogee, has been unanimously selected by the city commissioners to fill the vacancy as mayor.——Dr. Dock Long, Duncan, has been appointed chief physician of the bureau of tuberculosis of the state department of health.——Dr. and Mrs. David A. Myers, Lawton, were seriously injured in San Antonio, Texas, January 6, in a grade crossing accident in which their automobile was struck by a train.——Dr. James C. Hawkins has been appointed health officer of Blackwell, succeeding Dr. Arlington R. Havens, resigned.

OREGON

Woman Appointed Deputy Health Officer.—Dr. Emma Maki Wickstrom, Portland, has been appointed deputy health officer of Multnomah County and has been assigned to duty with the court of domestic relations.

Hospital Item.—Owing to the need of more hospital space in Portland it is reported that the building at East Second and Multnomah Streets which was begun several years ago will be converted into a hospital of about 100 beds.

New Officers.—At the annual meeting of the Coos-Curry County Medical Society Dr. George Earl Low, Coquille, was elected president and Dr. Philip J. Keizer, North Bend, secretary.——The Portland Ophthalmological and Oto-Laryngological Society at its annual meeting elected the following officers: president, Dr. John F. Beaumont, Portland; vice presidents, Drs. Sherman E. Wright and Ralph A. Fenton, Portland, and secretary-treasurer, Dr. C. Gertrude

French, The Dalles.——At the annual meeting of the Central Willamette Medical Society which includes Linn, Benton and Lincoln counties, in Albany, December 5, Dr. Robert Bruce Miller, Lebanon, was elected president; Dr. Robert A. Jayne, Philomath, vice president; Dr. Robert L. Wood, Lebanon, secretary-treasurer.

PENNSYLVANIA

New Secretary-Editor.—At the meeting of the council of the Medical Society of the State of Pennsylvania, Dr. Frederick L. Van Sickle, Olyphant, was elected executive secretary and will be the editor of the *Pennsylvania Medical Journal* beginning with the July issue.

Epidemics.—The department of public health has instituted active measures for combating the threatened epidemic of influenza. A letter has been sent to each physician emphasizing the necessity of prompt report of all cases of influenza and pneumonia.——The health authorities of Erie have taken possession of the government dormitories at Fourth and Cascade Streets for use as an emergency hospital during the prevalence of scarlet fever.

Arrest of an "Association Doctor."—Alleged to be one of the smoothest "quacks" operating in this country, Dr. John Newhall Kirk was arrested, February 6, by chief county detective, Major S. O. Wynne, at the instance of Dr. Edward Martin, the state health commissioner. At the same time a fugitive warrant from Baltimore was served on the physician. Dr. Kirk was operating here as elsewhere under the name of "Association Doctors."

Philadelphia

Mary Scott Newbold Lecture.—Dr. Alonzo E. Taylor delivered the third of the Mary Scott Newbold lectures before the College of Physicians, February 6, on "Post War Conditions and Problems of Civic Organization in Europe."

New County Officers.—At the business meeting of the Philadelphia County Medical Society, held January 21, Dr. Herman B. Allyn was elected president; Dr. Benjamin F. Devitt, vice president; Dr. James Morton Boice, secretary; Dr. Charles Scott Miller, assistant secretary, and Dr. Edward A. Shumway, treasurer.

Packard Lecture.—Sir Arthur Newsholme, M.D., K.C.B., lecturer of public health administration, School of Hygiene and Public Health, Johns Hopkins University, delivered the annual Frederick A. Packard Lecture of the Philadelphia Pediatric Society in Thompson Hall, College of Physicians, February 10, on "Neo-Natal Infant Mortality."

Campaign for Woman's Medical College.—The campaign to raise $250,000 as an extension fund for the Woman's Medical College of Pennsylvania is two thirds completed, as the result of an intensive drive from January 8 to January 20. On March 11, the seventieth anniversary of the founding of the college will be marked by special exercises, and the building will be open to the public. Five teams organized by women interested in social and civic welfare are working for a $60,000 memorial fund as a tribute to the late Dr. Anna Howard Shaw.

VIRGINIA

Health Department Issues Bulletin.—The health department of Norfolk has initiated a monthly digest of its activities, in which current health problems are discussed.

Personal.—Dr. Ira H. Thomas, Aldie, has retired on account of ill health, after thirty-one years of practice.——Dr. Joseph E. Taylor has been appointed city coroner of Danville, succeeding Dr. Edward H. Miller, Jr., Danville, resigned.

Influenza—Up to January 28, 1,001 cases of influenza had been reported in Richmond, with only four deaths. An appropriation of $10,000 to combat influenza was asked from the finance committee of the Richmond city council, January 27, by health officer, Dr. Ernest C. Levy.

Society Reorganized.—The Southwest Virginia Medical Society was reorganized at a meeting held recently at Pulaski. Meetings of this organization had been suspended since 1916. The membership of the organization includes residents of the counties of Pulaski, Montgomery, Wythe, Smyth and Washington. Members of the profession from counties contiguous to those included and from the cities of Roanoke and Bristol are eligible as associate members. Dr. Wilson R. Cushing, Dublin, was elected president; Dr. Joseph A. Noblin, East Radford, vice president; Dr. Alfred B. Greiner, Rural Retreat, secretary-treasurer.

WASHINGTON

Personal.—Dr. Ralph Hendricks, Spokane, was reelected health officer and secretary of the health board of Spokane, January 9.—— Dr. James T. Mason, Seattle, has been appointed a member of the state board of health succeeding Dr. Henry H. McCarthy, Spokane, term expired.—— Dr. Claude A. Lewis, Fairfield, has been elected mayor of Fairfield.—— Dr. Richard Connell, North Yakima, has been appointed physician of Yakima County.——Dr. Charles C. Benedict, Enumclaw, has been appointed local surgeon for the Milwaukee railway system.

New Officers.—Lewis County Medical Society at its annual meeting, Dec. 8, 1919, elected Dr. James M. Sleicher, Chehalis, president; Dr. Frederick J. Hackney, Centralia, vice president, and Dr. Rush Banks, Centralia, secretary.—— Whatcom County Medical Society at its annual meeting elected the following officers: president, Dr. Hays A. Compton, Bellingham; vice presidents, Drs. Albert M. Dawson, Bellingham, Charles S. Hood, Ferndale, and Carl C. Hills, Custer; secretary, Dr. Edward L. Brinson, Bellingham.—— King County Medical Society at Seattle, January 8, elected as president, Dr. Homer D. Dudley; vice president, Dr. Herbert E. Coe, and secretary-treasurer, Dr. Howard J. Knott, all of Seattle.——Spokane County Medical Society at Spokane, January 8, chose as president, Dr. Arthur T. R. Cunningham; vice president, Dr. James D. Windell; secretary, Dr. Fred G. Sprowl; corresponding secretary, Dr. Edward S. Jennings, and treasurer, Dr. John H. R. Brodrecht, all of Spokane. By a vote of 65 to 30 the society denied the right of any member to engage in contract work.

WEST VIRGINIA

Personal.—At the fourth annual meeting of the West Virginia State Hospital Association, at Parkersburg, Dr. Joseph A. Guthrie, Huntington, was unanimously reelected president of the organization.

State Society Meeting.—At the meeting of the Little Kanawha and Ohio Valley Medical Society in Parkersburg, January 20, it was decided that the annual meeting of the West Virginia State Medical Association be held at Parkersburg, May 18 to 20.

WISCONSIN

Personal.—Prof. Henry C. Tracy, A.M., Ph.D., Milwaukee, has been appointed professor of anatomy in the University of Kansas, Lawrence and Rosedale.

Office Building for Physicians.—The Beloit Physicians and Surgeons Club, January 16, inaugurated a movement toward securing an office building, medical laboratory, and club room for physicians and dentists, to cost $100,000. A committee consisting of Drs. Arthur C. Helm and Harry E. Burger was appointed to take charge of this matter. At this meeting, Dr. Arthur C. Helm was elected president, Dr. Virgil D. Crone, vice president, and Dr. Benjamin Fosse, secretary-treasurer.

CANADA

Personal.—Dr. James Third has resigned as professor of medicine in Queen's University, Kingston.——Dr. Harold P. Rogers, Toronto, has returned after four years' service in Mesopotamia and Syria.——Dr. Alfred K. Haywood, medical superintendent of the Montreal Hospital, has been appointed chairman of the committee of the Canadian National Council for Combating Venereal Disease. The council will interest physicians throughout Canada in the venereal disease problem and in plans of the Dominion government for its solution.——Dr. C. M. Sellery, Toronto, who served overseas in England and France, has been appointed a medical missionary in China, and will take up his work in August.—— Dr. John Noble has been elected chairman of the Toronto Board of Construction.

GENERAL

Secretary Houston Requests Appropriation to Combat Plague.—Secretary of the Treasury Houston, in a communication to Congress, has requested supplemental appropriation in the sum of $250,000 to enable the Public Health

Service to continue its work of controlling the outbreak of bubonic plague discovered in New Orleans last October. Since that time the Public Health Service has been spending $50,000 monthly to effect suppression and control of this disease.

Appreciation of Work of Rockefeller Institute.—The Rockefeller Institute for Medical Research has received a letter from Surgeon-General William C. Braisted, U. S. Navy, testifying to his appreciation of the valuable aid rendered by the institute in connection with the War Demonstration Hospital, New York City. The assistance was not limited to the active period of the war, but continued after the signing of the armistice and indicated a high standard of efficiency in the institute both as to personnel and equipment.

Bequests and Donations.—The following bequests and donations have recently been announced:

Montefiore Home, Hebrew Orphan Asylum, Sanatorium for Hebrew Children, Blind Asylum of New York, Skin and Cancer Hospital, Servants for the Relief of Incurable Cancer, Beth Israel Hospital and Henry Street Nurses's Settlement, all in New York, each $3,700 by the will of Emma Feuchtwenger.

Clarence Barker Memorial Hospital, Biltmore, N. C., a gift of $50,000, from Mrs. Walker Rathbone, Bason.

Columbia University for the equipment of surgical research laboratories, an anonymous donation of $6,000.

Grace Hospital, Toronto, $500 by the will of the late Dr. Charles E. Treble, Toronto.

Boat Trip to Mississippi Valley Conference.—The Mississippi Valley Conference on Tuberculosis will be held at Duluth, Minn., September 2, 3 and 4. The Mississippi Valley Council has chartered the S. S. *North American*, which will leave Chicago, August 30, and returning will reach Chicago on the morning of September 7. The cost of the trip, including war tax, sleeping accommodations and breakfasts in Duluth, will be $80. The only additional expense will be luncheons and dinners at Duluth during the three days of the meeting. Reservations may be made on application to Mr. James Minnick, superintendent of the Chicago Tuberculosis Institute, 8 South Dearborn Street, Chicago.

Recommendations Regarding Yale School of Medicine.—After a study of a survey and report as to the School of Medicine of Yale University, Dr. Fred T. Murphy presented his views to the committee on educational policy, which unanimously recommended the following minutes which have been adopted by the corporation:

1. That there is a clear and definite opportunity and obligation of the university to medical education.

2. That the Yale School of Medicine has a valuable nucleus of men and material and sound traditions, which righly justify the development of an institution for medical education of the highest type.

3. That the corporation accept as a policy the development of a medical school of the highest type to include the pre-clinical and clinical years of instruction upon such principles of medical education as may be approved by the corporation, after conference with the medical faculty.

4. That every effort be made to obtain at the earliest possible date the necessary funds with which to expand and develop the buildings, the equipment, the instruction, and the research, and the service, in accordance with the best ideals of modern medical education—as an essential unit of our university plan for development.

A Modern Almanac.—The Miners' Safety and Health Almanac for 1920 (Miners' Circular 26), compiled by the U. S. Public Health Service, has just been issued by the Bureau of Mines of the Department of the Interior. This is the second year that the Bureau of Mines has issued this calendar. In addition to the usual information, it contains instructions on the prevention of various diseases and accidents, and shows the miner how he can reduce the risks of his occupation. He is told that sickness means loss of time and money, and that it may mean reduced efficiency or permanent incapacity. There are special articles on influenza and pneumonia, miners' consumption, miners' nystagmus, contagious diseases among children, prevention of coal dust explosions, malaria, flies, typhoid fever, pure drinking water, school inspection, adenoids, "patent medicines," venereal diseases, sanitary housing, dust and ventilation in mines, mine gases and sanitary privies. The reader is advised that "patent medicines" are unnecessary, useless and a waste of money; that frequent and routine physical examinations are a good thing; that clean drinking water is just as essential as clean food, clean air or clean homes. The booklet is copiously illustrated and well printed. Thus the almanac, formerly a medium for the dissemination of misinformation regarding "patent medicines," has become also a worthy agency in providing accurate information on the prevention of accidents and disease.

Botulism from Eating Ripe Olives

Newspapers of February 8 reported deaths following the eating of ripe olives, this time in Memphis, Tenn. Previous deaths occurred in Canton, Ohio, Detroit and New York, and have been reported in THE JOURNAL. THE JOURNAL asked Dr. B. W. Fontaine, associate professor of medicine in the Memphis Medical College, for an account of these cases. He telegraphs the following report:

"Thursday afternoon, February 5, at a luncheon given by a weekly social club at the home of Mrs. M. V., there were three guests, the hostess and a 10 year old boy. Later on the husband of the hostess and the husband of another guest joined the party, making seven in all, each person partaking of the refreshments. The first illness, the case of Mrs. H., began ten to twelve hours later, death occurring some time Friday morning, Mrs. H. being found dead in bed at 8:30 a. m. The next death was the hostess, Mrs. V. on Saturday morning at 5 a. m.; the third death, another woman, Saturday afternoon; the fourth, the husband of Mrs. V., Saturday afternoon; the fifth, another guest, Sunday morning; the sixth, the 10 year old boy, Sunday afternoon. The last guest is now seriously ill and is not expected to survive, making six deaths and the seventh case probably fatal. The initial symptoms were referred chiefly to the throat and eyes; the most noticeable symptoms were sensations of constriction about the throat and inability to swallow. Double vision soon occurred in all the cases and was finally followed by blindness. No gastro-intestinal symptoms occurred, except in the case of the boy, who was slightly nauseated. In all of the cases respiration was extremely labored and the pulse was very fast. Prostration was extreme, the temperature was subnormal. All of the patients were entirely conscious to the time of death. Necropsies were not permitted.

"Investigation by the health department discloses the fact that the menu at the luncheon consisted mainly of ham sandwiches, lettuce salad and whole ripe olives. No alcoholic liquors were drunk. Investigation of the jar from which the olives were taken showed that it had contained about fifty olives. Nine olives were found in a dish on the table. It is estimated that each guest must have eaten from four to six olives. The olives were of ripe variety, packed by the cold process in brine and were in a glass jar, having a tin top with a rubber seal under the cap, bearing the number 3X3602, put on by a rubber stamp. Just below the top, around the neck was a paper band, bearing the word 'Jumbo.' On the main label, just below the band were the words: 'Supreme Curtis Olives Corporation, Los Angeles, U. S. A.' In the middle of the label, in large type were the words: 'Curtis quality, 16 ounces net' and a picture of three or four large black olives. The olives found in a dish on the table had a very objectionable and pronounced foul odor. In the kitchen, on the drain-board was found the empty jar containing about twelve drops of the brine, which also gave the same disagreeable odor. The olives were obtained from a store in Memphis of which the principal business is buying and selling salvaged merchandise. The olives were transported by the firm from one of their branch houses in Montgomery, Ala. Investigation reveals that many cases of the same brand of olives were sold by this house. Ten or twelve jars were still unsold, which had finally reached Memphis. Examination of the olives by the city chemist and bacteriologist showed them to be soft and black and to have been preserved in brine. The contents of the other jars, similar to the jar in question, and put up by the same company, bearing the same label and packing number were without odor and wholesome so far as gross appearance was concerned.

"Bacteriological studies in the limited time, necessarily being hurried and incomplete, have revealed an anaerobic motile bacillus, gram positive, morphologically and culturally identical with *Bacillus botulinus*. Injection of the original brine in minute quantity, about one hundredth of a cubic centimeter subcutaneously, into a guinea-pig resulted in death in nine hours, with symptoms of labored respiration, ruffling of the hair and dilatation of the pupils, the four feet outstretched."

FOREIGN

Mortality of Lisbon.—It is stated from Lisbon that the mortality for the year 1918 exceeded that of any previous year. The number of deaths was 17,071 or 5,543 more than the previous year. The number of deaths caused by the influenza was 3,692; seven deaths were due to typhus fever. No mention is made of the death rate.

Prize for Orthopedic Research.—The Rizzoli Orthopedic Institute at Bologna, Italy, announces that the competing articles or appliances sent in to compete for the Umberto I prize of 3,500 lire must be in the hands of the president of the institute before Dec. 31, 1920. The prize is awarded for the best work or invention in the field of orthopedics and competition is open to physicians of all countries. The provisions for the competition will be sent on demand. Address the President, Instituto ortopedico Rizzoli, Bologna, Italy.

Surgeons Form Association.—Surgeons representing the surgical staffs of all the great teaching hospitals of Great Britain assembled in London, January 8, under the chairmanship of Sir Rickman J. Godlee, London, and organized the "Association of Surgeons of Great Britain and Ireland," thus following the precedent set by members of the medical staffs several years ago. The association will be representative of British surgeons, will represent British interests at international surgical congresses and will foster scientific meetings of surgeons from time to time at various centers. Sir John Bland-Sutton, London, was elected president of the association.

Physiology at the Paris Aviation Show.—The sixth Salon de l'aéronautique, which was held at Paris the last week in December, was a striking demonstration of the progress in the medical side of aviation since the last Salon in 1913. Two sections were devoted to physiology; one more especially civilian and aeronautical, the other essentially military and devoted to the study of aviation in general. It had six subsections showing the general examination of the candidate for aviation, the examination of the nervous system and the senses, a full display being made of the instruments and apparatus used in the various tests. Among the exhibits in the subsection for examination of circulation and respiration were much enlarged photographs of the blood pressure and pulse curves showing the effect of fatigue on athletes and aviators. The various devices for studying and overcoming the effect of rarefaction of the air included Dr. Garsaux's automatic oxygen inhaler. This supplies 35 liters an hour per person, and automatically increases this supply progressively up to 150 liters at 8,000 feet. The Salon exhibited further data showing that there are now fourteen companies of aerial navigation in France and that between May and November, 1919, they had a record of 1,079 voyages, covering 442,180 kllometers and carrying 1,356 passengers, without the loss of a single person. The organizers of this physiology exhibit were Dr. Crouzon, a leader in the medical features of aviation, and Dr. M. de Fossey, who is styled by the *Journal de médecine de Bordeaux*, in its report of the exposition, "the *cheville ouvrière* of this remarkable medical exposition."

LATIN AMERICA

Quarantine Against New Orleans Lifted.—It is stated from El Salvador that the quarantine affecting all ships from New Orleans has been lifted.

Dr. Lefás Goes to Paraguay.—Dr. Emmanuel Lefás, of Paris, has accepted the chair of pathology in the school of medicine of Paraguay, and will arrive in Paraguay about the middle of February.

Personal.—Dr. B. K. Ashford, Col., M C., U. S. Army, of Porto Rico, has been visiting in Cuba. Sessions in his honor have been held by the Association of the Medical Press of Cuba and the Society of Clinical Studies.

New Nurses' School at Nicaragua.—Dr. Luis Sequeira, of Bluefields, Nicaragua, is about to establish a school for nurses in that city. There will be only twelve pupils admitted at first and teaching will be free of charge.

Election of Officers.—The Sociedade Brazileira de Neurologia, Psychiatria e Medicina Legal recently elected its officers for the new year: president, Prof. J. Moreira; vice president, Prof. Abreu Fialho, and secretary-general, Dr. M. Pinheiro.

Medical Students in Cuba.—The number of students enrolled in the School of Medicine and Pharmacy of the University of Havana during the year 1919-1920 is 1,560, distributed as follows: medicine, 1,037; pharmacy, 312; dentistry, 170; veterinary 41.

Deaths in the Profession.—Dr. Horacio Rodríguez, aged 36, was the first victim in the profession to succumb to typhus during the prevailing epidemic of typhus at Valparaiso, Chile. He was connected with the Asistencia Pública, in direct charge of typhus patients, and leaves a widow and two children.

Health Certificates for Colombian Travelers.—The office of public health of Colombia has issued regulations decreeing that passengers traveling on outbound ships must be provided with a physician's certificate to the effect that they are not suffering from any contagious disease.

Medical Society of Caracas.—At a recent meeting held by the medical society of Caracas the following officers were elected: president, Dr. J. Sanabria Bruzual; vice president, Dr. B. Perdomo Hurtado; treasurer, Dr. Andrés Pietri; secretary, Dr. Jiménez Rivero; librarian, Dr. Salvador Quintero, and editor of the journal, Dr. Salvador Córdova.

New Leprosarium.—A model leper hospital, equipped to accommodate several hundred patients of both sexes and all ages, is being built some distance outside the city of São Paulo. Well appointed laboratories will be established within the hospital to conduct research on the disease. The leper colony will have all the facilities pertaining to an independent community, including police and fire departments, light and water services, cemetery, and postal and telegraph offices.

Government Services

Major Phelan Receives Special Appointment

Major Henry du R. Phelan, U. S. Army, has been appointed representative of the Historical Branch, General Staff, U. S. Army, as liaison officer between the French and American historical sections and attached to the American Embassy, Paris.

What the Government is Doing for the Disabled in War

According to the Federal Board for Vocational Training the status of those who were disabled in the world war is as follows: in tuberculosis sanatoriums, 46,000; in hospitals for treatment, 18,000; in asylums, 19,000; taking vocational training, 27,912, and 5,000 refused government training, making a total of 115,000. In addition there are about 200,000 men who are only slightly disabled.

A Lapel Button for Members of the Officers Reserve Corps

A circular, issued by the War Department, January 17, states that a lapel button for members of the Officers' Reserve Corps has been approved, optional for wear on civilian clothes only. The button is of gold, one-half inch in diameter with the face enameled in the color of the facing of the arm or corps of the service. It has the letters U. S. R. in the center. The button is to be issued by the Quartermaster's Department.

Influenza in Naval Stations

The *Naval Medical Bulletin*, issued to medical officers of the United States Navy, reports mild epidemics of influenza at the Great Lakes Station, and also in the Marine Barracks at Quantico, Va. The type of the disease is reported to be the same as last year, but not so virulent. A few cases have occurred at Gulfport, Miss., and at Charleston, S. C. Special attention is invited to the importance of placing the sick under treatment at once and modifying the routine, if necessary, so that the well may avoid unnecessarily close contact with each other, overexposure to cold and wet and fatigue.

Medical Corps Section of Army Relief

A campaign for a new membership in the Medical Corps Section of the Army Relief Society is under way. The object of the society is the relief and education of widows and orphans of enlisted men of the regular army and it is requested that all members of the Medical Corps or some member of their family become members of the organization

The dues are $1 a year. Application may be made to Mrs. Merritte W. Ireland, the Wyoming, Washington, D. C., or Mrs. M. A. Delaney, the Northumberland, Washington, D. C.

Government Needs Physicians

The United States Civil Service Commission announces that a number of physicians are needed in the Indian Service, the United States Public Health Service, the Coast and Geodetic Survey and the Panama Canal Service. Both men and women are eligible, salaries of $200 a month are offered with prospective promotion and higher pay. Information and application blanks will be obtained from the commission at Washington, D. C., or the civil service board at any of the principal cities in the United States.

Care of Discharged Soldiers

Over 10,000 discharged, disabled soldiers were undergoing treatment in Public Health Service hospitals, or under contract with private hospitals, during January, according to tabulated returns. The number of applicants for treatment under the war risk act is constantly increasing, as the men become familiar with the fact that they are entitled to free treatment. The United States Public Health Service is now operating forty-three hospitals for the care of discharged, disabled soldiers, sailors, marines and war nurses, who are beneficiaries of the War Risk Insurance Act.

Army Turns Over Hospital Equipment to Fight Epidemic

The Secretary of War has been permitted to turn over to the State of Kansas emergency hospital equipment of the army to check the present influenza epidemic in that state. The Senate moved with unusual speed on this resolution, which was passed the day it was introduced. Senator Curtis and Governor Allen of Kansas asserted that the Topeka High School has been converted into a temporary hospital and that 150 influenza patients are being treated there. Similar conditions exist in many of the Kansas state institutions. This is the first instance where state government officials have asked for emergency relief from the War Department.

Medical Veterans of the World War

Col. Frederick F. Russell, M. C., U. S. Army, secretary of the Medical Veterans of the World War, states that during January, 143 new members joined, making a total membership of 2,542, divided as follows:

Medical Corps, U. S. Army	1,116
Medical Corps, U. S. Navy	46
Medical Corps, U. S. P. H. S.	59
Contract Surgeons, U. S. Army	85
Acting Assistant Surgeons, U. S. P. H. S.	44
Members Local Board	512
Members Examiner, Local Board	174
Members Medical Advisory Board	506

Army Hospitals in Operation

On January 9, fourteen army hospitals were in operation with 14,370 bed patients, distributed as follows:

U. S. General Hospital No. 28, Fort Sheridan, 2,800; Walter Reed General Hospital, Takoma Park, D. C., 1,675; U. S. General Hospital No. 2, Fort McHenry, Md., 1,447; Letterman General Hospital, Presidio, San Francisco, 1,245; U. S. General Hospital No. 41, Fox Hills, N. Y., 1,518; U. S. General Hospital No. 21, Denver, Colo, 1,088; U. S. General Hospital No. 6, Fort McPherson, Ga., 914; U. S. General Hospital No. 19, Oteen, N. C., 887; U. S. General Hospital, Fort Bayard, N M., 698; Base Hospital, Fort Sam Houston, Texas, 713; U. S. General Hospital No. 31, Carlisle, Pa., 560. U. S. General Hospital No. 43, Hampton, Va., 319; U. S. General Hospital No. 20, Whipple Barracks, Ariz., 351; Army and Navy General Hospital, Hot Springs, Ark., 155.

U. S. General Hospital No. 20, Whipple Barracks, Ariz., and No. 43, Hampton, Va., will be closed February 15, and such patients as require further treatment will be transferred to other hospitals.

Neurosurgical Unit in Richmond

It is announced that Richmond, Va., has been selected as the place of the fourth district, embracing Virginia, Maryland, District of Columbia and West Virginia, in which a neurosurgical unit is to be established to treat and care for veterans of the world war suffering from injuries of the brain, spinal cord and nerves. Arrangements have been made to give treatments at Memorial Hospital, Richmond, and the Retreat for the Sick. The personnel of the unit includes Drs. Claude C. Coleman, Paul V. Anderson and John H. Baird, all of Richmond; Dr. William F. Mercer, Richmond, will have charge of all cases of diseases of eye, ear, nose and throat; Asst. Surg. Clavel T. Wilfong, U. S. P. H. S., will treat all office cases discharged from hospitals in Richmond, and all cases sent through hospitals in Richmond will be under the care of Dr. William R. Jones, Richmond.

Legislation for Care of Mental and Nervous Diseases in Men of Army and Navy

A bill has been introduced by Congressman Edward J. King, of Illinois, "to provide for the segregation and care of men in the Army and Navy afflicted with mental and nervous diseases." The bill provides for the appointment of a Board of Sanitarium Commissioners to be composed of five medical officers in the Army and Navy. The board is authorized to select and purchase a site and erect a hospital thereon for the care and treatment of soldiers and sailors afflicted with mental or nervous diseases. At present men suffering from these disorders are confined at the Saint Elizabeth Insane Hospital in the District of Columbia and other similar government institutions for the insane. The purpose of this legislation is to care for these men at a separate institution where their maladies may be given special treatment and where the sufferers will not be placed in the distressful environment of an insane hospital, as is now the practice. It is understood that the bill was introduced at the request of the American Legion. Senator McKellar, of Tennessee, has introduced the same bill in the Senate.

The Discharged Soldier's Problem

The United States Public Health Service is making wide advertisement of the channels through which a discharged soldier may receive treatment at the hands of the Public Health Service to which he is entitled as beneficiary of the Bureau of War Risk Insurance. He may obtain treatment through: 1. Application to the examiner of the Public Health Service in the soldier's locality on presentation of an honorable discharge as evidence of his right to such treatment. The examiner will examine him, treat him, and make provision for necessary hospital care and will also instruct him in making out the necessary forms to be forwarded to the Bureau of War Risk Insurance and to the Federal Board for Vocational Education. 2. Application to the Bureau of War Risk Insurance by letter, requesting examination and treatment. The bureau notifies the district supervisor who in turn notifies the patient to report to an examiner, giving the examiner's name and address and issuing transportation for travel when necessary. 3. Application to the American Red Cross, the American Legion, county or state board of health, or to welfare organizations who will either direct him to the nearest examiner of the service or will take up his case with the district supervisor.

Health Conditions of the Army

For the week ending January 30 the admission rate for disease was considerably greater than for the previous week, because of the rise of the influenza epidemic. Influenza patients are being kept in the hospital until all symptoms of the disease have disappeared and the possibility of pneumonia following has been guarded against. This period is at least ten days after the temperature has become normal. For this reason the noneffective rate of the Army is very high. The increase in the number of new cases of influenza concerns not only the home forces, but also the American forces in Germany and in Siberia.

It is noted that the present epidemic of influenza in the United States is not as severe in type as that which occurred in 1918. For comparison, the figures from Camp Grant, Ill., are cited: This camp had a most pronounced epidemic, both in 1918 and in the present year. At the time of highest incidence in 1918, one person out of every 4.28 contracted influenza, whereas in the present epidemic, one person out of 11.4 contracted the disease. In 1918 one of each 16.86 contracted pneumonia; this year one of 141.61. In the 1918 epidemic, one person of 47.62 died; this year, one of 399.01 died.

Foreign Correspondence

PARIS

Jan. 8, 1920.

The Camphor Scarcity

The embargo placed on camphor by the Japanese government, which seek to make Japan the sole source of supply for the crude gum, has given impetus to the manufacture of synthetic camphor. This scarcity of crude camphor, which is reaching an acute stage and threatens to stop the preparation of pure gum in American laboratories, has caused manufacturers in the United States to make an effort to establish a laboratory for the manufacture of synthetic camphor which would produce sufficient quantities of camphor to supply the needs of their industries. Also at Segni, Italy, a laboratory for the manufacture of synthetic camphor has recently been established, and a similar enterprise is about to be launched in France.

Since oil of turpentine can be secured very cheaply by the distillation of resinous woods, it is easy to produce synthetic camphor at a reasonable price. In all cases in which a hydrocarbon is to be used in the manufacture of synthetic camphor, oil of turpentine proves the most available. It happens that France is a large producer of oil of turpentine, and it is possible to increase still further our pine forests—the seaside pine in the western part of France and the Aleppo pine in the Southeast and in Algeria. The Comité interministériel des plantes médicinales, in collaboration with the Office des matières premières, is engaged at the present time in collecting information on the subject of the manufacture of synthetic camphor, and in the near future it proposes to call a meeting of technicians and manufacturers with a view to taking immediately the necessary steps to assure to France, as soon as possible, its normal supply.

But it is to be hoped that the natural camphor may keep its place alongside the synthetic product, the manufacture of which is furthered by the existing circumstances. In this connection it may be well to mention that the camphor laurel grows naturally in some of our colonies, notably in Tonkin (Indo-China), and also in Algeria, where the camphor produced from the leaves is identical with that produced from the same kind of trees in Japan.

Reorganization of the Municipal Chemical Laboratory

The municipal council of Paris is considering the interesting proposition of reorganizing the municipal chemical laboratory. The purpose of this laboratory when originally founded in 1878 was to protect the public against fraudulent adulteration of wines, but the principal function of the laboratory at this time would be the suppression of frauds in general. The plan is to make of it a center of scientific study.

Opposition to Paid Courses of Medical Instruction

Contrary to the current practice in Germany, where university professors often give paid courses of instruction, this custom has not been accepted in this country and has been at times severely criticized; for example, the paid graduate medical course organized by Dr. de Lapersonne, professor of clinical ophthalmology of the Faculté de médecine de Paris, has recently been quite severely criticized by "A Reader" in the *Journal des Praticiens:*

"I admit that an eminent physician who is known by his writings, his researches, or his skill in teaching, and being duly authorized, may announce paid courses of instruction. The poor man who has no private fortune, as is so often the case, cannot spend his time without compensation. He may not receive the 15,000 francs of a regular professor, which he needs to support himself and family; but that a regular professor of the Faculté de médecine de Paris should require fees of his students surpasses all belief, and we cannot protest too vigorously against such tendencies, which threaten to become general."

Exhibit of French Pharmaceutical Products in Canada

M. Beaubien, Canadian senator, recently paid a visit to the Comité Français des Expositions à l'étranger, and during the course of his visit suggested a plan by which French interests in Canada might be served, namely, by an exhibit of French products. But, as the distances between the cities of Canada are very great, he suggested that the exhibit be put on wheels, explaining that, in a train of eight coaches, samples of all French products, and more particularly, pharmaceutical products, might be exhibited. Two coaches might be placed at the disposal of the representatives of the exhibitors. This traveling exhibit may be taken through all of Canada, remaining from two days to a week in various cities, according to their importance. Moving pictures would accompany the exhibit.

Preferential Milk Tickets for Prospective Mothers

At the suggestion of Professor Pinard, the prefect of the department of the Seine has sent out instructions to the maires of twenty arrondissements of Paris, relative to supplying prospective mothers with preferential milk tickets. These tickets will be issued on presentation of a certificate, signed by an obstetric nurse of any of the Paris hospitals and setting forth the necessity of a milk diet, the quantity of milk needed daily, and the duration of the regimen.

Tuberculosis in the Regions of France Evacuated by the Germans

Dr. Calmette, assistant director of the Institut Pasteur de Paris, who, in his capacity of director of the Institut Pasteur de Lille, has been conducting an inquiry into the state of the public health of Lille during the years of German occupation, has recently communicated the sad results of his investigation. He thinks the ravages of tuberculosis, both glandular and pulmonary, in the countries of the North were due to the restrictive diet to which the children were subjected during the period of occupation. Tuberculous children who have been sent out into the country or to the seaside have improved remarkably. Calmette recommends that such therapeutic treatment be continued and that all schoolchildren be examined carefully from time to time. He also advises the establishment of antituberculosis dispensaries for adults. Calmette adds that the appeals of Germans in favor of German children who are suffering in great number must not allow us to forget the lamentable consequences of the inhuman conduct the Germans showed, during the long period of occupation, toward our own children.

History of Medicine and Pharmacy

At the last meeting of the Société française d'histoire de la médecine it was decided to hold a congress of the history of medicine and pharmacy at Antwerp, Aug. 7-12, 1920, coincident with the kermess and the celebration of the Olympian games. The principal subjects thus far selected for discussion are: Medical iconography and epigraphy; a chapter from the history of welfare movements in various countries; medical bibliography; monastic and collegial medicine in Belgium, and the mobiliary equipment of apothecaries.

LONDON

Jan. 22, 1920.

The Prevention of Influenza

In view of the possibility of another epidemic of influenza this winter, the ministry of health has been studying the measures to limit its incidence and mortality, and has revised a memorandum previously issued on the subject. The difficulty of securing a continuous record of true influenza has made it impossible to forcast with any confidence the arrival of the next wave. We do not yet know the nature of the virus, and the laboratory has not yet furnished a specific form of treatment or prevention. Pfeiffer's bacillus cannot be regarded as the essential causative organism, but for present purposes is looked on as an important secondary or coincident agent responsible for many of the fatal complications. As infection is conveyed by coughing, sneezing and even loud talking, overcrowding should be avoided. The evidence collected by the ministry shows that acute and temporary overcrowding in trains, cars and places of entertainment is more important than overcrowding in the home. Personal protection includes good ventilation, good food, gargling the throat and douching the nose with 1:5,000 potassium permanganate. Face masks are advised for those attending the sick, but not for the public. As regards vaccines, it is laid down that since we are uncertain of the primary cause, no form of inoculation can be guaranteed to lessen materially the incidence of the disease. Vaccines may, however, lessen the dangers of complications. Drugs are of little avail. When attacked, the patient should take to bed. A standard polyvalent vaccine prepared from strains of Pfeiffer's bacillus, pneumococcus and streptococcus appears to reduce materially the liability to complications and the risk of death. Therefore, it should not be neglected. The bacteriologists of the Medical Research Committee believe that in the previous government vaccine the proportion of Pfeiffer's bacillus was too small, and that better results might follow the use of a vaccine in which this microbe forms the dominant constituent and of which a much larger

dose is given. The ministry has accordingly made arrangements for the preparation of a considerable quantity of prophylactic vaccine made from the new formula. This will be issued in bottles of 25 c.c. each to health officers for distribution on demand, and free of charge to physicians, who will be expected not to charge their patients for the vaccine used. It is further proposed to arrange for the preparation of vaccines in selected localities from the strains of microbes associated with local cases of influenza. The prevention by quarantine of the importation from abroad is regarded as impracticable. Health authorities should distribute information to the public by leaflets, posters, notices and lectures. In Sheffield during the last epidemic a "pool" of unattached physicians was formed with good results, their services being placed at the disposal of physicians as required. In the larger areas, part of such a pool might be formed from the health authorities' own staffs.

Increased Remuneration for Panel Physicians

The increase in the cost of living in this country since the war has amounted to more than 100 per cent. and has led to demands for increased wages in practically every calling. As reported in The Journal, physicians have increased their fees by 50 per cent. The panel physicians demanded from the government an increase of the capitation fee from $2 to $3.25. A deputation of the Insurance Acts Committee of the British Medical Association was received on the subject by the minister of health, Dr. Addison. He offered to seek the authority of Parliament to pay an increased fee of $2.75, with a mileage fund of $1,500,000 for rural physicians. The deputation said that it would feel bound to its constituents not to accept this, but it was empowered to ask for arbitration, which it did. After discussion, the minister announced that the government would accede to this request. The arbitrators' award will operate from April 1, the government agreeing to pay in the meantime a capitation fee of $2.75 The government reserved its freedom to institute at a subsequent date any inquiry that might be thought desirable, in the light of the award and the cost of its working, into the question whether service as good or better could be secured with the same or less expenditure of money, under some other system.

As a result, no doubt, of this increase the government has decided to increase by 6 cents the weekly contributions paid, of which 4 cents will fall on the employer and 2 cents on the employed person. The rate of sickness benefit is to be increased to $3.75 a week in the case of men and $3 in the case of women. Maternity benefit is to be increased from $7.50 to $10. Sanatorium benefit is to be removed from the acts, the treatment (other than domiciliary) of tuberculosis, among both the insured and the uninsured, being recognized as falling within the province of the local authorities. A state system of medical referees is to be established, toward which the societies will make a small contribution by way of payment for each case referred.

New Hospital for Tropical Diseases in London

The study of tropical diseases in London originated in the Seamen's Hospital at Greenwich, where sailors suffering from tropical diseases are received from all parts of the world. A branch hospital for tropical diseases, containing thirty beds, was established in the East End of London, at the Albert Docks. Among the patients are Europeans of all nations, Asiatics, Africans, West Indians and natives of British and other colonies. A laboratory was built in connection with the hospital, and more than 2,000 physicians were trained in the study of tropical diseases. But the accommodation became inadequate. In the "University Quarter" of London, at Endsleigh Gardens, a hospital established for officers during the war was therefore secured. In this much more central and accessible position the several departments of the London School of Tropical Medicine will be housed. The riverside wards will be retained for patients who, for various reasons, should not be taken to the new hospital. But hundreds of cases of tropical disease in the chronic stage will be available for study in the latter.

Death of Sir Thomas Frazer

Sir Thomas Frazer, M.D., F.R.S., emeritus professor of materia medica and clinical medicine in the University of Edinburgh, one of the most distinguished investigators of his time, who did much in laying the foundations of modern pharmacology and therapeutics, has passed away at the age of 79. Born in Calcutta of Scotch parentage, he was educated in Edinburgh. On graduation he obtained a gold medal for his thesis on the action and uses of Calabar bean (*Physostigma venenosum*). He was appointed assistant to the celebrated Sir Robert Christison in the materia medica department of the University of Edinburgh and, like him, he became a great authority on poisons. Among his earlier papers, which have become classical, were "The Antagonism Between the Actions of Physostigma and Atropia," and "The Kombé Arrow Poison" (*Strophanthus hispidus*). On the resignation of Sir Robert Christison in 1877, he was appointed professor of materia medica in the University of Edinburgh. He was also appointed physician to the Royal Infirmary, and as a clinician attained the first rank. In conjunction with Prof. Crum Brown, he made an important investigation into the chemical constitution and physiologic action of poisons, for which the Royal Society of Edinburgh awarded them a prize. It was mainly through his investigations that strophanthus came into use in therapeutics. Some of his best known work was on snake poison. His original observations, made individually or in association with Major Elliot, continued the investigations of Lauder Brunton and Joseph Fayrer on cobra poisoning. Much of our knowledge of the effect on cardiac action of cobra venom is due to his work. When, in 1894, Calmette published his researches into the immunity against snake venom that followed repeated injections of small doses of rattlesnake poison, Frazer, who had already gone over the same ground, gave valuable confirmation to Calmette's work, as well as further points as to the nature of the protective action of the antitoxic serum. Other original work of the first importance emanating from him was on the salicyl compounds in acute rheumatism, the nitrites in the dyspnea of asthma and bronchitis, bone marrow in pernicious anemia, opium, morphin and codein in diabetes, and potassium bichromate in gastric affections. He was one of the first, if not the first, to teach the expression of dosage in terms of body weight and to analyze pharmacologic action into its component parts. All his work was characterized by accuracy and thoroughness. In 1894 he delivered the graduation address at the University of Edinburgh in which he uttered a warning that has been needed ever since and is still needed: He pointed out that recent advances in organic chemistry had led to the discovery of a host of complex substances with possible pharmacologic actions which afforded a great opportunity to charlatanism. He considered that physicians as well as commercial chemists were advocating for all sorts of disease the employment of drugs to which no proper trial could be given. The determination of the physiologic action of any substance might require at least six months' study by a skilled investigator. Like many of the leaders of the profession, he suffered badly in the war. He lost one son on submarine service, and another, as well as a son-in-law, in France. One of his sons is a well-known New York physician and is at present with the American army on the Rhine.

Marriages

Dwight Chase Sigworth, Lieut., M. C., U. S. Army, Stanton, Neb., on duty at Alcatraz Barracks, Calif., to Miss Irene L. Cratty of Elgin, Neb., at Long Beach, Calif., February 14.

Henry Bloodgett McInryre, Lieut.-Col., M. C., U. S. Army, New York City, on duty at Fort McHenry, to Miss Gladys E. Miller at Mamaroneck, N. Y., January 31.

Edward Franklin Younger, Lynchburg, Va., to Miss Bessie Mason of Campbell County, Va., in Washington, D. C., December 15.

Thomas Wister Edmunds, Danville, Va., to Mrs. Sallie Davis Penn of Reidsville, N. C., in Baltimore, December 20.

Clarence Walter Adams, Visalia, Calif., to Miss Marie Genevieve Rogers of Spokane, Wash., December 15.

Charles Lyndon Outland, Tarboro, N. C., to Miss Alice Louise Sadler of Richmond, January 21.

Harry Emmick Lee, Detroit, to Miss Jamie Florence Greenlee of Studley, Va., December 31.

Dr. Benjamin F. Davis, Chicago, to Miss Marie Lucille Brickson, Stoughton, Wis., February 7.

Clarendon Rutherford to Miss Ella Williams McCauley, both of Chicago, February 4.

Harry S. Berman, Detroit, to Miss Caroline Block of Richmond, December 23.

Milo Kirk Miller to Miss Freda Anita Stracke, both of Chicago, January 10.

Deaths

Elmer Ernest Southard ✠ Cambridge, Mass.; Harvard University Medical School, 1901; aged 43; chairman of the Section on Nervous and Mental Diseases of the American Medical Association; died in New York City, February 9, after two days' illness from pneumonia. He was born in Boston and was graduated in arts and in medicine by Harvard University. He later studied at Senckenberg Institute, Frankfort on the Main, and in the University of Heidelberg. On his return to the United States he became instructor in neuropathology in his alma mater; later assistant professor, and since 1909 Bullard professor of neuropathology. He was assistant visiting pathologist to the Boston City Hospital in 1904 and 1905; assistant physician and pathologist of the Danvers (Mass.) State Hospital from 1906 to 1909; pathologist of the Massachusetts Commission on Mental Diseases in 1909, and director of the Boston Psychopathic Hospital since 1912. He was a director of the Eugenic Record Office, Cold Spring Harbor, N. Y.; a member of the board of scientific directors of the Bedford Hills Laboratory, Bureau of Social Hygiene, New York; a director of the Massachusetts State Psychiatric Institute, and member of the editorial board of the *Archives of Neurology and Psychiatry*. During the war Dr. Southard was director of the U. S. Army Neuropsychiatric Training School, Boston unit, and major in the Chemical Warfare Service. He had devoted particular attention to the pathology of the brain and nervous system in dementia praecox, and published important original investigations on this subject. He also advanced an original classification of the psychoses which had aroused considerable interest. His most recent publication is a large volume on shell-shock and other neuropsychiatric problems, an epitome of war neurology. In his death the medical profession loses a specialist of broad vision, a clinician who was preeminently a neuropathologist with broad training and insight into the problems of general medicine.

Sir James Alexander Grant, K.C.M.G., one of the most distinguished physicians of Canada; died, February 6, at his home in Ottawa, aged 89. He was born in Inverness, Scotland, Aug. 11, 1831, was graduated from McGill University in 1854, and obtained the degrees of M.R.C.P., M.R.C.S. (Eng.) and in 1864 the F.R.C.S. (Edin.). A year before his graduation he passed the examination of the College of Physicians and Surgeons of Quebec, and after graduation located in Ottawa. He was a member of the Provincial Medical Council from 1866 to 1869, and its president in 1868-1869. He was a member of parliament from the council of Russell in 1867, and later from Ottawa City, serving altogether fourteen years. He was made president of the Canada Medical Association in 1874; president of the Royal Society of Canada in 1903; vice president of the International Medical Congress in 1887; was president of the General Hospital, Ottawa, and chief of staff for twenty-five years. In 1887 he was made Knight Commander of Sts. Michael and George, and in 1910 was given the freedom of the city of Inverness. He was an active and honorary member of many scientific societies, and of late years had devoted much of his time to geology.

John Abner Mead, Rutland, Vt.; College of Physicians and Surgeons in the City of New York, 1868; aged 78; a veteran of the Civil War; for several years assistant physician at the Insane Hospital, Flatbush, L. I.; surgeon-general of Vermont in 1878 and 1879; first mayor of Rutland; a member of the state senate in 1892 and of the house of representatives in 1906; lieutenant-governor of Vermont in 1908-1909, and governor from 1910 to 1912; died, January 12, from pleuropneumonia.

Emil Augustus Herig, Saginaw, Mich.; University of Berlin, Germany, 1866; aged 79; formerly president of the board of health, health officer and city physician of Saginaw; coroner of Saginaw County; chief of staff of the Bliss Hospital, Saginaw, and attending physician to the Saginaw General Hospital; once president of the Saginaw Valley Medical College; a veteran of the war between Prussia and Austria in 1866; died, January 21.

Robert William Carter, Montclair, N. J.; College of Physicians and Surgeons in the City of New York, 1904; aged 44; who went to the Philippines as a missionary of the Presbyterian Board at Dumaguete Maasin and Albay; was invalided home, ill with tropical sprue in 1913; returned to Dumaguete in 1917, and two years later was transferred home; died in the Presbyterian Hospital, New York City, November 21, from sprue.

Julius Stimpson Clark, Melrose, Mass.; Georgetown University, Washington, D. C., 1869; aged 81; a veteran of the Civil War; a member of the Massachusetts Medical Society, and for seven years president of the Middlesex District Medical Society; from 1870 to 1878 health officer, city physician and police surgeon of New Orleans; president of the medical board of the Melrose Hospital; died, January 20, from pneumonia.

James Jefferson Johnson ✠ Braggs, Okla.; Memphis (Tenn.) Hospital Medical College, 1897; aged 43; a specialist on diseases of the eye, ear, nose and throat; who entered the Army in 1913, and was discharged as captain, M. R. C., July 10, 1919, and was then attached to the American Red Cross Commission to Siberia; died in Siberia, December 13, from typhus fever, and was buried at Irkutsk.

Frederick James Bowles ✠ New York City; University of the City of New York, 1884; aged 67; a member of the American Academy of Ophthalmology and Oto-Laryngology, and the New York Academy of Medicine; ophthalmologist, otologist and laryngologist to the Bloomingdale clinic; died in the Post-Graduate Hospital, New York City, January 28, from pneumonia.

William Lewis West, Indianapolis; Miami Medical College, Cincinnati, 1876; also a druggist; cashier and later president of the First National Bank of Oakland City, Ind.; president of the Farmers and Merchants National Bank, Fort Branch, Ind., and the Citizen's Bank and Trust Company of Princeton, Ind.; died, January 2, from heart disease.

R. K. Prewitt, Ackerman, Miss.; Kentucky School of Medicine, Louisville, 1882; aged 77; once president of the Choctaw County (Miss.) Medical Society and local surgeon for the Mobile, Jackson and Arkansas City Railroad; a Confederate veteran; representative in the legislature from Choctaw County in 1896; died, January 22.

Francis B. Nofsinger, Kansas City, Mo.; University of Nashville, Tenn., 1864; aged 82; surgeon in the United States Navy during the Civil War; who established the first packing house in Kansas City in 1859; postmaster from 1889 to 1893; county assessor and president of the city council; died, January 6, from cerebral hemorrhage.

Edward Grant Birge, Iowa City; Johns Hopkins University, Baltimore, 1907; aged 31; formerly instructor in the department of preventive medicine and hygiene in Harvard University Medical School, and later state epidemiologist of Iowa; captain, M. R. C., U. S. Army, and discharged, Aug. 10, 1919; died, February 4, from pneumonia.

Francis Alonzo Bailey, Hillsboro, Ore.; Willamette University, Salem, Ore., 1870; aged 80; a medical cadet in the Confederate Service during the Civil War; twice president of the Oregon State Medical Association; for several terms mayor of Hillsboro and a member of the city council; died, January 23, from pneumonia.

Edward William Spragge, Toronto; M.R.C.S. (Eng.), L.R.C.P. (Edin.), 1868; aged 76; also a licentiate of the Ontario College of Physicians and Surgeons in 1869; for than forty-seven years medical officer of the Toronto police force, and surgeon to the Canadian Pacific Railway Company; died, December 31.

Parker Lloyd Berge, Brainerd, Minn.; University of Minnesota, Minneapolis, 1913; aged 31; a member of the Minnesota State Medical Association; who as a lieutenant, M. C., U S. Army, was attached to the Aviation Corps for two years, and was discharged, July 7, 1919; died, January 22, from heart disease.

James Albert Rutledge ✠ Woodmen, Colo.; Rush Medical College, 1866; aged 58; formerly a practitioner of Elgin, Ill.; medical director and superintendent of the Modern Woodmen of America Sanatorium since 1911; a specialist in tuberculosis; died in a hospital in San Francisco, February 3, from influenza.

Tucker Henderson Frazer ✠ Mobile, Ala.; University of Alabama, Mobile, 1888; aged 60; dean and professor of obstetrics in his alma mater; head of the American Red Cross in Mobile during the world war; died in the Southern Infirmary, Mobile, January 26, four days after an operation for appendicitis.

James Elias Seay, Birmingham, Ala.; University and Bellevue Hospital Medical College, New York City, 1899; aged 41; a member of the Medical Association of the State

✠ Indicates "Fellow" of the American Medical Association.

of Alabama; surgeon to the Birmingham Southern Railroad; died, January 26, from cerebral hemorrhage.

Abraham Feldman, Hammonton, Calif.; College of Physicians and Surgeons, Los Angeles, 1916; aged 30; a member of the Medical Society of the State of California; lieutenant, U. S. N. R. F., and relieved from active duty, July 11, 1919; died, January 20, from pneumonia.

Theodore H. Swayne, Chihuahua, Mexico; Northwestern University Medical School, Chicago, 1895; aged 59; also a graduate of the Faculty of Mexico Medical School; for many years a practitioner of Chihuahua and local railway surgeon; died, January 9, from pneumonia.

George Victor Genzmer, Verona, N. J.; Albany (N. Y.) Medical College, 1913; aged 28; assistant surgeon, lieutenant, U. S. Navy, and on duty for two years at Pelham Bay Hospital, and relieved from active duty, Sept. 4, 1919; died, January 30, from pneumonia.

Charles Edward Treble, Toronto, Ont.; College of Physicians and Surgeons, Toronto, 1901; aged 43; in charge of the roentgen-ray department of the Wellesley Hospital; while making his rounds in Grace Hospital, October 29, died suddenly from heart disease.

Hudgins S. Ellis, Memphis, Tenn.; College of Physicians and Surgeons, Memphis, 1911; aged 36; a member of the Tennessee State Medical Association; died suddenly in St. Joseph's Hospital, Memphis, January 25, from acute dilatation of the heart.

Mary Frye Barry, Washington, D. C.; Northwestern University Woman's Medical School, Chicago, 1887; aged 60; for ten years a practitioner of Colorado, and once a member of the state legislature; died in Colorado Springs, Colo., December 8.

Harry Stoddard Clever, Tuscarawas, Ohio; University of Pittsburgh, 1897; aged 46; a member of the Ohio State Medical Association; health officer of Tuscarawas; died in Grant Hospital, Columbus, Ohio, January 20, from heart disease.

Charles O. Warner, Warsaw, Ill.; Washington University, St. Louis, 1863; aged 89; assistant surgeon of volunteers in the Army during the Civil War; for many years a member of the local school board; died, January 15, from bronchial asthma.

George R. Green, Muncie, Ind.; Medical College of Indiana, Indianapolis, 1878; aged 68; a member of the Indiana State Medical Association, and lecturer on history of medicine in the Indiana Medical College; died, January 24, from pneumonia.

Riley J. Drew, Alma Center, Wis.; Medical College of Indiana, Indianapolis, 1904; aged 45; a member of the State Medical Society of Wisconsin; died, December 28, in Sacred Heart Hospital, Eau Claire, Wis., from bronchial pneumonia.

Joseph Aurelius Young, Caldwell, Idaho; University of Illinois, Chicago, 1903; aged 41; was accidentally drowned, January 20, when his automobile slid off the ferry platform at Froman's ferry into the Snake River.

May Cushman Rice ⊕ Chicago; Northwestern University Woman's Medical School, Chicago, 1896; aged 56; a specialist in roentgenology and electrotherapeutics; died, February 4, from pneumonia following influenza.

Sylvanus Joy, Tillsonburg, Ont.; University of the City of New York, 1854; Queens University, Kingston, Ont., 1857; aged 85; for forty-five years local surgeon for the Grand Trunk system; died, October 31.

Robert Kearns ⊕ Middletown, N. Y.; College of Physicians and Surgeons in the City of New York, 1888; aged 54; a specialist in diseases of the ear, nose and throat; died, January 21, from septicemia.

Maurice Henry Miesse, Circleville, Ohio; College of Physicians and Surgeons in the City of New York, 1868; aged 76; a veteran of the Civil War; died, January 21, from cerebral hemorrhage.

John Eugene English, Baraboo, Wis.; Rush Medical College, 1883; aged 68; for thirty-seven years district surgeon for the Chicago and Northwestern system; died, January 24, from myocarditis.

Frank A. Sabin, Anna, Ill.; Berkshire Medical College, Pittsfield, Mass., 1861; aged 84; an honorary member of the Illinois State Medical Society; died, January 26, from arteriosclerosis.

Robert Addison Stevenson, Toronto; McGill University, Montreal, 1871; aged 73; chairman of the staff and chief of the medical service of Grace Hospital, Toronto; died, November 12.

Thomas T. Zerbe, Schaefferstown, Pa.; University of Pennsylvania, Philadelphia, 1869; aged 74; for two terms a member of the state legislature; died, January 26, from cerebral hemorrhage.

Thomas Kelly Proctor, Sulphur Springs, Texas; University of Louisville, Ky., 1895; aged 60; a member of the State Medical Association of Texas; died last month, from carcinoma.

George Henry Albers, Cincinnati; Miami Medical College, Cincinnati, 1887; aged 57; a member of the Ohio State Medical Association; died, January 19, from cerebral hemorrhage.

John Schulze, Racine, Wis.; Bennett Eclectic Medical College, Chicago, 1894; aged 68; for more than half a century a druggist of Racine; died, January 26, from diabetes.

Edward E. Engel, St. Louis; Washington University, St. Louis, 1877; aged 66; for thirty-two years a practitioner of Prairietown, Ill.; died, January 21, from cerebral hemorrhage.

Christopher Columbus Lathers, Lieut., M. R. C., U. S. Army, Washington, D. C.; Howard University, Washington, D. C., 1914; aged 40; died, January 23, from pneumonia.

John M. Wiltshire ⊕ Chillicothe, Ohio; Starling Medical College, Columbus, Ohio, 1865; aged 85; a veteran of the Civil War; died, January 17, from valvular heart disease.

Victor Knapp, Ferdinand, Ind.; Medical College of Ohio, Cincinnati, 1881; aged 62; a member of the Indiana State Medical Association; died, January 10, from uremia.

Alexander Crawford ⊕ Mount Vernon, Iowa; Rush Medical College, 1883; aged 61; formerly health officer of Mount Vernon; died, January 10, from angina pectoris.

John M. Littler, Fortville, Ind., and Indianapolis; Kentucky School of Medicine, Louisville, 1876; aged 72; died in St. John's Hospital, Anderson, Ind., January 19.

Orson S Parker, Aurora, Ill.; Tulane University, New Orleans, 1892; aged 52; a member of the Illinois State Medical Society; died, February 5, from pneumonia.

Noah J. LaRose, Zion City, Ill.; Eclectic Medical Institute, Cincinnati, 1885; aged 68; health officer of Zion City since 1902; died, January 18, from influenza.

Franklin Newton Hudson, Gadsden, Ala.; University of Nashville, Tenn., 1874; aged 71; died at the home of his daughter in Birmingham, Ala., January 20.

Joseph A. Liddell, Cedartown, Ga.; Medical College of Georgia, Augusta, 1879; aged 65; a member of the Medical Association of Georgia; died, January 1.

Henry Harlan Townshend ⊕ Hedgesville, Mont.; John A. Creighton Medical College, Omaha, 1896; aged 51; died, January 10, from cerebral hemorrhage.

Edward Burns Hughes, Canton, Ill. (license, Illinois, 1878); aged 78; died at the home of his sister in Ipava, Ill., January 23, from senile debility.

Charles Buchanan Young, Lynchburg, Va.; Hahnemann Medical College, Philadelphia, 1881; aged 68; died, January 13, from cerebral hemorrhage.

Wallace G. Bobb ⊕ Philadelphia; University of Pennsylvania, Philadelphia, 1880; aged 59; died, January 25, from pancreatitis and septicemia.

Alexander Duff Stevens, Dunham, Que.; McGill University, Montreal, 1857; died in the General Hospital, Sweetsburg, Que., November 22.

Charles H. Wells, Philadelphia; Hahnemann Medical College, Philadelphia, 1891; aged 55; also a dentist; died, January 19, from pneumonia.

Charles Franklin Banta ⊕ Eureka, Ill.; Bellevue Hospital Medical College, 1884; aged 63; died in the Methodist Hospital, Peoria, January 10.

Ralph Erskine Moffatt ⊕ Harrisburg, Pa.; University of Pennsylvania, 1904; aged 43; died, January 26, in Cumberland, Md., from uremia.

Joseph Harris Cowell, Saginaw, Mich.; University of Michigan, Ann Arbor, 1871; aged 72; a veteran of the Civil War; died, January 18.

J. L. Underwood Cochran, Atlantic City, N. J.; Louisville (Ky.) Medical College, 1892; aged 47; died, December 24, from acute nephritis.

Alfred T. Evans, Rayville, La.; University of Alabama, Mobile, 1873; aged 71; died in Providence Hospital, El Paso, Texas, December 31.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

"AUTO-HEMIC SERUM"

A Cure for Laziness, Ugliness, Frigidity and Many Other Things

The following letters are typical of many that have been received asking for information regarding Dr. L. D. Rogers and his "Auto-Hemic Serum." This from a physician in New York state:

"Can you give me any information in reference to Dr. Rogers of Chicago, Ill., who has an Auto-Hemic Institute?"

And this from Kansas:

"Just received a letter from a Dr. L. D. Rogers, 2812 North Clark St., who is anxious to sell me a course in 'Auto-Hemic Therapy.' Would you kindly inform me what he has to sell? He did not tell me what it consisted of; am inclined to believe it is a rank fake. Kindly let me know what THE JOURNAL thinks about it. Just what is it? In the letter they claim that it is practically a panacea for every blood disease."

This from Maine:

"What is Auto-Hemic Therapy? I have a handsome red and yellow circular from the Ideal Life Extension Press, 2812 North Clark St., Chicago, soliciting subscriptions to their publication, offering as a bonus this book, 'Auto-Hemic Therapy' by L. D. Rogers, A.M., M.D., LL.D., Chicago, and membership in the American Medical Union."

THE NATIONAL MEDICAL UNIVERSITY

In order better to appreciate the probable scientific status of the "Auto-Hemic Serum," it is well briefly to sketch some of the previous activities of its discoverer, Dr. L. D. Rogers. For many years Rogers was the head and chief owner of the National Medical University of Chicago, a low-grade school of the "sun-down" variety. The "university" is now out of existence and for some time before it went out of existence was not recognized either by the board of health of the state in which it operated or by the boards of the majority of the other states in the Union. The report of the Carnegie Foundation on medical education had this to say about the laboratory facilities of Rogers' school:

> "The school occupies a badly lighted building, containing nothing that can be dignified by the name of equipment. There has been no dissecting thus far (October to the middle of April, 1909), anatomy being didactically taught. Persistent inquiry for the 'dissecting-room' was, however, finally rewarded by the sight of a dirty, unused, and almost inaccessible room containing a putrid corpse, several of the members of which had been hacked off. There is a large room called the chemical laboratory, its equipment 'locked up,' the tables spotless. 'About ten' oil-immersion microscopes are claimed—also 'locked up in the storeroom.' There is not even a pretense of anything else. Classes in session were all taking dictation."

Dr. Rogers is, or was, if he is not still, "Permanent Secretary" of the "National Association of Panpathic Physicians"—whatever that is. In fact, one of Dr. Rogers' specialties seems to be the founding of quasi-medical organizations—organizations, apparently, which may prove useful in the promulgation of such projects as he may, at the time, be interested in. A few years ago Rogers was exploiting a "cancer serum" and, *presto,* the "American Cancer Research Society" came into being, L. D. Rogers, president. Soon thereafter certain members of the profession were circularized urging them to purchase shares in the "Cancer Research Laboratory and Hospital," par value $10. Apparently, the profession did not invest.

A few years ago, also, L. D. Rogers' name appeared on the "Faculty" list of the "American Post-Graduate School," a concern which granted—on the mail-order plan—a long line of sonorous degrees and an equally complete line of ornate diplomas.

THE JAPANESE CONSUMPTION CURE

Then, in 1915, there appeared in the classified columns of certain newspapers the following advertisement:

> TUBERCULOSIS—New Japanese treatment; to prove merits and give discovery quick publicity will send 10 days' treatment free. DR. ROGERS, 546 Surf St., Chicago.

So far as we have been able to learn, Rogers, for some unexplained reason, did not call into existence out of the vasty deep a "Japanese-American Tuberculosis Research Society." This consumption cure apparently died of inanition.

Then came the "Auto-Hemic Serum" with its inevitable sequel, the "National Society of Auto-Hemic Practitioners." Another adjunct to the serum exploitation is the *North American Journal of Homeopathy,* the official organ of the "Auto-Hemic Practitioners" and of the "American Medical Union" and possibly of some other "societies"—but not representative of homeopathy!

WHAT IS AUTO-HEMIC THERAPY?

What is this new therapy? According to a very lurid poster it is described as "The Missing Link in Medicine"—possibly referring to the ease with which one may make monkeys of certain physicians. More specifically, although still vaguely, we learn:

"It consists in giving the patient a solution made by attenuating, hemolizing, incubating and potentizing a few drops of his or her own blood, and administering it according to a refined technic developed by the author."

Elsewhere it is said to consist:

". . . in taking five drops (or some multiple of five) of blood from a vein and putting it into nineteen times as much sterilized, distilled water, and incubating it at fever temperature for twenty-four hours, and then making further dilutions according to the needs of the case, as can be determined only by a physician skilled in its use."

Neither of these statements, of course, describes the "refined technic" of those "skilled in its use," but those who are interested can, by sending Dr. L. D. Rogers, "One Hundred Dollars cash-in-advance" get a mail-order course in this new marvel.

But if it is rather expensive to learn just how to use "Auto-Hemic Serum" it does not cost so much to learn what the "serum" will do. Rogers has written a book on the subject, "Auto-Hemic Therapy," which is used as a premium for subscriptions to the *North American Journal of Homeopathy,* price "$5.00 per year, payable in advance." In the book Dr. Rogers modestly assures his readers that he considers his discovery more important than that of Alex. Carrel, winner of a Nobel Prize.

A CURE FOR LAZINESS

One of the chief virtues claimed for this serum is that of developing in the patient who takes it an unbounded energy that, apparently, makes him want to work himself to death. In some sensational articles that have appeared in Sunday editions of newspapers on Rogers' serum, the stuff has been described as "Lazy Serum." One of the first cases described in the Rogers book is that of a young waiter, "a good-for-nothing lazy fellow who would not work and would not pay for medical services" and who was turned over to Dr. Rogers' free clinic. He was given the serum on Thursday and was told to report Saturday. He did not return until Monday, his excuse being that "he worked all day Saturday until midnight and all day Sunday and felt as if he could work all day and all night without rest." The "case report" ends:

". . . finally remarking, 'I feel like a bird' he flew out of the classroom and we never saw him again."

HOUSEWIVES TAKE NOTICE

The next case described is that of a servant girl who had not worked for a year; within a week after taking the "Auto-Hemic Serum" "she voluntarily beat carpets till she

blistered her hands." Then there was the rooming house keeper who had spent more than half of each day in bed. After an "Auto-Hemic" injection she "discharged her maid and janitor . . . and did all the work of her twelve room house herself, beating rugs, firing furnace and carrying out ashes besides doing some of the laundry." "Case No. 7176" is interesting: a man, generally considered the laziest person in his community and with a habit of "drinking thirty whiskies a day," took "Auto-Hemic Serum." He stopped drinking, shaved himself and changed from "a 'bum' to that of a sober, clean, wholesome, bright and honest workman." Then there was the case of the "lady physician" who "took the serum one evening and the next evening reported that she had had the 'giggles' all day"; also she became "more magnetic." More remarkable still was the case of the young woman clerk in a retail store who, after taking the serum "astonished her employer by volunteering to work over time." In the chapter dealing with "Ills Peculiar to Women" Dr. Rogers details the moving story of a *man* to whom the "serum" was given and who reported that "about the third twenty-four hours after taking it his bowels moved forty times"—nevertheless, "he felt no exhaustion."

In all phases of human activity the serum seems to work wonders. "The cases are numerous in which the frigidity of both sexes have [*sic*] melted after Auto-Hemic treatment." A young married woman with a morbid dislike for her husband took the serum and within a week "became normal." The discoverer suggests that in some cases there is no doubt that this serum "would prevent divorce." A forty-year-old woman who could not endure to wear any waists but white or black was able, it seems, after taking the serum to tolerate a veritable Jacob's coat.

Is, then, "Auto-Hemic Serum" good for everything? Let Dr. Rogers answer:

> "Briefly stated, without any great exaggeration, this new modified serum treatment is good for anything that is the matter with you, provided the cause is not organic, mechanical or bacterial."

One infers that in the inorganic, mental, spiritual and non-bacterial spheres the stuff is supreme. But it has its limitations. For instance, Dr. Rogers states that he once had "a very troublesome cough which lasted several weeks, but did not yield to this serum." Reaching the conclusion that some other treatment was necessary "he had the bones of his neck 'adjusted' and got immediate relief."

AS A COMPLEXION BEAUTIFIER

The serum "cannot be made up by the barrel and sold at wholesale or retail":

> "If it could be bottled and stored and sold at retail like a patent medicine, the demand for it as a complexion beautifier alone would net the proprietor millions. More than one person a few days after taking the treatment has been wrongly accused of painting."

Should any of The Journal readers decide to take the $100 mail-order course in "Auto-Hemic Therapy" he should realize that even after he has done so there are certain restrictions in the practice of this "therapy." In no case must he administer "a course of Auto-Hemic Treatment" for "less than $100, paid in advance." The only exceptions to this rule are "cases of absolute charity, expectant mothers and to persons positively unable to pay that amount." Furthermore, Dr. Rogers says that for the reputation of his method, as well as for the good of all concerned, "I insist that the entire fee be paid in advance and that the course extend over a period of one year whether the patient needs few or many treatments."

DOLLARS AND CENTS

For those who do not wish to take the mail-order course Rogers offers to prepare individual specimens of the "serum" from blood that is sent to him by the physician. The cost of this "serum" is $5.00, "in advance," of course.

Still emphasizing the commercial side, "Auto-Hemic Therapy" is especially recommended to "the general practitioner growing old and the physician who is ambitious to build up a creditable and lucrative office practice" because "the health of four people out of five (old or young, whether they consider themselves sick or well) taken at random can be improved by this method of treatment"! An Ohio physician was said to have doubled his $3,000 practice in two years after starting the "Auto-Hemic" method. A Virginia physician is alleged to have "increased his income $10,000 a year." A Pennsylvania physician, urged by Rogers to send $150.00 for the mail-order course, was assured that this "is merely a nominal amount, as most of the doctors have been able to get this amount back the first month."

But enough. The story, were it not for the tragic element that forms the background, would be amusing. But it *is* tragic!

Correspondence

"UNIVERSAL MILITARY TRAINING"

To the Editor:—Your commendation of the provisions for compulsory universal military training in the Wadsworth army bill in your editorial published in The Journal, January 31, I understand to be an endorsement of militarism. It does not seem possible that any one can avoid this conclusion who is familiar with the history and growth of this institution.

Before the war, in Europe, militarism was a subject much discussed; but here in the United States it received little attention because it did not concern us at that time and very few believed that it would ever be seriously proposed as the policy of our country. Now it has become one of the most important questions of our national life. In a few days the question may be decided by Congress, and your editorial may have important influence in determining the decision. I suppose we may reasonably assume that this was the purpose of the editorial.

I do not now propose to present objections to militarism, but I would like to call your attention to the fact that the advisability of introducing this institution into our national system is by no means admitted by all. On the contrary, this proposal is debated by the most serious students as an exceedingly important problem. I question your right to commit the Association to its endorsement. [The House of Delegates of the American Medical Association is the only body which can commit the Association to any policy; The Journal does not presume, pretend or intend to arrogate this right to itself.—Ed.]

You may claim that military training has some other purpose than the building up of a military system. You may contend that the four months' period of training, which you say is quite too short, is desirable for other reasons than because it furnishes the basis of a very large and trained American army. If you mean that military training is desirable for some other reason than this and for reasons that are so good that they might overbalance the dangers of militarism, it would seem proper that you indicate in some way why you commend it.

If your editorial were in a lay publication that made no claims to authority on questions of health and physical training, one might assume that you had in mind the value of military training for physical development. Your knowledge of the unfavorable reception heretofore accorded by Congress to public health measures must raise a doubt in your mind concerning the conversion of this body implied in its willingness to appropriate from 600 to 1,200 millions of dollars for a health measure. Moreover, it must seem strange that the military forces of the country have suddenly become so intensely interested in a health measure.

This argument for military training is so generally discredited by experts in physical education, and its honesty is so thoroughly impeached by the fact that the proposed compulsory training exempts those who most need it, that is, those least well developed physically as well as all girls, that it is not possible to assume that this senile and badly discredited reason is what you had in mind.

I hope you will inform your readers why you as representative of the American medical profession endorse this measure that some undoubtedly regard as vitally wrong.

C. S. Bacon, M.D., Chicago.

"EFFICIENT HOSPITALS": SUCCESS OF PRIVATE ROOM PLAN AT TEMPLE, TEXAS

To the Editor:—I have read with interest the article by Bacon on "The Efficient Hospital" (THE JOURNAL, Jan. 10, 1920, p. 123). It may be of some interest to your readers to know that the plan suggested is not only feasible, but has been in operation for many years at the King's Daughters' Hospital, Temple, Texas. Some years ago the staff of this hospital realized that the patients, especially the operative cases, would be better in private rooms than in the wards. Something like twelve years ago we abandoned the ward system entirely, and since then each patient, charity or otherwise, has had a private room, and it is seldom that the nurse in attendance knows whether the patient is a pay or a charity patient. So far as I know, this is the only hospital that gives charity patients private rooms. The rates of our rooms now run from $2 to $6 a day. Last year there were comparatively few calls for charity outright, but all of these were met with service in such rooms as were available at the time. It goes without saying that we do not put the charity patients in the most expensive rooms.

We have had to work practically without donation, except what little the physicians themselves have contributed, and no endowment. We now have a hospital of seventy-five beds. Of course there is some debt for buildings. Most of the buildings are of modern fire-proof construction. I merely mention this to show that the plan can be worked without wards, and charity taken care of, if the administration is thoroughly efficient. A rather stringent rule, that has been lived up to with practically no friction, is that the hospital bill shall be paid before the attending physician or surgeon can receive any pay.

Instead of having four wings, as suggested by Bacon, we have an L-shaped building with arms of about equal length, with the elevator and dumb-waiter at the angle. It is so arranged that no patient is as much as 100 feet from the distributing center. We have long since adopted the plan as suggested by Bacon of central cooking and central linen distribution, and find it exceedingly satisfactory. However, instead of having service rooms on the ground floors, we have them on the top floor, which we have found to be a better arrangement, as there is practically no odor of food throughout the building, and there is less possibility of the help's carrying off food—no small item in the southern country. As in Bacon's plan, we have examining, operating and roentgen-ray rooms, the pathologic laboratory and the like on the top floor, which is conducive to efficient hospital service.

After our experience with private rooms, we would consider wards again only with reluctance, and would by far prefer to furnish the charity patients with one of our less expensive rooms rather than return to a ward plan, which is unsatisfactory both to the patient and to his attending physician.

GEORGE S. MCREYNOLDS, M.D., Temple, Texas.

NOTE ON RESPIRATORY SOUNDS HEARD ON THE HEAD

To the Editor.—These phenomena are recorded largely because I do not find any mention of them in the literature. At present I know of no clinical significance which they may have.

When the bell stethoscope is placed over certain points of the face and head, breathing sounds are distinctly heard. These places are, first, the antrums; second, the temporal portion of the scalp; third, the vertex along the median line; fourth, just mediad to each mastoid and frequently over the mastoids themselves; fifth, at the junction of the occiput with the neck.

In many cases the breathing sounds may be heard all over the head, in other cases only in the places mentioned. There is a marked difference in the loudness of the sound heard, and, as might be expected, they are best heard on the heads of persons who have but little hair.

The quality of the sound is like that heard over the larynx, and probably represents a transmission along the skull of the respiratory noises in nose, pharynx and larynx, that is, the upper air passages. I have stated that a bell stethoscope is best for hearing these sounds, but a Bowles may be used. The subject should be instructed to breathe deeply and regularly.

The phenomena are physiologic. That they may be of some significance in fracture of the skull and in diseases of the sinuses and the mastoid seems possible, *a priori*. I have not had the opportunity to study such cases, but take this opportunity of calling the attention of specialists in this field to these phenomena.

ABRAHAM MYERSON, M.D., Boston.

"THYROIDECTOMY IN PREGNANCY"

To the Editor:—In your editorial, January 13, page 329, occurs the question: "May premature delivery be associated with the milder grades of hyperthyroidism?" I believe that it is pretty generally conceded by students of the subject that hyperthyroidism produces premature delivery. I myself have observed a number of cases that seem to substantiate this opinion. The report of one of these cases I am quite sure was published, but I cannot just now cite the reference. It was a case of premature delivery from separation of the placenta, which separation, I concluded after careful survey of the case, was caused by a hyperactive thyroid. Crotti, in his book on "Thyroid and Thymus," page 368, speaking of exophthalmic goiter in pregnancy, says: "It predisposes the patient to uterine hemorrhages and may result in the death of the fetus."

MILES F. PORTER, M.D., Fort Wayne, Ind.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

SPIDER VENOM

To the Editor:—Will you let me know the name of the poison that causes the symptoms following the bite of a spider known as the "black widow," or, scientifically, *Latrodectus mactans*. I wish to know how and why this acts so violently on human beings. I have had three cases in the past few years. I have letters from Dr. Howard of the U. S. Department of Entomology, some from the Florida State Bureau, and one from Dr. Eugene Courson, Savannah, Ga., who wrote about the "widow" years ago. Dr. Courson has no extra copies of the paper. The two former told me about the distribution and gave me a list of references. None of them seemed to answer my question of what the poison is and how and why it acts as it does. Hence I am writing to you, as I was sure you would be able to help me out.

GEORGE D. KENNEDY, M.D., Mandarin, Fla.

ANSWER.—Little is positively known about the specific nature of the venom of spiders, although there has been much speculation. The venom is an oily, translucent, lemon-yellow liquid having an acid reaction and a hot, bitter taste. It gives the xanthroproteic reaction and is rendered harmless by heating to 90 C. In many ways the symptoms of spider bites resemble those produced by snake bites, so that it is probable that the spider venoms belong to that class of poisons. It is known that snake venoms are very complex mixtures and that they differ greatly in the different species of reptiles. Among the ingredients that have been found are fibrin ferment and antiferment, proteolytic enzymes, cytotoxins for red corpuscles, and neurotoxins, as well as leukocytes and endothelial cells. The marked effects on the nervous system produced by the bite of the black spiders, *Latrodectus mactans*, and other species of *Latrodectus* indicate that the venom of these animals resembles that of the cobra more nearly than the venoms of American snakes. Kobert believes that all parts of the spider contain a toxalbumin which in some species is mixed with the secretion of the poison gland. He considers that the secretion of the poison gland produces only local symptoms, while the general symptoms are due to the presence of this toxalbumin. It is because of the toxalbumin that the bite of *Latrodectus* is so

severe as occasionally to cause death in human beings. It contains a hemolysin called arachnolysin which acts on the red cells of man, rabbit, mouse and goose, but not on the horse, dog, sheep and guinea-pig. Some authors question whether the nervous symptoms following spider bites may not be due to changes in the blood rather than to a direct toxic effect on the nervous tissues.

The appended bibliography may be of interest:

Houssay, B. A., and Negrete, J.: Nuevos estudios experimentales sobre la acción fisiológica de las ponzoñas de las arañas, *Rev. d. Inst. Bact.*, Buenos Aires **2**: 189 (June) 1919.

Kobert: Beiträge zur Kenntniss der Giftspinnen, 1901.

Sachs: Zur Kenntniss des Kreuz Spinnengiftes, Hoffmann's *Beiträge* **2**: 125.

Wilson: Records of the Egyptian Government School of Medicine, 1904, p. 7.

Castellani and Chalmers: Manual of Tropical Medicine, 1910, p. 136.

Browning: Original Investigations of Spider Bites in Southern California, *South. California Pract.* **16**: 291, 1901.

Davidson: *South California Pract.* **12**: 169, 1897.

Riddick: A Case of Poisoning from the Bite of a Black Spider, *North Carolina M. J.* **40**: 247, 1897.

Hodgdon, A. L.: Bite of a Poisonous Spider, Latrodectus Mactans, THE JOURNAL May 4, 1907, p. 1506.

HYPERHIDROSIS

To the Editor:—Some time ago you printed several prescriptions for the treatment of hyperhidrosis. Can you find these for me and tell me in what issue of THE JOURNAL they were published?

WILLIAM HILL BEAN, M.D., New Haven, Conn.

ANSWER.—The following prescriptions appeared in the Therapeutics Department of THE JOURNAL, Jan. 12, 1918:

		Gm. or C.c.
℞	Chromium trioxid	2.5
	Water	50

Use as a paint once a week.

This treatment is said to be exceedingly active, and hence must be used with care, especially in the axillae. Less active but more pleasant than the foregoing is:

		Gm. or C.c.
℞	Tannic acid	5
	Alcohol	100
	Water up to	200

Use as a wash twice a day.

The drying powders suggested were:

		Gm. or C.c.
℞	Boric acid	10
	Purified talc	100

		Gm. or C.c.
℞	Salicylic acid	5
	Bismuth subnitrate	40
	Zinc stearate	20

		Gm. or C.c.
℞	Salicylic acid	2
	Bismuth subnitrate	20
	Starch	20

Other remedies suggested are: 25 per cent. solution of aluminum chlorid in distilled water; 2 per cent. solution of the official liquor formaldehydi in water (a 5 per cent. solution may be used for the feet); pure glycerin; potassium permanganate solutions of about 5 parts to 1,000. In very severe cases, the roentgen ray has been used with some good effect; however, the method is expensive and not entirely safe in unskilled hands.

DRY, WARM CLIMATE TO RETARD DEAFNESS

To the Editor:—I am unfortunate enough to suffer from partial deafness, due to catarrh of the nares, eustachian tube and middle ear. I realize that my hearing is becoming worse and that sooner or later I shall be incapacitated from doing medical work. I have treated with some of the best aurists in the East, have had my tonsils removed, septum straightened, tubes dilated and ears inflated, but without any permanent success. One or two aurists have replied, in answer to my query concerning the effect of climate, that my removal to some dry climate might aid my ears. I have endeavored to learn from the U. S. Public Health Service and the U. S. Weather Bureau of some of the localities in the United States where the climate may be suitable to my needs, but without success. It occurs to me that you may be able to give me the information I desire or may be able to refer me to some one who can. Or it might be that the publication of this letter will put me in touch with physicians who will give me the desired information. Whatever the course pursued to obtain the facts I want, I shall be glad to meet any expenses that may arise. I shall appreciate greatly any reply you may make or any thing you may do in this matter.

ROLLA CAMOEN, M.D., Parkersburg, W. Va.

ANSWER.—This communication is published for the purpose of bringing our correspondent's request to the attention of some reader who may be able to give him the information he seeks.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, Mar. 2. Sec., Dr. L. O. Sloan, Juneau.

CALIFORNIA: Los Angeles, Feb. 16-19. Sec., Dr. Chas. B. Pinkham, 906 Forum Bldg., Sacramento.

CONNECTICUT: New Haven and Hartford, March 9-10. Sec., Reg. Bd., Dr. Robert L. Rowley, Hartford. Sec., Homeo. Bd., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven. Sec., Eclectic Bd., Dr. James Edwin Hair, 730 State St., Bridgeport.

FLORIDA: Jacksonville, March 16. Sec., Homeo. Bd., Dr. Geo. A. Davis, East Port.

ILLINOIS: Chicago, Mar. 1-3. Director, Mr. Francis W. Shepardson, Springfield.

IOWA: Iowa City, March 29-31. Sec., Dr. Guilford H. Sumner, Capitol Building, Des Moines.

MAINE: Portland, March 9-10 Sec., Dr. Frank W. Searle, 140 Pine St., Portland.

MASSACHUSETTS: Boston, March 9-11. Sec., Dr. Walter P. Bowers, Room 144, State House, Boston.

NATIONAL BOARD OF MEDICAL EXAMINERS: St. Louis and Chicago, Feb. 18-25. Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia, Pa.

NEW HAMPSHIRE: Concord, March 11-12. Sec., Dr. Charles Duncan, Concord.

RHODE ISLAND: Providence, April 1-2. Sec., Dr. Byron U. Richards, State House, Providence.

Massachusetts September Examination

Dr. Walter P. Bowers, secretary of the Massachusetts Board of Registration in Medicine, reports the oral, written and practical examination held at Boston, Sept. 9-11, 1919. The examination covered 13 subjects and included 70 questions. An average of 75 per cent. was required to pass. Of the 45 candidates examined, 35, including 4 osteopaths, passed, and 10, including 3 osteopaths, failed. One candidate, a graduate of Harvard University in 1915, passed a special examination held Sept. 24, 1919. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Chicago College of Medicine and Surgery		(1916)	78.8
Rush Medical College		(1898)	75
Bowdoin Medical School		(1917)	79.3
Medical School of Maine		(1899)	75
Baltimore Medical College		(1895) 75, (1912)	75
University of Maryland		(1916) 78.9, (1917)	79.8
Boston University		(1906)	80.5
College of Physicians and Surgeons, Boston		(1919)	76.7
Harvard University (1913) 80.6, (1914) 81.2, (1916) 82.7, 87.5, (1918) 83.			
Middlesex College of Medicine and Surgery		(1919) 77.1,	78.2
Tufts College Medical School		(1905) 76, (1917)	75
University of Michigan Homeopathic Med. School		(1911)	81
Washington University		(1919)	85
Dartmouth Medical College		(1910) 80.7, (1914)	81.7
Cincinnati College of Medicine and Surgery		(1901)	78.4
Ohio State University College of Homeo. Med.		(1915)	76.9
Hahnemann Medical College and Hospital of Phila.		(1919)	82.2
Jefferson Medical College		(1908) 81.2, (1918)	80.1
Woman's Medical College of Pennsylvania		(1912)	77
University of Vermont		(1915)	75.7
McGill University		(1916)	85.5
	FAILED		
Chicago College of Medicine and Surgery		(1914)	68.5
Chicago Hospital College of Medicine		(1917)	71.6
College of Physicians and Surgeons, Boston		(1916)	68.2
Middlesex College of Medicine and Surgery (1918) 65.1, (1919) 71.2.			68.2,
Tufts College Medical School		(1919)	73.3

Connecticut November Examination

Dr. Edwin C. M. Hall, secretary of the Connecticut Homeopathic Medical Examining Board, reports the written examination held at New Haven, Nov. 11, 1919. The examination covered 7 subjects and included 70 questions. An average of 75 per cent. was required to pass. One candidate was examined and passed. Two candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
New York Homeopathic Med. Coll. and Flower Hosp.		(1919)	83

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
New York Homeopathic Med. Coll. and Flower Hosp.		(1915)	New York
New York Med. College and Hospital for Women		(1903)	New York

Social Medicine and Medical Economics

HOME AND PUBLIC HEALTH NURSES AND THEIR TRAINING

JOHN DILL ROBERTSON, M.D.
Commissioner of Health
CHICAGO

As this paper goes to press, we are in the midst of the 1920 outbreak of influenza.

Several days before the outbreak assumed epidemic proportions, the available supply of regular nurses was exhausted. For a period of days the calls for nurses poured in at the health department at the rate of fifty an hour.

At the offices of the School for Home and Public Health Nursing, two girls were kept busy at the telephone all the time taking calls for nurses trained in our eight-weeks course. Four hundred of our graduates took cases in private homes. Six hundred others, who were restrained by household duties from nursing full time, spent as many hours each day as they could spare in attending to the needs of the families in their neighborhood. All others, so far as I can ascertain, took care of their own ill, if they had any. Apparently there were no demands made on the regular nursing agencies by the families of any of our graduates.

THE DIFFICULTY OF SECURING NURSES

Every physician knows the difficulty of securing competent nursing care for the family in moderate or in submoderate circumstances. The difficulty has been steadily growing greater instead of less. There are various causes responsible for this condition. Foremost among them is the extension of the preliminary requirements for matriculation in a hospital for training. The nurse that is required to graduate from high school and spend three years in hospital training before she is eligible for registration feels that she cannot afford to work for less than $35 a week. And she is quite right.

There is no question about the value of the registered nurse: her services are invaluable for those who can afford them. The trouble is that only those in very comfortable financial circumstances can afford them. When the family weekly income must cover fixed expenses such as rent, fuel, food, clothing, insurance, and so on, it is obvious that there is not sufficient left to cover $35 a week and board for a nurse.

Physicians realize that disease is all too frequently the penalty of carelessness or of ignorance. Often it is the result of ignorance. There is no reason, however, why the victim should be too heavily penalized. His suffering is usually sufficient punishment for him. It is our duty to teach him as much as we can; but when a man is ill we should help first and teach afterward.

THE SCHOOL FOR HOME AND PUBLIC HEALTH NURSING

In August, 1919, we established in Chicago the School for Home and Public Health Nursing, both to teach and to help. The length of the course is two months. The pupils spend in class two hours a day for three days a week. We graduated 790 in the first class and 1,363 in the second class. Our third term opened, December 6, right in the midst of the fuel shortage incident to the coal strike. We found it necessary, therefore, to limit the size of the class to 1,000, and now have that number enrolled. We hope, however, to be able to make some arrangements that will enable us to admit a larger class in February.

At no time since the graduation of the first class have we been able to fill the calls for the services of these women, in spite of the fact that we have not circularized the physicians of the city or in any way attempted to advertise their work. The calls for them have come in the main from the patients themselves, rather than from the attending physicians; but no dissatisfaction with their work has been expressed to me. Quite the reverse. As to the work they have been doing in their own homes I have, of course, no data.

In the beginning, our course aroused bitter opposition in some quarters. There is still some opposition; but this has never been sufficient to affect the work. Those who have spent three years in hospital training naturally feel that a nurse cannot be trained in two months—every one knows that a West Point graduate felt just the same way about a Plattsburg man. We do not, of course, pretend that the nurses we are training are the equal of registered nurses—that would be foolish, indeed. What we claim is that they can satisfactorily fill the need for nurses in the general run of cases in which all that is needed is some one to follow the physician's directions intelligently. In a critical surgical case, I should prefer a surgically trained nurse; surgical cases, however, make up a very small percentage of the cases that require nursing. For nursing tuberculosis, diabetes and cancer cases; nervous invalids, elderly persons, babies, children with measles, chickenpox, and, in fact, any children's diseases; for cases of tonsillitis, septic sore throat, colds, etc.—in short, for the great bulk of nursing, these women are quite as capable as the registered nurse. Often they are more desirable because they are willing to do housekeeping as well as nursing, and, in its final analysis, nursing is nothing more nor less than housekeeping for the sick.

THE CURRICULUM

Before we established the school, I called a meeting of the staff of the department of health. We discussed the curriculum of the standard nursing course with a view to determining what in the course was essential. As a result of this conference, we drew up a course of study for our school. Then we selected from our staff of physicians those who seemed best fitted to teach the subjects we had included in the course, and from our corps of city nurses we selected those who could best demonstrate the nursing technic we thought necessary.

The course included lectures on:

The home nurse, her duties, qualifications and dress.
The sick room.
Daily routine care of the patient.
Giving medicine and home medicine equipment.
Temperature, pulse and respiration.
Uses of water as a therapeutic agent.
Symptoms of sickness.
First aid to the sick.
First aid to the injured.
Poisons and their antidotes.
The human body.
Food.
Food for the sick.
Sanitation of the home.
Plumbing and the housewife.
Contagious diseases.
Causes, symptoms and prevention of contagious diseases.
Principles of contagious disease nursing.
Nursing care of influenza.
Nursing care of patients suffering from tuberculosis.
Obstetric nursing.
Care of the baby.
Care of the older child.

Our demonstrations included bed making, bathing, sponging, taking temperature, pulse and respiration, bandaging, first aid, etc.

We placed most emphasis on the taking of temperature, pulse and respiration. We held temperature, pulse and respiration clinics. Every pupil was required to provide herself with a clinical thermometer. We taught them to take temperature by mouth, by rectum and by axilla; and we didn't let one go until she could take temperature and read her ther-

mometer correctly. Many of them learned in a short time, others were slower. The hardest two weeks of the course, so far as the instructors were concerned, were the two weeks when we were drilling on this subject.

The lectures on contagious disease nursing were given by the nurse in charge of the work at our contagious disease hospital. The lectures on obstetric nursing were given by a woman who had spent twenty years in that sort of nursing. The lectures on the nursing of the tuberculous were given by experts in this line from the Municipal Tuberculosis Sanitarium, and augmented by lectures by the medical director of that institution. And so on with the other lectures—each was given by the best talent that we could command. No one who lectured did so from theoretical knowledge alone.

Throughout the course we hammered on two main propositions—absolute adherence to the physician's orders, and cleanliness. In order to show them what a physician means by cleanliness, I arranged that every woman who attended the lectures should be given a chance to see at least one surgical operation from a hospital amphitheater. They were visibly impressed by the precautions taken by the surgeon and his assistants to secure absolutely aseptic conditions. Clean hands no longer mean to those women what clean hands meant to them before they saw the surgeon and his assistants scrub up.

TABLE 1.—DATA CONCERNING THE FIRST TWO CLASSES

Ages:	No.
Under 20	81
From 20 to 25	311
From 25 to 30	354
From 30 to 35	320
From 35 to 40	328
From 40 to 45	282
From 45 to 50	245
Over 50	147
Nativity and marital status:	
American born	1,728
Foreign born	425
Colored	192
Single	802
Married	997
Widowed	354
Education:	
Grammar school	1,252
High school	520
Business college	245
College	136

It is no part of the duty of a nurse either to diagnose or to prescribe. In our lecture on the "Symptoms of Disease" we endeavored to teach them what symptoms indicated the presence of a condition that should be brought to a physician's attention; we made no attempt to teach them to read the meaning of the symptoms. We taught them that when they found a high temperature associated with an abnormal pulse they were to summon a physician at once. We taught them that any abnormal condition of the excretions of a person, whether a patient or one apparently in good health, should be brought to the attention of a physician. We tried to make clear to them that it was wise to have a physician overhaul the physical mechanism as soon as there was even an apparently trifling indication of trouble rather than to wait to see whether something worse would develop. Our idea in this was to have these women become the guardians of the health of their families first and to act as their nurses secondly.

In our lecture on "Giving Medicine," we emphasized the importance of absolute adherence to the physician's orders. We made not the least attempt to teach the women to prescribe; on the contrary, we tried to make clear to them the danger of attempting to prescribe even castor oil of their own accord. There is no other place in the universe where a little knowledge is so truly a dangerous thing as in medicine. These women know that they know nothing about materia medica—at least we told them so often enough.

Our aim throughout has been to train them enough to enable them to follow the physician's orders explicitly; but not enough to make them think they can assume any part of the duties of the physician.

In order that there might be no mistake as to what they had been taught, we collected the lectures from those who gave them and incorporated them in an official note book. We gave a copy of this note book to each nurse we graduated.

TABLE 2.—SALARIES DESIRED BY EIGHT HUNDRED AND SEVENTY-TWO GRADUATES WHO ARE WILLING TO WORK OUTSIDE THE FAMILY

	No.
Willing to work for from $10 to $15	7
Willing to work for from $15 to $18	82
Willing to work for from $18 to $20	163
Willing to work for from $20 to $25	618

USE MADE OF THE TRAINING

Many of the women we have trained have no intention of doing any nursing outside of their own families. The figures given in Table 2 will be of interest. Whether they nurse their own families of their neighbor's families, however, makes little difference in the final result. If Mrs. Brown can nurse her own sick, the nurse who would otherwise be on duty in her home is released for work elsewhere. The homes in which there are neither babies, children nor elderly persons are few and far between. Where there are none of these to tax the family income, the family can probably afford to pay for the services of a registered nurse in case of illness in the household. Where there are babies, children or elderly persons, the nurse is always likely to have enough to do to keep her busy at home.

We started the school when we did in order to be prepared for a possible recurrence of the influenza epidemic that swept our country during the winter of 1918-1919. A great many of the women that we have trained can be depended on to come to our aid in time of need, such as a recurrence of the epidemic would cause. When I say that they are unwilling to do nursing outside of their own homes I mean ordinarily, not during an epidemic.

Many of our graduates want more knowledge, as witness the data given in Table 3.

TABLE 3.—GRADUATES WHO DESIRE FURTHER INSTRUCTION

	No.
Registered for extension courses	1,222
Willing to enter hospital:	
For three months	225
For one year	50
For two years	8
For three years	35

CONCLUSION

The prophet's job is a thankless one, consequently I shall not attempt to prophesy the final outcome of the movement that we have undertaken. I shall, however, state that I expect to have trained 10,000 women in our school by the end of the first year of its existence. Ten thousand nurses sounds like a drop in the bucket in a city of two and a half million; but 10,000 such nurses would have saved many lives if we had had them during our epidemic in 1918. Moreover, it is a start, and every one knows that a task well started is half finished. Eventually, I should like to have every housewife in Chicago in our class room, not so much to train her to

nurse the sick as to train her to keep her family well. In my mind there is no doubt that preventive medicine will supplant our present system of remedial medicine in the near future. When every man pays his physician to keep him well instead of to get him well, there will be little need of health commissioners. I am trying to do my part toward bringing about such a state of things.

Let me repeat, it is no part of our plan to run in opposition to the registered nurse. There will always be a field for her. It is our plan to train a body of housekeepers for the sick, practical nurses, attendants—whatever you want to call them—who will competently carry out the physician's directions in that great bulk of cases in which it is out of the question to pay for the services of a registered nurse. We are training soldiers to serve under the leadership of the physician in the fight against disease; we are not training subofficers.

I should like to see a similar movement undertaken by every health department in our land, and can promise the help of my department to the extent of our resources to any one who desires it.

Book Notices

VENEREAL DISEASES: A PRACTICAL HANDBOOK FOR STUDENTS. By C. H. Browning, M.D., D.P.H., Director of Bland-Sutton Institute of Pathology of Middlesex Hospital, and David Watson, M.B., C.M., Lecturer on Venereal Diseases, Glasgow University, with an Introduction by Sir John Bland-Sutton, F.R.C.S. Cloth. Price, $6.50. Pp. 336, with 76 illustrations. New York: Oxford University Press, 1919.

This manual gives an outline of our knowledge of syphilis in 140 pages, and then of gonorrhea, in almost the same amount of space. The presentation is up to date, scientific, well written, and orthodox. As one of the authors is a laboratory man who has done considerable work on syphilis, the book goes with more than ordinary detail into the laboratory side of these diseases. This is altogether to be desired. The consideration of the diseases, furthermore, is not confined to either genital or skin manifestations: the systemic manifestations of both syphilis and gonorrhea are given due consideration. Although the book is called a handbook of venereal diseases, chancroid, curiously enough, is given no formal consideration, being taken up incidentally in connection with the diagnosis of syphilis. It is entitled to more consideration in a book on venereal diseases. The make-up of the book is good. Some criticism is to be made of the illustrations. The clinical illustrations in black and white are not as good as we are used to, and many of the colored clinical illustrations, which are made from color photographs, are poor. A few are quite lifelike. The book has the great merit of being concise and not burdened with unnecessary details. It can be highly recommended as a guide to a practical knowledge of syphilis and gonorrhea.

PLASTIC SURGERY: ITS PRINCIPLES AND PRACTICE. By John Staige Davis, Ph.B., M.D., F.A.C.S., Instructor in Clinical Surgery, Johns Hopkins University. Cloth. Price, $10 net. Pp. 770, with 864 illustrations. Philadelphia: P. Blakiston's Son & Co., 1919.

It is the author's opinion that "the field of plastic surgery extends from the top of the head to the sole of the foot, and no properly trained plastic surgeon would be willing to limit his work to the face alone"; as a result, he has assembled between the covers of one book a summary of restorative and reconstructive surgery dealing primarily with defects of the surfaces of the body, including harelip and cleft palate, hypospadias, and exstrophy of the bladder. Wound infection, burns, deforming cicatrices, chronic ulcers and the general principles of tissue transplantation, with especial reference to the transplantation of skin, are among the subjects receiving thorough consideration. There is little to criticize unfavorably, and much to commend. The style is clear and convincing; there is no verbosity, and yet when the author has discussed a subject there are few places where the admirable brevity of the text permits of ambiguity or misinterpretation. The illustrations are numerous, well executed and labeled with a thoroughness rarely seen in textbooks, but which should be much appreciated by those who may wish to use this book as a guide. An abundant and possibly top-heavy bibliography appears at the end of each chapter. The author has what might be called the definitive adjective habit. Like many other medical writers, he speaks of an appendicitis, a pneumonia, a necrosis, apparently being unable to overcome the habit of interjecting the unnecessary word. From a scientific standpoint the book is excellent, and should find a place in every medical library.

MEDICAL SCIENCE: ABSTRACTS AND REVIEWS. Monthly. Published for the Medical Research Committee by the Oxford University Press. Price, $8.50 per annum.

This publication is an outgrowth of one published during the war under the auspices of the Medical Research Committee to keep British military physicians informed concerning advances in medical science as revealed in periodical literature. The publication includes collective abstracts on various subjects as well as abstracts of single articles which have seemed to the editors to be of special importance. The editors are: medicine, J. D. Rollêston, M.D.; surgery, W. G. Spencer, M.S., F.R.C.S.; pathology and bacteriology, W. Bulloch, M.D., F.R.S.; neurology, F. M. R. Walshe, M.D., and radiology, W. S. Lazarus-Barlow, M.D., F.R.C.P., and Sidney Russ, D.Sc. In addition to covering the field as did the German "Centralblatts," the editors of the various departments do not seem to be bound to local or national schools of medicine, but have consulted freely the periodical literature of all nations.

PHYSICAL DIAGNOSIS. By Richard C. Cabot, M.D., Professor of Medicine in Harvard University. Seventh edition. Cloth. Price $4. Pp. 527 with 269 illustrations. New York: William Wood & Co., 1919.

In his preface, Dr. Cabot states that new experiences gained during the war have modified his ideas on the cardiac signs of nervousness, on hilum tuberculosis, on goiter heart and on empyema. New matter has been supplied on these subjects. He also states that he has developed great skepticism "as to the existence of rheumatic mitral regurgitation (without stenosis), as to the diagnosis of chronic appendicitis and of tricuspid stenosis." He has also presented some new views on the subject of arterial sclerosis and blood pressure. Beyond these points, the book appears much as usual. It is well printed, with numerous illustrations, and is a reliable textbook.

Medicolegal

Liability for Negligent Advice to Parents of Scarlet Fever Patient

(Skillings v. Allen (Minn.), 173 N. W. R. 663)

The Supreme Court of Minnesota, in affirming an order overruling a demurrer to the complaint in this case, holds that a physician may be liable to a parent of a patient for damages sustained by such parent from negligent advice given by the physician, as when the patient had scarlet fever. In other words, the court holds that a complaint states a cause of action when it is alleged therein that the defendant, a physician, was employed by the plaintiff to attend his minor daughter professionally while she was sick; that, knowing that the child's disease was scarlet fever, he negligently advised the plaintiff's wife, who inquired in his behalf as well as in her own, that it was safe to visit the child, then in a hospital and under the defendant's care; that he also advised her that it was safe to remove the child from the hospital to the plaintiff's home, and that there was no danger that the disease would be communicated, although it was then at a stage when great danger of infection existed; that the plaintiff and his wife did not know of the infectious nature of the disease and relied on the defendant's advice, and accordingly visited their child at the hospital

and removed her to their home, and the plaintiff thereby contracted scarlet fever, to his damage.

The court says that the case was a novel one, wherein it had been certified that the question raised was important and doubtful, and counsel for the defendant asserted that no case like it had before been presented to any court, so far as they had been able to ascertain. Counsel contended that a cause of action was not stated because there were no contractual relations between the plaintiff and the defendant. But the statement in the complaint, that the child was under the defendant's care "pursuant to solicitation and employment by the plaintiff and his wife," amounted, the court thinks, to an allegation that there were such relations. True, the child was the defendant's patient; but can it be said that therefore he owed no contractual duty to her parents by whom he was employed? The child would have a cause of action against the defendant for the consequences of any failure on his part to treat her with ordinary professional skill and care, though she did not employ him. The plaintiff might also have a cause of action entirely separate and apart from that of his child for the loss of her services, due to the same failure to exercise ordinary professional care which gave rise to the child's cause of action. Generally speaking, one is responsible for the direct consequences of his negligent acts whenever he is placed in such a position with regard to another that it is obvious that if he does not use due care in his own conduct he will cause injury to that person. This principle was applicable to the fact stated, and the demurrer to the complaint was properly overruled.

Assuredly this was a case in which there was every reason to hold that the defendant was under a legal duty to the plaintiff, and it was of little practical consequence whether the duty was called contractual or noncontractual. The health of the people is an economic asset. The law recognizes its preservation as a matter of importance to the state. To the individual nothing is more valuable than health. The laws of Minnesota have been framed to protect the people, collectively and individually, from the spread of communicable diseases. Scarlet fever is classed as such a disease. When the defendant discovered that the plaintiff's child was suffering from an infectious disease, it became his duty to comply with the laws of the state in order that the public health might be protected. His duty did not stop there. The child's parents were naturally exposed to infection to a greater degree than any one else. To advise them that they ran no risk in visiting her at the hospital or in taking her into their home necessarily exposed them to danger if they acted on the advice, and the defendant was bound to know that they would be likely to follow his advice. It was allowed that the advice was given negligently, and all the necessary elements of a cause of action based on negligence were present.

The court concludes that the complaint was not demurrable, although it might be true, as suggested, that it is a matter of common knowledge that scarlet fever is an infectious disease and that the plaintiff might not have been greatly influenced by the defendant's alleged assurance that he might visit his child or take her to his home without running any risk of infection.

Osteopathy and the Practice of Medicine

(In re Opinion of the Justices (R. I.), 107 Atl. R. 102)

The Supreme Court of Rhode Island, in giving the opinion, in answer to a question in regard thereto submitted by the governor, that persons who have received certificates to practice osteopathy from the state board of health, and who have registered in the town clerk's office of the city or town in which they reside their authority for so practicing, are legally entitled to sign death certificates in those cases in which they were last in attendance professionally on the deceased, says that it thinks the conclusion reached is strengthened by a consideration of the result if the other construction were adopted. In that case we should have this situation: The state by its examination and certificate has certified to the ability of the osteopath to discover the cause of the disease while the patient is alive; but, on the death of the patient, the osteopath then is to be held to be incompetent and unauthorized to state the cause of death. Such a construction is illogical, and its effect would be to impose in many instances unnecessary hardship and pain on the relatives of the deceased. It cannot be doubted that the practice of osteopathy as authorized by Chapter 1058 of the Public Laws of 1914 is the practice of medicine within the meaning of those words as used by Section 8 of Chapter 193, by which penalties are provided for the unlawful practice or attempt to practice medicine or surgery or any of the branches of medicine or surgery. The statute authorizes the licensed practitioner of osteopathy to make a diagnosis of diseased or abnormal conditions of the human body and to apply a remedy therefor. This power of diagnosis is not restricted. Having determined, however, the nature and the cause of the sickness, the practitioner is then restricted to the remedy for the ailment which must be confined to manipulation of the body; the method and the extent of the manipulation is left to the judgment of the practitioner. But in some parts of the statutes the word "physician" undoubtedly does have the limited meaning of doctor of medicine, and not the broader meaning; as in Chapter 123, Section 54, by which it is provided that liquors are not to be sold, etc., except on a physician's prescription; and in Section 17 of Chapter 178, "Of Medicines and Poisons," where it is provided that any physician who shall prescribe certain drugs, etc. As osteopaths have no authority to give prescriptions or to prescribe drugs, it is manifest that the word "physician" in these clauses does not include a practitioner of osteopathy.

Demand for Injection of Collargol Not Reasonable

(United States Fidelity & Guaranty Co. et al. v. Wickline (Neb.), 173 N. W. R 689)

The Supreme Court of Nebraska holds that, when a woman employee who has suffered an injury to one of her kidneys offers to permit a roentgenogram of the kidney to be made, but refuses to permit the injection of collargol into the kidney for the purpose of rendering it opaque, she does not necessarily, by such refusal, forfeit her right to compensation under the employers' liability act. The court says that in a former opinion it stated that, in the present advanced state of the science of roentgen-ray examinations and photographs of the person, there appears to be no reason why such examination or photograph should not be permitted by a claimant for compensation under the employers' liability act, on request by the employer or insurer, unless the request is shown to be unreasonable. The district court was therefore required to determine whether under the circumstances the request in this case was reasonable. A physician skilled in the art of making and reading roentgenograms testified that in order properly to determine the extent and character of the defendant's injury a roentgenogram of the kidney ought to be made, and that in order to make a proper roentgenogram it might be necessary to inject collargol into the kidney. In the hands of an expert, he said, there is no danger whatever; but that procedure is not used as extensively as formerly, because of ability now to roentgenograph the kidney without it, though he found it necessary to use the solution in a few cases. The defendant testified that if the court called on her to have a roentgenogram taken, she would permit that to be done; but she would refuse to have collargol injected into her kidney. The district court found that the demand on her was not reasonable, and that her refusal ought not to bar her from a recovery of compensation under the employers' liability act; and the supreme court is constrained to hold, with the trial court, that the demand on Mrs. Wickline was not reasonable. It will be seen from the testimony produced by the plaintiff, the supreme court says, that it is only in rare instances that it is necessary to inject this substance into the kidney, and it would seem that the plaintiff ought to have availed itself of the defendant's offer to submit to a roentgenoscopy without this injection. It might be that an injection was not necessary.

Society Proceedings

PHILADELPHIA COUNTY MEDICAL SOCIETY

Meeting held Jan. 14, 1920

The President, DR. J. FRANKLIN STAHL, in the Chair

The Question of Dental Infection in the Production of Nervous and Mental Diseases

DR. CHARLES K. MILLS: Fortunately, the mind of the profession seems to be tending toward a very healthy discussion of the probable fallacies of dental infection in its relation to various important diseases, and of many other correlated and zealously exploited views. Shortly after the death of Colonel Roosevelt, a newspaper article appeared which illustrated one of the most dangerous forms of medical propaganda. It was stated that one of Colonel Roosevelt's teeth was the indirect cause of his death, and that thousands of persons die or are incapacitated yearly from maladies arising from infected teeth. The cases of a rescued backward boy whose brain was clouded to the point at which he could not master the rudiments of knowledge, and a youth assailed with a lethargy at the age of 15, who afterward became one of the most brilliant lawyers of the Middle West, were included in a series of cases supposedly illustrative of the marvelous results of the removal of infected teeth. I have but little doubt that literally bushels of teeth of excellent quality have been sacrificed as the result of this atrocious article about Colonel Roosevelt. Viewing roentgenograms, I have been skeptical as to what are designated as abscesses at the roots of teeth. It has always seemed to me that these pictures represented absorptive lacunae or artefacts of some other description, rather than true abscesses. The roentgen ray enables us to discriminate between areas of differing density. In a strict sense an abscess cannot be demonstrated by a roentgenologic investigation. A score or more of cases have come to my knowledge in which important mental and nervous diseases have been attributed to dental infection, and in which the teeth had been removed with results in some instances so harmful as to make me feel that the procedure was almost a criminal one. Dr. Cotton, one of the leading psychiatrists of the country, attributes many and diverse forms of insanity to dental infection. The late Dr. August Hoch, in a critical review of one of Dr. Cotton's articles, clearly points out the logical defects in the presentation. Under the influence of the propaganda of focal infection, to use the expression of Dr. Peterson, the colons of epileptics bid fair to be reduced to semicolons by operation. The appendix will soon no longer be a vestigial illustration, and the tonsil, protrusive and submerged, is sharing the fate of the ovary in our early experience. A nose and throat specialist not long ago gravely informed me that he thought of preparing a statute to be presented to the state legislature making compulsory the extirpation of the tonsils of children after reaching a certain age on the theory that prevention is better than cure. On the same principle may not our exodontist friends be called in for their exterminating activities, and thus free the rising generation of teeth which in the course of time may have their roots infected and abscessed? I protest against the too free use of the therapeutics of organic mutilation. If the craze for violent removal goes on, it will come to pass that we shall have a gutless, glandless, toothless and perhaps, thanks to psychology and surgery, a witless race.

Dental Therapeutics Based on Clinical and Roentgen-Ray Investigations

DR. WILLIAM MIDDLETON FINE: As a dentist I am forced to believe that too many teeth are extracted in the expectation that their removal will cure systemic disturbances. Because it is possible to demonstrate the same micro-organisms in pulpless teeth and in arthritic joints, it should not be stated that the teeth are invariably the primary cause of the infection. The extraction of badly decayed teeth with root abscesses, or their restoration to health and usefulness, removes one of the contributing factors in the cause and development of many diseases. I do not share the belief that all nonvital teeth should be removed. Our bodily protective processes prevent well treated teeth, without living pulps, being the direct cause of disease. Talbot would lead us to believe that all the shadows in roentgenograms of dead teeth are not abscesses, and that these teeth should not be extracted ruthlessly. I agree with those who advise the extraction of dead and diseased teeth after a thorough attempt to effect a cure has failed or is doubtful. It is more than likely that 75 per cent. of the shadows in the roentgenograms at the apical ends of teeth have been caused by irritation from mechanical treatment and the use of drugs in dental operations, and hence these teeth are removed unjustifiably. I have seen teeth that roentgen-ray examination indicated were abscessed—as some men would say—remain fifteen years or longer without any symptom of disease, local or general. I received recently three cards from men announcing that they were giving up general practice to specialize in extraction of teeth. We do not need three new extractors every week.

Present Status of Oral Sepsis in Relation to Systemic Disease

DR. JAMES M. ANDERS: The importance of the relation of tooth root infection to systemic diseases cannot be overemphasized from the point of view of study and investigation. Our knowledge of the flora of the mouth, as related to special affections, is still imperfect. A closer cooperation between dentist and physician, along bacteriologic lines, is urgently needed to deal intelligently with affections of the teeth and alveolar processes, and to correct the haphazard sacrifice of the masticating apparatus. I recall a case, one of epilepsy, in a young woman, aged 19, in which, on the advice of a physician, all the teeth, although in good condition, were extracted, without, of course, any effect on the epilepsy. It behooves physicians and dentists to oppose the appalling present rate of removal of teeth. It has been shown that after the fortieth year of life, disseminated infections leading to constitutional disturbances are more frequent and of more serious character than in younger subjects. That many morbid medical conditions may be of oral origin is shown in their cure following the removal of the foci of oral infection. Among many such medical conditions are arthritis, endocarditis, pericarditis, myocarditis, gastritis, myocardial degeneration, chronic nephritis and exophthalmic goiter. Gingival and dental diseases, however, are rarely the sole cause of the morbid states for which gums and teeth may be held responsible. Before teeth are condemned, it is a matter of vital importance to determine that other than oral infectious foci are not present. Treatment based on roentgen-ray studies alone is unwise, since the deeper dental lesions may be simulated by other local conditions, and an abscess which actually exists may not be shown. The local and clinical features are to be noted carefully, and extreme caution should be observed in ascribing a systemic infection to the mouth condition. Bacteriologic study is essential in oral infections. Sanitary oral cavities are potent factors in limiting the incidence and spread of communicable diseases.

Roentgen-Ray Studies of Dental Defects

DR. HENRY K. PANCOAST: The roentgenologist is not able to judge of the direct connection between dental conditions and their supposedly resultant systemic conditions. This is the work of the internist. Not all "clear areas" are due to abscesses at the roots of teeth. Some may be due to old infections, others to chemical irritants. If read properly, however, most of these "clear areas" represent active abscesses. I am opposed to the wholesale extraction of teeth. In many instances it is possible to treat abscessed teeth successfully and have good service from these teeth afterward. An abscess may be present at the root of a tooth and not show in the roentgenogram, but that is a rare occurrence. Experience in the interpretation of the roentgenograms is more important than the technic, and such interpretation is best carried out by the dentist and the roentgenologist in collaboration.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

January, 1920, **159**, No. 1

Some Practical Points in Prostatic Surgery. J. B. Deaver, Philadelphia.—p. 1.
*Surgical Renal Tuberculosis: Prognosis. W. F. Braasch, Rochester, Minn.—p. 8.
Diagnostic Significance of First Sounds of Heart. Le Roy Crummer, Omaha.—p. 20.
Diabetic Service at U. S. Army General Hospital, No. 9, Lakewood, N. J. F. M. Allen and J. W. Mitchell, New York.—p. 24.
Studies in Bone Growth: An Experimental Attempt to Produce Pseudarthrosis. F. H. Albee, New York.—p. 40.
*Points in Pharmacology of Certain Drugs Used for Stomach Effects. W. A. Bastedo, New York.—p. 53.
*Roentgen-Ray Sign of Perinephritic Abscess. M. H. Fussell and H. K. Pancoast, Philadelphia.—p. 67.
*Effects of Restricted (So-Called Ulcer) Diets on Gastric Secretions and Motility. B. B. Crohn and J. Reiss, New York.—p. 70.
Clinical Experience with Sahli's Sphygmoholometer. N. B. Potter, Santa Barbara, Calif.—p. 93.
*Rapidity and Persistence of Action of Digitalis on Hearts Showing Auricular Fibrillation. G. C. Robinson, St. Louis.—p. 121.

Surgical Renal Tuberculosis.—Coincident active pulmonary tuberculosis was found by Braasch in approximately 5 per cent. of his patients, of whom more than 60 per cent. recovered following nephrectomy. Involvement of genitalia was present in at least 73 per cent. of male patients but did not seem to affect the ultimate recovery. Frequency of spontaneous healing of lesions in the prostate and seminal vesicles contraindicates their removal by subsequent operation. Evidence of tuberculosis involving the bones and joints was noted in 6 per cent. of the cases; one half of the lesions were active. The late mortality was 5 per cent. from which it may be inferred that the presence of such complications may be an index of increased resistance. Spondylitis, usually healed, was present in 5.7 per cent., with a mortality of 12 per cent. Tuberculous adenitis was present in nineteen patients (6.4 per cent) and the low mortality (10 per cent.) is suggestive of a heightened resistance. The operative mortality is a negligible factor; the late mortality (five years or less after operation) is approximately 20 per cent.; failure to effect complete cure is approximately 20 per cent.; this leaves a prognosis of recovery in 80 per cent. and of a complete cure to be expected in fully 60 per cent. of patients.

Pharmacology of Certain Drugs.—A number of drugs were studied by Bastedo and some of his findings in the use of the more important ones were as follows: In the ordinary hyperacidity case, with cessation of secretion at the usual time, atropin or belladonna, in maximum doses, either by mouth or hypodermic, had no useful effect on acidity or secretion. In hyperacidity cases atropin had no useful effects in any dosage. In continuous hypersecretion cases it may check the secretion after the digestive period, but it does this in maximum doses only. In pylorospasm it may be useful, but in maximum doses only. In the doses usually employed, it is wholly without effect on the secretory or the motor function of the stomach. In cases of achylia gastrica, whether or not accompanying pernicious anemia, a deficiency of acid may be partially overcome by hydrochloric acid medication. For digestive purposes, hydrochloric acid should always be accompanied by pepsin. In the achylias with diarrhea, acid promises a more noticeable result than in the achylias without diarrhea. When acid produces sourness and stomach irritation, its use should not be continued. To avoid acidosis alkalies should be given during the same period, though not at the same time as the acid, the amount required being judged by the effect on the urine reaction. A bitter is useful as an appetizer for those with subnormal nutrition, as in convalescence from acute illness, provided, that it is taken not more than five or ten minutes before the time for eating. It acts in achylia gastrica as well as in cases with gastric secretion. In subacidity it promotes the secretion of gastric juice. It should be administered in just sufficient dose to give a strong bitter taste, and not in amounts large enough to have a depressant action in the stomach. If the patient is in a state of normal nutrition, but psychically disturbed about eating, it will be useless. If the appetite is already normal the bitter may not only fail to increase appetite but may even lessen it. If the stomach and bowels are deranged, bitters may nauseate. The effect on appetite is solely the local one on the taste buds, therefore, it cannot be obtained if the bitters are hidden in capsules or coated pills.

Roentgen-Ray Diagnosis of Perinephritic Abscess.—Cases are cited by Fussell and Pancoast to show that the roentgen ray will aid in the diagnosis of perinephritic abscess. In the first case cited, this fluid was demonstrated while the patient was standing in the fluoroscope. The shoulders of the patient were grasped and the patient's body moved quickly two or three times from side to side. Watching the fluoroscopic picture showed a distinct wave in the supposed fluid. The renal region was opened and a huge sac of pus was demonstrated within the capsule of the kidney.

Effects of Diets on Gastric Secretion.—The study made by Crohn and Reiss shows that medical treatment, consisting of restricted diet and rest in bed, causes the cessation of hypersecretion in 45 per cent. of cases, a fair proportion; clinical improvement takes place as often in cases with persistent hypersecretion as in those relieved of their excessive flow of gastric juice, and is apparently not dependent on it. Cases that fail to show clinical and chemical improvement are of two kinds, patients with advanced indurated ulcers which are resistant to treatment and those with a marked neurosis. The first class can be reduced in number by more persistent and more protracted treatment. The second group requires the expert care of a neurologist, often of a psychanalyst. Mistakes in diagnosis undoubtedly form a third group of not inconsiderable proportion. The beneficial effects of medical treatment are seen in those cases of hyperacidity, hypersecretion and pylorospasm accompanying latent cholelithiasis or chronic appendicitis, as well as in ulcer cases or functional secretory disturbances.

Action of Digitalis on the Heart.—This paper was abstracted in The Journal, Aug. 30, 1919, p. 715.

Archives of Internal Medicine, Chicago

Jan. 15, 1920, **25**, No. 1

*Harmful Effects of Shallow Breathing with Special Reference to Pneumonia. J. Meakins, Montreal.—p. 1.
*Physiology of Stomach. A. C. Ivy, Chicago.—p. 6.
*Effect of Roentgen Rays on Metabolism of Cancer Patients. R. N. DeNiord, B. F. Schreiner and H. H. DeNiord, Buffalo.—p. 32.
*Cerebrospinal Fluid in Multiple Sclerosis. J. E. Moore, Baltimore. —p. 58.
*Cavity Formation and Annular Pleural Shadows in Pulmonary Tuberculosis. J. A. Honeij, New Haven, Conn.—p. 63.
Rat Bite Fever: Report of Case. A. Arkin, Morgantown, W. Va. —p. 94.
Protein and Lipin Contents of Blood Serum in Nephritides. M. Kahn, New York.—p. 112.

Shallow Breathing and Pneumonia.—A number of cases of pneumonia were investigated by Meakins in order to determine the quantity and quality of the expired air. It was found that as the respiratory rate increased there was a gradual decrease in the volume per respiration, but the total ventilation per minute showed a conspicuous increase. Meakins believes that the conclusion is justified that the anoxemia occurring in acute lobar pneumonia is the result of the rapid and shallow breathing typical of this condition.

Physiology of Stomach.—Ivy reports the results of his studies on gastric ulcer, including studies on the pathologic physiology of the stomach and duodenum in the condition of ulcer of these parts of the gastro-intestinal tract.

Roentgen Rays and Cancer.—Of forty-one cases studied by DeNiord and his associates, thirty-four, or 83 per cent., showed a varying excess of total fat in the blood before exposure to the roentgen rays. One-half hour after exposure to the roentgen rays, the first findings were increased in thirteen cases, and decreased in twenty-eight cases. Twenty-four hours after treatment with the roentgen ray, the first findings were increased in six cases and decreased

in thirty cases. Thus, the total fat content was diminished in 83 per cent. of his series of cases after exposure to the roentgen ray, and in some cases the decrease was preceded by a slight rise of the total fat quantity. Urea, urea nitrogen and creatinin showed nothing characteristic of the cancer patient. The moderate uric acidemia which exists for a short period of time after exposure to roentgen rays the others claim is the result of nuclear degeneration, but is not especially characteristic of malignancy. The sodium chlorid content of cancer patients is altered neither by the presence of the tumor nor the exposure to roentgen rays. The cholesterol, fatty acids and total fats are generally increased in cases of malignancy. Cholesterol is increased in the blood, but this is not in proportion to the duration of exposure to the roentgen ray or varied as to the type of tumor. The increase of cholesterol in the blood is probably due to cellular autolysis with liberation of cholesterol, induced by the action of the roentgen rays. Fatty acids and total fats are consistently high in the blood of cancer patients and this increase is reduced by the roentgen rays. The authors do not give any reason or hypothesis for the reduction, as they are at present carrying on further studies along this line. The final conclusion arrived at is that there is nothing in the behavior of the blood sugar or diastatic activity that is diagnostic of cancer. However, the roentgen rays activate the diastase for a short period of time to a greater than normal activity. The plasma and corpuscle percentages were unaltered by the effect of the rays, hence are of no diagnostic value in cancer.

Cerebrospinal Fluid in Multiple Sclerosis.—The cerebrospinal fluid findings in twenty-eight cases of multiple sclerosis are reported by Moore. In twenty cases the diagnosis is clinically certain; in the other eight cases it is clinically doubtful. In the first group, the findings are (*a*) negative blood and spinal fluid Wassermann (all cases); (*b*) pleocytosis (eight cases); (*c*) positive globulin (eighteen cases); (*d*) paretic gold curve (eighteen cases). In the second group the findings are the same, except for the gold curve, which was syphilitic in three cases and negative in five cases. Together with the clinical evidence, it is believed that the spinal fluid picture is fairly constant, and that, other things being equal, such a picture is a strong argument in favor of a diagnosis of multiple sclerosis. In its absence the diagnosis becomes at least doubtful.

Pulmonary Tuberculosis.—There are three conditions, Honeij says which at times may be confused and which make a differential diagnosis difficult or often impossible. These include (*a*) true cavitation in pulmonary tuberculosis, with and without fibrous walls; (*b*) true pleural annular shadows, with and without pulmonary disease; (*c*) false annular shadows of intrapulmonary bronchial origin, occurring in early pulmonary tuberculosis and other chest conditions. These three conditions are illustrated. A clear understanding of the pathologic processes involved, thorough appreciation of the different clinical signs is needed, and since, in a broad sense, physicians are less interested in the presence or absence of cavitation than in its effect on diagnosis, treatment and prognosis, it is essential carefully to consider other acute or chronic lung lesions in conjunction with the direct evidence of cavitation.

Arkansas Medical Society Journal, Little Rock

January, 1920, **16**, No. 8

Infection Exhaustion Psychoses. C. C. Kirk, Little Rock.—p. 157.
Attitude of Obstetrician to Illegitimate and Mother. G. A. Warren, Black Rock.—p. 158.
Pruritus Ani. E. H. Terrell, Richmond, Va.—p. 162.

Boston Medical and Surgical Journal

Jan. 29, 1920, **182**, No. 5

Calorie as Unit in Figuring Milk Modifications. T. J. Putnam, Boston.—p. 107.
Experience with Schick Test and Toxin-Antitoxin; Plea for Use in Extinction of Diphtheria. T. E. Lilly, Shirley, Mass.—p. 110.
Psychoses Accompanying Influenza. E. W. Fell, Cincinnati.—p. 113.
Treatment of Gonorrhea in Male. A. H. Crosbie, Boston.—p. 116.
*Tissue Injury an Important Factor in Development of Tuberculosis. H. F. Gammons, Dallas, Tex.—p. 119.

Injury of Tissues and Tuberculosis—Gammons reports four cases in which he believes that injury was an important factor in determining the localization of the tubercle bacilli. Two of the patients fell and injured the knee. Several years later tuberculosis of the knee was diagnosed. In the third case, the patient was kicked by a horse in the vicinity of the right ilium. An abscess formed later and the pus was positive for tubercle bacillus Tuberculosis of the ilium was found The same patient injured the right ankle It, too, became tuberculous. The fourth patient sustained a contusion of the right hand. Tuberculosis of the small bones developed. All of these patients also had a pulmonary tuberculosis.

Indiana State Medical Ass'n Journal, Fort Wayne

Jan. 15, 1920, **13**, No. 1

*Value of Roentgen Ray in Diagnostic Work of Internist. G. W. McCaskey, Ft. Wayne.—p. 1.
Some Fractures of Pelvis. C. Haywood, Elkhart.—p. 8.
*Relative Merits of Surgery, Radium and Roentgen Ray in Treatment of Uterine Fibroids. E. E. Padgett, Indianapolis.—p. 12.
Conservative Surgery. O. O. Melton, Hammond.—p. 14.

Value of Roentgen Ray in Diagnostic Work.—While McCaskey appreciates the value of roentgen-ray examinations and other aids to diagnosis, he emphasizes the fact that these methods never make a complete or rational diagnosis but are simply factors, albeit sometimes indispensable factors, in the general diagnostic judgment. He fears that roentgenologists are often pressingly solicited by physicians for specific diagnostic judgments, and that they too often yield to the importunity when they should make it plain that their duty is done when they give an objective description of their findings. So common has it become for roentgenologists to attempt to arrive at diagnostic conclusions from their studies alone, that it is sometimes difficult to get from them the objective description that one desires, either alone or accompanied by a diagnostic impression. Instead, the reports of "chronic infectious arthritis," "pulmonary tuberculosis," or some other diagnosis come in. McCaskey believes that this unsatisfactory state of affairs will soon be remedied so that roentgenology and internal medicine will reciprocally benefit one another to the utmost.

Surgery, Radium and Roentgen Ray in Treatment of Uterine Fibroids.—This paper was abstracted in THE JOURNAL, Nov. 1, 1919, p. 1390.

Journal of Biological Chemistry, Baltimore

January, 1920, **41**, No. 1

Crystalline Uridinphosphoric Acid. P. A. Levene, New York.—p. 1.
*Determination of Saccharin in Urine. G. S. Jamieson, Washington, D. C.—p. 3.
Thermoregulator with Characteristics of Beckman Thermometer. R. B. Harvey, Washington, D. C.—p. 9.
Determination of Hydrogen Ion Concentration. J. W. M. Bunker, Detroit.—p. 11.
*Identification of Citric Acid in Tomato. R. E. Kremers and J. A. Hall, Madison, Wis.—p. 15.
Structure of Yeast Nucleic Acid. V. Ammonia Hydrolysis. P. A. Levene, New York.—p. 19.
Quantitative Estimation of Indol in Biologic Medium. H. F. Zoller, Washington, D. C.—p. 25.
*Availability of Carbohydrate in Certain Vegetables. W. H. Olmsted, St. Louis.—p. 45.
*Alkaline Reserve Capacity of Whole Blood and Carbohydrate Mobilization as Affected by Hemorrhage. A. L. Tatum, Chicago.—p. 59.
*Hemoglobin. I. Optical Constants. W. H. Welker and C. S. Williamson, Chicago.—p. 75.
Fat-Soluble Vitamin. III. Comparative Nutritive Value of White and Yellow Maizes. H. Steenbock and P. W. Boutwell, Madison, Wis.—p. 81.
*Protein Requirement of Maintenance in Man and Nutritive Efficiency of Bread Protein. H. C. Sherman, New York.—p. 97.
Effect of Iodids on Autolysis of Liver Tissue. P. G. Albrecht, Chicago.—p. 111.
*Chemical Study of Blood of Several Invertebrate Animals. R. G. Myers, Palo Alto, Calif.—p. 119.
Chemical Study of Whale Blood. R. G. Myers, Palo Alto, Calif.—p. 137.

Determination of Saccharin in Urine.—The method described by Jamieson is based on the quantitative extraction of the saccharin with ether from the acidified urine which had been previously treated with normal lead acetate and filtered. After acidifying with hydrochloric acid, the saccharin is extracted by ether, the ether removed by evapora-

tion, and the saccharin extracted from the residue with ether. The ether is removed and the resulting residue is fused with sodium carbonate and the sulphur determined as barium sulphate. The amount of saccharin is calculated from the sulphur found after making a correction for the blank. The experimental results obtained by the analysis of urines, to which known amounts of saccharin had been added, show that the method is capable of giving satisfactory results, providing that the directions are followed exactly as described in every detail.

Citric Acid in Tomato.—The presence of citric acid in tomato juice was shown by Kremers and Hall by means of its triphenacyl ester.

Carbohydrate in Certain Vegetables.—Vegetables usually used in low carbohydrate diets for diabetic patients were analyzed by Olmsted by the use of diastase and copper reduction, and by feeding to phlorizinized dogs. The results are given in detail.

Effect of Hemorrhage on Alkaline Reserve and Blood Sugar.—The results of the experiments described by Tatum appear to indicate that hemorrhage produces a rise in blood sugar by changes in the state of acid-base balance in body cells, which state is fairly well reflected in corresponding changes in the general circulation. The chief seat of action is probably the liver, for this is the location of glycogen storage most readily affected.

Hemoglobin as Means of Identifying Species.—From the results obtained by Welker and Williamson, it would appear that there is not sufficient difference in the absorption coefficients of the hemoglobin of various species to serve as a means of identification of the species. This finding confirms the conclusions of most previous investigators.

Protein Requirement of Maintenance.—Sherman states that even when the protein of the food is almost entirely derived from bread or other grain products, with a diet adequate in energy value, a daily intake of about 0.5 gm. of protein per kilogram of body weight is sufficient to meet the actual requirements of maintenance in healthy men and women. While, if numerous older experiments, having a tendency to high results, are included, the average is somewhat less than 0.66 gm. of protein per kilogram of body weight. A standard allowance of 1 gm. of protein per kilogram of body weight per day appears, therefore, to provide a margin of safety of from 50 to 100 per cent., as far as the requirements of adult maintenance are concerned. It is plainly desirable in all cases, that grain products be supplemented by milk products, and it is clear that in providing for needs of growing children and of pregnant or nursing mothers the proportion of milk in the diet should be more liberal than it need be when only maintenance is concerned; this both because of the superior amino-acid make-up of the milk proteins and to provide amply for the mineral elements and vitamins as well.

Journal of General Physiology, Baltimore

Jan. 20, 1920, **2**, No. 3

Action of Strychnin and Nicotin on Neuromuscular Mechanism of Asterias. A. R. Moore, New Brunswick, N. J.—p. 201.
Studies on Bioluminescence: Action of Acid and of Light in Reduction of Cypridina Oxyluciferin. E. N. Harvey, Princeton, N. J.—p. 207.
*Studies on Enzyme Action: Saccharogenic Actions of Potato Juice. G. McGuire and K. G. Falk, New York.—p. 215.
Photochemical Nature of Photosensory Process. S. Hecht, Omaha. —p. 229.
Free Energy of Biologic Processes. G. A. Linhart, Barkeley, Calif. —p. 247.
Apparatus for Measurement of Oxidase and Catalase Activity. R. B. Harvey, Washington, D. C.—p. 253.
Influence of a Slight Modification of Collodion Membrane on Sign of Electrification of Water. J. Loeb, New York.—p. 255.
Influence of Concentration of Electrolytes on Some Physical Properties of Colloids and of Crystalloids. J. Loeb, New York.—p. 273.
Quantitative Laws in Regeneration. J. Loeb, New York.—p. 297.

Saccharogenic Action of Potato Juice.—The saccharogenic enzymes present in potato juice were studied by McGuire and Falk. The actions were followed on the substances present in the juice and on added sucrose, maltose and soluble starch. Sucrase and amylase were found to be present in the juice. No indication of a maltase was obtained. The sucrase showed optimum conditions for action at p_H 4 to 5, the amylase at p_H 6 to 7, both on the starch present in the juice and on added soluble starch. The action of a yeast sucrase preparation on the juice showed the presence of sucrose (or raffinose) in a concentration of the order of magnitude of 1 per cent

Journal of Industrial Hygiene, Boston

January, 1920, **1**, No. 9

*Syphilis in Railroad Employees. J. H. Stokes and H. E. Brehmer, Rochester, Minn.—p. 419.
Proper Executive Function of Industrial Physician. D. R. Kennedy and R. M. Neustadt, Philadelphia.
Prevention of Fatigue in Manufacturing Industries. R. A. Spaeth, Baltimore.—p. 435.
Organizing an Industry to Combat Influenza. C. E. Turner, Boston. —p. 448.
Home Work. Emma Duke, Washington, D. C.—p. 452.
Sanitation of Industrial Water Supplies. G. M. Fair, Cambridge, Mass.—p. 457.

Frequency of Syphilis Especially in Railroad Employees.—A general medical examination of 1,763 patients of the Mayo Clinic showed that 3.1 per cent. had syphilitic infections obvious enough to be detected without the use of the routine Wassermann test. The lowness of these figures Stokes and Brehmer contend, reflects, to some extent, the weakness of clinical judgment in the recognition of this disease as compared with current figures based on the routine Wassermann test. Part of the lowness of these figures is attributable to the large farming element in the clientele of the clinic and to the low incidence of venereal diseases in the states from which most of the patients are drawn. Of the railroad employees examined, 11.7 per cent. had syphilis. The disease was eight times as frequent in them as in farmers (1.5 per cent.), three times as frequent in them as in business men (3.8 per cent.), and twice as frequent as in laborers (6.1 per cent.). The doubtful value of the history of the infection and the blood Wassermann test in the recognition of these cases is shown by the fact that 24 per cent of the patients gave no history of infection other than gonorrhea; 62.5 per cent. had observed no secondary manifestations, and 53 per cent. were completely Wassermann negative on the blood. On the other hand, 64 per cent. of those whose spinal fluids were examined showed positive findings. Of the diagnoses, 58.7 per cent. were contributed by laboratory procedures; 41.3 per cent. were identified by routine physical examination. Of the men examined, 79.5 per cent. had syphilis of the nervous system; 18.7 per cent. had cardiovascular syphilis. Pupillary abnormalities, muscular paralyses and fundus changes were present in 62.5 per cent. of the cases. Of the persons examined, 65.1 per cent. showed abnormal knee reflexes, and similarly high percentages prevailed for the other simpler details of the neurologic examination. Definite mental symptoms were present in 38.4 per cent. These findings suggest that the routine railroad medical examination is insufficient to protect the public from the dangers of syphilis in men concerned in the operation of the trains. Three suggestions are made with a view to increasing the efficiency of the railroad medical examination, with respect to the recognition of syphilis: First, routine Wassermann tests should be performed on all employees between the ages of 17 and 25 by a competent state board of health laboratory, and repeated on all employees reaching 32 years of age. Second, there should be annual effective examination of men between the ages of 25 and 40, rather than of men over 50. Such examinations should include more attention to pupillary reactions than is at present given, and should employ those fundamentals of the neurologic examination, such as tests of the deep reflexes, Romberg, etc. These can readily be performed by competent general examiners. Third, formal educational propaganda should be undertaken by railroad medical departments for the education of medical examiners and employees alike to the great significance of syphilis in industrial insufficiency and personal ill health.

Journal of Medical Research, Boston

November, 1919, **41**, No. 1

*Studies on Rocky Mountain Spotted Fever. S. B. Wolbach, Boston.

Rocky Mountain Spotted Fever.—It is impossible to abstract briefly the results of the extensive and detailed study made by Wolbach. All phases of the subject are discussed. The conclusions as to the parasite itself are these: Three definite morphologic types of the spotted fever parasite can be recognized: (1) An extranuclear bacillus-like form without chromatoid granules, relatively large and only present in ticks during the initial multiplication of the parasites; (2) a relatively small rod-shaped form with chromatoid granules, probably the same form seen within nuclei in sections of ticks, and rarely in smooth muscle cells in the blood vessel of mammals; and (3) a relatively large lanceolate paired form present in ticks and in the blood and lesions in mammals. This lanceolate form is characterized by its "chromatoid" staining reaction, and according to the evidence at hand, is the form in which the virus is passed between the tick and mammalian hosts. The other two forms described are multiplicative stages, and can only be demonstrated occasionally and with difficulty in mammalian hosts. The name *Dermacentroxenus rickettsi* is proposed by Wolbach for this parasite.

Journal of Urology, Baltimore

August, 1919, **3**, No. 4

*Operative Treatment of Seminal Vesiculitis. J. H. Cunningham, Boston.—p. 175.
*Etiology of Vesical Diverticulum. F. Hinman, San Francisco.—p. 207.
Histologic Study of Ureter. Y. Satani, Baltimore.—p. 247.
Colliculus Seminalis at Birth: Origin, Development and Zonal Distribution of Its Gland Tubules. E. M. Watson, Buffalo.—p. 269.
Simple Apparatus for Continuous and Automatic Bladder Irrigation. F. Hinman, San Francisco.—p. 281.

Operative Treatment of Seminal Vesiculitis.—Cunningham discusses the relationship between infections of the prostate and the seminal vesicles and arthritis, and the surgical treatment of these infections.

Etiology of Vesical Diverticulum.—In Hinman's opinion, vesical diverticulum is the result of anatomic, pathologic and mechanical factors in the vast majority, if not all, instances, and in this sense is always an acquired condition. A mild and chronic urinary obstruction, in association with the necessary anatomic or pathologic predisposing conditions of the bladder wall, is particularly conducive for the development of diverticulums. Median bar formation is one of the most frequent types of obstruction.

Kentucky Medical Journal, Bowling Green

January, 1920, **18**, No. 1

Semicentennial of Medico-Chirurgical Society of Louisville. L. S. McMurtry, Louisville.—p. 3.
Acute Mastoiditis. W. B. McClure, Lexington.
Surgery of Thyrotoxicosis. L. Wallace Frank, Louisville.—p. 10.
Modern Day Diagnosis. L. L. Solomon, Louisville.—p. 15.
Some Phases of Diseased Gallbladder and Bile Duct. H. H. Grant, Louisville.—p. 22.

Laryngoscope, St. Louis

December, 1919, **29**, No. 12

Intracranial Infections Complicating Mastoiditis. S. J. Kopetsky, New York.—p. 679.
Nature and Origin of Stammering. E. L. Kenyon, Chicago.—p. 700.
Enucleation of Tonsils; Local Anesthesia. E. G. Gill, Roanoke, Va.—p. 715.
Hoarseness Caused by Thyro-Arytenoid Interni Paresis, with Symptoms Simulating Acute Pulmonary Tuberculosis Due to a Sinus Infection. E. L. Myers, St. Louis.—p. 720.

Maine Medical Association Journal, Portland

January, 1920, **10**, No. 6

Treatment of Pneumonia. L. L. Powell, Portland.—p. 159.
Education and Recreation in Army. W. G. Haan, U. S. Army.—p. 178.

Medical Record, New York

Dec. 27, 1919, **96**, No. 26

Réné Theophile Hyacinthe Laennec. S. A. Knopf, New York.—p. 1039.
New Technic (Diet and Roentgen Ray) in Treatment of Cancer. F. R. Cook, New York.—p. 1042.
Christian Science Psychosis. E. H. Williams, Los Angeles.—p. 1048.
Proposed Compulsory Health Insurance Law. Its Injustice to Physicians, Dentists and Pharmacists. J. J. Kindred, River Crest, L. I.—p. 1050.
Posture in Defecation. L. D. Bulkley, New York.—p. 1053.

Jan. 3, 1920, **97**, No. 1

Hysterical Symptoms. T. A. Williams, Washington, D. C.—p. 1.
Value of Laboratory Examinations in Diagnosis and Prognosis in Otolaryngology. S. Oppenheimer and H. J. Spencer, New York.—p. 7.
Function and Clinical Uses of Pineal Gland. W. N. Berkeley, New York.—p. 12.
Heredity as Factor in Etiology of Neoplasms. V. H. Moon, Indianapolis.—p. 14.
*Deterioration of Cardiovascular Stimulants; Means of Preserving and of Increasing Their Therapeutic Efficiency. E. Zueblin, Cincinnati.—p. 16.

Preserving and Increasing Therapeutic Efficiency of Cardiovascular Stimulants.—Zueblin urges that proper instruction of the wholesale and retail druggists ought to be encouraged on the subject of deterioration of chemicals and pharmaceutical preparations. In Zueblin's experience, fermentative processes in the organic drugs cannot be discarded entirely as a possible cause of these changes. Whenever possible, he says, use fresh drugs, freshly prepared, they will serve the purpose better for securing help and improvement to the patients. The old and shopworn preparations, after a more or less prolonged existence of oblivion in the drawers or in the form of old solutions, will be called on in vain to save a patient's life. In his experimental work, Zueblin incidentally detected a possibility of increasing the therapeutic efficiency and electric radiation of drugs by a short exposure of various remedies to the passage of electric waves. The practical methods of such a process are still a subject of studies and experimentation, but this much can be said, that the "life period" of the drugs can be raised to several months, and even years. Equally, there seems to exist a possibility of imparting new life to dead pharmaceutic preparations and compounds, and by doing so to restore and increase pharmacodynamic activity.

Jan. 10, 1920, **97**, No. 2

Motility in Animal Organism. E. H. P. Ward, White Plains, N. Y.—p. 47.
Surgical Disorders of Digestion. W. D. Haines, Cincinnati.—p. 58.
What Has the War Taught Us of Tuberculosis? S. J. Maher, New Haven, Conn.—p. 60.
Heliotherapy in Tuberculosis. J. B. Dinnan, Meriden, Conn.—p. 62.
*Treatment of Influenza by an Apparently Specific Method. F. E. Park, Stoneham, Mass.—p. 66.

Treatment of Influenza.—Park injects intravenously sodium salicylate, soluble iron phosphate and beechwood creosote in lime water. Physiologic sodium chlorid solution is the vehicle used.

Minnesota Medicine, St. Paul

February, 1920, **3**, No. 2

The Clinician and Research. W. W. Herrick, New York.—p. 47.
Epidemic Lethargic Encephalitis. C. E. Riggs, St. Paul.—p. 49.
*Treatment of Urethral Caruncle. J. L. Crenshaw, Rochester, Minn.—p. 54.
Diagnosis and Treatment of Peripheral Nerve Injuries. A. F. Bratrud, Minneapolis.—p. 57.
Clinical Course and Pathology of an Obscure Osteitis Causing Loose Bodies in Joints. A. R. Colvin, St. Paul.—p. 65.
A Neisser: Syphilitic Outlook. A. A. Baker, Minneapolis.—p. 69.
*Early Diagnosis and Treatment of Acute Inflammations of the Eye. E. W. Benham, Mankato.—p. 73.
Medicine, Forty Years Ago; Glances in Retrospect; Comparison with Later Periods. W. Courtney, Brainerd.—p. 76.
Diphtheria T-A (Toxin-Antitoxin). C. B. Drake, St. Paul.—p. 81.

Treatment of Urethral Caruncle.—Under cocain anesthesia, Crenshaw clamps the caruncle, and cuts it off close to the upper surface of the clamp. The cut surface is thoroughly seared with acid nitrate of mercury solution applied with a wooden applicator. All tags are removed in the same manner. Symptoms are relieved almost immediately.

Modern Hospital, Chicago

January, 1920, **14**, No. 1

High Hospital Building Proves a Success. E. Stotz.—p. 1.
Air Control and Reduction of Death Rate After Operations. E. Huntingdon, New Haven, Conn.—p. 10.
Entertaining Sick and Convalescent Children in Hospital and at Home. M. H. Barker, Worcester, Mass.—p. 15.
Plea for Education for Young Men as Nurses. B. F. Bailey, Lincoln, Neb.—p. 18.
New Brockton Hospital Building Represents Result of Three Years' Study. L. B. Packard, Brockton, Mass.—p. 20.
Management of Contagious Disease Hospitals. D. L. Richardson, Providence, R. I.—p. 30.
Development of Hospital Organization in Canada. M. T. MacEachern, Vancouver, B. C.—p. 33.

Modern Medicine, Chicago

January, 1920, **2**, No. 1

*Underlying Causes of Narcotic Habit. A. Lambert, New York.—p. 5.
Occupational Therapy and Vocational Guidance for the Tuberculous. H. A. Pattison, New York.—p. 10.
Medical Service of Illinois State Institutions Under New Code. A. L. Bowen, Springfield, Ill.—p. 17.
Standards of Public Maternity Care. H. Ehrenfest, St. Louis.—p. 27.
Application of War Surgery to Industrial Practice. D. Hinton, Philadelphia.—p. 38.
Physician and Surgeon in Industrial Crisis. O. P. Geier, Cincinnati. —p. 41.
Eye Injuries. F. C. Trebilcock, Toronto, Can.—p. 46.
Trachoma in Camps and Hospitals of U. S. Army; B. Chance, Philadelphia.—p. 60.
*Handshaking as Route of Infection. H. W. Hill, St. Paul.—p. 72.

Underlying Causes of Narcotic Habit.—These causes, Lambert says, must be sought for in the psychology of a personality unable or unwilling to face individial problems, difficulties, disappointments or defeats. In such cases an anodyne is demanded to bolster up the ego or to afford escape from painful experience. Solve the personal problem and the individual is freed from the need of narcotic forgetfulness.

Handshaking as Route of Infection.—The general conclusion of most practical observers has been that the route of hand infection is the great pathway of infection, and is responsible for perhaps 90 per cent. of all contact infection, medical or surgical, except the venereal diseases. While the handshake does not rank with kissing in directness, it is not confined, like kissing, to the exchange of nasal or oral discharges, but includes the discharges of the bowel and bladder. Moreover, the hands are so constantly infected and handshaking is so constantly repeated that, in the long run, Hill says, it probably eclipses the relatively less common and less promiscuous kissing in its sum total damage.

New York Medical Journal

Jan. 10, 1920, **111**, No. 2

Hysterical Vomiting. A. F. Hurst, London.—p. 45.
Errors in Present Day Abdominal Diagnosis. J. B. Deaver, Philadelphia.—p. 49.
Vaccine Antitoxin Method in Treatment of Diphtheria. F. M. Wood, Chicago.—p. 53.
Repairs Following Labor. W. E. Parke, Philadelphia.—p. 54.
Asthma Caused by Insufficiency of Pylorus. M. I. Knapp, New York. —p. 55.
Poland in World War from Medical Aspect. F. E. Fronczak, Buffalo. —p. 59.
Radical Operation for Cholesteatomatous Mastoiditis. O. Glogau, New York.—p. 64.
The Blood Pressure Vogue. D. Nathan, Norristown, Pa.—p. 67.
Sarcoid Tuberculosis of Skin. C. G. Cumston, Geneva, Switzerland. —p. 67.

Philippine Journal of Science, Manila

June, 1919, **14**, No. 6

Mechanical Properties of Philippine Bast-Fiber Ropes. A. E. W. King, Manila.—p. 561.
Pink Disease of Citrus Trees. H. A. Lee and H. S. Yates, Manila. —p. 657.

Southern Medical Journal, Birmingham, Ala.

January, 1920, **13**, No. 1

Work of Medical Department During War. M. W. Ireland, M. C., U. S. Army.—p. 1.
National Research Council. H. A. Christian, Boston.—p. 3.
Status of Amebic Dysentery: Diagnosis and Treatment. R. Lyons, New Orleans.—p. 4.
Otitis Media. L. T. Royster, Norfolk, Va.—p. 10.
Doubts, Differences and Difficulties in Diagnosis of Gastro-Intestinal Diseases. J. C. Johnson, Atlanta.—p. 14.
Facts and Fallacies Relating to Maternal Feeding of Infants. J. D. Love, Jacksonville, Fla.—p. 16.
Prevalence of Ameba Cercomonas Intestinalis-Hominis, and Pellagrous Infections in the South. J. L. Jelks, Memphis.—p. 22.
Problems in Control of Acute Infectious Diseases in Army. F. F. Russell, M. C., U. S. Army.—p. 29.
*Sanitary Social Service Based on Experience with Bureau of Venereal Diseases. M. Board, Louisville.—p. 37.
Lessons from War. J. M. T. Finney, Baltimore.—p. 40.
Medical Profession in War: Its Sacrifices and Compensations: Humanity's Gains. J. L. Crook, Jackson, Tenn.—p. 46.
Fracture of Lower End of Humerus. C. A. Vance, Lexington, Ky. —p. 50.
*New Operation for Suspension of Uterus. F. G. Dubose, Selma, Ala. —p. 57.
Scientific Team Work in Diagnosis and Treatment of Diseases of Eye, Ear, Nose and Throat. E. H. Cary, Dallas, Tex.—p. 62.
Team Work in Practice of Otolaryngology. J. A. Stucky, Lexington, Ky.—p. 65.

Sanitary Social Service.—With more syphilis now in this country than tuberculosis; with blind asylums filled with children as a result of gonorrhea; with women unsexed and their nervous systems shattered as the result of gonorrhea, usually contracted from their husbands; with paresis, which a hundred years ago was a medical curiosity but which is now filling insane hospitals with cases of locomotor ataxia and cerebrospinal syphilis, constituting a great part of the work of the modern neurologist, is it not time, asks Board, that the doctor, the lawyer, the minister, the teacher, the Women's Federation and the legislative bodies awake to the appalling facts of this situation and begin in a rational, thorough manner the eradication of venereal disease?

New Operation for Suspension of Uterus.—DuBose describes his method as follows: A linen or silk thread, on a full curved needle, is carried through the broad ligament as a running stitch, close to and immediately underneath the round ligament, beginning at the internal abdominal ring, carried across the fundus of the uterus, engaging superficially under the peritoneal coat, passing underneath the opposite round ligament until the other internal ring is reached. The needle is unthreaded and a ligature carrier is passed through the aponeurosis of the rectus muscle about one inch from the abdominal incision, and on a level with the internal abdominal ring, through the musculature of the anterior abdominal wall until it emerges from the parietal peritoneum at the internal abdominal ring. The linen suture is threaded on the carrier and drawn through the abdominal wall. The same technic is carried out on the opposite side. Then both ends of the thread are caught, and the uterus is pulled up into the desired position. Two hemostats are applied to the thread; one on either side, where it emerges from the aponeurosis of the rectus muscle. The peritoneum is then closed, the aponeurosis of the rectus muscle is sutured, and while the forceps are still in position, the linen suspension thread is tied. The placing of the forceps as described prevents the drawing too tightly on the suspension suture, which would bring the uterus too far forward, and possibly so narrow the space between the uterus and abdominal wall as to result in hernia or obstruction. The hemostats are removed after the tying of the suspension suture. The closure of the abdominal skin incision is then completed.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

Jan. 10, 1920, **1**, No. 3080

*Surgical Aspects of Spinal Tumors. P. Sargent.—p. 38.
Public Health versus The State. B. G. M. Baskett.—p. 40.
Sclerodermia: Two Cases. F. H. Barendt.—p. 44.
*Meningitis Treated by Intratheeal Injections of Patient's Blood Serum. R. Waterhouse.—p. 45.
Forgetting: Psychologic Repression. A. Carver.—p. 46.

Surgical Aspect of Spinal Tumors.—Twenty-seven cases of true neoplasm of one sort or another, associated with cord symptoms, are analyzed by Sargent. Fifteen were cases of encapsulated intrathecal extramedullary tumors, all benign except one, a fibrosarcoma. In no case was the tumor situated above the fifth cervical or below the eleventh thoracic segment. The tumors were enucleated. Of these patients six are (or when last heard of were) doing their full ordinary work; one patient, 77 years of age, is in perfect health and vigor, and the other four are so far recovered that they may reasonably be regarded as successful cases. Of the four unsuccessful results, one (whose paralysis had existed for nine years before operation) remains virtually in statu quo, five and one half years after removal of the tumor. The remaining three patients died. In twelve of the twenty-seven cases the tumors were of a malignant character.

They were intrathecal extramedullary; intramedullary and extrathecal. In none of the twelve cases of malignant growth in this series was the exact nature of the case diagnosed before operation. The fact that the cord was being subjected to an increasing degree of compression led in each instance to the performance of an exploratory laminectomy, and in all but one the diagnosis of "tumor" was made before operation (one was thought to be a tuberculous caries); in all, too, the segmental level of the compression was correctly ascertained before operation. But in no instance could the exact position with relation to the cord and membranes, or the nature of the tumor be foretold. The operations were, therefore, primarily of an exploratory character. Two patients, one with a high cervical intramedullary tumor, and the other with a sarcoma of bone in the upper dorsal region, died within a few hours of the operation. Of the remaining ten patients, three were not benefited, seven were benefited to a variable degree. One patient lived seven years after operation and one lived six and one-half years after operation. Others were lost to further observation.

Autoserumtherapy in Meningitis.—Waterhouse's patient had cerebrospinal meningitis. The symptoms became aggravated and finally 20 c.c. of the patient's own blood serum were injected into the subarachnoid space by lumbar puncture after removal of the same quantity of cerebrospinal fluid. This procedure was repeated on the three following days with 12 c.c. of serum and on the fifth day 5 c.c. of serum were injected. Improvement set in from the time of the first injection and convalescence was rapid.

Jan. 17, 1920, **2**, No. 3081

Treatment and Management of Diseases Due to Deficiency of Diet: Scurvy and Beri Beri. W. H. Willcox.—p. 73.
Aims and Methods of Graduate Study. R. Rolleston.—p. 77.
Uses of Free Transplants of Fascia Lata in Surgery. G. G. Turner.—p. 79.
*Acute Abdominal Cases. J. L. Stretton.—p. 80.

Acute Abdominal Cases.—Stretton reports a case of pedunculated polypoid adenoma attached to the posterior wall of the stomach about 1 inch inside the pyloric orifice. The tumor was removed. The patient made an uneventful recovery. A second case was one of large hemorrhage into the wall of the cecum between the muscular and mucous coats. The result was what appeared to be a large cyst. During the appendectomy which was performed at the same time, the cyst burst and nearly two pints of blood escaped. The cause of the hemorrhage is believed to have been a strain endured during the moving of some heavy objects. The third case was one of ovarian cyst which contained 6½ gallons of fluid.

Dublin Journal of Medical Science

December, 1919, No. 576

*Cause of Eclampsia. H. Tweedy.—p. 225.
*Case of Congenital Syphilis. J. Moore.—p. 229.

Cause of Eclampsia.—The basis of Tweedy's theory is that ordinary food becomes poisonous during pregnancy, and when in this condition it gives rise to toxemia and eclampsia.

Congenital Syphilis.—Moore cites the case of a girl, aged 12 years, the victim of congenital syphilis, who was treated successfully with Donovan's solution (liquoris arseni et hydrargyri iodidi, 8 c.c.; syrupi aromatici, 24 c.c.; aquae, 210 c.c.), one-half ounce, taken three times daily, after meals. He says "in these days of salvarsan, neo-salvarsan, kharsivan, soamin, and other organic compounds too numerous to mention, and of the combined salvarsan and mercurial treatment of syphilis, we are perhaps too apt to forget older and no less effective means of combating and defeating the spirochete."

Edinburgh Medical Journal

January, 1920, **24**, No. 1

Influence of Edinburgh on M'Gill University. J. Meakins.—p. 5.
Binet Scale for the Blind. W. B. Drummond.—p. 16
*Beri Beri Among Chinese in France. A. R. Leggate.—p. 32.

Beriberi.—Two hundred and sixty-nine cases were observed by Leggate. Of these, 200 patients showed edema of the legs and body; forty-six of these showed no other symptom. One hundred and eighty-three had loss of deep reflexes, and of these, seven had no other symptom. One hundred and fifty-five had paresthesia, nine of these without any other symptom. Inability to rise from a squatting position without the aid of the hands or other assistance was a striking symptom in some of the cases. In the dry type of case, it was the rule—66 per cent.; in the wet type, it was the exception—6.5 per cent. When the edema was marked, Leggate used purgatives. A saturated solution of magnesium sulphate, with 15 minims of dilute sulphuric acid to the ounce of solution, was his favorite. An important point in the treatment emphasized by him is to discontinue the polished rice diet and to administer eggs, beans, yeast and peas.

Glasgow Medical Journal

January, 1920, **11**, N. S.

*Prenatal Tuberculosis. J. W. Allan.—p. 1.
*Is Fat Starvation a Causal Factor in Production of Rickets? H. S. Hutchison.—p. 8.
Sores, Analogous to Veld Sores and Barcoo Rot, Appearing Among Soldiers Working in Blue Clay and in Chalk. D. D. Logan.—p. 13.

Prenatal Tuberculosis.—Allan defends the proposition that a child may be born tuberculous; in fact, he believes that antenatal tuberculosis is more common than is generally supposed.

Fat Starvation as Cause of Rickets.—Hutchison's observations lead him to the belief that in rickets there is no fat starvation, and that the excessive loss of calcium in this condition is not brought about through the agency of fat. This conclusion is supported by the fact that the average daily excretion of soaps in rickets was 2.2 gm., as compared with 2.5 gm. in health. Fat could only remove calcium as an insoluble soap, and as there is no increase in soaps in rickets, there is evidently no connection between the calcium loss in rickets and the fat excretion.

Journal of Tropical Medicine and Hygiene, London

Jan. 1, 1920, **23**, No. 1

Bronchomoniliasis in Anglo-Egyptian Sudan and Egypt. A. J. Chalmers.—p. 1.
Vibriotbrix Zeylanica (Castellani). L. Anigstein.—p. 7.

Lancet, London

Jan. 10, 1920, **1**, No. 5028

Surgery of Heart. C. Ballance. To be concluded.—p. 73.
Malaria in Egyptian Expeditionary Force. P. Manson-Bahr.—p. 79.
Diverticulitis. W. H. M. Telling.—p. 85.
*Feeding Infants on Dried Milk. V. Borland.—p. 89.
*Means of Lessening or Eliminating Alimentary Toxemia. R. Chetbam-Strode and J. D. Benjafield.—p. 91.
Paratyphoid B Group. H. Schutze.—p. 93.

Feeding Infants on Dried Milk.—Borland suggests that it would be an infinitely better plan to feed a baby in relation to its weight than by calculating quantities of feeds according to age alone. This method has produced very satisfactory results in Willesden, where it has now been practiced for more than two years. The present scale is based chiefly on a full cream dried milk which has been modified to resemble human milk, but others not so modified have answered satisfactorily when given according to scale. The investigation was carried out primarily on sixty-nine babies of ages ranging from 3 weeks to 8½ months. The smallest feed which produced a satisfactory gain, the baby otherwise being in good health, was chosen from the clinic cards and noted. In this way 188 feeds at various weights were obtained. It has been Borland's practice to arrange breast feeding at intervals of three hours, three and one-half hours and four hours, according to the age of the child and the progress made. The four hourly intervals are begun as early as possible. In the case of the three hourly intervals the number of feeds given in the twenty-four hours is six, in three and one-half hourly intervals, and in four hourly intervals five feeds are given daily. It was found that by adding the number 9 to the weight, if below 7 pounds and the number 10 to the weight from 7 to 16 pounds, inclusive, the required number of level teaspoonfuls of dried milk to be given in twenty-four hours was obtained. Working tables are given.

Eliminating Alimentary Toxemia.—Assuming that a lactic acid fermentation in the large intestine is the condition to be aimed at in the control of an alimentary toxemia, Strode and Benjafield administer the carbohydrates in the form of coarse uncrushed oatmeal. This may be taken raw or cooked sufficiently to soften the outside of the grain, only leaving behind a hard core. The result is that the partially digested grain reaches the large intestine in the form of carbohydrate. The center of the grain is composed of unaltered starch, while the outer layers, which have been subjected to the digestive action of the juices of the mouth, stomach and small intestine, are composed of simpler molecules, the disaccharids and hexoses. Both these latter can rapidly be converted into lactic acid and carbon dioxid by a suitable bacterial flora. One of the authors has been combining this course of treatment with the ordinary symptomatic methods in his practice for the last fifteen years. Failures have been met with, but they have all been failures in that the lactic acid fermentation could not be obtained. In all cases where this fermentation has been established the condition of the patient has been materially improved. Cases are cited.

Quarterly Journal of Medicine, London

January, 1920, **13**, No. 50

*Cases of Hematuria of Unusual Origin. T. I. Bennett and C. H. S. Frankau.—p. 105.
*Action of Chlorin, Etc., on Bronchi. J. A. Gunn.—p. 121
Effects of Multiple Embolism of Pulmonary Arterioles. J. S. Dunn. —p. 129.
*Unilateral Alterations in Blood Pressure Caused by Unilateral Pathologic Conditions: The Differential Blood Pressure Sign. E. F. Cyriax.—p. 148.
Numerical Measurement of Dyspnea. G. H. Hunt and D. Dufton. —p. 165.
*Treatment of Chronic Cases of Gas Poisoning by Continuous Oxygen Administration in Chambers. J. Barcrof and D. Dufton.—p. 179.
Mustard Gas Poisoning. C. M. Wilson and J. M. Mackintosh.—p. 201.

Hematuria of Unusual Origin.—In the cases reported by Frankau, the onset was usually sudden, with fever rising to 100 or 102 F. The patient complained of pains in the shins and along the radial border of the forearms; headache was slight; there were often slight pains in the back. The respiratory, circulatory and alimentary systems showed only those changes which are common to all mild febrile diseases. In one case, the headache was so severe, and pain in the spine so marked, that meningitis could not be excluded on admission. A lumbar puncture was performed and a few drops of normal cerebrospinal fluid were collected; but in no other case were there symptoms or signs of any involvement of the nervous system. Sometimes, on the first day, invariably within a few days, there was marked hematuria; at the same time a slight dysuria was added to the other symptoms. In several cases it was the hematuria alone that led the patient to seek medical aid. After a few days, the hematuria disappeared, although, microscopically disintegrated red cells, pus cells and epithelial débris were still to be found in the urine. But the symptoms persisted, lumbar pain and dysuria became more prominent, and the shin pains were often sufficient to prevent sleep. A labial herpes was observed several times on about the fifth day. The initial temperature fell to normal, but rose again after, at most, a few days. Often there were sharp relapses, such as are commonly seen in cases of trench fever; in other cases the pyrexia developed into a hectic type, with morning remissions.

Action of Chlorin on Bronchi.—Generally, the results of experiments with chlorin showed that inhalation of 1 : 5,000 up to 1 : 1,000 produces an increased rate of respiration with a transient bronchoconstriction. This bronchoconstriction, Gunn believes, is produced reflexly by the first contact of the irritant vapor with the bronchial mucous membrane. It lasts such a short time that therapeutic measures to combat it would be unavailing. A subsequent sudden increase in the concentration of the gas produces thereafter an apparent slight and gradual bronchoconstriction, but from histologic observations it appears probable that this is due rather to edema of the bronchial mucous membrane than to contraction of the bronchial muscle.

Unilateral Alterations in Blood Pressure.—According to Cyriax, the differential blood pressure sign (differences between the readings in the two arms) is nearly always present in unilateral or bilaterally unequal traumatisms or operations. As regards the maximum pressures, differences of 10 mm. are found in about 83 per cent. and of 20 mm. or over in about 12 per cent. of all cases. As regards the minimum pressures, similar differences are found respectively in 81 per cent. and 20 per cent.

Treatment of Chronic Cases of Gas Poisoning.—Twenty-six patients were treated by the continuous administration of oxygen. The patients were placed in chambers in which the percentage of oxygen aimed at, and usually maintained, was between 40 and 50. The usual term of residence was five days, sixteen or seventeen hours of each day being spent in the chambers. The night was always spent in them. The effect on the red cell count was as follows: if the red cell count was markedly higher than 5 millions, it was reduced by residence in oxygen, usually to just about that figure; if the red count, as was often the case, especially with mustard gas, was not raised above 5 millions, residence in oxygen did not alter it. The subsequent history of cases differs: in some the red count tends to rise, in others it remains nearly normal at the end of two and one-half months. As the red count fell, there was usually a fall—but a much slighter one—in the hemoglobin. The color index, therefore, rose. An almost constant sign in the gassed cases studied has been a failure on the part of the pulse to return normally after exercise to its resting rate. This condition has been benefited by the oxygen treatment in nearly all cases; and in about half it was brought to—or almost to—the normal condition. Of fourteen patients treated, six suffered from nocturnal attacks of dyspnea. None of these had attacks in the chamber; three appeared to be cured permanently, and two others were permanently benefited. The patients all stated that they were able to walk faster and with less distress than before the treatment. In the second series of cases a definite test for dyspnea was introduced, in which the opinion of the patients was not involved. Of the six patients thoroughly tested, four increased the quantity of work which they could do with a given degree of breathlessness by over 20 per cent. and two others by over 10 per cent.

South African Medical Record, Cape Town

Dec. 13, 1919, **17**, No. 23

Syphilis. B. Bernstein.

Bulletin de l'Académie de Médecine, Paris

Dec. 9, 1919, **82**, No. 39

*Alcoholism and the Thyroid. Le Clerc.—p. 394.
*Treatment of Vincent's Angina. Capitan.—p. 396.
*Hospital Ships. Chevalier.—p. 399.
Dual Nature of Farcy. G. Chénier.—p. 403.

Alcoholism and Thyroid Agenesia.—Le Clerc reports three cases of defective development of the thyroid in children of drinking fathers. One patient was a man of 30 with myxedema, one a girl of 14, a mongolian imbecile, and the third a child with myxedema. The older children in the families seemed to have escaped the taint, but the younger ones all showed the effect of it more or less. He has never encountered any other cases of thyroid agenesia.

Treatment of Vincent's Angina.—Capitan has treated 200 cases of Vincent's angina with intramuscular injection of 6 c.c. colloidal arsenic, and states that it never failed to sterilize the lesions in twenty-four or forty-eight hours, and the cure was complete in four or five days. A second injection was only exceptionally required. Local treatment is not absolutely necessary.

Hospital Ships.—Chevalier is inspector general of the medical department of the navy, and he here describes the work of the various hospital ships bringing the wounded and sick from Flanders and Serbia and from the Mediterranean fronts. He urges that in building vessels for the merchant marine some should be designed so they could be rapidly transformed into hospital ships at need, the hospital equipment kept in readiness at some convenient point. (See also Paris Letter, p. 189.)

Dec. 23, 1919, **82**, No. 41

*Food Value of Different Grains. C. Achard and L. Gaillard.—p. 500.
*Prophylaxis of Bovine Tuberculosis. J. Lignières.—p. 505.
Tincture of Box in Intermittent Fevers. S. A. de Vevey.—p. 508.

Value of Flours.—Achard reports that to the usual food of rabbits were added 50 gm. of different kinds of flour. Six sets of five rabbits each were thus fed separately on wheat, rye, barley, corn or rice flour over long periods. No difference in weight was apparent in any of the sets fed on different flours and no difference in the mineral content of the bones. The only practical conclusion from the research is that the mineral content of the food does not decide the mineral content of the organs and skeleton. The ash was as large in the animals fed on rice as with any of the other flours, although rice has less than a third as much mineral elements as barley and rye.

Prophylaxis of Bovine Tuberculosis.—Lignières would sweep away all indemnities, etc., for tuberculous cattle, and place the loss squarely on the shoulders of the proprietor. This, he declares, is the only effectual way to stamp out bovine tuberculosis by making the loss from it so excessive that the proprietors will be forced to take steps to protect their herds against it. According to the present measures, the proprietors have comparatively little personal interest in stamping out the infection. When they find that unless they do this their losses will be excessive, a new order of things will be inaugurated. Three things are necessary for this: (1) The nullification of the sale of any animal found to be tuberculous. The animal to be returned immediately to the vendor; the latter to pay the expenses of transportation and refund the purchase money; (2) The public health service to investigate the herd from which the tuberculous animal came, and brand all tuberculous cattle found destined for any purpose except slaughtering. The vendor to stand the partial or total loss when meat is confiscated on account of tuberculous lesions. (3) No indemnity to be paid to the owner of the cattle except when an animal is ordered to be slaughtered on account of tuberculosis of the mammary glands, or when a mistake has been made in the diagnosis.

With these regulations in force, he states, the tuberculous animal would have to be kept at home, and hence could not start new foci. It would have very little commercial value, as it could not be sold for anything except butchering, and not even for this if the disease is far advanced. The financial loss would be so great that the proprietors would spare no pains to protect themselves. This would transfer the fight against bovine tuberculosis from the authorities to private interests, instead of the latter hampering and seeking to circumvent the authorities in the task. The proprietor would not have to make any declaration, and would not be molested by any one so long as he kept his tuberculous cattle at home. He can call on authorities to help him weed out the tuberculous animals, and these he can keep separate from the others and send to the slaughter-house at his convenience as the years pass, while the rest of his herd is kept safe from infection with tuberculosis. He can take his own time and means to eradicate tuberculosis from his herd, and none of his tuberculous cattle need be branded if he does not attempt to sell them for any purpose except butchering. This prophylaxis based on private interests will act everywhere throughout the country at once, and will be kept up until bovine tuberculosis has disappeared. Lignières urges legislators to pass a law nullifying the sale of a tuberculous animal for any purpose except butchering, and providing for branding as described above.

Dec. 30, 1919, **82**, No. 42

*Ligation of Carotid for Traumatic Exophthalmos. A. de Lapersonne and Sendral.—p. 515.
*Hospital Hygiene and Influenza. A. Lesage.—p. 522.
Malaria and Dysentery Carriers Among the Demobilized. F. Barbary.—p. 524.

Ligation of Carotid for Traumatic Exophthalmos.—Slight exophthalmos was evident two days after the railroad accident fracturing the base of the skull, and neuroparalytic keratitis, ptosis, and intolerable subjective disturbances were combated by de Lapersonne with ligation of the carotid. The thrill and murmur disappeared but the subjective chug-chug persisted, and the left common carotid was ligated likewise after having been prepared by several weeks of training of the vertebral arteries to prepare them to substitute the ligated artery. For this the carotid was cautiously compressed with the fingers. At first this induced dizziness, jerking, and profound asthenia for several hours, but finally it could be borne for ten minutes at a time, so that a ligature was thrown around the left common carotid also, eight months after the accident and five months after the first ligature. For the first three days there was a feeling as of ice in the head, but all the symptoms soon became attenuated, and the young man was much pleased with the outcome. Twenty-two months later, he still has frequent headaches but is able to read and write without difficulty. Bending over brings on severe dizziness. This symptom is marked in another case of ligation of both carotids. Both of the men are satisfied with their physical condition but complain of impairment of the memory and early mental fatigue. The right exophthalmos in another man had developed seven months after a war wound, and at the twenty-third month had suddenly become aggravated, threatening the loss of the eye. Ligation of the right carotid put an end to all disturbances at once and permanently.

Hospital Hygiene.—Lesage cites experiences—especially with influenza—which confirm anew that individual isolation is the base of all hygiene in hospitals.

Journal de Médecine de Bordeaux

Dec. 25, 1919, **90**, No. 24

Substitution, Compensation and Vicarious Action in the Symptomatology after Injury of Nerves. A. Pitres.—p. 535. Conc'n.
*Reverdin Skin Flaps. W. Dubreuilh.—p. 545.

Technic for Reverdin Skin Flaps.—Instead of using a razor, as for Thiersch flaps, Dubreuilh lifts up the skin with a curved needle held at a right angle in hemostatic forceps, with the tip curving up He pricks the skin with this tip, and as the skin is thus lifted up he cuts out the lifted up portion with a sharp bistoury. The needle thus has a small disk of skin impaled on its tip and this disk is transferred to the defect to be covered. By this means quite a large defect can be rapidly covered with forty or fifty of these disks, about 2 mm. in diameter; larger than this it is hard to detach the scrap, and smaller than this the scrap may be lost when cut out. No anesthesia is necessary, the patient feels merely the prick of the needle. He applies the grafts about 4 or 8 mm. apart, and takes them from nearby. When all are in place, he covers the surface with numbers of small pieces of gauze, a few centimeters wide, placed individually, watering with artificial serum, and presses them down with his hand. The gauze dressing is changed in forty-eight hours but the lowest layer of gauze can be left untouched, watering copiously with physiologic serum. The flaps take hold by the sixth or seventh day. They heal as cicatricial tissue, with the danger of retraction, but they accomplish the healing in cases in which otherwise it would take much longer or be impossible. These minute flaps can be taken so easily and leave such insignificant gaps in the skin that, even if the procedure fails, not much harm has been done. In one case a roentgen dermatitis on the back, as large as a plate, had shown no tendency to heal during the year, but applying these needle grafts, to the more favorable points in turn, led to the complete healing of the lesion in two months. The lesion seems to feel a stimulating action from the grafts even at points where the latter do not touch.

Médecine, Paris

December, 1919, **1**, No. 3

*Progress in Hygiene and Infectious Diseases. L. Tanon.—p. 133.
*Peritonitis in Typhoid. F. Rathery.—p. 144.
*Diphtheria Bacilli Carriers. F. Arloing.—p. 149; Id. Stevenin.—p. 168.
Beriberi in France. H. Roger.—p. 151.
Lethargic Encephalitis. P. Halbron.—p. 155.
*Gonococcus Count as Guide to Treatment. L. Ramond.—p. 158.
Smallpox in France. M. Guilhaud.—p. 162.
Polyvalent Lipovaccine Against Typhoid. A. Sezary.—p. 164.

Recent Progress in Infectious Diseases.—Tanon specifies among other progress the knowledge of the complications of typhus, and the favorable results reported by a few workers with serotherapy. Among them are Nicolle and Blaizot with an antiserum from horses that had been injected with emulsions of spleen and suprarenals from inoculated guinea-pigs. Monvoisin during his war imprisonment treated typhus by intravenous injection of 1 or 2 c.c. of convalescents' serum. In his experience this reduced the mortality from 30 to 10.34 per cent. The best results were obtained with blood drawn the eighth day. The injections seemed harmless, and could be repeated if necessary. Lebailly and Poisson arrested an incipient epidemic by inoculating the thirty-four contacts by injecting subcutaneously 1 c.c. of horse serum or convalescent's serum, and 1 c.c. of serum from a guinea-pig developing the disease.

Peritonitis in Typhoid—Rathery refers to peritonitis from propagation without perforation, and reiterates that the slightest suggestion of peritonitis calls for complete immobilization, with ice to large areas of the abdomen, and absolute fasting; nothing should be allowed except subcutaneous injections of artificial serum. The slightest movement should be forbidden, and the chilling of the abdomen should be extensive and constant.

Treatment of Diphtheria Bacilli Carriers—Arloing expatiates on the effectual sterilization of the throat realized with insufflation of desiccated bactericidal antiserum prepared by injecting the horse simultaneously with diphtheric toxin and the bodies of the bacilli. The desiccated antitoxin is mixed with an inert powder and with gum tragacanth to make it adhere to the tissues. These insufflations are given three or four times a day, between meals, after gargling with an antiseptic solution. The nozzles of the atomizer are interchangeable and individual. In three weeks, and sometimes earlier, the diphtheria bacilli disappeared from the throat. He insists that this treatment is absolutely harmless and rapidly effectual. It is important to examine for bacilli anew a week after they have apparently permanently disappeared, as it is possible that they have been merely temporarily checked in their development. Stevenin comments on the misleading conclusions liable from the intermittency of positive findings in the smears. He has had good results recently with insufflation of desiccated *sérum antimicrobien*, insufflated three or four times a day in the pharynx and nasal fossae. Labbé and Canat have also reported good results with it.

The Gonococcus Count as Guide to Treatment.—Ramond reports the differential count of the cells and cocci in the urethral secretions from nine patients repeatedly examined. Nothing was found to throw light on the prognosis or treatment except that the gonococcus curve seems to indicate a partial local immunization in the course of the third week. This suggests that it might be well to wait for the end of the third week before giving balsamics. At this time they might usefully supplement the partial immunization going on, and thus get a chance for effectual action.

Presse Médicale, Paris

Dec. 6, 1919, **27**, No. 74

*Present Status of Our Knowledge of Ferments. H. Roger.—p. 741.
*Fracture of the Malleolus. E. Juvara (Bucharest).—p. 743.
*Diabetes Insipidus and Its Pituitary Origin. P. Pagniez.—p. 746.

The Ferments.—In this opening lecture of his course on experimental and comparative pathology Roger reviews the data accumulated in respect to ferments, and suggests that further study of those that preside over reductions and oxidations may explain the origin of many pathologic conditions and the mechanism of death.

Reconstruction of Fractured Malleolus.—Juvara gives illustrations showing the technic for osteosynthesis with fracture of the malleolus. The reconstruction of the bone in its normal outline is accomplished by driving a long, slender nail from below, slanting upward, far into the bone to hold the parts in normal apposition. Or two nails may be driven in close together, the tips diverging a little. One set of roentgenograms shows nails driven into both malleoli the fourth day after the fracture. The nails were pulled out the twenty-second day, and the cure was complete the thirtieth. In another case illustrated the nail was driven through the skin into the internal malleolus two days after the fracture, and it had healed completely by the twenty-fourth day. Both these patients were men. In other cases he drove two nails horizontally through the malleolus into the tibia, or axially into the fibula from below, or else merely tied a wire around the fractured bone after fitting the parts into place. One illustration shows the foot like a big pin-cushion with three nails thus driven into the bone. No immobilizing apparatus is required and the foot can be moved from the second day, and this should be done as much as possible thereafter. The disappearance of the pain is the result accomplished first by the osteosynthesis. The first dressing is changed the second or third day as blood oozes from the nail holes. The secret of success is to reconstruct the bone in this way at once, as an actual emergency operation, immediately after the fracture. This prevents swelling of the region, and the pains disappear after the osteosynthesis. He uses ordinary iron nails, 1 mm. in diameter and 7 or 8 cm. long. The spongy bone of the malleolus takes the nails easily. Sometimes nailing the internal malleolus in this way is sufficient to hold the external in place without further intervention. The internal malleolus is exposed by a U incision, the base above, and the flap is turned back on the leg. The internal saphenous vein skirts the anterior margin of the malleolus and injury of this must be guarded against.

Pituitary Diabetes.—Pagniez analyzes five recent works on this subject published in Spain, Italy, France and this country. Many points are still obscure, he remarks, but two things seem to be certain, namely, that pituitary treatment has an immediate and specific inhibiting action on essential polyuria in man, and that any traumatic irritation of the nerve regions adjacent to the pituitary entails polyuria. In pituitary treatment we have now a remedy of considerable efficacy for the polyuria of diabetes insipidus, although its action is transient.

Dec. 20, 1919, **27**, No. 78

*Gas Cysts in the Abdomen. M. Letulle.—p. 781.
*Peripheral Vasoconstriction in Shock. R. Ducastaing.—p. 782.
Cultivation of Malaria Hematozoon. M. Chambelland.—p. 783.
Acute Appendicitis. C. Lenormant.—p. 784.

Gas Cysts of Intestine and Peritoneum.—Letulle concludes his illustrated description of intra-abdominal pneumatosis by stating that it is a complication of chronic obliterating lymphangitis, and that a laparotomy may lead to resorption of the gas and total subsidence of all the cysts. This has occurred repeatedly when compression of stomach or bowel by some cyst had made a laparotomy imperative.

Peripheral Vasoconstriction in Shock.—Among other arguments in favor of peripheral vasoconstriction as an important factor in shock, Ducastaing cites two cases of shock in which the slow, weak or absolutely imperceptible pulse became normal under the action of amyl nitrite.

Revue Neurologique, Paris

November, 1919, **26**, No. 11

*Facial Diplegia. A. de Castro (Rio de Janeiro).—p. 801.
Bernard-Horner Syndrome from Shell Shock. Léri and Thiers.—p. 808.
*Reflex Adduction of Eyeball. Id.—p. 810.
*Stunted Pyramidal-Cerebellar System. D. E. Paulian (Bucharest).—p. 815.
*Extraction of Bullet in Lateral Ventricle. G. L. Regard.—p. 818.
*Hypertrophic Neuritis. M. Dide and Courjon.—p. 825.
*Achondroplasia in Greek Art. A. Porot.—p. 833.

Facial Diplegia.—De Castro remarks that in his service at Rio a large number of cases of facial diplegia are encountered every year. The paralysis is rapidly progressive, and it may take days or months for it to subside. It may subside completely on one side while persisting on the other. When accompanying polyneuritis, the facial paralysis usually is bilateral and persists longest. Contracture is rare and seldom affects both sides. A series of illustrations are given of three typical cases.

Reflex Adduction of Eyeball.—Léri and Thiers give illustrations of a case in which any peripheral stimulus, such as touching the mucosa of the ear with cold water, or tickling the mucosa of the nose, induces at once a pronounced deviation inward of the eyeball on that side. This phenomenon was marked in two patients with other symptoms indicating injury of the labyrinth, and was negative in twenty-two other neurologic patients. It may possibly aid in detecting an upset in the muscle balance from excessive functioning of the third pair and weakness in its physiologic antagonists, the abducens or sympathetic.

Defective Development of Pyramidal-Cerebellar System.—A woman of 31 and her brother, 26, both present evidence of arrested development of the pyramidal system and afferent cerebellar tracts. The disturbances from this cause did not become apparent until about the age of 20 in each. There was a history of spinal cord disease in an uncle, and the mother had unmistakable signs of syphilis. The cases resemble those published as cerebellar ataxia, but Paulian prefers to label them familial pyramido-cerebellar dysgenesia, emphasizing also the inherited taint.

Extraction of Bullet in Lateral Ventricle.—Regard says that the rarity of the localization of the bullet in the lateral cerebral ventricle and its curious mobility are not so interesting in this case as the primary displacement of the projectile, the means taken to complete the diagnosis, and the successful extraction. The bullet entered at the posterior-inferior end of the left second parietal convolution but there was no word blindness, which tends to disprove the location of this special center at this point. The bullet probably did not land in the ventricle but was pushed into it by the strange expulsive force exerted by the brain tissue for foreign bodies partially embedded in it. Intense headache, somnolency and mental confusion were the symptoms, none pathognomonic, but roentgen examination with the head in different positions showed a displacement of 6 cm. of the bullet. It was easily extracted from the rear after it had been made to drop into the occipital extension of the ventricle and a large flap had been cut in the skull. The whole procedure proved so simple and easy that Regard says he would feel justified in attempting it in cases of apoplexy when hemorrhage into the ventricle is threatening to prove fatal. It could be done at one sitting, but he did not complete the operation till the following day as he wished to be certain of his asepsis.

Hypertrophic Neuritis in Adults.—Dide and Courjon report five cases with illustrations. The extreme atrophy of muscles began in the hands and arms in five personal cases and in four published by Long and by Hoffmann. In thirteen known cases no inherited or familial taint was discoverable. In ten cases the onset was between 30 and 40. The disease in adults may assume various types, and complicating cerebellar symptoms are rare.

Achondroplasia in Greek Art.—Porot relates that after the siege of Athens by the Romans, 86 B. C., some of the ships taking the loot from Athens to Rome were wrecked, and one of these wrecked ships was discovered a few years ago in the sand bars off Tunis. Its cargo of Greek statues, etc., is now installed in the museum at Bardo. Among them are some bronze statuettes of dwarfs which show all the attributes of the achondroplasic type described by Marie. The trunk, the head and the sexual organs in this type develop normally, but the long bones are stunted, and these features are faithfully reproduced in these dancing figures of which illustrations are given.

Correspondenz-Blatt für Schweizer Aerzte, Basel

Dec. 18, 1919, **49**, No. 51

*Effect of Pyelitis in Infancy on Kidneys Later in Life. E. Rhonheimer.—p. 1929.
*Functional Capacity of Tendon Sutures. J. Dubs.—p. 1938.
Venereal Disease in Swiss Army. W. R. Schnyder.—p. 1952. Cont'd.

Prognosis of Pyelitis in Infants for Later Life.—Rhonheimer has secured information in regard to the later life in 122 cases of pyelonephritis in infants. The diagnosis cannot be positive without examination of the urine, but the experiences related show that the urine may show pathologic findings for months and even for more than a year when the child seems otherwise to have entirely recovered. His examination from one to eight years later demonstrated entirely normal conditions in the urine; no recurrence during the interim was known in any instance. This complete healing of the pyelitis in infants is in direct contrast to what is observed with pyelitis in older children. In the latter, recurrence is so common that some clinicians consider the pyelitis of pregnancy merely the flaring up of the disease dating from childhood. He reviews the testimony of pediatrists, including Birk's case in which pyelitis at 9 was followed by grave recurrence at 11, but the urine and kidneys seemed to be normal throughout a pregnancy at 18. In Rhonheimer's 122 cases, about 23 per cent. were boys, and necropsy showed severe changes in the kidneys and only slight lesions in the bladder. This testifies that infection is blood-borne in infants, while in older children it is usually ascending infection. After infancy, fully 90 per cent. of pyelitis patients are females.

Functional Prognosis of Tendon Sutures.—It has generally been assumed that sutured tendons behave normally thereafter, but Dubs, in a personal experience with 100 cases and analysis of 375 cases on record of injury of tendons in the arm requiring suture, has found that the ultimate outcome is far from favorable. In over 43 per cent. the cause of the interference with function was adhesion to surrounding tissues; infection and suppuration were responsible only in 11.3 per cent. The outcome was poorest in the cases in which secondary suture had been done, and best when the suturing was done early. Even with primary suture, the outcome was bad in 50 per cent. of the extensor tendons and in 10 per cent. of the flexors. The earlier the suture the less danger of adhesions forming. The surgeon should make every effort to ward off adhesions, as the free play of the tendon is indispensable for proper functioning. Too little attention has been paid to this point hitherto.

Policlinico, Rome

November 1919, **26**, Medical Section No. 11

*Hemolytic Splenomegaly. P. Biffis.—p. 393; Idem. Livio Losio.—p. 410.
*Pernicious Anemia. F. Marcora.—p. 424.

Hemolytic Splenomegaly.—Biffis reports eight cases of familial chronic jaundice with enlargement of the spleen, but no bile pigments in the urine. The jaundice did not manifest itself until between 22 and 25. The cases were all in several generations in one family. The children present all the symptoms except the jaundice; this will probably appear as they grow up. Removal of the spleen is always followed by improvement, but the abnormal fragility of the blood corpuscles persists unmodified. Only one case is known (Micheli) in which the corpuscles regained normal stability, but even in this case, reexamination several years later showed that the fragility of the corpuscles had returned. The jaundice is no index of the gravity of the condition. In the familial or congenital form, the jaundice is usually pronounced, while the other symptoms are often mild and there is little or no anemia. Biffis and Ceconi have previously published seven cases of the acquired type, and have recently encountered the familial cases here described and another set in a second family. The urobilinuria, attacks of pain in the right hypochondrium and paroxysmal intensity of the jaundice, which had begun at 25, all pointed to the acquired type in the case first seen, but investigation revealed seven other cases in the man's family tree, including his two children.

Splenectomy for Hemolytic Jaundice.—Losio reports a case of chronic hemolytic jaundice in a woman of 22 whose splenomegaly was first noted at the age of 12. He removed the spleen at 22, and the disease seemed to be cured for a time, but then all the symptoms gradually returned. The vessels in the spleen showed peculiar complex changes for which he knows of no precedent; among the other changes was a tendency to calcification of the middle coat. He remarks in conclusion that not only is there no criterion to distinguish the acquired from the congenital type but, in

some cases, it may be impossible to distinguish between primary and secondary jaundice.

Pernicious Anemia and Typhoid.—Marcora gives the minute clinical and necropsy details in a case of progressive pernicious anemia in which typhoid bacilli were found in the blood marrow and spleen, although there was nothing in the findings elsewhere or in the antecedents to suggest typhoid infection. The grave anemia had developed insidiously in the course of three or four months, with urobilinuria, and death about the sixth month. A colored plate shows the blood findings.

November, 1919, **26**, Surgical Section No. **11**

*Total Necrosis of Clavicle. G. Aperlo.—p. 349.
*Sarcoma of Frontal Sinus. P. Caliceti.—p. 353.
Modern Technics for Transfusion of Blood. A. Sebastiani.—p. 369.
*Pathology of Sweat Glands. G. L. Colombo.—p. 383.

Necrosis of Clavicle.—The girl of 7 was scratched in the back of the right hand by the nail of another child in play, and a furuncle developed, with secondary rapidly acute staphylococcus osteomyelitis of the clavicle, compelling its entire removal eight days after the primary scratch.

Sarcoma in Frontal Sinus.—Caliceti illustrates a case of rapidly growing primary sarcoma originating in the frontal sinus in a soldier. As long as the growth was restricted to the sinus it caused absolutely no symptoms. When these appeared the growth was already inoperable. If discovered or suspected in an early stage, it might be well to try an antovaccine, as Citelli recommends. Caliceti obtained most gratifying results with an antovaccine in a case of sarcoma of the upper jaw. He reviews the literature on malignant disease of the frontal sinus.

Changes in Sweat Glands.—Colombo found severe changes in the sweat glands in patients with nephritis, also in tuberculosis and in various chronic intoxications. The elimination of toxins through the sweat glands entails these changes in time, and he induced them in cats and rats by blocking kidney functioning.

Archivos Brasileiros de Medicina, Rio de Janeiro

August, 1919, **9**, No. 8

*Serotherapy of Anemia. Sylvio Prado Pastana.—p. 623.
*Treatment of Fractures. Alipio Santos.—p. 666.

Serotherapy in Anemia.—Prado Pastana says that with the Besredka technic it is a simple matter to obtain an antihuman hemolysis serum from rabbits. This hemolytic serum, as he calls it, has a potent stimulating action on the blood-producing centers. The blood corpuscles are produced in larger numbers, comparatively, than the hemoglobin. The hemoglobin takes a longer time to approximate normal, and it is wise to aid this with iron. The principal indication for this treatment is severe aplastic anemias, especially when the blood-producing centers seem exhausted and a stimulant is called for. The immediate effect surpasses that from administration of iron. The best results are observed with minute and well spaced doses; 1 c.c. of the 1:20 antiserum is the preferred dose, diluted with 9 c.c. of physiologic solution, and infused into a vein, very slowly after the first. None of the five patients whose cases are described with minute detail complained of the technic, and no trace of anaphylaxis was ever noticed. The intervals were from eight to twelve days, and only two or three injections were made.

Treatment of Fractures.—Alipio Santos describes the first case in Brazil treated by what he calls the Anglo-American method, that is, weight extension applied to the suspended limb. He extols the perfect healing and functional outcome.

Boletín de Medicina y Cirugía, Guayaquil

October-November, 1919, **17**, Nos. 125-126

*Etiology of Yellow Fever. H. Noguchi.—p. 139 and 155.

Noguchi's Research on Yellow Fever.—This is a Spanish translation in full of Noguchi's various publications on the clinical and other features of yellow fever and on the leptospira which he incriminates in the etiology. Much of the work was done at the Guayaquil hospital. Noguchi's charts and twelve photomicrographs are reproduced.

Brazil-Medico, Rio de Janeiro

Nov. 8, 1919, **33**, No. 45

*Pleurisy with Heart Disease. Luna Freire.—p. 353. Begun in No. 43, p. 337.
Epidemic Poliomyelitis in Uruguay. V. Escardó y Anaya.—p. 356. Cont'n. See abstract below.

Pleurisy with Heart Disease.—Luna Freire has recently encountered three cases of pleural effusion in the left side in persons with heart disease. Analysis of these cases and of the literature shows that the heart disease with arterial lesions and with pleural effusion on the left side originates in the aorta, and spreads secondarily to the myocardium. This suggests that syphilis may be the primary factor. The symptoms are the same whatever the origin of the pleurisy, but few think of testing for syphilis, and yet this might give the clue for effectual treatment. In his three cases chronic aortitis was evident, and one of the men, a physician, succumbed to the progress of the disease, with multiple hemorrhages, epistaxis, hematemesis and melena. In all, the heart was displaced toward the right of the sternum. He discusses the reasons why the effusion is generally on the right side with heart disease, while in his three cases the left side only was involved. In Beaufumé's sixteen cases, only one involved the left side. The mechanical factors explain the predilection of congestion and edema for the right side, but do not explain the pleurisy; infection is required for this. The term arterial cardiopathy should be restricted to the cases in which chronic inflammation of the large vessels of the base spreads to invade the myocardium or the valves, and syphilis is generally responsible for the inflammation of these large vessels. This conception allows a more favorable prognosis.

Revista Médica del Uruguay, Montevideo

November, 1919, **22**, No. 11

*Hemiplegia Consecutive to Influenza. F. Abente Haedo.—p. 771.
*Epidemic Poliomyelitis in Uruguay. V. Escardó y Anaya.—p. 779.
*Connection Between Syphilis and Tuberculosis. E. Mariño and J. C. Mussio Fournier.—p. 807. In French.
Comparative Analysis of French and German Arsphenamin. A. Prunell.—p. 812.

Hemiplegia After Influenza.—Abente's patient is a young man who for a few weeks after influenza presented symptoms of the Millard-Gubler type of hemiplegia. By exclusion, Abente accepts an infectious arteritis of influenzal origin as probably responsible for the hemiplegia.

Epidemic Poliomyelitis in Uruguay.—Escardó's address on this subject was presented at the recent International Child Congress. He comments in particular on the element of pain which was a feature of the disease during the three epidemics in Uruguay, 1906, 1912 and 1916. He mentions further two unpublished cases of cephaloplegia, like those described by Figueiras at Rio de Janeiro. The two cases were seen ten years ago by de Pena at Montevideo. Probably unrecognized poliomyelitis was responsible for the cephaloplegia. The child was totally unable to hold up its head, and there was also a slight tendency to paralysis. These symptoms subsided in about a week in one case, but the infant of 2 years succumbed to asphyxia. Escardó adds that serotherapy is being tried at Buenos Aires in poliomyelitis, and the results are quite encouraging.

Syphilis and Tuberculosis.—Summarized on page 359 when published elsewhere.

Berliner klinische Wochenschrift, Berlin

Oct. 13, 1919, **56**, No. 41

Proposed Reforms in Medical Education. O. Lubarsch.—p. 961.
The Sachs-Georgi Serologic Reaction in Meat Testing. E. Seligmann and F. von Gutfeld.—p. 964.
Paralysis of the Soft Palate after Influenza. G. Kickhefel.—p. 967.
*Hemostasis with Prostatectomy. A. Freudenberg.—p. 967.
What the War Has Taught Us About Nutrition. K. Bornstein.—p. 968

Local Use of Calcium Chlorid for the Prevention of Serious Hemorrhages in Suprapubic Prostatectomy.—After or during suprapubic prostatectomy one of the chief dangers, Freudenberg has found, lies in the serious hemorrhages that

so frequently prove fatal. He has, however, of late been using a method of prevention that he finds very satisfactory, namely, the local application of a 6 per cent. solution of calcium chlorid. From ten to twenty minutes before the operation, 100 c.c. of the solution are injected into the patient's bladder, the contents of which have been removed by catheter. Immediately before the skin incision is made, the fluid is withdrawn from the bladder and air is injected. After the enucleation of the prostate, for which the smallest possible incision in the bladder is made, the resulting cavity is plugged tight with medicated gauze that has been immersed in the calcium chlorid solution. Above this a large-sized drain is inserted. The balance of the cavity of the bladder is likewise plugged with the gauze dipped in the calcium chlorid solution. Through the Freyer drain a Nélaton catheter may be inserted and the greater part of the urine drawn off through a tube, thus preventing to a great extent the infiltration of urine into the tissues. The abdominal flaps are then sutured above and below close up to the drain. Following Freyer's technic, the bladder itself is not sutured. After twenty-four hours, the Freyer drain is removed; also the tampon in the upper part of the bladder. The tampon in the prostate cavity is not removed for two or three days. Caution then is necessary, and it may be advisable to use hydrogen dioxid to avoid hemorrhage from mechanical irritation. For bladder lavage during the first few days following the operation, calcium chlorid should be added by way of precaution. Freudenberg has operated in twenty-six cases in this manner without experiencing any serious difficulties from hemorrhages.

Deutsche medizinische Wochenschrift, Berlin

Oct. 16, 1919, **45**, No. 42

*Nonoperative Treatment of Hemorrhoids. I. Boas.—p. 1153.
*Regenerative Processes in Man. XX. Regeneration of Blood Vessels. A. Bier.—p. 1155.
*Meaning of Term "Uremia." W. H. Veil.—p. 1158.
*Pathologic Conditions in Skeleton from Undernutrition. A. Böhme. —p. 1160.
*Injuries of Middle Meningeal Artery. A. Salomon.—p. 1162.
Effusion in Peritoneum as Symptom of Intestinal Occlusion. A Galambos.—p. 1163.
*Causes of Quincke's Edema. H. Sieben.—p. 1164.
*Gonococcus Otitis in Nurslings. H. Putzig.—p. 1165.
*Poisoning by Oil of Eucalyptus. P. Auerbach.—p. 1165.
Proposed Reforms in Medical Course. J. Schwalbe.—p. 1166. Cont'd.

Radical Nonoperative Cure of Hemorrhoids.—After twenty years' experience in treating hemorrhoids, Boas finds injections of 96 per cent. alcohol the most effectual measure. For years he had used injections of phenol (Kelsey's method) with fair success, but the results were often not entirely satisfactory. Recurrences were rather frequent. The main objections to phenol are its escharotic and toxic effects. Boas sought for an injecting medium that was free from these objections, and for four years has been using 96 per cent. alcohol with eminent satisfaction. He describes his method under three headings: (1) preparation of the patient; (2) the treatment proper, and (3) after-treatment. The patient must remain in bed during the treatment. Boas objects to the ambulant treatment of hemorrhoid patients which he thinks, if he is correctly informed, is all too prevalent in America. By means of the Bier suction glass the hemorrhoids are drawn out of the anus. From experience one learns how long and how vigorously the suction must be applied in order to bring forth all the hemorrhoids, for it is essential in this method that every nodule should be injected. When the operator has thus informed himself as to the number and size of the hemorrhoidal tumors, they are returned within the rectum. If the hemorrhoids bleed too freely it is well to control the hemorrhage by repeated injections of calcium chlorid. On the first day the patient is given a purge. After securing a thorough evacuation, the bowel is cleansed the next day by means of a soapsuds enema. The treatment proper begins with the patient in the knee-chest position. With the Bier suction glass, the hemorrhoidal tumors are now brought well into view. With a record syringe of 10 c.c. capacity, from 2 to 5 c.c. of 96 per cent. alcohol are injected, carefully but quickly, deep into the hemorrhoids. In one of moderate size 2 c.c. may be injected in the upper half and 2 c.c. in the lower half. In an especially large tumor, 5 c.c. may be required. The whole procedure takes only two or three minutes even when the vascular tumors are numerous. Occasionally the injections are painful and he now uses a local anesthetic from fifteen to twenty minutes before applying the treatment. A slight burning sensation may be felt for a time, but there should be ordinarily no further discomfort. After the injections the hemorrhoidal mass should, if at all possible, be returned to the bowel. If the mass is large, this may entail some difficulty. In rare cases it may be necessary to leave a small part of the mass outside of the rectum, but this only delays the cure a few days, as through gradual necrobiosis the extra-anal portion will slough off. The after-treatment is important. The patient remains in bed for four days in the dorsal recumbent position and receives during that period only a liquid diet, in order to reduce intestinal activity to the minimum. On the fourth or fifth day a purgative is given. If prolapse of the injected piles does not occur during the first stool, it will not usually occur at all, so that the patient can then be allowed to resume a normal diet and will soon be able to move about freely. The final test, applied about a week after the injection, consists in using the Bier suction glass again to see if the hemorrhoids are now securely anchored within the rectum. Boas has treated fifty-two patients by this method. A radical cure was effected in all the cases and there have been no recurrences as yet, although in two cases a second injection became necessary. The total amount of alcohol injected never exceeded 10 c.c.

Regenerative Processes in Blood Vessels.—As regards transplantation of blood vessels, Bier believes that autoplastic transplants are the only ones that can be counted on. Various investigators had maintained that homoplastic and heteroplastic transplants, or even segments of dead blood vessels, would live and conduct the blood stream. But the microscope has shown that such transplants suffer the same fate as all other homoplastic and heteroplastic transplants: they disintegrate and are absorbed, while other surrounding tissues, usually scar tissue, take their place. Bier adds that the remarkable part of it is that even this scar tissue may actually perform the needed function. For a more extended treatment of this question, Bier refers to the investigations of Borst and Enderlen published in the *Deutsche Zeitschrift für Chirurgie* **99**, June, 1909.

Meaning of the Term "Uremia."—The current views in regard to the pathogenesis of uremia are only approximately correct and need revision, Veil thinks. The term "uremia" covers too many things that in the light of recent investigations are not closely associated. If for traditional reasons the term must be retained, it should be used, he says, to designate "only azotemia or ureahemia." Its diagnosis should be based on the chemical proof of abnormal quantities of the constituents of the urine and of nitrogenous bodies in the blood.

Bone Disease from Undernutrition.—Böhme says that the similarity between the clinical picture of osteomalacic affections and that of ordinary rickets led to the use of the same therapy, which proved adequate; namely, highly nutritious diet that was sufficiently varied, prevention of unnecessary weight bearing by the bones and administration of cod liver oil with phosphorus. This therapy usually produced an improvement in the general condition, a rapid remission of the pain and the return of strength, so that the patient was soon able to walk and later to go about his work. In deformities of the legs, corrective bandages worn during the night were found beneficial. The fact that the same external conditions sometimes produce rachitis tarda and sometimes osteomalacia raises the question as to the relation between the two diseases. The pathologists support the view that from an anatomic standpoint the two diseases cannot be differentiated. Clinicians insist on a differentiation, especially from the pathogenetic standpoint, maintaining that in osteomalacia a hyperfunction of the ovaries is a main cause. Böhme thinks that the observations of the war period bring out also the close clinical relationship between the two diseases.

The bone changes in rickets and in osteomalacia are essentially the same. In respect to localization, however, there is some difference, which may perhaps be explained by the modifying influence of the ovaries. The symptoms and clinical course of this war period type of osteomalacia differ from those of peace times. That the glands of internal secretion were often damaged could be concluded from the fact that certain secondary sexual characteristics were repressed.

Injury of the Middle Meningeal Artery.—The diagnosis of injury of the middle meningeal artery, while an easy matter in typical cases, becomes exceedingly difficult if the classical symptoms of cerebral pressure are absent or are obscured. Salomon gives as convincing evidence of the difficulty attending the diagnosis of epidural hematomas the fact, as cited by Brun, that of thirty-nine cases of hematoma in Krönlein's service at Zurich only nineteen were diagnosed before the death of the patients, and thus could be given operative treatment. To add to the difficulties, patients are often admitted to the hospital in an unconscious state, nothing of their past history being known, while the brain is completely paralyzed. Salomon thinks a more widespread knowledge of atypical lesions of the middle meningeal artery would lead to better results. The diagnosis and the indications for operation should not be allowed to depend so exclusively on the classical symptoms of pressure on the brain. Though aphasia may be the only focal symptom, this alone may at times be taken as an indication for operation. If after two or three days' observation, in spite of temporary improvement, the typical brain pressure pulse, the aphasia and the mental condition remain the same, we are justified in assuming the presence of a good-sized, unabsorbable extravasation of blood, the removal of which is clearly indicated. Salomon is convinced that extension of the operative indications will reduce quite perceptibly the number of cases that come to necropsy, which now amount to about 50 per cent. of all cases.

Quincke's Edema.—Sieben reports a case of influenza in a 13 year old girl which was followed by chorea and a concurrent angioneurotic edema. He has observed a number of cases, in which not only chorea but also other nervous diseases were associated with influenza, so that he does not hesitate to count the chorea and edema among the after-effects of influenza. Furthermore, he reports as after-effects of influenza: serious maniacal emotional conditions, and even genuine mania of the severest type, necessitating confinement of the patient in an asylum but with final complete recovery. If Quincke's edema follows one infectious disease (influenza), it may possibly follow other infectious diseases. If there are no intestinal symptoms that point to the origin of the disease, it would be well to look for some infection that may have played an important part in its genesis.

Gonococcus Otitis in Infants.—Putzig reports a case of purulent otitis media in a 14 month old child which occurred nearly two months after the child had been successfully treated for a typical gonorrhea. He thinks that it was due to a second infection transmitted from the mother who was still suffering from a specific gonorrheal discharge. He emphasizes the need of bacteriologic examination of the discharge in all cases of persistent suppuration of the ear in infants, especially those who have had gonococcus infection, as knowledge of the gonorrheal origin makes possible specific treatment, such as with 1 per cent. protargol solution and, if necessary, potassium permanganate lavages, which usually bring about a cure in a few days. If a bacteriologic examination is not made, the child may be seriously injured by a protracted otitis, and through lack of knowledge of the danger, other members of the family may become infected.

Poisoning by Oil of Eucalyptus.—Auerbach reports a case of poisoning in a man of 47 who had ingested about 20 c.c. of oil of eucalyptus. Half an hour afterward he was found unconscious in bed. Auerbach found the patient cyanotic; with a weak, slightly accelerated pulse, and covered with a cold sweat. The pupils were contracted and fixed. The area of cardiac dulness was increased, and breathing was shallow. Ingestion of milk caused vomiting, and milk lavage brought forth distinct evidence of eucalyptus oil. The condition of the patient slowly improved, and complete recovery followed on the fourth day. Auerbach gives this account of the case because he finds in the literature few reports of poisoning from oil of eucalyptus.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Oct. 18, 1919, **2**, No. 16

*Actinomycosis of Lung. G. H. Moll van Charante.—p. 1150.
*Growth of Urinary Calculi. F. Hijmans.—p. 1159.
Case of Ascending Paralysis. A. Q. van Braam Houckgeest.—p. 1163.
*Present Status of Acute Purulent Pleurisy. W. F. Wassink.—p. 1165.

Actinomycosis of the Lung.—Moll van Charante reports the case of a man of 45 with a history and aspect suggesting tuberculosis, but a very tender point was found in the interscapular space, with dulness, and the vocal fremitus was weak, and there were some râles. Roentgenoscopy revealed what seemed to be periostitis of ribs, but the discovery of actinomycetes in the sputum cleared up the diagnosis. Necropsy showed symmetrical abnormal conditions in the periosteum of nearly all the ribs, the periosteum often sagging like a bag, and the lungs were studded with minute lumps. In a second case pain in the left side for three months was finally explained by a swelling assumed to be a tuberculous process in a rib. The infiltration was hard as wood but soon softened, and an incision released pus containing the actinomyces. Symptoms suggesting pleurisy with effusion developed, back of the process in the chest wall. No fungi were found in the sputum and the lung did not seem to be involved. Complete recovery followed ample incisions, roentgen treatment, potassium iodid and copper sulphate, locally and internally. Agglutination may help in the diagnosis; the actinomyces does not become agglutinated but the patients' serum is said to agglutinate *Sporotrichum beurmanni*, although Harbitz and Israel were unable to confirm this. After long coughing and expectorating, sudden violent pain in side and chest is soon accompanied by the hard infiltration, with final softening and retraction of the chest wall. With secondary infection, air from the lung may get into the abscess and the succussion sounds then are pathognomonic. One case is on record of ten years' duration, but others are known with a fatal outcome in three months. Potassium iodid, eucalyptus oil and roentgen treatment have not benefited more than a few cases. Illich found no recoveries in fifty-eight cases, but Mayer found seven in thirty-five, and Netter has reported a case of complete recovery in four weeks under 6 gm. daily of sodium iodid. Two cases are on record of recovery under vaccine therapy when conditions seemed very grave, seventeen injections in one case and six in the other. Operative intervention as for cancer has now a record saving twelve otherwise doomed patients.

Growth of Urinary Calculi.—In one of Hijmans' two cases, 11 large stones, weighing altogether 110 gm., were found in the bladder six years after cystotomy to clear the bladder of 2 small stones. In a second case, two years after pyelotomy 6 phosphate stones were found in the kidney pelvis, weighing in all 40 gm. Such cases teach the necessity for keeping patients under surveillance after an operation for urinary calculi, and regulating their habits to correspond to the urine findings. Regular supervision at three months' intervals might reduce materially the number of cases of recurring urinary calculi.

Acute Purulent Pleurisy.—Wassink analyzes recent literature on this subject, and remarks that the trend seems to be to restrict intervention to puncture in recent cases of rapid onset with numerous cocci in the empyema or serous effusion. The puncture may be supplemented or not with insufflation of gas. If the condition of the lung permits, Mozingo's method of closed sterilization may be tried and may ward off actual empyema (The Journal, Dec. 21, 1918, p. 2062). The Dakin method is still on trial, and should not be attempted outside of a large hospital. The experiences with open treatment of empyema in young children have been extremely unfavorable. Repeated puncture seems to be all the intervention that should be attempted in infants.

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PHYSICAL AND HYGIENIC BENEFITS OF MILITARY TRAINING AS DEMONSTRATED BY THE WAR

MERRITTE W. IRELAND, M.D.
Surgeon-General, U. S. Army
WASHINGTON, D. C.

Probably no other class of men have the vision, as medical men have, to see the good that would result from universal military training.

There never has been a real survey of the man power of the United States, but all of us know that many surprising facts would be developed if such a survey were made. The Civil War gave a certain indefinite survey at that time, but during the last fifty-five years tremendous changes have taken place in our mode of living, and the human mechanism has not adjusted itself to the changes of civilization. We have had no opportunity to judge the defects among our male population. For a long time the finger of scorn has been pointed at the Army and Navy because we had such a high percentage of venereal disease. I have been interested in this subject for a quarter of a century. The only reason we had a high percentage of venereal disease was that we knew the amount of this disease among our soldiers and sailors and published it to the world. We always knew that the rate of venereal disease did not represent the rate in the Army but did represent, to a fair degree, the rate in the civil population in the vicinity of our military posts. We do not contract venereal disease in the Army to any extent, but acquire it almost exclusively from without the military reservation. With a distinct understanding of the meagerness of the information we had at the beginning of the world war, it is most interesting to review the statistics furnished by the draft, the report covering the mobilization of nearly 5,000,000 men in the military forces of the United States (Army, Navy and Marines).

BENEFITS RESULTING FROM THE WAR

The cessation of hostilities at a period in the war when the American battle casualties had been insignificant, in comparison with the losses of other belligerent countries, offers a favorable opportunity to consider the brighter side of the war and to estimate what benefits have accrued to the nation as a whole, and to the individual soldier in particular, from calling to the colors approximately one twentieth of the entire population of the United States. These benefits are manifold and may thus be roughly classified:

1. Improvement in physical development as a result of outdoor life, good food, regular exercise and strenuous physical training.

Alertness, activity, strength, endurance and discipline, combined with a body free from disease, are the first requirements of a soldier. These qualities are largely obtained by gradual and well regulated physical training. As applied to the recruit, this training enables him to bear the hardships and to overcome the difficulties of warfare. The beneficial results of physical exercise during the training are supplemented by the outdoor life, the regular hours required, the plain, simple food, the good sanitary surroundings, and the many other features that promote the development of a high type of physical manhood. The improvement in the physical development of the young man in the Army was most striking. Our sanitary inspectors visited dozens of camps to investigate the thoroughness of the examination made on the arrival of the recruit at camp, and they made the same investigation of the soldier before his demobilization. At the first of these examinations, the inspector was greatly impressed by the stream of naked men who were awkward, narrow chested, with flabby muscles and often with a stoop. Contrasted with this picture, he was tremendously impressed by a similar line of naked men who presented themselves for examination before demobilization. They were bronzed, erect, broad-chested soldiers with fine muscular development and a characteristically alert and self-confident air. Many exaggerated statements have been made as to the gain in weight soldiers have acquired during the war. Some day these statistics will be available, but at the present time no correct statement can be made. The officer in charge of the sanitary division of the Surgeon-General's Office estimates that the average gain in weight in the first year of military service is from 15 to 20 pounds. The actual records of one company of National Guard troops under the semitropical conditions existing on the Mexican border in 1916 showed an average gain of 12½ pounds a man in nine months. Studies on this subject during the war made by the division of foods and nutrition in the office of the Surgeon-General showed in one infantry company an average gain of 10 pounds a man after four months of service, and in three artillery batteries an average gain of $6\frac{4}{10}$ pounds in six months. Another study showed $2\frac{6}{10}$ pounds gained in five weeks. There is no doubt that this gain in the soldiers' weight was almost entirely muscular tissue. It is reasonable to believe that a six months' training of the youths of our land during the year they are 19 years of age would produce similar good results from the physical standpoint.

2. Detection and cure of many obscure and latent pathologic conditions, particularly hookworm, malaria, venereal disease, tuberculosis and focal infection.

The examination of a young man for universal training would bring similar results. Many of the disabili-

ties detected would not be disqualifying for military service, but could be remedied during the period of training. Notable examples would be: painful feet, weak backs, hookworm infestation, malarial infection, venereal disease, and focal infection from diseased tonsils and diseased teeth. In the examination of the draft it was ascertained that 29 per cent. of the men had physical disabilities that were disabling for military service. A small list is given in the accompanying table. Suffice it to say, however, that of the 225,000 cases of venereal disease in the Army during the war, prior to May 1, 1919, 200,000 were contracted before enlistment, that is, before the men joined the Army. This statement was made from incomplete statistics and is only relatively correct.

SOME IMPORTANT DEFECTS REVEALED BY THE DRAFT

	Per Cent.
1. Defects of feet (flatfoot, 11 per cent.)	13
2. Venereal diseases:	
During first period of draft	2.9
In later period of the draft	5.7 8.6
(Increase due to improvement in method of examination and tabulation, and also to the larger percentage of negroes inducted during the later period.)	
3. Hernia and enlarged inguinal rings	4
4. Defective vision (largely refractive errors)	3⅓
5. Defective physical development (including underweight and underheight)	3⅓
6. Organic diseases of the heart	3
7. Deformities or loss of extremities	3
8. Tuberculosis	2.50
9. Hypertrophy of tonsils	2⅓
10. Defective and deficient teeth	1⅓
11. Mental deficiency	1.25
12. Otitis media (purulent)	1
13. Hemorrhoids, varicocele, varicose veins (combined)	1
14. Goiter (simple and exophthalmic)	0.75
15. Deformities of hand	0.75
16. Cardiac arrhythmias and tachycardia	0.50
17. Asthma	0.25

3. A determination by examination of the actual physical condition of the adult male population of military age, and a consequent awakening of the nation to the necessity for efforts directed toward limiting the possibility for the continued evolution of physically defective citizens.

The examination of the registrants before Dec. 15, 1917, resulted in the rejection of 29 per cent. This was before the industrial and economic classification of all registrants had been made. After this classification had been accomplished, 14.5 per cent. were rejected by the local boards, and approximately 7 per cent. were rejected by the boards at military camps. This gives a total rejection by camps and local boards of 21.2 per cent. Forty-seven per cent. of the men examined were found to have certain defects. Fifty-three per cent. were accepted as fully meeting the physical standard, with no defects recorded.

4. Instruction in sanitation and personal hygiene gained by both precept and practice in camp. A great part of this acquired knowledge the discharged soldier will take back to his home and transmit to his family and fellow citizens.

As you know, a great effort was made at our concentration camps to provide every requisite for high-grade sanitation. Camps were models of cleanliness. An ample supply of potable water was furnished; shower baths were unlimited; sewage disposal was complete, and the best of food was provided. Every effort was made to have food properly prepared. The men were protected against flies and mosquitoes. Food handlers were examined to detect possible carriers of typhoid, paratyphoid and dysentery. Modern laundries were established. Vice and liquor selling were abolished or limited. In addition to what the soldier saw of sanitary methods at the camp, he was given instruction in sanitation and personal hygiene; he was provided with suitably fitting shoes, his teeth were examined and put in condition, and he was vaccinated against typhoid, paratyphoid and smallpox. He was frequently examined to detect incipient disease. A great part of this knowledge the soldier retained to take back with him into civil life. It will have a marked influence on his method of living, and he will transmit a part of his knowledge of hygiene to his family and neighbors.

5. Education in sex relation and in the matter of protection from the dangers of illicit sexual indulgence. This subject is of so great importance that it is given a special heading.

There is no one thing which demands greater attention from the people of the United States than does the widespread prevalence of venereal disease. The discussion of this subject has been tabued in polite society until quite recently. The examination of the men between 21 and 31 years of age developed the fact that more than 5 per cent. were suffering from manifest venereal troubles. The Wassermann test was not taken, so cases of syphilis which did not present local manifestations were not detected. The wide prevalence of venereal disease among our young men was a revelation to the people at home and I think that from now on the campaign against venereal disease will be one of the good results from the war. While the soldier was in camp he was protected in every conceivable way from venereal disease—by education, by law-enforcement, and by early treatment. The low record for venereal disease in the American Army in France was a revelation to our allies. It is believed that the education on this one subject alone will be of tremendous value to the country in the future.

6. Training in discipline and the development in the soldier of respect for authority.

Among those promoted to commissioned and noncommissioned grades, there was developed the faculty to command and exact obedience. I do not think too much importance can be laid on this subhead. I am certain it is accepted by all that in recent years the tendency of the American youth has been in the direction of disrespect for authority, whether parental, municipal or national. I think the discipline of military life has had a most wholesome effect on the American soldier, and will in a marked degree make him better material for citizenship. The experience which these men gained will be of inestimable value in civil life.

7. Protection, by vaccination, of 5,000,000 men against the danger of contracting typhoid, paratyphoid and smallpox for several years to come.

This will have a far-reaching effect on the population of the United States for many years. We have learned to control typhoid fever and have practically eliminated by sanitary measures dysentery and malaria. Even as late as the Spanish-American War, typhoid fever, dysentery and malaria filled our hospitals. During the world war those three diseases were practically negligible quantities in our sick report. Until May 1, 1919, we had only 213 deaths from typhoid fever, thirteen deaths from malaria, and forty-two from dysentery. Think of the great change that has taken place in this respect as contrasted with the Civil War and the Spanish-American War.

BENEFITS OF UNIVERSAL MILITARY TRAINING

The statements that I have made refer to the good the Army did the American soldier during the world

war. There is every reason why this good could be multiplied with the youth of the land by universal military training. It would give us a wonderful opportunity to make a physical survey each year of the youth of the land. It would enable us to detect physical disabilities that could be remedied and would make the man economically more valuable for the rest of his life. Many of the disabilities which men carry through life and which interfere with their value as citizens are remediable. At one time during the war, 10,000 cases of hernia were awaiting operation. All of these disabilities could be corrected during the period of military training. Defective vision could be corrected; men with weak feet and weak backs could be relieved. The mental defectives could be classified; the young man would be given an object lesson in discipline and be taught respect for authority—the good that could be accomplished is unlimited.

PATHOLOGIC ANATOMY OF TRAUMATIC FRACTURES OF CRANIAL BONES

AND CONCOMITANT BRAIN INJURIES*

E. R. LECOUNT, M.D.
AND
CARL W. APFELBACH
CHICAGO

This attempt to consider the injuries of the brain and cranial bones when the latter are broken by external violence is based on conditions encountered in 504 postmortem examinations made by one of us during the years 1911 to 1918. It does not include all the postmortem examinations during that period of the bodies of persons with such traumatic fractures, for in about sixty instances the measurements and other steps necessary in the interests of precision were not so detailed as in the 504 here reviewed. The patients were cared for in the Cook County Hospital or the Hospital of the House of Correction, and some postmortem examinations were of bodies of persons who were found dead or who died en route to a hospital.

SIX FUNDAMENTAL CONSIDERATIONS

Notwithstanding certain still mooted questions regarding the mechanism whereby the injuries of both the cranial bones and the brain are produced, and especially the influence a whirling motion of the falling head and body may have on the characteristics of the injuries, there are six facts that are generally accepted and need brief mention as a background for what follows:

1. There are six regions where the greater thickness of the cranial bones forms arches thicker below and gradually thinning out in the vault: one in front from the root of the nose and glabella; one behind, including the inion and the external and internal crests of the occipital bone, as well as the torcular eminence; one on each side from the external angular processes of the frontal bone and prolonged obliquely back and into the body of the sphenoid in the bones of the skull base, and finally one on each side formed by the petrous bones and continued externally in the protuberance of the mastoid (Figs. 1, 2 and 3).

2. With violence applied to the cranium, these arches hinder horizontal bending; whereas the bone between the arches can more easily bend vertically. As a result, the bone between the arches flattens the more in a horizontal plane and breaks across, the linear fractures radiating up into the vault and down into the bones of the base of the cranium between the arches.

3. With the head in motion, the brain lags behind the more rapidly moving cranium, and as a consequence is closer to the cranial bones *opposite* where violence is applied; and with the axis of the skull abruptly shortened at right angles to where violence is applied, the brain is the more bruised opposite that place.

4. The resistance (weight) of the trunk and extremities transmitted to the skull via the condyles of the occipital bone tends to bend in the bottom of the skull, especially the arches, and is one factor determining the course and distribution of the fractures.

5. When the cranial bones are broken with the head in a fixed position, contrecoup bruising of the brain is reduced to the minimum and the bruises are direct, at the place of fracturing.

6. The general direction taken by fractures which course between the arches is also well known, and is shown in Figures 4, 5, 7, 10, 19, 23 and 29.[1]

NATURE AND LOCATION OF FRACTURES

About 85 per cent. of the 504 cases here considered were simple linear fractures or linear fractures with branches; in the remainder, the bones were extensively comminuted and with some of the fragments depressed. With the bones of the cranial base involved slightly more than those of the vault, both were involved in varying degrees in all but about 8 per cent. of the 504. When grouped according to the fossae chiefly involved, with one group for the vault and one for fractures so extensive that several fossae and part of the vault as well were broken, the incidence is as shown in the accompanying table. In this table are included a few fractures partly healed or so healed that their courses could still be followed. Many of the fractures of the back fossae ran forward to end in the ethmoid bone or one of the foraminae of the middle fossae. Violence for these fractures as indicated by the scalp injuries was usually to the back of the head. Of the sixty-one fractures of the anterior fossae, seventeen were simple linear, from 2 to 5 cm. long and in the roof of one orbit. Of the extensive fractures, usually with comminution, the violence was to the back of the head for twenty-seven, to the side for nineteen and in front for four. The average of the total linear length of these fractures was 70 cm., the greatest 138.9 cm. (Fig. 19). With the vault fractures, some traumatic diastasis of sutures was not rare: in twelve of the forty-nine, part of the sagittal or its entire length was affected; in three, the coronal

LOCATION OF FRACTURES

	Posterior Fossae	Middle Fossae	Anterior Fossae	Vault	Extensive	Totals
Total number	178	166	61	49	50	504
Some depression	6	11	6	4	7	34
Mode of injury learned	130	124	51	33	42	380
Short falls	36	43	9	2	2	92
Longer falls	48	37	13	16	13	127
Street car	17	12	16	4	13	62
Automobile and autotruck	11	17	7	2	11	48
Assault	18	15	6	9	3	51
Meningitis	15	7	13	3	1	39
Healed fractures	7	6	4	1	0	18
Decompression operation	15	27	3	8	6	59

*From the Coroner's Medical Service at the Cook County Hospital.
*Aided by a grant from the Otho S. A. Sprague Memorial Institute.

1. We have made no attempt to cite from the literature, but wish to refer especially to the work of Tilmann (Arch. f. klin. Chir. **66**:750, 1902; **59**: 236, 1899) and that of M. Auvray (Maladies du crâne et de l'encéphale, Paris, 1909).

suture, and in five, one or both lambdoid sutures. As regards the meningitis, the petrous parts of the temporal bones were the portal of entry for the infection in twenty-three, the ethmoid bone in thirteen; in two fractures the opened sagittal suture with the scalp laceration, and in one the petrous bone of one side was broken and a decompression operation had been made. With thirteen of the eighteen fractures with some degree of healing, there were contrecoup bruises, and in four, direct bruises alone. With one of these healed fractures there was an abscess of the left cerebral hemisphere in front, the fracture of the right posterior fossa and no outside bruise of the brain; in other words, the abscess opposite the fracture.

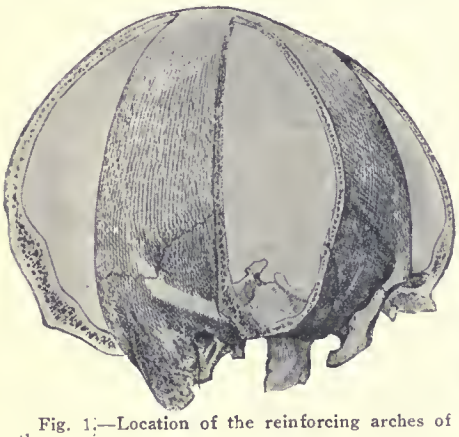


Fig. 1.—Location of the reinforcing arches of the cranium.



Fig. 2.—The thickest portions of the cranial bones are in the shaded areas.

CONCOMITANT BRAIN INJURY

The injuries of the brain concomitant with fractures of the cranial bones are preponderantly of the outside of the brain, owing partly to the inbending of the cranial bones, but chiefly to the bumping of the brain against the cranial bones. Most fractures of the cranium result from causes which first set the head into rapid motion and then suddenly stop the skull against a firm object. The brain, floating as it does in the cerebrospinal fluid, lags in the movement of the head, so much so that when the head stops moving the brain receives its greatest injury by bumping against the cranial bones directly opposite where the cranium is broken. When the bones of the temporal fossae or of the nuchal planes of the occipital bones are fractured, because of their thinness, there is frequently a bruise directly under the fracture resulting from inbending of the bone and compression of the brain. The back half of the cerebrum is larger and heavier than the front half, and because of this the front poles of the cerebrum are more frequently and more extensively bruised than the back poles. If the lateral ventricles are enlarged (internal hydrocephalus) the sides of the brain and front poles are more easily torn. As a result of these factors the frontal and temporal lobes are the most frequent site of injury; injuries of the back of the head have a large percentage of contrecoup bruises; of the sides, the next largest percentage of contrecoup bruises; and injuries of the front are more frequently associated with large direct bruises than with large contrecoup bruises.

DEGREES OF BRAIN INJURY

That the degree of brain injuries may be indicated in some way, they are roughly divided into seven groups, according to severity:

1. Severe lacerations of the brain from 4 to 6 cm. in diameter and extending into the brain 4 or 5 cm. Here there is a defect in the surface filled with clotted blood and torn brain tissue. There were fifty-four injuries of this type, and in fifteen the tear had extended into one of the lateral ventricles (Figs. 14 and 22). In thirty-nine of the fifty-four, bleeding continued intracerebrally for a few centimeters, so that in places on some of the surfaces made by coronal sections of the brain beyond the margins of the bruises of the outside there were hemorrhages inside of the brain not connected with the surface (Figs. 12, 13 and 14). Thirty-six of the latter occurred in the frontal or temporal lobes, three in the occipital lobes, usually with severe injuries (street car, automobile, high falls, etc.). There were subdural hemorrhages with all fifty-four injuries, weighing from 10 to 220 gm. All except eight were contrecoup injuries.

2. Bruises of the brain, usually wedge-shaped, in which the brain is infiltrated with blood from 2 to 4 cm. deep in a place 4 or 5 cm. in the largest outside dimensions (Figs. 25, 30 and 32). The leptomeninges covering the bruise are usually torn, the brain is lacerated from 1 to 2 cm. deep, the adjacent tissue is thickly infiltrated with blood, and the margins are edematous and dotted with petechial hemorrhages. Subdural hemorrhage is always present, but in amounts varying from a few grams up to 100 gm. Bruises of this type were the most frequent of all of the larger bruises. There were 248 in this series: 182 contrecoup and sixty-six direct.

3. Bruises, frequently with the leptomeninges intact, from 1 to 1.5 cm. deep, with little laceration of the brain tissue. There is generally hemorrhage into the brain, wedge-shaped on cross-section (Figs. 11, 16, 24, 25, 27 and 28). These are found with cranial fractures in which the trauma is usually of such a degree as might result from a short fall on a side-walk, floor, etc. They are also frequently associated with the severe injuries, mentioned above, that is, with a blow on the back of the head on the right side the large bruise will be of the left frontal or temporal lobe, while one of these more superficial bruises will be found of the right frontal and



Fig. 3.—As the arches come together at the body of the sphenoid bone they are curled up at their ends; because of this, fractures radiating down into the base of the cranium course toward the body of the sphenoid bone, as shown in many of the illustrations.



Fig. 4.—The fractures shown in this illustration and in Figures 5 6 and 7 may be taken as "composites," that is to say, they represent conditions with extension from the vault down into the different fossae. (Figures 1, 3, 4, 5, 6 and 7 are taken from LeDentu, A., and Delbet, Pierre: Nouveau traité de chirurgie, XIII. Auvray, M.: Maladies du crâne et de l'encéphale, Paris, 1909.)

temporal lobes or of the right side of the cerebellum (Figs. 11, 24 and 25). This type of injury was present with about 35 per cent. of all the fractures. In only fifteen when these were the largest bruises present were there subdural hemorrhages with clots weighing more than 10 gm., and in only two did they weigh as much as 90 gm.

4. Superficial contusions represented by closely set petechial hemorrhages of the cortex in places from 1 to 1.5 cm. in diameter (Figs. 21, 24, 27 and 32). The meninges are intact and usually there is a little bleeding into the leptomeninges about the contusion. One or more of these contusions is usually present when the brain is severely injured, oftentimes five or six. Like those in Class 3, they are in those parts of the brain some distance away from the direct line of force (Figs. 16, 21 and 24). Some of them were the only gross evidence of direct injury of the brain.

5. Hemorrhages into the pons and medulla, chiefly the pons, centrally located, often multiple and the individual hemorrhages from 1 to 3 mm. in diameter (Fig. 18). These are usually contrecoup in location, that is to say, the fractures do not course through the bones adjacent to the brain-stem. The explanation of these hemorrhages is variously stated: contrecoup bruising, stretching of the brain away from the brain-stem because the former is more movable, and interference with the blood supply of the pons and medulla (infarction).[2]



Fig. 5.—Composite fracture.



Fig. 6.—Composite fracture.



Fig. 7.—Composite fracture.

There were eighteen brains with hemorrhages in the brain-stem with fractures of the posterior fossae: in thirteen multiple, and in five a single hemorrhage from 2 to 4 mm. in diameter. In thirteen of the 166 fractures of the middle fossae, there were hemorrhages in the pons; ten of these patients lived less than one day, one three days, one seven days and one ten days. There were three with fractures of the frontal fossae, and all were associated with extensive injury of the brain. There were brain-stem hemorrhages in eighteen of the fifty extensively comminuted fractures; twelve with the violence applied behind, five of the side and one of the front of the skull. In the forty-nine fractures of the vault, there were hemorrhages in the brain-stem in five, and none of these patients lived longer than one day in the hospital.[3]

6. Small intracerebral hemorrhages, usually in the cerebral basal ganglions, from 5 to 10 mm. in diameter. There were only six of these in the 504 fractures of this series (Fig. 18).

7. Small intracerebral hemorrhages about 1 cm. in diameter, usually single, occurring when an extradural blood clot compresses one of the hemispheres. They are always in the compressed hemisphere. They were present with only four of the 104 large extradural hemorrhages (Fig. 30).

2. Greenacre, Phyllis: Multiple Spontaneous Intracerebral Hemorrhages, a Contribution to the Pathology of Apoplexy. Bull. Johns Hopkins Hosp. **28**: 312, 1917.

3. With some of these hemorrhages, sugar is found in the urine, as it is also with large spontaneous (apoplexy) hemorrhages in the pons.

INCIDENCE AND NATURE OF BRAIN INJURIES

Brain Injuries with Fractures of the Posterior Fossae.—In 149 (83.70 per cent.) of the 178 fractures, the largest bruise of the brain was contrecoup, in sixteen (8.98 per cent.) direct; and in three both the contrecoup and direct bruises were of equal extent. In the remaining ten the brain injury was slight. When the fracture was near the midline, the bruising was usually fairly symmetrical of each frontal lobe at the tips, lower outer margins and of the tips of the temporal lobes (Figs. 20, 21 and 22). With the fractures coursing more outward from the midline and forward in the posterior fossae, the contrecoup bruises were chiefly of the opposite side of the brain (Figs. 10, 11, 12 and 13). As a rule with the violence applied close to the back of the ear, the frontal and temporal lobes on that side were little if any bruised. In 159 of this 178 (89.32 per cent.), one or both frontal lobes bore bruises, tears or both; in 120 (67.41 per cent.), the temporal lobes had so suffered; in sixteen (8.98 per cent.), the occipital lobes; and in fifty-five (30.89 per cent.), the cerebellum. As already stated, the injuries of the frontal and temporal lobes were chiefly of their frontmost convolutions, undersurfaces and lower convolutions; but with the point of injury high on the back of the head, the undersurfaces of these parts of the cerebrum were chiefly bruised; with the injury at the level of the external occipital protuberance, the contrecoup bruises were chiefly of the frontal poles of the cerebrum; if at some distance from the midline, the outer margins of the opposite frontal or temporal lobes were chiefly bruised; in short, there has not been observed any noteworthy deviation from the directly opposite location of the contrecoup bruising of the brain which is such a conspicuous and important feature of the lesions accompanying the fractures.

Brain Injuries with Fractures of the Middle Fossae.—In 103 (62.04 per cent.) of the 166 fractures, the largest bruises of the brain were contrecoup, in forty-three (25.90 per cent.) direct. In the remaining twenty the brain injury grossly visible was only slight leptomeningeal hemorrhage of about equal extent on the two sides of the brain, except in a few brains which were without gross injury. In seventy (42.16 per cent.) of this 166, one or both frontal lobes bore bruises, tears or both; in 146 (87.94 per cent.), one

or both temporal lobes; in thirty-eight (22.89 per cent.), the parietal lobes; in fifteen (9.03 per cent.), the occipital lobes, and in ten (6.02 per cent.), the cerebellum. The bruises of the frontal lobes were mostly of the outer margin and undersurface. In only a few instances were the bruises of the frontal lobes deep, and then the external injury was of the back half of the parietal region of the opposite side. The bruises of the temporal lobes were preeminently of the outer margin and undersurface, depending on whether the violence was applied low or high on the vault, respectively (Figs. 23, 24, 26 and 27). One or both of the temporal lobes were bruised whenever the brain was injured.

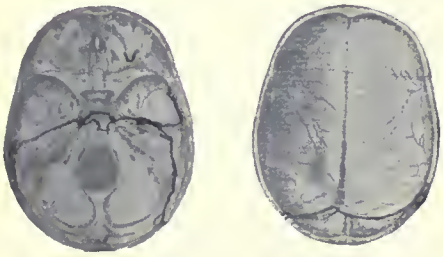


Fig. 8 (Case 23).—An extensive, traumatic, comminuted fracture of the cranial bones with an independent fracture of the roof of the right orbit. The fracture is 53 cm. long. The scalp was bruised opposite the right mastoid region. This man, aged 52, was struck by a street car six hours before death.

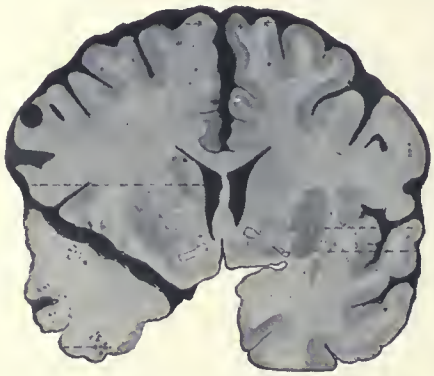


Fig. 9 (Case 23).—Extensive traumatic leptomeningeal hemorrhage due to extension from contrecoup bruises of the frontal and left temporal lobes.

Bruises of the Brain with Fractures of the Frontal Fossae.—In thirty-five (57.37 per cent.) of the sixty-one, the greatest bruising of the brain was direct, in thirteen (21.31 per cent.) contrecoup. In forty-four (72.13 per cent.), the frontal lobes were bruised or torn; in seventeen (27.70 per cent.), one or both temporal lobes; in three (4.91 per cent.), one or both parietal lobes; in nineteen (31.14 per cent.), one or both occipital lobes; and in eleven (18.03 per cent.), the cerebellum. In thirteen brains there was no gross evidence of injury, and in thirty-seven of the sixty-one fractures the brain injury was slight (or no injury was present), death resulting from other causes (in nine, from meningitis; in eight, from delirium tremens; in six, from broken bones; in five, from epilepsy; in two each, from bronchopneumonia and internal injuries; and in one each, from uremia, tetanus, drowning, syphilis and so-called pachymeningitis hemorrhagica interna).

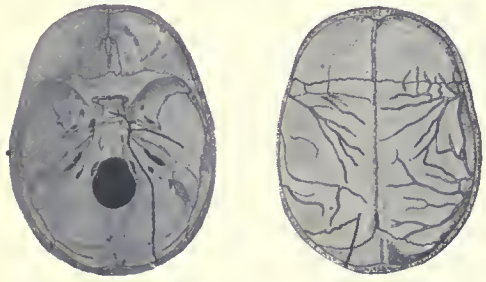


Fig. 10 (Case 24).—Typical linear fracture of the right posterior fossa resulting from the patient's falling backward and striking the back of the head on a cement floor. The patient was a white man, aged 45.



Fig. 11 (Case 24).—The location of the contrecoup tears of the left frontal and temporal lobes (Class 1), the superficial contusion of the right frontal lobe (Class 3) and the extent of traumatic leptomeningeal hemorrhage. The front half of the left cerebral hemisphere was covered by a subdural clot, and at the tears the clot was from 8 to 10 mm. thick. Altogether the subdural clot weighed about 25 gm.

Brain Injuries with Extensively Comminuted Fractures of the Cranium.—The greatest bruising of the brain in thirty-one (62 per cent.) of the fifty was contrecoup; in fourteen (28 per cent.), direct; and in five, both the contrecoup and direct bruises were equally severe. In only two of the fifty brains were the injuries slight, consisting of direct leptomeningeal hemorrhage. The point of external violence was used in deciding whether the bruising was contrecoup or direct, because some of the fractures encircled the skull, and especially through the middle fossae. In thirty-nine of the fifty (78 per cent.), one or both frontal lobes were bruised or torn; in thirty-seven (74 per cent.), one or both temporal lobes; in seven (14 per cent.), one or both parietal lobes; in eight (16 per cent.), one or both occipital lobes; and in sixteen (32 per cent.), the cerebellum. Of the twenty-seven fractures in which the violence was applied behind, the contrecoup bruising was greatest in fourteen; in four, direct; in eight, chiefly contrecoup; but the direct bruises were also large, and in one there was little injury of the brain. Of the nineteen with the violence applied to the side of the skull, in nine the contrecoup bruising was greatest, in five, direct, and in five chiefly contrecoup; but the direct bruises were also large. With the external violence applied in front, the direct bruises were greatest in three of the four, and in one the brain injury was slight.

Brain Injuries with Fractures of the Vault.—In thirty-nine (79.59 per cent.), the greatest bruising was contrecoup; in nine (18.36 per cent.), direct; and in one, the brain injury was slight. In eight of the thirty-nine brains, the contrecoup bruising was only slightly greater than the direct. The frontal lobes were bruised or torn in thirty-nine (79.59 per cent.) of the forty-nine fractures; the temporal lobes in thirty-three (67.34 per cent.); the parietal lobes in sixteen (32.65 per cent.); the occipital lobes in nine (18.36 per cent.), and the cerebellum in six (12.24 per cent.). The contrecoup bruises were mostly of the undersurfaces of the frontal and temporal lobes, usually with many contusions of the type included in Class 4 (Figs. 31 and 32).

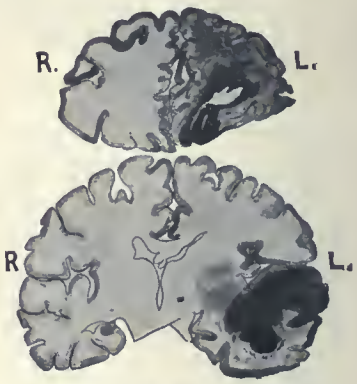


Fig. 12 (Case 24).—Coronal sections (anterior surface) through the frontal and temporal lobes, showing the depth of the contrecoup bruising (Class 7).

SUBDURAL TRAUMATIC HEMORRHAGES

Subdural traumatic hemorrhages result most frequently from lacerated cerebral veins where the brain is bruised. Also of importance are the bleeding, torn, cortical vessels. Infrequent sources of subdural hemorrhage are torn dural venous sinuses and the larger cerebral arteries of the base of the brain. In order to obtain facts for a better understanding of the location and extent of subdural hemorrhages, as much of the blood as could readily be removed from the torn brain without further injury was weighed, its distribution measured and the injury described, all with some accuracy.

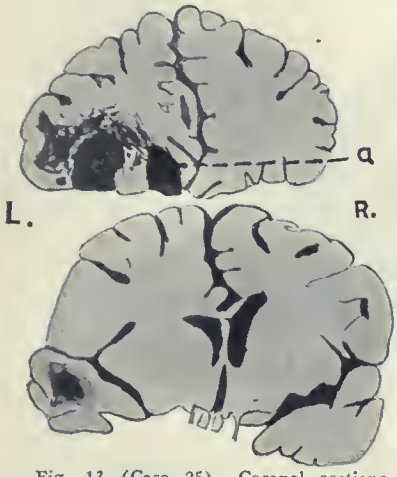


Fig. 13 (Case 25).—Coronal sections (posterior surface) through the frontal and temporal lobes, showing contrecoup bruises of the left frontal lobe (Class 1), and intracerebral bleeding back into the left temporal lobe.

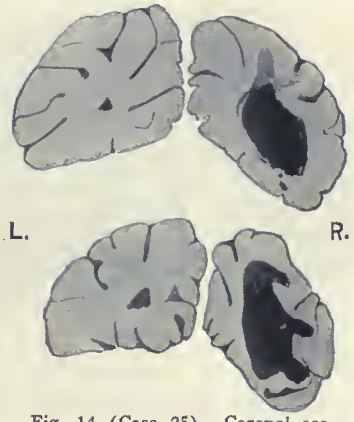


Fig. 14 (Case 25).—Coronal sections (posterior surface) through the occipital lobes. The bruise of the outside could not be seen from the undersurface with the cerebellum attached (Class 1), and both intracerebral bleeding beyond the margins of the bruise and rupture into a ventricle.

Subdural Hemorrhages with Fractures of the Posterior Fossae.—Examinations were made in 136 of the 178 fractures of this group. In 115 of the 136 there was subdural hemorrhage, 104 contrecoup and eleven direct. In seventy-one of the 115 the blood weighed between 20 and 210 gm., but the most frequent weight of these large clots was about 40 gm. In the remaining forty-four there were usually only a few grams (from 1 to 10 gm.), and in a few from 10 to 20 gm. Of the large subdural hemorrhages, fifty-four were local, that is, confined to the front third or front half of the cranial cavity; seventeen were more widely spread over one side of the cerebrum.

Of these large hemorrhages, sixty-six were located altogether on one side. Two of the large subdural hemorrhages were contributed to by tears of large cerebral veins without severe injury to the brain.

Subdural Hemorrhages with Fractures of the Middle Fossae.—Examinations were made in 134 of the 166 fractures of this group. In ninety-eight there was subdural hemorrhage. Of these, in fifty-one the blood weighed between 20 and 310 gm., in the other forty-seven much less. In sixty-three the subdural hemorrhage was contrecoup, in thirty-five, direct. Of the large subdural hemorrhages, thirty-six of the fifty-one were contrecoup, and fifteen, direct. Also, thirty-one of the large subdural hemorrhages were local, and twenty widely spread. The small subdural hemorrhages were only a few millimeters thick and extended from 1 to 10 mm. beyond the margins of the bruise from which the bleeding occurred. With increasing size, the subdural hemorrhages spread mostly up over the parietal lobe, the front margin advancing less than the upper and back margins.

Subdural Hemorrhages with Fractures of the Frontal Fossae.—In twenty-one of the forty-eight accurately described cranial injuries in this group there was subdural hemorrhage, and of these twenty-one, thirteen were direct and eight contrecoup. There were only six large subdural hemorrhages, five direct and one contrecoup, the latter beneath the tentorium cerebelli.

Subdural Hemorrhages with Extensively Comminuted Fractures.—In forty-three of the fifty fractures in this group, accurate records of the subdural hemorrhage or its entire absence were made. There were subdural hemorrhages in thirty-six, twenty large and sixteen small. Eighteen large subdural hemorrhages were contrecoup, and only two direct. Twelve small hemorrhages were contrecoup and four direct. In several cases there were both direct and contrecoup subdural hemorrhages.

Subdural Hemorrhages with Fractures of the Vault.—There were subdural hemorrhages in thirty-eight of the forty accurately described brains; twenty-eight of these were large and ten small. All but three of the large subdural hemorrhages were contrecoup, and fourteen of the large hemorrhages were local.

TRAUMATIC EXTRADURAL HEMORRHAGES

Bleeding, which splits the dura away from the cranial bones as a result of fracture, may result from laceration of the trunk or branches of one of the middle meningeal arteries, the dural venous sinuses, the cerebral veins at the point of entrance into the superior longitudinal sinus, tears of the dura allowing free subdural blood to enter the extradural space, from the broken cranial bones, or from pericranial hemorrhages with comminuted depressed fractures.

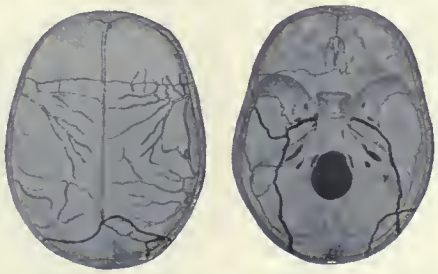


Fig. 15 (Case 26).—Extensive, traumatic, comminuted fracture of the cranial bones, 55.9 cm. long. The cause of the fracture was undetermined. The scalp bruises were opposite the lambda. The patient was a white man, about 35 years of age.

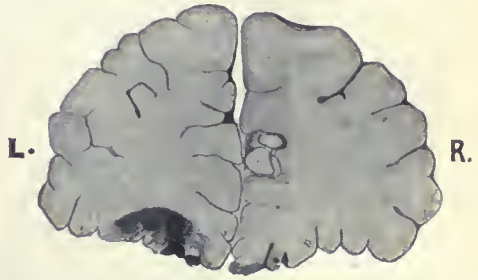


Fig. 16 (Case 26).—Coronal section (posterior surface) of the frontal lobes. Contrecoup bruises of Class 3 of the left frontal lobe and Class 4 of the right frontal lobe are shown here.

There were extradural hemorrhages in 199 (39.48 per cent.) of the 504 fractures in this series. Of these 199, 104 (52.26 per cent.) were large enough to produce appreciable compression of the brain (from 20 to 246 gm.) and ninety-five were small, usually only a

few grams. Of the large extradural hemorrhages, seventy-three (70.19 per cent.) were with fractures of the middle fossae; fifteen (14.42 per cent.) with fractures of the posterior fossae; ten (9.61 per cent.) with fractures of the vault; three (2.88 per cent.) each with fractures of the frontal fossae and fractures listed as extensively comminuted. About 50 per cent. of the small extradural hemorrhages resulted from bleeding of the broken bones, and 20 per cent. from torn dural sinuses. The remainder were probably due partially to bleeding from broken bones and from pericranial hemorrhage.

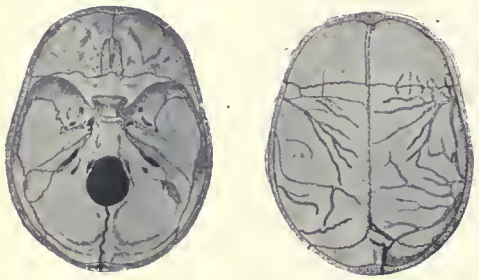


Fig. 17 (Case 27).—Healing, traumatic fracture of the skull of undetermined cause, in a negro, aged 40. This illustrates the course of many fractures of the posterior fossae.



Fig. 18 (Case 27).—Typical traumatic hemorrhage (*a*) in the pons (Class 5), and (*b*) traumatic hemorrhage of the intracerebral type (Class 6), usually in the cerebral ganglions.

Of the large extradural hemorrhages, forty-nine covered the temporal and parietal lobes on one side, thirty-four the temporal, parietal and occipital lobes on one side, fourteen one occipital lobe, six the frontal and parietal lobes on one side, and one the temporal and parietal lobes of both sides. Of these large hemorrhages, forty-nine were attributed to bleeding from the anterior branch of one of the middle meningeal arteries, forty-four from one of the posterior branches, three to laceration of the superior longitudinal sinus (the blood in two weighed between 25 and 30 gm., in the third about 60 gm. on each side, that on the left removed by the surgeon) and eight, in which there were fractures of the posterior fossae, from one of the transverse sinuses, the blood in none of the latter weighing more than 50 gm. Thirty-six of the large extradural hemorrhages were with fractures of the middle fossae passing through the anterior parts of the fossae in the squamous portions of the temporal bones, and thirty-seven with fractures that passed through the middle and posterior portions of the fossae. Comminution of the bones in the middle fossae occurred in less than half of the seventy-three large extradural hemorrhages; most of the fractures were of the linear type. Fifty-four of the large extradural hemorrhages were on the left side, forty-nine were on the right side, and one was on both sides.

The usual shape of the blood clot of the large compressing type is oval, the margins thinnest and the center thickest. The long dimension is obliquely directed up and back. The lower border is seldom lower than the middle temporal convolution, and the upper border is usually 1 or 2 cm. from the superior longitudinal sinus (only in six instances did the clot reach to the sinus). The thickest portion of the clot is usually at the middle of the outer surface of one of the parietal lobes so that the greatest compression of the brain is in a line drawn horizontally through the middle of the parietal eminences. The compression of the brain is saucer-shaped (Fig. 30). The blood clots early, so that with death one or one and one-half days after the injury the clot adheres to the dura, when the calvarium is removed, rather than to the bones. Later the clot becomes so adherent that it is necessary to use the sharp edge of a knife to detach it. The average dimensions of a clot weighing about 100 gm. (this is an average weight) are 10 by 8 cm. and from 3 to 3.5 cm. thick.

In nine of the large extradural hemorrhages caused by fractures of the middle fossae, there was no bruising of the brain grossly visible; in thirty-three there were only superficial bruises like those included in Class 3 of brain injuries; in twenty-five there was sufficient bruising to allow from 5 to 20 gm. of blood to enter the subdural space, and in six there were large subdural clots weighing from 40 to 120 gm. In none of the fifteen large extradural hemorrhages resulting from fractures of the posterior fossae was the brain without bruises, and in thirteen there were large bruises, contrecoup, and in the other two like those of Class 3. There were bruises of the brain in the remainder of the large extradural hemorrhages, frequently like those of Class 2. The proportion of contrecoup and direct bruises was approximately the same in fractures with large extradural hemorrhages as with the fractures without such hemorrhages.

There were decompression operations in twenty-three of the large extradural hemorrhages, in some with free blood still present at the time of the postmortem examination in and beneath the decompression defect, and weighing from 60 to 120 gm. There were several decompression operations not included in these twenty-three in which the conditions postmortem precluded conclusions as to whether a large extradural clot was present before the operation; and for these no mention of a large extradural hemorrhage was made in the description of the operation by the surgeon. Sixteen of the twenty-three operations were with fractures of the middle fossae, three with fractures of the

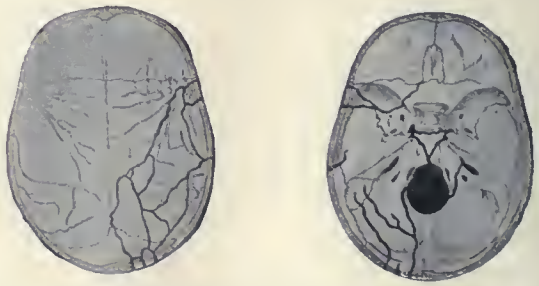


Fig. 19 (Case 28).—Extensive comminuted, traumatic fracture of the cranial bones, 138.9 cm. long, in a white man, aged 52, who, while in the bospital suffering from chronic alcoholism, jumped from a second story balcony to the main floor and struck the cement floor head first. There were superficial contrecoup contusions of the brain (Classes 3 and 4) and moderate leptomeningeal hemorrhage. Death occurred in five minutes.

posterior fossae, three with fractures of the vault, and one with an extensively comminuted fracture.[4]

TRAUMATIC LEPTOMENINGEAL HEMORRHAGE

Bleeding into the subarachnoid space or between the brain and pia (subpial) occurred in about 95 per cent. of all the fractures. Subarachnoid hemorrhage results most frequently from bleeding of bruises of the brain, but also from rupture of leptomeningeal vessels. Subpial hemorrhage results from tears of the pial arteries and cortical vessels. Subpial hemorrhage is seldom as extensive as subarachnoid hemorrhage, and is usually only enough to discolor the surface of the brain pink.

The extent and amount of subarachnoid hemorrhage is dependent on the size of the tear of the arachnoid membrane at the bruise (with large defects, bleeding occurs more readily into the subdural space[5] than with smaller defects in which the margins of the bruise extend beyond the edges of the arachnoid tear), the bruise of the brain and the laceration of leptomeningeal vessels. Therefore, the amount of subarachnoid hemorrhage is not always proportional to the extent of the bruising of the brain. It is always thickest about the margins of the bruises and gradually thins out centrifugally, sometimes covering an entire hemisphere. When extensive, from 1 to 3 mm. thick, the convolutions of the brain are hidden. When less extensive, the sulci stand out as a network because the blood tends to collect in them, and between them the convolutions form a pink meshwork. When slight, the convolutions are discolored pink ("traumatic lividity"). Although severe brain injuries and extensive leptomeningeal hemorrhage are frequently coincident, still there were a few extensively comminuted fractures associated with superficial bruises of the brain but with extensive leptomeningeal hemorrhage, and with some of these death occurred abruptly—from within a few minutes to several hours (Fig. 9).

The location of leptomeningeal hemorrhages corresponds in general to that of bruises in the various types of fractures.

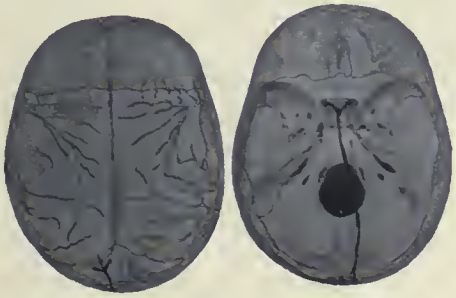


Fig. 20 (Case 29).—Typical linear fracture of the midline of the posterior fossae, 21.2 cm. long. The patient, a white woman, aged 38, died about four days after falling down a flight of stairs.



Fig. 21 (Case 29).—The location and extent of the contrecoup tears (Class 1) of the frontal lobes (*a*) with rupture of the lateral ventricles, contusions (Class 4) of the temporal lobes (*b*) and traumatic subpial hemorrhage (*c*). A thin layer of clotted blood in the subdural space covered the entire brain, and at each tear there were about 5 gm. Altogether the subdural clot weighed 23 gm.

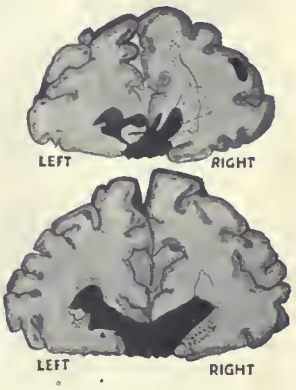


Fig. 22 (Case 29).—Coronal sections (posterior surface) through the frontal lobes, showing the depth of the tears and the petechial hemorrhages and edema of the surrounding brain tissue.

TRAUMATIC EDEMA OF THE BRAIN

The most frequent change in brains of patients dying from fracture of the skull was traumatic edema of the brain, and it was the only change sufficient to explain death in a few cases. As in other forms of edema of the brain, the convolutions are flattened, the cerebral veins relatively empty and flattened, the peripheral ends of the sulci closed up more or less tightly, the fluid in the leptomeninges greatly lessened; and when the edema is marked, the visceral layer of the arachnoid is almost dry when the dura is first removed, and by reflected light this surface of the arachnoid is finely granular because the little moisture present is heaped up by separating the two serous surfaces into almost microscopic droplets.

REPORT OF CASES

The failure on the part of police officers and physicians to recognize the presence of fractures of the cranial bones and severe brain injury, or to recognize these injuries only after several hours, requires some comment. Some of the cases reported concern the transfer of patients with fracture of the cranial bones from one hospital to another, in a few even after the nature of the injury was known.

CASE 1.—A man, aged 45, who had fallen on a sidewalk, was taken to a police station and remained there from 11 p. m. until 12:15 p. m. the next day, when he was taken to the Cook County Hospital, where cerebral hemorrhage, left sided hemiplegia and basal skull fracture were diagnosed. He lived forty-five hours in the hospital.

Postmortem examination revealed a fracture of the right side of the vault, 17 cm. long, below this an extradural clot weighing 118 gm., covering the right motor region, and superficial direct contusions of the right cerebral hemisphere. The only external sign of injury was a bruise of the scalp about the right ear.

CASE 2.—An adult negro, after a street fight, while intoxicated, fell to the sidewalk and was taken to a police station, where he remained about twelve hours, lying on a cement floor. The following morning he was taken home, and then worked for three days as a porter in a saloon. On the fourth day he became "dopy" and was taken to the Cook County Hospital, where cerebral hemorrhage and lacerated scalp were diagnosed. He lived eleven days in the hospital, and five days passed between the time of injury and the entrance to the hospital.

Postmortem examination disclosed a fracture of the left half of the posterior fossa, 8 cm. long, contrecoup contusions of the frontal and temporal lobes, that of the right frontal 5 cm. deep, a huge subdural blood clot weighing 120 gm. of the front half of the right subdural space (brown and clotted firmly), and a healing laceration of the scalp near the inion.

CASE 3.—A man, aged 37, walked into a police station at 9 p. m., supposedly drunk. The next morning at 10:30 a. m.

4. Although the period of time covered in the two articles is the same, a little discrepancy exists between the figures regarding extradural hemorrhages by us and the figures of Dr. Moody (THE JOURNAL, this issue, p. 511). This is due to the inclusion here of cases from the Hospital of the House of Correction.

5. Strictly speaking, the term "subdural space" is a misstatement because the inside of the dura is lined with the smooth, glistening parietal layer of the arachnoid, and for "subdural space," which is commonly used, there should be substituted "arachnoid space."

he was taken to the Cook County Hospital, where he lived two and one-half days, cerebral hemorrhage and lobar pneumonia being diagnosed.

At the postmortem examination a fracture of the right half of the posterior fossa, 32.8 cm. long, extensive destruction of the tip of the right frontal lobe, 3 cm. deep, and a thin clot of blood in the subdural space covering the whole right hemisphere, but chiefly in front, were found. There was no sign of external injury of the scalp.

CASE 4.—A man, aged 50, fell down a flight of stairs about 1 a. m. and arrived at one police station at 2 a. m. the same day, where he remained for twenty minutes and was then taken to another police station for medical care, remaining there until 8:40 a. m. the same morning, when he was taken to the Hospital of the House of Correction. Skull fracture was diagnosed and two decompression operations performed, one of each parietal region. He lived for three and one-half days in the hospital.

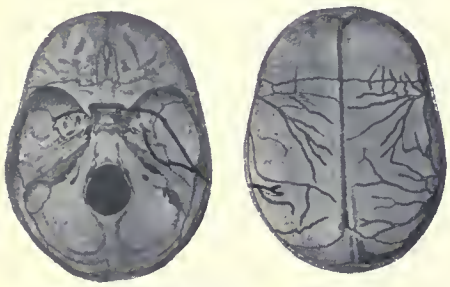


Fig. 23 (Case 30).—Traumatic, slightly depressed fracture of the skull, 19.5 cm. long. On the right side in the parieto-occipital region there was an extradural clot, 9 by 7 by 1 cm. in its largest dimensions, and weighing 40 gm. The patient, a white boy, aged 14 years, was struck by an automobile seven and one-half days before death.

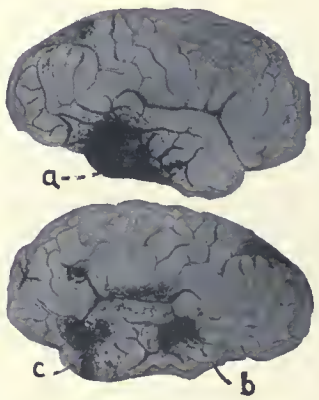


Fig. 24 (Case 30).—A direct bruise at *a* (Class 2) under the depressed fracture, a contrecoup bruise at *b* (Class 3), and superficial contusions at *c* (Class 4). About the bruises there was leptomeningeal hemorrhage. There were several grams of blood subdural about the tear of the right temporal lobe, but none on the left side.

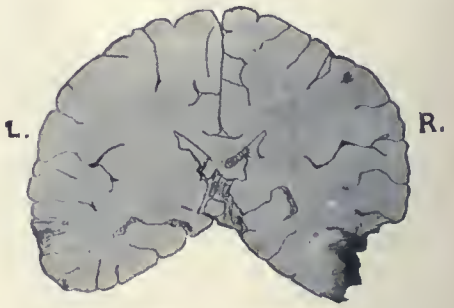


Fig. 25 (Case 30).—Coronal section (posterior surface) through the temporal lobes, showing the depth of the direct and contrecoup bruises.

Postmortem examination revealed a linear fracture of the left posterior fossa, 9 cm. long, contrecoup bruises of the frontal and temporal lobes, that of the right frontal lobe being deepest, reaching to the lateral ventricle, a thin subdural clot covering the front half of the right cerebral hemisphere, and an extradural clot weighing 40 gm. in the operation defect of the left parietal region.

CASE 5.—A man, aged 22, after an unknown injury, and supposedly suffering from alcoholism, was taken to a hospital where he remained one day before skull fracture was suspected, after which he was taken to the Hospital of the House of Correction, where he lived two days. Skull fracture was diagnosed and a decompression operation of the left parietal region was performed.

Postmortem examination revealed a fracture of the left posterior fossa, 34.8 cm. long, contrecoup bruises of the right frontal and temporal lobes, and a direct bruise of the left half of the cerebellum, a large subdural clot on the right side in the front half, an extradural clot filling the decompression bone defect and a bruise of the scalp behind.

CASE 6.—A man, aged 35, arrested and taken to a police station, remained twelve hours, suffering from alcoholism and epileptic fits, according to the police officers. He was taken to the Hospital of the House of Correction, where he lived fifteen hours. Skull fracture was diagnosed.

Postmortem examination revealed an extensively comminuted fracture of the back and base of the skull, with diastasis of both lambdoid sutures, altogether 60 cm. long; also there were deep contrecoup bruises of the frontal poles, subdural clots covering both frontal poles, 30 gm. of blood in the decompression defect of the left parietal region, and bruises of the scalp behind.

CASE 7.—A man, aged 40, was arrested and taken to a police station on account of alcoholism; after remaining there twelve hours he was taken to the Hospital of the House of Correction, where he lived twenty-eight hours, and where a decompression operation of the left parietal region was performed.

Postmortem examination revealed a fracture of the right parietal bone, slightly comminuted and 17 cm. long, a large contrecoup bruise of the right frontal lobe, blood subdural in front on the right side weighing 110 gm., and bruises of the scalp over the fracture.

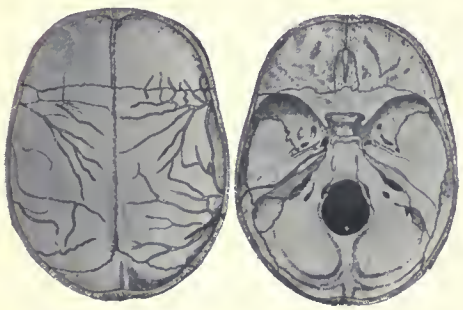


Fig. 26 (Case 31).—Linear fracture of the left middle fossa 9 cm. long. Three days and six hours before death this man, aged 42, fell while in a "fit," and struck his head on a cement sidewalk.

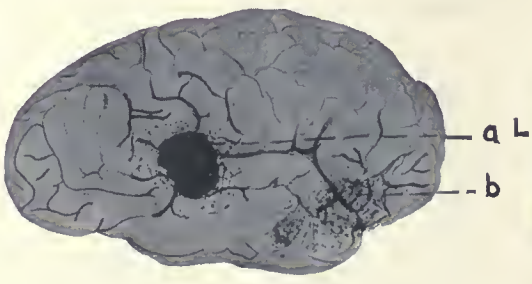


Fig. 27 (Case 31).—A contrecoup bruise at *a* (Class 3) and superficial contusions at *b* (Class 4), with subpial hemorrhage. There were 90 gm. of clotted blood in the subdural space on the right side covering the back half of the hemisphere. There was no bruising of the left cerebral hemisphere.

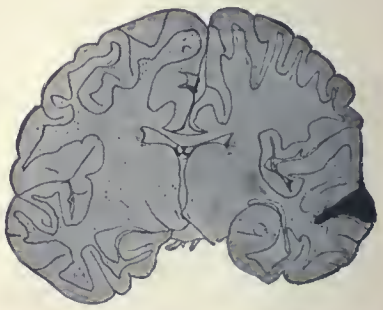


Fig. 28 (Case 31).—Coronal section (posterior surface) through the deepest part of the contrecoup bruise. The symmetry of the brain is due to compression by the subdural clot on the right side.

In these cases there was failure to detect the presence of a skull fracture, or the fracture was discovered only after hours or days had elapsed:[6]

CASE 8.—A man, aged 28, was knocked to the ground by a falling sack of malt weighing 200 pounds. He was taken home, where he remained three days. Several physicians

6. Such unfortunate occurrences as these are less likely to be repeated, since they led to the institution of observation rooms at the Cook County Hospital, adjacent to the admittance department, where patients are kept over night or until the presence or nature of injuries is definitely ascertained.

examined him but none of them suspected the presence of a fracture of the skull, and one sent him to the hospital for the insane, where he lived seven hours and fifty minutes. No diagnosis was made in the hospital.

Postmortem examination revealed a linear fracture of the right posterior fossa, 8 cm. long, contrecoup bruises of the right frontal and temporal lobes and of the left occipital lobe, 40 gm. of blood on the right side behind (extradural) and a bruise of the scalp at the inion.

CASE 9.—A man, aged 42, while intoxicated, was tripped by a boy, October 9, and taken to the Cook County Hospital, where acute alcoholism and alcoholic dementia were diagnosed, and where he remained until October 22, when he was sent to Oak Forest (an infirmary). October 24, he was readmitted to the Cook County Hospital and lived for two days. Skull fracture was diagnosed on the second entrance.



Fig. 29 (Case 32).—Traumatic, comminuted and depressed fracture of the vault and base of the skull with independent fractures of the frontal fossae; also a decompression defect in which five loose pieces of bone were found by the surgeon. The superior longitudinal sinus was ruptured, and extradural bleeding resulted on both sides; that of the left was removed at the operation, and 60 gm. were found on the right side at the postmortem examination. The patient, a white man, aged 25, lived eleven hours and thirty minutes after being hit on the left side of the vault by a heavy iron bar during a fight.

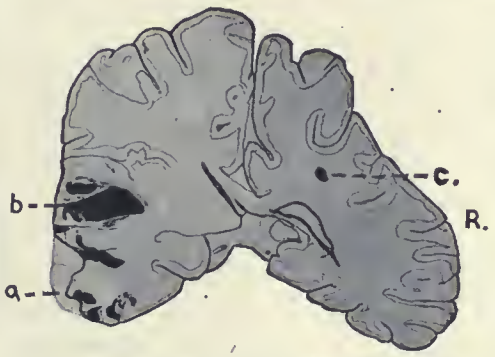


Fig. 30 (Case 32).—Coronal section (posterior surface) through the brain 1 cm. posterior to the optic chiasm showing a tear (Class 2) at *a*, intracerebral bleeding from a bruise anterior to *b*, and the saucer-shape compression of the right cerebral hemisphere by the extradural clot weighing 60 gm. Traumatic hemorrhage of Class 7 at *c*.

Postmortem examination revealed a comminuted fracture of the right posterior fossa through the right petrous bone, in addition to contrecoup bruises of both temporal lobes, that of the left, 9 by 3 cm., and reaching to the lateral ventricle, into which bleeding had occurred; also there was an extradural clot covering the right parietal lobe weighing 28 gm. There was no external sign of scalp injury. The extradural clots were brown and firmly clotted, the subdural mostly on the left side and weighing only a few grams.

CASE 10.—A man, aged 35, was struck by another man in a fight. It is not known whether the blow was struck with a fist or a weapon. He was examined by a physician immediately, who found "nothing wrong except complaint of headache." Suddenly, after two or three hours, he had a "fit" and was taken to the Hospital of the House of Correction, where he lived two days.

Postmortem examination revealed a depressed, comminuted fracture of the right temporal bone, 120 gm. of blood extradural on the right side in the parietotemporal region, and a superficial bruise of the outside of the right parietal lobe. There were no external injuries, only a swelling in the right temple.

CASE 11.—A boy, aged 8 years, run over by an automobile, November 9, was treated at home until November 28, when he was taken to a private hospital and epidemic meningitis diagnosed. The same day he was removed to the Cook County Hospital by request of the health department, where he lived two days, and epidemic meningitis was again diagnosed. No one suspected skull fracture.

Postmortem examination revealed a small fracture of the ethmoid plate, superficial contusions (mostly subpial hemorrhage) of the frontal poles and left occipital lobe, and meningitis of the base of the brain (pneumococcus). Above the left eyebrow there was a scar.

CASE 12.—A man, aged 37, was in a fight, December 26, and fell to the sidewalk. He was taken to a private hospital, where he remained four days and where laceration of the scalp was diagnosed. The physicians thought there was no skull fracture. He was discharged and went home, but, December 31, he suddenly became very sick and was taken to the Cook County Hospital, where he lived eighteen hours and where skull fracture was diagnosed.

Postmortem examination revealed a fracture of the midline of the posterior fossae, and through the right petrous bone; in addition there were also superficial contusions of the tips of the frontal lobes, meningitis of the base, and a healing laceration of the scalp at the inion.

CASE 13.—A man, aged 71, walked into a private hospital at 5:15 p. m. with lacerations of the back of the head, which were dressed there and which he did not know how he received. He walked out of the hospital. Two days later he was arrested and taken to the Hospital of the House of Correction, where he lived four days. Here he was irrational and unable to talk; alcoholism and delirium tremens were diagnosed.

Postmortem examination revealed a fracture of the left middle fossa, linear and 10 cm. long; also direct bruises of the left temporal and parietal lobes covered by adherent, brown subdural clots, weighing about 5 gm.

CASE 14.—A man, aged 48, fell from a moving wagon, January 20, and was taken home. On the 24th he went to a physician's office, and the physician thought he was suffering from alcoholism. He remained at home for three or four days more, wildly delirious and all this time in bed. He was then taken to the Hospital of the House of Correction, where acute alcoholism was diagnosed and where he lived two days.

Postmortem examination revealed a fracture of the midline of the posterior fossae, 39.2 cm. long, deep contrecoup bruises of the frontal and temporal lobes, large subdural clots about the bruises, an extradural clot in the left occipital region, and hemorrhages in the pons. There was extensive hemorrhage into the deep tissues of the scalp behind.

CASE 15.—A man, aged 45, was found on a sidewalk by the police at 1 a. m., was taken to the police station, where an ambulance surgeon diagnosed alcoholism, and where he remained until 2:40 p. m. the same day, when he was taken to the Hospital of the House of Correction. Here skull fracture was diagnosed, and he lived only thirty-five minutes.



Fig. 31 (Case 33).—Traumatic, extensively comminuted and diastatic fracture of the skull, 123 cm. long, with an independent fracture of the roof of the right orbit. The greatest scalp injury was over the back half of the right parietal bone. This man, aged 35, fell from a ladder head first, about two hours before death.



Fig. 32 (Case 33).—Multiple superficial, contrecoup contusions (Class 4) at *a*, a contrecoup tear of the undersurface of the left frontal lobe at *b* (Class 1), and a contrecoup bruise of the right frontal lobe (Class 2) at *c*. There were 190 gm. of blood in the left subdural space covering the entire left cerebral hemisphere, and only a few grams on the right side at *c*.

Postmortem examination revealed a fracture of the right middle fossa 18.5 cm. long, 200 gm. of blood extradural in the right temporoparietal region, superficial bruises of the outside of the right temporal lobe, and a thin clot of blood covering the right temporal lobe. There was no external sign of injury.

Case 16.—A man, aged 49, found on the street by the police at 1 a. m., was taken to the police station, where he remained four hours, and then to a private hospital, where a physician diagnosed skull fracture and alcoholism. He was then transferred to the Hospital of the House of Correction at 6 a. m., and died the same day at 7:40 a. m. Skull fracture was diagnosed in the latter hospital.

Postmortem examination revealed a fracture of the right posterior fossa and traumatic diastasis of the right lambdoid suture, altogether 24 cm. long, in addition to contrecoup bruises of both frontal and the left temporal lobes, all superficial except the latter, which reached to the lateral ventricle; there was blood in all of the ventricles of the brain. There was only a little subdural hemorrhage about the bruises. The scalp was lacerated at the inion.

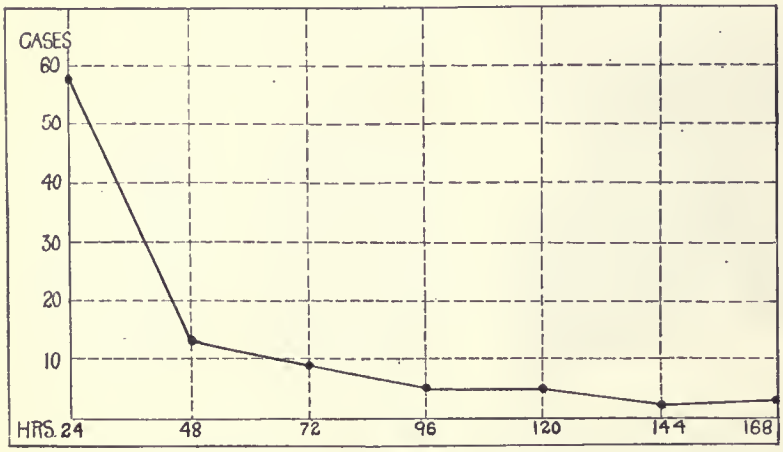


Fig. 33.—Time of death of ninety-five of the 104 patients dying with large extradural hemorrhages. Of the nine not shown in this graph, five were found dead and four died between the eighth and the twenty-second day after entrance to hospital. (Other details connected with some of these extradural hemorrhages, diagnosis, operations, etc., are given in the article by Dr. Moody.)

Case 17.—A man, aged 44, was arrested at 2 a. m. and taken to a police cell, where he remained until 11 a. m. the next day, the ambulance physician having diagnosed incipient delirium tremens. He became violent and was taken to the Hospital of the House of Correction, where he lived eighteen hours, and where delirium tremens was again diagnosed.

Postmortem examination revealed a linear fracture of the left lambdoid suture, right parietal bone and right middle fossa; there were also a contrecoup laceration of the left frontal lobe 4.5 cm. deep, a large subdural clot covering the top and side of the left frontal lobe, a small extradural clot in the right middle fossa, and hemorrhage into the right eyelid. There was no other sign of injury of the scalp, but in the deep scalp tissues of the right parietal region there was hemorrhage.

Case 18.—A man, aged 24, to escape the police, jumped off a train into the Drainage Canal. At the Hospital of the House of Correction, where he stayed one week, no diagnosis was made. At home he complained of headache, and after ten days was removed to Cook County Hospital, where purulent meningitis was diagnosed, and where he lived one day. Postmortem examination revealed a fracture of the ethmoid plate and sella turcica, superficial contusions of both frontal lobes, and meningitis of the base.

Case 19.—A man, aged 53, was found intoxicated by the police, 8:15 p. m., June 6; the police took him to a police station, where he fell on the floor; the wounds sustained were dressed at a private hospital, and he was again taken to the police station, where he remained until 11:30 p. m., June 7. He was then removed to the Hospital of the House of Correction, where he died, June 10, at 12 m. Basal skull fracture was diagnosed.

Postmortem examination revealed a fracture of the midline of the vault and posterior fossae, 50 cm. long; also there were extensive contusions of the undersurfaces of the frontal and temporal lobes of both sides, 16 gm. of blood subdural at the bruises, 30 gm. extradural along the superior longitudinal sinus, and meningitis of the left temporal lobe.

Case 20.—A man, aged 70, was arrested for acute alcoholism and kept in a police station for ten hours; then he was removed to the Hospital of the House of Correction, where he remained two days; lobar pneumonia and delirium tremens were diagnosed.

Postmortem examination revealed a fracture of the right middle fossa, 17.5 cm. long, a large laceration of the right parietal and temporal lobes reaching to the lateral ventricle, 75 gm. of blood outside the dura and covering the right parietal region, and extensive hemorrhage into the right side of the scalp behind.

Other cases, such as these, concern cranial fracture recognized by physicians, and the patients transferred from one hospital to another:

Case 21.—A man, aged 62, was run over by an automobile about one hour before entrance to a hospital, where he was given first aid; he was then taken to another hospital, where a decompression operation was performed above the right ear; here he remained for three or four days, and was then taken to the Cook County Hospital, where he lived three and one-half days and where old skull fracture, infected decompression wound and fractured ribs were diagnosed.

Postmortem examination revealed a fracture through the right petrous bone, 18 cm. long, superficial contrecoup bruises of the frontal and temporal lobes, fibrinopurulent meningitis of the top of the brain, and purulent ependymitis.

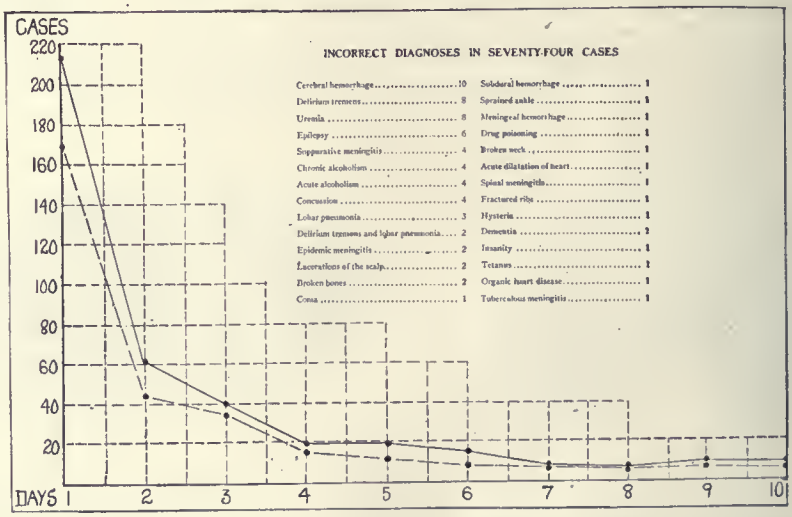


Fig. 34.—Time in twenty-four hour periods of death from fracture of the cranial bones and brain injuries of 403 of the 504 patients (upper line), and number of correct diagnoses during the same periods (lower line). The 101 remaining are not included because the time for eighteen of them was from eleven to twenty-two days, inclusive; twenty-seven had to do with persons found dead; for thirty-eight the records were incomplete; and eighteen concerned healed fractures. Any consideration of diagnosis must take into account the time under observation. Therefore, such charts as were used by Bissell and LeCount (A Consideration of the Relative Frequency of the Various Forms of Coma, The Journal, March 27, 1915, p. 1041; Feb. 17, 1917, p. 500) are continued here.

Case 22.—A man, aged 37, was struck by a street car at midnight, December 18, and taken to a private hospital, where skull fracture was diagnosed, and where he remained for five days. Because of inability to assure payment for hospital service, the patient was transferred to the Cook

County Hospital, where he lived until December 29, altogether eleven days.

Postmortem examination revealed a linear fracture of the midline of the base and left petrous bone, 38.5 cm. long; there were also lacerations of both frontal lobes, contusions of the temporal lobes and a direct bruise of the undersurface of the cerebellum, a few small subdural clots at the lacerations, and fibrinopurulent meningitis of the cerebellum.

TRAUMATIC FRACTURE OF THE CRANIAL BONES

CLINICAL CONSIDERATIONS, WITH ESPECIAL REFERENCE TO EXTRADURAL HEMORRHAGE *

W. B. MOODY, M.D.
CHICAGO

Between August, 1911, and June, 1918, 908 patients entered the Cook County Hospital for "skull fracture." This diagnosis was made certain for 547 of these either by operation or by postmortem examination. Fracture of the cranial bones was diagnosed by means of the roentgen ray for 105 others. The remainder (256) include patients whose illness and injuries were recovered from, and the conclusion that they also suffered from traumatic fracture of the cranial or other skull bones was not as adequately confirmed; for some small part of these, especially those in the hospital only a few hours, the diagnosis may

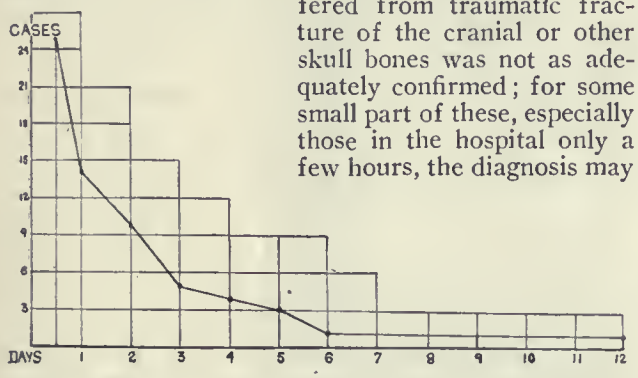


Chart 1.—Number of days under observation of sixty-three patients with extradural hemorrhage found at postmortem examination but not recognized clinically.

have been wrong. Postmortem examination was made in all deaths but sixty-two; in forty-one of these no fracture of the skull was actually demonstrated.

These considerations, as well as others shown in the accompanying table, are simply prefatory, since it is proposed to discuss here the extradural traumatic middle meningeal hemorrhages. Of the total 908 thought to be skull fractures (547 demonstrated as such), there were 100 with extradural hemorrhages of such size that compression of the brain by the blood was the chief cause of death. This condition was established for all the 100 patients either by operations, by postmortem examinations, or by both.

Diagnosis of traumatic extradural middle meningeal hemorrhage, found postmortem, was not made clinically in sixty-three instances. The time under observation of these sixty-three patients, whose compression of the brain was not recognized, is shown in Chart 1. It will be noted that twenty-four were in the hospital two days or more, the longest period for any single patient being twelve days.

Among other details regarding these extradural hemorrhages, shown in the table, is that all of the thirty-seven patients in whom the condition was recognized had a decompression operation. Of this number, twenty-six died, twenty-one being operated on within twelve hours after entrance to the hospital (Chart 2). The longest period any one patient was under observation before operation was seven days. Following operation, eighteen died within twenty-four hours, three inside of the next two days and one patient on the twenty-second day (lobar pneumonia).

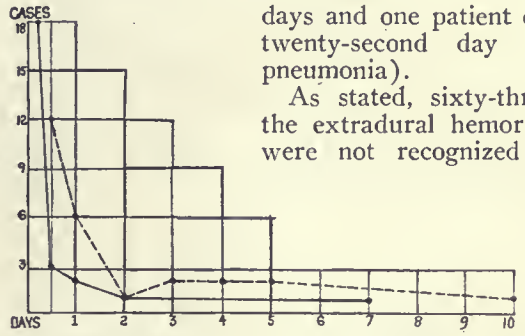


Chart 2.—Time under observation before operation (solid line), and time between operation and death (broken line), of twenty-six patients with extradural hemorrhages, diagnosed and operated on, one patient dying on the twenty-second day with lobar pneumonia is not represented.

As stated, sixty-three of the extradural hemorrhages were not recognized clinically. The maximum weight of the extradural blood found postmortem was 246 gm., the minimum, 40 gm., with an average of 110.5 gm. for the sixty-three. In the clinical records for all but two there were symptoms generally regarded as useful in the recognition of compression of the brain; nine patients had hemiplegia, nine rigidity of the muscles on one side, and nine had convulsions; in twenty-three there was a positive Babinski reflex, and in some of the sixty-three the symptoms were combined in various ways.

In general, the pulse at the time of entrance and for a short time afterward was full and strong, from 65 to 90, the temperature from 97 to 99 F. The most conspicuous features of pulse and temperature records, however, are that in the eleven recovering with decompression operation, the pulse and temperature were both lower than in other patients, and this pertains equally to conditions before and after operation.

FINDINGS IN FIVE HUNDRED AND FORTY-SEVEN CASES OF SKULL FRACTURE *

	Fracture Demonstrated	Fracture Not Demonstrated	Extradural Hemorrhage
Died (male)	407	34	77
Died (female)	37	7	12
Recovered (male)	94	285	10
Recovered (female)	9	35	1
Necropsies	423	...	85
Operated on and died	82	...	26
Operated on and recovered	55	...	11
Entered conscious	108	164	13
Entered unconscious	436	194	87
Convulsions	66	19	14
No clinical evidence of injury	80	55	17
Positive Babinski reflex	156	64	33
Patellar reflex absent	119	42	26
Patellar reflex exaggerated	103	59	26
Hemiplegia	49	7	21
Spasticity	31	7	15
Facial paralysis	36	19	8
Ptosis of eyelids	12	3	2
Clear cerebrospinal fluid (taken before death)	25	20	7
Meningitis	39	2	0
Bleeding from nose	163	107	24
Bleeding from mouth	59	43	6
Bleeding from ears	132	118	23
Eye reflexes normal	156	203	29

* In sixty-two deaths, no postmortem examination was made. In twenty-one of these, fracture had been previously demonstrated. Roentgenologic diagnosis of skull fracture was made in 133 instances, 105 not being subsequently confirmed (by operation or portmortem examination). There was no roentgenographic evidence of fracture of the skull in ninety-six instances. Seventeen of these were found at necropsy to be fracture.

* From the Cook County Hospital.

In twenty-seven of the clinical records blood pressure is recorded, without, however, anything of importance to comment on here because the observations were not repeatedly made for any single patient.

The other important features of these head injuries with one exception are indicated in the table. This exception concerns the records of blood examinations, and of all these 107 were found in the entire number (908). That there was an average leukocytosis of 15,300 apparently makes this condition of importance in the recognition of skull fracture. The number is so large that it is difficult to be accounted for by bronchopneumonia, and still less readily by meningitis; moreover, many of these blood examinations were made shortly after entrance.

POSTDIPHTHERITIC PARALYSIS

WITH REPORT OF TWO CASES *

SAMUEL W. BOORSTEIN, M.D.
NEW YORK

The most common form of polyneuritis encountered in children is diphtheritic paralysis. Not many of these patients, however, come under the observation of the orthopedic surgeon, because either the children recover without any treatment, or they are brought to him too late, just as the case used to be with patients with anterior poliomyelitis who were brought to him only after the deformities were marked. Thus, we do not have the frequent chance to see the proper benefit of early orthopedic treatment in diphtheritic paralysis. I am anxious to emphasize particularly the value of orthopedic treatment in relieving the distressing respiratory symptoms.

Diphtheritic paralysis occurs usually in the second or third week after the illness. The frequency of its occurrence after the injection of antitoxin is hard to state, while without antitoxin it occurs in about 5 to 15 per cent. of the cases.

A distinction may be made between a localized and a generalized paralysis. In localized paralysis the soft palate is usually involved. The palate alone may be involved or the muscles of the pharynx and larynx may also be paralyzed as well as the ocular muscles. Paralysis of the muscles of accommodation is present, but reaction to light remains. Paralysis of the pharyngeal muscles causes trouble in swallowing. There may be regurgitation of fluids through the nose caused sometimes by difficulty in swallowing and again by the entrance of food into the larynx, owing to anesthesia of the epiglottis and paralysis of the muscles of deglutition. The paralysis may involve the recurrent laryngeal muscles, causing hoarseness and aphonia.

In the generalized form, the extremities are next affected. In severe cases there may also be involvement of the muscles of the trunk and neck, and sometimes of the diaphragm. This distinguishes diphtheritic paralysis from other forms of multiple neuritis.

In cases in which the extremities are involved, there is at first weakness, followed by paresthesia and then pain. Then follow disturbances of movement, of sensation and of coordination. Walking is exceedingly difficult or impossible. Westphal's sign is always present, and Romberg's symptom frequently may be noted. There are disorders of function of the bladder and the rectum. Paralysis of the cervical muscles may be so complete that the head cannot be held upright.

Respiratory paralysis may be due to involvement of the phrenic or the intercostal nerves. It is shown by occasional attacks of dyspnea and coughing. As the diaphragm is usually affected, the breathing is entirely thoracic. The respiratory movements are rapid, but irregular, shallow and ineffectual. There is cyanosis. The anxiety, distress and apprehension of the patient are sometimes terrible. There is constant dread of impending suffocation.

PROGNOSIS

Duration of the affection depends on its severity and extent. A patient may recover from a slight localized paralysis in a few weeks. The severer form lasts for many months, even for a whole year. Recovery is, as a rule, to be expected, though often it is much delayed and frequently leaves deformities. The deglutition paralysis is quite serious. Respiratory paralysis, myocarditis and nephritis are annoying complications.



Fig. 1 (Case 2).—Position of collar. This photograph was taken after recovery.

TREATMENT

Strengthening the diet is an important factor in the treatment of this condition; hence the patient should be fed by a stomach tube if he is not able to eat. The injection of serum is of doubtful benefit. Absolute rest in bed is important, and early contractures should be prevented. Massage and exercise are urgently recommended.

REPORT OF CASES AND COMMENT

CASE 1.—*History.*—O. R., boy, aged 3 years, referred to me by Dr. Luttinger, Jan. 27, 1919, had had diphtheria four weeks before. No antitoxin had been administered, and paralysis of all four limbs developed two weeks after the attack.

Examination.—There was paralysis of all four limbs and of the neck. The patient appeared apathetic. There was a marked drooping of the head forward; the eyelids dropped; speech was distinctly nasal, and could not be understood at all. Respiration was thoracic, rapid, irregular and shallow. The patient could not sit up. There was marked interference with deglutition.

Treatment and Results.—After noting the interference with the pharyngeal muscles and fearing the stretching of the paralyzed neck muscles, I decided to apply something to prevent the stretching (devised on the same principle as apparatus used in anterior poliomyelitis or other forms of paralyzed muscles), and perhaps also to facilitate the respiratory difficulties. Remembering the principle of the Thomas

* Read before the Orthopedic Section of the Academy of Medicine, Oct. 17, 1919.

collar used to support the neck in cervical Pott's disease, I made a collar from thick felt, 1½ inches in thickness and rather solid, and applied it in the vertical position. The width of the collar corresponded to the distance between the chin and the sternum when the head was slightly hyperextended (Fig. 1). This piece of felt was enveloped in softer felt, one-eighth or one-sixteenth inch in thickness. The collar was put on, encircling the neck, and the ends were sewed together. To my great surprise the child began to breathe better immediately. I then strapped the feet to prevent drop foot, and ordered the patient to bed, leaving the general treatment to the family physician, Dr. Luttinger. He took a culture from the child's nose and found diphtheria bacilli still present. He administered immediately 20,000 units of antitoxin. In a week a spinal brace was applied, the collar was left on, and massage was ordered. Later on, exercises were added. The exercises were, of course, the ones used in anterior poliomyelitis. In one and one-half months the child made a perfect recovery.

Though diphtheritic paralysis is curable, considering the severity of the symptoms, I believe that the orthopedic treatments, especially the application of the collar, hastened the recovery. I do not believe that the antitoxin was responsible for the recovery, as most pediatricians admit the uselessness of antitoxin in such a late stage. I was, however, skeptical about the orthopedic treatments till I had a chance to treat the second patient, who presented very interesting features:

CASE 2.—*History.*—S. W., boy, aged 7, admitted to the medical service of Dr. T. F. Reilly, Fordham Hospital, April 25, 1919, had had diphtheria two months previous to admission. He had received 5,000 units of antitoxin on the second day after the attack. Six weeks later paralysis of both upper and lower extremities developed. The child could not speak or swallow, and had to be fed by a stomach tube for ten days.

Examination.—When I was called to see the patient, April 29, there were paresis of both upper extremities and almost complete paralysis of both lower extremities with a tendency to drop foot. Breathing was thoracic, superficial and shallow. The face was dull and apathetic. The head drooped forward and the child could not hold it in an upright position. The eyelids dropped. The patient could not speak. He was still being fed by the stomach tube. If liquids were taken, regurgitation through the nose occurred.

Treatment and Results.—Remembering the benefit derived from the felt collar in the first case, I applied a similar one to the second child. Plaster casts were applied to the feet at the same time. The child began to improve immediately. The sudden improvement brought great joy to the kind nurses of the children's ward, who had shown a devoted interest in the case. Within a few days the child took food himself and showed marked improvement in his speech. May 8, massage and exercises were ordered; May 15, the child was able to take a few steps when he was supported. The casts were removed, May 31. The child continued to improve and, June 30, he was discharged, entirely cured, without any deformity whatever.



Fig. 2 (Case 1).—Complete recovery. Note perfect symmetry of the face. Child is holding the brace which he was wearing before.

It was a source of joy to note the interest of the nurses of the children's ward, who spared no pains to carry out all orders. The last examination, Aug. 26, 1919, disclosed no paralysis or weakness of any muscle.

This case emphasizes a few points that are in contrast to those noted in the first case. Antitoxin was given on the second day, and still paralysis developed. The improvement after the application of the collar was remarkable: before its application the patient was getting worse all the time.

The child was cured without a second dose of antitoxin, which means that the improvements in the first case were also due entirely to the orthopedic treatments.

Though children with diphtheritic paralysis do recover, still the very rapid recovery noted in these two cases is undoubtedly due to the orthopedic methods employed.

The benefit of the collar can possibly be explained on the theory that mechanically it relieves the pressure on the trachea and esophagus induced by the pressure of the head. I am not, however, prepared to say whether that is really the reason.

529 Courtlandt Avenue.

Effect of Alcohol.—The latest number of the special report series issued by the national health insurance medical research committee embodies the results of an investigation made on the effects of alcohol on manual work and the coordination of fine muscular movements. The pieces of test work to be done consisted in typing a memorized passage and correlating the number of errors; with the speed attained, in reproducing a given set of figures many times with a standard pattern adding machine and in pricking with an awl vertical rows of dots on a target suspended vertically at arm's length. The subjects included eight men and five women, and duplicate sets of experiments were conducted before and after the taking of moderate quantities of alcohol in the form of wine, etc., both while fasting and with food. The results of the experiments went to show that alcohol produced some effect in all of the individuals tested by the typing and adding machine methods. The degree of effect depended largely on whether the alcohol was taken on an empty stomach or with food, for on an average it was about twice as toxic under the former conditions as under the latter. In some subjects a moderate dose of alcoholic liquid, taken with food, produced no measurable reaction. Such a nonreactive dose amounted to one glass of port (= 18.5 c.c. alcohol) in a male subject, and to 4 ounces of port (= 22 c.c. alcohol) in a female subject. When the alcohol was taken with food, the effect was slightly longer in reaching its maximum. When alcohol (30 c.c.) was taken in 5 per cent. strength, the effect produced was about three fourths as great as when it was taken in 20 per cent. or 40 per cent. solution. A similar difference was observed when taking diluted brandy (10 per cent. alcohol) and "neat" brandy (37 per cent. alcohol).—*Medical Officer,* Nov. 15, 1919.

BLOOD PRESSURE IN OPERATIVE SURGERY *

ALBERT H. MILLER, M.D.
PROVIDENCE, R. I.

As a factor in the preliminary examination, for judging the condition of the patient during operation and in following up the postoperative recovery, the blood pressure examination is of great importance although as yet imperfectly appreciated.



Fig. 1.—Simple blood pressure apparatus for use in operative surgery: stethoscope bell strapped to the arm and attached to ear pieces by tubing; sphygmomanometer cuff wrapped snugly around the arm and secured with a safety pin; gage and bulb connected to the cuff by tubing.

PREOPERATIVE EXAMINATIONS

The physical examination, which should invariably be made before any patient undergoes a surgical operation, is incomplete without a study of the blood pressure. Some of the pathologic conditions which bear directly on the chance of recovery from the operation and the anesthetic are indicated by characteristic blood pressure readings. Nephritis is accompanied by a marked increase in the systolic and diastolic pressures. Tuberculosis is regularly accompanied by a low systolic pressure. Myocarditis is indicated by a low pulse pressure. Incompetence of the aortic valve is indicated by a high pulse pressure and a low diastolic pressure. In some cases of aortic disease and also of exophthalmic goiter, the fourth phase of the blood pressure wave extends to zero and the fifth phase is lacking. With the stethoscope applied at the elbow or at the popliteal space, the pulse sounds are heard without constricting the limb. In other cases showing the high pulse pressure of aortic incompetence or of exophthalmic goiter, the same condition is found while the patient is under ether anesthesia, but this passes away early in the recovery.

For determining the index of the patient's resistance, the rule given by Moots[1] is of great value. It may be thus stated:

> The pressure ratio, a fraction having the pulse pressure as numerator and the diastolic pressure as denominator, may be normal between 40 and 60 per cent. If the ratio is either high or low, there is reason to apprehend danger. If the ratio lies between 25 and 75 per cent., the case is probably operable; if outside these limits, it is probably inoperable.

In checking up the accuracy of this rule in a series of 1,000 cases, it was found that in the operable cases, 3.23 per cent. of the patients died and 96.77 per cent. recovered; in the inoperable cases, 23.07 per cent. of the patients died and 76.93 per cent. recovered.[2]

ROUTINE EXAMINATIONS DURING OPERATIONS

The importance of routine blood pressure tests in the course of surgical operations is not generally appreciated. Catastrophes occur daily which might have been foreseen and prevented by attention to this subject. The apparatus required is simple. The bulb or pump with release valve, for raising or lowering the pressure in the cuff, is joined to the gage by a short piece of tubing. By a T, inserted in this tubing, connection is made with the usual cuff by a tube 3 feet in length. The gage is attached to the patient's pillow so as to be in the anesthetist's field of view. The cuff is wrapped smoothly about the arm and the outer folds secured by a safety pin. A flat stethoscope bell is connected to ear-pieces by a tube 3 feet long. The bell is provided with an elastic garter for keeping it in place at the bend of the elbow. This apparatus is put in place before the anesthesia is commenced. At five or ten minute intervals the anesthetist takes, by the auscultatory method, the systolic, diastolic and pulse pressures and records them on a chart on which are also entered the pulse and respiration rate, and other data of interest concerning the anesthesia or the operation. Changes in the blood pressure will result from excitement, from obstruction to respiration, from overdose of the anesthetic, from changes in the position of the patient, from unusual temperature in the operating room, and from hemorrhage or as the result of operative manipulation.

Hot and cold applications within the abdomen cause a marked fall in the systolic pressure, but the change

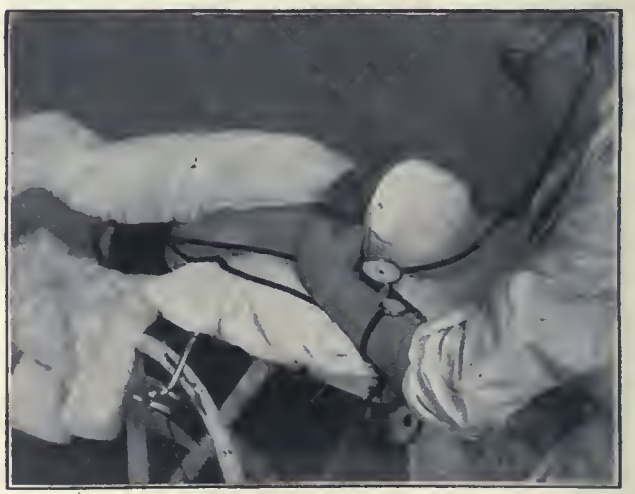


Fig. 2.—Blood pressure apparatus from anesthetist's point of view: gage attached to pillow in easy view, thus obviating danger of leaving pressure in the cuff between observations; during operations, the arm to which the apparatus is attached need not be exposed.

is usually transient. A drop in the temperature of the operating room is followed by a corresponding fall in the blood pressure, especially in the cases in which there is considerable visceral exposure. When the operating room temperature is raised the blood pressure slowly recovers. An operation performed in a room at a temperature of from 50 to 60 F. is certain to be accompanied by a considerable fall in the blood pres-

* Read before the Central New York Medical Association, Syracuse, N. Y., Oct. 30, 1919.

1. Moots, C. W.: Am. J. Obst. **74**: 996 (Dec.) 1916.

2. Miller, A. H.: Boston M. & S. J. **180**: 12 (Jan. 2) 1919.

sure, which will be especially marked if the incision is extensive and if there is a large exposure of viscera. The operating room temperature should be a matter of concern and should not be allowed to fall below 70 F. in the course of any major operation.

EFFECT OF POSTURE

To determine the effect of posture on the blood pressure during operations under anesthesia, a series of 1,000 cases has been tabulated with regard to posture and blood pressure. In this study, some confusion in the determination of standard pressures for comparison was inevitable. The standard pressures were taken in the dorsal position; some on the day before operation, some on the day of operation before the commencement of anesthesia, and some in the course of the anesthesia and the operation. The standard pressures taken on the day before operation are sometimes increased because of excitement. On the day of operation, the readings are frequently depressed as a result of the technic of preparation, including catharsis and deprivation of food and water, and following preliminary medication. The pressures taken in the course of operations may have been modified by the action of the anesthetic or by operative manipulations. The pressures for comparison in the dorsal position have been taken from ten to twenty minutes after the commencement of anesthesia. Pressures in other positions have been taken at

TABLE 1.—LACK OF REACTION TO EXPOSURE AND MANIPULATION OF INTESTINE FOR MORE THAN AN HOUR UNDER LIGHT ANESTHESIA IN EXPLORATORY LAPAROTOMY AND REDUCTION OF HERNIA THROUGH FORAMEN OF WINSLOW *

Time	Ether Dosage, Fluidounces	Pulse	Respiration	Blood Pressure: Systolic	Blood Pressure: Diastolic	Pulse Pressure	Remarks
Day before	..	120	24	120	85	35	
9:45	..	...	..	...	..	..	Ether anesthesia
	1						
9:50	..	132	28				
	2						
9:55	..	...	..	...	..	..	Operation begun in lithotomy position
	3						
10:05	4	120	36	125	95	30	
10:10	..	...	..	...	..	..	Abdominal operation in dorsal position
10:15	5	136	48				
	6						
10:25	..	124	36				
10:30	..	...	..	130	90	40	Exposure and manipulation of intestine
	7						
10:40	..	132	40				
10:45	..	...	..	130	90	40	
	8						
10:55	..	108	36				
11:00	..	...	..	130	90	40	
11:05	..	116	32	...	..	..	Appendectomy
11:10	9	...	..	135	95	40	
11:15	..	104	28				
11:20	¼	...	..	135	95	40	
11:25	..	...	..	...	..	..	Operation completed

* Pupil, contracted throughout; color, normal throughout. Recovery was uncomplicated.

a like period after the particular position has been assumed.

In the dorsal position, the systolic pressure varied less than 10 mm. in 55 per cent. of the cases, increased more than 10 mm. in 22.5 per cent., and diminished more than 10 mm. in 22.5 per cent.

In the lithotomy position, the systolic pressure varied less than 10 mm. in 64.5 per cent., increased in 24.4 per cent., and diminished in 11.1 per cent.

In the combined lithotomy and Trendelenburg position, the systolic pressure varied less than 10 mm. in 25 per cent., increased in 50 per cent., and diminished in 25 per cent.

In the reverse Trendelenburg position, the systolic pressure varied less than 10 mm. in 40 per cent., and diminished more than 10 mm. in 60 per cent. of the cases.

In the Trendelenburg position, the systolic pressure varied less than 10 mm. in 38.7 per cent., increased in

TABLE 2.—RESULT OF TRANSFUSION, EXPLORATORY LAPAROTOMY AND GASTRO-ENTEROSTOMY FOR PYLORIC ULCER WITH EXTENSIVE HEMORRHAGE *

Time	Gas - Oxygen, Liters per Min.	Pulse	Respiration	Blood Pressure: Systolic	Blood Pressure: Diastolic	Pulse Pressure	Remarks
Day before	..	122	..	60	30	30	9 p.m.
9:15	..	...	..	70	40	30	
9:45	..	...	..	...	..	..	Transfusion of 750 c.c. of blood from sister; procain anesthesia
10:00	..	...	..	110	60	50	
10:10	..	...	..	120	80	40	
10:15	..	...	..	...	..	..	Gas-oxygen anesthesia
	10						
10:20	..	...	..	...	..	..	Operation begun
	5½						
10:25	..	...	..	...	..	..	Exploratory laparotomy
10:30	..	108	24	120	80	40	
10:40	..	108	30	120	80	40	
10:45	..	112	24	130	90	40	
10:50	4½	96	..	130	90	40	
10:55	..	100	..	120	90	30	Gastro-enterostomy
11:00	5½	100	28	120	85	35	
11:05	..	108	..	125	90	35	
11:10	4½	96	28	130	90	40	
11:15	..	108	..	120	85	35	
11:20	5½	104	24	125	85	40	
11:25	..	112					
11:30	..	112	..	90	60	30	
11:35	..	...	..	90	65	25	
11:40	4½	112	..	100	70	30	
11:45	..	...	..	...	..	..	Operation completed

* Pupil, contracted throughout. Recovery was normal save for phlebitis, ninth day.

4.1 per cent., and diminished in 57.2 per cent. of the cases.

These figures indicate that in this series of operations under anesthesia: In the dorsal position, the systolic pressure tended neither to increase nor diminish; in the lithotomy position, it tended to increase; in the combined lithotomy and Trendelenburg position, the increase in the systolic pressure was exaggerated; in the Trendelenburg position, the pressure tended to decline; and in the reverse Trendelenburg position, there was a marked tendency to decline in the systolic pressure.

The routine use of the reverse Trendelenburg or Fowler position following certain types of operation has undoubtedly contributed to unnecessary fatalities. Its use must be condemned unless the patient's condition has first been proved satisfactory by blood pressure tests.

EFFECT OF ANESTHESIA

By a light degree of anesthesia, in the absence of efficient dosimetric methods, we refer to a condition of anesthesia characterized by quiet respiration, a contracted pupil, with no increase in the secretion of perspiration, mucus and tears, and the pulse and blood pressure not markedly affected. The anesthetics, when carefully administered, do not usually cause a rise in blood pressure. With cyanosis, the systolic pressure is raised. If excitement be present, the systolic and diastolic pressures and the pulse rate are increased. A profound degree of general anesthesia is likely to be accompanied by a rapid decline in blood pressure. The spinal administration of anesthetics is followed by

a distinct drop in blood pressure which frequently reaches the danger zone; in one instance, the systolic pressure had declined to 20 mm. ten minutes after the administration.

The effect on blood pressure of overdosage with anesthetics is not generally realized. Cholecystectomy, hysterectomy and other major operations if free from hemorrhage may be performed under light anesthesia without marked effect on the blood pressure or the pulse rate. Under the overdosage of the anesthetic frequently employed, a tremendous decline in blood pressure is regularly noted.

INDEX OF SURGICAL SHOCK

A falling blood pressure with an increasing pulse rate is the most certain indication of the incidence of surgical shock. For determining the presence of shock, McKesson's[3] rule is an important guide. It is thus stated:

> With a pulse rate of 120 or more, a pulse pressure of 20 mm. or less, and a diastolic pressure of 80 mm. or less in a patient, who, at the beginning of the operation, had presented normal pressures, frank shock has occurred. If these low pressures are continued without improvement for more than half an hour, a vicious circle is generally established, which, without treatment, will cause the death of the patient.

In checking up the accuracy of this rule, it was found that in patients who were within the danger zone as determined by the rule for more than twenty-five minutes, the mortality rate was 69.23 per cent.[2]

CONCLUSIONS

Before every surgical operation, a physical examination should be made including an estimation of the blood pressure.

During operations, blood pressure tests provide an invaluable index to surgical shock, hemorrhage, and anesthetic overdosage.

The sphygmomanometer should be used not only in selected cases but also as a routine measure. In this way we shall become accustomed to normal variations in the blood pressure during operations and be able to detect the signs which indicate vital changes in the patient's condition.

The Fowler position should not be used after an operation until the circulatory condition has been proved to be satisfactory by blood pressure examinations.

131 Waterman Street.

3. McKesson, E. I.: Am. J. Surg. (anesthesia supp.) **30**:2 (Jan.) 1916.

The Doctor's Dilemma.—The doctor, like his brother professional men, finds himself in a tight place in these days where income and outgo make such close connections. But the doctor has an additional grievance. The salaried man gets his pay, such as it is, on time. The doctor frequently has to wait for his and sometimes waits in vain. All the other bills apparently take precedence over the doctor's. Not, surely, because his services are less valued or because he is less in need, but more because he has the feeling that in his profession service should rank above profit. Were he to emulate the tradesman, he would run the risk of lowering the splendid tradition of his brotherhood. A minister almost never sues for his salary. A doctor must look at it in somewhat the same way. If the ethics of a profession stand in such wise, an obligation of honor surely lies on those whom the profession serves to accept the same high standard and live up to it.—Milwaukee *Journal*.

AN OUTBREAK OF BOTULISM*

DWIGHT L. SISCO, A.M., M.D
BOSTON

The outbreak of botulism reported here occurred in January, 1920, in an Italian family, living in the Bronx, New York City. The source of the toxin was shown to be a glass jar of factory packed California ripe olives. These olives, consumed as such and also as part of a salad, caused the death of six of the seven members of the family who ate of them. Bacteriologic examination of these olives was carried out by Mr. Paul Orr in the Department of Preventive Medicine and Hygiene of the Medical School of Harvard University; Dr. Charles Krumwiede of the Research Laboratories of the New York City Department of Health; the Microbiological Laboratory at Washington, D. C., and Dr. Gettlar of Bellevue Hospital, New York. At the present writing it is known that at least two of these laboratories have been successful in demonstrating the presence of *Bacillus botulinus* and its toxin. Mr. Paul Orr, working in this laboratory, has succeeded in isolating from the remainder of the olives used by the family a bacillus morphologically and culturally characteristic of *B. botulinus*. A Mandler filtrate of the liquor in which the olives not eaten were found proved toxic to animals as follows: When injected intraperitoneally into a 12 gm. white mouse, 0.004 c.c. of this filtrate caused death in seventy-four hours. One-tenth c.c. of this filtrate given to a 200 gm. guinea-pig by mouth resulted in death in sixty-eight hours. A 410 gm. guinea-pig which was given 3 c.c. of the same filtrate, by mouth, was found dead twelve hours later. One-tenth c.c. of antitoxin (Graham) injected intraperitoneally and simultaneously with 0.1 c.c. of the Mandler filtrate failed to protect an 11 gm. white mouse, death occurring in four hours. This indicated that the toxin in the olives was formed by an organism not homologous to the one used by Graham in the preparation of the antitoxin. The toxin was destroyed by heating to 80 C. for two minutes.

There were eight members in the D. family: Mary, the mother, aged 33; Paul, the father, aged 36; Dominica, a son, aged 16; Antonio, a son, aged 13; Angelo, a brother of Paul, aged 26; Dominick, a brother of Paul, aged 46; Lena, a daughter, aged 9, and Joseph, a son, aged 7. Dominick lived down town in Manhattan, but all the other members of the family lived together in the Bronx. Dominick frequently brought ripe olives to his brother's home, and it was he who furnished the jar of olives and made the salad that caused the deaths.

The diagnosis was not made until a necropsy performed on the body of the second member of the family to die suggested the possibility of food poisoning. It was then recalled that an outbreak of botulism, due to ripe olives (the Detroit outbreak), had been described in a very recent journal. Investigation of this clue led to the discovery that all the members of the family had partaken of ripe olives, and were presenting symptoms of botulism. A detective was immediately sent to the D. home with orders to confiscate all foodstuffs in the house.

* This work is a part of the investigation of food poisoning, conducted under the direction of Dr. M. J. Rosenau, professor of preventive medicine and hygiene, Medical School of Harvard University. The investigations are made under the auspices of the Advisory Committee on the Toxicity of Preserved Foods of the National Research Council, and under a grant of the National Canners Association.

The investigation here reported was begun after four of the family were dead, one so far gone that he could give no information, and one so ill that he could hardly talk. The two surviving ones were children, aged 9 and 7, respectively, and consequently could not be depended on for much information. As a result, many very desirable details are lacking in this report. Through the kindness of Mr. B. R. Hart, Chief, Eastern District, United States Food and Drug Inspection, I was able to work with the government inspectors, and thus secure much information which would not otherwise be available. Inspectors Olof Olsen and F. L. Wollard, U. S. Bureau of Chemistry, the Fordham Hospital, the New York City Health Department, the Medical Examiner's Office, and Dr. Louis J. Ferrara offered all the assistance possible.

EPIDEMIOLOGY

The olives responsible for this outbreak were "giant" size, California ripe olives, packed in 14 ounce (net weight) glass, hermetically sealed jars. They were not the same brand of olives that were responsible for the outbreaks in Canton, Ohio, and in Detroit in August and October, 1919, respectively. The present available information makes it seem quite probable that they came from an entirely different section of California than the olives responsible for the first two outbreaks. The olives concerned in the present outbreak were packed by a California olive company for a New York City distributing company. They bore the private label of the latter company. The distributing company ordered the olives, Oct. 11, 1917, and received them, April 4, 1918; but they rejected this shipment because the olives were not of good quality, branding them as "impossible" and declining to put them on the market under their label. The olives were then placed in a New York warehouse by the California company. They were resold and placed on the market by the California olive company, which in the meantime had undergone a reorganization. After considerable shifting and circulation among several New York distributers and wholesale dealers, thirty cases, 720 bottles, of these olives, were sold, Oct. 28, 1918, to the retail dealer who, in turn, sold the infected jar to Dominick. The New York distributing company protested, not only to the California company, but also to dealers in New York, the sale of these olives which they had rejected, under their private label; but the labels were not removed, and the olives continued on the market. During the shifting and circulation of these olives, several of the persons who handled them stated that many of the jars were spoiled and unfit for sale. One man, on purchasing a retail grocery store, threw away thirty-seven jars because they were not in good condition. Whether or not any of these numerous spoiled jars contained *B. botulinus* will probably never be known. Of the thirty cases sold to the grocer who sold the olives to Dominick, only five and one-half cases, 131 of the original 720 bottles, were on hand when confiscated by the health authorities. The remaining 589 bottles had been sold to customers in the neighborhood, none of whom, however, had made any complaint to the storekeeper. Whether or not any illness had occurred in these homes, attributed to other causes, since the sale of these olives began (Oct. 28, 1918) was not ascertained.

The exact date on which Dominick purchased the olives that caused the outbreak is not definitely known; but he says it was sometime after Jan. 1, 1920. Thus it will be noticed that the jar of olives responsible for the outbreak had been packed for at least twenty-six months, for it had been in New York City since October, 1917.

Among the things commandeered by the detective at the D. home was one-half bottle of ripe olives and two empty olive jars of the same size and bearing similar labels. The tin cover of the half filled jar was missing, but two other tin covers were found each bearing the same batch number. In view of all the facts concerning these olives, there is practically no doubt that they all came from the same batch. Dominick, before his death, stated that he had purchased these three jars of olives at the same store, one just before Christmas, one just after Christmas, and the third shortly after New Year's, 1920. They were carried to the D. home by Dominick as a delicacy, one jar at a time. Definite facts are not available, but it is reasonable to assume that one jar was consumed before another was opened, thus making it seem quite probable that the third jar was the one that contained the toxin.

As pointed out in the case histories, there is no definite proof that Mary, the first to die, ate ripe olives; but certainly all information available indicates that she opened this third jar of olives, January 8 or 9, and ate some of the olives, replacing the jar on its accustomed shelf, where it was later found by the other members of the family. The unsettled conditions and irregular status in the home following her death and funeral make it seem very probable that no olives were eaten until the following Tuesday night, January 13, when the rest of the family gathered at the home in the evening for supper. As accurately as could be attained, this meal consisted of macaroni with tomato sauce and a salad prepared from ripe olives, anchovies, pickled peppers, olive oil and vinegar. Dominick stated before his death that he prepared this salad, saying that the olives came from a jar taken from a shelf over the kitchen table, that this jar had been previously opened, and that "several" olives had been removed. He said that the other members of the family were seated about the table as he prepared this salad. Some of the olives were removed from the jar and placed on a plate, from which he took them one at a time, to cut them up for the salad. According to him the other members of the family helped themselves to these olives while awaiting the completion of the salad. He did not know whether some ate more heartily than others. He did state, however, that he noticed nothing wrong about the odor or taste of the olives, but on the contrary found them "very good," saying that he "liked them."

No statements concerning the odor and taste of the olives were obtained from other members of the family before they died. When asked if he washed the olives before putting them in the salad he nodded an affirmative answer, but this assertion is open to much doubt in view of the other facts of the case. Paul, the father, stated before his death that "everybody" ate olives. Lena, 9 years old, developed no symptoms, but insists that she ate one whole olive which her father handed her at her request. When asked why she ate no more she simply stated that she "didn't want any more," but said that she found neither the taste nor the odor disagreeable; that, in fact, she "liked them." She did not eat any of the salad. She said

that her brothers, Dominica and Antonio, were very fond of ripe olives, and that she saw them taking olives from the plate and open jar while the salad was being prepared. She also said that her mother was very fond of olives, and that she had seen her, on several occasions, remove olives from an open jar and eat them.

The exact hour at which this meal occurred is not known, but it is reasonable to assume that it was not before 6 p. m. Assuming such to be the case, definite symptoms of botulism had developed in all those who showed symptoms at all in from four to fifty hours after this meal.

REPORT OF CASES

Case 1.—Mary, the mother of the family, was the first to become ill. Information concerning her death is found in the following statement made by Dr. L. J. Ferrara, her physician:

"Jan. 10, 1920, I was called in at 8 a. m. and saw the mother, Mary, in bed suffering from a choking sensation, with partial blindness. The history obtained was that she had been worrying and crying the entire night before. Vomiting began at 10 p. m., January 9. I looked in her throat and found it practically normal. I asked her to take a drink, which she was unable to swallow. I then examined the eyes and found them to react to light; she could recognize me and various objects which I held up to her; she said her vision was blurred. Temperature was normal. Her pulse was about 80, snappy and bounding. Reflexes were normal. There was no tenderness or pain in the abdomen. History as to possible poisoning from alcohol or food products was negative. At 12 noon (of the same day) I was recalled and found on my arrival that the patient was dead.

"On questioning, the husband, Paul, stated that his wife had been treated two years ago for kidney trouble; that since then she had had, off and on, puffiness of the eyes and some swelling of the limbs. In view of this history I signed her death certificate as 'uremia, chronic nephritis,' ascribing the dimness of vision to albuminuric retinitis."

No definite data concerning the consumption of ripe olives by her is available, but all the information at hand makes it seem quite probable that on January 8 or 9 she opened the contaminated jar of olives and ate two or three or more of them. The fact that ripe olives had been kept in the house, that they always stood on a shelf over the kitchen table, and that Mary was particularly fond of them and had been observed to eat olives taken from such a jar on previous occasions, makes such an assumption quite reasonable. This assumption is further substantiated by the fact that the jar of olives used later by the family in the salad was found open with "several" olives removed. No definite statement as to the number actually missing could be obtained. There is no way of telling how soon after eating olives her symptoms appeared or how long symptoms had been present before she was seen by her physician, although it is stated that she vomited ten hours prior to the visit of her physician. It seems reasonable to estimate that death occurred fifteen or twenty hours after the onset of symptoms.

Case 2.—Dominica, a son, aged 16, became ill Tuesday, January 13, about 10 p. m. Dr. Ferrara's statement concerning him is as follows:

"I was next called, January 14, at 7 a. m., to see the son, Dominica. The history, obtained from the father and verified by the patient, was that he was seized on the evening of January 13, about 10 p. m., with a choking sensation and inability to swallow, with a partial loss of vision, vomiting and extreme weakness. He was unable to talk, owing to the pharyngeal paralysis, and wrote answers to my questions on a piece of paper. His mental condition at the time was normal. He did not complain of abdominal pains. Dominica was in bed and was unable to open his eyes completely, having a ptosis of both upper lids. His pulse was very weak, about 80. Temperature was normal. There was no tenderness of the abdomen. There was no diarrhea, the bowels not having moved at all. He could recognize various objects, such as matches, pencil and paper, but his vision was also dim. I washed his stomach with plain water, and removed a brownish, dark fluid, with a putrid smell, 4 quarts of water being required before the liquid returned clear. I put in through the tube a cup of strong black coffee to stimulate him, and ordered whisky. I sent an ambulance and had him removed to Fordham Hospital, where he arrived about 10 a. m., and died within a few minutes (thirty-two) after his arrival."

The diagnosis on admission to the hospital was "paralysis of the throat," "migraine" and "hysteria." He failed to react to one-thirtieth grain of strychnin sulphate, subcutaneously. He was mentally clear and conscious to the last, and there were no convulsions.

The onset of symptoms occurred four hours after eating the olives, and death occurred twenty-four and one-half hours after the onset of symptoms, or twenty-eight and one-half hours after ingestion of the olives. Information obtained from other members of the family shows that Dominica was unusually fond of ripe olives and always ate freely of them whenever they were available. This fact, together with the rapid onset of symptoms and the profuse vomiting (suggestive of gastric irritation due to a large amount of toxin) makes it seem quite probable that he partook more freely of the olives than the others. It was the necropsy on his body which led to the suggestion of food poisoning and later to the diagnosis of botulism.

Case 3.—Paul, the father, aged 36, was the next member of the family to fall ill. Wednesday afternoon, January 14, he noticed that he had considerable difficulty in expectorating. When seen by his physician at 4 p. m., there was dimness of vision, diplopia, marked prostration and weakness, difficulty in swallowing and talking, and thick, glairy mucus in the mouth and throat which could be evacuated only with great difficulty. He immediately walked to the Fordham Hospital, the admission diagnosis being "paralysis of throat and partial blindness." His pupils reacted only sluggishly to light and accommodation. Other reflexes were not influenced. He vomited a small amount of material which was said to have a putrid odor. There was no diarrhea, but instead marked constipation. There soon developed ptosis of both eyelids and complete aphonia. He also complained of a distressing sense of pressure or weight in the epigastrium. Perspiration became very profuse. Edema of the soft palate and pharynx developed. As respiration became more difficult, cyanosis became more marked, and death, due to respiratory paralysis, resulted. Mental clearness was present throughout.

The highest recorded temperature was 99.8 F. The pulse rate never exceeded 92 beats a minute, and the greatest respiratory rate recorded was 24 a minute. The white blood count was found to be 10,600. The differential blood count was not abnormal and presented nothing of interest. Lumbar puncture revealed a sterile and otherwise negative fluid under pressure sufficient to cause one-half inch projection of the stream. The urine presented nothing of interest. The onset of symptoms occurred twenty-two hours after eating the olives, and death occurred forty hours after the onset of symptoms, or sixty-two hours after ingestion of the olives.

Case 4.—Antonio, a son, aged 13 years, became ill at 8 p. m., Wednesday, January 14. He became much alarmed when a sensation of choking developed in his throat, and at 4:45 a. m., January 15, walked into the Fordham Hospital. His pupils were dilated and reacted sluggishly to light and accommodation. Other reflexes were not obtained. There was ptosis of both eyelids, dimness of vision, great weakness and prostration, difficulty in swallowing and speaking, with later development of complete aphonia, constipation, thick, glairy mucus in the throat, profuse perspiration

and marked respiratory difficulty and cyanosis, which progressively increased as death due to respiratory paralysis approached. At no time was mental clearness clouded.

The highest figures recorded for temperature, pulse and respiration were 100.2 F., 120 and 28, respectively. The pulse was irregular, but of good volume. The Wassermann test was negative. The urine showed a very few pus cells, but was otherwise uninteresting.

The symptoms appeared twenty-six hours after he had eaten the olives. Death occurred forty-three and one-half hours after the onset of symptoms, or sixty-nine and one-half hours after ingestion of the olives. It is not possible to say how many olives this patient consumed, though the available information makes it seem quite probable that he ate freely of them.

CASE 5.—Angelo, a brother of Paul, aged 26, also became ill at 8 p. m., Wednesday, January 14. His first symptoms were dryness of the throat, thick speech, difficult expectoration and a choking sensation. He was admitted to the Fordham Hospital at 3:30 p. m., January 15, the admission diagnosis being "paralysis of throat muscles." His pupils were dilated, reacting only sluggishly to light and accommodation. Other reflexes were present and active. There was ptosis of both eyelids, dimness of vision, great muscular weakness and prostration, difficult speech leading to complete aphonia, dysphagia, and some pain in the throat. Constipation was marked. The thick glairy, tenacious mucus was present in the throat. There was a distressing sense of pressure or weight "at the pit of the stomach." Profuse perspiration also was present. The difficulty in respiration grew progressively worse, and cyanosis developed culminating in respiratory paralysis with death, the patient maintaining mental clearness until shortly before death.

Temperature, pulse and respiration were not recorded in excess of 99.6 F., 120 and 24, respectively. The urine, other than a very few pus cells, presented nothing of interest.

The onset of symptoms occurred twenty-six hours after the olives had been eaten. Death occurred seventy-two hours after the onset of symptoms, or ninety-eight hours after ingestion of the olives.

CASE 6.—Dominick, aged 46, brother of Paul, walked into the Fordham Hospital at 4:30 a. m., Friday, January 16, complaining of a choking sensation and dimness of vision. On Thursday, January 15, he had felt considerable apprehension, and somewhat indefinite indisposition, but noticed nothing definite until about 8 p. m., when there was difficult expectoration and some dimness of vision. He followed rapidly the course of the others, presenting dilated pupils which reacted sluggishly to light and accommodation, but no involvement of other reflexes, diplopia, ptosis of both eyelids, great muscular weakness and prostration, difficulty in speaking and swallowing, constipation, mucus in the throat, profuse perspiration, a sense of chilliness, and gradual failure of respiration with accompanying cyanosis, leading to the terminal respiratory paralysis. He became somewhat irrational about an hour before death.

The highest recorded values for temperature, pulse and respiration were 99.6, 120 and 24, respectively. The urine contained a very few pus cells, but was otherwise negative.

SOME DETAILS OF THE OUTBREAK

Name and Age	Status in Family	Occupation	Date Olives were Eaten		Number of Olives Eaten	Onset of Symptoms			Adm. to Hospital		Death				Symptoms and Physical Signs																								
			January	Hour		January	Hour	No. of Hours after Eating Olives	January	Hour	January	Hour	No. of Hours after Onset of Symp.	Immediate Cause	No. of Hours after Eating Olives	Ptosis	Diplopia	Dimness of Vision	Dilatation of Pupils	Pupillary Reaction	Weakness: Prostration	Difficult Speech	Aphonia	Dysphagia	Mucus in Throat	Choking Sensation	Constipation	Vomiting	Epigastric Pressure	Mental Clearness	Profuse Perspiration	Sense of Chilliness	Difficult Respiration	Terminal Cyanosis	Highest Temperature	Highest Pulse Rate	Highest Respiratory Rate	Reflexes
Mary 33	Mother	Housewife	8 or 0	?	?	9	10 p.m. ?	?	..	.....	10	12 m.?	15 or 20?	Respiratory paralysis	?	+	..	+	..	.....	+	+	..	+	+	..	+	+	..										
Dominica 16	Son	Shoemaker	13	6 p.m.	Salad and Olives	13	10 p.m.	4	14	9:55 a.m	14	10:27 a.m.	24½	Respiratory paralysis	28½	+	..	+	..	.....	+	+	..	+	+	..	+	+	..	+	..	..	+	+					
Paul 36	Father	Shoemaker	13	6 p.m.	Salad and Olives	14	4 p.m.	22	14	4:40 p.m.	16	8:05 a.m.	40	Respiratory paralysis	62	+	+	+	..	Slug.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	99.8	92	24	+
Antonio 13	Son	School	13	6 p.m.	Salad and Olives	14	8 p.m.	26	15	4:45 a.m.	16	3:30 p.m.	43½	Respiratory paralysis	69½	+	..	+	+	Slug.	+	+	+	+	+	+	+	..	..	..	+	+	+	+	+	102.4	120	28	—
Angelo 26	Brother of Paul	Shoemaker	13	6 p.m.	Salad and Olives	14	8 p.m.	26	15	3:30 p.m.	17	8:00 p.m.	72	Respiratory paralysis	98	+	..	+	+	Slug.	+	+	+	+	+	+	+	..	+	+	+	+	+	+	99.6	120	24	+
Dominick 46	Brother of Paul	Shoemaker	13	6 p.m.	Salad only	13	8 p.m.	50	16	4:30 a.m.	17	10:11 p.m.	74	Respiratory paralysis	124	+	+	+	+	Slug.	+	+	..	+	+	+	+	..	..	..	±	+	+	+	+	98.9	120	30	+
Lena 9	Daughter	School	13	6 p.m.	One olive only	..	.....	....	14	4:40 p.m.																												
Joseph 7	Son	School	...	.....	None																																	

The first symptoms appeared fifty hours after he had eaten the olives. Death occurred seventy-four hours after the onset of symptoms, or 124 hours after ingestion of the olives.

This patient stated before his death that he felt quite sure he had eaten only about two olives which had been chopped up and put in the salad.

CASE 7.—Lena, aged 9, a daughter, was taken to the Fordham Hospital, January 14, with her father. She was presenting no symptoms at this time, but was admitted for observation merely as a precautionary measure. She was quite positive that she had eaten one ripe olive, January 13, during the preparation of the salad, but had eaten none of the salad. During the night of January 17, it was felt by some of the physicians that she showed some hesitancy in speech and slight ptosis of the right eyelid in addition to constipation. There was, however, no concensus as to the presence of these symptoms, so that it seems impossible to state with finality that she exhibited definite symptoms. She was later discharged from the hospital apparently none the worse for her experience.

Joseph, aged 7, a son, was taken to the home of friends after his mother's funeral, and was not present, January 13, when the other members of the family became infected. He ate no olives and developed no symptoms.

SYMPTOMS AND PHYSICAL SIGNS

The symptoms and physical signs were much the same in all six cases. As stated above, the onset of symptoms varied from four to fifty hours after ingestion of the contaminated food. In general, the onset was gradual and not of such a nature as to cause apprehension on the part of the patient. Reference to the accompanying chart and the individual case histories will reveal the details of each case.

The incidence and progression of symptoms was not identical in all the cases, but followed the same course in general. The first intimation of trouble seemed to be rather an indefinite indisposition, followed rapidly by muscular weakness which gradually increased to great prostration. Difficulty in expectorating, thick speech, dryness of the mouth and dysphagia were among the first symptoms noted, seemingly due to mucus in the throat and perhaps also to beginning paralysis of the pharyngeal muscles. As the disease progressed the mucus became thicker, glairy and more tenacious, and could not be evacuated either up or down. It was the source of much discomfort, and the patients made vain efforts to remove it with their fingers or handkerchiefs. As the paralysis of the muscles of the throat increased, swallowing became more difficult and the ability to speak diminished toward an ultimate complete aphonia. A sensation of choking, with more or less sense of constriction about the throat, was noticed early in the disease by four of the patients.

The various eye symptoms were among the earliest manifestations. Dimness of vision, a blurring and mistiness, was noted by all the patients. Diplopia was remarked by only two of the six, but it is quite probable that it was present in the others. Dilated, sluggishly reacting pupils were observed in three cases. Other reflexes were present and active in three of the four cases examined. Ptosis of the eyelids invariably developed. Nystagmus was observed in one case.

Vomiting occurred in three of the cases and, as far as the evidence was available, was associated with large doses of toxin, which apparently produced gastric irritation prior to paralysis. In this outbreak, as in the Detroit cases reported by Jennings, Haass and Jennings,[1] the patients who vomited at the onset died sooner than the others. Diarrhea was not present in any case but, on the contrary, constipation was evident in all, evidence which may be interpreted as local, peristaltic paralysis. A feeling of pressure and "weight at the pit of the stomach" was remarked by two of the patients. A feeling of chilliness and profuse perspiration was present in four cases. Mental clearness, maintained until shortly before death, was strikingly characteristic. All the patients were drowsy and somewhat comatose immediately before death. One patient became somewhat irrational about an hour before death. Dyspnea did not manifest itself so much in rapidity as in difficulty of breathing. The highest respiratory rate recorded for any of the six patients was 30 a minute. The accessory muscles of respiration were called more and more into play as the intoxication progressed, inspiration becoming more and more difficult and finally ceasing quietly when the muscles refused to function any longer. Cyanosis was observed in all cases as respiration weakened and the end approached. Thirst, vertigo, abdominal pain and diarrhea were absent in all cases.

The pulse remained of good volume and good quality throughout, although somewhat rapid and variable in rate. The highest rate recorded was 120 a minute. The temperature reaction was not remarkable, 102.4 F. being the highest recorded, and this followed the intravenous injection of antitoxin. A leukocyte count was made on only one patient, and this was found to be 10,600; the differential count was not abnormal. A lumbar puncture on the same patient revealed nothing other than somewhat increased pressure. The urine was negative except for a very few pus cells found in three of the four patients whose urine was examined.

TREATMENT

Elimination, stimulation and antitoxin were the fundamental bases of treatment. Stimulants, such as strychnin sulphate, atropin, camphor-in-oil, digitalis and coffee enemas were administered as it seemed advisable. Inhalation of oxygen was also used for short periods. Gastric lavage was performed as soon as the patient reached the hospital. Cathartics, for the most part, could not be swallowed. Magnesium sulphate and croton oil, when introduced through the stomach tube, brought no results. High colonic enemas usually brought good results. Nutrient enemas were also used, for the patients had difficulty in swallowing even liquids. Warm blankets contributed much to their comfort.

Antitoxin was not available until four patients were dead and one other was so far gone that he was past aid. This left only one patient, exhibiting definite symptoms, to whom the serum was administered. This patient was Dominick, aged 46. At the time the antitoxin was given, just forty-eight hours after the onset of symptoms, he was presenting the following manifestations of the disease: dimness of vision, diplopia, ptosis of both eyelids, great difficulty in speaking, inability to swallow, much glairy, tenacious sputum in the throat, great prostration and weakness, profuse persipration, and respiratory difficulty. Twenty-five c.c. of serum obtained from Professor Graham of the University of Illinois were injected intravenously at 7:15 p. m. At 8:30 p. m. there was no apparent change in his condition. At 9:30 p. m. the temperature, pulse and respiration were recorded as 102.4 F., 124 and 30, respectively. The patient grew gradually weaker and ceased to breathe at 10:11 p. m., three hours after the antitoxin was administered.

Lena, the 9 year old daughter who ate one olive, was given two intravenous injections of 15 c.c. each, about twelve hours apart, of an antitoxin received from the Bureau of Animal Industry at Washington, D. C. As mentioned in the case history, it does not seem possible to state that she was presenting definite and clear-cut symptoms. Such symptoms never did develop, but to what degree the antitoxin was responsible for their failure to develop will probably never be known. It is not improbable that symptoms would not have developed if no antitoxin had been administered. Joseph, aged 7, was given one 15 c.c. intravenous injection of the same serum, merely as a prophylactic measure, for

1. Jennings, C. G.; Haass, E. W., and Jennings, A. F.: An Outbreak of Botulism, J. A. M. A. 74:77 (Jan. 10) 1920.

at that time there was some uncertainty as to whether or not he had partaken of any of the olives.

Taken all in all, the serum therapy was inconclusive. The serum administered to Dominick was probably given too late to expect favorable results. Furthermore, the serum administered was not prepared from a homologous strain of *B. botulinus*, a fact that would render it ineffective in this case. As stated above, the Graham antitoxin failed to protect laboratory animals against the toxin present in the olives. The serum administered to Lena, presumably derived from a homologous strain, cannot be said definitely to have aborted the development of the disease.

THE EYE AS A PORTAL OF INFECTION IN RESPIRATORY DISEASES*

H. J. CORPER, M.D.
AND
J. J. ENRIGHT, S.B.
DENVER.

The main channel of infection in respiratory diseases, and especially in pulmonary tuberculosis, has confused scientific men for a long time. An effort to avoid infection, especially in the acute diseases, has led to the introduction of many methods of protection, the latest of which is the gauze mask. As complicated as this problem has been in the study of the acute respiratory diseases, it has proved even more baffling and confusing in pulmonary tuberculosis, which disease accounts for at least three fourths of the deaths attributed to the tubercle bacillus. Much of the confusion is of course due to the improper comprehension of the problem at hand and the application of unpractical methods of experimentation and conclusions drawn therefrom. Thus have been overemphasized at intervals prenatal infection, alimentary infection and other phases.

The problem that confronts us in the prophylaxis of pulmonary tuberculosis, though differing slightly, is practically the same as that in the acute respiratory diseases. We have to deal in both cases with organisms highly virulent[1] and specific or parasitic for the host, taking hold at the least provocation and producing clearly defined and characteristic pathologic changes, in contradistinction to those produced by the more saprophytic micro-organisms, which occur widely distributed in nature or which cause spontaneous disease in other species.

MODE OF INFECTION IN TUBERCULOSIS

Controversy has revealed diverse opinions regarding the exact portal of infection in pulmonary tuberculosis. Koch in 1884 maintained that tubercle bacilli entered the lungs with the inspired air and produced their lesions wherever they came to rest in the lungs. This view found almost universal acceptance for many years, and the dispute centered about the question as to whether dry and pulverized sputum (Cornet), or fluid droplets (Flügge) freshly expelled from the mouths of phthisical patients, play the more important part in propagating the disease. As a matter of historical interest it may be noted that shortly after the rediscovery of the infectious nature of tuberculosis by Villemin, Chauveau in 1868 held that the alimentary canal might be the portal of entry in tuberculosis even more frequently than the air passages, an idea probably made evident by the large percentage of ingestion tuberculosis from bovine sources in those days. In 1904, von Behring uncompromisingly maintained the intestinal origin of pulmonary tuberculosis irrespective of age. Calmette and Guérin[2] in 1905 strongly supported this theory, though they did not agree with von Behring's statement that such infection occurs commonly in infancy. On the contrary, they believed that the lymphatic glands are more permeable in the adult than in the child, and that infectious micro-organisms may pass through them from the intestines to the lungs by way of the thoracic duct. To add to the confusion of this entire problem is the rise of the theory of latency or the residence of tubercle bacilli in the lymph glands and tissues free from all anatomic changes, as maintained by Baumgarten. Such latency has been recently observed by Wang,[3] who found bacilli in three of thirty-two cases studied. He reviews the literature, but in all of the cases reported the time element in man is impossible of determination and Wang found that tubercle bacilli could be latent in guinea-pigs as long as 104 days (a comparatively short time of study for enlightenment in this problem).

THE EYE AS A PORTAL OF INFECTION

In considering so important a problem as the avenue of infection in pulmonary tuberculosis, it is conceivable that the question resolves itself not so much into producing effects at the expense of practicability as to considering the problem from the standpoint of facts. For a proper interpretation of facts the available data seem still to be lacking in definiteness, since dosage and the possibility and repetition of infection have been left entirely out of consideration. In the same manner a consideration of the eye as a channel of infection had been entirely neglected until Maxcy[4] recently demonstrated that this might be one of the least protected regions of the body, giving access to pathogenic micro-organisms by droplet infection, especially from man to man. He found that *B. prodigiosus* introduced into the conjunctival sac can be recovered from the nose in five minutes, from the throat in fifteen minutes, and from the stool in twenty-four hours. With the mouth and nose protected by gauze, organisms were found in the nose and nasopharynx after droplet spraying at a distance of from 3 to 4 feet.

Maxcy states that from the nasopharynx the micro-organisms may follow one of three courses: 1. They may pass outward through the mouth with the sputum. 2. They may be carried into the larynx and reach the lower respiratory tract. 3. They may be carried downward into the esophagus with the swallowing movements, and perish in the intestinal canal or be excreted with the feces. He says that the latter is probably the most frequent course, as he obtained the bacilli in one of three subjects whose stools were tested.

A number of points of direct interest in the problem of the eye as an avenue of infection were left unsettled by Maxcy. These factors seemed worthy of further investigation: whether the micro-organisms really

* From the Research Laboratories, National Jewish Hospital for Consumptives.

1. Corper, H. J.: Are All the Tubercle Bacilli Found in the Sputum Virulent? J. A. M. A. **70**: 1281 (May 4) 1918.

2. Calmette, A., and Guérin, C.: Ann. de l'Inst. Pasteur **19**: 601. 1905.

3. Wang, C. Y.: Lancet **2**: 417 (Sept. 2) 1916.

4. Maxcy, K. F.: The Transmission of Infection through the Eye, J. A. M. A. **72**: 636 (March 1) 1919.

ever reached the respiratory tract below the epiglottis and vocal cords and how long they remained there; what course the micro-organisms followed after instillation in either eye; how long they persisted in the nose, pharynx or larynx (the studies reported by Maxcy were of only thirty minutes' duration); and since it has been suggested, though not authentically demonstrated, that micro-organisms can enter the lungs by way of the intestinal tract in experimental animals, whether this could occur in man. It was with a view to corroborating and elaborating the work initiated by Maxcy that the experiments to be described were performed.

EXPERIMENTAL DATA

The experiments were carried out on patients with pulmonary tuberculosis who were capable of expectorating (lung) sputum. These people were chosen for the twofold purpose of obtaining satisfactory pulmonary material and also with a view to using patients with a respiratory system of reduced protective mechanism such as may occur acutely at any time in any person but not often in a manner available for satisfactory experimental purposes.

Time Factor.—In order to gain an idea of the rate of appearance and disappearance of the micro-organisms from the nose and various parts of the pharynx after eye instillation, a series of seven cases were thus tested with the results given in Table 1.

TABLE 1.—APPEARANCE AND DISAPPEARANCE OF B. PRODIGIOSUS FROM THE NASOPHARYNX AFTER EYE INSTILLATION

	Appearance		Disappearance	
Location	Earliest	Latest	Earliest	Latest
Nose	5 min.	15 min.	45 min.	2¼ hrs.
Pharynx	10 min.	15 min.	1½ hrs.	2¼ hrs.

A brief survey of this table indicates that *B. prodigiosus* appears and disappears from the nose and throat after eye instillation with fair regularity and within a definite time in different persons.

TABLE 2.—DISTRIBUTION OF B. PRODIGIOSUS IN THE MOUTH AFTER RIGHT EYE INSTILLATION

Location	Case	Time Interval after Instillation in Hours ½	1	1½	2	2½
Hard palate	Y	—	—	—	—	—
	St. J.	—	+	—	—	—
Uvula	Y	+	—	—	—	—
	St. J.	—	+	+	—	—
Right tonsil	Y	+	+	+	+	—
	St. J.	—	+	+	—	—
Left tonsil	Y	—	—	—	—	—
	St. J.	—	—	—	—	—
Posterior nasopharynx	Y	+	+	+	+	+
	St. J.	+	+	+	+	—

Course of Micro-Organisms.—In order to determine whether the micro-organisms instilled into the eye follow a definite course, a suspension of *B. prodigiosus* was dropped into the right eye, and various parts of the nasopharynx were tested with the results shown in Table 2. An examination of this table reveals the tendency of the micro-organisms to follow definite paths. If instilled into the right eye the organisms are found on the right side of the nasopharynx and on the right tonsil, while the left side is free from them, as are also the anterior portions of the mouth. Instillations of strong solutions of argyrol into the eye were also found to follow a similar definite course in the nasopharynx.

The direct determination of the presence of micro-organisms in the trachea and on the vocal cords, which might indicate a downward passage into the lower respiratory tract after eye instillation, is admittedly difficult, so that a number of procedures were employed for this purpose. It would be unreasonable to expect the determination of the presence of *B. prodigiosus* in the washed sputum itself, and their presence in the unwashed sputum, especially while the nasopharynx was still positive, is obviously open to criticism. There were two other procedures to be considered: the passing of a tube into the trachea, obtaining through this tube a swab of the trachea and vocal cords, and the examination of the (lung) sputum after the nasopharynx and mouth were proved negative by careful and repeated examinations.

TABLE 3.—LAST POSITIVE CULTURE OF B. PRODIGIOSUS FROM PHARYNX AND FROM SPUTUM AFTER EYE INSTILLATION, IN HOURS

From Pharynx	From (Lung) Sputum
1½	2
1¾	1¾
1½	—*
1½	2½
2	2
1½	2
2	2
1¾	—*
2¼	2½
2¼	2½
2¼	2¼
2	—*
2	—*
2¼	2¼
1¾	2¾
2½	—*
2	2¾
2	—*
1¾	—*

*In these cases the sputum was negative before the pharynx.

A series of ten cases were examined by passing a metal tube into the trachea from four to six hours after the instillation of *B. prodigiosus* into the eye. The nasopharynx was negative for *B. prodigiosus* in these cases after about two hours. It was found that only a small area could be thus swabbed; but two of the ten cases revealed positive cultures from the vocal cords, one within six hours, and the other four hours after eye instillation. In a series of twenty cases the nasopharynx and sputum were examined to determine whether the sputum was positive for *B. prodigiosus* after eye instillation for a longer period of time than was the nasopharynx. The time of appearance of the last positive cultures from the nasopharynx and pharynx and from the sputum in the twenty cases is given in Table 3.

Of the twenty cases studied, there were seven cases, or 35 per cent., in which the lung (sputum) specimens were positive on repeated examination after the pharynx was negative. If these seven cases are considered, the lung specimen was positive on an average of 0.6 hours (minimum, one-quarter hour; maximum, one hour) after the pharynx was negative on repeated examination. One case in the series was of interest because of the fact that a definite positive culture of *B. prodigiosus* was obtained from the sputum one week after the instillation into the eye, the pharynx being repeatedly negative in the interval following the first two hours and also at the time of obtaining the positive culture from the sputum. Three other

cases, observed through an interval of nine days after eye instillation, gave negative sputums for *B. prodigiosus* after the initial few hours following instillation.

DISTRIBUTION AFTER INGESTION

The study of the distribution of *B. prodigiosus* after ingestion was divided into the persistence of the organism in the mouth, the appearance in the sputum, and the appearance in the feces after ingestion. In none of the cases shown in Table 4 was *B. prodigiosus* found in the sputum during the first two hours after the mouth and pharynx were negative.

TABLE 4.—PERSISTENCE OF B. PRODIGIOSUS IN THE MOUTH AFTER ORAL INGESTION, IN HOURS

Number of Cases	Time of Persistence		
	Shortest	Longest	Mean
11	4¼	5	4½

In four cases the nose was examined for *B. prodigiosus,* and in no case were the organisms found within one hour after oral ingestion, while the mouth and pharynx were positive during this time.

In a series of ten cases, *B. prodigiosus* was given by mouth and the sputum and feces were examined after six hours and at daily intervals for ten days. In none of these cases was a positive culture obtained from the sputum; the organisms were recovered from the feces in only two of the ten cases during the first twenty-four hours, after which no more positives were obtained.

TABLE 5.—EFFECT OF HYDROCHLORIC ACID AND HYDROCHLORIC ACID AND PEPSIN ON THE VIABILITY OF B. PRODIGIOSUS IN VITRO

	Concentration of Hydrochloric Acid											
	Alone (Normal Per Cent.)*						With 0.2 Per Cent. Pepsin in Addition					
Exposure at 37 C.	0	0.5	1.0	1.5	2.0	2.5	0.0	0.5	1.0	1.5	2.0	2.5
5 min.	+	+	+	+	—	—	+	+	+	+	+	—
15 min.	+	+	+	+	—	—	+	+	+	+	+	—
25 min.	+	+	—	—	—	—	+	+	+	+	+	—
40 min.	+	+	—	—	—	—	+	+	+	+	—	—
60 min.	+	+	—	—	—	—	+	+	+	+	—	—
2 hr.	+	+	—	—	—	—	+	+	+	—	—	—
3 hr.	+	+	—	—	—	—	+	+	+	—	—	—

* One per cent. normal acid is equivalent to 0.0365 per cent. by weight of hydrogen chlorid, and the other figures are in proportion.

In order to find a possible explanation for the inability to recover *B. prodigiosus* from the feces after the ingestion of large amounts of the culture, the effect of various concentrations of hydrochloric acid and of a mixture of pepsin and hydrochloric acid on suspensions of the bacilli was studied with the results given in Table 5. An examination of this table reveals that the cultures of *B. prodigiosus* used in these experiments are highly susceptible to the action of hydrochloric acid, alone or in the presence of pepsin, 0.07 per cent. by weight of hydrochloric acid killing within five minutes.

SUMMARY

The eye must be considered as one of the important portals of infection in respiratory diseases, and, although the greater part of the infectious material entering by way of the eye is subsequently swallowed and passes into the gastro-intestinal tract, a small but definite portion of it finds its way into the larynx and trachea, where it may persist even as long as a week (as was noted in one case studied).

In its passage from the eyes, the infectious material traverses a definite channel dependent on which eye it has entered or into which it has been introduced. Infectious material that is ingested is far less likely to enter the respiratory tract than that entering by way of the eye or nose.

MATERNAL MORTALITY

C. HENRY DAVIS, M.D.
MILWAUKEE

There is a general impression among physicians that there has been a great improvement in maternal mortality during the past half century. This impression is based on the present favorable maternal mortality in hospital and dispensary services, and not on a comparison of mortality and birth statistics.

In 1917, Grace L Meigs[1] made a careful study of maternity mortality from all conditions connected with childbirth from the available records of the United States and certain other countries. In answer to the question, Is the death rate from childbirth falling? she says (page 17):

> According to the evidence available, these death rates are apparently not decreasing. During the twenty-three years ending in 1913, in this country no definite decrease in the death rate from the diseases caused by pregnancy and confinement can be demonstrated; nor can any decrease in the death rate from puerperal septicemia be shown.

She says further of the deaths from diseases of pregnancy and the puerperal state (page 22):

> In order to make possible a comparison of the death rate from these causes for fifteen foreign countries with those for the United States, an average rate has been computed for the years 1900 to 1910 for each of the countries, using the same method as that in use in the United States. When the sixteen countries studied are arranged in order, with the one having the lowest rate first, the death registration area of the United States stands fourteenth on the list. Only two countries, Switzerland and Spain, have higher rates; many of the countries, however, show rates differing but little from that of the United States. Markedly low rates are those of Sweden (6), Norway (7.8), and Italy (8.9); a strikingly high rate is that of Spain (19.6). [The ten year average for the United States was 14.9 per hundred thousand population (Table 1).]
>
> The death rate from child birth per thousand live births is not available for the death registration area of the United States, but can be given only for the small number of states and cities included in the provisional birth registration area and for one year, 1910. This rate, 6.5, is considerably higher than that for 1910 of any of the countries studied.

However, a birth registration area was established in 1915, and eventually there will be records from which it will be possible to compute our maternal mortality on the basis of the number of live births. A comparison of the birth rate in the birth registration area with the mortality rate in the death registration area for 1915 and 1916 would indicate that in 1915 one mother died in every 164 live births, and in 1916 one for every 152 live births. The ratio in 1910 was one mother for every 154 live births.

During the past thirty years, deaths from many diseases have been reduced to a fraction of their former toll. Between the years 1890 and 1915, the records of the death registration area of the United States

1. Meigs, Grace L.: Maternal Mortality, U. S. Dept. of Labor. Children's Bureau. Miscellaneous Series 6, Bureau Publication 19. 1917.

show that the deaths from tuberculosis per hundred thousand population dropped from 252 to 145.8; pneumonia, from 186.9 to 82.9; diphtheria and croup, from 97.8 to 15.7; diarrhea and enteritis under 2 years, from 139.1 to 59.5; typhoid fever, from 46.3 to 12.4. The death rate from diseases caused by pregnancy and the puerperal state in 1890 was 15.3, while in 1915 it was 15.2. The maternal mortality rate in 1916 was 16.3 per hundred thousand population.

In the face of all available statistics, we are not justified in believing that the average woman is benefited by the advances that have been made in scientific obstetrics during the past half century. Few realize that for all women of childbearing age, childbirth is the second greatest cause of death. For the year 1915 in the death registration area of the United States, there were, among women aged 15 to 45, 29,200 deaths from tuberculosis; 10,134 from childbirth, of which 4,173 were from puerperal septicemia; 8,766 from the various circulatory disturbances; 6,458 from all digestive disturbances; 5,549 from pneumonia, all types; 5,424 from cancer and other malignant tumors; while for these ages syphilis was reported as the cause of death 647 times and gonorrhea 174 times.

Additional data to prove the great danger of pregnancy and labor are given in Table 2, which is based on a medico-actuarial mortality investigation. The table has been modified and rearranged to make it available for general study and comparison with other statistics. This insurance record shows that for all women insured during the childbearing period, the diseases of pregnancy and the puerperal state are the second greatest cause of death; and for all women insured, maternity ties with nephritis and Bright's disease as the fifth greatest cause of death.

TABLE 1.—AVERAGE DEATH RATES PER HUNDRED THOUSAND POPULATION IN CERTAIN COUNTRIES FROM DISEASES CAUSED BY PREGNANCY AND CONFINEMENT, 1900 TO 1910*

Country	Death Rate per Hundred Thousand Population from Diseases Caused by Pregnancy and Confinement		
	Total	Puerperal Septicemia	All Other
Sweden**	6.0	2.4	3.5
Norway	8.1	4.1	3.9
Italy	8.9	3.3	5.7
France†	10.3	4.8	5.5
Prussia‡	10.4	4.7	5.8
England and Wales	11.1	4.7	6.5
New Zealand	12.4	3.1	9.3
Ireland§	12.9	4.5	8.4
Hungary	13.3	3.6	9.8
Japan**	13.3	4.5	8.8
Australia‖	14.1	4.7	9.4
Belgium‡	14.8	5.8	9.0
Scotland**	14.8	5.5	9.4
United States¶	14.9	6.5	8.3
Switzerland	15.2	6.4	8.8
Spain**	19.6	12.3	7.3
Austria	#	6.6	#

* Table XII, p. 56, of "Maternal Mortality," by Meigs (Footnote 1).
** Rates based on figures for 1901 to 1910.
† Rates based on figures for 1906 to 1910.
‡ Rates based on figures for 1903 to 1910.
§ Rates based on figures for 1902 to 1910.
‖ Rates based on figures for 1907 to 1910.
¶ Rates based on figures for death registration area which increased from year to year; in 1900 it comprised 40.5 per cent. of the total population of the United States, and in 1910, 58.3 per cent.
Figures not available.

A study of these insurance figures suggested that from insurance records additional valuable information might be obtained regarding the frequency with which individual families are affected by death from common causes such as tuberculosis, childbirth and malignant tumors. Through the courtesy of Dr. J. W. Fisher, medical director of the Northwestern Mutual Life Insurance Company of Milwaukee, I have examined the family records of 10,000 applicants. The first series of 5,000 showed that one applicant for life insurance in every seventeen reported a mother or sister or both as having died from the immediate effects of childbirth; 1 in 27 from tuberculosis, and 1 in 47 from cancer or other malignant tumor. The second series of 5,000 cases showed childbirth 1 to 17.7; tuberculosis 1 to 29.7, and malignancy 1 to 42.7. In view of the similar ratios in the two series of 5,000 each, it was not considered advisable to give more time to this line of investigation.

TABLE 2.—MOST COMMON CAUSES OF DEATH AMONG INSURED WOMEN IN THE UNITED STATES*

Cause of Death	Percentages of Total Deaths of Women Insured; Age at Time of Applying for Insurance				
	15-29	30-44	15-44 Average	45 and Over	All Ages Average
Tuberculosis of the lungs	27.2	13.9	20.5	4.0	15.0
Cancer and other malignant tumors	2.7	11.8	7.3	13.3	9.3
Pneumonia	6.1	7.5	6.8	10.7	8.1
Organic diseases of the heart	3.3	5.3	4.3	10.7	6.4
Diseases of pregnancy and puerperal state	12.6	5.6	9.1	....	6.1
Nephritis and Bright's disease	4.2	6.4	5.3	7.4	6.1
Typhoid fever	6.3	4.3	5.3	1.3	4.0
Cerebral hemorrhage and apoplexy	1.5	3.9	2.7	10.3	5.2
Appendicitis and typhlitis	2.3	1.5	1.9	0.3	1.4
Diseases of the uterus	2.2	3.3	2.8	1.0	2.2
Cirrhosis of the liver	0.4	0.8	0.6	1.0	0.7
Diabetes	0.7	0.9	0.8	1.8	1.1
Suicide	2.1	1.4	1.7	0.5	1.3
Accident	3.7	4.0	3.8	2.6	3.4
All other causes of death	24.7	29.4	27.0	35.1	29.7
	100.0	100.0	100.0	100.0	100.0

* This table does not indicate the ages of the women at the time of death. The table is based on the Medico-Actuarial Mortality Investigation, compiled and published by the Association of Life Insurance Medical Directors and the Actuarial Society of America, New York, 2: 52, 1913.

The examination of 10,000 family histories as given by applicants for life insurance would seem to indicate that among the class of men who have applied for life insurance during recent years, maternity has been a cause of death in more families than either tuberculosis or malignant tumors. In comparing these figures with figures already given from the actual numbers of deaths based on the causes recorded on the death certificates, it must be remembered that tuberculosis is most frequent and most fatal among the very poor—a class excluded from the life insurance records except as a percentage of applicants may have been born in poverty either in this country or abroad. Another and possibly more important reason for the great frequency of childbirth over tuberculosis arises in the practice of physicians in giving tuberculosis or other general cause on the death certificate of the woman who dies shortly after delivery without reference to the childbirth. The layman, on the other hand, remembers the childbirth and not the cause of death recorded on the death certificate.

The records of large maternity hospitals indicate that most of the deaths from puerperal sepsis are preventable when a rigid surgical technic is employed in the delivery room, and that many of the deaths from other complications of pregnancy, labor and the puerperium are unnecessary. The continued high maternal mortality constitutes a standing reproach to all civilized peoples in general, and to the medical profession in particular.

The teaching of obstetrics has perhaps not kept pace with that of general medicine and general surgery, but for this the teachers of obstetrics are only partially responsible. Obstetrics has always been the most time consuming and at the same time the poorest paid work

a physician undertakes. Comparatively few physicians have specialized in this branch of surgery. Hospital facilities for obstetric cases are most inadequate when compared with those for general surgical or medical cases. Comparatively few hospital interns have any real training in obstetrics. Most physicians in general practice have to handle all types of labor with little training and under the most unfavorable conditions.

The present need in obstetrics is not so much the discovery of the cause of certain rare and obscure conditions, but rather the application of present knowledge. The infection of obstetric patients should be prevented by elimination of the unclean midwife—both male and female. This may be accomplished by systematic and long continued education of the people and the profession. The toxemias of pregnancy should be prevented through careful prenatal supervision. Most of the severe toxemias are preventable. The delivery mortality and morbidity should be reduced to the minimum by ample hospital facilities. There is no longer any question about going to the hospital for even the most simple operation. Why continue the practice of doing obstetric surgery in a home with lack of facilities and questionable asepsis?

SUMMARY AND SUGGESTIONS

1. Mortality statistics show that for women of childbearing age (15 to 45), childbirth is the second greatest cause of death. The records of life insurance companies show that for all women who are insured under 45 years of age, the diseases of pregnancy and the puerperal state are the second greatest cause of death. Childbirth ties with nephritis and Bright's disease for fifth place as a cause of death among insured women.

2. A study of 10,000 family histories as given by applicants for insurance in the Northwestern Mutual Life Insurance Company shows that one in every 17.3 associates the death of a mother or sister or both with childbirth, 1 in 28.3 with tuberculosis, and 1 in 45 with malignancy. It is believed that a considerable percentage of these deaths from childbirth were recorded on the death certificates as being due to tuberculosis, heart disease, etc., and that the applicant for insurance remembered the associated childbirth and not the cause of death given on the death certificate. Our present mortality records do not show the frequency with which childbirth is a contributing cause of death.

3. The present maternal mortality may be greatly reduced by application of our present obstetric knowledge. Systematic education similar to that used in combating tuberculosis is needed.

4. Increased hospital facilities and nursing service must be provided. The state should furnish assistance in giving poor women the proper care during pregnancy, labor and the puerperium. For the present, more hospital beds may be made available by sending women home by ambulance early in the puerperium and caring for them through an outpatient nursing service.

5. The clinical teaching of obstetrics must be improved. Outpatient services are at present necessary; but as soon as beds are available, these women should all be brought to the hospital for delivery. Students get a midwife idea of obstetrics from the so-called simplified technic used in many outpatient services, and reflect these methods in the continued high maternal mortality. Few interns have an obstetric training comparable with that received in medicine and surgery. They go into general practice, and must meet the emergencies of obstetric practice with the inadequate training received as an undergraduate.

6. Churches could aid greatly in making motherhood safer, if on Mother's Day special collections were taken for the obstetric services of our various hospitals. In addition to the money raised, such a collection would have an educational value by calling the people's attention to the great obstetric needs.

141 Wisconsin Street.

Clinical Notes, Suggestions, and New Instruments

A SIMPLE TECHNIC FOR CONCENTRATING SPUTUM *

STANLEY WOOLLEY, M.D., LOOMIS, N. Y.

Greenfield and Anderson[1] have recently described a simple technic for the sedimentation of tubercle bacilli in the sputum. In brief, this method consists in placing a small amount (5 c.c.) of sputum in a centrifuge tube, adding two volumes of 1 per cent. sodium carbonate in 1 per cent. phenol (carbolic acid), shaking well, and placing in the incubator for from twelve to twenty-four hours. The tubes are then centrifuged for about fifteen minutes and smears made from the sediment after pouring off the supernatant fluid.

The advantages claimed by the author for this method are: (1) rapidity; (2) sterility of sputum when taken from the incubator, and (3) the resemblance of the films to direct smears. They also made controls of their method, using the full technic of Ellerman and Erlandsen for comparison, and report a distinct advantage in the simplified method.

This technic was recently tried out at the Loomis Sanatorium, and with some slight modifications, has been adopted in place of the more cumbersome Ellerman and Erlandsen technic.

The sanatorium uses the standard 4 ounce blue glass pocket sputum flasks ("Cleaneasy") for collecting sputum for concentration or sedimentation. As these are graduated, it is a simple matter to add the required amount of sodium carbonate solution directly to the sputum. The cork is replaced and the contents are thoroughly mixed by shaking. If the bottle is more than one-third full, which is usually not the case, a portion of the contents can be discarded, or treated in the same way in another bottle.

Placing in the incubator (37.5 C.) overnight has generally been found sufficient for digestion. On removal, the bottle is again shaken and the contents poured into a 50 c.c. plain, lipped centrifuge tube. In case there are more than 50 c.c. in the bottle, a sufficient amount is discarded before shaking. These tubes are centrifuged for fifteen minutes in an electric centrifuge, the supernatant fluid is poured off, and smears are made in the usual way.

In comparing the two methods, thirty-seven specimens were examined. After thorough shaking of the sample of sputum, the contents of each bottle were divided: one part was used for the standard Ellerman and Erlandsen (E. & E.) method, and the other for the simplified Greenfield and Anderson (G. & A.) technic. The G. &. A. method showed nine positives and twenty-eight negatives, the E. & E. method eight positives and twenty-nine negatives. The results were the same for each specimen by the two methods, with the one exception in which the E. & E. method was negative. Each slide was thoroughly examined by two examiners, and separate records were kept and compared after all slides were scrutinized.

The advantages of the G. & A. method, besides its simplicity and cleanliness, are that the sediment yields better smears and the stained bacilli are more distinct. This is probably because digestion is not quite as complete as in the E. & E. method, but our limited experience seems to show that it is sufficient for all purposes.

* From the Loomis Sanatorium, Babbitt Memorial Laboratory.

1. Greenfield, J. G., and Anderson, I.: Lancet 2:423 (Sept. 6) 1919.

Therapeutics

A DEPARTMENT DEVOTED TO THE IMPROVEMENT OF THERAPY. A FORUM FOR THE DISCUSSION OF THE USE OF DRUGS AND OTHER REMEDIES IN THE TREATMENT OF DISEASE.

USE AND ABUSE OF CATHARTICS *

(Concluded from page 461)

RHUBARB

Rhubarb [1] might be called the "constipating purge"; it presents a remarkable combination of constipating and purgative action, since it contains tannic acid and a resinous body, which, on hydrolysis, yields various purgative anthraquinon derivatives (rhein, emodin, chrysophanic acid, etc.). The latter may also exist partly free. In addition, this drug contains a large amount of calcium oxalate, which accounts for its "grittiness" when chewed.

MODE OF ACTION AND INDICATIONS

With small doses (up to 0.3 gm., or 5 grains), the astringent action predominates; with gram doses (15 grains or more) the purgative action is brought out, a mushy evacuation resulting in from six to ten hours, followed by a greater tendency to constipation than is the case with most other purgatives. When used in sufficiently large doses to be a reliable cathartic, rhubarb is a distinct irritant to the intestine; hence it is contraindicated in such conditions as enteritis or mucous colitis.

Authorities differ regarding the use of rhubarb in chronic constipation. Some consider it especially indicated in this condition, because—as is the case with other anthraquinon cathartics (cascara sagrada, senna, aloes)—habituation does not readily occur. Others, and with greater cogency of reason, condemn rhubarb as one of the worst of all cathartics in chronic constipation, because of its tendency to leave constipation as an after-effect. We may safely conclude that chronic rhubarb purgation is a misuse of the drug. It surely cannot cure chronic constipation; and it might make it worse.

Rhubarb is claimed to be especially indicated in those cases of delicately poised enteric function, occasionally found in feeble women and children, characterized by a tendency to diarrhea following the use of any other purgative. Rhubarb knows when to "stop." The introduction of such nonirritating physical laxatives as liquid petrolatum and agar, which cannot cause excessive action, has rendered rhubarb much less important in such cases.

The chief use of rhubarb is in the milder diarrheal disturbances, especially of infants and children. On the other hand, in the severer diarrheal disorders, when there is actual inflammation of the intestine, rhubarb would be contraindicated because of the possibility of its acting as an irritant. When the intestinal tract contains curds or other unsuitable or indigestible food, which produces colic and diarrhea in the course of "nature's" efforts at evacuation of the irritant, rhubarb is a remedy *par excellence* to reinforce the salutary tendency to evacuation, and to antagonize, by its astringent action, an excessive prolongation of the diarrheal discharges. For this purpose the *aromatic syrup of rhubarb* is usually administered, and with good reason. Here is a pharmaceutic masterpiece in efficiency of drug disguising. Children delight in taking it. It is so weak a preparation—representing only 3 per cent. of the drug—that it can be given in teaspoonful doses even to infants. For adults it is too feeble in action. The following is Kerley's [2] schedule of dosage:

DOSAGE OF AROMATIC SYRUP OF RHUBARB

6 months	4 c.c. (3 i)
18 months	8 c.c. (3 ii)
3 years	12 c.c. (3 iii)
5 years	16 c.c. (3 iv)

For children, this is the rhubarb preparation to be preferred to all others, unless the sugar contained in it should render it objectionable, as in excessive intestinal fermentation. In such cases, an equivalent amount of the aromatic tincture of rhubarb, of which the syrup contains 15 per cent., might be substituted; and benzosulphinid (saccharin) used for sweetening, as in this prescription:

	Gm. or C.c.
℞ Benzosulphinid	0|03
Sodium carbonate	0|03
Aromatic tincture of rhubarb	4|50
Water to make	30|00

Dosage same as that of the syrup.

This drug has the reputation of being "good for the stomach." It would no doubt be as difficult to bring objective proof for this action as it is for that of other so-called stomachics. Its not unpleasant bitter, aromatic taste and its astringent effect would entitle it to rank among the astringent bitters were it not for its purgative properties. This combination of qualities possessed by it renders rhubarb superior to other astringent bitters in some cases of dyspepsia complicated with constipation. For this purpose, owing to the stomachic qualities of the alcohol contained in them, one of the tinctures, the tincture of rhubarb (20 per cent., spiced with cardamom) or the more pleasant aromatic tincture (also 20 per cent., flavored with cinnamon, clove and nutmeg) would be employed in teaspoonful doses—more or less, according to the effect on the bowels—taken in a little water half an hour before meals. This treatment is, of course, suitable only in "atonic" conditions, and would be contraindicated by a state of excessive irritation or irritability.

SIDE EFFECTS

As the rhubarb stools have a "bilious" appearance due to the presence of the coloring matters of rhubarb, it was formerly classified as a cholagogue, and special indications were constructed for it based on this supposed action on the liver. We now know that it is not a real cholagogue, and that whatever benefits are obtained from its use in liver disturbances are due to its cathartic action. It must be remembered that, owing to the chrysophanic acid it contains, rhubarb imparts to the urine a yellowish color, which may lead one to suspect the presence of icterus. This urine may be distinguished from that of jaundice by the fact that it becomes purplish red on the addition of an alkali. Rhubarb renders the milk of nursing women laxative to the child. The drug has been known to cause macular, vesicular and even hemorrhagic eruptions, though such effects are rare.

* This article, the nineteenth, concludes the series on the "Use and Abuse of Cathartics." These articles, with revision and additions, will shortly be published in book form.

1. Rhubarb is the rhizome of an Asiatic plant, related to but by no means identical with the "rhubarb" or "pie-plant," the juicy stems of which we use in cookery. Eating of these has, therefore, merely the laxative value of cellulose food, and will, of course, not give one the purgative action of the official rhizome.

2. Kerley, C. G.: The Treatment of the Diseases of Children, Philadelphia, W. B. Saunders Company.

METHOD OF ADMINISTRATION

For solid administration forms, powdered rhubarb is to be used. The *extract of rhubarb* is undesirable, as it is unreliable in action. The active principles are so easily injured by heat that the extract may even be less efficient than the powdered root.[3] Soap forms a good excipient for rhubarb pills. This prescription might serve as example:

	Gm. or C.c.	
℞ Rhubarb, powdered	6 | 0	gr. xc
Soap, powdered	2 | 0	gr. xxx
Water.....enough to make a mass		

Mix and divide into 30 pills.
Label: One or two after each meal.

Each of these pills contains only 0.20 gm. (3 grains) of rhubarb; and more than 0.30 (5 grains) could hardly be given in pill form, on account of the necessary limitation in the size of pills. Hence, when larger doses are required, the powder form must be employed, though the powder might be disguised by enclosing it in cachets, each of which may be made to contain up to 0.60 gm. (10 grains) of the powder. Some persons actually enjoy chewing rhubarb; and little cubes of the rhizome are on the market, especially suitable for this purpose.

RHUBARB AND ALKALI

The addition of alkali prevents precipitation when an alcoholic preparation of rhubarb is mixed with water. This is the reason for the presence of a small amount of potassium carbonate in the syrup of rhubarb. There are numerous other compound rhubarb preparations, however, in which alkali is used for synergistic or for cooperative action.

Compound rhubarb powder, also known as Gregory's powder, is a mixture of:

Powdered rhubarb	25 gm.
Magnesium oxid	65 gm.
Jamaica ginger	10 gm.

We have here the evacuant action of the rhubarb, which acts chiefly as stimulant to peristalsis, reinforced by the laxative action of the magnesium ion, which acts by retaining fluid in the bowel. In addition to this, the antacid action of the magnesium oxid is of value in excessive intestinal acidity, which is frequently present in the summer diarrheas of infants and children. The dose of this powder for an adult would be from 2 to 4 gm. (one-half to 1 dram); for a child 2 or 3 years old, from 0.3 to 0.6 gm. (5 to 10 grains). This powder is, however, far from being palatable. Adults will take it, but children only with protest and often only after a struggle. In this connection, two axioms on children's medication might be laid down:

1. A struggle in administration sometimes does more harm than the medicine can do good.
2. The more we know about medicines, the less offensive is our medication.

That it is not necessary to inflict Gregory's powder on the sensitive palate of a child is shown by a prescription that offers all the effects obtained from the powder in an actually delicious form:

	Gm. or C.c.
℞ Magnesia magma	30
Aromatic syrup of rhubarb	30

M. Label: Teaspoonful every two hours.

The proportion of the ingredients, size of dose, and frequency of repetition of dose may, of course, be varied to suit the individual case. The previously described saccharinated substitute might be used instead of the syrup in cases in which sugar would be contraindicated.

"Rhubarb and soda" is quite a popular stomachic remedy, and deservedly so. It is a veritable gastric polychrest, combining the previously detailed effects of rhubarb in dyspepsia with those of baking soda, which is probably the single most efficient temporary remedy against gastric distress. Rhubarb and soda tablets are marketed by various manufacturers. They are the most convenient form for administration of this remedy to the average dyspeptic. This prescription might be useful:

	Gm. or C.c.	
℞ Powdered rhubarb	10	ʒ iiss
Sodium bicarbonate	30	ʒ i
Oil sugar of peppermint (N. F.)	30	ʒ i

Mix and divide into 30 powders.
Label: One, in hot water, after meals as required.

The oil sugar might be omitted for those who dislike sweet, or for patients with whom sugar disagrees. The 0.60 c.c. of oil of peppermint contained in the oil sugar (2 per cent. according to a general formula in the National Formulary) might be incorporated with the other drugs. For patients who dislike the flavor of peppermint—and there are such—oil of fennel, oil of anise, or any other volatile oil desired might be substituted. Instead of being divided into doses, the powder might be dispensed in a box and the patient directed to take a level or a heaping teaspoonful, as required. This preparation is therapeutically as efficient as, and pharmaceutically much superior to, the old and now no longer official *mixture of rhubarb and soda,* at present embalmed in the National Formulary under the title of *"Compound Rhubarb Mixture."* The manner in which the extemporaneous preparation may be modified, as indicated above, to suit the needs and idiosyncrasies of the patient proves the undesirability, so often noted in other instances, of ordering a ready made "hand-me-down" mixture.

3. For the same reason the use of the fluidextract of rhubarb is very limited.

TREATMENT OF LARVA MIGRANS, OR CREEPING ERUPTION

DR. R. R. KIME, Lakeland, Fla., writes: In Queries and Minor Notes (THE JOURNAL, March 8, 1919, p. 748) there was a short discussion on the treatment of larva migrans, or creeping eruption. Most of the methods of treatment presented are painful and uncertain in results. I would suggest a simple, efficient, quick, easily applied remedy, consisting of salicylic acid, 10 grains, for young children, or salicylic acid, 20 grains, to collodion, 1 ounce, for older children. If this is painted well over the eruption, especially at the points of migration, twice daily, the eruption will soon disappear. The collodion obstructs migration and the salicylic acid destroys the larva.

Faræus' Sedimentation Test for Pregnancy.—Faræus noticed that the blood of a pregnant woman allows more sedimentation of erythrocytes than the blood of the non-pregnant. He uses a tube 0.01 cm. in diameter, and mixes in it 8 c.c. of blood with 2 c.c. of a 2 per cent. solution of sodium citrate, and sets it aside for an hour. If the sediment of the corpuscles then reaches only to a height of 1 cm. or less, the woman is not pregnant as, with blood from a pregnant woman, the sediment was always found extending above the 1 cm. mark. Hauch stated at the recent French Gynecologic Congress at Brussels that this test is being used considerably in the Scandinavian countries, and that negative findings could be relied on, but that positive findings were noted sometimes in certain diseases as well as in the pregnant.

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SATURDAY, FEBRUARY 21, 1920

AMERICAN FOOD HABITS AND HEALTH

Changes in the food habits of large groups of persons may be brought about by necessity and likewise by altering customs and food preferences. Conditions determined by the war and consequences arising from it have enforced pronounced changes in the dietaries of thousands. What the outcome of this necessary response to the exigency of food situations may be is now being exemplified in the effect of the innovations on the health of the affected nations. Scurvy, beriberi and war edema are conspicuous illustrations of the extreme effects brought about by necessity, that is, by actual shortage of certain foods or by their high cost. A few months of deprivation may suffice to send deficiency diseases broadcast among people previously living in good health and working efficiency.

The other category of change in food habits by which new dietary customs come into vogue and older choices lose their popularity is slower in becoming manifested. The more permanent revisions of food preferences are not ordinarily created by famine, war or pestilence. They develop slowly, like other changes in styles; nevertheless they do arise, despite the fact that many persons assume that our food practices are perennially the same. Recently the Office of Home Economics in the United States Department of Agriculture[1] completed a comparison of the foodstuffs purchased by 500 families with the amounts of the same foods purchased by 400 families about twenty years ago. The outcome shows that the amount of meat in the diet has decreased about 8 per cent., and grain products about 11 per cent., while dairy products have increased about 6 per cent.: vegetables, 4 per cent., and fruits, 8 per cent. The average amount of meat and fish supplied in the diet in the 500 studies was about 6 ounces daily per man; dairy products, 16 ounces; grain products, 13 ounces; vegetables, 16; fruits, 9; sugar and syrups, 3, and fats, 2 ounces.

The statistics indicate, so far as such broad generalizations which deal with the quantity of nutrients rather than the special qualities of the foods can be depended on, that the "average" diet of such groups is adequate. The use of milk increased up to 14 ounces a day in the period under consideration. This is scarcely more than one-third quart a day; and since the amount of milk did not increase in accordance with the greater number of children in the families studied, the undervalued importance of milk in the dietary still deserves to be emphasized to the American public. Few of the dietaries were seriously below the accepted standards for the more important mineral ingredients required, namely, iron, calcium and phosphorus. The average dietary is more likely to be deficient in iron than in the other elements mentioned. The data indicate that milk and other dairy products supply the greatest percentage of calcium; vegetables and grain products, the greatest percentage of iron; and dairy and grain products, the greatest amount of phosphorus, and in each case at the lowest cost.

1. Langworthy, C. F.: Office of Home Economics: Some Results of the Work Carried on During the Fiscal Year 1918-1919, J. Home Economics **11**: 519 (Dec.) 1919.

THE CONSEQUENCES OF BURNS

The pathogenesis of the severe symptoms, often ending in death, which may follow burns has long been a matter of speculation. The widely unlike character of the phenomena involved makes it more than probable that differences in the degree of injury are attended by a variety of untoward consequences not necessarily dependent on a common cause. Thus, in burns of the first and second degree there is little, if any, actual destruction or disintegration of the tissues, the reaction being more nearly of a severe inflammatory character. On the other hand, in the severe damage of burns of the third degree, when subcutaneous cellular tissues are actually destroyed, unusual chemical products may be generated, and their possible deportment in the organism must be taken into account. It is easy to understand how local symptoms arise in the case of burns; but the nature of the less frequent but more aggravated general phenomena, with their remote effects, has been more puzzling.

An unusually large number of observations on a group of persons more or less severely burned in a munition factory near Frankfort[1] has afforded an opportunity to test, on a considerable scale, the validity of some of the theories that have been advanced to explain the consequences of burns. The theory of Sonnenburg,[2] which attributed death to a reflex depression of the vasomotor tonus, failed to receive support from these clinical cases. Vasomotor shock was not a common manifestation. Marked changes in the blood, reported by a number of observers, have been emphasized as factors of primary significance. Alterations in the form of the red corpuscles with hemoglobinuria,

1. Becky, K., and Schmitz, E.: Klinische und chemische Beiträge zur Pathologie der Verbrennung, Mitt. a. d. Grenzgeb. d. Med. u. Chir. **31**: 416, 1919.

2. Sonnenburg: Die Ursachen des Todes nach ausgedehnten Verbrennungen, Deutsch. Ztschr. f. Chir. **9**: 138, 1877; Virchows Arch. f. path. Anat. **80**: 381, 1881.

and particularly a loss of water from the blood accompanied by an increase in the number of erythrocytes amounting sometimes to 4,000,000 per cubic millimeter, are on record. In the Frankfort victims hemoglobinuria, which is often regarded as an almost specific symptom of severe superficial burns, was by no means always present. The formed elements of the blood were considerably altered in several instances, but the most striking finding was the enormous increase in the number of leukocytes, which reached 50,000 per cubic millimeter in one case. Whatever the significance of such changes in the blood picture may be, they cannot be regarded by themselves as of sufficient moment to account for the severity of the symptoms exhibited by badly burned patients. In any event it is unlikely, to say the least, that the altered red corpuscles so often observed after burns could produce by thrombosis or embolism those lesions which have been observed at necropsy.

The most probable hypothesis of the pathogenesis of burns still remains unchallenged. It looks on the clinical manifestations, such as delirium, hemoglobinuria and albuminuria, as well as on the anatomic findings, as the outcome of a profound intoxication.[3] However obscure the nature of the hypothetic poison still is, there are many hints that it may be allied to those products which are concerned in so-called anaphylactic shock. One thinks, first of all, of protein derivatives that might arise through the destruction of the tissues at the site of injury. It is no longer a new conception to assume that the organism may be sensitized by chemical compounds arising through abnormal reactions in its own tissues. Vogt[3] has summarized this view in suggesting that death following immediately on a burn may be due to shock, while delayed death is the outcome of an intoxication. The poison is generated in the area of tissue destruction, and by its continued absorption and distribution leads to a sensitization of the body which, in turn, permits subsequent death by anaphylaxis.

Corresponding with the views just formulated, the detection of foreign toxic products in the urine has been reported after severe burns as well as following anaphylactic seizures. Becky and Schmitz [1] assert the presence of a protein of unidentified character in the urine of the Frankfort patients, and they confirm the previous reports concerning the enhanced toxicity of the urine for mice. Bearing in mind the fiasco of earlier studies on "urotoxic coefficients," and the unfortunate confusion which they caused in discussions on "autointoxication," we may well hesitate to embody such evidence in any theory of intoxication after burns. The essential features of the possible production of poisons in burns are by no means invalidated, even if the current evidence is not yet conclusive. From the standpoint of treatment it cannot be too strongly emphasized that something far more serious and threatening than the mere disintegration of localized areas of tissue must be taken into account. A profound systemic intoxication may be involved.

3. Bardeen, C. W.: Johns Hopkins Hosp. Rep. **7**: 137, 1898. Eyff: Centralbl. f. d. Grenzgeb. d. Med. u. Chir. **4**: 428, 1901. Pfeiffer: Virchows Arch. f. path. Anat. **180**: 367, 1905. And particularly Vogt: Ztschr. f. exper. Path. u. Pharmakol. **11**: 191, 1912.

"UP FROM INSANITY"

Newspaper medicine contributes much to the gaiety and insouciance of medical life, as may be seen by the frequent quotations from the lay press in our Tonics and Sedatives. There is some excuse for the ephemeral dailies whose reporters can hardly be expected to be familiar with the elaborate technical terms of medicine; it would be impossible to employ a medical censor to examine the hourly output of world news. It amuses us if the reporter discusses the interstitial glands, ascribes *Taenia solium* to its proper place in brain anatomy, credits some surgeon with the clever removal of the Ethiopian tubes, and eyes us as he writes with a scarcely perceptible movement of the alligator supercilii. But it is a matter of concern when a dignified monthly periodical, with weeks and often months for consideration of its manuscripts, gives publicity to medical material which is unproved, misleading, untrue or sensational. It should not be difficult to have any medical essay scrutinized by expert physicians before publication.

The November issue of the *Atlantic Monthly* contained an article entitled "Up from Insanity" by E. J., purporting to be the experiences of one who had been insane and had recovered. The editor of the *Atlantic* is at pains to say of the author that "his life has been precisely as described in his revealing narrative. He could not be so frank and sign his name; but that name is known to the editor. The paper has been the subject of much correspondence, and with the author's consent pains has been taken to verify many of the facts. The *Atlantic* has entire confidence that the story is genuine down to the smallest detail." The editor thus claims to have taken pains to verify many of the facts, and says that the story is genuine down to the smallest detail. But there is one fact, one small detail, that the editor has not authenticated; that is, as to whether the writer of the article has ever suffered from insanity. It is, of course, a small detail, but it should not have been overlooked.

There is no evidence in the article itself that "E. J." ever did suffer from insanity; and since the editor offers us no proof of the fact, it would seem that a very essential element in the story is lacking. On the other hand, there is in the article considerable evidence that the writer was not insane. After a harrowing description of an episode intended to be the real "thriller" of this sensational paper, the writer (on his way to hunt big game in Africa) consulted a "celebrated New York specialist" who told him he had only *six*

months to live, and his advice "was to go out and hunt and roam the world and make the best of the passing hours." As there is no curable form of insanity in which sudden taking off could be predicted, and as any celebrated specialist would have been a little more politic in his prognosis to an insane man, and under such circumstances would have advised a sanatorium for the remainder of his brief career, we are inclined to believe that the specialist did not discover insanity in the patient. But he seems to have made a wrong prognosis, and Time took its revenge. The writer went on the suggested hunting trip to Africa, and on his return he learned that just *six months* after he had left the United States *"that great physician had died—insane."*

We shall have to be brief with the "thriller" just alluded to: One cold, raw March day, while traveling from village to village in a buggy, as a salesman, apparently, he entered a country store and found as he crossed the threshold that a great change had come over him. He leaned against the counter to keep from falling, was unable to speak, and "grinned diabolically" in attempting to talk to the merchant. The merchant in a kindly and fatherly way helped him back into his buggy, and he drove seven miles in a torrential downpour to a village inn. The host helped him out, and as he supported him into the house winked at his pals around the stove. The patient grinned "like a Cheshire cat," had lost his power of locomotion, stared at the pals who burst out laughing in his face, finally got to his room, fell across the bed fully dressed and went to sleep, with a vicelike frontal headache. Sometime in the night he awoke, lighted a lamp, looked at himself in the mirror (he describes the "horrible caricature" with reportorial frills) and then became intensely nauseated and violently ill! After closing this description he exclaims: "That, my friends, is insanity, the ultimate curse of God." On the contrary, the description does not fit insanity at all, but is a clinical picture of a condition very familiar to physicians and to laymen in times past—before the days of prohibition. The inn-keeper and his friends around the stove evidently—from the text—made a diagnosis at the time. They laughed. Their diagnosis may have been wrong. It may be that it was a hysterical nervous condition from fatigue and exposure simulating closely intoxication; but the description does not fit insanity.

The picture of himself as drawn by the writer in the article is that of a man now about 42 years of age, who had been at various times a salesman, a wanderer and a reporter. He was a poor mixer, odd, eccentric, shy, morbidly self-conscious so that at one time he wore blue glasses because of this, and given to introspection. In other words, he describes the usual course of an ordinary case—a neurotic individual with a tendency to hypochondriacal self-analysis, self-pity and gross exaggeration of his symptoms.

There is plenty of really good literature written by the insane, either after recovery or during the progress of the disease, and some of it has been of distinct benefit to humanity; for instance, "The Mind that Found Itself," by Clifford Beers—a book that led to the foundation of useful societies of mental hygiene in this country and Canada, and has furthered the welfare of the insane everywhere. Then there is the "Autobiography of a Paranoiac," extracts from which were published years ago in the *Journal of Psychology,* a truly extraordinary self-analysis, written in most excellent style, and a real contribution to psychology. "Up from Insanity" is misleading and sensational, carries no conviction, does no good, and the *Atlantic Monthly* is the last periodical in which one would expect to see such an article.

BOTULISM FROM RIPE OLIVES

For the fourth time within a few months a highly fatal outbreak of botulism due to ripe olives is recorded in our columns. The article on an outbreak of botulism in New York in THE JOURNAL [1] this week follows close on the heels of the report of the Memphis outbreak in our "General News" of last week. These added to the outbreaks at Canton, Ohio, and Detroit make a formidable showing.

Three of the four outbreaks appear to have been traced to one brand of olives, packed in southern California, a fact that we believe should be given wide publicity at this time, even if commercial interests suffer. It seems at all events as if all local health authorities should make systematic attempts to find out whether this particular brand of olives is being distributed within their jurisdiction. It is only the part of prudence and good common sense to make sure so far as possible that olives of this brand are not being "salvaged" and perhaps distributed to scores of small groceries and delicatessen shops throughout the country.

Two particularly disturbing features characterize these later outbreaks, one being that the olives apparently responsible for the New York outbreak were not of the same brand as those causing botulism in Canton, Detroit and Memphis. If it is true that more than one brand of olives is involved in the causation of botulism, the difficulties that public health authorities will have in coping with this menace are measurably increased. It is evident also that the whole ripe olive industry should be subjected to investigation and supervision. Steps in this direction have already been taken, as is also noted in our news columns. Thus far green olives do not seem to have been implicated in the causation of botulism.

The second point about which concern may well be felt is the seeming willingness of unscrupulous dealers

1. Sisco, D. L.: An Outbreak of Botulism, this issue, p. 516.

to sell olives and perhaps other foodstuffs that have been condemned. We are informed that the olives causing death in Memphis were obtained from a store of which the principal business is buying and selling salvaged merchandise. In this case, olives found in a dish on the table at the house where they were served had a very objectionable and pronounced foul odor. In the New York outbreak, a distributing company in New York City refused to put the olives on the market under their label, but the jars were resold by the California olive company that packed them and were shifted about from place to place for some months, many being rejected during their circulation because they were obviously spoiled and unfit for sale. From the information available it does not seem clear that the olives that were eaten in New York had a definitely spoiled odor. The only evidence from those eating the olives came from one victim shortly before death, who stated that he noticed nothing wrong about the odor or taste, and from one 9 year old child, who also noticed nothing disagreeable in taste or odor. Although a half bottle of ripe olives, probably the one that contained the toxin, was found in the home of the victims, no statement is made about the physical condition of these olives.

It seems clear that immediate and drastic warning should be given to dealers regarding the sale of ripe olives showing any signs of spoiling. It is also true that at least until fuller information is available salvaged food, particularly olives, should be regarded with considerable suspicion by the general public.

Current Comment

A PECULIAR SYNDROME ASSOCIATED WITH ADENOMA OF THE HYPOPHYSIS

Hitherto there have been two clear-cut clinical pictures associated with disease of the hypophysis: acromegaly, first accurately described by the French clinician Pierre Marie, and the syndrome described many years later by Fröhlich as dystrophia adiposogenitalis. It has generally been assumed that acromegaly is an indication of hyperpituitarism, while Fröhlich's syndrome is a manifestation of hypopituitarism. The work of American observers, and particularly of Harvey Cushing, has thrown a good deal of light on the subject of disorders of the hypophysis, and has indicated that in addition to these classical pictures certain atypical manifestations may at times be associated with disease of this gland. Reichmann[1] has recently recorded two examples of a third fairly clear-cut syndrome associated with disease of the hypophysis and easily distinguishable from either acromegaly or Fröhlich's syndrome. The prominent clinical features presented by his patients were turgidity and cyanosis of the face, with exophthalmos and dilated pupils; cardiac hypertrophy, with hypertension and bradycardia; glycosuria, premature menopause, pronounced myasthenia, edema of the legs, and a blood picture showing a decrease in the lymphocytes. In the patient who came to necropsy, the lesion was a chromaphil adenoma of the anterior part of the hypophysis, such as has been described by Benda as characteristic of acromegaly. The necropsy disclosed in addition a small thyroid rich in colloid material, and a slight but definite hyperplasia of the suprarenals. There was also osteoporosis in the bones of the vertebral column, and the patient had noted that her stature was gradually decreasing. It is apparent from the pathologic findings in this case that, while the main lesion was in the hypophysis, there was evidence that other glands of internal secretion were involved. The thyroid was smaller than normal, and the suprarenals were somewhat hyperplastic. Indeed, Reichmann had concluded during the patient's life that the syndrome was probably a polyglandular one. Reichmann is of the opinion that the clinical picture presented by these patients is not exceedingly uncommon. It will, of course, require further reports to determine whether this is the case. History has usually shown that the description of a new syndrome is followed by its recognition in various parts of the world, and there is little doubt that other reports on this peculiar condition will appear in the literature if Reichmann's assumption is correct. Since our knowledge of the glands of internal secretion is still very fragmentary, observations of this sort are stimulating both to the clinician and to the laboratory worker.

1. Reichmann: Deutsch. Arch. f. klin. Med. **130**:133, 1919.

THE PIGMENTS FOUND IN NERVE TISSUES

The existence of lipochromes—fat-holding or fat-combining pigments—in various parts of the body has long been recognized. The yellow color characteristic of the corpora lutea belongs to the group here referred to. Only in recent years has the chemical nature of some of the lipochromes been more clearly understood. The pigments of milk fats and body fats, of egg-yolk, of blood serum, of the corpus luteum and of other tissues have been identified as belonging to two classes of coloring matter, the carotin and xanthophyll pigments, respectively. We are indebted especially to the work of Palmer and his associates[1] in this country that these carotinoid pigments are now known to represent in many, if not in all cases, merely the lipochromes of plants transferred in the form of animal or human food and incorporated into the animal tissues. Histologists are familiar with a pigment that accumulates in the nerve cells in advancing life and sometimes under pathologic conditions. Of its origin and nature little has been known definitely. Because the pigment has been observed in certain wasting processes, some pathologists have looked on it as originating in the cells through their "wear and tear." As nothing more specific than staining methods has been depended on to determine the identity of the so-called cell lipochromes in most cases, it is by no means certain that the same products have been encountered in every instance.

1. Palmer, L. S., and Eckles, C. H.: J. Biol. Chem. **17**: 191 (March) 1914; **23**: 261 (Nov.) 1915; **27**: 27 (Oct.) 1916.

For one case, that of the lipochrome pigment of the nerve cell, however, the researches of Dolley and Guthrie[2] at the University of Missouri appear to have given a satisfactory answer. They demonstrate that it is a plant carotinoid pigment, derived from the food and incorporated in the cell, but limited to such species as carry carotinoids in the blood serum. Thus, in bovines, the occurrence of lipochrome in nerve cells appears to be customary; in swine, it is absent. Man, who is best known to exhibit lipochrome, is also known to carry carotinoids in his blood serum and to have colored fat. Some investigators have attempted to distinguish a group of pathologic pigments from the true lipochromes by calling them "lipofuscins."[3] Dolley and Guthrie[2] have been able to make pigment appear in or be absent from the nerve cells, according to the method of feeding they employed. When carotinoid-free diets were given, the lipochrome was missed from the nerve cells. They demonstrated that the reactions of the pigment that they could induce experimentally to deposit in the nerve cells was identical in its microchemical tests with the so-called "lipofuscin." The quite different melanin pigment that has been noted in nerve cells is, according to Dolley,[4] likewise not a natural constituent of any region of the nervous system, nor is it a product of normal or hypernormal functional activity. The genesis of the melanin pigment under all conditions, physiologic, morbid or senile, the Missouri investigators assert, is referable solely to depression. According to them, the histogenesis of the melanin pigment found in nerve cells is from nuclear material.

BRONCHIAL SPIROCHETOSIS

As long ago as 1905, Castellani, the student of tropical diseases, described the occurrence in the island of Ceylon of a form of bronchial infection caused by spirochetes. Since that time other observers have seen cases of bronchial spirochetosis in various parts of the world, but chiefly in the tropics. The American observers Jackson and Waters recognized the disease in the Philippines in 1908. The experiences of the recent war led to the observation that the disease was not confined to tropical countries. During the war, cases were observed in considerable number along the Adriatic coast, in Serbia, in Switzerland and in France. Recently Farah[5] described a number of cases of the disease in Egypt. The condition is one that is usually confused with tuberculosis. It generally runs a chronic course, although it may occur in the acute form. Patients usually complain of a chronic cough which is worst on arising and toward night and is accompanied by an expectoration that is frequently bloody. In the common form of the disease, the chronic type, the patient is usually afebrile, and no pronounced effect on the general health results. The recognition of the disease depends on the finding in the sputum of the characteristic spirochete, which was named by Castellani *Spirochaeta bronchialis*. The organism stains readily with the ordinary basic anilin dyes, but does not take Gram's stain. It generally occurs in the sputum in large numbers. Attention is called to the subject at the present time because of the return of large numbers of our citizens from service in France and other European seats of war where the disease might possibly have been contracted.

2. Dolley, D. H., and Guthrie, Frances V.: The Pigmentation of Nerve Cells, II, The Lipochrome a Plant Carotinoid Pigment, J. M. Research, **40**: 295 (Sept.) 1919.

3. Wells, H. G.: Chemical Pathology, 1918, p. 475.

4. Dolley, D. H.: The Recovery from Depression in the Purkinje Cell and the Decline to Senility of Depression: With the Incidental Histogenesis of Abnormal Pigmentation, J. Comp. Neurol. **28**: 465, 1917. Dolley, D. H., and Guthrie, F. V.: The Pigmentation of Nerve Cells, I, The Non-Fatty, Melanotic Pigment in the Dog and Rabbit Produced by Chronic Depression, J. M. Research, **39**: 123 (Sept.) 1918.

5. Farah, Najib: Presse méd. **27**: 774 (Dec. 17) 1919; abstr. J. A. M. A. **74**: 360 (Jan. 31) 1920.

THE ATTEMPTS TO TRANSPLANT TUMORS

It has been remarked that the cancer problem, like the kingdom of heaven, is within us. An ordinary infection can be transferred from one individual to another, and the disease may often even be conveyed between individuals of different species. This is in striking contrast to what is true of most neoplasms. They do not continue to develop when introduced into another than the original host. Hence, when it was found that one or more varieties of tumors having something in common morphologically with the malignant growths of man could be transferred from animal to animal, particularly in the case of mice, the hope of finding important facts in relation to the spread of such tumors was greatly encouraged. The story of transplantation experiments in cancer research is a history of many chapters. Spurred on by the striking analogies with human experience obtained in the investigation of tumor grafts in mice, as well as by the tremendous human importance of the questions at issue, numerous investigators have turned their best energies toward transplantation studies. Despite the oft repeated experience of "negative results," the workers have persisted in what has often seemed to be a hopeless undertaking. Nothing short of the courage of mind which is a characteristic of the true man of science could have kept cancer research alive to the degree that is represented by its place in present day medical inquiry. Yet in the midst of many disappointments and of the protracted uncertainties, some positive findings and helpful information have almost always been forthcoming. Each year has witnessed the patient unearthing of some new fact that has proved to be a spur to further initiative. As an illustration of this we may cite the recent attempts of Mann[1] in the Department of Experimental Surgery at the Mayo Clinic to obtain a transplantable tumor in the higher species of animals. Heretofore all such experiments, with the exception of those dealing with the infectious sarcoma of the dog, have been failures. Mann has made a new effort to transplant tumors of the dog and cat, for the advantage of obtaining a transplantable growth in a larger species is obvious. The results obtained in the Rochester experiments were strikingly similar to those hitherto observed in autotransplantation and homotransplantation of normal tissues. The transplants of a mammary carcinoma of a dog and of a fibroma of a cat failed to

1. Mann, F. C.: Attempts to Obtain a Transplantable Tumor in the Higher Species of Animals, J. Cancer Res. **4**: 331 (Oct.) 1919.

develop to any noteworthy extent on other individuals of the same species. The transplants of the fibroma which were made in the donor grew, however, and were exactly similar to the mother tumor in the cat. Mann has discovered the lesson in such experiences. The problem, he says, of developing a transplantable tumor in the higher species of animals is, it would seem, closely allied to the problem of making homotransplants of normal tissues grow. Here, again, is a fruitful field for renewed research.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Reciprocal Relations Established.—Reciprocal relations have been established between the state medical licensing boards of California and Iowa which became effective Jan. 22, 1920.

New Officers.—At the meeting of the West Side Medical Association of Kern County, held in Taft during the week of January 17, Dr. Harry N. Taylor, Maricopa, was elected president, and Dr. Allen, Taft, secretary.

Botulism Study.—A fund has been raised by the olive growers and the canning industry for an intensive study of botulism in California. The investigation will be conducted in the laboratories of the Stanford University Medical School and the George William Hooper Foundation for Medical Research of the University of California and has the cooperation of the U. S. Public Health Service and the California state board of health. A careful study will be made of the distribution of *Bacillus botulinus* in nature, of the ways in which food materials may become infected and of the steps necessary to destroy the organism when it has infected raw food materials. It is expected that the work will require at least two years.

FLORIDA

Personal.—Dr. Clarence M. Slack has been elected mayor of St. Petersburg.——Dr. John T. Bowen, Clearwater, who has been on duty with hospitals in Serbia during the world war, has received a decoration from the Serbian government.

Bequest to Health Bureau.—A citizen of Florida, who wishes to remain anonymous, has deposited with the state officer a will in which he leaves $75,000 to carry on the fight against venereal disease. The will provides that a corporation must be formed to administer the bequest, which constitutes the major portion of the testator's fortune.

County Society Program.—The committee on scientific work of the Hillsboro County Medical Society has issued the society's program for 1920 in the form of a calendar. The meeting days of the society are red letter days to the physicians of the county. At the bottom of the page for each month appears the scientific program for the society's bimonthly meetings.

ILLINOIS

Chicago

Grant by the Fenger Memorial Association.—The Fenger Memorial Association, at the suggestion of Dr. Ludvig Hektoen, has awarded Dr. Harry B. Culver a grant to aid in the study of certain urinary infections.

Dinner to Philadelphia Neurologist.—Dr. Charles H. Frazier, Philadelphia, was given a complimentary dinner at the University Club, February 18, at which he met former service men who had been members of his classes, and afterward read a paper before the Chicago Medical Society on major trigeminal neuralgias and their treatment.

Decrease in Influenza and Pneumonia.—From more than 2,000 there was a drop to 136 cases of influenza, February 14, and pneumonia cases dropped from a maximum of 300 to 56. Eighteen deaths were reported from influenza, and twenty-three from pneumonia. On account of the improvement in the influenza situation, the ban on visiting in hospitals has been removed, and public funerals are again permitted.

Augustana Hospital Drive.—A drive of the Augustana Hospital for $700,000 for the erection of a new building was opened, February 16, by the first of a series of ten dinners. Addresses were made by Chief Justice Harry Olson, chairman of the executive committee, Dr. William A. Evans, Mrs. C. A. Evald, and Mrs. Albert J. Ochsner. A budget was approved to apportion to the various divisions the following amounts: executive committee, $18,245; men's division, $22,911; women's division, $5,454; miscellaneous, $2,300.

Joint Meetings.—A joint meeting of the Chicago Pediatric Society and Clinic Society of the Children's Memorial Hospital was held at the hospital, February 20. Dr. John A. E. Eyster of Madison, Wis., delivered the address of the evening.——A joint meeting of the Chicago Medical Society and American Congress on Internal Medicine will be held February 25, at 8:40 p. m. Dr. A. Scott Warthin, chief of the department of pathology of the University of Michigan, Ann Arbor, will deliver an address on "The Medical Aspects of Gassing and Warfare with Particular Reference to Mustard Gas," illustrated by lantern slides.

INDIANA

Conference on Mental Hygiene.—At the Indiana Conference on Mental Hygiene held in Indianapolis, December 15, under the auspices of the Indiana Society for Mental Hygiene, President William Lowe Bryan of Indiana University, Bloomington, was elected president; Mr. Z. T. Fitzgibbon, Muncie, vice president; Mr. Paul Kirby, Indianapolis, secretary, and Mr. Edward Woollen, Indianapolis, treasurer. Medical members of the executive committee are Drs. S. E. Smith, Richmond, George S. Bliss, Fort Wayne, and Charles P. Emerson, Indianapolis.

Personal.—Dr. Columbus B. Goodwin, Kendallville, is reported to be seriously ill with pneumonia in Lakeside Hospital.——Dr. George S. Bliss, superintendent of the Indiana Home for Feeble-Minded Youth, Fort Wayne, has been appointed executive head of a similar institution operated by the United States government in Honolulu, Hawaii.——Henry C. Gemmill, director of the Fort Wayne municipal venereal clinic, has resigned to accept a position as executive officer of the seventh district of the U. S. Public Health Service with offices in Cincinnati.

LOUISIANA

Full-Time Health Work.—The Rapides Parish Police Jury has appropriated $15,000 to be supplemented by appropriations made by Alexandria for carrying out full-time health work.

No Bubonic Plague in New Orleans.—The U. S. Public Health Service announces there have been no new cases of human plague in New Orleans since December 29. During the two months preceding, there were in all twelve cases of human plague, all of them among those employed in the large food warehouses located near the water front. The situation was promptly and effectively met by the authorities, and New Orleans is declared to be just as safe today as any other city in the country. It is just as safe to visit New Orleans as it is to visit Rome, Paris or any other large city.

MASSACHUSETTS

Tuberculosis Association Established.—The representatives of organizations in northern Massachusetts which are interested in the control of tuberculosis met, February 4, in Salem and organized the Northeastern District Tuberculosis Association, electing Israel C. Clark, Haverhill, president; Mrs. Sturges, Salem, vice president; Mrs. George G. Winchester, Gloncester, secretary, and Josiah Gifford, Salem, treasurer.

Universal Military Training Bill.—Acting on the unanimous request of the council of the Massachusetts Medical Society, the joint committee on legislation of that society and of the Massachusetts Homeopathic Medical Society, February 10, considered and unanimously endorsed the medical aspects of the bill now before Congress providing for universal military training. It was the opinion of the committee, which represents over 4,000 physicians of Massachusetts, that the detection of diseases and defects through physical examination, their relief by appropriate measures,

and the betterment of health and physique through out of door life and exercise must inevitably improve greatly the physical condition of the young men throughout the country.

MICHIGAN

Society Reorganized.—Physicians of Barry County met at Hastings, December 31, and reorganized the Barry County Medical Society, electing the following officers: president, Dr. Clarence H. Barber, Hastings; vice president, Dr. Edgar T. Morris, Nashville; secretary, Dr. Arthur W. Woodburne, Hastings.

State Officers Reelected.—At the meeting of the trustees of the Michigan State Medical Society in Detroit, December 13, Dr. Frederick C. Warnshuis, Grand Rapids, was elected secretary and editor of the official organ. Dr. David Emmett Welsh, Grand Rapids, was reelected treasurer. It was decided that the annual meeting of the society be held in Kalamazoo, from May 25 to 27.

Personal.—Dr. Garfield Smalley, Charlotte, who has been in Central America for a number of years, is ill with tropical fever in the Charlotte Sanatorium.——Dr. Vern N. Richeson has succeeded Dr. Jeannette Brigham, resigned, as city health officer of Howell.——Dr. George K. Pratt, Flint, has been made assistant superintendent of the Oak Grove Hospital.——Dr. Lloyd C. Harvie, Saginaw, has been appointed city physician of Saginaw to succeed Dr. Leon B. Harris, deceased.——Dr. Lucius G. Fitzgerald, Port Huron, was acquitted by a jury, January 19, of the charge of performing an illegal operation.

MINNESOTA

Upper Mississippi Physicians Elect Officers.—At the annual meeting of the Upper Mississippi Medical Society held in Brainerd, January 8, the following officers were elected: president, Dr. J. A. Evert, Brainerd; vice president, Dr. F. L. Wilcox, Walker; secretary-treasurer, Dr. Irving Badeaux, Brainerd.

Overseas Medical Officers Club.—Minneapolis physicians, surgeons and dentists who served in the U. S. Army, Navy, Marine Corps or Public Health Service during the world war met, January 15, and organized a club, of which Dr. Frederick E. Haynes was elected president and Dr. Clifford E. Henry, secretary.

Deaths.—Elmer Ray Hoskins, Minneapolis; Ph.D., University of Minnesota, 1916; aged 30; Instructor in Anatomy, University and Bellevue Hospital Medical College, 1917-1918; Lieut., U. S. Sanitary Corps, 1918-1919; Associate Professor of Anatomy, University of Pittsburgh, and Assistant Professor of Anatomy, University of Minnesota, 1919; extensive contributor to the literature on the endocrine organs; died January 30, from influenza-pneumonia.——Walter W. Denny, a senior student of the University of Minnesota and an intern in St. Paul City Hospital, died January 26, from influenza.

MISSISSIPPI

Physician Sentenced.—Dr. Fletcher E. Lee, Aberdeen, is said to have been found guilty of manslaughter and sentenced to imprisonment for twenty years. Dr. Lee was charged with performing a criminal operation, as a result of which Miss Mary Miller of Aberdeen died.

Infirmary Purchased.—The locating commission of the Mississippi conference of the Methodist church has purchased the South Mississippi Infirmary, Hattiesburg, from Dr. Walter W. Crawford for $30,000. The present building will be moved and the infirmary will continue work until new buildings to cost $500,000 are ready for use.

NEW JERSEY

New Officers.—At the reorganization meeting of the Greenville Medical Society held in Jersey City, January 14, Dr. Samuel A. Cosgrove and Dr. Leonard B. Fauquier, both of Jersey City, were elected president and secretary-treasurer, respectively.——At the annual meeting of the Atlantic County Medical Society held in Atlantic City, January 9, Dr. Henry T. Harvey was reelected president, Dr. Walt P. Conaway, vice president, and Dr. Edward Z. Holt, secretary-treasurer; all are residents of Atlantic City.

Personal.—Dr. Marcus A. Curry, Greystone Park, has been appointed physician in chief and medical superintendent of the Morris Plains State Hospital pending the election of a permanent superintendent to succeed Dr. Britton D. Evans, deceased.——Dr. Philip Embury, Basking Ridge, recently sustained severe cuts and bruises when his automobile was struck and demolished by a train at a grade crossing on the Lackawanna Railroad.——Dr. Matthew K. Elmer, Bridgeton, has been elected a director of Cumberland National Bank.——Drs. David H. Oliver and Stacy M. Wilson, Bridgeton, have been elected directors of the Cumberland Trust Company.——Dr. William G. Schauffler, Lakewood, recently discharged as Colonel, Medical Corps, U. S. Army, resumed practice at Princeton, February 1.——Dr. Blase Cole, Newton, has been elected a director of the Merchants National Bank, Newton.——Dr. John R. C. Thompson, Bridgeton, has been reelected physician of Cumberland County.——Dr. Morris R. Faulkner, Vineland, sailed from New York for South America, January 15.

NEW YORK

New Officers.—At the annual meeting of the Medical Association of Oneida County held in Utica, January 13, the following officers were elected: president, Dr. Wood Clark; vice president, Dr. John D. Jones; secretary, Dr. Daniel E. Pugh, and treasurer, Dr. Robert Sloan, all of Utica.

Welfare Legislative Program.—Social welfare and labor legislative programs were discussed at a hearing before the senate labor committee February 12. These measures include the Knight bill extending the workmen's compensation law to cover occupational diseases, a health insurance measure, and a bill regulating the working hours of women and children.

Board of Inebriety Quits.—Assemblyman Martin McCue reported to the Assembly at Albany that the New York City board of inebriety, organized in 1910 to care for persons addicted to overindulgence in intoxicants, has found no one in need of its aid and has asked to be disbanded. A bill was introduced to delegate its powers to the board of correction.

Personal.—Count Pierre de Nouy, who was here during the war working for the French Mission, arrived on the *Rochambeau*, February 11, to take charge of the new laboratories of the Rockefeller Institute in connection with Dr. Alexis Carrel's research work.——Dr. St. Clair Darden, Poughkeepsie, has been appointed superintendent of the Healthwin Hospital and has assumed the duties of his position.

New York City

Personal.—Dr. Seymour Oppenheimer has been appointed a trustee of the state institute for the study of malignant disease.——Dr. Philip F. Bernstein, Brooklyn, has been appointed diagnostician to the Brooklyn section by the New York department of health.

Sanitary Code Affecting Milk.—At a recent meeting of the board of health, section 155 of the sanitary code of the department of health was amended and the term "modified milk" was defined. Under the terms of the amendment "modified milk" means any subdivision of the classification known as "Grade A for infants and children" which has been changed by the addition of water, sugar of milk or other substance intended to render the milk suitable for infant feeding. Such milk cannot be sold without a permit from the department of health.

NORTH CAROLINA

School Clinic.—Buncombe County Medical Society has established a permanent clinic at Asheville for the treatment of schoolchildren suffering from adenoids and diseased tonsils. Arrangements have been made for operations at the Mission, Meriwether and Biltmore hospitals, the physicians donating their services, but the hospitals making graduated charges not exceeding $12.50. The clinic will not be limited to Buncombe County, but will be open to those in western North Carolina.

Personal.—Dr. Andrew J. Warren, Raleigh, assistant state health officer, has been appointed health officer of Charlotte, succeeding Dr. C. Curtis Hudson, Charlotte, who resigned to accept a similar position in Richmond, Va.——Dr. James C. Braswell, Whitakers, was elected grand master of North Carolina masons at the meeting of the grand lodge at Raleigh.——Dr. Walter A. Newman, Wilmington, physician of New Hanover County, has been appointed field health director for Halifax County, Va.

Sanatorium Burns.—The Royal League Sanatorium, Black Mountain, with all its cottages, was destroyed by a fire originating in the power house on the night of February 15. Dr.

Isaac J. Archer, the superintendent, and the nurses and staff removed the patients without casualty to Cragmont Sanatorium, nearby. The loss is estimated at $30,000, partially covered by insurance. This sanatorium was the first to be established by a life insurance or fraternal insurance organization for the care of its members suffering from tuberculosis.

OHIO

Starts for Prison.—Dr. William A. Charter, Marion, sentenced several weeks ago to imprisonment in the penitentiary for from one to seven years for performing an illegal operation, was taken to the penitentiary, January 21.

Peak of Influenza Epidemic.—The larger cities of the state have passed the peak of the influenza epidemic, and the mortality is presumably at its height, but it is likely that the incidence of the disease will yet be greater in smaller towns and rural districts.

Hamilton S. Biggar Prizes.—The Cleveland Medical Library Association announces a prize essay competition for two prizes, one of $200 and one of $100, to be designated the Hamilton S. Biggar Prizes of the Cleveland Medical Library Association. Competition is open to members of the medical profession of Cuyahoga County, senior students in Western Reserve University and interns in hospitals in Cuyahoga County. The prizes will be awarded for the best essays on some clinical or theoretical subjects of immediate clinical interest. Manuscripts must be submitted to the secretary of the association, Dr. George Edward Follansbee, on or before Oct. 1, 1920, the identity of the author being safeguarded in the usual way. The announcement of the winners of the prizes will be made at the annual meeting of the association in December.

Personal.—Dr. James W. Young, Bellefontaine, has been appointed coroner of Logan County, succeeding Dr. Horace A. Skidmore, resigned.——Dr. David E. Stephen, Lorain, was seriously injured in a collision between his automobile and an interurban car, January 14.——Dr. LeRoy Pence was elected president of the Mechanics Building and Loan Association, Lima, at its annual meeting, January 20.——Dr. Jonas E. King, Girard, has been appointed health commissioner of Trumbull County.——Dr. James J. Martin, Bucyrus, has been elected city health commissioner.——Dr. James P. Wortman, Crooksville, suffered a fracture of the leg in an automobile accident, January 20.——Dr. Robert C. Rind has been elected president of the Springfield City Hospital staff. Dr. Clarence S. Ramsey has been reelected vice president and Dr. William B. Quinn has been elected secretary.

PENNSYLVANIA

Academy Offers Use of Library.—The Pittsburgh Academy of Medicine announces that the use of its library is open to all members of the Allegheny Medical Society and that a resident librarian is on duty at the Academy building, 322 North Craig Street, from 10:30 a. m. to 2:30 p. m., daily.

New Officers.—Mercer County Medical Society held its meeting January 4 at Buhl Hospital, Sharon, preceded by a clinic and luncheon. The following officers were elected: president, Dr. Frank Bleakney, Grove City; vice presidents, Drs. Augustus M. O'Brien, Sharon, and David Ferringer, Stoneboro; secretary, Dr. Martha Edith MacBride, Sharon, and treasurer, Dr. Carl J. Mehler, Sharon.

Licenses Revoked.—Federal attorney E. Lowry Humes was notified February 8 by Dr. John M. Baldy, Philadelphia, president of the Bureau of Medical Education and Licensure, that the bureau has revoked the license of Dr. Ellsworth J. Trader of Pittsburgh, now serving a sentence in the federal prison in Atlanta, Ga., for illegal writing of prescriptions for narcotics.——Six Pittsburgh physicians have been arrested by federal agents in the last few weeks.

Philadelphia

Campaign Against Quacks.—A city-wide campaign against quack doctors was announced February 10 by assistant district attorney Charles Edwin Fox, after William J. Locker, a practitioner of drugless therapy, pleaded guilty before Judge Rogers of practicing without a license.

Provost of University Resigns.—After forty-four years of service in college work, Provost Edgar Fahs Smith of the University of Pennsylvania has tendered his resignation to the board of trustees. He announced his complete retirement from all university activities and connections, giving up not only his office as provost which he has held since January, 1911, but also the Blanchard professorship of chemistry.

Personal.—Dr. Joseph C. Beck, Chicago, professor of rhinology, otology and laryngology of the College of Physicians and Surgeons of Illinois, read a paper on the use of radium and other nonsurgical measures in malignant disease of the head and neck, before the section on otology and laryngology of the College of Physicians, February 18.——Dr. Alonzo E. Taylor of the University of Pennsylvania sailed for Europe, February 14, to make a close study of food conditions in the "hungry sections" of the continent.——Dr. C. Lincoln Furbush, director of public health and charities, has been confined to his home with a mild attack of influenza.

VIRGINIA

Improvement of Health Administration.—The United States Public Health Service is conducting a campaign throughout the state to improve health administration in the rural districts. The work is being financed jointly by federal, state and local authorities.

Damages Against Sanatorium.—Henry Cohen, Jr., is said to have been awarded $2,000 damages in his suit for $10,000 which he brought against the Tucker Sanatorium, Richmond, claiming that he sustained injuries as a result of the application of hot water bags, while he was a patient in the institution in December, 1918. The attorneys for the sanatorium made a motion to set aside the verdict on the ground that the amount awarded was excessive.

WASHINGTON

Physicians Meet.—At the recent meeting of the Washington Medical Library Association held in Seattle, Dr. Samuel J. Holmes, was reelected president for the fourteenth term; Dr. J. A. Smith was elected vice president, and Dr. Charles A. Warharnik, secretary-treasurer. The number of active members of the association has increased to 177.——At the meeting of the Pierce County Medical Society held in Tacoma, February 10, the topic of the evening was an open discussion of influenza, inaugurated by Dr. Charles S. Wilson of the city health office.

Laboratory Activities.—The work of the laboratory of the Washington state board of health for January shows a large increase over previous records. The number of examinations totaled 1,318, representing an increase of 67 per cent. over the December total and of 220 per cent. over the monthly average for 1918. There has been an epidemic of diphtheria in the state, and the laboratory has been able to render efficient service in the distribution of large amounts of mediums as well as in the prompt diagnosis of cultures. The increase in the diphtheria diagnostic work is shown by the January total of 728 in contrast to the total of 915 for the entire year 1919. Virulence tests on the carrier cases have been made where requested at the expiration of the quarantine period. The Wassermann work also shows a steady increase since its introduction in 1918. The Wassermann specimens for 1918 totaled 435; for 1919 the total was 1,827, and for January, 1920, it was 278.

WISCONSIN

Hospital Items.—The new Milwaukee Maternity and General Hospital, formerly the Columbia Hospital, has been completely remodeled at a cost of more than $10,000 and was opened for inspection, Dec. 21, 1919.——The Methodist conference is reported to be planning to buy St. Joseph's Hospital, Racine, and will erect an $80,000 hospital building.

CANADA

Hospital News.—The old Toronto General Hospital is to be purchased by the city of Toronto and will be converted into an isolation hospital.

Medical Clinic for Kingston.—Incorporation has been granted to the Kingston Clinical Association, Limited, with a capital of $100,000. The purpose of the association is to conduct a medical clinic which will standardize the systematic examinations. Specialists in each branch of medicine will be in charge, and all modern science equipment will be used. This will make Kingston a more important medical center, as it is the first clinic of the kind to be established in Canada. Dr. Walter T. Connell will be the director.

Public Health Notes.—Representatives of the Academy of Medicine, Toronto, and of the Ontario Medical Council,

headed by Dr. Edmund E. King, recently waited on the Ontario Government in support of the vaccination act. The physicians desire that the act be left unamended, or else strengthened by giving more power to the Ontario board of health and the medical officers of health. Every child should be vaccinated before going to school at least, and there should be subsequent vaccination if necessary. The deputation thought it would be in the interests of the community if vaccination was made compulsory.——Dr. Arthur A. Simard, Quebec, president of the provincial board of health of Quebec, reports the general health of the province as good. Close touch with the origin and spread of smallpox in Ontario has been maintained, and it has been decided not to lift the boundary quarantine against Ontario. Every precaution is also being taken against the admission of influenza into that province. This disease has been present in many points in Ontario, and although not so bad as the epidemic of 1918, a large number of deaths from influenzal pneumonia have been reported.——Toronto has had as many as thirty deaths a day from influenza, and the height of the epidemic has evidently not been reached.——The Winnipeg epidemic of encephalitis lethargica has reached sixty cases with twenty-three deaths, an unduly high mortality rate of 38 per cent. In eighteen cases the brain was examined and showed marked congestion, perivascular infiltration with lymphocytes and plasma cells, and occasionally hemorrhage. Degeneration of the nerve cells was variable, the changes being most marked in the midbrain. Marked lesions were also found in the kidneys. A remarkable epidemic of hiccup occurred in Winnipeg at the same time.

FOREIGN

Fuchs in Spain.—On the invitation of the Junta de Ampliación de Estudios (Postgradnate Studies' Board), Dr. E. Fuchs, professor of ophthalmology at the University of Vienna, will deliver a course of lectures at Madrid on the pathology of eye diseases. In addition, his lectures will be supplemented by explanations by Dr. Cajal.

Deaths in the Profession Abroad.—Dr. **H. Müller,** professor of internal medicine at the University of Zurich until 1918, aged 71. Percussion and auscultation were his hobbies, he used to say, and he used them in perfecting the diagnosis of heart disease so that under his teachings congenital heart disease is detected earlier and in larger proportions in Switzerland, it is said, than elsewhere.——Dr. **Julio Robert,** physician to the French embassy at Madrid and to the French hospital, director of the first infant consulfation station at Madrid.

Prize for Research on Nerves.—The *Nederlandsch Tijdschrift* publishes a notice from the University of Leyden to the effect that the Bachiene prize of at least 500 florins, with a parchment certificate, will be awarded for the best work on the recording of the electric phenomena in the living body of certain nerves that have not already been thus studied. The nerves that have been already investigated are the phrenic, the vagus of the lung and the depressor nerves. It is stated that competition is open to all, and the competing articles describing the research can be in Dutch, French, English or German. They must be in the hands of the secretary, H. Krabbe, Witte Singel 28, Leyden, Netherlands, before March 1, 1921.

LATIN AMERICA

Influenza in Havana.—On account of the prevalence of influenza, the health officer of Havana, Dr. López del Valle, has put in force several measures to combat the spread of the disease. Among the measures adopted are the forbidding of all mask balls and children's dances, the placarding of houses where cases occur and the restricting of public funerals.

Tribute to Dr. Vieira de Carvalho.—The *Annaes Paulistas de Medicina e Cirurgia* of São Paulo, Brazil, describes the ceremonies which have been organized by the Santa Casa in honor of the completion of thirty years as director of that public hospital by Dr. Arnaldo Vieira de Carvalho, professor of forensic medicine in the law school there and one of the founders and organizers of the Faculdade de Medicina e Cirurgia. The faculty will present him with a bronze bust at the public meeting planned at the Theatro Municipal, where a gold medal and a parchment describing his record as physician, administrator and citizen will also be presented. Representatives from scientific institutions in other states have announced their intention to attend as well as numbers outside of scientific circles.

GENERAL

Personal.—Drs. William J. Mayo, Rochester, Minn., and Franklin H. Martin, Chicago, who have been touring South America in the interests of a possible Pan-American College of Surgeons, started for home from Santiago, Chile, February 14. In the course of their tour they have visited Buenos Aires, Montevideo and Valparaiso, Chile.

Delegates to World Red Cross Meeting.—The American Red Cross has announced the appointment of the following delegates to the first meeting of the general council of the League of Red Cross Societies at Geneva, Switzerland: Willoughby G. Walling, Chicago; Otis H. Cutler, New York; Mrs. William K. Draper, New York; Samuel Mather, Cleveland, and Eliot Wadsworth, Boston. Mr. Henry P. Davidson, chairman of the board of governors of the league, will accompany the delegation. The council will open in Geneva, March 2, and will continue in session one week. Twenty-four powers have been invited to send delegates from their national Red Cross societies.

Bill to Suppress Bubonic Plague.—To continue the work for suppression and control of bubonic plague in New Orleans, Senator Ransdell of Louisiana has presented to the Senate an amendment to the deficiency bill, appropriating $250,000 for the immediate use of the Public Health Service. This is in accordance with the recent request of the Public Health Service, which has no available funds at the present time to suppress the bubonic plague and similar epidemic diseases. The Clearing House Association of New Orleans is cooperating with the Public Health Service and has agreed to lend the New Orleans Dock Board $500,000 to finance the operations of local authorities in rat-proofing operations on the docks.

Air Service Medical Association.—Medical officers formerly or at present connected with the air service of the Army have organized the Air Service Medical Association of the United States and have elected the following officers: president, Dr. John A. McReynolds, Dallas, Texas; vice presidents, Col. Theodore C. Lyster, New York City; Col. Eugene R. Lewis, Dubuque, Iowa; Col. Isaac H. Jones, Philadelphia; Col. William H. Wilmer, Washington, D. C., and Col. Albert E. Truby, Washington, D. C.; secretary, Major Vernon K. Earthman, Dallas, Texas, and treasurer, Major Robert S. McCombs, Philadelphia. The next annual meeting of the association will be held in the St. Charles Hotel, New Orleans, April 26.

Resolution Regarding Dr. Osler.—At the meeting of the executive committee of the Federation of American Societies for Experimental Biology in Cincinnati, Dec. 30, 1919, a minute was drafted, stating:

> In the death of Dr. Osler, the medical profession has suffered an immeasurable loss. Belonging to no cult, or age, or clime, . . . he was master of the art of medicine in its purest form. . . . As a teacher, he was again master, painting with broad strokes pictures of disease never to be forgotten by the student. An investigator and an inspirer of investigation, a worthy counsellor of brother physicians, a delver in the history of medicine, and an ornament to its letters; and withal so human and of such rare personal charm as to be beloved of all who came in contact with him. Such was the man we mourn. We grieve not only at the loss of leader and friend, but also that death overtook him in the very shadow of the great conflict which brought him so great personal loss and sorrow and robbed him of the mellow years which were so fully his due.

Incidence of Influenza.—The U. S. Public Health Service reports the incidence of influenza for the month of January as being excessive. In thirty-one states which have sent reports, there were over 120,000 cases. The mildness of the disease is generally commented on, and it is believed that many physicians are not reporting mild cases of influenza. Mortality reports from large cities indicate that from May, 1919, to January, 1920, the death rates from influenza and pneumonia were "quite generally below the general average." With the week ending January 17, which marked the beginning of the influenza epidemic in Chicago, the death rate from influenza and pneumonia in Chicago increased slightly, but is still not in excess of the average for the season. Similar significant increases have taken place in New York City, Washington, D. C.; Milwaukee, Kansas City, Mo., St. Louis, Cleveland, San Francisco, Albany, N. Y., Atlanta, Ga., Baltimore, Cambridge Mass., Columbus, Ohio, Dayton, Ohio, Indianapolis, Jersey City, N. J., Louisville, Ky., Minneapolis, Newark, N. J., New Haven, Conn., Philadelphia, Pittsburgh, Richmond, Va., St. Paul, Syracuse, N. Y., and Toledo, Ohio.

Regulations for Prescribing Liquors

A circular issued by the Commissioner of Internal Revenue gives explicit directions regarding Form 1403, prescription blanks for practicing physicians who have secured permits to prescribe liquor. As stated in the abstract of Internal Revenue Regulations 60 (THE JOURNAL, Jan. 31, 1920, p. 342), it is first necessary for practicing physicians to secure a permit to prescribe. Application for such a permit must be made on Form 1404, in triplicate, sworn to before a notary public. These blanks can be secured from the federal prohibition director of the state or from the collector of internal revenue of the district in which the physician making application is located. Permits will be issued only to physicians legally qualified to practice under the laws of the state. The three copies when filled out are returned to the federal prohibition director. After receiving a permit to prescribe, the physician is then supplied with Form 1403 on which prescriptions for alcohol and alcoholic liquors must be made out. These prescription blanks are furnished in books of 100 blanks each. A sample blank is reproduced in the adjoining column. The books are serially numbered, and each prescription blank in each book is also serially numbered, with stubs attached. Books must be returned to the director when the prescription blanks have all been used, or sooner if ordered by the director or the Commissioner of Internal Revenue. All unused, mutilated or defaced blanks must be returned with the books.

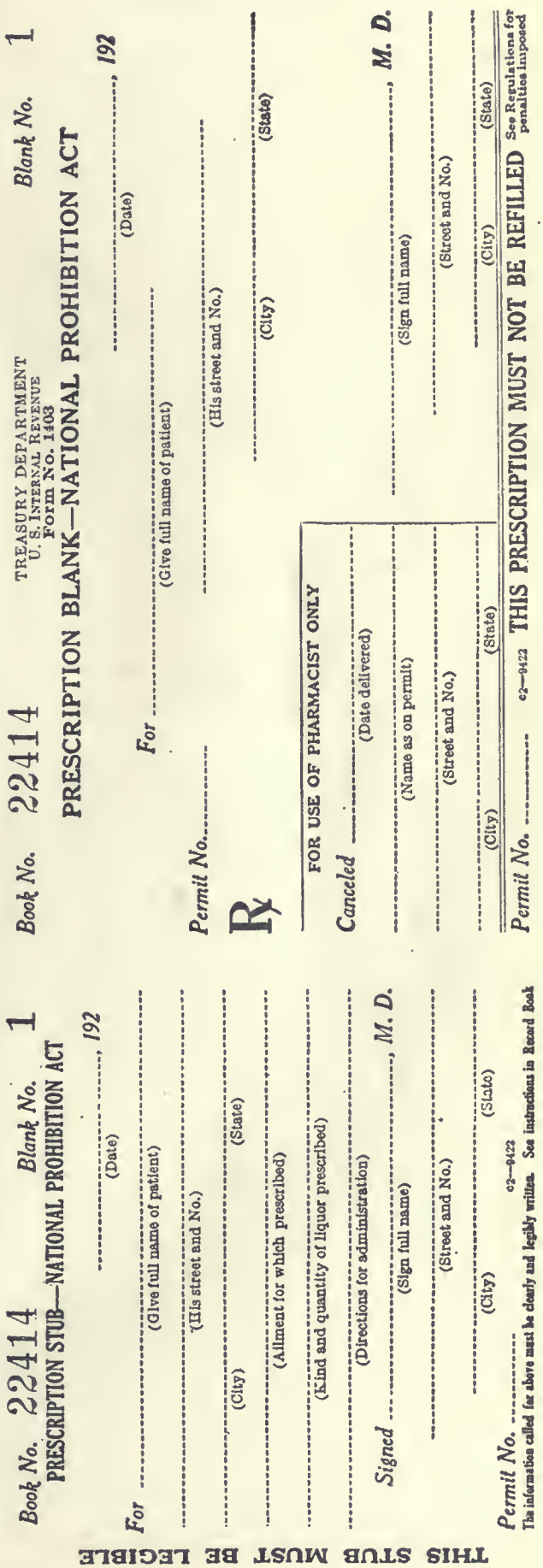
The state directors and the district collectors of internal revenue by whom these prescription books will be issued are directed to keep a record of the books issued to each physician. Prescription books can be secured by physicians only after they have made application in triplicate on Form 1404 for a permit to prescribe and after the permit has been issued on Form 1405. No bond is required for such a permit. A register is also issued to each physician in which must be recorded all prescriptions written for alcohol or liquors.

Instructions regarding the administration of liquors in accordance with the regulations are explicit. They read as follows:

"Regulations No. 60 provide that distilled spirits, wines and alcoholic medicinal preparations may be administered by physicians to their patients for medicinal purposes in cases where the use of such liquor is believed necessary to afford relief of some known ailment, and delay in procuring the same through a retail pharmacist upon a prescription might result in loss of life, aggravation of the ailment, or intense suffering. Physicians may make application on Form 1404 for permit for this purpose, and if approved a permit will be issued by the commissioner to the physician to use the liquor in the course of his practice, and he may obtain as much as six (6) quarts of liquor during any calendar year, to be administered as stated above, but he may not sell or furnish the same to such persons or to any other persons." Permits to prescribe may be issued by state prohibition directors, but permits to physicians to use liquor for administration to their patients must be issued by the Federal Prohibition Commissioner.

"Physicians are not permitted to write prescriptions for liquor for their own use, and the law provides that not more than a pint of spirituous liquor to be taken internally shall be prescribed for use by the same person within any period of ten days, and no prescription shall be filled more than once."

Druggists qualified to sell medicinal liquors are notified that all prescriptions for medicinal liquor must be on Form 1403 except that in any case where a physician holding a permit to prescribe liquor is not in possession of such a form due to any justifiable reason and where delay in procuring this form might result in loss of life, aggravation of the illness or intense suffering, he may prescribe intoxicating liquor on a form other than Form 1403 provided such prescription contains all of the information called for on Form 1403 and a record of the prescription is made.



Government Services

MEDICAL OFFICERS, UNITED STATES NAVY, RELIEVED FROM ACTIVE DUTY

ILLINOIS
Chicago—Benjamin, H. W.

MICHIGAN
Detroit—Marsh, A. R.

NEW YORK
Brooklyn—Schneider, S.
New York—Burk, S. B.
Goldberg, R. M.

TENNESSEE
Flatwood—Sharp, T. H.

Disease Conditions in the Army

For the week ending February 6, it is reported that influenza continues at many of the large camps and stations, principally among the eastern and southern states. The number of new cases of pneumonia for that week was double the number reported for the previous week. Admission and noneffective rates showed a slight decline. There was a marked decline in the number of new cases of influenza, measles and pneumonia occurring among the American forces in Germany. The incidence of pneumonia in the camps in the United States is about one tenth of that accompanying influenza at the height of the 1918 epidemic. The mortality percentage was also much lower.

Foreign Correspondence

PARIS

Jan. 15, 1920.

The Attitude of French Societies of Learning Toward German Savants

Notwithstanding the fact that the treaty of peace has gone into effect, there are as yet no indications that relations between French and German men of science are about to be resumed. It will be recalled that it was the attitude of the ninety-three signatories of the all too famous manifesto of German intellectuals that induced our academies to break with the German savants. Before the war, Germany had, to a certain extent, reserved to herself the monopoly of treatises on natural science, and France saw fit to buy and use them, but does not propose to do so longer. The Sociétés françaises de sciences naturelles have recently formed a federation for the purpose of combating German enterprise in this field. The Sociétés françaises de chimie have also formed a federation with the same object in view.

It is interesting to note that the attitude of German men of learning during the Franco-Prussian War of 1870-1871 was far from being correct, just as was the case in the War of 1914-1918. Dr. Léon Cheinisse has published some extracts from the correspondence of the celebrated German jurist Rudolf von Ihering, who, under date of Aug. 23, 1870, wrote:

"Happy is the man who is permitted to play a part in this towering flight of our people! . . . Never before in the history of any people has there been such a glorious epoch. . . . It is like the German tale of Cinderella, who was suddenly raised to the rank of princess. Thanks be to these dogs of Frenchmen for having, up to the present time, treated our people as Cinderella was treated. The application of the story has thus been brought home to their conscience, and the blows have fallen on their own shoulders. The humiliation and weakness of France must ever remind Frenchmen of our cause for gratitude. . . ."

It may perhaps be assumed that the arrogance of the German mentality, which still persists in spite of everything, and of which The Journal recently cited a typical example (The Journal, Dec. 20, 1919, p. 1889), will be no slight obstacle to the resumption of normal relations with the scientists and scholars of the empires of "Mitteleuropa."

Child Welfare in the United States

Dr. P. F. Armand-Delille, who was sent last year on a mission to the United States, recently reported to the Académie des sciences morales et politiques his impressions of the child welfare movement in that country. In his report he brought out the fact that in the United States the care of children's health has been thoroughly organized, and commended the system of visiting nurses; the consultations held in the homes with mothers and prospective mothers, the teaching of hygienic rules, and the care of the child who may be ill. He also emphasized the value of the American federation of charity organizations, which made possible a better utilization of charity funds from public and private sources. He found that the heartiest cooperation prevailed, which resulted in the greatest benefit to public health in general.

This visit of Dr. Armand-Delille furnishes an additional example of the salutary influence that the United States is destined to exert on the development of public hygiene in France. In a previous letter (The Journal, Jan. 31, 1920, p. 338) I mentioned other evidences of such influence.

Antipyrin and Anaphylaxis

Dr. Fernand Widal, professor of clinical medicine at the Faculté de médecine de Paris, in collaboration with Dr. Pasteur Vallery-Radot, has made an interesting report to the Académie des Sciences on an anaphylactic state produced by a nonalbuminoid substance—antipyrin. A woman, aged 24, had formed the habit of taking antipyrin every month for the relief of headache. During a period of nine years no untoward effects were produced, but at the end of this period anaphylaxis appeared, together with an intense pruritus at the level of the chin and lips, which became red, swollen and painful. This anaphylactic state was so persistent that it continued for seven years after the patient had completely abstained from the drug. Widal and Pasteur Vallery-Radot have been investigating for the purpose of discovering how small a dose must be to exclude all possibility of accident, and they find that it lies between 0.0001 and 0.0002 gm. Patients to whom these minute doses are administered for a period of two months are desensitized completely and definitively and they can take antipyrin tablets without feeling the slightest discomfort.

Widal remarked that analogous conditions doubtless existed for a number of substances that are ingested and inhaled. He mentioned particularly the case of a merchant who, after having sold mutton for more than thirty-seven years, was no longer able to handle mutton without having an attack of asthma. Our temperamental nature may, then, be continually modified, by the process of sensitization and desensitization; by anaphylactic shocks that take place totally unknown to us. It seems that asthma, migraine, and certain other morbid states with which man is affected during certain periods of life, are obedient to the laws of anaphylaxis.

Medical Relations with Poland

At the instance of Professor Letulle, the first meeting of the Comité médical franco-polonais was held recently at the Faculté de médecine de Paris. This committee, which was presided over by Professor Roger, dean of the Faculté de médecine, counts among its members a number of physicians of Polish extraction; for example, Dr. Babinski, hospital physician of Paris; Dr. Danysz of the Institut Pasteur, and Dr. Ockinzyc, hospital surgeon of Paris. A similar committee has been appointed in Warsaw, and the hope is expressed that before long, by means of journeys in the interest of science and by courses of lectures, scientific relations between Poland and France may be restored.

Vehicles for the Use of Cripples

Marshal Pétain has taken steps to promote an exhibit of vehicles for the use of cripples, which will be held in the Grand-Palais.

LONDON

Jan. 24, 1920.

A New Surgical Organization

The Association of Surgeons of Great Britain and Ireland, at the inaugural meeting of which Sir Rickman J. Godlee presided, owes its inception to the suggestion of Sir Berkeley Moynihan in 1914. England was then almost alone in having no representative society for the adequate discussion of surgical topics. At a meeting held at the Royal College of Surgeons, May 26, 1914, a committee was appointed to draw up rules and to circularize the members of the surgical staffs of hospitals connected with teaching schools. The war interrupted the project, and after more than five years, organization of the association has been effected. Two main principles have been kept in view: First, the active membership of the association will be limited both in respect to members and to age. Second, the discussions will be free, in every meaning of the word and the expression of thought will be untrammeled by the dread that what might be said confidentially to a friend will be repeated in a garbled form from the

housetops. No reports will be sent to the journals or newspapers, but the fellows will be at liberty to publish their communications when and where they choose, appropriately in the *British Journal of Surgery*. Experience of other countries shows the advantage of holding meetings at different centers, but it is proposed that at least every third meeting shall be held in London. It is hoped that stagnation in the directorate will be avoided by the annual change of president and one third of the ordinary members of council, and continuity will be secured by the more or less permanent tenure of office by the honorary treasurer and secretary.

Miners' Nystagmus

At a meeting of the North Staffordshire Institute of Mining Engineers, Dr. T. L. Llewellyn, medical officer to the collieries of North Staffordshire, declared that deficiency of illumination is the dominating factor in the causation of miners' nystagmus, and, in his opinion, so important that all other factors become insignificant. In the prevention of the disease three main considerations must be taken into account: 1. Nystagmus is a disease of gradual onset; the average number of years of underground life before failure of sight is twenty-five. 2. The illumination in open-light pits is five times that in safety-light pits. 3. Cases of nystagmus, although uncommon, do occur in open-light pits.

The True Nature of Multiple Exostoses

At a meeting of the Medical Society of London, Prof. Arthur Keith read an important paper on the true nature of multiple exostoses. From the study of the roentgen-ray records of four cases of multiple exostoses he had come to the conclusion that the disease should be removed from the category of tumors and placed among the disorders of growth under the name suggested by Morley Roberts—diaphysial aclasis. The exostoses which attracted the attention of the clinician are merely secondary results which mask one of the most remarkable disorders of growth. In one case the patient was a private, aged 20, in a labor battalion who was diagnosed in the Third Canadian General Hospital as suffering from multiple exostoses. The lower ends of the femurs and the upper and lower ends of the shafts of the tibias represented an arrest of bone development, which was to be anticipated if John Hunter's teaching on the growth of bones was correct. Hunter was the first to perceive that the shaft of the long bones grew by a double process: In the first process new bone is laid at the extremities of the shaft in the diaphysial lines; in the second, which Hunter named the "modeling process" the cancellous bone laid down is rebuilt, trimmed and gradually converted into an architectural part of the shaft. In diaphysial aclasis the modeling process is arrested; hence between the properly formed part of the shaft and the epiphysial end there is interposed an irregular cylinder of imperfectly modeled bone, on the surface of which there are several outgrowths. Further investigation of the case showed that the diaphysial ends of all the bones of the body manifested a similar disturbance of growth, the disturbance being greatest at the lines where growth is most vigorous and prolonged. A clue to the true nature of the disease is given by noticing its incidence on the skeleton. Bones formed in membrane or in cartilage are not affected. It is only where the two processes—membrane formation and cartilage formation—come into juxtaposition that this disorder of growth occurred. Hence it is most marked at the growing ends of diaphyses of long bones, especially those where growth is greatest. The proximal end of the humerus and the distal ends of the radius and ulna show a much greater disturbance of growth than the shafts which end at the elbow joint. In the lower extremity, growth is greatest at the diaphysial ends directed toward the knee, and there the disturbance is greatest; but as there is also considerable growth at the proximal end of the shaft of the femur and at the distal ends of the tibia and fibula, these parts also exhibit ample evidence of the disease. At these sites two different kinds of bone formation are in progress. As bone is laid down within the growth disk (epiphysial line) in cartilage a covering of fibroblastic bone is being deposited by the growing margin of the overlying periosteum. We have so concentrated our attention on the process of ossification, which takes place in the cartilaginous growth disk, that we have left out of sight the equally important processes which go in the ferrule of periosteum which surrounds the growth disk. Consequently we are not prepared to encounter a dislocation in the harmony with which these two processes ought to proceed. In achondroplasia the arrest of the growth is a partial cessation of the growth process which goes on within the cartilaginous disk. In diaphysial aclasis the arrest lies in the growing edge of the periosteal ferrule. Hence large areas of cartilage-formed bone are left exposed. This arrest of periosteal formation is only temporary. The modeling process which is attended by the deposition of periosteal bone goes on for years after all growth in length has ceased. This conception of multiple exostoses is not new. Hunter emphasized its constitutional nature. Paget recognized it as an ossific diathesis due to some morbid condition of the blood. Several German writers have recognized it as a disturbance of growth.

Nephritis and Military Service

The discovery during the war of "trench nephritis" has led the Medical Research Committee to institute an inquiry into the condition of the soldier's kidney. The main work devolved on Capt. Hugh MacLean, whose report involves an examination under war conditions of 50,000 men. He began by attempting to find out whether there was a tendency during training for symptoms of kidney trouble to develop in ordinary recruits. He found that only 2 per cent. gave any indication of kidney mischief. He concluded that no injurious effects are produced on the kidney by any of the conditions associated with training for active service. The soldier during training does not appear to be more liable to deleterious kidney effects than is the civilian in ordinary life. No relation between albuminuria and occupation was found. Long service exercised no ill effects on the incidence. It was thus evident that trench nephritis was not a condition carried over from civil life. Further work confirmed this view. Conditions such as length of service, previous illness, age and occupation seemed to play no part in its etiology. Many of the cases developed in men who had been in the front area only a short time. Other factors—diet, infection, water supply and so on—were excluded. By elimination, the conclusion was reached that the most probable cause of trench nephritis is infection by means of body vermin, probably lice. The mortality from the disease was low in the first instance; but relapses occurred, and some of the cases became chronic. They were found to fall into the same groups as ordinary Bright's disease—interstitial and parenchymatous.

Piteous State of Wounded Serbians—Serbian Surgeons to Be Trained in England

Sir John Lynn-Thomas, the orthopedic surgeon of Cardiff, who returned recently from Serbia, paints a gloomy picture of the state of the wounded and disabled in that country. The land is filled with cripples, many of whom could be cured or improved by modern orthopedic methods. The contrast between what has been accomplished in England by Sir Robert Jones and his co-workers and the state of the broken soldiers of our ally is piteous. These men are without the simplest appliances, and the country lacks surgeons with the requisite knowledge of the new methods. It is felt by the Serbian Red Cross Society in Great Britain that the proper method to help these soldiers is to invite Serbian surgeons to come to this country to study British orthopedics under our most distinguished men. This invitation has been sent, and a favorable reply is expected.

RIO DE JANEIRO

Jan. 10, 1920.

Bubonic Plague

In the shipments of alfalfa and wheat imported from Buenos Aires, rats infected with bubonic plague were discovered. Shortly after, several cases of plague occurred among the men working on the docks at Rio de Janeiro. There were ten cases reported, but no deaths.

Institute of Medical Research

Dr. Rocha Lima, formerly of the Instituto de Manguinhos, Rio de Janeiro, and lately professor at the university and chief of the section on pathologic anatomy in the institute of tropical diseases in Hamburg, has been offered the position of director for the Butantan Institute for Medical Research. He is expected in Rio at the end of January, when he will give a definite answer.

Medical School Changes

Dr. Alfredo de Andrade has been promoted to professor of analytic chemistry, and Dr. Adelino Pinto has been appointed in his place.

Federal Department of Public Health.

The law creating the federal department of public health was approved by President Pessoa, January 20. As men-

tioned in a former letter, the creation of a ministry of public health did not meet the approval of congress. There will be three boards under the supervision of the department, namely, a board of health for Rio de Janeiro, a board of rural sanitation, and a board of maritime and fluvial prophylaxis. Besides these, there will be sections dealing with sanitary statistics; sanitary engineering; the supervision of drains; the prevention of leprosy and venereal diseases; the supervision of the practice of medicine, pharmacy, dentistry and obstetrics, and hospitals for contagious diseases and child welfare. The federal government takes charge of meat and food inspection and of all the functions of the municipal health service.

Under the law, a supreme council of hygiene and public health is appointed. The following officials are members of the board: the president of the department of health, the directors of the above mentioned divisions, the professor of sanitary engineering in the polytechnic school, the surgeon-general of the army, the chief of the navy medical corps, and the government legal adviser. The exclusion from this board of the professor of hygiene and of the dean of the medical school, as well as the president of the Academia de Medicina, was not favorably received in medical circles.

The cost of rural prophylaxis and sanitation of the interior will be met by a special tax on alcoholic drinks, by the income from the different laboratories pertaining to the department of the interior, 15 per cent. of the revenue of gambling houses, clubs and casinos at health resorts, and a stamp tax of from 20 to 200 reis on all tubes of serums, vaccines, opotherapic products and on all drugs either foreign or domestic. Public opinion is not in favor of licensed gambling.

Infectious Disease in Brazil

In an address to medical graduates, Dr. Afranio Peixoto protested vehemently against the erroneous impression that Brazil is one great hospital. Many prominent physicians seem intent to convince the public that there are scarcely any healthy persons in the population of 25,000,000, and that those who are lucky enough to escape from malaria or hookworm disease are infected with the Brazilian trypanosomiasis. Just because Chagas saw some cases of the disease which bears his name in Lassance (state of Minas), one physician has gone to the extreme of asserting that 15 per cent. of the population is infected with *Trypanosoma cruzi*.

Election of Officers

At a meeting of the Sociedade de Medicina e Cirurgia, December 30, the following officers were chosen: president, Prof. Fernando Magalhães; vice presidents, Dr. Julio Monteiro and Dr. Plinio Marques; secretary-general, Dr. Leonel Gonzaga; secretaries, Dr. Edilberto Campos, Dr. Arnaldo de Moraes and Dr. Theophilo de Almeida; speaker, Dr. Octavio Ayres; librarian, Dr. Catao; custodian of the museum, Dr. Del Vecchio, and editor of the annals, Dr. Guarany Goulart.

Marriages

EUSTACE HAROLD PRESCOTT, Lieut., M. C., U. S. Navy, Edgefield, S. C., to Miss Alpha Hammond of Edgefield County, S. C., at Augusta, Ga., February 1.

BENJAMIN FRANKLIN DAVIS, Chicago, to Miss Marie Lucile Brickson of Stoughton, Wis., February 7.

JAMES SYLVESTER ANTLE, Utica, Ill., to Miss Margaret Walter of LaSalle, Ill., in Chicago, January 17.

ALBERT WARD MCCALLY, Dayton, Ohio, to Miss Edna Fiegenbaum of Edwardsville, Ill., December 25.

CHARLES LYNDON OUTLAND, Tarboro, N. C., to Miss Alice Louise Sadler of Richmond, Va., January 21.

KINTON DORION, Lawrence, Mass., to Miss Angelina Tessier of New Bedford, Mass., January 26.

J. J. FITZGERALD, Granite City, Ill., to Miss Georgia Coudy of Louisville, Ky., December 3.

PAUL WESLEY BEST, Atlanta, Ga., to Miss Louise Cotton of Waco, Texas, January 21.

CHARLES A. WADE to Miss Florence Marie McGeehan, both of Chicago, February 8.

LYMAN OVERSHINER, Indianapolis, to Miss Ella Ingles, in Indianapolis, December 13.

Deaths

Correction.—The obituary notice of Dr. William J. Humphrey, Union City, Pa., which appeared in THE JOURNAL of Dec. 27, 1919, was incorrect. Dr. Humphrey informs us that he is alive and well. The source of information was a notice which appeared in an Eastern medical journal.

Melvin George Overlock, Worcester, Mass.; Baltimore Medical College, 1896; aged 54; a member of the Massachusetts Medical Society; a specialist in tuberculosis, and instrumental in securing legislation requiring the maintenance of tuberculosis hospitals in cities and towns of Massachusetts; state medical health inspector; a trustee of the Worcester City Hospital since 1900; died in that institution, January 30, from diabetes.

Oliver Thompson Hyde ⊕ Albuquerque, N. M.; College of Physicians and Surgeons in the City of New York, 1901; aged 44; a specialist in tuberculosis, and for six years director of the St. Joseph Sanatorium, Albuquerque; for several years resident director of a sanatorium in Silver City, N. M.; formerly a member of the faculty of Drake University, Des Moines, Iowa; died, February 2, from tuberculosis.

Royal A. Gove, Tacoma, Wash.; College of Physicians and Surgeons, Keokuk, Iowa, 1878; aged 63; a member of the Washington State Medical Association; for twelve years secretary of the Pierce County Medical Association; for six years a member of the State Board of Medical Examiners, and for two years its chairman; from 1892 to 1896 a member of the city council; died, January 21.

Francis Pollock Ball ⊕ Lock Haven, Pa.; University of Pennsylvania, Philadelphia, 1877; aged 63; once president of the Medical Society of the State of Pennsylvania; who was one of the guests of honor at a banquet given by the Clinton County Medical Society in 1918; chief surgeon of the Lock Haven Hospital; died in Williamsport, Pa., January 31, from angina pectoris.

William Henry Cook, Coffeen, Ill.; Washington University, St. Louis, 1867; aged 85; a member of the Illinois State Medical Society; a charter member of the District Medical Society and for two years its secretary; one of the organizers of the Montgomery County Medical Society, and at one time its president; died, January 28, from senile debility.

James H. Shorter ⊕ Macon, Ga.; Long Island College Hospital, Brooklyn, 1875; aged 69; oculist and aurist to the Macon Hospital and to the Southern Railway; a member of the American Academy of Ophthalmology and Oto-Laryngology, and of the American Laryngological, Rhinological and Otological Society; died, February 2.

Francis Torrens Stewart ⊕ Philadelphia; Jefferson Medical College, 1896; aged 45; professor of clinical surgery in his alma mater; since 1910 surgeon to the Jefferson and Germantown hospitals, and for twenty-five years a member of the surgical staff of the Pennsylvania Hospital; author of a manual on surgery; died, February 4, from uremia.

Claude Dewes Hamilton, Canton, Ohio; College of Physicians and Surgeons, Baltimore, 1913; aged 31; a member of the Ohio State Medical Association; who served as captain, M. R. C., U. S. Army, and was discharged, April 4, 1919; died in Phoenix, Ariz., January 30, from pulmonary tuberculosis.

Fred Grey Benton ⊕ Major, M. C., U. S. Army; University of Syracuse, N. Y, 1912; aged 33; who entered the Medical Reserve Corps, June 29, 1916; was graduated from the Army Medical School, June 10, 1917, and promoted to captain and major, Aug 3, 1918; died at Fort Aurora, January 18.

Lyle Gunn Thornton ⊕ Lieut., M. C., U. S. Army, Westpoint, Texas; Chattanooga (Tenn.) Medical College, 1897; aged 45; physician of Colorado County, Texas, and assistant city physician of Westpoint; died at Fort Sam Houston, San Antonio, Texas, January 15., from valvular heart disease.

Ridgeley Brown Warfield ⊕ Baltimore; University of Maryland, Baltimore, 1884; aged 56; professor of surgery in his alma mater; formerly associate professor of anatomy in Baltimore Medical College; chief surgeon of the Maryland General Hospital; died, February 4, from heart disease.

Harry A. Medernach, Portland, Ore.; Chicago College of Medicine and Surgery, 1904; aged 42; who served during the war as a secretary of the Knights of Columbus, at Camps Lewis, Ballard, and Vancouver, Wash., died. January 28.

⊕ Indicates "Fellow" of the American Medical Association.

Richard Cooke Harley, Newark, N. J.; George Washington University Medical School, Washington, D. C., 1904; aged 41; a member of the Medical and Chirurgical Faculty of Maryland; formerly health officer of Prince Georges County, Md.; died, February 4, from pneumonia.

Henry Brown Conrad, South Bend, Ind.; Johns Hopkins University, Baltimore, 1916; aged 29; who resigned from an internship in Johns Hopkins Hospital to enter the Navy, and was relieved from active duty with the U. S. N. R. F., Nov. 26, 1919; died, January 29, from pneumonia.

Crandall Loughery, Montreal; McGill University, Montreal, 1918; ager 28; who served with the Canadian Army Medical Corps in France in 1918 and 1919; a member of the staff of the Montreal General Hospital; died in that institution, Oct. 25, 1919, from bronchopneumonia.

Peter Winston, Farmville, Va.; University of the City of New York, 1860; aged 83; a member of the Medical Society of Virginia; surgeon in the Confederate Service during the Civil War; for fifteen years physician to the State Normal School; died, about January 30.

Sally Robinson Creighton Best, New York City; Cornell University, New York City, 1899; aged 50; a member of the executive committee of the American Woman's Hospitals, and active during the war in the censorship of drugs for the government; died, February 6.

Frank C. Hershey, Carmel, Ind.; Medical College of Indiana, Indianapolis, 1894; aged 53; a member of the Indiana State Medical Association; health officer of Hamilton County; died, February 4, from septicemia, due to a slight scratch of the hand.

John W. Starr, Pocahontas, Iowa (license, Iowa, examination, 1889); aged 61; a member of the Iowa State Medical Society; once secretary and treasurer of the Pocahontas County Medical Society, and city physician; died, January 17, from angina pectoris.

William Francis Gillim, Chicago; University of Louisville, Ky., 1871; aged 73; a member of the Kentucky State Medical Association; for many years a practitioner of Owensboro; while returning to his old home in Owensboro, February 4, died at Evansville, Ind.

Boyer Smith Kofford, Youngstown, Ohio; University of Buffalo, N. Y., 1917; aged 25; lieutenant, M. C., U. S. Army, with service overseas and discharged, Feb. 15, 1919; a member of the staff of the Youngstown Hospital; died, January 27, from pneumonia.

Frank Boutelle Fuller ✠ Pawtucket, R. I.; Harvard University Medical School, 1878; aged 66; acting superintendent of health of Pawtucket; for several years medical examiner (coroner) for the Pawtucket district; died, January 23, from heart disease.

Beauregard Ross Merritt, Fancy Farm, Ky.; Marion-Sims Medical College, St. Louis, 1891; aged 50; a member of the Kentucky State Medical Association; one of the owners of the Dawson Springs Sanitarium; died in that institution, January 24.

Marvin William Duckwall, Dayton, Ohio; Miami Medical College, Cincinnati, 1902; aged 40; a member of the Ohio State Medical Association; for many years a member of the board of St. Elizabeth's Hospital; died, February 1, from tuberculosis.

Milton Harlan Cloud ✠ Masontown, Pa.; Miami Medical College, Cincinnati, 1886; aged 62; a director and for several years vice president of the Masontown Bank; vice president of the Masontown Glass Company; died, January 27, from meningitis.

Robert Bruce Duncan, Petaluma, Calif.; Missouri Medical College, St. Louis, 1873; aged 73; coroner and public administrator of Colusa County in 1888; twice health officer of Petaluma; died in the Petaluma Hospital, January 3.

Joseph P. Ralston, Jr. ✠ Houston, Texas; University of Texas, Galveston, 1896; aged 49; was crushed between the elevator and the wall of the elevator shaft in the Kress Building, Houston, February 2, and instantly killed.

Raymond Jack Hauser ✠ Lieut., M. C., U. S. Army, Danville, Pa.; University of Pennsylvania, Philadelphia, 1910; aged 33; on duty at Camp Grant, Rockford, Ill., died, January 18, from pneumonia complicating influenza.

Alexander John Macaulay, Brockville, Ont.; Trinity Medical College, Toronto, 1888; aged 55; medical officer of health of Brockville; president of the Ontario Medical Health Officers' Association in 1906; died, October 27.

William Alexander Molson, Montreal; McGill University, Montreal, 1874; M.R.C.S. (Eng.), 1875; coeditor of the *Canada Medical and Surgical Journal* from 1879 to 1882; died, January 5, from cardiorenal disease.

Richard F. Boonstra, Detroit; University of Michigan, Ann Arbor, 1913; aged 31; lieutenant, M. C., U. S. Army; on duty with the air service and discharged, March 4, 1919; died, January 30, from pneumonia.

Rollin Alanson Curtiss, Stratford, Conn.; University of the City of New York, 1893; aged 53; a member of the Connecticut State Medical Society; died, January 28, from cerebral hemorrhage.

Logan M. Thompson, Atlanta, Mo.; College of Physicians and Surgeons, Keokuk, Iowa, 1880; aged 61; a member of the Missouri State Medical Association; died in Macon, Mo., January 19.

Charles Henry Waters, Dawsonville, Md.; University of Maryland, Baltimore, 1871; aged 70; for many years pastor of the Trinity Baptist Church, near Dawsonville, Md.; died, January 26.

Morgan Shell Evans, New Orleans; Tulane University, New Orleans, 1917; aged 26; an intern in the State Charity Hospital, Natchez, Miss.; died, January 21, from tubercular meningitis.

William Harrison Wilson ✠ Johnson City, N. Y.; Bellevue Hospital Medical College, 1888; aged 56; physician and surgeon to the Binghamton City Hospital; died, about January 23.

J. Sion Smith, Fort Wayne, Ind.; Fort Wayne (Ind.) College of Medicine, 1891; aged 71; superintendent of several branches of the Bass foundries, Fort Wayne; died, January 24.

Jesus Monagas, Mayaguez, P. R.; University of Barcelona, Spain, 1883; aged 58; a member of the Porto Rico medical Association; died, January 27, from cirrhosis of the liver.

Edwin T. Myers, Netawaka, Kan.; Western Reserve University, Cleveland, 1876; aged 63; a member of the Kansas Medical Society; died, January 23, from chronic nephritis.

William H. Clarkson, Blair, Okla.; Memphis (Tenn.) Hospital Medical College, 1889; aged 58; a member of the Oklahoma State Medical Association; died, December 13.

Otto Jamès Blessin, Galesburg, Ill.; Hahnemann Medical College, Chicago, 1901; aged 40; captain, M. R. C., U. S. Army, and discharged, Jan. 18, 1919; died, January 29.

James Emmett Vaughan ✠ Lynchburg, Va.; Lincoln Memorial University, Knoxville, Tenn., 1893; aged 60; died, Dec. 18, 1919, from chronic interstitial nephritis.

William A. Paschall, Franklin, Tenn.; Vanderbilt University, Nashville, Tenn., 1881; aged 60; died at the Woman's Hospital, Nashville, January 31, from pneumonia.

John Alexander Landis, Oklahoma City; University of Tennessee, Nashville, 1860; aged 82; died at the home of his daughter in Brownsboro, Texas, January 24.

Joseph William Martin, DuBois, Neb.; University of Nebraska, Omaha, 1903; aged 52; died at the home of his mother in Pawnee City, Neb., January 23.

Charles Ash Bower ✠ Mitchell, S. D.; Hahnemann Medical College, Chicago, 1900; aged 44; was drowned while bathing at Lake Worth, Fla., January 21.

Caleb F. Elkins, Liege, Mo.; American Medical College, Eclectic, St. Louis, 1901; mayor of Liege and health officer of Montgomery County; died, January 26.

John F. Shaw, Wilkes-Barre Pa.; Medico-Chirurgical College of Philadelphia 1895; aged 66; also a druggist; died, February 1, from cerebral hemorrhage.

William Gwathmey, Beulahville, Va.; Medical College of Virginia, Richmond, 1898; aged 40; a member of the Medical Society of Virginia; died, January 5.

Edward Hills Lake, San Francisco; St. Louis College of Physicians and Surgeons, 1895; while on his return from Australia, died at sea, January 28.

Patrick James Hughes, Lawrence, Mass.; University and Bellevue Hospital College, 1907; aged 41; died, January 26, from pulmonary tuberculosis.

Robert G. Langsdale, Middletown, Ohio; Medical College of Ohio, Cincinnati, 1881; aged 71; died in the Middletown City Hospital, January 26.

H. Moses Brooks, Olivebranch, N. C.; University of Maryland, Baltimore, 1879; aged 64; died, January 21, in a hospital in Charlotte, N. C.

John M. Grant ⊕ St. Louis; Missouri Medical College, St. Louis, 1889; aged 55; a specialist in surgery; died, January 29, from pneumonia.

A. Malen Spangler ⊕ Pageton, W. Va.; College of Physicians and Surgeons, Baltimore, 1892; aged 53; died, January 18, from diabetes.

Joseph L. Anderson, Tarentum, Pa.; College of Physicians and Surgeons, Baltimore, 1883; aged 65; died, January 27, from pneumonia.

James T. Parker, Chauncey, Ga.; Southern Medical College, Atlanta, 1897; aged 44; died in a hospital in Macon, Ga., January 30.

Joel J. Foulon ⊕ East St. Louis, Ill.; Missouri Medical College, St. Louis, 1887; aged 57; died, January 23, from heart disease.

John Maynard Gulick, El Paso, Ill.; Northwestern University Medical School, 1891; aged 53; died, January 15, from endocarditis.

Nicholas R. Marshall, Evanston, Ill.; Rush Medical College, 1867; aged 76; a veteran of the Civil War; died, February 3.

Alban Thomas Cuzner, Gilmore, Fla.; College of Physicians in the City of New York, 1864; aged 80; died, January 18.

Edward Martin Cherry, San Francisco; Cooper Medical College, San Francisco, 1899; aged 46; died, about January 30.

Cyrus V. Luke ⊕ Woodworth, Ill.; Illinois Medical College, Chicago, 1899; aged 44; died, January 16, from brain tumor.

Joseph Talbot Maclean, New York City; Bellevue Hospital Medical College, 1876; died, January 28, from pneumonia.

John M. Pierce, Rogersville, Tenn. (license, Tennessee, 1889); aged 73; for many years a druggist; died, December 16.

Archibald Gooding Servoss, Havana, Ill.; Jefferson Medical College, 1886; aged 54; died, January 22, from gastric ulcer.

Oliver Frank Harper, Baltimore; Atlanta (Ga.) School of Medicine, 1911; aged 30; also a chemist; died, January 22.

Emory Lanphear, St. Louis; Missouri Medical College, St. Louis, 1881; aged 60; died, in Citrus Park, Fla., February 6.

Philip Gray Sanderson, Detroit; University of Illinois, Chicago, 1899; aged 53; died, January 28, from pneumonia.

Ralph Emerson Buck, Newfield, N. J.; Rush Medical College, 1894; aged 49; died, February 4, from acute gastritis.

James A. Fraser, Lexington, Mich.; University of Vermont, Burlington, 1886; aged 60; died, about January 29.

L. C. Goneke, Springvale, Ga.; Atlanta (Ga.) Medical College, 1884; aged 60; died, January 27, from dysentery.

Frederick Woodhull, Hartney, Man.; Trinity Medical College, Toronto, 1886; aged 56; died in October, 1919.

Walter Westlake Hoare, Walkervill, Ont.; Queens University, Kingston, Ont., 1864; aged 83; died, January 29.

Samuel L. Inman ⊕ El Paso, Texas; Marion-Sims College of Medicine, St. Louis, 1897; aged 54; died, recently.

Edmund B. Echlin, Ottawa, Ont.; Queens University, Kingston, Ont., 1891; aged 56; died, Dec. 12, 1919.

Sabritt Scruggs, Rolla, Miss.; Kentucky School of Medicine, Louisville, 1866; aged 80; died, January 27.

William Bilbro Palmer, Audubon, Texas; University of Nashville, Tenn., 1887; aged 70; died, January 21.

D. Luke Gavin, Shubuta, Miss.; Louisville (Ky.) Medical College, 1898; died in Chicora, Miss., January 31.

Frederick Roderick Dew, Weston, W. Va.; Baltimore Medical College, 1905; aged 40; died, January 31.

Daniel Justin McSweeney, Boston; Harvard University Medical School, 1903; died, about January 20.

Renwick W. Bartley, Marion, Ind.; Loyola University, Chicago, 1880; aged 74; died, January 25.

James T. Croney, Lima, Ohio (license, Ohio, years of practice, 1896); aged 75; died, January 21.

Nicholas J. Hopkins, Dunnville, Ont. (license, Ontario, 1869); aged 77; died, Nov. 7, 1919.

P. W. Logan, Knoxville, Tenn.; Jefferson Medical College, 1861; aged 80; died, January 28.

J. C. Barker, Lebanon, Mo. (license, Missouri, 1884); aged 84; died, January 18.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

EUMICTINE

Report of the Council on Pharmacy and Chemistry

The Council has adopted and authorized publication of the report which appears below. This report declares "Eumictine" ineligible for New and Nonofficial Remedies because (1) it conflicts with Rule 10 in that it is unscientific and useless, (2) it conflicts with Rule 6 in that it is sold under unwarranted therapeutic claims, (3) it conflicts with Rule 4 against indirect advertising to the public in that the name "Eumictine" is blown in the bottle for the obvious purpose of bringing the product to the attention of the public when it is prescribed in the original package and (4) because the name is therapeutically suggestive and not in any way descriptive of its composition.

W. A. PUCKNER, Secretary.

Eumictine is a preparation from the laboratory of Maurice Le Prince, Paris, France, and is marketed in this country by George J. Wallau, Inc., New York. It is claimed that the product is "a balsamo-antiseptic preparation composed of Santalol, Salol, and Hexamethylene-Tetramine, in the form of gluten-coated capsules." Nowhere in the advertising are the amounts of the ingredients given. According to the American agent, however, "each capsule is supposed to contain 20 centigrams of Santalol, 5 centigrams of Salol, 5 centigrams of Hexamethylene-Tetramine."

Eumictine is advised "in treating genito-urinary diseases (urethritis, cystitis, prostatitis, pyelitis, etc.)." It is claimed to be "both an antiphlogistic modifying agent, a well-tolerated diuretic" which "may be administered for long periods without ill effects."

The Council declares Eumictine ineligible for New and Nonofficial Remedies because it is exploited in conflict with the following rules:

It is unscientific (Rule 10). Eumictine is composed of hexamethylenamin, salol and santalol in fixed proportions. Hexamethylenamin may serve a useful purpose in some forms of infection of the urinary tract, but neither it nor salol are of any considerable value in gonorrhea. It is now known that the balsamic preparations, formerly so widely used, do not have the curative effects in gonorrhea and associated conditions that used to be ascribed to them. To combine three substances, none of which has any distinct therapeutic value in the conditions for which Eumictine is proposed, does not enhance their value. There is nothing original in the combination used in Eumictine, or in the manner of dispensing it.

It is sold under unwarranted therapeutic claims (Rule 6). These claims are made not only for the components of Eumictine but for the combination itself. Though santalol has certain advantages over the somewhat variable oil of santal and other balsamic resins, it is not true that santalol "does not cause congestion of the renal epithelium" or that it does not "produce exanthema as do copaiba, cubebs, and the ordinary santal oil." It is not true that salol is "devoid of toxicity." Neither is it correct to say that salol "asepticizes and disinfects the bladder, the prostate and the urethra." The claim that hexamethylenamin "is of value when any acute symptoms or tendency to inflammation subsist" is not justified. The claim that hexamethylenamin "renders soluble the uric acid and urates" is also without foundation. The fol-

lowing paragraph is characteristic of the claims made for Eumictine:

"Anti-gonorrboic by its Santalol, diuretic, urolytic and analgetic by its hexamethylenetetramin (Urotropin) antiseptic and antipyretic by its Salol, Eumictine represents a real therapeutic advance in the scientific treatment of diseases of the urinary passages."

Instead of being "a real therapeutic advance" in the treatment of diseases of the urinary passages, Eumictine presents one of the complex combinations that have long retarded the scientific treatment of these diseases. Eumictine also conflicts with Rules 4 and 8 of the Council.

Correspondence

NEED OF UNIFORMITY IN SHAPE AND SIZE OF PROFESSIONAL REPRINTS AND ADVERTISED OBJECTS

To the Editor:—There should be uniformity in the size, shape and arrangement of printed data that the physician may wish to preserve, conveniently file and promptly refer to. This should include (*a*) reprints of papers and (*b*) advertising data describing objects that deserve preservation and prompt reference.

The object of collectanea is convenience for filing and for reference. I have previously made recommendations to advertisers that they adopt a suitable system whereby descriptive matter, memoranda, etc., could be readily filed. One measure has been extensively adopted, viz., index filing cards of a standard size, 3 by 5, also small, closely printed circulars or descriptive booklets of the same size and containing several pages of outline. The fact is that many physicians now use index filing systems, kept in the drawer of a desk for short case notes, and another for other data. Inquiry and experience teaches me that this custom of filing data is becoming nearly universal, and will become more so in proportion as the material is supplied in filable shape. Meanwhile, all heterogeneous printed stuff in odd sizes and forms is thrown in the scrap, where it deserves to go. Contemplate the millions of money thus wasted. (One comes to doubt gravely the commercial wisdom of many big business bodies.)

Reprints of valuable articles suffer in much the same way. To collect and attempt to arrange them causes suffering, vexation and loss of time to those who wish to preserve and later read them. Surely all editors or managers of medical journals should be as wise, or at least as cooperative, as some manufacturing concerns have now become. This subject is no trifling matter; it is of fundamental significance.

J. MADISON TAYLOR, M.D., Philadelphia.

"VACCINATION WITHOUT SCAR"

To the Editor:—In a recent editorial comment (THE JOURNAL, Jan. 24, 1920, p. 252), reference was made to Major J. R. Goodall's paper on "The Subcutaneous Method of Vaccination," under the caption, "Vaccination Without Scar." The experiment recorded by Goodall in his paper does not give exact information, which is necessary before any conclusions can be drawn. Six thousand individuals were each given, subcutaneously, from one quarter to three quarters of the contents of a capillary tube of vaccine with sufficient water added to make 1 c.c. The local reaction was described as being very similar to that resulting from the injection of typhoid vaccine. The reaction, however, did not appear in the majority of cases till after the second day. This was occasionally delayed till even the tenth day. No reaction was reported in 8 per cent. of the cases. In a few cases the reaction was marked, causing swelling of the elbow, and in some the edema involved the whole arm and hand. Between the seventh and tenth days the local swelling and induration subsided, leaving a hard nodule ill defined, which later became well circumscribed and persisted for about one month. The general symptoms varied in intensity and did not differ from those of ordinary vaccination. No mention, however, is made of different reactions being observed in the cases of men previously vaccinated, which is regretted. An omission which is most vital to the subject was the revaccination of some of those who had received the vaccine by the ordinary method. This would have given evidence as to the immunity produced. Without such further observations, accurate deductions cannot be drawn.

Finally, the wisdom of the subcutaneous injection of vaccine virus which, under ordinary circumstances, contains living bacteria is open to question. The bacterial count of vaccine virus (Hygienic Laboratory standards) may be as high as fifty bacteria per capillary tube. Goodall used from one quarter to three quarters of the contents of the capillary tube, and even if smaller amounts are used, this objection remains.

R. D. DEFRIES, M.D., Toronto.

"HITHERTO UNDESCRIBED DISLOCATION OF THE PATELLA ENDWISE"

To the Editor:—There is nothing new under the sun. In THE JOURNAL, Feb. 7, 1920, p. 388, there appeared under the heading "Hitherto Undescribed Dislocation of the Patella Endwise," a report of a case of horizontal rotation of the patella due to laceration of the quadriceps tendon. Such an injury has not hitherto escaped observation and description, as the author would indicate, but, on the contrary, is described in many textbooks on general surgery and in monographs on fractures and dislocations. Such cases are very rare, but have been known to occur for many years. Reference to this injury will be found in Stewart's "Manual on Surgery," page 316; Wharton and Curtis' "Practice of Surgery," page 598, Keen's "Surgery," Volume II, page 427; Wyeth's "Surgery," page 200; and it is described very fully and reported cases are cited in Stimson's work on "Fractures and Dislocations."

JOHN H. GIBBON, M.D., Philadelphia.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

GOLAY'S MODIFIED WASSERMANN REACTION

To the Editor:—Could you give me information about the simplified serologic test of J. Golay, appearing in THE JOURNAL, Jan. 31, 1920, p. 361. Could you give me the technic?

PAUL SERRE, M.D., Dixmont, Pa.

ANSWER.—Golay's modification of the Wassermann reaction is based on the antihuman hemohemolytic method of Noguchi (THE JOURNAL, April 20, 1918, p. 1157). The antigen is furnished by an alcoholic extract of the liver from congenital syphilis. Complement is obtained from a rabbit immunized by injection of 10 c.c. of a 10 per cent. suspension of human corpuscles in physiologic sodium chlorid solution. The serum is inactivated by heating over a water bath at 56 C. for one hour. The amboceptor is titrated as follows: Into each of a series of tubes are put 1 c.c. of physiologic sodium chlorid solution, two drops of human serum and 0.5 c.c. of a 5 per cent. suspension of blood corpuscles. Progressive doses (one, two, three, etc., drops) of rabbit serum are added to the various tubes. The titer of amboceptor is the smallest quantity that will produce complete hemolysis after incubation over a water bath at 37 C. for one-half hour. The antigen is titrated in the same way by using the requisite quantity of amboceptor as determined in the foregoing. For preparing the suspension of blood corpuscles the defibrinated blood of the patient is washed with physiologic sodium chlorid solution until it is free from serum and the wash water is absolutely clear. The technic of the test is as follows: In the first tube (syphilitic system) are put 1.1 c.c. of physiologic sodium chlorid solution, the requisite drops of antigen, and two drops of the patient's serum; in the

second tube 1.2 c.c. of physiologic sodium chlorid solution and two drops of the patient's serum. The tubes are incubated at 37 C. for one hour. The requisite number of drops of amboceptor and 0.5 c.c. of a 5 per cent. suspension of corpuscles (hemolytic system) are then added to each tube; these are incubated until complete hemolysis of the control. The tubes are centrifuged and the results are read. It is advisable to use two doses of antigen for each test; one the maximum titer, the other dose sensibly less. Three tubes will then be necessary instead of two. The test should be made as soon as possible after obtaining the patient's blood.

THERAPEUTIC VALUE OF DIGITALIS

To the Editor:—Please refer me to the recent literature on the therapeutic value of digitalis as disclosed by recent investigations and tests.

J. A. SPEED, M.D., Durham, N. C.

ANSWER.—The literature contains a vast number of articles pertaining to digitalis; a general discussion of digitalis may be found in such recent works as Frederick Forchheimer's "Therapensis of Internal Diseases," edited by Frank Billings and E. E. Irons; "A Manual of Pharmacology," by Torald Sollmann, or "Useful Drugs," published by the Council on Pharmacy and Chemistry. The subjoined references are to some of the leading articles of the last ten years:

Hatcher, R. A., and Brody. J. G.: A Biological Standardization of Digitalis, *Am. J. Pharm.*, 1910, p. 360.

Hatcher, R. A.: The Persistence of Action of the Digitalins, *Arch. Int. Med.* **10**: 268 (Sept.) 1912..

Hatcher, R. A.: The Elimination of the Digitalis Bodies, THE JOURNAL, Aug. 9, 1913, p. 386.

Eggleston, Cary: Biologic Standardization of Digitalis Bodies by the Cat Method, *Am. J. Pharm.* **85**: 99 (March) 1913.

Eggleston, Cary: Clinical Observations on the Emetic Action of Digitalis, THE JOURNAL, Sept. 6, 1913, p. 757.

Hatcher, R. A., and Eggleston, Cary: The Stability of the Infusion of Digitalis, THE JOURNAL, Nov. 27, 1915, p. 1902.

Roth, G. B.: Standardization of Digitalis, Bull. 102, Hyg. Lab., U. S. P. H. S., p. 5.

Barker, L. F., and Bridgman, E. W.: Extreme Prolongation of Conduction Time in the Bundle of His, an Example Resulting from Digitalis Therapy, THE JOURNAL, March 24, 1917, p. 903.

Rowntree, L. G., and Macht, D. I.: The Standardization of Digitalis and the Potency of American-Grown Digitalis, THE JOURNAL, March 18, 1916, p. 870.

Eggleston, Cary: Influence of Large Doses of Digitalis and Digitoxin on the Blood Pressures in Man, THE JOURNAL, Sept. 22, 1917, p. 951.

Hatcher, R. A.: Digitalis Therapy and the Present Shortage of Drugs, THE JOURNAL, Nov. 3, 1917, p. 1524.

White, S. M., and Morris, R. E.: The Eggleston Method of Administering Digitalis, *Arch. Int. Med.* **21**: 740 (June) 1918.

Pratt, J. H.: Digitalis Therapy, THE JOURNAL, Aug. 24, 1918, p. 618.

Hatcher, R. A., and Eggleston, Cary: Study in Elimination of Certain Digitalis Bodies from Animal Organisms, *J. Pharmacol. & Exper. Therap.* **12**: 405 (March) 1919.

Pratt, J. H., and Morrison, Hizman: The Activity of American Digitalis, THE JOURNAL, Nov. 22, 1919, p. 1606.

Pardee, H. E. B.: Notes on Digitalis Medication, THE JOURNAL, Dec. 13, 1919, p. 1822.

Levine, S. A.: Potency of Some French Digitalis Preparations, *Boston M. & S. J.* **182**: 64 (Jan. 15) 1920.

In addition to the foregoing, two reports by the Council on Pharmacy and Chemistry (THE JOURNAL, Sept. 5, 1914, p. 881, and Dec. 4, 1915, p. 2024) and also a number of short reports and abstracts appearing in the November, 1919, issue of the *Journal of the American Pharmaceutical Association* (pp. 900 to 928) should be consulted.

INTRAVENOUS ADMINISTRATION OF SODIUM SALTS IN COMBINATION

To the Editor:—Can you tell me whether it is safe to give sterile solution of sodium salicylate and sodium iodid intravenously? Is their combination compatible with the blood stream without any special preparation? If it requires special preparation and cannot be made up by the practitioner or ordinary pharmacist, can you inform me of any reputable preparation for use?

W. D. CHASE, M.D., Bethlehem, Pa.

ANSWER.—The danger from the intravenous administration of solutions of sodium salicylate or of sodium iodid are those inherent in the intravenous method of drug administration. Since the effect of salicylates and of iodids may readily be attained by oral administration of sodium salicylate or other salicyl preparations, and of sodium iodid or one of its substitutes, the intravenous administration is rarely, if ever, necessary or warranted. Solutions for intravenous use must be sterile, but pharmacists should have little difficulty in furnishing satisfactory products. The objections to the unnecessary use of the intravenous method of administering drugs were discussed in THE JOURNAL, Nov. 11, 1916, p. 1450. The intravenous administration of salicylates was discussed in THE JOURNAL, Oct. 28, 1916, p. 1319.

"THE NEW DU PONT ETHER"

To the Editor:—Please let me know what information you have about the enclosed clipping.

E. W. CARPENTER, M.D., Greenville, S. C.

To the Editor:—"Cotton Process Ether," manufactured by the Du Pont Co., has been given considerable notoriety in the lay press. A letter of inquiry addressed to the firm elicits the information that "Cotton Process Ether is a very highly refined Di-ethyl Ether charged with Ethylene Gas." . . . What is your opinion of the "Cotton Process Ether"? Has the Council on Pharmacy and Chemistry investigated this product?

JOHN L. ATLEE, M.D., Lancaster, Pa.

To the Editor:—I have been waiting for some reference to the new anesthetic referred to in the enclosed clipping, but if any has been made in the medical press I have failed to notice it. If there is anything of interest in connection with this item, and it is not too much trouble, I will thank you to put me in touch with the situation.

HOLMAN TAYLOR, M.D., Fort Worth, Tex.

ANSWER.—About January 20, the "News Service" of the "E. I. Du Pont De Nemours and Co., Inc.," circularized the press of the country with what it was pleased to term a "good 'filler'"; this particular piece of press agent work dealt with "The New Du Pont Ether." To quote one paragraph from the "News Item":

> The new anesthetic, which is a highly refined di-ethyl ether, modified by the addition of gases, has the following characteristics: (1) the property of inducing and maintaining anesthesia with practical freedom from postoperative nausea, and (2) the property of inducing and maintaining analgesia (conscious insensibility to pain) as distinguished from anesthesia (insensibility to pain plus narcosis).

The Du Pont Ether and the claims made for it are seemingly based on the work of one man, "James H. Cotton, M.A., M.D., Toronto, Canada," who published an article on "Cotton Process Ether and Ether Analgesia," in the *American Journal of Surgery* for April, 1919. However, Cotton did not give the composition of the "new" ether nor, so far as we are aware, has his work been corroborated. In view of the inquiries received, the Secretary of the Council on Pharmacy and Chemistry asked the Du Pont Chemical Works for the composition of the new ether. From the firm's reply we quote one paragraph:

> ". . . The procedures of manufacture, and the exact composition of our ether, we regard as confidential information which we are entitled to retain unless a condition were to arise in which we were unable alone to satisfy the demand for this type of ether."

It has been recognized—and incorporated in the "Principles of Medical Ethics"—that the use of a therapeutic agent of unknown composition is unscientific and contrary to the best interests of the medical profession and the public; but it is many times more serious for a physician to employ a secret or semisecret substance as an anesthetic. A physician using such a semisecret substance would have little defense if the patient should die.

VERONAL (BARBITAL) ADDICTION

To the Editor:—Can you give me information about veronal addiction? I have a patient who is addicted to this drug, but I cannot find much in the literature about veronal addiction and its treatment. He has taken treatment at several hospitals, but they always send him out using his veronal. This case might be interesting to the medical profession, as veronal is being used a great deal by them at present.

A. B. C.

ANSWER.—Constant use of even small doses of barbital (veronal) affects the central nervous system, especially the cerebellum and the vestibular portion of the cochlea. Those taking the drug habitually become much debilitated and seem less able to stand moderate doses. Death has occurred from a 3 gm. dose in addicts, while recoveries are known after a single dose of 10 gm. in others. Fog (*Ugesk. f. Læger* **79**:370 [March 8] 1917) treated a case of addiction by gradually substituting antipyrin salicylate in the powders which were being taken until the patient was getting no barbital at all. In England barbital and its closely related derivatives have been classed as poisons, and as such are subject to the same regulations that apply to the sale of narcotics.

PELVIC VARICOCELE

To the Editor:—Please give a notation of recent literature on varicose veins of the broad ligament.

W. F. SIHLER, M.D., Devils Lake, N. D.

ANSWER.—The following references are taken from the Quarterly Cumulative Index:

Wall, J. A.: Pelvic Varicocele, *Surg. Gynec. & Obst.* **23**: 62 (July) 1916.
Darnall, W. E.: Varicocele in the Female, *Med. & Surg.* **1**: 624 (Aug.) 1917.
Jewett, W. A.: Pelvic Varicocele, *Am. J. Obst.* **75**: 500 (March) 1917.
Furniss, H. D.: Pelvic Varicocele, *Am. J. Obst.* **75**: 152 (Jan.) 1917.

Book Notices

CONTRIBUTIONS TO MEDICAL AND BIOLOGICAL RESEARCH. Dedicated to Sir William Osler, Bart., M.D., F.R.S., in honor of his seventieth birthday, July 12, 1919, by his pupils and co-workers. Two volumes. Pp. 1268. Paul B. Hoeber, New York. Edition limited to 1,600 copies.

In these two large octavo volumes have been collected essays by some of the numerous pupils and co-workers of the late Sir William Osler. They are issued as a tribute to him on his seventieth birthday. The 142 essays are contributed by 151 writers, including 106 American, 33 English, 10 Canadian and 2 Scotch physicians; they are scientific, historical and literary. As might have been expected of such a large number of articles, there are variations in quality. Some are notable, others unusually good, and some of ordinary character. A few—happily only a few—are not quite worthy of a place in this series. In general, it may be said that the articles on historical, educational and social subjects distinctly surpass in literary quality and general interest those of a scientific or clinical nature. This is perhaps accounted for by the very nature of things, since the research worker or clinician could not produce a special study for this purpose, but must needs report work already done and use something already published, or, perhaps, rewrite for this purpose.

The first volume opens with a frontispiece—a steel engraving of Sir William Osler—an excellent likeness. Following is a beautiful proem by Sir Clifford Allbutt. In an editorial note the committee states the purpose and method of preparation of these volumes. The first twenty-eight essays are by British and Canadian physicians. Mr. Acland, in the first article, describes the Oxford University Museum. The article is well illustrated with especially fine half-tone photographs of the museum, and is a most interesting account of the relation to this museum of some of the predecessors of Sir William Osler in the chair of medicine at Oxford. It is brought out that John Ruskin was in part responsible for the designing of this structure. The second essay is a timely discussion of graduate study in London by Professor Adami, who is well adapted to the task, through his Canadian experience, his experience in the world war, and his intimate knowledge of conditions in America. Following two historical essays are some personal reminiscences of Sir William Osler by Dr. Crozier describing the early life of the great teacher.

A notable essay is that of Sir Auckland Geddes, entitled, "Social Reconstruction in the Medical Profession." Sir Auckland is intimately associated with reconstruction programs in Great Britian and is largely responsible for the establishment of the Ministry of Health. His views, therefore, are of great importance. It is interesting to note that in his opinion "the medical profession in Great Britain, with brilliant exceptions, is in the main composed of men who are immature as citizens, and in quite a separate compartment of their being possess expert technical knowledge, too often on sale to the highest bidder."

As is usual with his writing, Dr. Arthur Keith contributes a notable historical essay on the Hunterian School. Most fascinating is a description by Dr. Macalister, secretary and editor of the Royal Society of Medicine, of an institution which exists in medical Utopia, the Osler Library. This institution, which the author has visited in his dreams, is the medical library *par excellence*. The essay must be read to be appreciated. Librarians will overlook a great opportunity if they fail to adopt some of Dr. Macalister's suggestions.

As is usual also, Sir Humphrey Rolleston contributes a notable essay on Thomas Trotter, physician of the Grand Fleet in 1780. The well known historians, Charles and Dorothea Singer of Oxford, describe a miniature depicting an operation. The miniature is beautifully reproduced in colors.

There follow essays on some seventeenth century writings on the endowment of research, on Galen, Plato and Immortality, and on "Fragment of a Persian Primer." Sir Clifford Allbutt discusses "Innate Heat."

The next essay has the fascinating title, "On the Sizes of Things, or the Importance of Being Rather Small," which develops into a discussion of the coleoptera and the reaction of bacteria on the human organism. A most interesting essay is that of F. Parkes Weber, "Thinking and Dreaming, and the Explanation of Dreams." Those acquainted with his notable book on the "Aspects of Death" will find this essay all that might be expected of the author.

Professor Anders writes on "Myxedema and Cretinism"; Dr. C. C. Bass on "Malaria"; Dr. Norman Bridge has a note on "Pulmonary Streptothricosis" as observed in California; Dr. N. S. Brill of New York writes on "Typhus Fever"; Dr. Thomas Cullen of Baltimore describes a special sign noted in the umbilicus; Dr. Edsall describes poisoning with manganese as it occurs in the industries. All of these essays, as those familiar with medical literature know, concern subjects which have interested their writers for many years and in which they have made notable advances.

The second volume opens with a discussion by Dr. Frank Billings on the "Rehabilitation of the Disabled." Brigadier General Munson has a brief essay on "Military Morale." Dr. C. L. Dana, who acted as editor, contributes an essay, "A Psychotic Episode in Roman History." The late Mortimer Frank has an interesting historical article, and Dr. Fielding Garrison a charming essay entitled, "Physicians' Letters." Very timely is the note by Guy Hinsdale describing epidemics of influenza in 1647, 1789 and 1807 as they were recorded by Noah Webster, Benjamin Rush and Daniel Drake. Particularly interesting is a note by Dr. Henry Hurd on Sir William Osler's relation to the Johns Hopkins Hospital, a note no one would be more fitted to write; and in the same manner, Dr. George M. Kober discusses the influence of Osler on American medicine. Space forbids even a mention of all the articles and authors. One interesting article follows another, promising the reader many valuable hours with these valuable essays; reminding him of the greatest work which any great physician can do, the instruction of students, leading to the production of great thinkers who will follow in his footsteps.

Mechanically, the books are excellent, printer and publisher having done their work well. There are many halftones of artistic and historical merit. The selection of the type, the spacing, paper and binding could hardly have been improved on. The delay in publication, due to the long printer's strike in New York, was unfortunate and unavoidable. It was especially unfortunate because the books in their final form reached Oxford only two days before Sir William's death. These volumes represent a large amount of labor on the part of the committee, which may well take pardonable pride in the results of their efforts.

GUN-SHOT FRACTURES OF THE EXTREMITIES. By Joseph A. Blake, Lieutenant-Colonel, Medical Corps, U. S. A. Paper. Price, 4 francs. Pp. 136, with illustrations. Paris: Masson et Cie, 1918.

While this little book is essentially a work on war surgery it contains much that may prove of value to the surgeon in civil life, particularly with regard to the application of splints, bandages and extension apparatus to compound fractures. Virtually all the material presented has been described and discussed repeatedly in every surgical journal of consequence during the past three years, so that it should be fairly familiar. Nevertheless, those who desire an authoritative summary of the subject will find it here with sufficient details for general guidance.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

Alaska: Juneau, Mar. 2. Sec., Dr. L. O. Sloan, Juneau.
Arizona: Phoenix, April 6-7. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.
Colorado: Denver, April 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.
Connecticut: New Haven and Hartford, March 9-10. Sec., Reg. Bd., Dr. Robert L. Rowley, Hartford. Sec., Homeo. Bd., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven. Sec., Eclectic Bd., Dr. James Edwin Hair, 730 State St., Bridgeport.
Florida: Jacksonville, March 16. Sec., Homeo. Bd., Dr. Geo. A. Davis, East Port.
Idaho: Boise, April 6. Commissioner, Hon. Robert A. Jones, Boise.
Illinois: Chicago, Mar. 1-3. Director, Mr. Francis W. Shepardson, Springfield.
Iowa: Iowa City, March 29-31. Sec., Dr. Guilford H. Sumner, Capitol Building, Des Moines.
Maine: Portland, March 9-10 Sec., Dr. Frank W. Searle, 140 Pine St., Portland.
Massachusetts: Boston, March 9-11. Sec., Dr. Walter P. Bowers, Room 144, State House, Boston.
Minnesota: Minneapolis, April 6-8. Sec., Dr. Thos. McDavitt, Loury Bldg., St. Paul.
Montana: Helena, April 6. Sec., Dr. S. A. Cooney, Power Bldg., Helena.
National Board of Medical Examiners: St. Louis and Chicago, Feb. 18-25. Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia, Pa.
New Hampshire: Concord, March 11-12. Sec., Dr. Charles Duncan, Concord.
Oklahoma: Oklahoma City, April 13-14. Sec., Dr. J. M. Byrum, Shawnee.
Rhode Island: Providence, April 1-2. Sec., Dr. Byron U. Richards, State House, Providence.
West Virginia: Charleston, April 13. Sec., Dr. S. L. Jepson, Masonic Bldg., Charleston.

GRADUATE MEDICAL EDUCATION

J. M. ANDERS, M.D., LL.D.
Philadelphia

The present position of undergraduate medical education in this country may be said to be satisfactory as the result of systematic efforts at standardization, although the principle that related departments should work together in order that the various problems connected with individual diseases may be viewed at once by the student needs to be more widely applied. On the other hand, graduate training has not been developed to a commendable extent. Before indicating some lines of reform in graduate training, it might be well for me to recite a few fundamental facts which show the vastness of the problem and also the needs of the large number of practitioners and specialists who present themselves for instruction.

THE GENERAL PRACTITIONER AND THE NEEDS OF THE COMMUNITY

The busy physician cannot keep pace with the remarkable and continuous additions to our knowledge of the modern methods of diagnosis and treatment, as well as the prevention of disease and the laboratory technic. Many of those who seek help enjoyed meager opportunities for the study of the basal sciences and clinical training while at a medical college, not to speak of the well known paucity of laboratory facilities. Now the aim and purpose of graduate teaching should be primarily to maintain an adequate medical service, and to accomplish this the needs of the general practitioner must be fully recognized. But though modern movements in the practice of medicine are everywhere evidenced by a tendency toward specialization, the general practitioner has not been displaced. Says Lyon[1] in this connection: "I predict that general practice will endure, will adjust itself to specialism and to group medicine and to public medicine."

Among those vitally interested in postgraduate medical education are some who would restrict training to the higher grade of practitioners and to those who desire instruction in special subjects as well as in the medical specialties. By exacting certain entrance requirements, they would exclude a large contingent of medical practitioners who apply for needed help: they would, in short, practically abandon the so-called polyclinic courses. It seems to me that ways and means should be found to assist all classes of physicians, excepting the so-called hopeless cases. Requirements for acceptance should be waived in the case of those who are in good standing and who merely wish to improve their diagnostic and therapeutic skill by taking an intensive practical course. It has been well said that the general practitioner is the foundation of any medical service, its "first pivot, its anchor, its instrument."

The creation of the Medical Reserve Corps of the army during the recent world war disclosed a not inconsiderable class of physicians who were professionally inefficient; but many of these finally reached the medical training camps after being subjected to a process of filtration. It seems to me that owing to the care and caution exercised by the Surgeon-General to make certain that all medical officers receiving appointment were men of good professional standing and fair attainments they should be admitted to the polyclinic and other courses of our graduate schools without examination or preliminary test of any sort. Munson[2] points out that for many of those not found qualified, special schools and "salvage classes" were organized, and they were thus rendered competent for efficient military duty. The war having taught us the great value of practical and intensive courses in preparation for commissions in the army and navy, it is obvious that brief polyclinic courses (e. g., of four months as the minimum) should hold a definite place, for the present, at least in our graduate schools, so as to qualify the professionally inefficient for civilian service.

One factor which bears specifically on this aspect of the subject is the precept that above the interests of the medical school for graduates stand the interests of the general public. These interests may not be ignored in planning the scope and curriculums of our postgraduate institutions. There was a time, easily recollected by the majority of the present generation of physicians, when in our undergraduate schools, the courses in pathologic anatomy, including the performance of necropsies, in microscopy, physical diagnosis, laboratory methods, in bedside clinical training and other branches were on a scale far from commensurate with their importance. The men and women who were graduated under the old order of things, and the same may be said of all who have been engaged in general practice for a few years even, cannot, as stated above, keep abreast with the more recent and continuous advances of enormous significance to the communities in which they carry on their professional work. Shall these general practitioners be denied an opportunitty to acquire modern methods which will enable them to diagnose and attack disease with greater assurance of success? Is it not reasonable to assume that it is the duty of graduate schools to make provision for the immediate needs of the public and of practicing physicians who recognize and seek to remove their deficiencies, the while indulging the hope that one day this demand will be less insistent or may cease to exist altogether?

There is another and hopeful phase of the situation to be observed in the present-day recognition of the importance of correlating the teaching of the basal sciences with the more strictly practical branches of medicine. Many of the

1. Lyon, L. P.: Graduate Education in the Clinical Branches, and the Minnesota Experiment, J. A. M. A. **69**: 1307 (Oct. 20) 1917.

2. Munson, E. L.: The Needs of Medical Education as Revealed by the War, J. A. M. A. **72**: 1050 (April 12) 1919.

difficulties and much of the confusion experienced by the undergraduate student will disappear, once he clearly appreciates the relationship that the various scientific subjects bear to one another and to clinical medicine.

The same precept applies with equal force to postgraduate teaching; and in order to accomplish a satisfactory correlation of the different branches it is necessary to have an organization based on a comprehensive knowledge of the practical interrelations of the branches represented in the curriculum. Such a scheme of coordination of the instruction is possible only with physicians who have given the subject of the arrangement of the graduate school curriculum careful and thorough study. Moreover, cooperation between the heads of the different departments and the deans of the various schools is essential to the end that appropriate teamwork may be effected. It is in line with the need of meeting this requirement of the graduate student that a most important reform is possible; but obviously it will demand time and serious thought to bring it about.

Doubtless, the further development of an adequate scheme of graduate medical education in this country will be in large part the result of the efforts of the American Medical Association. As in the case of undergraduate education, so in that of graduate training, the recommendations of special committees of this body, with the object of standardizing instruction, will be generally accepted. It may be reasonably assumed that candidates will be subjected to a process of elimination; but it is hoped and believed that this sifting will not exclude the medical graduates who compose the backbone of the profession and whose deficiencies are, in many cases at least, attributable to low standards of the medical schools from which they were graduated.

There should be brief, intensive courses, then, for the average general practitioner; they are an effective help in his work, and at the same time meet in a measure at least the needs of the community. Indeed, this educational movement is so largely associated with the vital interests of the public that further comment regarding the duties and responsibilities of graduate schools in the matter would seem to be unnecessary. Surely, graduate medical schools should not wait until the people in general are so organized and enlightened that they can adequately express their professional needs. For these brief group courses no official certificate should be granted, although a statement issued by the dean setting forth that the candidate had taken certain polyclinic courses, with a mention of the duration of the period of study would be allowable.

THE SPECIALTIES

The world war revealed the scarcity of physicians who were qualified to render service along technical or "highly specialized lines." While there was an unprecedented demand for physicians of the highest attainments during that period, the experiences gained served to emphasize the necessity for improvement in both undergraduate and graduate medical education, so as to procure and maintain an adequate expert medical service.

It follows as a natural corollary from the foregoing statements that one of the chief functions of the graduate school is to provide an opportunity for the preparation of physicians for service requiring exceptional qualifications and the highest skill, as specialists, teachers and research workers. To those desiring to pursue the advanced courses, however, a strict psychologic rating should be applied; and all who fail to show the proper mental aptitude should be rejected. These entrance examinations are to be conducted by a competent specialist in neurology or psychology in conjunction with the dean.

I feel strongly that the time has arrived when we must free ourselves, by degrees if need be, from the custom of including among polyclinic courses, strictly speaking, the recognized medical specialties. They should fall either into the higher courses or into those leading to degrees, or the purely personal ones with a view to attaining to greater technical and practical efficiency along special lines and to become impregnated with the environmental atmosphere of a given teacher. To requests for personal tuition either in general medicine or surgery or the specialties, graduate schools must ever give heed; but the instruction should be conducted quite independently of any or all group courses, and no degrees should be granted.

The adoption of advanced courses to prepare men for the specialties in medicine would be a distinct and long step in advance, and a commendable asset in the movement to eradicate incompetents. This object, the standardization of the specialties, will not be attained so long as one or more brief polyclinic courses give physicians the right to assume the rôle of a specialist. For example, modern operations are on the whole comparatively safe; but far greater credit would accrue to the medical profession if the so-called leading operations in all departments of medicine requiring surgical procedures were performed only by the thoroughly trained, skilled and experienced surgeon.

The organization and standardization of advanced courses necessitate an immediate division of internal medicine and general surgery into several subbranches or specialties. Further details with regard to these two subjects would be beside the scope and purpose of this article, although it may be added that each subdivision should be provided with a full-time head, and that graduate schools require a large personnel of well-trained and experienced teachers. The progress of the science and art of medicine has been, doubtless, retarded by lack of preparedness on the part of physicians who have been pursuing special limited fields of civilian practice. More rigid training after the proper scientific preparation and certification for specialists is a most pressing public need and should engage the attention of our newly organized graduate medical schools. Both entrance requirements and curriculums would naturally differ in different medical specialties, but they must without exception be conducted under the higher scientific and practical standards.

METHODS OF TEACHING

It is in the graduate schools of this country that the cooperative or group method of studying disease, which is to be commended, must be properly rooted and developed. It is time that a satisfactory start be made in the higher courses leading to degrees, which should be a guarantee of exceptional attainments in preparation for the conduct of professional chairs or the practice of one of the recognized specialties, or for public health work; indeed, this should be undertaken as soon as proper facilities can be offered.

It is generally conceded that original research is to be encouraged by graduate rather than undergraduate schools; it can have no definite place in the curriculum of the latter because of two significant facts: first, lack of time to pursue original investigation successfully, and second, lack of qualifications to carry on such difficult and exacting work with promise of important and reliable results.

The custom of conducting group courses has its well-marked limitations. While it is feasible to give theoretical training (lectures, demonstrations and the like) to groups or classes of students, the practical work, which should make up the bulk of the course, should be in great part at least by individual contact of the student with patients and apparatus under supervisory instruction. In operative tech-

nic a student assistantship affords an excellent opportunity to gain practical information; the same remark applies to the student of internal medicine. The method of individual touch with apparatus and patients is indispensably necessary in the more advanced courses for which special degrees are offered. It will be seen that an abundance of clinical material and laboratory equipment is a prime requisite for carrying on such training. Its successful consummation, therefore, demands a large corps of competent teachers, and the affiliation with universities of all available hospitals, clinics, laboratories and museums. Such an affiliation of hospitals and clinics with universities, however, should be effected slowly and systematically. Indeed, the process should never be more rapid than is consistent with thorough organization and efficient, systematic teaching. The length of degree courses should not be less than from two to three semester years.

The chief primary aim and purpose of graduate schools being to provide highly skilled specialists, teachers and research workers, so far as they accomplish these ends will they become a potent factor in the era of production and construction on which America has recently entered. To promote a scheme such as outlined, however, an ample endowment fund is absolutely essential. Not only are new hospitals and laboratories required, but also endowed chairs. We are passing through a period in which "drives" have become popular and surprisingly successful. It has been authoritatively stated that the need of funds was never greater at our universities than at present, owing to plans looking to new developments in connection with the graduate medical schools and in other lines of endeavor. Since time is the essence of such an undertaking, it is hoped that "drives" will be made in the immediate future by the alumni and friends of the great American universities which have failed to do so in the past. It should be recollected in this connection that institutions which have received grants from the General Education Board have been those which have themselves contributed a certain amount. I am decidedly of the opinion that once the public, more especially the benevolently inclined portion, thoroughly understands what is the goal of these schools and that the welfare of the community is first, financial aid can be obtained through private philanthropy and from the state as well.

Much pertaining to both comprehensive planning and execution of the public demands in regard to medical service must obviously be left to the future. Meanwhile, all who are identified with the control and direction of graduate education should be intensely occupied with endeavors to meet the new and ever changing conditions of the times. This will necessitate the institution of new policies and methods which must be given proper direction, after the most thorough consideration of their wisdom. As the work progresses there must also be maintained close intercourse between the policy forming management, the deans and the faculties, if a real merit system of graduate medical education is to be expected.

FUNCTIONS OF THE GRADUATE SCHOOL

To recapitulate, the fully functioning graduate school should provide:

1. Polyclinic courses preferably of from four to eight months' duration for those pursuing general practice, who are desirous of overcoming their unavoidable deficiencies.

2. Advanced courses in the different departments of internal medicine, surgery and in the medical specialties for which degrees are offered, properly standardized and from two to three years' duration with an adequate standard of acceptance and an examination at the close of each scholastic year.

3. Personal courses under special arrangements with individual teachers, quite independently of any class or group instruction.

4. An abundance of material and laboratory space and equipment resulting in part from a gradual and careful affiliation of hospitals and clinics with universities, and a large corps of teachers with sharp division of duties and fixed responsibilities, including full-time professors as heads of departments in the advanced courses, with proper emoluments of their services.

5. A research bureau with separate organization to which the other departments defined above would naturally contribute candidates, subject to certain acceptance standards.

6. Large endowments to meet the conditions of the times; this is fundamental to all success. The people—the benefactors—must be fully informed of the purpose and aims of this modern educational product, as an aid to the securing of private and corporate endowment.

1605 Walnut Street.

Idaho October Examination

Mr. Paul Davis, director, Bureau of License, Idaho Department of Law Enforcement, reports the written examination held at Boise, Oct. 7-9, 1919. The examination covered 13 subjects and included 130 questions. An average of 75 per cent. was required to pass. Twenty candidates were examined, all of whom passed. Six candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
George Washington University		(1915)	82.3
Chicago College of Medicine and Surgery		(1917)	83.2
Hahnemann Medical College and Hospital of Chicago		(1913)	86.3
Northwestern University	(1904) 83.8,	(1907)	78
Rush Medical College		(1917)	81.2
University of Illinois		(1919)	85.3
State University of Iowa College of Medicine		(1903)	85.5
University of Kansas		(1917)	82.8
University of Maryland	(1915) 83.3,	(1918)	83.2
Boston University		(1905)	89.7
Marion-Sims College of Medicine		(1896)	88.6
St. Louis University		(1906)	87
John A. Creighton Medical College		(1911)	80
University of Pennsylvania	(1917) 81.8,	(1919)	80.5
Hahnemann Medical College and Hosp. of Philadelphia		(1907)	89.4
University of Tennessee		(1919)	87.4
McGill University		(1919)	83.3

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Denver College of Medicine		(1894)	Utah
University of Colorado		(1917)	Colorado
Chicago College of Medicine and Surgery		(1910)	Utah
Rush Medical College		(1910)	Utah
St. Louis University		(1905)	Utah
Jefferson Medical College		(1897)	Washington

Montana October Examination

Dr. S. A. Cooney, secretary of the Montana State Board of Medical Examiners, reports the written examination held at Helena, Oct. 7-9, 1919. The examination covered 10 subjects and included 50 questions. An average of 75 per cent. was required to pass. Of the 23 candidates examined, 14 passed and 9 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Chicago Coll. of Med. and Surgery	(1915) 76.1,	(1917)	81.8
Northwestern University		(1909)	80.9
Rush Medical College	(1915) 82.8,	(1919) 79.7, 83.3,	*85.4
State University of Iowa College of Medicine		(1897)	84
Univ. of Minnesota Coll. of Homeo. Med. and Surg.		(1897)	80.5
University of Minnesota Coll. of Med. and Surg.		(1907)	78.9
Long Island College Hospital		(1914)	82
University of Oregon		(1917)	76.9
Willamette University		(1913)	75.2
Jefferson Medical College		(1910)	76

College	FAILED	Year Grad.	Per Cent.
Loyola University	(1916) 56.4,	(1917)	62.6
Barnes Medical College		(1909)	47
Kansas City Hahnemann Medical College		(1905)	59.5
St. Louis College of Physicians and Surgeons		(1909)	70.3
St. Louis University		(1913)	63.9
John A. Creighton Medical College		(1917)	66.9
University of Oregon		(1919)	68.7
Memphis Hospital Medical College		(1911)	62.7

* Received certificate for four years' work, August, 1919.

Social Medicine and Medical Economics

THE DISPENSARY SITUATION IN NEW YORK CITY

Summary and Recommendations

BY THE PUBLIC HEALTH COMMITTEE OF THE NEW YORK ACADEMY OF MEDICINE *

The Public Health Committee of the Academy of Medicine was organized, May 1, 1911. Its main purposes have been:

1. To maintain a bureau for the collection of facts in regard to public health, sanitation and hygiene.
2. To endeavor to establish an active cooperation with all public health activities in the city.
3. To keep the medical profession advised of current public health conditions.
4. To render to the public authorities and to the community at large an authoritative medical opinion on public health matters.
5. To undertake and suggest special researches looking to the solution of vital public health problems.
6. To make comparative studies of methods and results of public health activities in other cities, both in this country and abroad.
7. To utilize facts obtained by the study of public health and hospital conditions for practical application in the preparation of the annual municipal budget.
8. To assist actively the various departments of the city government which relate to public health and hospitals in the preparation of their tentative budgets.
9. To study the hospital and dispensary situation in the city with a view of making plans for their future development and in order to further the efforts for raising the standards of efficiency.

From the time of its organization the committee has carried out its program faithfully, as demonstrated in the annual summaries of its work. The sphere of action and influence of the committee has been widened from year to year, and it now occupies an important place in the public health affairs of New York. Two of the studies of the committee have already been published in THE JOURNAL.[1]

I. CLINIC FACILITIES IN NEW YORK

According to the report of the state board of charities there are 153 dispensaries in New York City. In this number are included twenty-one tuberculosis, eight dental, ten eye and three rabies clinics of the department of health, and six school dental clinics maintained by the Children's Aid Society. Of the 105 dispensaries outside of the health department and school dental clinics, there are sixty-five outpatient departments of hospitals, thirty-four detached dispensaries and six college dispensaries. In addition, the health department maintains twelve venereal disease clinics (all but two advisory only), three occupational clinics and sixty baby health stations. Several private agencies maintain an additional number of milk stations.

The average number of persons treated annually in the dispensaries of the city has been one and a quarter million for the last five years, and the average number of treatments given is about four million, making an average of over three treatments per patient.

Over 2,000 physicians in New York City are giving their services to dispensaries, and in the vast majority of instances their services are not compensated. Approximately 69 per cent. of the physicians are associated with outpatient departments of hospitals, and the remainder, or about 31 per cent., work in the independent dispensaries. The dispensaries are open weekly for about 8,000 clinic hours. Most of the dispensaries are open during morning and early afternoon hours. The number of dispensaries open in the late afternoon hours is very small, and the total number of evening hours during which the clinics function is only 213½, or a little over 2.5 per cent. of the total number of clinic hours per week.

There is evidently a sufficiency of dispensary facilities in New York City, and there will be no need for additional dispensaries for some years to come if the existing facilities can be utilized to a larger extent, and if, with a system of paying salaries to physicians, the dispensary hours can be arranged to meet in a larger degree the demand of those who are employed, and of the schoolchildren.

Of late the dispensaries have taken on functions along the lines of preventive medicine and public health, but this development is still in its infancy. The great opportunities of the dispensaries in the fields of both curative and preventive medicine have not as yet been fully grasped by the institutions, nor have their social responsibilities been clearly realized.

II. THE DISPENSARY LAW

According to the state law of New York, all persons applying for advice or treatment at a dispensary must be questioned as to their ability to pay a physician, and only those who are, in the opinion of the registrar, unable to pay physicians or dentists, shall be accorded treatment. Exceptions to the rule are permitted in emergency cases and cases of communicable disease (this refers chiefly to tuberculosis and venereal diseases), and in the case of persons applying at dispensaries connected with medical schools which may be "selected for use in clinical instruction." It is a misdemeanor to obtain medical or surgical treatment on false representation. The questioning concerning the financial status of dispensary applicants required by law is more or less perfunctorily performed; and although the law has been on the statute books for twenty years, not a single case has been brought to court.

Studies made at various times in several cities, including New York, show that the amount of imposition on the practically free services of dispensaries is not flagrant and does not constitute an important factor in the dispensary problem. The study conducted by a special committee of the New York County Medical Society in 1912[2] led to the conclusion that 10 per cent. of the patients seemed "able to pay for medical treatment under ordinary circumstances, but the margin over and above fixed expenditures seemed in most cases so slight that in illness demanding continued treatment or the services of a specialist, to pay a physician would mean for them serious deprivation or the incurring of debt from which afterward it would be difficult to escape."

A study of 1,000 cases at the Presbyterian Hospital Dispensary in Philadelphia showed that in 2 per cent. of the cases the acceptance of free care offered by the hospital amounted to abuse.[3]

The Illinois State Health Insurance Commission reported in May, 1919, that according to its study 4.5 per cent. of the dispensary patients "were recipients of medical charity which their economic status did not justiy."[4]

Similar studies at the Boston Dispensary and at the Washington University Dispensary at St. Louis led to the conclusion that 2 per cent. of the patients were taking undue advantage of the free services of the dispensary physicians.[5]

Our own study, based on first hand information obtained from the patients who were visited in their homes, corroborates the findings of the other investigations. We found that 2.2

* The members of the committee are E. H. Lewinski Corwin, Ph.D., executive secretary; Dr. Charles Loomis Dana, chairman; Dr. James Alexander Miller, secretary, and Drs. John S. Billings, Nathan E. Brill, Robert J. Carlisle, James B. Clemens, Haven Emerson, Lewis Fox Frissell, Arpad G. Gerster, S. S. Goldwater, John A. Hartwell, Ward A. Holden, L. Emmett Holt, Otto V. Huffman, Walter B. James, Walter L. Niles, Bernard Sachs, Thomas W. Salmon, Frederic E. Sondern, M. Allen Starr, W. Gilman Thompson, Philip Van Ingen, Karl M. Vogel, George B. Wallace, Cassius H. Watson and Herbert B. Wilcox.

1. Quarantine in the Maritime Cities of the United States, J. A. M. A. **60**: 194 (Jan. 18) 1913; Report on Postmortem Examinations in the United States, ibid. **60**: 1784 (June 7) 1913.

2. New York State J. Med. **13**: 50 (Jan.) 1913.

3. Johes and Hostetter: A Social Survey of Dispensary Patients in Philadelphia, Mod. Hosp., November, 1915, pp. 321-326.

4. Report of Health Insurance Commission of the State of Illinois, May 1, 1919, pp. 93, 355.

5. Davis and Warner: Dispensaries, New York, 1918.

per cent. of the patients were palpably taking undue advantage of the dispensaries, that 79.4 per cent. were justified in the use of the dispensaries because of low economic status, and the rest because they sought the services of specialists or the use of equipment and apparatus which could not be obtained anywhere except in a dispensary at a price which they could afford to pay.

The bulk of dispensary work today is done in departments devoted to the treatment of special conditions. Not more than 20 per cent. of treatment is given in the department of internal medicine; the remainder is divided among pediatrics, surgery and specialties. The vast majority of patients seek the advice of specialists in the dispensary because they cannot meet the fees prevailing in private practice.

In view of that condition, it may be stated that the dispensaries have ceased to be institutions for the destitute only, and have come to occupy a very prominent place in the treatment of disease among the wage-earners of the community.

III. DISPENSARY POLICY AND EXECUTIVE DIRECTION

There exists no standard method of dispensary organization, either from the administrative or medical point of view. The dispensary has too often been treated as a Cinderella in the hospital household—neither sufficient funds nor sufficient thought have been given to its organization and work.

The problems encountered in dispensary administration are probably more complex and difficult than are the problems arising in the management of a hospital, yet the majority of institutions lack a definite policy with regard to dispensary work, and the administrative supervision is in too many institutions purely perfunctory. Likewise, with the exception of independent dispensaries, there seldom is an executive officer of training and ability attached to the dispensary whose duty it is to give undivided attention to the study of its problems and the development of adequate administrative procedure.

There is a need in most of the institutions of a clearly defined policy and responsibility to be formulated by the board of trustees and to be supervised by a joint committee representing the board of trustees, as well as the medical board. Provision should also be made, at least in the large institutions, for a full-time executive, who will carry out the policies of the board of trustees and devote his undivided thought and attention to the administrative problems of the dispensary. Many of the existing administrative deficiencies would be obviated by the existence of well defined policies and by the fixing of responsibility for their enforcement on specially designated full-time executives.

IV. FEES

The prevailing charge for admission, drugs, dressings, apparatus and so on varies from institution to institution. No effort has been made to standardize charges. They are invariably very low, although in some institutions the registration fee is as high as one dollar. Municipal hospitals have thus far refrained from charging any fees in their outpatient departments, although payments are accepted in such hospitals for the maintenance of ward patients. During the last year the charges in many institutions have been slightly increased. The increase in charges leads at times to a falling off of the number of patients, who seek treatment in institutions where the charges are lower. There is an evident need of an equalization policy in the matter of charges for treatment, as well as for medicine, dressings, etc., and an attempt along these lines should be made jointly by all the institutions, including the municipal.

At least three considerations must be borne in mind when the problem of fixing dispensary charges is undertaken. First, all the institutions are in need of additional income for the purpose of improving the services; second, the majority of the wage-earners are able to pay part of the cost for skilled medical service, and third, there exists a class of patients, chronic invalids and the unemployed, who will be deprived of treatment altogether if the admission fee is demanded in every case. The fees should likewise be low or remitted to patients in tuberculosis and other similar clinics to which the patients are required to come for sanitary supervision. It is therefore necessary to adopt a system of carefully graded fees with a maximum not to exceed 50 cents, and to make that system uniform in the dispensaries throughout the city. The wage-earners in a more or less steady employment could pay a fee of 50 cents per visit without hardship. Moreover, considering the fact that the majority of patients come to the dispensary to seek the advice of specialists, the suggested increased fees would not be considered prohibitory to most of them. They are at present compelled to resort to the practically free services of the dispensary because they cannot meet the customary charges of specialists. The adoption of a 50 cent maximum fee would materially increase the present dispensary income, and would aid toward making possible the necessary improvements in dispensary service. It would help the institutions to pay salaries to physicians and to employ larger clerical, nursing and social service staffs to carry on more adequately the manifold functions of the dispensary and to meet the responsibilities toward the patients and the community. Even small salaries of from $300 to $600 yearly are often sufficient to keep good young physicians interested in their positions, and to lessen the medical "turn over" in the clinics.

The institutions which are poorly equipped, and which would be unable to render a superior grade of service, would lose many of their patients who, on paying a higher fee, would be more discriminating, and in this way the inferior institutions would be gradually eliminated.

V. REDUCTION IN WAITING TIME

The two things that first need amelioration in clinic procedure are the reduction in the waiting time before admission and the method of assignment of patients to clinics. In many instances, patients are made to wait unduly long periods of time, which is a hardship for most of them if they are employed, or, as in the case of mothers, if they have domestic duties. It is believed that this could be obviated to a large extent by the system of appointments, as is customary in private practice. That such a system can be made practical has been demonstrated by the American Red Cross Clinic for Children at LaHavre, and at the Mayo Clinic at Rochester, Minn.[6]

Because the dispensary plant is in many instances used only for several hours during the day, there is a great overcrowding of patients at most of the institutions. More extended use of the dispensary facilities would obviate the existing overcrowding in many instances and would allow for better individual attention than is at present accorded the average patient. When the extension of the use of the plant is impracticable, the principle of limitation of numbers should be applied, that is, no more patients should be admitted to the dispensary than the facilities of the institution in personnel and equipment would warrant.

The present practice of the lay registrars assigning patients to the several departments of the dispensary results in numerous transfers from one clinic to another, with the concomitant loss of time, and also in the condition that many clinics treat cases which do not belong to them.

6. The Red Cross plan is described by Dr. Edwards A. Park: Mod. Hosp. **13**: 101 (Aug.) 1919.

VI. THE DIAGNOSTIC CLINIC

To remedy this, it is suggested that each dispensary should have a diagnostic division, and patients with systemic diseases or suffering from conditions not easily ascertainable should receive the benefit of an examination by a group of physicians representing the several departments of the dispensary, and be assigned to the treatment departments after a preliminary examination has been made. Conditions in which the diagnosis is obvious, such as simple wounds or fractures, or when the disease or complaint is trivial and transient, such as a common "cold," could be disposed of without assignment to the diagnostic clinic.

Patients in need of a general examination should be assigned to the diagnostic division and subsequently sent for treatment to other departments. The physicians in the several departments would serve in the diagnostic division on a rotation basis. In this way the patients would receive the benefit that accrues from medical team work, and the physicians would have a much better opportunity for a complete study of patients than they do under the present form of organization. Consultants of broad experience and of recognized ability should be associated with and should actively participate in the work of both the diagnostic and the therapeutic departments.

VII. EDUCATIONAL OPPORTUNITIES

The waiting period of the patients has not been utilized in any of our dispensaries for educational purposes. Even if a system of appointments is introduced, it will not entirely obviate waiting. This period could be well utilized if moving pictures, dealing with certain health aspects, could be shown, large posters placed in the dispensary rooms, so that they could be read from the distance, or other methods of health education employed. Dietetic demonstrations would be of great value in this connection. The dispensary might also be used outside clinic hours for lectures, classes in dietetics, corrective gymnastics, teaching of hygiene, and similar activities; in other words, the dispensary should strive to become the educational center of the neighborhood.

VIII. ROOM ARRANGEMENT

It is important that in many of the institutions better arrangement of the facilities should be made so that the clinic rooms would be well lighted and ventilated and that the laboratories would be housed in readily accessible locations, and that clinics closely related in function should be in juxtaposition. The arrangement of the waiting rooms in large clinics could also be improved, and when feasible the exit from the building should be separated from the entrance. The social service department should likewise be made easily accessible and located in immediate proximity to the diagnostic department, which would facilitate the joint work of the two departments.

IX. EQUIPMENT

In order to make the services in dispensaries as attractive as possible for physicians, and in order that the patients may derive the greatest benefit from medical skill, it is imperative that the dispensaries be equipped with all the modern facilities for diagnosis and treatment of disease. Many institutions have meager laboratory and roentgen-ray facilities. The hospital laboratories on which many of the outpatient departments have to depend are too overcrowded with work for hospital patients to assume all the burden that proper medical work in the dispensaries would impose on them. In addition to the lack of adequate laboratory equipment, the dispensaries are seldom equipped with therapeutic workshops and with the facilities for hydrotherapy, mechanotherapy, thermotherapy and electrotherapy.

X. REMUNERATION OF DISPENSARY PHYSICIANS

Even if all the necessary physical facilities were provided in the dispensary, it would not attract physicians for continued and sustained application if there were no other benefits derived from dispensary practice. Medical ethics restrains physicians from deflecting patients from the dispenasry to their private offices, and particularly with the present high cost of living it is very difficult for many to devote a great deal of time to dispensary practice, which, with a few exceptions, is not compensated. Remuneration, even though nominal, affords a stimulus to more conscientious performance of work, and makes possible a better discipline in the institutions. But what is even more important for the efficiency of the service is a medical organization correlating the dispensary service with that of the hospital, such as is already in vogue in the best institutions and should be adopted by others. The essential features of a correlated dispensary and hospital service are herewith suggested.

XI. CORRELATION OF DISPENSARY AND HOSPITAL SERVICE

The medical organization of outpatient departments which are connected with hospitals should be divided into two main branches corresponding to those of the hospital, namely, the medical and the surgical. The medical division of the hospital and that of the dispensary should be under one director. Likewise, the two surgical departments should have common direction. The specialties in each branch should be differentiated in accordance with the best interests of the medical and administrative organization of each institution. The outpatient service should be graded. The appointment to the lowest grade in the outpatient department should be made on a probationary basis of three or six months, and after a successful trial the probationer should, on the recommendation of the chief of clinic and with the approval of the board of trustees, be appointed a member of the dispensary staff in the lowest grade. On completion of a period of satisfactory service he should be promoted to a higher grade, and whenever the conditions warrant, should be made a member of the lowest grade of the visiting staff of the hospital. A rotating service for the junior members of the visiting staff of the hospital, allowing a combined service in the dispensary and in the hospital, is beneficial to hospital and dispensary alike.

Whenever such an arrangement exists, it affords physicians a stimulus to enter dispensary service; it adds to the experience of physicians, many of whom, on account of the limited facilities of hospitals, do not get the benefit of hospital association except during the one or two years of internship, and it gives to the hospitals a broader opportunity of choice of the visiting staff. A universal adoption of such a plan would be welcomed by the profession, and it would obviate to some degree, perhaps, the necessity for paying salaries to dispensary physicians. The opportunity for promotion to hospital rank counts for more than a salary reward for a routine day-to-day drudgery without hope for promotion. Such a plan would also dovetail with a medical school organization.

In detached or independent dispensaries, where such a plan of organization could not be effected, arrangements with medical schools for organizing graduate instruction could perhaps be made in order that the whole field of clinic work of this city should be permeated with the spirit of research and teaching, and in order that all existing facilities should be put to the most useful purpose.

The study of medical records has revealed the fact that the special institutions devoted to the treatment of particular conditions are almost invariably superior in their work to the corresponding branches of the general dispensaries. It seems important, therefore, that in making plans for the development of New York as a great medical teaching and research

center the facilities and clinical material of the special institutions should be correlated and utilized to the fullest extent.

XII. MEDICAL RECORDS

Adequate medical records prepared in a certain standard way and legibly written are one of the prime essentials of conscientious performance of work and of a scientific utilization of the clinic material. Under existing conditions, in which the physicians in the majority of instances are required to write histories in the rush of clinic work, and where there is no supervision over the keeping of histories, and no scientific or administrative stimulus for keeping them, the medical histories in many instances are little more than worthless. Often the essential findings of the physical examination and the ancillary laboratory tests, or the character and method of treatment, are not recorded.

The analysis of the thousands of medical records obtained from a large number of institutions, although inadequate as an exact portrayal of medical work, indicates, however, that in many instances dispensary work is of a slipshod character.

General physical examinations were found to be recorded in less than one fifth of all the cases examined. For certain conditions, such a procedure is probably unnecessary. In many others, however, the failure to make an adequate general physical examination is a serious omission and indicates to what extent the dispensaries could be improved if their responsibilities as agencies for the prevention of incipient disease and the discovery of remedial defects were fully realized. Then, again, the fact that the number of diagnoses recorded on the medical histories exceeds the number of physical or local examinations and the number of laboratory tests would indicate that the diagnoses are often forced without sufficient warrant. Even in such cases diagnosed as nephritis, for instance, records indicate that urinalysis was made in only 66.7 per cent. of instances. Among the cases of syphilis studied, in only 50 per cent. was an indication found that the patient had been given proper treatment.

For the efficient functioning of the clinics, it is desirable that clinic staff conferences should be held regularly and cases reviewed. The members of the staff should be urged to study intensively certain series of records and make analyses of them for presentation, discussion and publication.

With an administrative organization, as outlined in this series of recommendations, the keeping of adequate histories is quite feasible. In order that the histories may be made readily available for all purposes for which they may serve and in order that they may be kept in a uniform way, it is essential for a dispensary to maintain a central cross index filing system, such as has been successfully maintained at the Presbyterian Hospital of New York or at the Massachusetts General Hospital or at the Mayo Clinic, for example. The daily routine procedure in dispensaries should provide that at the close of each clinic session the clinic secretary should turn in the day's records to the filing clerk, who, on examination, files them in accordance with an established system, if the records contain all the information called for by the standard adopted. If the records are incomplete they should be returned to the physician for the supplementary information before they are placed on file. Before the clinic session begins, the records pertaining to patients who are expected to return on that particular day would be obtained by the clinic secretary from the filing clerk. Additional items indicating the patient's progress would be added, and the records again returned to the central file.

Although theoretically the central file is highly to be recommended for its manifold advantages, it has certain practical drawbacks. First of all, it is expensive, as it requires a considerable staff of trained and experienced file clerks with a thorough understanding of medical terms. Its proper functioning is also dependent on the existence of clinic secretaries who would cooperate with the filing department in seeing that all the details are entered and that the department is notified daily in time to prepare histories for each clinic session.

Furthermore, the frequency of error in misfiling a record increases with the number of records handled, and accordingly the chances of a temporary loss of record are greater in the central files than they are in the individual files. Likewise, the question of available space for a central file must be considered before its adoption. A central file usually occupies a considerable amount of contiguous room space, while the decentralized file is easily distributed among the several clinic rooms.

Finally, the adaptability of a central file to the requirements of certain clinics, such as tuberculosis and venereal disease, which are called on to make periodic summaries of their work, must also be considered.

XIII. CLINIC SECRETARIES

Another important factor in increasing the efficiency of the clinic is the dispatch with which patients are prepared for examination. There are few institutions in this city at which clinic secretaries, as they are called, are employed. Wherever the experiment has been tried, whether with paid or volunteer workers, it has proved to be of great value. It is very important that clinic secretaries be generally employed as adjuncts in the discharge of clinical procedure. Many volunteers could be secured for the service from among those in the schools for social service, for whom such an experience would be of invaluable assistance in their future careers. A certain number of paid secretaries will, under any conditions be necessary in the clinic in order to train volunteers and facilitate the work of the physicians, and to spare the patients a great deal of waste of time and effort and also their occasional disappointment and discouragement.

XIV. FOLLOW-UP SERVICE

One of the tests of a dispensary's efficiency is the hold it exercises over its patients, for unless patients return for treatment until discharged, a great deal of the effort and money expended has been lost. As matters stand, the return visits in some of the departments of the clinics are very few. In certain departments, like tuberculosis, venereal disease and children's, efforts are being made to bring the patient back through the follow-up system, which in the majority of institutions consists in notifying patients who fail to come on an appointed day that they should return to the clinic. Only in certain institutions are the patients visited by the agents of the dispensary and urged to come back. There are many reasons for the failure of the patients to return. They sometimes get discouraged; frequently, again, the symptoms which in the first instance drove them to the dispensary disappear, and it is not evident to them that they should continue treatment. In this study it has been shown that the majority of the patients gave "pain" as the chief symptom which prompted them to seek medical advice. It is essential for an efficient clinic to have an adequate number of workers who would be able to impress the patients with the importance of continuing treatment, even when the distressing or annoying symptoms disappear.

The number of persons with syphilis or gonorrhea who remain under treatment until discharged by the clinic is almost negligible, and no systematic efforts have been attempted to examine the families of the infected patients. In this respect the experience of tuberculosis clinics, where efforts in that direction have become a part of the routine of procedure, may be pointed out as a possibility for larger prophylatic opportunities of the venereal disease clinics. It is imperative

that the venereal disease clinics have at their command larger physical facilities, as well as more clerical, nursing and social service assistance, in order that they may take a proper part in the campaign for the eradication of venereal disease.

XV. THE NURSING ORGANIZATION

The nursing personnel of dispensaries is generally inadequate. The nurses are chiefly found in the children's, gynecologic, surgical and tuberculosis departments. Other departments are handicapped by lack of nursing assistance. Moreover, the nurses are frequently called on to do other than purely nursing duties, and their assignment to the dispensary is often contingent on the needs of the hospital. The practice established in certain institutions in which a part of the course in the training school for nurses is devoted to dispensary work, should be generally adopted and arrangements made in such a way that each of the pupil nurses should have several months' experience in the dispensary, which would be of great value to her. The pupil nurses should remain under the direction of a head nurse designated from the training school for the direction and instruction of the pupils. If such an arrangement could be effected in all the outpatient departments connected with hospitals maintaining a training school, the nursing service in dispensaries could be made much more adequate and economical than it is now, as the number of graduate nurses should be reduced to a minimum of one in some of the dispensaries.

XVI. THE SOCIAL SERVICE DEPARTMENT

The social service department could best do its work if it were in close cooperation with the admitting and diagnostic departments of the institution. The patient's first contact should be either with the social service department, where on rapid questioning, certain facts required by law would be ascertained about his social history, before he proceeds to the diagnostic or other departments of the institution; or this function could be performed by a proper registrar who, when directing the patient to the diagnostic clinic, attaches to his history sheet a slip to be returned by the physician with a check mark indicating whether or not the services of the social service department are required in the case. Such a routine procedure would automatically call the physician's attention to the availability of social service. Likewise a method should be worked out whereby reports on cases that are referred by physicians would automatically be sent to them as soon as available.

Because of the underutilization of the dispensaries by certain racial groups in our population, as a result of their ill adaptation to the new environment, it is important that the social service department learn to meet the racial point of view of the patients, as well as to have some one who would obtain, when necessary, the desired information in the language of at least the major foreign group using the dispensary.

The social service workers are often called on to perform functions which are not within the range of activities which should properly belong to them. Because in New York the hospital social workers are almost invariably nurses, they are in some instances devoting a great deal of time to nursing work. This is particularly true of the pediatric and tuberculosis clinics. Likewise, while visiting patients in their homes, the social service workers undertake at times what is tantamount to public health nursing. Social service workers need not be nurses; and whenever patients require public health nursing, arrangements for it should be made by the social service department with the Visiting Nurses' Association or the department of health, just in the same manner as other agencies are called on when the nature and exigencies of a case call for a special service.

There is a need of a standard or uniform social service nomenclature to designate certain conditions or procedures. The terms used at the present time are often vague and do not convey the same meaning to all who consult or use the records. The records of the social service department should be uniform and contain a certain amount of indispensable information. Digests of them should be filed with the medical records. The original full records might then be kept in the social service department.

The social service department has become recognized as an important part of the dispensary and hospital organization, and should be administratively incorporated as an integral part of the institution. It should be responsible before the board of trustees just as the other departments are, and all funds that are collected for its maintenance, if there be any special need for soliciting funds for any special department of an institution, should be placed in the treasury of the institution and paid out to the workers in the same way as salaries in other departments. There is an advantage, however, in having advisory committees of interested persons to discuss cases and to bring all the outside points of view and facilities available to assist in the work. On such committees, however, there should be representatives of the boards of trustees, the administrative heads, such as the superintendent, the heads of the training school for nurses, and also a representation from the several departments of the medical organization.

The work of medical social service has as yet not reached a plane where it can be said to be standardized in its aims and methods. It is still in a formative state. There is need for a concentration of effort on the part of all those interested to secure a crystallization of function and procedure.

A central clearing house for social work might be attempted in order to standardize procedure, to make comparative studies of the work in the several institutions of the city, and to minimize the waste of money and effort by dividing the city into sections, so that workers from one institution would not need to visit patients in distant parts of the city, but could "clear" through such a central office. Such an arrangement should be rendered more feasible if standard methods and standard record forms were used.

The suggested central clearing office, with its accumulated wealth of material and experience, would also be in a position to formulate plans for instruction to be given to those who desire to enter the field of social service.

XVII. DISTRICTING THE CITY FOR CLINIC PURPOSES

In order that the dispensaries may become what it is possible for them to be, namely, important medical, public health and social centers in the community, in addition to a reform of the present point of view and of the present organization, there is a need of a better public appreciation of the scope and function of the dispensary and of a regional division of the city with regard to dispensary service.

The first could be accomplished through proper publicity on the part of the dispensaries, and by reports more informing than those published by most of the institutions. In reports the work could be presented and analyzed in an interesting and instructive way, and the costs per patient or per attendance figured in accordance with an accurate and uniformly applied system.

The districting of the city for dispensary purposes may be difficult, because of the uneven distribution of the institutions and because of the needs of teaching clinics which do not desire to be restricted. In addition, there are a number of special institutions which cannot easily be included in any plan for the division of territory; likewise, denominational institutions might find it difficult to join in a district arrangement.

The advantages which would, however, accrue from a regional distribution of responsibility make it desirable to try such an arrangement. At first, perhaps, certain departments could organize their work on a district basis, following the successful example of cooperation on the part of the tuberculosis clinics. The pediatric, venereal disease, obstetric, social service and preventive medicine departments might find it most advantageous to adopt the district division of the field. Other departments might follow later, if these experiments should prove satisfactory.

The successful experience of the Association of Tuberculosis Clinics in raising the standard of equipment and procedure is worth while considering, particularly in connection with the venereal disease clinics, in which the variations in standards and records are so great at present as to render comparisons of their work of limited value. With a pooling of interests, and a uniform system of reporting and of scoring, great improvement could be expected.

Of all the departments of general dispensaries, the tuberculosis clinics, although far from ideal, are undoubtedly the most efficient. It is true that they differ from other branches of the dispensary in that their primary function is education, supervision and the securing of a change in environment, while in most of the other departments, the primary object is treatment; but similar cooperative arrangements could be established in other branches.

The Associated Out-Patient Clinics of the City of New York is the logical body to take the initiative in such a plan and to provide leadership to bring about needed reform in the dispensary practice and organization of this city.

Medicolegal

Validity of Law Taking Away Right to Issue Certain Prescriptions

(State v. Emonds (Wash.), 182 Pac. R. 584)

The Supreme Court of Washington, in affirming a judgment of conviction of the defendant of the crime of issuing a prescription for intoxicating liquor after he had been twice convicted of unlawfully issuing such prescriptions, holds constitutional Section 8 of initiative measure No. 3, Laws of 1915, which, among other things, provides that it shall be unlawful for a physician, after he has been convicted a second time of a violation of the provisions of the act, thereafter to write any prescription for the furnishing, delivery or sale of intoxicating liquor. The defendant contended that the legislative power of the state, whether by initiative measure or an act passed by the legislature, could not deprive a regularly licensed physician of the right or privilege of prescribing intoxicating liquor as a medicine, if he believed the patient's condition required it, though it was admitted that for such offenses as that with which the defendant was here charged it would have been proper to deprive him of the right to practice medicine entirely. But the court says that no constitutional provision was called to its attention which it was contended that the law here assailed violated, and no authority was presented holding that the court may declare a legislative act invalid when it does not offend against some constitutional provision. The limitations on the legislative power must be found, if at all, in constitutional enactments, and not in the judgment or discretion of the courts. The law complained of was a valid exercise of legislative power. Nor was there any merit in the contention that, since the statute made it unlawful for a physician to issue a prescription for intoxicating liquor after having been twice convicted of unlawfully issuing such prescriptions, it was error to permit proof of more than that number. The state was not required to cease the introduction of proof when it had offered sufficient evidence to carry the case to the jury and sustain a conviction.

Excluding Children from School for Trachoma

(Martin v. Craig et al. (N. D.), 173 N. W. R. 787)

The Supreme Court of North Dakota, in affirming an order of the district court of La Moure County, quashing an alternative writ of mandamus that was issued on the petition of the plaintiff for a peremptory writ to compel the defendants to admit to school certain children, says that the defendants justified their refusal on the ground that one of the children had been found by a reputable physician and by a qualified representative of the federal health service to be afflicted with trachoma, and the other to present a case in which trachoma was suspected. It appeared that during the past few years the disease of trachoma had been present in La Moure County. The school nurse directed the attention of the county health authorities to a number of cases in which schoolchildren appeared to be affected with granulations of the eyelids; and, when some of them were examined by the superintendent of the county board of health, he diagnosed the cases as trachoma. When examined by other physicians, however, and even by representatives of the state public health laboratory, the finding was negative as to trachoma. In some of the cases that had been pronounced trachoma by the superintendent of the county board of health, and not trachoma by the representatives of the public health laboratory, the patients were sent to the government hospital at Pikeville, Ky., for treatment, and the diagnosis was trachoma. There being a number of persons afflicted with this or similar eye trouble, representations were made by the governor of the state to the federal Public Health Service, which resulted in a survey being made by a representative of the latter service, who reported that he found in La Moure County 120 positive and 350 suspicious cases of trachoma. As a result of this survey, a government hospital was established at La Moure, in which patients afflicted might be given the advantage of scientific treatment without charge. Moreover, to prevent the spread of the disease and to secure proper treatment for those affected, the county board of health promulgated an order forbidding admission to school of children who, on examination, were found to be or were suspected of being afflicted, unless they were at the time under treatment for the disease.

In this case the plaintiff produced two physicians who presented what are generally considered to be first-class professional credentials qualifying them to give expert testimony. They had also had ample opportunity to examine the patients and to diagnose the cases. In fact, the children had been patients of one of the physicians. These physicians testified that the children were not afflicted with trachoma, but with folliculosis. One of them also testified that it was injurious to the eye to treat it for trachoma when trachoma was not present; but a careful reading of his testimony disclosed that the injury resulted from a species of treatment that was likely to be resorted to only when the disease was clearly present and when the necessity for radical treatment was indicated. When qualified physicians disagree on the diagnosis of a diseased condition of particular persons, the health authorities and a school board, whose duty it is to execute the orders of the board of health, are justified in acting on the opinion of their own competent experts.

The order of exclusion in this case could not be said to be unreasonable. It excluded only those whose cases were positive and suspected, who were not at the time under treatment. The seriousness of the disease and its communicable character afforded ample foundation for such an order; and, even conceding that it might be doubted in the present case whether the children in question were affected, the doubt was one that must be resolved in favor of the authorities charged with the serious responsibility of preventing the spread of the disease. This was a case in which mandamus would not issue as a matter of right, but wherein it would issue only in the exercise of a judicial discretion; and this discretion should not be exercised in a way that might result in needlessly exposing healthy children to a disease as serious as trachoma.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

February, 1920, **19**, No. 2

*Etiology of Arthritis Deformans in Children. A. H. Byfield, Iowa City.—p. 87.
*Calcium Metabolism of Infants and Young Children, and Relation of Calcium to Fat Excretion in Stools. L. E. Holt, A. M. Courtney and H. L. Fales, New York.—p. 97.
*Incidence of Protein Sensitization in Normal Child H. M. Baker, Boston.—p. 114.
Foreign Bodies in Air and Food Passages: Report of Cases. E. E. Graham, Philadelphia.—p. 119.
*Auriculoventricular Heart Block in Children: Report of Case. J. A. E. Eyster and W. S. Middleton, Madison, Wis.—p. 131.
Abscess of Lungs in Infants and Children. H. Wessler and H. Schwartz, New York.—p. 137.
*Elimination of Acetone Bodies During Infectious Fevers. B. S. Veeder, St. Louis, and M. R. Johnston, M. C., U. S Army.—p. 141.
Two Cases of Congenital Stricture of Esophagus. J. L. Morse, Boston. —p. 144.
Recent Work in Anatomy, Physiology and Pathology of Infancy and Childhood. J. B. Holmes, Baltimore.—p. 148.

Arthritis Deformans in Children.—From a study of cases Byfield concludes that arthritis deformans in children results chiefly from a chronic infection situated in the tonsils and adenoids and in the accessory sinuses of the nose. In children less than 3 years of age, the portal of infection seems to be limited to the tonsils and adenoids. After this time removal of tonsils and adenoids is ineffective in arresting the progress of the disease. A sinus infection should be suspected as an etiologic factor if, after the tonsils and adenoids are removed, there remains elevation of temperature (even if slight), leukocytosis, poor appetite, together with a slowness of the joints to become less painful and swollen. Relapse and exacerbations are definite indications of the need of nasal treatment. Byfield believes that Poncet's disease is probably no more than arthritis deformans in an individual infected with tuberculosis. Although supportive and orthopedic measures are helpful, surgical treatment of the nasal sinuses is to be regarded as the most important therapeutic measure indicated in arthritis deformans in children. The prognosis in uncomplicated cases is good as far as arrest of the disease is concerned. The deformity and functional disability may persist for a considerable time.

Calcium Metabolism of Infants.—The average absorption of calcium oxid by healthy infants taking modifications of cow's milk was 0.09 gm. per kilogram of body weight. Since the average absorption of calcium oxid by breast fed infants was about 0.06 gm. per kilogram, it may be assumed that 0.06 gm. per kilogram is the minimum normal absorption by infants taking modifications of cow's milk. The excretion and the absorption of calcium were, in general, dependent on the amount of calcium intake, from 35 to 55 per cent. of the intake being absorbed. The calcium absorption was much lower when diarrhea was present. With an increased excretion of calcium in diarrheal stools, there was a marked decrease in soap excretion. The calcium absorption by rachitic infants was much lower than that by healthy infants. In the few cases in which observations were made on infants recovering from rickets, the calcium absorption was higher than the normal average. These infants had received cod liver oil for a considerable period. The administration of cod liver oil regularly increased the absorption of calcium, unless diarrhea was present.

Protein Sensitization.—Baker's studies show that the incidence of food sensitization of apparently normal children is almost a negligible factor, except in the case of salmon, which reaction in any case cannot be considered as an absolute indication of sensitization. The articles of diet most commonly causing disturbance in children presenting anaphylactic symptoms are: oatmeal, potato, eggs, peas, rice, casein, beef juice and chicken. This does not mean that a child with anaphylactic symptoms is not capable of taking any one or all of these articles of diet. Only a careful examination can reveal the causative factor. In many instances it is only one food, while it may be several.

Heart Block in Child.—A case is described by Eyster and Middleton of partial auriculoventricular dissociation developing in a child, aged 2 years, apparently associated with an acute nasal and throat infection. This child has been under observation for more than two years. At present the cardiac condition is that of a well compensated mitral lesion, associated with a 2:1 auriculoventricular block, with a ventricular rate between 50 and 60. The child has developed normally, and is at present in apparent good health and is normally active. A search of the literature revealed twenty reported cases of heart block in children. Nearly all of these were definitely or probably of congential origin or occurred during the course of severe and usually fatal diphtheria. The reported case is regarded as being of particular interest in reference to its probable origin and the relatively mild clinical disturbance produced by the condition.

Acetone Bodies in Infectious Diseases.—Observations were made by Veeder and Johnston on forty-one children with scarlet fever, diphtheria, measles and pneumonia. The findings show that while an increased elimination of acetone bodies may occur in the infectious diseases, this does not always take place; that in the same patient it may occur during one infection and not during a second; that it is not dependent on the severity of the infection or the degree of temperature; and lastly, that the decreased intake of food, so consistently a part of an infectious process, does not explain the causation.

Archives of Neurology and Psychiatry, Chicago

February, 1920, **3**, No. 2

*Diagnosis of Peripheral Nerve Injuries. S. D. Ingham and J. H. Arnett, Philadelphia.—p. 107.
*Nature of Aurae. L. B. Alford, St. Louis.—p. 124.
*Histopathology and Histogenesis of Syringomyelia. G. B. Hassin, Chicago.—p. 130.
*Analysis of Blood of Insane Patients. P. G. Weston, Warren, Pa. —p. 147.
Splints Used for Peripheral Nerve Cases at U. S. Army General Hospital, No. 11. R. C. Buerki, Boise, Idaho.—p. 151.
*Case of Meningo-Encephalitis (Lethargic Encephalitis). W. W. Hala and C. M. Smith, Brooklyn.—p. 160.

Diagnosis of Peripheral Nerve Injuries.—The authors discuss at length the factors concerned in the diagnosis of peripheral nerve lesions, the production of compensatory movements, and the lesions of individual nerves considered in reference to compensatory movements and other phenomena. They emphasize the importance of careful observation to avoid errors in diagnosis, especially in the atypical cases, which are the ones that offer the greatest difficulties in neurosurgical diagnosis. The fundamental requisites for accurate diagnosis include a thorough anatomic knowledge, a mastery of the mechanics of joint action and discriminating observation. With the application of these broad principles to neurosurgical diagnosis, the difficulties are minimized and the proper treatment can be instituted.

Nature of Aurae.—Alford attempts to point out anew the analogy between aurae and the hallucinations occurring in connection with sleep, hypnosis, crystal gazing, etc. According to this view, he says, aurae should be regarded not as the result of "discharges" of an epileptic nature in some part of the cortex, but as deficiency reactions, like dreams, occurring when there is a "disturbance of consciousness" of a certain type. Their relation to the loss or disturbance of consciousness in epilepsy and migraine is assumed to be the same as that of dreams to drowsy or sleep states; and their content should be regarded as being determined by the same factors that determine the content of dreams and similar hallucinations. Their relation to structural changes may be the same as that of those hallucinations which develop in connection with disease of the organs of special sense or of the nerves connecting them with the brain.

Pathogenesis of Syringomyelia.—From the study of his own case and of previous contributions to this question, the conclusion is drawn by Hassin that in syringomyelia there are a number of specific pathologic changes which differ

totally from those to be found in any other spinal cord lesion —changes which stamp syringomyelia as a distinct anatomopathologic entity. A very full report is made of the results of the microscopic examination of the spinal cord in the author's case.

Blood of Insane Persons.—The blood of thirty insane patients, selected cases of dementia praecox, epilepsy and manic-depressive insanity, was examined by Weston to determine the chlorin and urea nitrogen content. No deviation from the normal content of total nitrogen, nonprotein nitrogen, uric acid, urea, creatinin, creatin, glucose, chlorin or calcium was found.

Meningo-Encephalitis.—The case reported by Hala and Smith was interesting because it displayed not only the characteristic histopathologic lesions observed in the brain by others, but also on account of the intense purulent meningitis and ependymitis found at necropsy. The fact that an organism was isolated both antemortem and postmortem, which evidently was the etiologic factor concerned, is noteworthy. From the clinical standpoint the case was one of meningo-encephalitis, with lethargy and involvement of the motor fibers of the third, sixth, seventh, tenth and twelfth cranial nerves. The etiologic cause was a gram-negative motile bacillus, unidentified, but probably belonging to some intermediate class of the colon-typhoid-enteritidis group. Pathologically, the lesion demonstrated septic meningo-encephalitis and ependymitis, with punctate hemorrhages and perivascular cell infiltration of the centrum ovale, corpus striatum and optic thalamus.

Archives of Ophthalmology, New York

January, 1920, **49**, No 1

Teaching of Ophthalmology. F. H. Verhoeff, Boston.—p. 1.
Postgraduate Teaching of Ophthalmology. M. Wiener, St. Louis. —p. 9.
Postgraduate Course in Ophthalmology. A. Duane, New York.—p. 17.
Epithelial Inlay and Outlay in Lid Repair. S. H. McKee, C. A. M. C. —p. 30.
War Injuries of Eyelids. J. M. Wheeler, Ft. McHenry, Md.—p. 35.
Vernal Conjunctivitis. W. H Luedde, St Louis.—p. 43.
Routine Office Measurement of Stereopsis. D. W. Wells, Boston. —p. 64.
Motor Muscles of Eye. E. H. Hazen, Des Moines.—p. 70.
Nature of Trachoma; Normal Histology of Conjunctiva. K. Hiwatari, Kioto, Japan.—p. 82.
Case of Atypical Albuminuric Retinitis. C. A. Clapp, Baltimore. —p. 98.

Florida Medical Association Journal, St. Augustine and Jacksonville

January, 1920, **6**, No. 7

Diagnosis of Upper Abdominal Symptoms. H. C. Dozier, Ocala. —p. 132.
Doctor and Druggist. W. M. Hankins, Daytona.—p. 138.

Journal of Abnormal Psychology, Boston

October, 1919, **14**, No 4

Psychogenesis of Multiple Personality. M. Prince, Boston.—p. 225.
A Divided Self. C. E. Cory, St. Louis.—p. 281.
Problems in Sex Education. H. W. Brown.—p. 292.

Journal of Bacteriology, Baltimore

November, 1919, **4**, No. 6

*So-Called Reduced Oxygen Tension for Growing Meningococcus. E. F. Kohman, Camp Jackson, S. C.—p. 571.
Nomenclature of Actinomycetaceae. R. S. Breed and H. J. Conn, Geneva, N. Y.—p. 585.
*Culture Medium for Maintenance of Stock Cultures of Bacteria. M. C. Worth, Detroit.—p. 603.
Value of Presumptive Tests for Coli Based on Routine Use of Lactose Bile and Lactose Broth. N. Ritter, Lawrence, Kan.—p. 609.
Morphologic Changes During Growth of Bacteria. P. F. Clark and W. H. Ruehl, Madison, Wis.—p. 615.

So-Called Reduced Oxygen Tension for Growing Meningococcus.—Experiments were made by Kohman to determine the rôle that carbon dioxid plays in the cultivation of the meningococcus. He found that by making defibrinated human blood agar medium with a p_H of from 7.8 to 8.0, and incubating the meningococcus in a partial atmosphere of carbon dioxid, the same medium may be used for this organism which is used for the pneumococcus and the streptococcus.

Culture Medium for Maintenance of Stock Culture of Bacteria.—A medium of the following composition Worth found favorable for the preservation of *B. typhosus, B. paratyphosus, B. coli, B. dysenteriae, B. pertussis, Micrococcus catarrhalis,* a streptococcus, and the meningococcus and gonococcus for several months without transfer: Nutrient gelatin: chopped beef, 500 gm.; water, 1,000 c.c. Heated in a water bath (50-55 C.) for one hour. Strain through a bag cloth, the volume being restored: peptone, 10 gm.; sodium chlorid, 5 gm.; gelatin, 100 gm. Dissolve, filter, adjust to 1 per cent. acid. Sterilize for twenty minutes at 100 C. Inoculation is made and the cultures are placed at 37 C. for twenty-four hours after which they are stored at 20 C. with the exception of the meningococcus and gonococcus which are kept at 37 C. Without further attention *B. typhosus* retains its viability, characteristic appearance, and agglutinating power for eight months; *B. coli* for eleven months; meningococcus for eight months; *B. paratyphosus, B. pertussis* and *B. dysenteriae* for eight months. The streptococcus was still in good condition at the end of four months.

Journal of Infectious Diseases, Chicago

February, 1920, **26**, No. 2

*Varieties of Streptococci with Special Reference to Constancy. B. J. Clawson, Chicago.—p. 93.
*Human Fecal Streptococci. C. J. Oppenheim, Chicago.—p. 117.
*Some Factors Influencing the Potency of Concentrated Antitoxic Serum. C. R. Hixson, Woodworth, Wis.—p. 130.
Influence of Normal Beef Serum on Anthrax Bacillus. J. A Kolmer, D. C. Wanner and M. F. Koehler, Philadelphia.—p. 148.
*Some Factors Influencing the Final Hydrogen Concentration in Bacterial Cultures with Special Reference to Streptococci. H. Jones, Chicago.—p. 160.
Effect of Pasteurizing Temperatures on Paratyphoid Group. E. M. Twiss, Chicago.—p. 165.
*Fate of Streptococcus Hemolyticus in the Gastro-Intestinal Canal. D. J. Davis, Chicago.—p. 171.
*Influence of Brilliant Green on Diphtheria Bacillus. J. A. Kolmer, S. S. Woody and E. M. Yagle, Philadelphia.—p. 179.

Varieties of Streptococci and Constancy.—The work reported by Clawson deals with the characteristics of strains of streptococci isolated from various sources. Particular attention is given to the constancy of the special characteristics of streptococci, such as peculiarities in morphology, the action on the blood-agar plate, the fermentation of the various carbohydrates, and the immune reactions, such as agglutination and complement fixation.

Human Fecal Streptococci.—Mannite fermenting nonhemolytic streptococci, according to Oppenheim, are the characteristic predominant types found in the feces of normal individuals. The "indifferent" variety of streptococcus in the feces of normal persons is inconstant in its indifference to the formation of green; green formation would seem to be favorably influenced by the alkalinity of the mediums. Hemolytic streptococci are but exceptional findings in the stools of normal, healthy people, and are inconstant in occurrence. No apparent morphologic characteristics, aside from those dependent on rapid, luxurious growth, characterize the human fecal streptococci.

Potency of Concentrated Antitoxic Serum.—The experiments reported by Hixson were designed to investigate the influence of heat on the antitoxic content of the globulin fraction.

Final Hydrogen-Ion Concentration in Bacterial Cultures.—Jones' results show that, to obtain any accurate information regarding the final hydrogen-ion concentration of an organism, a number of factors should be taken into consideration. This characteristic, the limiting hydrogen-ion concentration of a given organism, to have any significance or subsequent application should be defined in terms of the composition of the medium, the initial reaction and any other conditions which favor or hinder abundant growth of that organism.

Streptococcus Hemolyticus in Digestive Canal.—Examination of the gastro-intestinal canal at various levels in rabbits fed hemolytic streptococci showed that this organism does not develop appreciably in the intestine, nor does it readily gain a permanent foothold there. Rabbits with generalized streptococcus infection in joints, blood, etc., showed no

hemolytic streptococci in the intestinal contents. Gastric juice of normal acidity from man and from rabbits kills these hemolytic micro-organisms in from two to five minutes. Gastric juice in achylia may not kill them in several hours. In normal human feces hemolytic streptococci were not found by Davis in fifty-three cases. Hemolytic streptococci when mixed with normal feces will live in the icebox for at least several days. In the incubator they tend to die out rapidly.

Effect of Brilliant Green on Diphtheria Bacillus.—Brilliant green was found highly bactericidal and antiseptic for a virulent diphtheria bacillus in vitro by Kolmer and his associates; the presence of blood and serum in the medium reduced the bactericidal activity. The dye was found also highly bactericidal and antiseptic for staphylococci. Brilliant green possesses much less bactericidal and antiseptic activity for *B. typhosus* and *B. coli,* particularly for the former. The use of brilliant green in the treatment of carriers of diphtheria and pseudodiphtheria bacilli usually resulted in the temporary disappearance of these bacilli from the nose, throat and ears of the treated persons; permanent ridding of these tissues of the bacilli, however, was not observed. Owing to the high bactericidal activity of brilliant green for *B. diphtheriae* and such pathogenic cocci as staphylococci, streptococci and pneumococci, the authors suggest the probability that the clinical use of a 1:250 solution of the drug in water may prove of value in the local treatment of infections caused by these organisms.

Medical Record, New York

January, 1920, **97**, No. 3

Diagnostic Pitfalls in Pulmonary Tuberculosis. M. Fishberg, New York.—p. 89.
Genesis and Diagnosis of Mental Diseases. E. Brodsky, Westport, Conn.—p. 94.
*Reflex Phenomena in Influenza Cases. S. Ginsburg, New York.—p. 98.
Roentgenography in Artificial Pneumoperitoneum. A. S. Hyman, Dorchester.—p. 100.
Community Health Units and Health Insurance. A. C. Burnham, New York.—p. 103.
Legislative History of Compulsory Insurance in State of New York. J. P. Davin, New York.—p. 105.
Lapsus of Memory. H. Laveson, New York.—p. 106.

Reflex Phenomena in Influenza Cases.—The two chief characters which Ginsburg observed in his cases were: 1. The almost constant presence of pleuropulmonary involvement in every case of pandemic influenza, no matter how mild the clinical course of the disease. 2. The almost invariable accompaniment of reflex phenomena in the neck, chest, abdomen, or back, whenever pleuropulmonary involvement was found on physical examination, at some time during the course of the disease. Ginsburg says, that it was striking to find patient after patient, on the first day of the disease, complaining of reflex pain with no lung signs, and, then later to develop pleuropulmonary signs in accordance with the reflex phenomena. Frequently, on further investigation of the case, he was able to find the proof that a diseased viscus was responsible for the visceromotor and viscerosensory phenomena.

Missouri State Medical Ass'n Journal, St. Louis

February, 1920, **17**, No. 2

Preventive Medicine and War. M. P. Ravenel, Columbia.—p. 49.
Acute Empyema; Diagnosis and Treatment. W. T Coughlin, St. Louis.—p. 56.
Treatment of Empyema by Carrel-Dakin Method. H. E. Happel, St. Louis.—p. 59.
*Primary Carcinoma of Nasopharynx; Report of Case. O. A. Smith, Farmington.—p. 62.
Hysteria. T. F. Lockwood, Butler.—p. 63.
Ear, Nose and Throat Service in a Base Hospital. S. S. Burns, St. Louis.—p. 69.

Primary Carcinoma of Nasopharynx.—A woman, aged 31 years, had had trouble with her nose for about one year when Smith saw her. Anterior rhinoscopy was practically negative. Posterior rhinoscopy revealed a mass in the vault of the pharynx resembling to some extent adenoids, but seemed too firm for adenoids, was irregular and presented a fungous arrangement. This mass occupied almost the entire vault so that the obstruction to breathing through the nose was quite complete. Glandular enlargements to the size of hazelnuts were noticeable along the sternocleidomastoid muscle on both sides of the neck. Blood examination revealed a leukocytosis of 12,000; hemoglobin 70 per cent. Blood Wassermann was negative, urine normal. The mass was removed and it proved to be a carcinoma. A large swelling developed under the angle of the right jaw. The glands extending down the right side of the neck to the clavicle were immensely enlarged, attaining the size of a small cocoanut and other masses of enlarged glands developed, some of them on the lower extremities. The masses on the neck and limb broke down and a septic condition developed with chills and fever. Nausea and vomiting began soon and continued until her death, seven months after operation.

Neurological Bulletin, New York

September, 1919, **2**, No. 9

*Aneurysm in Posterior Cranial Fossa. H. S. Howe, New York.—p. 325.
*Chronic Nondegenerative Hereditary Chorea. I. S Wechsler, New York.—p. 329.
Traumatic Neurosis. M. Osnato, New York.—p. 334.
Traumatic Hysteria. M. Osnato, New York.—p. 341.
*Cerebral Glioma and Acute Hemorrhagic Encephalomyelitis. H. S. Howe, New York—p. 349.

Aneurysm of Right Vertebral Artery.—Analysis of his findings leads Howe to conclude that the diagnosis of intracranial aneurysm in his case was reasonably certain on consideration of the clinical history and the neurologic findings. The history was that of irritation and later paralysis of the right seventh, eighth, tenth, eleventh and twelfth nerves. These lesions could be produced by a new growth, a basilar meningitis or an aneurysm of the vertebral arteries, but it is not probable that a new growth in this locality of four years' duration could produce this group of findings without also causing compression of the medulla or cerebellum and signs of increased intracranial pressure. Basilar meningitis was excluded by the negative serologic findings. A murmur was heard, and while murmur alone is not pathognomonic of aneurysm, in conjunction with other findings it does indicate aneurysm, and in this case it lead Howe to make a diagnosis of aneurysm of the right vertebral artery originating at the junction of this vessel with its largest branch, the posterior inferior cerebellar.

Chronic Nondegenerative Hereditary Chorea.—Wechsler reports the case of a young woman, aged 36, who had been suffering from a chronic nonprogressive chorea for sixteen years. Her father undoubtedly had chorea for twenty years, but, apparently, it was not degenerative in character. One brother had "shakings" of the arms; one daughter was "nervous"; two boys had chorea, one of them a severe form which had lasted almost three years with some mild remission, the other a continuous mild form, also of three years' duration. The clinical picture of the patient herself was typically huntingtonian in behavior. There was no doubt about the hereditary nature of the condition, three generations showing chorea of a continuous and prolonged nature. But, the patient did not show two of the most prominent symptoms which go with a Huntington's chorea. The patient's condition is not progressive, in fact, it is stationary, if not somewhat better; she has no defective mentality, not to speak of even an approach to dementia. Her attention alone is defective. She has attacks of fainting or so-called spells of weakness, which speak in its favor, but there is nothing else, either of psychic or somatic nature, to confirm that diagnosis; nor would a hysterical condition be compatible with chorea. Chorea gravidarum is a remote possibility in this case as the condition began ostensibly with a miscarriage, but that type of chorea usually stops with the emptying of the uterus and only rarely becomes chronic. Also it is never hereditary. Senile chorea is out of the question. Paramyoclonus multiplex is ruled out because of the absence of the lightning-like rapidity and universality of contraction found in this disease, and the bizarre character of gait, facial and tongue movements, and the hereditary or familial attributes are lacking.

Cerebral Glioma and Encephalomyelitis.—The antemortem diagnosis of epidemic encephalitis made by Howe was not

confirmed at the necropsy. A glioma of the right cerebral hemisphere and a hemorrhagic encephalomyelitis were found. The existence of the glioma, although it was of large size, had never been suspected as it had caused neither general symptoms nor focal signs.

New York Medical Journal

Jan. 17, 1920, **14**, No. 3

Acquired Retrodisplacements of Uterus. J. O. Polak, Brooklyn.—p. 89.
Technic of Tonsillectomy in Use at Camp Hancock Army Hospital, 1918. G. M. Coates, Philadelphia, and M. Raskin, Baltimore.—p. 92.
*Ligation of Internal Iliac Artery in Gynecologic Operations. R. Massart, Paris.—p. 94.
Hemostasis Obtained with Small Rubber Bands Instead of Ligatures. A. L. Soresi, New York.—p. 96.
Case of Dwarfism in Twins. H. Goldstein and M. Schneck, New York.—p. 97.
History of Patients Suffering from Rectal Disorders in Relation to Diagnosis. A. A. Landsman, New York.—p. 100.
Analysis of Eighty Cases of Bronchial Asthma. A. Sterling, Philadelphia.—p. 104.
Poland World War, from Medical Aspect. F. A. Fronczak, Buffalo.—p. 107.
Sarcoid Tuberculosis of Skin C. G. Cumston, Geneva, Switzerland.—p. 112.

Ligation of Internal Iliac Artery in Gynecologic Operations.—According to Massart, ligature of the internal iliac artery, in extensive abdominal hysterectomy for cancer of the neck of the uterus, is at times indispensable; at least, it is to be advised in the majority of cases. This ligature affects all of the territory irrigated by the branches of the internal iliac artery, including the uterine artery. It prevents oozing in the vaginal section, facilitates the manœuvers of liberating the ureters, and relieves the surgeon from caring for a long and minute hemorrhage. Massart practices Faure's ligation of this vessel.

New York State Journal of Medicine

January, 1920, **20**, No. 1

Neurologic Cases with Eye Manifestations. W. B. Weidler and J. M. Jonghin.—New York.—p. 1.
Treatment of Cancer of Uterus. H. C. Taylor, New York.—p. 8.
Cautery Methods in Treatment of Uterine Cancer. V. L. Zimmermann, Brooklyn.—p. 11.
Social Insurance. H. L. Winter, Cornwall.—p. 15.
Development of State Departments of Health in Relation to Health Insurance and Industrial Hygiene. A. B. Wadsworth, Albany.—p. 21.

Northwest Medicine, Seattle, Wash.

January, 1920, **19**, No. 1

Septic Bone Infections with Special Attention to Osteogenesis in Sepsis. E. A. Rich, Tacoma.—p. 1.
*Surgical Treatment of Trifacial Neuralgia. A. W. Adson, Rochester, Minn.—p. 6.
Eighteen Months' Experience with Radium. A. Jordan, Seattle.—p. 11.
Surgery Versus Radium or Roentgen Ray in Treatment of Uterine Fibroids. A. A. Matthews, Spokane.—p. 15.
Bacteriology of Influenza. M. E. Steinberg, Portland.—p. 18.
Discrepancies and Standardization of Wassermann Test. G. Hollister, Spokane.—p. 21.
Use of Dionin in Wood Alcohol Blindness. R. A. Fenton, Portland.—p. 22.

Surgical Treatment of Trifacial Neuralgia.—After dividing the posterior root in sixty-seven cases of trifacial neuralgia during the last two and one-half years, Adson is convinced that patients can be relieved of this disease by this procedure without any serious complications, and he strongly advocates that patients be encouraged to have the radical operation performed in preference to the alcohol injection or avulsion of the peripheral branches, unless there is some doubt concerning the diagnosis, or if the patient is a poor operative risk, or requires preliminary preparation.

Ohio State Medical Journal, Columbus

Jan. 1, 1920, **16**, No. 1

Pre-Operative Treatment of Hyperthyroidism. W. D. Haines, Cincinnati.—p. 7.
Value of Pain as Symptom. L. Baxter, Newark, Ohio.—p. 11.
Clinical Serology in Relation to Disease of Eye, Ear, Nose and Throat. O. Berghausen, Cincinnati.—p. 14.
Otolaryngological Work at Hospital for Head Surgery, Cape May, N. J. J. M. Ingersoll, Cleveland.—p. 17.
Results of Routine Wassermann Tests in Children. C. I. Snohr, Columbus.—p. 21.
Enlarged Thymus; Symptoms and Treatment. E. R. Brooks, Cleveland.—p. 23.
Value of Public Health Nurse to Community. H. R. Stewart, New York.—p. 26.

Public Health Journal, Toronto

January, 1920, **11**, No. 1

Preparation of Smallpox Vaccine. J. G. Fitzgerald, Toronto.—p. 585.
Some Successes and Some Failures of Medical Profession. W. B. Moore, Kentville, N. S.—p. 590.
Plan for More Effective Federal and State Health Administration. F. L. Hoffmann, Newark, N. J.—p. 597.
Prostitute as Health and Social Problem. R. S. Yarros, Chicago.—p. 606.
Poverty as Factor in Disease. C. E. A. Winslow, New York.—p. 612.

Southwestern Medicine, El Paso

January, 1920, **4**, No 1

Paraffin Wax Method of Treatment of Burns. C. G. McMahon, Miami.—p. 1.
Roentgen Ray and Radium Actions and Reactions. A. Soiland and C. W. Stewart, Los Angeles.—p. 7.
Oral Infection and Systemic Disease. E. J. Cummins, El Paso—p. 12.

Surgery, Gynecology and Obstetrics, Chicago

February, 1920, **30**, No. 2

*Plastic Surgery of Facial Burns. H. D. Gilles, Sidcup, England.—p. 121.
Gunshot Fractures of Femur. A. Bowlby, London.—p. 135.
*Postoperative Tetanus. R. R. Huggins, Pittsburgh.—p. 142.
Ununited Fractures of Hip. M. S. Henderson, Rochester.—p. 145.
*Operation for Advanced Carcinoma of Tongue or Floor of Mouth. V. P. Blair, St. Louis.—p. 149.
Acute Empyema of Throat Treated by Minor Intercostal Thoracotomy. P. W. Aschner, New York.—p. 154.
*Operative Treatment of Advanced Pulmonary Tuberculosis. W. Meyer, New York.—p. 161.
*Rapid Expulsion of Placenta. G. Sklavounos, Athens, Greece.—p. 168.
Sterility. B. Solomons, Dublin, Ireland.—p 173.
*Safety Factors in Surgery, with Especial Reference to Blood. L. Frank, Louisville.—p. 182.
*Biloçular (Hour Glass) Stomach. V. Pauchet, Paris.—p. 190.
Bone Changes in War Amputation Stumps. T. G. Orr, Kansas City.—p. 195.
*Cysticercus Racemosus (Taenia Solium) Infection of Spinal Cord. A. R. Kimpton, Boston.—p. 198.
Plastic Repair of Hard Palate for Loss of Substance from Gunshot Wound. F. H. Albee, New York.—p. 201.
*Epididymectomy, an Improved Technic. M. Stern, New York.—p. 205.
Prostatic-Ambulant Postoperative Management. A. E. Rockey, Portland, Ore.—p. 206.
New Cystoscopic Table. H. L. Kretschmer, Chicago.—p. 207
*Rammstedt Operation in Adult. H. F. Graham, Brooklyn.—p. 208.
*Use of Intramedullary and Extracortical Beef Bone Splints in Repair of Fractures of Long Bones. A. C. Breuizer, Charlotte, N. C.—p. 209.
Large and Small Doses of Radium. C. W. Hanford, Chicago.—p. 210.
Presentation of a New Pan Device on a Cystoscopic Table. C. S. Levy, Baltimore.—p. 212.

Plastic Surgery of Facial Burns.—The result of various plastic methods employed by Gillies for the relief of the distressing deformities and disabilities arising as the result of contractions following severe facial burns are described in detail in connection with case reports.

Postoperative Tetanus.—In the case cited by Huggins, one of complete removal of the uterus and appendages the patient developed symptoms which were typical of tetanus but bacteriologic proof could not be obtained. Smears and cultures were made from the abdominal wound which had healed without any evidence of infection. Cultures were also made from the vagina. No growth could be obtained which in any way resembled the tetanus bacillus. This was true also of the catgut used at operation. A study of the spinal fluid was also negative. The case suggests the possibility of false tetanus under certain circumstances.

Operation for Cancer of Tongue.—The operation described by Blair is said to be properly applicable to the more advanced cases, especially those that also involve the jaw, the floor of the mouth or the base of the tongue, or those with palpable involvement of the submaxillary nodes, and to early cases in which, after removal by a less radical procedure, examination reveals a high grade malignancy. It consists in the block removal from below of the tongue, the structures in the floor of the mouth, all muscles above the body of the hyoid bone and stylohyoid muscles, the submaxillary and submental lymph nodes and as much of the

faucial pillars and pharynx as desired, together with thorough cauterization of the mandible wherever the ulcer approaches or involves it. The mandible is not divided.

Extrapleural Thoracoplasty in Pulmonary Tuberculosis.—Meyer discusses his experience with extrapleural thoracoplasty in suitable patients with advanced tuberculous affection of the lung, in whom therapeutic pneumothorax is not feasible.

Rapid Expulsion of Placenta.—The injection of salt solution into the placenta through the omphalic veins in the cord was tried in thirty hospital cases at the suggestion of Sklavounos. The placenta was expelled spontaneously within from three to five minutes, and without any other manipulation. In a few instances the injection was not entirely successful and the Credé method had also to be used. The failures were due to imperfections in technic. The method is said to be superior to the Credé method and to manual removal. The necessary instruments are: (1) an ordinary syringe; (2) a metallic cannula attached to the distal end of the rubber tube (this cannula must have a perimeter of 1.5 cm. and a groove behind the lumen to prevent slipping of the cord when attached to the cannula); (3) a pair of scissors and a clamp. Fifteen or 20 gm. of salt are added to 1,500 c.c. of sterilized hot water (temperature 50 to 60 C.). The cannula is inserted in the immobilized lumen of the vein and the vein is tied about the groove in the cannula. The salt solution is injected into the vein which swells and takes on a white instead of the previous blue color. The swelling of the arteries proves that the injection has been successful. So soon as 200 c.c. of the salt solution is injected, detachment of the placenta begins. When water comes from the arteries, they are pressed with a clamp and the result of the injection is waited for. To prevent formation of clots in the vessels and facilitate the circulation of the injected liquid, Sklavounos adds 2 per cent. sodium nitrate to the salt solution.

Safety Factors in Surgery.—Frank's observations lead him to conclude that a patient is not in the best possible condition to undergo any surgical procedure when he has a hydrogen-ion concentration of his blood below p_H 7.35; a carbon-dioxid tension in the alveolar air below 35; a soda tolerance test above 15; an Ambard coefficient above 0.10; a urine which shows but little variance in quantity from day to day and with the specific gravity varying less than seven points, regardless of the intake; also nocturnal polyuria; a phenol-sulphonephthalein output below 40, unless it can be accounted for by disease of other organs, the liver particularly.

Bilocular Stomach.—Pauchet has operated in twenty-five cases of bilocular stomach, a resection being done in twenty-three cases. These operations were divided as follows: one gastroplasty; two gastrogastrostomies; either alone or associated with a gastro-enterostomy; four mediogastric resections, and eighteen pylorogastrectomies. He has reoperated on two patients on whom a pyloroplasty, gastrogastrostomy and gastro-enterosotmy had been performed. These operations resulted in two deaths; one case was complicated by a perigastric abscess and in the other there was an extensive perforating ulcer. These operations were performed under reginal or spinal anesthesia with or without several whiffs of nitrous oxid for several seconds. Pauchet says that the extensive resections have given by far the best end-results.

Tenia Solium in Spinal Cord.—Kimpton is of the opinion that his case is the first in this country and the only case where a pork tapeworm has been removed successfully from the spinal cord during life. Mercur found a similar tumor of the spinal cord, but at necropsy. A diagnosis of spinal cord tumor at the fourth or fifth dorsal segment had been made in Kimpton's case and operation was advised. A laminectomy was done on the fourth, fifth and sixth dorsal vertebrae and the cord exposed. There was a distinct difference in the tension of the cord. The tension appeared to be greater, and the cord was paler in this region. The cord membranes were incised and this revealed a translucent tumor. The tumor was easily shelled from the cord. It appeared as a gelatinous mass. The pathologic diagnosis was cysticercus racemosus.

Epididymectomy.—Stern separates the epididymis from the blood supply of the testis by careful dissection and then ligates the epididymis.

Rammstedt Operation on Adult.—Graham reports a case of pylorospasm in a man, aged 46. Operation produced a cure.

Beef Bone Splints.—Brenizer discusses the use of beef bone splints and cylinders which have been boiled and kept in alcohol until every organic living cell is dead.

Texas State Journal of Medicine, Fort Worth

January, 1920, **15**, No. 9

Influenza; Its Complications and Sequels. A. Woldert, Tyler.—p. 315.
Influenza Echoes and Experiences. J. M. Frazier, Belton—p. 321.
Future of Tuberculosis. H. F. Gammons, Dallas.—p. 323.
Some Predisposing Factors in Development of Pulmonary Tuberculosis. R. B. Homan, El Paso.—p. 327.
Classification and Treatment of Pulmonary Hemorrhage Due to Tuberculosis. S. E. Thompson, Kerrville.—p. 328.
Psychotherapy in Tuberculosis. W. O. Wilkes, Waco.—p. 331.
Serum Treatment of Acute Lobar Pneumonia. J. E. Robinson, Temple.—p. 335.

U. S. Naval Medical Bulletin, Washington, D. C.

Hospital Corps Quarterly

January, 1920, No. 12

Air Station at Dunkirk. R. W. Meals, U. S. Navy.—p. 9.
Harmful Parasites of Man. R. H. Laning, M. C., U. S. Navy.—p. 22.
Hospital Corps Training School at Great Lakes. R. G. Davis, M. C., U. S. Navy.—p. 30.
In the Thick of the Fight. F. Tousic, U. S. Navy.—p. 35.
Testing Aneroid Sphygmomanometers. C. Schaffer, M.C., U. S. Navy.—p. 40.
Naval Pharmacist Afloat. F. J. Shea, U. S. Navy.—p. 44.
Pharmacist's Mates School. P. F. Dickens, M. C., U. S. Navy.—p. 46.
Technic of Roentgen Ray Plate Development. A. P. Evans, M. C., U. S. Navy.—p. 68.

Virginia Medical Monthly, Richmond

January, 1920, **46**, No. 10

*Surgical Treatment of Intestinal Stasis. J. S. Horsley, Richmond.—p. 247.
Râles from Expiration and Cough as a Means to Early Diagnosis in Tuberculosis. B. L. Taliaferro, Catawba Sanatorium.—p. 251.
*Hemoptysis. E. E. Watson, Salem.—p. 252.
*Home Treatment of Pulmonary Tuberculosis. W. E. Brown, Catawba Sanatorium.—p. 254.
Artificial Pneumothorax. F. G. Simmons, Salem.—p. 257.
Tuberculosis and General Practitioner. H. G. Carter, Burkeville.—p. 259.
*Simple Method of Controlling Secondary Hemorrhage after Operation for Piles. R. B. James, Danville.—p. 263.
Diagnostic Points for Re-Education of Neglected Pareses, and Similar Impairments of Motion. J. M. Taylor, Philadelphia.—p. 264.

Surgical Treatment of Intestinal Stasis.—Horsley reports the end-results in seventy-four cases of intestinal stasis in which he operated between February, 1912, and September, 1917. In twenty-two patients the operation performed was appendectomy and division of Lane's band. Thirteen of these reported that they were greatly improved, eight that they were improved. There was none unimproved and no deaths. One patient did not report. In twenty-seven cases, the Coffey, or hammock operation, which consists in suturing the gastrocolic omentum to the abdominal wall, was done. Of this number, twelve reported great improvement, ten were improved, and two were unimproved. Two died, and from one patient no report could be obtained. In seventeen patients cecosigmoidostomy was done. In this group six patients were greatly improved, four were improved, five were unimproved, one patient died and from one patient no report was obtained. In five cases the Coffey operation and cecosigmoidostomy was done. Of these patients three were greatly improved and two were unimproved. In three cases ileosigmoidostomy was done. None of these patients was greatly improved, but two are classed as improved. All recovered from the operation. One patient died from pneumonia two years and two months after leaving the hospital. Summing up this group of seventy-four cases, thirty-four patients (46 per cent.) are greatly improved; twenty-four (32.5 per cent.) are improved, nine (12 per cent.) are unimproved, four (5.5 per cent.) are dead, and three (4 per cent.) were not heard from. The reports from these patients varied

from five months to five and one-quarters years from the time of operation.

Hemoptysis.—This paper was abstracted in The Journal, Nov. 29, 1919, p. 1722.

Home Treatment of Pulmonary Tuberculosis.—This paper was abstracted in The Journal, Nov. 29, 1919, p. 1722.

Controlling Secondary Hemorrhage After Operation for Piles.—In a case cited by James secondary hemorrhage was controlled without disturbing the patient, by slipping a rubber glove finger over a glass tube, 3 inches long, and wrapping the open end of the glove finger securely around the near end of the tube, and attaching to the projecting tube a rubber bulb such as is used in a common atomizer. By inserting this rubber covered tube between the sphincters and pumping in air, sufficient compression was produced to control the hemorrhage, with no pain or distress to the patient and without disturbing him in the least. A clamp was placed on the rubber tubing, and the apparatus was left in place for three days, when on removing the clamp the air escaped and in an hour or two the apparatus had come away without the knowledge of the patient.

West Virginia Medical Journal, Huntington

January, 1920, **14**, No. 7

Fractures. W. W. Golden, Elkins.—p. 241.
Failure of Restricted Operations in Cancer of Breast. A. McGlannan, Baltimore.—p. 247.
Schick Reaction. W. E. Smith, Minden.—p. 250.
Head Injuries; Some Case Reports. J. M. Emmett and R. J. Wilkinson, Huntington.—p. 254.
Angioneurotic Edema. W. E. Vest, Huntington.—p. 258.
Diabetes Mellitus with Multiple Abscesses, Report of Case. O. L. Perry, Elkins.—p. 261.

Wisconsin Medical Journal, Milwaukee

January, 1920, **18**, No. 8

Preventive Medicine: Stool Examinations for Diagnosis of Intestinal Parasites. W. D. Stovall, Madison.—p. 328.
Diphtheria, Vincent's Angina and Other Infections of Nose and Throat. W. D. Stovall, Madison.—p. 329.
Need for Morbidity Registration in Wisconsin. R. Olesen, Madison.—p. 333.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Brain, London

October, 1919, **42**, Part 3

*War Neurasthenia—Acute and Chronic. D. W. Carmalt Jones.—p. 171.
*Hyperglycemia in Mental Disorders. F. H. Kooy.—p. 214.

War Neurasthenia.—After having cases of this type under observation for one year, Jones is convinced of the reality, the severity and the amenability to treatment of this disease. He believes that the symptoms of this condition are due, in part at least, to prolonged overstimulation of the ductless glands, chiefly the suprarenal. Jones pleads for recognition of this disease and its appropriate treatment by competent men, if possible in a special hospital given over entirely to these cases.

Hyperglycemia in Mental Disorders.—Two of ten cases of dementia praecox examined by Kooy with reference to the blood sugar content showed a higher count than 1.30 per mille after breakfast. In nine cases of dementia paralytica, the average of the highest amounts was 1.33 per mille. Six of the nine patients had, without excitement or apoplexy, an amount above 1.30 per mille after breakfast. An examination of nineteen cases of melancholia showed that in this disease the blood sugar is much increased. If 1.10 before breakfast is the normal limit, then nine patients had surpassed that figure. Examination of four cases of true neurasthenia and psychasthenia, without any bodily abnormalities, showed plainly that emotions cause hyperglycemia in man. The blood sugar is very much increased when the patients who have confusional insanity are in a highly emotional state, whereas it decreases on recovery. The results with mania are extremely variable. Optimism and highly increased blood sugar run parallel. Increase in blood sugar, as a rule, is highest in real emotional states, such as may occur in mania at its climax; it is smaller, although still present, in the milder form of mania, and absent in those hypomaniacal forms in which the patient is only optimistic, cheerful and inclined to be jocular. Emotions, especially those of a depressive character, cause an increase in blood sugar They, therefore, have a deteriorating influence on diabetes mellitus. They may cause a temporary hyperglycemia and even glycosuria in normal persons not suffering from saccharin diabetes. Even a considerable increase in blood sugar need not be a symptom of disordered metabolism. Hyperglycemia may occur with any emotional state in mental disorders. Kooy found it to occur in emotional states of patients suffering from general paresis, epilepsy, dementia praecox, traumatic neurosis and neurasthenia. Glycosuria and hyperglycemia are most frequent in melancholia. Kooy's investigation has shown that hyperglycemia before breakfast (spontaneous hyperglycemia) is not a constant symptom in melancholia, but it was constantly present after the patients had taken ± 200 c.c. of milk and ± 100 gm. of bread and butter (alimentary hyperglycemia). With marked anxiety there was the highest amount of sugar in the blood.

Bristol Medico-Chirurgical Journal

December, 1919, **36**, No. 137

Contemporary Medicine from Standpoint of Patbology. I. W. Hall.—p. 9.
Disease in Mesopotamia. F. P. Mackie.—p. 118.
Treatment of Ununited Fractures: Use of Bone Grafts. E. W. H. Groves.—p. 132.
Stammering as It Occurred in War. R. G. Gordon.—p. 143.

Lancet, London

Jan. 17, 1920, **1**, No. 5029

Application of War Methods to Civil Practice. A. Bowlby.—p. 131.
*Surgery of Heart. C. Ballance.—p. 134
Treatment of Malunion in Fractures of Femur. W. E. Wilson.—p. 139.
*Meaning of Tachycardia. R. M. Wilson.—p. 146.
Case of Dislocation of Cervical Spine. J. P. Buckley.—p. 149.
*Ureter Calculus of Unusual Size. F. Kidd.—p. 150.
Diverticulitis, Report of Cases. G. G. Turner.—p. 151.
*Acute Hydropneumothorax J. W. T. Thomas.—p. 152
Case of Sudden Complete Procidentia Recti in Young Adult Male. W. R. M. Turtle.—p. 153.

Surgery of Heart.—In certain cases of purulent infection of the pericardium, Ballance holds that the culdesac of Haller should be drained. He believes that the operation is justified on anatomic and pathologic considerations. He feels that the surgery of the heart will occupy in the coming time a conspicuous place in surgical practice. The reward of success will attend efforts in so far as the heart is treated as one of the ordinary tissues of the body and the method of operation conforms to the fundamental principles of surgery.

Significance of Tachycardia.—According to Wilson, tachycardia in a man who is up and about is compensatory in character, the addition of acceleration to augmentation. It points to the presence of a mild infection, and can be removed only by removing the infection. There is evidence that the action of the toxin is directly on the cardiac vagus.

Ureter Calculus of Unusual Size.—The stone in Kidd's case measured 2¼ inches in its long diameter and 1 inch in its short diameter, and weighed 1 ounce. It consisted of phosphates, with a trace of oxalates, and contained no cystin, no carbonate and no uric acid. The stone lay below the pelvic brim. Very few symptoms had been caused by it.

Acute Hydropneumothorax.—In Thomas' case the acute hydropneumothorax resulted from an old gunshot wound of the chest. The patient recovered in spite of a communication between the pneumothorax and the stomach.

Jan. 24, 1920, **1**, No. 5030

Pulmonary and Other Forms of Tuberculosis. H. B. Shaw.—p. 179.
*Carbon Monoxid Poisoning in Warfare. W. J. Rutherfurd.—p. 184.
*Rickets in Germany: Study of Effects of War on Children. Engel.—p. 188.
Case of Severe Cerebral Toxemia, Following Intravenous Injection of Novarsenobillon. R. J. G. Parnell.—p. 190.
*The Schick Reaction for Determination of Susceptibility to Diphtheria. H. M. Leete.—p. 192.
Treatment of Malaria in Macedonia. A. G. Phear.—p 194
Bilharziasis: Its Incidence and Eradication F. Milton.—p. 196.

Carbon Monoxid Poisoning in Mines.—Carbon monoxid is produced during explosion of charges in mines. Where the mine is deeply placed, or where a small charge has been used so that the surface of the ground has not been broken, the gas is either forced into the underground system of mine galleries or gradually percolates into the galleries through cracks and porosities in the ground and in these circumstances the miners become subject to this form of gas poisoning, the severity of which may range from mere headache and debility to coma and death. In some cases the reflux of carbon monoxid after an explosion has come up to the mine shaft and caused gas poisoning in the trench in the near vicinity to the mine entrance. Carbon monoxid has the effects of a cumulative poison, even in relatively small quantities. The various explosive substances (with certain exceptions, such as the acetylene compounds) contain within themselves a considerable amount of oxygen, which is, however, generally insufficient for the complete oxidation of all the constituent oxidizable elements. In consequence, not only may there be the formation of carbon monoxid, but hydrogen, marsh gas and certain other oxidizable substances may be liberated as the result of the detonation of various explosives. The methane is said to result from interaction of the hydrogen with the oxids of carbon as the hot gases cool down and not to be formed at the time of the explosion. Nitroglycerin is an exemple of the explosives which are completely oxidized on detonation, and this substance exists to the extent of 75 per cent. in dynamite and 30 per cent. in cordite, besides being present in smaller proportions in many of the blasting gelatins. Carbon monoxid is produced as the result of the use of a large series of explosives, such as gunpowder (whether in the form of rifle powder, "cocoa powder," or blasting powder), gun cotton (either by itself, or as cordite, of which it forms 65 per cent.; smokeless powder, which is 98 per cent. gun cotton with 1 per cent. of acetone and 1 per cent. of moisture, etc.; or the blasting gelatins), and ammonal, the latter of which is used extensively and in enormous quantities. The fulminate in the detonators also liberates carbon monoxid in small amount. It is the carbon monoxid thus produced, and produced in these high proportions and enormous quantities, which is absorbed in the chalk and forced into the fissures, either existing naturally or resulting from the explosion of the charges that have been laid, that is being constantly encountered by those engaged in the work of the various tunneling companies, and which frequently results in the occurrence of cases of gas poisoning of this specialized nature. Owing to the gas being contained in cracks among the chalk it is found in what are described by the miners as "pockets" and owing to this fact in many instances the gas is liberated too suddenly for the men to notice any alteration in the behavior of the test animals (mice or canaries) that they have with them before they are themselves beginning to be affected.

Rickets in Germany: Effects of War on Children.—Engel says that only in the very latest period of the war did weakly children under weight begin to appear in greater number. The average of weight of new-born children, as observed in the lying-in hospital, was then reduced. The general health of infants was good, the mortality rate low. The number of births had fallen sharply, a circumstance which always reacts favorably on infant mortality. In addition to this, chiefly in consequence of the shortage of cow's milk, and encouraged by a special grant from the state, breast feeding became more prevalent. The mortality rate of infants was permanently reduced. The position of children between two and five years of age, however, became more and more unfavorable. In spite of the fact that their number also fell, and, therefore, other things being equal, their prospect of life became better, the mortality rate did not fall, but from 1915 on practically reached the infantile mortality rate and even exceeded that of 1918. In normal times the mortality of the children from 2 to 5 years old was not half as great as that of infants. When the statistics are examined, it is seen that the increased number of deaths are not referred to the infectious complaints, but to inflammation of the lungs, but in reality the increase of deaths of rachitic children was the result of respiratory insufficiency, or "inflammation of the lung," and which makes it probable that the high mortality of little children is really to be ascribed to rickets.

Schick Reaction for Determination of Susceptibility to Diphtheria.—In Leete's experience the Schick test appears to be of definite value in detecting diphtheria susceptibles, and as such has many possible applications. It is easy to perform and free from any danger. A reliable toxin and careful technic are essential. Once the difference between a positive and a pseudoreaction are appreciated, reading is easy, but if there is any doubt, controls of heated toxin should be used. The best times for reading are twenty-four hours, three days, and ten days after the test.

Medical Journal of Australia, Sydney

Dec. 13, 1919, **2**, No. 24

Bacteriology of Influenzal Pneumonia. A. H. Tabbutt.—p. 499.
*Case for Diagnosis (Thomsen's Disease?). A. W. Campbell.—p. 506.

Thomsen's Disease?—Campbell reports the case of a man, aged 27 years, who for ten or eleven years had shown apparently remarkable muscular development, but whose real muscular power was slight and subject to easy fatigue, whose every movement was hampered and impeded by "intention rigidity" and tendency to tonic contraction, and whose muscles were unduly firm in relaxation and show an alteration of electrical excitability, suggesting the myotonic reaction. In these respects the clinical picture fitted Thomsen's disease. It was incomplete, however, inasmuch as the marks of familial and congenital origin were wanting.

Dec. 20, 1919, **2**, No. 25

Antimalarial Work with Australian Mounted Division in Palestine. Its Relation to the Same Problem in Australia. W. Evans.—p. 526.
Three Cases of Bilharziasis Treated with Tartar Emetic. N. H. Fairley.—p. 529.

Dec. 27, 1919, **2**, No. 26

Interaction between War, Profession of Medicine, and Practitioner. R. S. Skirving.—p. 548.
*Brain Weight in Congenital Mental Deficiency. W. A. Limb.—p. 551.

Jan. 3, 1920, **1**, No. 1

Results and Treatment of Suspensory Apparatus of Female Pelvic Organs. T. G. Wilson.—p. 2.
Abolition of Drainage Tube in Operative Treatment of Hydatid Cysts. W. J. Stewart.—p. 6.

Brain Weight in Congenital Mental Deficiency.—The figures presented by Lind show that whatever significance the brain weight may have in the sane, it possesses no indicative value when applied to those born insane, who had brain weights ranging in this series from 115 to 1,680 gm. The weights recorded are those of the brains of 142 congenital mental deficients.

Journal of State Medicine, London

January, 1920, **28**, No. 1

Influence of Town Planning on Tuberculosis. P. Abercrombie.—p. 1.
Tuberculosis Colonies and Their Management. P. C. Varrier-Jones. —p. 12.

Naval Medical Association Bulletin, Tokyo

October, 1919, No. 26

*Mucor Isolated from Feces of Beriberi Patients. S. Kiyosaki.—p. 1.
*Quantity of Diastase in Normal Urine. E. Saigusa.—p. 1.

Mucor Isolated from Feces of Beriberi Patients.—Kiyosaki examined the feces of thirty beriberi patients. In ten instances he found the identical mucor. Injected into frogs, pigeons, guinea-pigs and rats, it caused toxic effects, producing, especially in frogs, symptoms resembling motor paralysis.

Quantity of Diastase in Normal Urine.—The urine of 114 persons was examined by Saigusa by the one-half hour method of Noguchi and Wohlgemuth. The quantity of diastase thus determined varied from 8 to 64, in the majority of cases ranging from 16 to 32. It had, to a certain extent, a relation to the specific gravity of the urine. The starch paste used by Saigusa in his experiments was prepared from official potato starch by heating it for a certain time to destroy amylopectin contained in it, and then passing it

through a filter. The author claims that this starch paste could well take the part played by the soluble starch of Kahlbaum in this experiment.

Sei-I-Kwai Medical Journal, Tokyo

August-September, 1919, **38**, Nos. 8-9

*Perfusions of Respiratory Center in Turtles: Effect of Calcium, Potassium Chlorid and Magnesium Chlorid. K. Tsugane.—p. 37.
Cardio-inhibitory Action of Magnesium Chlorid on Turtles. K. Tsugane.—p. 39.
Infantile Scarlet Fever. T. Nomura.—p. 40.

Effect of Calcium, Potassium Chlorid and Magnesium Chlorid on Respiratory Center.—Perfusing the respiratory center of a turtle with a mixture of sodium and calcium, or sodium and potassium salts, and also magnesium, only showed that the effective action of the respiratory center was greatly increased, but if a physiologic quanity of potassium salts was added to an isotonic sodium chlorid solution and this mixture was perfused, examination of the respiratory center did not reveal an increased effectiveness. In thirteen cases comparison was made with the 0.7 per cent. magnesium chlorid solution. There was immediately quickening of rhythm in the heart, but the same experiments showed that the application of magnesium chlorid solution to the respiratory center causes immediately abolition of the functions of the medullary center.

Annales de Médecine, Paris

December, 1919, **6**, No. 5

*Meningococcemia. P. Ribierre, P. Hébert and M. Bloch.—p. 341.
*Meningeal Reactions with Uremia. H. Roger.—p. 369.
*Periodic Paralysis. G. Guillain and J. A. Barré.—p. 386.
*Experimental and Critical Research on Pneumothorax. E. Rist and A. Strohl.—p. 393.
Recent Literature on the Pathology of the Ramifications of the Bundle of His. C. Esmein.—p. 415.

Meningococcemia Without Meningeal Symptoms.—Ribierre and his co-workers state that they have recently encountered several cases of prolonged intermittent fever for which the meningococcus was responsible. Five complete case reports are given and two others without bacteriologic control. The chills and fever are of the malarial type, eruptions are constant, as also pains in muscles and joints during the febrile periods, frequently accompanied by redness and swelling around the joints. In nearly every case the cocci finally invade the meninges, the tardy meningitis in some cases first giving the clue to the nature of the disease. In three of the cases reported the interval was one, two and three months from the first symptoms, but intraspinal serotherapy then proved promptly effectual and cured at the same time the general infection. Lumbar puncture long before had yielded a limpid and sterile fluid, but it contained 0.3 or 0.4 per cent. albumin with moderate leukocytosis and abnormally large proportions of polynuclears. The fluid was also of this type in another case in which the meninges seemed to escape entirely, although the febrile meningococcemia persisted for four months. The cocci were isolated from the rhinopharynx as well as from the blood, and the onset of the disease was that of frank septicemia. There was no epidemic at the time, the cases occurring between November and April. In one of the two fatal cases there was tardy localization of the meningococci in the endocardium. The eruptions may be purpuric, papulous or nodular. The experiences related emphasize the importance of identifying the exact strain of meningococci involved, and giving this specific serotherapy, using a polyvalent serum until this is possible. In these cases scarcely any benefit was apparent from the antiserum until the strictly specific antiserum was used. They advise five injections at twenty-four hours intervals, alternately subcutaneous and intramuscular; if improvement is not observed in the following days, they give it by the vein, and in case this fails, inject it into the spinal cavity, regardless of whether there are meningeal symptoms or not. The patient should be kept under observation for at least a month after the supposed cure as there may be a tardy relapse. The nasopharynx should be examined for meningococci and, if found, the antiserum in powder form should be insufflated. In one of the cases, treatment was with neoarsphenamin by the vein, with recovery after 1.65 gm. had thus been injected in the course of a month. The Wassermann test was negative. No benefit from this drug was apparent, however, in any of the other cases. In rebellious cases others have reported good results with autovaccines and revulsion by a turpentine abscess.

Uremic Meningeal Reactions.—Roger presents evidence to show that the meningeal reactions which develop in the course of uremia do not seem to be directly caused by the retention of nitrogen. They are usually the results of intercurrent cerebral complications, hemorrhage and softening, for which the kidney sclerosis is only indirectly responsible. Cerebral hemorrhage was found by Frerichs in 11 of 292 uremia cadavers, and 3 in 112 by Rosenstein. Canti has recently published 3 cases of cerebral hemorrhage or softening with azotemia of 0.9 to 1.5 gm. per liter. Meningeal hemorrhage is not exceptional with chronic kidney disease. The latter raises the blood pressure until some vessel ruptures. This explanation of the meningeal reactions in uremia as mechanical rather than toxic, would be verified oftener if the cerebrospinal fluid was examined more carefully at necropsies. Slight xanthrochromia may escape detection unless the tube is inspected lengthwise, but this proves the presence of blood, thus adding a fourth type to the three biologic types of uremic meningeal reactions, those with hyperalbuminosis, those presenting merely hypercytosis, or both combined. Acute infectious meningitis in a patient with uremia is often mistaken for uremic meningitis. The pneumococcus is usually involved, but syphilis and tuberculosis may likewise be responsible. In one such case, with positive Wassermann reaction, the convulsions subsided after lumbar puncture, but the headache and torpor did not improve until under treatment for syphilis. When the uremia alone can be incriminated for the meningitis or meningeal condition, the spinal fluid may show merely cytologic and chemical reactions without clinical manifestations, or these reactions may be encountered in the course of neuro-uremia, febrile or not, with headache, vomiting, convulsions, stiffness of the back of the neck, Kernig sign and contracture of the spine. But Roger insists that most of these symptoms are the work of the azotemia rather than any special injury of the meninges. The urea poisons the cortex. He had one case in which extreme retention of sodium chlorid alone, without uremia, was responsible for convulsions, etc. To prove the various points in his article, he cites numerous concrete examples from his own and others' experiences.

Periodic Paralysis.—Guillain and Barré report the case of a soldier of 36 who had paralysis of the arms come on nearly every night, about 2. There is no pain and no paresthesia, but the patient is unable to lift even the bed clothes. By 7 or 8 the paralysis passes off, and his muscles keep normal during the day. Only occasionally, when writing, he has to stop as his arms and legs feel heavy, but walking around a bit restores normal conditions. He has noted symptoms of the kind for sixteen years, but the actual paralysis did not develop until in the trenches in 1915. The attacks of paralysis vary widely in intensity, and during the severer ones the electric excitability of the muscles and nerves disappears completely. The muscles innervated by the cranial nerves never showed a trace of paralysis during the several months the man was under observation. The tendon reflexes disappeared during the severer attacks, but the skin reflexes showed no modifications, and there never were any sensory disturbances. There was no history of malaria, and although the Wassermann reaction was positive in the blood on two occasions, they are inclined to doubt its pathogenic importance here. The spinal fluid shows no sign of neurosyphilis, and no benefit was realized with tentative specific treatment, nor from strychnin, epinephrin, camphor, repose, etc. There seems to be some intermittent intoxication, some poisons of unknown origin accumulating during the intervals, and then acting on certain peculiarly susceptible nerves.

Capacity of the Pleural Cavity.—Rist and Strohl comment on the extreme variability of the curves when the quantities

of gas introduced into the pleura for artificial pneumothorax are compared with the corresponding intrapleural pressure as abscissa and ordinate. The variability depends on the elasticity of the lung, permitting the spreading apart of the sheets of the pleura. A sudden drop in the pressure curve is a sign of sudden increase in the capacity of the pleura, entailed by the breaking of adhesions. The pleural cavity is not a space with rigid walls.

Presse Médicale, Paris

Dec. 27, 1919, **27**, No. 80

*Inaugural Lecture of Operations and Apparatus Course. P. Duval.—p. 801.
*Aspiration during Operations. H. L. Rocher.—p. 806.
Anatomy of Snapping Hip. A. Mariau.—p. 807.
*By-Effect with Mercuric Cyanid. L. Renard.—p. 808.

French Surgery During the War.—In the course of this opening lecture of the "operations and apparatus course," Duval says of the Carrel method that it represented immense progress at the time of its introduction, restoring confidence when despair at the impotence of surgery was almost universal. But the Carrel method is based on two errors, the assumption that a wound after it has been cleared of devitalized tissues requires disinfection; in reality the sound tissues are perfectly competent to cope with the few microbes left, provided—and this was Carrel's second mistake—that there are no streptococci in the wound. He merely counted the bacteria, paying no heed to the species. It was Henri Gaudier, he says, who blazed the way for the successful treatment of war wounds, proclaiming that all devitalized tissue must be cleared out, but that when this was done, then the wound could be safely sutured. Tissier showed that this was true only in the absence of the streptococcus; by excluding or waiting for the disappearance of the streptococcus, then wounds can be confidently sutured. To France, Duval reiterates, belongs the honor of discovering the importance of the biology of the wound: the toxicity of crushed, devitalized tissues, the excision of all such, and the primary suture at once or a few days later when the wound has been cleared out and absolutely protected against contamination. The French also proclaimed that wounds anywhere in the body, even in the lungs, should all be treated on these same principles.

Illumination and Aspiration During Operations.—Rocher expatiates on the importance of a forehead electric light for all operating on cavities, and the importance of continuous vacuum aspiration during operations with which hemorrhage is liable. He uses for the purpose an electric pump designed for compressing air for therapeutic hot air jets. He holds the aspirating cannula in his left hand, sucking up with it all blood, pus, and other secretions, while the right hand wields the curet or other instrument, or an assistant manages the vacuum aspiration. Several cannulas are kept ready in case one gets blocked. He has found this aspiration cleansing of the wound especially useful in operations on bones, on the face and jaws, and on the throat and palate. A minor advantage of the aspiration is that it materially reduces the number of sponges needed at operations.

Mercuric Cyanid by the Vein.—Renard calls attention to the subjective odor of bitter almonds which is sometimes experienced as mercuric cyanid is given by the vein. He now warns patients to expect it.

Jan. 3, 1920, **28**, No. 1

*Esthetic Laparotomy Incision. F. Jayle.—p. 1.
Advantages of Filiform Drainage for Chancroidal Bubo. A. Floquet.—p. 5.

Esthetic Gynecologic Incision.—Jayle expatiates on the advantages of a small transverse incision, to one side of the median line, for access to the adnexa on one side and for removal of the "cold" appendix, under general anesthesia. He gives twenty-four views of the various steps of the operation. It takes a little longer than with a larger incision, and the surgeon has to work with fingers and forceps, and cannot introduce his hand. But the lack of a disfiguring scar and the advantage for the patient of this reduction to the minimum of intraperitoneal manipulations counterbalance this. He has been able to resect the tube from the other side as well, without enlarging the incision, and even to resect nine tenths of the other ovary.

Progrès Médical, Paris

Dec. 27, 1919, **34**, No. 52

The Three Forms of Shock: Nervous, Hemorrhagic and Toxic. R. Dupont.—p. 519.
General Etiology of Dyspepsias. F. Ramond.—p. 521.

Correspondenz-Blatt für Schweizer Aerzte, Basel

Dec. 25, 1919, **49**, No. 52

*Precipitation Serologic Test for Syphilis. B. Galli-Valerio.—p. 1977.
*Volvulus as Complication of Appendicectomy. G. Dardel.—p. 1980.
*Gap in Transverse Mesocolon. Stocker-Dreyer.—p. 1985.
Venereal Disease in Swiss Army. W. R. Schnyder.—p. 1988. Conc'n.

Precipitation Test for Syphilis.—Galli-Valerio declares that his findings in 241 cases confirmed the great value of Sachs-Georgi precipitation test with cholesterolized organ extracts in the serodiagnosis of syphilis. As the technic is improved, he thinks it will supersede the Wassermann test almost completely as it is so simple and easy. The findings paralleled those of the Wassermann test in 77.59 per cent., and in some of the discordant cases, the effect of treatment had modified the response. The organ extract is made with 100 c.c. of an alcoholic extract of beef heart (1 gm. of heart to 5 c.c. of alcohol); 200 c.c. of alcohol, and 13.5 c.c. of a 1 per cent. alcoholic solution of cholesterol. When ready to use, one part of this extract is mixed with one part of 0.85 per cent. physiologic solution, agitated, and four parts of the latter are added. The serums to be tested should be fresh and clear and should be inactivated by heating for half an hour at 55 or 56 C. To 1 c.c. of the serum to be examined, diluted ten times with the 0.85 per cent. saline, is added 0.5 c.c. of the extract diluted as stated above. The whole is well mixed and incubated at 37 C. for two hours and then kept for twenty, twenty-four, forty-eight hours at room temperature, after which the findings are recorded. Meyer suggests that the interval can be shortened by centrifuging the tubes after three or four hours' incubation. The flocculation and precipitation can be estimated by placing the tubes slanting on the black background of a Leitz dissection microscope, and examining with a No. 8 glass. This renders an agglutinoscope unnecessary.

Volvulus as Complication of Appendicectomy.—Dardel removed the appendix in a girl of 8 with threatening symptoms, but the peritoneum was found intact. The appendicitis was of the so-called catarrhal type. There were no adhesions, but four weeks later the last loop of the ileum became twisted and gangrenous. All the cases on record of post-appendicectomy volvulus with gangrenous loop terminated fatally with one exception besides the case here reported. The diagnosis in this case was unmistakable but the general condition was so good that the child was kept under observation for several hours. The circumstance that in seventeen hours the bowel was found gangrenous and on the point of rupture, emphasizes anew the danger of delay. The case teaches, he says, the inadvisability of removing the appendix for purely prophylactic purposes, and it also teaches that when abdominal disturbance follows appendicectomy, it should not be ascribed as a matter of course to errors in diet. The earlier the diagnosis, the better the outlook for these tardy complications of appendicectomy.

Gap in Transverse Mesocolon.—The retrospective diagnosis was that an old gastric ulcer had in time entailed stenosis of the pylorus and adhesions to the pancreas and the mesocolon. The traction on the latter had caused it to atrophy, and in lifting a basket of washing a sudden violent pain gave notice of a tear in the mesocolon. A loop of intestine slipped at times through the gap, with transient occlusion, but this spontaneously corrected itself several times. The opening was large enough for the circulation in the loop to proceed unhindered for a time. Conditions gradually became aggravated, but after a gastro-enterostomy and suture of the gap in the mesentery the extremely emaciated patient recovered and has called her health perfect during the nine years since.

Chirurgia degli Organi di Movimento, Bologna

December, 1919, **3**, No. 5-6

*Collateral Circulation in the Limbs. G. Bolognesi.—p. 413.
*Hernia of Muscle. G. Ferrarini.—p. 435.
*Deformity of Shoulder Resembling Coxa Vara. E. Angeletti.—p. 513.
Trophic Changes in Amputation Stumps: 650 Cases. F. Delitala. —p. 535.
*Tuberculous Process in Hip Joint and Congenital Luxation. U. Cesarano. —p. 549.
Ligation of Femoral Artery for Ancurysm. B. Nigrisoli.—p. 561.
Treatment of War Wounds of Joints. F. Caccia.—p. 562.
Case of High Scapula. F. Putzu.—p. 578.
*Cast for Fractured Humerus, Immobilizing the Shoulder. D. Taddei. —p. 587.
*Prosthetic Appliances, Especially for the Arm. A. Serra.—p. 593.

Development of Collateral Circulation.—Bolognesi reviews what has been written on this subject in recent years and the experimental research in Italy by Porta, Talma, Stefani, Orecchia and Fichera since 1845. He then gives the roentgen findings in the circulation in six dogs killed from four to ninety days after ligation of the external iliac artery. The abdominal aorta was injected with a contrast suspension of 60 parts minium in 60 parts liquid petrolatum and 30 parts oil of turpentine. In comparison with the intact side, all the vessels below the ligature were found larger and they had more ramifications. The direct lateral circulation was insignificant and of tardy development, while the indirect lateral circulation developed to a remarkable extent, bridging the gap in the artery. His illustrations show this bundle of bridging vessels, numbering twenty-seven in one of the dogs and a still larger number in another. The ligated artery in one finally regained partial permeability. The entire circulatory tree had increased generally in size below the ligature, ensuring resumption of arterial circulation in an almost perfect manner. Persons with a particularly well developed sciatic artery seem to be more liable to develop satisfactory collateral circulation after ligation of the external iliac, as conditions thus resemble more closely the conditions in the dogs in his experiments.

Hernia of Muscle.—Ferrarini analyzes the extensive international literature on hernia of muscle, and describes his own experimental research on myocele and a personal clinical case in which the tumor in the thigh had been noted for seven years. There had been some pain at first after a sudden muscular strain which had evidently caused the hernia. Later the tumor was tender, but the man paid no attention to it until he noticed that it seemed to be growing larger. An operation was done on the assumption of a lipoma, but the tumor proved to be the belly of the rectus muscle. Some of the fibers had been torn across and had retracted, and a cyst had formed in the gap. The clinical picture therefore of a myocele may differ widely according to the pathologic conditions encountered and the site.

Varus Deformity of the Shoulder.—Angeletti discusses the findings in five clinical cases and some anatomic specimens in which there was deformity of the shoulder corresponding to coxa vara in the hip joint. It was of traumatic, inflammatory or rachitic origin, or occurred in a cretin or from chondrodystrophy. The roentgen findings in his clinical cases are reproduced.

Congenital Dislocation of Hip Joint and Tuberculosis.—Cesarano relates that among the 2,000 cases of congenital luxation of the hip joint at the Rizzoli Institute there were two cases in which the operation for correction of the deformity, or casual trauma, was followed by rapid development of a tuberculous process in the joint, although there had been nothing to suggest tuberculosis in the child before. In one, the deformity was bilateral, but the right joint had required more forcible and repeated correction, and the tuberculous process developed in this joint. The child came from a tuberculous family, but roentgenography had shown apparently normal conditions before the intervention. The process had developed in the older child after a trauma, nine years subsequent to the correction of the deformity. Only a few such instances are on record, he says, and the fact that tuberculous processes only exceptionally follow the stress of correction of congenital luxation of the hip joint, testifies anew that trauma alone is not able to induce a tuberculous process in a healthy subject. With inherited or acquired taints, even slight trauma, even any transient overuse of the part, or prolonged morbid congestion may be enough to induce the localization of a tuberculous lesion.

Plaster Cast for Immobilization of the Shoulder.—Taddei extols the advantages of the right-angled or square plaster frame which holds the arm on a level with the shoulder, the forearm on the same level or sloping downward. The findings after healing show fine anatomic, functional and radioscopic results. The patients do not object to the square frame after the first.

Artificial Hands and Arms.—Serra discusses what has been done in the line of prosthetic appliances in Italy and elsewhere in the last two or three years, giving forty-three illustrations and the indications for the different types of artificial limbs and working hands.

Policlinico, Rome

Dec. 7, 1919, **26**, No. 49

*Symptomatology of Meningitis. E. Fossatara.—p. 1445.
*Sterility. A Brun.—p. 1449.
Quinin in the Prophylaxis of Malaria. F. Paoletti.—p. 1458.
Income Limit for State Insurance against Sickness. L. Verney. —p. 1469.

Symptoms of Meningitis.—Fossataro reports the case of a man of 37 who suddenly began to cough and expectorate, with fever, headache and vomiting. Râles were found at the base of the right lung, and the back of the neck was stiff. The meningococci found in the spinal fluid had evidently invaded the lungs and cerebral meninges simultaneously; the course was distinguished by torpor throughout, the man dying the third month. The spinal meninges did not seem to have been affected. The loss of balance and tendency to fall had suggested a tumor in the cerebellum but vision was normal, except for strabismus. The torpor was evidently the result of the hydrocephalus in the ventricles which was also responsible for the lack of control of the sphincters. Necropsy revealed merely purulent leptomeningitis of the lower surface of the cerebellum with hydrocephalus, ventricular and also intermeningeal, at the base of the brain.

Causes of Sterility.—Brun analyzes 300 cases of sterility in women from his practice at Trieste. In 230 cases the women had never conceived; in seventy cases the women had already gone through an abortion or pregnancy. His experience confirms anew the importance of patience and perseverance in measures to correct the congenital or acquired defects impeding conception. The genitals were apparently normal in thirteen of the 230 cases of primary sterility; in 107 there were congenital defects, in 102 inflammatory processes were responsible, and fibroma in eight.

Dec. 14, 1919, **26**, No. 50

Atypical Forms of Typhoid Fever. E. Mondolfo.—p. 1475.
*Bacteriologic Diagnosis of Shiga Dysentery. A. Petrucci.—p. 1483.
Stab Wound of Gravid Uterus. P. de Tommasi.—p. 1486.
The Housing Problem. A. Filippini.—p. 1487.

Stab Wound of Gravid Uterus.—The woman was at the eighth month when a stab wound pierced the wall of the uterus and amniotic fluid escaped. The laparotomy showed the fetus visible through the 3 or 4 cm. wound. De Tommasi merely sutured the wound, and in a few days the woman was delivered of a healthy child and left the hospital in good condition. Delivery was hastened with forceps, to avoid too much strain on the recent sutures.

October, 1919, **26**, Surgical Section No. 10

Traumatic Aneurysms of the Limbs. T. Laurenti.—p. 313.
*Cinematization of the Jaw. R. Avanzi.—p. 330.
Critical Review of Treatment of Compound Fractures from War Wounds. R. Bompiani.—p. 336. Conc'n.

Cinematization of the Jaw.—Avanzi relates that Pellegrini, in discussing motor plastic amputations recently, suggested that it might be possible to form loops in the muscles after amputation of the lower jaw which might serve for vitalization of the prosthesis, as after motor plastic amputations of the leg. Avanzi reviews the various elements that would be

necessary for such intervention, and especially the cooperation of the surgeon and the mechanic or, better yet, the double training in one person.

December, 1919, **26**, Medical Section No. 12

*Serodiagnosis of Echinococcus Disease. A. Gasbarrini.—p. 441.
*Rhizomelic Spondylosis and Osteomalacia. N. Pende.—p. 446.
*Spontaneous Nystagmus. G. Bilancioni and A. Romagna-Manoia. —p. 461.

Serum Test for Echinococcus Disease.—Gasbarrini applied the test by the intradermal technic and obtained a positive response in all his twelve cases of hydatid cyst, except in one case in which the cyst had suppurated and thus had ceased to be "active." He commends the ease and harmlessness of the test. It is made with serum from bovine hydatid cysts, filtered; after addition of one drop of phenol to 20 c.c. of the fluid it is set on ice. It keeps active for about a month. Giani obtained satisfactory results also with the Abderhalden test applied to human and bovine serum from subjects with echinococcus disease, and it was positive in seven of Gasbarrini's twelve cases. After surgical intervention the intradermal reaction veers to negative.

Rhizomelic Spondylosis and Osteomalacia.—Pende gives an illustrated description of a case of this combination in a woman of 48 who had had several attacks of articular rheumatism in the last eighteen years. Nothing can be found to indicate any special endocrine disturbance. The associated osteomalacia throws light on the etiology of the rhizomelic spondylosis, as it suggests a common origin in a trophoneurosis of bones and joints. It is localized in this case in the inferior cervical and the lumbosacral metameres and the adjoining joints and corresponding joints in the limbs. The prevailing views on spondylosis are analyzed and compared.

Spontaneous Nystagmus.—The present status of our knowledge on this subject is presented by Bilancioni and Manoia who noted spontaneous nystagmus in 150 of 3,000 aviation candidates. There was nothing otherwise to suggest pathologic conditions in the labyrinth, but there were always signs of functional disturbance in the nervous system, exaggerated reflexes, dermographism, tremor, etc. Many were accepted and passed satisfactorily through the course of training. The details are given of 4 cases of pure spontaneous nystagmus, and of 8 with heart, kidney or nervous disturbances, also in 2 cases after a fall while flying, and in 2 cases in which there was a history of an old healed otitis media. In 3 others the tests revealed abnormally long reaction to visual and auditory stimuli. They take up in turn the various hypotheses advanced to explain nystagmus. Their conclusion is in favor of some causal functional disturbance in the centers which control the movements of the eyes, this disturbance being probably of embryonal origin and located in the center itself or the cortex or connecting nerve fibers, and consisting in the lack of normal balance between the acting and antagonist elements. The nystagmus occurred only when the eyeballs were rotated to the farthest limit.

Crónica Médica, Lima, Peru

September, 1919, **36**, No. 675.

*Treatment of Trigeminal Neuralgia. M. Sixto Chavez.—p. 299.
*The Psychology of Insanity. H. F. Delgado.—p. 316.
*Emergency Splenectomy for Rupture. E. P. Manchego.—p. 327.

Trigeminal Neuralgia.—Chavez reviews the broad field of measures that have been recommended for treatment of trigeminal neuralgia for which no cause can be discovered. In one case he cured supra-orbital neuralgia of three months' standing in a student by application of electricity, but the interval since has not been very long. He cites A. Courcelle's success in treating neuralgia by subcutaneous injection of air (1905), but this can scarcely be applied in treatment of the trigeminal form on account of the resulting disfigurement in the face. Pitres of Bordeaux was the first to inject alcohol in treatment of facial neuralgia (1902), and this has now an extensive literature in all countries At the best, however, its effect does not last more than nine months. Chavez reports a case in which the trigeminal neuralgia was not modified in the least by the neurolytic injections of alcohol nor by partial resections of the nerve. This patient was a man of 50 and the neuralgia dated from 1910, although there had been occasionally mild neuralgic pains above the orbit from the age of 23. Year after year the whole array of treatment was applied in turn, including resection of the supra-orbital nerve. Retrogasserian neurotomy is the only resource now in this case, and he gives the minute details of the technic for this and the comments of various authors on this section of the sensory root of the nerve by Frazier's technic. (Published in THE JOURNAL, May 11, 1918, p. 1345.) Chavez describes further a case in which this operation was attempted for neuralgia of ten years' standing, refractory to all other measures. In detaching the meningeal artery from the base of the skull, there was severe hemorrhage which was arrested by ligating the middle meningeal artery. So much blood had been lost and the general condition was so bad in the woman of 62 that the operation was suspended, the patient dying six hours later. In another case the woman of 50 had continued to suffer from the neuralgia after resection of the ophthalmic and the superior and inferior maxillary nerves, and finally the gasserian ganglion was resected (Dr. de la Puente, July, 1917), the first operation of the kind in Peru. The patient died from hemorrhage after the gasserectomy.

Psychology of Insanity.—Delgado remarks that experience has shown the important part played by moral factors in the development of mental derangement; in fact, he deems this the principal factor. The new psychiatry, he declares, is based on psychology, while the textbooks and medical schools lead the student only a few steps into the vast field of psychologic processes. Psychanalysis reveals that mental derangement may be caused by factors of a moral order, moral conflicts, and that the hallucinations, gestures and attitudes of the insane are all important clues for the psychologist, revelations of profound and vital significance for treatment. Of course every psychic process has its molecular concomitant, but Delgado reiterates anew "the priority of the function—the conception which is rejuvenating medicine in all its branches now." "Modern endocrinology is also demonstrating the connection between the psychologic activity and the somatic activity, and the influence of one on the other. Psychanalysis has further shown the importance of organic inferiorities as factors in the psychogenesis of neuroses and psychoses, and in the physiologic estimation of the processes resulting from 'undrained' emotions."

Emergency Splenectomy.—Manchego removed the spleen of a boy of 14 on account of rupture and hemorrhage from a fall. The spleen was much enlarged from malaria, measuring 11 by 7 by 17 cm. and the tear was 8 cm. deep. Splenectomy is a comparatively common operation in Peru. In the case reported the liver began to enlarge the fourth day after the operation. If the tear in the spleen had been lower down, instead of in the upper pole, the boy would probably have bled to death before he reached the hospital.

Semana Médica, Buenos Aires

Oct. 30, 1919, **26**, No. 44

Proposed Reforms in Medical Course. P. J. García.—p. 509.
*Extremely Diluted Tuberculin in Treatment of Tuberculosis. F. Gómez Alvarez.—p. 516.
Origin of Univitelline Twins. M. Fernández.—p. 527.
*Roentgen Treatment of Bone and Joint Tuberculosis in Children. R. Espínola.—p. 533.

Tuberculin Prophylaxis and Treatment of Tuberculosis.—In this third instalment of his report, Gómez gives the details of ten cases of pulmonary tuberculosis systematically treated by the method of extreme dilution of the tuberculin. The bases for this treatment have already been summarized in these columns, as for instance, Feb. 23, 1918, p. 579. All Gómez' patients seem to be clinically cured at present.

Roentgen Treatment of Tuberculous Bone and Joint Disease.—Espínola declares that roentgen treatment is the best of all measures in surgical tuberculosis especially in cities. Surgical measures should be only secondarily considered. His experience with it has been very favorable, especially when the effect can be supplemented with heliotherapy and mountain or seaside climate.

Siglo Médico, Madrid

Dec. 13, 1919, **66**, No. 3444

*Emotion. Ramón Turró.—p. 1073.
Personal Prophylaxis of Venereal Disease. E. Mañueco Villapadierna. —p. 1076.
Treatment of Gonorrhea in the Female. Sicilia.—p. 1079.
Vaccine or Tuberculin Treatment of Tuberculosis? R. Villegas. —p. 1080.

Emotions and Endocrinology.—Turró explains the psychic by the physiologic basis on which it rests, not the physiologic by the psychic, as is the general rule. Achúcarro's assertions in regard to an internal secretion of the neuroglia and Marañon's demonstration that the brain can influence the vegetative life in two ways, by both nerves and blood, have thrown much light on the question of emotions. Marañon has demonstrated that it is possible to induce all the phenomena of fright, such as pallor, dilatation of the pupils, acceleration of the heart beat, goose flesh, sweating, etc., without the intervention of the brain, merely by injection of epinephrin in the artificially hyperthyroidized or in subjects with latent hyperthyroidism.

Mitteilungen a. d. med. Fak. d. kais. Univ., Tokyo

Dec. 28, 1918, **20**, No. 4. Rec'd Dec., 1919

Physiologic Actions of Fish Poison: Fugutoxin. F. Ishihara.—p. 375.
The Albumin in Horse Serum before and after Immunization with Diphtheria Toxin. K. Sakaguchi, L. Hayashi and B. Tanabe.—p. 427.
*Research on Diabetes: II, III and IV. K. Sakaguchi.—p. 439.

Research on Diabetes.—Sakaguchi presents here his second, third and fourth reports on his exhaustive study of various features of diabetes. In the second he discusses why the tolerance of diabetics is the lowest at breakfast and the elimination of sugar the highest after this meal. His conclusion is that this is due to the fact that the production of glycogen is less after breakfast than at other meals. The elimination of sugar after breakfast can be reduced by giving a little carbohydrate or meat an hour or two before the breakfast. He states further that carbohydrates to the limit of tolerance are borne better if taken four or five hours after the preceding meal. When the interval is six hours or more, the glycosuria may be increased.

In his third communication he presents clinical evidence to show the injurious action of emotional stress on the sugar content of the blood, while brain work, without emotional disturbance, does not modify the glycemia. In the three cases described, the sugar content of the blood was determined before and after the patients had been informed of the serious nature of their disease. Diabetics should avoid occupations, he suggests, that entail worry or excitement.

The fourth communication discusses the influence of intake of albumin on the sugar content of the blood. As the considerable rise in the sugar content reaches its highest point in from two to four hours after eating meat, it seems to be due to the products of digestion in the small intestine, rather than to the products of putrefaction of albumin in the large intestine.

Deutsche Zeitschrift für Chirurgie, Leipzig

February, 1919, **148**, No. 5-6

*Differential Diagnosis of Gas Gangrene. Stemmler.—p. 289.
Prophylaxis of Gas Infection. Remmets.—p. 325.
*Ligation of Femoral Vein in Treatment of Infected Wounds Below. J. Ritter v. Winiwarter.—p. 333.
Gluteal Aneurysms. F. Krische.—p. 352; Id. Goldammer.—p. 374.
*Goiter Operations. O. Orth.—p. 360.
*Covering Defects by Temporarily Suturing to Other Limb. J. F. S. Esser.—p. 385.
Chronic Gastric and Duodenal Ulcer. A. Troell.—p. 404. Cont'd.

Differential Diagnosis of Gas Gangrene.—Stemmler emphasizes that there can be no hope of successful serotherapy of gas gangrene until we learn to differentiate it. Various kinds of lesions are now grouped under this heading. Typical gas gangrene is a general intoxication from infection of muscle tissue by anaerobic bacteria; the muscle tissue is destroyed by ischemia, never by putrefaction, as gas gangrene is not a putrefaction process, and should never be classed with such. There are two forms of typical gas gangrene, the bronze phlegmon and the epifascial form. Malignant edema belongs in this category of inflammation from gas and edema-forming bacteria, although it is not of the true gangrene type. The two other categories of wound infection are inflammation from the pus formers, and inflammation from the putrefaction producers with formation of gas.

Stasis Hyperemia by Ligation of Femoral Vein.—Von Winiwarter was unable to obtain reliable results with a constricting band to the thigh in treatment of suppuration in the knee joint, and hence he resorted to ligation of the femoral vein, and reports encouraging results and knows of similar experiences in other hospitals. As the outcome thus surpassed expectations in these severe cases, he is inclined to extend the field of this procedure, and advocate ligation of the femoral artery whenever the fever keeps up for several days after the surgical toilet of the injured knee, and pus is found in the joint. It may be possible by this means to arrest the inflammation, and the lesion may heal without loss of function. As ligation of the femoral vein is a simple and harmless procedure it is justified, he thinks, in every case of severe infectious processes on the legs, in or outside of the knee. He urges others to give the method a trial, citing the details of his eighteen cases. All were war wounds. He applies the stout silk ligature to the vein just below Poupart's ligament, sometimes ligating another large vein besides the femoral. The cyanotic appearance has usually subsided by the next day, but the stasis edema persists. The relief from pain was striking, and even the change of dressings was not painful. The general condition improves, not only from the relief from the pain but from the shutting off of the septic products from the general circulation.

Goiter Operations.—Orth reviews his experience with 300 goiter operations; the mortality was 0.17 per cent. A number of cases showed the close correlation between the various endocrine glands which surgeons have to bear in mind; for instance, one woman first developed goiter after splenectomy. In another woman the goiter developed at once after removal of a myoma, while Wettergreen has witnessed the subsidence of a myoma as exophthalmic goiter developed. Several have reported increase in the size of the thyroid after removal of both ovaries, and Orth had a case in which the woman aborted three days after resection of the thyroid. Such happenings show the necessity for investigation of the genital organs before operating for goiter. In three cases a moderate form of tuberculosis seemed to be whipped up by removal of a goiter which had been compressing the trachea, and the patients soon died. Clairmont has reported some similar experiences with tuberculous patients. The blood pressure was high in 70 per cent. of Orth's cases, and after the thyroidectomy it dropped below normal, but gradually righted itself in a few weeks. No change in the coagulation of the blood was apparent. Transient albuminuria was evident in ten cases after the operation, not before. One patient had a spontaneous fracture of the femur a year after resection of the thyroid, and she died in six weeks. Orth is inclined to ascribe this fragility of the bones to abnormal conditions such as are observed in the bones of thyroidectomized dogs. The displacement of the trachea should be determined with radioscopy before the intervention as a guide to the operation. His only recurrences were in the four cases in which radioscopy had been neglected, and the protrusion of the goiter in the depths was not fully appreciated. He had fatal hemorrhage or embolism in two malignant cases, and in one case the esophagus was injured during the operation as also the trachea in another, but both healed without mishap after suture. Anomalies in the vessels were not infrequent, and this possibility should never be forgotten. In conclusion he warns of the necessity for caution in using disinfectants in this region; some have witnessed the flaring up of latent hyperthyroidism after application of iodized dressings, etc. Another danger from them is the effect on the vocal cords, similar to Cisler's experience with dogs; the vocal cords kept in the cadaver position when their innervation had been cauterized with silver nitrate. After thyroidectomy the vocal cords are liable to keep in the median position for a long time before

they resume normal movements, and any chemicals in the vicinity might exaggerate this.

Plastic Repair of Defects by "Suturing In."—Esser has been very successful with pedunculated flaps from the sound leg in operating on suppurating lesions that refuse to heal. When this technic is not applicable, he applies what he calls *Einnähen*, suturing the freshened defect, after excision of scar tissue, to some point on the sound leg. After it has grown to the sound tissues he cuts out one or two flaps and sutures the other edges to the defect. He gives illustrations of several particularly severe cases that healed under this "suturing in" procedure. None of the patients died.

Deutsche medizinische Wochenschrift, Berlin

Oct. 23, 1919, **45**, No. 43

The Restoration of the German Population. A. Gottstein.—p. 1177.
*Induced Pneumothorax in Lung Disease. K. Henius.—p. 1178.
Endemic of Friedländer Bacillus Pneumonia. Zander.—p. 1180.
*Glucose Injections in Heart Disease. W. Pfalz.—p. 1181.
*Progressive Paralysis. A. Jakob.—p. 1183.
Phototherapy in Lupus. Dora Gerson.—p. 1187.
Epidemic of Microsporia. W. Klehmet.—p. 1188.
Infectiousness of Latent Syphilis. W. Gärtner.—p. 1189.
Upward Displacement of the Diaphragm. C. Schwenke.—p. 1191.
*Myocarditis from Illuminating Gas Poisoning. E. Liebmann.—p. 1192.
End-Results of the Friedmann Treatment of Tuberculosis. R. Mühsam and E. Hayward.—p. 1193.
To Remedy Scarcity of Gas in Laboratories and Hospitals. H. Reiter. —p. 1194.
Proposed Reforms in Medical Course. J. Schwalbe.—p. 1196. Cont'n.

Induced Pneumothorax in Lung Disease.—That indeed pneumothorax marks a distinct advance in the treatment of tuberculosis is the conviction reached by Henius after using it in twenty-four cases. He gives his indications for induced pneumothorax as follows: (1) unilateral tuberculosis with cavity formations, even though the other side shows a mild tuberculous infection, provided it is not progressive; (2) unilateral infiltrating inflammatory processes; (3) unilateral, cheesy pleuropneumonia; (4) hemoptysis, if the side that is bleeding can be ascertained; (5) pleuritis, with much effusion, replacing the fluid with air, and (6) a short trial in cases of unilateral, multiple bronchiectatic areas and a central lung abscess. Henius ascribes the good effects of pneumothorax not to the rest that the lung gets from collapse, but to lymph stasis and to hyperemia, which in turn induce renewed growth of connective tissue and thus initiate a healing process. Lymph stasis doubtless prevents the spread of the disease process and the resorption of toxic substances. Collapse of the lung causes also an abatement of the secretion, and pneumothorax gives the diseased lung an opportunity for healing by shriveling. He quotes statistics from Spengler, Saugmann, Stuertz and Zinn, which go to show that over 25 per cent. of the patients so treated are symptomatically cured, and that from 40 to 50 per cent. more are benefited.

Glucose Injections in Heart Disease.—Pfalz found that infusion of glucose solution, as recommended by Büdingen in various heart diseases in which he postulates cardiodystrophy, affects the subjective symptoms favorably. In many cases he noted also objective evidence of improved heart action. No untoward effects have been observed thus far. Büdingen raised the question whether the nutritive material stored up in the heart and that brought to it by the blood are under all circumstances quite sufficient to enable the heart to perform the work that is expected of it. Büdingen began to consider whether or not in certain cardiac diseases, for example, in coronary sclerosis, the symptoms might be caused in large measure by faulty heart nutrition in consequence of narrowing of the blood vessels. He reached the conclusion that carbohydrates, and more especially glucose, play a larger part in heart nutrition than do protein and fat. The physiologic sugar content of the blood is from 0.07 to 0.11 per cent. (Ivar Bang), which suffices under ordinary conditions. The most important reserve product of carbohydrate metabolism is glycogen, the presence of which in the heart muscle is well known. Büdingen assumes that in certain conditions the heart fails to be adequately nourished, that the reserve of glycogen runs low and thus the heart does not get sufficient nourishment. The resulting cardiodystrophy may be cardiogenic or ectocardiogenic. Coronary sclerosis is an example of the former type, in which both cause and effect lie within the heart. Pathologic conditions of the glands of internal secretion furnish an instance of the ectocardiogenic type, in which the cause lies without and the effect within the heart. Either type of cardiodystrophy Büdingen considers an indication for treatment with from 10 to 20 per cent. glucose infusions. Pfalz has used the Büdingen treatment in a number of cases, and states that he regards it as a valuable procedure. The technic is simple. He infuses a 12 to 20 per cent. glucose solution, prepared from chemically pure glucose tablets, and sterilized before it is used. Ordinarily, from six to ten infusions of from 200 to 300 c.c. each are given at intervals of a week. He gives the infusion at body temperature. He secured the best results in two cases of coronary sclerosis, combined with angina pectoris, with blood pressure only slightly above normal. At the end of the treatment the symptoms (oppression and pain in the chest and arm with suffocation after exertion) had almost entirely disappeared. In three cases of general arteriosclerosis with hypertonia and angina pectoris the infusions proved beneficial, in that the heart symptoms subsided considerably. The infusions raised the temperature in several cases, but normal temperature was promptly regained.

Progressive Paralysis.—The investigations of Jahnel, which showed that ordinarily there were large numbers of spirochetes present in the cerebral cortex of paralytics who had died during an attack, are confirmed by the researches of Jakob and Hermel. The findings of the latter investigators go to show that the exacerbations of the disease, considered from a parasitologic standpoint, constitute very important episodes in the course of progressive paralysis. As the most important results of his investigation, Jakob mentions finding that the mental and motor exacerbations are associated with regressive and progressive phenomena in the fundamental and essential part of the nerve fibers (the axis cylinder), and with severe inflammatory processes in the connective tissue, and infiltration of the pia, the vessels of the cortex and medulla; infiltration of cellular elements into the nerve tissue; collections of lymphocytes; encephalitic processes; occurrence of gummatous changes in the vessel walls, and of miliary gummata in the cerebral cortex. Also endarterial proliferation processes in the vessels of the cortex were noted. Jakob looks on his histologic investigations as furnishing further proof of the correctness of Jahnel's view that the exacerbations of the disease coincide with a vigorous and extensive multiplication of spirochetes. So much, Jakob thinks, must be taken as certain, that in progressive paralysis living spirochetes exert a direct effect on the brain.

It is still a question why paralysis develops in certain syphilitics and not in others, although the observation that it is the syphilitics with very slight defense reactions in whom paralysis appears seems to point toward a solution. Further light on the question is thrown by the observations of Erb and of Fournier that those in whom the infection takes a mild course and who present no specific skin lesions in the secondary stage are more prone to paralysis than are those of whom the converse is true. Jakob's histologic data give the clue to treatment of progressive paralysis. Everything possible must be done to effect a cure of the syphilis, to destroy the remaining foci of spirochetes, and to enhance the production of antibodies. He reports that efforts in this latter line are now under way. He is injecting patients by the vein with inactivated serum from untreated patients in the secondary stage of syphilis with pronounced cutaneous manifestations of the disease, hoping thus to increase the supply of specific antibodies. He is also planning to use cultures of the spirochetes for a similar purpose. As a further reenforcement of the treatment of progressive paralysis and other forms of severe neurosyphilis, he intends to try Knauer's method of injecting arsphenamin into the carotids. [This latter method was described in the *Münchener medizinische Wochenschrift* **66**:609 (June 6) 1910. Even with this, the drug does not seem to pass into the cerebrospinal fluid, but the cell content dropped from 1,600 to 0 in one of the

nineteen patients thus treated. Knauer asserts that his experiments on the cadaver and on animals as well as his clinical experiences have demonstrated that this technic does not entail any considerable danger. He suggests that it might be combined with intraspinal injection of the drug, and that possibly mercury or other drugs might pass more readily than arsenic into the cerebrospinal fluid. He usually injects the drug into the carotid through the skin, without exposing the artery, as the patients are liable to tear off the dressings. The head has to be pendent, to throw the artery into relief. He says that in two of his cases no effect was apparent, but in the others the benefit surpassed that from any other treatment known to him.]

Myocarditis from Illuminating-Gas Poisoning.—Liebmann remarks that the publication of Zondek's studies on the heart findings after illuminating-gas poisoning impel him to publish the present case report. The unusual finding in Liebmann's case, which was that of a woman of 38 who was found unconscious in her bathroom, having been overcome by gas escaping from a gas heater, was a severe interstitial and parenchymatous myocarditis. Liebmann thinks that the symptoms in Zondek's case, the drop in blood pressure, the disturbances of the heart beat, and dilatation of the heart were doubtless the results of similar processes.

Münchener medizinische Wochenschrift, Munich

Oct. 24, 1919, **66**, No. 43

Spontaneous Healing of War Wounds of Nerves. Perthes.—p. 1219.
*Induced Pulmonary Edema. E. Laqueur.—p. 1221.
*Osteochondritis dissecans. P. F. Nigst.—p. 1223.
*Silver Salvarsan Sodium in the Treatment of Syphilis. Rille and Frühwald.—p. 1226.
Neurorelapses after Salvarsan Treatment. O. Sinn.—p. 1228.
Device for the Intravenous Injection of Opaque Solutions. Stühmer.—p. 1230.
Expert Treatment of Tropical Diseases. L. Külz.—p. 1231.
Simple Method for Determination of Wave Lengths of Homogeneous Roentgen Rays. F. Voltz.—p. 1232.
Rib-Cutting Shears. Kehl.—p. 1233.
Significance of the Casein in Parenteral Milk Therapy. F. Müller.—p. 1233.

Experimental Pulmonary Edema.—What attitude does the healthy organism take toward the presence of fluid in the lung? In order to answer this question Laqueur undertook a series of experiments on cats and rabbits. A solution with which osmotic pressure would be especially active was chosen, in order that fluid might be drawn rapidly into the alveoli. He injected 1 c.c. of a 50 per cent. solution of glucose or of a 20 per cent. sodium chlorid solution into the trachea of a rabbit, whereupon edema of the lung shortly began to develop and continued to increase for about an hour, until the weight of the lung was three times the normal. Associated with the osmotic edema in the lung there was exudation into the surrounding serous cavities, especially into the pericardium. In all the fourteen instances of animal experimentation, at a certain period within the first two hours after injection, the hemoglobin content was higher than before the injection, so that it became evident that in osmotic edema, as well as in toxic edema, the blood undergoes inspissation. Through hemoglobin determinations it could be shown that the amount of fluid that passed out of the blood corresponded to the amount of fluid forming the edema. Induced edema of the lung appears, therefore, to be a ready means of not only bringing about changes in blood concentration but also of estimating the amount of such changes. Muscular rest was found to affect very favorably the course and final outcome of the edema. The circulatory disturbances are apparently suffocation symptoms. Respiration was accelerated but less profound, so that the total air inhaled was not changed. Laqueur thinks that the physical findings with such experiments may aid in teaching percussion and auscultation. Resorption in the lung after the injection was extremely rapid. Most of the fluid and of the glucose injected was absorbed promptly, the balance much more slowly. Osmotic equilibrium between the edema fluid and the blood serum was soon established.

Osteochondritis Dissecans.—Nigst remarks that the etiology of the disease of the joints in which pieces of articular cartilage are split off from the ends of joints remaining otherwise intact is not yet fully cleared up, but the results of his radiographic investigations, together with the anamnesis, symptomatology and operative findings in his cases, are in close accord with the findings published by Ludloff in 1908. In view of the uniform, characteristic clinical picture he is inclined to regard osteochondritis dissecans as a distinct morbid entity. The various differences reported by other investigators correspond to the different stages of the same pathologic process. He agrees with Ludloff that the striking similarity in the localization of the lesions must be traceable to a definite disease process. The preliminary stages of the disease are as yet unknown, but if in all cases roentgenograms of corresponding joints were made, comparative studies could be undertaken that would help to throw light on the pathogenesis of the disease.

Silver Salvarsan Sodium in the Treatment of Syphilis.—Rille and Frühwald find that the effect of silver salvarsan on syphilitic symptoms, both clinical and serologic, is more rapid than that of the usual combined neosalvarsan treatment. Much smaller doses, they say, are required than are needed of other salvarsan preparations, which is all the more significant in view of the fact that silver salvarsan contains only two thirds as much arsenic as old salvarsan. In using silver salvarsan one therefore keeps well under the toxic doses. The authors found that as a rule silver salvarsan was well borne by patients; no serious accidents from its use were observed.

Zentralblatt für Chirurgie, Leipzig

Dec. 13, 1919, **46**, No. 50

Clamp with Double Parallel Grasp, for Operations on Stomach and Intestine. R. Sommer.—p. 994.
Technic for Correction of Ischiorectal Fistula. H. Walther.—p. 995.

Dec 27, 1919, **46**, No. 52

*Blocking the Splanchnic Nerve. G. A. Preiss and A. Ritter.—p. 1025.
Epinephrin not Indicated for Prevention of Postoperative Paralysis of the Intestines. Mülberger.—p. 1030.

Blocking the Splanchnic Nerves.—Preiss and Ritter report the application in 89 cases of Kappis' technic for blocking the splanchnic nerve from the rear, reaching it from just below the twelfth rib, at a depth of approximately 7 cm. above the second lumbar transverse process, introducing the needle at the lateral convex margin of the vertebra, and depositing from 10 to 40 cc. of a 1 per cent. procain-epinephrin solution. The patient may be prepared with a sedative the evening before and again half an hour before the operation. Wendling reaches the nerve from the front, 0.5 cm. to the left of the median line and 1 cm. below the xiphoid process, blocking the nerve before it joins the solar plexus. Four reports have been published of experiences with these methods, a total of 254 cases. Preiss and Ritter here state that in their 89 cases there were only 4 so refractory that the operation had to be done under inhalation anesthesia. Cancer involving the nerves was responsible for the failure in 2 of these cases and phlegmonous appendicitis in another case in which the parietal peritoneum was intensely sensitive. The fourth failure was with an ovariectomy; blocking the splanchnic nerves does not anesthetize the ovaries. In 5 other cases a little supplementary inhalation anesthesia was required. In one case the vena cava was punctured and in another the lung. Fifteen different types of operations were performed, including 13 resecting operations on the stomach, 5 gastro-enterostomies, 2 nephrectomies, 1 decapsulation of the kidney, 2 cholecystectomies and a large number of resections of the intestines, jejunostomy, etc. The fluid spreads easily in the retroperitoneal tissues, so that a single injection on each side was all that was needed for the appendicectomies. The results were better when Kappis' solution was modified to the following: 1 c.c. procain; 50 c.c. distilled water; epinephrin (suprarenin) 0.001; sodium chlorid 0.35, and potassium sulphate 1.2 c.c. The anesthesia was so complete that they finally dispensed with the preliminary sedatives as superfluous and even detracting from the anesthetic effect. The youngest patient was 11, the oldest 70. No serious by-effects were noted, no signs of intoxication or collapse, at most occasional nausea and pallor during the

operation, exceptionally a little vomiting. The special field for splanchnic anesthesia, they affirm, is not only for major operations on all the organs of the greater abdominal cavity but also interventions for severe acute peritonitis, as after perforation of a viscus.

Zentralblatt für Gynäkologie, Leipzig

Dec. 6, 1919, **43**, No. 49

*Helminths in Female Genital Organs. F. Tschamer.—p. 989.
*Nasal Diphtheria in the Newly Born. J. Becker.—p. 996.

Helminths in Female Genital Organs.—Tschamer reports a case in which two living specimens of the oxyuris were found in the right tube after total hysterectomy. As the tube was slit, one of the helminths crawled to the mouth of the tube, the other to the fimbriated end and both dropped off. The longest was 12 mm. in length. No ova of the oxyuris could be detected anywhere in the excised mass, but it had been rinsed, and possibly some may have been present at first. The woman had been recently treated with santonin on account of discomfort from itching at the anus and genitals and in the nose. The pinworms probably had found their way from the anus through the vulva and uterus into the tube, but there did not seem to be any pathologic condition for which they could be held responsible. The patient in this case was a previously healthy secundipara of 31 who had had a hydatidiform mole removed in 1909; another in 1919 compelled evacuation of the uterus anew. The genitals were otherwise normal at the time, but five months later she returned complaining of pains in the inguinal region and excessive menstrual hemorrhages, and a nodular tumor was found low in the uterus, apparently a chorio-epithelioma. Tschamer reviews the literature on helminths in the internal genitals; it is evidently a very rare occurrence. He was not able to find any previous record of the penetration of the helminths or ova beyond the vagina and cervix except that Marro reported in 1901 a case in which oxyuris ova were found in a cyst on an ovary.

Nasal Diphtheria in New-Born Infants.—Becker states that at the Jena maternity there were five cases of nasal diphtheria in new-born infants in 1918 and four in 1919. He warns that bacteriologic examination is indispensable for every case of coryza in a young infant and above all when the discharge from the nose shows traces of blood. In one case the nasal diphtheria entailed general sepsis with mixed infection and necrosis of the arm. The snoring breathing is the first symptom to attract attention, and then the thin, slightly purulent discharge running from one or both nostrils. It is often reddish or brownish, and erodes the upper lip. The membranes are generally far back in the nose, but can be easily removed. Becker ascribes the infection to carrier visitors as the most probable source. On this account it is now the rule not to give the child to its mothers to nurse during "visiting hours," and no outsider is allowed in the infants' ward. In a recent compilation of thirty-eight cases the mortality was 31.6 per cent., mostly from complications. In another case the diphtheria settled in the cord.

Dec. 13, 1919, **43**, No. 50

*The Other Tube with Tubal Pregnancy. C. U. v. Klein.—p. 1001.
Id. R. Meyer.—p. 1007.
Transperitoneal Cervical Cesarean Section with Premature Separation of the Placenta and Contracted Pelvis. D. Eherle.—p. 1010.

The Other Tube with Tubal Pregnancy.—Klein discusses the best method for preventing further conception in operating for tubal pregnancy, saying that simple ligation of the other tube does not accomplish this nor even excision of a piece of the tube. He has had cases of pregnancy later after both these procedures, and he describes a case of a second tubal pregnancy in the other tube which had been ligated at the first operation. The changes in the tube in consequence of the ligation had evidently afforded a predisposition for embedding of an ovum in the tube. Hence he advises in operating for tubal pregnancy to leave the other tube unmolested, unless time can be taken to render it permanently impermeable, by excision and burying the stump in the uterus wall. Anything less than this may actually invite tubal pregnancy later. If it is deemed best to shut off the other tube, he advises Madiener's method as the most promising of the rapid procedures, that is, to shut off with ligatures a crushed loop of the tube. Klein's experience with eighty cases of extra-uterine pregnancy includes thirty-two in which sterilization was attempted.

Dec 27, 1919, **43**, No. 52

*Eclampsia and the War. W. Gessner.—p. 1033.
Rieck's Resection the Uterus. D. Pulvermacher.—p. 1036.

Eclampsia and Wartime Conditions.—Gessner states that the official statistics for Baden show a proportion of from 1.5 to 2 cases of puerperal eclampsia per thousand births between 1910 and 1916, inclusive. In 1917 the births numbered only 29,779, in comparison to the 60,621 in 1914, but the cases of eclampsia showed a still greater proportional decline, there being only 0.8 cases per thousand births. Baden is the only one of the German states that has compiled statistics on eclampsia, but various obstetricians have commented on the proportional drop in the number of cases of eclampsia. At the Hannover maternity eclampsia dropped from 25 cases in 1913 to 23, 13, 10 and 7 during the years of the war. He ascribes this decline in eclampsia to the women's working and exercising more under war conditions rather than to the wartime restrictions in diet, though the latter helped to combat the dangerous accumulation of fat. If the lack of fat and protein were responsible for the falling off of the cases of eclampsia, then cows would never have eclampsia. But cows do have eclampsia, he says, because they are phlegmatic and lazy, and this allows fat to accumulate. As soon as the troops scattered to their homes and the women ceased to be active breadwinners, the old conditions returned, so that the factors keeping down eclampsia no longer prevail. There is every reason to expect, he reiterates, that the eclampsia curve will rise and will never again touch such a low point as in 1918.

The obesity resulting from thyroid or pituitary deficiency was not modified by war conditions, and women with this did not grow thin during the war. Pregnant women of this "fat anemia" type are peculiarly predisposed to eclampsia unless they are given thyroid or pituitary treatment in time. He adds that the war experiences have demonstrated on a huge scale that women exercising and working to the last, and living on a scanty diet, have shorter and easier labor because there are no hindering subperitoneal layers of fat, as under other conditions, and the children are smaller. He explains that the reason why there were any cases of eclampsia during these recent years was that women of means were not obliged to work, and the extensive contraband trade lessened the dietary restrictions for many women.

Zentralblatt für innere Medizin, Leipzig

Dec. 27, 1919, **40**, No. 52

*Effect of War Undernutrition on the Bones. A. Koepchen.—p. 961.

War Pathologic Conditions in Bones.—Koepchen comments on the reports which came in first from Vienna, in the spring of 1919, on the peculiar endemic pathologic condition in the bones, resembling rachitis or osteomalacia. Reports soon followed from other points in Germany and Austria, Tübingen, Frankfort, Breslau, Bonn and Dresden. In his own experience, in the Rhine-Westphalia district, he encountered twenty cases in a few weeks, all in men except three, and inquiry elicited a large number of similar histories throughout the region. All were in young people, and all were of the poorer classes. The combination of severe pains in the bones, edema and a hemorrhagic tendency, and the characteristic light roentgen shadows of the bones and the endemic character, with negative findings in other respects, distinguish this war osteopathy. Influenza cannot be incriminated, as nothing of the kind seems to have been observed in the countries of the Allies, or after preceding epidemics of influenza. It is probably the result of a qualitative starvation of bone tissue, from chronic lack of certain necessary food elements. As he was unable to obtain cod liver oil, he gave merely phosphorus and calcium and found this effectual, the pains in the bones becoming attenuated in a few

days as a rule, only a few not feeling the benefit for a week or two. He cites nineteen reports on the subject in German-Austrian journals.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Oct. 25, 1919, **2**, No. 17

*Deformity of Chest from Asthma. A. A. H. van den Bergh.—p. 1245.
A Practical Stomach Pump. H. Wigger Boelens.—p. 1251.
*Asphyxia of the Newly Born. P. J. Mink.—p. 1253.
*Colic from Acute Angioneurotic Edema. J. H. Landwehr.—p. 1259.

The Tetrahedron Chest.—Van den Bergh says that he has not found any reference in the textbooks to the malformation of the chest which he describes with illustrations. It suggests a solid with four sides, each an equilateral triangle, the chest projecting in a peak between the nipples. His five patients with this deformity had suffered since childhood from attacks resembling severe asthma, and the strain from these attacks explains the protrusion of the chest and its final persistence in this pyramidal shape. There was no history of rachitis in any instance. One of the patients was a man of 31 and another a boy of 11.

Asphyxia of the Newly Born.—Mink does not accept Kouwer's theory in regard to intra-uterine movements of the fetal respiratory muscles. He insists that the fetal air passages are collapsed, and there can be no lumen. The glottis and the nostrils are also closed. The small arteries are contracted also, as is inevitable when there is no respiration. This is an additional factor in the anemia of the central nervous system. Other factors are the pressure on the head and chest in the birth passages. Respiration is inaugurated, he explains, by the sinking of the diaphragm. The traction from this pulls on the trachea and opens it, and this in turn pulls on the glottis and opens it and the nostrils. The respiration releases the arterioles from compression; they dilate, and blood streams to the respiration center, and the latter then takes charge of the respiration process. He reiterates that when the ordinary stimuli from the mechanical and other changes after delivery are inadequate, tickling the nasal mucosa might prove a potent means to act on the respiration center. As it is vitally important to supply the respiration center with blood, he advises not to cut the cord until after this stimulus has been applied to the nose. Very little time is lost by this, while the mother's blood may turn the scale. If not, the cord can then be cut and the Schultze swinging started. The swinging is merely, he thinks, a strong stimulus to the skin, and irritating the nasal mucosa is an equally potent stimulus. The great importance of this stimulation of the nasal mucosa is best appreciated by comparing the normal nose breathing with breathing through the mouth or tracheal cannula. The lack of the normal stimulus from the nose may be one of the causes of the asphyxia. The excitability of the respiration center at birth may be enough to start respiration, but may not be enough to maintain it when the normal stimulation from the nose is lacking.

Acute Angioneurotic Edema.—In the case reported by Landwehr in a previously healthy woman there was fleeting edema at various points, but each time the edema subsided in about half an hour, not leaving a trace. Eyelids, lips, chin, arms, hands and feet were affected in turn, and finally sudden stormy symptoms indicated that the fleeting angioneurotic edema had attacked the bile ducts, simulating actual gallstone colic. This has occurred on two occasions to date. The swelling of the mucosa of the bile ducts obstructs the flow of bile, and the retention causes the colic pains the same as from retention of other origin. The case is still under treatment. Arsenic, strychnin and quinin have been recommended, with regulation of the bowels and a milk-vegetable diet. The first signs of the edema were noted about four months before date of writing.

Nov. 1, 1919, **2**, No. 18

*Scarlatinal Nephritis. M. A. Duyvis.—p. 1339.
The Anti-Birth Control Congress. F. Hers.—p. 1344.
*Correction of Deformed Noses. E. W. de Flines.—p. 1353.
*Vasotomy. Scheffelaar Klots.—p. 1356.
*Triplet Birth with One Living Child. A. ten Docsschate.—p. 1357.
*Abscess in Lung after Tonsillectomy. H. Burger.—p. 1359.

Prognosis of Scarlatinal Nephritis.—Duyvis protests that scarlatinal nephritis does not altogether deserve the bad reputation it has acquired Recent recxamination of 30 nephritis patients from the epidemic of scarlet fever at Amsterdam in 1906, showed normal kidney functioning in 21 cases The blood pressure was normal in 5 others who presented intermittent albuminuria, including one suspected of tuberculosis. In 4 others the blood pressure was above normal, and there were traces of albumin in the urine. All of the 30 were in good general health. Not one of the 30 had actual nephritis, and none had died from nephritis in the interim.

Correction of Crooked Nose.—De Flines gives illustrations before and after his correction of "rhinodystasis," congenital or acquired, and describes his technic for this "rhinorthosis" by cutting a wedge-shaped piece out of the upper jaw, on the broader side of the nose, working through the nose and subcutaneously, so there is no scar. The apex of the triangular wedge resected points upward, reaching nearly to the orbit. The bone on the other side is reached in the same way but merely a linear incision is made on this side, slanting from the orbit outward, and the same length as the corresponding side of the wedge on the other side. The nose is then pushed over into its normal place. In doing this, the bony connection with the frontal bone has to be wrenched apart or fractured. He does this with the thumbs both on the small side, and has always succeeded without using instruments. The nose is then modeled, and fastened in its new position with a stout silk thread passed through a hole in the jaw on the broad side and in and out through two holes in the septum, thus pulling the whole nose over into its proper place. He operates under local anesthesia throughout, as also when he merely removes redundant bone to transform an ugly hook nose into an esthetic profile.

Vasotomy.—Klots merely describes this operation "as done by the Americans."

Triplet Birth.—A viable 8 months girl was delivered and then two dead male twins from a second ovum at about the fifth month. This case confirms the assumption that triplets are generally from two ova.

Lung Abscess Following Tonsillectomy.—Burger reviews the literature that has accumulated on this sequel of tonsillectomy since Manges first called attention to it in 1916. He thinks that the possibility of blood-borne infection cannot be excluded, but emphasizes that lack of preparation for the operation may also be a factor. Recovery after long convalescence is usual, but operative intervention has sometimes been necessary, opening and draining the abscess, or resection of the lung. Cott lauds artificial pneumothorax as the most effectual measure in treatment. Burger remarks in conclusion that the data cited confirm the necessity for remaining in bed under medical supervision for a few days after tonsillectomy; also the necessity for the employment of local anesthesia for older children and adults, and in young children the special precautions which every general anesthetic should impose.

Hygiea, Stockholm

Dec. 16, 1919, **81**, No. 23

*Mammary Cancer. A. Neander.—p. 937.

Mammary Cancer.—Neander analyzes the experiences at Stockholm with 427 operations for mammary cancer between 1900 and 1914. The 330 radical operations were followed by recurrence in or near the site of the cancer in 165 cases, and only 19 per cent. were living free from recurrence after three years; 28 patients were thus apparently definitely cured. After five years these figures were 16.8 per cent. and 23. The outcome is not known in 84 cases. The immediate operative mortality was 2.1 per cent. He reiterates that 75 per cent. at least of all pathologic conditions in the female breast after the age of 30 are malignant. He discusses the arguments for and against evacuation of the supraclavicular fossa, saying that the 15 patients on whom this was done all died from cancer. Over 66 per cent. of all recurrences developed in or near the old site.

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PROTEIN DIETS AND UNDERNUTRITION IN TREATMENT OF DIABETES

FREDERICK M. ALLEN, M.D.

NEW YORK

The modern treatment of diabetes is generally recognized as an attempt to relieve overstrain of a weakened assimilative function by limitation of the diet. In the more severe cases, such relief is most quickly and thoroughly obtained by fasting, either immediately or after a preparatory fat-free diet as proposed by Joslin. This part of the program is usually the simplest for successful accomplishment, and the chief difficulties and chief causes of varying results in the hands of different practitioners are found in the arrangement of the subsequent diet. Excess in total calories has been the commonest mistake and responsible for much unfavorable progress and mortality, as pointed out in the comparison of cases differently treated by different persons in the Rockefeller Institute series.[1] But the proportions of various foods are also highly important for maintaining control of the diabetes with the least possible impairment of health and strength. Some practitioners desiring to avoid the former evils of high protein-fat diets have gone too far toward the opposite extreme with diets excessive in vegetables and deficient in protein and calories. Mosenthal[2] has oulined diets predominant in protein and emphasized protein as the most important food for maintaining body nitrogen. Equilibrium is known to be possible at widely different levels of nitrogen, total calories and body weight. If active symptoms are to be prevented, the therapeutic problem in each individual patient is to determine the diet which gives the most beneficial nutritive result without overtaxing the assimilative power, the latter being taken as the standard rather than any arbitrary nutritive level.

At the Rockefeller Institute hospital, the diet after fasting generally began with a carbohydrate tolerance test, in the form of a regular addition of 10 gm. of carbohydrate in vegetables daily until glycosuria resulted. The purpose was to establish a standard of tolerance for comparison of different cases and of the same case at different times, and to continue undernutrition while diminishing or abolishing acidosis. Such a program is really feasible only in an experimental institution, and objections to it may be thus formulated: First, the time consumed is often so great as to be an obstacle to general practical application. Second, during this period there is relative protein starvation combined with a special strain on the carbohydrate assimilation, both of which are better avoided if possible. Third, it is now known both from the clinical experience and from animal experiments[3] that relief of the injurious overstrain of the assimilation requires control not only of glycosuria but also of hyperglycemia. A test based only on glycosuria therefore sets a false standard, and is subject to considerable errors through the wide variations of renal permeability.

Five facts may serve for guidance in planning diets after fasting: (*a*) The total calories at first should be very low and increased gradually. (*b*) Protein is the most important food. (*c*) The tolerance for protein is highest when other foods are excluded or closely restricted. (*d*) The caloric requirement falls with the body weight and may reach a very low minimum.[4] (*e*) The tolerance rises as the weight falls; and with exceedingly few exceptions the two curves intersect at some level on which life can be supported.

In a few cases with severe acidosis, a short carbohydrate period may be advisable. But for most cases in private practice it has seemed advantageous to use almost pure protein diets until the blood sugar falls to normal, and then gradually to build up a maintenance diet to such a level as is possible without return of hyperglycemia or marked acidosis. The severity of the diabetes and the quantity of protein that can be tolerated may best be judged by a protein tolerance test as described by Jacobsen,[5] which is especially useful in some cases for deciding whether the patient is breaking diet. Or, without any formal test, a satisfactory routine is to begin with a small protein allowance and determine the blood sugar occasionally as a guide for the increase. Under any conditions, the ultimate criterion of the severity of diabetes is the level of diet and body weight which can be endured without return of symptoms. The application of the method in question may be illustrated by the following summaries of case records, selected chiefly with reference to some of the practical difficulties.

MILD DIABETES WITH OBESITY AFTER MIDDLE LIFE

CASE 1 (36).—*History.*—A married woman, aged 55, admitted to the hospital, July 30, 1919, with negative family history except for obesity in the father and one brother, had worked hard and was thin up to age of 26, when she moved to America. Here she married and gradually became pros-

1. Total Dietary Restriction in the Treatment of Diabetes, Monograph 11, Rockefeller Institute for Medical Research, 1919.

2. Mosenthal, H. O.; Clausen, S. W., and Hiller, Alma: The Effect of Diet on Blood Sugar in Diabetes Mellitus, Arch. Int. Med. **21**: 93 (Jan.) 1918. Mosenthal, H. O., and Clausen, S. W.: The Maintenance Diet in Diabetes Mellitus as Determined by the Nitrogen Equilibrium, ibid. **21**: 269 (Jan.) 1918. Mosenthal, H. O., and Harrop, G. A., Jr.: The Comparative Food Value of Protein, Fat and Alcohol in Diabetes Mellitus as Measured by the Nitrogen Equilibrium, ibid. **22**: 750 (Dec.) 1918.

3. Allen, F. M.: J. Exper. Med., to be published.

4. Monograph 11, Rockefeller Institute for Medical Research, p. 130.

5. Jacobsen, A. T. B.: Am. J. M. Sc., to be published.

perous and obese. Five children were born to her; there was fever for two months following the birth of the first. One miscarriage occurred at the age of 40; she refused curettage and suffered from profuse menstrual hemorrhages thereafter. A year or two later she began to suffer chronic pains in the joints, especially the knees, which still continue. Five years before admission she was in bed with fever for three weeks; the physicians diagnosed infected uterine fibroids and were on the point of operating when the condition improved spontaneously. Hemorrhages ceased at menopause at about the same time and a small umbilical hernia was discovered which, though retained by a belt, has grown larger and creates much inconvenience. She had complained of "stomach trouble" for the last twenty-five or thirty years, with pain when hungry, generally relieved by food, but sometimes with cramps after eating. There had been continuous slight pain and tenderness in the liver region, and physicians had diagnosed an enlarged liver. She had been a large eater all this time, but denied excesses in sweets. Five years before admission she reached her highest weight of 274 pounds. Pruritus, polydipsia and polyuria then came on, and diabetes was diagnosed about one year later. Lax diet stopped the glycosuria temporarily, but it returned. Three years before, severe neuritis of the right leg kept her in bed for seventeen weeks; it was over a year before she could walk straight, and slight pain still remained. During this time her physicians used only local treatments, without diet restriction. Her weight had been diminishing, and she had become highly neurasthenic. Her complaints on admission were weakness, loss of 16 pounds in weight in the last two weeks, polyuria, pruritus, indigestion with abdominal pain, pelvic pain from fibroids, joint pains, neuritis in the right leg, inconvenience from hernia, and exaggerated nervousness with frequent crying spells.

Physical Examination.—The patient's height was 5 feet, 7 inches, and the weight, 212 pounds. The knee-jerks were absent and the Wassermann test was negative. Other findings were as indicated in the foregoing history.

Treatment.—In addition to heavy sugar, the urine showed traces of albumin but no acetone. After twenty-four hours of fasting, the glycosuria diminished to a faint trace, acetone did not appear, but the plasma sugar was still 0.4 per cent. A diet was begun of 10 gm. of carbohydrate, 50 gm. of protein and 400 calories; glycosuria ceased within another twenty-four hours. August 4, the plasma sugar before breakfast was 0.214 per cent., and the diet was increased to 70 gm. of protein, 20 gm. of carbohydrate and 650 calories. August 9, the carbohydrate was increased to 40 gm., and August 13 the patient was discharged on a diet of 70 gm. of protein, 50 gm. of carbohydrate and 900 calories; the plasma sugar was 0.144 per cent. and the body weight 103 pounds. Occasional slight nitroprussid reactions were present in the urine. Most of the pains and other subjective symptoms had disappeared; there was no complaint of indigestion on the low diet; the strength had improved with the aid of outdoor walking; with the better general condition the distress from the enlarged liver, hernia and fibroids was much less, and the patient felt well and cheerful.

Subsequent History.—August 20, the patient reported, with urine negative for sugar and acetone, but plasma sugar 0.254 per cent.; she was still feeling well. She admitted some laxness in diet, and was admonished to be strict. At her second visit, August 29, the plasma sugar was 0.183 per cent.; September 15, it was 0.152 per cent. The weight fell below 200 pounds, though the diet was gradually increased to 1,500 calories, and the patient had taken minor liberties in addition. The plasma sugar, November 24, was 0.190 per cent., and the patient was urged to be more strict.

The case illustrates the variety of ailments that may result from overeating and obesity. Both for these and for the mild diabetes there is naturally indicated an undernutrition diet containing protein to protect body nitrogen and carbohydrate to prevent any serious acidosis, but deficient in fat so as to compel burning of body fat. The high renal threshold for sugar shows the unreliability of urine tests as a guide for treatment. The best policy calls for a normal blood sugar; but in view of the age of the patient and the inherent mildness of the diabetes, no undue alarm need be created by moderate hyperglycemia, especially as the analyses after discharge were all taken during digestion. Operation has been suggested for the hernia and possible gallstones if the patient will first reduce her weight sufficiently, but she will probably remain satified with her present condition.

MODERATELY SEVERE DIABETES AFTER MIDDLE LIFE

CASE 2 (42).—*History.*—A man, aged 58, married, manufacturer, admitted, Aug. 2, 1919, with negative family history except for slight obesity in the father and mother, had had scarlet fever at 12, which was his only illness. There was no history of alcoholism or of excesses in food or sweets. Slightly obese from boyhood, he reached his highest weight of 210 pounds four years before. Then he had an acute onset of weakness, and a physician immediately diagnosed diabetes. The diets prescribed were unable to stop the glycosuria and loss of weight; pains in the legs became very troublesome, and in April, 1919, he was referred to me for treatment. He was given general instructions for a diet adequate in protein and low in both carbohydrate and fat, on which glycosuria was absent but hyperglycemia persistent. Instead of improving, he complained of increasing languor. An examination, July 29, revealed a very faint sugar and negative nitroprussid reaction in the urine, with plasma sugar of 0.395 per cent. It was evident that mistakes in the diet at home were subjecting the patient to semistarvation without corresponding benefit, and he was accordingly brought into the hospital, August 2.

Physical Examination.—The patient's height was 5 feet, 8 inches, the weight, 137 pounds. The teeth were much decayed and repaired. The knee-jerks could be barely elicited with reenforcement. The examination was otherwise negative.

Treatment.—The patient insisted on staying as short a time as possible in the hospital. On a diet of 70 gm. of protein, 10 gm. of carbohydrate and 700 calories, the plasma sugar fell to 0.181 per cent., August 7, and moderate nitroprussid reactions were constantly present. With increase of fat to make 1,200 calories, these reactions became heavier and the plasma sugar rose to 0.192 per cent. The patient was dismissed in this condition, August 16, weighing 132 pounds and feeling slightly better. On attempting to work, he became weak and had an attack of indigestion, which alarmed his family so that they brought him back to the hospital, August 22, and persuaded him to stay for more thorough treatment.

On a diet of 40 gm. of protein, 10 gm. of carbohydrate and 1,000 calories, the plasma sugar fell to 0.136 per cent. September 1. Also the blood urea, which had been 52.2 mg. per hundred c.c., fell to 26 mg. The diet was gradually built up, so that the patient by September 30 received 70 gm. of protein, 50 gm. of carbohydrate and 1,400 calories (reduced one seventh by weekly fast-days). The last plasma sugar tests showed 0.147 per cent. fasting and 0.181 per cent. during digestion. The blood urea was 22.8 mg. per hundred c.c. There were constantly slight nitroprussid reactions in the urine. The weight was 128 pounds, and there was a decided improvement of strength and well-being and an absence of pains. The patient was dismissed, October 3, with a reduction of carbohydrate to 30 gm. as a precaution against errors of diet at home.

Subsequent History.—Owing to well-meaning mistakes, the plasma sugar has since varied from 0.115 to 0.277 per cent. It has not been feasible to increase the diet or the weight. The improvement in health has continued, and the patient performs the light duties of his business and asserts that except for some lack of endurance he feels as well as ever in his life.

The case illustrates the frequent difficulties of home treatment even in willing and intelligent households, and the necessity of sufficiently long and thorough supervision and instruction in order to obtain results. It is also an example of the greater or less discomfort and disability which usually result from diabetes even in later life. The case may be classed as moderate in severity, on the basis of the restrictions of diet and weight required. Undernutrition has improved the strength and comfort as well as the prognosis, but the results can never be as good as if thorough treatment had been begun at an earlier stage.

CASE 3 (6).—*History.*—A man, aged 62, married, lawyer, admitted, July 23, 1919, whose father died at 67 of tuberculosis, mother at 67 of cancer, three uncles of tuberculosis, and a grandmother of acute nephritis, and in whose family there was no record of diabetes or obesity, had passed a very healthy life except for childhood diseases. In 1901 an attack of urinary "gravel" incapacitated him for three days. An intense attack in 1911 terminated with the passage of a stone the size of an orange seed. He had a mild attack of "grip" five years before, but was not subject ordinarily to colds. He was moderate in all habits, and his highest weight had been 195 pounds. For the last two years he had noticed gradually increasing loss of weight and strength, polydipsia, polyuria, irritability of temper, and aching in the legs. A physician consulted in June, 1919, diagnosed diabetes and referred the patient to me for treatment.

Physical Examination.—The patient was 5 feet, 11 inches in height and weighed 138 pounds when dressed. The general examination proved negative except for thinness and heavy glycosuria with slight acetonuria.

Treatment.—Instructions were first given for an approximate diet to be taken at home, guessed to represent about 60 gm. of protein and from 20 to 30 gm. of carbohydrate, with as little fat as possible. Glycosuria ceased within a week, but notwithstanding further restrictions of diet and loss of weight, hyperglycemia persisted, and glycosuria returned whenever an increase of diet was attempted. The patient entered the hospital, July 23, weighing 133 pounds, with negative sugar and slight nitroprussid reactions in urine, and plasma sugar of 0.214 per cent. On a diet of 40 gm. of protein and 10 gm. of carbohydrate, heavier nitroprussid reactions developed, and the plasma sugar, July 28, had fallen to 0.115 per cent. This rapid fall of blood sugar may be attributed partly to the more accurate restriction of diet as compared with that at home, and partly to the preceding month of undernutrition. The diet was rapidly increased to 80 gm. of protein, 20 gm. of carbohydrate and 1,500 calories (reduced by weekly fast-days to about 70 gm. of protein and 1,300 calories average). The patient was discharged thus, August 8, with plasma sugar before breakfast of 0.127 per cent. and negative sugar and moderate nitroprussid reactions in the urine. His weight was 130½ pounds.

Subsequent History.—The patient was rigorously faithful, but there were various minor mistakes in his household, so that later the plasma sugar was found to range from 0.106 to 0.234 per cent. Matters improved after a dietitian took charge of his kitchen for two weeks. The weight fell to 116 pounds stripped, but it was possible to increase the diet to 30 gm. of carbohydrate and 2,000 calories, generally with only 60 gm. of protein because of the patient's distaste for it. The weight thus rose to 119 pounds. The plasma sugars during digestion in the forenoon have ranged from 0.148 to 0.197 per cent. Attempts to increase the diet or weight have resulted in glycosuria and increased ketonuria. Nitroprussid reaction in the urine now remain negative. The patient has been maintained at the level stated in the hope of improvement with time.

In all probability the diabetes in such a case existed in mild form for a number of years before the beginning of noticeable symptoms. At the time of initial treatment, the decline of health and strength was becoming rapid. The benefit usually felt when diabetes is checked by diet was about balanced by the undernutrition imposed, so that the patient feels about the same as before treatment. He still carries the full work devolving on him as a prominent lawyer, which he probably could not have done if the diabetes had continued unchecked; but he remains thin, weak, and subjectively unimproved. The chief claim to be made for treatment lies in the prognosis, which can generally be considered good at this age. Overfeeding to the point of marked hyperglycemia and glycosuria damages the prognosis in such a case without building up strength. On the other hand, insistence on rigidly normal blood sugar, necessary in youthful cases, is here unnecessary. For the sake of strength the diet has been pushed to the point of moderate hyperglycemia, and there is hope of falling blood sugar and rising tolerance with time. Though there have never been any symptoms of acute danger, the reason for calling this fairly severe diabetes is the low tolerance, which in six months has not permitted raising the weight above 119 pounds.

SEVERE DIABETES IN MIDDLE LIFE

CASE 4 (25).—*History.*—A man, aged 43, unmarried, wholesale liquor dealer, admitted, Aug. 4, 1919, whose father died with diabetes at 77, whose mother was well at 72, and who had two brothers and four sisters who were well, and one brother who had epilepsy, stated that mild childhood infections, and gonorrhea at 20, had been his only illnesses. He had eaten three ordinary meals a day and a lunch every night, and was guilty of no excesses in food, alcohol or tobacco. He had always been thin, with an average weight of 115 pounds. In 1917 he experienced loss of weight without other symptoms, and a physician diagnosed diabetes. A diet low in carbohydrate without restriction of protein and fat kept sugar absent for six months, but glycosuria had been present most of the time since, and he had suffered from weakness, loss of weight, polydipsia, polyuria, nervousness, dental caries and inflammation of the gums.

Physical Examination.—The patient's height was 5 feet, 2½ inches, and weight 86 pounds. He was delicate and nervous in appearance, but did not present acute symptoms. The teeth showed much repair, and though scrupulous cleanliness had been maintained by frequent washes and a dentist's care, the gums were everywhere red, very dry, and covered with small, superficial ulcers. There was slight dulness of both lung apexes anteriorly and posteriorly, but no active signs of tuberculosis. Knee-jerks were absent. The blood pressure was 84 systolic and 66 diastolic.

Treatment.—Fasting, with the usual clear soup, bran, and agar jellies was begun at entrance on the morning of August 4. The plasma sugar on the morning of August 5 was 0.350 per cent. With continuous fasting to August 12, the urine still showed slight sugar and nitroprussid reactions. There were no signs of danger, and the plasma bicarbonate remained high. The weight had risen by water retention to 89½ pounds. August 13 and 14, a diet of 30 gm. of protein and 135 calories was given. The remaining traces of glycosuria then ceased with a single fast-day, August 15. The plasma sugar was then 0.231 per cent., and the carbon dioxid capacity 69.2 per cent., with nitroprussid reactions positive in the urine but negative in the plasma. August 16, a diet of 10 gm. of protein was begun, increased by 10 gm. daily. Glycosuria appeared with 50 gm. of protein, August 20, and continued on reduced diet, so that fasting was necessary August 23 and 24. An increasing protein diet was again attempted, and glycosuria appeared with 60 gm., August 30. After a fast-day, the plasma sugar on the morning of September 1 was 0.208 per cent. On that day a diet of 60 gm. of protein and 900 calories produced glycosuria, which required two fast-days, September 2 and 3, to stop. On the morning of September 4 the plasma sugar was 0.106 per cent. As such

a rapid fall under such circumstances may be a sign of serious weakness, the diet of 60 gm. of protein and 900 calories was resumed, with the result of slight glycosuria and on the morning of September 6 a plasma sugar of 0.288 per cent. A single fast-day, September 7, brought another sharp drop of the plasma sugar to 0.120 per cent. on the morning of September 8. Thereafter a diet of 30 gm. of protein and 500 calories was tolerated without glycosuria and with only occasional traces of nitroprussid reactions, but the plasma sugar, September 15, was up to 0.238 per cent. It fell by September 20 to 0.120 per cent., and after a fast-day, September 21, to 0.086 per cent. September 22. The diet was then increased to 50 gm. of protein and 700 calories, and by September 27 the plasma sugar had risen to 0.165 per cent. After a fast-day, it was down to 0.130 on the morning of September 29. Though the patient appeared scrupulously faithful and, furthermore, was under close observation, it was deemed prudent to make sure whether his diabetes was actually so severe or whether there was any smuggling or deception. Accordingly, September 29, Dr. Jacobsen[6] performed a protein test, and it was found, with the patient sitting constantly in the laboratory, that the ingestion of 50 gm. of protein in beefsteak sufficed to raise the plasma sugar to 0.203 per cent. in six hours.

Continued undernutrition, in the form of a diet of 50 gm. of protein and 800 calories, with weekly fast-days, reduced the plasma sugar to 0.079 per cent. on the morning of October 13. About this time the body weight reached its lowest level of 69 pounds. The patient, though very feeble, was always out of bed several hours a day. An increase to 60 gm. of protein and 1,000 calories was now tolerated without hyperglycemia. The diets up to this point had consisted strictly of protein and fat, without thrice-cooked vegetables or any possible source of carbohydrate other than a few bran biscuits. October 20, it was possible to proceed to a diet of 60 gm. of protein, 5 gm. of carbohydrate and 1,200 calories. November 1, the patient was discharged on a diet of 70 gm. of protein, 10 gm. of carbohydrate and 1,500 calories; also the weekly fast-days were mitigated by an allowance of 20 gm. of protein and 5 gm. of carbohydrate. The plasma sugar was 0.118 per cent. The weight was 73 pounds, and the patient was up all day and able to take walks.

Subsequent History.—The patient returned to his home in another state, and was able to carry on his private affairs, though remaining practically an invalid. He came back for examination, December 12, with his general condition as at discharge, though distinctly stronger. Sugar and nitroprussid tests were negative in the urine, and the plasma sugar taken at 10:30 a. m. was 0.152 per cent. This figure, during digestion of breakfast and under the stress of traveling, was regarded as a basis for continuing the same diet.

Even in the absence of acute symptoms at admission, the severity of the diabetes makes it probable that it would cause early death if not controlled. The severe measures used were necessary for controlling such a case. When the last traces of glycosuria are unduly persistent, the initial fast may profitably be interrupted by a few days of low protein diet. The subsequent program consists in feeding chiefly protein to keep up the strength as well as possible, while waiting for undernutrition to lower the weight and raise the tolerance. The undernutrition may thus be carried to a point which might otherwise be dangerous, though in such desperate cases it is always necessary to be on the watch for threatening collapse. The skilful use of soup, coffee, agar, bran, celluflour[7] and other materials of little or no food value is an important aid against suffering from hunger. The result in this case was as good as could be expected under the conditions. The teeth and gums were quickly brought to normal, and the trouble from diabetes is now limited to emaciation and weakness. The patient is comfortable as a semi-invalid, and much pleased with his present feelings as compared with the former state of active diabetes. The question remains open how long this condition can be maintained.

6. Jacobsen, A. T B: Am. J. M. Sc., to be published, Case 5.
7. An indigestible cellulose flour, still on a somewhat experimental basis, produced by the Dietetic Cellulose Laboratory, 2557½ West Chicago Avenue, Chicago.

POTENTIALLY SEVERE DIABETES IN YOUNG ADULT

Case 5 (70).—*History.*—A man, aged 28, married, carpenter, admitted, Oct. 6, 1919, whose parents were living and well, knew of no heritable disease in the family. Three brothers and two sisters of the patient died in infancy of unknown cause. His wife and two children were well. He had measles, mumps, chickenpox, whooping cough and diphtheria in childhood. Then he was well until 1912, when he had severe typhoid with three relapses, being dangerously ill in bed for fourteen weeks. Since then he had had vague umbilical and lumbar pains about once a week, not related to meals, which came on especially if he maintained a stationary position, and were relieved by exercise. Jaundice or clay-colored stools were never noticed. He had had regular habits and had eaten heartily in his occupation as a carpenter, chiefly at outside work. He reached his highest weight of 160 pounds during convalescence from typhoid, and thereafter maintained an ordinary weight of 145 pounds. Three weeks before admission his weight was found to be only 137 pounds; he had a severe acute rhinitis with headaches, followed within two days by distinct onset of polyphagia, polydipsia and polyuria. The physician, who was called immediately, diagnosed diabetes, but prescribed lax diets, largely of milk and eggs, on which active symptoms and loss of weight continued.

Physical Examination.—The patient's height was 5 feet, 9¼ inches; his weight, 126 pounds. He was tanned and muscular, and appeared healthy except for moderate thinness. There was marked cervical adenopathy. The knee-jerks were normal. The examination was otherwise negative.

Treatment.—Glycosuria ceased with two days of fasting, while the slight ketonuria increased. From an original 0.357 per cent. the plasma sugar fell rapidly to normal and remained so on a diet of protein alone, beginning with 30 gm. and increasing to 70 gm. October 13, the diet was made 70 gm. of protein, 20 gm. of carbohydrate and 1,200 calories, and increased, October 20, to 70 gm. of protein, 40 gm. of carbohydrate and 1,500 calories. The plasma sugars before breakfast ranged from 0.100 to 0.114 per cent., but one reading taken two hours after lunch was 0.187 per cent. Nevertheless, as the patient was in a hurry to leave, he was discharged, October 26, in the hope that he would improve further.

In the short hospital period he had not become sufficiently impressed with the necessity of exactness, and at home committed several minor indiscretions which caused glycosuria; and though this was checked by fasting and reduced diet, the plasma sugar remained high, and he was therefore readmitted to the hospital, November 27.

Injury to the tolerance was evident, for on a diet of 30 gm. of protein and less than 300 calories the plasma sugar fell slowly to 0.172 per cent., December 1, and 0.110 per cent., December 6. It remained thoroughly normal while the diet was gradually built up through the ensuing weeks to 70 gm. of protein, 30 gm. of carbohydrate and 1,650 calories, on which the patient was dismissed, January 22, weighing 128 pounds.

The pancreatic damage probably dates from the typhoid infection. Glycosuria presumably began some time between this and the first observed diabetic symptoms. The severity of the diabetes was still moderate at admission, but relapse was quick owing to the slight impression made by a short hospital period. The instruction in testing the urine for sugar proved important, as an effectual danger signal was thus given. The longer second period in the hos-

pital established a safer condition on a higher diet. The weight is lower than at admission, but stationary instead of falling. The patient is strong enough to work, but the caloric requirements of manual labor constitute a problem in a case having the elements of severity.

THE EARLY STAGE OF INHERENTLY SEVERE DIABETES IN YOUTH

CASE 6 (61).—*History.*—A youth, aged 19, a dealer in antiques, unmarried, admitted, Oct. 3, 1919, whose mother and one aunt had diabetes, had a healthy life and excellent habits. There was slight obesity. He had measles in childhood, malaria three years before admission, and influenza in the fall of 1918. During the first week of September, 1919, he noticed onset of weakness, polyphagia, polydipsia and polyuria. After steady loss of weight, he consulted a physician, September 25, who discovered heavy glycosuria and prescribed a carbohydrate-poor diet. Glycosuria rapidly diminished so that only a trace was present at admission.

Physical Examination.—The patient's height was 5 feet, 6 inches, and weight, 143 pounds. The patient appeared in good health and nutrition, and normal to all examinations.

Treatment.—After one day of fasting, glycosuria was absent and the plasma sugar was 0.134 per cent. The first day's diet was only 10 gm. of protein, increased by 10 gm. daily to 60 gm., October 8. The urine showed slight to moderate nitroprussid reactions during this time. Carbohydrate was then added, first 10 gm., increased to 40 gm., so that by October 11 the nitroprussid test was negative. The plasma sugar before breakfast, October 13, was 0.106 per cent. Up to this point fat had been so strictly excluded that the highest diet had not been above 500 calories. Fat was now introduced to make 1,000 calories, and increased by October 20 to 1,500. The occasional faint nitroprussid reactions thus produced were ignored. The highest plasma sugar observed was 0.149 per cent. during digestion in the afternoon. The patient was discharged, October 24, on a diet of 70 gm. of protein, 40 gm. of carbohydrate and 1,500 calories. His weight was then 136½ pounds.

Subsequent History.—The patient resumed his regular work and was strictly faithful to diet. The urine remained normal except for occasional faint nitroprussid reactions, but there was difficulty with the blood sugar, such as is frequently encountered shortly after patients return home. In samples taken forenoons during digestion, the highest plasma sugar found was 0.192 per cent., and the lowest 0.150 per cent. The diet was therefore reduced to 60 gm. of protein, 20 gm. of carbohydrate and 1,200 calories, with weekly fast-days. The body weight has thus fallen to 130 pounds, but the plasma sugar does not exceed 0.14 per cent. It will be required to remain below this level during digestion of all meals, and below 0.12 per cent. fasting, even if more weight has to be sacrificed. The patient meanwhile continues his regular work, looks distinctly thin, is a little below full strength and not completely satisfied in his appetite, but never suffers actual hunger.

It is hoped that a diet of 1,500 calories may soon be tolerated; but it is believed that the case represents the early stage of inherently severe diabetes, and that any overfeeding which would give an appearance of increased well-being at the price of hyperglycemia would prove disastrous. A longer period of hospital treatment would have been advantageous. The principal lesson, however, is the strict care which is necessary even in an incipient case, and the irremediable downward progress that would result from depending on urine examinations and ignoring the signs of overtaxed function evident in the blood.

JUVENILE DIABETES IN STAGE OF MODERATE SEVERITY

CASE 7 (44).—A boy, aged 5, admitted Aug. 31, 1919, whose parents and two brothers were well, though both grandfathers and the paternal grandmother had diabetes, had always been a vigorous, active child, plump but not obese. Measles at 3 years had been the only illness. He was not subject to colds or tonsillitis and indulged in no excesses in sweets. He had an infected wound of the face in May, 1918. Jan. 12, 1919, his mother noticed polyphagia, polydipsia and polyuria, and found that his weight had diminished by 2 pounds. The physician found 7 per cent. glycosuria, and treatment was begun at once. A two day fast produced sugar freedom, and carefully restricted diets were used thereafter, but glycosuria kept returning at frequent intervals. The weight at onset was 38½ pounds, and it had increased to 42½ pounds. During the last month glycosuria had occurred every few days, and the patient was referred for treatment on this account.

Physical Examination.—The patient was a well developed, handsome child, apparently in perfect health and nutrition. He had left cervical adenopathy, supposedly the result of the face wound. The knee-jerks were normal and the Wassermann test negative. Examination was otherwise negative.

Treatment.—The urine was free from sugar, but showed continuous heavy nitroprussid reactions. The plasma sugar before breakfast was 0.120 per cent. September 1, a diet of 50 gm. of protein was begun, and from September 2 an addition of 10 gm. of carbohydrate was made daily, while fat was excluded as far as convenient. September 9, glycosuria appeared with 80 gm. of carbohydrate, while slight nitroprussid reactions still persisted. No fasting was imposed, but the foregoing program was repeated, and glycosuria returned when the increase of carbohydrate reached 60 gm. September 16, the nitroprussid reactions had become faint. A diet was then begun of 60 gm. of protein, 45 gm. of carbohydrate and 600 calories, with weekly fast-days. The plasma sugar, September 20, was 0.102 per cent. As a skilled diet nurse was available, the parents were allowed to take the child home at this stage. The weight was 39 pounds.

Subsequent History.—September 28, the plasma sugar before breakfast was 0.15 per cent. Unduly high figures continued thereafter, notwithstanding a temporary reduction of diet to 40 gm. of protein, 20 gm. of carbohydrate and 450 calories. Attention was then given to the fact that the office visits involved a long automobile ride from the home in the country, with some attendant excitement; and by keeping the child over night at the hospital, normal sugar values have been obtained both fasting and during digestion. The nitroprussid tests are continuously negative. The child holds an even weight, 3 or 4 pounds below that at admission. He still looks well and is active, but yet is weaker as well as thinner than when received, and the fast-days are especially depressing. The diet is now being gradually increased, and gain of strength is to be expected if a sufficient ration can be tolerated.

The physician in charge had succeeded in keeping this child in an appearance of perfect health and strength during one year of diabetes, and also the plasma sugar before breakfast was normal. The overprosperous appearance had been maintained by the liberal use of fat. The tolerance had now fallen so that glycosuria was increasingly frequent from the small quantities of carbohydrate employed. At the same time there was marked continous ketonuria, even though the plasma bicarbonate was still normal. Continuance of the high fat diet involved three possibilities: If the carbohydrate should be diminished, the acidosis would increase; if the carbohydrate should be continued the same, the increasing glycosuria would soon bring still greater acidosis; if the carbohydrate should be increased, it would give a temporary diminution of acidosis at the price of a rapid breakdown of assimilation followed by the most dangerous acidosis of all. Therefore the program adopted was to exclude fat, to give 50 gm. protein for maintaining strength, and to take advantage of the increased tolerance gained by undernutrition for the purpose of pushing

carbohydrate so as to abolish acidosis. This result was slow and difficult to attain, because the excess in fat had been so long. The only benefit of the treatment to date has been the clearing up of glycosuria and acidosis, at the price of a certain amount of weight and strength.

The expectation now is to add to the diet so far as possible without a return of hyperglycemia or ketonuria. Some degree of thinness is inevitable from the nature of diabetes, but the family, especially the mother, hold the ideal of a fat child. Though the child does not now appear pathologically thin to a casual observer, this insistence on fattening is likely sooner or later to ruin the entire result in this case.

This case is presented as illustrating some of the practical difficulties of treatment. A diabetic child is not a well child and is often irreparably injured by the attempt to keep it appearing like a well child. Without hazarding a prediction of the ultimate outcome, there is now firm basis for two assertions concerning the possible benefits of thorough treatment of juvenile cases from the earliest stage: first, the three year limit of life no longer holds; second, comfort and happiness are greater than when active diabetic symptoms are permitted. As the diabetes is not cured, these benefits are purchased at a price. For the child, this is continuous undernutrition corresponding to the severity of his diabetes. For the household, the presence of an ailing child who is known to be incurable, the constant exact care of the diet or the keeping of a nurse for the purpose, and the nervous tension associated with the various vicissitudes and tests, constitute a serious burden. Obviously, this is no worse than the situation existing with many forms of chronic disease. With mothers of the old-fashioned type, it is possible for the child to receive correct care for an indefinite period with little disturbance of the home life. Some records of favorable progress and longevity, illustrating the brighter possibilities of juvenile diabetes, may be published later.

Half-measures are hopeless in children. It is fair to ask that those who believe in high diets should follow them consistently, and not merely through the mild stage when temporary weight and comfort are so easily maintained at the price of irremediable injury and subsequent suffering. If thorough control of the diabetes is the policy chosen, normal urine and blood should be insisted on from the time of the earliest diagnosis, for only thus can the best prognosis along with the best lasting nutrition be attained.

SEVERE JUVENILE DIABETES

CASE 8 (23).—*History.*—A schoolboy, aged 15, admitted Aug. 5, 1919, with family and personal history negative, had always been fat, while both parents were spare built. In January, 1918, it was first noticed that he was losing weight. He was taken from school and given abundance of milk and nourishing food; intense polyuria and polydipsia developed. The curious feature was that several urinalyses by the family physician and one by a commercial laboratory were reported negative, and no diagnosis was made until, in May, 1919, failing vision sent him to an oculist, who diagnosed double diabetic cataract and referred him to a consultant, who found 4 per cent. glycosuria. The weight, which had originally been 96 pounds, remained above 75 pounds up to this time, and then began to fall rapidly. Finally the patient was taken to a hospital in desperate condition, July 14, and subjected to fasting, but sugar-freedom was found difficult and heavy glycosuria returned with every attempt to feed. In consultation, July 31, there were found heavy sugar, nitroprussid and ferric chlorid reactions in the urine, blood plasma creamy with fat, plasma sugar 0.441 per cent., and carbon dioxid capacity 68 per cent. by volume. The last figure was largely explained by the use of alkali; the plasma gave a heavy nitroprussid reaction. Weakness and emaciation were extreme but not actually critical. Alternation of fasting and very low protein diet was advised. The patient was transferred, August 4.

Physical Examination.—The boy's height was 5 feet 6¾ inches, his weight 66 pounds. Except for emaciation, cataracts and absent knee-jerks, examination was negative.

Treatment.—The urine at admission showed only slight sugar and nitroprussid reactions. The plasma sugar was 0.410 per cent., the carbon dioxid capacity 76.8 per cent. by volume. There was no visible lipemia, and only a faint nitroprussid reaction in the plasma. Notwithstanding the serious weakness, fasting was continued from August 4 to 12, with only thin soup, coffee and agar jelly, bran being omitted for fear of its possible carbohydrate. The renal permeability was peculiar, for while only traces of glycosuria, too small to titrate, were present at admission with plasma sugar of 0.410 per cent., these traces continued with plasma sugar, August 12, of 0.259 per cent. August 13 and 14, 30 gm. of protein and whisky to make 300 calories were given daily, with resulting gain of strength and fall of the plasma sugar to 0.205 per cent. A trace of glycosuria was still present, but ceased on fasting with whisky, August 15. The same program was continued, August 16. Whisky was then stopped, and protein alone given, August 17, 20 gm.; August 18, 30 gm.; August 19, 40 gm. Slight glycosuria then resulted, with plasma sugar of 0.250 per cent. It was then attempted to keep the protein at 25 gm. and increase calories with fat to 600; but glycosuria with plasma sugar of 0.268 per cent. resulted, August 23. With a single day of fasting and whisky, August 24, the plasma sugar fell to 0.188 per cent. A diet of 15 gm. of protein and 400 calories was then given for a week, and, August 31, the first fast-day without glycosuria was given; the plasma sugar before it was 0.192 per cent., and after it 0.150 per cent. The same diet with weekly fast-days was continued, and the plasma sugar after the fast-day of September 7 was 0.127 per cent., and after the fast-day of September 14 it reached the normal level of 0.115 per cent.

The diet was gradually increased to 30 gm. of protein and 700 calories, without glycosuria and with only faint traces of ferric chlorid reactions, notwithstanding the strict exclusion of carbohydrate. In spite of the long undernutrition, the weight tended to rise by invisible water retention, and, October 15, reached its highest point of 72½ pounds. The strength improved correspondingly, and the boy was out of bed all day. Also, October 3, the more advanced cataract was uneventfully removed, and no retinitis found behind it. The clear vision of one eye in place of the former almost complete blindness contributed most of all to the patient's happiness. But the plasma sugar after the fast-day of October 12 was up to 0.192 per cent., and the calories were therefore reduced to 500, leaving the protein at 30 gm. After October 20, 5 gm. of carbohydrate was given daily. The plasma sugar before breakfast, October 25, was 0.155 per cent.; after the fast-day of October 26, it was 0.125 per cent. It was 0.097 per cent., October 31, and the diet was therefore increased to 30 gm. of protein, 10 gm. of carbohydrate and 600 calories. The plasma sugar was 0.12 per cent. on the morning of November 10, but gradually rose to 0.174 per cent., November 19. The carbohydrate was therefore diminished to 5 gm. On this diet, plasma sugars before breakfast were obtained as follows: November 29, 0.139 per cent.; December 5, 0.128 per cent.; December 10, 0.142 per cent. With a view to improving strength, the diet was changed to 40 gm. of protein and 600 calories, and later increased to 50 gm. of protein and 650 calories. This regimen has continued to the present. The plasma sugars have held about the same slightly elevated range of values as stated. Even on salt-free diet to remove edema, the weight has not fallen below 67 pounds, which is 1 pound above the entrance weight. Both sugar and nitroprussid reactions are continuously negative in the urine.

Unfortunate delays in the diagnosis of diabetes are still encountered even among practitioners of good repute, but are becoming less frequent. The damage in such a case is irreparable. The boy remains emaciated, weak and always more or less hungry. It is inconceivable that he should live to maturity, and during life he is cut off from practically all normal pursuits. Favorable features in his treatment may be thus enumerated: Actual suffering from hunger is prevented by the use of materials to furnish bulk (bran, agar, celluflour, "India gum," liquid petrolatum, soups, small quantities of thrice boiled vegetables), without which such low diets would scarcely be practicable. The boy has become strong enough to keep the average hours of a normal boy, and to go walking or riding every day, his pedestrianism amounting to 6 or 8 blocks without weariness.

Operations may be performed with safety, and wounds heal well when diabetes is controlled even at this extreme stage; therefore the sight of one eye could be restored and the same can be done for the other at the proper time. Having exceptional artistic talent, the boy now is able to keep himself constantly amused with drawing and painting. He has a naturally cheerful disposition, and though an invalid, his continuous enjoyment of life is genuine and not pretended.

Such cases suggest the possibilities open when thorough treatment is employed from the earliest stages.

SUMMARY

A possible form of low-calory diet after fasting is one composed wholly or chiefly of protein, and this plan has seemed to be most useful for maintaining strength during the period of undernutrition necessary for attaining a normal blood sugar. In some elderly patients slight hyperglycemia and nitroprussid reactions may be permissible to avoid undue hardships, but diabetes after the age of 40 is by no means always benign, and not infrequently requires stringent measures to control it, especially after long neglect. The more severe the diabetes and the younger the patient, the more rigorously should hyperglycemia and all other symptoms be controlled from the outset. Such a policy often means a considerable reduction of weight and strength as compared with the level which can be maintained temporarily by higher diets, and its justification depends on the belief that patients are best off in the long run when their weakened function is spared as thoroughly as possible.

5 East Fifty-First Street.

Alcoholic Hair Tonics.—Assurance of 100 per cent. cooperation in the enforcement of the prohibition laws were given by representatives of the barbers' supply and perfumes trade organizations at a hearing before Prohibition Commissioner John F. Kramer and officials of the Bureau of Internal Revenue to discuss ways and means for rendering certain alcoholic preparations now on the market undrinkable. After Jan. 16, 1920, the date the national prohibition act becomes effective, such preparations cannot be legally manufactured or sold if fit for beverage purposes. Dr. A. B. Adams, chief chemist of the Bureau of Internal Revenue, declared there are on the market many hair tonics whose principal ingredient is alcohol and that they are hair tonics in name only. Such preparations must be modified to conform to the law. The bureau has under consideration a requirement that in the manufacture and sale of bay rum there be added a quarter of a grain of tartar emetic for each fluidounce.—*United States Bull.*, Dec. 8, 1919.

THE FEEDING OF NORMAL INFANTS DURING THE SECOND YEAR

JOHN LOVETT MORSE, A.M., M.D.
Professor of Pediatrics in the Medical School of Harvard University
BOSTON

Whether or not it has been nursed or fed artificially, a baby, when it is a year old, will be taking, in most instances, whole milk or whole milk with a cereal diluent. If it follows the present fashion, it will almost certainly be receiving orange juice in addition. It will probably be taking some of the simple cereals and perhaps broth and beef juice. If it is being fed properly, it will not, in my opinion, be given anything else.

NEED OF CEREALS AFTER FIRST YEAR

If the baby is not getting cereals when it is a year old, they should be given at once. The simplest and most digestible cereals are barley jelly, oat jelly and farina. They should be given at the beginning of two feedings daily with milk and salt, but no sugar. Cream should never be given to babies, and sugar is unnecessary. It is idle, of course, to say that a little sugar will do harm. Almost all babies and children are, however, fond of sugar, and the tendency of almost all children is to take more sugar and sweets and to refuse foods that are not sweet or sweetened. The most common cause of indigestion in childhood is sugar and its products. If the baby is taught from the first to eat things without sugar, it learns to like them in this way and, as it grows older, is willing to eat proper food. Much trouble in the future is thus avoided if babies are never given sugar or sweet foods. Cream of wheat, Ralston and rice may be given after a few months, and it is not necessary to strain the oatmeal after the baby is 18 or 20 months old. Cereals that are not cooked in the house and the sweet cereals should never be given to babies.

BROTH AND BEEF JUICE

If the baby is not already receiving broth and beef juice, these should be given at the beginning of another feeding when the baby is a year old or soon after. Chicken and lamb or mutton broth are much more digestible than beef broth. Not more than 4 ounces should be given at a feeding, because of the danger of "filling up" the baby and destroying its appetite for more nutritious food, the value of clear broth being practically nil. The expressed beef juice is far preferable to any other form. Not more than 2 teaspoonfuls should be given at first, and never more than 2 ounces before the end of the second year, because beef juice makes many babies nervous and sleepless. It must not be forgotten in this connection that the nutritive value of beef juice is only about half that of an equal quantity of milk.

ZWIEBACK, BREAD AND RICE

A month or two after broth and beef juice have been started, zwieback, bread crumbs and rice should be given in them. If the baby has a sufficient number of teeth to enable it to chew properly, it may be given zwieback, toast bread, stale bread or plain white cracker "in its hand" to eat after one or more feedings. It should never be given these things between feedings, because it is of great importance for the baby to acquire early the habit of eating only at meal times.

Bread and crackers may also be given in milk or in the form of milk toast or cracker milk toast in place of, or in addition to, the cereal at the last meal of the day.

LAXATIVES

It is probably advisable, although not usually necessary, to continue the orange juice, especially if there is a tendency to constipation. If there is, prune juice or pulp and baked apple may be given instead of, or in addition to, the orange juice. The orange juice should be given an hour before some feeding, and prunes and baked apple at the end of some feeding.

Plain boiled macaroni, preferably riced, may be added to the diet at 15 or 16 months. At this time, or a little earlier, the milk at the midday meal may be given in the form of junket or plain blanc mange. It is most unwise, I believe, to begin potatoes before the baby is a year and a half old. Throughout infancy they should be given only when baked, and then sparingly. There is apparently no other form of starch so hard for the baby to digest and so likely to cause fermentation.

THE USE OF EGGS

It is also unwise, in my opinion, to give eggs before the baby is eighteen months old. Half an egg may then be given once or twice a week, and a little later a whole egg three times a week. In my experience, few babies can take more without being disturbed. If babies can take eggs without disturbance, a number of other articles that are made with eggs can then be added to their diet. These are baked custard, rice pudding and bread pudding. Eggs should be given to babies coddled, soft-boiled, dropped or poached and in no other ways.

MILK AS THE BASIS OF DIET

Milk should form the basis of the diet during the second year, and an important part of the diet for several years longer. It is probably wise to limit the amount of milk to a quart daily. This quantity provides enough nourishment to cover a considerable part of the caloric needs. If more is taken, it is likely to destroy the appetite for other articles of food.

MEAT AND GREEN VEGETABLES

The diet outlined above is all that is necessary or advisable for the average, normal infant up to the end of the second year. At this time I add meat to the diet and sometimes green vegetables. Ordinarily, however, I wait some months longer before adding the green vegetables. The most easily digested meats are the white meat of chicken, lamb chop and scraped beef. These are, therefore, given first. The most easily digested vegetables are, in my experience, spinach, string beans, peas, asparagus and stewed celery. The spinach, string beans and peas should always be rubbed through a sieve or a colander. Carrots are much less digestible and should always be mashed. My subject, however, is the diet of the normal infant during the second year, and infancy ends with the close of the second year. I must not, therefore, further consider any articles of diet that, as I believe, should not be given until infancy is passed.

THE LIBERAL DIET

I am well aware that the diet which I have outlined is old fashioned and that many, perhaps the majority, of pediatricians and practitioners feed much more liberally. I know that many give green vegetables to babies that are artificially fed when they are only 6 months old. Some of them may give them also to breast-fed babies. I do not know. I know that many give eggs and meat at a year and feed babies of 2 years more liberally than I would feed children 4 or 5 years old. Why is it that so many pediatricians feed babies so much more liberally than was the custom some years ago? Are there any good reasons for the change, or are they blindly following a new fashion? Do the babies do any better when they are fed so liberally, or do they thrive better when they are fed simply? If they do better on one system than the other, why do they? If they do not, why do they not? Ought those who feed simply to adopt the newer and more liberal methods, or ought those who feed so liberally go back to the simpler methods of their elders?

It is very difficult to answer these questions on the basis of clinical experience. My own experience has been that babies thrive on the simple diet that I have outlined. The not inconsiderable number of babies brought to me because they are not thriving on the liberal diets prescribed by other pediatricians convinces me that some babies, at least, do not do well on these liberal diets. These babies do well, however, when given simple diets, which would seem to show that the simple diet is better and that the babies which do well on a liberal diet do so in spite of the diet rather than because of it. I have no doubt, on the other hand, that other men may have seen babies which were not doing well on the simple diets prescribed by me and which did well at once on the more liberal diets that they ordered. They would, of course, draw entirely different conclusions from their experience than I would from mine. Would either of us, neither of us or both of us be justified in our conclusions? I am inclined to think neither of us.

WHAT NATURE TEACHES US

Does Nature teach us anything of value as to the solution of this problem? Very little. As Nature provides a supply of breast-milk sufficient under normal conditions for the needs of the baby for nearly a year, it seems evident that Nature did not intend breast-fed babies to have eggs, meat and green vegetables when they were 6 months old. Nature teaches us nothing, however, as to what the baby should eat after it is a year old or what an artificially fed baby should have to eat during the first year, except the general indications afforded by the composition of human milk. These are that the baby's digestive powers are best fitted to take care of a dilute food relatively high in fat and carbohydrates and relatively low in proteins, with the protein in an easily digestible form. It would seem reasonable on the basis of these indications to believe that artificially fed babies should be given a simple diet along these lines rather than a diet that makes demands on the digestive powers for which they are apparently not fitted. We are, nevertheless, not justified in drawing too definite conclusions as to what indications Nature gives us as to the feeding of babies, as is shown by what we know of starch. There is no starch in human milk, and it would seem, therefore, as if a baby could not digest starch. Nevertheless, we have found that the power of starch digestion is well developed at birth, and that babies have no disturbance of digestion when mod-

erate amounts of starch are added to their foods. We must be careful, therefore, in drawing conclusions from what Nature seems to teach us as to the artificial feeding of babies.

IS THE SIMPLE DIET SUFFICIENTLY NUTRITIOUS?

Rather than to attempt to prove at once that the simple diets are preferable to the more liberal, it seems to me better first to ask what arguments those who believe in the liberal diets are likely to advance in their favor. It seems to me that they may claim that the simple diet is not sufficiently nutritious; that it does not contain a sufficient amount of certain elements, such as vitamins and salts, necessary for the well-being and development of the baby, and that it tends to the development of constipation, while their liberal diet corrects all the deficiencies of the simple diet. They certainly cannot claim that the liberal diet is more digestible than the simple diet. It is self-evident that it is not, and it must be admitted without question that whatever advantage there may be in easy digestibility lies with the simple diet.

Let us take up first the nutritiousness of the diet; that is, its caloric value. The caloric needs of the average baby of a year are at a liberal estimate not over 1,000 calories daily and of a baby of two years not over 1,200 or 1,300 calories. The quart of milk which is recommended in the simple diet provides 670 of these calories. Two or three tablespoonfuls of cereal, a slice of bread and the juice of an orange will bring the total up to 1,000 calories. If there is no lack of calories in the simple diet at the beginning of the first year, there will certainly be no lack later, when the diet is increased. The protein needs of babies in their second year vary between 20 and 30 gm. daily. A quart of milk contains 34 gm. It is evident, therefore, that the simple diet outlined amply provides for the caloric needs of babies in the second year and more than covers their protein needs.

THE VITAMINS

Now as to the argument that the simple diet may not contain enough vitamins, or accessory food factors: The fat of milk contains an abundance of the fat soluble A. If a baby takes a quart of milk daily, it will have no lack, therefore, of this element. Milk is also rich in the water soluble B. A baby that takes a quart of milk will thus also be amply provided with this element. It will, moreover, get a certain amount of these elements in its other food. Judging from the fact that babies grow satisfactorily on an exclusively milk diet during their first year, it seems reasonable to believe that milk contains a considerable amount of the hypothetic growth vitamin. A quart of milk daily will presumably furnish enough of this in the second year. Milk is known to be low in antiscorbutic power. Nevertheless, a pint of milk contains enough antiscorbutic element to prevent the development of scurvy during the first year. A quart of milk would be expected to furnish enough during the second year. If the baby is taking orange juice, moreover, the question of the antiscorbutic power of the rest of the diet will never arise.

MINERAL SALTS

The salts which may reasonably be considered in this connection are those of calcium, phosphorus and iron. The average amount of calcium retained by infants is between 0.17 and 0.18 gm. daily. One liter of cow's milk contains from 1.65 to 1.98 gm. of calcium oxid.[1] Other figures given are that infants require 5 grains of calcium daily, and that a quart of milk contains 22 grains.[2] Next in calcium content come eggs; then the cereals, especially rice; then some of the vegetables, such as radishes, asparagus and spinach. Foods poor in calcium are meat, fish, bread, fruits and potatoes. It is evident, therefore, that the baby that gets milk will not suffer for lack of calcium. Furthermore, eggs and cereals contain more calcium than do the vegetables.

Milk contains so much more phosphorus than the baby can possibly utilize that it is not necessary to consider this element further.

I have been unable to find any figures as to the needs of babies for iron. A liberal estimate of the adult's need of iron is 0.015 gm. daily. Taking the average weight of the adult as 150 pounds and that of the average baby between 1 and 2 years of age as 25 pounds, the infant's requirement will be one sixth of the adult's, or 0.0025 gm. daily. Milk is a food notoriously low in its iron content. Nevertheless, a pint of milk contains 0.0009 gm. of iron, and a quart 0.0018 gm. of iron, or more than two thirds of a baby's daily needs. An ounce of beef juice contains 0.00198 gm. of iron. The value of this iron is, however, probably not as great as it would seem to be, because the iron contained in hemoglobin and its derivatives is very poorly absorbed. The yolk of an egg contains 0.0015 gm., three tablespoonfuls of cooked cereal 0.0009 gm. and one and one-third slices of bread 0.0003 gm. of iron. It is quite evident, therefore, that the baby taking the simple diet will not lack for iron. Furthermore, the iron content of the green vegetables is not as great as would seem from their color. An ounce of fresh spinach contains 0.00094 gm. of iron; 1 ounce of string beans, 0.00047 gm.; and 1 ounce of carrots, 0.00023 gm. These figures have been calculated from the tables given by Carter, Howe and Mason.[3] Moreover, it would seem more reasonable, provided the simple diet did not contain enough iron, which it does, to give the baby some preparation of iron than to take the chance of upsetting the baby's digestion by giving green vegetables. The argument which may be raised by some that the iron in the green vegetables, being organic, would be better utilized is erroneous, because it has been conclusively proved that organic and inorganic iron are equally well utilized.

THE NEED OF BULK

Now as to the question of constipation: It is true that green vegetables act as laxatives by increasing the bulk of the intestinal contents and perhaps also by certain irritating elements stimulating intestinal peristalsis which they may contain. Bulk is not lacking, however, in the simple diet, for milk provides a considerable residue. Orange juice, prune juice and baked apple are as good laxatives as green vegetables and less likely to disturb the digestion. There is, therefore, not likely to be any necessity for the use of the green vegetables for the relief of constipation.

1. Morse and Talbot: Diseases of Nutrition and Infant Feeding, New York, the Macmillan Company, 1915.
2. Hutchinson: Food and Dietetics, New York, William Wood and Co., 1917.
3. Carter, Howe and Mason: Nutrition and Clinical Dietetics, Philadelphia, Lea and Febiger, 1917.

THE SIMPLE DIET VINDICATED

The arguments that it was thought might be advanced by the believers in the liberal diets against the simple diet in favor of the liberal diets have, therefore, no basis in fact. What other explanation can there be of the present tendency to increase the diet so rapidly during the latter part of the first and the second year of life? It can be traced back to the time, I think, when the majority of physicians in this country accepted without question and without thought everything that came from Germany. German babies were given sausages and sauerkraut; consequently they believed that American babies ought also to take them. Another possible reason is the general tendency of physicians, especially young ones, to believe that everything which is new is right and everything which is old is wrong. Physicians are in general altogether too willing to accept any new teaching as true, if it is new or different. This, to my mind, is wrong. We should not discard the old and tried in favor of something new, simply because it is old, and should not accept the new until it has been proved to be better than the old. We must not forget that there are fashions in medicine as well as in dress, and that the new fashions are often no improvement on the old. On the other hand, we must be open-minded and be willing to accept the new when it is better than the old and not reject it because it is new. I have tried to be open-minded on this question of diet for babies during their second year, but perhaps I have not succeeded. My conclusion after due consideration, observation and experience is that the old fashioned simple method of feeding is better and safer than the newer and more liberal diet.

70 Bay State Road.

THE DIAGNOSIS OF HEART DISEASE IN YOUNG PEOPLE *

PAUL D. WHITE, M.D.
BOSTON

One of the most important lessons that the civilian physician learns from his army experiences is the need of more accurate diagnosis of heart conditions in young people. A discussion of this subject is particularly apropos at the present time, because still fresh in our minds and still fresh on the pages of many medical journals are the descriptions of the soldier's heart, or effort syndrome, or cardiac neurosis, or neurocirculatory asthenia—call it what you will. For definition of this condition, effort syndrome, with which the diagnosis of heart disease is so often confused, I refer to the excellent writings of Thomas Lewis[1] and Alfred Cohn.[2] Lewis writes as follows:

> When a healthy man takes exercise, and this exercise is sufficiently stressful or prolonged, he becomes aware at the time of the effort, or after it has ceased, of certain symptoms, and he presents certain physical signs. The most notable of his symptoms is breathlessness, a symptom which comes during the exercise and continues with diminishing intensity for a variable period afterward. During the exercise, consciousness of the heart beat may come; giddiness or actual faintness or fatigue may be added. At the cessation of the exercise, aching of the limbs, tremulousness and exhaustion are experienced; at a later period, stiffness of the muscles, a feeling of lassitude and sometimes actual malaise and tremulousness are noticed. In cases of extreme effort, pain over the precordial region, at first aching but exceptionally more violent and widespread, may be felt. During the period of exercise the heart rate and blood pressure are raised; the alae nasi are dilated, the accessory muscles of respiration are brought into action to increase the tidal flow of air. To these physiological symptoms and signs briefly described as a group I apply the term *physiological syndrome of effort.* . . . The difference in symptomatology which exists between health and this form of ill health is largely a difference in degree; the gage is the amount of work which, performed in a given space of time, will provoke the symptoms. Symptoms produced in normal subjects by excessive work are produced in the patients by lesser amounts; the smaller amount of work required, the more severe the malady. Naturally, there is no sharp line of division; there is in a large group of patients a perfect grading from the healthy man to him who is seriously unwell. We are traveling in the borderland between health and disease. This point of view has its value; it directs investigation toward the normal reactions of the body to exercise and to the corresponding reactions in disease; it brings us to inquire into the reserves of some of the most important bodily functions, and into the manner in which these reserves are reduced.

He also states that:

> One of the largest groups of effort syndrome is that of constitutional weakness, nervous or physical or both. In this group are many who show incomplete or imperfect development. To it belong many undersized men, many with flat or elongated chests and instances of infantilism; to the same group belong many with family histories tainted by insanity or epilepsy, and those who in childhood were nervous weaklings, bed-wetters, somnambulists, etc.

The term "effort syndrome" is incomplete, in that it does not express the reaction of these patients to excitement. Excitement alone may produce the same symptoms as effort.

Since my return to civil life, I have noticed a group of cases, particularly in young women, which had been diagnosed as heart disease, sometimes for years, not infrequently as mitral stenosis, and which I feel were no more heart disease than were cases of effort syndrome encountered in soldiers during the war. In the Massachusetts General Hospital I have seen twelve such cases in the past six or eight weeks. The importance of this matter is obvious. If these patients have not heart disease—and the evidence is against their having heart disease—reassurance and treatment of their nervousness are the important therapeutic measures. Much worry has been occasioned and much time has been lost for some of these people as the result of the inaccurate diagnosis in the past. Since young women, as compared with young men, are generally more subject to exhaustion or irritability of the nervous system, it is likely that they more often develop the effort syndrome. It is not, however, merely in young women that we have seen the incorrect diagnosis of mitral disease.

Other conditions besides effort syndrome which, because of the symptomatology, may simulate heart disease are hyperthyroidism and infectious diseases.

In the past, great stress has been laid on the symptoms ordinarily found in serious heart disease, dyspnea, palpitation, precordial pain and tenderness, but more and more it has become obvious that the same symptoms may occur when the heart is apparently sound and when the condition is that of effort syndrome or

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* From the Massachusetts General Hospital.

1. Lewis, Thomas: The Soldier's Heart and the Effort Syndrome, New York, P. B. Hoeber, 1919.
2. Cohn, Alfred: The Cardiac Phase of the War Neuroses, Am. J. Sc. **158**: 453, 1919.

nervousness. As the patient's attention is called to his or her heart, the symptoms tend to become more and more aggravated. In old people these symptoms are probably much more significant of heart trouble, but in young people who are nervous and in whom no signs of heart disease can be found, the presence of dyspnea and palpitation and even precordial pain should be regarded as very uncertain evidence of heart disease.

To which of the symptoms and signs must we pay especial heed in the differential diagnosis between effort syndrome and early or slight actual heart involvement? In the first place, a past history of rheumatic fever is certainly important and tends to support a diagnosis of heart disease. On the other hand, a familial or personal history of nervousness or nervous prostration is much more in support of the diagnosis of effort syndrome. The symptoms of dyspnea, palpitation, pain and tenderness are insufficient for differential diagnosis. Lewis[1] states that "breathlessness of purely cardiac origin is always accompanied by general cyanosis—slight, moderate or extreme."

Some physicians have paid much attention to tachycardia, extrasystoles and systolic murmurs in diagnosing heart disease. Here again we may be led astray, since all these conditions are apt to be found in people with the effort syndrome. A recent discussion by Lewis[3] covers these points.

Positive evidence of heart disease on physical examination includes any of the following:

1. Definite cardiac enlargement, to be determined, if in doubt, by teleroentgenography or orthodiagraphy.

2. The presence of a diastolic murmur. If one suspects the presence of a presystolic murmur and cannot be sure of it, it is usually wiser to consider it as not existing. Such a patient should be checked up by later examination. The exercise test used to bring out a presystolic murmur also causes in cases of effort syndrome the first sound to become so forcible and tumultuous that a mistaken diagnosis of mitral stenosis may sometimes be made from the character of this sound.

3. A systolic murmur at the apex, if very loud, and especially if it masks the first sound, usually means evidence of actual involvement of the mitral valve. The slower the pulse the more important is this murmur. Transmission of the systolic murmur to the axilla and back depends on the intensity of the murmur: the more intense the murmur the further it is transmitted, and the more likely it is to be evidence of organic valve disease. Therefore, transmitted murmurs are more apt to be evidence of true mitral disease, but not necessarily so.

A very loud systolic murmur at the base, with thrill, indicates the presence of stenosis of the pulmonary valve or of the aortic valve.

4. The presence of serious arrhythmia, that is, heart-block or auricular fibrillation, if not the result of digitalis.

5. Congestion of the veins of the neck.

6. Enlargement of the liver. Edema of the feet and legs, or, if a patient is in bed, of the sacral region; ascites and hydrothorax, and edema of the lungs.

7. Cyanosis.

The presence of very severe anginal pain is in favor of organic heart disease. The presence of extreme nervousness, tremor, sweating, and other vasomotor phenomena favors the diagnosis of effort syndrome. Occasionally one finds a combination of the two conditions which may give rise to a good deal of difficulty in diagnosis.

3. Lewis, Thomas: On Cardinal Principles in Cardiological Practice, Brit. M. J. **2**: 621 (Nov. 15) 1919.

Meredith[4] has recently found among 2,000 young women in college and in clerical and factory work, 193 who had been told by physicians that they had heart trouble, usually valvular, and had been advised to work as little as possible and to rest all they could. On examination, she failed to find in these 193 women evidence of organic heart disease, but she did find functional heart disturbance which she ascribed to myocardial subdevelopment, but which, from her description of the symptoms and signs, fits very well in the effort syndrome class. These women should, of course, have their attention distracted from the heart, and their life occupied with work and play which will not be too strenuous for them. Neuhof[5] has recently discussed the irritable heart as found in general practice. He considers the vasomotor symptoms more pronounced in civilian cases than in soldiers. He says, "The fundamental cause of the cardiac neurosis with its various manifestations, seems due to hyperexcitation of the sympathetic nervous system."

There is one further point to which I should like to call attention and that is, that even when the heart is damaged and a diagnosis of slight involvement can accurately be made, the life of the individual should not be too closely restricted or the patient too much alarmed over the abnormal heart finding. It has been shown by Mackenzie and others that people with slight heart disease may live active, useful lives without difficulty.

REPORT OF CASE

A case is herewith reported in order to illustrate the differential diagnosis between heart disease and effort syndrome.

History.—M. H., woman, aged 28, single, machine operator at a box factory, reported that she had always felt run-down and had become very tired operating a heavy machine, which she had done for the last eight years. Two years before, after a hard day, she fainted and had palpitation. No more fainting attacks had occurred, but there had often been palpitation, exhaustion and dyspnea, especially after exertion or excitement. Needle-like precordial pains occurred with the palpitation, beginning with the first attack two years before. The pain never extended to the back or arms. There was no history of fever, loss of weight, cough or hemoptysis. The palpitation consisted of pounding of the heart, at times irregular, like a double beat felt in the chest and head. Running for a car would sometimes start an attack of palpitation. The patient had always been easily excited; was very nervous and "trembly"; and this condition had grown gradually worse. Two years ago she went to a physician and was told she had "bowel trouble, not heart trouble." She had not worked for the past three months, and had been in bed off and on. She felt more exhausted and her heart seemed weaker in the morning than in the evening.

There was no history of infection of the rheumatic type.

The father died young; the mother was living, but was very nervous.

Physical Examination.—There was no cyanosis. The thyroid gland was palpable but not definitely enlarged. No exophthalmos. A slight tremor was noted. Knee jerks were very active. No cardiac enlargement could be made out; rhythm was regular at rate of 98; there was a soft systolic murmur at the base, the first sound at the apex was very loud and accentuated by exercise; no diastolic murmur could be heard; the heart action was forcible. The pulse was normal. Blood pressure readings were 110 systolic and 80 diastolic. The Wassermann test was negative. The blood findings were: hemoglobin, 75 per cent.; red blood cells, 4,600,000 per cubic millimeter.

4. Meredith, F. L.: Functional Heart Disturbances in Women, Boston M. & S. J. **181**: 734 (Dec. 25) 1919.

5. Neuhof, S.: The Irritable Heart in General Practice, Arch. Int. Med. **24**: 51 (July) 1919.

Diagnosis.—This case was diagnosed "double mitral disease," that is, mitral stenosis, because of the symptoms, the pounding heart action, and the suspicion of a presystolic murmur. The whole picture is that of nervousness with the effort syndrome.

COMMENT

The differential diagnosis in young people between heart disease and nervousness, or the so-called "effort syndrome," is in need of great emphasis at the present time. This is particularly true in the case of young women, who are probably more susceptible in civil life to the condition than are young men.

RUPTURED ECTOPIC PREGNANCY IN UTERINE CORNU

AFTER SALPINGECTOMY FOR PREVIOUS TUBAL PREGNANCY *

JOHN DOUGLAS, M.D.
NEW YORK

REPORT OF CASE

A woman, aged 30, admitted to St. Luke's Hospital in December, 1916, had had a severe abdominal pain about four hours before admission, and had fainted. On admission, she was in shock, and was bathed in cold perspiration; the pulse was almost imperceptible, but could be counted at the apex with the stethoscope, the heart rate being 152 a minute. The abdomen showed a boardlike rigidity. There was a mass in the left fornix, and as the patient had skipped her last menstrual period a diagnosis of ruptured ectopic pregnancy was made. As her condition was becoming worse rather than better, she was operated on without delay.

Hypodermoclysis needles were inserted under both breasts before the administration of nitrous oxid gas. A midline incision was rapidly made. The abdomen was found full of blood. The bleeding ruptured left tube, together with the ovary, was removed. At the same time an assistant was removing a liter of blood from the patient's husband, and this was given to the patient by the citrate method, without waiting for the usual grouping tests, in view of the patient's condition. She made an uneventful recovery.

More than two years later, March 6, 1919, the patient had a similar attack except that the symptoms were not so severe as in the previous attack. By vaginal examination, marked tenderness could be demonstrated in both fornices, and the right ovary could be felt somewhat enlarged. As she was twelve days past her menstrual period, all other periods in the past two years being regular, it was believed that she had a ruptured pregnancy in the remaining right tube.

At operation the abdomen was again found to contain a considerable quantity of blood, with bright red blood coming up from the pelvis. The right tube and ovary were brought up into the wound, and except for a large corpus luteum cyst in the ovary, were found normal. It was then discovered that at the left cornu of the uterus, where the tube had been removed at the operation previously, there was a ragged, raw, bleeding area, which evidently represented a ruptured ectopic pregnancy. No ovum was found, but on the edge of the raw area was a small peritoneal cyst filled with clear fluid and lined with flattened epithelium. An effort was made to introduce a probe through this area, but no communication with the cavity of the uterus could be demonstrated. The raw area was closed by sutures through the uterine tissue.

COMMENT

Ectopic pregnancy occurring in a remaining tube, after salpingectomy in the other side, is not an uncommon occurrence. Rongy,[1] in an article on ectopic gestation based on a study of 100 cases, reported twelve cases of repeated ectopic pregnancies included in this series. He quotes Smith and Rabinowitz, who have made a study of 2,998 cases of ectopic gestation, in which there were 113 cases of recurrent ectopic pregnancy, or 3.8 per cent. In all probability, as suggested in the article mentioned, if the subsequent history of these primary cases could be followed for a sufficient time, this percentage would be larger. This brings up the question of the advisability of the suggestion, that, in a woman, who has borne three or more children, the danger of a repeated ectopic pregnancy be explained to the patient, with the idea of obtaining consent for the resection or ligation of the remaining tube at the time of operation for the ruptured ectopic gestation.

The case reported furnishes an interesting conjecture as to how the impregnation occurred. The first operation was done rapidly, as circumstances required. The tube was tied close to the uterine cornu and removed, no attempt being made to excise a wedge-shaped portion of the uterine cornu. At the second operation, all evidence as to whether a sufficient amount of stump had been left to allow an ostium to become patent again was removed by the rupture that had occurred.

The question remains, How did the fecundated ovum become attached to this point? Did it pass down the right tube and across the cavity of the uterus and attempt to enter the remains of the left tube, and if so should it not have been possible to find a communication with the uterine cavity with the probe? If this did not occur, it must have reached its point of attachment by means of the peritoneal cavity, in which case it is of considerable interest to conjecture where it became fecundated and how or why it became attached to the remaining stump of the resected tube.

568 Park Avenue.

* Read before the Alumni of the Sloane Hospital for Women, Jan. 23, 1920.

1. Rongy, A. J.: Am. J. Obst. **77**: 86 (Jan.) 1918.

ACUTE RESPIRATORY DISEASE CARRIERS *

LESLEY H. SPOONER, M.D.
BOSTON

The prevalence of respiratory infection, especially among young adults, has been the subject of many statistical reports. Vaughan and Palmer [1] have shown that for the six winter months of 1915, 43 per cent. of the deaths occurring in the United States between the ages of 20 and 29 were due to this cause. The interest aroused in the subject was increased on mobilization of our troops during the winter months of 1917 and 1918. Covering a similar period, 77 per cent. of the deaths among the troops of approximately the same age as quoted above resulted from respiratory infection.

In this group it was shown that the organisms which I shall discuss were of great importance. Pneumonia was twelve times more prevalent in the army than in civil life, meningitis forty-five times, and diphtheria two times. Although the etiologic factors of measles and scarlet fever remain unknown, the streptococcus is well known as an organism of importance in the production of dangerous complications and sequelae. The same report states that measles was nineteen and

* Read before the New England Oto-Laryngological Association, Nov. 19, 1919.

1. Vaughan and Palmer: Report from Section of Communicable Diseases, Division of Sanitation, Surgeon-General's Office.

scarlet fever six times more prevalent in the military than in the civil population.

Since the discovery by Pasteur that the pneumococcus could be cultivated from the saliva of healthy persons, various other organisms, the etiologic factors of respiratory infection, have been demonstrated on the normal mucous membrane. The significance of the presence of these bacteria was not realized at first, except to throw doubt on the etiology of certain of these diseases. Later, however, it became well recognized that persons harboring such organisms were factors in the spread of infectious diseases. To such individuals has been applied the term "carriers."

In many instances the organism may be only temporarily present, and in others it may be a constant inhabitant of the respiratory tract. This division of carriers into the transient, and the persistent or chronic groups, will be considered later. The most important classification seems to me to depend on the manner in which the organisms become planted on the mucous membrane of the carrier. It has long been known that the presence of any of these bacteria was no proof of previous infection by that organism. To this group I apply the term the "healthy carrier." Cole has shown that after infection by the pneumococcus, from 12 to 13 per cent. of those infected with Types I and II remain as bearers of those specific cocci. A similar condition follows infection by *Bacillus diphtheriae* and the meningococcus. This group will be referred to as the "diseased carrier." Still another consideration is the virulence of the organism isolated from the carrier. This appears to be of less significance than the latter, since the temporarily avirulent organism may, when implanted on fresh soil, regain its lost virulence.

In this paper I shall consider the four most important organisms that are the etiologic factors of acute respiratory infection. These are the pneumococcus, *Bacillus diphtheriae,* the meningococcus, and the streptococcus.

PNEUMOCOCCUS

Cole,[2] after an intensive study at the Rockefeller Hospital on acute lobar pneumonia, points out that the four types of the pneumococcus may be reclassified according to their occurrence in carriers into two general subdivisions: the truly parasitic and the primarily saprophytic pneumococci. Types I and II fall into the former division, Types III and IV into the latter. He was able to isolate from a series of 297 healthy persons, not exposed to the disease nor giving history of respiratory infection, a member of the parasitic group only once—a percentage of 0.33. On the other hand, the same series showed the saprophytic group [3] in 115 persons, a percentage of 39. Following lobar pneumonia caused by the Type I pneumococcus, on the other hand, he succeeded in recovering that organism late in convalescence in 13.1 per cent., and the Type II organism following that specific infection in 12.1 per cent. It is not to be inferred that Types III and IV are essentially saprophytic organisms, since together I found them as etiologic factors in approximately 63 per cent. of more than 1,300 cases of lobar pneumonia which I studied. The fact remains that of the truly parasitic group which was responsible for 37 per cent. of my cases, the "healthy carrier" was essentially unknown.

2. Avery, Chickering, Cole and Dochez: Monograph 7, Rockefeller Institute for Medical Research, 1917.

3. The saprophytic group included, in addition to Types III and IV, the atypical Type II organisms, which Cole has shown are more closely allied to those groups than to the typical Type II.

In a study of the correlation of the types of pneumococci obtained from the circulating blood and the sputum in lobar pneumonia, I was able to demonstrate certain changes in the respiratory flora which further suggest the separation of the pneumococcus into parasitic and saprophytic groups. In several instances, the types recovered from the sputum in the later stages of the disease changed from the parasitic group, which had earlier been found in both blood and sputum, to the saprophytic group. From this fact it seems at least suggestive that in Types III and IV there are certain harmless strains; while other members, presenting the same serologic reaction, are frequent factors in the production of pneumonia. It is fair to assume that the convalescent pneumonia patient is a far greater source of danger, in regard to the spread of infection, than the healthy person, even though the latter is a bearer of the pneumococcus.

Epidemiologic studies of pneumonia in our large camps during the recent war have shown most interesting outbreaks of the various types of the disease. I was fortunate enough to be able to observe such waves of infection at Camp Devens. In the winter and spring of 1917 and 1918, the infection was caused largely by Type IV. This was followed by an outbreak of Type I, especially among two battalions of negroes who had recently arrived from Florida. This was succeeded by a preponderance of Type II cases, which was again followed by Type IV. During this period the usual sporadic cases were found, showing the classical percentage of types. These waves of infection, or small epidemics, can be explained best by infection from the individual in the early stages of pneumonia or from the diseased carrier during late convalescence.

The presence of the pneumococcus in the sinuses, incident to recent acute or present subacute infection, is doubtless of great importance in connection with the spread of disease; but my experience on the subject is too limited to warrant any conclusion.

BACILLUS DIPHTHERIAE

The Klebs-Loeffler bacillus, like the pneumococcus, has long been recognized as a possible inhabitant of the healthy throat. During a period of ten months, my laboratory at Camp Devens examined 3,800 contacts with cases of diphtheria. On the diagnosis by the laboratory of a case of that disease, all members of the patient's company were brought to the laboratory and cultures made at once on Loeffler's blood serum.

Of the 3,800 persons examined, 140 positive carriers were detected, a percentage of 3.7. In a paper published last year [4] I said:

> The healthy carrier may, according to the experience of this laboratory, be divided into two classes, the transient and the persistent carriers. In the search for diphtheria carriers it was necessary to rely for diagnosis on the microscopic morphology and staining reaction of the organisms and the relative number of such bacilli. Limits of time, personnel and material prevented more elaborate cultural differentiation, animal inoculation, etc. In order to safeguard as far as practicable against error in this report, the following requisites for diagnosis were insisted on:
>
> First, the suspected type of organism must be present in at least moderate number in the preparation; second, the diagnosis must be made independently by three trained members of the staff or personnel.

4. Spooner, L. H.: The Base Hospital Laboratory, Mil. Surgeon 44: 55 (Jan.) 1919.

It seems wise to make this detailed technical statement in order that the results of this investigation may be taken at their proper value.

The daily examination of cultures from the throats of the carriers yielded interesting results. Of the 140, 121, or 86 per cent., showed negative cultures within five days of isolation. To this large group I apply the name "transient carrier." Fourteen, or 10 per cent., showed organisms present between six and fifteen days following isolation. These might be classified as an intermediate group. Five, or 4 per cent., showed cultures positive over a period longer than fifteen days, the actual time being seventeen, twenty-one, sixty-two, seventy-five [5] and eighty-five days, respectively. From these figures it may be concluded that 3.7 per cent. of contacts were found to be carriers, and that of the latter, only 14 per cent. were of practical epidemiologic importance, since the presence of bacilli in the throat of the remaining 86 per cent. was so transient. In other words, only 0.5 per cent. of those examined were significant carriers, harboring bacilli longer than five days, and only 0.1 per cent. were proved to be true chronic carriers. The transient carrier has an added significance in time of epidemic, although his importance in the dissemination of disease is not considerable under ordinary conditions.

The process of disinfection of all but the chronic carrier was too simple to warrant more than passing note. It consisted of rest, fresh air, house diet, and generally no local treatment, although occasionally bland mouth washes and gargles were employed, care being taken that their use did not interfere with the cultural results. The release from quarantine and the negative findings referred to in these statistics were gaged by three negative cultures, from the nose and throat, taken on successive days.

The "diseased carrier," the convalescent from diphtheria, presented a very different laboratory picture. In this case the persistence of positive cultures was always pronounced, and more radical steps, such as tonsillectomy and nasal operations, were often resorted to. These were frequently followed by a disappearance of the organism, which was unfortunately not always permanent. One case in particular deserves a brief note:

On admission, a soldier presented moderate constitutional symptoms and a small membrane on the left tonsil. Cultures from the latter revealed *B. diphtheriae*. After appropriate serum therapy, the constitutional reaction and the membrane disappeared, but the bacilli remained. Daily cultures from each tonsil, each nostril and the postnasal space showed negative results in every instance, save that of the left tonsil, cultures from which remained positive for from six to eight weeks. At that time the tonsil was removed in the usual manner. During his convalescence from this operation, negative cultures were obtained from all sources. After a week, however, the left tonsillar fossa showed positive cultures, which continued with as much persistence as before the operation. At last the patient was discharged from the hospital on the grounds of the nonvirulence of the organism.

From these observations I conclude that:

1. The chronic healthy diphtheria carrier is very rare.

2. Although the sterilization of his mucous membrane is difficult, it is easier than that of the chronic disease carrier.

3. He and his fellow, suffering from the early stages of acute infection, are the potent factors in the spread of this disease.

5. At the time of preparation of the paper referred to in Note 4, this patient was in the hospital showing positive cultures.

MENINGOCOCCUS

When Weichselbaum identified the meningococcus in the spinal fluid in epidemic cerebrospinal meningitis, it was supposed that the infection was restricted to the meninges. At present it is recognized as a septicemia. The organism gains entrance through the upper respiratory tract, and may be found in the postnasal space of both the healthy carrier and the person sick with the disease.

During the recent war the marked increase in this form of meningitis was the cause of a considerable disquietude in the Office of the Surgeon-General. As a natural consequence, the search for meningococcus carriers was carried out in a most elaborate and painstaking manner on all disease contacts. My experience revealed a low percentage of healthy carriers, 1.3 per cent. of 3,647 being detected, although the percentage of a limited group ran to 6.9 per cent. of 116 who had been in most intimate contact with infected subjects. It is, of course, impossible to state whether these carriers were responsible for the infection, or whether, as seems more likely, they became carriers because of close exposure to the disease.

In the South this form of meningitis is more prevalent than in this latitude. As Vaughan and Palmer have shown that the soil from which troops were drawn governs the prevalence of infectious disease, it follows that the Southern camps presented a high meningitis morbidity. At the same time the percentage of healthy carriers detected in those cantonments was correspondingly high. Here again it is difficult to assign any epidemiologic significance to the carrier.

We are confronted with a problem, which, technical though it may be, has a marked bearing on the interpretation of all results on this work. The cultivation of the meningococcus is difficult even from spinal fluid, but this difficulty is greatly increased when the organism is mixed with the usual saprophytic bacteria of the postnasal space. This tends to reduce the number of positive findings. On the other hand, it often rendered necessary the diagnosis of carriers from a relatively small number of organisms. The inevitable result is the diagnosis as carriers of many who harbor what might reasonably be considered an insignificant number of meningococci. This point is strengthened by a consideration of the response to treatment.

The usual method of disinfection was through the use of postnasal sprays of dichloramin-T. In the case of all our healthy carriers, the results of this treatment were most striking. The regulation for release consisted of three consecutive negative cultures taken at three-day intervals. In the case of the healthy carrier, the maximum period of isolation was twelve days.[6]

As I have stated above, the clinical meningitis patient is also a carrier of the organism in the postnasal space during the disease and convalescence. These diseased carriers were disinfected with greater difficulty. The maximum period of isolation was forty-three days.

The group of chronic healthy carriers, as in the case of diphtheria, is a small one. None typical of this type were detected among 3,647 contacts. They present two

6. This excluded one carrier whose isolation lasted seventeen days. He should be classified in an intermediate group, since the original examination revealed an almost pure culture of the meningococcus. The latter characteristic belongs to the chronic type, although the period of isolation prevents him from being classified as such.

characteristics which differentiate them from the type that was identified in my laboratory. They harbor the meningococcus in almost pure culture, and defy the utmost measures of disinfection. I observed such a group, consisting of perhaps a dozen men drawn from our entire army, when visiting the Rockefeller Hospital in May, 1918. From these observations it seems fair to conclude that the chronic healthy carrier of the meningococcus is rare, and that the important bearer of infection is the diseased carrier.

During the epidemic of influenza which swept Camp Devens during the latter part of September and October, 1918, a peculiar outbreak of epidemic cerebrospinal meningitis took place. In less than four weeks, twenty-two cases of this disease had developed in a camp that had shown only twenty cases during the ten months from October, 1917, to August, 1918. The most striking element in this outbreak lay in the fact that fourteen of the twenty-two patients (64 per cent.) had been confined in the hospital with influenza five days or more prior to manifestation of the earliest symptoms of meningitis. Twelve (55 per cent.) had been patients for nine days or more before onset of this infection.

The following facts were brought out after an intensive study of the situation: The twenty-two cases represented eighteen separate camp organizations, which were in no way in close contact with one another. In spite of the crowded condition of the camp, in only three instances did multiple infection exist. In none of these could camp contact be satisfactorily demonstrated to an extent warranting any epidemiologic conclusions.

Two cases arose in A Company, 212th Engineers; of these one had been in the hospital ten and the second thirteen days prior to manifestation of symptoms. Of the two cases in the 31st Company, Depot Brigade, one had been confined to the hospital five, the second, twenty-three days. In the 14th Company, Depot Brigade, in which three cases developed, one was admitted sick with the disease; the second had been confined for nine, and the third for thirteen days. A comparison between the dates of manifestation of symptoms and of admission to the hospital shows that in the case of only one organization—the 212th Engineers—could the patients have been in personal contact within at least one week prior to onset of symptoms.

A study of the distribution of cases throughout the hospital shows that among those who evidently had developed the disease within the hospital, no two cases were found in the same ward. The frequent change of patients from ward to ward during the stress of the epidemic did not alter this unique record. Of the medical staff, hospital personnel, and nurses in those sixteen wards, as well as of the patients in contact with the case, cultures were taken with the utmost care. Of 586 contacts only twelve, or 2 per cent., were found to be healthy carriers. Similar cultures taken from the possible camp contacts showed nineteen carriers out of 1,061 examined, a percentage of 1.8. It is of interest to note that in the 14th Company, Depot Brigade, to which organization three patients belonged, no carriers were discovered among 219 examined.

Since no appreciable increase in the number of carriers was found among hospital contacts and in the organizations to which these cases belonged, and in fact since in the one to which were attached the largest number, none were discovered; and as there was a wide distribution of cases through the camp as well as in the hospital, and such a large number developed the disease in the hospital after a lapse of time generally accepted as the incubation period of meningitis, it seems reasonable to consider these cases as possible autoinfections of the carrier. Although no absolute proof of this point has been produced, it seems rational to consider that these persons, whose vitality had been lowered by an attack of influenza, yielded in this manner to infection with the meningococcus. I will add that I have the informal statement from the Office of the Surgeon-General that such an outbreak took place in three other base hospitals in this country.

STREPTOCOCCUS

In civil life the streptococcus is an important factor in the production of septic sore throat, septicemia and more localized surgical infections. Its rôle in connection with pneumonia should not be neglected. In the army, however, it was found to be one of the most dreaded of infectious organisms. Bronchopneumonia either due to the streptococcus in the form of primary infection, or secondary to measles, with the resulting empyema and pericarditis, was responsible for the highest mortality in Southern camps. Primary and secondary infection of wounds by this organism was also of utmost importance.

The regional distribution of the streptococcus was fully as striking as in the case of the meningococcus.

Although many strains of the organism have been isolated, *Streptococcus hemolyticus* was almost universally found in connection with respiratory, as well as with wound, infection.

In the spring of 1918, a considerable number of cases of postmeasles streptococcus pneumonia were reported through my laboratory. This organism was also frequently demonstrated in postpneumonic empyema during that period and throughout the summer. Following the influenza epidemic, even larger proportions of the postpneumonic empyemas showed this organism, always in the rôle of a secondary invader. Toward the close of 1918, in a few returned wounded soldiers the organism was demonstrated in chronic sinuses and areas of bone destruction. With these exceptions, infection by *Streptococcus hemolyticus* was relatively rare throughout Camp Devens during the first fifteen months of its existence.

This preliminary statement is of importance in the consideration of my investigation on suspected carriers of this organism, which, it must be borne in mind, was terminated before the influenza epidemic or the return of wounded troops, noted above.

During the winter of 1917-1918, cultures were taken of 100 Medical Reserve Corps officers stationed at the base hospital. Cotton swabs were applied to the tonsils, and with this material the water of condensation of Loeffler's blood serum was impregnated. Diagnosis was made by microscopic morphology. In this series, 60 per cent. were found to be streptococcus carriers. A similar investigation on the nurses at the same hospital revealed 68 per cent. of sixty examined. A smaller group of regimental surgeons stationed throughout the camp was next investigated by the same methods. These showed only 5 per cent. of healthy carriers. Whether the marked difference resulted from the nature of the lives led by these groups, or whether

the hospital environment played a rôle in the production of carriers, it is difficult to decide. The former seems to me the more rational solution.

As it was realized that the technic was faulty, the next series was thus investigated: Swabs were planted directly on blood agar plates,[7] and after twenty-four hours' incubation the microscopic morphology of typical hemolytic colonies was studied. This series covered 140 officers, about 75 per cent. of whom were included in the first investigation. The same process was repeated twice at three to four week intervals. The migratory life of the army officer prevented the completion of observation in all the group. This incompleteness tended to lower the percentage, which I believe would have been even more striking had the work been performed on a stationary body.

Of 140 officers of whom cultures were taken, 83 per cent. were positive on at least one examination; 25 per cent. showed *Streptococcus hemolyticus* in appreciable numbers on three or more trials, and only 17 per cent. were consistently negative. These figures indicate that the transient streptococcus carrier is very common and that the persistent carrier—I believe had my investigation been carried out over a longer period the term chronic carrier would have been appropriate—is also common.

When these facts are considered in the light of the scarcity of primary streptococcus disease at this hospital and the absence during their entire residence at that post of such infection among the Medical Corps officers, the importance of the streptococcus carrier, as an etiologic factor in the origin and spread of that infection, becomes parallel to that of the pneumococcus carrier. Another analogy to that organism lies in the recent work on streptococcus grouping, which will probably separate these organisms into parasitic and saprophytic groups similar to those of the pneumococcus.

It is my opinion that in the case of the streptococcus, healthy and diseased carriers bear the same relation to the health of the community as exists with the other organisms just discussed.

CONCLUSIONS

1. Acute respiratory disease is at present the greatest menace to the youth of our country.
2. It is more serious in the army than in civil life.
3. The transient healthy carrier is more common than should be expected from the incidence of the specific disease.
4. This transient quality is shown by the disappearance of the organism without treatment.
5. The chronic healthy carrier is rare, except in the case of the "saprophytic pneumococcus" of Cole, in which many of the organisms may be nonpathogenic, and with *Streptococcus hemolyticus*, in which a similar condition may well exist.
6. The potent factors in the spread of these diseases rest in this small group of chronic healthy carriers and the diseased carrier.
7. The latter, during the prodromal stages of disease and convalescence, is of by far the greatest importance.
8. They respond to attempts at disinfection even less satisfactorily than do the chronic healthy carriers.

520 Commonwealth Avenue.

7. To meat infusion agar is added 10 per cent. sterile defibrinated human blood, and the mixture plated.

ELECTRICAL STIMULATION OF PERIPHERAL NERVES EXPOSED AT OPERATION

SURGICAL VALUE

WALTER M. KRAUS, A.M., M.D.
NEW YORK
AND
SAMUEL D. INGHAM, M.D.
PHILADELPHIA

The occurrence during the war of large numbers of nerve lesions of traumatic origin has stimulated the investigation of nerve function by various methods, among which that of electrical stimulation is of recognized importance. Operations for the correction of these lesions have furnished the opportunity for the direct stimulation of exposed nerve trunks, pathologic and normal, by which means extremely important information may be gained. This paper is based on such observations in a series of seventy-three cases in which operation was performed in the service of Lieut.-Col. C. H. Frazier at U. S. Army General Hospital No. 11, Cape May, N. J., and U. S. Army General Hospital No. 41, Fox Hills, N. Y., and aims at presenting general conclusions and such other data as may be of interest to the surgeon. The case reports, with more detailed anatomic and theoretical consideration, will be embodied in another paper.

TECHNIC

As soon as nerves are freed at operation, those of the leg are oriented at a point distal to the lesion by a black silk thread passed through the sheath on their posterior aspect, and proximal to the lesion by a white thread similarly placed. The arm nerves are oriented in the same way on the anterior aspect. This permits proper orientation for stimulation, suture and pathologic examination.

The stimulating electrode (Fig. 1) used was bipolar and was devised by one of us (W. M. K.) following the principle of the French investigator, Henri Meige. It is rather simple. Two strands of No. 2 copper wire about 2 yards long are strung with small glass beads for insulation. The two strings of beads are placed in a glass tube, 8 inches long, whose edges are well rounded, and are held in position by nonvulcanized rubber. Another modification of the electrode is as follows: At a point, about 1½ inches from the handle end of the tube, a slight indenture is made by drawing the tube out a bit. The beaded wires are drawn toward the stimulating end and a rubber band is placed over them at the indenture, thus holding them in place. The beaded wires are then allowed to trail off in their original direction (Fig. 1). The stimulating ends of the electrode are twisted back on themselves, thus making a loop. This avoids trauma to the nerves. This electrode may be readily sterilized. The battery used was the Harvard inductorium, No. 20, made by the Harvard Inductorium Company, Boston (Fig. 2). The freed nerve is held by a glass rod with a curved end which permits it to rest as in a cradle. The strength of the current is best taken as that which will produce a minimal contraction in a neighboring muscle. This rarely fails to cause stimulation of the nerve. The stimulation should always be applied both below and above the lesion. Normal nerves require much less current than abnormal. The stimulating is done with

the electrodes placed longitudinally on the nerve—this to avoid diffusion as much as possible. The sequence is: posterior side, internal, anterior, external. The surgeon while stimulating calls out the aspect of the nerve he is working on, in order to avoid confusion. The muscles stimulated are observed by another man. In stimulating the arm nerves it is better to use the terms radial and ulnar than internal and external. It has been found valuable to have nerve maps in the operating room for reference. The findings are directly recorded on circular charts.



Fig. 1.—Stimulating electrode.

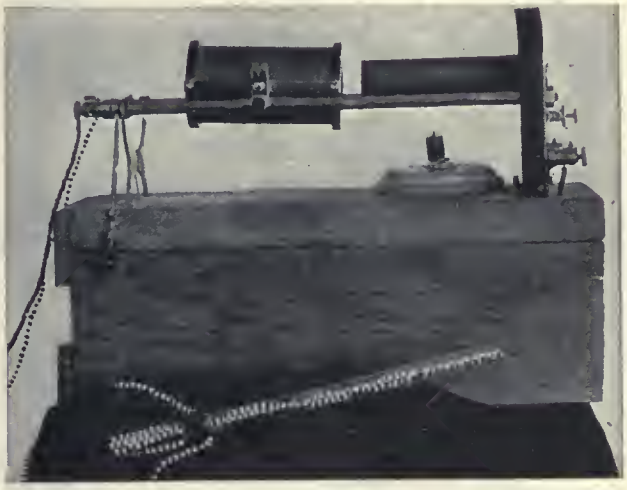


Fig. 2.—Battery.

VALUE OF THE METHOD TO THE SURGEON

The surgical aspects of this subject are of considerable importance, not only because of the increased accuracy of diagnosis and of surgical manipulation which a better knowledge of topography insures, but also because direct electrical stimulation of nerves exposed at operation is of material aid to the surgeon in estimating the degree of nerve injury and in facilitating operative procedure. It enables him easily and quickly to identify normal nerves, often a difficult matter otherwise, especially when the normal anatomic relations are disturbed by pathologic conditions. Again, direct electrical stimulation is the most dependable means of determining conductivity in motor nerves which have been injured but not interrupted, as in the case of compression.

ELECTRIC PHENOMENA

We are all familiar with the paradoxical phenomenon of Erb, most frequently found in compression palsy of the musculospiral nerve from the use of crutches. In this condition the nerve conducts impulses when it is stimulated through the skin below the area of compression, but this area acts as an area of decrement, and its muscles cannot be made to react when the nerve is stimulated through the skin above the point of compression. We have found that in some cases the nerve

NUMBER OF REACTIONS IN NERVES AND MUSCLES IN FIFTY-SIX OPERATIVE CASES

	Case Numbers	Nerve	Muscles and Sensations	Total
I. Brachial plexus	5, 41	5		
1. Pectoralis major	.....	.....	1	
				1
II. Median nerve:				
(a) Inner head	31	1		
(b) Outer head	11, 31	2		
(c) Trunk	2, 3, 9, 13, 16, 17, 19, 26, 27, 30, 36, 43, 44, 45, 50, 53, 57, 69	18		
1. Pronator radii teres	.....	.....	14	
2. Flexor carpi radialis	.....	.....	12	
3. Palmaris longus	.....	.....	3	
4. Flexors of the fingers	.....	.....	11	
5. Flexor longus pollicis	.....	.....	7	
6. Pronator quadratus	.....	.....	2	
7. Abductor pollicis	.....	.....	2	
8. Opponens pollicis	.....	.....	1	
9. Lumbricales	.....	.....	1	
10. Sensory	.....	.....	1	
				54
III. Ulnar nerve	3, 8, 11, 13, 16, 18, 27, 28, 42, 43, 45, 49, 50, 60, 66	16		
1. Flexor carpi ulnaris	.....	.....	11	
2. Flexor profundus digitorum	.....	.....	10	
3. Adductor pollicis	.....	.....	5	
4. Interossei	.....	.....	5	
5. Hypothenars	.....	.....	4	
6. Sensory	.....	.....	1	
				36
IV. Circumflex nerve	39	1		
1. Deltoid	.....	.....	2	
				2
V. Musculospiral nerve	15, 22, 31, 33	4		
1. Triceps	.....	.....	4	
2. Supinator longus	.....	.....	2	
3. Extensor carpi radialis	.....	.....	2	
4. Extensors of the fingers	.....	.....	1	
				9
VI. Sciatic nerve:				
(a) Internal popliteal division	12, 20, 23, 24, 63, 64	6		
1. Hamstrings	.....	.....	4	
2. Gastrocnemius	.....	.....	3	
3. Tibialis posticus	.....	.....	2	
4. Flexor longus digitorum	.....	.....	2	
5. Flexor longus hallucis	.....	.....	2	
6. Intrinsics	.....	.....	0	
				13
(b) External popliteal division	14, 21, 59	3		
1. Peronei	.....	.....	3	
2. Tibialis anticus	.....	.....	2	
3. Extensor digitorum	.....	.....	1	
4. Extensor hallucis	.....	.....	1	
				7
VII. Internal popliteal nerve	1, 6, 7, 10, 40, 51, 52, 54, 56, 58, 63, 64, 68	13		
1. Hamstrings	.....	.....	2	
2. Gastrocnemius and soleus	.....	.....	9	
3. Tibialis posticus	.....	.....	10	
4. Flexor longus digitorum	.....	.....	5	
5. Flexor longus hallucis	.....	.....	4	
6. Intrinsics	.....	.....	2	
				32
VIII. External popliteal nerve	10, 14, 38, 46	4		
1. Peronei	.....	.....	4	
2. Tibialis anticus	.....	.....	1	
3. Extensor digitorum	.....	.....	1	
4. Extensor hallucis	.....	.....	1	
				7
Total		73	.....	161

and its muscles are quite unresponsive to electrical stimulation at all points through the skin, while direct stimulation of the nerve trunk at operation causes muscle reaction. We have also observed all of the conditions of Erb's reaction elicited by direct stimulation of the exposed nerve.

3. A phenomenon of difference between percutaneous and direct stimulation.

The explanation of the last mentioned phenomenon appears to be simple. The direct stimulation of an exposed nerve is stronger and less diffused, and suffices to overcome the decrement in conduction produced by the lesion, while stimulation through the skin does not.

The surgical importance of these reactions is obvious. Where conductivity can be demonstrated, nerves or portions of nerves can be conserved which might otherwise be considered as completely interrupted and consequently subjected to unnecessary operative resection

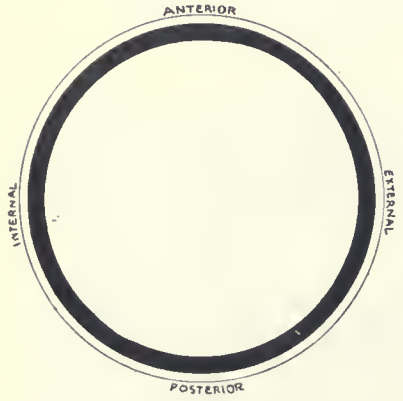


Fig. 3.—Heads of the median nerve: *A*, external (6 and 7); pronator radii teres; *B*, internal (8 and 1): 1, flexor carpi radialis; 2, flexion of the fingers; 3, flexion of the thumb; 4, abductor pollicis.



Fig. 4.—Median nerve, midarm level: 1, pronator radii teres; 2, flexor carpi radialis; 3, palmaris longus; 4, flexores digitorum; 5, flexor pollicis; 6, pronator quadratus.

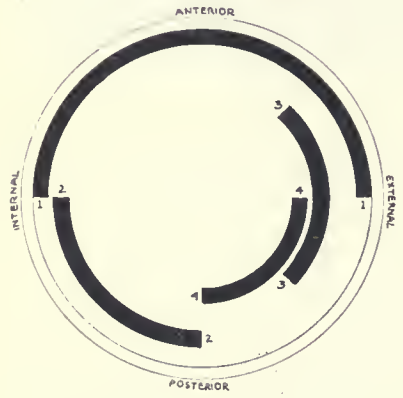


Fig. 5.—Median nerve, midforearm level; 1, sensory; 2, opponens pollicis; 3, abductor pollicis; 4, lumbricales.

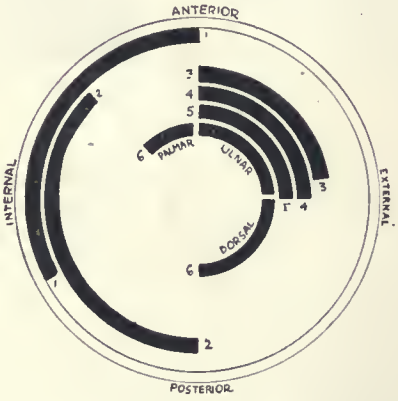


Fig. 6.—Ulnar nerve: 1, flexor carpi ulnaris; 2, flexor profundus digitorum; 3, hypothenars; 4, interossei; 5, adductor pollicis; 6, sensory.



Fig. 7.—Musculospiral nerve: 1, triceps; 2, supinator longus; 3, extensor carpi radialis.

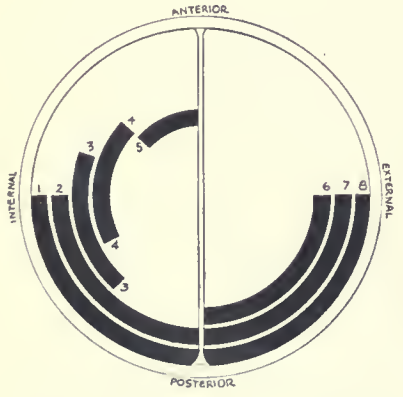


Fig. 8.—Sciatic nerve: 1, hamstrings; 2, gastrocnemius and soleus; 3, flexor longus hallucis; 4, flexor longus digitorum; 5, tibialis posticus; 6, peronei; 7, tibialis anticus; 8, extensors of the toes.

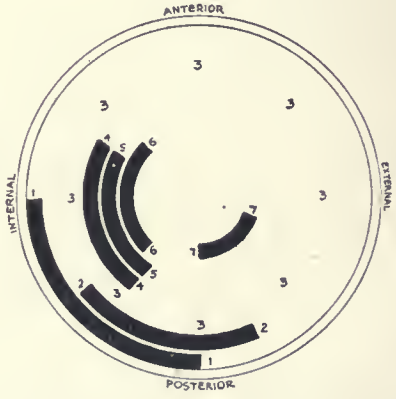


Fig. 9.—Internal popliteal nerve: 1, hamstrings; 2, gastrocnemius; 3, tibialis posticus; 4, flexor longus digitorum; 5, flexor longus hallucis; 6, intrinsics; 7, flexor brevis hallucis.

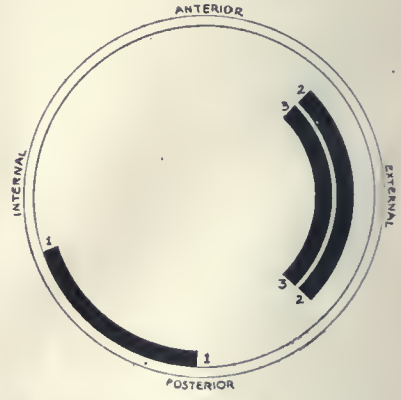


Fig. 10.—External popliteal nerves; 1, peronei; 2, tibialis anticus; 3, extensors of the toes.

Summarizing the phenomena due to areas of decrement which we observed, we have:

1. Erb's indirect, or percutaneous, paradoxical phenomenon.

2. A direct paradoxical phenomenon, from stimulation of the nerve trunk.

and suture. Finally, the free ends of nerves that have been completely interrupted can be identified in the recent stage of injury, that is, until secondary degeneration develops. In cases in which it is of interest to cut the fibers to some muscles, let us say the gastrocnemius and soleus group, as in Little's disease, or when a transplantation is desired, say of the triceps fibers into the circumflex nerve, it is essential to use electrodes.

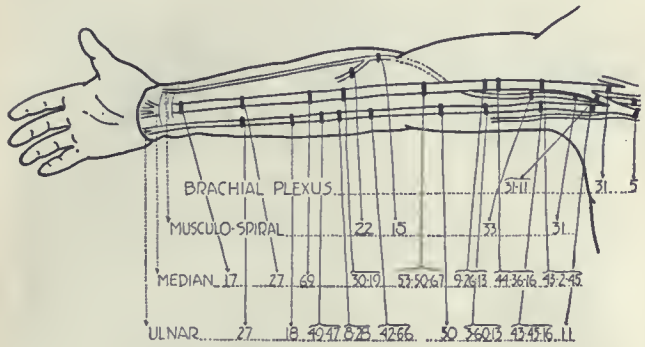


Fig. 11.—Levels of stimulation of the main arm nerves and their branches.

RESULTS OF STIMULATION IN SEVENTY-THREE CASES

The results obtained have been combined for each nerve and are represented on the accompanying charts (Figs. 3, 4, 5, 6, 7, 8, 9 and 10). The black areas represent the responsive area on the circumference of the nerve, namely, the area in which faradization caused muscle contraction. The arrow in Figure 4 indicates that the fibers to the pronator radii teres muscle cross from the external aspect to the internal aspect of the median nerve on its anterior surface, the extent of the crossing being several inches in the midarm portion of the nerve. The absence of a black line to represent the position of the fibers for the tibialis posticus in Figure 9, and the location of the numbers throughout the circumference, indicate that we were unable to localize definitely the fibers to this muscle, but found them on all aspects of the nerve in different cases. This was the only exception to the rule that the fibers to a given muscle pursued a straight course from the plexus to the point of branching. The charts of the circumferential position of various bundles represent the results of stimulation at various levels (Figs. 11 and 12).

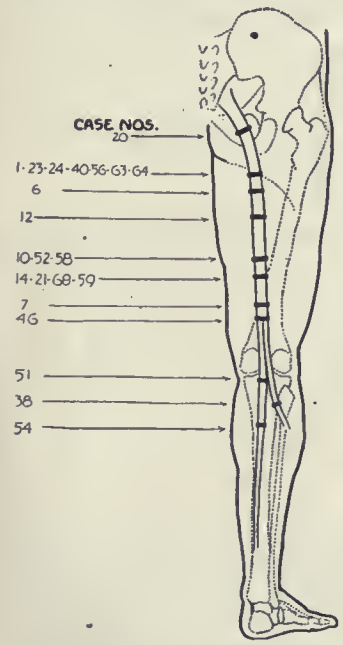


Fig. 12.—Levels of stimulation of the sciatic nerve and its branches.

CONCLUSION

Electrical stimulation at operation gives important information to the surgeon as to the location of nerves and their degree of abnormality due to injury.

It serves as an indispensable guide to operative manipulations.

It is a means by which we may add to our all too scanty knowledge of peripheral nerve anatomy.

RESTORATION OF LOSS OF BONE

INCLUDING AN ANALYSIS OF THE FIRST HUNDRED CASES OF FRACTURE TREATED BY BONE GRAFT AT U. S. ARMY GENERAL HOSPITAL NO. 3, COLONIA, N. J.*

FRED H. ALBEE, M.D., Sc.D.
ASSISTED BY
ELMER P. WEIGEL, M.D.
NEW YORK

In the task of restoring loss of bone substance and function in the wide variety of traumatisms resulting from the war, the plastic surgeon is confronted with a correspondingly varied array of mechanical problems. The recognition of the underlying biologic and physiologic significance of tissue growth and metabolism is a fundamental requirement in the successful treatment of these cases. The surgical repair of bone, and more particularly the use of the bone graft in cases of pseudarthrosis with or without bone loss, is based not only on the ultimate establishment of adequate fixation of the bone fragments, but also on the attainment of a proper environment for the nourishment of the graft. This entails the exact coaptation of parts of the graft to respective parts of the host bone; in other words, the adequate and extensive contact of all four corresponding bone layers, namely, periosteum, cortex, endosteum and marrow.

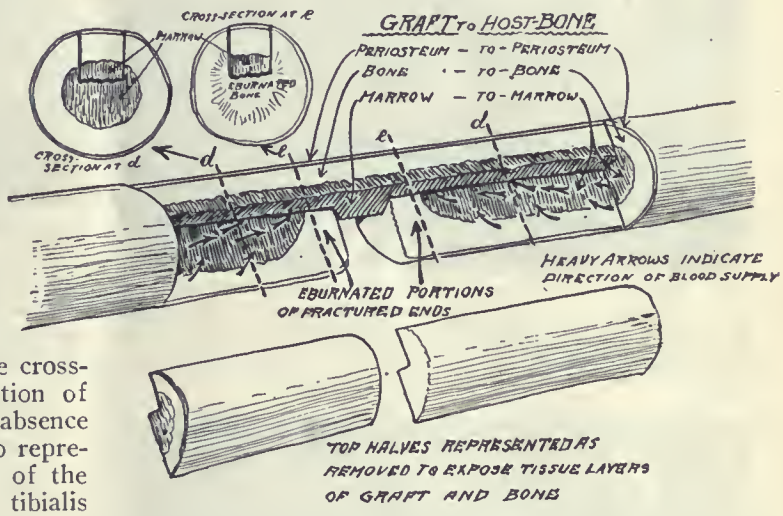


Fig. 1.—Requisite apposition of bone layers of graft with respective parts of host bone. The graft is of sufficient length to extend well beyond the eburnated area of the host fragments, coming into generous contact with the healthy vascular marrow substance. The cross-section at *E* shows the eburnated plug of bone where, as a rule in pseudarthrosis, it closes the marrow cavity in the fractured ends. Here the gutter has been deepened sufficiently to receive the full amount of marrow of the graft, which is demonstrated (lower drawing and cross-section at *D*) in extensive contact with the marrow of the host fragments. The arrows on the marrow in the host fragments indicate the direction of blood supply to the graft from its principal normal source, namely, the marrow substance of the host. By the insertion of the inlay, with its full amount of marrow, a continuous marrow bridge is formed, extending from the healthy marrow of both host fragments through the gutter in the eburnated ends. This marrow bridge plays a most important rôle as conductor of blood vessels and osteogenic cells from one host fragment to the other. The cross-sections at *D* and *E* show also the cabinet-maker fit of the inlay graft with the host fragments, which not only affords mechanical fixation of parts, but also favors the stimulus to bone growth from frictional irritation, emphasized by Roux.

* Read before the Congress of the Italian Orthopedic Association, Bologna, Oct. 18, 1919.

MECHANICAL STRESS AND BONE GROWTH

Throughout his plastic work, both in civilian practice and army experience, the author has been greatly impressed with the striking influence exerted by mechanical stress on the growth and metabolism of bone. In cases of loss of substance of long duration,



Fig. 2 (Case 1).—Wound in which an officer, hit at Ourcq River by fragments of a high explosive shell, lost about 3½ inches of the upper third of the humerus, including the entire head. In this case, destruction of practically all the musculature of the shoulder rendered the patient incapable of shoulder motion.

in the radius, humerus or any long bone, the bone cortex has often become reduced to one-fifth its normal thickness, in fact, almost to eggshell consistency, largely owing to removal of the stimulus of mechanical stress. Such a condition is, of course, in direct sequence to the general physiologic law of bone growth; it is, in fact, a magnification of Wolff's law. If bone, whose nourishment and blood supply have not been greatly impaired, should suffer so materially as a result of loss of the stimulus of mechanical stress, how much greater must be the effect of the same inhibitory influences on any free bone graft whose blood supply and nourishment are not yet established.

A more suitable environment for successful bone growth is established by the cabinet-maker fit of the properly inserted inlay graft than by any other known technic. At the same time the biologic laws that obtain in the transplantation of all varieties of tissues are fulfilled, since corresponding tissue-layers are brought in apposition, thereby furnishing ideal conditions for the rapid and complete establishment of the blood supply. Under such conditions, Wolff's law of bone growth is given favorable opportunity to exert its influence on bone proliferation and on the adequate adjustment of the bone architecture. Moreover, by the inlay technic, the full influence of Roux's law of frictional irritation is ideally provided for, since extensive plane surfaces of the graft are brought into the closest proximity with equally extensive plane surfaces of the host fragments.

TECHNIC

In work on bone tissues, which easily dry on exposure to the air, operative speed is necessary; moreover, in the repair of bone that from lack of the stimulus afforded by mechanical stress has become almost eggshell-like in consistency, great delicacy of technic and operative speed are fundamental requirements in the difficult work of inserting the necessary inlay. It would be impossible to execute such accurate inlay technic by the former laborious methods with mallet and chisel, or osteotome. In work of this nature, in which the operating field is frequently limited, where fragility of bone may be a constant menace to success, and in which an accurate cabinet-maker fit of parts is indispensable, an electrically driven rotary twin-saw seems absolutely essential. In contradiction to a recent assertion, it is emphatically stated that the motor-saw, when properly used, does not heat nor glaze the bone. During various operations in the past few months, the author has made repeated attempts to determine whether heat was generated by the motor-saw when used properly, and if so, to what degree. In every instance it has been found that the most delicately adjusted thermometers have failed to register an increase in temperature, even to the fraction of a degree, when placed directly on the motor-saw or on the bone immediately following the withdrawal of the instrument.

Methods of Internal Fixation.—For the inlay graft, accurately cut and fitted by motor-saw technic, the fixation afforded by kangaroo sutures is adequate and preferable to that of all metal agents (such as plates, nails, screws or wire). Kangaroo tendon, from the standpoint of mechanical strength, absorbability and tolerance by the tissues, surpasses all known fixation agents. It remains in situ sufficiently long for the purpose of fixation, and begins to be absorbed within forty days. Moreover, it is sufficiently elastic to allow the plane surfaces of an inlay graft to rub in a microscopic amount on the contiguous plane surfaces of the gutter of the host fragments, thus favoring the frictional irritation law of Roux.

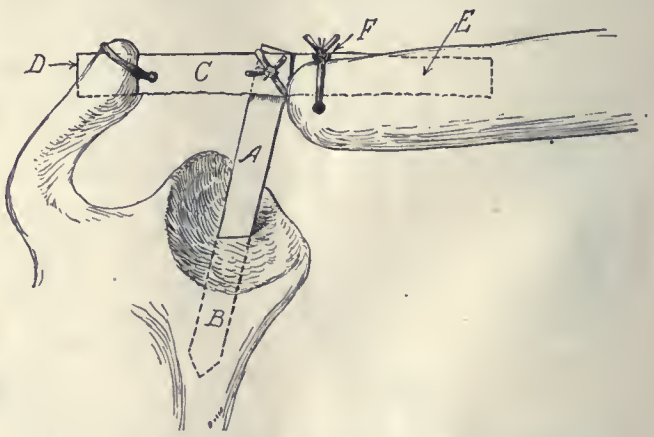


Fig. 3 (Case 1).—Diagrammatic drawing (anterior view) to show the trusswork of tibial grafts in position and fixed with kangaroo tendon. Graft *C* is inlaid into the shaft of the humeral fragment at *E*, and mortised into the acromion process at *D*. Graft *A* is mortised into the glenoid body of the scapula at *B*, and attached by means of kangaroo tendon to Graft *C* at the point where the latter graft meets the end of the humeral fragment.

The practice of inserting metal plates (as recommended by some surgeons) is absolutely contraindicated in this work. The use of metal plates as the internal fixation agent not only robs the graft of mechanical stress, but an influence is thereby added

that contributes strongly toward the stirring up of old infections, if such remain in the tissues. Whereas, in tissues retaining only a slight amount of an original infection, a bone-graft operation speedily done with minimum trauma may bring satisfactory results, the introduction of a foreign body (such as a metal plate,



Fig. 4 (Case 1).—The plastic operation in this case was performed four and one-half months after the patient was wounded and two months after the wound had healed. The roentgenogram demonstrates restoration of loss of bone by two tibial grafts, eight weeks after operation. Graft 1 was inlaid into the shaft of the humerus and mortised into the acromion process. Graft 2 was mortised into the glenoid body of the scapula and contacted with Graft 1 at the point where that graft met the humerus. During the union of the grafts the arm was held by a plaster-of-Paris shoulder spica in an elevated anterior posture and in such relation to the scapula that the powerful thoracic muscles controlling this bone might later move it and in a large measure restore its loss of function by causing the scapulothoracic motion to be compensatory for loss of shoulder motion.

nails or screws) adds a second devitalizing element, which, in the battle of tissues, may turn the scales unfavorably, with the result that infection again breaks out.

ANALYSIS OF CASES

A careful analysis of the first 100 cases of fracture treated by bone graft at U. S. Army General Hospital No. 3 during the period from July 15, 1918, to May 1, 1919, has yielded, it is believed, valuable data in regard to possibilities of treatment.

Of the 100 cases, seventy-nine involved bones in which injury resulted from high explosive shell, machine gun bullet, or shrapnel; seventeen were simple fractures of the long bones; the remaining four cases were compression fractures of the spinal vertebrae. All the simple fractures and the spine cases have been successfully treated, in that they have healed, in each instance, without infection, and have shown bone growth by roentgenographic examination within a reasonable period after transplantation of the graft. In every case of fracture of the long bones, function has been restored, while in the spine cases there has been an inhibition of symptoms.

Of the seventy-nine cases of fracture by projectiles, treated by bone graft, sixty-five, or 82 per cent., were for loss of substance varying in amount from one-half inch to six inches, and averaging about two inches; ten cases were for nonunion without loss of bone; the remaining four cases were for malunion. These cases are classified anatomically in Table 1.

TABLE 1.—SEVENTY-NINE CASES OF FRACTURE TREATED BY BONE GRAFT, GROUPED ACCORDING TO THE BONES INJURED

Site of Injury	No. of Cases
Radius	23
Ulna	17
Radius and ulna	4
Humerus	12
Humerus and ulna	2
Metacarpal	3
Mandible	1
Total cases, head and upper extremities	62
Tibia	12
Femur	4
Patella	1
Total cases, lower extremities	17
Total number of cases considered	79

SPECIAL METHODS

Some of the various methods of plastic repair employed in this series of fractures, more than four fifths of which involved loss of bone, are briefly described in the following groups of cases:

Restoration of Loss of Bone at Shoulder.—Owing to the exposure of the upper portion of the body in trench warfare, shoulder injuries, and particularly those involving the upper part of the humerus, have been frequent in the recent war. Through the rather extensive practice of certain surgeons at the front, more especially of the French, of removing large portions of bone at or near the shoulder-joint in such injuries as these, there has resulted a notable group of cases in which shoulder function is very nearly negligible, if not entirely destroyed, on account of the loss of bony framework over which the shoulder muscles might play. Of all surgical conditions, none pre-



Fig. 5 (Case 1).—Type of brace applied after removal of the plaster spica. This brace is so adjusted as to allow the arm to descend to a lower position than that maintained during the union of the grafts to scapula and humerus. This new position brings a slight amount of lateral stress on the grafts, thus stimulating their hypertrophy and development. It is obvious that this new posture causes the lower angle of the scapula to separate itself from the thoracic cage.

sents a picture of greater helplessness than a dangling arm from which the upper portion of the humerus is missing.

The high frequency of shoulder and forearm injuries is strikingly borne out in Table 1. In this series of seventy-nine cases of fracture by war projectiles, injury to bones of the upper extremities, as compared with those of the lower, has occurred in a ratio of nearly 4 to 1. Of the total number of cases of injury in the upper extremity, the humerus has been involved in fourteen instances, or more than 25 per cent. Cases of loss of substance in the humerus with loss of shoulder function have been classified in two groups, with respect to treatment:

Group 1. Restoration of Shoulder Motion and Function: This class consists of cases in which the humerus has been destroyed, but the musculature has been sufficiently preserved to enable the surgeon to hope for a return of shoulder-joint motion and function, provided the bone be replaced. The author has restored motion and function in such cases by transplanting into the humeral fragment the head and upper end of the fibula to replace the upper portion of the humerus that has been destroyed. He has resorted to this operation many times in his civil practice, as well as in military work, and has invariably found that the patient can functionate satisfactorily without the upper end of the fibula. In these cases, whenever possible, the principal muscles of the shoulder, such as the pectoralis major, the supraspinatus and the subscapularis, are firmly affixed subperiosteally to the transplanted head and neck of the fibula.

Group 2. Shoulder Function Restored by Compensatory Scapulothoracic Motion (Figs. 2, 3, 4 and 5): This group includes cases in which, in addition to loss of bone, the musculature of the shoulder has been destroyed or severely injured to such a degree that one cannot hope to secure a return of shoulder-joint motion. In these cases, the loss of bone is restored by ankylosing the humerus to the scapula by a truss-work of tibial grafts, usually two in number. During the union of the grafts, the arm is immobilized in an elevated anterior posture, and is held in such relation to the scapula that the powerful scapulothoracic muscles which control this bone may later move it. Thus, by causing the scapulothoracic motion to compensate for loss of shoulder motion of the arm, the lost motion of the arm and the shoulder is restored to a surprising degree.

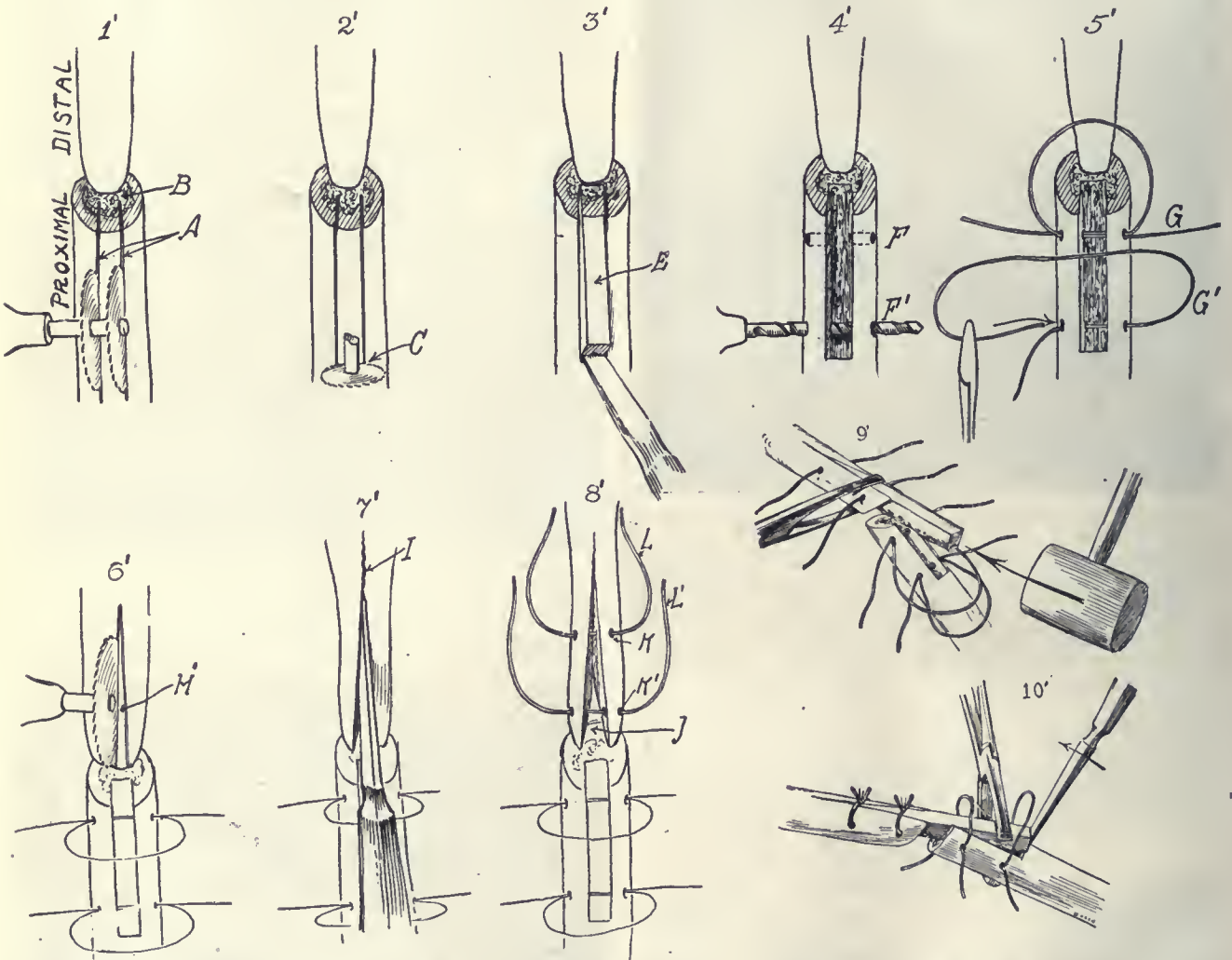


Fig. 6 (Cases 1 to 4).—Diagrammatic drawings 1' to 10' illustrate the author's technic in cases in which the end of the bone fragment (distal or upper fragment in this case) is conical in shape and too small in diameter to receive the usual inlay graft which is shown in the proximal, or lower, fragment in these drawings. A wedge-shaped piece of cortex, *H*, is removed from the upper fragment. A split at the end of the wedge cavity may, or may not, be made by means of a thin osteotome, as shown at *I*. If the fragment is small in diameter and osteoporotic, as is usual in these cases, the bone may be bent on both sides of the cavity in the region of *I*, and the wedge cavity may be enlarged by driving a wedge-ended graft of larger diameter into it, as demonstrated in Step 9'. In Step 10', the wedge end of the graft is firmly immobilized in the distal or upper fragment by means of kangaroo tendon. The other end of the graft is then forced into the proximal fragment by means of a strong clamp at the same time that the graft is being levered endwise by means of a narrow osteotome, the object of this procedure being twofold; first, to restore as far as possible the length of the ulna, and secondly, to bring end stress on the graft as a stimulus to bone growth. These drawings were made with the distal fragment of the ulna uppermost because of the position of the arm during operation.

In restoring loss of bone near joints, this technic has been employed: By means of an osteotome or chisel, a wedge-shaped mortise is made in the joint fragment and is extended under the capsule, and sometimes completely through to the joint cartilage, without damaging the joint. One end of the graft is driven into this wedge-shaped mortise. The other end of the graft is then inlaid into the long bone fragment by the usual inlay technic and is fixed with kangaroo tendon (Fig. 3).

Restoration of Long Bones.—Restoration of the shaft of the humerus, femur, tibia or any long, large bone has been accomplished by means of a graft inlaid by the author's usual inlay technic, as illustrated in Figure 6, in the larger fragment at *A, B, C* and *E*. On bones of the forearm, or on any bone of small diameter, or in cases in which a bone of large diameter has become conical-ended, as frequently occurs, the mode of repair which has been resorted to is designated, for purpose of description, as the "fishpole" technic (Fig. 6 *H, I* and *J*), since a similar method is employed by the artisan in mending a fishpole.

The influence of stress on the hypertrophy and metabolism of bone has been more strikingly illustrated in bone graft restoration of the shafts of long bones than in any similar class of work. However small the



Fig. 7 (Case 2).—Extreme laxity of left arm due to loss of substance in shaft of humerus as result of wound by machine-gun bullet at Cantigny. The plastic operation for restoration of bone and function in this case was performed seven months after injury and two months after wound had healed.

diameter of the graft, provided it be protected from fracture by external support and at the same time be allowed to withstand stress, it will eventually restore the lost bone in almost every anatomic particular, namely, in diameter, strength and external contour, as well as in respect to the internal architecture.

Immobilization in Extremity Work.—By making the most of all known mechanical joints and by the insertion of kangaroo tendon in such ways as to afford the best internal fixation, in conjunction with the most perfect external fixation by plaster-of-Paris dressings, the extremity being placed in various "positions of neutral muscle-pull," immobilization of the involved fragments has been found possible. Too great emphasis cannot be laid on the importance of putting absorbable ligatures in the skin, so that carefully applied plaster-of-Paris dressings need not be disturbed for a period of at least eight weeks after implantation of the graft. Plain catgut No. 0 or No. 1 with suture-holes puddled with tincture of iodin, serves admirably for this purpose. Chromic catgut, No. 0 or No. 1, is also suitable. The buried sutures in the soft parts should always be small in diameter and as limited in number as possible. The only adequate postoperative dressing in these cases is the plaster-of-Paris splint, applied with the utmost care and molded to the bony contours of the extremity. It should always include at least one joint above and one joint below the bone involved, with due attention given to position, which is of the greatest importance. By way of illustration, in cases of injury of the upper portion of the ulna, the arm should always be put up straight, never with the elbow flexed. In cases of injury at or near the lesser trochanter of the femur, the extremity should always be immobilized in a plaster spica with the thigh abducted and flexed.



Fig. 8 (Case 2).—Loss of about 1½ inches of shaft of humerus.

Synthetic Grafting of Tissues in Construction of New Fingers.—In two cases of loss of four fingers with the adjoining metacarpal bones as a result of high explosive shell and shrapnel wounds, the hands were completely helpless, so far as grasping and holding were concerned. In these cases, function has been restored to a great extent by the synthetic construction



Fig. 9 (Case 2).—Method of immobilization of fractures of humerus. In this case the dressing was allowed to remain on for eight weeks.

of new digits. One of these cases is illustrated in Figures 12, 13 and 14. By providing an apposing surface for the thumb, the usefulness of the member has in each instance been restored.

In plastic work of this nature, which involves the transplantation of more than one kind of tissue, a two-step or multiple-step procedure is the only method whereby a successful sequence may be expected. It is essential, for example, in handling soft parts and bone (as in the construction of new fingers, in plastic repair



Fig. 10 (Case 2).—Tibial bone graft firmly united in position, ten weeks after plastic operation.

of the jaw, etc.) that skin and subcutaneous tissues be firmly united with the host-tissue and that circulation therewith be well established before implantation of bone. Ease of technic and the possibility of obtaining ample soft tissues and bone have also led the author to recommend strongly this type of operative procedure.

Repair of the Mandible.—Probably no branch of surgical repair presents greater difficulty of mechanical fitting and adjusting than in injury to the lower jaw, involving extensive loss of bone. Owing to the irregularity of contour of the jaw fragments, hardness of the bone and lack of anvil stability, such work demands an accuracy and precision of technic that can be secured only by the use of delicately adjusted motor tools, such as the author's tiny circular saws, burrs, drills, end-mills and the like.

Of primary importance is the cosmetic result. In many cases this depends entirely on the construction of a suitable graft framework over which to restore the contours of the face. Such a framework must secure the adequate fixation of the jaw fragments, as well as restoring, in many instances, loss of bone substance. In his plastic work on the jaw, the surgeon will do well to cooperate, so far as possible, with the prosthetic dentist in the application of the most efficient intradental splints. Use of such splints is, however, in many instances, impossible, owing to the extensive loss of teeth and of bone. In the latter cases, the sole means of fixation must be provided by the graft, which should be molded and firmly inlaid into each fragment, adequate in any emergency (such as removal of the dental splint on account of pressure necrosis, etc.) to supply the requisite fixation.

In other work, such as the restoration of the shafts of long bones, neck of femur, etc., the tibia has been found a satisfactory source from which to obtain the graft. In work on the jaw involving extensive bone loss, however, the tibial dimensions are not always sufficient to supply a graft of the necessary curve and size. In such an event, the side of the ilium, adjacent to the anterior superior spine, is the only bone, with the possible exception of the outer table of the skull, which is of adequate dimension to allow the proper modeling of the graft, which is done by means of motor-driven tools in a manner resembling the scroll-work of the cabinet-maker.

Relief of Compression Fractures of the Vertebrae.—The use of the bone graft as a means for relief of compression fractures of the vertebral bodies has afforded highly satisfactory results. On account of meager bone growth and inadequate bone repair around crushed vertebral bodies, and because of constant interference with bony union by the respiratory and voluntary motion, nature, unassisted, does not bring about the proper repair in these cases, even though efficient external means of immobilization be employed for months, and sometimes even for years. To supply the deficiency resulting from lack of bone repair, the bone graft offers a sure means of relief, and its indications in such cases are as definite as in any pathologic or traumatic conditions encountered. It is inserted into the spinous processes by precisely the same technic as has been devised by the author for the treatment of Pott's disease of the spine (Fig. 15).

Preoperative Treatment of Persistent Infection.—In our first series of 100 fracture cases treated by bone graft, we found that postoperative wound infections were more frequent in the last twenty-five cases than previously. However, these cases did not include in



Fig. 11 (Case 2).—Stability of arm from union of graft, ten weeks after operation. Such a posture was impossible before operation.

all instances those wounded at a later date, but rather those in which the primary wound took longer to heal; and the later infections, following the plastic operations, are attributed to a more severe primary infection and to a less complete immunization on the part of the patient.

At the time of the plastic operation, positive cultures were occasionally found in the scar tissue around the bone ends, and small sequestrums were removed from the bone fragments. Not all of these cases, however, showed infection following the operation. In those cases which did, the infection was usually of a mild, low-grade type, apparently owing to the attenuation of the infecting organism or to a partial previous immunization of the patient against that organism.



Fig. 12 (Case 3).—Left hand of an American soldier who lost completely the four fingers and adjoining metacarpal surface following a high explosive shell wound at Château-Thierry. One may note the absence of any apposing surface when the thumb is flexed, as a result of which nothing can be grasped or held.

The scar, on account of its low-grade tissue and its deficient blood supply, furnishes a most unfavorable environment for the reception and nourishment of the graft. To obviate the possibility of subsequent infection in cases which, from their past history, seem unfavorable, and in order to furnish healthy tissues in which to implant the bone graft later, it has been the author's practice to excise the scar at a preliminary operation, laying bare the bone ends, and replacing the scar by plastic flaps of healthy skin, subcutaneous tissue, muscle, fat, etc. If, as has usually been the case, satisfactory healing of the wound takes place, the bone graft operation follows after a period of from ten days to two weeks. By means of such a two-step operative procedure, healthy tissue is provided for the subsequent implantation of bone, and a successful sequence is more reasonably certain.

Source of Graft Material.—Owing to its accessibility and favorable contour, the tibia, perhaps of all the bones of the body, as a source of graft material affords the greatest ease of technic. Moreover, bone from the tibia is nearly always preferable for grafting purposes, not only on account of the dimensions and the plane surface of this bone, which permit of a wide choice in the selection of material, but also because of its characteristic strength and osteogenic activity. In the treatment by bone graft of the foregoing series of 100 cases of fracture, the tibia with few exceptions furnished the graft material. The exceptions were in cases of sliding grafts to restore loss of substance in the humerus, femur or tibia, and in one instance of synthetic transplantation of tissues to form a new finger, in which case bone was transplanted from the clavicle.

Avoidance of Operative Trauma.—There are traumatic influences which have an important bearing on the success of a bone graft operation. It is necessary to avoid certain faults in technic, such as excessive length of operating time, with the resultant drying of the graft or host tissues from contact with the air, rough use of the retractors, poor mechanical fit of graft, absence of coaptation of similar bone layers, or direct trauma from wedging or crushing by the chisel and mallet.

Table 2 permits a comparison of the average operating time with the shortest in certain cases, and has been inserted because it is believed that in no other class of surgery does length of operating time so materially influence results. In this work, in which we are dealing with rigid tissues, every effort must be made to maintain to the fullest possible extent the viability of the transplanted bone, a condition largely dependent on the early union of graft tissue with host tissue and on the adequate establishment of nourishment. Drying of the tissues from contact with the air should be constantly guarded against, not only by the use of saline

TABLE 2.—SUMMARY OF TIME REQUIRED IN BONE GRAFT OPERATIONS, ACCORDING TO SITE OF INJURY

Bone	Time of Operation—Average	Time of Operation—Shortest
Humerus	1 hour	45 minutes
Radius	47 minutes	25 minutes
Ulna	33 minutes	19 minutes
Femur	55 minutes	21 minutes
Tibia	23 minutes	14 minutes



Fig. 13 (Case 3).—To restore lost function of hand, the synthetic transplantation of soft tissues and bone was undertaken in a two-step operative procedure. Skin and soft parts were first turned up from the chest wall to form a boneless finger. Through a pedicle left attached to the chest wall, supply of blood was furnished until circulation with the hand was thoroughly established. The hand and arm were immobilized in plaster for four weeks. In the second operative step, the boneless finger was first cut loose from the chest wall. A tibial graft, inserted through the soft parts, was then mortised firmly into the os magnum. A sliver graft, indicated by the arrow, was affixed alongside for increased osteogenesis. The roentgenogram was taken four weeks after the implantation of the grafts, which now have become firmly united to the bones of the hand.

solution, but by completing the operation in the shortest possible time consistent with good work and with minimum trauma.

Final Results in Forty-Eight Cases.—Too short a time has elapsed to pass judgment, at the present date, on the entire series of 100 cases of fracture. However, in forty-eight cases that were treated before March 1, 1919, and have, therefore, afforded opportunity for observation over a period of at least ten months, we feel justified in reporting definite conclusions.

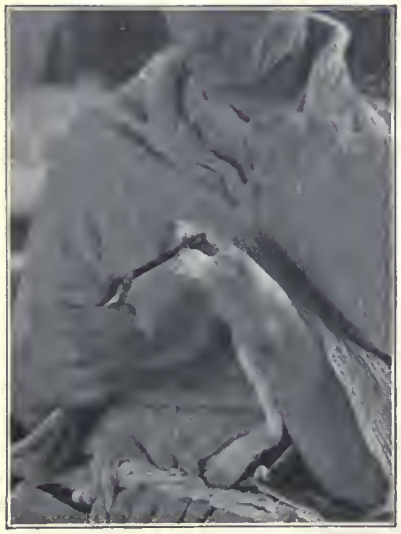


Fig. 14 (Case 3).—New finger six weeks after last operation. The patient is now able to grasp and hold objects with his thumb and grafted finger.

Of these forty-eight cases, the results in six are questionable; the grafts are still in situ and the roentgen ray reveals bone growth, but the wounds were primarily infected and there yet remain one or more sinuses. Three of these questionable cases, however, show favorable indications of ultimate good results; the other three cases will probably be failures.

Four of the forty-eight cases are definite failures. Of these, one case, a sliding inlay from a tibia to a femur to stabilize a resected knee, was complicated by pneumonia five weeks after the operation; sinuses broke out on both sides of the knee, with a resulting infection of the entire scar tissue of the knee and a failure of part of the graft to "take." Of two radius cases that were failures, one showed a positive Wassermann after, but not before, the operation; and the patient himself removed the fixation dressing on three different occasions. The other radius case showed a bad infection of dense scar tissue. The fourth, and last case of failure, was a humerus case with loss of three inches of substance, and with much scar tissue. The wound broke down, and examination by roentgen ray revealed that the lower end of the graft was not attached to the distal end of the humerus.

Subtracting this group of ten cases, of which four are definite failures and six questionable cases, we have thirty-eight cases remaining, all of which have shown perfect results in respect to postoperative primary healing of the wound, proliferation of new bone as demonstrated by the roentgen ray, and restoration of function. This yields a rate of 79 per cent. perfect results, with a possibility of an ultimate 85 per cent., should three of the questionable cases prove successful.

A complete report of all the plastic operations performed at U. S. Army General Hospital No. 3 will be published as soon as sufficient time has elapsed to permit of trustworthy deductions.

SUMMARY

The following conclusions are based not only on a study of cases and results at U. S. Army General Hospital No. 3, at Colonia, N. J., but also on the author's previous experience with over 1,800 cases treated by bone graft in civilian practice, as well as in extensive animal experimentation. It is believed that the careful observance of these points is essential to success in this class of work.

1. *Early Observation of Wound.*—A careful study of the wound should be made before it has healed, if possible. The type of infecting organism (*Streptococcus hemolyticus,* gas bacillus, etc.), the nature of the clean-up operation and the manner of healing of the wound should be noted.

2. *Time to Operate.*—In a few cases it is permissible to operate after the wound has been completely healed for a period of two months, while in others, on account of possible latent infection, it may be advisable to delay the final plastic work for at least six months. In some of the unfavorable latter cases, a two-step operative method may be followed, consisting of a preliminary excision of scar tissue with replacement by a healthy skin flap, muscle, fat, etc., followed after a period of from ten days to two weeks by the final bone plastic operation.

3. *Immediate Preoperative Observations.*—For the purpose of determining the existence of latent infection, splints should be removed, and deep massage and rough manipulation should be practiced for a period of from one to two weeks prior to the operation. During this time the temperature should be observed, and the parts should be carefully examined for local tenderness or any evidence of a recrudescence of infection. The field of operation should have a forty-eight hour preparation, iodin technic being preferred.



Fig. 15 (Case 4).—Case of compression fracture of third, fourth and fifth lumbar vertebrae caused by fall in dugout. Panel of vertebrae (from clay model of case), showing relief of condition by a tibial graft inlaid into spinous processes from first lumbar to first sacral vertebrae.

4. *Plan of Operation and Choice of Incision.* — By means of roentgenographic and physical examinations, the proposed plan of operation, especially in respect to location of graft, should be determined before incision is made. If possible, the skin incision should not lie directly over the proposed bed of the graft, and the operation should be so planned that the graft may be covered without undue tension of skin and, if possible, so placed that it comes in contact with healthy tissue instead of scar tissue. In several cases in which this has been accomplished, the graft has healed in by primary union, whereas the scar, even at a

considerable distance from the graft, has broken down completely. In cases of extensive loss of bone, the scar tissue may be pushed to one side, in order that the graft may lie in healthy tissue. Drainage wicks of any kind should never be inserted at the time of operation.

5. *Duration of Operation.*—It is believed that the shortest possible operating time consistent with good work and with a minimum amount of trauma is requisite to successful results in these cases.

6. *Use of Motor-Driven Instruments.*—These are essential: (*a*) on account of the necessity for rapid work in order that drying and traumatization of the graft tissues and host tissues may be avoided; (*b*) in order that a cabinet-maker fit may provide for mechanical fixation of parts and for the operation of Roux's law of frictional stimulus to bone growth with a view to an early and adequate establishment of nourishment to the graft; and (*c*) on account of the necessity for the fulfilment of the law of anociassociation. The motor outfit with its various tools to produce automatic fits seems indispensable. The motor-saw, when used by the proper technic, does not heat nor glaze the bone.

7. *Adequate Length of Graft.*—The graft should always, when possible, be of the inlay type, and sufficiently long to extend into each fragment for a distance of at least 2 inches, and always beyond the sclerosed area. The gutter should extend well into the healthy marrow of the host-bone, with which the marrow of the graft should be amply contacted. It is exceedingly important that the bridge of marrow from the marrow canal of one fragment to that of the other should be restored for the transmission of blood vessels, bone cells, etc.

8. *Type of Graft.*—The graft should, if possible, be autogenous, consisting of all the bone layers, namely, periosteum, complete thickness of cortex, endosteum and marrow substance; and it should be so inlaid that the fit is perfect, with exact apposition of corresponding layers of graft tissue to those of the host fragments. Such a contacting fit not only favors the mechanical fixation of the fractured bone and the graft, but also the very potent frictional stimulus to bone growth, emphasized by Roux.

9. *Supplemental Grafts for the Purpose of Osteogenesis.*—Small silver grafts placed alongside the principal fixation graft are most efficacious in supplying additional foci for bone growth.

10. *The Graft as Main Fixative Agent.*—Fixation should always be secured by the graft itself, and not by metal plates or other foreign material, since it is the stimulation from the stress carried by the graft itself that is largely responsible for the healthy metabolism of the graft and for bone growth.

11. *Suture Material.*—The graft should be held in place by a minimum amount of absorbable suture, preferably kangaroo tendon, which is the ideal material for this purpose, in that it is tolerated by tissue, readily absorbable, very strong and reliable. Fine absorbable suture material should be used for the skin and underlying soft parts.

12. *Postoperative Fixation.*—The limb should be firmly immobilized by a plaster-of-Paris cast for a period of from eight to ten weeks following operation, and as long thereafter as the roentgen ray shows it to be necessary. Emphasis should again be placed on the importance of using absorbable skin suture material in order that the plaster dressing need not be disturbed until time for the removal of the splint.

DIAGNOSIS AND SURGICAL TREATMENT OF INTRATHORACIC GOITER

PALLIATIVE TRACHEOTOMY; TRACHEOSTENOSIS *

GUSTAV SCHWYZER, M.D.
MINNEAPOLIS

The term intrathoracic goiter indicates in a general way that the thyroid growth is located in the chest. Woelfler used to classify these goiters as substernal, subclavicular and endothoracic. Others speak of partial or total intrathoracic goiters. None of our goiters belong to the endothoracic or total intrathoracic group; they were all complicated by a goiter on the neck itself.

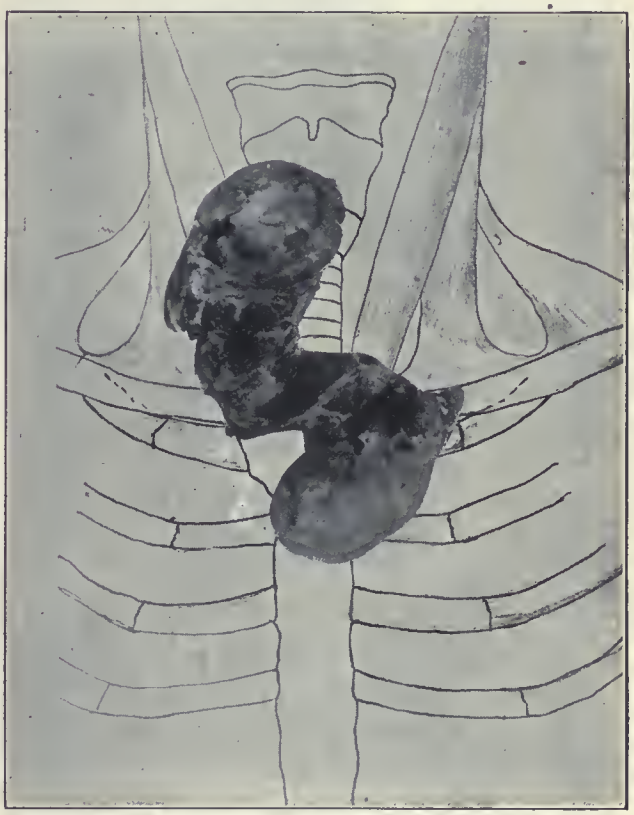


Fig. 1.—Intrathoracic goiter in Mrs. R., aged 57.

In order to eliminate confusion with the ordinary struma profunda projecting into the sternal notch, I shall consider only those goiters that reach to the height of the second rib or lower.

ANATOMY

In order to gain a clear understanding of the symptoms of intrathoracic goiter we must consider for a moment its anatomic relations.

The aperture in the thorax anteroposteriorly measured from the upper border of the sternum to the first dorsal vertebra is only 5 or 6 cm. in distance, and the lateral diameter taken through the middle of both ribs is from 9 to 10 cm. It is evident, therefore, that the aperture into the thorax is the most dangerous place if a goiter is located here, as this bony ring cannot give, and compression of the adjacent organs going through is unavoidable. If the goiter goes through

* Read before the Minnesota Academy of Medicine, Oct. 8, 1919.

the aperture into the cavum mediastini, conditions become more tolerable. If it stays back of the sternum, it compresses particularly the trachea. The esophagus does not give any symptoms in most cases; though

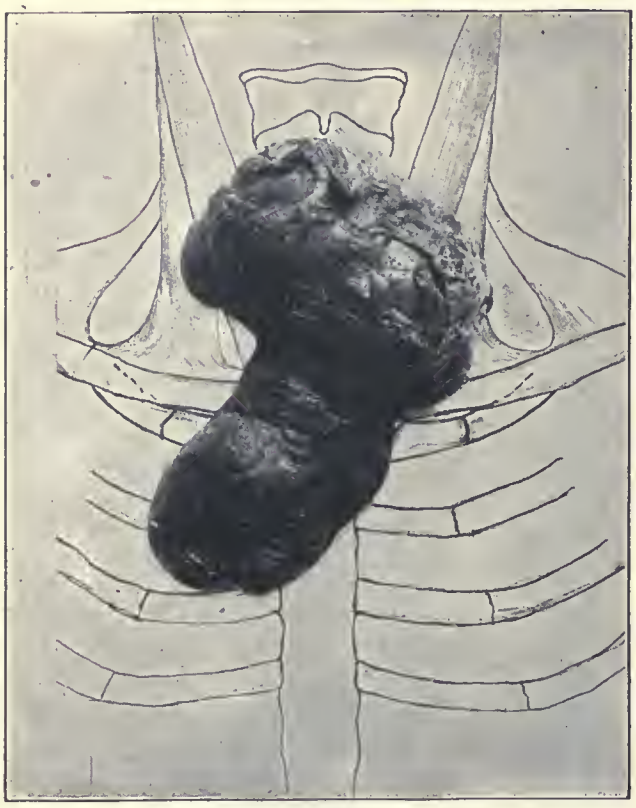


Fig. 2.—Intrathoracic goiter in Mrs. C., aged 63.

difficulty in deglutition speaks for a retrosternal goiter.

The cavum mediastini is bordered in front by the manubrium sterni, the anterior ends of the claviculi and the first ribs, posteriorly by the first three dorsal vertebrae, on the side by the parietal pleurae, and inferiorly by the big blood vessels, the vena and arteria anonyma, the arch of the aorta, and the pericardium. The organs we deal with in this cavum are the vena anonyma, back of it the truncus anonymus arteriosus, the common carotid, and the subclavial artery, the nervi vagi, recurrentes and phrenici, the thoracic duct, the tip of the lungs, the trachea and the esophagus.

DIAGNOSIS

A considerable aid in the diagnosis is a good history. We may learn that the patient had a goiter for years, and that this goiter disappeared or "was cured," as the patient often expresses himself. He may mention that breathing was always labored at the least muscular effort, and difficulty in breathing remained even after the disappearance of the goiter on the neck. In addition the patient may say that in bed he is forced to lie in a certain position. Often he requires no pillow or, on the other hand, he may have to elevate his head unusually high. Should he change the well-chosen position of the head unconsciously in his sleep, the patient awakens feeling chocked, has to sit up straight in bed, or runs to the window in an effort to inhale air. Sometimes he spends night after night in a chair, fearing the recurrence of one of these spells.

INSPECTION

At times such a patient has almost a comical appearance, carrying his head in a high and stiff manner. Again, we may find the head bent forward with the chin approaching the sternum.

Physical Examination.—If no goiter attracts our attention, we now start with a thorough physical examination of the chest. Percussion may give us a distinct dulness over the sternum, or over the sternum and one side, or over both sides. This symptom is a more constant one than the findings perceived through auscultation. The latter examination, though, may help us at times in our diagnosis. The breathing in the upper chest may be so light and superficial that it attracts our attention. This finding points to the fact that there is an impediment to the breathing. The lung may be squeezed to the side, so much so that it cannot inflate. Or a bronchus may be compressed.

Whether or not there is a goiter plainly visible, with or without dyspnea, we are bound to make a careful palpation of the neck down into the jugulum as far as we can reach. We may find a palpatory resistance in the jugulum which is constant or which appears only during deglutition. The larynx may stand very low. We then speak of a ptosis of the larynx. Its excursion during deglutition might be markedly reduced. Consequently we must always remember deglutition when we palpate.

If hoarseness exists, then the laryngoscope will tell us of a paresis or a paralysis of the vocal cord. Again we are a step ahead in the diagnosis. True, there



Fig. 3.—Intrathoracic goiter in Mrs. R., aged 53.

are some cases with extreme dyspnea in which the more skilful laryngoscopist will be unable to succeed in seeing far down into the trachea. I will add that not only the vocal cords but also the lower part of the trachea must be included in the laryngoscopic picture.

Pathologic Structure.—At times there are symptoms existing which originate from the special pathologic structure of the goiter, and these also have to be considered.



Fig. 4.—Intrathoracic goiter in Mrs. O., aged 64.

The malignant intrathoracic goiter in its initial state is of course intracapsular and cannot be diagnosed. Should we have severe dyspnea and especially paralysis of the recurrent laryngeal nerve together with some metastatic tumor, the diagnosis becomes certain, but a cure impossible.

Fortunately, most of the intrathoracic goiters are of benign nature. In this group belongs the toxic or exophthalmic intrathoracic goiters with their characteristic symptoms: tachycardia, tremor, disturbances of the nervous system, and the various eye symptoms including exophthalmos.

Heart Symptoms.—The connection between the goiter and the heart has long been recognized. We commonly speak of a "goiter heart." A toxic goiter or the pronounced exophthalmic goiter is responsible for the thyrotoxic heart. But there is another important heart affection more commonly found in intrathoracic goiter called the "mechanical goiter heart." It is an accepted thought that pressure of the tumor on the large blood vessels as well as on the nerves, especially the cardiac branches of the sympathetic nerve, can bring on this condition of the heart. On examining the heart itself we commonly find its valves free from murmur. It usually appears enlarged, but because of the dulness mostly constant in the chest, the outlines of the heart become indistinct. The heart action is confused, irregular and accelerated.

A very characteristic symptom is the net of dilated veins on the neck and upper chest anteriorly. The superior vena cava, which brings all the blood from the upper part of the body into the right atrium, suffers principally through this pressure. That blood is now drained through some side channels (the venae costalis superiores, hemiazygos and azygos) into the inferior vena cava. This phenomenon was observed in one of my cases (Miss H.). Her history tells us that at one time she was treated at a hospital for these varicose veins.

The arterial blood vessels also can suffer.

There are cases reported in which one common carotid and the radial artery of the same side were only faintly pulsating, owing to the severe pressure from an intrathoracic goiter.

Roentgen-Ray Examination.—Good roentgenograms and a fluoroscopic examination are, indeed, a welcome aid for the diagnosis. There are some rare intrathoracic goiters, for instance, tumors in the chest from aberrant thyroids, in which the roentgenographic examination is the only means by which we can detect such a disease. We should have an anterior and a lateral roentgen-ray view, lateral especially, as the intrathoracic goiter is located particularly in the anterior upper portion of the mediastinum. If during deglutition in the fluoroscopic examination the tumor follows the movement of the larynx and trachea, regularly and synchronously, the last doubt in the diagnosis is removed.

Indications for Operation.—Whether or not a case of intrathoracic goiter is operable does not depend on the degree of dyspnea, nor does it depend on the pressure of the nerves, or on any of the symptoms mentioned; but it does depend on the heart. A degenerated heart muscle, a pronounced myocarditis bringing on secondary changes of the other inner organs, is a contraindication for operation. But even after carefully weighing the various heart symptoms, we are

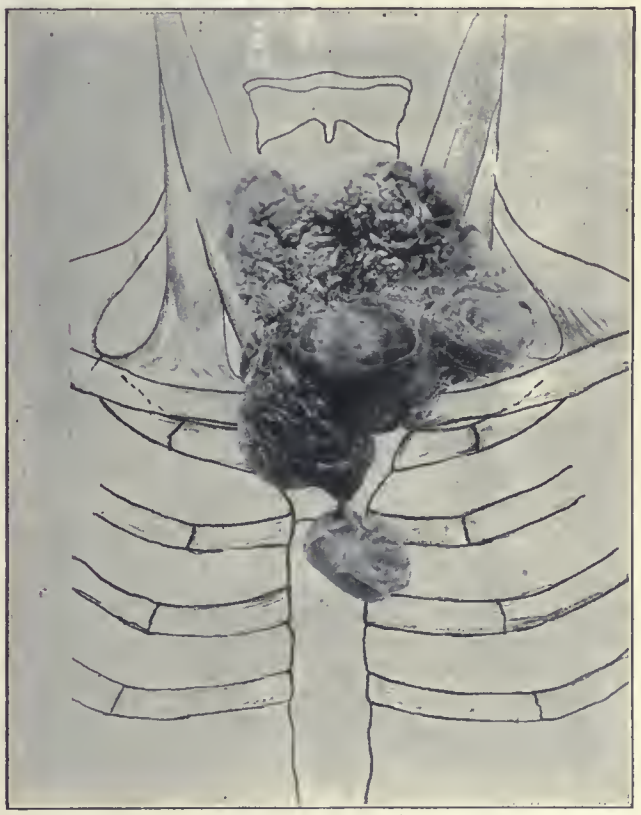


Fig. 5.—Intrathoracic exophthalmic goiter in Mr. C., aged 49.

always taking a certain risk, for we have no direct test which will reassure us that the heart is sufficiently resistant for the operation.

SURGERY

A retrosternal goiter with its precarious dyspnea should be operated on without much delay. We must remember that choking spells do not repeat themselves indefinitely, for with each such dyspneic attack the patient is one step nearer his grave. I shall never forget one case at Kocher's clinic which resulted fatally. It was a case in which dyspnea increased so rapidly that not even a tracheotomy could be done. The patient, who had an intrathoracic substernal goiter (found at necropsy), was ordered to bed. He disobeyed the physician's orders, left his bed during the night, and by doing so brought on a new spell of dyspnea, this time fatal.

It is desirable that the operation be begun under local anesthesia if the dyspnea is very marked or if the goiter is of toxic nature. Concerning this point, one of my cases will open an argument. A woman, aged 64, with a subclavicular goiter, died from pneumonia on the fourth day following the operation, which was done under local anesthesia. I am inclined to think that the severe mechanical injury resulting from working directly on the trachea was sufficient cause for the death. It has been my experience that even ordinary goiter operations may be complicated by an acute, putrid bronchitis. For this reason de Quervain in Bern avoids as often as possible dissecting the isthmus free from the trachea unless there is a strict indication for the removal of the isthmus.

Excitement must be kept away from the patient as much as possible. Very important too is the position of the patient on the operating table. Let the patient be the judge to tell us whether the head lies correctly. Only in apathetic patients must we be guided by the stridor. If the latter is minimized, the most desirable position is found. It is of the utmost importance to have an eye on the respiration. If the extreme dyspnea increases to a degree too dangerous for life as the operation progresses, a tracheotomy must be made and a cannula of sufficient length must be introduced to reach beyond the point of obstruction. I prefer the flexible cannula devised by Koenig.

This operation, which is only palliative, proves to be very difficult at times, especially if the trachea is covered by the thyroid mass above the manubrium sterni. The most desirable way that the operation can be performed is to divide the isthmus wherever it is most feasible and dissect it bluntly as much as possible from the trachea.



Fig. 6.—Intrathoracic goiter in Mr. M., aged 56.

While surgeons formerly practiced a two-stage operation, we today excise the tumor regardless of a tracheotomy. The tumor itself must be bluntly enucleated from within its capsule. Its blood vessels as they present themselves require exact attention. Only in this way can fatal hemorrhage be avoided. I always start my goiter excisions by tying off the upper horns. I was astonished to find that no severe hemorrhage ever followed. In one case I compressed temporarily with gauze, but I never inserted liquid wax, a procedure recommended by competent surgeons. Should a large blood vessel like the anouyma become torn, the question in my mind remains open whether the hemorrhage can be controlled without resecting the sternum and the clavicles, a procedure which in itself carries unavoidable complications.

Kocher has devised a good clamp of great value for traction on such intrathoracic tumors. The instrument compresses the tumor, thus avoiding profuse bleeding. The sharp hooks of the instrument prevent it from slipping, and the tumor, therefore, must follow the traction.

I have drained every cavity which naturally exists after such goiter excisions with fine, flexible, rubber tubes. The drains are removed as soon as the secretion ceases. It is astonishing in how short a time the obliteration of such cavities takes place.

Let us consider my own cases. All these intrathoracic goiters were of benign nature; one was a double cyst, two distinctly toxic, one exophthalmic, and the others were colloid, parenchymatous or cysto-parenchymatous goiters. Two were in men and fourteen in women, although the statistics generally favor the male sex for intrathoracic goiters.

The one exophthalmic case, in a man, aged 49, I shall report somewhat in detail:

I performed the ligation operation on both upper horns in January, 1912. The patient, who had the characteristic tremor, perspiration, sleeplessness, sick feeling in the stomach and abdomen, and loss of body weight (160 pounds), showed a pulse of 122 when quiet in bed. The characteristic symptoms existed over the gland, but there was no exophthalmos. The operation had the desired effect. From notes taken in January, 1914, I learned that he improved generally within the two years after the ligation. His pulse came down to between 106 and 110. Still he suffered from his heart beating and from slightly dyspneic breathing. At this examination the laryngoscope detected a deviation of the trachea to the right and compression of the tracheal rings.

Having felt the intrathoracic part of the goiter at the first operation, I proceeded with the excision of the goiter in January, 1914. It proved to be a bloody and difficult operation. The tumor tore in different places, but luck was with me. The patient left the hospital two weeks later

with a pulse of 76, and in June, 1914 (same year), he writes that he does all the work without a hired man on his farm of 160 acres. His weight is now 200 pounds, his pulse 74, and he eats and sleeps well.

One of my toxic cases was unusual on account of acute mental disturbance lasting about thirty hours following the operation. In her confusion the patient tore the bedclothes and constantly tried to leave her bed.

Two cases showed a plain "mechanical heart":

Mrs. R., aged 57, had a very irregular pulse at a high rate without any pathologic findings over the valves. To my surprise there were only 100 pulsations on the second day following the operation.

Mrs. C., aged 63, had a perfectly normal heart. The tone over all the valves was clear, but the function of the heart was increased in frequency and energy. The pulse rate, previously up to 132, became normal forty-eight hours after operation. The heart in any of our thyrotoxic patients has never responded so promptly, that is, never has come down to a norm in such a short time following excision.

In three cases of the series my diagnosis was incomplete. I thought I had to do with strumae profundae, which proved to be intrathoracic goiters.

Since I always found a goiter on the neck, my attention was drawn immediately to the diagnosis, as I never failed to find dyspnea present, the main symptom.

Owing to the fact that most of my cases date back a number of years when roentgenology had not reached the point of perfection of today, I depended in the first place on the clinical symptoms.

TRACHEOSTENOSIS

As dyspnea caused by compression of the trachea is the main symptom in intrathoracic cases, I may be permitted to consider this phenomenon for a moment. A normal trachea has the form of a stirrup. Compression by a goiter at any height naturally changes this picture. We have accurate knowledge from specimens taken at necropsies and we know that the natural picture of the trachea can be distorted in almost every way. There may be a sheath formation, or a half-moon formation. The trachea may be strictured circularly by a circular goiter. The trachea may also be deviated to one side; it may be distorted by two different goiters on different sides and even at different heights. There may be a trachea twisted in such a way that surgeons formerly spoke of a scoliosis.

At the beginning of the nineteenth century, a French surgeon (Lullier-Winslow) described the sheath formation of a trachea. Demme, a surgeon in Bern (Switzerland) in the first half of the nineteenth century, demonstrated the same tracheal deformity with brilliant illustrations that have impressed surgeons.

An interesting controversy was started by Rose in the eighties. He had a series of sudden deaths. Some occurred at the time of the goiter operations, and others hours following the operations. He thought that more important than the compression of the trachea itself was the fact that the trachea became softened at the place of pressure. He explained this softening through fatty degeneration. His statement encouraged a number of eminent surgeons of those days to look up matters histologically. The lengthy debate ended in the accepted fact that no fatty degeneration existed in the cartilage, but that an atrophy of the cartilage became evident. Rotter then found the interesting point that the membranous bands between the cartilaginous rings were elongated in all these cases of compression of the trachea. It was then left to Woelfler to settle this argument, and at the same time bring out facts which led us to believe that the deaths which Rose had on the operating table and which he believed to be due to the softening of the trachea resulted from a collapse of the trachea at inspiration. At the time of expiration, such trachea freed through operation will fill with air like the sail of a boat; but during inspiration the trachea aspirates itself, that is, collapses. The goiter on the trachea is a support and acts like a splint.

I had the opportunity to witness this phenomenon in three cases, though nonintrathoracic. Not having been compelled to make a tracheotomy for any of my intrathoracic goiters, I may be permitted to mention briefly those three cases. They were all in girls from 15 to 20 years old, and all were double goiters. In two of them I was forced to add a tracheotomy within twelve hours after the operation. The dyspnea following the excision gradually became more marked; intercostal inspiration was exceedingly plain. The third patient, with a double struma vasculosa, was breathing with marked stridor. Excision of one goiter cleared the respiration, but as soon as the other side was removed the trachea collapsed at inspiration. I acted quickly and incised the trachea at once. All three patients recovered.

Tracheostenosis very seldom requires surgical correction at the time of operation. The trachea cannula, however, must always have its place among the instruments.

CONCLUSION

If I may be allowed to compare my work in intrathoracic goiters with the general work in goiters, I am impressed by the rather gratifying results, in view of the fact that no other operation has more marked and immediate success. The patient who, with his labored breathing and his cardiac trouble, appears to himself and to others an invalid is now, through removal of the growth in the chest, restored to health immediately.

Maternity Benefit Systems.—The United States is the only one of the leading industrial countries of the world to have no system of state national assistance to maternity according to the Children's Bureau of the U. S. Department of Labor. The countries having such systems are: Australia, Austria, Bosnia, Denmark, France, Germany, Great Britain, Herzegovina, Hungary, Italy, Luxemburg, Netherlands, New Zealand, Norway, Roumania, Russia, Serbia, Sweden and Switzerland. Few of these countries offer benefits to all mothers, but there is a general agreement that wage earners shall be included. The benefits provided consist usually in money, either a lump sum or weekly payments, and occasionally in medicine and medical and surgical services. The expense of the benefits is most frequently shared by the wage earner, the employer, and the state, the wage earner contributing the largest share. In Australia and France, however, the government bears the entire cost. Australia in 1913-1914 paid out $3,284,839 in maternity allowances, and France calls on the national government for over $1,000,000 annually and gets another $1,000,000 annually from local government for this purpose. The English benefits are part of a health insurance scheme for wage earners, of which the government bears a share equal, in the case of the women, to one fourth of the total benefits. In New Zealand there is a voluntary system of health insurance, which includes a maternity benefit, but it reaches so few mothers as to make its effect almost negligible. The method of attack is not through maternity benefits but through adequate nursing service, hospital and medical care, and instruction in the hygiene of maternity and infancy. At present the death rate of New Zealand is the lowest in the world. Australia, on the other hand, gives a maternity benefit of 5 pounds, over which there is no supervision.

Clinical Notes, Suggestions, and New Instruments

IMPROVEMENTS IN TECHNIC FOR THE OBSTETRIC NURSERY

HERBERT THOMS, M.D., NEW HAVEN, CONN.

The daily use of the devices herein described has given excellent results in the maternity department of the Grace Hospital, New Haven, Conn. The first is a simple and efficient method for the identification of babies in the obstetric nursery and the second is a new instrument for use in stretching and retracting the foreskin of newborn babies.



Fig. 1.—Aluminum tag for identification of infants.

In reading the transactions of the Brooklyn Medical Society for May 2, 1919, I became greatly interested in the various methods that were there described for the identification of babies. All of the methods were efficient, but their adaptability to all maternity hospitals was not great. After some experimentation, the method here depicted was adopted with uniform success, not only because of its simplicity but particularly because of its adaptability.

A small aluminum tag the size and thickness of a 5-cent piece (Fig. 1), with a raised edge and a perforation near the edge, is used. This is readily written or engraved on with a steel pencil or machinist's stylet. This makes, of course, an absolutely ineffaceable record. Immediately after the birth and tying and cutting of the cord, this tag is tied around the baby's neck by means of linen tape, three knots being used in tying. This tape is not only very strong but also unabrasive. Aluminum is employed because it is noncorrosive, very light, inexpensive, nonabrasive, and readily written on with the steel pencil.

The reaction of the mothers in the hospital since the adoption of this method is interesting. Not only have they been delighted with their "tagged babies," but they insist on taking their babies home with the tag adornment undisturbed.

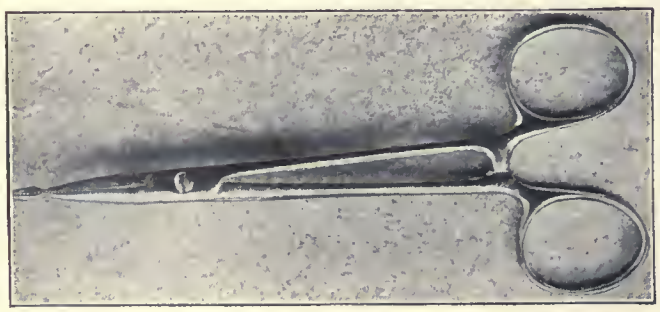


Fig. 2.—Modification of hemostatic forceps for stretching and dilating foreskin.

The instrument shown in Figure 2 is modified from hemostatic forceps. Every one who has used the ordinary hemostat in stretching the foreskin of babies realizes how readily the instrument slips away from the penis. In order to obviate this and to make a more even dilating surface, the instrument here shown was devised. About 0.5 cm. from the end of the forceps on each side is a marked concavity, the purpose of which is readily understood. After the adhesions between the foreskin and the glans have been broken up with an ordinary probe, this instrument is introduced between the glans and the foreskin, and dilatation is easily accomplished.

59 College Street.

A CHAIR FOR SPINAL PUNCTURE*

NORMAN E. WILLIAMSON, M.D., STOCKTON, CALIF.
Pathologist, Stockton State Hospital

In the ordinary method of performing spinal puncture it is difficult to get the patient in the right position. Even when the patient is held by attendants, as has been my practice, there is the possibility of sudden movement closing, more or less, the space between the vertebrae. If a flexible gold or platinum iridium needle is used, there is no danger of breaking; but one may experience considerable trouble in inserting the needle, especially after it has been repeatedly kinked. With the back properly bowed and the needle inserted, it is at times found that the needle is directed too near the perpendicular, and the fluid runs down the needle and is lost on the back. This necessitates a troublesome change of position.



Chair for spinal puncture; arrow points to needle.

I have devised a spinal chair which holds the patient in the correct position so that no attendants are necessary. The front of the seat is so raised that the line of its fall to the lowest point forms an angle of 27 degrees to the horizon. Back of this is a 5-inch curved rise to prevent the patient from sliding off backward. When the patient is sitting at this angle with the back curved outward and the needle inserted, the point of the needle is elevated so that the fluid always drips into the test tube.

A webbing strap with buckle attached to the back of the chair is fastened in front of the abdomen, and the curve of the back is obtained, and fixed by an adjustable bar brought down over the scapulae. The rod passing through this bar can be fixed by a thumb screw to any point in slots in uprights erected at each side opposite the lowest point in the seat.

The curvature of the back is maintained by three points of fixation, and the puncture is made with ease and safety.

* From the Stockton State Hospital.

ACUTE MYELOID LEUKEMIA SIMULATING MENINGITIS

E. E. H. MUNRO, M.D., ST. LOUIS

REPORT OF CASE

History.—Miss M. W. (589), aged 17, telephone operator, was admitted to the City Isolation Hospital, St. Louis, Sept. 17, 1919, having been transferred from the St. Louis City Hospital because it was suspected that she had meningitis. Her past general health had been good. Of significance in the past history is the fact that she had had an alveolar abscess of the superior right maxilla five months before admission. The abscess had been lanced three times during the past three months. It had given no trouble for the past two and a half months. Occasionally during the past four months the patient complained of swelling of the feet in the evening. Three times she fainted while at work.

The present illness began five days before admission with headache (occipital) and slight vertigo. The patient vomited twice during the first day of illness, although she was not sick enough to go to bed. The next day the patient remained up but complained of vertigo and headache. She vomited four times and slept poorly that night. On the fourth day, fever and delirium developed. On the fifth day, the patient was in a stupor. The family physician sent her to the city hospital, where stiff neck and positive Kernig's and Babinski's signs were noted. A spinal puncture was performed that evening and repeated the next morning. The fluid was blood stained and under increased pressure. Smears and cultures from the fluid were negative. The patient was transferred to the isolation hospital as suffering from meningitis.

Examination.—On admission to the isolation hospital the patient was semiconscious, the temperature was 105, the pulse 120, and the respirations 38. There was stiff neck, mild opisthotonos, and slight external strabismus; the right pupil was more widely dilated than the left, and both pupils reacted to light. At intervals there was a twitching of the right side of the face. Pressure over the right ear caused moaning and marked twitching of that side of the face. Both ear drums were normal in appearance. The teeth were in good condition. The scar of the old alveolar abscess was seen, but there was no evidence of active infection. The tonsils were moderately enlarged and red. The superficial lymphatics, cervical, axillary, epitrochlear and inguinal, were all slightly enlarged. The systolic blood pressure was 135, and the diastolic, 75 mm. The upper margin of the liver dulness in the right nipple line was at the fifth intercostal space; the lower border was palpable 6 cm. below the costal margin in the same line. The spleen was palpable 6 cm. below the level of the umbilicus in the left nipple line. It also extended 4 cm. to the right of the midline of the abdomen. A notch was made out at the level of the umbilicus. There was general rigidity of the extremities, more marked in the upper extremities. Kernig's sign was positive. The knee jerk was sluggishly active on the left, and absent on the right. On admission the plantar reflexes were hyperactive; on the following day, Babinski's reflex was positive; on the third and fourth days, all plantar reflexes were absent. The blood count revealed: 3,080,000 red blood cells; 720,000 white blood cells; hemoglobin, 40 per cent. In the stained blood smear there were a number of large mononuclear cells, the size of a myelocyte, with a nucleus which almost completely filled the cell. This was also found in a lymphocyte which could not be accurately classified. The differential count on admission was: myelocytes, 66 per cent.; myeloblasts, 6 per cent.; polymorphonuclear neutrophils, 16 per cent.; large mononuclears, 10 per cent.; eosinophils, 2 per cent., and normoblasts, 6.

Diagnosis.—A diagnosis was made of leukemia with hemorrhage into the central nervous system.

Treatment and Results.—Spinal puncture on four occasions revealed a yellowish pink fluid under increased pressure. Smears and cultures disclosed no organisms. The Wassermann and tuberculosis complement fixation tests were negative. Blood cultures were negative. A catheterized specimen of urine showed albumin and a large number of hyaline and finely granular casts.

For four days the rectal temperature ranged from 103 to 105.6. On the last two days there was involuntary urination and defecation. Several times a cool tap water enema was returned blood stained.

Necropsy Findings.—The patient died on the fifth day after admission. Necropsy was performed four hours after death by Dr. Sherry, city pathologist. No evidence of an inflammatory condition anywhere in the central nervous system was found. There was a very marked engorgement of the vessels of the meninges and an acute edema of the brain and cord. No gross point of hemorrhage was found. The omentum, mesentery, and intestinal serosa showed many minute hemorrhages. The intestinal mucosa showed diffusely scattered minute hemorrhages. There was a small amount of free blood in the lumen.

The chambers of the heart were filled with the characteristic greenish yellow clots. Microscopically the heart showed great engorgement of the vessels and marked mononuclear infiltration between the muscle columns. This engorgement of the vessels and mononuclear infiltration were seen in the liver, spleen, ovary, pancreas, heart, kidney, cerebellum, spinal cord, coverings, lung, lymph glands and intestine. The capsule of the liver was thickened, and directly beneath it and almost completely separating it from the parenchyma was a layer of mononuclear cells of varying thickness.

The liver and spleen were very large. The spleen weighed over 13,000 gm. The spleen showed a number of sharply outlined yellowish, lymphoid tumors giving the appearance of anemic infarcts.

There was general hyperplasia of lymphoid tissue with notable enlargement of the mesenteric lymph glands and of Peyer's patches.

COMMENT

Although the history of onset and the clinical picture presented by this case would lead us to suspect strongly a meningitis, it is evident that the whole picture was produced by the leukemia.

Therapeutics

A DEPARTMENT DEVOTED TO THE IMPROVEMENT OF THERAPY. A FORUM FOR THE DISCUSSION OF THE USE OF DRUGS AND OTHER REMEDIES IN THE TREATMENT OF DISEASE.

MILK AS A VEHICLE FOR CASTOR OIL

LOUIE C. BOYD, Williamsport, Pa., writes: "I was much interested in extracts from an article originally published in THE JOURNAL on giving castor oil. I want to object emphatically to the giving of medicine in food and especially in milk. Milk is too valuable a food for long usage (in tuberculosis, for instance) to have the taste for it changed to utter disgust, with inability to take it with any relish because some medicine was given temporarily in milk. In the matter of castor oil, I suggest the following ways: 1. Hold the nose and swallow the dose. 2. Hold a piece of ice in the mouth for a time and then proceed as under 1. 3. Put diluted lemon juice in a glass; rub the rind on the edge of the glass; pour in oil and a small amount of diluted juice on top. If desired, a pinch of sodium bicarbonate can be dropped in, which will make it froth. 4. Put oil in the froth of soda pop."

COMMENT.—The objection to the use of castor oil in milk or in any other food is well taken; and such objection was voiced in the article on castor oil referred to. The fact remains, however, that there are some patients who prefer to take it in milk, and that the odor of pure unspoiled castor oil is so faint as to be unobjectionable. All the methods suggested by the writer are useful. Especially interesting and, no doubt effective, is the use of lemon juice, as detailed under 3; though, unless the diluted lemon juice is sweetened, children would refuse to take the dose.

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SATURDAY, FEBRUARY 28, 1920

SOME FACTORS IN BONE REPAIR

In the process of the bone repair which follows fracture and other injury of the osseous system, there is frequently considerable débris to be eliminated, such as blood clots, injured bone fragments and other damaged tissue. In addition to this necessity in the early stages of the reparative process, at a subsequent stage the preliminary or primitive new structure must in part be removed to give place to true bone. The excess of the provisional callus which is organized in connection with a bone injury as a rule gradually disappears, so that, as in the course of bone growth, bone resorption is likewise an active process in the later stages of bone repair. Osteoblasts are concerned first of all in the formation of primary bone from calcified cartilage. Until quite recently, it has been assumed that the so-called osteoclasts, which function in the formation of the large central marrow cavities of bones and in the metamorphosis resulting in the permanent bone, are concerned with the absorption and clearing away of cartilage in bone growth. They have been looked on as the scavengers of the developing osseous structures.

The investigations of Shipley and Macklin[1] at the Johns Hopkins University have thrown doubt on the assumed phagocytic action of the long recognized osteoblasts. By methods of vital staining with dyes belonging to the benzidin series of colors, it has become possible to identify throughout the body the special phagocytic cells which store the dyestuffs in the form of very minute dye granules, just as the mobile phagocytes of the blood engulf bacteria and other particles. Of late the term macrophage, first employed by Metchnikoff, has been applied to the entire group of phagocytic cells which are characterized by a uniform functional response to these colloidal dyestuffs. As a writer has recently remarked, the term macrophage is a physiologic designation, including within its compass very diverse morphologic elements. This similarity in staining reaction is but an expression of the phagocytic potentiality which these cells hold in common, and which manifests itself during their everyday existence in the ingestion and storage of certain elements of the surrounding tissue fluids. Some time ago it was pointed out in THE JOURNAL that the resorption of disintegrating calcified tissue in the secondary stages of osseous development, if judged by the results with vital staining achieved by Shipley and Macklin,[1] must be attributed not to the osteoclasts but to fixed macrophages represented by the ordinary reticulo-endothelial cells of the marrow reticulum.

It has now been demonstrated by Macklin[2] of the University of Pittsburgh that the same agencies function in the healing of bone wounds. Macrophages, which stain brilliantly with trypan blue, soon congregate at the site of the injury, where they increase in numbers and in size, and demonstrate increased phagocytic power. They assist in dealing with the tissue waste resulting from the trauma. These phagocytes are developed principally from the lymphocyte-like cells of the blood stream, but some are derived from local mononuclear cells with phagocytic potentialities. Most of them ultimately disintegrate in situ. Furthermore, according to Macklin, during the structural changes attending the transformation of provisional into permanent callus, trypanophil macrophages develop in the callus spaces from the reticulum cells and become numerous, large and phagocytic. They function in the removal of redundant bony spicules, their particular rôle being the absorption of the waste products formed by the breaking down of the matrix. When cartilage is present in the callus they also play a part in its removal. Their action here is thus the same as that of the macrophages of developing bone.

1. Shipley, P. G., and Macklin, C. C.: The Demonstration of Centers of Osteoblastic Activity by Use of Vital Dyes of the Benzidine Series, Anat. Record **10**: 597, 1916; Some Features of Osteogenesis in the Light of Vital Staining, Am. J. Physiol. **42**: 117, 1916.

2. Macklin, C. C.: The Development and Function of Macrophages in the Repair of Experimental Bone-Wounds in Rats Vitally Stained with Trypan Blue, Publication 272, Carnegie Institution of Washington, p. 1.

REGIONAL HEALTH SURVEYS

Napier Burnett,[3] a British expert on public health, has recently given an interesting account of a regional survey of the hospital situation in a northern district in England. The success of the concentration and coordination of effort in protecting the health of troops which was exercised during the war seems to have opened the eyes of the British government to the possibilities of similar coordinated action during times of peace. Among the results is the formation of a ministry of health in Great Britain. Burnett's article indicates that the preliminary information on which action must be based is being gathered under this ministry.

The survey which Burnett describes covered an area of 4,000 square miles containing a population of two and a half million people. Data were collected covering the ratable value of property; the number and distribution of physicians and midwives in each locality; the various types of hospitals, dispensaries and convalescent homes; the birth rate and the infant

3. Burnett, Napier: Edinburgh M. J. **23**: 387 (Dec.) 1919.

mortality rate; the population living in one, two and three room houses, and the transport facilities by rail and road. As would be expected, certain facts were brought out which, in spite of difference in medical organization in the two countries, are not without interest to American physicians. There were clear indications that the number of beds available in general hospitals was entirely inadequate, there being only 0.76 bed per thousand of the population. This was offset to some extent by the fact that there were as many beds available for infectious diseases as there were general hospital beds, and that, as contrasted with American conditions, there were a larger number of convalescent homes than exist in this country. The report also brought out that there was a lack of accommodations for medical as contrasted with surgical cases, that the distribution of the hospitals throughout the district was very unsatisfactory, and that the hospitals were having difficulties on account of lack of funds, just as they are in this country.

The report is of particular interest because certain aspects of the hospital question are at present under scrutiny here. One of the main points emphasized is the unsatisfactoriness of allowing the health machinery of a country to develop in a haphazard fashion. There can be no question that if the hospital development of a given region should be preceded by a survey in which data are collected concerning the distribution of the population and other important factors, such as those mentioned, the locations of hospitals would frequently be quite different from what they are. Now that an extensive hospital inspection is actually imminent in the United States, would it not be possible to combine with it the collection of information bearing on the health conditions of the population served by each hospital? It would seem that the situation presents a great opportunity for public service.

COMPENSATORY RESPONSES TO THE OXYGEN WANT AT HIGH ALTITUDES

Life at high altitudes is liable to be attended with symptoms of illness, whether the sojourn in the regions of lowered barometric pressure be on a mountain, in a balloon, or in an aeroplane. The essential cause of altitude sickness has been demonstrated repeatedly to be a lack of oxygen. Whatever the method by which the oxygen supply of the body is reduced, there will occur adaptive reactions having the evident function of furnishing in some way the indispensable element that is needed by the active tissues. All of the latter become sensitive to the oxygen want, but the responses are undoubtedly initiated in the central nervous system. They are definitely stimulated at first. In the effort to compensate for the reduction of the oxygen supply the blood, the respiration and the circulation may become involved. Thus, as has been indicated repeatedly by THE JOURNAL, there may be an increase in the amount of hemoglobin in the body, and associated with this a redistribution of the red corpuscles whereby a reserve supply is thrown into the general circulation; deeper breathing may bring about increased ventilation of the lungs; an increase in the rate of blood flow may occur. Each of these responses tends to insure a more adequate supply of oxygen to the tissues.[1]

In the acclimatization to oxygen want which follows the ascent of a mountain, the respiratory response is almost invariably the first to appear, beginning during the trip or almost immediately after the summit is reached. The increment in the number of erythrocytes comes more slowly and gradually. The alterations in the pulse rate may also be somewhat gradual. These effects, brought about by protracted residence at high altitudes, in turn disappear only gradually when the person returns to a lower barometric level.

As was recently pointed out[2] in relation to the more sudden shifts in altitude corresponding to the rapid flight of the modern aeroplane, similar adaptive responses are undergone by the aviator; but in contrast with the experiences of the alpinist, they develop much more quickly. Gregg, Lutz and Schneider,[3] who have been engaged in extensive researches on these questions in the Medical Research Laboratory of the Air Service at Mineola, N. Y., have found that following the more sudden changes in atmospheric pressure and oxygen tension such as may occur in aviation, there is no such uniformity in the relative response of the different adaptive mechanisms as is found after the slower ascents on mountains. In other words, the relative values of the different compensatory reactions to low oxygen tension may differ as does the sensitiveness of different persons. The aeronautic physiologists report that the majority of men appear to make a well-balanced use of the three mechanisms for supplying oxygen. The ventilation of the lungs, the rate of blood flow, and the percentage of red corpuscles and hemoglobin are definitely increased. Some meet the new condition largely by increased respiration, and others depend almost entirely on an increased blood flow. In many individuals, during the early period of exposure to a decreasing oxygen, the burden of compensation is borne wholly by the circulatory and respiratory mechanisms; but later the blood changes relieve one or both of these mechanisms from a part of the burden. There is evidently an interdependence and interplay of the adaptive mechanisms. The same person may compensate differently in each of a series of emergencies associated with lowered oxygen.

In another respect also the compensatory reactions to a rapid reduction in oxygen differ from experiences in mountaineering. They disappear quickly when the

1. An excellent review of the evidence for these adaptive changes at high altitudes will be found in the Manual of the Medical Research Laboratory, War Department, Air Service, Division of Military Aeronautics, Washington, D. C., 1918.

2. Low Barometric Pressure and Changes in Circulation, editorial, J. A. M. A. 74: 250 (Jan. 24) 1920.

3. Gregg, H. W.; Lutz, B. R., and Schneider, E. C.: Compensatory Reactions to Low Oxygen, Am. J. Physiol. 50: 302 (Dec.) 1919.

oxygen tension is restored. There is little lag in the changes induced. Schneider and his co-workers[3] conclude that the differences in the responses observed under these two different conditions of exposure to low oxygen depend, no doubt, on the suddenness with which the low barometric pressure and low oxygen percentage have been decreased, and on the extent to which they were lowered. In very slow and moderate changes, it is possible that no response may be evoked. They add that possibly the respiratory center, by virtue of greater sensitiveness, may react so much to the stimulus that the increase in respiration for a time cares adequately for the oxygen requirement of the body. In the more rapid decrease in oxygen tension, the respiratory and cardiac centers and very likely the vasomotor centers are stimulated at higher oxygen tensions and at about the same time. Consequently, under some conditions these two mechanisms serve almost equally to care for the oxygen need of the body. Evidently the problems of life at high altitudes must be considered somewhat separately for the various modes of ascent and sojourn in the upper reaches of the air. The slow progress of the Duke of the Abruzzi to a height of 24,580 feet in the Himalayas, and the more rapid rise of Glaisher to an altitude of 30,000 feet in a balloon, have already been far surpassed by the swift record altitude ascents of the modern aeroplane, to which neither sea nor land any longer bars the way.

THREE EARLY EPIDEMICS OF INFLUENZA

The history of epidemic influenza is a record of devastation and distress. The earliest record of influenza in America was made by William Hubbard:

> In the year 1647 an epidemical sickness passed through the whole country of New England both among Indians, English, French and Dutch. It began with a cold and in many was accompanied with a light fever. Such as bled, or used cooling drinks, generally died; such as made use of cordials, and more strengthening, comfortable things, for the most part recovered.

This is cited by Guy Hinsdale, whose contribution to the Osler memorial volume is a record of the epidemics of influenza in 1647, 1789 and 1807, as recorded by Noah Webster, Benjamin Rush and Daniel Drake. Noah Webster, in addition to publishing his famous dictionary, was also the author of a "Brief History of Epidemic and Pestilential Diseases." In this book, published in 1799, Webster described forty-four instances of influenza, dating in Europe from 1174 and in America from 1647. All of these epidemics are associated with earthquakes, volcanic eruptions, comets, droughts and similar disturbances of nature. Thus Webster notes under the year 1647, "First catarrh mentioned in American annals. The same year with violent earthquakes in South America, a comet."

The epidemic of 1789 was described by Benjamin Rush, who, as Dr. Hinsdale says, had the unusual faculty and patience to set down the minute details of cases as they came under observation. Dr. Rush's account, which is reproduced verbatim, reveals a remarkable parallelism between the epidemic of 1789-1790 and that of 1918-1919. It includes a classic description of the sneezing, hoarseness and sore throat; the sense of weariness, chills and fever, pains in the head and infection in the frontal sinus. "Many complained of a great itching in the eyelids. In some the eyelids were swelled. In others, a copious effusion of water took place from the eyes." Rush also describes mastoiditis, distressing cough and the final pneumonia, and the occurrence of secondary nervous and mental disturbances consequent on the disease.

Twenty-seven years after the epidemic described by Benjamin Rush, there occurred another epidemic which was described by Daniel Drake, who was acting as an army surgeon to two regiments of militia in camps when the influenza swept down from the "East to the frontier post in the Ohio Valley where he was stationed." He describes the way in which the disease first attacked the men in his camp, secondarily, the towns surrounding, and finally the scattered inhabitants of the country districts. "I need not give the history of any other prevalence," he says, "as this illustrates the most constant of the laws which govern influenza: first, its progressive extension from east to west; and second, its independence of all sensible conditions of atmosphere; third, its first outbreak in bodies of men, and compact settlements." Drake closes his account by mentioning the occurrence of purulent pleural effusions as the most serious sequelae.

In connection with these reports, we may point out that, allowing for the lack of knowledge of bacteriology and modern pathology, these early observers noted practically all of the important facts concerning this disease. Their reports are vital evidence of the importance of close, systematic observation in the practice of medicine.

Current Comment

ANOTHER WATER SUPPLY "ACCIDENT"

A recent report[1] of the typhoid outbreak at Lansing, Mich., in March, 1919, illustrates once more the necessity of caring for the surroundings of public water supplies from deep wells. The Lansing outbreak was apparently caused by leakage of sewage-contaminated ground water into the good water in the wells. It is stated that no thorough and regular investigations had been made of the lead joints between suction pipes and casings, and that the piping was under water much of the time. In March of last year, heavy rains caused the Grand River to rise eight feet, the pressure from this source forcing concentrated sewage into the sandy soil around the wells. An extensive outbreak of intestinal disturbance followed almost immediately, 3,000 cases of so-called water-borne dysentery being caused. Following this, eighty-two cases

1. Engineering News Record 84: 92, 1919.

of typhoid developed, resulting in eleven deaths. This "accident," due to neglect of the surroundings of a good artesian water, is almost exactly similar to the extensive outbreak at Rockford,[2] eight years ago. Information about the cause of the Rockford outbreak and similar water-borne epidemics has been available for a number of years in the various technical journals dealing with water supply. It seems strange that such disasters can still occur, since every responsible engineer must be well aware of the necessity for safeguarding the casings and suction wells wherever a deep well supply is used as a drinking water source.

THE 1920 INFLUENZA

The outbreak of influenza in the United States which began about the middle of January has now progressed far enough for its main characteristics to be plainly seen. It is noteworthy that the death rates from influenza and pneumonia in the large cities were below the usual average all over the country from May, 1919, to Jan. 1, 1920. The first marked change seems to have occurred almost simultaneously in Kansas City and in Chicago, where the influenza-pneumonia rates rose sharply in the week ending January 17, although in Chicago an excess over the average was not reached till some days later. The maximum mortality in Chicago occurred in the week ending January 31, but in Kansas City the mortality reached its height a week later. New York, Washington, San Francisco, Milwaukee and St. Paul all showed an increase in the week ending January 24, and many other cities were added to the list in the following two weeks. The Census Bureau report for the week ending February 14 showed that thirty-two out of the thirty-six large cities reporting had a largely increased death rate from influenza and pneumonia as compared with the February weekly average in 1917. The same report states that the number of death claims per thousand policies in force (42, 300 and 241) in industrial insurance had increased in the annual rate from 10.3 for the week ending January 24, 10.9 for the week of January 31 and 13.0 for the week of February 7 to 14.1 for the week of February 14. The relative severity of the 1920 influenza is difficult to estimate correctly at this time. If it is possible to repeat in several well chosen localities the exact enumeration of morbidity and mortality secured in a few places by the U. S. Public Health Service in 1918, there will be better opportunity for a judgment on this point. It is worth noting, however, that in several cities, Milwaukee, Minneapolis and Kansas City, for example, the total death rate was considerably higher in the week ending Feb. 7, 1920, than it was at any time during the 1918 epidemic. In Chicago the death rate, while not as high as in October, 1918, rose to a point far above that reached during the 1889-1890 influenza outbreak. Although the total mortality in Chicago for the first half of January was considerably lower than the mortality for the average of the corresponding weeks of 1913-1917, the influenza in the last two weeks of the month brought the total January mortality to 5,149, much the highest monthly mortality in the history of the city with the single exception of October, 1918, when influenza raged through the whole month. In Detroit, likewise, the epidemic has been severe. The weekly health reviews by the commissioner of health state that by the twentieth day of the epidemic there had been 1,161 reported deaths from influenza and pneumonia, as compared with 836 for the corresponding period in the 1918 epidemic. Up to the present writing the chief prevalence of the disease has been in the Middle West. According to the reports of the U. S. Public Health Service made by state health departments, Illinois has had the largest number of cases. Kansas, Wisconsin, Minnesota and California have also reported several thousand cases each. In the East, Connecticut and New Jersey had reported by January 31 a relatively large proportion of cases. It seems reasonable to suppose that most communities, at all events the larger cities and towns that have not already experienced an influenza outbreak in 1920, will have some recurrence of the disease. The impression seems to be in general that the disease is milder in its symptomatology and that the rate of incidence is considerably lower.

2. Jordan, E. O.: The Rockford (Ill.) Typhoid Epidemic, J. Infect. Dis. 11: 21, 1912.

PHARMACY BY ACT OF CONGRESS

The school of political thought that holds to the *laissez faire* doctrine sometimes described as Manchesterism has always pooh-poohed the idea that it is possible to make men moral by statute. Should the present national experiment in prohibition be successful it will give the Manchester doctrine a body blow and do much to make "morality by act of Congress" an established fact. This same experiment is, apparently, bringing about even greater wonders. For, insolvable problems—as we have been led to believe—in the field of pharmacy have been solved within the short time that the Eighteenth Amendment to the Constitution of the United States has been in being. For years the gentlemen who have waxed rich and socially and politically powerful from the sale of those "patent medicines" whose most potent and powerful ingredient was alcohol have assured us with all the earnestness at their command that the alcohol in their nostrums was really but a regrettable incident in the manufacture. Alcohol has always been used in such cases, we were assured, for solvent, preservative or extraction purposes and occasionally "to prevent freezing"! Consider the case of a "patent medicine" more or less familiar to the readers of THE JOURNAL—"Wine of Cardui." This woman's tonic which, before the days of the Food and Drugs Act, was "a Certain Cure" and "Nature's Great Emmenagogue" later admitted (as per the law's requirements) the presence of alcohol to the extent of 20 per cent. Repeated and exhaustive experiments by some of the best chemists and pharmacologists in the country conclusively demonstrated that the alcohol was the most powerful and active drug in it. THE JOURNAL'S first extended article on this product brought the claim from the manufacturers that no more alcohol was used than was "needed as a solvent and preservative" and the further declaration that they had "employed leading chemists who

have sought widely for another preservative, but without success." In the court action that followed THE JOURNAL'S exposés the Wine of Cardui concern again emphasized its inability to diminish the amount of the alcohol. As the company's attorney said in his opening statement, Wine of Cardui had been submitted to one of the great chemists in the United States "for the purpose of ascertaining whether or not any other solvent or preservative could be used rather than alcohol." This great chemist "found that 20 per cent. of alcohol was the exact amount that would answer the purposes and that anything substantially beneath that amount would make the medicine spoil and would no longer act either as a solvent or as a preservative." "Wine of Cardui" continued to contain 20 per cent. of alcohol—the irreducible minimum, according to the manufacturers; an unnecessarily large amount, according to the medical profession. Then came national prohibition. Today Wine of Cardui contains 10 per cent. alcohol and its preservative powers have been fortified by the addition of benzoates. Verily, the wonders of science are as nothing to the marvels of legislation!

TISSUE CONSERVATION THROUGH THE ACTION OF QUININ

While there are numerous drugs and chemical substances that stimulate metabolism and lead to a breakdown of tissue and a corresponding waste of body material,[1] it is not easy to cite compounds that affect the organism in the direction of tissue conservation. One of the latter, however, is quinin. It has long been known that quantities of the drug too small to have marked pharmacodynamic effects may decrease the disintegration of nitrogenous compounds in the body. The output of urea is diminished after administration of the alkaloid to persons on a constant diet, without any impairment of absorption from the alimentary tract. It has even been suggested that the antipyretic action of quinin is in essence due to the lessening of metabolism and consequent diminution in the amount of heat liberated in the body. Whether or not the fall of temperature often induced by the drug is due to lessened heat production is not positively determined. Hence every evidence bearing on the effects of quinin is still of importance. When a bird produces eggs, it separates from itself a considerable amount of protein for the formation of the egg white and egg yolk. At the Station for Experimental Evolution at Cold Spring Harbor, N. Y., Riddle and his associates[2] have apparently demonstrated that the amount of albuminous substance expended by the body in egg production is decreased under the influence of quinin. In their experiments with it on ring-doves, less than the normal content of nitrogenous compounds was released by the albumin-secreting gland of the oviduct during egg production, thus furnishing an added illustration of the protein-conserving effect of the alkaloid, which is unique also in other ways.

1. Illustrations are given by Higgins, H. L., and Means, J. H.: J. Pharmacol. & Exper. Therap. **7**: 1, 1915.
2. Riddle, Oscar, and Anderson, C. E.: Am. J. Physiol. **47**: 92 (Sept.) 1918. Behre, E. H., and Riddle, Oscar: The Effect of Quinine on the Nitrogen Content of the Egg Albumen of Ring-Doves, ibid. **50**: 364 (Dec.) 1919.

Association News

THE NEW ORLEANS SESSION

The Scientific Exhibit

The Scientific Exhibit at the New Orleans session will be located on the third floor of the Hutchinson Memorial Building, the Medical Department of Tulane University. Ample space has been provided for exhibits in the large laboratories, while the halls afford abundant wall space for charts, diagrams, photographs and placards. The amphitheater on this floor is equipped with projection apparatus, screens, etc., and will be used for the demonstration of roentgenograms, lantern slides and moving picture films suitable for the Scientific Exhibit. If sufficient material is offered, a continuous program will be arranged for the four days of the session. Applications for space in the Scientific Exhibit or for assignment on the program of the moving picture exhibit should be sent at once to the Director of the Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago, stating the character of the exhibit, the amount of space or time required, and the name of the individual or institution wishing to make the exhibit. As space will be assigned shortly after March 1, applications should be made at once.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

State Society Meeting.—The Medical Society of the State of California will meet, May 11, 12 and 13, at Santa Barbara instead of at Delmonte, as at first planned. Headquarters will be at the Hotel Ambassador.

Physician Arrested.—Dr. Amos J. Landis of Chico has been arrested on a charge of violating the state drug laws by the illegal sale of narcotics.——A. F. Francis of Oroville was arrested on the charge that he is not a physician and is practicing without a license.

Personal.—Dr. James H. Barr, Marysville, health officer of Yuba County, and Dr. A. L. Miller, health officer of Yuba City, have been appointed assistant collaborating epidemiologists by the state board of health.——Dr. Walter M. Dickie, Los Angeles, has been appointed director of the bureau of social hygiene of the state board of health.

Illegal Practitioner Charged with Manslaughter.—Mrs. Gertrude Steele, a naturopathic physician of Venice, is charged with manslaughter and with practicing outside the limits of her certificate. She was arrested following the death of her son-in-law, George A. Blaha of Venice, who was treated by Mrs. Steele with a freckle lotion which is said to have caused his death.

Bureau of Child Hygiene.—The bureau of child hygiene of the state board of health became an entity following the passage of a law at the last legislature. Dr. Ethel M. Watters, San Francisco, who formerly had charge of the juvenile court children in San Francisco and for two years was sanitarian of the social hygiene bureau of the state board of health, was appointed director.

Diploma Lost.—Early in January, 1920, a diploma issued to Dr. William Hammond Worley by the Hahnemann Medical College and Hospital, Chicago, April 26, 1900, was reported to have been lost by the Railway Express Company in Los Angeles. Officers of all state licensing boards are requested to be on the lookout for such a diploma, since it may have been stolen.

Sun Cult Leader Arrested.—Ottoman Zar-Adusht Hanish, self-styled "little master" of the Mazdaznan cult of sun worshipers, Los Angeles, has been arrested by the Board of Medical Examiners on charges of grave offenses against

minor children. In 1913, Hanish was convicted in the federal district court of sending indecent matter contained in his cult book, "The Inner Circle," through the mails, and was sentenced to six months in jail. April 25, 1918, Hanish was charged with practicing medicine without a license, at which time he vanished.

League for Conservation of Public Health.—The league will survey all the hospitals in the state and will soon promote a state conference of hospitals to discuss problems which will be brought up as a result of the survey. Only those hospitals, whether large or small, which have been adhering to a high standard of service, will be included in membership. The third annual meeting of the league was held in San Francisco, Dec. 29, 1919, and the following officers were elected: president, Dr Dudley A. Smith, Oakland, and vice president, Dr. Granville McGowan, Los Angeles.

COLORADO

Social Service at University.—The Association of Collegiate Alumnae has taken charge of the medical social service of the University of Colorado dispensary and clinic, Denver, has organized a corps of volunteers for such service, and has placed in charge of the social service, Miss Madeline C. Ridgeway, formerly of Chicago.

Influenza.—The University of Colorado, Denver, which was closed for two weeks on account of an epidemic of influenza, reopened February 16.——The Denver *Post* announces that it will pay $25,000 to the physician finding a cure for influenza, the money to be paid after the cure has been approved by the Rockefeller Institute for Medical Research and Johns Hopkins University.

Tuberculous Persons Should Not Leave Home.—The Denver Anti-Tuberculosis Society has issued a leaflet entitled "Why Tuberculous Persons Without Funds Should Not Leave Home." This leaflet gives a consensus of opinion of the tuberculosis workers of Denver in regard to sending indigent tuberculous sufferers West. It is estimated that several hundred tuberculous persons without funds come to Denver every year and arrive almost penniless and without provision for their needs. Since Colorado has no state sanatorium and Denver no municipal sanatorium, the care of such persons is limited to a few free private sanatoriums which are continuously overtaxed. The society urges that states throughout the country plan definite programs to retain their indigent tuberculous patients, giving them effective treatment in state sanatoriums or in their own homes.

ILLINOIS

Sanatorium Changes Hands.—The Mennonite Sanitarium Association has purchased the Kelso Sanitarium property, Bloomington, and will conduct its hospital operations on an enlarged plan.

More Money for Speedway Hospital.—On February 20, the United States Senate adopted an amendment to the urgent deficiency bill adding $500,000 to the limit of cost of the Speedway Hospital.

Personal.—Dr. William F. Carroll, New Holland, who has been seriously ill with influenza has recovered.——In the case of Dr. Pierre J. Fullerton, Dupo, against St. Clair County in which he sought to collect $350 alleged to be due him for treating indigent smallpox patients, the jury returned a verdict in favor of the county on the ground that Dr. Fullerton had not been authorized to treat the patients.

Chiropractor Arrested.—According to report, Frank D. Whittenberg, a chiropractor living at Mt. Carmel, was arrested for practicing medicine without a license. Whittenberg claims that State's Attorney Phipps of Wabash County told him to go ahead and practice without a license. Whittenberg is now reported to have not only discontinued practice but also to have sold his office fixtures and left the state.

Forged Prescriptions for Whisky.—A recent investigation by the Illinois Department of Registration and Education shows that persons in Chicago are writing prescriptions for whisky on regular prescription blanks and forging the signature of Dr. John W. Sarpalius, a licensed physician in Illinois. Dr. Sarpalius left Illinois some months ago and now resides in Alden Station, Pennsylvania. On leaving Chicago, he left behind a number of prescription blanks with his name and address printed thereon. These blanks were taken from his Chicago office and are now being used extensively for whisky prescriptions. An inspector picked up thirty-four in two drug stores in Chicago. Each called for a pint of whisky for use "as directed." The department has no jurisdiction over the writing of whisky prescriptions, but they were turned over to Major Dalrymple in Chicago for investigation.

Chicago

Personal.—Dr. Ludvig Hektoen has been elected an honorary member of the Pathological Society of Philadelphia.

Midwife Fined.—Mrs. Anite Salvino, a midwife, was fined $25, February 19, for failure to apply silver nitrate to the eyes of a baby in her care.

Municipal Sanatorium.—The January issue of the *Bulletin of the City of Chicago Municipal Tuberculosis Sanatorium* contains a detailed description of the vocational school for the tuberculous, by Dr. John Dill Robertson, profusely illustrated.

Institute of Medicine Meeting.—A meeting of the Institute of Medicine of Chicago will be held March 5, at the City Club, 315 Plymouth Court at 8 p. m. Prof. James R. Angell of the National Research Council will speak on "The Organization of Research in a Democracy."

Reception and Dinner to Admiral Braisted.—Surg.-Gen. William C. Braisted of the United States Navy, President-Elect of the American Medical Association, will read a paper before the Chicago Medical Society at its meeting, Wednesday evening, March 3. A reception and dinner at the Palmer House at 6 p. m. will be tendered him previous to the meeting to which all members of the Association are cordially invited.

Fraternity Dinner.—The Alpha Omega Alpha Honorary Medical Fraternity announces that the annual dinner of the three Chicago chapters located respectively at the University of Illinois, University of Chicago, and Northwestern University, will be held March 1, at the Congress Hotel, at 6:30 p. m. Among the speakers will be Dean Irving S. Cutter, Omaha, of the University of Nebraska, Dean John L. Heffron, Syracuse, of Syracuse University and Dr. William W. Root, Slaterville Springs, N. Y.

Druggist Arrested for Practicing Medicine.—Joseph P. Baltrenas who owns a drug store at 1705 South Halsted Street, is reported to have been arrested recently for practicing medicine without a license and was fined $200 and costs. Baltrenas had in his possession a license as a physician issued by the state board of health in 1916, but the name of the physician had been erased and that of Baltrenas substituted. An inspector of the Department of Registration and Education recognized that it was fraudulent. It later developed that the license had been stolen from the office of Dr. Ralph Waldo Petersen. Baltrenas claimed he had paid a certain "senator" $3,500 for the license.——Three other cases against Baltrenas will be heard in March; one for buying a license, one for aiding and abetting in the purchase or sale of a license and still another for practicing under a license fraudulently obtained. The maximum fine for each offense is $200 or one year in jail, or both.

IOWA

New Officers.—Northwest Iowa Medical Society at its annual meeting in Sheldon elected Dr. Louis L. Corcoran president and Dr. Jay M. Crowley secretary, both of Rock Rapids.——Hardin County Medical Society at its annual meeting at Eldora elected Dr. J. Willard Caldwell, Jr., Steamboat Rock, president; Dr. William H. VanTiger, Eldora, vice president; Dr. William E. Marsh, Eldora, secretary, and Dr. Clarence M. Wray, Iowa Falls, treasurer.

KANSAS

Personal.—Dr. Louis B. Gloyne, who has been serving as health director of Kansas City, has been made city physician.

New Officers.—Brown County Medical Society held its annual meeting in Horton, January 6, and elected Dr. Roscoe T. Nichols, Hiawatha, president; Dr. James S. Rushton, Morrill, vice president, and Dr. James M. Robinson, Hiawatha, secretary-treasurer.

Venereal Disease Activities.—During the period from July 1, 1918, to Dec. 30, 1919, there were reported to the division of venereal disease of the state board of health 3,311 cases of gonorrhea, 1,405 cases of syphilis and fifty-four cases of chancroid. Treatment has been provided through clinics located at Wichita, El Dorado, Topeka, Lawrence, and Rosedale, and a clinic is expected to be in operation this month at Kansas City. At these clinics 537 cases of gonorrhea, 745 cases of syphilis and twenty-four

cases of chancroid have been treated. In connection with the University Medical School at Rosedale, a public health laboratory has been maintained which has furnished an average of 500 Wassermann examinations a month since its establishment, Jan. 1, 1919. At the quarantine camp established at Lansing, twenty-one men and 340 women were detained in 1918, 157 men and 258 women in 1919.

KENTUCKY

Libraries Consolidated.—The libraries of the medical department of the University of Louisville and of the Jefferson County Medical Society have been consolidated and will be housed at the medical college.

Eye and Ear Men Elect.—The Louisville Eye and Ear Society at its annual meeting, January 8, elected Dr. Claude T. Wolfe, Louisville, president; Dr. Albert L. Bass, Louisville, vice president, and Dr. Walter Dean, Louisville, secretary-treasurer.

Contract Let for Government Hospital.—The Dawson Springs Construction Company has received the contract for the construction of three main buildings of the $1,500,000 governmental hospital at Dawson Springs. The hospital will be used to take care of discharged soldiers, sailors and marines. This contract is for the erection of a hospital building, an administration building and a nurses' home and the combined cost will be $680,666.

Personal.—Col. Dunning S. Wilson has been discharged from the Medical Corps, U. S. Army, and has returned to Louisville.——Dr. Randolph Dade, Jr., has succeeded Dr. John W. Harned, resigned, as health officer of Hopkinsville. ——Dr. Daniel V. Bentley, Whitesburg, is reported to be critically ill with cerebrospinal meningitis.——Dr. Lester A. Crutcher, Louisville, has resigned to accept a position with the Kentucky State Board of Health, and has been succeeded by Dr. Louis A. Mehler, Louisville.——The Jefferson County court jury has refused to indict Dr. Christopher G. Schott, Louisville, who was charged with murdering his office assistant.

Nutrition Survey.—The big gray automobile known as the Child Welfare Special which the Children's Bureau of the United States Department of Labor is using to bring the welfare message to babies in villages and on farms, has been cooperating in the nutrition survey in one of the rural sections of Kentucky. The county selected was in the mountain district, 250 cases were studied, and it is hoped that the examinations will reveal the causes responsible for the malnutrition prevalent in this area. The information was obtained by a house-to-house canvass and the examinations were made by the staff of the Child Welfare Exhibit in an automobile truck fitted as a model well-baby clinic with a government physician and nurse in charge. The car is parked in a central location, usually near a court house, town hall, lodge hall or woman's club. One family at a time is received in the car, the health history of the family is secured, each child is examined, weighed, and measured, and advice is given to the mother in hygiene matters.

LOUISIANA

Ground Broken for Hospital.—Construction work on the new Presbyterian Hospital, New Orleans, has been begun. The new building will be three stories in height, but eventually other stories, up to ten, will be added.

Personal.—Dr. Joseph G. Stulb, New Orleans, visiting physician to the Isolation Hospital has resigned.——Dr. Mayer A. Newhauser, New Orleans, has succeeded Dr. G. C. Chandler as president of the board of health of Shreveport.

Laboratory Item.—Dr. Abraham L. Metz, city chemist, has tendered the use of his new chemical laboratory to the city of New Orleans, and it was formally dedicated to the city's use, February 1. The plant represents an outlay of $15,000 and includes a library of 1,000 volumes.

New Officers.—At the annual meeting of the Rapides Parish Medical Society held at Alexandria, February 5, Dr. Paul K. Rand, Alexandria, was elected president and Dr. George Antony, Alexandria, secretary-treasurer.——Calcasieu Parish Medical Society at its annual meeting, Dec. 31, 1919, adopted a resolution authorizing appointment of a committee to enter into negotiations with the state board of health regarding the establishment of a public laboratory in Lake Charles. Dr. John G. Martin, Lake Charles, was elected president, Dr. Cecil R. Price, De Quincy, vice president, and Dr. Dempsey C. Iles, Lake Charles, secretary-treasurer.

MASSACHUSETTS

Personal.—Dr. Fred D. Jones, Springfield, has been appointed medical examiner (coroner) of the second Hampden, district, succeeding Dr. Edward J. Mahoney, Springfield, resigned.——Dr. Frederick R. Barnes, Jr., Fall River, has been appointed associate medical examiner (coroner) of the third Bristol district, succeeding Dr. John H. Gifford, resigned.——Dr. Llewellyn H. Rockwell has been appointed acting superintendent of the Long Island Hospital during the absence of Dr. Charles E. Donlan.——Dr. Samuel B. Woodward was reelected vice president of the Worcester Chamber of Commerce at its meeting, January 20.——Dr. William T. Sedgwick, senior professor in the Massachusetts Institute of Technology and head of the department of biology and public health, will be the first exchange professor with the universities of Cambridge and Leeds.——Dr. Oren M. Deems, Springfield, is reported to be seriously ill with pneumonia.

MICHIGAN

Personal.—Dr. Albert C. McLeod, Calumet, has just returned after five years' service in the Royal Army Medical Corps.——Dr. E. Charles Hughes, Armada, has been appointed superintendent of the Burley Hospital, Almont.

Industrial Earnings.—According to the published report made at the annual meeting of stockholders, Parke, Davis & Co. earned net profits of $4,293,591 for 1919. The sales for the year were approximately $25,000,000. The gross profits were $6,604,702 and of this $2,000,000 was reserved for excess profits and income taxes and $194,845 for depreciation.

Venereal Disease Clinics.—Dr. Garner M. Byington, Charlotte, director of the bureau of venereal disease, announces that Battle Creek, Lansing, Kalamazoo, Jackson, Flint, Bay City, Saginaw, Detroit and Ann Arbor are operating venereal disease clinics in close cooperation with the bureau and that similar clinics will soon be established in Grand Rapids and Muskegon.

Cancer Publicity.—The entire December number of *Public Health*, the monthly news bulletin of the Michigan Department of Health, was devoted to cancer. The number was prepared in response to a belief that public sentiment must be thoroughly aroused and organized, and that scientific data on the cancer problem must be given to the public if results are to be obtained in the campaign for the eradication of cancer.

MINNESOTA

Personal.—Dr. Mabel S. Ulrich, Minneapolis, has been appointed health director of the northern division of the American Red Cross.

Decline in Mortality.—The division of public health of the board of public welfare, Minneapolis, in its last bulletin gives a résumé of the decline in the mortality from certain diseases since 1890. The deaths from typhoid fever per hundred thousand of population between 1891 and 1900 numbered 49; and in 1919, about 4; the deaths from diphtheria per hundred thousand of population from 1890 to 1899 averaged 0.43, compared to 0.165 in 1919; the deaths from tuberculosis per thousand population from 1890 to 1899 were 1.28, and in 1919, 0.97; and the death rate of infants under 1 year, which from 1900 to 1909 was 88.2 per hundred thousand, dropped in 1919 to 66.5.

MISSISSIPPI

Influenza.—On account of the spread of influenza all of the rural schools near Purvis, the town schools, and the Lamar County Agricultural School have suspended indefinitely and all public meetings have been interdicted.——The schools, churches and other public places of Hazlehurst and Wiggins have been closed for the same reason.

Home for Feebleminded.—The Mississippi society for mental hygiene is urging the passage of a bill calling on the legislature for an appropriation of $200,000 with which to prepare and maintain a home for feebleminded for the next two years. There are at present 1,317 feebleminded persons in the state, 205 of whom are in state insane hospitals, 90 in orphanages, 10 in the industrial training school, 14 in the state institution for deaf and dumb, 345 in county jails, 214 on county poor farms and 439 in the state penitentiary.

Mental Deficiency Survey.—The report of the Mississippi Mental Hygiene Commission to the governor, January 7, after an exhaustive report on present conditions regarding mental

deficiency in the state, recommends the establishment and organization of a state colony and training school for the feebleminded; the organization of special opportunity schools as a part of the public school system, these schools to emphasize training of the nervous system through the hands; the organization of mental clinics; at the disposition of every school, court and social agency someone specially trained in medical and social service as related to mental deficiency; the complete divorce of hospitals of the insane and the colony for the feebleminded from partisan politics and their organization under a state psychiatrist as director, and finally a system of state registration and state supervision of all mentally defective individuals.

MISSOURI

Graduate Instruction in Pediatrics.—Washington University, St. Louis, has established a course of graduate instruction in pediatrics to begin April 5. Particulars of this course may be obtained on addressing the dean of the school.

Semicentennial Ceremonies.—Jackson County Medical Society will honor with a dinner at the City Club, Kansas City, March 4, members who have practiced medicine a half century. Five members will be thus honored: Brig-Gen. Jefferson D. Griffith, Kansas City, who graduated from New York University Medical College in 1870; Dr. John C. Rogers, Kansas City, an alumnus of Washington University Medical School, St. Louis, in 1865; Dr. John Wilson, Kansas City, a graduate of the same school in 1866; Dr. John S. Mott, Kansas City, a graduate of the University of Michigan, Ann Arbor, 1867, and Dr. Thomas R. Thornton, Lees Summit, a graduate of Washington University, St. Louis, in 1868.

Personal.—Dr. Owen P. McPherson, Kansas City, has recently received the medal of the first order of St. Sava from the Serbian Government. Dr. McPherson was assigned to the American Military Red Cross Hospital, No. 5, in Serbia and afterward established two hospitals.——Dr. Robert Vinyard, St. Louis has been appointed assistant physician to the Frisco Hospital, Springfield.——Dr. George M. Boteler, St. Joseph, has been appointed assistant health officer of St. Joseph and placed in charge of the emergency and influenza hospital.——Dr. William D. Fulkerson, Clinton, for thirteen years local surgeon of the Rock Island System, has resigned and expects to retire to a farm near Catesville.——Dr. Fayette C. Ewing, Webster Groves, has moved to Alexandria, La., and has been appointed chief of the eye, ear, nose and throat department of the U. S. Public Health Hospital at that place.

MONTANA

Western Montana Physicians Elect Officers.—At the annual meeting of the Western Montana Medical Society held in Missoula, Dr. Harry B. Farnsworth, Missoula, was elected president; Dr. John P. Ritchey, Missoula, vice president, and Dr. James D. Hobson, Missoula, secretary-treasurer.

Personal.—Dr. Roscoe C. Main, formerly of Marquette, Mich., has succeeded Dr. Louis W. Allard, resigned, as health officer of Billings and Yellowstone County.——Dr. Frank D. Pease, Missoula, has been appointed full-time health officer of Missoula County and will assume his new duties, April 1.

Public Health Hospital for Mental Diseases.—A hospital for the treatment of mental diseases is being opened at Fort Harrison, Helena, by the United States Public Health Service. Dr. Arthur S. Pendleton is the officer in charge. The hospital will not be an insane asylum but is designed to care for men who have been mentally incapacitated in war service.

NEBRASKA

Meningitis at College.—Doane College and other schools in Crete have been closed and public gatherings prohibited because of an outbreak of cerebrospinal meningitis.

New Officers.—At the annual meeting of the Dodge County Medical Association, held in Fremont, January 1, Dr. Byron B. Hauser was elected president, Dr. James C. Agee, vice president and Dr. Grant S. Reeder, secretary-treasurer, all of Fremont.

Personal.—Dr. Jerome G. Pace, Lincoln, has been appointed superintendent of the Modern Woodmen of America Sanatorium, Colorado Springs, succeeding Dr. James A. Rutledge, deceased.——Dr. Floyd C. Dean, Hastings, formerly superintendent of the sanatorium at Hastings, has been appointed superintendent of the Kansas Sanatorium, Wichita, succeeding Dr. Robert L. Stokes, resigned.

NEW JERSEY

Changes in Sanatorium Management.—Commissioner Burdette G. Lewis of the Department of Institutions and Agencies, has made the following recommendations to improve conditions at the New Jersey Sanatorium for Tuberculous Diseases, Glen Gardner: a roentgen-ray examination of every patient admitted to the institution; the purchase of strictly fresh eggs and more careful adherence to the dietaries suggested by this department and approved by the federal bureau of foods and drugs; the employment of a trained social worker; the enlargement of the institution to accommodate enough patients to reduce the per capita cost of medical, scientific and social work, and to provide homelike surroundings including sitting rooms and play rooms for children.

NEW YORK

Mental Clinic Established.—The American Red Cross and health department of Plattsburg have started a mental clinic in that city under the charge of Dr. John R. Ross, medical superintendent of the Dannemora State Hospital.

Tuberculosis Survey.—A summary of the clinics which have been held in Oneida County under the auspices of the state department of health, by the State Charities Aid Association, shows that 1,287 patients were examined, of whom 214, or 16.6 per cent., were found positive, 390, or 30 per cent., suspicious, and 683 negative.

Tuberculosis Association Bulletin.—The first issue of the *Bulletin of the New York Tuberculosis Association, Inc.,* has made its appearance. It is an eight-page periodical having for its purpose the dissemination of knowledge for the information of all those interested or engaged in the fight against tuberculosis in New York City and elsewhere. Mr. David Ryan is managing editor.

Personal.—Dr. Reeve B. Howland, Elmira, has been reappointed health officer of Elmira for a term of four years.——Dr. Frederick M. Meader, Albany, director of the division of communicable diseases in the state board of health, has been granted an indefinite leave of absence in order to accept an appointment as surgeon in the United States Public Health Service. Dr. Edward S. Godfrey, Jr., has been appointed acting director of the division in the place of Dr. Meader.

New Organization to Fight Quackery.—A national cooperative service, under the name of the Doctors Service Corps, and including physicians, surgeons and dentists, has been organized for the detection and punishment of "dead beats," and as an intelligence service to operate against frauds. The movement is endorsed by Prof. Irving Fisher of Yale, Major A. R. Crane, formerly chief dental surgeon to U. S. Army General Hospital No. 1, and Herbert D. Brown, chief of the Bureau of Efficiency, Washington, D. C.

New York City

Meeting in Memory of Sir William Osler.—A meeting in memory of Sir William Osler is scheduled to be held February 28, at 8:30 p. m., in the New York Academy of Medicine.

School Hygiene.—The bureau of public health education, department of health has instituted publication of a monthly pamphlet, *School Health News,* for the information of school teachers.

Personal.—Dr. T. Mitchell Prudden, who has been a member of the Public Health Council since its inception, was recently reappointed by Governor Smith for a term of six years.——Dr. Elbert M. Somers, Brooklyn, has been appointed deputy medical examiner of the bureau of deportation by the State Hospital Commission.

Seamen's Service Center.—The Seaman's Service Center, operating under the direction of the Surgeon-General of the United States Public Health Service in cooperation with the Red Cross and volunteer agencies, was recently established for the purpose of assisting merchant seamen entering the port of New York. The center will be conducted as a clearing house for the sick, disabled and needy sailors of the merchant fleets of the world.

OHIO

Verdict for Physician.—In the case of Ralph Meyers against Dr. Corwin T. Hill, Akron, in which the plaintiff sought to recover $25,000 on claims that the defendant was

negligent in treating a fracture of the leg, a verdict in favor of the defendant was returned by the jury after a fifteen minute session.

County Health Commissioners.—Of the eighty-eight counties of the state, fifty have already organized under the Griswold act, and thirty-nine health commissioners have been appointed, twelve of whom are to serve full time. Twenty-five of the fifty counties have made provision for a public nurse, and thirty nurses have already been named.

Chiropractors Fined.—It is reported that Mike Klotz, a chiropractor residing at Akron, was fined $200 and costs in the municipal court of Cleveland for practicing medicine without a license.——A report also states that A. M. Hoch, chiropractor at Cleveland, was fined $500 and costs, and that M. Pottgeiser, a chiropractor of Cleveland, was fined $100 and costs on a similar charge.

Prosecutions During 1919.—A letter received from Dr. Herbert M. Platter, secretary of the Ohio state medical board, states that during 1919 thirty-two individuals were convicted for the illegal practice of medicine and four for the illegal practice of midwifery, and the certificates of seven physicians were revoked and one certificate was suspended. Fifteen other individuals against whom cases were pending left the state and for that reason were not brought to trial.

Personal.—Dr. Benjamin I. Harrison, Cleveland, has been awarded a traveling fellowship for one year by Western Reserve University. Dr. Harrison saw service with both the British and American Expeditionary Forces during the world war. He will initiate his studies at the University of Oxford, England.——Dr. William S. Warren, Jacobsburg, was seriously injured by the overturning of his automobile near Businessburg, February 3.——Dr. Chester M. Peters, Canton, has been appointed health commissioner of Stark County.

Hospital Items.—Plans for the $500,000 hospital to be erected at the Masonic Home have been approved by the trustees.——The plan, which has been under consideration for several years, for the erection of a joint tuberculosis hospital by the counties of Muskingum, Fairfield, Perry, Licking and Coshocton, has been abandoned so far as the Muskingum County commissioners are concerned.——The Massillon State Hospital has been granted an appropriation of $130,000 for a new hospital building and an industrial building. The present industrial building will be converted into a cottage. The capacity of the hospital will thus be increased so that 130 additional patients can be accommodated.

PENNSYLVANIA

Conference of Industrial Physicians and Surgeons.—The state department of labor and industry will convene the tenth conference of industrial physicians and surgeons in the state capitol, Harrisburg, March 25.

Philadelphia

Drive for St. Agnes' Hospital.—For the first time in its thirty-two years of existence, St. Agnes' Hospital will appeal to the public for funds in a drive for $500,000 to be inaugurated March 15.

Osteopaths Lose Test Case.—The first step in a test case brought to determine whether or not practitioners of osteopathy may prescribe and administer drugs to patients was lost by the osteopaths when Judge Martin in Quarter Session Court refused to grant a new trial to Philip S. Dailey and fined him $50 and the costs of prosecution.

Personal.—Dr. Robert N. Keely has been appointed surgeon of the Philadelphia Nautical School's schoolship *Annapolis*.——Dr. Max R. Gabrio has been appointed chief resident physician at the Philadelphia Hospital for the Insane at Byberry to succeed Dr. James Allen Jackson, resigned. ——Dr. Edgar Fahs Smith was unanimously offered the position of provost emeritus of the University of Pennsylvania by the board of trustees.——Dr. John F. X. Jones has been appointed a member of the surgical staff of St. Agnes' Hospital.

Influenza Fund.—The city council has passed a general appropriation bill by which $50,000 will be available for combating influenza or for use in any other health emergency. The director of public health and charities will expend the money, subject to approval of the mayor, president of council and chairman of the finance committee. The latest report indicates that influenza is decreasing: the number of persons taken ill in the twenty-four hours ending at noon February 19 was 176 as compared with 219 on the preceding day, with 100 deaths from influenza, pneumonia and complications.

CANADA

Medical Building for University.—The United States Consul at Calgary, Alta., reports that a new medical building to cost $750,000 is to be erected for the University of Alberta. The plans have already been prepared and the construction will be commenced as soon as weather conditions permit.

Disease Record of Ontario.—There were almost 2,000 fewer deaths from communicable disease in Ontario during 1919 than in the previous year. Although more than 3,000 cases of smallpox were reported only nine deaths were recorded. Diphtheria caused 428 deaths and tuberculosis showed a slight increase, 2,234 cases and 1,722 deaths, as compared with 2,122 cases and 1,359 deaths in 1918.

Mental Hygiene Survey.—The Canadian National Committee for Mental Hygiene which was organized in April, 1918, has already conducted mental hygiene surveys in British Columbia, Manitoba, and Guelph, Ont. Governmental requests have been made for surveys during 1920 by the provinces of Alberta and New Brunswick, and the cities of Fort William and Port Arthur, Ont., while surveys are now in progress in Toronto and Ottawa, Ont., and Montreal, Que.

Postgraduate Course in Public Health Nursing.—In cooperation with the Victorian Order of Nurses and the public health, charitable and philanthropic organizations of Halifax and Dartmouth, Dalhousie University has inaugurated a course in public health nursing limited to graduate nurses. The Nova Scotia branch of the Canadian Red Cross Society has provided twenty scholarships of a value of $200 each. Lectures will be given chiefly by members of the medical faculty, and will deal with every phase of public health nursing. These courses will be augmented by eighteen hours of field work each week in social service, prenatal hygiene, infant welfare and school medical inspection service, by attendance at public clinics and by visits to all hospitals, industrial schools and health and social centers in Halifax. Upon successful completion of the full course of six months, a certificate of proficiency will be awarded to candidates.

GENERAL

Duty on Scientific Apparatus.—The Senate Committee on Finance has approved the bill placing a duty of 45 per cent. on imports of surgical and scientific instruments and laboratory glassware. There was no opposition to this bill before the committee.

New England Medical Women Elect Officers.—At the annual reunion and banquet of the Medical Women of New England, held in Boston, January 17, Dr. Agnes C. Vietor was reelected president; Dr. Margaret L. Noyes Kleinert, vice president; Dr. Alice H. Bigelow, secretary, and Dr. Isabel D. Kerr, treasurer, all of Boston.

Transportation for Railroad Surgeons.—Physicians who act in a professional capacity for railroads will continue to have the privilege of free railroad transportation. The clause in the railroad bill as it passed the House of Representatives, which would forbid free transportation to physicians, has been eliminated by the conference committee.

Hospital Society Enlarged.—The National Methodist Hospital Association at its meeting in Chicago, February 12, voted to include homes for aged and for dependent children in its organization. Plans for cooperation with the interchurch world movement were discussed, giving over an item of $100,000,000 in the budget for Methodist hospitals. Mr. E. S. Gilmore, superintendent of the Wesley Memorial Hospital, Chicago, was reelected president, and M. C. England, Cleveland, vice president.

Board for Ophthalmic Examination.—The next examination of the American Board for Ophthalmic Examinations will be held in New Orleans, April 26, at the time of the meeting of the American Medical Association. Applications and necessary credentials of candidates who desire to take the examination and obtain the certificate of the board should be in the hands of the secretary, Dr. William H. Wilder, 25 East Washington Street, Chicago, at least sixty days before the time set for the examination.

Health Work in Colleges and Universities.—In connection with the annual Conference on Public Health and Legislation called by the Council on Health and Public Instruction of the American Medical Association at the Auditorium Hotel,

Chicago, on March 4, 1920, Dr. John Sundwall, university health officer for the University of Minnesota, and Dr. Warren E. Forsythe, director of the university health service of the University of Michigan, have issued a call for all persons interested in health work in colleges and universities to attend a special meeting to be held at some convenient time during the conference to discuss special features of such work and possibly to effect an organization and arrange for meetings in the future. The time and place of the meeting will be announced at the conference.

Appropriations for Public Health Service.—In the emergency deficiency bill which has just passed the Senate, there is an appropriation of $3,000,000 for medical, surgical and hospital services for war risk insurance patients of the Public Health Service. The expenditure of this money is made immediately available to care for the work of the Public Health Service in behalf of former service men of the Army and Navy. There is also included in this bill provision for the final purchase of the Broadview Hospital—Speedway—at Chicago, Ill. This hospital will be used by the Public Health Service in the care and treatment of war risk insurance patients. Three million dollars has been appropriated heretofore for the purchase of this hospital and an additional sum of $500,000 is necessary to complete the construction of the hospital and make it meet the needs and purposes of the Public Health Service.

Philippine News.—The municipal council of Manila has approved an appropriation of 25,000 pesos (about $12,500) to furnish free of cost condensed milk to indigent children during the year 1920.——There has been held recently at Batangas, the capital of the province of the same name, the meeting of the physicians of the twentieth sanitary district. The district sanitary director, Dr. José M. Raymundo, presided, and the meeting was attended by some of the most prominent Filipino physicians, including the director of public health, Dr. V. de Jesús, Drs. P. Gabriel and J. B. Cabarrús.——Plans are being made for the construction of a municipal hospital at Tondo at an estimated cost of 1,000,000 pesos (about $500,000).——The following appointments have been announced: Dr. José Avellana Basa to be physician in chief of the Culión leper colony; Dr. Guillermo S. Sisón to be president of the thirteenth sanitary district division of Pangas; Dr. Fernando Calderón to be member of the board of trustees of the University of the Philippines, and Drs. José P. Bantug, Otto Schobl and Proceso Gabriel to act as a committee to report on the convenience and mode of enforcing anticholera vaccination in the Philippines.

The Dye Industry Bill.—Physicians, as well as chemists, are interested in the action of the Senate Committee on Finance in favorably reporting the dye industry bill. This is due to the fact that the manufacture of synthetic drugs is directly connected with the dye industry. The bill places import duties on dyes and an embargo on their importation, in order to encourage American laboratories to build up an industry which will be able to compete with the German monopoly heretofore dominating in the manufacture of synthetic drugs. The bill has already passed the House of Representatives. It provides a tariff of 30 per cent. on acetanilid suitable for medicinal use, acetphenetidin, acetylsalicylic acid, antipyrin, benzaldehyd, benzoic acid, betanaphthol, phenolphthalein, resorcin, salicylic acid and its salts, salol and other medicinals. The subcommittee held extensive hearings covering a period of several weeks, and important statements on the subject of the development and production of synthetic drugs by American laboratories were made by Dr. Marston T. Bogert, professor of organic chemistry of Columbia University, New York, and Dr. Julius Stieglitz, chairman, department of chemistry, University of Chicago.

Decennial Pharmacopeial Convention.—The United States Pharmacopeial Convention has issued the call for its tenth decennial meeting at 10 a. m., May 11, in Washington, D. C., at the Hotel Willard. One of the first and most important activities of the convention will be the election of fifty delegates who will constitute a committee on revision, to which will be assigned the task of determining the general principles to be followed in compiling the tenth revision of the pharmacopeia. The United States Pharmacopeial Convention is a corporation constituted of delegates elected by a number of organizations associated for the purpose of revising the United States Pharmacopeia every ten years. The interests of practitioners of medicine are conserved by delegates from the American Medical Association, the state medical associations, the medical colleges and the medical departments of the U. S. Army, U. S. Navy and U. S. Public Health Service. Each of these organizations should promptly select three qualified and competent delegates who will attend the convention and take active part in framing its policies. Because of the importance of the work and because of the great responsibility it entails, the medical profession should be properly represented. Forms for certifying the delegates to the convention are to be obtained by adderssing Dr. Noble P. Barnes, Arlington Hotel, Washington, D. C. These forms should be properly executed and the delegates reported to Dr. Barnes at least six weeks before the date set for the convention.

Legislation for Physical Education.—A bill for the promotion of physical education through cooperation of the federal government with the states has been introduced by Congressman Fess of Ohio. It provides for the employment of supervisors and teachers of physical education, including medical examiners and nurses. The work is to be conducted under the direction of the National Bureau of Education and the Public Health Service. The bill appropriates $10,500,000 for 1921, and $1 per year thereafter for each child of school age, the money to be apportioned to those states which shall appropriate on equal amount. Its provisions include a comprehensive course of physical activities, periodical physical examination, health supervision of schools, and schoolchildren; practical instruction in the care of the body and in the principles of health. The bill also provides for the establishment in the Public Health Service of a division of child hygiene. This bureau is to be in the charge of a commissioned officer of the Public Health Service who shall select other employees to assist him in his duties. These duties shall be to study and investigate the problems of child hygiene, to cooperate with state boards of health in medical research and practical administrative demonstrations relating to the health of women, children and to child bearing, and shall cooperate with the children's bureau of the bureau of education in matters relating to health conservation of children and mothers. An elaborate plan for cooperation with state authorities is formulated in the measure.

FOREIGN

Lister Memorial Institute.—The project which originated before the war for the establishment in Edinburgh of a memorial to the late Lord Lister has been revived. The memorial is to take the form of a scientific teaching and research institute under the auspices of the University of Edinburgh, the Royal College of Physicians and the Royal College of Surgeons of Edinburgh.

Statistics on Venereal Diseases in Germany.—The minister of the interior sent a questionnaire to all the physicians in Germany asking for the number of cases of venereal diseases in their charge between Nov. 15 and Dec. 14, 1919. The names of the patients were to be written on a perforated slip accompanying the questionnaire, but this was to be torn off and retained for the writer's information if need arises later.

Insane Aliens in Switzerland.—At the recent semiannual meeting of the Société des médecins aliénistes suisses a resolution was adopted asking the authorities for regulation of conditions in regard to alien insane. It has been found that many of the interned who required psychiatric treatment and were repatriated at the proper time, have returned to Switzerland, instances being known in which their home authorities paid their transportation back to Switzerland.

Personal.—Dr. Swale Vincent, since 1904 professor of physiology at the University of Manitoba, Winnipeg, has been appointed professor of physiology in the University of London, Middlesex Hospital, and will probably take up his new duties early in May.——Dr. Harold Pringle, lecturer on histology and assistant in physiology in the University of Edinburgh, has been appointed professor of physiology in Trinity College, Dublin, succeeding the late Sir Henry Thompson.

The International Pneumothorax Association.—The *Policlinico* announces that now, after the interregnum of the war, the international association entitled Pneumothorax Artificialis is to resume its work. The association intends to revive the international review, *Pneumothorax Thérapeutique*, founded by Forlanini, but for the present has made arrangements with *Tuberculosi*, published at Rome, which has agreed to summarize all the works on artificial pneumothorax as they appear in 1920. The secretary of the association is Prof. U. Carpi, Lugano, Italy.

French Children and the World War.—The effect of the war on the children of France is shown in a recent report submitted by the American Red Cross headquarters at Lille, based on the figures of the municipal bureau of hygiene. Before the war the city had a population of 200,000. The birth rate has shrunk from nearly 4,900 in 1913 to only 600 in 1918, and the figures by years indicate a loss of 15,000 births during the war. Since the armistice a survey has been made in all public and private schools to determine the number of children whose development has been retarded, and to place those with signs of tuberculosis in the care of institutions and welfare organizations. Of 18,000 children in the schools of Lille at the time of the armistice, over 6,000 had to be sent to hospitals or convalescent centers, 60 per cent. showed signs of arrested development, while about 40 per cent. gave evidence of glandular or pulmonary tuberculosis. In one typical school, out of 210 examined only one child was in normal health.

Deaths in the Profession Abroad.—Dr. **W. Schallmeyer** of Munich, whose work, "The Threatened Physical Degeneration of Civilized Races," won the Krupp prize in 1903, aged 62.——Dr. **Schottelius,** director of the Institute of Hygiene at Freiburg for many years, aged 70, has been missing since last September. He was visiting a lake resort when last seen.——Dr. **R. Stierlin,** professor of surgery at the University of Munich.——Dr. **A. Knoblauch,** aged 56, whose atlas of chronic diseases of the nervous system appeared in 1919. He was the constantly reelected president of the Senckenberg Society for Scientific Research at Frankfort.——Dr. **Hoffmann** of Heidelberg, author of various works on neurology, aged 62.——The cable brings word of the death of Dr. **E. Wertheim,** professor of gynecology and obstetrics at the University of Vienna, whose name is associated with operations for uterine cancer.——Dr. **Calatraveño,** a leading pediatrist, hygienist and medical editor at Madrid and honorary member of numerous scientific societies at home and abroad, aged 58.

LATIN AMERICA

Foot and Mouth Disease in Bolivia.—According to a cablegram received from Bolivia, foot and mouth disease is prevalent among the cattle of the department of Cochabamba.

Plague in Uruguay.—During the recent outbreak of the plague in Uruguay there were seventeen cases with two deaths, all of which occurred at Santa Rosa, department of Canelones, in October and November, 1919.

New Members of the Uruguayan Public Health Council.—Drs. Alfredo Vidal y Fuentes, José Mainginou and José Infantozzi have been appointed president and members, respectively, of the National Council of Hygiene of Uruguay.

Influenza in Mexico.—A cablegram from Mexico states that the epidemic of influenza continues to spread. In the Military School classes were suspended, and public business is suffering because of the absence of employees. The disease is of a mild type.

New Hospital for Panama.—Construction work on the new national hospital for Panama has been begun at El Hatillo, a high point facing the Pacific in a suburb of Panama. The hospital will cover a site of fourteen acres, and will be composed of eleven reinforced concrete buildings arranged in rectangular form, with accommodations for 600 patients. The construction is in charge of Major Edgar A. Bocock, M. C., U. S. Army, at present superintendent of the Santo Tomas Hospital, Panama.

Panama Nurses' Graduation.—At the graduating exercises of the Santo Tomas Hospital Training School for Nurses, January 31, diplomas were presented to the seven graduates by Major Edgar A. Bocock, M. C., U. S. Army, superintendent and director of the training school. Thirty-five selected pupils of Panamanian nationality form the school and during its three years of operation twenty-nine diplomas have been awarded to successful graduates, who are now found in several hospitals of South America.

International Sanitary Conference.—The sixth International Sanitary Conference of the American Republics will convene at Montevideo, Uruguay, Dec. 12-20, 1920. The invitations for the conference will soon be sent by the Uruguayan government, and the program will be issued by the International Sanitary Bureau in Washington, of which Dr. Rupert Blue, U. S. Public Health Service, is acting chairman. As indicated by Dr. E. Fernandez Espiro, the chairman of the organization committee, the chief subject for discussion will be the improvement of sanitary conditions in American countries.

Government Services

Health of the Army

For the week ending February 13, influenza continued to be reported from almost all the camps in decreasing numbers. The number of new cases of pneumonia following influenza is also decreasing. The death rate for disease is lower than for the previous week. Among the American forces in Germany, influenza and measles continued about the same, while pneumonia showed a slight increase. Among the American forces in Siberia, influenza and pneumonia were also prevalent.

Eighty-Ninth Division Medical Association

The officers who served with the Eighty-Ninth Division have formed an organization to be known as the Eighty-Ninth Division Medical Association of which Dr. Czar C. Johnson, Lincoln, Neb., is acting organization secretary. The purpose of the organization is to perpetuate the association of the 260 medical officers who at some time served with the division, by keeping a roster of membership and by a reunion at some central place each year for a professional and social meeting. The first reunion will be held in Kansas City, Mo., during the summer or early fall.

Medical Officers Over Fifty May Remain in Service

Senate Bill No. 3668 provides for the retention in service of certain "persons under the age of fifty years," who shall have served as officers of the medical, dental or veterinary corps in the United States Army, the National Guard in the service of the United States or in the National Army between April 6, 1917, and Nov. 11, 1918. It is suggested that, should the Senate do justice to the small number of officers now holding temporary commissions, who will be barred from entering the Medical Corps by reason of having attained the age of fifty years, an amendment be offered to the bill inserting after the words "fifty years" "or complete twenty or more years of commissioned service with regular troops before reaching the age of 64 years," etc. Under the present bill many valuable officers over fifty years of age will be eliminated from the Army.

Foreign Correspondence

LONDON

Feb. 7, 1920.

Medical Secrecy in Venereal Cases

Unlike the conditions in other countries, the English law recognizes the inviolability of the medical secret. The question has just arisen in a new form. During the hearing of an undefended suit for divorce brought by the wife, a physician was called on to give evidence that he had treated her for venereal disease. Adultery was proved, but in this country a woman suing for divorce must prove cruelty also. In this case the charge of cruelty was based on the communication of syphilis to her by the husband. A physician from the Westminster Hospital was called to prove that she was suffering from syphilis. Before giving evidence he handed the judge a letter from the chairman of the house committee stating that the hospital had adopted the national scheme for dealing with venereal disease and enclosing a copy of the statutory regulations, one of which enjoined absolute secrecy on the physician who attended the patient. The judge (Justice McCardie) said that the physician was one of those who were desirous of assisting the scheme for treating venereal diseases in every way, and for that purpose he wished loyally to maintain the secrecy which rightly rested on him. But in a court of justice there were even higher considerations than those that prevailed with regard to the professional position of physicians. Apart from the obligation that might be imposed on physicians by the judge, it was desirable that there should be a loyal observance of the confidence that was reposed in them by patients. He then ordered the physician to give evidence, which the latter did, showing the woman was suffering from syphilis. This ruling has not been received without criticism by the profession. Mr. H. W. Bayly, honorary secretary of the Society for the Preven-

tion of Venereal Disease, stated that he felt confident that his committee would agree that physicians should be protected from compulsion to "give away" their patients. There would never be an effective use of the clinics now provided unless the patients had complete confidence that their secrets would not be revealed. If he found himself in the same position, he would refuse to give evidence. This would make him liable to imprisonment for contempt of court but it is doubtful whether any judge would press the matter, as public sympathy would be against him. The *Lancet* also points out the detrimental effect of the ruling on the working of the venereal clinics.

The Influenza Epidemic

The most comprehensive account of the great influenza epidemic has been issued as a government report by Dr. Carnwith. He gives evidence to show that the epidemic originated in China and spread to America and thence to Europe. Glasgow in May, 1918, was the seat of the first outbreak among the civilian population. In June the disease reached England, and the summit of the first wave occurred in the week ending July 13. The early cases were slight, the late ones severe. This was again seen in the autumn wave, the most terrible of all. The ports of Portsmouth, Southampton and Liverpool, which were affected first, suffered lightly. Inland towns suffered later and more severely. The subjoined table gives a comparison of the deaths in London with those in American towns from influenza and pneumonia (all forms) during eight weeks of the epidemic.

DEATHS IN LONDON AND IN AMERICAN CITIES

City	No. of Deaths	Rate 8 Weeks per 100,000 of Population
London	13,744	341
New York	20,681	360
Chicago	8,785	343
Philadelphia	12,806	749
Boston	4,211	548

The number of weeks intervening between the highest points of the summer and autumn epidemics were: London, 15; Liverpool, 14; Manchester, 20; Stockholm, 9; Copenhagen, 12; Chicago, 28. The age incidence showed curious changes. During the summer wave the ages most affected were 15 to 45. In the winter wave there was a considerable shifting toward the extremes of life and particularly toward the younger years. The susceptibility of young children was the subject of a special inquiry in London. Though the attack rate was below the average, the chances of recovery were less than in other age groups. Of breast-fed infants, 30 per cent. contracted the disease; of artificially fed, 54 per cent. The opposite, however, occurred in lying-in homes. An inquiry in Cheshire revealed that 25.4 per cent. of expectant mothers affected died, and of 118 expectant lives only fifty-seven survived. It does not appear that one attack was invariably powerful in protecting against others. The results are contradictory, but may be reconciled by the hypothesis that there are several strains of the influenza virus, and that these vary in virulence and antigenic potency. On this explanation, infection with one strain confers little or no protection against infection with others. Each wave seemed to have its peculiar dominant strain producing a certain wave individually.

The Fellowship of Medicine

At a meeting of the executive committee of the Fellowship of Medicine and Post-Graduate Association, at which Sir Humphrey Rolleston presided, a resolution was passed in silence recording the profound sorrow of the association at the loss of their president, Sir William Osler, without whose guidance and support success would have been impossible. A plan for the establishment of postgraduate courses was submitted by a special subcommittee and approved. Three series of courses are contemplated: 1. Postgraduate courses for general practitioners. A series of courses dealing with the various clinical subjects from the general practitioner's point of view, each lasting a fortnight or more, should be arranged by single institutions or by groups of institutions. These institutions would be of two kinds: (*a*) those, such as the existing postgraduate institutions, providing postgraduate instruction through the greater part of the year, and (*b*) those undergraduate schools which are willing to provide short courses from time to time. 2. Postgraduate advanced and special courses. Consecutive series of advanced courses, each series dealing with one clinical subject from the specialist or advanced point of view, should be arranged by educational subcommittees to be elected annually by separate meetings of London teachers, including the councils of the corresponding sections of the Royal Society of Medicine. 3. Postgraduate students preparing for special examinations. Courses for special examinations should be arranged by individual schools, as has been done in the past.

Increase of Women Physicians

The great increase in the number of women physicians in this country since the war began has been pointed out in previous letters to THE JOURNAL. It is now foreseen that by 1925 there will be a very large number, for nearly 3,000 woman students are taking up medicine today. The Women's School of Medicine is quite full. There are many reasons for this. First, there was a scarcity of men physicians brought about by the war. Then, a large number of openings arose, owing to the progressive public attitude toward social welfare and child life. These appointments will increase from year to year as it is realized what great factors the clinic and the medical inspector are in the educational and industrial worlds. The girls who are training to become physicians are mostly from the middle professional class, some are the daughters of rich merchants, who are determined to be independent, and others are from the families of the once leisured class, now described as the "new poor" (people made poor by the rise in the cost of living with no counterbalance).

Criticism of the Insurance Act

Dr. Addison, minister of health, received a deputation from the British Federation of Medical and Allied Societies with regard to the national insurance act. Dr. Arthur Latham said that the deputation came to emphasize the fact that national health insurance did not permit the insured persons to receive all that the science of medicine had to give, and under the regulations the physician was not able to do the effective work he was willing and anxious to do. They had the lessons of five years' experience during the war of the most gigantic experiment in health services the world ever saw. The insured public asked for bread and were given a stone. They asked for health and were given regulations which seemed to be chiefly designed to catch the erring physician in some fault. The tendency of the regulations was to impair the efficiency of the health services. At the end of the war the medical arrangements were far more effective than at the beginning, and under the compelling force of great events, modern methods were able to push their way through regulations. There must be regulations; but if they were not to hamper efficiency, they must be elastic. None of the lessons of the war had been incorporated in the regulations of the insurance act. The deputation suggested a public inquiry into the working of the act.

Dr. Addison said he was grateful for the efforts of the federation to focus trained medical opinion on the question how the medical services of the country could best serve the public. He invited its help in devising a scheme whereby a strongly individualistic profession, such as the medical, could be brought with good will to devote its services commonly to the public necessity. The type of service he was aiming at had been remitted to the consultative council, and as soon as he received the report it would be made public. Should a wider inquiry be found necessary it could be undertaken.

The St. Andrews Institute for Clinical Research

On retiring from practice in London, Sir James Mackenzie took up his residence in the small Scotch town of St. Andrews, where he has founded an institute for clinical research of a new type to carry out methods of investigation which he has long advocated. He considers that the methods of physiology and bacteriology which have helped some sections of medicine are not applicable by themselves to the wider fields of clinical medicine. What is necessary is a much more profound and systematic study of symptoms than has been accomplished in the past. Disease is made manifest only by symptoms. Therefore, the first step is to understand the nature and significance of symptoms. The structural stage of disease when it has caused structural damage has been fairly well studied, but not so the early stages before the occurrence of physical signs, and the causes which predispose to disease. St. Andrews has a population of only 10,000, but this is considered an advantage, as the inhabitants are less migratory than in larger towns and it is therefore easier to keep in touch with them. The

object is to study not the rarer forms of disease but the most common. Arrangements have been made with the physicians on the insurance panel by which their patients will attend the institute at regular hours. Each physician will have at his disposal a separate room and all the facilities of the institute. A chemist has been appointed on the staff, and it is intended to appoint a bacteriologist. The professors of anatomy and physiology of St. Andrews University will give help and also—a peculiar innovation—the assistant professor of logic.

Ventilation of Places of Amusement

The Public Health Committee of the London County Council is recommending the enforcement of regulations for the more effectual ventilation of places of amusement, and the exclusion of children, as precautionary measures against the spread of infectious diseases. The theaters and music halls committee of the council has already expressed the opinion that the only efficient means of securing satisfactory atmospheric conditions in a place of entertainment and thereby preventing as far as possible the spread of infection is the installation of an adequate system of mechanical ventilation combined with a system of heating under which fresh air is warmed before it enters the building. Experience has shown that unless incoming air is warmed, the mechanical ventilation system is not fully utilized, owing to the cold draft caused. Such a combined system is required in all new places of entertainment and, as opportunity offers, in existing places. A similar policy has been pursued with regard to the provision of means of natural lighting, so that daylight may be freely admitted into halls when not in use for cinematograph displays.

PARIS

Jan. 22, 1920.

A Confederation of French Scientific Societies

In my letter of January 15 (The Journal, Feb. 21, 1920, p. 538) I mentioned the circumstances that had led certain societies to form federations. The chemical societies were the first to take such action. Soon afterward the societies of natural science followed their example, and now a federation of the societies of physical science is about to be organized. On the initiative of M. Moureu, professor in the Ecole supérieure de pharmacie de Paris, and member of the Academy of Medicine and the Academy of Science, a meeting of the representatives of these various federations has been called to discuss the feasibility of forming a general confederation of federated scientific societies. About forty scientific societies were represented at this meeting, and it was unanimously decided to form such an organization. The purpose of this confederation will be to establish intimate relations between the groups of the different branches of pure and applied science; to coordinate their efforts from a scientific, technical and economic standpoint, and to further the development of all movements destined to contribute to the progress of pure and applied science, with a view to promoting the economic welfare of the country, and to increasing the general prosperity.

Difficulties That Scientific Publications Are Facing

Everything pertaining to printing and publishing is associated with difficulties nowadays. First, there is the shortage of paper to contend with; then there is the scarcity of labor, the lack of suitable buildings, transportation difficulties, the deficiency of coal, etc. This state of affairs not only retards the publication of scientific journals, but threatens their very existence. Some publications whose fine general appearance justifies a considerable increase in price or whose subscription list is growing rapidly can endure all these inconveniences, but with scientific publications it is different, for their patronage is necessarily limited. This condition of things is beginning to attract considerable attention in scientific circles, and, quite recently, M. Henneguy, professor in the Collège de France, took the initiative and called a meeting of the managing directors and secretaries of the scientific publications, and representatives of the federations of societies of learning. Ways and means of remedying the unfavorable conditions were discussed. A proposal to establish a cooperative society to handle the printing and publishing of scientific journals was considered, reference being made to the university press idea as carried out in England and America (Oxford University Press, and many others), but it was thought to be impossible or impracticable to adopt the university press plan in toto, although it was admitted that certain commercial features on which it is based may well be imitated. Any cooperative plan would have to be based, above all, on a complete inventory of French scientific publications, and would necessitate as wide a curtailment as possible. This implies, of course, the necessity of raising considerable funds; state aid would have to be secured; private contributions would need to be solicited, and an issue of stock would have to be made. In short, as a cooperative society could not be established over night, it was thought best to face the immediate needs of the scientific publications.

After this exchange of opinions, in which many men well known in the scientific world took part, M. Henneguy moved that a committee be appointed to study into the matter. His motion was unanimously adopted. Accordingly, the Comité d'étude de la presse scientifique was chosen to investigate the question and to report on these three matters pertaining thereto: 1. What plan can be adopted to print and publish works needed for scientific documentation, journals of pure and applied science, and works on pure science, so that they can be sold at a reasonable price, authors and writers be paid a just remuneration, and a maximal output be secured? 2. What journals already in existence or about to be founded could be so associated as to make possible eventually the plan of a cooperative printing and publishing house? 3. How may, eventually, French scientific publications be grouped and classified so as to avoid duplication of effort, and favor, on the other hand, the founding of new journals, if such should seem needed?

Medical Science and Aeronautics

The sixth Salon de l'Aéronautique, recently held in Paris, gave abundant evidence of the progress that medical science as applied to aerial navigation has made during the past six years, since the last Salon de l'Aéronautique was held in 1913. The physiologic section of military aviation was especially interesting. It covered six display booths. The first booth comprised everything that pertains to the general examination of the would-be aviator, including means of identification, height, weight, musculature, bones and joints. The second and third booths were devoted especially to the nervous system and the organs of sense: study of the functions involved in walking, the coordination of movements, the equilibration apparatus, and the examination of vision and audition. In the fourth booth, examinations of the circulation, blood pressure, and respiration were conducted. The fifth and sixth booths took up roentgenoscopy and the laboratory examination. The general impression that one gained at this exhibit was that medical science has made exceedingly important contributions to the progress of aeronautics, not only as regards the establishment of the standard which a candidate for the post of pilot must attain to in the medical examination, but also with respect to the limitation of the dangers of aviation in general. From the prophylactic point of view, the automatic oxygen inhaler may be mentioned particularly. The Garsaux inhaler is so constructed that oxygen to the extent of 35 liters an hour for each passenger is supplied automatically as soon as an altitude of 3,500 meters is reached. The amount of oxygen furnished increases gradually, until, at an altitude of 8,000 meters, 150 liters an hour are supplied.

Marriages

Henry Blodgett McIntyre, Lieut.-Col., M. C., U. S. Army, on duty at Fort McHenry, Md., to Miss Gladys E. Miller, at Mamaroneck, N. Y., January 31.

George Lyle Venable, New Sharon, Iowa, to Miss Georgia Jinks of North Manchester, Ind., in the chapel of St. Luke's Hospital, Chicago, February 3.

Matthias Higgins, Jr., Newport, Ky., to Mdlle. Germaine Perillion of St. Etienne, France, in New York City, February 7.

William H. Matchette to Miss Nellie Turner, both of Greenville, Ohio, at Covington, Ky., Dec. 22, 1919.

Arthur Lawrence Nielson, Kansas City, Mo., to Miss Katherine Krug of Washington, D. C., January 24.

Ralph Henry Dunning, Syracuse, N. Y., to Miss Georgia Malone of Lancaster, Ohio, January 27.

Thomas Conroy Eley, Plymouth, Ind., to Miss Gertrude Spiegel of Indianapolis, February 18.

Deaths

John Walton Ross ⊕ Pasadena, Calif.; Tulane University, New Orleans, 1868; aged 77; medical director (captain), U. S. Navy, retired; who entered the Navy in 1870, and was retired Jan. 11, 1905, on attaining the age of 62 years, after ten years and one month of sea service; and who since his retirement had resided in California; an expert in yellow fever; chief of the department of charities and hospitals in Havana during the American occupation of Cuba, and director of the hospitals of the Canal Zone; a member of the Association of Military Surgeons of the United States; died, February 9.

Joseph Ashton Blanchard, Shreveport, La.; College of Physicians and Surgeons, Baltimore, 1897; aged 45; formerly city physician of Shreveport; a member of the Louisiana State Medical Association; captain and assistant surgeon, First Regiment, Louisiana Volunteers, during the war with Spain; was found dead in his room in a hotel in Memphis, February 4, from a gunshot wound of the head, believed to have been self-inflicted, with suicidal intent.

Joseph Nelson Clark, Harrisburg, Pa.; Georgetown University, Washington, D. C., 1867; aged 80; for many years a druggist of Harrisburg; a veteran of the Civil War; president of the People's Savings Bank of Harrisburg; a school director for eleven years, and for one year secretary of the board; died, February 5, from bronchopneumonia.

James Jackson Johnson, Braggs, Okla.; University of Louisville, Ky., 1907; aged 35; sergeant first class, Medical Department, U. S. Army, for six years, and later attached to the American Red Cross Commission to Siberia; died, Dec. 13, 1919, from typhus fever, and was buried with military honors at Irkutsk, Dec. 16, 1919.

Harry John Tate, Pittsfield, Mass.; Georgetown University, Washington, D. C., 1914; aged 30; first lieutenant, M. C., U. S. Army, with service abroad; a member of the Massachusetts Medical Society; city physician of Pittsfield; died in the House of Mercy Hospital, Pittsfield, February 11, from pneumonia.

Hiram M. Day, Delaware, Ohio; Western Reserve University, Cleveland, 1881; aged 65; a member of the Ohio State Medical Association, and once president of the Delaware County Medical Society; formerly president of the Farmer's Bank, Pandora, Ohio; died, February 2, from heart disease.

George Henry Balleray ⊕ Paterson, N. J.; College of Physicians and Surgeons in the City of New York, 1869; aged 71; a fellow of the New York Academy of Medicine, and of the British Gynecological Society; for ten years surgeon to the Woman's Hospital, Newark; died, February 11.

John Stevenson Tinker ⊕ Philadelphia; University of Pennsylvania, Philadelphia, 1908; aged 45; a member of the eye, ear, nose and throat staff of the Polyclinic Hospital and Bethany Dispensary, Philadelphia; died, February 8, in the Polyclinic Hospital, from pneumonia.

William Leckie Bain, Chicago; College of Physicians and Surgeons in the City of New York, 1884; aged 60; for several years a resident of Denver; a specialist in the electrolytic treatment of copper ores; died, January 30, from locomotor ataxia.

Michael Charles Dunnigan, Erie, Pa.; University of the City of New York, 1868; aged 80; formerly town clerk and treasurer of Erie; president of the Erie Board of Health in 1899; died, February 5, from cerebral hemorrhage.

Otto A. Hartwig, St. Louis; Missouri Medical College, St. Louis, 1880; aged 76; a member of the Missouri State Medical Association; for more than twenty-five years a pharmacist; died, February 3, from bronchitis.

James E. Cole, Hazelwood, N. C., formerly of Middleton, Ga.; Southern Medical College, Atlanta, Ga., 1890; aged 54; a member of the Elbert County Board of Education; died, February 3, from cerebral hemorrhage.

Alexander Samuel Harshberger ⊕ Lewistown, Pa.; University of Pennsylvania, Philadelphia, 1870; aged 70; local surgeon for the Pennsylvania Railroad for thirty-two years; died, February 11, from pneumonia.

Joseph Patrick Deery, Fairfield, Conn.; Maryland Medical College, Baltimore, 1913; Kansas City (Mo.) College of Medicine and Surgery, 1917; aged 34; died at Bridgeport, Conn., February 2, from pneumonia.

⊕ Indicates "Fellow" of the American Medical Association.

Harvey Sturgeon Foringer, Wilkinsburg, Pa.; College of Physicians and Surgeons, Baltimore, 1896; aged 60; for the last fifteen years a representative of a pharmaceutical house; died, February 4, from pneumonia.

Howard L. McKinstry, Red Wing, Minn.; University of Pennsylvania, Philadelphia, 1870; aged 71; died at the home of his daughter in Granite Falls, Minn., February 7, from cerebral hemorrhage.

Edwin Howe, Los Angeles; Physio-Medical College, Cincinnati, 1851; aged 91; for more than sixty years a practitioner of St. Joseph, Mo.; died, Dec. 29, 1919, from cardio-renal disease.

William Thomas Vance, Bloomsburg, Pa.; University of Maryland, Baltimore, 1881; aged 68; a member of the Medical Society of the State of Pennsylvania; died, January 30, from heart disease.

John F. Taggart, New Washington, Ind.; Jefferson Medical College, 1860; aged 83; surgeon of the Fourth Indiana Volunteer Cavalry during the Civil War; died, Nov. 30, 1919, from epithelioma.

John Thomas Phillips, Newport, Wash.; Rush Medical College, 1897; aged 49; president of the Security State Bank of Newport; once mayor of Newport; died, February 11, from influenza.

Malcolm Munroe Campbell, Albany, Mo.; University of Michigan, Ann Arbor, 1871; Bellevue Hospital Medical College, 1875; aged 80; died in a hospital in St. Joseph, Mo., February 10.

William Frank Kistler, Minersville, Pa.; Hahnemann Medical College, Philadelphia, 1874; aged 68; died at his winter home in St. Petersburg, Fla., January 30, from cerebral hemorrhage.

Oscar Loehr, Milwaukee; University of Berlin, Germany, 1880; aged 65; died in Alexian Brothers Hospital, Chicago, February 9, from uremia following an operation for prostatic abscess.

Edward August Arnold, East Orange, N. J.; Cornell University, New York City, 1909; aged 32; house physician at the Orange Memorial Hospital; died, February 5, from pneumonia.

John Jasper Sewall, Newport, Me.; University of the City of New York, 1887; aged 62; a member of the Maine Medical Association; died, February 3, after a surgical operation.

George Philip Beutel, Louisville, Ky.; University of Louisville, Ky., 1880; aged 72; died in St. Anthony's Hospital, Louisville, February 7, from shock after a surgical operation.

Walter DeWolf Jones, Dierks, Ark.; Philadelphia University of Medicine and Surgery, 1867; aged 75; a veteran of the Civil War; city health officer of Dierks; died, February 4.

Daniel Henry Arendale, Mount Vernon, Ill., University of Nashville, Tenn., 1884; aged 62; died at his farm, near Mount Vernon, January 30, from acute dilatation of the heart.

Henry Rudolph Widmer ⊕ Newark, N. J.; College of Physicians and Surgeons in the City of New York, 1903; aged 38; died, February 1, from cerebral hemorrhage.

Joseph LeRoy Gross, Pittsburgh; Jefferson Medical College, 1919; a member of the house staff of Mercy Hospital, Pittsburgh; died, February 5, from pneumonia.

Clarence Homer Kemp, Elmwood, Ill.; Rush Medical College, 1896; aged 49; a member of the Illinois State Medical Society; died, January 30, from pneumonia.

Arthur G. Thome, Chicago; Chicago Homeopathic Medical College, 1883; aged 62; died in the Chicago Union Hospital, February 17, from heart disease.

William P. Van Sant, Brooklyn, Ind.; Columbus (Ohio) Medical College, 1880; aged 68; died in the Methodist Hospital, Indianapolis, Dec. 5, 1919.

George Washington Hart, Brooklyn; College of Physicians and Surgeons in the City of New York, 1901; aged 46; died, February 7, from pneumonia.

Caryl B. Storrs, Minneapolis; Michigan College of Medicine and Surgery, Detroit, 1892; aged 49; died, January 18, as the result of an accident.

George W. W. Walker, Roseville, Ohio; Zanesville (Ohio) Academy of Medicine, 1875; aged 73; died, February 6.

Correction.—Dr. James Jefferson Johnson, whose death was announced in THE JOURNAL of February 14, states that there must be an error in name as he is still alive and practicing at Sulphur Springs, Texas. The physician who died was Dr. James Jackson Johnson.

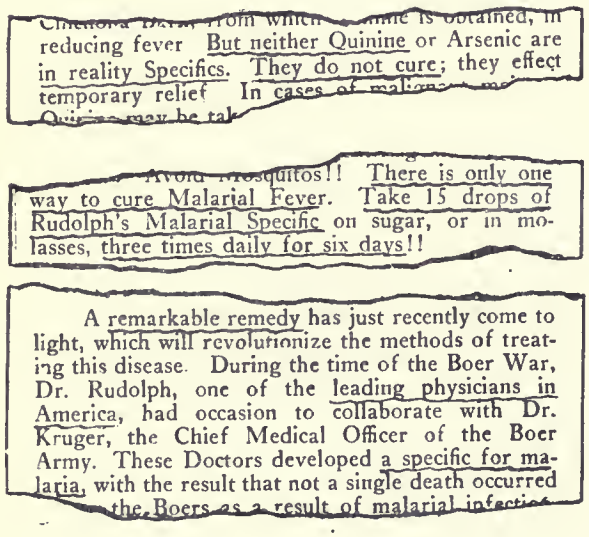
The Propaganda for Reform

In This Department Appear Reports of The Journal's Bureau of Investigation, of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Fraud on the Public and on the Profession

ANTIPLASMA

J. J. Rudolph's Alleged Specific for Malaria

During the last few months The Journal has received a large number of inquiries from the South relative to a nostrum that is being sold in that part of the country under the name "Antiplasma" or "Rudolph's Malarial Specific." According to the advertising, the preparation was "developed by J. J. Rudolph, M.D." who, we are told is "one of the leading physicians in America." This, while an obvious enough joke to the medical profession, may be taken seriously by the general public and thus contribute duly to the sale of "Antiplasma." The story goes that Dr. Rudolph during the Boer War collaborated with "Dr. Kruger, the Chief Medical Officer of the Boer Army" and that, between them, they



[illegible] from which Quinine is obtained, in reducing fever But neither Quinine or Arsenic are in reality Specifics. They do not cure; they effect temporary relief In cases of malign[illegible] Quinine may be tak[illegible]

[illegible] Avoid Mosquitos!! There is only one way to cure Malarial Fever. Take 15 drops of Rudolph's Malarial Specific on sugar, or in molasses, three times daily for six days!!

A remarkable remedy has just recently come to light, which will revolutionize the methods of treating this disease. During the time of the Boer War, Dr. Rudolph, one of the leading physicians in America, had occasion to collaborate with Dr. Kruger, the Chief Medical Officer of the Boer Army. These Doctors developed a specific for malaria, with the result that not a single death occurred [illegible] the Boers as a result of malarial infection

Reproductions (reduced) from the circular which is wrapped around the bottle of "Antiplasma."

"developed a specific for malaria with the result that not a single death occurred among the Boers as a result of malarial infection."

In orthodox "patent medicine" style it is declared that quinin—universally recognized as one of the few specifics in medicine—is not in reality a specific at all:

"There is only one way to cure Malarial Fever. Take 15 drops of Rudolph's Malarial Specific on sugar or in molasses, three times daily for six days."

"In no instance has a case not yielded to treatment and a complete and lasting cure effected within seven days."

This marvel, it seems, after the close of the Boer War lay dormant for years and "has just recently come to light"; it "will revolutionize the methods of treating this disease." We are told that for eighteen years past "Dr. Rudolph has used this compound in his private practice in America and has proved its efficacy beyond question and to the complete satisfaction of a number of reputable scientists." Search of medical literature, however, fails to show that Dr. Rudolph has given the world, medical or otherwise, any information regarding his epoch making discovery. Apparently, this "leading physician" kept to himself the knowledge of his "specific" for one of the most widespread diseases known, until he decided that the time had come to commercialize it.

A number of original, sealed packages of Antiplasma were turned over by The Journal's Propaganda department to the A. M. A. Chemical Laboratory. Here is the chemist's report on the product:

"'Antiplasma' ('Rudolph's Malarial Specific') is a pale yellow, viscid liquid having an odor resembling a mixture of oil of turpentine and oil of wintergreen. Its taste is aromatic and bitter, somewhat like the resinous exudates from spruce. On heating, the substance burned with a smoky flame, leaving only a trace of ash. The specific gravity was found to be 0.97924 at 25 C. On distillation with steam, Antiplasma gave a volatile fraction and a non-volatile portion, the latter amounting to 52.9 per cent. of the weight taken. The non-volatile residue was a pale yellow solid which softened to a thick, viscous fluid at 100 C. The odor of the warmed substance was pine-like. It responded to the usual tests for rosin. The distillate appeared to be a mixture of oil of turpentine and methyl salicylate (oil of wintergreen). Quinin and arsenic, two remedies frequently used in the treatment of malaria, were absent. It was impossible to determine by the analysis whether the product had been made by warming a mixture of rosin, oil of turpentine and methyl salicylate or by 'thinning' some natural turpentine-like product with methyl salicylate.

"A mixture of 53 parts of bleached rosin, 41 parts of oil of turpentine and 6 parts of methyl salicylate would probably have whatever anti-malarial properties Antiplasma possesses."

Correspondence

STATUS OF ARSPHENAMIN PATENTS

To the Editor:—In response to requests from a number of physicians concerning the status of the arsphenamin patents, I submit data on the subject in the hope that they will interest the readers of The Journal.

During the recent war, Congress passed a law, known as the "Trading with the Enemy Act," which, among other things, conferred on the President the authority to license American citizens to operate enemy-owned patents. This power was by executive order delegated to the Federal Trade Commission, which granted, after due consideration, licenses to certain applicants. Licensees under this law were to pay 5 per cent. of their gross receipts to the alien property custodian, who was to deposit the same in the United States Treasury. Within a year after the declaration of peace, the foreign owners of the patents were given the right to sue in a court of equity for the payment of a reasonable royalty (presumably the said 5 per cent.) and also to petition the court for a termination of the license granted.

These provisions of the Trading with the Enemy Act have been to a large extent nullified by certain clauses in the treaty of peace, bearing on seized property. An amendment to the Trading with the Enemy Act permitted the alien property custodian to regard patents as property and to seize and sell such property as was owned by enemy aliens. The alien property custodian thereupon seized the 4,500 German chemical patents in the United States, including those covering drugs, dyestuffs and the like. These were sold to the Chemical Foundation for $250,000.

The purposes of this corporation have been misunderstood in certain quarters. The Chemical Foundation is to be conducted *pro bono publico* and its by-laws exclude the possibility of private gain. Its object is to protect the struggling dye industries of this country and to stimulate and aid scientific research in industrial and medical chemistry; the profits accruing from the royalties paid to it on patents are, after redemption of the preferred stock, to be utilized in grants for these purposes. Its trustees are prominent men of known public spirit and of unimpeachable honor.

The title of the Chemical Foundation to the patents appears to be absolute and irrevocable. Congress specifically limited any claim on the part of the former foreign owners to the proceeds of the sale and not to a recovery of the patents. The peace treaty, in Article 297, validates and confirms the acts of the alien property custodian, and Germany

thus acquiesces in the loss of these patents. The treaty further provides that the German owners of seized patents cannot seek financial redress from the American licensees, but shall look to the German government, which shall indemnify her citizens to the extent of the claims due. The German owner of patents granted before the war is no longer entitled to manufacture in the United States, or to import his products into the United States.

The arsphenamin patents now being the property of the Chemical Foundation, the German manufacturer cannot export the drug to this country without infringing the patent ownership. The laboratories in the United States now manufacturing arsphenamin will enjoy this privilege for the duration of the patent, which on this particular drug extends to 1928. Royalties must, of course, be paid by them to the Chemical Foundation, which may, in its judgment, license additional laboratories to produce this compound and other similar compounds. As to new patents in the future, Germany will be protected as she was in the days before the war. The licensing of persons to furnish arsphenamin and neo-arsphenamin throughout the United States was in the beginning carried out by the Federal Trade Commission under regulations formulated by the United States Public Health Laboratories. It may be safely asserted that in no country in the world is the distribution of these products so thoroughly controlled and regulated as in the United States. Compounds must contain a definite percentage of arsenic within narrow limitations, and must pass rigorous toxicity tests in animals. In Germany the original product was tested by subcutaneous injections in mice. The laboratories referred to above have wisely substituted intravenous injections in rats.

Great credit is due to Dr. G. W. McCoy, director of the United States Public Health Laboratories, for the manner in which he has organized the scientific supervision over the arsenical products, and to Prof. Julius Stieglitz of the University of Chicago, who has acted as the government's expert on arsphenamin throughout the entire period of the war, and who has made many personal sacrifices in the interests of the country.

JAY FRANK SCHAMBERG, M.D., Philadelphia.

AMERICANIZATION OF THE MEDICAL PROFESSION

To the Editor:—Would not this be a propitious time for the various states to enact laws requiring full citizenship of all physicians, etc., who may hereafter apply for a license to practice? Educational institutions should be open to all, irrespective of nationality or citizenship, but medical societies, clubs, and similar organizations might aid considerably in the work of Americanization were they to require citizenship as an essential qualification for membership. Honorary memberships could be extended to nonresident foreigners of eminence.

WILLIAM H. HOLMES, M.D., Chicago.

"A MODIFIED TECHNIC IN OPERATION FOR OBLIQUE INGUINAL HERNIA"

To the Editor:—I have read, with no little interest, Dr. Angwin's article (THE JOURNAL, Feb. 14, 1920, p. 437) on the subject of a modified technic in the operation for oblique inguinal hernia. Having served at the Naval Hospital at Great Lakes during Dr. Angwin's duty there, I had a chance to observe some of his methods of both herniotomy and varicocele operations, both of which vary somewhat from the classical. One of the main advantages in his technic in herniotomy, which is not emphasized in the article, is the lessening of traumatism to the cord structures. This small factor not only relieves the patient of postoperative distress, but also lessens the dangers to the veins and vas in the cord.

On the other hand, the principle of anchoring the peritoneum to a structure outside the abdomen, however strong, does not appear desirable. Intra-abdominal structures resemble the caged lion, continually moving about seeking a weak place in the cage. To anchor the peritoneum, at or very near the point of a previous hernia, necessarily leaves a predisposing point for subsequent trouble. Closure of the clean peritoneum will, I think, give the best results when not securely anchored, but allowed to heal as it is normally found, free, movable and smooth.

B. V. MCCLANAHAN, M.D., Galesburg, Ill.

"COMMERCIAL DOMINATION OF BIOLOGIC THERAPEUTICS"

To the Editor:—I wish to express appreciation of your editorial on the "Effects of Quinin on the Tissues," in THE JOURNAL, February 14, and to congratulate you on the splendid article on "Commercial Domination of Biologic Therapeutics," in Current Comment in the same issue. The latter subject is a suitable one for an editorial, in which you should place the matter even stronger than you did in this article. In fact, I think this subject is one that justifies repeated editorials from time to time.

C. C. BASS, M.D., New Orleans.

RESPIRATORY SOUNDS HEARD ON THE HEAD

To the Editor:—Apropos of the letter of Dr. Myerson in THE JOURNAL, Feb. 14, 1920, regarding respiratory sounds heard on the head, I should like to call attention to the difference in degree of sound transmission between a healthy and a diseased mastoid. Both the respiratory sounds and sound such as that produced by tapping on the central incisors are transmitted better to a bell stethoscope on the diseased side. In mastoiditis this fact becomes of diagnostic importance.

ARTHUR C. JACOBSON, M.D., Brooklyn.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

PHYSICIANS AND THE PROHIBITION LAW

To the Editor:—Please advise me whether or not it will be necessary for me to execute a bond for $1,000 to the federal government in order to get a permit to purchase 6 quarts of whisky to be used in emergency cases that may occur in my regular practice during any one year, the whisky to be furnished with no charge whatsoever. I have been told that the bond is necessary, but I do not so understand from the article on "The Physician and the Prohibition Law" (THE JOURNAL, Jan. 31, 1920, p. 342).

G. P. ZIRKLE, M.D., Kingston, Tenn.

ANSWER.—Treasury Decision 2940, issued Nov. 6, 1919, provided that all persons holding permits to purchase whisky or alcohol must give bond to the minimum amount of $1,000. Internal Revenue Regulations 60, issued late in January, 1920, superseded previous regulations and modified this rule by providing, as stated in the article mentioned, that unless otherwise required by the commissioner, bonds need not be filed by physicians, dentists or veterinarians. This means that except in special cases in which the commissioner may see fit to require a bond, physicians do not need to file a bond to secure a permit.

VACCINATION WITHOUT SCAR

To the Editor:—Please describe the technic of vaccination without scar, referred to in THE JOURNAL, Jan. 24, 1920. What is the best variety of vaccine to use, how is it diluted, what is the size of the dose, is it given endermically or hypodermically, and how far should the needle be introduced? In children should the site of injection be anesthetized with a toothpick dipped in pure phenol?

HENRY F. HOYT, M.D., Long Beach, Calif.

ANSWER.—The subcutaneous method of vaccination was described by J. R. Goodall (*Am. J. M. Sc.* **158**:721 [Nov.] 1919), who employs the following technic: Vaccine put up in capillary tubes is used. These are put in denatured alcohol for a few minutes, then dried with aseptic absorbent cotton,

the ends broken off, and the vaccine blown into a beaker by means of a sterile rubber bulb fixed to the end of the tube. From one half to three quarters of a tube of vaccine is allowed for each person, and sufficient sterile water is added to make the individual injection 1 c.c. The arm is sterilized with iodin and the vaccine injected with a fine hypodermic needle and syringe diagonally into the subcutaneous tissues. In a few cases in which the injection was made intradermically, the typical reactions of ordinary vaccination developed without complications. In the others the local reaction was much like that after antityphoid inoculation and usually set in between the second and fourth days, but in a few cases was considerably delayed even for from twelve to fifteen days. Everything should be done with surgical cleanliness, and the needle should be changed for each injection. Children undergo hypodermic vaccination without any difficulty by this comparatively painless procedure. If only one or two persons are to be vaccinated, the vaccine may be prepared as for ordinary hypodermic injection. It should be understood that the method is not yet generally accepted.

"PROCAIN"—BOOKS ON GONORRHEA—SYPHILIS—MALARIA

To the Editor:—1. What is the difference between novocain and procain?

2. Which is the least toxic?

3. What percentage of each should be used on all parts of the body with the exception of the gums?

4. What percentage is safe for extraction of teeth?

5. What is the maximum amount in grains or fractions that is safe for use in one operation?

6. Please refer me to a good book on (*a*) the treatment of syphilis of all types; (*b*) the treatment of gonorrhea and its sequelae; (*c*) malaria and its treatment.

I note what THE JOURNAL has to say about apothesine. I am glad that there is such a publication to speak out boldly against all pretenses.

W. B. PALMER, M.D., Furman, Ala.

ANSWER.—1. None. The term "procain" was adopted by the Federal Trade Commission and the Council on Pharmacy and Chemistry for use in place of novocain, which is the trade name for this product used by a single firm. "Procaine" is the term used by the American firms which have been licensed by the Federal Trade Commission to manufacture the drug.

2. See Answer 1.

3. According to New and Nonofficial Remedies, for infiltration anesthesia, solutions of 0.25 gm (4 grains) of procain in 100 or 50 c.c. (3.2 or 1.6 ounces) of physiologic sodium chlorid solution, with 0.3 or 0.6 c.c. (5 or 10 minims) of epinephrin solution (1:1,000); for instillations and injections, solutions of 0.1 gm. (1½ grains) procain in 10 or 5 c.c. (16 or 8 minims) physiologic sodium chlorid solution (1:1,000); in ophthalmology, 1 to 5 to 10 per cent. solution; in rhinolaryngology, 5 to 20 per cent. solutions are recommended, with the addition of 0.4 to 0.5 c.c. (6 to 8 minims) of epinephrin solution (1:1,000) to each cubic centimeter (16 minims).

4. See Answer 3.

5. Internally, owing to its feeble toxicity, it may be given in doses up to 8 grains. It might therefore be said that this is the maximum amount to be used in any operation.

6. (*a*) Thompson, Loyd: Syphilis, Philadelphia, Lea & Febiger, 1916, $4.25.
White and Martin's Genito-Urinary Surgery and Venereal Diseases, Ed. 10, Philadelphia, J. P. Lippincott Company, 1917.
Hayden, J. R.: Venereal Diseases, Philadelphia, Lea & Febiger, 1916.
Manual of Treatment of the Venereal Diseases, published by the American Medical Association, price 25 cents.

(*b*) Lumb, N. P. L.: The Systematic Treatment of Gonorrhea, Philadelphia, Lea & Febiger, 1918.
Luys, Georges: A Text-Book on Gonorrhea and Its Treatment, translated from the French by Arthur Foerster, New York: William Wood & Co., 1913, $6.

(*c*) Craig, C. F.: The Malarial Fevers, New York: William Wood & Co., 1909.
Deaderick, W. H.: A Practical Study of Malaria, Philadelphia: W. B. Saunders Company, 1909, $4.50.

TSCHERNING

To the Editor:—I notice in Queries and Minor Notes (THE JOURNAL, Sept. 20, 1919, p. 930) an inquiry for biographic data concerning Dr. H. E. Tscherning.

Dr. Tscherning is at present, and has been for the last few years, professor of ophthalmology in the University of Copenhagen, and chief of the department of eye diseases in Copenhagen.

S. N. VENOEL, M.D., Bröndersley, Denmark.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, Mar. 2. Sec., Dr. L. O. Sloan, Juneau.

ARIZONA: Phoenix, April 6-7. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.

COLORADO: Denver, April 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

CONNECTICUT: New Haven and Hartford, March 9-10. Sec., Reg. Bd., Dr. Robert L. Rowley, Hartford. Sec., Homeo. Bd., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven. Sec., Eclectic Bd., Dr. James Edwin Hair, 730 State St., Bridgeport.

DISTRICT OF COLUMBIA: Washington, April 13-15. Sec., Dr. Edgar P. Copeland, the Rockingham, Washington.

FLORIDA: Jacksonville, March 16. Sec., Homeo. Bd., Dr. Geo. A. Davis, East Port.

IDAHO: Boise, April 6. Commissioner, Hon. Robert A. Jones, Boise.

ILLINOIS: Chicago, Mar. 1-3. Director, Mr. Francis W. Shepardson, Springfield.

IOWA: Iowa City, March 29-31. Sec., Dr. Guilford H. Sumner, Capitol Building, Des Moines.

MAINE: Portland, March 9-10 Sec., Dr. Frank W. Searle, 140 Pine St., Portland.

MASSACHUSETTS: Boston, March 9-11. Sec., Dr. Walter P. Bowers, Room 144, State House, Boston.

MINNESOTA: Minneapolis, April 6-8. Sec., Dr. Thos. McDavitt, Loury Bldg., St. Paul.

MONTANA: Helena, April 6. Sec., Dr. S. A. Cooney, Power Bldg., Helena.

NEW HAMPSHIRE: Concord, March 11-12. Sec., Dr. Charles Duncan, Concord.

OKLAHOMA: Oklahoma City, April 13-14. Sec., Dr. J. M. Byrum, Shawnee.

RHODE ISLAND: Providence, April 1-2. Sec., Dr. Byron U. Richards, State House, Providence.

WEST VIRGINIA: Charleston, April 13. Sec., Dr. S. L. Jepson, Masonic Bldg., Charleston.

Washington July Examination

Dr. C. N. Suttner, secretary of the Washington Board of Medical Examiners, reports the written examination held at Seattle, July 1-4, 1919. The examination covered 13 subjects and included 143 questions. An average of 60 per cent. in each subject was required to pass. Of the 35 candidates who took the physician's and surgeon's examination, 34, including 2 osteopaths, passed, and 1 failed. The following colleges were represented:

College	Year Grad.	Number Licensed
PASSED		
College of Medical Evangelists	(1917)	1
George Washington University	(1912)	1
Bennett College of Eclectic Medicine and Surgery	(1897)	1
College of Phys. and Surgs., Chicago	(1903), (1910)	2
Loyola University	(1919)	1
Rush Medical College	(1878)	1
Baltimore Medical College	(1891)	1
Johns Hopkins University	(1913)	1
Harvard University	(1915)	1
Barnes Medical College	(1911)	1
Kansas City Medical College	(1901)	1
Kansas City University of Phys. and Surgs.	(1919, 2)	2
John A. Creighton Medical College	(1919)	1
Ohio-Miami Medical College	(1911)	1
University of Oregon	(1914), (1918), (1919)	3
Jefferson Medical College	(1918), (1919, 3)	4
University of Pennsylvania	(1892), (1916), (1918, 3)	5
Meharry Medical College	(1915)	1
McGill University	(1891), (1905)	2
Chiba Special Medical School	(1917)*	1
FAILED		
University of Louisville	(1912)	1

* Graduation not verified.

District of Columbia October Examination

Dr. Edgar P. Copeland, secretary of the District of Columbia Board of Medical Supervisors, reports the oral and written examination held at Washington, Oct. 14-16, 1919. The examination covered 16 subjects and included 80 questions. An average of 75 per cent. was required to pass. Of the 23 candidates examined, 21 passed and 2 failed. Eight candidates were licensed by reciprocity. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Georgetown University	(1919) 83.7, 84.5, 86.6, 87.1, 87.5, 87.6.	
George Washington University	(1917) 75.8, 83.6, 84.7, (1919) 82.8,	86
Howard University	(1918) 76.3, (1919)	79.1
Johns Hopkins University	(1913) 86.5, (1918)	85.6
University of Maryland	(1917)	76.6
Harvard University	(1919)	88.2
Columbia University	(1914)	87.6

Cornell University	(1917)	91.1
Med. Coll. of the State of South Carolina	(1917)	77.2
Dalhousie University	(1916)	85

FAILED

Coll. of Med. and Surg. (Physio-Medical) Chicago	(1911)	58.6
Columbus Medical College	(1884)	66.2

College	Year Grad.	Reciprocity with
LICENSED BY RECIPROCITY		
George Washington University	(1904)	Maryland
Baltimore Medical College	(1906)	Maryland
Tufts College Medical School	(1905)	Maine
Ensworth Medical College	(1912)	Missouri
University of Nebraska	(1904)	Nebraska
Temple University	(1913)	Penna.
Medical College of Virginia	(1916)	Virginia
University of Aberdeen	(1901)	Virginia

Medicolegal

Sufficiency of Evidence of Typhoid Fever from Drinking Contaminated Water

(Stubbs v. City of Rochester (N. Y.), 124 N. E. R. 137)

The Court of Appeals of New York says that this action was brought by the plaintiff to recover damages alleged to have been sustained by him as the result of drinking contaminated water from the defendant's domestic service, in 1910. The trial resulted in a judgment for the defendant, which was affirmed by the appellate division of the supreme court, but that is here reversed, and a new trial granted, by this court, divided four to three. The important question in the case was, Did the plaintiff produce evidence from which inference might reasonably be drawn that the cause of illness was due to the use of contaminated water furnished by the defendant? Counsel for the defendant argued that, even assuming that the city might be held liable to the plaintiff for damages caused by its negligence in furnishing contaminated water for drinking purposes: (*a*) The evidence adduced by the plaintiff failed to disclose that he contracted typhoid fever by drinking contaminated water; (*b*) it was incumbent on him to establish that his illness was not due to any other cause to which typhoid fever might be attributed for which the defendant was not liable. Counsel asserted that there was a failure of proof on the part of the plaintiff, in that he did not establish that he contracted disease by drinking contaminated water, and in support of his argument cited a rule of law that when there are several possible causes of injury for one or more of which a defendant is not responsible, the plaintiff cannot recover without proving that the injury was sustained wholly or in part by a cause for which the defendant was responsible. If the argument should prevail, and the rule of law stated is not subject to any limitation, this case would illustrate the impossibility of a recovery in any case based on like facts.

One cause of typhoid fever was stated to be "personal contact with typhoid carriers or other persons suffering with the disease, whereby bacilli are received and accidentally transferred by the hands or some other portion of the person or clothes to the mouth." Concededly, a person is affected with typhoid some weeks before the disease develops. The plaintiff here resided three miles from his place of employment, and traveled to and from his work on the street car. To prove the time when he was attacked with typhoid, then find every individual who traveled on the same car with him, and establish by each one of them that he or she was free from the disease even to his or her clothing would be impossible. Again, the evidence disclosed that typhoid fever is caused by sources unknown to medical science. If the word of the rule stated were to prevail, the plaintiff would be required to eleminate sources which have not yet been determined or ascertained. This court does not believe the rule stated to be as inflexible as claimed for it. If two or more possible causes exist, for only one of which a defendant may be liable, and a party injured establishes facts from which it can be said with reasonable certainty that the direct cause of the injury was the one for which the defendant was liable, the party has complied with the spirit of the rule.

The plaintiff was employed in the immediate locality where the water was contaminated. He drank the water daily. The consumption of contaminated water is a very frequent cause of typhoid fever. In the locality there were a large number of cases of typhoid fever, and near to sixty persons who drank the water and had suffered from typhoid fever in that neighborhood appeared as witnesses on behalf of the plaintiff. The plaintiff gave evidence of his habits, his home surroundings, and his method of living, and the medical testimony indicated that his illness was caused by drinking contaminated water. Without reiteration of the facts disclosed on the trial, the court does not believe that the case on the part of the plaintiff was so lacking in proof as matter of law that his complaint should be dismissed. On the contrary, the most favorable inferences deducible from the evidence for the plaintiff were such as would justify a submission of the facts to a jury as to the reasonable inferences to be drawn therefrom, and a verdict rendered thereon for either party would rest, not in conjecture, but on reasonable possibilities

Unconstitutional Exemption Law Relative to Physicians' Bill

(O'Leary v. Croghan (S. D.), 173 N. W. R. 844)

The Supreme Court of South Dakota, without explaining the special nature of this case, says that the only question presented for determination on this appeal was the constitutionality of Chapter 150, Laws of 1911, which reads:

> Nothing in this chapter shall be so construed as to exempt any personal property from mesne or final process for laborers' or mechanics' wages or physicians' bills, or for the necessaries of life, including only food, clothing and fuel, provided for the debtor or his family, except property absolutely exempt . . . Provided, that in case of physicians' bills or for necessaries of life, there shall also be exempt household and kitchen furniture, including stoves, of the debtor, to an amount in value not exceeding $400, and also two cows: provided, however, that the collection of physicians' bills shall not be enforced by legal process in less than six months from the accruing thereof except when the debtor is about to remove from the state.

Stated somewhat differently, under the provisions of this chapter, the amount of a debtor's exemptions depends on the nature of his debts. As against certain classes of claims he may not be allowed any exemptions at all, except such as are denominated as absolute exemptions, while as against other claims he may be allowed additional exemptions to the extent of $750 worth of personal property, as provided by Section 2659, or the alternative exemptions enumerated in Section 2660, of the code. A corresponding discrimination is made as between different classes of creditors. A laborer or mechanic may satisfy his claim for wages out of any property of the debtor, except that made absolutely exempt, and may have immediate execution. A physician and one who has supplied the debtor with the necessaries of life must leave the debtor $400 worth of household and kitchen furniture, including stoves, and also two cows, in addition to his absolute exemptions; and the creditor who furnished the necessaries of life may have immediate execution; but a physician cannot have execution until six months after accruing of his claim.

None of these discriminations are authorized by Section 4 of Article 21 of the state constitution, which provides that:

> The right of the debtor to enjoy the comforts and necessaries of life shall be recognized by wholesome laws exempting from forced sale a homestead, . . . and a reasonable amount of personal property, the kind and value of which shall be fixed by general laws.

On the contrary, such discriminations are expressly prohibited by the provisions of Section 18, Article 6, that "no law shall be passed granting to any citizen, class of citizens or corporation, privileges or immunities which upon the same terms shall not equally belong to all citizens or corporations. The discriminations that have been attempted by the legislature may be wise and in the interest of the public at large, but until the constitution has been changed the legislature is without authority to make them. The court is satisfied that, in enacting Chapter 150, Laws of 1911, the legislature exceeded its constitutional power, and that said law is void.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, New Orleans, April 26-30.

Alabama State Medical Association, Anniston, April 20-22.
American Association of Anatomists, Washington, D. C., April 1-3.
American Assn. of Pathologists and Bacteriologists, New York, April 2-3.
American Dermatological Association, Asheville, April 22-24.
American Proctologic Society, Memphis, Tenn., April 22-23.
American Urological Association, New York, March 23-25.
Assn. of Military Surgeons of the U. S., New Orleans, April 24.
Louisiana State Medical Society, New Orleans, April 24-26.
Missouri State Medical Association, Jefferson City, April 6-8.
National Tuberculosis Association, St. Louis, Mo., April 22-24.
New York State Medical Society, New York, March 23-25.
North Carolina State Medical Society, Charlotte, April 20.
South Carolina Medical Asspciation, Greenville, April 20-21.
Tennessee State Medical Association, Chattanooga, April 6-8.
Texas State Medical Association, Houston, April 22-24.

THE CHICAGO SOCIETY OF INTERNAL MEDICINE

Thirty-First Regular Meeting, Held Feb. 23, 1920

The President, DR. JOSEPH A. CAPPS, in the Chair

The Bacteriology of Epidemic Influenza

DRS. JAMES C. SMALL and FRED STANGL: *Bacillus influenzae* was found in 100 per cent. of our cases studied in our first series; pneumococcus Type I, none; Type II, one; Type II atypical, five; Type III, one; Type IV, nine; total positive for pneumococcus, sixteen, or 72.7 per cent. Hemolytic streptococci were found in two instances, or 9.1 per cent.

A second group comprises forty-five cases of acute influenza which were studied by the throat and sputum cultures only. These cultures were made on brown blood agar, and no attempt was made to identify organisms other than *B. influenzae*. This organism was obtained in forty-three of these cases, or 95.5 per cent. Six of this number had throat cultures only. The two cases negative for *B. influenzae* were in this group of six.

Among thirty controls, *B. influenzae* was demonstrated twenty-one times, or 70 per cent. The relative high incidence of *B. influenzae* in this group is comparable to the findings during the pandemic of 1918, and may be regarded as illustrating the wide dissemination of these organisms during epidemic periods.

In a second series, twenty-six patients in the tuberculosis hospital were studied. These patients were hospitalized before the epidemic. *B. influenzae* was found in nine instances, or 34.6 per cent. The findings in this group may be regarded as comparable to the incidence of *B. influenzae* during interepidemic times.

A group of thirty-two cases studied presents the bacteriology of the pneumonia of influenza, as it occurred among cases chosen at intervals throughout the course of the epidemic. The results of this study have been: Pneumococcus Type I, two; Type II, one; Type II atypical, six; Type III, five; Type IV, thirteen; total, twenty-seven, or 84.4 per cent. Hemolytic streptococci with pneumococci, one instance; with no pneumococci, five; total six, or 18.7 per cent. *B. influenzae*, twenty-four instances, or 75 per cent.

Those types of pneumococci occurring in the mouths of normal persons were found in practically 90 per cent. of the pneumococcus pneumonia of this group. The parasitic types I and II occurred infrequently: Type I only twice, and Type II once. These findings are in accord with those reported for the pneumonia of 1918. The hemolytic streptococcus occurred in approximately a fifth of the cases. It should be emphasized that in cases studied early in the epidemic this organism was not found. All instances in this group in which hemolytic streptococci were found appeared among the cases studied within the latter half of the period.

Ward surveys for hemolytic streptococci were made on three occasions at about ten-day intervals in several of the wards. These surveys were instituted to determine the hemolytic streptococcus situation in the wards rather than to follow the bacteriology of individual patients. The sheet cubicle system and a definite plan for preventing contact infections within these wards was practiced.

One of the wards had a high incidence of hemolytic streptococci at the time of the first survey. Isolation of patients carrying hemolytic streptococci did not prevent its further dissemination within this ward, and on the third survey twelve of twenty-two patients, or 54.4 per cent., had hemolytic streptococci in their throats. Four empyemas (all due to hemolytic streptococci) developed in this ward. Some cases of otitis media and one case of frontal sinusitis also developed in this ward. The bacteriology of these was not determined.

The other ward had an incidence of hemolytic streptococcus carriers of 16.7 per cent. on the first survey. Ten days later, on the second survey, it had only 3.3 per cent. On a third survey, only four patients remained in this ward, and two of these were positive. Two empyemas appeared in this ward, neither due to the hemolytic streptococcus. Several cases of otitis developed here also, of undetermined bacteriology.

These studies are too incomplete to enable one to draw conclusions, but it is a striking circumstance that, in the ward in which hemolytic streptococci were most prevalent, only hemolytic streptococcus empyemas developed, while in the other ward, no hemolytic streptococcus empyemas developed.

Observations on Green-Producing Cocci of Influenza

DR. RUTH TUNNICLIFF: During the recent influenza epidemic the majority of observers have isolated green-producing diplococci from the sputum and from material obtained at necropsy. The organisms were generally classed as Type IV pneumococci on account of their being soluble in bile and not agglutinated by pneumococcus serums. Pneumococci of Types II, III and more rarely I were isolated also. *Streptococcus viridans* and nonhemolytic streptococci were isolated by Keegan, Nuzum, Blanton and Irons, and others; but the colonies were not described, so that it is not possible to identify them with the other strains of streptococci. Other workers, notably Mathers, MacDonald, Rosenow, Howel, Anderson and Jordan, isolated a peculiar green-producing streptococcus from the nasopharynx, sputum, blood and necropsy material. This streptococcus was isolated by the late Capt. George Mathers at Camp Meade at the very onset of the epidemic at the camp and during the first and second days of the disease. He isolated this streptococcus from the sputum in 87 per cent. of the 110 cases of influenza and the complicating bronchopneumonias. The Pfeiffer bacillus was isolated also in 58 per cent. of these cultures. The coccus was cultivated from necropsy material in the six cases examined, the Pfeiffer bacillus from five.

I made immunity experiments with the Mathers coccus to determine its relation to influenza and the complicating pneumonia. The serum was examined for opsonins, as this antibody is usually easily demonstrated in streptococcus infections. The serum of patients with acute influenza was examined daily for its opsonic power. On the first day of the disease the opsonic content was low. On the second or third day it rose well above normal, remaining high a day or two.

Severe cases of bronchopneumonia following influenza were also examined. The serum showed little or no opsonins for the Mathers coccus. The negative phase in these influenzal pneumonias for this green-producing streptococcus is much more pronounced than is generally observed in other acute infectious diseases. The serum of the patients that recovered showed, as the symptoms subsided, a high opsonic content.

These changes in opsonins in influenza and influenzal pneumonia were specific for the Mathers coccus, no fluctuations being observed with the Pfeiffer bacillus, *B. influenzae*, *Micrococcus catarrhalis* or *Streptococcus hemolyticus*. Agglutination experiments with this streptococcus were negative.

It does not seem possible to determine definitely the etiologic relation of the Mathers coccus to influenza and its complications. At Camp Meade, Md., it was the prevailing organism during the onset and height of the epidemic. It was the micro-organism which appeared with the onset of influenza, Pfeiffer's bacillus having been present in the respiratory diseases for several weeks previous. In Chicago, Dr. Jordan found this coccus present in a few more cases than the Pfeiffer bacillus. When present, the coccus was always found in the early stages of the attack and was more closely associated with the pneumonia cases than the Pfeiffer bacillus. However, Dr. Jordan found the Mathers coccus present in colds and tonsillitis infections in about the same proportion of cases as influenza, while the Pfeiffer bacillus was here found less frequently.

My experiments, and later those of Rosenow, Howell and Anderson, show that the serum of convalescent influenza and influenzal pneumonia patients shows definite specific opsonins, agglutinins and complement fixation bodies for the Mathers coccus, which indicates that it played at least some part in the reaction in the epidemic and was of wider distribution than has been commonly recognized.

Evidence for and Against the Use of Vaccines in the Treatment of Influenza With and Without Pneumonia

DR. ERNEST E. IRONS: Before a remedy, whether prophylactic or curative, is recommended for general use, its powers and limitations should be well determined: (1) It should be of itself harmless, and should be of proved value; (2) if not altogether harmless, its value should be such that the advantages far outweigh the risk involved in its use; (3) if harmless of itself, it may still be dangerous in that it gives a false sense of security, and thereby prevents the institution of other more effective measures of prevention or cure. A common example of the latter type is the fumigating of a house while the resident, a carrier of the disease, goes at large. In estimating the value of vaccines in the prevention and cure of respiratory disease, several factors are commonly neglected:

1. Controls: No one today would accept a report on a Wassermann test unless he were assured that in making it, all necessary controls were used. In estimating the value of vaccines in groups of patients inoculated with them, it is not sufficient to base conclusions on impressions. Statistics, to be available for safe conclusions, should be based on large series of cases with like numbers of controls under identical conditions. This has not usually been the case in reports available in the literature; and when these are carefully examined the fallacy in the argument is usually recognizable.

2. Results of Animal Experiments: Animal experimentation, while fundamental and a necessary preliminary in biologic investigation, does not afford the final proof of value of a remedy for man. Because an immune serum for example contains demonstrable antibodies and will protect a mouse from fatal infection in a dose of 5 c.c., it does not follow that this serum will be effective in man in the same or even fivefold dose. In the same way, because the injection of a relatively large quantity of bacteria into animals produces demonstrable antibodies, it does not follow that the injection into man of an allowable amount of the same bacteria will afford protection against the corresponding organisms; nor is the amount of demonstrable response the same for all organisms. Even in the often quoted example of typhoid vaccination, the immunity is only relative, and though usually sufficient, fails when large numbers of bacilli are ingested.

During the recent periods of influenza epidemics, it has been proposed to prevent influenza by the inoculation of vaccines containing streptococci, pneumococci and the Pfeiffer bacillus, and this method has been widely practiced. The amount of vaccines used in this way is enormous—usually under circumstances which preclude the drawing of any scientific conclusions from results obtained. In the first place, the evidence that the Pfeiffer bacillus is the cause of influenza is extremely weak. It is true, that in recent weeks it has been found quite constantly in respiratory infections in Chicago. This prevalence was noted last year in some localities in the East, and in still other Eastern communities the same workers using the same methods were unable to find this bacillus. The Pfeiffer bacillus has also been found for years in diseases which have nothing to do with influenza, and at times when clinical influenza was not present. It is evident that the Pfeiffer bacilli in the vaccine cannot, therefore, be expected to contribute anything specific to the supposed protection from influenza.

The question then may be asked whether on clinical grounds any protection is afforded. Among the few adequately controlled reports available is that of McCoy, who inoculated a portion of the inmates of an institution and subsequently found an incidence of influenza among them equal to that in a like number of uninoculated controls.

If vaccines as used failed to protect against influenza, did they protect against the later pneumonia? The organisms of the secondary pneumonias varied greatly in different parts of the country, and in the same community at different periods of the epidemic, and so a vaccine prepared for use in one community might not have any specific relation to the prevalent type in another. To argue the importance of some unknown nonspecific elements in vaccines and other proteins in the treatment of disease is to cast aside one of the most important guides in the study of immunity. So far as I have been able to find, there is no conclusive evidence that previous vaccination had any effect on the incidence of pneumonia following influenza.

Of the other factors that had an enormous effect on the incidence of pneumonia, early hospitalization was the most important in the army and in civil practice. Patients already in hospital, such as those in surgical wards, frequently contracted influenza, but rarely pneumonia. Nurses who remained on duty after the onset of influenza developed pneumonia in twice as many cases as did nurses who went to bed at the first symptoms.

As has been the practice in recent years, a variety of substances, such as peptones, vaccines, liquor formaldehydi and mercurial salts, were injected intravenously in patients suffering from pneumonia, usually without any attempt at comparison with control cases. Some of the discussions of events following the injections would be amusing if it were not for the serious import to the patients. When in an occasional case the chill and thready pulse resulting from the administration of the vaccine is followed by a permanent defervescence, the event is described with as much detail as if sudden defervescence were not of almost daily occurrence in other groups of pneumonias not under such treatment. The effect of these administrations in hastening the fatal issue is not usually discussed.

In view of the very doubtful efficacy of vaccines in prophylaxis of influenza and its subsequent pneumonia, it is believed that further popularization of this method of control of influenza is undesirable. The use of vaccines and other proteins intravenously is dangerous, as well as being of extremely doubtful value.

DISCUSSION

DR. E. O. JORDAN: My own work in regard to influenza is incomplete, and my opinions are somewhat unformed at the present time. As regards the Pfeiffer bacillus, we made some observations both in the 1918 epidemic and in the epidemic just passing. I got the impression in 1918 that there was undoubtedly a good deal of variation in the frequency of the finding of the Pfeiffer bacillus according to the group that was examined.

We had several groups under observation in our laboratory work and we found a good deal of difference both in the frequency of occurrence of the Pfeiffer bacillus in individual cases and as regards actual numbers of Pfeiffer bacilli in different cases. That observation has been confirmed by our findings in the present epidemic. The frequency of occurrence of the Pfeiffer bacillus in cases of acute respiratory infection is by no means very convincing as to the rôle this organism plays in the primary infection. I confess to

being very much impressed by the work done by Park's laboratory on the lack of unity in the different strains. In one case, for instance, he describes his findings with six strains isolated from six members of one family, all coming down with typical influenza at about the same time, and these six strains from six different members of the family were all different immunologically. The serum of one strain would not agglutinate any of the others. This observation has been confirmed independently by Fleming in England, and those who have worked with the agglutinated serums have found considerable diversity in the reactions obtained.

There are different kinds of Pfeiffer-like organisms in the throat, both in normal persons and in different kinds of respiratory infection, and it may be that we shall have to sort out the different kind of bacteria. I do not believe the criteria usually employed for the identification of the Pfeiffer bacillus are sufficient to permit us to place these organisms in one group. We have certainly different kinds of organisms that have gone under the name of Pfeiffer bacilli, and it will take some time to sort them out.

In the last twenty-five years quite a number of cases have been put on record of meningitis in which the Pfeiffer bacillus has been found in pure culture, and these cases have been regarded as due to this bacillus. If the Pfeiffer bacillus was the cause of meningitis in the 1918 epidemic, we might suppose there would be, in all events, some increase in the number of cases of meningitis due to the Pfeiffer bacillus; but there has not been anything of that sort. Again, attempts made to produce influenza in human beings with injections of pure cultures of Pfeiffer bacillus have been unsuccessful in the vast majority of cases.

A word about the very interesting organism Dr. Tunnicliff has described. In the 1918 epidemic we found the Mathers organism, which had an extraordinary degree of virulence. It killed mice and sometimes guinea-pigs more rapidly than any other bacteria I ever got out of the respiratory tract. We have been examining the flora of ordinary colds and have not found the Mathers cocci in these cases; so when the first case of influenza appeared last month we looked with great interest to see whether the Mathers coccus was present, and much to my surprise we did not find it. We have not found Mathers' cocci in anything like the number we did in 1918.

With reference to vaccination or vaccines, in connection with the commission, financed by the Metropolitan Life Insurance Company, on respiratory diseases, of which I am a member, some observations and experiments are being carried on at the present time with a mixed vaccine, and it is hoped that before long we shall be able to give you the results of the work of this commission.

DR. DAVID J. DAVIS: The work that has been going on in the last year or two emphasizes the fact that the hemophilic organisms and the so-called influenzal bacillus are very widely distributed. In normal individuals the percentage varies anywhere from 10 to 40 or 50 per cent., which means that one person out of every three, four or five normally harbors these bacteria, and this percentage persists in epidemic times as well as in interepidemic times, as shown by the work of Lord and a number of other investigators. This organism is more widely distributed and more frequently the cause in all sorts of respiratory diseases, both acute and chronic, than any other. We have known for a long time that the bacillus occurred in practically 100 per cent. of whooping cough cases, and these organisms are not more dangerous, although they are distinctly different. It occurs commonly in measles cases, in various kinds of pneumonias, in meningitis cases, meningococcic infections, and in bronchiectases, pulmonary tuberculosis, and so on; consequently, the mere fact of the occurrence of the organism in a high percentage of cases, taken by itself, is not a criterion of any great value in considering it as an organism of etiologic importance in connection with this disease or any other disease. Pfeiffer, for instance, nearly forty years ago found the organism known by his name in practically 100 per cent. of cases, yet in the last year or two in Germany they have had great difficulty in finding the organism in a small number of cases. Pfeiffer's early work was supported generally by German investigators, yet in the 1918 epidemic, generally speaking, these German investigators had not been able to find the organism and had generally taken a stand against it as the cause of influenza.

As to the presence of hemolytic streptococci in the throat, I should like to call attention to the point that an error may creep in in making cultures from throats. Hemolytic streptococci are virtually constant in all throats in which tonsils are present. They can be found deep in crypts of the tonsils, and unless this fact is considered, reports of throat cultures in which hemolytic streptococci are found may be misinterpreted. These organisms are developing in the crypts from time to time and are passing out into the throat. They are quite virulent for animals, and they are obtained from empyema cases or from the blood in fatal cases.

DR. A. M. MOODY: I had occasion to examine material from many cases of influenza in France during the epidemic of 1918. The first cases occurred the latter part of August, 1918. It was impossible to differentiate those cases clinically from the cases we saw later. We made a bacteriologic examination of the material from the lungs, trachea, bronchi and sputum, and in nearly every case we found hemolytic streptococci in pure culture. About the middle of September the bacteriologic findings seemed to change and we began to find more influenza bacilli and green-producing streptococci similar to the organism described by Dr. Tunnicliff. In the first part of October we began to get patients from the states. During the epidemic we found more and more influenza bacilli. In November we found a mixture of all sorts of organisms, particularly influenza bacilli, and streptococci in the fatal cases. In the fatal cases we found large numbers of streptococci in the alveoli, so that none of these organisms can be put down as the cause of the disease. I do not believe we are any nearer the solution of the cause of the disease today than we were quite a while ago.

DR. JOSEPH A. CAPPS: In visiting the different base hospitals in France it was interesting to see the difference of opinion among bacteriologists as to the different organisms they found. In a group of hospitals having the same type of cases clinically one bacteriologist would find influenza bacilli, another pneumococci, and another streptococci. There were many places in which influenza bacilli were not found, and it was thought by some of the chief surgeons that the bacteriologists did not know how to find them; yet many of these bacteriologists were experts, and the reason they did not find influenza bacilli more frequently was that they were not there.

Does one attack of influenza confer immunity? I have seen several cases recently which lead me to believe that it does not. One patient in particular had leukopenia, respiratory symptoms, great prostration, and other symptoms associated with influenza, and recovered. This patient went to Florida and again developed a fresh attack. Another patient, after having recovered from the primary attack of influenza, went to California, and several weeks after the first attack had a second one. I presume that one can say this was a recurrence or perhaps a relapse, such as we have in typhoid fever cases.

DR. THEODORE TIEKEN: I have a strong conviction that vaccines are absolutely useless. I find that practitioners are using them for both prophylactic and curative purposes. They are using two or three different varieties of vaccines in the same cases so as to have what they call a polyvalent vaccine. In a town in an adjoining state I found one practitioner who was using Sherman's, Parke, Davis & Company's and Mulford's vaccines in the same case. When this patient developed pneumonia he switched to No. 38 or to No. 36. By the time I got there the patient developed marked tympanites and diarrhea, so that the practitioner had a colon vaccine ready to use. This is merely an example of what is going on and as showing the indiscriminate use of vaccines.

DR. ELLIS KIRK KERR: In connection with immunity, we were struck by the epidemic, Sept. 20, 1918, which ran for about six weeks. During that time we had about 6,000

cases of influenza in our camp of 35,000 or 40,000 men. About two days before the armistice, a troop movement started from the rural districts in Minnesota. The men were collected in Minneapolis and sent to Chattanooga. The men who were attacked with influenza were dropped off the train at different places. They had the same type of influenza that was prevailing in the camps. While the original epidemic was on, the ward attendants, nurses and physicians were coming down with the disease in the same proportion as the men in the camps. When this batch of men came in from Minnesota there was practically no extension of the disease. This group was isolated in camp, and the very ill patients were sent to the hospital, but there was practically no spread in the hospital from this group of cases. It would seem as if the disease had gone through the camp and picked out all the susceptible men.

DR. BERNARD FANTUS: Last year I had quite a number of patients who, two or three months after the primary attack, developed another attack. In the meantime, they had been entirely well. I have had a few patients that have developed a third attack about two months after the second attack. I think all practitioners have noticed the fact that in this year's epidemic many individuals were taken sick who were sick with influenza last year. Again, some patients who had severe attacks last year have had mild attacks this year, and vice versa.

So far as the vaccine treatment is concerned, vaccines cannot be of great value because we do not know what particular organisms are concerned in the causation of the disease.

Miscellany

PROCESS OF CANNING RIPE OLIVES

Because of the number of cases of botulism lately reported after the eating of canned ripe olives, there is naturally some speculation as to the processes involved in preserving this fruit. From a recent summary (*Am. Food J.* **15**:26 [Feb.] 1920) it is learned that while practices vary slightly certain procedures have been generally adopted by olive packers. The fruit is permitted to ripen on the trees, care being exercised to start picking before the olives are overripe. After the olives have been gathered by hand, they are transported to the packing plant, there first to be sorted by sizes, then put through repeated washings and conditionings for variable periods depending on the quality and condition of the fruit, the seasonal temperature and the technical details in vogue at the particular plant. In some plants the olives are kept in agitation during these procedures by means of the ordinary hand paddle, while compressed air jets serve the same purpose under more modern practices. The olives are first immersed in clear water in cement or wooden vats for two or three weeks, in order to prepare the skins for the subsequent steps in the process. They are then subjected for from eight to twelve hours to the action of a solution of caustic soda, 2½ ounces to the gallon of water. After exposure to the air until their coloring is uniform, the olives are again immersed in a solution of caustic soda, 1¼ ounce to the gallon of water, for a period of from eight to twelve hours. The second caustic treatment is to abstract the bitter properties of the fruit and is followed by washing in clear water until all traces of the lye have been removed. The olives are next immersed for one or two days in a brine solution testing 9 or 10 points on the salometer, after which they are deposited in bins in the canning room. Women operators then pack them in cans, rejecting at this time all imperfect or soft fruit. The cans are filled with brine testing about 12 points on the salometer at a temperature of 175-180 F. and are subjected to an exhaust process of 185 F. before sealing. The fruit is next cooked at 224 F. for from twelve to thirty minutes depending on the size of the containers, and is permitted to cool naturally. No effort is made by any of the canners to control accurately the temperature of the solutions in the various processes.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Anatomy, Philadelphia

Jan. 15, 1920, **26**, No. 3

*Origin, Growth and Fate of Osteoclasts and their Relation to Bone Resorption. L. A. Arey, Chicago.—p. 315.
Glandular Cells of Frogs Pancreas. S. Saguchi, Kanazawa, Japan. —p. 347.
Course of Wolffian Tubules in Mammalian Embryos. F. T. Lewis, Boston.—p. 423.
*Histologic Study of Spleen of Rabbit Under Heightened Phagocytic Activity. W. H. F. Addison, Philadelphia.—p. 437.

Nature of Osteoclasts.—The observations recorded by Arey were made on developing membrane bone of human and pig embryos. He concludes that the multinucleated giant cells known as "osteoclasts" probably include several morphologically similar but developmentally distinct elements. In the earliest stages of bone development, and to a certain extent in later stages, osteoclasts apparently arise from the confluence of the mesenchymal cells and conective tissue of the marrow. The chief source of osteoclasts, however, is from old osteoblasts and bone cells. Depleted, basophilic osteoblasts coalesce to form multinucleate masses. These syncytial elements become typical osteoclasts when their cytoplasm assumes an oxyphilic stainability. All intermediate tinctorial stages are demonstrable. True oxyphilic osteoclasts also exist in cytoplasmic continuity with basophilic osteoblasts. Increase in size and nuclear content results from the engulfing of osteoblasts met in the path of resorption and from bone cells which are ingested as the bone matrix is resorbed. Osteoclasts undergo retrograde changes and ultimately disappear through extreme degeneration. Only indirect and insufficient evidence points to the osteoclasts as the active, specific agents of bone resorption. That they are merely degenerating, fused osteoblasts, in Arey's opinion accords better with the known facts.

Spleen and Phagocytic Activity.—The cycle of changes associated with the phagocytic activity of the splenocytes of the rabbit was followed by Addison. He noted that when washed pigeon corpuscles are injected intravenously, they are rapidly hemolyzed. The hemolysis of the pigeon blood results in the liberation of great numbers of bone marrow cells, mature and immature. These are caught within the spleen, and quickly begin to be ingested by the splenocytes. The splenocytes grow with their increased contents, until at the sixteen hour stage they reach a very large size. As many as twenty cells are visible in a 4 microns section of a splenocyte, measuring 55 by 23.4 microns. As digestion proceeds, the splenocytes become smaller, and at the forty-eight hour stage they are much reduced in sizes some being not much larger than normal. Of the products of hemolysis of the pigeon blood after a single injection, little remains within sixteen hours. In the spleen, the splenocytes have an increased amount of iron containing substances, while the endothelial cells show, for the most part, very little. The comparatively small results seen within the phagocytic cells follow from the rapid reduction of the foreign blood corpuscles to particles of a very small size, and from the short time in which these fragments remain within the blood stream. In this special experimental procedure, where cells and cell fragments are the stimulus to phagocytosis, the splenocytes are the first to act, and they continue to act as the main phagocytic agents.

American Journal of Ophthalmology, Chicago

January, 1920, **3**, No. 1

Syphilitic Neuroretinitis. H. V. Wuerdemann, Seattle.—p. 1.
Test Objections for Illiterate. A. E. Ewing, St. Louis.—p. 5.
Venesection as Preventive for Explosive Hemorrhage. E. E. Maddox Bournemouth, England.—p. 23.
Experiments on Eye with Gas Mantles of Different Compositions. C. E. Ferree and G. Rand, Bryn Mawr College.—p. 24.
Rôle of Focal Infections in Sympathetic Ophthalmia. C. T. Cooke, Seattle.—p. 33.

Visual Defects of West Point Cadets. K. A. Phelps, Minneapolis. —p. 39.
Cyclodialysis. H. S. Gradle, Chicago.—p. 41.
Occlusion of Central Artery of Retina by Paracentesis of Cornea. L. W. Callan, New York City.—p. 48.
Simple and Practical Tonometer. E. J. Brown, Minneapolis.—p. 48.
New Perimetric Chart. A. Cowan, Philadelphia.—p. 49.
Visual Disturbances from Damage to the Centers. G. A. Veasey, Spokane.—p. 51.
Standardization of Ophthalmology and the Ethical Attitude of its Members. J. H. Burleson, San Antonio.—p. 52.

American Journal of Physiology, Baltimore

Jan. 1, 1920, **50**, No. 4

*Cardiovascular Reaction in Valsalva Experiment and in Lifting; Note on Parturition. P. M. Dawson and P. C. Hodges, Madison, Wis. —p. 481.
Some Aspects of Neuromuscular Respiratory Mechanism in Chelonians. H. C. Coombs, New York.—p. 511.
Protective Action of Some Organic Substances on Catalase in Acid Medium. M. Takeda, Tokyo.—p. 520.
*Gastrin Studies. II. Distribution and Extraction of Gastrin Bodies. A. B. Luckhardt, R. W. Keeton, F. C. Koch and V. La Mer, Chicago. —p. 527.
Physicochemical Studies on Bioluminescence. 1. Luciferine and Luciferine of Cypridina Hilgendorfii. S. Kanda, Fukuoka, Japan. —p. 544.
Id. II. Production of Light by Cypridina Hilgendorfii is not an Oxidation. S. Kanda, Fukuoka, Japan.—p. 561.
Preparation of Adenine Nucleotide by Hydrolysis of Yeast Nucleic Acid with Ammonia. A. Jones, Baltimore.—p. 574.
*Changes in Hydrogen Ion Concentration of Urine, as Result of Work and Heat. G. A. Talbert, Baltimore.—p. 579.

Effect of Strain on Heart Rate and Blood Pressure.—Dawson and Hodges report the results of their experiments to determine the immediate effect on the heart rate and blood pressures of exercises of strain. By "exercises of strain" is meant those muscular efforts which are performed with the glottis closed and which tend to compress the chest, thereby causing a rise in intrathoracic pressure. The two forms of strain studied were the Valsalva experiment and lifting. In the Valsalva experiment, the systolic pressure rose rapidly, primary rise. This was followed by an extensive fall. On cessation of the Valsalva effort there was a moderate rise of the systolic pressure. Lifting was characterized by changes in systolic blood pressure essentially similar to those which occurred in the Valsalva experiment. When the Valsalva or lift was modified, the usual picture was somewhat changed. The effect on the heart rate of greatly prolonging the Valsalva experiment was to decrease the intensity of the effort and with this the extent of the changes in the heart rate. When the Valsalva experiment experienced a series of interruptions, consisting of a single gasp each, the systolic blood pressure rose with each gasp from 10 to 20 mm. above normal. When a lifting experiment experienced similar interruptions, the changes of heart rate were less in extent than would otherwise occur even when the weight lifted was greater in amount. Observations were also made during parturition. During a labor pain in the anesthetized and tracheotomized rabbit, the mean blood pressure experienced changes (rise followed by fall) which are attributable to the changes in peripheral resistance due to uterine contraction and subsequent relaxation. The respiration also changed, decreasing in amplitude to a standstill in the inspiratory phase and then gradually returning to normal.

Cause of Gastric Secretion.—The existence of two classes of bodies causing gastric secretion is suggested by the authors. Whether these bodies are extractives from special tissues or hydrolytic cleavage products has not been determined. The investigation in the distribution of gastrin bodies has been temporarily abandoned for the more promising studies into the chemical nature of the product derived from the gastric mucosa.

Hydrogen Ion Concentration of Urine.—Talbert claims that intense exercise from fifteen to twenty minutes' duration increases the hydrogen ion concentration of the urine. A man subjected to the heat of a sweat cabinet for fifteen or twenty minutes will, in a large majority of cases, void a urine of higher hydrogen ion concentration. If muscular exercise follows immediately on subjection to heat, or vice versa, it is impossible to interpret the results.

Annals of Otology, Rhinology and Laryngology, St. Louis

September, 1919, **28**, No. 3

Otolaryngology in War. H. P. Mosher, Boston.—p. 673.
Delayed Secondary Hemorrhage Complicating Tonsillectomy. V. Dabney, Washington.—p. 697.
Otologic Work in U. S. A. General Hospital for Head Surgery. J. M. Ingersoll, Cleveland—p. 700.
Case of Brain Abscess Dependent on Empyema of Frontal Sinus. T. J. Harris, St. Louis.—p. 721.
Experiences in Surgery of Thyroid. J. C. Beck, Chicago.—p. 728.
Open Safety Pin in Trachea. R. McKinney, Memphis.—p. 777.
Case of Chronic Bilateral Abductor-Paralysis of Vocal Cords (Cricoarytenoideus Posticus) Result of Goiter Operation. A. W. Corwin, Chicago.—p. 781.
Unusual Nasal Manifestation (Condyloma) of Syphilis. C. W. Richardson, Washington, D. C.—p. 786.
Retrobulbar Neuritis from Posterior Accessory Sinus Disease: Report of Seventeen Cases. L. E. White, Boston.—p. 793.
Tonsillectomy Under Local Anesthesia. G. B. Johnson, Franklin. —p. 819.
Gangrene of Right Temporosphenoidal Lobe of Otic Origin; Extensive Excision of Lobe; Recovery. J. F. McCaw, Watertown.—p. 823.
Case of Sarcoma of Pharynx. W. C. Bane, Denver.—p. 828.
Digest of American and English Otologic Literature for the Year 1918. O. M. Rott, Spokane.—p. 831.
Study of One Hundred Cases of Suspected Chronic Nasal Accessory Sinus Disease. Report of the X-Ray Findings. H. C. Ballenger, Chicago.—p. 894.

Boston Medical and Surgical Journal

Feb. 5, 1920, **182**, No. 6

Surgical Treatment of Peptic Ulcer. Report of Cases. P. E. Truesdale, Fall River, Mass.—p. 135.
*Treatment of Back Injuries; Spinal Fractures That Are Not Associated with Cord Symptoms. H. W. Marshall, Boston.—p. 140.
Some Incidents in the Life and Military Campaigns of Baron Larrey (1766-1843). W. P. Cones, Boston.—p. 146.
Technic of Citrated Blood Transfusion. H. C. Marble, Boston.—p. 153.

Treatment of Back Injuries.—From the study of thirty cases of vertebral fractures without cord symptoms and from a much larger series of simple back strains, Marshall concludes that spinal bone grafts are suited best for well-to-do patients who will be considerably benefited by slight or moderate improvements in their physical conditions. Results of surgical methods are not beneficial enough uniformly, and chances of fair or excellent recoveries are so good in healthy young adults without operation, that spinal bone grafts are not warranted in the majority of workmen's cases. Spinal grafts reenforce the posterior group of spinal ligaments and usually strengthen spines, at least to slight degrees. There are some dangers that unavoidable injuries to muscles and ligaments which result from surgical procedures may weaken backs more than inlaid grafts strengthen them. Mechanical appliances are required very commonly for considerable periods of time even after successful grafts; and results of this combination are presumably better often than either single method of treatment alone. Slight degrees of bony fracture in healthy young subjects are fairly well recovered from without operation in six months or less at times; and severer grades of bony impactions occasionally are followed by complete restorations of back functions without operations several years after dates of injuries. Treatments of back injuries, perhaps, should be directed primarily toward restoring strengths in muscular and ligamentous tissues because these are phases of treatment which are usually overlooked and neglected; but pathologic conditions in crushed vertebrae should be appropriately treated by immobilization and protection in ways universally approved in treatment of fractures. Treatments of musculoligamentous defects should include use of various therapeutic agents, according to physiologic requirements of the tissues in question. There should be use of mechanical braces to reenforce muscles and to offset temporarily the extra mechanical strains due to faulty postures or anatomic deformities. Physical therapeutic agents, massage manipulations, and exercises should be employed as well as internal medical measures. The latter rectify vascular defects and influence muscles and ligaments through the qualities of circulating blood. Continuous exclusive use of any one of these methods is unjustifiable for very long periods, and they should be alternated and

combined with due regard to established physiologic principles of alternate rest and activity known to be best for muscles and ligaments.

Feb. 12, 1920, **182**, No. 7

*Present Needs of Tuberculosis Campaign. J. B. Hawes, Boston. —p. 161.
*Diet Reduction with Retention of Protein to Relieve Glycosuria in Diabetes Mellitus. R. L. Fenlon, Iowa City.—p. 168.
Pathology of "Influenzal Pneumonia." F. P. McNamara, New Haven, Conn.—p. 171.
Possibilities of Carrel-Dakin Technic in Civil Life. A. G. Rice, Springfield.—p. 174.
*Treatment of Chronic Ulcers. F. E. Stowell, Worcester.—p. 176.
Case of Metacarpal Fracture. S. S. Dearborn, Nashua, N. H.—p. 178.

Present Needs of Tuberculosis Campaign.—Hawes does not believe that more laws in regard to tuberculosis are needed. Overzealousness on the part of local health boards, he says, has done harm to many patients and prejudiced their physicians strongly against reporting future cases. Education as to the need of reporting tuberculosis, on the one hand, and tact on the part of the local authorities, on the other, are what will solve this problem. Nor does he believe that antispitting laws accomplish much. Here again education as to habits of cleanliness and decent living and not more legislation is what is needed. The harm done by the careless spitter and the incorrigible consumptive, he says, is, after all, very slight. What has been accomplished in reducing the mortality from consumption during the past twenty-five years, and what shall be accomplished in the future is not because by means of sanatoriums a number of patients have been cured, nor because the spread of infection has been prevented by providing beds for advanced consumptives, but because the gospel of right living has been spread. It is what is being done to solve the tenement and housing problem; it is the school and factory inspection and hygiene; the prevention of industrial diseases; it is a pure milk and water supply, thereby eliminating typhoid and other acute infectious diseases; open air schools, boy scouts, health crusaders—it is all this, and not efforts directed solely to the tubercle bacillus or the tuberculous individual that is ridding the world of tuberculosis.

Diet Reduction with Retention of Protein to Relieve Glycosuria in Diabetes Mellitus.—The theories underlying the diet reduction method are outlined by Fenlon. By keeping the protein intake of the diet at a necessary level, the tendency to a development of acidosis is decreased as the patient does not have to burn his own body fats. Protein is needed to replace that lost by the wear and tear on the tissues during the metabolic changes of the body. Chittenden's standard of 0.12 gm. of nitrogen per kilogram of body weight is necessary to the body during a diet reduction. This amount of protein is increased in this method because of the altered metabolic changes in diabetes. With the protein intake maintained at a definite level the percentage of carbohydrate in the diet would be relatively decreased. Under preparatory treatment to fasting the protein and fat are both reduced, leaving the carbohydrates relatively high. The tolerance of the patient is more easily and quickly determined. There is less complaint of hunger on the part of the patient by this method of reducing diet. The protein in the diet, by maintaining the serum protein in the blood, possibly aids in the nutrition and functioning of the kidney during the diet reduction. Of fifteen patients treated according to this method, 100 per cent. were discharged sugar and ketone free.

Treatment of Chronic Ulcers.—After a preliminary washing of the ulcer with soapsuds, 1:2,000 mercuric chlorid and alcohol, as much dead material as possible is removed with forceps and the base of the ulcer is very gently curetted to remove slough and exudate. The ulcer is then cleaned again with alcohol and painted with a 50 per cent. tincture of iodin. The patient is then connected with the negative pole of the static machine, the positive pole being grounded, and the static breeze and sparks thoroughly applied to ulcer and surrounding areas. According to Stowell, this usually relieves all pain at the first treatment and can be so regulated as not to be unpleasant. The object of all this is to remove stasis and stimulate healing. A dry dressing or, occasionally, in the judgment of the operator, a boric ointment dressing is applied and then the leg is bandaged. This Stowell considers is a most important part of the treatment and he says it must be done correctly. The method is described in detail.

Bulletin of Johns Hopkins Hospital, Baltimore

January, 1920, **31**, No. 347

*Effect of Pyloric Obstruction in Relation to Gastric Tetany. W. G. MacCallum, J. Lintz, H. N. Vermilye, T. H. Leggett and E. Boas, Baltimore.—p. 1.
*Acute Cholecystitis in Children as a Complication of Typhoid Fever. M. R. Reid and J. C. Montgomery, Baltimore.—p. 7.
*Roentgen-Ray Studies of Seminal Vesicles and Vasa Deferentia after Urethroscopic Infection of Ejaculatory Ducts with Thorium; New Diagnostic Method. H. H. Young and C. A. Waters, Baltimore. —p. 12.
*Self-Eventration of Large Abdominal Hygroma through Scalpel Prick of Peritoneum. W. S. Halsted, Baltimore.—p. 13.
*Upturned Edge of Liver Acutely Distended Empyematous Gallbladders. W. S. Halsted, Baltimore.—p. 14.
*Fate of Bacteria Introduced into Upper Air Passages. A. L. Bloomfield, Baltimore.—p. 14.
*Case of Nonparasitic Hematochyluria. H. H. Hampton, Baltimore. —p. 20.
*Myoma of Uterus Showing Unusual Degenerative Changes. L. Brady, Baltimore.—p. 24.

Pyloric Obstruction and Gastric Tetany.—The authors point out that when the pylorus is obstructed and the gastric juice with its hydrochloric acid is constantly removed, there ensues a decrease in the chlorin of the plasma. There is a consequent increase in the alkali reserve which becomes extreme. The electrical excitability of the nerves is, in general, heightened and there are spontaneous twitchings and in most cases violent convulsions which lead to death. All of this can be prevented by constantly furnishing a large supply of chlorids. The authors injected from 50 to 100 c.c. of a 2 M (117 gm. in a liter) sodium chlorid solution intravenously. It is less easy to cure the condition by the administration of chlorids. The convulsive movements are not exactly like the twitchings of the tetany of parathyroidectomy in which they found no heightened alkali reserve, but they can be produced by the injection of sodium carbonate or bicarbonate. Since these convulsions can be stopped or prevented by sodium chlorid, it remains a problem as to what becomes of the excessive base sodium and as to the specific need of the chlorin ion. Further experiments are contemplated to settle these points.

Acute Cholecystitis Complicating Typhoid.—Reid and Montgomery report a case of a large typhoidal empyema of the gallbladder in a girl, aged 8 years, and review eighteen cases of typhoid fever in persons less than 15 years of age who either died from or who were operated on for complications arising in the gallbladder. The authors believe that the low operative mortality (only one of these patients died) justifies operation when there is grave doubt as to the nature of the condition of the gallbladder. Acute typhoidal suppurative cholecystitis should receive immediate surgical treatment, for in such cases rupture of the gallbladder may occur and thus lessen many times the chances of recovery. The best treatment is said to be cholecystectomy.

Roentgen-Ray Studies of Seminal Vesicles and Vasa Deferentia.—Young and Waters believe that they have demonstrated that catheterization of the ejaculatory ducts and radiographic study of the canal system above may be carried out with ease, and that it furnishes a ready and satisfactory method of determining the condition of these structures. The process is apparently without danger. In about fifty cases in which the instruments and thorium solution have been introduced for varying distances into the vasa deferentia and seminal vesicles, they have never encountered an epididymitis or any other deleterious sequels. The method is described in detail.

Self-Eventration of Large Abdominal Hygroma.—A child, 2 years old, was brought to Halsted to be tapped for ascites. The child's abdomen presented the typical ascitic picture. In making a short incision in the midline, the peritoneum

was accidentally pricked. Immediately there protruded through the prickhole a vesicle hardly larger than a mustard seed. The little bladder, slowly increasing in size, soon covered the abdomen, and finally in saddlebag fashion fell over the child's flanks, a broad, flat isthmus of sac-contained fluid stretching across the now scaphoid belly from one great bag of water to the other, both of these resting on the bed sheets. The wall of this great cyst was of filmy thinness. The midline incision was then lengthened and a search made for the pedicle, about which several small cysts were found to be grouped. All of these seemed to have their origin in the great omentum—embryologically, in the posterior mesogastrium. An independent cyst, about as large as an orange, seemed to be contained between the layers of the duodenal mesentery, the continuation of the stomach's mesentery or posterior mesogastrium. This cyst was so adherent to the mesenteric vessels that Halsted feared its removal might imperil the circulation of the bowel; hence he stitched its wall to the parietal peritoneum, and in a few days opened and drained it. The child made a prompt recovery. Twenty-two years later, examination of the abdomen revealed nothing abnormal, except, perhaps, a little tenderness in the region of the appendix.

Upturned Edge of Liver in Gallbladder Infections.—Halsted regards this as a diagnostic sign of some value. He has never noted this upturned or everted edge in the absence of signs of infection of the gallbladder, but is not sure that it may not occur with hydrops vesicae. More than once this sign has enabled Halsted in a debatable case to make the correct diagnosis.

Fate of Bacteria in Upper Air Passages.—Bloomfield found that *B. coli* and *Staphylococcus albus* swabbed on the tongue or nasal septum usually disappeared within twenty-four hours. *B. coli* and *S. albus,* introduced into tonsil crypts could be recovered after somewhat longer intervals. In no case was a permanent carrier state set up. Inert particles disappeared at about the same rate of speed as the bacteria. The organisms probably disappear because they are mechanically removed more rapidly than they multiply. The disposal of *B. coli* and *S. albus* illustrates a mechanism radically different from that effective in removing *Sarcina lutea.*

Nonparasitic Hematochyluria.—Hampton reports a case of nonparasitic chyluria that has persisted over a period of nine years in a young woman whose health was below par. She had a mitral stenosis that had given symptoms at intervals for more than ten years. Her chief complaint had been general weakness wih frequent syncopal attacks. Just how much of her disability depended on one or other of these conditions, could not be determined. Apparently, her kidney function was unimpaired. There was no evidence of renal or pulmonary tuberculosis. The leak in the lymphatic system was located in the right kidney. On starvation or a fat-free diet, the urine became fat-free, blood cells and albumin persisting. Posture influences did not control the amount of lymph leakage. Increased water intake and urine output increased the "fat loss."

Myoma of Uterus with Degenerative Changes.—In Brady's case a large cystic mass extended out into the broad ligament, and arising from the posterior surface of the uterus and extending into the left side of the abdominal cavity there was a large myoma. The cyst was multilocular, heart shaped, had a bluish color and extended downward from the lower surface of the uterus. On the inner and lower side of the cyst, about 2 cm. from the external os of the uterus, there was in the vagina an opening about 2 mm. in diameter. A small probe was introduced into this opening and a definite canal dissected out. Brady says that such a canal is in exactly the correct location for one of the rather rare embryonic remains of Gaertner's duct. Cross sections of the duct showed a musculature resembling that found in an artery and no epithelial lining. The cyst was made up of several smaller cysts, each of which was filled with grumous material. In one of these smaller cysts was a well developed polyp. Sections from the cyst showed it was a myoma showing degenerative changes.

Journal of Laboratory and Clinical Medicine, St. Louis

January, 1920, **5**, No. 4

Relation of Common Bile Duct to Pancreatic Duct in Common Domestic and Laboratory Animals. F. C. Mann, J. P. Foster and S. D. Brimhall, Rochester, Minn.—p. 203.
A Second Model Illustrating Phases of Kidney Secretion. M. H. Fisher, Cincinnati.—p. 207.
*Report of Five Cases of Poisoning by Nicotin. W. D. McNally, Chicago.—p. 213.
*Ectopic Adenomyoma of Uterine Type. Report of Ten Cases. A. E. Mahle and W. C. MacCarty, Rochester, Minn.—p. 218.
Importance of Biologic Classifications in Epidemiology. L. C. Havens, Iowa City.—p. 229.
Icebox Fixation Method in Performance of Wassermann Reaction. R. G. Owen and F. A. Martin, Detroit.—p. 232.
Comparative Study of Wassermann Test and Hecht-Weinberg-Gradwohl Modification. A. J. Blaivas, Brooklyn.—p. 244.
Method for Preparing Bacteriologic Medium Containing Ascites Fluid. L. G. Grace, Cleveland.—p. 253.
*Early Diagnosis of Typhoid and Paratyphoid Infections. H. J. Goeckel, Plainfield, N. J.—p. 255.
Hexamethylenamin Interferes with Test for Indoxyl in Urine. H. J. Goeckel, Plainfield, N. J.—p. 257.
Device for Withdrawing Blood from Veins. C. L. Cummer, Cleveland.—p. 257.
Traumatic Hemolysis and Wassermann Reaction. G. M. Olson, Minneapolis.—p. 259.

Poisoning by Nicotin.—The five cases of poisoning reported by McNally have occurred from taking insecticides containing nicotin by mistake for whisky.

Ectopic Adenomyoma of Uterine Type.—The ten cases reported by Mahle and MacCarty were extra-uterine and extratubal tumors diagnosed at the time of operation as adenomyomas. These growths contained glandular portions resembling typical uterine mucosa, surrounded by a fibrous connective tissue, and smooth muscle stroma, the latter in varying amounts. The distribution of the tumors was as follows: umbilicus, 1; abdominal wall, 2; sigmoid, 1; groin, 2, and rectovaginal septum, 4. Clinically these tumors gave no consistent group of symptoms on which an accurate diagnosis could be made. Of the ten patients, six gave a history of symptoms directly referable to the tumor.

Early Diagnosis of Typhoid and Paratyphoid Infections.—Goeckel claims that it is possible to obtain and identify typhoid and paratyphoid bacilli in the urine by agglutinins before the blood shows a positive Widal reaction or a typical cell count. By this means a prompter report may be given than if blood culture is resorted to. It is a more definite method of identification of the infection than is identifying agglutinins in the patient's blood serum. It is also more positive and eliminates reliance on the Widal reaction of blood serum. Goeckel suggests that it should be resorted to whenever possible in patients who may have a natural or acquired agglutinating capacity due to previous infection or through the use of vaccines.

Journal of Urology, Baltimore

October, 1919, **3**, No. 5

*Congenital Obstruction of Posterior Urethra. H. H. Young, W. A. Frontz and J. C. Baldwin, Baltimore.—p. 289.
Certain Relations Between Shell Fracture of Spine and Changes in Kidney and Bladder Function. H. W. Plaggemeyer, Detroit.—p. 367.
*Routine Examination of Bladder in Secondary Syphilis. E. L. Zimmermann and C. S. Levy, Baltimore.—p. 407.
*Effect of Prostate Feeding on Development of Tadpoles. D. I. Macht, Baltimore.—p. 411.
Toxicity of Pyelographic Mediums, Death Following Use of Thorium Nitrate. E. H. Weld, Rochester, Minn.—p. 415.

Congenital Obstruction of Posterior Urethra.—Twenty-four authenticated cases of congenital obstruction of the posterior urethra recorded in the literature are reviewed by Young and his associates, and twelve cases, admitted to the Johns Hopkins Hospital, are reported in detail. Three distinct types of congenital obstruction, all more or less valvular in construction, so placed that the concave surface of the valve is directed upward, thus bringing about an obstruction to the outflow of urine. In the great majority of cases, symptoms of the condition are manifest during infancy or early childhood. Symptoms of the condition are those arising from obstruction to the outflow of urine, together with the symptoms resulting from renal destruction, induced by back pressure and infection. The history of symptoms of urinary obstruction in male children in the authors' opinion should always suggest the possibility

of this condition. The presence of a distended bladder, and particularly of residual urine, is further indicative of obstruction. This possibility is further strengthened by obstruction in the posterior urethra to the passage of a catheter. Much information regarding the character and exact location of the valves and the renal damage resulting therefrom may be obtained by urethroscopy, the use of the roentgen ray, and renal function studies. The treatment of the condition is surgical, and consists of the removal of the obstruction. This may be accomplished in certain cases by the passage of a sound, with the forcible rupture of the valve; in certain other cases the obstruction may be removed by the urethrotome or by urethroscopic methods. Of the operative procedures, the selection of the suprapubic or perineal route will be governed by the personal preference of the operator. In infants and young children the suprapubic method has proved very satisfactory, the valvular obstruction being removed by its forcible rupture with a sound, its division with a rongeur, or its removal by scissors or cautery. In adults the condition is treated in most cases by intra-urethral methods.

Bladder in Secondary Syphilis.—Twenty-four male patients with active secondary syphilis were selected by Zimmermann and Levy for this investigation. Nine cases presented macular syphilides, twelve a papular eruption and in three the eruption was pustular. In eighteen there were lesions on the mucous membrane of the mouth and pharynx, or moist lesions about the anus or on the scrotum. In no case were urinary symptoms present, and examination of the urine was negative, except for a few shreds in the first glass in a few cases of chronic urethritis. No striking bladder changes were discovered. In ten cases slight vascular changes were noted in the region of the trigone in the form of a delicate ramifying network, and on the bladder wall itself as an increase in the caliber of the vessels. The vascular changes were not considered significant. None of these cases presented either papular or ulcerative lesions.

Effect of Feeding Prostate.—By feeding prostate gland to the larvae, the metabolism of the tadpoles was stimulated and their metamorphosis was hastened. In other words, the tadpoles developed legs earlier than normally and were soon transformed into frogs. At the same time the size of the tadpoles was not diminished and, indeed, in many cases the tadpoles also increased in size. This effect was produced by feeding the desiccated prostate of the ram of bulls and of human prostate. Macht believes that such a phenomenon speaks strongly in favor of an internal secretion of the prostate gland.

Medical Record, New York

Jan. 24, 1920, **97**, No. 4

*Empathic Index and Personality. A. A. Brill, New York.—p. 131.
Modern Treatment of Obesity by Faradic Electricity; Bergonic Method. E. C. Titus, New York.—p. 134.
Action of Electrical Currents on Ductless Glands and Other Tissues. F. DeKraft, New York.—p. 136.
Diagnosis of Abdominal Tumors. A. McGlannan, Baltimore.—p. 138.
Radium Treatment of Uterine Hemorrhage. T. C. and W. H. Kennedy, Indianapolis.—p. 141.
Inhalation Treatment in Pulmonary Tuberculosis. B. Robinson, New York.—p. 143.
*Administration of Arsphenamin by Retention Enema. J. L. Mandracchia, Brooklyn.—p. 144.

Empathic Index and Personality.—This term was coined by E. B. Titchener and deals with the idea of reading oneself into an animate or inanimate object. Brill regards this index as being a new and quick method of observing a person's mode of adjustment. He speaks of a racial, national and biologic empathic index and relates his experience in determining the index in different persons, on the basis of "Tell me your empathic index, and I will tell you who you are." For instance, Brill has found that a nickname given by classmates or friends usually shows the person's empathic index. The woman's empathic index always shows the type of man that appeals to her.

Administrations of Arsphenamin by Retention Enema.—Mandracchia describes a method by which arsphenamin is given in an enema. The solution of arsphenamin is prepared in the usual way, diluting it to between 200 and 250 c.c. The apparatus consists of a glass cylinder of a capacity of about 300 c.c., connected at one end with a rubber tubing having a glass window and a stopcock, and a rectal tube of sufficient caliber so that the fluid can flow easily and swiftly. The solution having been prepared and placed in the cylinder, and the air having been expelled, the patient, if a male, is allowed to assume the genupectoral position, and if a female, the lateral or Sims position. After the rectal tube has been introduced into the rectum for 4 or 5 inches, the solution is allowed to flow into the rectum by gravity after the stopcock in the rubber tube has been opened. As a rule, the average patient can hold this enema from twenty to twenty-four hours. In exceptional cases, it has been held for four days. Arsphenamin seems to have a constipating effect on the intestinal tract. Where a patient cannot retain the enema, it has been the custom to give a dose of the tincture of opium or paregoric by mouth. In children this is a standing rule. The enema having been given, the patients are sent to bed and allowed to remain in bed for about four hours, instructing them to change their position at frequent intervals. Reverse persistalsis can be more readily facilitated when the foot of the bed is elevated. In adults, the initial dose is 0.3 gm. and every dose thereafter is 0.6 gm. The enema can be given either once or twice a week, all depending on the condition of the patient. By giving the enema twice a week it is believed that the spirochetes are kept in a constant arsenic saturation and thus the duration of the infection is materially shortened. The ideal time to give these enemas is in the evening. During the course of arsphenamin enemas, the patient should undergo a course of active mercurial treatment. No sequels, such as headaches, nausea, vomiting, fever, dizziness, or subsequent nitroid crises acting destructively on the eyes, kidneys and liver, or a fatal termination have been observed by Mandracchia.

Nebraska State Medical Journal, Norfolk

January, 1920, 5, No. 1

Symptomatology of Diaphragmatic Pleurisy. A. D. Dunn, Omaha.—p. 1.
Contaminated and Infected Wounds; Principles of Treatment with Antiseptics and Terminology. D. C. Hilton, Lincoln.—p. 5.
Organotherapy in Gynecology. I. C. Munger, Lincoln.—p. 12.
*Malignant Sarcoma. M. Emmert, Omaha.—p. 14.
Amaurotic Idiocy; Report of Cases. F. Clarke, Omaha.—p. 17.
Acriflavine in Gonorrhea. E. G. Davis, Omaha.—p. 19.
*Surgical Problems of Pancreas, Report of Cases. C. E. Roeder and A. L. Nielson, Omaha.—p. 23.

Malignant Sarcomas.—Emmert reports a case of tumor on the posterior surface of the right thigh midway between the trochanter and the popliteal space, about the size of a large orange in which a clinical diagnosis of sarcoma was made and operation advised. The tumor was removed. The pathologic diagnosis was simple fibroma with large connective tissue cells. Six weeks after leaving the hospital a streptococcus infection started in the scar and spread over the entire leg and thigh. This subsided in two weeks. One week later there developed rapidly on the median surface of the left ankle a tender inflammatory mass which was thought to result from the recent infection. This persisted for several weeks and then the inflammatory condition subsided, leaving a firm mass which was recognized as a sarcoma. The mass was removed five months after the first one. The pathologic diagnosis was fibromyxosarcoma, spindle and round cells. The second patient was only 2 months old. At the time of birth, a mass the size of a pigeon's egg was noticed on the thoracic wall. The mass was excised later. The microscopic diagnosis was fibromyxosarcoma.

Surgical Problems of Pancreas.—Roeder and Nielsen report three cases: congenital pancreatic cyst; infectious pancreatic cyst and acute pancreatitis.

New York Medical Journal

Jan. 24, 1920, **111**, No. 4

Results of Fracture of Femur Caused by Gunshot Wounds. A. Bowlby, London.—p. 133.
Uncorrected Factors Perpetuating Stomach Symptoms After Surgical Work. J. C. Wood, Cleveland.—p. 136.
Essentials of Success in Prostatic Surgery. J. H. Cunningham, Boston.—p. 138.

Eye in Pregnancy. L. C. Peter, Philadelphia.—p. 141.
Value of Inhalation of Certain Gases in Prevention of Influenza. B. Robinson, New York.—p. 142.
Roentgen Therapy in Gynecology. W. H. Meyer, New York.—p. 143.
Some Extragastric Causes of Gastric Symptoms. M. B. Kunstler, New York.—p. 144.
Clinical Analysis of Influenza Cases. A. S. Blumgarten, New York, and F. H. Voss, Gardner, N. J.—p. 146.

Jan. 31, 1920, **140**, No. 5

*Wassermann Contradictions Considered from Clinician's Point of View. A. L. Wolbarst, New York.—p. 177.
Extraction of Rifle Bullet from Bladder by Natural Route. G. Luys, Paris.—p. 181.
*Dental Syphilitic Chancre. H. Goodman, New York.—p. 183.
Coordination of Principles of Chemistry with Laws of Immunity in Treatment of Tuberculosis. B. S. Paschall, New York.—p. 184.
Psychology of Conscientious Objector. D. E. Hoag, New York.—p. 187.
Curing the Drug Addict. J. A. Hamilton, New York.—p. 192.
Compulsory Health Insurance. C. H. Chetwood, New York.—p. 193.
Shortening of Round Ligaments When Operating for Other Intrapelvic Conditions. S. Goldberg, Buffalo.—p. 197.

Wassermann Contradictions.—Wolbarst is of the opinion that the Wassermann test and the gonorrhea fixation test should be made by at least three serologists working independently; the serum should be taken simultaneously and sent to the different laboratories under identical conditions; one serologist is not to be depended on, however capable he may be. Three serologists will agree in approximately 53 per cent. of Wassermann tests and approximately 42 per cent. of gonorrhea fixation tests. That is, the chances are about fifty-three in a hundred that three serologist will agree on any given serum. They are more likely to agree in the negative cases than in the positive cases. At all events, it is well to devote more study to the clinical features of all cases and trust not quite so implicity on laboratory workers for a diagnosis.

Dental Syphilitic Chancre.—Goodman reports a case of syphilitic infection contracted at the site of tooth extraction.

Philippine Journal of Science, Manila

August, 1919, **15**, No. 2

Application of Generic Name Melodorum of Lourciro. E. D. Merrill, Manila.—p. 125.
Jumping Plant Lice of Paleotropics and South Pacific Islands. D. L. Crawford, Honolulu.—p. 139.
Genus Krisna (Jasside). C. F. Baker, Los Baños, P. I.—p. 209.

Southwest Journal of Medicine and Surgery, El Reno, Okla.

January, 1920, **28**, No. 1

University of Oklahoma School of Medicine. L. Long, Oklahoma.—p. 2.
Chronic Progressive Cerebellar Tremor. G. M. Eckel, Hot Springs.—p. 4.
*New Method of Inserting Bone Graft for Correction of Kyphosis. S. A. Grantham, Joplin.—p. 8.
Fractures of Upper End of Humerus. M. E. Stout, Oklahoma City.—p. 10.
Postbellum Morbidity. J. A. Roddy, Oklahoma City.—p. 13.

New Method of Inserting Bone Graft for Correction of Kyphosis.—The method which Grantham proposes is to make a transverse incision, 1 inch long, just below the posterior spinous process of the affected vertebrae, extending through the supraspinous ligament. A thin osteotome, made with a reverse curve, is introduced as far as the base of the spinous process; the process is sheared in a direction parallel with the spinal canal; the two processes above the vertebra are cross sectioned in the same manner without the withdrawal of the instrument. The osteotome is then withdrawn and inserted in the opposite direction, and two spinous processes below the affected vertebra are cross sectioned, in a similar manner; a graft of sufficient length, from one-half to three-quarters inch in width, is secured; the capsular layer of periosteum is removed in such manner as to leave as much of the intervening osteogentic layer of cells as possible on the graft. The graft is now introduced into the tunnel thus prepared for its reception; if the skin incision requires a suture, it is placed subcuticularly, with catgut armed with two needles, so that the needles pass from within outward in passing through the skin. Grantham claims for his method that the graft is placed in direct bony contact, the endosteal surface to the stumps of the cross sectioned posterior processes, near the laminae; the periosteal surface, its fibrous capsule removed and as much as possible of the osteogentic layer of cells preserved, is pressed firmly by the freed ends of the processes, held in situ by the uncut lumbodorsal fascia, and supported literally by the muscles of the back.

United States Naval Medical Bulletin, Washington

January, 1920, **14**, No. 1

Comparative Anthropometric Study. L. S. Solhaug, M. C., U. S. Navy.—p. 1.
Medical and Hygienic Aspects of Submarine Service. E. W. Brown, M. C., U. S. Navy.—p. 8.
Queen's Hospital for Facial and Jaw Injuries, Frognal, Sidcup, Kent, England. L. W. Johnson, M. C., U. S. Navy.—p. 17.
Military Orthopedic Hospitals in the British Isles. R. Hammond, Providence, R. I.—p. 65.
Scuttle Butts on Board Ship. J. A. B. Sinclair, M. C., U. S. Navy.—p. 137.
Bronchopulmonary Spirochetosis in An American. G. W. Lewis, M. C., U. S. Navy.—p. 149.
Probable Case of Encephalitis Lethargica. A. F. Kuhlman, M. C., U. S. Navy.—p. 151.
Defense of Open-Air Treatment of Pneumonia. D. Ferguson, Jr., M. C., U. S. Navy.—p. 153.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

Jan. 24, 1920, No. 3082

Clinical Research. J. MacKenzie.—p. 105.
*Early Diagnosis of Pulmonary Tuberculosis. T. Beattie.—p. 111.
*Routine Treatment of Malaria in Uganda. J. A. Taylor.—p. 113.
*Comparison of Two Methods of Administering Arsenobenzol Compounds in Syphilis. H. E. Gibson.—p. 14.

Early Diagnosis of Pulmonary Tuberculosis.—Besides placing dependence on the family history, previous history, as of pleurisy and hemoptysis, subjective symptoms, such as gradual loss of flesh or of constantly increasing languor, lassitude, tiredness, inaptitude for work, indigestion, dyspepsia, retching, anemia, slight evening pyrexia, feeling dull and tired in the evenings, objective signs, such as deficient expansion, impaired resonance on percussion, cogwheel respiration, posttussive crepitations, and the roentgen ray, Beattie attaches much importance to the tuberculin diagnostic test. He prefers to use Koch's T. A.; 1:1,000 dilution, 1 c.c. hypodermically.

Treatment of Malaria.—Most of the cases of malaria met with in Uganda, Taylor says, are of the simple subtertian form without complications. The routine treatment adopted by him in these cases was, calomel, in an average dose for an adult of not less than 5 grains, followed in some hours by a saline. Quinin hydrochlorid, 5 grains by mouth, one hour after the saline. This was usually about 7 a. m., and between this time and noon three more doses of 5 grains each were given at more or less regular intervals. On subsequent days, until the temperature had remained normal for twenty-four hours, 20 grains were given daily in the same manner, the first dose at 6 a. m., or as soon as the patient was awake, and the last dose at noon. After the temperature had been normal for twenty-four hours, the quinin was reduced to 15 grains daily—5 grains before the morning, midday and evening meals. This was continued for one week and then reduced to 10 grains daily—5 grains morning and evening. Ten grains daily were continued for a fortnight, and then only 5 grains were given each evening for two months. Acetphenetidin, in 5 grain doses, up to 15 grains daily, for headache alone, or acetylsalicylic acid in the same doses, if complaint were also made of pains in the limbs and body. Under this treatment the temperature usually remained normal after the third day, but occasionally, especially if a first attack, after four or five days; no complications occurred in any cases from the effects of the quinin or malaria; there were no recurrences of the fever during the three months' treatment, and attacks only occurred later when some definite fresh infection had taken place.

Administration of Arsenic Compounds in Syphilis.—The two courses of treatment given by Gibson were a concen-

trated course, which was completed in five or six weeks, and a "prolonged course," which lasted about eight weeks. Advantage seems to lie with the prolonged course, partly owing to the lesser incidence and violence of reactions, and partly because the total results are better than with the concentrated course; this especially applies to secondary cases.

Indian Journal of Medical Research, Calcutta

October, 1918, 6, No. 2

Area Sown as Measure of Bacterial Growth. W. F. Harvey.—p. 127.
*Yield by Weight of Bacterial Substance for Area Sown and Duration of Growth. W. F. Harvey.—p. 131.
*Dried Bacterial Antigen. W. F. Harvey.—p. 137.
*Report on Antiberiberi Vitamin Content of Ground Nut (Peanut) Meal Biscuits. E. D. W. Greig.—p. 143.
Preparation of Sterile Tryptic Extract from Pancreatic Glands of Herbivora. J. Cunningham.—p. 147.
Diagnosis of Acute Infections of Throat Occurring among Troops of Mesopotamian Expeditionary Force. H. W. Acton.—p. 152.
*Significance of Charcot-Leyden Crystals in Feces As Indication of Amebic Colitis. H. W. Acton.—p. 157.
Leishmania Tropica Infections in Mesopotamia. C. P. Connor.—p. 162.
*Culture Medium Suitable for Growth of Organism Used in Vaccines. D. Norris.—p. 174.
Twenty Years of Plague in India; Outbreak of 1917-18. F. N. White. —p. 190.

Yield of Bacterial Substance for Area Growth.—Harvey claims that yield of bacteria, as measured by surface growth, is a reasonably good approximation to moist bacterial weight and is very easily estimated. Weight of bacteria moist presents a considerable degree of direct relationship with weight dry. There is, however, a greater variability of weight moist for constant area of surface than there is of weight dry. The weight of bacteria in the dried condition would, therefore, appear to be the only satisfactorily accurate measure of quantity of bacterial antigen.

Dried Bacterial Antigen.—Not only can a dried antigen of bacterial substance be prepared easily, but it can be used with safety in animals by intravenous and intraperitoneal injection. Harvey found that such an antigen conserves its power of production of agglutinins for a long period. It is of extremely small bulk; is easily measured by weighing: and is capable of being dispensed in mixture with other similar antigens in any proportion desired.

Antiberiberi Vitamin Content of Peanut Meal Biscuits.—Greig's investigation shows that the ground nut (peanut) meal biscuit is as rich as the 15 per cent. atta biscuit in antiberiberi vitamins. Hence, the ground nut meal, whether in the form of bread or biscuit, would be suitable to form part of an "emergency" or other ration for issue to the troops.

Charcot-Leyden Crystals in Feces in Amebic Colitis.—After examining on an average about 500 stools a month, Acton has come to regard the presence of Charcot-Leyden crystals to be an almost certain indication of the existence of an amebic colitis and not to be associated with helminth infections. In the absence of amebas, he does not hesitate to diagnose the case as amebic dysentery when pus, mucus and Charcot-Leyden crystals are found, and the results obtained by treatment with emetin justified the conclusion.

Culture Medium Suitable for Growth of Organisms Used in Vaccines.—Various types of culture mediums were prepared and examined by Norris with a view to the determination of their nutritive value as regards the growth of *B. typhosus* for vaccine purposes. Of the various meat mediums at present in use, those prepared by means of a tryptic digestion appear to be much more nutritive than an ordinary beef peptone medium or than those prepared by acid hydrolysis. The addition of nutrose and casein appears to have no great influence on growth unless added to a particularly nonnutritive medium. The addition of a comparatively small amount of hydrolyzed nutrose to a poor medium increases the growing power to the level of an ordinary trypsinized medium. Glucose seemed to inhibit growth. Mediums obtained by the tryptic hydrolysis of nutrose, press cake from ground nut, and casein give material equal in nutritive value to that obtained from meat. In examining the nutritive value of these mediums, concentration of substrate appeared, within limits, to be of greater importance than time of hydrolysis.

Japan Medical World, Tokyo

Jan. 3, 1920, No. 315.

Antigen for Wassermann Test. R. Kobayashi.—p. 17.
Treatment of Cystitis in Women by Injection of Colloidal Silver. E. I. Kito.—p. 17.
Clinical Applications of Solidified Carbonic Acid. T. Sato.—p. 17.
*Wassermann Reaction of Aqueous Humor. G. Okazaki.—p. 17.

Wassermann Reaction of Aqueous Humor.—In the aqueous humor of the eyes of syphilitics, except when inflammation of the eye existed, Okazaki succeeded in demonstrating a Wassermann reaction in the proportion of 1:200 or even 1:600 part of the blood contents. In the presence of inflammatory diseases of the eye, the antibodies appeared in an even higher concentration. The Wassermann reaction in the aqueous humor occurs just as soon as it does in the circulating blood.

Dublin Journal of Medical Science

January, 1920, 3, No. 577

*Pancreatic and Intestinal Infantilism. T. G. Moorhead.—p. 1.
The Criminal as a Patient. C. E. McQuade.—p. 11.

Pancreatic and Intestinal Infantilism.—In one case cited by Moorhead the apparently primary pathologic change was a catarrhal condition of the colon, and probably also of the small intestine, and, in consequence, the author regards the case as one of undoubted intestinal infantilism. Other changes present were probably secondary and resulted from the inanition produced by the bowel condition. The second case reported appears to be a further confirmation of Byron Bramwell's view, that pancreatic infantilism is a definite entity.

Journal of Laryngology, Rhinology and Otology, London

January, 1920, 35, No. 1

Intratracheal Tumor Removal by Peroral Tracheoscopy. H. Tilley. —p. 1.
Vincent's Angina of External Auditory Meatus; Two Cases. A. Cheatle.—p. 6.
*Lupus of Upper Air Passage: Report on 128 Cases. R. Webber.—p. 7.
Sphenoidal Sinus Empyema in Cerebrospinal Meningitis. E. A. Peters. —p. 11.

Lupus of Upper Air Passages.—Webber believes that in the vast majority of cases of lupus, the condition first appears in the nose. This was the case in 113, or 88 per cent., of the 128 cases studied by him. The disease began either on the anterior part of the nasal septum, on the mucous membrane of the outer wall of the nose and close to its junction with the septum, or on the anterior end of the inferior turbinate. In a certain number of cases there was an extension of the disease to the mucosa of the hard and soft palate, the pharynx or larynx, without evidence of skin lesion, but in sixty-nine, or 52 per cent., of the cases, skin involvement was noted on the face. Glandular involvement occurred in forty-eight cases, the glands most frequently affected being those of the submaxillary chain. As worthy of note Webber calls attention to the fact that in twelve of these cases there were present scars following operations for old submaxillary gland trouble. He infers that at the time of such operation the disease within the nose causing the gland enlargement was present but overlooked. One of Webber's patients has been under treatment for his lupus for thirty-two years! In the treatment of lesions on the palate and alveolar process, the best results were obtained from curettage and the application of lactic acid (75 per cent. solution) or the electric cautery. For lupus of the nose, Pfannenstiel's treatment was distinctly helpful. This consists in curettage and packing the nasal cavities with gauze soaked in hydrogen peroxid. and sodium iodid internally. In lupus of the epiglottis and the laryngeal mucosa, removal of the diseased area with cutting forceps often has resulted in a cure, or, at least, arrest of the disease. The roentgen rays have been used largely in the past in the treatment of the associated skin condition, but at the present time they are used only in selected cases. Webber emphasizes that no matter what treatment is selected, only the closest cooperation between the patient and the person in charge of the case will produce the best results

Journal of Tropical Medicine and Hygiene, London

Jan. 15, 1920, **23**, No. 2

Etiology of Thrush. A. Castellani.—p. 17.
*Case of Appendicitis in Native of Solomon Islands. N. Crichlow. —p. 22.

Appendicitis in Solomon Islands.—According to Crichlow, appendicitis is a rare disease among the natives of the Solomon Islands. During five years' experience among these natives he has seen only one case. The case in question was a young missionary girl, who after being "Christianized" and "Europeanized" left off eating native foodstuffs and used to eat European foodstuffs. Crichlow says he cannot help feeling that the European foodstuffs and her life in civilization played some part in the development of her attack of appendicitis, as appendicitis is unknown among the natives living solely on native foodstuffs.

Medical Journal of Australia, Sydney

Jan. 10, 1920, **1**, No. 2

Value of Cystoscope as Means of Diagnosis in Urology. A. S. Roe. —p. 25.
*Isolation of Organism Resembling Paratyphoid Group. A. Dean. —p. 27.
*Case of Septicemic Anthrax Successfully Treated by Intravenous Serum Therapy. E. N. Bateman, N. H. Fairley.—p. 32.
*Case of Rupture of Liver, with Recovery. L. Doyle.—p. 32.

Isolation of Organism Resembling Paratyphoid Group.—From the urine and feces of five cases, no two of the same disease, Dean isolated an organism of the coli-typhoid group, which gave unusual biochemical reactions in the sugars. The organism was smaller than *B. typhosus*, being more of a coccobacillus in appearance. It varies from 1 to 2 microns in length. It stained easily with the usual anilin dyes, but was gram-negative. The organism does not ferment dulcite, lactose, inulin or adonite, while, on the other hand, it ferments saccharose, mannite, maltose, glucose, sorbite, raffinose and arabinose. Its gas producing powers are considerable, particularly on saccharose, glucose and sorbite. In arabinose and raffinose its action is changeable. New cultures give acid and slight gas formation. Some subcultures only give acid reaction. Its action on litmus milk differs widely from the usual nonlactose fermenters. For the first four days no change is noted, except that on the second day the alkalinity of the litmus milk is more exaggerated, the milk becoming intensely blue. On the fifth day, the milk assumes an acid reaction. This continues until the tenth day, when clotting of the milk occurs. On the fifteenth day, the milk clears, but still retains its acid reaction. In its agglutination reactions, this organism appears to be more closely linked to *B. paratyphosus* B, than *B. paratyphosus* A or *B. typhosus*.

Septicemic Anthrax Successfully Treated by Intravenous Serum Therapy.—In the case reported by Bateman and Fairley, anthrax bacilli were demonstrated in quantity in the seropurulent discharge from the excised pustule, and on the fifth day of the disease, blood culture yielded a positive result. The energetic administration of a large quantity of Sclavo's serum culminated within twenty-four hours in a critical fall of temperature, in a complete recovery from all toxic symptoms, and in a rapid amelioration of the local lesion itself.

Traumatic Rupture of Liver.—A boy, aged 8 years, sustained a rupture of the liver from being run over by an automobile. The outstanding features of the case were the thoracic type of breathing, the anxious expression of the child and the history of very severe trauma. Micturition occurred shortly afterward and perfectly normal urine was voided. A provisional diagnosis of a ruptured abdominal viscus was made by Doyle, and the evidence suggested that the lesion would be found in the spleen or the left lobe of the liver. The general appearance of the child was indicative of an injury much more serious than what was compatible with the physical signs, and it was felt that it would be safer to explore the abdomen immediately rather than to wait. Laparotomy was performed about two hours after admission. On opening the peritoneum, blood stained fluid was encountered, and on retracting the abdominal wall, blood gushed up in startling quantity and with great rapidity. The issue was traced to the right lobe of the liver. There was a laceration on the anterior surface, commencing on the free edge, about 2.5 cm. lateral to the gallbladder and running vertically for about 5 cm. A long strip of iodoform gauze was packed as tightly as possible into the wound, and the end was brought out of the incision. Four large abdominal packs were inserted between the liver and the diaphragm over the tear. Transfusion of physiologic sodium chlorid solution and of the father's blood was done. About seventy hours after operation, under light ether anesthesia, the packs were removed, drains were inserted and the wound was closed again. No further hemorrhage occurred. The lesson Doyle draws from this is that when there is a possibility of a solid abdominal viscus being damaged, it is generally safer to explore at once rather than to await the classical symptoms of hemorrhage.

South African Medical Record, Cape Town

Nov. 8, 1919, **17**, No. 21

*Syphilis in South Africa. A. Pijper.—p. 323.
Successful Treatment of Case of Sleeping Sickness. W. A. Murray. —p. 326.
Case of Urethral Hemorrhage. H. T. Mursell.—p. 328.

Syphilis in South Africa.—In order to determine the prevalence of syphilis among the population of South Africa, Pijper subjected the blood serum of fifty persons born in South Africa, and who apparently were healthy, to the Wassermann test. Five were found to have acquired syphilis at some period of their existence. In other words, according to these figures, 10 per cent. of people born in South Africa, while apparently healthy, are infected with syphilis. As none of these persons presented any symptoms, Pijper assumes that the disease was in the latent stage at the time of their examination. It is a well known fact that only about 50 per cent. of syphilitics will exhibit a positive Wassermann reaction, while in the latent stage. Consequently, 20 per cent. of the population of South Africa are infected with syphilis while seemingly enjoying good health. If the percentage of latent cases is 20 per cent. it may safely be assumed that the total percentage of persons infected with syphilis is somewhere between 20 and 25 per cent.

Archives des Mal. du Cœur, etc., Paris

September, 1919, **12**, No. 9

*Diagnosis of Different Forms of Slow Pulse. L. Bard.—p. 385.
*Phono-Phlebograms. J. de Meyer and V. Gallemaerts (Brussels). —p. 395.
*Digitalis in Tuberculosis with Low Blood Pressure. R. Burnand. —p. 419.

Diagnosis of Slow Pulse by Inspection of Veins.—Bard states that the diagnosis of the nature of bradysphygmia is usually made from the pulse tracings, but that this is possible merely from inspection of the jugular pulse wave. He explains how the characteristics of the pulse wave permit the false bradycardias from coupled rhythm of the ventricles to be distinguished from true ventricular bradycardia, and further distinguish between the three varieties of the latter. Thus in the majority of cases simple inspection of the venous pulse serves to differentiate the six different forms of slow pulse with regular rhythm.

Phonophlebogram.—De Meyer and Gallemaerts have continued their research published in 1914 on the graphic recording of the sounds that accompany the venous pulse, or at least those sounds which are perceptible on auscultation of the bulb of the jugular vein. They use the Einthoven apparatus as for cardiography, and record a whole series of complex sounds from the auricle and ventricle systoles and the duration of the silences.

Digitalis in Pulmonary Tuberculosis.—Burnand is medical director of the Sanatorium populaire at Leysin, and he here expatiates on the advantages of prolonged administration of digitalis in pulmonary tuberculosis with abnormally low blood pressure. He gives it irregularly, three days out of every ten, and has been convinced of the benefit therefrom in cases in which the myocardium still retains some of its vitality. In the advanced stages the heart is unable to respond.

Archives de Médecine des Enfants, Paris

January, 1920, **23**, No. 1

*Inherited Syphilis and Dystrophies. V. Hutinel and H. Stévenin. —p. 5.
Children's Asylums, etc., Should Be in the Country.—J. Camescasse. —p. 37.
*Present Status of Nephritis in Children. J. Comby.—p. 41.

Inherited Syphilis and Dystrophies.—Hutinel and Stévenin review the whole field of special and general dystrophies from inherited syphilis, and emphasize its predilection for the liver, spleen, brain and glands. Its effect on the endocrine glands may be responsible for the development of such opposite conditions as dwarfism and giantism, obesity and extreme leanness, severe rachitis, chronic rheumatism, etc. Treatment requires not only measures against syphilis but also the specific organotherapy for the endocrine gland involved. They discuss the anatomic lesions for which the inherited syphilis is responsible, commenting in particular on the constant abnormal changes in the bone marrow, lungs and heart. The latter is very rarely directly affected by the syphilis; it seems to pass by the larger blood vessels and heart in children, and act merely on the smaller vessels. They cite some cases of genital infantilism in which the development of the organs had not only been arrested but sclerosis had invaded them and crushed out the noble elements. In other cases the organs undergo actual retrogression; this is particularly likely in the pluriglandular cases, especially those in which pituitary or thyroid disturbances predominate. This clinical picture may be traced to other chronic infections and intoxications besides syphilis, but is more common with the latter, as the morbid process is more apt to act on several of these glands at once. This is not inevitable, however, as some of the glands may become pathologic only secondarily to the first ones involved.

Nephritis in Children.—Comby reproduces nearly the whole of Hill's article on this subject in the *American Journal of Diseases of Children*, April, 1919. Comby comments on it that it "mirrors his own experience and ideas." . . . "Dr. Hill," he adds, "has observed large numbers of cases and has observed them well. His descriptions bear the stamp of truth."

Bulletin Médical, Paris

Jan. 3, 1920, **34**, No. 1

Is Influenza an Autonomous Disease or an Epidemic of Pyosepticemia? M. Sacorrafos.—p. 5.
*Treatment of Acute Appendicitis. A. Gauchoix.—p. 7.

Treatment of Acute Appendicitis.—There has been considerable discussion lately of this subject in France, apparently going over the ground that the surgeons of America traversed and left behind them, twenty years ago.

Jan. 10, 1920, **34**, No. 2

*Medical Treatment of Acute Amebic Disease of the Liver. F. Françon. —p. 21.
*False Tuberculosis. A. Jacquemin and M. Dubreuil.—p. 23.

Medical Treatment of Acute Amebic Disease of the Liver.—Françon emphasizes that the differential diagnosis of acute amebic hepatitis may be puzzling when there is associated malaria or the clinical picture resembles typhoid, pleurisy, gastro-enteritis or cholecystitis. Instances of each have been published. Radioscopy is useful when the ameba cannot be detected in the stools, as happened in 15 of his 28 cases, and in 16 of Ravaut's 21. Medical treatment is necessary even when an operation is contemplated. In the 88 cases Françon has compiled, emetin was given in 72 cases; neo-arsphenamin in 2, and both in 12. He regards the combination as most promising. When exploratory puncture shows a young focus, with creamy, reddish pus, with well preserved leukocytes and no fatty degeneration, the focus can usually become resorbed under medical measures alone. But with dead pus and associated infection, resorption is practically impossible and the focus will have to be mechanically cleared out; secondary infection is not amenable to emetin treatment. Medical measures are liable to fail also if the abscess is larger than a mandarin orange. Recurrences can be treated with the medical measures anew. The results in the 88 cases he has compiled fully confirm the efficacy of emetin in amebic disease of any kind. It seems to be even more effectual when the focus is in the liver rather than in the bowel, as is easily explained by the fact that the encysted forms of the ameba seldom get into the liver, and superposed infection is the rule in the intestines.

False Tuberculosis.—Jacquemin and Dubreuil review their four years of sanatorium experiences in respect to false and factitious pulmonary tuberculosis. They warn of the danger of incriminating tuberculosis when the patient has merely a bronchitis of nasal origin or exhibits the lung phenomena of mitral stenosis or the respiratory disturbances common in certain forms of liver disease, or has interlobar pleurisy with a fistula into a bronchus. There may be frequently recurring or continuous bronchitis when the nose is more or less stopped up. "Beware," they say, "of mouth breathers; examine the nose before the chest." Stones in the gall-bladder may induce a pleural reaction, pains in the shoulder, tendency to hemorrhages, and occasional waves of fever and general depression that may be mistaken for pulmonary tuberculosis, especially when there is a cough. The liver cough may deceptively simulate a lung cough, and the right tracheobronchial glands may enlarge under the influence of the cholecystitis. The laboratory findings may be the only clue in such cases. An old interlobar pleurisy with a fistula into a bronchus is almost certain to be mistaken for pulmonary tuberculosis unless it is noticed that the fever occurs in the morning instead of the evening. Another sign is a tendency to hippocratic fingers. This, they declare, is always the expression of a pleural lesion. It is a synonym, they say, for interlobar pleurisy when it occurs early. With pulmonary tuberculosis it is exceptional and tardy.

As the demobilized men know that a sputum containing tubercle bacilli is like a government bond in insuring a certain income from the state, all kinds of tricks are practiced to impose the diagnosis of pulmonary tuberculosis. To avoid fraud, the man is examined on waking. He is given two or three swallows of tea, and is told to expectorate in the sterilized spit-cup given him for the purpose. His hands are carefully washed beforehand. This method averts fraud, but it is tedious and makes a number of examinations necessary. Among the tricks described is the effort to show a rapid loss of weight; the man at the first weighing artificially increases his weight.

Bulletins de la Société Médicale des Hôpitaux, Paris

Dec. 12, 1919, **43**, No. 36

*Edematous Rash from Neo-Arsphenamin. G. Milian.—p. 1055.
Epidemic of Probable Dengue in Troops in Near East. Pagnier and O. Couffon.—p. 1059.
*The Blood in Typhoid after Vaccination. P. Armand-Delille and others.—p. 1063.
*Senile Wrinkled Skin in Children. A. Souques.—p. 1074.
*Injection of Air for Radioscopy. P. Emile-Weil and Loiseleur. —p. 1077.
*Spirochetal Jaundice. Lortat-Jacob and Deglaire.—p. 1077.
Pott's Disease in Woman of Seventy. P. Merklen and H. Schaeffer. —p. 1079.
*Gas Gangrene in Typhoid. Weinberg and Françon.—p. 1084.

Rash with Edema and Desquamation After Arsphenamin.—The man in Milian's case developed the rash, with edema of the eyelids, etc., resembling that with Bright's disease, after he had been taking a long course of neo-arsphenamin. The urine was constantly normal, except for urobilinuria. Ramond has encountered a similar case, the scarlatiniform eruption developing after the sixth injection. The syphilis was of only a few weeks' standing. The edema in face, arms, and legs was extreme, but there was no fever and the general condition and appetite kept good. The man became transiently deaf in one ear, probably from extension of the edema to the eustachian tube. This edematous rash persisted for about two months, the pruritus keeping up to the last. Ramond remarks that this toxic eruption with edema is not so rare as might be imagined from the literature, but instances of it are not published as a rule.

Blood Findings in Typhoid and Paratyphoid After Vaccination.—The findings in 350 cases in soldiers and civilians

in the near East are given. They suggest that paratyphoid bacilli seem to acquire greater virulence in subjects vaccinated against typhoid. The authors comment that this seems to confirm the wisdom of polyvalent vaccination.

Gerodermia in Children.—Souques recalls another case of loose, flabby, corrugated, senile skin in a child. Variot says that he has also encountered two cases of the kind.

Roentgenography After Injection of Air.—Weil and Loiseleur comment on the double advantage from injection of air after an effusion is evacuated. It not only has a therapeutic action but aids materially in the diagnosis by rendering much more distinct the outlines of the pleura, peritoneum or joint involved in the process.

Spirochetal Jaundice.—The case was typical in the robust young man, but there was in addition intense diffuse pruritus throughout the three weeks of the disease, and the urine contained bile salts; there was also bradycardia—all testifying, Lortat-Jacob says, to retention of the products elaborated by the kidney cells.

Typhoid Gangrene.—The typhoid in the young man ran a rather severe course without intestinal complications. Two days after defervescence, symmetrical patches of gangrene developed on the thigh; they were arrested by a gas gangrene antiserum, but the patient died the third day. Weinberg and Françon remark that if the stools or blood had been examined for anaerobes, the antiserum could have been used earlier, and the patient might have been saved.

Paris Médical

Dec. 27, 1919, **9**, No. 52

*The Mental Stomach. Chavigny.—p. 497.
*Treatment of Scoliosis. Joland.—p. 499.
*Treatment of Deafmutism. G. de Parrel.—p. 504.
Diagnosis of Height of Lesion Causing Spinal Paraplegia. J. A. Barré.—p. 507.

Mental Dyspepsia.—Chavigny declares that we digest with our brains as well as with our stomachs. Gastric digestion is cerebral in large part, and cases of uncontrollable vomiting should be classed as mental dyspepsia, and be treated by psychiatrists after gastro-intestinal specialists have diagnosed the case. He remarks that psychiatrists will realize their finest successes in the *rééducation psychique de ces petits mentaux*. Most of the patients who seek the stomach specialists cherish special fads in regard to eating whole wheat bread or other special diet, or going barefoot, or they have other odd hobbies. It is remarkable, he exclaims, how persons in this category often do well on a diet that a normal person might have difficulty in digesting. He adds that the surgeon must beware of the operative adventures to which this class of patients often seek to entice him. The recent tragic death of Pozzi and of Guinard should warn to refuse to these *petits aliénés* with *troubles cénesthésiques* the operations for which they sometimes clamor. Soldiers with this "mental dyspepsia" should be given rapid mental retraining, with gymnastic exercises and military discipline. In one of the typical cases related, the relapse under emotional stress or extra responsibility confirmed the psychic element involved. The lack of any modification after a useless appendicectomy, and the practically normal gastric chemistry testified that the uncontrollable vomiting in the previously healthy officer of 33 was of this nervous dyspepsia type, but more psychic than anatomically nervous.

Abbott's Method of Treating Scoliosis.—Joland insists that Abbott's method for treatment of scoliosis is difficult and dangerous, and should not be attempted except by the few specialists who know the exact indications for it. "The general practitioner should realize that the great majority of scoliotics should not be abbotted."

Treatment of Deafmutism.—De Parrel emphasizes that much can be done by physicians and parents to prepare deafmutes for the training in special institutions when they reach the age of 6 or 7. The young child should be given the benefit of hygiene, and of physiologic and surgical measures as the case demands to enable him to profit to the full from the specialist training later. He declares, "absolute deafness is extremely rare, and if the vestiges of hearing are trained, this is an inestimable gain when specialist treatment is begun." Vision should also be trained to the utmost, as lip reading depends on the visual acuity. De Parrel stresses the importance likewise of preparing the child for *réceptivité pédagogique* so that it will be ready to learn. This is the mother's task, but the physician is the indispensable technical adviser in this, and he should be well posted on what to advise. De Parrel gives minute details of all these preliminary measures, especially those seeking to train in attention, in imitation, and in tactile perception.

Jan. 3, 1920, **10**, No. 1

*Recent Progress in Tuberculosis. P. Lereboullet and L. Petit.—p. 1.
*Menstrual Equivalents in the Tuberculous. C. Sabourin.—p. 11.
*Miliary Forms of Pulmonary Tuberculosis. A. Pissavy.—p. 19.
Influenza and Tuberculosis. R. Debré and P. Jacquet.—p. 24.
*Diagnosis of Pulmonary Tuberculosis. P. Ameuille.—p. 28.
*Sunlight as Factor in Sterilization of Tuberculous Sputum Expectorated on the Street. H. Tecon.—p. 33.

Tuberculosis in 1920.—Lereboullet and Petit say that the prophylaxis and hygiene rather than the medical aspect of tuberculosis engrossed attention during 1919. Among the few communications on the medical features were those on the detection of the falsely labeled tuberculous. Compulsory declaration of tuberculosis seems to have been postponed to the day when the declaration will ensure care and assistance for the tuberculous and his family. Until this can be realized, notification serves merely to pile up statistics. E. Sergent has recently presented evidence that even tubercle bacilli in the sputum do not necessarily prove that the lesions are in process of evolution, and also that the absence of tubercle bacilli is not unfailing testimony as to the nonactivity of the lesions. Radiography throws no light on the age and evolution of the lesions, but a low arterial pressure is the rule in progressing cases. A rise in temperature after muscular exercise does not necessarily mean tuberculosis, as unstable temperature may be observed under various other conditions, digestive, cardiac, etc. They agree with Sergent's dictum that there is no absolutely certain sign which tells whether the tuberculous process in a well appearing person is progressing or not. He may have had hemoptysis on one occasion or a disquieting pleurisy, but has been in apparent health since. Repeated examination, the fixity of the stethoscopic and radioscopic findings, the character of the physical signs, the attenuation of the myotonic reaction, the disappearance of the tenderness at the apex, the normal blood pressure, the intensity of the tuberculin reaction, stability of the temperature, and the repeatedly verified absence of tubercle bacilli from the sputum, form a bundle of proofs on which the diagnosis can be based. The whole secret lies in repeating the examinations and comparing the findings. About 25 per cent. of the tuberculous show roentgen shadows in the fissures between the lobes, but few physicians ever examine for these *localisations scissurales*, and yet they are an important factor in recurring pleurisy. The stethoscope reveals small and inconstant foci of dry rattling, or friction râles, which, associated with intercostal neuralgia and cough, aid in detecting these frequent and benign tuberculous lesions.

Roger demonstrated ten years ago that the absence of albumin from the sputum excluded tuberculosis. A positive albumin reaction is found in many other diseases, but Krongold has recently published evidence to the effect that the presence of peptone in the sputum is a reliable sign of tuberculosis, as the tubercle bacilli belong to the small group of micro-organisms which by their proteolytic ferments split albumin into albumoses and peptones. Jousset insists that tuberculosis, as we know it, is merely the nodular form of infection by the tubercle bacillus. The latter may induce a wide range of reactions and symptoms, and in both there is first an acute, curable, congestive stage, in which serotherapy is promising. (His method was described in these columns, Aug. 17, 1918, p. 605.) The most important work on artificial pneumothorax during 1919 is stated to be that by Morelli of Montevideo. (One of his recent communications was summarized here, July 19, 1919, p. 235.) He draws the balance sheet with a most favorable balance to the credit of the

procedure in appropriate cases. Lalesque's review of his thirty years of treatment of tuberculosis at a seashore sanatorium is said to be another instructive contribution. He emphasizes the importance of the moisture of the sea air in preventing congestion and hemoptysis.

Menstrual Equivalents in the Tuberculous.—Sabourin describes how the organism seeks to throw off the excess of endocrine secretions that accompany ovarian functioning and which have to be got rid of, unless fecundation occurs. They usually pass off in the menstrual hemorrhage, but in the tuberculous they are liable to make their influence felt first on the points of lesser resistance, inducing congestion and possibly hemorrhage. There may be fever, congestion of the lungs, with hemoptysis, epistaxis, bleeding from hemorrhoids, diarrhea, excessive secretion in nose or bronchi, or there may be menstrual vomiting of bile or transient congestion of the liver, or several of these combined.

The Miliary Form of Pulmonary Tuberculosis.—Pissavy explains why and how we must distinguish between the four forms of pulmonary tuberculosis, the miliary, the nodular, the pneumonic, and the bronchitic or emphysematous form.

Bacteriologic and Radiologic Tests in Pulmonary Tuberculosis.—Ameuille says that he writes this article to convert the few physicians still left who fail to realize the paramount importance of bacteriologic and radiologic examination in every case of disease of the air passages.

Sterilization by the Sun of Tubercle Bacilli in the Street.—Tecon reports research from Lausanne, Switzerland, the results of which demonstrate that sputa expectorated on the roadway under the usual conditions even when exposed to the sun in summer for from two to fifty-two hours, that is, during nine successive days, induced the development of tuberculosis when guinea-pigs were inoculated from them. All the inoculations gave positive results, in one instance after eleven days of insolation. When the sputa had been deposited on snow beaten down in the driveway, the inoculations were all negative except in one instance in which the insolation had been only for thirteen hours. The sterilizing action of the sunshine is thus practically negligible for clumps of sputum such as the tuberculous expectorate.

Presse Médicale, Paris

Jan. 10, 1920, **28**, No. 3

*Volvulus of Sigmoid Flexure. E. Forgue.—p. 21.
*Electric Accidents with House Electric Current. A. Zimmern.—p. 25.
*Protecting Coating for the Stomach. F. Ramond.—p. 27.

Volvulus of Sigmoid Flexure.—Forgue emphasizes that the onset is not so sudden with volvulus as with ileus of other cause, and the symptoms are not so violent from the first. There is no vomiting, at least at first, and it is not fecaloid, while urine excretion continues almost normal—all testifying to the low location of the obstacle. The twisted loop becomes distended with gases, and percussion elicits a metallic resonance. The segment of the colon involved, ballooned by the local meteorism, shows an asymmetrical protrusion of the abdomen without peristaltic movements, but these findings are soon masked by the general distention of the intestines. He insists on the tendency to recurrence; the volvulus returned in 10 per cent. of Kuhn's ninety-five cases, and in nearly 16 per cent. of Filipowicz' thirty-two cases. Resection of the twisted loop has given a high mortality, up to 40 per cent., and the technic is difficult. Hence Forgue concludes this comprehensive study with the advice to be content with palliative measures such as colopexy, simple exclusion of the loop by entero-anastomosis, or enterostomy when the obstruction creates a pressing danger.

Mishaps from Domestic Electric Currents.—Zimmern remarks that the lamentable accident which recently cost the life of a colleague has called attention anew to the dangers of electricity even with low-power currents. Electrocution has occurred with a current of only 110 volts or even less. Conditions in a bath are especially favorable for this, the wet hands and the water clinging to the surface of the body provide exceptionally favorable conditions for conduction of the current if an electric light, or electric heater, or bell handle, is touched. Jellinek, Lutaud and Fleury have reported cases of this kind, young women being found dead in the bathtub with the metal chain or bulb in their hand. He urges that electric appliances should not be allowed, in bath rooms, within reach of a person in the bathtub. Weiss has reported a case in which a woman was killed in her kitchen as she was holding an electric light in one wet hand and turning on the water faucet with the other. Another woman was killed as she was dusting with a wet cloth the current-distributing apparatus for the electric heating appliances. A man was given an almost fatal shock when he took hold of the chandelier while holding in the other hand an electric light suspended by a wire. Few realize the danger they incur in changing a bulb when the hands or the floor are wet. If there should be some defect in the insulation a serious accident might result. He adds that although he has never heard of an accident of the kind, beyond slight shocks, yet it is well to be warned of the danger, in operating rooms, from manipulating electric lights, cautery, etc., and touching at the same time the water faucet, especially if the floor or walls are moist. The danger from the electric current is for the heart, and the effect is more pronounced when there is an element of surprise. Sleep and general anesthesia attenuate the effect. Rabbits in general anesthesia survive a current that kills at once normal rabbits. Zimmern adds that a number of fatalities have been reported in Germany during the application of Kauffmann's method of treating neuroses, giving a sudden, sharp shock to the patient; he forgets his previous ailments when thus "torpedoed." No explanation could be found in many of the cases for the fatality.

Protecting Coating for the Stomach.—Ramond gives, instead of bismuth, gelose, made from agar and medicated at will, with or without a mixture of gelatin. It is taken like bismuth for the "gastric dressing," one large dose fasting, or half an hour before meals and before retiring. As the dissolved gelose attracts molds, he sometimes used pulverized gelose, 0.10 gm., or a mixture of the same with 0.40 gm. crushed gelatin. This is thrown into a cup of boiling water flavored with peppermint or anise. The boiling is continued for four or five minutes, occasionally agitating; then the fluid is filtered and it is drunk while still hot, before it can coagulate. Or 5 gm. gelose can be boiled gently in a liter of water for twenty or thirty minutes, then passed through fine gauze, and before it cools 200 gm. of some aromatic syrup are added. A tablespoonful of the resulting jelly is dissolved in a cup of very hot water. The patient must change his position to bring this fluid into contact with the inflamed parts of the stomach. This gastric dressing answers the purpose almost if not quite as well as bismuth, and sometimes surpasses it while it has none of the drawbacks of bismuth. Ramond prefers to combine the two, giving bismuth for ten days and then the gelose the rest of the month, or mixing one twelfth of bismuth with the gelose for continuous use.

Progrès Médical, Paris

Dec. 20, 1919, **34**, No. 51

*Injection of Oxygen to Aid Roentgenography. L. Mallet and H. Baud.—p. 507.
*Cancer of Uterine Cervix. Potherat.—p. 508.
Treatment of Scabies. L. Bory.—p. 509.

Oxygen as Aid in Roentgenography.—Mallet and Baud expatiate on the harmlessness of intraperitoneal insufflation of oxygen, and on the instructive roentgen findings when this is done. The oxygen is harmlessly resorbed in a day or two; acute peritonitis seems to be the only contraindication.

Cancer of Uterine Cervix.—Potherat remarks that cancer on the vaginal aspect of the cervix resembles an epithelioma of the skin in many respects, as the structure of the mucosa of the vagina is more like skin than the mucosa lining the uterus proper. When operative removal was out of the question, he has known of survivals for five, seven and fourteen years after excision of the cancerous tissues down to the hard zone, where the sharp curet was arrested, and then the lesion was cauterized vigorously with a large nummular thermocautery.

Schweizerische medizinische Wochenschrift, Basel

Jan. 1, 1920, **50**, No. 1

*Pulse Findings with "Volume Bolometry." H. Sahli.—p. 2.
*Operations for Goiter. G. Hotz.—p. 6.
Parallel Skin Tests with Human and Bovine Tuberculins. Bernheim-Karrer.—p. 10.
*Laws Regulating the Multiformity of Symptoms. De Montet.—p. 12.

Research on the Pulse.—Sahli has long insisted that determination of the blood pressure may be misleading unless it is accompanied by a knowledge of the volume of the pulse at the same time. This he estimates by what he calls volume bolometry, and he here describes with illustrations his simple apparatus for the purpose and the numerous instructive findings with it.

Goiter Operations.—Hotz applies on both sides Kocher's method of resecting one half of the thyroid, leaving behind only a small piece. Hotz resects at one sitting nearly the whole of both halves leaving only enough on each side for physiologic purposes. In his 400 operations of the kind, one young man died and necropsy revealed influenza. There was only one other death in the series; this was in a woman of 72, and necropsy disclosed degeneration of the heart. In three cases after-hemorrhage required opening of the wound. The only deficiency symptoms observed afterward were in a young pregnant woman, which subsided under parathyroid tablets, and one case of mild symptoms of hypothyroidism. The recurrent nerves were injured during the operation in 5 per cent. of the first 200 cases; it is not known whether the resulting paralysis has subsided or not, to date. The upper parathyroids are not molested with this technic, but the lower ones are endangered. Other technics sparing more of the gland expose to the danger of recurrence, especially in the quite young. Hotz' operation takes about an hour, but the patient leaves the hospital in about eleven days as the average. He operates under local anesthesia, ligating the four thyroid arteries. Over 12 per cent. of the subjects were only 16 or less. The goiter tissue removed in children averaged 103 gm. He aims to remove all of the thyroid that he can, including the whole of the isthmus. The rectus muscles are severed, and from 60 to 120 ligatures are applied, and sometimes up to half are left in the wound.

Multiformity of Symptoms in Response to Single Stimulus.—De Montet argues that the relations between the various organs and functions are much more extensive than has hitherto been appreciated. The multiformity of the symptoms from a uniform stimulation of the sole, for instance, is evidence of this, he says, as he shows by the findings in a young infant, and in 184 adults, seeking to deduce a general comprehensive law.

Gazzetta degli Ospedali e delle Cliniche, Milan

Nov. 23, 1919, **40**, No. 94

*Hemostatic Band in Surgery. U. Nobili.—p. 1019.

Hemostatic Band in Surgery.—Nobili explains the advantages of partly blocking the circulation in the limb or fingers before operating on phlegmons, etc. The aim is more to prevent infectious material being swept into the general circulation during the operation than to avert hemorrhage. In addition to this precaution, Nobili makes a circular incision in the cellular tissue, all in sound tissue, some distance above, in operating on a phlegmon. This cuts off the spread of infectious material by way of the lymphatics, while leaving the arteries intact.

Revista Clínica, Medellín, Colombia

November, 1919, **2**, No. 14

The Human Body in Art. Montoya y Florez.—p. 49.
*Permanent Slow Pulse. L. E. Arango.—p. 84.
*Cure of Skin Disease by Intercurrent Acute Infection. J. Restrepo A.—p. 86.
*Code of Ethics.—p. 90.

Slow Pulse.—The pulse of 36 and the physical signs in the young man whose case is described by Arango, suggested mitral insufficiency with stenosis of the aorta. Considerable improvement was observed under 1 gm. of sodium iodid daily, and sodium cacodylate, with small doses of diuretics and laxatives.

Cure of Dermatitis by Intercurrent Acute Infectious Disease.—Restrepo relates that the ulcerating lesions on the legs had persisted for over three years, rebellious to all measures, but they disappeared completely during an attack of erysipelas. The patient was a woman of 44, otherwise healthy. In a second case of chronic dermatitis of the leg in a young man, it subsided likewise during intercurrent measles.

Code of Ethics.—This is a code presented by the Bogotá Sociedad de Pediatría for consideration at the recent national medical congress. Its special points have been summarized in these columns when published elsewhere.

Revista Médica del Rosario

December, 1919, **9**, No. 5

*Angioneurotic Edema; Two Cases. D. Staffieri.—p. 293.
*Case of Erythromelalgia. A. Boden.—p. 299.
*Chronic Arsenic Poisoning from Drinking Water. C. Alvarez.—p. 311.

Angioneurotic Edema.—Staffieri summarizes the prevailing views in regard to Quincke's edema, in the statement that it is characterized by abnormally exaggerated excitability of certain nerves which have control of the secretion and circulation of lymph. This hyperexcitability is almost always constitutional, the result of "dysendocrinia" (defective functioning of the endocrine glands), with thyroid insufficiency predominating. This excitability is rendered manifest by influences of different kinds, including some which behave like antigens, inducing anaphylaxis. In the first of his two cases, one side of the throat was affected but there was no inflammation. The young man showed signs of thyroid insufficiency and hypogenitalism, and under thyroid treatment there has been no recurrence of the acute edema of the throat. Atropin and a saline purge relieved the immediate symptoms; it was the first and only attack to date. In the other case there had been fleeting edema at various points during seven years. In this latest attack the face alone was involved, and the edema was so extreme that the eyelids could not be closed. As usual, the edema subsided completely in a few days. The patient was a healthy married woman of 35 with two healthy children and negative Wassermann reaction, and there are no signs of derangement of any of the glands of internal secretion.

Erythromelalgia.—Boden describes what he says is the fourth case of Weir Mitchell's disease to be published in Argentina. His patient is a bachelor of 34 with regular habits, healthy until the development of the erythromelalgia fourteen years ago. Four years later symptoms of Raynaud's disease became superposed on the Weir Mitchell set of symptoms, and the man wandered from hospital to hospital in search of a cure or at least some relief. The left big toe had to be amputated about two years ago, and the wound took seven months to heal. Boden cites the three other cases of erythromelalgia in Argentina, and mentions some still unpublished cases and one reported from Santiago de Chile in 1914. The redness and neuralgic pains are not necessarily restricted to the foot. In Cassirer's compilation of 67 cases both feet were affected in 24, both hands in 2, both hands and feet in 17, one foot in 9, and one hand in 4. Auché has published a case in which there was congestion also in the eyes and testicles during the attacks. No acute or chronic infection or intoxication could be discovered to account for the disease in Boden's case, the patient being apparently free from acquired or inherited taint. The only pathologic finding was atony and ptosis of the colon, and great improvement was realized with treatment addressed to the intestines, repose and dieting. One case is on record in which Raynaud's disease subsided completely after resection of the entire colon, and this confirms the close connection between production of toxins in the sagging bowel and the vasomotor centers which regulate the circulation, especially the trophosecretory neurons and those regulating the peripheral circulation. If the intestinal disturbances do not yield to medical measures, colectomy should be considered. This would break up the sympathetic-medulla reflex arc and remove the source of the toxins, and it is now under consideration in this case. [In J. J. Ferro's 1919 inaugural thesis at the University of Lisbon, the recent international literature on

erythromelalgia is exhaustively cited. The thesis is reproduced in the *Medicina Contemporanea* **37**:380, 1919.]

Chronic Arsenic Poisoning from Drinking Water.—Alvarez publishes two further cases of what he calls Bell-Ville disease, as the first cases of this chronic intoxication from arsenic-containing water were observed at Bell-Ville in northern Argentina. The new cases were in men of 25 and 62 and after abandoning the use of water from a certain well, both recovered completely from the severe clinical picture they presented at first. In the young man the liver was predominantly affected, and ascites required tapping twenty-one times. In both the skin showed dark pigmentation, with scattered white and black dots.

Mitteilungen aus der Med. Fak. der Univ. zu Tokyo

Oct. 11, 1918, **20**, No. 3, German Edition

*Auricular Flutter. S. Yamada.—p. 308.
*Carbohydrates and the Sugar Content of the Blood. K. Sakaguchi.—p. 345.

Auricular Flutter.—Yamada gives eight double-page tracings of the heart action in a man of 40 with nephritis and auricular flutter. This flutter was up to 230 per minute, and was not influenced by any measures, and it never changed to fibrillation, not even under digitalis. The ventricle could not keep pace with the auricle, and the ratio altered under epinephrin to 3:1, and under atropin to 2:1.

Carbohydrates and the Sugar Content of the Blood.—Sakaguchi publishes here the first report of his research on the nature of diabetes. He has been investigating the influence on the sugar in the blood of the amount, kind and time of ingestion of food. It is evident, he says, that the sugar content of the blood fluctuates even in normal conditions. The range, fasting, in the healthy Japanese was found to be between 0.067 and 0.107 per cent.; the average was 0.088 per cent. There was always distinct hyperglycemia after ingestion of from 70 to 100 gm. of glucose. The hyperglycemia reached its heighest point in twenty or thirty minutes, and then subsided, with one or two recurring waves.

Berliner klinische Wochenschrift, Berlin

Oct. 20, 1919, **56**, No. 42

*Gonorrheal Arthritis. H. Klose.—p. 985.
Antitoxin or Normal Horse Serum? M. Klotz.—p. 987; Idem. K. Dorn.—p. 988.
Effect on Rigor Mortis of the Lack of Postmortal Acid Production in the Muscles. F. Oppenheim and L. Wacker.—p. 990.
*Preservation of Erythrocytes After Death. G. Strassmann.—p. 994.
*Damage of the Eye from Methyl Alcohol Poisoning. W. Bab.—p. 995.
*Microsporia and Its Causative Agent. W. Fischer.—p. 996.
Proposed Reforms in Medical Teaching. O. Luharsch.—p. 998. Cont'n.

Gonorrheal Arthritis.—During the war period Klose noted a woful increase in gonorrhea. Before the war only 2 per cent. of gonorrheal infections presented gonorrheal arthritis, whereas at present Klose estimates the percentage at 10 per cent. There are several causes: personal indifference, forced and improper treatment of the primary infection, and weakened physical condition of patients due to the effects of war. Since 1909, arthrotomy has been carried out systematically in the Universitätsklinik, Frankfort-on-the-Main, in certain severe types of gonorrheal arthritis. Definite indications for operative intervention have been set up: In a gonorrheal articular effusion, arthrotomy is indicated if, after one puncture, there is a second effusion, accompanied by considerable stretching of the capsule, together with pain, and also when the condition of the joint indicates a beginning subluxation. In phlegmonous and mixed types, arthrotomy is performed: (1) early, in the course of the first few days of a severe phlegmon, if the patient is plainly losing ground on account of pain and loss of sleep; (2) in general gonorrheal infections that arise from a joint infection; (3) in severe primary infections, with genito-urinary complications, which render vigorous, conservative treatment of the joint infection more difficult; (4) in multiple joint infections that cannot all be treated at one time, after careful selection of the joint for the arthrotomy, and (5) as a routine measure, after three weeks, if during this time vigorous treatment has brought about no perceptible remission of the subjective symptoms; in which case a beginning contracture of the joint caused by an effusion into the flexor tendons should be watched for and guarded against. By means of roentgenoscopy any beginning shrinking of the capsule, atrophy of parts of the joint, or obliteration of joint outlines can be controlled. The beneficial effects of arthrotomy are due to the getting rid of the toxic tissue fluid, and the relief from pressure afforded the tissues. The pain subsides promptly, and the general condition begins to improve at once. The case is thus shortened by many months. Two or three weeks after the operation the medicomechanic treatment may begin. However, in 14 per cent. of the knee joint infections thus treated by arthrotomy, the injuries that the knee had already suffered, proved to be irreparable, and ankylosis was unavoidable.

Preservation of Erythrocytes After Death.—Contrary to the usual view that red blood corpuscles disintegrate within a few days, or at the latest within twenty to twenty-five days after death of the organism, Strassmann found through examination of a blood effusion from the thoracic cavity of a cadaver exhumed seven months after death, that unchanged, well preserved red corpuscles were still present, whereas of the white corpuscles only lymphocytes were to be seen, and these were somewhat changed in appearance. It appears, then, that the white corpuscles do not resist decay as well as the erythrocytes.

Loss of Vision from Methyl Alcohol Poisoning.—In view of the increasing number of cases of methyl alcohol poisoning, Bab recommends that, in case it does not seem feasible to prohibit the manufacture of wood alcohol, it might be given a disagreeable taste by the addition of small quantities of some harmless substance. This would perhaps be the best way to lessen the danger of its continued use as a beverage. He describes four cases demonstrating the pronounced degenerative processes from the action of the methyl alcohol.

Microsporia and Its Causative Agent.—Fischer describes an epidemic of microsporia in Berlin children. It affected mainly schools, orphan asylums, and public institutions. The causative agent in similar epidemics in the past had been *Microsporon audouini,* but in the present epidemic it seemed to be *Microsporon depauperatum,* a representative of the human type of the microsporon group that had been hitherto unknown in Germany. The clinical aspects of the disease were somewhat different from the usual picture of microsporia in man, in that the inflammation was more pronounced. An abscess developed in four of the 200 cases.

Deutsche medizinische Wochenschrift, Berlin

Oct. 30, 1919, **45**, No. 44

*Acute Puerperal Inversion of the Uterus. R. T. von Jaschke.—p. 1209.
*Atypical Erythema Nodosum. G. Denecke.—p. 1211.
Vacuolation in Leukocytes. H. Meyer-Estorf.—p. 1213.
*Treatment of Old Ulcerating Wounds. Dürig.—p. 1215.
A Peculiar Epidemic of Meningitis. Paetsch.—p. 1217.
*Effect of Epinephrin on Blood Pressure. J. Bauer.—p. 1217; Reply. K. Dresel.—p. 1218.
Prophylactic Injections of Friedmann's Tuberculosis Remedy. Brünecke.—p. 1218.
Glycerin as Vehicle for Certain Stains. Hollhorn.—p. 1219.
Proposed Reforms in Medical Teaching. J. Schwalbe.—p. 1220. Cont'n.

Acute Puerperal Inversion of the Uterus.—Von Jaschke reiterates that although partial or complete inversion of the uterus is one of the most dangerous complications associated with childbirth, yet prompt and proper treatment materially lessens the danger. Although mismanagement is generally responsible, partial inversions might possibly be caused by traction or relaxation of circumscribed portions of the uterus wall and contraction of adjoining portions. He thinks that in England and America too much weight is attached to local relaxation and unequal contraction. Zangemeister found on examination of the literature that in 98 per cent. of the cases traction played a part. Traction occurs almost always through the medium of the placenta, part or all of which has remained in the uterus. Occasionally, however, a submucous myoma may be a contributing factor. If relaxation of the uterine wall is pronounced, the placenta may exert traction by the force of its own weight, or a short cord may cause a partial inversion during expulsion of the

child. Inversion is favored without doubt by the fundal site and partial adherence of the placenta. Pressure on the relaxed uterus from above, as is applied in Credé's maneuver, produces the same effect as downward traction. No matter how the inversion may have been caused, therapy demands that puerperal inversion of the uterus be reduced at once. Von Jaschke admits, however, that Zangemeister and others oppose this view, maintaining that the shock of reduction, added to the shock caused by inversion, may prove serious. Even in the presence of severe hemorrhage, Zangemeister will not admit of immediate reposition, but endeavors to stop the hemorrhage by means of an elastic bandage fastened about the inverted organ. Von Jaschke cannot accept this teaching, and thinks that the bandaging causes a much greater shock than reduction under profound anesthesia. He regards the danger from infection as so great that its avoidance must be considered the main issue. However, if infection has already set in, he agrees with Zangemeister that the reduction of the inversion is contraindicated and that extirpation of the inverted organ, together with drainage of the Douglas pouch, must be done. But in fresh or recent cases infection is rare, and radical treatment should not be considered unless the inversion has existed at least six hours. He finds that profound anesthesia reduces to a minimum the shock manifestations sometimes occurring during reposition of the uterus. As a prophylactic measure or as a means of combating an already present shock, 2 c.c. of camphor and from 0.01 to 0.02 gm. of morphin will prove beneficial. The technic of the reposition is a delicate one. Brusk procedure is out of place. There should be no forcing of the organ through Bandl's ring, spasm of which can practically always be suppressed under profound anesthesia, aided by the effect of the morphin. Any remaining portions of the placenta may easily be, and should be, removed before the uterus is reverted. The manual technic follows: With the thumb, middle finger and index held in a cone shape, with the tips of the fingers he endeavors very gently to make an upward indentation at the lowest point of the inverted uterus. Sometimes it may be necessary to try another spot near by. When such a dent is produced, the pressure is slowly increased and the finger tips are gradually spread apart so as to cover a larger area. Care must be exercised, however, not to make the indentation broader than Bandl's ring. If this caution is not heeded, failure will result, and operators will be inclined to err and to ascribe their failure to a persistent spasm of Bandl's ring. However, after the indented portion has been carried past the cervical ring, the fingers may be spread out wider. The balance of the operation is usually easy. The still inverted portions are gradually drawn up by the upward rise of the fundus. If a high degree of atony persists, this will make reinversion more difficult. Pressure of the fingers must then be all the more even and steady. In such cases it will be found helpful, as soon as the reinverted portion has been brought up to Bandl's ring, to push gauze into the uterus, alongside of the operating hand. Then, as the reinversion proceeds, the gauze tampon is increased, which will check the hemorrhage, incite contraction and prevent a renewed spontaneous inversion of the uterus. Tamponade of the vagina with wide gauze, inserted in separate layers and tightly pressed together (the Kussmaul tamponade), will insure better results. Von Jaschke admits that there are a few cases in which it may be necessary to resort to instruments, but advises that the manual method be tried first.

Atypical Erythema Nodosum.—Within a few weeks of each other, five young women, whose ages ranged from 16 to 22, presented themselves at the University Clinic in Greifswald with similar skin lesions. Denecke states that on the front and outer side of the lower third of the legs there were red and reddish blue spots just above the ankle. The skin was smooth and shiny. A handbreadth area was swollen. Suction caused the redness to disappear and leave a pale ground. The spots were irregular, clearly circumscribed, and presented a mottled appearance. The skin was firmly attached to the substratum and felt hard. Finger pressure was slightly painful and left no indentation. In fact, it was difficult to make any impression on the skin. The skin when compressed into folds showed a very fine wrinkling. All five patients presented heart symptoms pointing to a pathologic condition of the endocardium, and all had rheumatic pains in the ankles and some in other joints. The differential diagnosis of the condition presented some difficulty. Denecke mentions half a dozen dermatoses that were considered and excluded before repeated palpation of the affected area led him to his final diagnosis of chronic, recurring erythema nodosum. The differentiation from erythema exudativum multiforme was not so difficult because the appearance of the dermatosis did not rapidly change from day to day; there were no outlying lesions, no patches with elevated edges, no tubercles, no blisters, no scales nor crusts. Sodium salicylate, 5 gm. daily, was the principal therapeutic agent. He comments on the coincidence of five cases, all in girls, and all localized in the same region, the area on the leg between the skirt and the shoe, which is most exposed to wind and weather, and the fact that all were in domestic service, obliged to be much on their feet.

Treatment of Old Ulcerating Wounds.—Wounds with extensive loss of tissue may refuse to heal, or, healing partially, they break down again and ulcerate. Dürig had found healing of such wounds difficult, and, after fruitless attempts to heal them, it became necessary to cover them with a transplant. The cause of the condition no doubt is that the central portions of the wound are not adequately supplied with blood. The scar tissue becomes more fibrous. The blood vessels grow smaller. The scar is deprived of fluid. It shrinks and is put on the stretch. The color changes from red to white, and finally in its center an ulcerous condition is set up. The indications are for an improvement in the blood supply. It occurred to Dürig that a procedure used years ago for the treatment of phagedenic ulcer would be helpful in treating ulcerating scar wounds, namely, lavage with a hot solution of potassium permanganate. Dürig uses for this purpose an irrigation apparatus at an elevation of 2 meters. The port wine red solution of potassium permanganate has a temperature of 40 C. The glass end-piece is fused, leaving only a pinhead opening, so that the wound may be sprayed with a fine, cutting stream. Two liters of the solution are needed for a ten minute lavage, which is done daily. After the lavage a dry dressing is applied. The viscous coating of the wound is often replaced in a few days by healthy granulations, and epithelization, beginning with the edge of the wound, soon covers the whole surface. Even though, because of the extent of the wound, a transplant should be necessary, Dürig finds this preliminary lavage treatment beneficial, as the wound is well cleansed and its size materially reduced.

Effect of Epinephrin on Blood Pressure.—Bauer has found that occasionally the subcutaneous administration of epinephrin in man causes a primary and not inconsiderable lowering of blood pressure that is not soon followed by a rise of pressure.

Münchener medizinische Wochenschrift, Munich

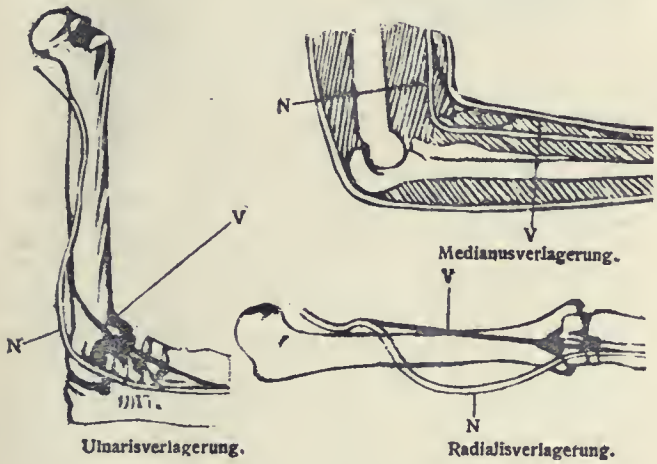
Oct. 31, 1919, **66**, No. 44

*Otogenous Pyemia and Sepsis. B. Heine.—p. 1251.
*Nerve Shifting and Joint Adjustment in Relation to Primary Nerve Suturing. M. Brandes and C. Meyer.—p. 1256.
Influence of Thermopenetration on Carcinomatous Tissue. A. Theilhaber.—p. 1260.
Relations Between Influenza and Tuberculosis. Kayser-Petersen.—p. 1261.
Treatment of Influenzal Empyema. Bettina Neuer.—p. 1264.
Mortality from Tuberculosis During the War. G. B. Gruber.—p. 1266.
Glaucoma in Relation to Exudative Diathesis. Rohr.—p. 1266.
Nitrobenzene Poisoning. Wandel.—p. 1267.
Therapy of Malignant Edema and Sepsis. W. Hancken.—p. 1268.

Otogenous Pyemia and Sepsis.—The pyemic and septic forms of otogenous infectious disease may sometimes be differentiated, although frequently, Heine states, they overlap. Remittent and intermittent fever (with or without chills) and metastases characterize the pyemic form. For the septic form, continuous fever, signs of poisoning (prostration, mental disturbance, delirium) and a stormy course are significant. In the septic form we may assume the

presence of increasing numbers of pyogenic bacteria in the blood (bacteremia) resulting in a poisoning of the organism by their toxins; or there may be a pure toxinemia. This toxinemia does not necessarily have its sole starting point in the original focus, as in diphtheria. Kümmel has shown that in other organs of the body (brain, kidneys) secondary bacterial foci may have formed, which maintain the supply of toxins. Heine admits that, exceptionally, this general infection may occur without involvement of the transverse or lateral sinus, but states that such cases are so rare that they may be safely left out of account, so far as indications for operative intervention are concerned. In one case he felt compelled to assume that the source of the pyemic fever was the suppuration in the mastoid process itself. He finds that most frequently the inflammatory process is conveyed to the sinus wall through contact with adjoining diseased bone. In some cases there is disintegration of bone tissue, and granulations form and shoot up along the sinus wall, resulting in an extradural abscess or suppuration around the sinus. He agrees with Haymann that mere inflammation of the sinus wall does not cause a thrombus in the sinus, and, with Lubarsch, that changes in the blood and retardation of the blood stream through the affected area are necessary accessory factors. The formation of a thrombus is gradual, and it arises ordinarily from a parietal coagulum. An obstructive thrombus is seldom formed at the start. Heine describes his mode of treatment in detail, but warns that every case must be considered on its own merits, and treated accordingly; for if one were to follow any single plan of treatment in all cases, more harm than good would often be done.

Nerve Shifting and Joint Adjustment in Relation to Primary Nerve Suturing.—The adjustment of joints so as to make a "cut-off" and save distance for nerve trunks, Brandes and Meyer remark, has been done for some time, but the shifting of the position of nerves (nervenverlagerung) in order to accomplish a similar purpose dates back to Wrede, who in 1916 published in the *Zentralblatt für Chirurgie* his article on "Nervenverlagerung zur Erzwingung einer direkten Nervennaht." The authors give an enthusiastic account of what Wrede has accomplished by his nerve shifting procedure. For example, in a 10.5 cm. defect of the median nerve the most that could be gained by adjustment of the elbow and wrist joints was 5 cm.; but, when the proximal nerve stump was removed from its bed in the pronator teres muscle and was embedded on this muscle and the bicipital fascia, as shown in the accompanying illustration, 5 cm. more were gained, so that the nerve could be sutured without any tension whatever. The authors, aroused by Wrede's success to make further research, have made extensive investigations on the cadaver and here publish their results. They have determined the maximal defects that various nerves may have and still permit the stumps to be brought together for primary suturing by means of joint adjustment and nerve shifting. They also give details as to how various joints should be adjusted in order to provide for shortening the course of different nerve trunks.



N, normal position of nerve; *V*, position of nerve after shifting.

Therapie der Gegenwart, Berlin

October, 1919, **60**, No. 10

*Dilatation of the Heart with Thyroid Insufficiency. H. Zondek.—p. 361.
*Artificial Esophagus. C. Hirschmann.—p. 368.
Sycosis. M. Michael.—p. 373.
Testing for Eyeglasses. Fehr.—p. 377. Cont'n.
Treatment of Intestinal Disease. G. Klemperer and L. Dühner.—p. 382.
Vaccine Therapy of Furunculosis. H. Schirokauer.—p. 397.
Treatment of Tuberculosis with Living Turtle Tubercle Bacilli. F. Baum.—p. 398.

Dilatation of the Heart with Thyroid Insufficiency.—Zondek warns that dilatation of the heart with hypothyroidism is of common occurrence, and it does not yield to digitalis. Neither the size of the heart nor the diuresis, nor the tendency to cyanosis, shows any modification under the usual heart tonics, but a prompt change for the better is apparent when the deficit in thyroid secretion is made up by thyroid treatment. All the subjective and objective pathologic findings retrogress, he says, and in two months the outline of the heart usually has returned to normal, even when the dilatation had been extreme. The heart disturbances with thyroid insufficiency are characterized by sluggish action and by the relative insignificance of the disturbances in comparison with the degree of dilatation. Electrocardiography serves as a useful guide when to suspend the treatment. When the high thyroid peak has dropped back to normal, the treatment can be resumed.

An Artificial Esophagus.—Hirschmann reports that the outcome in his three cases was so excellent that he does not hesitate to commend his technic for the systematic relief of absolutely impermeable stenosis of the esophagus. One young woman is in the best of health now, a year and a half after the operation. The various steps are illustrated. A short loop of the jejunum is moved to a bed under the skin of the chest, and one end is implanted in the stomach. Then the skin is incised to the right and left of the median line, these parallel incisions 6 or 7 cm. apart. The inner lips of the two incisions are turned back and sutured together, thus forming a skin-lined tunnel from throat to stomach. The stump of the esophagus is brought out through the skin in the neck, and sutured to the upper end of the skin-lined tunnel. Then the lower end of the latter is sutured to the short segment of the bowel loop that has been brought up to bridge the gap between the skin tunnel and the stomach. In all the steps of the operation he is careful to leave sufficient blood supply for all parts concerned.

Zentralblatt für Chirurgie, Leipzig

Jan. 3, 1920, **47**, No. 1

*Nearthrosis. A. Bier.—p. 2.
*Means to Facilitate Thyroidectomy. M. Claessen.—p. 9.
Extraperitoneal Laparotomy for Kidney Tumors. J. J. Stutzin.—p. 10.

Nearthrosis.—Bier tries to facilitate the formation of the new bursa in the new joint by injecting gelatin or sodium chlorid solution or inducing accumulation of serum in the joint cavity or leaving the extravasated blood. He gives case reports with each of these methods. None of the methods gives constantly good results, and infection is liable with each of them. In two cases the making of the new joint was followed by fatal infection; in one with an interposed flap of fascia, 250 c.c. of salt solution had been injected. The danger of infection is particularly great when the knee is flexed. He now fills the cavity after the resection with 5 per cent. tincture of iodin, and cleans it out again after a time and then sutures. He has thus treated fourteen joints, including twelve in which the ankylosis resulted from a suppurative process. The iodin induces an acute irritation which thus disinfects the cavity by the natural, biologic means. All healed by primary intention. The after-treatment is more difficult than the operation. He has found that the muscles may promptly recuperate function when they have long been useless on account of ankylosis. In one case the quadriceps rapidly recuperated after twenty years of

disuse from ankylosis due to a tuberculous process in the knee. The extensors are much more apt to atrophy than the flexors. He is convinced further that nervous and toxic influences may be responsible for the atrophy of muscles, more than any other factors. Active exercise is the best means to strengthen a weakened muscle. He only exceptionally applied force to mobilize a joint, but this is often very useful in correcting a nearthrosis that has developed ankylosis.

Thyroidectomy.—Claessen advises passing stout silk around behind the thyroid to lift it up with. He does not pass the silk through the thyroid tissue as this might entail hemorrhage. When these threads are to be left behind, as with partial thyroidectomy, he uses catgut instead of silk. Another use for these catgut encircling slings is to tie off and thus obliterate in time the remaining portion of the thyroid after partial removal. A series of catgut threads were thus tied around the stump, and it harmlessly shriveled up under them in one case described.

Zentralblatt für Gynäkologie, Leipzig

Jan. 3, 1920, **44**, No. 1

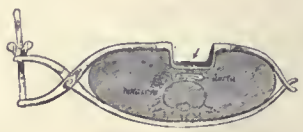
*Prophylaxis of Thrombosis. H. Fehling.—p. 1.
*Dangers of Transfusion in Obstetrics. E. Opitz.—p. 6.
*Obstetric Hemostasis. E. Sehrt.—p. 8; Idem. C. J. Gauss.—p. 10.
Treatment of Gonorrbea in the Female. H. Brauns.—p. 16.

Prophylaxis of Thrombosis.—Fehling declares that we are not so powerless as formerly supposed against thrombosis and embolism. Getting the patients up early after childbirth and operations is a great advance, and systematic exercising is also of great aid in prevention. Even more important is the systematic strengthening of the heart with tonics before and immediately afterward, and he cites figures showing the great improvement in his service since this has been done. He introduced this heart treatment in 1910. Before that he had had thrombosis in 5 per cent. and embolism in 1.25 per cent. in his myomectomy cases; 7.5 and 5.5 per cent., respectively, in his cancer cases, and 4 and 0.7 per cent. in his operations on the adnexa. The corresponding figures since 1910 have been 3.1 per cent. thrombosis and 0 embolism; 2.1 thrombosis and 1 embolism, and 1.4 per cent. thrombosis and 0.5 per cent. embolism. Other prophylactic measures are the bandaging of varicose veins before an operation. This prevents their becoming aggravated. Massage might aid in curing them, or compressed air massage, or obliteration of the varicose veins in the leg by injection of 1 or 2 c.c. of a 1 per cent. solution of mercuric chlorid with equal parts of a 1 per cent. sodium chlorid solution, injected into the vein, avoiding the most dilated portion and repeating as indicated. The patient can go about his business as usual, reclining only when there is a sensation of oppression. Zirn and Linser reported in 1919 that this procedure had been successfully applied in 800 cases without harm. Even with already developed ascending thrombosis, ligation of the vein and excision of the segment might be tried. Although embolism in the saphena is rare, yet this justifies the procedure. Haward has suggested intravenous injection of a 0.5 per cent. solution of citric acid to reduce the tendency to coagulation. Chantemesse for the same purpose has given 15 or 18 gm. citric acid in the course of two or three days before myomectomy. Fehling says that if this does not injure the stomach it seems promising. Riemann and Wolf recommend injection of 1 gm. herudin repeated in four hours, Kuhn injects sugar solution by the vein: experiments on rabbits seem to promise success with this. His formula is 4 gm. dextrose; 0.04 gm. sodium saccharate; 0.85 sodium chlorid and 100 c.c. distilled water, injecting 1 or 2 gm. by the vein. If there is already thrombosis before the laparotomy, or if the subject has previously had embolism, Fehling advises that some of these measures might be tried.

Dangers of Blood Transfusion in Obstetrics.—Opitz has had unfavorable experiences with reinfusion of the blood taken from the abdominal cavity after tubal abortion. In future he will simply leave the blood in the abdominal cavity unmolested. No harm from this was ever observed in the numerous cases in which this was done in Olshausen's service. The blood seemed to be always rapidly resorbed. The disturbances from autolysis of the blood are fewer and less than those with reinfusion of the blood after it has been cleared out. In two cases in which citrated blood from another person was transfused, serious disturbances followed, fatal in one instance. It was afterwards found that the donor's blood had a strong agglutinating action on the other blood.

To Shut Off the Blood from the Lower Half of the Body.—The Journal described at the time Momburg's method of hemostasis by constricting the body at the waist line, winding a rubber tube around the abdomen. Sehrt describes here a contrivance which accomplishes this in a more scientific manner by pressure on the abdominal aorta alone. The instrument is something like a pair of compasses. It encircles the abdomen, and a square jog in one branch fits down over the aorta and presses it back against the spine, flattening it out and closing the lumen. The compression is regulated and maintained with a thumbscrew, and it can thus be very gently and gradually applied and removed, and the resulting ischemia is complete. The device can be applied with the left hand and without moving the patient, the straight branch being easily slipped under the back. The instrument is light and takes up very little space in the physician's bag, and the testimony on all sides is said to be favorable.

Gauss endorses the advantages of a device of the kind, and states that the resulting ischemia has always caused strong contractions in the uterus in his clinical experience with an instrument he devised for the purpose some years ago, with a pad device. He adds that Sehrt's instrument is much lighter and simpler, and deserves the preference if it fulfils its promise. He even advises its prophylactic use when there is reason to anticipate too much hemorrhage, and he has successfully applied it in eleven cases as he describes. He queries whether it might not be applied as a routine measure to ward off the natural loss of blood at childbirth.



Zentralblatt für innere Medizin, Leipzig

Jan. 3, 1920, **41**, No. 1

*Vaccination Against Tuberculosis. A. Strubell.—p. 1.

Vaccination Against Tuberculosis.—Strubell says that Maragliano's experience with thousands of children whom he vaccinated against tuberculosis has proved the value of preventive vaccination, but his method of applying it by the Jenner scarification technic is behind the times, and exposes to the danger of secondary infection. Strubell is chief of the veterinary college, and he has been applying on a large scale a vaccine of his own preparation, for man and cattle, which he has patented.

Ugeskrift for Læger, Copenhagen

Jan. 15, 1920, **82**, No. 3

*Influenzal Empyema. Anna Sabroe.—p. 63.
*Case of Lethargic Encephalitis. G. R. Ulrich.—p. 71.

Empyema.—Sabroe relates that 94 cases of empyema as a sequel of influenza were treated at the public hospital, with 17 deaths, but the general infection rather than the empyema was responsible for all but 7 of the fatilities. Operative treatment was necessary in 90 of the cases, aspirating and draining, requiring from thirty to 169 days of hospital care, with an average of sixty-seven days. The influenzal empyema was capricious in its course, and required constant oversight, the temperature running up at times, but the general condition kept surprisingly good throughout as a rule.

Lethargic Encephalitis.—Ulrich calls attention to the stormy onset and brief course of the disease in the young man and the total lack of paresis of any kind. Total unconsciousness and convulsions seemed to be the only manifestations of the disease, and recovery was complete in less than two weeks with no memory of the twelve days of the sickness.

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ACIDOSIS IN NEPHRITIS *

ARTHUR F. CHACE, M.D.
AND
VICTOR C. MYERS, PH.D.
NEW YORK

The subject of acidosis in nephritis is one of such practical importance that it deserves emphasis from a clinical standpoint. Many significant observations bearing on this general topic have accumulated during the last ten years. In the study of this question, Van Slyke's simple method [1] of determining the alkali reserve of the body with the aid of the carbon dioxid combining power of the blood has been of great assistance. We have utilized this method to excellent advantage since Van Syke's preliminary publication [2] in 1915.

The term acidosis, although originally coined by Naunyn to apply to the ketosis of diabetes, has come to be used in a much broader sense with the development of our knowledge of this subject. Obviously, acidosis may result either from an abnormal formation of acid substances or, as in nephritis, from a decreased elimination of normally formed substances. Under conditions of health, the blood is uniformly maintained at a constant slightly alkaline reaction through the influence of the bicarbonate, phosphate and proteins of the blood.

The carbonates of the blood have been called by L. J. Henderson the first line of defense. Increased pulmonary ventilation, as occurs with dyspnea or hyperpnea, serves to increase the excretion of carbon dioxid, thus keeping the reaction of the blood within normal limits. In conditions of acidosis, other acids may combine with the bicarbonate, robbing the body of its alkali reserve. Under ordinary conditions, however, the kidneys are able to secrete an acid urine from a nearly neutral blood through the medium of acid phosphate, constituting a second means of defense. From the investigations of Marriott and Howland [3] it appears that it is just this factor which breaks down in the acidosis of nephritis. They have found the inorganic phosphates of the blood serum increased to many times the normal in nephritic acidosis, although nephritic cases without acidosis did not show this change. Other means of defense against acidosis are the blood and body proteins, which are able to take up considerable amounts of acids without marked change in reaction, and the ability to form alkali, i. e., ammonia. The latter factor is of considerable importance in the acidosis of such conditions as diabetes and pernicious vomiting, but apparently of little significance in nephritis.[4]

DETERMINATION OF DEGREE OF ACIDOSIS

A number of different criteria have been suggested as a measure of the degree of acidosis: (1) lowered carbon dioxid combining power of the blood; (2) lowered alveolar carbon dioxid tension; (3) decreased affinity of hemoglobin for oxygen; (4) reduced alkalinity of the blood; (5) increased hydrogen ion concentration of the blood; (6) increased intensity of urinary acidity (hydrogen ion concentration), and (7) the retention of alkali by the body in cases in which the kidney is capable of rapidly excreting an excess of alkali.

All of these have furnished valuable information in the development of our knowledge of this subject, but the first, second and seventh have yielded information of special clinical value. Although the carbon dioxid tension of the alveolar air may readily be ascertained at the bedside with Marriott's simple apparatus,[5] the information is not as reliable as the carbon dioxid combining power of the blood determined by the Van Slyke method. Nevertheless, the method of Marriott may be of great clinical assistance. That the bicarbonate depletion may roughly be determined by administration of sodium bicarbonate has been pointed out by Sellards,[6] and by Palmer and Henderson,[7] and this method has been in practical use for several years. Normally from 5 to 10 gm. of sodium bicarbonate are sufficient to change the reaction of the urine, but in the acidosis of advanced nephritis the deficiency may amount in exceptional instances to as much as 100 gm. of bicarbonate or more.

Palmer and Van Slyke [8] have recently studied this question rather carefully in connection with the carbon dioxid combining power of the blood. They found that in most pathologic cases the urine did not become more alkaline than blood until a higher plasma bicarbonate had been reached than in normal individuals. This would result in the giving of unnecessary and

* From the Department of Medicine and the Laboratory of Pathological Chemistry, New York Post-Graduate Medical School and Hospital.

1. Van Slyke, D. D.: J. Biol. Chem. **30**: 347 (June) 1917. Van Slyke, D. D., and Cullen, G. E.: Ibid., p. 289.
2. Van Slyke, D. D.; Stillman, Edgar, and Cullen, G. E.: Proc. Soc. Exper. Biol. & Med. **12**: 165 (April) 1915.
3. Marriott, W McK., and Howland, John: Phosphate Retention as a Factor in the Production of Acidosis in Nephritis, Arch. Int. Med. **18**: 708 (Nov.) 1916.
4. Marriott, W. McK., and Howland, John: The Influence of Acid Phosphate on the Elimination of Ammonia in the Urine, Arch. Int. Med. **22**: 477 (Oct.) 1918.
5. Marriott, W. McK.: The Determination of Alveolar Carbon Dioxid Tension by a Simple Method, J. A. M. A. **66**: 1594 (May 20) 1916.
6. Sellards, A. W.: Bull. Johns Hopkins Hosp. **25**: 141, 1914.
7. Palmer, W. W., and Henderson, L. J.: Clinical Studies on Acid Base Equilibrium and the Nature of Acidosis, Arch. Int. Med. **12**: 153 (Aug.) 1913; A Study of the Several Factors of Acid Excretion in Nephritis, ibid. **16**: 109 (July) 1915.
8. Palmer, W. W., and Van Slyke, D. D.: J. Biol. Chem. **32**: 499 (Dec.) 1917.

possibly injurious amounts of bicarbonate, if the administration was continued until the urine turned alkaline, as has been the usual clinical procedure. The bicarbonate retention may therefore indicate a much more severe acidosis than actually exists. Palmer and Van Slyke advise carefully controlling the therapeutic use of sodium bicarbonate. They have calculated that taking 42 pounds as the unit of weight, 0.5 gm. of sodium bicarbonate will raise the plasma carbon dioxid

TABLE 1.—ACIDOSIS IN FATAL CASES OF NEPHRITIS WITH MARKED NITROGEN RETENTION

			CO_2 Combining Power,	Sodium Bicarbonate Administration		Other Blood Analyses		
Case	Age	Sex*	C.c. per 100	Days before Death	Remarks	Creatinin, Mg. per 100 C.c.	Urea N, Mg. per 100 C.c.	Period of Observations before Death
1. E. M.	39	♂	12	0	No alkali	28.6	186	3 weeks
2. A. C.	53	♂	29	9	No alkali	22.5	106	2 weeks
3. P. J.	43	♂	31	0	No alkali; operation	20.0	209	4 days
4. L. R.	25	♀	36	0	6 gm. for 8 days; pneumonia	20.0	108	3 weeks
5. E. D.	53	♀	27	14	Receiving alkali	19.8	114	2 weeks
6. N. W.	19	♀	31	9	No alkali until after test	19.2	164	2 weeks
7. E. L.	20	♀	34	1	No alkali	18.9	141	2 weeks
8. R. A.	30	♀	38	3	No alkali; operation	18.7	68	1 week
9. M. M.	40	♀	23	1	No alkali until after test	18.3	246	2 days
10. E. P.	34	♀	32	7	Little alkali; CO_2 four days previously	17.0	85	2 weeks
11. A. N.	27	♀	12	3	No alkali until after test	17.0	148	2½ months
12. J. H.	29	♂	45	1	Alkali previous day	14.7	77	2 weeks
13. M. P.	25	♂	31	10	No alkali	14.4	141	2 weeks
14. A. M.	44	♂	32	60	Received alkali subsequently	13.5	147	2 months
15. E. P.	40	♀	38	24	Died outside hospital	12.7	116	3 months
16. A. L.	52	♀	32	4	No alkali	12.6	78	5 days
17. M. N.	46	♂	31	13	No alkali	12.5	210	3 months
18. W. W.	30	♂	22	60	Alkali discontinued for some time	12.5	76	5 months
19. J. B.	34	♂	32	240	Received 6 gm. daily for 10 days	12.5	110	11 months
20. F. R.	32	♂	39	6	Receiving colonic irrigation of 2% alkali	11.5	102	1 week

* In this column, ♂ indicates male, and ♀ female.

1 per cent. by volume. In view of this, it is possible to calculate the amount of alkali required to restore the plasma bicarbonate to normal.

The normal range for the carbon dioxid combining power of the blood in the adult, as shown by Van Slyke, Stillman and Cullen,[9] is from 55 to 75 c.c. of carbon dioxid per hundred c.c. of plasma.

OBSERVATIONS ON ACIDOSIS IN NEPHRITIS

In Table 1 are given observations in twenty fatal cases of nephritis with marked nitrogen retention. These cases were the first twenty in a series of 100 having high figures for the blood creatinin[10] in which observations of the plasma carbon dioxid had been obtained. It will be noted that without exception these cases show a pronounced acidosis, and in two instances, Cases 1 and 11 (compare also Table 2), this was sufficient to have been the immediate cause of death. Only in one case was the carbon dioxid found to be above 40, and here alkali had been given the day previous.

To emphasize the importance of acidosis in nephritis, three groups of two cases each are tabulated in Table 2. It is not believed that detailed case histories would aid especially in any deductions that might be drawn, and they are therefore omitted. The first two patients suffered from severe chronic interstitial nephritis, showing marked nitrogen retention and acidosis. It is worthy of note that E. M. was up and about at the time of the first analyses, while A. N., after a short stay in the hospital, was at home for a period of seven weeks feeling improved. In both of these cases there was pronounced acidosis, and at the end the carbon dioxid dropped to such a low level as to be incompatible with life. The observations of Whitney[11] make it evident that such low figures may be the direct cause of death. As these patients did not receive alkali (until after the last recorded test), the carbon dioxid obviously fell to a lower level than would otherwise have been the case.

W. W. and J. McC. represent cases of chronic nephritis admitted to the hospital with pronounced symptoms of acidosis. Although both patients died about one month after leaving the hospital, they showed considerable clinical improvement, this being coincident with the rise in the carbon dioxid combining power of the blood.

The last two patients, M. McA. and W. C., men of 44 and 49 years, respectively, were cases of acute nephritis showing pronounced acidosis (very marked dyspnea), but ending in complete recovery. Although this type of case is apparently not frequently encountered, it furnishes an interesting contrast to the preceding two groups. W. C. was admitted supposedly in

TABLE 2.—ACIDOSIS IN CHRONIC AND ACUTE NEPHRITIS

Case	Date	CO_2 Combining Power C.c. per 100	Creatinin, Mg. per 100 C.c. Blood	Urea Nitrogen, Mg. per 100 C.c. Blood	Remarks
E. M.	11/30/15	24	17.5	97	
	12/ 4/15	21	21.5	129	
	12/10/15	26	22.3	132	
	12/17/15	15	24.2	150	
	12/24/15	12	26.7	200	Death in chronic nephritis apparently due to acidosis; no alkali given
A. N.	3/12/18	31	8.6	97	
	3/26/18	28	12.1	110	
	4/16/18	23	11.2	78	
	5/ 7/18	25	15.2	76	
	5/24/18	12	17.0	148	
W. W.	2/11/16	23	8.5	55	
	2/23/16	21	12.5	76	
	3/ 7/16	52	10.4	60	Acute exacerbation of chronic nephritis; clinical improvement coincident with rise in alkali reserve; alkali given for a time
	4/ 7/16	54	9.5	39	
	5/10/16	22	9.6	56	
J. McC.	12/28/15	20	5.1	64	
	1/ 8/16	56	4.5	39	
	1/11/16	58	5.4	39	
	2/ 4/16	40	4.8	36	
M. McA.	1/25/16	22	4.6	71	
	4/11/16	45	2.7	17	
	5/ 8/17	..	2.4	17	
W. C.	1/15/16	22	3.5	44	Severe acidosis in acute nephritis with complete recovery
	1/17/16	58	4.1	62	
	1/19/16	56	3.2	53	
	1/28/16	..	1.9	19	
	6/11/18	..	1.8	16	

"uremic" coma. On estimating the creatinin and urea in the blood, however, we were surprised at the comparatively slight nitrogen retention, but an examination of the carbon dioxid combining power disclosed the apparent difficulty. Two infusions of sodium bicarbonate, 12 gm. each, on the fifteenth and sixteenth, produced quite remarkable clinical results, and in less than two weeks the blood findings were normal.

9. Van Slyke, D. D.; Stillman, Edgar, and Cullen, G. E.: J. Biol. Chem. **30**: 401 (June) 1917.
10. Myers, V. C., and Killian, J. A.: Am. J. M. Sc. **157**: 674 (May) 1919.
11. Whitney, J. L.: Studies on Acidosis; The Immediate Cause of Death, and Remarks on the Acidosis of Nephritis, Arch. Int. Med. **20**: 931 (Dec.) 1917.

Several years ago, Peabody[12] stated that the development of acidosis bears little relation to the accumulation of nonprotein nitrogen in the blood or to the phenolsulphonephthalein output, although he pointed out that in the terminal stages of uremia there may be a high grade acidosis. Our experience likewise leads us to believe that there are many cases of nephritis with considerable nitrogen retention that show little acidosis; but this certainly is not true of the more advanced cases. From the data reported in Table 1, it would appear that all fatal cases of chronic nephritis with marked nitrogen retention show a severe acidosis, sufficient in some instances to be the actual cause of death.

What part acidosis plays in the clinical symptoms of so-called uremia is difficult to answer. Patients with pronounced acidosis present a somewhat different clinical picture; but until we possess additional information regarding the cause of uremic symptoms, whether they are due to a toxic base such as methylguanidin, to a deficiency in calcium, or to something else, it will not be possible to clear up this problem satisfactorily. Palmer and Henderson, Sellards, Peabody and Whitney, in the papers previously referred to, have given illuminating discussions of the acidosis problem in nephritis. So far as the acidosis goes, it is now possible to obtain very reliable information from the carbon dioxid combining power of the blood plasma with the relatively simple Van Slyke method; and furthermore, the administration of alkali can be particularly well controlled with this method. Acidosis is a fairly prominent feature of many cases of acute nephritis, and is present in severe form in all terminal cases with marked nitrogen retention.

CONCLUSIONS

All fatal cases of chronic nephritis with marked nitrogen retention show a severe acidosis, sufficient in many instances to be the actual cause of death.

In some cases of acute nephritis and acute exacerbation of chronic nephritis the distress is apparently due to the acidosis, since the judicious use of sodium bicarbonate results in general clinical improvement. With the rise in the carbon dioxid combining power of the blood, the dyspnea and hyperpnea disappear.

12. Peabody, F. W.: Clinical Studies on the Respiration, II, The Acidosis of Chronic Nephritis, Arch. Int. Med. **16**: 955 (Dec.) 1915.

Child Surveys.—The need for surveys to reveal exactly what a child ought to have in order to be properly reared and what his chances are for getting it under present conditions is one of the topics emphasized in the seventh annual report of the chief of the Children's Bureau of the U. S. Department of Labor. Special investigations made by the Children's Bureau in three American cities show how babies have suffered as a result of the advance in the price of milk. In Baltimore, of 728 children between 2 and 7 years of age, only 29 per cent. are now having fresh milk to drink, as against 60 per cent. a year ago; in Washington, half of those between 2 and 7 years visited by the public health nurses were receiving no fresh milk to drink; and in New Orleans conditions were even worse. Studies of the type recommended by the chief of the Children's Bureau would seek to determine all a child's needs. They would be based on actual living conditions in various types of communities; and would accordingly have a practical and not merely a theoretical value. Through them mothers would obtain an authoritative statement concerning the basic needs of growing children, and communities would be given an insight into the way in which those needs may be met.

HEMOLYTIC ACTIVITY OF SOLUTIONS OF ARSPHENAMIN AND NEO-ARSPHENAMIN *

JOHN A. KOLMER, M.D.
AND
ELIZABETH M. YAGLE, B.S.
PHILADELPHIA

In the preparation of solutions of arsphenamin and neo-arsphenamin for administration by intravenous injection, sterile freshly distilled water or saline solutions (generally 0.4 per cent. sodium chlorid in distilled water) are commonly employed as solvents; the solution of arsphenamin so prepared is acid and highly toxic and requires neutralization with an alkali before administration, 15 per cent. solution of sodium hydroxid being commonly used for this purpose. On the addition of sodium hydroxid, the solution becomes very turbid, owing to the precipitation of the insoluble base of arsphenamin; with the further addition of alkali, the solution is neutralized and "clears," with the formation of the soluble monosodium salt. The addition of still more alkali to this clear solution (usually one third of the amount required for neutralization and clearing) results in the hydrogen atoms of both hydroxyls becoming replaced with sodium, and the production of a disodium salt of arsphenamin. Ehrlich originally advised the administration of the monosodium salt (solutions neutralized with sodium hydroxid just to the point of neutralization and clearing), but recently the tendency has been to add a little excess of alkali with the production or partial production of the disodium salt, which has been regarded as somewhat less toxic. Solutions of neo-arsphenamin, being neutral, do not require the addition of alkali.

While the causes and nature of the reactions following the intravenous injection of arsphenamin and neo-arsphenamin are not as yet definitely known, one of us (Kolmer) with Schamberg, Raiziss and Weiss[1] has recently shown that solutions of arsphenamin in water possess hemolytic properties, and that this factor may exert some influence in the pathogenesis of the untoward symptoms following intravenous injections of arsphenamin. Solutions of neo-arsphenamin were reported as being practically devoid of hemolytic properties.

HEMOLYTIC ACTIVITY OF ARSPHENAMIN

The hemolytic activity of solutions of arsphenamin in water may be ascribed to three factors, namely, (1) the direct hemolytic activity of arsphenamin; (2) the hemolytic activity of nonisotonic solvents (water or hypotonic saline solutions), and (3) the hemolytic activity of sodium hydroxid, especially when used in excess for the production of the disodium salt.

When arsphenamin is dissolved in water and the solution is neutralized with sodium hydroxid, some sodium chlorid is produced but never enough to render the solution isotonic; 0.1 gm. of arsphenamin dissolved in water and neutralized with sufficient sodium hydroxid to produce the monosodium or disodium salt yields about 0.0247 gm. of sodium chlorid. *For the*

* From the Dermatological Research Laboratories.

1. Schamberg, J. F.; Kolmer, J. A.; Raiziss, G. B., and Weiss, Charles: Laboratory and Clinical Studies Bearing on Causes of the Reactions Following Intravenous Injections of Arsphenamin and Neo-Arsphenamin, Arch. Dermat. & Syph. **1**: 235 (March) 1920.

preparation of isotonic solutions, varying strengths of sodium chlorid in distilled water must be used according to the total volume of fluid desired; a salt solution of one uniform strength does not suffice for all concentrations, as thus indicated:

0.1 gm. in 50 c.c. isotonic solution requires the use of 0.82 per cent. sodium chlorid solution (0.6 gm. in 300 c.c.).
0.1 gm. in 40 c.c. isotonic solution requires the use of 0.81 per cent. sodium chlorid solution (0.6 gm. in 240 c.c.).
0.1 gm. in 30 c.c. isotonic solution requires the use of 0.79 per cent. sodium chlorid solution (0.6 gm. in 180 c.c.).
0.1 gm. in 20 c.c. isotonic solution requires the use of 0.77 per cent. sodium chlorid solution (0.6 gm. in 120 c.c.).
0.1 gm. in 10 c.c. isotonic solution requires the use of 0.68 per cent. sodium chlorid solution (0.6 gm. in 60 c.c.).
0.1 gm. in 5 c.c. isotonic solution requires the use of 0.47 per cent. sodium chlorid solution (0.6 gm. in 30 c.c.).
0.1 gm. in 4 c.c. isotonic solution requires the use of 0.33 per cent. sodium chlorid solution (0.6 gm. in 24 c.c.).

Since salt solutions varying from 0.8 to 0.9 per cent. may be regarded as isotonic for practical purposes, the standard physiologic sodium chlorid solution (0.85 per cent.) may be used when each 0.1 gm. of arsphenamin is dissolved in 30 c.c. or more of saline solution (equivalent to 0.6 gm. dissolved in 180 c.c. or more); possibly the same solution could be used when each 0.1 gm. is dissolved in 20 c.c. (equivalent to 120 c.c. for 0.6 gm.), which is generally recommended; but when more concentrated solutions are employed, the strength of the saline solution varies accordingly and becomes increasingly important, since concentrated solutions of arsphenamin are more hemolytic than dilute solutions.

The results of experiments shown in Table 1 were observed by preparing solutions of the acid (non-neutralized) and of the monosodium (alkali added just to neutralization and clearing) and disodium (one third excess alkali) salts of arsphenamin in water and isotonic saline solutions in seven concentrations varying from 0.1 gm. in 50 c.c. (equivalent to 0.6 gm. in 300 c.c.) to 0.1 gm. in 4 c.c. (equivalent to 0.6 gm. in 24 c.c.); each of the resulting forty-two solutions was tested for hemolytic activity by placing 1 c.c. in eight test tubes and adding increasing amounts of a 50 per cent. suspension of washed human erythrocytes, thus: 0.1, 0.2, 0.4, 0.6, 0.8, 1.0, 2.0 and 3.0 c.c. These mixtures and controls were placed in a water bath at 38 C. for one hour and then in a refrigerator over night, the occurrence and degree of hemolysis being recorded the following day.

TABLE 1.—THE HEMOLYTIC ACTIVITY OF ARSPHENAMIN IN VARYING SOLUTIONS FOR HUMAN ERYTHROCYTES*

Arsphenamin	Acid Solutions		Monosodium Solutions		Disodium Solutions	
	Water†	Isotonic Saline	Water	Isotonic Saline	Water	Isotonic Saline
0.1 gm. in 50 c.c. (0.6 in 300 c.c.)	0.1	<0.1	0.2	<0.1	0.4	<0.1
0.1 gm. in 40 c.c. (0.6 in 240 c.c.)	0.1	<0.1	0.2	<0.1	0.4	<0.1
0.1 gm. in 30 c.c. (0.6 in 180 c.c.)	0.1	<0.1	0.4	<0.1	0.6	0.2
0.1 gm. in 20 c.c. (0.6 in 120 c.c.)	0.2	<0.1	0.4	<0.1	0.6	0.2
0.1 gm. in 10 c.c. (0.6 in 60 c.c.)	0.2	<0.1	0.6	<0.1	1.0	0.4
0.1 gm. in 5 c.c. (0.6 in 30 c.c.)	0.2	<0.1	0.6	<0.1	1.0	0.4
0.1 gm. in 4 c.c. (0.6 in 24 c.c.)	0.2	0.1	0.8	0.2	1.0	0.6

* This table gives the largest amounts of a 50 per cent. suspension of washed erythrocytes completely hemolized by 1 c.c. of each solution of arsphenamin after the mixtures had been incubated at 38 C. for one hour and stood in a refrigerator over night.
† Water alone in 1 c.c. caused the complete hemolysis of 0.2 c.c. of cells.

In Table 2 are shown the results of duplicate experiments conducted at the same time with sheep erythrocytes. Additional experiments were conducted in exactly the same manner, employing defibrinated rabbit blood and rabbit blood collected with sodium fluorid to prevent coagulation, in order to test the hemolytic properties of the solutions under conditions more closely approaching those in vivo and in the presence of plasma or serum.

The results of the four sets of experiments were closely parallel and may be thus summarized:

1. Acid or non-neutralized solutions and solutions of the monosodium and disodium salts of arsphenamin in isotonic saline solution were decidedly less hemolytic than corresponding solutions in plain distilled water. Even in isotonic saline all solutions of arsphenamin showed some hemolysis, owing to the direct hemolytic activity of the drug itself, as previously mentioned. As shown in Tables 1 and 2, while 1 c.c. of a solution of arsphenamin in water in the proportion of 0.6 gm. in 120 c.c. caused the complete hemolysis of from 0.6 to 1.0 c.c. of 50 per cent. suspensions of human and sheep erythrocytes, similar solutions in isotonic saline solution hemolyzed only from 0.1 to 0.2 c.c. of the same cells, these and similar results with defibrinated and fluorided rabbit blood indicating that *solutions of arsphenamin in isotonic soline solutions are generally from three to ten times less hemolytic than similar solutions in plain distilled water.*

TABLE 2.—THE HEMOLYTIC ACTIVITY OF ARSPHENAMIN IN VARYING SOLUTIONS FOR SHEEP ERYTHROCYTES*

Arsphenamin	Acid Solutions		Monosodium Solutions		Disodium Solutions	
	Water†	Isotonic Saline	Water	Isotonic Saline	Water	Isotonic Saline
0.1 gm. in 50 c.c. (0.6 in 300 c.c.)	0.1	<0.1	0.4	<0.1	0.8	<0.1
0.1 gm. in 40 c.c. (0.6 in 240 c.c.)	0.1	<0.1	0.4	<0.1	1.0	<0.1
0.1 gm. in 30 c.c. (0.6 in 180 c.c.)	0.1	<0.1	0.8	<0.1	1.0	0.1
0.1 gm. in 20 c.c. (0.6 in 120 c.c.)	0.1	<0.1	0.8	<0.1	1.0	0.2
0.1 gm. in 10 c.c. (0.6 in 60 c.c.)	0.2	<0.1	1.0	<0.1	1.0	0.2
0.1 gm. in 5 c.c. (0.6 in 30 c.c.)	0.4	0.1	3.0	<0.1	2.0	0.8
0.1 gm. in 4 c.c. (0.6 in 24 c.c.)	0.8	0.2	3.0	0.2	3.0	1.0

* This table gives the largest amounts of a 50 per cent. suspension of washed erythrocytes completely hemolized by 1 c.c. of each solution of arsphenamin after the mixtures had been incubated at 38 C. for one hour and stood in a refrigerator over night.
† Water alone (1 c.c.) caused the complete hemolysis of 0.6 c.c. of cells.

2. *Concentrated solutions of arsphenamin in water and isotonic saline are more hemolytic than dilute solutions;* this is to be expected, owing to the direct hemolytic activity of arsphenamin, which effects are naturally most marked in concentrated solutions. For example, while 1 c.c. of a solution of the disodium salt in isotonic saline in proportion of 0.6 gm. of arsphenamin in 300 c.c. failed to produce complete hemolysis of 0.1 c.c. of 50 per cent. suspensions of human and sheep erythrocytes, concentrated solutions, as 0.6 gm. in 24 c.c. of isotonic saline, produced complete hemolysis of from 0.6 to 1.0 c.c. of cells, indicating that the latter solution was from six to ten times more hemolytic than the dilute solution. This gradual increase in hemolytic activity of concentrated solutions is shown in Tables 1 and 2, and similar results were observed with defibrinated and fluorided rabbit blood.

3. Solutions of the monosodium salt of arsphenamin in water and saline are more hemolytic than acid solutions, and solutions of the disodium salt are more hemolytic than those of the monosodium salt. We have ascribed these differences to the well known and marked hemolytic activity of sodium hydroxid and alkalis in general. Of most practical significance are

the relative hemolytic activities of solutions of the monosodium and disodium salts; for example, 1 c.c. of a solution of the monosodium salt of arsphenamin in isotonic saline solution in the proportion of 0.6 gm. in 120 c.c. produced complete hemolysis of less than 0.1 c.c. of human and sheep corpuscles, whereas similar solutions of the disodium salt caused complete hemolysis of 0.2 c.c. of the same cells. These and similar examples with rabbit blood indicate that solutions of the disodium salt of arsphenamin are from two to eight times more hemolytic than corresponding solutions of the monosodium salt. We may repeat in this connection that solutions of the monosodium salt are designated as those to which just sufficient sodium hydroxid had been added to neutralize and "clear" the solution; solutions of the disodium salt contained this amount of alkali plus one third excess. Whether the monosodium and disodium salts of arsphenamin are more hemolytic than the base has not been determined; we have ascribed the results to the alkali, the solutions of the disodium salt being more hemolytic in proportion to the larger amounts of alkali added to the solutions.

HEMOLYTIC ACTIVITY OF NEO-ARSPHENAMIN

Neo-arsphenamin, in contrast to arsphenamin, is not hemolytic; but *dilute solutions of neo-arsphenamin in sterile distilled water are hemolytic, whereas concentrated solutions are not; both dilute and concentrated solutions in physiologic sodium chlorid solution (0.85 per cent. sodium chlorid in distilled water) are without demonstrable hemolytic properties.*

TABLE 3.—THE HEMOLYTIC ACTIVITY OF NEO-ARSPHENAMIN IN WATER AND PHYSIOLOGIC SODIUM CHLORID SOLUTION FOR HUMAN ERYTHROCYTES

Neo-Arsphenamin	Hemolytic Activity	
	Solutions in Water*	Solutions in Saline
0.1 gm. in 50 c.c. (0.9 in 450 c.c.)	0.6 †	No hemolysis
0.1 gm. in 40 c.c. (0.9 in 360 c.c.)	0.6	No hemolysis
0.1 gm. in 30 c.c. (0.9 in 270 c.c.)	0.4	No hemolysis
0.1 gm. in 20 c.c. (0.9 in 180 c.c.)	0.4	No hemolysis
0.1 gm. in 15 c.c. (0.9 in 135 c.c.)	0.4	No hemolysis
0.1 gm. in 10 c.c. (0.9 in 90 c.c.)	0.2	No hemolysis
0.1 gm. in 5 c.c. (0.9 in 45 c.c.)	<0.2	No hemolysis
0.1 gm. in 4 c.c. (0.9 in 36 c.c.)	<0.2	No hemolysis
0.1 gm. in 3 c.c. (0.9 in 27 c.c.)	No hemolysis	No hemolysis
0.1 gm. in 2 c.c. (0.9 in 18 c.c.)	No hemolysis	No hemolysis
0.1 gm. in 1 c.c. (0.9 in 9 c.c.)	No hemolysis	No hemolysis

* Water alone (1 c.c.) caused the complete hemolysis of 0.4 c.c. of a 10 per cent. suspension of corpuscles.

† The largest amount of a 10 per cent. suspension of washed human erythrocytes in physiologic sodium chlorid solution completely hemolyzed after incubation at 38 C. for one hour and stood over night in a refrigerator.

The results of experiments conducted as described above, except that washed human corpuscles in 10 per cent. suspension were employed, are shown in Table 3. Duplicate tests were conducted with defibrinated and fluorided rabbit blood.

When neo-arsphenamin is dissolved in water, some inorganic matter is produced, including sodium chlorid. The exact amount of sodium chlorid produced by a given amount of the drug remains to be determined; but it would appear, according to our results, that when 0.9 gm. of neo-arsphenamin is dissolved in 27 c.c. of water, enough salt is furnished to render the solution isotonic. This indicates that in 3 per cent. solutions of neo-arsphenamin there is produced somewhere in the neighborhood of 0.7 per cent. inorganic salts responsible for isotonicity or, in other words, the solution of 0.9 gm. of neo-arsphenamin in about 30 c.c. of water produces about 0.2 gm. of these salts sufficient for rendering the water isotonic. As shown in Table 3, dilute solutions of neo-arsphenamin (0.9 gm. in 90 c.c. or more of water) are decidedly hemolytic because the inorganic salts are too highly diluted with water; solutions of 0.9 gm. in from 36 to 50 c.c. are slightly hemolytic, while solutions of 0.9 gm. in 30 c.c. or less of water are nonhemolytic. These results would have been more striking if 50 per cent. suspensions of corpuscles had been used, because a 10 per cent. suspension in saline solution, as employed in these experiments, carried over more isotonic sodium chlorid solution than a 50 per cent. suspension of cells.

As shown in Table 3, all solutions of neo-arsphenamin in physiologic sodium chlorid solution were nonhemolytic; unquestionably, all solutions, and particularly the concentrated solutions, were hypertonic by reason of the addition of the sodium chlorid liberated by the solution of the drug, but none of the solutions produced hemolysis.

PRACTICAL SIGNIFICANCE

The practical significance of these results depends almost entirely on the importance of intravascular hemolysis following the intravenous administration of arsphenamin and neo-arsphenamin; if hemolysis is held responsible for some of the untoward effects following the administration of these drugs, the results are of considerable practical importance and clearly indicate the adoption of certain steps in the technic of administration calculated to reduce the degree of hemolysis. Animal tests consisting of the intravenous injection of rats with 2 per cent. solutions of the disodium salt of arsphenamin in water and in isotonic saline have not shown constant differences in toxicity; similar tests employing 4 per cent. solutions of neo-arsphenamin in water and physiologic sodium chlorid solution have yielded closely similar results so far as life or death of the experimental animals were concerned. Possibly these tests are not sufficiently delicate for eliciting the effects ascribable to hemolysis alone; abundant clinical experience has shown that solutions of arsphenamin in water are well borne, and some physicians believe that the solution of the disodium salt of arsphenamin is better borne than that of the less hemolytic solution of the monosodium salt. However, comparative studies may show differences and a decrease of reactions in favor of the use of the less hemolytic solutions; we are not aware of such studies having been made on a sufficiently large scale to be conclusive, but suggest the advisability of conducting the investigation by reason of the very important practical value of the subject.

TECHNIC FOR REDUCING HEMOLYTIC ACTIVITY

While hemolysis in vivo may be insufficient to produce appreciable harm, it would appear quite certain not to do good, and it is advisable to reduce as much as possible the hemolytic activity of solutions of arsphenamin and neo-arsphenamin; these objects may be obtained by observing the following points in technic:

1. By administering neo-arsphenamin dissolved in sterile physiologic sodium chlorid solution instead of plain distilled water.

2. By preparing solutions of arsphenamin in a saline solution of sufficient strength to render the solution isotonic. The strength of the saline depends on the

concentration of the drug; for example, solutions of 0.6 gm. of arsphenamin in 120 c.c. or more, and of 0.4 gm. in 80 c.c. or more, may be made with physiologic sodium chlorid solution, whereas more concentrated solutions require from 0.3 to 0.7 per cent. saline as described above to secure isotonic solutions, according to the concentration of the solution of arsphenamin the physician is accustomed to prepare. The strength of the saline is the same for solutions of both the monosodium and disodium salts. Probably sterile physiologic sodium chlorid solution may be used for preparing the concentrated solutions of arsphenamin; but the resulting solutions would be hypertonic. These hypertonic solutions, however, are not likely to prove hemolytic, as experiments have shown that solutions of sodium chlorid in distilled water may be as high as 7 per cent. before producing hemolysis of fresh citrated human blood.

3. By avoiding the intravenous administration of concentrated solutions of arsphenamin for the reasons already given, concentrations of 0.6 gm. of arsphenamin in 60 c.c. or less of water or isotonic saline markedly increase hemolytic activity; more dilute solutions, as 0.6 gm. in from 120 to 180 c.c. of water or saline, are much less hemolytic.

4. By giving the injections slowly rather than rapidly, and particularly if concentrated solutions are being administered with a syringe; with slow injections there is more opportunity afforded for dilution of the hemolytic solution of arsphenamin with blood plasma and consequent reduction in hemolytic activity.

5. By avoiding the use of an excess of sodium hydroxid; whether solutions of the disodium salt are less toxic than solutions of the monosodium salt is yet to be determined in a conclusive manner. From the standpoint of hemolysis alone, the solution of monosodium salt (just enough alkali added to neutralize and "clear" the solution) is preferable to solutions to which one third excess of alkali has been added; probably the practice of adding enough alkali just to neutralize the solution plus one fifth more will prove the best practical procedure.

CONCLUSIONS

1. All solutions of arsphenamin are hemolytic, owing primarily to the direct hemolytic activity of arsphenamin itself.

2. Solutions of arsphenamin in isotonic saline solution are from three to ten times less hemolytic than solutions in water.

3. The hemolytic activity of solutions of arsphenamin in water and isotonic saline is unavoidably increased by the addition of sodium hydroxid for purposes of neutralization; the addition of an excess of alkali increases hemolytic activity.

4. Concentrated solutions of arsphenamin in water and isotonic saline are more hemolytic than dilute solutions.

5. Neo-arsphenamin is not hemolytic.

6. Dilute solutions of neo-arsphenamin in water, as 0.9 gm. in 90 c.c. or more of water, are hemolytic, owing to hypotonicity of the solution. Concentrated solutions, as 0.9 gm. in 30 c.c. or less of water, are not hemolytic, owing to the presence of sufficient inorganic salts from the drug to render the solution approximately isotonic.

7. To avoid hemolysis in the administration of dilute solutions of neo-arsphenamin, sterile physiologic sodium chlorid solution prepared of freshly distilled water should be used; when the concentrated solutions are administered (each 0.1 gm. dissolved in 3 c.c. or less), sterile distilled water may be employed.

8. The degree of hemolysis produced by the administration of arsphenamin may be lessened (*a*) by using instead of water sterile saline solutions of such strength as to render the solutions isotonic; (*b*) by avoiding the administration of concentrated solutions; (*c*) by carefully neutralizing and "clearing" the solution with sodium hydroxid, counting the drops or otherwise measuring the amount necessary, and adding not more than a fifth of this amount in excess, and (*d*) by giving the injections slowly so as to permit gradual mixing and dilution of the solution with the blood.

DIFFERENCES IN PATHOLOGY OF PANDEMIC AND RECURRENT FORMS OF SO-CALLED INFLUENZA

DOUGLAS SYMMERS, M.D.
Director of Laboratories, Bellevue and Allied Hospitals

WITH THE COLLABORATON OF

MORRIS DINNERSTEIN, M.D., AND A. D. FROST, M.D.
Pathologist and Pathologic Intern, Respectively, Bellevue Hospital

NEW YORK

In New York City the first recurrent epidemic of so-called influenza, now fortunately at an end, presented certain noteworthy differences from the pandemic disease which prevailed in the latter part of 1918. The recurrent disease, while it incapacitated thousands, pursued a milder course, complicating pneumonias were relately few, and the death rate, of course, did not approach the appalling figures of the previous eruption. On the other hand, the recurrent disease was characterized by a greater variety of pulmonary lesions—among other things, by concomitant semipurulent pleural exudates, by multiple pleural and subpleural abscesses, by frequent and extensive purulent invasion of the interlobar and interlobular septums of the lungs, by the formation of solitary, oftener multiple, discrete or confluent abscesses of the parenchyma, and by an extraordinary range of pneumonic lesions. The pathologic anatomy of the recurrent disease is important, not only from the standpoint of the diagnosis and treatment of the acute process, but also because the nature and distribution of the anatomic changes are such that we may expect both immediate and remote sequelae, some of which will probably demand operative interference.

The pandemic of 1918 is fresh in memory; but for purposes of comparison it may be recalled that the disease was strikingly abrupt in onset and that pneumonic complications were seldom absent, that they occurred early, progressed with amazing rapidity, and yielded a high mortality. At necropsy, the changes in the lungs were so constant that the anatomic diagnosis of so-called influenzal pneumonia could be postulated with almost absolute certainty, even in the absence of any knowledge of the clinical history. Variations occurred, of course, but were numerically inconsiderable. For example, in the first epidemic, the pleura was almost invariably free from signs of exudate. The inflammatory changes in the lungs, commencing in the deeper portions of both lower lobes apparently simultaneously, and progressing rapidly,

toward the periphery, often spared many intervening or surface lobules. The pleura almost always escaped literally, it would appear, because death took place before the pleura had time to react. In certain localities, empyema frequently occurred as a sequel to pneumonia; but the rapidly fatal pneumonias were seldom actually accompanied by inflammatory changes in the pleura. In the recurrent epidemic, on the contrary, many hundreds came down with a disease of comparatively trifling proportions; pneumonic complications, when present at all, were late and progressed without unusual rapidity. In the recurrent disease, the anatomic picture was extremely variable, so much so that, in order to classify the pleural and pulmonary changes, one must resort to the process of grouping; and between groups and the individual members of different groups there are numerous gradations.

DEATH FROM ASPHYXIA WITHOUT PNEUMONIA

Near the close of the epidemic of 1918, one of us [1] described a variety of so-called influenzal infection which was characterized anatomically by generalized intense congestion of the viscera, without evidences of pneumonic lesions, or attended by lesions of such small size as to be negligible. Death was accompanied by signs of asphyxia and, at necropsy, the right side of the heart was found to be immensely distended by deep bluish black fluid and clotted blood. The lungs were large, heavy and deep bluish, and the pleura was thin, smooth and glistening. On section, the cut surface was of the smoothness of velvet, and pressure yielded large amounts of dark fluid blood with or without an admixture of dirty, pinkish, edematous fluid. The mucosa of the larger bronchi was covered by a thin sheeting of whitish exudate, beneath which the membrane was swollen and intensely injected. Virtually every other organ in the body was injected to a correponding extent. In the recurrent epidemic we have encountered five cases of identical nature. In all of them poisoning by wood alchohol was suspected because of the intense and widespread injection of the tissues, particularly the lungs and brain. Chemical investigation of the viscera in every case, however, was negative. Of the cases observed in 1918 and 1920—seven in all—the clinical histories were obtainable in six and showed that the patients had been ill for periods varying from a week to twenty-one days with cyanosis and generalized aches and pains, prostration, elevation of temperature, injection of the pharynx, and numerous moist and squeaky râles scattered over both sides of the chest. In two cases, signs of meningeal irritation were present in the form of muscular twitchings. In one case of the seven, death was sudden.

EMPYEMA AND PULMONARY ABSCESSES

In the recurrent epidemic, forty-five cases were investigated by necropsy at Bellevue Hospital. Of this number, the pleura was involved in twenty-seven (60 per cent.). Of the twenty-seven cases, effusions occurred into the pleural cavity in eighteen, or forty per cent. of the total number of cases observed at necropsy; in twelve cases (26.6 per cent.), the effusions were semipurulent and unilateral in distribution, and in two cases bilateral; the remaining four were frankly purulent—two bilateral and two unilateral. Of the twenty-seven cases of pleural involvement, mutiple small subpleural abscesses occurred twelve times (44.4 per cent.) and of these, six were associated with semipurulent effusions and one with frank empyema. All of the seven cases of small subpleural abscesses associated with pleural effusions were found to be accompanied by abscesses in the parenchyma of the lung, the latter being relatively much larger in size. In the remaining five cases of subpleural abscesses, purulent foci in the parenchyma of the lung were absent, and there were no signs of pleural effusion, although the pleura was the seat of edematous fibrinous exudate in every instance. The association of multiple subpleural abscesses with pleural effusions and with abscesses in the parenchyma of the lung is of obvious surgical significance. On the other hand, it appears that multiple small subpleural abscesses may exist alone without giving rise to secondary effusions into the pleura. In the presence of such abscesses, however, it would be rather far fetched to assume that an accompanying effusion represents an independent infection of the pleura. While we have no anatomic evidence to offer that subpleural abscesses of the type described in this paper bear a direct causative relationship to empyema, it is quite probable that if an individual with small subpleural abscesses survives sufficiently long, rupture of or seepage through might readily infect the pleura with the secondary formation of seropurulent or purulent effusions. In short, in the recurrent disease there were cases of pleural effusion, purulent or semipurulent, which were associated with a combination of subpleural and parenchymal abscesses; there were other cases in which subpleural abscesses occurred alone and were not associated with effusions into the pleural cavity; in still other cases, pleural effusions occurred independently of abscess formation either in the pleura or in the lungs.

Of the forty-five cases, sixteen were associated with the presence of intrapulmonic abscesses (35.5 per cent.). In only one of these cases was the abscess solitary. The others were multiple, of irregular distribution, some bilateral, others unilateral, some in the lower lobes, others in the upper. The abscesses varied in size from minute affairs to purulent foci approximating 2 or 3 cm. in diameter. In one case, the upper lobe of the lung was almost completely replaced by multiple discrete or intercommunicating cavities.

THE PLEURAL CHANGES

The inflammatory changes in the pleura presented marked variations:

(*a*) In those cases of pneumonia in which the changes in the lung were obviously of the more acute variety, localized sheets of edematous fibrinous exudate were scattered over the surface of the consolidated lung, and when stripped away left an opaque, finely granular, deep bluish surface, scattered through which innumerable minute hemorrhagic specks were often discernible. In such cases, the exudate was practically never attended by the excessive accumulation of fluid in the corresponding pleural cavity.

(*b*) A second group of cases was characterized by the extensive deposit of fibrinous material over the surface of the lung, the membrane being thick, tough, opaque, dirty yellowish white, firmly attached, and often thrown into innumerable small corrugations. These membranous deposits were obviously in proc-

1. Symmers, Douglas: The Significance of the Vascular Changes in the So-Called Pandemic Influenza, New York M. J. **110**: 789 (Nov. 15) 1919.

ess of organization, and were invariably associated with excessive accumulation of semipurulent fluid exudate in the pleural cavity.

(*c*) In a third group of cases, the pleura was the seat of diffuse or patchlike collections of succulent, yellowish exudate which penetrated the lung substance at irregular intervals. Section of the consolidated lung in such cases showed thick, edematous prolongations extending from the pleura and surrounding individual lobules or small groups of lobules, not alone at the periphery of the lung, but deep in its substance. In many instances the interlobar septums were extensively invaded, the lobes were firmly glued together, and not infrequently collections of fluid exudate were included between them.

(*d*) In a fourth group of cases, the pleura presented solitary or multiple, pea-sized or slightly larger, rounded projections which were yellowish, soft in consistency, and, on section, released moderately thick, yellowish, cloudy fluid. These small abscesses lay in or immediately beneath the pleura and were often associated with quantities of seropurulent fluid in the dependent portions of the cavity. The intervening pleura was usually the seat of irregular or diffuse collections of edematous fibrinous exudate The external covering of the abscesses was intact as far as the unaided eye could determine. Microscopic examination of the pleura in these cases showed the presence of rounded or elongated, circumscribed masses of polymorphonuclear leukocytes enclosed in a meshwork of finely fibrillated fibrin, the whole lying in or just beneath the pleura, sometimes surrounded by a thin but distinct layer of connective tissue representing, apparently, the result of proliferation of the walls of the lymph vessels. In certain of these minute abscesses the limiting connective tissue contained small, injected blood vessels.

It is obvious that the changes in the pleura are of extreme importance, not only from the standpoint of immediate effects, but because they are such that, if the patient survives, sequelae may be expected in a certain proportion of cases in the form of organization of the pleural membranes, with complete or partial obliteration of the cavity and interference with the movements of the corresponding lung, chronic diffuse or sacculated pleural or interlobar empyemas, and chronic interstitial interlobar pleuritis or interlobular pneumonia following organization of the exudate in the pleural extensions. In the same way, one seems justified in the prediction that residuums of pulmonary abscesses may occasion trouble in a certain number of cases in the form of gangrene of the lung following invasion by putrefactive bacteria, organization of the abscess walls with the overgrowth of connective tissue, and the formation of bronchiectases, expectoration of pus from bronchial fistulas, and the like.

PULMONARY LESIONS

In the pandemic of 1918, pneumonia was an almost constant occurrence. The prevailing type was a confluent lobular hemorrhagic and exudative lesion of bilateral distribution associated with areas of acute vesicular emphysema. In the recurrent disease, as we saw it at Bellevue Hospital, the attendant pneumonia conformed to no anatomic type. Of the pulmonary changes, the nearest approach to uniformity was found in the five cases marked by diffuse and intense congestion of the lungs and of virtually every other organ in the body, with dilatation of the heart and death from asphyxia without signs of pneumonia, or with pneumonic foci which were numerically and geographically insignificant. Of the forty-five cases, only three were sufficiently charateristic to be classified with the variety of pneumonia that prevailed in the pandemic sweep. The remaining thirty-seven cases represented a conglomeration of pneumonic lesions, scarcely any two of which bore the same essential features. Among these, however, we were enabled to recognize a group, the members of which seemed to bear a certain general resemblance to the confluent lobular pneumonia of 1918. In these cases both lungs were involved, the lower lobes to a greater extent than the upper. The pleura covering the consolidated areas was irregularly strewn with fibrinous exudate and more or less richly sprinkled with hemorrhagic petechiae, and areas of acute vesicular emphysema were occasionally to be observed. The splotchlike hemorrhagic extravasations in the pleura, so frequently encountered a year ago, were seldom discernible. On the other hand, the consolidated portions not uncommonly showed large nodular or streaklike, firm, dark slate-blue elevations which, on section, revealed a smooth, velvety, bluish black surface, rich in blood—the so-called marantic infarctions or, better, massive hemorrhagic extravasations. The cut surface of the lungs as a whole presented extreme variations both in appearance and in consistency, owing to different combinations of dull reddish or deep bluish or grayish red lobular consolidations, confluent lobules of dull white appearance and semifluid consistency, inflammatory edema, abscess cavities varying in size from the head of a large pin to that of a crabapple, and filled with moderately thick whitish pus, the picture being still further complicated on occasions by the intersection of cream colored bands of infiltrated pleura that surrounded lobules or groups of lobules or that bound one lobe to another. In addition, the mucosa of the larger bronchi was swollen, deep bluish red, and of velvety smoothness. In three cases, large portions of a lobe were consolidated in such fashion as to resemble ordinary croupous pneumonia.

We do not mean to convey the impression that any single group of pneumonias in the recurrent epidemic presented the above described features with anything approaching regularity. On the contrary, as we have already stated, no two sets of pneumonic lungs presented the same essential features in the same essential combination as did the prevailing pneumonia of the pandemic year. Nevertheless, it is possible to select individual features from the array of pneumonias that accompanied the recurrent epidemic, and from them to reconstruct a composite picture of the pneumonia which characterized the pandemic.

Microscopically, the changes in the lung were correspondingly variable. The capillary vessels were universally engorged, intra-alveolar hemorrhages were frequent—sometimes discrete, at other times confluent. Certain vesicles were partially or completely filled by coagulated serous fluid, entangled in which were a few red cells or an occasional round cell. Other vesicles were filled by polymorphonuclear leukocytes and fibrin, and through necrosis and confluence of these, the majority of abscesses appeared to arise. The frequent and abundant appearance of fibrin was in contrast to the lungs of the pandemic disease, in which fibrin threads were rarely demonstrable and then in isolated

localities and small numbers. The interlobar pleural extensions were frequently enormously thickened through the infiltration of polymorphonuclear leukocytes and the deposition of variable quantities of fibrin. Most of these prolongations were ribbon-like in shape but not infrequently became oval or rounded and centrally necrotic; in this way, other abscesses were formed. In still other instances, the intervesicular venules and arterioles were thrombosed, and the exudate in the immediate vicinity showed large areas of necrosis. The smaller bronchi were distended by polymorphonuclear leukocytes, and their epithelial cells were desquamated.

HEART

In the pandemic of 1918, the heart muscle in the majority of cases was deeply congested but otherwise well preserved, both as far as the naked eye and microscopic changes were concerned. In the recurrent epidemic, acute parenchymatous degeneration occurred with great frequency, the heart muscle being flabby, opaque and friable. The immediate cause of death in both epidemics was to be found in immense dilatation of the heart, particularly the right side, the cavities of which were often filled to the point of distention by deep bluish red fluid and partially clotted blood. In one of the Bellevue Hospital cases during the recurrent epidemic, the pericardium was the seat of a semipurulent effusion out of which a pure growth of pneumococcus was secured. With this exception, the pericardium showed no changes worthy of record.

KIDNEYS

In the recurrent epidemic, acute parenchymatous degeneration of the kidneys occurred more frequently and in a more severe form than in the previous disease, the kidneys often being swollen, edematous and flabby, easily torn, and their markings obscured or irregular in distribution. Microscopic examination revealed, in addition to widespread congestion, granular changes in the epithelial cells of the convoluted tubules, occasionally in those of the glomerular tufts.

JAUNDICE

Of the forty-five cases investigated postmortem at Bellevue Hospital, jaundice occurred in only four, and was slight in extent, being limited to the face and upper portions of the chest. At necropsy, a number of factors appeared to participate in its production, namely, congestion and edema of the papilla of Vater and the surrounding mucous membrane of the duodenum, and the presence of mucoid secretions in the larger bile ducts, together with congestion and parenchymatous degeneration of the liver proper.

MISCELLANEOUS COMPLICATIONS

In the recurrent epidemic, degenerative changes in the rectus muscles were observed in Bellevue Hospital only once, and were of mild degree (Zenker's degeneration). In the previous epidemic, this variety of muscle change was encountered in a considerable proportion of cases, and not infrequently was attended by rupture and extravasation of large quantities of blood into the sheath of the muscle, occasionally followed by secondary infection and abscess formation. In another case in the recurrent epidemic, an abscess was found at the hilum of the right testicle associated with a solitary abscess of the upper lobe of the right lung occurring in a hemorrhagic variety of lobular pneumonia. The same patient presented multiple effusions into the joints.

BACTERIOLOGY

Bacteriologic examination of the pleural fluid removed surgically and sent to the laboratory, together with that encountered at necropsy, revealed streptococci in most instances, occasionally *Staphylococcus aureus* and pneumococci. Bacteriologic examination of the pus in the intrapulmonary abscesses almost invariably yielded a pure growth of *Streptococcus hemolyticus,* but occasionally *Staphylococcus aureus.* In three cases, *Streptococcus hemolyticus* was isolated in pure culture from the blood. In the pneumonic exudates themselves, the prevailing micro-organism was a streptococcus. In occasional instances, influenza bacilli and pneumococci were isolated in combination with one another or with streptococci. There were three cases in which massive portions of a lobe were consolidated in such fashion as to resemble ordinary croupous pneumonia. In all of these the exudate was sticky. In two, *Bacillus mucosus-capsulatus* was isolated, in the other *Streptococcus mucosus.* In three other cases, streptococci were isolated from the blood during life; and all of them, at necropsy, presented abscesses of the lungs.

SUMMARY AND CONCLUSIONS

1. The first recurrent epidemic of so-called influenza in New York presented anatomic variations from the pandemic disease of a year before, (*a*) in the form of frequent and widespread inflammatory involvement of the pleura characterized by semipurulent and purulent exudates occurring in immediate association with pneumonic changes; (*b*) by multiple small pleural or subpleural abscesses; (*c*) by purulent infiltration of the interlobular and interlobar pleura, and (*d*) by solitary, oftener multiple, discrete or confluent intrapulmonary abscesses varying in size from a few millimeters to several centimeters.

2. In the pandemic disease of 1918, the participation of the pleura in the pneumonic process was conspicuous by its rarity. In the recurrent epidemic, pleural involvement occurred in 60 per cent. of all cases; and in 40 per cent., purulent or semipurulent effusions were present.

3. In the epidemic of 1918, intrapulmonary abscesses were virtually unknown accompaniments of the pneumonic process. In the recurrent epidemic, they were encountered in 35.5 per cent. of all cases. Of the total number of cases attended by pleural involvement (twenty-seven in all), multiple small pleural or subpleural abscesses occurred in twelve, or in 44.4 per cent.

4. As a result of the recurrent disease, sequelae may be expected in the form of (*a*) organization of the inflamed pleural membranes with partial or complete obliteration of the cavity and interference with the excursions of the corresponding lung; (*b*) delayed, diffuse or sacculated pleural or interlobar empyemas; (*c*) fibrosis of the lung following organization of exudate in the interlobar and interlobular septums of the pleura, and (*d*) gangrene of the lung and bronchiectatic cavities following secondary changes in intrapulmonary abscesses.

5. In the epidemic of 1918, pneumonia was virtually constant, both in point of incidence and in conformation to type. In the recurrent disease, pneumonia was a relatively infrequent event, and the anatomic vaga-

ries in the distribution and structure of the lesions were so numerous that no two sets of lungs were similar in appearance, and often one lung differed markedly from its fellow.

6. In the pandemic disease of 1918, acute degenerative changes in the heart muscle, liver and kidneys were neither frequent nor intense. In the recurrent disease, they were both common and severe. In the pandemic, the blood cultures were almost invariably sterile; in the epidemic, streptococcal septicemia occurred, we estimate, in about 10 per cent. of all pneumonias.

YELLOW FEVER CONTROL IN ECUADOR

PRELIMINARY REPORT

M. E. CONNOR, M.D.
Field Director, International Health Board
GUAYAQUIL, ECUADOR

The files of the National Board of Health of Ecuador show that the first recorded epidemic of yellow fever in the country occurred in the city of Guayaquil in the year 1842, and it was estimated at that time that one half of the population of the city died from this disease during the epidemic.

Yellow fever was probably introduced into Ecuador from Panama by the earlier settlers soon after the appearance of the disease at Panama, and has probably been present in Ecuador since that time, notwithstanding the fact that the records of the sanitary department report as many as three consecutive months in one year having passed without a single recognizable case of the disease. It undoubtedly was present, but in a type so benign as not to be easily diagnosed, especially in children.

The Gorgas commission of the International Health Board in a world survey for endemic yellow fever centers reported that this disease could be "eradicated from the west coast of South America by eradicating it at Guayaquil, Ecuador," and recommended that the attack be made by destroying the stegomyia breeding places in that city.

Arrangements were entered into with the Republic of Ecuador for a cooperative campaign with its national health agency on the following basis:

1. The National Board of Health of Ecuador would supervise the isolation of yellow fever patients and fumigation of houses as might be attempted.
2. The International Health Board would concentrate its efforts on mosquito-proofing the necessary water receptacles, that is to say, antilarvae measures.

The built-up area of Guayaquil occupies about 3 square miles, has a population of 90,000, and contains nearly 6,000 buildings. The average annual rainfall is 60 inches, and occurs principally during the months of January, February, March and April — a relatively short and light rainy season for a tropical city. The elevation of the city above mean tide is about 2 meters, and the topography is that of a plane.

The water supply is taken from a river about 90 kilometers northeast of the city. The present supply provides for 40 liters per capita each day and is delivered from storage tanks through a system of mains for about four fifths of the city area. The ration of water is available in the morning for one and one-half hours only. That part of the city in which it is not possible to make house connections is served by water venders and from public taps or fountains.

The scarcity of water, therefore, makes it obligatory on the residents to store sufficient water for their needs in tanks, barrels and like receptacles.

ANTILARVAE MEASURES

That yellow fever is a place disease is a generally accepted fact. The spot map of yellow fever cases occurring in the city of Guayaquil during the year 1918 brings this out quite clearly, and shows that the vast majority of cases reported up to November of that year occurred in the most densely populated section of the city, or rather in that section in which houses had been erected without any intervening space. A survey of this district revealed the important fact that the vast majority of homes were supplied with from one to twelve water tanks each, in addition to the barrels and smaller receptacles, while the outlying districts depended almost entirely on smaller receptacles, very few tanks being used. Many of the tanks inspected were uncovered or so badly covered that the mosquito experienced no difficulty whatever in gaining access to the water within. The barrels and other receptacles were all uncovered. All tanks inspected on this survey were found to contain the stegomyia larvae; the smaller receptacles were also breeding places, more especially for the culex; and in two instances I noted stegomyia larvae in tanks, while in barrels in the same room only culex larvae could be found.

The stegomyia is essentially a house mosquito, that is to say, it breeds, lives and dies in the same house, it does not fly for any considerable distance, and it avoids bright sunlight; only under rare circumstances is it to be found breeding in streets, yards or fields, at least in Ecuador, and up to now we have not found this extraneous breeding of sufficient importance to be considered a factor in the present campaign.

The antilarvae measures were started Nov. 25, 1918, and were based on the findings of the early survey. The first step was to mosquito-proof all tanks as soon as possible, and the organization concentrated its efforts on this work during the earlier weeks of the campaign.

A graph to be published later will show that yellow fever cases decreased rapidly as the tanks were made mosquito-proof; and when the number of breeding places in tanks were reduced to 5 per cent. of the total number inspected, the disease had been controlled, but was not considered eradicated. This reduction was taking place during the height of the rainy season and while receptacles of water, other than tanks, still remained stegomyia breeding places.

Nearly all tanks used in the city for conserving water are made in the country, are rectangular, and have a capacity of from 10 to several hundred gallons. The water enters the tanks from above, the inlet pipe resting on the top of one side of the tank; the outlet pipe is usually from 1 to 2 inches above the level of the tank floor, and even when the tanks are empty, so far as getting any water from them by means of the faucet is concerned, there always remains enough water in the tank for an ideal breeding place for the mosquito. This fact explains in part why tanks are a more desirable breeding place for the mosquito: this class of water container is seldom without water, and the surface of the water is disturbed only during the morning for one hour or so.

In the barrels and the smaller containers, conditions are not so favorable for the mosquito, as the water is always taken from these containers by means of a pail or large cup and always from above; consequently, during daylight hours there is considerable movement of the water surface which is not conducive to the selection of this class of receptacle as a breeding place by a mosquito of the habits of the stegomyia; and further, there comes a time rather frequently in the dry season when the barrel and similar receptacles are empty by reason of the scarcity of water or for purposes of cleaning the container, a condition that does not obtain with tanks, at least with the same frequency. It is fair to assume that if the stegomyia mosquito can exercise the instinct for self preservation, it will select and even hunt for water in a tank in which to deposit her eggs as offering a more favorable opportunity for the development of same as contrasted with chances in a barrel or similar receptacle.

The present campaign has been based on the thought that with a reduction of stegomyia mosquito breeding in water tanks there should be a reduction in the number of cases of yellow fever, and that if the effort is continued the disease will be eradicated. All containers of fresh water in or near human habitation have been treated; but the thought to be conveyed is that the tanks as water containers have been given first consideration.

There are nearly 7,000 water tanks in use in the city, and nearly 30,000 other containers to be inspected. The tanks have been covered with either copper screen, galvanized iron, or wooden covers. Of the three classes of covers, the galvanized iron has proved the most satisfactory and the cheapest; they do not admit of contamination of the water by rats, which is possible with copper screening; nor can they be taken and used for fire wood, as sometimes happens with wooden covers.

Great care is taken that the tanks are so covered that the mosquitoes cannot gain entrance to the water within. We impress on the people that the mosquito is a small insect and naturally can penetrate a small opening. Tanks with perfectly fitting covers are sealed, bearing the stamp of the service, in a manner that the cover of the tank cannot be raised without breaking the seal, and a broken seal indicates to the inspector that a careful inspection of the tank must be made to determine whether the cover has been off long enough for the mosquito to deposit her eggs within.

Public opinion for the work was created through the press, public lectures, posters, handbooks, etc. Yellow fever had so long handicapped and actually retarded the progress of Guayaquil and Ecuador that the public was ready to cooperate in any measure that would aid in the control of this disease, and this effort has been most intelligent and constant. Owing to the scarcity of water, especially in the dry season, it was highly desirable that we should adopt some measure that would free the water containers of mosquito larvae and at the same time conserve the water to the people, and accomplish this result economically. We experimented with different species of fish to determine their usefulness as mosquito larvae consumers.

The first variety of fish used is known locally as the "huaijas," a member of the perch family. This fish readily eats mosquito larvae, but soon tires of its existence in a barrel or small receptacle, and will jump 3 and sometimes 4 feet to free itself from the container. The jumping properties are most often exhibited during the night. It will be readily seen that even when people are willing and anxious to conserve the fish in their water containers, they can hardly be expected to watch them during the night. To counteract this jumping, the service supplied covers for the barrels; but here again we encountered difficulty in keeping the covers on the barrels, and there are good local reasons why it was not desirable to insist that all barrels be equipped with covers and the water drawn off by faucet. We were forced to abandon the huaijas, on account of its jumping, for the chata, a small fish which proved to be a voracious eater of mosquito larvae. It has the additional property of spending the greater part of its time at the surface of the water; but when any one approached the container, the chata would immediately swim to the bottom, remaining there until the cause of its fright had been removed.

The chalaco also was tried out and has given very good results. Top minnows or "millions," were given a trial, and are quite satisfactory for certain class of containers. These fish are very delicate and do not survive long in the ordinary container unless some care is given to them. As long as fish are available, they will be used for all containers other than tanks.

The present campaign was actually started, Nov. 25, 1918, with twelve sanitary districts. The number of districts was gradually increased up to twenty-nine. This number was maintained for a few months, when reduction was permissible. Oct. 1, 1919, the city was redivided into ten sanitary districts. The inspection cycle was arranged so that every home in the city should be visited at least once every seven days, including Sundays. Sanitary inspectors started in their districts on Monday, and those not able to conclude on Saturday were aided by auxiliary squads.

On the farms outside the city of Guayaquil, all large containers were eliminated; and as these farms are usually located on the river and the homes of the laborers on the banks of the river, it was decided to recommend that receptacles holding not more than 5 gallons of water be used in place of barrels. It had previously been observed that the vast majority of the laborers do not use in their homes more than 5 gallons of water in twenty-four hours. Bathing, washing of clothes, etc., is usually done in the river, so that there is really no need for conserving water longer than twenty-four hours in the homes. By this method it is believed that the stegomyia mosquito can be eliminated in those areas where this measure can be put in force.

Death and Blindness Caused by Wood Alcohol.—Owing to the heavy increase recently noted in the number of deaths and cases of blindness resulting from the drinking of wood alcohol by those ignorant of its dangers, the National Committee for the Prevention of Blindness, 130 East Twenty-Second Street, New York, is sending broadcast special warnings of the tragic consequences which may follow the use of wood alcohol, denatured alcohol and medicated alcohol for beverage purposes. The harmful action of this poison comes not only from taking it internally, but may likewise be induced by breathing its fumes, and by absorption through the mucous membranes of the body. Its effect is usually noticeable very shortly after exposure. Within a few hours after drinking, acute headache is noted, usually accompanied by violent attacks of vomiting, body pains, extending over the region of the kidneys, and excessive dizziness. Vision may become impaired, total blindness occur, and death itself result.—*Illinois Health News,* October, 1919.

ARTERIAL HYPERTENSION*

FREDERICK M. ALLEN, M.D.
NEW YORK

The great importance of arterial hypertension or the conditions associated with it, as a widespread and apparently increasing cause of disability and death, is a self-evident incentive to investigation. At the same time it must be recognized that our knowledge of the subject is in a very confused state, as respects its phases of etiology, mechanism and treatment. Just as with diabetes, the literature contains almost every conceivable variety of opinions and suggestions. The first task of an investigator to choose is what seems significant and valuable among this mass of conflicting material, and the second is to build concrete facts with accurate methods in a clinical field which is still largely a morass of tradition and imagination.

THEORIES REGARDING THE CAUSES OF HYPERTENSION

More or less restriction of salt has been employed for many years by some observant clinicians in the treatment of the various forms of nephritis. The first scientific foundation of both theoretical and practical importance is afforded by the work of the French school, beginning with Widal's demonstration of the rôle of the chlorids, particularly in the causation and treatment of edema, and with the application of this principle to hypertension by Ambard,[1] Combe,[2] Laufer[3] and others. Similar results were obtained in arteriosclerosis by Bayer;[4] but with only a few exceptions the tests with nephritis in Krehl's clinic were negative or doubtful, and the general German experience was opposed to a strict relationship between retention of chlorids and elevation of blood pressure.[5]

In American literature, salt and fluid restriction in hypertension is mentioned casually and incompletely if at all, and the protein intoxication theory is undoubtedly the dominant one. Treatment consists chiefly in low protein diets, the elimination of supposed toxins, or the artificial reduction of pressure by drugs, bleeding, electricity, and the like. Mental and bodily rest is advised to a degree which largely terminates usefulness in life, and many conservative practitioners refrain from any serious attempt to reduce the pressure, and devote themselves to keeping the patient as comfortable as possible, with resignation as to the results.

There are various reasons for this confusion and pessimism. In the German work the cases were not always well chosen and the restriction of salt was generally inadequate, though this work does furnish evidence against any invariable association of hypertension and gross chlorid retention. On the other hand, whether or not protein has any influence on blood pressure, it is impossible to accept Ambard's assertion that it is harmless in nephritis. Ambard considers fluid restriction unnecessary, and in adopting milk diet he comes back to the identical therapeutic program used by the followers of the intoxication hypothesis. The fluid restriction of Laufer, who accepts von Noorden's limit of a liter daily without reckoning the important additional quantities contained in the food, is too lax for the worst cases. Likewise a much stricter exclusion of salt than represented by milk diet is essential for results in really severe cases. These inaccuracies are responsible for an unnecessarily high percentage of cases of absolutely or relatively irreducible hypertension in French, German, American and all other records, and also for the unnecessarily frequent and early deaths from apoplexy, cardiac failure, pulmonary edema and convulsions (misnamed uremic). For the same reason there have been no differences in therapeutic results sufficiently marked to establish any one theory to the satisfaction of all parties.

RESTRICTION OF WATER AND SALT

It would be wrong to ignore the unknown and uncontrollable factors in hypertension and the unsolved problems which they present. But any practitioner who will conform his treatment to one reasonable and definite condition, namely, the necessity of the organism to force a filtrate of water and dissolved substances through a damaged and partially blocked glomerular filter, can readily demonstrate for himself the compensatory element in the hypertension, by observing the fall in pressure and the relief of some attendant symptoms when proper diet reduces the quantity of this filtrate to a minimum. The opposite treatment under the intoxication hypothesis, through unsuitable diets and attempts at "flushing out," entails much harm. In some hypertension cases the mere reduction of the overload of salt and water brings relief which is comparable to the benefits of diet in diabetes.

Fuller laboratory study, particularly by blood analyses, contributes new information of theoretical, prognostic and therapeutic importance. Among the nephritic cases treated in our clinic to date, there have been twenty examples of marked hypertension. Most of these were treated in private hospital status, but four were outpatients. The observations are necessarily empiric, and are subject to modification from wider clinical experience, and particularly to more fundamental and decisive interpretations when animal experiments become available. Numerous data of these cases, function tests according to Ambard's principles, and details of individual histories and results, must be reserved for a more complete publication at a later date.

It may suffice here to state that the patients' ages ranged from 25 to 69 years, with the usual predominance of those past 40. All the cases were of chronic type. Their severity was mostly too great to yield to mere rest and hospital care, and some were known as highly severe cases which had proved intractable to a variety of customary treatments for several years. Bleeding was used temporarily in three critical cases, and brief experiments have been tried with some other measures; but in general the patients were not kept in bed or confined to the house but were treated entirely by diet.

To establish the general principle, the effects of sudden dosage with salt or water in suitable cases are illustrated by two experiments.

In the first experiment (Table 1), attention may be called to the absence of real retention of either salt or water (contrary to the French reports), and to the

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* Read before the American Society for Experimental Pathology, Cincinnati, Dec. 30, 1919.

* Preliminary communication, based on a clinical study in collaboration with Drs. J. W. Mitchell and J. W. Sherrill.

1. Ambard, L.: Thèse de Paris, 1905; Semaine méd. **26**: 361, 1906.
2. Combe, A.: Monatsschr. f. Kinderh. **4**: 13, 82, 1905.
3. Laufer, R. J.: Compt. rend. Soc. de biol. **56**: 249, 1904.
4. Bayer, R.: Arch. f. exper. Path. u. Pharmakol. **57**: 162, 1907.
5. Loeb, A.: Deutsch. Arch. f. klin. Med. **85**: 348, 1905-1906. Brodski, J.: Berl. klin. Wchnschr. **43**: 906, 1906; Deutsch. Arch. f. klin. Med. **93**: 310, 1908. Löwenstein, C.: Arch. f. exper. Path. u. Pharmakol. **57**: 137, 1907.

remarkably high plasma chlorid figures [6] and the elevation of blood pressure accompanying these.

The second experiment (Table 2) was performed on a different patient. The plasma chlorid percentage was not high, and fell lower with the water drinking, while the blood pressure rose markedly.

The first patient received salt, but showed no effect from a corresponding test with water alone. Because of the close relations between salt and water, it is

TABLE 1.—SALT TOLERANCE TEST, SEPT. 25, 1919

Time	Water Given, C.c.	Urine Vol., C.c.	Urine Sp. Gr.	Urine NaCl %	Urine NaCl,* Gm.	Plasma Chlorids Mg. per 100 C.c.	Blood Urea Mg. per 100 C.c.	Blood Pressure Systolic	Blood Pressure Diastolic
8 a.m.	200	...	.....	....	....	...	....	202	104
9 a.m.	200	65	1.011	0.72	0.47	...	....	...	...
10 a.m.	200	410	1.006	0.30	1.21	...	....	...	...
11 a.m.*	200	305	1.007	0.34	1.03	672	19.6	200	100
12 m.	200	120	1.008	0.44	0.53	672	19.6	198	94
1 p.m.	200	160	1.015	1.15	1.84	684	19.6	194	98
2 p.m.	200	105	1.016	1.21	1.27	676	....	224	100
3 p.m.	200	120	1.016	1.30	1.55	704	....	242	110
4 p.m.	200	210	1.007	0.90	1 88	...	....	266	110
5 p.m.	200	500	1.007	0.44	2.20	...	....	238	100
6 p.m.	200	250	.....	0.60	1.49	648	....	210	100
6 p.m. to 8 a.m.	550	830	1.009	0.41	3.40	644	19.6	182	80
Total	2,750	3,275			16.87				

* Ten grams of sodium chlorid were given at 11 a. m.

difficult to distinguish accurately between their effects, and space requirements necessitate leaving other tests to a later publication. The rise in pressure in both cases was accompanied as usual by the subjective symptoms of headache, dizziness, weakness and general malaise. Precautions were taken so that no patients suffered harm from such tests, but in severe cases there is danger that the reckless administration of either salt or water may cause alarming symptoms and even death. The accuracy of the tests is often interfered with by a protective diarrhea which also prevents dangerous disturbances.

The results of a short test may be negative in some patients or at some stages, and bad effects may become

TABLE 2.—WATER TEST, NOV. 19, 1919

Time	Water Given, C.c.	Plasma Chlorids, Mg. per 100 C.c.	Blood Urea, Mg. per 100 C.c.	Blood Pressure Systolic	Blood Pressure Diastolic
8:30 a.m.	.....	571	30.2	215	130
8:40 to 9:20 a.m.	1,000	...	....	...	...
9:25 a.m.	.....	...	....	226	128
9:20 to 9:50 a.m.	600	...	....	...	...
9:55 a.m.	.....	...	....	245	130
10:00 to 11:10 a.m.	1,400	...	....	...	...
11:15 a.m.	.....	...	....	238	140
11:20 a.m. to 12:20 p.m.	800	...	....	...	...
12:30 p.m.	.....	543	23.7	254	120
2:25 p.m.	.....	...	....	226	125
4:00 p.m.	.....	...	....	188	100
5:00 p.m.	.....	...	....	190	100
9:30 a.m.	.....	...	....	200	120

evident only after some days. The effects of salt are in general more powerful and obvious, as demonstrated by the success of Ambard and others in numerous cases. A very close restriction of water may be impracticable at the beginning of treatment, because of the salt stored in the patient's body and the inadvisability of imposing any real suffering from thirst. Also in many cases no rigid fluid restriction is necessary, and moderate quantities (from 1 to 3 liters daily) may be actually beneficial for flushing out salt or nitrogen. But the prolonged combination of excessive fluid and little salt possibly involves osmotic and eliminative difficulties which are responsible for the anasarca, pulmonary edema and cardiac failure sometimes described in connection with long continued salt-poor diet.

No rigid classification, either anatomic or functional, of the cases listed in Table 3 was attempted, partly because the experience is insufficient, and partly because every case of nephritis is in some respects an individual problem, in which tests of the efficiency of different functions should be made and individual treatment prescribed accordingly. Different tests will give different classifications, and there are presumably types of cases not shown in this series. The phenolsulphonephthalein excretion is given here as one indication of renal action, but the complete publication will include other function tests. The data shown are otherwise limited to those which seemed most essential for treatment and prognosis. The order of cases is not merely consecutive or accidental, but forms a series based on these data.

TABLE 3.—EFFECTS OF DIETETIC TREATMENT IN TWENTY CASES OF HYPERTENSION

Case No.	Phenolsulphonephthalein Excretion in 2 Hrs., %	Before Treatment: Plasma Chlorids, Mg. per 100 C.c.	Before Treatment: Blood Urea, Mg. per 100 C.c.	Before Treatment: Blood Pressure* Systolic	Before Treatment: Blood Pressure* Diastolic	After Treatment: Plasma Chlorids, Mg. per 100 C.c.	After Treatment: Blood Urea, Mg. per 100 C.c.	After Treatment: Blood Pressure Systolic	After Treatment: Blood Pressure Diastolic
1	....	624	29.2	208	...	569	28.0	163	98
2	54.5	640	27.1	(300) 215	170	588	20.0	134	70
3	54.0	620	21.8	240	110	541	24.5	140	80
4	42.8	610	19.8	210	120	586	21.2	160	95
5	36.0	620	20.5	240	110	590	10.4	166	75
6	....	620	23.5	220	140	556	23.5	178	98
7	46.0	608	32.2	195	92	591	26.9	162	80
8	48.0	613	30.7	220	98	570	28.5	110	80
9	....	611	32.6	220	70	570	16.2	130	66
10	41.3	612	47.0	220	110	555	31.4	154	80
11	4.0	556 (625)	69.4	212	104	556	52.6	156	80
12	30.2	664	94.4	210	120	598	26.4	172	100
13	.. .	659	104.5	198	100	545	62.5	90	60
14	5.0	648	134.0	214	170	537	42.2	140	100
15	....	597	27.1	190	92	597	....	108	70
16	38.2	569	36.4	190	90	595	14.6	165	100
17	....	534	16.7	210	100	553	56.2	180	95
18	27.4	576	55.0	235	145	543	23.7	170	98
19	12.1	548	58.2	(305) 215	170	505	18.0	180	130
20	64.8	565	21.0	234	160	559	19.4	180	120

* Parentheses in the systolic pressure column indicate that the pressure in these cases was repeatedly near 300 m.m., but the actual pressure on beginning dietetic treatment was 215. In Case 19 this reduction had been accomplished only by heavy bleeding in another hospital.

CASES OF PURE HYPERTENSION

The first cases are more or less typical examples of so-called pure hypertension. One of them (Case 2) had been observed for over a year, and occasional urinalyses, even when the blood pressure was as high as 300 m.m., never showed albumin. In recent months, with more frequent urinalyses, traces of albumin have sometimes been found. The others of this group have traces of albuminuria. Omitting individual peculiarities, it may be said that this group is characterized by activity of excretion and apparent absence of retention in tests with nitrogen, water and even salt. The kidney retains power to concentrate, and both the blood urea and the urea function according to the Ambard principle may be fully normal. But the chlorid threshold, whether determined mathematically or by salt privation, is high, and these patients purchase their apparent efficiency of salt excretion at the price of abnormally high blood salt and blood pressure. Extraordinary strictness of salt-free diet may be necessary to control these, and the therapeutic success corresponds to the restriction in salt intake. This single feature some-

6. For chlorid method, see Donleavy, J. J.: J. Biol. Chem. **37**: 551 (April) 1919.

times makes the difference between health and invalidism. While protein and water create no symptoms, on general principles they should be limited to some extent. Without assuming that all possible kinds of cases are represented in this list, and without overlooking other abnormalities revealed by sufficiently thorough study, it can be stated that pure hypertension, so far as it has occurred in this series, has been essentially a salt nephritis.

HYPERTENSION WITH KIDNEY IMPAIRMENT

As all standards of kidney function are to some extent arbitrary, this group passes by gradual transition into the second and larger group, in which there is obvious impairment of several kidney functions, as indicated by retention of urea and other products, impaired excretion of urea and chlorids by Ambard's laws, more or less fixation in the chlorids and specific gravity of the urine, and especially chlorid retention with or without evident edema.

The degree of impairment in the nitrogen economy calls for corresponding restriction of protein, and influences the prognosis. But the hypertension is affected only through the salt and water functions. Careful fluid restriction is necessary as a rule, but attention should be given to the nitrogen retention thus entailed in certain toxic cases. This is an additional reason for limiting the protein intake, though it is well known that the percentage of blood urea is not an infallible index of danger. Even though chlorid retention be far greater than in the first group and the other signs more evident as stated, the actual chlorid threshold may be lower and the actual salt restriction required to control the pressure may be less stringent in the second group.

It is well known that retained salt may be diffused through edema fluid without raising the percentage in the blood. Patient 11 thus had much edema, and as this diminished, the chlorid percentage in the blood rose as shown in parentheses. With this proviso, the great majority of these cases had high chlorids in the blood plasma, and it is probable that the same will hold for the majority of all hypertension cases. But in appoaching Group 3, we find a small group of hypertension patients with continuously low blood chlorids and low chlorid threshold, and often with normal or actually low blood urea.

HYPERTENSION WITH DIABETES OR SEVERE NEPHRITIS

The six closing cases of this table may be divided into two groups of three each. The first group includes three cases (15, 16 and 17) of diabetes. In them the prognosis is good with thorough treatment of the diabetes, sometimes with the aid of salt and water restriction and sometimes without it. Though there are presumably rare cases of intractable hypertensive nephritis associated with diabetes, there is generally the strong probability that proper treatment, associated with reduction of the blood sugar, will reduce the hypertension.

The last three cases of the table are nondiabetic, and have proved the most difficult and intractable of the entire series. Limitation of salt, protein and fluid, reducing the twenty-four hour urine volume below 300 c.c., has given symptomatic relief and more or less complete checking of retinitis, but the influence on the pressure has on the whole been slight and the reduction shown in the table has not been permanent. Notwithstanding the innocent looking blood analyses, according to function tests these are cases of severe nephritis, and the worst element in their prognosis from the standpoint of hypertension seems to be the absence of a high blood chlorid before treatment.

LIMITATIONS IN TREATMENT

Certain precautions or limitations should be mentioned with regard to the practical application of these principles in treatment.

First, a diet which is reasonably satisfying and at the same time sufficiently poor in salt is not so easy to arrange as it may appear. Both physician and patient may sometimes believe conscientiously that strict abstinence from salt has been maintained, when analyses will show the blood chlorids undiminished and an output of from 5 to 10 gm. in the twenty-four hour urine. Such analyses are important for controlling the treatment, and no pressure is rightly called irreducible unless the daily chlorid excretion has been reduced to practically zero.

Second, some quantity of salt is considered indispensable in the permanent ration. This is stated as about 2 gm. for normal persons, but the limits for nephritics have never been determined. On the one hand, it is not certain that the intake need be as great when the output is obstructed. On the other hand, there may be danger in withdrawing salt from certain nephritics, especially with nitrogen retention, who seem to need much more than 2 gm. of salt for its diuretic action to ward off uremia. As a rule, the outstanding effect of undue salt privation has been weakness. It is necessary, therefore, to work out salt rations for individual nephritics which may range from almost zero to a considerable quantity.

Third, restriction of salt or fluid, like every dietetic treatment of organic disease, is only palliative. Success is not as uniform as in the treatment of diabetes, and complete or partial failures are more numerous. When the first results are more or less satisfactory, there is still reason to fear that the same patients may pass into a hopeless condition in the course of months or years. Futhermore, the most effectual relief of the hypertension demonstrates strongly that the essential trouble is more than mechanical. Reduction of the blood pressure nearly or completely to normal may still leave the patient an invalid, either from weakness due to the strict salt privation which is necessary to hold down the pressure, or still worse, if salt is given so as to allow the pressure to go up. They may also be subject to attacks of hypertension and accompanying symptoms from little or no evident cause. The greatest defect of the French work is the disposition of those authors to treat the entire question as a mere mechanical matter of salt retention. Obviously, even the mechanics of hypertension remains largely unsolved, and the fundamental condition thus far baffles both research and treatment.

Notwithstanding these limitations, the benefit of suitable chlorid restriction for hypertension is still great, in making the patients more comfortable, diminishing the danger of apoplexy, and possibly checking the progressiveness of the disorder. So many of these patients give a history of copious use of salt that this may be a possible contributory factor. Granting a primary infectious or toxic etiology of the renal or vascular damage, the prolonged irritation by the excess of salt and the wear and tear of the hypertension itself

may well be regarded as a cause of progressive aggravation. By far the best and easiest results are obtainable in the earliest cases, when the hypertension is intermittent rather than continous. Early diagnosis is therefore important, and in advance of the sphygmomanometer it may be hoped that chemical tests, such as for the blood chlorids and chlorid threshold (the normal values for which are still undecided), may give advance warnings to guide prophylaxis.

Such studies may also throw some light on the origin and the control of arteriosclerosis and some other disorders. One of the most interesting branches of the investigation has concerned ophthalmic disorders, and with the cooperation of several oculists, evidence has been gathered indicating that many cases of retinitis are due chiefly or solely to chlorids and are benefited by chlorid restriction. More cases of retinitis and of glaucoma are needed for this study. The promising study of salt metabolism will probably soon be extended more widely by those who are in position to undertake parallel determinations of various salts and to develop the more fundamental problems through animal experiments. The present investigation, which has had to be self-supporting to date, has been limited and superficial for lack of these things. The clinical facts collected, however, warrant urging that unfounded theories be discarded, the widespread abuse of drugs, particularly nitrites and iodids, stopped, and the possibilities of modern laboratory methods utilized for the guidance of treatment.

5 East Fifty-First Street.

INFECTION BY THE BROAD TAPEWORM, DIPHYLLOBOTHRIUM LATUM *

M. W. LYON, JR., PH.D., M.D.
SOUTH BEND, IND.

While cases of infection by the broad tapeworm have been rather frequently reported in the United States in recent years, and most of them, like the present one, have occurred in immigrants who have acquired the infection abroad, yet because of the probability of the permanent establishment of this parasite in this country, it is desirable to record each case with as many details as possible.

The worm here recorded was casually handed to me in the early part of January of this year. The dark spots in each mature segment had been noticed, but the true nature of the parasite had not been fully appreciated. The specimen had been washed from the feces with which it was expelled by the patient. The head is lacking, although many of the immature segments immediately following the head are present. The specimen is in several pieces, and the combined length of them laid out without traction on a table is 6.230 mm. All the segments appear in excellent condition, and none appear atrophic or degenerated.

The patient presented almost no symptoms.

REPORT OF CASE

B. N., man, aged 39, Russian Jew, machinist, born at Bielostok, Poland, where he resided until he was about 19 years of age, spent the next six years, including the time of the war between Russia and Japan, and while with the Russian army, at various places in Siberia, such as Omsk, Tomsk, Irkutsk and Yakutsk. During these six years he ate much uncooked fish. Although much fish had been eaten during his youth at Bielostok, he thinks it was well cooked by his mother. After the six years spent in Siberia he returned to Bielostok, and soon after came to the United States. In this country he spent one year in New York, six years in Chicago, and six in South Bend, Ind. He first knew he had a tapeworm eight years before, while he was living in Chicago, his knowledge being based on the fact that he passed fragments from 12 to 18 inches in length. These fragments appeared to him well preserved, and he says that they showed motility. He found segments only at the time of defecation. He never noticed any segments passed while he was in the Old World, but he suggested that, being younger, perhaps he was a careless observer and did not pay so much attention to himself. The patient said that he had always been well and had never consulted a physician until he wished the worm expelled in the latter part of December, 1919, and except when being examined for life insurance. He passed the insurance examination successfully. About three months before seeking treatment for tapeworm he had obscure abdominal distress; and he had another attack at the time he sought treatment. He consulted Dr. C. C. Terry of this city, by whom he was given aspidium. A few days later, when he had recovered from the effects of medication, the worm was submitted to me for identification. I was unable to get the patient for a blood examination until nearly two weeks after the worm had been expelled. Blood examination then revealed: erythrocytes, 5,148,000; leukocytes, 6,400; hemoglobin, 85 per cent., Sahli; polymorphonuclears, 56 per cent.; small lymphocytes, 28 per cent.; large lymphocytes, 7 per cent.; large mononuclears, 2 per cent.; transitionals, 3 per cent.; eosinophils, 3 per cent.; basophils, 1 per cent. The patient has the appearance of being in perfect health, and looks strong and robust.

COMMENT

There can be little doubt that this patient became infected with a broad tapeworm while living at Bielostok, which is one of the general regions where such worms are common, or in Siberia, where he knows he ate uncooked fish. He may have acquired it in this country, but that is very doubtful.

That the patient is and has always been robust shows that an anemia is not necessarily caused by the presence of this parasite. The fact that he passed well preserved and easily recognized segments is rather unusual[1]. The absence of anemia, and the good condition of the segments passed as well as of the entire worm as subsequently passed, are in accord with the views that diseased or disintegrating worms are the chief cause of the anemia due to the absorption of products from disintegrating segments.[2]

This case has afforded an excellent opportunity for the parasite to become permanently established in this region of the United States. For the past six years many thousands of eggs must have entered the sewerage system of South Bend, very soon to reach the St. Joseph River and a short time later Lake Michigan. In both river and lake, hatching larvae must have been able to parasitize various fishes.

1. Brumpt, E.: Précis de parasitologie, Ed. 2, 1913, p. 249.
2. Brumpt: Précis de parasitologie, p. 263.

* From the laboratory of the Clinic.

Probabilities as to When the First Birth Will Occur.—According to Knibbs, statistician for Australia, the probability of a nuptial first birth occurring in less than one year after marriage is 0.4946 for age 15 of the wife; 0.7770 for age 18; 0.9176 for age 21; the maximum, or 0.9771, for age 25; 0.9075 for age 30; 0.6748 for age 35; 0.3245 for age 40, and 0.0622 for age 45. The foregoing statsitics are based on the supposition that the husband is approximately the same age as the wife. If he is younger or older than the wife, the probability will be affected accordingly.

SQUAMOUS-CELL EPITHELIOMA OF THE LIP

A STUDY OF FIVE HUNDRED AND THIRTY-SEVEN CASES *

A. C. BRODERS, M.D.
ROCHESTER, MINN.

Of all the malignant neoplasms with which man is afflicted, few cause more concern and inconvenience than that of epithelioma of the lip. In the past, pathologists have been content to classify cancer of the lip as cancer, without any distinction as to the degreé of malignancy. It is a well established fact that some cancers of the lip are fatal to patients and others are not. There must be a reason for this. One theory is that some persons are resistant to cancer, and this seems to be borne out in a certain percentage of cases.

Undoubtedly, a large proportion of cancer cells are destroyed by the defense cells of the body; of these, the fibrous connective tissue cell is the most important, since it cuts off nourishment from the cancer cells.

The endothelial leukocyte and lymphocyte evidently also play an important rôle in the destruction of cancer cells, for practically always they may be seen in the neighborhood of a cancerous growth. Foreign body giant cells that are most probably formed from the endothelial leukocytes are not infrequently found lying adjacent to cancer cells.

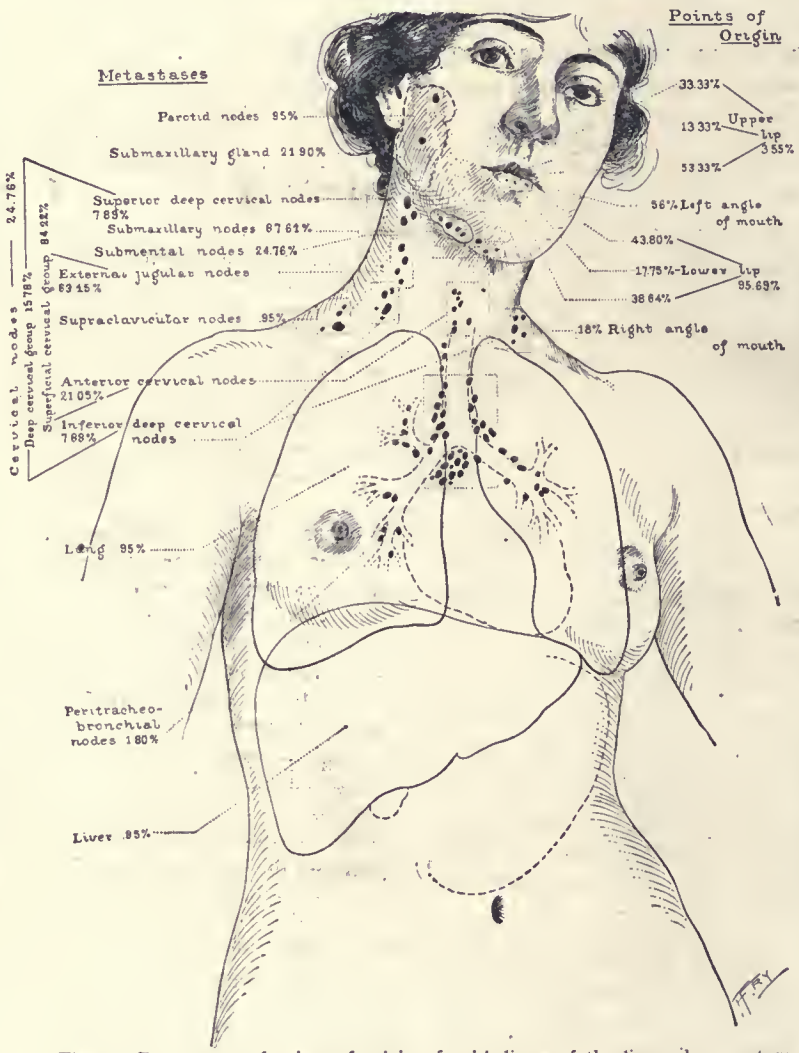


Fig. 1.—Percentages of points of origin of epithelioma of the lip, and percentages of location of metastasis.

The most important factor in squamous-cell epithelioma of the lip seems to be the degree of cellular activity. The cells of some epitheliomas of the lip show a marked tendency to differentiate, that is, to produce a growth similar to the normal; the pearly body is an example. The pearly body corresponds to the horny layer of the epidermis. In other squamous-cell epitheliomas there is no differentiation whatever. In the large majority of growths whose cells show no tendency to differentiate, or at least very little, there are many mitotic figures.

In studying these epitheliomas, therefore, it occurred to me that they should be graded according to differentiation and mitosis, special stress being laid on the former. The grading was made on a basis of 1 to 4, and absolutely independent of the clinical history. If an epithelioma shows a marked tendency to differentiate, that is, if about three fourths of its structure is differentiated epithelium and one fourth undifferentiated, it is graded 1; if the differentiated and undifferentiated epithelium are about equal, it is graded 2; if the undifferentiated epithelium forms about three fourths and the differentiated about one fourth of the growth, it is graded 3; if there is no tendency of the cells to differentiate, it is graded 4. Of course the number of mitotic figures and the number of cells with single large deeply staining nucleoli (one-eyed cells) play an important part in the grading.

Some epitheliomas of the lip are very active and from the start show little or no tendency to differentiate; some grow more malignant with time, and others increase in malignancy and then retrogress. Unquestionably an epithelioma of a low grade of malignancy is made more malignant by irritation with chemicals such as hydrochloric or nitric acid, silver nitrate or arsenic paste.

Chronic ulcers of the lip, like chronic ulcers of the stomach, should be examined very closely for cancer, provided syphilis has been eliminated. MacCarty [1] has demonstrated early cancer in the epithelium at or near the edge of gastric ulcers; practically the same process is found in early cancer or ulcer of the lip. In the lip the cancer starts in the stratum germinativum of the epithelium at or near the border of the ulcer. Not all cancers of the lip are preceded by ulcers, but the majority are.

I shall present the facts in statistical form and make the deductions, not from one, but from various standpoints: (1) the duration and size of the lesion; (2) the

* From the Section on Surgical Pathology, Mayo Clinic.
* Presented before the Richmond Academy of Medicine and Surgery, Richmond ,Va., Nov. 25, 1919, and before the Roanoke Academy of Medicine, Roanoke, Va., Dec. 1, 1919.

1. MacCarty, W. C.: Pathology and Clinical Significance of Gastric Ulcer: From a Study of Material from Two Hundred and Sixteen Partial Gastrectomies for Ulcer, Ulcer and Carcinoma, and Carcinoma. Surg., Gynec. & Obst. **10**: 449-462, 1910.

use or nonuse of tobacco; (3) the use or nonuse of caustics, pastes or plasters, etc., before treatment at the clinic; (4) metastasis or no metastasis; (5) cellular activity, and (6) other points of general interest.



Fig. 2 (a 188878).—Typical elevated or wartlike epithelioma of the lip.

CONCLUSIONS

1. The 537 cases of squamous-cell epithelioma of the lip in this series represent 26.85 per cent. of 2,000 cases of general epithelioma.

2. Squamous-cell epithelioma of the lip occurs more often in males than in females; the proportion is 49: 1.

TABLE 1.—SQUAMOUS-CELL EPITHELIOMA OF THE LIP: FIVE HUNDRED AND THIRTY-SEVEN CASES (26.85 PER CENT. OF TWO THOUSAND CASES OF GENERAL EPITHELIOMA)

Patients	537	
		Per Cent.
Males	526	(97.95)
Females	11	(2.05)
Age:		
Youngest patient	21	
Oldest patient	97	
Average age of patients	57.3	
Occupation:		Per Cent.
Farmer		56.7
Laborer		9.0
Merchant		3.83
Traveling salesman		2.87
Railroad employee		2.87
Carpenter		2.68
Lawyer		1.34
Blacksmith		1.15
Clerk		1.15
Other occupations 59, each below 1 per cent.		18.4
Family history of malignancy		14.9
Previous lesion at site of cancer:		
Sore or ulcer (coldsore, 10.6 per cent.)		63.3
Crack		4.1
Leukoplakia		3.7
Tobacco:		
Patients using tobacco		80.49
Patients not using tobacco		19.51
Females using tobacco (smoke)		45.45
Females not using tobacco		45.45
Methods of using tobacco:		
Patients who smoke only		69.82
Patients who chew only		6.31
Patients who smoke and chew		23.5
Patients who use snuff		0.35
Total number of smokers		93.33
Total number of chewers		29.82
Total number of snuffers		0.35
Methods of smoking:		
Pipe only		40.69
Cigars only		19.18
Pipe and other methods and with chewing		37.79
Cigars with other methods and with chewing		31.97
Total number of pipe smokers		78.48
Total number of cigar smokers		51.16
Total number of cigaret smokers		1.16
History of injury		8.38
		Years
Average duration of lesion		2.58
Longest duration of lesion		28.00
Shortest duration of lesion		0.08
		Cm.
Greatest diameter		12.5
Average greatest diameter		2.4
Origin of lesion:		Per Cent.
Lower lip		95.69
Upper lip		3.55
Left angle of mouth		0.56
Right angle of mouth		0.18
Lower lip:		
Left lower lip		43.60
Right lower lip		38.64
Middle lower lip		17.75
Upper lip:		
Left upper lip		53.33
Right upper lip		33.33
Middle upper lip		13.33

TABLE 2.—FIVE HUNDRED MEN WITHOUT EPITHELIOMA OF THE LIP

Average age, years	36.07
	Per Cent.
Users of tobacco	78.6
Nonusers of tobacco	21.4
Methods of using tobacco:	Per Cent.
Smoke only	82.95
Chew only	4.32
Smoke and chew	12.72
Snuff	0.20
Total number of smokers	95.67
Total number of chewers	17.04
Total number of snuffers	0.20
Methods of smoking:	
Pipe only	6.11
Cigars only	16.48
Cigarets only	26.32
Pipe and other methods, and chewing	31.91
Cigars and other methods, and chewing	42.02
Cigarets and other methods, and chewing	30.05
Total number of pipe smokers	38.03
Total number of cigar smokers	58.51
Total number of cigaret smokers	59.04

It occurs in patients past middle life; their average age is 57.3 years.

3. The disease occurs most often in farmers; they represent 56.7 per cent. of the cases.

4. A family history of malignancy plays a negligible part.

5. The site of the cancer was preceded by a sore or an ulcer in 63.3 per cent. of the cases.

6. About one fifth of all the patients do not use tobacco, while one half of the female patients do not use it.



Fig. 3 (a 265421).—Typical depressed or ulcer-like epithelioma of the lip.

7. Of the patients using tobacco, 93.33 per cent. smoke; 78.48 per cent. of these use a pipe.

8. A comparison of 500 men without epithelioma of the lip with the 537 patients with epithelioma of the lip shows that the percentage of tobacco users and non-tobacco users is practically the same; 78.6 per cent.

users and 21.4 per cent. nonusers in the former group, and 80.49 per cent. users and 19.51 per cent. nonusers in the latter group, but that the average age of the men



Fig. 4 (a 21283).—Marked leukoplakia of the lip, characterized by increase of (*a*) horny layer of epidermis, and (*b*) basal layer.

without epithelioma of the lip is about nineteen years less than the average age of the patients with epithelioma of the lip at the time of onset.

9. The most remarkable difference in a comparison of the patients with epithelioma of the lip and the men without epithelioma of the lip is in the method of smoking. The total number of pipe smokers in the former is 78.48 per cent. and the total number of cigaret smokers is only 1.16 per cent., while in the latter the total number of pipe smokers has dropped to 38.03 per cent., and the total number of cigaret smokers has risen to 59.04 per cent.

10. A history of injury plays a negligible part.

TABLE 3.—TREATMENT ELSEWHERE IN SQUAMOUS-CELL EPITHELIOMA OF THE LIP

	Per Cent.
Nonsurgical:	
1. One or more treatments alone or in various combinations of acids, carbon dioxid, copper sulphate, electricity, mercury, paste or plaster, potassium iodid, radium, roentgen ray, scarlet red, shoemakers' wax, and silver nitrate	29.05
2. Paste or plaster alone or in combination with other nonsurgical treatments	51.28
3. Caustics (acids or silver nitrate) alone or in combination with other nonsurgical treatments	35.89
4. Roentgen ray alone or in combination with other nonsurgical treatments	18.58
5. Paste or plaster alone or in combination with other nonsurgical treatments (proportion of all epitheliomas of lip)	14.89
6. Caustics (acids or silver nitrate) alone or in combination with other nonsurgical treatments (proportion of all epitheliomas of lip)	10.42
7. Roentgen ray alone or in combination with other nonsurgical treatments (proportion of all epitheliomas of lip)	5.4
Surgical:	
1. One or more operations	17.87
2. Excision of growth from lip without removing lymph nodes	53.12
3. Excision of V from lip without removing lymph nodes	5.2
4. Excision of growth and one or more groups of lymph nodes	16.66
5. Excision of V from lip and one or more groups of lymph nodes	6.25
6. Miscellaneous	18.75
Surgical and nonsurgical:	
1. One or more operations and one or more treatments with acids, carbon dioxid, etc., alone or in various combinations.	4.65
2. Operations without treatment with acids, carbon dioxid, etc., before or after operation	13.22
3. Treatment with acids, carbon dioxid, etc., without operation	24.39
4. Operation and treatment with acids, carbon dioxid, etc.	37.61

TABLE 4.—PATIENTS OPERATED ON AT THE MAYO CLINIC

	No.
Cases (96.08 per cent. of 537)	516
1. Excision of submental lymph nodes, submaxillary lymph nodes and salivary glands of both sides, and V-shaped excision of epithelioma of the lip (one operation) (39.34 per cent. of 516).	203
2. V-shaped or quadrilateral shaped excision of epithelioma of the lip (10.85 per cent. of 516)	56
3. Excision of submental lymph nodes, submaxillary lymph nodes, and salivary glands of both sides and quadrilateral shaped excision of epithelioma of the lip (one operation) (4.84 per cent. of 516)	25
4. Excision of submental lymph nodes and submaxillary lymph nodes and salivary glands on one side, and V-shaped excision of epithelioma of the lip (one operation) (3.29 per cent. of 516).	17
5 Unilateral block dissection (one operation) (2.9 per cent. of 516)	15
6 Miscellaneous (various combinations of operations, cauteries, excisions of specimens for diagnosis, at one time or at different times) (38.76 per cent. of 516)	200
REMOVAL OF LYMPH NODES AND SALIVARY GLANDS	
Cases	449
1. Submental lymph nodes (97.1 per cent. of 449)	436
2. Submaxillary lymph nodes and salivary glands (unilateral) (12.91 per cent. of 449)	58
3. Submaxillary lymph nodes and salivary glands (bilateral) (84.18 per cent. of 449)	378
4. Cervical lymph nodes (16.7 per cent. of 449)	75
5. Block dissections (alone or combined with other operations) (10.02 per cent. of 449)	45
6. Cases in which the lymph nodes were removed months or years after the removal of the epithelioma of the lip (2.44 per cent. of 449)	11
7. Lymph nodes removed (one or more groups) (87.01 per cent. of 516)	449
8. Cases in which no lymph nodes were removed (12.98 per cent. of 516)	67
PATIENTS WITH INOPERABLE EPITHELIOMA	
Cases (3.9 per cent. of 537)	21

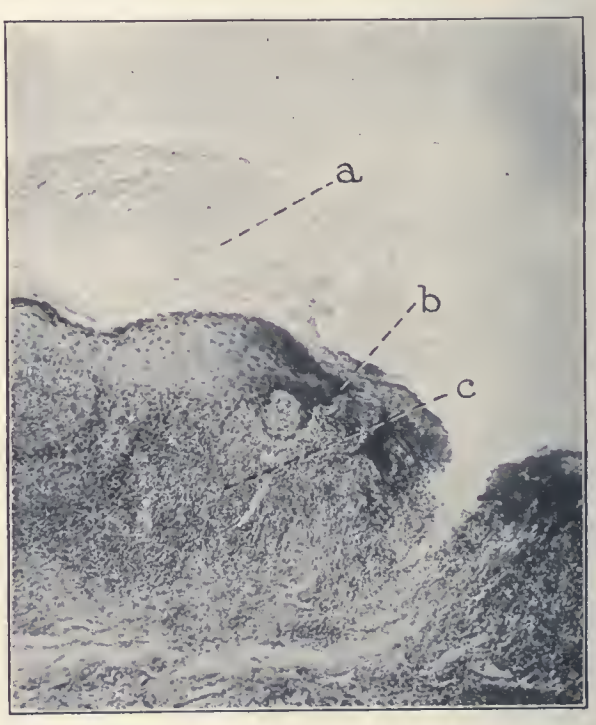


Fig. 5 (a 152243).—Ulcer associated with a leukoplakia of the lip: *a*, leukoplakia; *b*, junction of epidermis and ulcerated area; *c*, lymphocytes.

11. The duration of the lesion shows a marked variation, from 0.08 years to 28 years, with an average of 2.58 years.

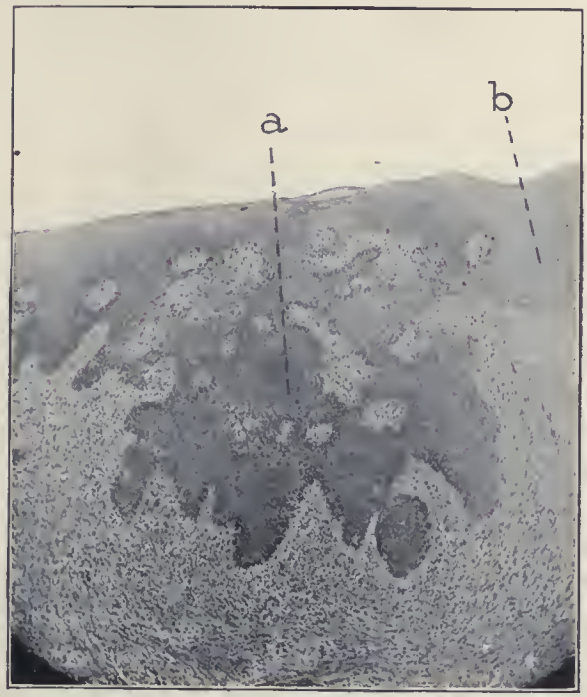


Fig. 6 (a 98158).—Grade 1 epithelioma of the lip with marked differentiation; low degree of malignancy; patient well five years after operation: *a*, epithelioma; *b*, normal epithelium.

12. The greatest diameter of any lesion is 12.5 cm.; the average, 2.4 cm.

13. The lesion originated on the lower lip in 95.69 per cent. of the cases, on the upper lip in 3.55 per cent., at the left angle of the mouth in 0.56 per cent., and at the right angle of the mouth in 0.18 per cent.

TABLE 5.—PATHOLOGIC FINDINGS IN CASES IN WHICH LYMPH NODES AND SUBMAXILLARY SALIVARY GLANDS WERE REMOVED

	No.	Per Cent.
Cases	449	
No metastasis found	344	76.62
Metastasis found	105	23.38
Submaxillary lymph nodes alone (one side)	44	41.90
Submaxillary lymph nodes and salivary glands (one side)	13	12.38
Submaxillary lymph nodes (one side) and submental lymph nodes	7	6.66
Submaxillary lymph nodes, salivary glands, and superior superficial cervical lymph nodes (one side)	6	5.71
Submental lymph nodes alone	5	4.76
Submaxillary lymph and superficial cervical lymph nodes (one side)	6	5.71
Submaxillary lymph nodes (both sides) and submental lymph nodes	5	4.76
Submaxillary lymph nodes (both sides), submental and anterior jugular lymph nodes (one side)	3	2.85
Miscellaneous (submaxillary lymph nodes and salivary glands, submental, cervical, parotid, supraclavicular and peribronchial lymph nodes; lung and liver, alone or in various combinations	16	15.23
Submaxillary lymph nodes, total involvement	92	87.61
Submaxillary salivary glands, total involvement	23	21.90
Submental lymph nodes, total involvement	26	24.76
Cervical lymph nodes (one or more groups)	26	24.76
Superior deep cervical nodes	3	7.89
Inferior deep cervical nodes	3	7.89
Exterior jugular nodes	24	63.15
Anterior cervical nodes	8	21.05
Supraclavicular nodes, total involvement	1	0.95
Parotid lymph nodes, total involvement	1	0.95
Peribronchial nodes, total involvement	2	1.90
Lung, total involvement	1	0.95
Liver, total involvement	1	0.95
Submaxillary lymph nodes, total involvement on both sides	13	12.38
Cervical nodes, total involvement on both sides	2	1.90

TABLE 6.—GRADE OF FIVE HUNDRED AND THIRTY-SEVEN CASES ON A BASIS OF 1 TO 4, ACCORDING TO CELLULAR ACTIVITY

	No.	Per Cent.
Grade 1	85	15.82
Grade 2	333	62.01
Grade 3	113	21.04
Grade 4	6	1.11

DURATION AND SIZE OF EPITHELIOMA ACCORDING TO GRADE

	Grade 1	Grade 2	Grade 3	Grade 4
	Years	Years	Years	Years
Longest duration	10.00	25.00	28.00	2.00
Shortest duration	0.10	0.08	0.08	0.91
Average duration	1.43	2.77	3.33	1.29
	Cm.	Cm.	Cm.	Cm.
Largest size	5.00	10.00	7.50	2.00
Smallest size	0.20	0.30	0.20	1.80
Average size	1.23	2.28	3.25	1.9

EPITHELIOMA PRECEDED BY ULCER

	No.	Per Cent.
Grade 1	52	15.29
Grade 2	225	66.17
Grade 3	60	17.64
Grade 4	3	0.88

PROPORTION OF EACH GRADE PRECEDED BY ULCER

Grade 1	61.17 per cent. of 85
Grade 2	67.56 per cent. of 333
Grade 3	53.09 per cent. of 113
Grade 4	50.00 per cent. of 6

INOPERABLE EPITHELIOMA ACCORDING TO GRADE

Grade 1	Grade 2	Grade 3	Grade 4
0	12	7	2

14. Twenty-nine and five hundredths per cent. of the patients were treated with acid, paste or plaster, etc., before they entered the clinic.

15. Seventeen and eighty-seven hundredths per cent. of the patients were operated on before they entered the clinic.

16. Ninety-six and eight hundredths per cent. of the patients were operated on at the clinic.



Fig. 7 (a 64692).—Grade 1 epithelioma of the lip showing marked differentiation, although it is of a slightly higher degree of malignancy than the epithelioma shown in Figure 5; patient well seven years after operation; *a*, completely differentiated area; *b*, partially differentiated cells; *c*, normal epithelium.

17. In 87.01 per cent., the regional lymph nodes were removed.

18. Of the 449 cases in which the lymph nodes or salivary glands were removed, metastasis was demonstrated in 23.38 per cent.; the submaxillary lymph nodes were involved in 87.61 per cent.; the submaxillary salivary glands in 21.90 per cent.; the submental lymph

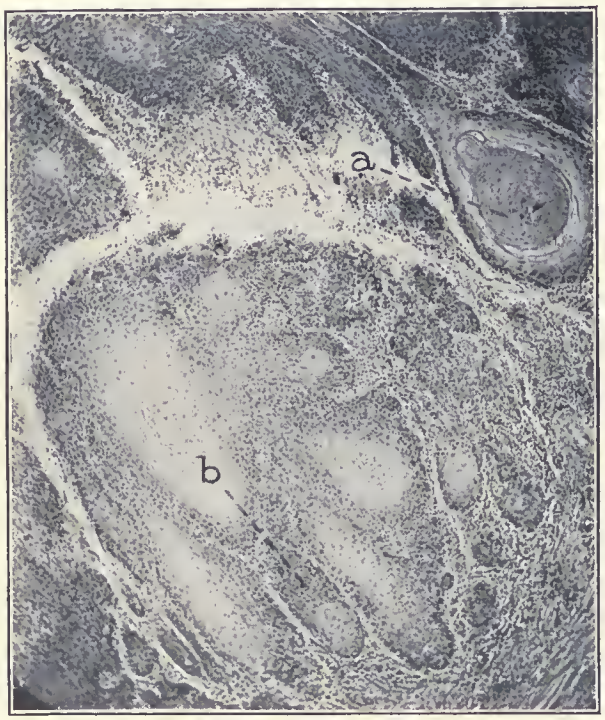


Fig. 8 (a 99884).—Grade 2 epithelioma of the lip; not so much differentiation as in epithelioma shown in Figure 6; patient died from epithelioma of the lip four and one-half years after operation: *a*, completely differentiated area or pearly body; *b*, undifferentiated cells.

TABLE 7.—RESULTS

GENERAL ULTIMATE RESULTS

Patients traced (operable, 306; inoperable, 8) (58.47 per cent. of total)	314
Patients operated on	306
Patients dead (40.52 per cent.)	124
Patients alive (59.47 per cent.)	182
Good result (no recurrence (92.85 per cent. of 182)	169
Fair result (slight recurrence) (6.04 per cent. of 182)	11
Bad result (no improvement) (1.09 per cent. of 182)	2

DURATION OF LIFE SINCE LAST OR ONLY OPERATION, ACCORDING TO RESULT

	Good Result	Fair Result	Bad Result
	Years	Years	Years
Longest	14.39	13.68	2.80
Shortest	1.25	0.96	0.49
Average	7.76	6.8	1.65

MORTALITY

Deaths (42.05 per cent. of 314)	132
Deaths of patients with operable epithelioma (93.93 per cent. of 122)	124
Deaths of patients with inoperable epithelioma (6.06 per cent. of 132)	8

TABLE 7.—*Continued*

CAUSE OF DEATH OF PATIENTS OPERATED ON: DATA FROM RELATIVE, HOME PHYSICIAN, OR PATHOLOGIC RECORDS OF THE CLINIC

	No.	Per Cent.
Known cause	99	
Cancer of the lip	63	63.63
Heart disease	5	5.05
Nephritis	5	5.05
Pneumonia	4	4.04
Stomach trouble	3	3.03
Paralysis	3	3.03
"Following operation elsewhere"	3	3.03
Fall	2	2.02
Carcinoma of the stomach	1	1.01
Tumor of the stomach	1	1.01
Abdominal tumor	1	1.01
Diabetes	1	1.01
Carcinoma of the sigmoid	1	1.01
Sepsis	1	1.01
Tuberculosis	1	1.01
Hepatic disease	1	1.01
Cardiac and hepatic disease	1	1.01
Sarcoma of the liver	1	1.01
Lung trouble	1	1.01
Unknown	25	

CAUSE OF DEATH OF PATIENTS WHO DIED IN THE MAYO CLINIC (ALL OPERABLE)

Chronic nephritis and arteriosclerosis (more than 2 years after operation)	1
Epithelioma and abscess of the neck (52 days after operation)	1
Epithelioma (25 days and 4 months, respectively, after operation)	2
Pneumonia (few days after operation)	3
Sepsis (12 days after operation)	1
Total (1.55 per cent. of 516)	8
Actual operative mortality (0.77 per cent. of 516)	4

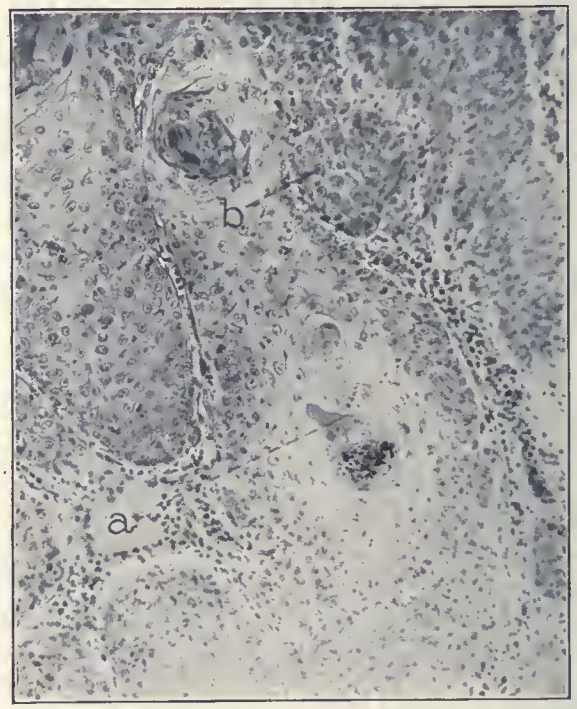


Fig. 9 (a 59017).—Grade 2 epithelioma of the lip; about the same degree of malignancy as in epithelioma shown in Figure 7; patient well more than seven years after operation: *a*, partially differentiated cells; *b*, undifferentiated cells.

TABLE 8.—TOBACCO USERS OPERATED ON

	Grade 1	Grade 2	Grade 3	Grade 4
Number of patients	37	118	37	3
Patients living	34 (91.81% of 37)	92 (77.96% of 118)	10 (27.02% of 37)	
Patients living, good result	33 (97.05% of 34)	85 (92.39% of 92)	10 (100% of 10)	
Patients living, fair result	1 (2.94% of 34)	6 (6.52% of 92)		
Patients living, poor result		1 (1.08% of 92)		
Patients dead	3 (8.10% of 37)	26 (22.63% of 118)	27 (72.97% of 37)	3 (100% of 3)
Cause unknown		6	5	1
Good result	2 (66.66% of 3)	6 (30.00% of 20)	7 (31.81% of 22)	
Fair result	1 (33.33% of 3)			
Poor result		14 (80.00% of 20)	15 (68.18% of 22)	2 (100% of 2)

	Per Cent.
Total good result (patient recovered from epithelioma and is living, or recovered from epithelioma and died from other cause)	78.14
Total fair result (patient living with slight recurrence or died from other cause)	4.37
Total poor result (patient lived with no improvement or died from epithelioma)	17.48

TABLE 9.—NONUSERS OF TOBACCO OPERATED ON

	Group 2	Group 3	Group 4
Number of patients	7	37	7
Patients living	6 (85.71% of 7)	29 (78.37% of 37)	4 (57.14% of 7)
Patients living, good result	6 (100% of 6)	29 (100% of 29)	2 (50.00% of 4)
Patients living, fair result	.....	.....	2 (50.00% of 4)
Patients dead	1 (14.28% of 7)	8 (21.62% of 37)	3 (42.85% of 7)
Cause unknown	.....	1	
Good result	1 (100% of 1)	5 (71.42% of 7)	
Poor result	.....	2 (28.57% of 7)	3 (100% of 3)

TOTAL RESULTS

	Per Cent.
Total good result (patient recovered from epithelioma and is living, or recovered from epithelioma and died from other cause)	86.00
Total fair result (patient living with slight recurrence)	4.00
Total poor result (patient died from epithelioma)	10.00

TABLE 10.—PATIENTS OPERATED ON TREATED WITH PASTES, PLASTERS, ACIDS, ETC., BEFORE ENTERING THE CLINIC

Patients concerning whom information has been received	94
Patients living (53.19 per cent. of 94)	50

	Grade 1	Grade 2	Grade 3	Grade 4
Patients living, good result	5 (11.11% of 45)	34 (75.55% of 45)	6 (13.33% of 45)	
Patients living, fair result	.....	1 (33.33% of 3)	2 (66.66% of 3)	
Patients living, poor result	.....	1 (50.00% of 2)	1 (50.00% of 2)	
Patients dead	.....	.....	.....	44 (46.80% of 94)
Cause unknown	.....	4	3	
Good result	.....	5 (55.55% of 9)	4 (44.44% of 9)	
Poor result	.....	9 (32.14% of 28)	16 (57.14% of 28)	3 (10.71% of 28)

TOTAL RESULTS

Total good result (patient recovered from epithelioma and is living, or recovered from epithelioma and died from other cause)	62.06% of 87
Total fair result (patient living with slight recurrence)	3.44% of 87
Total poor result (patient living with no improvement or died from epithelioma)	34.48% of 87

TABLE 11.—PATIENTS OPERATED ON NOT TREATED WITH PASTES, PLASTERS, ACIDS, ETC., BEFORE ENTERING THE CLINIC

Patients concerning whom information has been received	212
Patients living (61.79 per cent. of 212)	131

	Grade 1	Grade 2	Grade 3	Grade 4
Patients living, good result	34 (27.64% of 123)	83 (67.47% of 123)	6 (4.87% of 123)	
Patients living, fair result	1 (12.50% of 8)	7 (87.50% of 8)		
Patients dead	.....	.....	.....	81 (38.20% of 212)
Cause unknown	.....	10	9	1
Good result	4 (16.00% of 25)	17 (68.00% of 25)	4 (16.00% of 25)	
Fair result	1 (100.00% of 1)			
Poor result	.....	18 (51.30% of 35)	17 (48.45% of 35)	

TOTAL RESULTS

Total good result (patient recovered from epithelioma and is living, or recovered from epithelioma and died from other cause)	77.08% of 192
Total fair result (patient living with slight recurrence or died from other cause)	4.68% of 192
Total poor result (patient died from epithelioma)	18.22% of 192

TABLE 12.—PATIENTS WITH METASTASIS OPERATED ON

Patients concerning whom no information was received	36 (34.29% of 105)
Patients from whom information was received	69 (65.71% of 105)
Patients living	12 (17.39% of 69)

	Grade 1	Grade 2	Grade 3	Total Number of Good Results
Patients living, good results*	.....	5 (50% of 10)	5 (50% of 10)	10 (83.33% of 12)
Patients living, fair result*	.....	.....	1 (100% of 1)	
Patients living, poor result*	.....	.....	1 (100% of 1)	

DURATION OF LIFE OF PATIENTS WITH GOOD RESULT FROM LAST OR ONLY OPERATION

Longest	11.73 years
Shortest	3.29 years
Average	6.18 years
Patients dead	57 (82.6% of 69)

Grade 1	Grade 2	Grade 3	Grade 4
.....	15 (34.09% of 44)	26 (59.09% of 44)	3 (6.81% of 44)

	Years
Longest duration of life from last or only operation of patients who died from epithelioma	2.5
Shortest duration of life from last or only operation of patients who died from epithelioma	0.066
Average duration of life from last or only operation of patients who died from epithelioma	0.79
Longest duration of life from last or only operation of patients who died from epithelioma or other cause	4.88
Shortest duration of life from last or only operation of patients who died from epithelioma or other cause	0.016
Average duration of life from last or only operation of patients who died from epithelioma or other cause	0.86

CAUSE OF DEATH

Epithelioma	44 (91.66% of 48)
Lung trouble	1 (2.08% of 48)
Sepsis	1 (2.08% of 48)
Heart disease	1 (2.08% of 48)
Pneumonia	1 (2.08% of 48)
Not stated	9

* In the ten patients with metastasis who reported a good result, and in the one who reported a fair result, the submaxillary lymph nodes on only one side were involved. In the one patient who reported a poor result, the submaxillary lymph nodes and the salivary gland on only one side were involved.

TABLE 13.—PATIENTS WITH METASTASIS IN SUBMAXILLARY LYMPH NODES ON ONE SIDE ONLY

Patients concerning whom no information was received	14 (30.81% of 44)	Patients living, fair result	1 (9.09% of 11)
Patients concerning whom information was received	30 (69.18% of 44)	Patients dead	19
Patients living	11	Patients dead from epithelioma	14 (82.35% of 17)
Patients living, good result	10 (90.9% of 11)	Patients dead from other cause	3 (17.64% of 17)
		Patients dead from cause not stated	2

TABLE 14.—PATIENTS WITHOUT METASTASIS OPERATED ON

Patients concerning whom no information was received				146
Patients concerning whom information was received				198
Patients living (76.26% of 198)				151
	Grade 1	Grade 2	Grade 3	Total Number of Good Results
Patients living, good result	35 25.00% of 140)	99 (70.71% of 140)	6 (4.28% of 140)	140 (92.71% of 151)
Patients living, fair result	1 (10.00% of 10)	8 (80.00% of 10)	1 (10.00% of 10)	
Patients living, poor result	.....	1 (100% of 1)		
Patients dead	.....	.....	.....	47 (23.73% of 198)
Cause unknown	.....	10		
Good result	3 (12.50% of 24)	18 (75.00% of 24)	3 (12.50% of 24)	
Fair result	1 (100% of 1)			
Poor result	.....	9 (75.00% of 12)	3 (25.00% of 12)	
Total good result (patient recovered from epithelioma and is living or recovered from epithelioma and died from other cause)				164 (87.23% of 188)
Total fair result (patient living with slight recurrence, or died from other cause)				11 (5.85% of 188)
Total poor result (patient living with no improvement, or died from epithelioma)				13 (6.91% of 188)

TABLE 15.—PATIENTS WITH AND WITHOUT METASTASIS OPERATED ON

	Grade 1	Grade 2	Grade 3	Grade 4
Patients with metastasis	.....	39 (37.14% of 105)	63 (60.00% of 105)	3 (2.85% of 105)
Patients without metastasis	67 (19.47% of 344)	248 (72.09% of 344)	29 (8.43% of 344)	

DURATION OF LESION BEFORE EXAMINATION AT CLINIC

	Years		Years
Longest duration (patient with metastasis)	28.00	Patient without metastasis	25.00
Shortest duration (patient with metastasis)	0.16	Patient without metastasis	0.08
Average duration (patient with metastasis)	3.27	Patient without metastasis	2.40

SIZE OF LESION AT THE TIME OF EXAMINATION AT THE CLINIC

	Cm.		Cm.
Largest size (patient with metastasis)	12.5	Patient without metastasis	10.00
Smallest size (patient with metastasis)	1.0	Patient without metastasis	0.2
Average size (patient with metastasis)	3.74	Patient without metastasis	2.01

ASSOCIATION OF EPITHELIOMA OF THE LIP WITH OTHER MALIGNANT NEOPLASMS

	Cases	
Nonmelanotic melano-epithelioma on shoulder	1	
Squamous-cell epithelioma of cheek	1	
Squamous-cell epithelioma of bladder	1	
Basal-cell epithelioma of eyelid	1	
Adenocarcinoma of sigmoid	1	
	5	(0.93% of 537)

TABLE 16.—DURATION OF LIFE AFTER OPERATION OF PATIENTS WITHOUT METASTASIS

ACCORDING TO GRADE

Good result:	Grade 1	Grade 2	Grade 3
Number of patients	35	98	6
	Years	Years	Years
Longest duration	14.39	14.31	12.22
Shortest duration	1.73	1.25	4.3
Average duration	7.59	7.54	7.17
Fair result:			
Number of patients	1	8	1
	Years	Years	Years
Longest duration	4.39	13.68	7.32
Shortest duration	.....	0.96	
Average duration	.....	7.54	

DURATION OF LIFE AFTER OPERATION OF PATIENTS OF ALL GRADES

	Good Result	Fair Result	Poor Result
	Years	Years	Years
Longest duration	10.19	.....	4.51
Shortest duration	0.36	.....	0.51
Average duration	4.47	6.73	1.85

DURATION OF LIFE AFTER OPERATION OF ALL PATIENTS WITHOUT METASTASIS

	Years
Longest duration	10.19
Shortest duration	0.36
Average duration	3.68

DURATION OF LIFE OF PATIENTS OF ALL GRADES

	Good Result	Fair Result
	Years	Years
Longest duration	14.39	13.68
Shortest duration	1.25	0.96
Average duration	7.53	7.2

DURATION OF LIFE AFTER OPERATION OF PATIENTS WITHOUT METASTASIS WHO ARE DEAD

Good result—Patients did not die from epithelioma:

	Grade 1	Grade 2	Grade 3
Number of patients	3	18	3
	Years	Years	Years
Longest duration	5.8	10.19	9.3
Shortest duration	3.5	0.36	2.02
Average duration	4.28	4.24	6.07

Fair result—Patients did not die from epithelioma but had slight recurrence:

Number of patients	1
	Years
Longest duration	6.93

Poor result—Patient died from epithelioma:

	Grade 2	Grade 3
Number of patients	9	3
	Years	Years
Longest duration	4.51	1.52
Shortest duration	1.00	0.51
Average duration	2.15	0.95

nodes in 24.76 per cent., and the cervical lymph nodes in 24.76 per cent.

19. In a division of the epitheliomas according to cellular activity, on a basis of 1 to 4, Grade 1 represents



Fig. 10 (a 72479).—Grade 2 epithelioma of the lip: *a*, epithelioma; *b*, normal epithelium; *c*, lymphocytes

15.82 per cent.; Grade 2, 62.01 per cent.; Grade 3, 21.04 per cent., and Grade 4, 1.11 per cent.

20. The average duration of the lesion according to grade is longest in Grade 3, 3.33 years, and shortest in Grade 4, 1.29 years.

21. The average size of the lesion according to grade is largest in Grade 3, and smallest in Grade 1.

22. Of the patients operated on and traced, 40.52 per cent. are dead and 59.47 per cent. are alive.

23. Of the living patients, 92.85 per cent. report a good result, having been free from the disease on an average of 7.76 years.

24. Of the patients operated on who have died, concerning whom information has been received, 63.63 per cent. died from epithelioma.

25. Eight, or 1.55 per cent., of the patients who were operated on died in the clinic, while the actual operative mortality was only 0.77 per cent.

26. The users of tobacco who were operated on did not obtain quite so good total good results as the nontobacco users; 78.14 per cent. in the former, and 86 per cent. in the latter.

27. In the inoperable cases, the nontobacco users reached as high as 30.76 per cent.

28. The patients who were treated with pastes, plasters, etc., before entering the clinic did not get such good total good results as those who were not so treated; 62.06 per cent. in the former and 77.08 per cent. in the latter; moreover, 31.91 per cent. of the former who were operated on had metastasis, while only 19.48 per cent. of the latter operated on had metastasis.

29. Of the patients with metastasis, 17.39 per cent. are living and 82.6 per cent. are dead.

30. Of the living who had metastasis, 83.33 per cent. report a good result. In these patients the submaxillary lymph nodes on only one side were involved.

31. No patient with the cervical nodes or more than one group of any lymph nodes involved has been reported living.

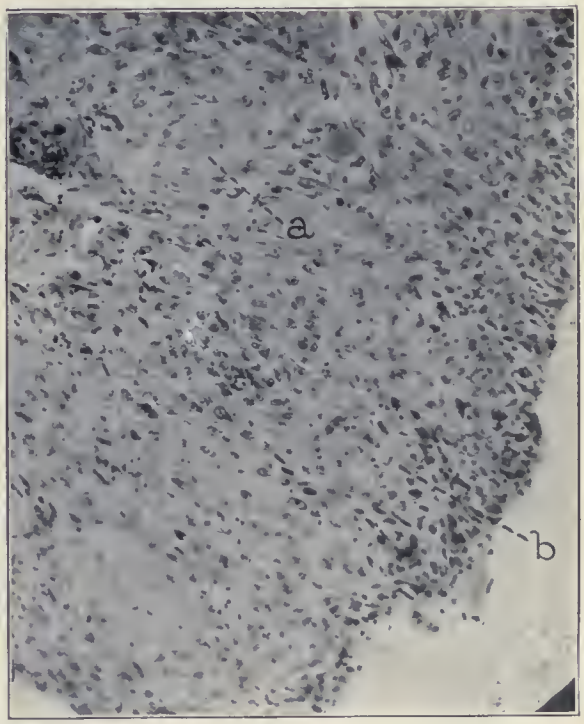


Fig. 11 (a 38260).—Grade 3 epithelioma of one of the left submaxillary lymph nodes, secondary to epithelioma of the lip; slight differentiation; the patient died from epithelioma five months after the last operation, and twenty months after the onset of the disease: *a*, partially differentiated cells; *b*, undifferentiated cells.

TABLE 17.—RESULTS FOLLOWING OPERATION ACCORDING TO GRADE

	Grade 1	Grade 2	Grade 3	Grade 4
Information received from patients operated on	45 (52.94% of 85)	192 (59.81% of 333)	65 (62.26% of 113)	4 (100% of 4)
Patients living	40 (88.88% of 45)	128 (66.66% of 192)	16 (24.6% of 65)	
Patients living, good result	39 (97.5% of 40)	119 (92.96% of 128)	13 (81.25% of 16)	
Patients living, fair result	1 (2.5% of 40)	8 (6.25% of 128)	2 (12.50% of 16)	
Patients living, poor result	.....	1 (0.78% of 128)	1 (6.25% of 16)	
Patients dead	5 (11.12% of 45)	64 (33.33% of 192)	49 (75.38% of 113)	4 (100% of 4)
Good result	4 (80.00% of 5)	23 (45.09% of 51)	6 (15.78% of 38)	
Fair result	1 (20.00% of 5)			
Poor result	.....	28 (54.90% of 51)	32 (84.21% of 38)	4 (100% of 4)
Not stated	.....	13	11	
Total good result (patient recovered from epithelioma and is living or recovered from epithelioma and died from other cause)	43 (95.55% of 45)	142 (79.32% of 179)	19 (35.18% of 54)	
Total fair result (patient living with slight recurrence or died from other cause)	2 (4.45% of 45)	8 (4.46% of 179)	2 (3.70% of 54)	
Total poor result (patient living with no improvement or died from epithelioma)	.....	29 (16.20% of 179)	33 (61.11% of 54)	4 (100% of 4)
Total result not stated	.....	13	11	

32. Of the patients reported dead who had metastasis, 91.66 per cent. died from epithelioma.

33. If a patient has the submaxillary lymph nodes on one side only involved, he has a 1 to 3 chance of getting a good result, and will be living and well on an average of 6.18 years after operation.

34. Of the patients operated on in whom no metastasis was demonstrated, 76.26 per cent. are living, and 23.73 per cent. are dead; of the living, 92.71 per cent. report a good result.

35. The average duration of the lesion in the patients with metastasis is 3.27 years, as compared with 2.40 years in those without metastasis; the average size of the lesion is 3.74 cm. in the patients with metastasis, as compared with 2.01 cm. in those without metastasis.

36. Among the known causes of death, deaths from epithelioma were as follows: none of Grade 1; 54.90 per cent. of Grade 2; 84.21 per cent. of Grade 3, and 100 per cent. of Grade 4.

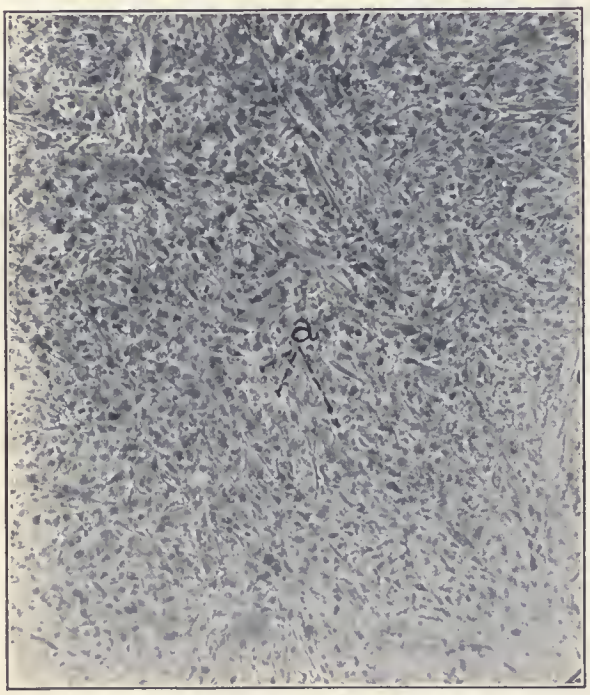


Fig. 12 (a 74162).—Grade 4 epithelioma of the liver secondary to epithelioma of the right side of the upper lip; no differentiation; numerous mitotic figures; high degree of malignancy; the patient died four and one-half months after the last operation, and eleven months after the onset of the disease, with metastatic epithelioma of the lymph nodes of the right side of the neck, right peritracheobronchial nodes, right lung, and liver: *a*, mitotic figures.

37. Some malignant neoplasm was associated with the epithelioma of the lip in 0.93 per cent. of the patients.

The First Book on Pediatrics.—The first book ever published on children's diseases is probably the work by Omnibono Ferrarii, printed in Bruges, 1557. The book is in Latin, in quarto, has 196 pages, besides three chapters with 12 pages of aphorisms. The book is dedicated to the College of Physicians and Philosophers of Verona. The dedicatory expresses the view that every person should have two purposes in life: First, avoid laziness so as not to waste his life, and second, show his gratitude to the persons from whom he has received any favors. According to the author, his book was written after having noticed that the ancient physicians who wrote about children did not say anything about nurses' diseases nor describe methodically the different diseases that might befall children.

THE INTESTINAL TUBE

ITS SIGNIFICANCE AND APPLICATIONS *

JACOB BUCKSTEIN, B.S., M.D.
First Lieutenant, M. C., U. S. Army
FOX HILLS, STATEN ISLAND, N. Y.

In the descriptions contained in this article, I am dealing primarily with the introduction of the rubber tube into the intestine beyond the duodenum. I have therefore taken the liberty of referring to it as an intestinal tube, rather than a duodenal tube, for the latter might imply that its use is limited to the duodenum.

The primary purpose of this study of a series of roentgenograms of the intestinal tube in a given case is to demonstrate more clearly the principle of the detachable bulb, as outlined in a preceding communication.[1] In that article, I described a modification of the duodenal tube, which, I believe, enhances its usefulness in intestinal feeding. In the first place, several openings were made along the course of the tube, up to a distance of about 1½ inches from its end, each opening about the size of its lumen. The purpose of this was to minimize the possibility of occlusion which occasionally occurs. Of greater value was the change from an end-piece that was permanently attached during its sojourn in the intestine, to an end-piece that could be detached shortly after the tube had reached its destination. This modification was considered of importance because of the possibilities of danger resulting from a prolonged direct contact of a weighted substance with the delicate intestinal mucous membrane. The detachable bulb not only obviates this factor, but as a direct result, makes it possible to use the tube in the intestine over a longer period of time, a factor which might be of value in the more chronic affections. I was able to accomplish this modification by sewing the metallic bulb to the end of the rubber tube with catgut. Plain catgut was first used, but in a number of cases, owing probably to a contraction of the pyloric sphincter, the tube remained in the stomach for several hours and the gastric secretions had digested the catgut, causing the premature detachment of the bulb. Without a weight at the end of the tube, there was a tendency for it to remain coiled within the stomach, the end failing to pass into the intestine. After experimenting with different kinds of catgut, I decided on the use of chromicized catgut No. 4, as this gave the most satisfactory results.

To illustrate this principle more clearly, it was decided to take a series of roentgenograms from the time the tube was swallowed and the end had passed within the intestine, until the bulb had left the intestinal canal.

As soon as the clear bile colored fluid was obtained by aspiration, I had a roentgenogram taken, with the result shown in Figure 1. The roentgenogram was taken during the process of injecting a suspension of barium in buttermilk through the open end of the tube by means of a syringe. The picture obtained showed the end of the tube within the intestine. From then on, roentgenograms were taken at varying intervals, with the idea of obtaining information regarding the time when the detachment of the bulb from the end of the tube occurred; and finally, after the bulb had left

* From the Medical Service, U. S. Army General Hospital No. 41, Col. C. R. Snyder, Chief of Staff.

1. Buckstein, Jacob: Experiences with Duodenal Feeding at U. S. Army General Hospital No. 41, J. A. M. A. **73**: 670 (Aug. 30) 1919.

the intestinal canal and had been recovered from the stool, a roentenogram was obtained showing only the rubber tube in place.

This detachment of the bulb is clearly demonstrated in Figure 2, The last plate of this series (Fig. 3) was taken after the bulb had been recovered from the stool. As a rule, the bulb is recoverable from thirty-six hours to four days after the tube is swallowed. In one case, although the bulb became detached within thirty-six hours, the patient did not recover the bulb from the stool until the fortieth day.

In examining the series of plates, I noticed an interesting fact: In the same patient and with the same length of tubing the outline of the intestine was different in each succeeding picture, although at the time each roentgenogram was taken, the patient occupied the same prone position. To demonstrate this change more clearly I had another patient swallow the rubber tube for a distance of 120 cm. from the teeth. Roentgenograms were taken at varying intervals, as indicated in Figures 4, 5 and 6. Another series (Figs. 7, 8, 9 and 10) was taken at a distance of 130 cm. from the teeth, and still another series (Figs. 11 and 12) at a distance of 150 cm. from the teeth. In the intervals between the taking of the roentgenograms, the patients engaged in the ordinary motions of getting off the roentgen-ray table, walking, sitting down and arising, getting back on the table at the appointed time, and movements of a similar nature. In the different pictures of each series I noticed changes in outline, no two being alike although taken with the same length of tube in the same patient and in the prone position.

The series of pictures appeared to indicate what may perhaps best be referred to as a shifting motion of the intestinal coils. It would seem, on *a priori* grounds, that such a shifting motion must inevitably be expected when we realize that the many coils of intestine attached to the mesentery are freely movable within the abdominal cavity. As the tube outlines the intestine, any change in position of the intestine will be indicated by a concomitant change in the position of the tube.

To determine whether changes in the outline of the coils occurred while the patient continued in the prone position and did not move about between the taking of the roentgenograms, a series of plates was taken while the patient remained prone during the entire period. One picture was taken every five minutes during the course of one hour. On examination, practically no



Fig. 1.—Shortly after the removal of intestinal fluid.



Fig. 2.—Thirty-two hours after swallowing the tube; bulb (indicated by arrow) detached.



Fig. 3.—Fifty hours after swallowing the tube, and shortly after recovering the bulb from the stool.



Fig. 4.—Tube swallowed for a distance of 120 cm. from the teeth.



Fig. 5.—Roentgenogram taken one hour after swallowing the tube.



Fig. 6.—Two hours after swallowing the tube.

change in intestinal outline was visible in the different plates.

We may assume that the changes in outline in the various series were due to changes in the position of the body in the intervals between the taking of the pictures. We may conclude, first, that a roentgenogram of a rubber tube within the intestine gives us an indication of the outline of the intestine only at that particular time; secondly, that there is a continual change in the position of the intestinal coils brought about through bodily motion, and thirdly, that we have here an indication of one specific way in which exercise acts as a therapeutic measure in some cases of chronic constipation.

It is a plausible assumption that the movement of the intestinal coils will be increased as the result of the increased bodily motion. A marked increase in the shifting of the intestinal coils probably aids in the onward propulsion of material contained within the lumen. For this reason, apart from its value in toning up the entire system through its influence on the circulation, exercise is to be advocated where constipation occurs in those of sedentary habits.

While rhythmic segmentation and intestinal peristalsis are the prime factors in the mechanics of digestion, the shifting motion of the intestinal coils, clearly indicated in the illustrations, probably plays a real part in the mechanical process of propulsion.

The possibility of the introduction of the end of the rubber tube to different portions of the small intestine widens the field of gastro-enterology from a practical therapeutic standpoint, and also from the standpoint of the biochemistry, bacteriology and parasitology of the intestinal canal. Since the end of the tube may pass well within the intestinal canal, the principle of duodenal feeding may be extended in its application to intestinal feeding, which may perhaps find a use in the rare conditions of jejunal and gastrojejunal ulcers that may complicate a gastro-enterostomy, and perhaps also in the case of fistulas that might conceivably occur at different parts of the intestine.

The principle of transduodenal lavage was first emphasized by Jutte. While our ordinary enemas at best reach only a small portion of the intestinal canal, we have by means of lavage through the intestinal tube a method of cleansing the entire intestinal canal and ridding it of stagnating material. Oxygen insufflation, and the introduction of medication through the tube, have also been practiced. Not only may lavage and medication be employed in this way, but the ready



Fig. 7.—Tube swallowed for a distance of 130 cm. from the teeth.



Fig. 8.—Five minutes after swallowing the tube.



Fig. 9.—Fifteen minutes after swallowing the tube.



Fig. 10.—Two hours after swallowing the tube.



Fig. 11.—Tube swallowed for a distance of 150 cm. from the teeth.



Fig. 12.—Twenty-four hours after swallowing the tube.

passage of the tube to varying distances within the lumen of the intestine makes possible the direct introduction of therapeutic agents to definite parts along the course of the intestinal tract.

Of interest from a biochemical standpoint is the fact that we may obtain intestinal secretions for examination. Hitherto, our analysis of the gastro-intestinal secretions in the living human being has been practically limited to the secretions of the stomach and of the duodenum. The value of our results was enhanced through the methods of fractional examination of the gastric secretions as emphasized by Rehfuss, and of the fractional examination of the duodenal secretions emphasized by Einhorn. There is no mechanical difficulty in the way of obtaining secretions beyond the duodenum. I believe that analysis of these secretions may not only prove of theoretical interest, but also may ultimately throw light on some of the more obscure intestinal derangements.

SUMMARY

1. There is a distinct value in the principle of the detachable bulb for the construction of the intestinal tube when used for feeding.
2. The intestine is clearly delineated in a roentgenogram by means of the barium filled rubber tube.
3. The shifting motion of the intestinal coils, as indicated by the changing outline of the rubber tube, throws some light on the mechanics of propulsion and on the therapeutic value of exercise in constipation.
4. Direct introduction of therapeutic agents is made possible at specific portions of the intestine.
5. Secretions from different portions of the intestine below the duodenum may be obtained for the purpose of biochemical, parasitic and bacteriologic examinations.

THE TREATMENT OF ECZEMA*

J. S. EISENSTAEDT, S.B., M.D.
Instructor in Dermatology, Northwestern University Medical School; Attending Dermatologist, Cook County Hospital
CHICAGO

As is generally well known, many diseased conditions of the skin are classed as eczemas or dermatitides. The so-called trade or occupational eczemas under the newer classification are considered as dermatitides. In discussing the treatment of eczema, therefore, it must be borne in mind that while the disease is a clinical entity, it does not represent a definite pathologic process with well-defined etiology. While it is true that many external factors may precipitate the outbreak of eczema, it is commonly assumed that some peculiar predisposition to the disease exists. This is perhaps a metabolic error, because the same external noxae which bring about an outbreak of eczema in a susceptible person will not provoke the eruption in a normal one. Concerning this point a painstaking and thorough examination of the patient and minute attention to his history and habits are of value.

Changes in metabolism which predispose to eczema are not well understood. At times these inherent causes cannot be determined; at other times they may not be controllable. In all instances in which the internal causative factors are not apparent, or their discovery is delayed, the pathologic process should be treated as observed. The patient should be warned against contact with irritating substances which may produce inflammation of the skin. If, however, the underlying cause in a given case can be determined, its elimination must be accomplished or at least attempted.

Eczema most frequently affects printers, bakers, painters and plasterers; but washerwomen, janitors, and employees in certain chemical industries or those who constantly come in contact with various irritating substances, are likewise frequently sufferers from this disease. In this type of case the patient will, of course, be ordered to refrain from his work until he is completely cured. Even then, recurrences may be anticipated if the same occupation is followed. These untoward circumstances often make treatment and cure financially difficult for the patient. Such susceptible persons should be advised to change their trade or occupation if possible, so that recurrences may be avoided.

The treatment here described has been found safe and in the majority of cases satisfactory in my own work. The external treatment of eczema depends on the intensity, the stage of the disease, and its duration; in other words, on the clinical symptoms as interpreted from a pathologic point of view. Those substances which produce irritation of the skin should first be eliminated from the patient's surroundings. In severe and generalized or extensive cases the patient should not wear starched linen or other articles of dress which rub against the inflamed parts. He should be confined to his room and should not exert himself, so as not to become overheated and thus produce hyperemia, which aggravates the condition. Next, the skin should be treated with preparations which tend to alleviate the itching and to cause the inflammatory process to retrograde. There is no specific medication for the disease: each case requires therapy based on the clinical picture at the time the patient comes under treatment. The physician should not change too rapidly from one type of medication to another. If a given preparation or combination causes improvement, it should be continued until improvement ceases. Nothing is so fruitless, nothing causes more harm, than irrational, ever-changing therapeutics.



Fig. 1.—Eczema of the face with crusts and scales and papules at borders of the lesions.

ACUTE ECZEMA

In acute papular or papulovesicular eczema the skin is often so irritable that salves and ointments as well as pastes are poorly tolerated. In these instances applications of a mild alcoholic solution of 0.5 per cent. of salicylic acid followed by the use of a bland dusting powder are indicated every three or four hours.

	Gm. or C.c.
Salicylic acid	1|2
Diluted alcohol	240|

Label: Apply to affected parts.

	Gm.
Starch	
Talcum	āā 60|

Label: Use as dusting powder.

* Read before the Chicago Medical Society, Jan. 28, 1920.
* Photographs from the collection of Northwestern University Medical School, Department of Skin Diseases and Syphilology, courtesy of Dr. Lawless.

The alcoholic solution of salicylic acid has a slightly astringent action as well as a cooling effect, and the dusting powder affords desirable protection. In this way the eczematous outbreak can often be aborted and recovery obtained in a few days. On the other hand, the papules may prove resistant and while the associated erythema and swelling disappear, the papules become somewhat harder in consistency and

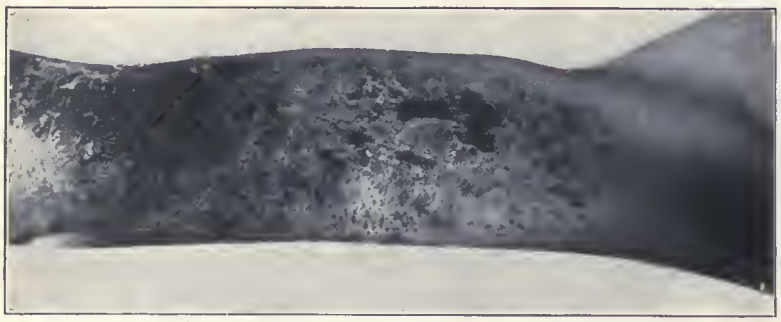


Fig. 2.—Marked subacute eczema of the right arm, with scales and crusts and papules at border of patch.

more apparent to the eye. At this stage the skin is not so irritable and may well tolerate ointments and pastes, followed by the application of a bland dusting powder, or a zinc oxid lotion may be used.

	Gm.
Zinc oxid	
Talcum ..... āā	15
Petrolatum	30

Label: Apply to inflamed parts.

	Gm. or C.c.
Zinc oxid	
Starch	
Glycerin	
Distilled water ..... āā	15

Label: Zinc oxid lotion.

Under this treatment, the acute cases become subacute, the papules lose their redness, and become darker or somewhat livid or brownish in hue. At this point a high dilution of some drug which hastens desquamation may be added to the ointment or paste. For example, tar preparations, such as the oil of cade or rectified oil of birch tar, ichthyol and its allied preparations, or salicylic acid, may be added.

	Gm. or C.c.
Zinc oxid	
Talcum ..... āā	10
Petrolatum	20
Rectified oil of birch tar	3

Label: Tar-zinc paste.

The use of tar preparations is indicated especially at this stage because of their effect in controlling dilatation of the blood vessels. However, it must be emphasized that their use should be followed rather gingerly, testing out, as it were, the patient's tolerance. It is not well to prescribe oil of cade or oil of Russian birch in strengths greater than from 0.5 to 1 per cent. in the first prescription containing tar.

In cases of vesicular and moist or weeping eczema the skin is in an even more irritable and intolerant condition. Here only the blandest, most soothing and cooling applications may be used. The preparations first mentioned are not to be used. Alcohol would cause pain, and dusting powders in admixture with the serous exudate would form a thick, adherent crust. One must, therefore, select applications which are protective and which at the same time will permit the free evacuation of the products of inflammation. In this instance a moist or wet dressing has cooling qualities and at the some time aids in the maceration of the roofs of the vesicles. Impermeable substances, such as oil silk or gutta percha tissue should not be applied over these wet dressings. It is distinctly desirable, however, to change dressings frequently. Dressings saturated with any of a number of solutions meet the indications admirably. Lead water diluted with from five to eight parts of water, solution of aluminum subacetate diluted with nine parts of water, and an aqueous solution of ichthyol 1:100, have proved efficacious.

These solutions are best used cold and should be changed every ten or fifteen minutes. The gauze should not be folded in more than three or four thicknesses, so that evaporation can readily take place. In the event that aqueous solutions are poorly tolerated, a mild ointment, such as boric acid and benzoated lard, or a mixture of equal parts of lime water and olive oil may be tried.

Should there be only slight or no improvement from these aqueous solutions or mild ointments, it is advisable to resort to the use of ointments or pastes of greater consistency; for example, zinc oxid ointment or Lassar's paste, applying the ointment on linen or mull bandage and swathing the part. If, finally, even the thicker ointments and pastes do not bring results, it may be necessary to resort to energetic stimulation which causes a crust to form. The crust acts as a protective covering under which the repair process goes forward. Stimulating applications may be made by painting the part with a 5 per cent. silver nitrate solution, or with a 10 per cent. alcoholic solution of tar. After application the part is covered with starch powder. It is well again to emphasize that the medication which causes improvement should be continued, while that which aggravates the condition or which



Fig. 3.—Eczema squamosum et crustosum of the leg with thickening of the skin, accumulation of scales and crusts and relatively sharp demarcation of lower margin of patch.

brings about no improvement must be immediately stopped.

In more chronic cases of vesicular eczema when the acute inflammatory symptoms have disappeared and when oozing has stopped and the patches are covered with adherent crusts (eczema crustosum), a good local application is a dressing impregnated with an astrin-

gent paste or ointment. Diachylon ointment serves this purpose very well; the ointment is applied to linen and the bandages are changed once daily and the part cleansed with olive oil. Such dressings are continued until all evidence of the disease has disappeared.

ECZEMA SQUAMOSUM

The method just described is applicable to cases of squamous eczema without previous use of the foregoing methods of treatment, because it will cause maceration of the scaly covering of the patch and produce an astringent effect on the dilated vessels. It also serves as a valuable protective covering. The standard treatment for squamous eczema is the application of nonirritating ointments or pastes to which may be added some antipruritic, such as thymol, phenol, camphor or salicylic acid. Tar preparations are indicated when the area has become distinctly less inflammatory and has taken on a bluish red or livid appearance. When the patient is free from eczema he must observe certain precautions: He must use a minimum of water on the skin; he should use only nonirritating soaps, and following a bath he should anoint his body with a bland oil.

ECZEMA OF THE SCALP

Eczema of the scalp is considered a special type of the disease because the numerous sebaceous glands partake in the inflammatory reaction. Thick pastes or ointments are naturally not indicated and must not be used. Nightly applications of oil to the scalp with a protective dressing on the head are advised, the scalp to be washed with soap and warm water in the morning. In this way the crusts and other products of inflammation are removed. The removal of crusts is essential so that subsequent therapy may reach the affected integument. In cases of moist eczema of the scalp, applications saturated with solution of lead acetate or aluminum subacetate meet the indications. When the oozing or weeping has stopped it is well to apply oily suspensions or thin ointments containing tar, sulphur or both.

	Gm. or C.c.
Rectified oil of birch tar	1
Precipitated sulphur	2
Benzoated lard	
Petrolatum ..... āā	20

Label: Apply to scalp.

To remove the scales an alcoholic lotion may be used with a small admixture of kerosene or ether. In many cases of chronic eczema of the scalp a 5 per cent. white precipitate ointment is of great value.

ECZEMA OF THE NARES

This condition is frequently associated with pathology in the nasal cavities, for example, deflected septum, hypertrophied turbinates, or polypus, and is often present in cases of chronic rhinitis. In these cases it is well to have the cooperation of a rhinologist. The patient often develops rhagades, and frequently erysipelas may follow if this condition persists. These cases are best treated with tampons impregnated with a 5 per cent. white precipitate ointment or a 10 per cent. ichthyol ointment.

ECZEMA OF THE PALMS

Eczema of the palms and soles is given special consideration because of the marked thickness of the epidermis in these parts. The vesicular type is rarely seen here because the epidermis is so closely and intimately connected with the underlying structures. In these cases a marked thickening of the epidermis is noted. The first therapeutic indication is the removal of this horny accumulation, so that the underlying inflammatory process may be influenced by the medication ordered. This can be accomplished by energetic therapy which produces maceration, for which a suitable ointment applied to a mull bandage and brought into intimate apposition with the skin is very useful.

	Gm. or C.c.
Diachylon ointment	30
Oil of cade	6

Label: Apply on linen and bandage.

During and after this mode of treatment it is well to use a formaldehyd ointment, because of the marked hyperhidrosis which is frequently associated with this form of eczema.

	Gm. or C.c.
Solution of formaldehyd	5
Menthol	5
Wool fat	
Petrolatum ..... āā	25

Label: Formaldehyd ointment



Fig. 4.—Chronic eczema of left leg associated with varicose veins, horny epidermis, scales and hard infiltrated papules at margin of lesion.

The frequent use of water is not permitted because it stimulates the growth of horny epidermis.

ECZEMA OF THE BREAST

In eczema of the breast it is well to examine the patient carefully for the presence of scabies. If scabies exists it should be energetically treated regardless of the intensity of the eczema. If the eczema is a result of nursing and the condition is not so severe as to necessitate weaning the child, great care must be exercised not to prescribe drugs which might be toxic to the infant. With these reservations, eczema of the breast is treated according to the foregoing rules and suggestions.

ECZEMA OF THE GENITAL AND ANAL REGIONS

It is not unusual to find eczema around the genital and anal regions, since hemorrhoids and constipation favor its presence. Cases of nervous pruritus ani are frequently sources of eczema, owing to the rubbing and scratching of the parts by the patient. Close attention to the regularity of the bowels, scrupulous cleanliness locally, and the use of ichthyol rectal suppositories are important aids in the treatment of the condition. In this location also, as long as there is weeping, applications of solution of aluminum subacetate are indicated, after which stage mild ointments may be used.

However, in many cases of eczema around the anal region, tar and other stimulating drugs may be used earlier than elsewhere.

The skin must be kept as dry as possible because any excess of moisture causes untoward maceration. In order to avoid this, ample dusting with starch powder and the application of a suspensory padded with absorbent cotton are valuable. To allay itching in the anal region, many drugs may be used in various types of application. However, one often has to experiment with the individual case to determine which drug to employ. The following may be used alone or in combination: tar, salicylic acid, betanaphthol, compound sulphur ointment (Wilkinson's ointment), solution of coal-tar, and ichthyol.

ECZEMA IN CHILDREN

In eczema of children one proceeds ordinarily in the routine manner. The children are not bathed, the skin is anointed with olive oil, and very mild ointments, such as zinc oxid ointment or zinc oxid ointment mixed with diachylon ointment, are applied to the skin. In order to prevent scratching, the hands of the child are tied. Later, as the condition improves, it is well to wash the skin with 40 per cent. alcohol.

In those locations where the skin surfaces lie in contact with one another, intertrigo often occurs in children as well as in adults. In order to care properly for these cases it is necessary to cleanse the skin carefully and to keep the surfaces apart by interposed padding. In fat children suffering from eczema intertrigo, one often sees dusting powders liberally used, frequently talcum powder, which forms into granules of variable size and often serves as an additional source of irritation. The principle of applying a bland powder is correct, but the result of using a dusting powder, especially talcum alone, is often unfortunate. Dusting powders may be used advantageously if applied on absorbent cotton rolls which are placed between the folds of the skin. By this method the cotton absorbs the moisture, and the powder does not form into rough, irregular, irritating granules. The cotton rolls must, of course, be changed frequently because they quickly become saturated. Here again in cases of marked or even moderate oozing the indication is for moist dressing of solution of aluminum acetate or subacetate, which should be applied cold and frequently changed.



Fig. 5.—Chronic eczema with marked lichenification on inner aspect of thigh.

ECZEMA ASSOCIATED WITH ANEMIA

In cases of eczema associated with marked anemia, the treatment is similar to the same type of eczema in other persons, except that experience has shown that the admixture of cod liver oil in the ointments favors their tolerance. The general condition of the patient, usually a young person, must, of course, be taken into consideration. Iron, arsenic, cod liver oil or other remedies for anemia may be prescribed as indicated.

CHRONIC ECZEMA

Chronic eczema shows superficial inflammatory signs similar to those noted in the acute type. However, there is present in these cases a deep-seated infiltration of the corium resulting from the protracted course of the disease. Therapy is directed, therefore, first toward the symptoms as observed, and second, to overcome the infiltration in the corium and the thickening of the skin. So long as the latter is not accomplished, recurrences may be expected. The superficial inflammatory reaction is treated in the same manner as in acute or subacute cases, with moist dressings, ointments, pastes and other applications. It usually yields readily to treatment and leaves the skin somewhat discolored, scaly, and often cyanotic and thickened.

In these chronic cases we do not then apply ointments containing tar or ichthyol as has been described, but institute a definitely planned treatment which compresses the involved cutis, and produces maceration and subsequent exfoliation of the overlying layers. This is best carried out with bandages impregnated with diachylon ointment, which actually function as plasters, or, in less inflammatory cases, by the use of salicylic acid plaster. This treatment must be carried out often for a period of weeks, but eventually produces excellent results.

It is well in cases of marked thickening of the skin to apply a thin coating of the undiluted oil of cade with a camel's hair brush, and then bandage with diachylon ointment. If this intensive therapy is poorly tolerated, the parts may be bandaged with Lassar's paste after the application of oil of cade. Often such dressings may be left for several days, and need not be removed unless the patient complains of burning or pain. This method simplifies the treatment considerably. The latter part of the treatment of such a persistent chronic case is carried out by the application of tar ointments or pastes, but only after the intense thickening has been carefully eliminated by the previous use of bandages.

INTERNAL THERAPY OF ECZEMA

In an article of this character the internal treatment can only be outlined. As has been stated, the causative factors of internal origin, when discovered, must be eliminated as completely as possible.

The dietary management of a patient is one of the most important features in the treatment of many if not most cases of eczema. Some patients do not tolerate carbohydrates as well as others, and in these cases a reduction of carbohydrate intake almost to complete

elimination is a necessary procedure. In all cases it is well to examine the urine, noting any change from normal; sugar especially should be looked for. Some cases of carbohydrate intolerance, while showing no sugar in the urine, present quite constantly an increased amount of sugar in the blood.

Other patients are intolerant of sodium chlorid in large quantities, and questioning will often bring out the fact that these patients indulge overmuch in the use of ordinary table salt. Still other patients eat excessive quantities of nitrogenous articles of food, and a diminution in this element is of distinct advantage.

Especially in persons past middle life suffering from eczema, nephritic changes should be looked for, and if present, properly treated. Certain other patients with eczema present an anaphylactoid if not a true anaphylactic reaction against specific proteins or proteins of certain groups, among which may be mentioned egg albumin, pork, and the protein of cow's milk. It would lead too far ahead to enter on a discussion of the various proteins which, in susceptible persons, may cause an outbreak of eczema, but the careful clinician will bear these possibilities in mind and will inquire into the dietary habits of his patients. Often he will find that the patient himself may connect the ingestion of certain articles of diet with the appearance of the eruption. A patient recently under my care reacted in a marked way to the ingestion of walnuts. Besides the eczematous condition which followed he also presented marked edema of the nasal and conjunctival mucosae. It is well, therefore, to start a patient off with an absolutely bland diet, which is readily digestible and which contains little or none of the substances that experience has shown may be productive of eczema.

There are undoubtedly patients in whom the predisposition to eczema can in a greater or less degree be controlled by organotherapy. I have repeatedly seen patients materially aided by small doses of thyroid substance, and several neurotic and underdeveloped young women, I am sure were markedly benefited by the use of corpus luteum extract. However, the physiology and therapeutic uses of the ductless gland substances are in general so poorly understood that it is impossible to give clear-cut indications for their use, and the suggestion is offered merely as one that they may sometimes be helpful in the management of eczema.

25 East Washington Street.

Infant Mortality in War Zone.—A report on the subject of the sufferings of French and Belgian children under German domination in the occupied regions has been made to the French Academy of Medicine by Dr. Albert Calmette. It was found that out of 18,036 children who at the time of the armistice were attending the public or private schools of Lille, rather more than 8,000 had to be sent to hospital or convalescent colonies by the ministry of the invaded regions. This selection, made by specially qualified doctors, established that in all the scholastic groups at the end of the occupation the growth of 60 per cent. of the children had been definitely arrested, while about 40 per cent. showed clear signs of tuberculosis of the lymph glands. In a single school (Ecole Fombelle) inspected in March, 1919, of 210 children examined only one was normal; 163 suffered from deformity or other disease; 139 had swollen glands; forty-two had rickets, and six had pulmonary tuberculosis.—*Med. Officer*, Nov. 29, 1919.

Clinical Notes, Suggestions, and New Instruments

BLOOD TRANSFUSION APPARATUS

L. L. STANLEY, M.D., SAN QUENTIN, CALIF.

This blood transfusion apparatus was devised and has been successfully used at the California State Prison, at San Quentin, Calif. It is of the ball valve plan, and may be used with any capacity Luer syringe.

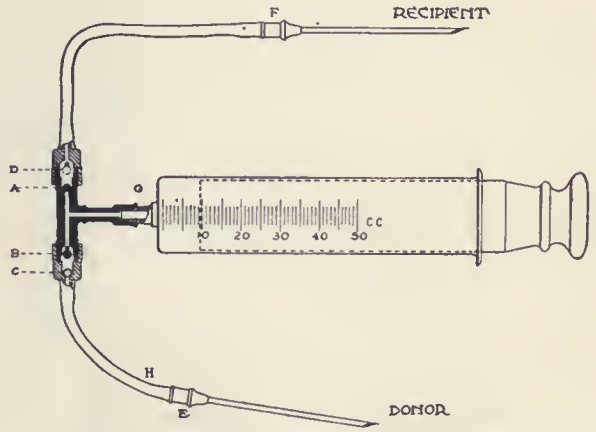


Fig. 1.—Details of blood transfusion apparatus.

When the plunger of the syringe is drawn out, the ball *A* (Fig. 1) engages in the socket, not permitting any fluid to pass it, while the ball *C* is displaced upward to position *B*, allowing the blood to come from the donor into the syringe. When the syringe piston is pushed in, the ball in the lower chamber engages the socket at *C*, preventing the fluid from returning to the donor. At the same time the ball *A* is released from its socket and assumes a position in the upper chamber at *D*, allowing the blood forced from the syringe to flow into the veins of the recipient.

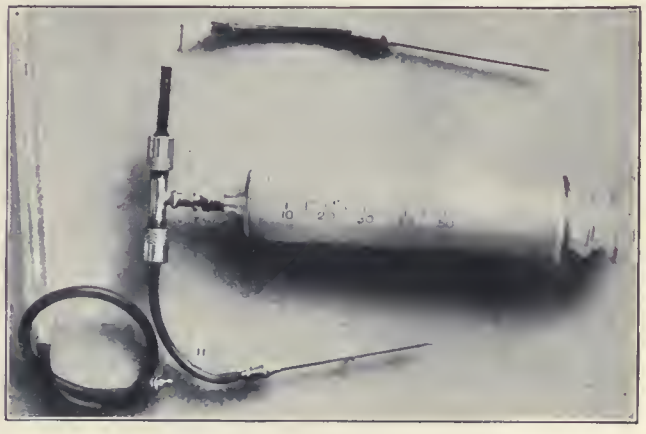


Fig. 2.—Blood transfusion apparatus and buret.

The donor and the recipient are placed on adjoining tables, with the arm of the recipient slightly higher than that of the donor, for the balls engage by gravity, and the valve must be held in a vertical position. The syringe is thoroughly sterilized, and the inside is coated with Ablemann's citrated ointment, which consists of:

	Gm. or C.c.
Adeps lanae	10
Aqua	10
Sodium citrate	10
Petrolatum q. s. ad	100

The valve connections and needles are boiled together.

With the syringe connected, enough physiologic sodium chlorid solution is drawn in to displace any air, and leave a

few cubic centimeters in the barrel. The cubital veins of both parties are located, and tourniquets applied. The needle is placed first into the vein of the donor, and when blood begins to flow, is connected to the apparatus at *E*. Similar procedure is done with the recipient, and when the connection is made at *F*, the operator may pump the blood.

The apparatus is so arranged that it may be taken apart and thoroughly cleaned. It is well to have two of these valves, one to quickly replace the other, in case the syringe should begin to work hard, or the blood begin to clot. The first valve is easily disconnected at *E*, *F* and *G*, and the second one substituted.

Should it be desirable to give citrate solution with the blood, a buret (*I*, Fig. 2), to which is attached a rubber tubing with a No. 28 hypodermic needle at the end, is provided. When the apparatus is connected up, the needle is plunged into the connecting tube at *H*. As the blood is drawn in from the donor, likewise the citrate solution is taken in from the container *I*. The percentage of the mixture is regulated by the size of the needles at *H* and *E*, and the strength of the citrate solution.

The advantages of the apparatus are:

1. The amount of blood transfused can be measured.
2. The blood is not exposed to the air.
3. The method is direct.
4. Only veins are used, and repeated transfusions from the same donor may be made.
5. Any amount can be transfused, and done very quickly.

In this prison, many injections of arsphenamin are given each week. When the patients are ready, sufficient solution is prepared for ten consecutive injections.

With this apparatus, using a 50 c.c. Luer syringe, one dose is drawn from the mixing vessel through the donor's tube, and injected into the patient, through the recipient's tube. This is more satisfactory than the gravity method, and saves considerable time.

UNIQUE FOREIGN BODY IN NOSE*

IRVING WILSON VOORHEES, M.S., M.D., NEW YORK

N. A. W., a colored man, aged 34, a native of the British West Indies, came to the West Side Dispensary, Jan. 17, 1920, with a history of yellow discharge from the right nostril during the previous two months. Examination revealed a large black mass in the right nasal fossa, very firm and hard, but freely movable in its bed. The septum was pushed over to the left, and the mass was bathed in yellow pus. It seemed reasonable to suppose that we had to do with a mass of necrotic bone, probably a sequestrum from the naso-antral wall following a tertiary lesion. Pledgets of cotton saturated with 10 per cent. cocain were introduced into the nose and left for ten minutes, at the end of which time our diagnostic acumen received a rude shock.

When 17 years of age, the patient tried to invent a gun. He took a piece of bicycle pipe about 1 foot long, into the open end of which he screwed a threaded bolt borrowed for the occasion from some part of a bedstead. He then bored a touch-hole in front of this breech plug. Into the muzzle he loaded a charge of gunpowder, rammed it down, followed this with a few BB shots, which were also rammed down, and then invited his cousin to apply a flame to the touch-hole while he held the apparatus in the position of aiming. The charge exploded and so did the piece of pipe. The breech plug blew backward and had never been seen or found, but small pieces of iron penetrated the left side of the nose in the region of the ethmoid. The scar from these fragments is still quite visible but insignificant. The boy was in bed for seventeen days, and was visited twice daily by a physician, who did not, however, locate the piece of iron. For seven months thereafter the boy experienced pain in his head and between the eyes about 10 o'clock each morning. Considerable discharge came from his nose. This was worse, he thinks, in summer. He came to the clinic chiefly because his friends chided him about a stench from his head, and because of "frequent colds."

After removal of the cocain pledgets, the black mass above mentioned was grasped with strong nasal grasping forceps, and much to our surprise a solid heavy object was gradually withdrawn from the nose, occasioning only slight discomfort in its passage. When washed off under the water tap, the improvised "breech plug" was identified as the missing iron bolt which seventeen years previously had been suddenly projected into the patient's nose.

The dimensions and weight of the bolt were: length 5.5 cm. (2⅛ inches); diameter, 1.5 cm. (½ inch); weight, a little over 1 ounce.

There is probably some latent sinus trouble, which we intend to look into as soon as roentgenograms can be made.

It seems hardly possible that any human being could carry such a foreign body in any part of his anatomy for seventeen years and not be conscious of its presence.

*Patient and specimen presented before the Nose and Throat Section, New York Academy of Medicine, Jan. 21, 1920.

Special Article

TYPHOID IN THE LARGE CITIES OF THE UNITED STATES IN 1919

EIGHTH ANNUAL REPORT

THE JOURNAL presents its eighth annual survey[1] of typhoid fever mortality in cities in the United States having more than 100,000 population. The cities included in the summary number sixty, and are the same as those reported on last year.[2]

It should be especially noted that the calculated typhoid rates for 1919 presented in this report are based on relatively unsatisfactory population estimates. It is now nine years since the 1910 census, and probably in a number of instances the population estimates are quite wide of the mark. The U. S. Census Bureau makes no estimate at all for the population of Denver, Memphis, Portland, Ore., Seattle and Spokane. Special methods of estimation have been used by the Census Bureau for the population of Cleveland and Washington.

The margin of error is probably not great in a few cities, such as Albany, N. Y., but in many others it will doubtless be shown by the 1920 census enumeration that calculated death rates for 1919 will have to be considerably revised. For these reasons, typhoid death rates can be subjected only to a broadly critical comparison this year.

The nine largest cities in the country (Group 1) show a very notable improvement in typhoid death rates as compared with 1918. For the first time, all the cities in this group have a rate below 10. In only one instance (Philadelphia) are the 1919 figures higher than those for the preceding year. Baltimore has the lowest typhoid rate in its history, and rises into the first rank (cities having a death rate of less than 10). The improvement in Baltimore is all the more noteworthy in that the recently annexed territory has had a much higher typhoid morbidity than the older portion of the city. It is stated that for the first

1. The preceding articles were published, May 31, 1913, p. 1702; May 9, 1914, p. 1473; April 17, 1915, p. 1322; April 22, 1916, p. 1305; March 17, 1917, p. 845; March 16, 1918, p. 777, and April 5, 1919, p. 997.

2. The number of typhoid deaths has been sent us by the local officer of health, and the rates have been calculated on the basis of population estimates made according to the method of the U. S. Census Bureau. It may perhaps be noted that the figures kindly furnished us by the municipal officials include the deaths of nonresidents as well as residents occurring within the city limits. In some instances this undoubtedly gives an exaggerated impression of the amount of typhoid fever in a community, but at present statisticians are agreed that "the attempt to eliminate the deaths of nonresidents would often result in an understatement of the true mortality" (Bureau of the Census, Mortality Statistics, 1912, p. 13).

six months of 1919 the morbidity rate in the annexed district was about five times as great as in the old city. It speaks well for efficient health administration in that city that, in the face of this disadvantage, the total typhoid mortality should show a decrease.

A particularly satisfactory improvement appears in Detroit, causing this city to rank well among other Northern cities for the first time in a number of years. The decline in Detroit's typhoid, which began about 1917, has now brought the death rate to the lowest point in the history of the city. Typhoid cases in Detroit are at present being studied very carefully. A relatively large proportion (about 45 per cent.) is attributed to outside infection. The proportion of contact cases seems to be low as compared with the figures for New York City, only twenty-four out of a total of 281 being attributed to this cause. Swimming and bathing in the polluted river water about the city is considered to be an important factor in the typhoid situation. Not a single case has been traced to milk during the three years 1917, 1918 and 1919.

Chicago, New York, Boston and Cleveland report typhoid rates that are astonishingly low. The improvement due to filtration of the Cleveland water supply is doubtless largely responsible for the lowering of the

TABLE 1.—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 1 (MORE THAN 500,000 POPULATION)

	Deaths from Typhoid per 100,000 Population				
	1919	1918	Average 1916-1919	Average 1911-1915	Average 1906-1910
Chicago	1.2	1.4	2.7	8.2	15.8
New York	2.0	3.7	3.4	8.0	13.5
Boston	2.2	2.5	2.8	8.0	16.0
Cleveland	2.4	4.7	4.9	10.0	15.7
Philadelphia	4.4	3.0	5.3	11.2	41.7
Detroit	5.3	10.0	12.0	18.1	21.1
St. Louis	5.8	7.2	7.5	12.1	14.7
Pittsburgh	6.2	9.8	8.9	15.9	65.0
Baltimore	8.9	12.2	13.6	23.7	35.1

rate in that city. Chicago heads the list of cities in this group for the third consecutive year.

As in previous years, the New York City Health Department has printed quarterly the results of its detailed study of each typhoid case. Increasing success seems to mark the work of the department in tracing sources of infection. For the last quarter of 1919 it is reported that the probable mode of infection was determined in 35.7 per cent. of the cases, as against 30 per cent. in the corresponding quarter of 1918. A relatively large proportion of the cases was traced to out of town infection. The majority of the cases traced to their source within the city were due to contact with active cases or chronic carriers. Water-borne and milk-borne typhoid infection seems to have almost disappeared from New York City.

It is doubtful whether there is today any other country in the world in which the nine largest cities could show so low an average typhoid rate as that reached in Group 1 in 1919.

The cities in Group 2 (from 300,000 to 500,000 population) show improvement almost without exception over the 1918 rates. Newark, N. J., and Cincinnati reach very low records, and Seattle maintains its admirably low rate of last year (2.3). The protection of the watershed of the Seattle water supply is receiving special attention from the local health authorities, since it is estimated that the watershed now has a population of from 500 to 600. All of these persons are required to submit themselves to typhoid immunization, and other methods of controlling conditions on the watershed are being energetically carried out.

Milwaukee continues to maintain its astonishingly low rate of the past few years. The purification of the water supply is still an issue in that city. Chlorination is now being practiced and, as the typhoid death

TABLE 2.—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 2 (FROM 300 000 TO 500 000 POPULATION

	Deaths from Typhoid per 100,000 Population				
	1919	1918	Average 1916-1919	Average 1911-1915	Average 1906-1910
Newark, N. J.	2.1	3.5	3.6	6.8	14.6
Seattle	2.3	2.3	3.1	5.7	25.2
Cincinnati	2.6	4.1	3.5	7.8	30.1
Minneapolis	3.1	7.6	5.6	10.6	32.1
San Francisco	3.3	4.6	4.0	13.6	27.3
Milwaukee	3.5	6.2	7.6	13.6	27.0
Washington	3.7	11.9	10.3	17.2	36.7
Los Angeles	4.7	2.8	3.9	10.7	19.0
Buffalo	7.0	7.8	8.9	15.4	22.8
New Orleans	13.7	20.1	20.0	20.9	35.6

rate shows, with eminent success; but it is generally considered that filtration will have to be resorted to eventually. Experiments to determine the applicability of various rapid filtration methods have been conducted during the past year.

New Orleans shows a substantial reduction in its typhoid rate for the first time in about ten years, and Washington records the remarkably low rate of 3.7, which brings it at once into cities of the first rank. The table (Table 2) shows the truly amazing improvement that has occurred in Washington in the past ten years. The typhoid death rate in this city in 1919 was almost exactly one-tenth the average rate for 1906-1910.

Group 3 (from 200,000 to 300,000 population) makes a much better record than in 1918, nearly every city showing a decrease in the typhoid rate. Denver and Columbus appear to have been exceptionally favored. Seven cities report rates under 5, as against four cities in 1918.

Rochester, N. Y., for some reason appears to have about doubled its rate of 1918, although the 1919 rate of 3.8 is by no means alarmingly high. Rumors were current in that city at one time during the summer that a break in the water main had led to the entrance of river water into the system; but this report seems to

TABLE 3.—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 3 (FROM 200,000 TO 300,000 POPULATION)

	Deaths from Typhoid per 100,000 Population				
	1919	1918	Average 1916-1919	Average 1911-1915	Average 1906-1910
Jersey City	2.2	4.1	4.0	7.2	12.6
Columbus, Ohio	3.0	8.9	8.2	15.8	40.0
St. Paul	3.0	3.5	3.4	9.2	18.3
Denver	3.2	8.7	6.0	12.0	37.5
Providence, R. I.	3.4	4.5	4.6	10.2	14.3
Portland, Ore.	3.6	5.6	4.8	10.8	23.2
Rochester, N. Y.	3.8	1.9	3.4	9.6	12.8
Indianapolis	4.7	6.6	11.9	20.5	30.4
Louisville, Ky.	9.0	12.4	10.8	19.7	52.7
Kansas City, Mo.	11.2	13.7	11.3	16.2	35.6

have been unconfirmed by the city health authorities. Louisville, Ky., makes a particularly good showing. It is stated, however, that a few cases of preventable typhoid have occurred in that city due to drinking contaminated spring water in a public park. Milk-borne typhoid was also a factor during the summer, but both city and state health departments acted with commendable promptitude, and the neglect of physicians to

report cases of typhoid in the family of a dairyman was summarily dealt with. The degree of improvement reached in Louisville with its large negro population may be appreciated by comparing the average of 1916-1919 (10.8) with the average for 1906-1910 (52.7). Indianapolis and Columbus, two Northern

TABLE 4.—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 4 (FROM 125,000 TO 200,000 POPULATION)

	Deaths from Typhoid per 100,000 Population				
	1919	1918	Average 1916-1919	Average 1911-1915	Average 1906-1910
Spokane, Wash.	0.0	9.1	4.5	17.1	50.3
Scranton, Pa.	1.3	5.2	4.4	9.3	31.5
Worcester, Mass.	2.8	4.6	3.9	5.0	11.8
Fall River, Mass.	3.0	7.0	9.4	13.4	13.5
Toledo, Ohio	3.1	9.9	11.4	31.4	37.5
Oakland, Calif.	3.2	4.7	3.4	8.7	21.5
Richmond, Va.	3.7	7.5	10.5	15.7	34.0
Paterson, N. J.	4.2	2.1	4.7	9.1	19.3
Omaha	4.4	5.0	5.2	14.9	40.7
New Haven, Conn.	5.7	5.2	7.0	18.2	30.8
Syracuse, N. Y.	6.7	9.3	8.6	12.3	15.6
Atlanta, Ga.	9.6	14.4	14.6	31.4	58.4
Birmingham, Ala.	14.6	31.9	35.8	....	....
Memphis, Tenn.	58.4	15.9	32.6	42.5	35.3

cities which, for some years, lagged behind similarly situated communities, seem now to be permanently in the class with other cities having the same climatic and racial characteristics. Kansas City, however, shows relatively little diminution in its typhoid rate, and has, indeed, remained practically stationary for four or five years. The rate for 1919 appears to be slightly higher than that in 1916 and 1917. It seems a favorable time for an intensive investigation of the relatively high prevalence of typhoid fever in that city.

Group 4 (from 125,000 to 200,000 population) includes the city with the highest (Memphis) and that with the lowest (Spokane) 1919 death rate in the whole series of sixty cities included in this summary. Spokane reports that it has not had a single death from typhoid fever, a truly remarkable showing, but one that we may anticipate will be rivaled by other communities in the near future. Cambridge, Mass. (Group 5), reports only two deaths, and Hartford, Conn. (Group 5), only one. Spokane, however, seems to

TABLE 5.—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 5 (FROM 100,000 TO 125,000 POPULATION)

	Deaths from Typhoid per 100,000 Population				
	1919	1918	Average 1916-1919	Average 1911-1915	Average 1906-1910
Hartford, Conn.	0.9	7.0	6.8	15.9	19.0
Tacoma, Wash.	1.6	5.7	3.3	10.4	....
New Bedford, Mass.	1.6	8.0	4.8	15.0	16.1
Cambridge, Mass.	1.7	2.7	2.4	4.0	9.8
Springfield, Mass.	2.6	3.6	4.3	17.6	....
Camden, N. J.	2.7	3.6	5.3	4.5	....
Lowell, Mass.	3.4	1.8	5.8	10.2	13.9
Bridgeport, Conn.	3.8	3.9	5.7	5.0	10.3
Dayton, Ohio	4.5	6.9	9.9	14.8	22.5
Grand Rapids, Mich.	5.1	10.3	10.8	25.5	29.7
Salt Lake City	5.4	7.1	10.2	13.2	....
Reading, Pa.	6.1	12.3	11.1	31.9	42.0
Trenton, N. J.	6.8	9.4	8.7	22.3	....
Albany, N. Y.	7.6	10.7	9.1	18.6	17.4
San Antonio, Tex.	9.6	54.3	26.6	29.5	....
Dallas, Tex.	12.2	12.6	17.9	....	....
Nashville, Tenn.	15.8	32.7	23.5	40.2	61.2

bear off the honor of being the first American city with more than 100,000 population to have no single death from typhoid fever within its borders during a calendar year.

At the other end of the scale, Memphis has temporarily descended into the depths. In March and April, 1919, Memphis suffered from an old fashioned waterborne epidemic of typhoid due to the serious contamination of the city supply. This unfortunate occurrence has made the Memphis rate the highest among the sixty cities here considered. It is, in fact, the highest typhoid rate recorded in any one of these cities since 1911, when it was Memphis again that had the unenviable distinction of having the highest rate from typhoid fever of any large city in the United States. An encouraging feature of the situation in that city, however, is that, except for the water epidemic in the spring, typhoid seemed well under control, only four deaths being reported for the last four months of 1919.

Richmond, Va., makes a new low record of 3.7, a rate which is probably the lowest ever reached by any Southern city of more than 100,000 population. Not a single death occurred in that city during the first six months of last year. The rate is so low, in fact, that difficulty may well be experienced in living up to it during the next few years. We have had occasion to

TABLE 6.—DEATH RATES FROM TYPHOID IN 1919

Honor Roll (from 0.0 to 2.0)			
Spokane, Wash.	0.0	Tacoma, Wash.	1.6
Hartford, Conn.	0.9	New Bedford, Mass.	1.6
Chicago	1.2	Cambridge, Mass.	1.7
Scranton, Pa.	1.3	New York	2.0
First Rank (from 2.0 to 5.0)			
Newark, N. J.	2.1	San Francisco	3.3
Boston	2.2	Providence, R. I.	3.4
Jersey City	2.2	Lowell, Mass.	3.4
Seattle	2.3	Milwaukee	3.5
Cleveland	2.4	Portland, Ore.	3.6
Cincinnati	2.6	Richmond, Va.	3.7
Springfield, Mass.	2.6	Washington	3.7
Camden, N. J.	2.7	Bridgeport, Conn.	3.8
Worcester, Mass.	2.8	Rochester, N. Y.	3.8
Fall River, Mass.	3.0	Paterson, N. J.	4.2
St. Paul	3.0	Omaha	4.4
Columbus, Ohio	3.0	Philadelphia	4.4
Minneapolis	3.1	Dayton, Ohio	4.5
Toledo, Ohio	3.1	Los Angeles	4.7
Oakland, Calif.	3.2	Indianapolis	4.7
Denver	3.2		
Second Rank (from 5.0 to 10.0)			
Grand Rapids, Mich.	5.1	Trenton, N. J.	6.8
Detroit	5.3	Buffalo	7.0
Salt Lake City	5.4	Albany, N. Y.	7.6
New Haven, Conn.	5.7	Baltimore	8.9
St. Louis	5.8	Louisville, Ky.	9.0
Reading, Pa.	6.1	Atlanta, Ga.	9.6
Pittsburgh	6.2	San Antonio, Tex.	9.6
Syracuse, N. Y.	6.7		
Third Rank (from 10.0 to 20.0)			
Kansas City, Mo.	11.2	Birmingham, Ala.	14.6
Dallas, Tex.	12.2	Nashville, Tenn.	15.8
New Orleans	13.7		
Fourth Rank (over 20.0)			
Memphis	58.4		

comment previously on the admirable health administration in Richmond during the last decade, which has been one of the factors that has made such achievements possible. Two other Southern cities, Atlanta and Birmingham, have also established low typhoid rates which must be regarded as highly creditable in view of the climatic and racial conditions with which these cities have to contend. The Birmingham milk supply has very properly been the subject of special agitation. There is reason to believe that milk-borne infection and fly-borne infection are still relatively important typhoid factors in many Southern cities. It can be fairly predicted that with a good pasteurization ordinance the typhoid in Birmingham will be materially reduced as it has been in other cities where suitable measures for safeguarding milk supplies have been put in force.

Toledo, which in 1916 had a rate of about 23, now records the very low rate of 3.1. Fall River, Scranton, Oakland and Worcester are other cities in which the 1919 typhoid rate was very low.

Group 5 (from 100,000 to 125,000 population) comprises seventeen cities. In all but one of these the typhoid rate was lower in 1919 than in 1918, the exception showing only a trifling change. It is plain that in most of the cities in this group the number of deaths is now so small that a slight fluctuation in rate from year to year has little significance. Many cities now report only one, two, three or four deaths in a year, and not all of these are deaths of residents.

It is probable, as stated earlier in the summary, that population estimates for some cities are quite wide of the mark. This is, perhaps, particularly true of certain cities in this group. Such cities as Bridgeport and Dayton, for example, may find their typhoid rates somewhat reduced when the 1920 census figures become available for use in calculation; but in cities of this size having less than half a dozen typhoid deaths, slight rate changes are of comparatively little significance.

It is evident that the maintenance of a low typhoid rate is not to be taken as a matter of course without the exertion of constant vigilance by the local health authorities. The remarkably successful results reached in this group of cities are due to the unremitting efforts of health officers in safeguarding the public water and milk supplies, in applying proper methods of excreta disposal, and in tracking down typhoid carriers. It must be remembered, too, that many of these communities are surrounded by villages and country districts less scrupulous with regard to typhoid occurrence or less able to cope with it than themselves, so that probably a considerable proportion of city typhoid is due to infection contracted outside the municipal limits.

It is worth noting that the three Southern cities that had the highest typhoid rate in Group 5 in 1918 all show a reduction this year.

The continued lowering of typhoid death rates in American cities is one of the outstanding features of modern sanitary progress. The rate for the whole group of sixty cities containing approximately one fourth of the population of the country is now less than 5. In 1912, only one of these cities had a rate lower than 5. So late as 1916 there were only three cities with a rate of 2 or less. There are now eight. In 1912 there were only fifteen out of the fifty-one cities then on our list that had a rate less than 10. All but four of these cities had a lower rate than 10 in 1919. Other comparisons might be made, but the tables themselves are sufficiently striking.

TABLE 7.—AVERAGE DEATHS FROM TYPHOID PER HUNDRED THOUSAND IN EACH GROUP, 1916, 1917, 1918 AND 1919

Group	Year	No. of Cities	Total Population	No. of Deaths	Av. Deaths per 100,000
1	1916	9	13,743,746	854	6.2
1	1917	9	14,027,263	774	5.5
1	1918	9	13,809,901	598	4.3
1	1919	9	15,019,516	463	3.1
2	1916	10	4,053,281	344	8.5
2	1917	10	4,150,099	329	7.9
2	1918	10	4,372,088	298	6.8
2	1919	10	4,511,181	204	4.5
3	1916	10	2,635,983	248	9.4
3	1917	10	2,701,029	173	6.4
3	1918	10	2,773,716	193	6.9
3	1919	10	2,829,092	134	4.7
4	1916	14	2,250,991	330	14.7
4	1917	14	2,310,372	307	13.3
4	1918	14	2,449,736	331	13.5
4	1919	14	3,564,860	210	8.2
5	1916	17	1,983,918	235	11.8
5	1917	17	2,031,313	229	11.3
5	1918	17	2,053,215	240	11.7
5	1919	17	2,103,710	115	5.5
Total....	1916	60	25,667,919	2,011	8.1
Total....	1917	60	25,220,076	1,812	7.2
Total....	1918	60	25,458,656	1,660	6.5
Total....	1919	60	27,028,359	1,126	4.2

The unusually large percentage of typhoid reduction shown in 1919 as compared with preceding years may very well be attributed in part to the immunization in the army camps of a large proportion of the particularly susceptible age group. It is plain, too, that the continued safeguarding of water and milk supplies has nearly everywhere reduced typhoid to so low a point that health authorities are enabled to devote more attention to the prevention of contact and carrier cases. Wherever it is possible to investigate promptly and thoroughly the circumstances surrounding the development of each individual case, further spread of the disease is likely to be materially diminished. The outlook is highly encouraging for the practical elimination of typhoid fever.

TABLE 8.—TOTAL AVERAGE TYPHOID DEATH RATE (1910-1919)

	Total Population (57 Cities)* Estimated by U. S. Census Bureau Methods	Typhoid Deaths	Typhoid Death Rate per 100,000
1910	20,996,035	4,114	19.59
1911	21,545,014	3,391	15.74
1912	22,093,993	2,775	12.56
1913	22,642,972	2,892	12.77
1914	23,191,951	2,408	10.38
1915	23,740,930	2,068	8.71
1916	24,205,359	1,842	7.61
1917	24,740,068	1,647	6.65
1918	24,971,278	1,557	6.23
1919	25,526,186	987	3.87

* Three cities are omitted from this summary because data for the full period are not available.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

BENZOCAINE (See New and Nonofficial Remedies, 1920, p. 33).

Anesthesin-Calco.—A brand of benzocaine complying with the N. N. R. standards.

Manufactured by the Calco Chemical Company, Bound Brook, N. J. No U. S. patent or trademark.

GONOCOCCUS VACCINE (See New and Nonofficial Remedies, 1920, p. 283).

The Gilliland Laboratories, Ambler, Pa.

Gonococcus Vaccine (Polyvalent).—A number of strains of *M. Gonorrhea Neisser* are used in the preparation of this vaccine; the killed bacteria are suspended in physiological solution of sodium chloride and preserved with 0.25 per cent. three cresols. Marketed in packages of four syringes containing respectively 250, 500, 1,000 and 2,000 million killed gonococci; also in packages of four 1 Cc. ampules containing respectively 250, 500, 1,000 and 2,000 million killed gonococci.

OVARY (See New and Nonofficial Remedies, 1920, p. 201).

Ovarian Residue-Hollister-Wilson.—The residue from the fresh ovaries of the hog after the ablation of the corpus luteum.

Actions and Uses.—Ovarian Residue is used for the same conditions as the entire ovarian substance but is claimed to have the advantage of being somewhat more stable in composition (see general article on Ovary, New and Nonofficial Remedies, 1920).

Dosage.—From 0.06 to 0.2 Gm. (1 to 3 grains).

Manufactured by the Hollister-Wilson Laboratories, Chicago. No U. S. patent or trademark.

Ovarian Residue-Hollister-Wilson is a grayish powder, having a peculiar odor. It is prepared from the entire fresh hog ovary by removal by hand of the corpus luteum. The residue is dried and powdered.

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SATURDAY, MARCH 6, 1920

AN INDEX OF THE BODY'S MUSCULATURE

The physiologic significance of creatinin, which regularly appears in the urine, is still shrouded in mystery. Its close chemical similarity to creatin, long ago discovered to be a characteristic component of the muscular tissues of the higher animals, has inevitably led to conjectures regarding a relationship between the two chemical compounds; but no tenable theory can be formulated at the present day. The demonstration that urinary creatinin may have a purely endogenous origin and be excreted in comparatively constant daily amounts by persons who do not ingest either creatin or creatinin gave an impetus to the search for its precursor.

The average amount of creatinin excreted daily during a creatin and creatinin free regimen, expressed as milligrams per kilogram of body weight, has been termed the creatinin coefficient.[1] This has been estimated at about 25 mg. for lean persons and 20 mg. for the corpulent, the difference indicating that muscular mass rather than body weight per se is a determining factor in the creatinin coefficient of the body.

Creatinin does not seem to be increased appreciably in the urine as the direct result of exercise; hence it is doubtful whether muscular contraction leads immediately to a transformation of muscle creatin or whether there is some other muscular genesis of the urinary end-product. Nevertheless, it has long been maintained that the creatinin coefficient may be an index of the functional capacity of the muscles, because of its apparent proportionality to the mass of active contractile tissues. In muscular atrophies, the creatinin excretion appears to be below normal.

There are times when body weight gives a distorted view of the functional efficiency of the organism. In such circumstances it would be helpful to have an index as to the degree of involvement of the master tissues of the body. By a suitable indication, the degree of deterioration or restoration might be more accurately evaluated through chemical analysis of metabolism than through physical measurements or clinical inspection. Bürger has reverted to the problem of the creatinin coefficient by new observations in Schittenhelm's clinic at Kiel.[2] Numerous determinations on patients there have confirmed the belief that a high coefficient corresponds as a rule with the presence of a vigorous musculature, lower figures being obtained when the muscular development is poor and activity weakened. The original figures recorded by the pioneer American investigators of this subject have been confirmed.

There is a practical value attached to the demonstration that the creatinin coefficient is an index of the extent of participation of musculature in the entire body mass under normal physiologic conditions. When "reduction treatments" are instituted on obese patients, it is not always easy to decide whether the consequent loss of weight is due to combustion of fat or to an undesired disintegration of other than adipose tissues. The determination of the creatinin coefficient may give a much desired clue. With properly conducted therapy to overcome obesity, the coefficient should increase. A calculation shows that on the basis of the conceptions here discussed, 1 gm. of urinary creatinin per day is correlated with about 23 kg. (50 pounds) of muscle tissue. From such statistics it is possible to estimate the approximate muscle content of the body. For the average normal person it should correspond to about 40 per cent. of the body weight. Deductions and applications of the tentative principles here presented are obvious.

1. Shaffer, P. A.: Am. J. Physiol. **28**: 1, 1908.

2. Bürger, M.: Beiträge zum Kreatininstoffwechsel, I, Die Bedeutung des Kreatininkoeffizienten für die quantitative Bewertung der Muskulatur als Körpergewichtskomponente, Ztschr. f. d. ges. exper. Med. **9**: 262 (Oct.) 1919.

DELEGATES TO THE UNITED STATES PHARMACOPEIAL CONVENTION

Attention was called in the General News department of THE JOURNAL last week to the meeting of the U. S. Pharmacopeial Convention to be held in Washington in May. The objects of this convention are set forth in its articles of incorporation:

> The particular objects and business of this association are the encouragement and promotion of the science and art of medicine and pharmacy by selecting by research and experiment and other proper methods and by *naming such materials as may be properly used as medicines and drugs* with formulas for their preparation [italics ours.—ED.]; by establishing one uniform standard and guide for the use of those engaged in the practice of medicine and pharmacy in the United States whereby the identity, strength and purity of all such medicines and drugs may be accurately determined, and for other like and similar purposes.

Of primary importance among the functions of the convention, then, are the naming of drugs which may properly be used as medicines; devising of formulas in accordance with which they are to be compounded, and establishing of standards by which their identity and purity may be proved. As this is a large task, requiring special knowledge, the convention properly delegates this work to a body of fifty experts called the "Committee of Revision of the U. S. Pharmacopeia."

Who are best qualified, first of all, *to name the drugs which may properly be used as medicines?* Obviously, physicians who use drugs in the treatment of disease, and pharmacologists who study the actions of drugs on the living organism. Pharmacists who devise the formulas for compounding drugs or for making preparations for administering such drugs, chemists who establish the standards by which their identity and purity may be determined, and manufacturers whose opinion must be influenced by commercial considerations, should by no means have the deciding vote in this matter.

At the time of the previous revision, a "Committee on Scope" was appointed, to which were referred all questions of additions to and deletions from the Pharmacopeia. The decisions of this committee were to be based on the "therapeutic usefulness" or the "pharmaceutic necessity" of the drugs considered. A majority of the committee consisted of physicians. After a vast amount of work, the Committee on Scope submitted its report, recommending the deletion of a large number of substances which were not considered to be "therapeutically useful" or "pharmaceutically necessary." However, the executive committee (only two members of which may be said to represent those practicing medicine) disregarded the recommendations of the Committee on Scope in many respects, and included or rejected whatever substances it pleased, even including some drugs which had not even been considered by the Committee on Scope. Naturally, the Pharmacopeia thus compiled is an expression of pharmacy and the drug trade rather than of medicine.

To avoid a repetition of these conditions in the next Pharmacopeia, it is essential that each medical organization entitled to representation at the coming meeting of the convention should elect three delegates and three alternates, so that full representation of medical science shall be guaranteed. Delegates should be selected who know what are the interests of scientific medicine in the Pharmacopeia—delegates who realize that physicians, more than any others, are vitally interested in the content of the Pharmacopeia—delegates whose practice and teaching reflect the modern trend to eliminate the unimportant and useless drugs from the Pharmacopeia. The delegates should feel their responsibility and attend and take part in all of the meetings of the convention in order to secure the necessary reforms. It would be desirable that the convention pass a resolution which would make the composition of the Committee on Scope subject to the will of the whole convention. Obviously it is desirable that pharmacologists and physicians should comprise at least the majority of the members of the Committee on Scope, and that the decisions of this committee should be final and not subject to revision by any other committee, general or special. Particularly, its action should not be revised by any committee on which manufacturing pharmacists predominate.

ORAL SEPSIS AND THE ELECTIVE LOCALIZATION OF BACTERIA

Six years have elapsed since Billings[1] published the extensive clinical observations made by himself and his co-workers to demonstrate the importance of septic foci, even when small, as sources of chronic infection conveyed by the blood stream. It was shown that these foci may harbor the same type of bacteria as are found in distant lesions, and that specific types tend to localize in definite organs or tissues. Rosenow,[2] in particular, has been most energetic in the attempt to demonstrate conclusively the elective localizing power of freshly isolated streptococci found in the focus or systemic lesions of a number of diseases, including appendicitis, ulcer of the stomach, chronic endocarditis, and rheumatic fever.

Inevitably the possible relationship between ill health and oral sepsis has come into prominence in connection with the recent studies on what has lately been termed focal infection. To many it has seemed of late as if tonsillectomy and extraction of the teeth were vying with each other in popularity as procedures for removing objectionable bacterial foci. Rosenow[3] has recently applied his methods to a study of the possible significance of dental sepsis. He reports that specific lesions have been produced with bacteria from the various types of dental focal infections, such as gingivitis, pyorrhea, infected pulps, apical abscesses, discharging sinuses, and granulomas. He believes that his newer findings warrant the conclusion that chronic foci of infection about the teeth are potentially or actually detrimental to the health of the persons who harbor them. According to him, the lesions which are more or less enclosed, and which drain only into the circulation, are probably the most dangerous, and that sooner or later, alone or in connection with predisposing factors, they will break down the resistance of the patient and produce disease. Pulpless teeth and blind abscesses are regarded as the most dangerous form of dental sepsis.

In view of the growing favor in which the extraction of teeth is being held, several precautions need to be emphasized. Teeth should never be sacrificed unless the indications for removal are clear. Rosenow avers that tonsillectomy as now so commonly practiced before the condition of the teeth has been corrected is illogical. The lymphatics of the mouth and jaws drain into the tonsils. Some infections of tonsils improve or even disappear following the extraction of infected teeth. The elimination of a visible focus does not

1. Billings, Frank: Focal Infection: Its Broader Application in the Etiology of General Disease, J. A. M. A. **63**: 899 (Sept. 12) 1914.

2. Rosenow, E. C.: Experimental Infectious Endocarditis, J. Infect. Dis. **11**: 210, 1912; The Etiology of Acute Rheumatism, Articular and Muscular, ibid. **14**: 61, 1914; The Etiology and Experimental Production of Erythema Nodosum, ibid. **16**: 367, 1915; Elective Localization of Streptococci, J. A. M. A. **65**: 1687 (Nov. 13) 1915. Rosenow, E. C.; Towne, E. B., and von Hess, C. L.: The Elective Localization of Streptococci from Epidemic Poliomyelitis, J. Infect. Dis. **22**: 313 (April) 1918.

3. Rosenow, E. C.: Studies on Elective Localization: Focal Infection with Special Reference to Oral Sepsis, J. Dental Res. **1**: 205 (Sept.) 1919.

necessarily mean the exclusion of all foci of infection. Vigilance must never be relaxed so long as the results are not all that is expected. When it is at length appreciated that the prevention and cure of dental foci is only one of many factors in the management of infection of obscure origin, the dangers of a one-sided therapeutic point of view will be averted, and a more sane hygiene is likely to ensue. However, the failure of the enthusiasm for oral hygiene to produce a cure-all need not blind us to the helpful contributions which a better knowledge and recognition of oral sepsis have brought to modern practice.[4]

TYPHOID A VANISHING DISEASE

THE JOURNAL'S annual summary of typhoid fever in the large cities of the United States,[5] which appears in this issue, is encouraging beyond expectation. Fifteen years ago, typhoid rates of more than 20 in these cities were very common, and rates of less than 10 correspondingly rare. The most sanguine sanitarian would hardly have anticipated the far reaching improvement that has actually occurred. At that time public health workers believed that any rate under 10 was highly satisfactory, and that a better average than this could hardly be expected for a generation. The author of an excellent work on typhoid, published in 1918, felt himself justified in stating at that time that "we have hitherto been extremely backward in applying recognized methods of sanitary prevention which have long prevailed in other lands." This criticism of American sanitary procedure would perhaps have been justified ten or fifteen years earlier, but long before 1918 the work of typhoid reduction was in full swing. Marked improvement began to occur about 1910, and from that time to this nearly every year has witnessed a fall in the typhoid death rate. The 1919 typhoid rate for a population of about 27,000,000 has reached the exceedingly low point of 4.2.

It should not escape notice that the 1919 rate shows a proportionately large diminution. The most plausible explanation would seem to be that given in our special article, namely, that the antityphoid inoculation of the young men in the military camps has proved a continuing safeguard for this age group, which would ordinarily have furnished a considerable number of typhoid victims. It seems to be evident that water supply and milk supply are hardly important factors at present in typhoid causation in our large American cities.

The great reduction in typhoid cases has everywhere the further advantage that it has now become possible for health authorities to investigate promptly and thoroughly each case of the disease as soon as it appears. It is thus becoming easier all the time to check incipient epidemics, to discover typhoid carriers, and to exercise better control over the surroundings of each typhoid case. The decrease in the number of typhoid carriers that will come inevitably with the lessening of the prevalence of the disease is sure in the long run to lighten the burden of health officers and to facilitate the task of eliminating typhoid fever. For it must now be recognized that the goal which we may set for ourselves is the practical extinction of typhoid fever in this country. When one city of more than 100,000 inhabitants is able to report not a single death from typhoid, and another city has only one death from this disease, while the city of Chicago, with a population of more than two and a half million, reports only thirty-one typhoid deaths, we are perhaps justified in hoping that the day will come when typhoid, already a medical curiosity in some localities, will become, like smallpox, practically a negligible factor in our mortality returns.

4. In this connection the reader is referred to the monograph by Duke, W. W.: Oral Sepsis in Its Relation to Systemic Disease, St. Louis, C. V. Mosby Company, 124 pp.

5. Typhoid in the Large Cities of the United States in 1919, special article, this issue, p. 672.

Current Comment

ACUTE RESPIRATORY INFECTION IN MONKEYS FROM INOCULATION OF INFLUENZA BACILLUS

As reported recently in THE JOURNAL, Blake and Cecil [1] obtained interesting results by the inoculation of monkeys with a strain of the influenza bacillus isolated from influenzal pneumonia in a man and subsequently raised in virulence by repeated passages through animals. When inoculated in the nose or nose and mouth there developed an acute, self-limited disease with prostration, fever, cough and sneezing, rhinitis and tracheobronchitis, and either leukopenia or no special change in the leukocytes. Purulent sinusitis and hemorrhagic pneumonia developed in some of the animals. On intratracheal injections of the same strain of influenza bacillus, there resulted a similar pneumonia and similar general symptoms. Blake and Cecil regard the disease thus produced as "identical with influenza in man in its course, symptomatology, complications and pathology," and they conclude that "it seems reasonable to infer that *B. influenzae* is the specific cause of influenza." While there is no doubt that the influenza bacillus can cause an infection in the respiratory tract in monkeys that somewhat resembles influenza, it does not seem to have been established that this organism is the cause of influenza. Blake and Cecil recently presented their findings before the New York Academy of Medicine; elsewhere [2] in this issue is a report of the meeting. In the discussion, exception was taken particularly to the claim that it had been demonstrated that the Pfeiffer bacillus was the cause of epidemic influenza. Dr. William H. Park pointed out that the Pfeiffer bacillus has been found in virtually every case of whooping cough, in 90 per cent. of measles cases, and also in a large

1. Blake, F. G., and Cecil, R. L.: The Production of an Acute Respiratory Disease in Monkeys by Inoculation with Bacillus Influenzae, THE JOURNAL A. M. A., Jan. 17, 1920, p. 170.

2. Society Proceedings, this issue, p. 696.

percentage of cases of respiratory infections which had been examined. It was his belief that the experience of Cecil and Blake had been important in designating that lesions can be formed in monkeys by the Pfeiffer bacillus similar to those found in the pneumonias occurring in influenza. According to Dr. Zinsser, the work had made it seem somewhat more likely that the influenza bacillus is the etiologic factor; and yet he did not believe that final judgment can be given on this point. The evidence cited by Blake and Cecil does not seem wholly convincing for various other reasons: (1) Possibly the inoculation of monkeys with other bacteria associated with influenza than the influenza bacillus would produce practically the same symptoms and lesions as those described, and on this account extensive control experiments are needed before any conclusions of a definite value can be drawn from the results of these experiments with the influenza bacillus; (2) many bacteriologists would take exception to the statement that the influenza bacillus is associated constantly with early uncomplicated cases of influenza, and (3) pathologists would hesitate to accept the statement that the pulmonary lesions in the inoculated monkeys are identical with those of human influenza. At least the question will remain open until the results of much more detailed studies are available, studies not only of material from inoculations with influenza bacilli but also of material from inoculations with other bacteria associated with influenza. In other words, we must not lose sight of the facts that other bacteria found in influenza may give similar experimental results; that the constant presence of the influenza bacillus in influenza has not been demonstrated conclusively, and that it has not been shown that lesions unquestionably peculiar to influenza have been reproduced in monkeys inoculated with influenza bacilli. It may, however, be stated that virulent influenza bacilli may cause an acute infection of the respiratory tract when inoculated in monkeys.

SNAPPING HIP

It is not always grave and dangerous diseases that bring the patient to the physician; frequently symptoms that are trivial, so far as their effect on health is concerned, are responsible for the call, on account of the annoyance they produce. Such a minor ailment is the peculiar condition "snapping hip." The patient complains that flexion and extension of the hip, such as occurs during walking, produces a peculiar snapping sensation on the outer side of the joint which, at times, may be audible to by-standers even at distances of 20 or 30 feet. Mayer[1] has recently described four cases. In his cases the phenomenon was due to a line of thickened fascia lata catching behind the great trochanter. Flexion of the thigh stretches the fascia, which finally, like a taut bow string, is suddenly released and snaps back in front of the trochanter. Propping[2] calls attention to the fact that Perrin was the first to describe this phenomenon, before a meeting of the Société de Chirurgie de Paris in 1859, and at that time demonstrated its mechanism. In 1912 Ebner[3] collected the reports of twenty-eight cases, to which Propping has added two more. In one of Propping's cases he demonstrated that the cause was a habitual dislocation of the head of the femur. He believes that in many cases the snapping is wholly under the control of the patient, and that it has a hysterical basis. The patient can produce the snapping sensation and sound voluntarily, whenever he desires. Manon[4] has also described a case recently. He found that simple transverse section put an end to the disturbance. It has been known for some time that there is normally a line of thickening in the fascia lata which runs from the iliac crest downward just in the line of the posterior margin of the great trochanter — the tractus cristofemoralis. If this tract becomes abnormally thickened or if the trochanter becomes abnormally prominent, the "snapping hip" may be produced, although a third factor is also necessary, namely, relaxation of the gluteus maximus. Mayer shows that the phenomenon may sometimes be controlled by appropriate strapping, but that in other instances it is necessary to excise portions of the tractus cristofemoralis so as to avoid a reformation of this band.

1. Mayer, Leo: Surg., Gynec. & Obst. **29**: 425 (Nov.) 1919.
2. Propping, Karl: Deutsch. Ztschr. f. Chir. **148**: 251 (Feb.) 1919.

BOILED VEGETABLES FOR DIABETICS

Von Noorden called attention to the fact that the boiling of vegetables removed some of the carbohydrates, and Allen applied this fact by using thrice boiled vegetables in the dietary of diabetics. Until recently, the degree of removal of carbohydrates from different vegetables under repeated boilings had not been extensively studied from the quantitative point of view. This gap in our knowledge has now been partly filled by the work of Cammidge,[5] who has analyzed seventeen of the commonly used vegetables after boiling once, twice and three times. He found that the number of boilings necessary to remove all carbohydrate varied with different vegetables. In the case of celery, rhubarb and spinach, two boilings sufficed to remove all carbohydrate. In the case of white turnips and carrots, three boilings were sufficient; but in the case of all the other vegetables tested there was still carbohydrate varying from 0.1 to 1 per cent. after three boilings. There appeared to be no direct relation between the amount of carbohydrate originally present and the number of boilings required to remove it. The serious drawback to the use of thrice boiled vegetables has proved to be the lack of palatability that results. It is difficult to serve in an appetizing form the resultant mass of vegetable material, and the removal of the carbohydrates is accompanied by almost complete removal of the original flavor. This can be remedied to some extent by mixing clear broths or similar flavoring substances with the vegetable purée. It was some time ago suggested by Ruth Wardall that repeated extraction of the vegetables at a temperature considerably below boiling might accomplish the same result as boiling, without interfering so seriously with

3. Ebner: Deutsch. Ztschr. f. Chir. **107**: 63, 1912.
4. Manon, M.: Snapping Hip Joint, Presse méd. **27**: 635 (Oct. 29) 1919.
5. Cammidge, P. J.: Lancet **2**: 1192 (Dec. 27) 1919; abstr. J. A. M. A. **74**: 358 (Jan. 31) 1920.

the palatability of the vegetables. Cammidge also tested this method of extraction and found that just as satisfactory results could be obtained and that the vegetables were left in a much more palatable condition.

Association News

COMMITTEE ON SCIENTIFIC RESEARCH MAKES GRANTS

The Committee on Scientific Research of the American Medical Association has made these grants for scientific work:

PROF. G. CARL HUBER, University of Michigan, for study of nerve repair, $400.

PROF. H. M. EVANS, University of California, for study of the influence of endocrine glands on ovulation, $400.

PROF. E. R. LECOUNT, Rush Medical College, for study of extradural hemorrhage and of the hydrogen-ion content of the blood in experimental streptococcus infections, $200.

DR. E. E. ECKER, Western Reserve University, for a study of the specificness of antianaphylaxis, $200.

DR. HENRIETTA CALHOUN, Iowa State University, for a study of the effect of protein shock on diphtheria intoxication, $400.

THE NEW ORLEANS SESSION

Going to New Orleans by Boat

As previously announced, Dr. Ira J. Haynes, P. O. Box 24, Richmond, Va., is arranging for a party to go by boat from Baltimore to New Orleans. He desires to correspond with physicians who would like to join such a party. The tentative plans for the trip provide that the boat shall leave Baltimore, Friday, April 23, and arrive in New Orleans, April 27. It is proposed that those who desire to do so may use their staterooms during the stay in New Orleans, and obtain breakfast on board the boat. On the return trip, it is planned that the boat leave New Orleans, Friday night, April 30, and reach Baltimore, Wednesday, May 5. It is estimated that the expense for the trip will be about the same as for railroad fare and sleeper, plus hotel expenses for the time occupied by the trip.

It has also been announced that the *Comas*, one of the Morgan Line of steamships, will leave New York, April 21, and sail from New Orleans on the return trip on the morning of May 1. This boat carries seventy first-class passengers. There is space also for thirty second-class passengers. Requests for particulars should be addressed to Mr. A. J. Poston, General Agent of the Southern Pacific Lines, 165 Broadway, New York City.

An Entertainment Feature

The Local Committee on Arrangements announces a novel feature of the entertainment to be provided for visiting Fellows, their wives and guests. This will be a carnival ball to be staged at the President's reception. There will be presented a number of interesting and attractive tableaux. This entertainment is characteristic of New Orleans, and promises to be of great interest to those who will be fortunate enough to be in attendance.

Hotel Accommodations

The chairman of the Committee on Hotels, Dr. J. J. Wymer, 921 Canal Street, New Orleans, reports that arrangements have been completed to handle promptly all requests for reservation for lodgings which may be received from Fellows of the Association. In addition to the available accommodations in the hotels, the Hotel Committee has arranged to assign to visitors a large number of rooms in well appointed boarding houses as well as in private homes. It is urged that Fellows who desire to make such reservations shall communicate with Dr. Wymer as soon as possible. When two or more are traveling in company and are willing to occupy the same room, this should be stated.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

COLORADO

Nursing Course Postponed.—On account of the prevalence of influenza, the opening of the four months' course of public health nursing, notice of which appeared in THE JOURNAL of February 7, has been postponed from March 1 to April 1.

Colorado School of Tuberculosis.—During 1919, the Colorado School of Tuberculosis was organized at Colorado Springs, along the lines similar to the Trudeau School of Tuberculosis. Dr. Gerald B. Webb was elected president; Dr. Philip A. Loomis, managing director, and Dr. George Burton Gilbert, secretary. The next course will begin August 2, and will continue until September 10.

DISTRICT OF COLUMBIA

Legislation to Regulate Practice of Osteopathy.—A bill to "regulate the practice of osteopathy in the District of Columbia" has been introduced in the House by Congressman Johnson of Kentucky. At the present time there are no medical restrictions or limitations on the practice of osteopathy in the national capital and any one can engage in the work. The bill provides for the creation of a board of osteopathic examiners; that all osteopaths must be graduates from legally incorporated schools or colleges, with a four years' course of instruction; that osteopaths shall observe all laws and regulations of the District of Columbia relating to the control of contagious diseases, certifying of births and deaths; a penalty of fine and imprisonment is provided for failure to comply with the provisions of the bill. This same bill passed the House two years ago but failed of passage in the Senate.

GEORGIA

New Officers.—The Association of Railway Surgeons of Georgia was organized at Macon, January 28, and the following officers were elected: president, Dr. Allen R. Rozar, Macon; vice presidents, Drs. George R. Maner, Warrenton, Thomas J. McArthur, Cordele, and Thomas H. Hancock, Atlanta, and secretary-treasurer, Dr. Jarrett W. Palmer, Ailey. The next meeting of the association will be held in Atlanta in August.——Emanuel County Medical Association held its annual meeting at Swainsboro, January 21, and elected Dr. Rufus C. Franklin, Swainsboro, president; Dr. Andrew C. Johnson, Garfield, vice president, and Dr. Thomas E. Blackburn, Wesley, secretary-treasurer.

Personal.—The residence of Dr. William J. Little, Vineville, Macon, was damaged by fire to the extent of $4,000. ——Dr. John M. Sigman, Macon, has resigned as director of the United States Public Health Service Hospital at Atlanta and resumed practice in Macon.——Dr. Horace C. Robles, Albany, has been elected health officer of Dougherty County.——Dr. Henry R. Slack, La Grange, was elected president of the Georgia branch of the Johns Hopkins Alumni Association at its annual meeting in Atlanta, February 21. ——Dr. Walter E. Barber, Atlanta, has been reelected vice chairman of the Fulton County Board of Health.——Dr. William H. Myers, Savannah, has been appointed chairman of the Savannah health survey.——Dr. Willard E. Quillian, Atlanta, has been elected vice president of the Atlanta Board of Health.——Dr. James T. Ross, Macon, has been reelected chairman, Dr. J. H. Hurd, Rutland, vice chairman, and Dr. Herring Winship, Macon, secretary of the Bibb County Board of Health.

IDAHO

Barracks Made Into Hospital.—The government barracks at Boise have been converted into a military hospital which will accommodate 200 patients. This hospital will care for disabled service men and will in addition be utilized as a general hospital.

Society Organized.—Physicians of Shoshone County met at Wallace recently and organized the Shoshone County Medical Society, electing Dr. Francis Leo Quigley, Wallace,

temporary chairman; Dr. William C. Lindsay, Kellogg, temporary vice chairman, and Dr. Leonard E. Hanson,, Wallace, temporary secretary.

ILLINOIS

Personal.—Dr. George W. Alverson, Sciota, is said to have been found guilty, February 28, of the murder of Lawrence Clugston at Bushnell, in July last, and to have been sentenced to imprisonment for life in the penitentiary.

Illinois State Medical Society Proposes Section for New State Constitution.—The Illinois State Medical Society, through a special committee headed by Dr. Charles E. Humiston, has proposed the following section for the new constitution of the state, now before the constitutional convention in Springfield:

Section. The health of the people is essential to the welfare and perpetuity of the state.

"The General Assembly may enact laws to preserve and safeguard the health of the people and to impose licenses upon those undertaking to treat or cure the sick or infirm or to preserve from sickness and infirmity, persons within the state.

"No power shall exist to impose, hereafter, any term or restrictions or give power to any person or persons to treat or undertake to treat any ailment, infirmity or disease of another for pay, reward or compensation, upon any different terms, limitations, qualifications or prerequisites from those granted or limited to every other person or persons, who may hereafter be licensed to undertake to treat or cure the sick or infirm, or to preserve from sickness and infirmity, persons within the state.

The proposition has been submitted to the committee on miscellaneous topics consisting of O'Brien, chairman, Cooley, Lohman, Michaelson, Meinert, Hill, Pincus, Brandon, Paddock, Johnson, W. A. and Hollenbeck. The bill was presented to the convention by delegate George F. Lohman. Physicians and others who are interested in this section may communicate directly with the members of the committee apprising them of their interest in its adoption.

Chicago

Surgeons Hold Clinical Meeting.—The Chicago Surgical Society held an all-day clinical meeting, March 5. Throughout the day there were clinics at St. Luke's Hospital and the dinner and scientific program were held at the University Club in the afternoon.

The Augustana Hospital Drive.—The seven day drive conducted by 1,000 workers to raise $700,000 for the erection and equipment of a new building for Augustana Hospital closed, February 26, with $153,266 in the hands of the campaign committee. The construction of the new building will go forward.

Home Nursing School.—The fourth class in the Free Municipal Training School for Home and Public Nursing will open, March 7, with a class of 650. The third class of 831 women was graduated, February 24, and received the diplomas after completing an eight weeks' course in the training school.——It is said that 862 graduates of this school attended 10,360 cases during the recent prevalence of influenza.

Personal.—Dr. Edwin O. Jordan, chairman of the department of hygiene and bacteriology in the University of Chicago, has been made a member of the International Health Board of the Rockefeller Foundation, but will remain with the university.——Dr. Georgiana M. Dvorak Theobald, the only woman physician to serve with the American Red Cross in Siberia as a surgeon of the Czecho-Slovak army, returned from Siberia, February 28.——Dr. Alice K. Hall has been appointed a medical intern in the Los Angeles County (California) Hospital.

Medical Staff Appointments.—The following appointments to the attending staff of Cook County Hospital in the department of medicine have been announced as the result of a competitive examination given Dec. 4, 1919, by the Cook County Civil Service Commission: Drs. Charles H. Spencer Williamson, Ernest E. Irons, Ellis Kirk Kerr, Joseph L. Miller, Arthur F. Byfield, Joseph A. Capps, Walter W. Hamburger, James G. Carr, Willard W. Dicker, Sidney Strauss, Don C. Sutton, Lee C. Gatewood, Frederick Tice, Ludwig M. Loeb, Karl K. Koessler, and Theodore Tieken.

INDIANA

Tuberculosis Association Meeting.—At the annual meeting of the Indiana Tuberculosis Association held at Indianapolis, February 3 and 4, Dr. Gardner C. Johnson, Evansville, was elected president; Dr. Alfred Henry, Indianapolis, vice president; Mrs. Ella B. Kahrer, Anderson, recording secretary, and Mr. James W. Lilly, Indianapolis, treasurer.

Leave of Absence to Dr. Hurty.—The state board of health has granted a leave of absence to Dr. J. N. Hurty, its secretary. He will spend his leave in Florida, and during his absence Dr. William F. King, Indianapolis, will be in charge of the office.

New Hospital for Muncie.—The city council of Muncie, after having refused to make an appropriation of $25,000, requested by the citizens who were seeking to buy the Home Hospital for $105,000 and convert it into a city hospital, has agreed to make a cash donation of $15,000 and to give an additional $10,000 whenever the board of governors desires to enlarge the institution. Home Hospital will continue as a public institution but with a city official represented on the board of governors.

Personal.—Dr. Herman W. MacDonald, New Castle, has been appointed local surgeon for the Big Four System succeeding Dr. Oliver J. Gronendyke.——Dr. Frederick J. Schulz, for thirteen years surgeon of the General Electric Company at Fort Wayne, has resigned.——Dr. Harry E. Sharrer, Hammond, has resigned as district surgeon of the New York Central Line.——Dr. Edgar C. Loehr, Noblesville, has been appointed health officer of Hamilton County succeeding Dr. Frank Hershey, deceased.——Dr. Harvey W. McKane, Indianapolis, has been appointed a director of the division of tuberculosis, one of the new divisions of the department of health created by the last state legislature.——Dr. Paul E. Bowers, superintendent of the Northern Indiana Hospital for the Insane, near Logansport, has resigned to accept the position of superintendent of a hospital in California.

IOWA

Hospital Notes.—The Samaritan Hospital, formerly the City Hospital, Des Moines, has recently been opened to the public and it can accommodate seventy-five patients.

Health Laboratory Finished.—The new bacteriologic laboratories of the Sioux City Health Department have been completed and are in charge of Mr. W. D. Hayes, city bacteriologist.

Personal.—Dr. John M. Knott, who has practiced medicine in Sioux City for over half a century, announces that he will retire from active practice this month and will move to Southern California.

MARYLAND

Increased Appropriation for Medical School.—The governor of Maryland has recommended to the legislature an appropriation of $42,500 per year for the next two years for the University of Maryland School of Medicine, which is an increase over the former appropriation of $25,000. The college has also received $1,000 from the City of Baltimore for its outdoor obstetric department.

Night Clinics at the Hebrew Hospital.—The board of directors of the Hebrew Hospital have opened a night clinic at the hospital which will be held every Tuesday and Thursday evening. There are a number of free day dispensaries connected with the hospitals in this city, but no night dispensaries for the treatment of general diseases in this city or in this part of the country. The visiting physicians of the hospitals will be in attendance at the clinics.

Personal.—Dr. Elmer V. McCollum, Ph.D., Baltimore, of Johns Hopkins University has been made a corresponding member of the Royal Academy of Medicine of Belgium——Col. Henry Page, commanding officer at U. S. A. General Hospital No. 2, Fort McHenry, who has been recuperating at Raleigh, N. C., from an attack of influenza, has returned to the post to make preparations for his transfer to Denver, Colo., where he will be in charge of General Hospital No. 21.——Dr. James H. Jarrett, Towson, nestor of the medical profession at Towson, where he has practiced since 1865, celebrated his eighty-eighth birthday last week at his home.——Dr. Ross McC. Chapman, first assistant physician and chief executive officer of St. Elizabeth's Hospital, Washington, has been appointed medical superintendent of the Sheppard and Enoch Pratt Hospital. Dr. Chapman, who will assume his new duties March 15, will succeed Dr. Edwin N. Brush, Towson, resigned after a service of nearly thirty years. In addition to his duties at St. Elizabeth's, Dr. Chapman holds the position of clinical associate in psychiatry and clinical neurology of the faculty of George Washington Universiy, Washington.

MISSOURI

Personal.—Drs. Andrew W. McAlester, Columbia, and Woodson Moss, Columbia, were elected honorary active members of the Boone County Medical Society on account of their long and distinguished service in the profession, and as an expression of the esteem in which they are held.

Electro-Therapeutic Clinic in Kansas City.—The week of May 24 has been selected for the second graduate course of lectures in electrotherapeutics by Dr. Burton B. Grove, Colorado Springs, Colo. The course will precede the annual meeting of the Western Electro-Therapeutic Society which is to be held at the Little Theater, Kansas City, May 27 to 28.

State Medical Association Meeting.—The annual meeting of Missouri State Medical Association will be held at the state house, at Jefferson City, April 6 to 8. The house of delegates and scientific assembly will hold sessions simultaneously on the first day. A bronze tablet in memory of the nine members of the association who died in service during the World War will be dedicated at this meeting.

St. Louis

Memorial to Dr. Steer.—The council of the St. Louis Medical Society has granted a request made by Dr. William T. Coughlin as chairman of the committee of Washington University Alumni Association to erect a memorial to the late Dr. Justin Steer in the hall of the St. Louis Medical Society building.

Dean Resigns.—Dr. G. Canby Robinson, dean of Washington University Medical School, has resigned to accept a position as dean and professor of medicine in Vanderbilt University, Nashville, Tenn. This is the first appointment to the faculty of Vanderbilt since the donation of $4,000,000 by the general education board to the university.

NEW YORK

Health Center at Hornell.—The common council of Hornell has set apart rooms in a city owned building to house a tuberculosis clinic, which has been in operation for several years, a child welfare station more recently established and a venereal clinic.

Trudeau School Quota Filled.—The Edward L. Trudeau Foundation for Research and Teaching in Tuberculosis of the Trudeau Sanatorium, Saranac Lake, announces that the Trudeau School of Tuberculosis, which will hold its sixth session, June 16 to July 27, has for six months had a capacity enrolment and will be unable to admit any more students.

Personal.—Dr. LeRoy W. Hubbard has resigned as a member of the health board of Mount Vernon and has been succeeded by Dr. John H. Tallman.——Dr. Malcolm F. Lent, Albany, formerly medical director of the Stony Wold Sanatorium, has been appointed supervisor of the division of tuberculosis of the New York State Department of Health.

Division of Industrial Welfare Advocated.—One of the most important works conducted by the public health council of the state department of health during the year 1919 was an investigation of the industrial welfare needs of the state. As a result of a general survey of industrial conditions throughout the state, the council and the health commissioner have recommended the establishment within the department of health of a division of industrial welfare. The council has during the year provided for a period of isolation for typhoid and paratyphoid fever patients; for the exclusion from schools of children suffering with epidemic influenza; for the regular attendance of a physician at all day nurseries in the state, and for the taking of smears in cases of ophthalmia neonatorum.

New York City

Harvey Society Lecture.—The seventh lecture of the Harvey Society series will be delivered at the New York Academy of Medicine, March 13, at 8:30 p. m., by Dr. Otto Folin, professor of physiologic chemistry in Harvard University, on "Blood Chemistry."

Personal.—Thomas J. Preston, Ph.D., dean of the New York Homeopathic Medical College, has resigned.——Col. Henry D. Thomason, M. C., U. S. Army, retired, has been appointed superintendent of the Flower Hospital.——Dr. Frederic L. Barnum, Brooklyn, a member of the Red Cross commission to Siberia, who was recently captured by the bolsheviki, has been released.

Campaign Against Violators of Harrison Law.—At a conference between representatives of the Internal Revenue Department, February 23, plans for a vigorous campaign against dealers, smugglers and physicians who violate the Harrison narcotic law were formulated. The narcotic squad has been greatly enlarged and the enforcement of the law placed under the direction of James S. Shevlin.

PENNSYLVANIA

Radium Manufacturer Dies.—Mr. Joseph M. Flannery, Pittsburgh, prominently associated with the Standard Chemical Company which is the pioneer industry in producing radium for use by American physicians from native ore, died recently.

Hospital Library Association Organized.—The St. Joseph Hospital, Pittsburgh, has organized a library association to be open to those who patronize the hospital as well as to the physicians of the city and vicinity. Dr. Richard J. Behan is president and Dr. Jacob Rockman, secretary of the association.

New Influenza Cases in Pennsylvania.—Until February 24, the health department figures showed 1,262 new cases of influenza and 383 of pneumonia, with 438 deaths in three days. The Philadelphia reports were: influenza, 193; pneumonia, 161, while Pittsburgh reported 42 of influenza and 53 of pneumonia.

Case Against Physician Non-Suited.—In the case of John W. Conrad against Dr. George N. Highley, Conshohocken, in which damages of $20,000 were claimed for alleged malpractice in the neglect of his wife during delivery, Judge Swartz granted a non-suit on the grounds that no negligence on the part of Dr. Highley has been proved.

Personal.—Dr. Hugh Hamilton, Harrisburg, is president, and Dr. Samuel P. Heilman, Lebanon, secretary of the Pennsylvania Federation of Historical Societies.——Dr. Joseph Scattergood, West Chester, has been appointed local surgeon of the Pennsylvania Railroad at West Chester, succeeding Dr. Percy C. Hoskins, deceased.——Dr. Charles T. Horn, Lehighton, is president of the newly organized Lehighton Board of Health.——Dr. Ira J. Hain has been made health officer for Reading.

Philadelphia

Personal.—William G. McAllister, superintendent of the bureau of hospitals in the health department, resigned, February 27, the resignation to take effect April 1. He was appointed provisionally to the new bureau a few weeks ago.

Prison Goods for Hospitals.—According to E. J. Lafferty, secretary of the prison labor board, authority to sell prison made goods to all institutions receiving state aid will be asked of the next legislature. An effort will be made to secure the passage of such a law for at present the sale of prison made goods is restricted to county institutions while the product cannot be sold in Philadelphia County. There are approximately 3,200 state wards in the penal institutions of the state at present. Of this number only 10 per cent. are employed. Under the new law all could be employed and made self supporting by manufacturing supplies used by hospitals such as beds, mattresses, sheets and blankets; and the adoption of such a law would make it possible for the Philadelphia Hospital and similar institutions throughout the state to buy largely from the prison labor board.

SOUTH CAROLINA

New Hospital.—A new Salvation Army home and hospital is to be erected at Greenville to cost $200,000.

Ambulance Given to Roper Hospital.—Having no further use for a motor ambulance, the Charleston Chapter of the American Red Cross has presented its Silver Thimble Fund ambulance to the Roper Hospital at Charleston.

Personal.—Dr. Allard Memminger has been appointed chairman of the board of health of Charleston. The other members are Drs. John Mercer Green, secretary, and Charles P. Aimar, Henry W. DeSaussure and Archibald J. Buist.——Dr. William T. Brockman has been elected mayor of Greer.

SOUTH DAKOTA

Personal.—Dr. George S. Adams, Yankton, has been appointed superintendent of the State Hospital for the Insane, succeeding Dr. Leonard C. Mead, deceased.

New Officers.—Huron Medical Society at its annual meeting elected Dr. Benjamin Thomas, Huron, president; Dr. John C. Shirley, Huron, vice president, and Dr. Lorenzo N. Grosvenor, Huron, secretary-treasurer.——Dr. Mathew J. Hammond, Watertown, has been elected president of the Watertown District Medical Society.

TENNESSEE

State Association Meeting.—The eighty-seventh annual meeting of the Tennessee State Medical Association will be held at Chattanooga, April 6 to 8, under the presidency of Dr. Andrew F. Richards, Sparta.

Chiropractors Enjoined.—Six chiropractors of Memphis were enjoined, January 28, from practicing, in a decision given by Judge Heikell in a case brought by representatives of the osteopathic and medical profession. An appeal was taken to the supreme court.

Personal.—Dr. John S. Freeman, Springfield, has been reelected for a term of four years as health officer for Robertson County.——Dr. Howard M. Francisco has been appointed assistant superintendent of the Central State Hospital, Nashville, and also chief of the neuropsychiatric clinic of Vanderbilt Medical School. He is holding two clinics a week at the medical college and one clinic a week at the Central State Hospital.——Dr. George A. Hatcher, formerly assistant physician at the Central State Hospital, Nashville, has entered private practice at Fayette.

TEXAS

Trachoma Survey.—Asst. Surg. Joseph L. Goodwin, U. S. P. H. S., who has been assigned to make a survey of trachoma in the state, has begun work in Jefferson County, where he will ascertain the prevalence of this disease among school-children.

Unwarranted Liquor Prescriptions.—The criminal district attorney has notified sixteen physicians of Houston to appear before a board of five state officials to explain why hundreds of prescriptions for liquor have been written by them. One of the physicians cited to appear is said to have a record of 388 prescriptions written in December alone.

Course in Public Health Nursing.—With the opening of the winter term the University of Texas will inaugurate a course in public health nursing, consisting of three months' theoretical work to be given at the university in Austin and two months' field work in Houston. This course is similar in length and content to those given in Columbia, Yale, Northwestern, California, Syracuse, Missouri and other universities.

Influenza Closing Order Upheld.—Declaring that the board of health of San Antonio was clothed with power to maintain quarantine measures deemed necessary to protect the public health, and that the state sanitary code is not exclusive, the petition of the First Church of Christ, Scientist, of San Antonio asking for an injunction to restrain the city from closing the churches, theaters, and other public places on account of influenza, was denied by Judge Taylor, February 13.

New Officers.—The board of directors of the Texas Public Health Association, February 10, elected the following officers: president, Dr. Zachary T. Scott, Austin; vice presidents, Dr. Elva A. Wright, Houston, and James H. Allison, Fort Worth; secretary, J. E. Rawlings, Forth Worth, and treasurer, H. A. Rowe, Austin. Dr. Morris H. Boerner, Austin; Frank C. Gregg, Austin; Charles S. Venable, San Antonio; William C. Farmer, San Antonio, and John Potts, Fort Worth, were elected directors.——At a recent meeting held at Angleton, the Brazoria County Medical Association was reorganized with the following officers: president, Dr. Samuel B. Maxey, Angleton; vice president, Dr. Moses H. Eades, Sweeney, and secretary-treasurer, Dr. George G. Wyche, Angleton.——The Central District Medical Association at its annual meeting, January 15, elected Dr. Howard M. Lanham, Waco, president, and Dr. N. D. Buie, Marlin, secretary. Marlin was selected as the next place of meeting. ——Johnson County Medical Society at its annual meeting held in Cleburne, elected: president, Dr. Walter R. Washburn; vice president, Dr. Cariolanus V. Ezell, and secretary-treasurer, Dr. William E. Lucey, all of Cleburne.

VIRGINIA

Graduate Course for Colored Physicians.—During the last week in January a graduate course in early diagnosis of tuberculosis was given at Piedmont Sanatorium, Bergeville, for the benefit of the colored physicians of the state.

New Officers.—Wise County Medical Society in Norton, January 20, elected the following officers: president, Dr. John A. Gilmer, Big Stone Gap; vice presidents, Drs. Charles C. Carr, Inman, David A. Dunkley, Tom's Creek, and Daniel M. Moore, Stonega, and secretary, Dr. Claude B. Bowyer, Stonega. It was unanimously voted that the physicians of Wise County increase their rates 75 per cent.

Personal.—Dr. Joseph E. Taylor has been appointed coroner of Danville succeeding Dr. Edward Howe Miller, resigned.——Dr. John Garnett Nelson, Richmond, was elected commander of the Richmond Chapter of the American Officers of the World War at its meeting for organization, January 30.——Dr. Stuart McGuire, Richmond, was elected president of the Richmond Chapter of the University of Virginia Alumni at its meeting, February 13.

CANADA

Influenza Epidemic Situation.—Influenza is declining in Toronto and other parts of Ontario, and in Montreal and Quebec the situation is said to be well in hand.

Personals.—Dr. James R. Cox who has been spending the last year in Ottawa is leaving for China about the middle of March. Dr. Cox has been a medical missionary in China for a number of years.——Dr. John G. Fitzgerald, Toronto, has been appointed professor of hygiene at the University of Toronto succeeding Dr. John A. Amyot, Toronto, who has been appointed deputy minister of health of the Federal Department of Health, Ottawa.——Dr. Charles K. Clarke, Toronto, dean of the medical faculty of the University of Toronto, has intimated that he will resign shortly.——Dr. Allan Kinghorn paid a visit to Toronto lately before sailing for England on his way to South Africa where he will resume work with the South African Company. Dr. Kinghorn was formerly at Saranac Lake.——Dr. Thomas Archibald Malloch, Montreal, is among the appointments to the Beit Memorial Fund for Medical Research.

GENERAL

Gifts to Medical Schools.—The general education board announces the following contributions for the advancement of medicine: Washington University, St. Louis, $150,000; Johns Hopkins University, $400,000, and Meharry Medical School, Nashville, Tenn., $150,000. The fund given to Johns Hopkins was for the establishment of a full-time teaching system, with complete facilities for a department of obstetrics.

Influenza Statistics.—The health index of the United States Bureau of Census, for the week ending February 14, shows a slight increase in the incidence of influenza and pneumonia in the forty large cities. There was an excess annual mortality of 1,306 per hundred thousand of population as compared to the corresponding week of the median year in the period 1910-1916. At the height of the epidemic of 1918, the excess annual mortality was 4,695 per hundred thousand.

Throat, Nose and Ear Men Meet.—The annual meeting of the middle section of the American Laryngological, Rhinological and Otological Society was held in Cincinnati, February 21, and the following officers were elected: chairman, Dr. Joseph C. Beck, Chicago; vice chairman, Dr. George M. Coates, Philadelphia; secretary, Dr. William B. Chamberlin, Cleveland, and executive committee, Drs. Francis P. Emerson, Boston, Greenfield Sluder, St. Louis, and Lee Wallace Dean, Iowa City.

Medical College Association Elects Officers.—At the annual meeting of the Association of American Medical Colleges held in Chicago, March 2 and 3, Dr. William Pepper, Philadelphia, was elected president; Dr. Thomas Hough, Charlottesville, Va., vice president, and Dr. Fred C. Zapffe, Chicago, was reelected secretary-treasurer. The new executive council consists of Drs. Irving S. Cutter, Omaha; Isadore Dyer, New Orleans; James Ewing, New York City; Charles R. Bardeen, Madison, Wis, and George Blumer, New Haven, Conn.

New Tri-State Officers.—The twenty-second annual meeting of the Tri-State Medical Society of the Carolinas and Virginia was held in Charlotte, February 18 and 19, under the presidency of Dr. Robert C. Bryan, Richmond, Va., and the following officers were elected: president, Dr. John P. Munroe, Charlotte; vice presidents, Dr. John A. Williams, Greensboro, N. C., William W. Fennell, Rock Hill, S. C., and Halstead S. Hedges, Charlottesville, Va., and secretary, Dr. James K. Hall, Richmond, succeeding Dr. Rolfe E. Hughes, Laurens, S. C., who had occupied the position for twelve years and declined reelection. Spartanburg, S. C., was selected as the meeting place for 1921.

Plans of Red Cross.—Dr. Livingston Farrand, chairman of the central committee of the American Red Cross, announces the following plans for the completion of war time obliga-

tions and carrying forward the peace time activities. A fund of $30,000,000 is appropriated for various uses at home and abroad. For obligations to soldiers, sailors and their families, relief demands incident to disaster ,and the establishment of a peace program in America, $13,750,000 is allotted; for general European relief, especially in Eastern Europe, an appropriation of $15,000,000 is made, and it is estimated that the work of the American Red Cross in Siberia will call for an appropriation of $1,250,000.

American Congress on Internal Medicine.—The fourth annual meeting of the American Congress on Internal Medicine was held in Chicago, February 23 to 28, under the presidency of Dr. Glentworth R. Butler, Brooklyn. The scientific program included clinics, lectures and laboratory demonstrations in the mornings; clinical talks and demonstrations in the afternoons, and on Wednesday evening a joint meeting of the congress and the Chicago Medical Society at which Dr. Alfred S. Warthin of the University of Michigan, Ann Arbor, delivered an illustrated address on the "Medical Aspects of Gassing in Warfare, with Particular Reference to Mustard Gas." On Thursday the members of the congress inspected the Chicago Municipal Tuberculosis Sanatorium. Baltimore was selected as the next place of meeting.

Physician as British Ambassador.—The medical profession will be interested in the appointment of Sir Auckland Geddes as British ambassador to the United States which marks another chapter in the public career of a physician. Our London correspondent commented on the singular fact that two qualified physicians held the rank of cabinet minister in the British government—Sir Auckland Geddes and Rt. Hon. Christopher Addison, first minister of health. Sir Auckland Geddes, who was born in Scotland in 1879, was a pupil of Sir William Turner at Edinburgh, where he graduated M.D. in 1903, and later served as demonstrator and assistant professor of anatomy. From Edinburgh he was called to the chair of anatomy at the Royal College of Surgeons of Ireland, and during this period he made many contributions to the literature of anatomy and embryology, with here and there a note on the mechanical and structural factors of pathologic process. In 1913, Dr. Geddes was appointed professor of anatomy at McGill University. At the outbreak of the European war, he obtained leave from McGill University to enter military service. In 1916 he was appointed director of recruiting and when in August, 1917, recruiting was placed under civilian control, Sir Auckland became minister of national service. His election to parliament from Hampshire and his appointment to the ministry of reconstruction followed. In addition he assumed for a time the duties of president of the Local Government Board, in which position he was instrumental in the passage of the act creating the ministry of health. In April, 1919, he was appointed principal of McGill University and it was expected that he would assume the duties of the position in the fall, but this was prevented by his subsequent appointment as president of the board of trade and now as ambassador to the United States. His active interest in medical education is evidenced by his critical remarks on the record of the medical profession of England during the war, as reported in THE JOURNAL, Jan. 3, 1920, p. 43.



SIR AUCKLAND GEDDES, M.D.

Annual Congress on Medical Education and Licensure.—The Annual Congress on Medical Education and Licensure under the auspices of the Council on Medical Education of the American Medical Association, the Association of American Medical Colleges and the Federation of State Medical Boards of the United States, was held this week at the Congress Hotel, Chicago. The sessions lasted three days. There were about 250 delegates present. This has been the most satisfactory conference held on medical education for several years. Instead of three disjointed programs as heretofore held by the three organizations above named, this year a joint session was arranged, by which duplications were avoided, the program as a whole was better arranged and more ample time given for discussion. It appears also that the speakers were invariably men of ability and competent to speak with authority on the subjects with which they dealt.

Besides the usual reports of progress by the officers of the Council on Medical Education and the presidents of the other organizations, papers were presented; there was a symposium on "The Needs and Future of Medical Education," by Dr. George E. Vincent, president of the Rockefeller Foundation, New York City; Dr. Ray Lyman Wilbur, president of Leland Stanford University, California; Dr. Charles F. Thwing, president of the Western Reserve University, Cleveland; Mr. Abraham Flexner, secretary of the General Education Board, New York City. This was followed by a paper on "The Larger Function of State University Medical Schools," by Dr. Walter A. Jessup, president of the State University of Iowa, Iowa City. Two papers on "Research in Medical Schools" was given by Dr. Oskar Klotz, professor of pathology, University of Pittsburgh School of Medicine, Pittsburgh, and Dr. G. Canby Robinson, dean, Washington University School of Medicine, St. Louis. A great deal of discussion was given to the subject of "Full-Time Clinical Professors" following the remarks by the chairman of the Council on Medical Education and the paper by Dr. William Darrach, dean of Columbia University College of Physicians and Surgeons, New York City.

The subject of medical licensure was presented in the address on "Coordination of Effort in Medical Licensure," by Dr. David A. Strickler, president of the Federation of State Medical Boards, Denver, and in a paper on "Interstate Relations in Medical Licensure," by Mr. Francis W. Shepardson, director of the Department of Registration and Education of the State of Illinois. "Graduate Medical Education in the United States and Europe" was presented in articles by Dr. Louis B. Wilson, director of the Mayo Foundation for Medical Research, Rochester, Minn., and Dr. Walter L. Bierring, secretary of the Federation of State Medical Boards, Des Moines, Iowa.

Following were a series of reports on the teaching of the various premedical sciences by members of the Committee on Medical Pedagogy of the Association of American Medical Colleges. Among those presenting reports were: "Anatomy," Dr. Charles R. Bardeen, dean, University of Wisconsin Medical School, Madison; "Histology and Embryology," Dr. F. C. Waite, professor of histology and embryology, Western Reserve University School of Medicine, Cleveland; "Neuro-Anatomy," Mr. Irving Hardesty, professor of anatomy, Tulane Uuiversity School of Medicine, New Orleans; "Physiology," Dr. E. P. Lyon, dean, University of Minnesota Medical School, Minneapolis; "Biological Chemistry," Dr. Otto Folin, professor of biological chemistry, Medical School of Harvard University, Boston; "Pharmacology," Dr. C. W. Edmunds, assistant dean, University of Michigan Medical School, Ann Arbor; "Pathology," Dr. James Ewing, professor of pathology, Cornell University Medical School, New York City; "Bacteriology and Parasitology," Dr. A. I. Kendall, dean, Northwestern University Medical School, Chicago, and "Public Health and Preventive Medicine," Dr. Victor C. Vaughan, dean, University of Michigan Medical School, Ann Arbor.

It had been frequently stated that a difficulty in previous conferences was the failure to provide ample time for discussion. The present conference, therefore, was all the more successful owing to the fact that there appeared to be no difficulty in this respect.

A more complete report, including abstracts of the various papers and discussions, will appear beginning in the next issue of THE JOURNAL.

FOREIGN

Cancer in Workers on Coal Briquettes.—The authorities in Germany are now collecting data in regard to cancer in persons engaged in making coal briquettes. In the last five years there have been ten cases of epithelioma recorded in a total of 2,500 workers. It was on the face or arm in five

cases and the scrotum in five others. Conjunctivitis is also common among these workers.

Appointments.—The president of the Royal College of Physicians, London, has appointed Francis W. Andrew, Harveian orator, and Dr. Reginald C. B. Wall, London, Bradshaw lecturer for 1920.——The council has appointed Dr. Martin W. Flack, London, Milroy lecturer for 1921, and has awarded the Oliver-Sharpey prize for 1920 to Prof. Emil Roux of the Pasteur Institute, Paris.

Memorial to Revilliod.—A bronze medallion with the bust of the late Professor Revilliod in bas relief is to be installed in the amphitheater of the medical department of the University of Geneva, Switzerland, the scene of his labors. The memorial is to be presented by his former pupils and friends, and subscriptions of 30 francs or more entitle the donor to a replica in bronze of the medallion. Address Dr. Maillart, 6 rue de la Synagogue, Geneva.

Diffraction Phenomena in Blood Cells.—The *Nederlandsch Tijdschrift* relates that Dr. A. Pijper of Bethal, Transvaal, in the midst of the difficulties of practicing medicine in Africa, has undertaken research which has demonstrated certain diffraction phenomena in blood cells and in cocci, which may serve for micrometric purposes. The South African Institute for Medical Research has awarded him 100 guineas as a token of appreciation.

Deaths in the Profession Abroad.—Dr. **M. Candela Plá,** a pioneer in the introduction of operative gynecology and radium treatment into Spain, professor of obstetrics and gynecology at the University of Valencia, aged 73.——Dr. **C. Bozzolo,** senator and professor emeritus of clinical medicine at the University of Turin, one of the first to study the spread of cancer by the lymphatics, and author of numerous works on pneumonia, meningitis and ankylostomiasis, aged 75.——Dr. **L. Barajas,** one of the best known specialists in ear and throat work at Madrid.

Data on Anesthetics.—Prof. W. Denk of Vienna appeals to the members of the profession for data on untoward by-effects or after-effects of all kinds from local anesthesia and nerve blocking, including intraspinal anesthesia. He is compiling records for an address on the subject to be delivered at Vienna in June, 1920, and he states that he would be very grateful for any information to aid him in the task. He inquires particularly for the reasons if any have abandoned the use of any of these methods for anesthesia. He is first assistant at the Klinik Eiselsberg, Alserstrasse 4, Vienna, Austria.

Reappearance of the Liége Médical.—After five years' suspension, the *Liége Médical* makes its appearance anew as the organ and mouthpiece of the profession in the Liége district, as in the seven years before the war. The editorial staff is all local, and includes many well known names, Nolf, Stassen, Malvoz, Fraipont, Beco, Henrijean, Delrez, Fredericq, Weekers and Stockvis, all members of the medical faculty of the university. The first issue tells of the presentation of a souvenir album to Dr. Herman, president of the Féderation Médicale Belge, in token of appreciation of his "superhuman efforts in medical care for 600,000 families during the war."

LATIN AMERICA

Epidemic Poliomyelitis in Argentina.—The *Brazil-Medico* states that Dr. Kraus, director of the public health service of Argentina, has gone to Santa Fé to investigate some cases said to be infant paralysis.

Deaths in the Profession. — At Rio de Janeiro, Dr. **H. Cesidio Samico,** aged 74, and Dr. **J. Saturnino de Brito** of the public health service.——Dr. **E. G. Figueroa,** a well known stomach specialist of Buenos Aires.——Dr. **F. de la Vega,** for many years connected with Hospital Rivadavia at Buenos Aires, was killed, December 30, by a bandit.

Quarantining Against Influenza at Rio. — Several ships arriving at Rio de Janeiro from Europe with influenza on board and several deaths from alleged influenza during the passage, have been quarantined and the passengers held, by order of the director-general of the public health service, Dr. C. Chagas, pursuing the policy inaugurated by his predecessor and demanded by the public press.

Influenza in Mexico.—Influenza continues to spread in Mexico. In Mexico City there were 106 deaths, February 24; 100, February 25, and 86, February 26. All churches, moving picture houses and schools have been closed. It is stated that there are 3,000 persons sick with the disease at Tampico, the disease having taken a virulent form of late. Numerous cases are also reported from the state of Sonora and the city of Puebla.

Personal.—Dr. Louis Shapiro of the Rockefeller Institute is now in Colombia at the request of the Colombian government, making a study of the prevalence of leprosy, malaria and hookworm disease, in order to submit a plan for its eradication.——Dr. Victor G. Heiser of the Rockefeller Foundation has just returned to New York after a trip to Porto Rico with Dr. Grant to make a study of sanitary conditions of the island, especially as regards hookworm disease. Since the appearance of the hookworm infection in Porto Rico, the government of the island has spent several hundreds of thousands of dollars to combat the disease.

Government Services

MEDICAL OFFICERS, UNITED STATES NAVY, RELIEVED FROM ACTIVE DUTY

ILLINOIS
Chicago—Glaubits, B. J.

MARYLAND
Grayton—Speake, T. C.

MISSOURI
Kansas City—Ridge, F. I.

NEBRASKA
Genoa—Davis, K. S.

NEW YORK
New York—Goodchild, F. M.
Victor—Aldridge, A. H.

PENNSYLVANIA
Emsworth—Plumer, J. S.
Philadelphia—Saska, A.

SOUTH CAROLINA
Charleston—Layimer, J. B.

Health Conditions in the Army

For the week ending February 20, there was continued improvement in the health of the troops, although influenza and pneumonia cases still appear. The number of new cases reported showed a marked decline. There was an increase in the number of new cases of measles. The admission and noneffective rates also declined, the death rate being slightly more than half the rate for the preceding week. Among the American forces in Germany, influenza and pneumonia remained practically the same, while measles showed a decline. Among the American forces in Siberia, twelve new cases of pneumonia were reported as against two for the previous week.

Army Reorganization Bill

The Army Reorganization Bill has been reported from the House Committee on Military Affairs by Congressman Kahn of California, chairman. Under its provisions, there will be 1,820 officers of the medical department. Medical officers who served in the Army during the World War and are now in the Medical Reserve Corps will be eligible for appointment in the regular Army on July 1, 1920, under the terms of this bill. Approximately 700 such vacancies will have to be filled, and the selections will be made from medical men who served in the war and who are now in private life, or from medical officers who are now holding temporary commissions effective until May 1, 1920, only.

The bill provides that a colonel in the Medical Corps shall be not less than 48 years of age; lieutenant-colonel, 45; major, 36; and that no person shall be appointed to a grade higher than that held by him on Nov. 11, 1918—the date of the armistice.

The selection of these medical officers will be made by a board consisting of the general of the Army, three bureau chiefs and three general officers of the line.

It is intended to use the material developed and trained during the war in filling vacancies and the high age limit of 54 years is set in order to obtain the services of men of advanced years and high abilities for some of the technical staff positions.

The bill provides for commissioned rank to members of the Army Nurse Corps. As a result of a caucus of House members, the bill contains no provision whatever regarding a policy for universal military training. There apparently is no prospect whatever that this policy will be established by the present Congress. Its future enactment into law will depend on some program to establish it in schools and colleges and in that way educate the people to its merits. The bill as reported by Congressman Kahn will be the basis of all Army legislation which must be enacted by July 1, because the present law applying to Army personnel is effective only to that date.

Foreign Correspondence

MEXICO CITY

Feb. 22, 1920.

Dr. Noguchi in Mexico

Next to the death of Dr. D. Eduardo Licéaga, already mentioned in THE JOURNAL, the event that has attracted most attention among the medical profession in this city has been the visit of Dr. Hideyo Noguchi. He arrived from Yucatán, February 3, and remained here until the 8th, when he returned to New York. Accompanied by Israel J. Kligler, Ph.D., a member of the Rockefeller Institute for Medical Research, he attended the first session of the National Academy of Medicine, of which he is an honorary member. Two days afterward, by special invitation of the board of trustees of the Mexican Medical Association, he gave a brilliant lecture relative to his scientific work on the etiology of yellow fever, carried out in Ecuador and more recently in the city of Mérida. The lecture was illustrated with slides and was given in Spanish, in which the New York bacteriologist can make himself understood. He said that his mission in this country was not a personal undertaking, but that he had been sent by the Rockefeller Institute to try to confirm in Mexico the discovery he had made in South America of *Leptospira icteroides*. He added that, using the well-known technic, he had been able to demonstrate the presence of this germ in four cases of fever he had observed at Mérida, and that he had delivered several specimens of the micro-organism to the superior board of health. He showed several live cultures of *Leptospira* in the dark field and in various stains, as well as the vaccine prepared from these germs, which, it is hoped, may serve to immunize against yellow fever, as similar products have done in other diseases. He also showed the specific serum which possesses curative properties, and the preserved bodies of guinea-pigs that had died of experimental yellow fever, in which could be seen lesions very similar to those produced by the disease in man. He ended by saying that in his work he had been assisted by Kligler and several Mérida physicians. Noguchi was very much applauded by his audience, which included several hundred physicians and many medical students. It can be said that while this lecture did not add to our knowledge of the bacteriology of yellow fever, it strengthened the belief in the causal rôle of *Leptospira*, through its having been isolated in the cases studied recently. Noguchi also demonstrated before several Mexican physicians in one of the departments of the board of health his modification of the Wassermann reaction. While in the city, Noguchi was lavishly entertained both by officials and by private citizens. The impression left by the visit of the Rockefeller representatives could not have been better, and we hope that more American scientists of the same category may come to this country to help us in our struggle for the improvement of health conditions and to cement the bonds that unite the members of the medical profession in the two countries.

The Influenza Situation

Against our hopes based on the long intervals that usually separate the epidemics of influenza, this disease has reappeared. As in previous instances, the epidemic has extended from north to south, after having presented itself in the United States. Owing perhaps to the fact that we are having very mild weather, or for some other reason, the number of those attacked is smaller than in the United States. The disease so far has been mild, the simple catarrhal form exceeding the hemorrhagic cases. The cases of influenzal pneumonia, pleuritis, and bronchopneumonia are also less numerous and there have been no nervous sequelae. There are no official statistics on which to base my opinion, but the general impression is that the mortality has not increased as in 1918; that the persons who contracted the disease in the preceding epidemic have not been attacked this time, and the largest morbidity has been among children.

Personal

Dr. G. Mendizábal, president of the Mexican Medical Association, has been made by the king of Spain commander of the Real Orden de Isabel la Católica.——Dr. José León Martinez, former professor of clinical medicine in the School of Medicine, has been appointed director of the Military Hospital of this city, and of the Military Medical School attached to it, receiving the rank of colonel.——Dr. Germán Díaz Lombardo, vice president of the Academy of Medicine, has returned from his trip to the United States, where, for the purpose of study, he visited the cities of Chicago and New York.——Dr. Agustín Chacón, an ophthalmologist, member of the academy and former professor of the School of Medicine, has died as a result of a gastrorrhagia.

PARIS

Jan. 29 1920.

The Creation of the Office of Minister of Hygiene

Prime Minister Clemenceau having resigned, M. Millerand, his successor, was charged with the organization of a new cabinet. He has introduced an innovation by creating a new ministerial office, that of ministère de l'hygiène, de l'assurance et de la prévoyance sociales (social hygiene, social insurance and social provision). The question of appointing a special minister of public health has been considered for some time. The question first came up in 1902, at the time the law in regard to the protection of public health was passed. It was again agitated when the application of the law was extended so as to include the antituberculosis and social hygiene dispensaries. In 1913, Dr. Vaillant, a Paris deputy, had taken the initiative and demanded the creation of the office of minister of public health, and M. Mirman, at that time directeur de l'assistance et de l'hygiène publiques au ministère de l'intérieur, had favored such action. In 1916, Jules-Louis Breton, deputy of the department of Var, presented a more modest proposal to the chamber of deputies. He requested that the office of undersecretary of state for hygiene, in connection with the service of the minister of the interior, be established. The year before, on the initiative of M. Millerand, at that time minister of war, the government had created the office of undersecretary of state for the Service de santé militaire. But during the great epidemic of influenza that raged in France in 1918, it was found that the duties and functions of two duly appointed officials clashed, namely, the undersecretary of state for hygiene, associated with the office of minister of the interior, and the undersecretary of state associated with the Service de santé militaire. In view of this fact, M. Clemenceau organized, under his chairmanship, a ministerial conference, grouping together all the services having to do with health and hygiene, which at that time were scattered through five ministerial departments. Under Prime Minister Millerand this temporary arrangement has taken on a permanent form, and the office of minister of hygiene has been conferred on J.-L. Breton, as already stated. Having been chemical engineer, adviser to the chamber of deputies in matters of social hygiene, and author of the bill aiming to suppress the use of white lead in building paint, Breton was the logical choice for the new post.

A Physician's Responsibility in Accidents Following Subcutaneous Injections

A physician residing in one of the departments outside of Paris is facing, as the result of the death of a client, in whom an abscess developed after an injection, a charge of homicide through imprudence. The Société de Médecine de Paris has interested itself in the case, and has drawn up and approved the subjoined conclusions, which will be presented to the court by the counsel for the defendant:

> The Société de Médecine de Paris hereby gives expression to the following opinions: 1. The use of subcutaneous injections of camphorated oil and of strychnin is absolutely indicated in cases of severe typhoid, in order to keep up the general condition of the patient and to forestall cardiac insufficiency. 2. The dose of strychnin employed (6 mg.) is less than the amount that may be injected with safety during a twenty-four hour period. 3. Abscesses may occur during the course of typhoid without giving rise to the presumption of error in the matter of asepsis. 4. The physician in charge of the case is always the judge of the treatment to be employed, and he can modify it according to the exigencies that arise.

Medical Service in the Liberated Regions of France

The minister of liberated regions offers the following conditions to physicians who desire to take up their residence, at least temporarily, in such localities of the liberated regions as are deprived of civilian physicians: 1. The physicians accepted for such service will be placed by the minister of war at the disposal of the minister of liberated regions, but with the stipulation that, whenever local conditions will permit, a certain limited amount of military service may be required. 2. They will continue to be governed by military statutes. 3. Those who are receiving a salary of less than 1,000 francs a month will receive from the minister of liberated regions such additional sum as will make up such total

amount. 4. They will be engaged for a period of three months, which will be renewable, and will be authorized to accept a paying clientage. 5. The minister of liberated regions will provide them with an automobile, and will furnish them gratuitously with tires and gasoline in such amounts as may be necessary to cover their allotted territory.

The first vacancies to be provided for are permanent posts in infirmaries and hospitals, which must be installed and organized in connection with the establishment of certain important centers where laborers needed in building up the desolated regions will be brought together.

A Commemorative Ceremony

A ceremony commemorative of the members of the medical corps who died at the post of duty was held at the Sorbonne, January 25, under the auspices of the Association générale des médecins de France and the Association générale des pharmaciens. The various medical faculties and schools of pharmacy, the academy of medicine, the learned and professional societies and the Service de santé militaire felt called on to take part in this solemn occasion. M. J.-L. Breton, minister of hygiene, presided at the ceremony. He was assisted by Dr. Mourier, former undersecretary of state for the Service de santé militaire, and by Dr. Roger, dean of the Faculté de Médecine de Paris.

In his opening address, Dr. Bellemontre, president of the Association générale des médecins de France, mentioned the fact that out of 22,000 French physicians and surgeons 18,000 were mobilized, and that the percentage of losses in the Service de santé militaire was next to that of the officers of the infantry.

LONDON

Feb. 7, 1920.

Medical and Surgical Units at the London Hospitals

The system of forming medical and surgical units for teaching and investigation at the London hospitals, described in previous letters, is extendng. At St. Thomas's, Dr. E. H. Starling, F.R.S., professor of physiology at University College, has been appointed director of the medical unit, and assistant directors in pathology and clinical medicine are about to be appointed. Sir C. Wallace, surgeon to the hospital, has been appointed director of the surgical unit. At University College, Dr. T. R. Elliott, F.R.S., physician to the hospital, has been appointed director of the medical unit, and Dr. J. W. McNee, recently assistant to the regius professor of medicine and to the professor of pathology at Glasgow, has been appointed deputy and first assistant. Dr. F. M. R. Walshe has been appointed second assistant to the director to control neurologic teaching and research, and also to take charge of electrotherapeutics and massage. The director of the surgical unit is Mr. C. C. Choyce, with two assistants. The directors of units are responsible for the general arrangements of systematic teaching on the principles of medicine and surgery. The instruction of junior students in physical signs and elementary laboratory methods, and the systematic demonstrations and lectures for senior students are to be organized by them, although the teaching of these courses is in certain cases given by other members of the staff. Every student is to take duty during his first year for two months' clerking and two months' dressing with the medical and surgical units, respectively. These terms of clerking and of dressing are intended to follow as far as possible a four months term of duty with other members of the staff. Thus, every student will in due course pass through one or the other unit. During his course of two months' duty under the director of the medical unit, the student will be attached for clinical clerking to some of the special departments, such as the cardiographic, under Dr. T. Lewis. The directors of the units and their assistants have ample accommodation and facilities for research work in the Graham laboratories of pathology.

The Vaccination Position

In his report to the late Local Government Board (now merged in the Ministry of Health), the principal medical officer, Sir George Newman, refers to a number of isolated outbreaks of smallpox, comprising 206 cases in all and affecting fifty-eight sanitary areas. Thanks to the anti-vaccination agitation and the recognition by law of the "conscientious objector," the percentage of children successfully vaccinated in 1917 was only 43.3, and the percentage exempted from vaccination was as high as 37.9. Compared with twenty years ago, these figures are significant, for in 1898, 61 per cent. of the children were successfully vaccinated and only 5 per cent. were exempted. In the years following the last serious epidemic of smallpox (1901-1904), the percentage of vaccinated children rose above 70. On the other hand, the war has led to a great increase of the revaccinated. Although revaccination was not made compulsory on all men who joined the army, a large proportion were revaccinated. At present a greater number of the male population between 20 and 40 years of age have been revaccinated than in former years. Revaccination has also extended to women, for a large proportion of women who joined the auxiliary services of the war were revaccinated. The position, therefore, is that while the adult population is better protected than before, children are less well protected. In the recent cases of smallpox, prompt notification, speedy isolation and diligent inquiry as to contacts, to secure their immediate vaccination, were successful in preventing the spread of infection. But it is held that such measures cannot be relied on when smallpox breaks out in a population unprotected by vaccination. In prevaccination days, the deaths from smallpox were most numerous at ages under 10, and the majority occurred at ages under 5. The unprotected state of the child population of this country is therefore a great danger.

Tests of Cure in Venereal Diseases

The Ministry of Health has issued a memorandum suggesting tests which should be applied before patients suffering from gonorrhea and syphilis can be considered cured. In the case of gonorrhea, a careful search should be made with the urethroscope for signs of urethral disease. While under examination the patient resumes his ordinary mode of life, sexual abstinence alone being enjoined. On three occasions at intervals of a week he comes for the test. Films are prepared from any moisture obtainable from the urethra, secretions expressed from the prostate and seminal vesicles and centrifugalized urine. On at least one occasion the examination of the films is supplemented by the taking of cultures, and when possible a complement fixation test is performed on the serum. In order to provoke a urethral discharge, the patient is encouraged to resume his usual habits as regards alcohol, pickles, curries, etc. For the same purpose full-sized bougies are passed, and instillations of silver nitrate are made, or a provocative injection of gonorrheal vaccine is given. If all these tests prove negative he is provisionally discharged as cured, but is warned to return should he notice anything suspicious. In the case of women the difficulty of being certain of cure is greater. The tests are best made immediately before or after the periods. Provocative treatment is carried out by the application of 15 per cent. silver nitrate solution to the cervical canal or by vaccine injections. Films and cultures are prepared from the cervical canal and urethra. Culture methods are essential in the female owing to the difficulty of finding the gonococcus in films. Whenever possible, the complement fixation test should likewise be employed.

In syphilis, the time factor is of great importance. When more than four years have elapsed since the original infection, the risk of contagion is minimal. Until this period has elapsed, the patient should report for examination at intervals of one month during the first year and of three months during the second. The examination includes inspection of all surfaces of the skin and mucous membranes, and the Wassermann test. At the end of the first and second years of the treatment, a small provocative dose of an arsphenamin compound is given, and the Wassermann test is performed a week later. If four years have passed since infection, the patient is regarded for all practical purposes as noninfectious. He is advised, however, in his own interest to continue under observation until it becomes probable that the disease has been eradicated.

Marriages

EMORY GRAHAM ALEXANDER to Miss Harriet C. Deaver, both of Philadelphia, February 17.

ABRAHAM JABLONS to Miss Ruth Leona Taylor, both of New York City, January 20.

ALBERT G. MILLER to Miss Katherine E. Frutchey, both of Philadelphia, February 10.

Deaths

Edward Chauncey Register, Charlotte, N. C.; University of the City of New York, 1895; aged 59; editor of the *Charlotte Medical Journal* since 1891; president of the Medical Society of the State of North Carolina in 1906, and the Charlotte Medical Society, and president of the State Board of Medical Examiners from 1898 to 1902; of the American Medical Editors' Association in 1915, Medical Councilors of North Carolina from 1903 to 1906, and of the Tri-State Medical Association of the Carolinas and Virginia in 1915; physician in charge of St. Peter's Hospital, Charlotte; formerly professor of practice of medicine in the North Carolina Medical College, Charlotte; president and chief physician of the Charlotte Sanatorium from 1906 to 1916; one of the most prominent and beloved physicians of North Carolina; died in the Charlotte Sanatorium, February 18, from pneumonia.

John Van der Poel ⊕ New York City; College of Physicians and Surgeons in the City of New York, 1881; aged 62; a member of the American Association of Genito-Urinary Surgeons and its president in 1910; a member of the American Urological Association, and a fellow of the New York Academy of Medicine; a member of the staff of New York and Mount Sinai hospitals, and attending genito-urinary surgeon to Washington Heights Hospital; lecturer on obstetrics and later lecturer in clinical genito-urinary diseases in the University of the City of New York; a member of the staff of a hospital at Chateau Annel, France, during the World War; died, February 22.

James Freer Richardson, Winnipeg, Man.; University of London, 1911; M.R.C.S. (Eng.), 1911; L.R.C.P. (Lond.), 1911; aged 35; a medical missionary of the Church Missionary Society at Peshawur, and Dera Ismail Khan, India, who on the outbreak of the World War enlisted and was sent to Mesopotamia as captain of the Thirtieth Advance Casualty Clearing Station, then transferred to Mosul, and later to the Forty-Ninth Indian General Hospital on the Afghan frontier; died in Afghanistan, Nov. 27, 1919, from pneumonia.

Frank James Schoenenberger ⊕ New York City; Bellevue Hospital Medical College, 1896; aged 44; adjunct professor of urology in Fordham University, New York City; a member of the New York Academy of Medicine; assistant genito-urinary surgeon to the City and Sydenham hospitals; genito-urinary surgeon to the Correctional Hospital and surgeon to the state penitentiary; died in Roosevelt Hospital, New York City, February 20, after an operation for the removal of gallstones.

Henry Ardagh Kingsmill, London, Ont.; Western University, London, Ont., 1895; aged 52; demonstrator of anatomy in his alma mater; surgeon of the Seventh Regiment Fusiliers, and after the outbreak of the World War president of the standing medical board of western Ontario; then captain, C. A. M. C., with service in England, and later adjutant and registrar of the Military Hospital, London; died, February 11, from pneumonia following influenza.

Philip Thomas Kennedy ⊕ Hartford, Conn.; Harvard University Medical School, 1909; aged 36; a specialist in pediatrics; for two seasons in charge of the Boston Floating Hospital; pediatrist to St. Francis' and the Baby hospitals and St Agnes' Home, Hartford; died in St. Francis' Hospital, February 14, after an operation for abscess of the lungs.

Wilford Hall Crutcher, Bartlesville, Okla.; Barnes Medical College, St. Louis, 1908; aged 37; formerly assistant superintendent of the Nebraska State Hospital for the Insane, Ingeside; who served during the World War as lieutenant, M. R. C., U. S. Army, and was discharged, Jan. 27, 1919; died, February 12, from pneumonia.

Arthur Brownell Wright ⊕ Hartford, Conn.; College of Physicians and Surgeons in the City of New York, 1895; aged 51; for eight years a member of the staff of the Manhattan Institute for the Insane; and since 1903 chief medical examiner for the Traveler's Insurance Company; died, about February 4.

José Maria Ferrer ⊕ New York City; College of Physicians and Surgeons in the City of New York, 1879; aged 62; a native of Cuba; a member of the New York Academy of Medicine; visiting physician to St. Vincent's and French hospitals, New York City; died, February 23, from heart disease.

⊕ Indicates "Fellow" of the American Medical Association.

Joseph Patrick Murphy, Brookline, Mass.; Harvard University Medical School, 1884; aged 58; also an attorney; assistant chief of the division of child hygiene of the Boston Board of Health since 1911; died in the Peter Bent Brigham Hospital, Boston, February 18, from bronchopneumonia.

Dwight Culver Smith, Goff, Kan.; University Medical College of Kansas City, Mo., 1904; aged 41; a member of the Kansas Medical Society; captain, M. C., U. S. Army, during the World War, with service overseas, and discharged, March 7, 1919; died, February 15, from influenza.

Thomas Alexander Lee, Jr., Hibbing, Minn.; George Washington University, Washington, D. C., 1908; aged 36; who served during the World War as lieutenant, M. R. C., U. S. Army, and was discharged, Aug. 15, 1919; died at the home of his father in Washington, February 19.

Albert Mealey Dunlap, Cleveland; Cleveland College of Physicians and Surgeons, 1905; aged 37; lieutenant, M. C., U. S. Army, during the World War, and discharged, Jan. 16, 1919; was taken ill with pneumonia at the home of a patient, and died there, February 10.

George William Brock ⊕ Atlanta, Ill.; Northwestern University Medical School, Chicago, 1910; aged 41; who served as captain, M. R. C., U. S. Army, during the World War, and was discharged, March 18, 1919; died, February 17, from an infection following influenza.

John Beriah Ellis, Springfield, Mass.; Bellevue Hospital Medical College, 1871; aged 74; for many years a practitioner of Little Falls, N. Y., and health officer and coroner of Herkimer County; died at the home of his daughter in Springfield, February 10.

Ernest Henry Noyes ⊕ Newburyport, Mass.; Harvard University Medical School, 1880; aged 66; city physician of Newburyport; a member of the staff of the Anna Jaques Hospital; died, February 7, from valvular heart disease.

Samuel Dixon Sturgeon, New Galilee, Pa.; Western Reserve University, Cleveland, 1884; aged 69; a member of the Medical Society of the State of Pennsylvania; died at the home of his sister in New Brighton, Pa., February 12.

Willet Jeremiah Herrington ⊕ Bad Axe, Mich.; University of Michigan, Ann Arbor, 1882; aged 63; for fourteen years surgeon in chief of the Hubbard Memorial Hospital; died in that institution, February 10, from pneumonia.

John H. Baldwin, Calera, Okla.; Memphis (Tenn.) Hospital Medical College, 1895; aged 60; for two terms a member of the state legislature from Bryan County; died, February 14, from pneumonia following influenza.

Lovick W. Philips, Girard, Ala.; Tulane University, New Orleans, 1861; aged 84; surgeon of the Thirty-Second, Georgia, Infantry, C. S. A., and later captain of cavalry during the Civil War; died, January 22.

Theophilus W. Bennett, Long Beach, Calif.; College of Physicians and Surgeons, Keokuk, Iowa, 1877; aged 67; formerly of Lenox, Iowa, and for three terms a member of the Iowa state senate; died, February 3.

Joseph Antoine Beaudry, Montreal; University of Victoria College, Cobourg, Ont.; 1878; aged 67; inspector general of the superior council of hygiene of the providence of Quebec since 1888; died, Dec. 2, 1919.

Jeptha Dillon, Fillmore, Calif.; Medical College of Ohio, Cincinnati, 1873; aged 75; once president of the Greenwood County (Kan.) Medical Society, and a practitioner of Eureka; died, February 9.

Loren L. Gray, Powersville, Mo.; Northwestern Medical College, St. Joseph, Mo., 1884; aged 58; a member of the Missouri State Medical Association; died, Dec. 20, 1919, from acute pancreatitis.

Henry Beauregard Disharoon, Roanoke, Ala.; College of Physicians and Surgeon, Baltimore, 1885; aged 59; a member of the Medical Association of the State of Alabama; died, February 11.

Charles A. Wakeman, Tawas City, Mich. (license, Michigan, five years' practice, 1900); aged 66; died at Pinconning, Mich., January 25, from dilatation of the heart due to bronchial asthma.

William J. Willim, Wynne, Ark.; College of Physicians and Surgeons, Keokuk, Iowa, 1882; aged 66; formerly a practitioner of Joplin, Mo., and physician of Jasper County; died, January 21.

John Stanley Thibaut, Donaldsonville, La.; Tulane University, New Orleans, 1883; aged 60; vice president of the Bank of Ascension; died in Touro Infirmary, New Orleans, February 12.

Robert John Gordon, U. S. I. S., Gordon, Wis.; George Washington University, Washington, D. C., 1917; an Indian physician; aged 25; died, February 10, from pulmonary tuberculosis.

John William MacKay, Calgary, Alberta; Western University, London, 1907; aged 39; captain, C. A. M. C.; died, Oct. 25, 1919, from pulmonary embolism following appendectomy.

James T. Douglas, Ferguson, Mo.; Washington University, St. Louis, 1859; aged 84; a member of the Missouri State Medical Association; died in St. Louis, Nov. 29, 1919, from uremia.

George Levi Alexander, Milwaukee; Hahnemann Medical College, Chicago, 1888; aged 54; a member of the staff of Hanover Hospital; died, February 13, from cerebral hemorrhage.

John Wesley Ishmael ⊕ Winchester, Ky.; Jefferson Medical College, 1872; aged 70; president of the medical staff of Clark County Hospital; died, February 6, from pneumonia.

James H. Shepperd, Peoria, Ill.; Meharry Medical College, Nashville, Tenn., 1899; aged 54; captain, M. C., Ill. N. G., and assigned to the Eighth Infantry; died, February 10.

Earl C. Rieger ⊕ Kansas City, Mo.; University Medical College of Kansas City, Mo., 1906; aged 41; also an attorney; died, January 28, from pneumonia following influenza.

Edgar Parker Hershey ⊕ Denver; Jefferson Medical College, 1888; aged 58; once president of the Denver and Arapahoe County Medical Society; died, January 27.

Anna T. Dunn Roe Murphy, Detroit; Michigan College of Medicine and Surgery, Detroit, 1894; a member of the Michigan State Medical Society; died, February 14.

Hannah C. Reinhold, Williamsport, Pa.; State University of Iowa, Homeopathic College of Medicine, Iowa City, 1892; aged 64; died, February 11, from pneumonia.

Robert C. Forsyth ⊕ Kirkwood, Mo.; Washington University, St. Louis, 1902; aged 40; died in St. Luke's Hospital, St. Louis, February 8, from influenza.

Jerome A. Heath, Cleveland, University of Wooster, Cleveland, 1884; aged 60; one of the founders of St. Clair Hospital, Cleveland; died, Dec. 10, 1919.

John Paul Golden, Pittsburgh; University of Pittsburgh, 1888; aged 56; a member of the Medical Society of the State of Pennsylvania; died, February 7.

Zenas Cather Clayton, Chicago; Kansas City Hospital College of Medicine, Kansas City, Mo., 1885; aged 62; died, February 10, from heart disease.

William Gage Potter, South Dartmouth, Mass.; University of the City of New York, 1888; aged 55; died, Dec. 18, 1919, from tuberculosis of the lungs.

Irvine Ketcheson Mott, Cincinnati; Pulte Medical College, Cincinnati, 1883; aged 59; died in Covington, Ky., February 7, from cerebral hemorrhage.

George Maurice Stelzleni, St. Louis; Washington University, St. Louis, 1880; aged 58; died, February 14, from pneumonia following influenza.

William John Martin, Philadelphia; Jefferson Medical College, 1881; aged 61; a practitioner of dentistry for many years; died, February 12.

Cincinnatus C. Maddox, Alpharetta, Ga.; Atlanta (Ga.) Medical College, 1880; aged 61; died in a sanatorium in Atlanta, January 6.

Andrew B. Spinney, Ionia, Mich.; Homeopathic Hospital College, Cleveland, 1859; aged 84; an itinerant practitioner; died, February 7.

Robert Edward Bradsher ⊕ Marmaduke, Ark.; Memphis Hospital Medical College, 1904; aged 43; died, February 8, from pneumonia.

Louis Kaelin, Louisville, Ky.; Kentucky School of Medicine, Louisville, 1894; aged 62; died, Dec. 29, 1919, from bronchiectasis.

Alexander Franklin Durham, Sparta, Ga.; Jefferson Medical College, 1887; aged 54; died, January 30, from valvular heart disease.

Nelson Gregory Hall, Nut Plains, Conn.; Yale University, New Haven, 1860; aged 86; died, January 15, from senile debility.

Hal Augustine Hardeman, Melrose, Texas; Atlanta (Ga.) Medical College, 1891; aged 60; died, February 3.

Charles Frederick Sporman, Headland, Ala.; University of Alabama, Mobile, 1886; died, January 31.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

GREEN'S DROPSY REMEDY

For some years THE JOURNAL has been receiving inquiries regarding "Green's Dropsy Remedy," put on the market by "Dr. H. H. Green's Sons," Atlanta, Ga. It is now sold by Dr. Thomas E. Green, who claims to be a successor to "Dr. H. H. Green's Sons," and it now comes from Chatsworth, Ga.

The business is a mail-order one. As with others of a similar type, the advertising claims in the past few years have undergone the usual modifications from the "lie direct" to the "lie with circumstance" as the following quotations—italicized by us—will show:

OLD CLAIMS	RECENT CLAIMS
"Dr. H. H. Green's Sons *Cure* Dropsy In All Its Various Forms."	"Dr. H. H. Green's Sons *Treat* Dropsy In All Its Various Forms."
"Have *cured* many thousand cases after having been pronounced *utterly* hopeless by eminent physicians."	"Have *relieved* many thousand cases after having been pronounced *almost* hopeless by eminent physicians."
"The Only Reliable and Successful Dropsy Treatment Known."	[Statement eliminated.]
"We have *cured thousands* of seemingly hopeless cases."	"We have *relieved hundreds* of seemingly hopeless cases."
"We have *cured* many patients after the family doctor had said there was *no* hope for recovery."	"We have entirely *relieved* many patients after the family doctor has said there was *little* hope for recovery."

The methods by which the Green concern gets in touch with prospective purchasers are the usual ones: Advertisements in the cheaper grades of magazines and in not-too-particular newspapers. In some cases advertising booklets have been mailed to small towns in various parts of the country addressed to "The Mayor or Any Minister of the Gospel." Those who answer the advertisements (which offer "a free trial treatment") are sent a question blank which must be filled in and returned before the sample is sent. With the sample is a statement to the prospective purchaser to the effect that if he wishes to take a course of "regular treatments" these will cost $10 or $15 each, as the case may be.

The "treatment" itself comes in the form of large black balls or boluses which when first sent out are moderately soft but become harder on keeping. One treatment seems to consist of six large boluses and six small ones—even the small ones are heroic in size. In addition, some purchasers receive "Tonic Tablets." The purchaser is directed to take "a large ball dissolved in a little water at nine o'clock at night and a small ball at midnight." At six o'clock the next morning and *every hour* thereafter until eleven a. m. a substantial dose of Epsom salt is to be taken in quantities sufficient to create a large number of bowel movements. This dosing is to be repeated "every other night and day until all dropsical accumulation is removed from the system"! The boluses and tonic tablets were examined by the Association's chemists who have reported as follows:

CHEMISTS' REPORT

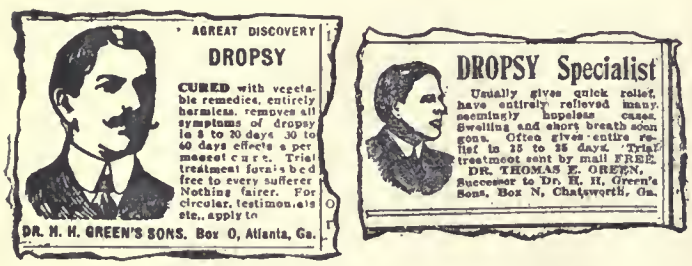
"One 'treatment' of Green's Dropsy Remedy, consisting of large balls or boluses, small balls or boluses and 'Grey Tonic Tablets' was examined. The small balls and the large balls appear to be of the same composition. The masses are brownish-black in color. When first received they were of about the consistence of a stiff pill mass but they became harder on keeping. Iodids, alkaloids, emodin-bearing drugs and magnesium sulphate were absent. The boluses yielded about 4.2 per cent. of ash in which were found iron, calcium, a sulphate and a phosphate, each in small amounts. Microscopic examination revealed the pres-

ence of a vegetable drug which appeared to be powdered squill. The preparation contained a considerable amount of dark colored extractive but this could not be identified. It was darker in color than would be expected from squill. It resembled licorice extract but tests for glycyrrhiza were negative. Reducing sugars were present.

"Examination of the 'Grey Tonic Tablets' failed to reveal any potent drug, except an iron salt, equivalent to about 2.65 per cent. of iron. The iron was present in both the ferric and ferrous condition, which would warrant the suspicion that dried ferrous sulphate is the salt used in the manufacture of the tablets. Large quantities of starch and calcium sulphate were present. Alkaloids, iodids and emodin bearing drugs were absent.

"To sum up: The boluses, large and small, appear to contain powdered squill as the chief medicinal ingredient. The tablets contain an iron salt, probably dried ferrous sulphate, as the chief medicinal ingredient."

Obviously there must be no small amount of danger for a person in a dropsical condition to dose and drastically purge himself. Yet, as in all cases of self-dosing, accidents that might follow would seldom be reported and in many instances might be suppressed by relatives who shunned publicity. One physician has reported that he had seen two patients in a state of collapse after taking the Green treatment—whether from the purging or the Green nostrum he was unable to say. Some years ago a newspaper reported the sudden death of a woman following the Green treatment but the coroner's inquest failed to elicit sufficient evidence to place the responsibility for the death on the Green



Facsimiles (reduced) of old and more recent advertising.

product. No necropsy or analysis was made in the case. In the case of another woman who also died suddenly while taking the Green dropsy cure, the local health office sent Green a death certificate advising him that the family declared that he was treating the woman at the time of her death. The only information given in the certificate as returned was the name and age of the woman and the statement that the primary cause of death was "Heart and Kidney trouble producing Anasarca."

Whatever part the Green "cure" may have played in these cases, one thing is certain: The product is one that has no legitimate place among home remedies. The public does not realize that dropsy is a symptom and not a disease and usually a symptom of serious import. For a person suffering from either heart or kidney trouble to attempt to treat himself with powerful drugs for the dropsical condition that may follow is the height of unwisdom. The idea that such serious conditions can safely and intelligently be handled on the mail-order plan without any physical examination of the patient or even seeing the patient is, of course, preposterous.

Deaths from Tuberculosis.—According to official census figures the death rate from all forms of tuberculosis in Wilmington, N. C., had fallen from 272.3 in 1912 to 180.9 per hundred thousand in 1917, which is the last year for which federal figures are available. This annual saving averages twenty-three lives a year for five years from tuberculosis alone. Capitalizing each life at the very low estimate of $2,000, shows an annual saving of $46,000, or $230,000 for the five years, which is an amount greatly in excess of what was contributed both for Red Cross Christmas seals and the health department.—*Our Communal Health*, October, 1919.

Correspondence

CONDITION OF THE OLIVES RESPONSIBLE FOR THE NEW YORK OUTBREAK OF BOTULISM

To the Editor:—In an editorial entitled "Botulism from Ripe Olives" (THE JOURNAL, Feb. 21, 1920, p. 530), the following sentence appears relative to the physical characteristics of the olives responsible for the recent outbreak of botulism in New York City, a report of which is printed in the same issue of THE JOURNAL: "Although a half bottle of ripe olives, probably the one that contained the toxin, was found in the home of the victims, no statement is made about the physical condition of these olives." The following information might well have appeared in the article:

The three olives received for examination were in a turbid, brownish tinged with red, watery fluid which was very difficult to see through. There was a slight flocculent precipitate in the bottom of the bottle. The olives themselves were lighter in color than ordinary ripe olives, having a tan, buff, almost straw color. They were somewhat spotted, each olive having several distinct black spots in it which stood out sharply from the lighter, general color of the olive, possibly areas from which the normal black color had not yet faded. In addition there were small, whitish, flocculent, irregular, lichen-like spots, giving somewhat the impression of being deposited on the surface, scattered irregularly over each olive. They had lost the shining luster usually seen in normal ripe olives. In consistency they were softer and not so firm as normal ripe olives. They were not, however, actually mushy, and could be lifted out of the bottle on the point of a knife.

The odor, in addition to that of ripe olives, had a weak but apparently quite definite putrefactive tinge. There was no suggestion of butyric acid. There was considerable controversy in the laboratories in New York and Boston as to whether the odor present in the olives could be considered characteristic enough to be of protective value to the average individual. Among those men who had worked with *B. botulinus*, and particularly those who had handled the olives from the Canton and Detroit outbreaks, there seemed to be no question as to the definiteness of the odor. Some of these men were so sure of their sense of smell that they ate olives from bottles of the same brand which were being investigated and which did not hold the suspicious odor. On the other hand, laboratory workers who had not had particular experience with *B. botulinus* were very skeptical and not inclined to feel that the average individual would have refused to eat these particular olives on account of a disagreeable odor. In our own laboratories, even among men who had frequently smelled *B. botulinus* cultures in various mediums, there was considerable controversy.

At present, almost seven weeks after the outbreak, these olives present the same picture, much accentuated in every way. They are now light tan, the black spots are not so numerous (owing possibly to gradual loss of the normal black color as the process of putrefaction progresses), the liquor is perhaps more turbid and deeper in color than it was, and the flocculent precipitate is more abundant. The liquor is covered with a thin, greenish mat of mold. The whitish, lichen-like spots are more numerous than before. The olives are now so mushy that they cannot be lifted on the point of a knife. The odor is much less marked than seven weeks ago. (The bottle has been tightly corked, though not sealed.) It is now a sweetish, spicy, weakly pungent odor, suggestive, but not definitely putrefactive, in character. There is no consensus as to what may be called a "characteristic" botulinus odor. In fact, there is a growing belief that *B. botulinus* does not have a "characteristic" odor any more than other anaerobic putrefactive organisms have. An odor of putrefaction may perhaps, to a greater or less degree, be present, but other than that it seems unwise to say more at present.

DWIGHT L. SISCO, M.D., Boston.

A CABINET OFFICER FOR SUPERVISION OF NATIONAL HEALTH AND EDUCATIONAL PROBLEMS

To the Editor:—Medicine has never been so efficient, so well organized or so thoroughly appreciated as it is now. The power to exercise our knowledge of disease and its control, as shown by our care of the millions engaged in warfare, the use of vaccines, serums and antitoxins by the wholesale, and the results of the surgical treatment of wounds and the prevention of infection, has given the profession a public recognition never before accorded it. This resulted from the enforced medical organization endowed with military authority and opportunity. The examination and supervision of the recruits gave wonderfully valuable information concerning both the lack of supervision of the health of young persons engaged in the occupation of education, and the lack of supervision of education. In our country's rapid commercial advancement we have been glad to use immigrant labor whose cost of production fell on Europe, and little attention was given to the health problems of labor.

In a general way, medical organizations of the past have been wont to criticize the attitude of both the government and the public concerning public health problems, as well as their failure to appreciate the necessity of establishing national standards of medical education and control of medical practice. I have always had a firm conviction that the reward of labor is in a fairly just measure in proportion to what is given; and it is undoubtedly true that medical standards are appreciated by the public as representing the average of medical knowledge so far as the public has had the opportunity to learn of them. Medical men have done little in local or state civic affairs, especially in lines in which they are competent to give advice, that is, education and public health problems. There should be a physician on every school board; also, a member of the city council should be a physician, and local medical organizations should actively support the public health officials. The fact is that the profession is only now ready to do its part in our civic life by reason of these very standards, which have been made as a result of military control of medical affairs and their application. The rapid evolution and advance of medicine in the last few decades has only now made this possible. I feel, then, that there should be no unjust criticism of the President for not appointing on the industrial investigating committees a single physician, large as the personnels have been, although in these conferences there were serious problems of health to be considered in its relation to hygiene, housing, child welfare, food and education, conditions which are properly medical problems.

We now have the greatest power, although it is intangible, which has ever existed, and which may be turned to our aid: that is, the psychic condition that has resulted from the mental concentration of the civilized people of the whole world on war and its problems for a period of five years without a day's intermission. The after-war condition as a result of the mental strain leaves the whole world in a chaos of disorganization and mental instability. In the individual we would call the condition a neurosis. We should take advantage of this psychic condition in our reconstruction problems along educational and public health lines, which are now matters of general discussion in this country, so as not only to serve the people of coming generations but also to maintain the present prestige of medicine. The many bills now before Congress in which the real motive is a health problem show the deep public concern.

In Washington, where medical standards and health problems should be representative, I found after nearly two years' residence that, so far as the government is concerned, medical affairs are most incoordinate. Laws controlling health problems, which have divided medical affairs among every cabinet bureau and numerous committees and boards, numbering about eighteen in all, have been passed as riders on necessary bills and appropriations. These boards seriously overlap in the conception of their functions, and there is apparently no way of securing coordination, although in their general activities much good is accomplished. The largest service is the Public Health Service under the Treasury Department; under Labor is Child Welfare, Prevention of Industrial Accidents and special boards; under the Department of the Interior is the care of the insane, not otherwise looked after and the Board of Indian Affairs; under Commerce, all statistical records relating to health and mortality, acceptable from about thirty-four states; under Agriculture, the Food and Drugs Act. I mention these few to show the condition. Rather lavish appropriations are made by the government for all the hospitals in Washington, and an equal amount by the board of the District of Columbia. All in all, a sufficient amount is thus expended locally to make government officials feel that they are doing much for the care of public health. Congress stands ready to help in the emergency of sickness like the recent influenza epidemic, when half a million dollars was appropriated for its control, it being much easier to give than to spend wisely.

With the high cost of labor and its rapid turnover, industrial organizations have taken every precaution to look after the health, housing, child welfare and social life of their industrial workers, to them an economic problem. The greatest industry of our country today is education, and we have learned from the examination of our draft recruits that there has been little care in general given to child welfare or to the protection of the health of the youth of our country thus engaged. The national need today for Americanism is intelligent supervision, with authority, of both education and public health, and the most important problem is that of health. While it may not be possible to secure a bureau chief for each, it should be possible to secure an official who would have supervision of health in the United States and coordinate the multitude of health problems now existing, as well as having the supervision of education.

Charles H. Mayo, M.D., Rochester, Minn.

DESTRUCTION OF B. BOTULINUS TOXIN BY BOILING RIPE OLIVES

To the Editor:—A number of deaths in various sections of the country have been attributed to poisoning due to toxin formed by *Bacillus botulinus* in canned ripe olives. This toxin is readily destroyed by heat. The flavor of ripe olives is not materially affected nor is the texture destroyed if the olives are boiled for fifteen minutes in the liquid in which they are preserved. This amount of heat is sufficient to destroy the toxin, and the product can be eaten with safety. This method will also exaggerate the odor of decomposition and tend to discourage the serving of olives partially spoiled. In every instance the olives were said to have a "queer odor." This is a simple method, easily applied, and would seem to eliminate the danger from eating ripe olives.

M. Grunfield, Albuquerque, N. M.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

REMOVAL OF TATTOO MARKS

To the Editor:—During the war, thousands of Armenian girls and children were taken by Turks and Kurds, and their faces tattooed. Now some of them have been brought back as refugees to their parents with their faces bearing these ugly tattoo marks. Please describe a method of treatment for removing these marks without leaving any scar.

Dr. M. Hovneriar, Aleppo, Syria.

Answer.—Replies to this question have appeared several times in Queries and Minor Notes. The methods of Variot and Brault have been recommended. The principle in each is to excite an inflammatory process by means of chemical irritants so as to cause destruction of the superficial layers of skin.

Variot uses as an irritant silver tannate produced by tattooing in a strong solution of tannin and rubbing a silver

nitrate pencil over the spot until it is blackened by the formation of silver tannate.

Brault removes the marks by tattooing the surface with a solution of 30 parts of zinc chlorid to 40 parts of water. A slight crust forms after these applications, the spontaneous removal of which after two weeks is followed by a pink cicatrix which gradually becomes of normal color.

The method is also described in practically all textbooks on diseases of the skin.

MALLORY'S EOSIN AND METHYLENE BLUE TISSUE STAIN —VLEMINCKX' SOLUTION

To the Editor:—Please supply me with (1) the formula and technic for Mallory's eosin and methylene blue tissue stain; and (2) the formula for Vleminckx' solution. I find frequent references to these items, but am unable to find the formulas and technic in any of my books.

Miles J. Breuer, M.D., Lincoln, Neb.

Answer.—1. A formula and technic for the eosin and methylene blue tissue stain may be found in Mallory, F. B., and Wright, J. H.: Pathological Technique, Ed. 6, Philadelphia, W. B. Saunders Company, 1915, p. 328.

The instructions given there are as follows:

Fix in Zenker's fluid.

Stain paraffin section in 5 per cent. aqueous solution of eosin for twenty minutes or longer. To get a deeper eosin stain place the sections in the paraffin oven for from fifteen to twenty minutes.

Wash in water to get rid of the excess of eosin.

Stain in Unna's alkaline methylene blue solution diluted one part to four or five parts of water for ten or fifteen minutes.

Wash in water.

Differentiate and dehydrate in a dish of 95 per cent. alcohol, keeping section in motion to decolorize uniformly. Control results under the microscope; when pink color has returned to the section and the nuclei are still deep blue, finish dehydration quickly with absolute alcohol.

Xylene.

Xylene balsam.

For celloidin sections use 95 per cent. alcohol, blot, and pour on xylene; repeat the last two steps until the specimen is clear.

Unna's alkaline methylene blue solution consists of methylene blue, one part; potassium carbonate, one part; water, 100 parts. For staining, the solution should be diluted 1:10 or 1:5; ripening the solution for a week improves the results.

2. The formula for Vleminckx' solution was published in The Journal, Jan. 24, 1920, p. 268.

STANNOXYL: A TIN PREPARATION

To the Editor:—I am very anxious to know whether tin or stannous oxid (SnO) has or has had any place among useful drugs. I have seen such a prescription given in the treatment of mucous colitis, and would be very glad to learn what its use may be.

Carlos Manuel Garcia, M.D., Havana, Cuba.

Answer.—Recently, on the assumption that tin workers are less troubled with boils than the average person, two French investigators proposed the use of tin compounds in the treatment of staphylococcic infections. Based on their work, a proprietary preparation—Stannoxyl—has been placed on the market which is claimed to be "composed of stannous oxide and specially purified metallic tin." Absurd claims are made for the product: for instance: ". . . We have no hesitation in offering STANNOXYL—in Tablets or Cachets—as the only true specific for diseases of Staphylococcus origin." The available evidence is unconvincing and in no way warrants such exaggerated statements.

Industrial Physician.—The industrial physician of the future must be able to interpret industrial processes, understand the operation of mechanical appliances, size up the human requirements for filling a certain job, make scientific studies of the hazards of occupations, make certain that proper working conditions are provided for the industrial population, and interpret these findings in terms of increased production, decreased labor turnover, and healthier and happier workers. He should also be able to tune up the home, community and industrial environment so that each would bear its part of carrying forward the great commercial life of the Nation.—F. L. Rector: *Public Health Rep.*, Jan. 9, 1920.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

Arizona: Phoenix, April 6-7. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.

Colorado: Denver, April 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

Connecticut: New Haven and Hartford, March 9-10. Sec., Reg. Bd., Dr. Robert L. Rowley, Hartford. Sec., Homeo. Bd., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven. Sec., Eclectic Bd., Dr. James Edwin Hair, 730 State St., Bridgeport.

District of Columbia: Washington, April 13-15. Sec., Dr. Edgar P. Copeland, the Rockingham, Washington.

Florida: Jacksonville, March 16. Sec., Homeo. Bd., Dr. Geo. A. Davis, East Port.

Idaho: Boise, April 6. Commissioner, Hon. Robert A. Jones, Boise.

Iowa: Iowa City, March 29-31. Sec., Dr. Guilford H. Sumner, Capitol Building, Des Moines.

Maine: Portland, March 9-10 Sec., Dr. Frank W. Searle, 140 Pine St., Portland.

Massachusetts: Boston, March 9-11. Sec., Dr. Walter P. Bowers, Room 144, State House, Boston.

Minnesota: Minneapolis, April 6-8. Sec., Dr. Thos. McDavitt, Loury Bldg., St. Paul.

Montana: Helena, April 6. Sec., Dr. S. A. Cooney, Power Bldg., Helena.

New Hampshire: Concord, March 11-12. Sec., Dr. Charles Duncan, Concord.

Oklahoma: Oklahoma City, April 13-14. Sec., Dr. J. M. Byrum, Shawnee.

Rhode Island: Providence, April 1-2. Sec., Dr. Byron U. Richards, State House, Providence.

West Virginia: Charleston, April 13. Sec., Dr. S. L. Jepson, Masonic Bldg., Charleston.

Oregon July Examination

Dr. Frank W. Wood, secretary of the Oregon State Board of Medical Examiners, reports the written examination held at Portland, July 1-3, 1919. The examination covered 11 subjects and included 90 questions. An average of 75 per cent. was required to pass. Twenty-seven candidates were examined, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	No. Licensed
Bennett College of Eclectic Med. and Surg.		(1906)	1
Rush Medical College		(1919)*	1
University of Illinois		(1913)	1
Keokuk Medical College		(1895)	1
College of Physicians and Surgeons, Baltimore		(1891)	1
Harvard University		(1916)	1
Kansas City University of Phys. and Surgs.		(1919)	1
University Medical College of Kansas City		(1908)	1
Lincoln Medical College		(1917)	1
Fordham University		(1917)	1
University of Oregon		(1908), (1918, 3), (1919, 6)	10
Jefferson Medical College		(1912), (1917)	2
Medico-Chirurgical College of Philadelphia		(1916)	1
University of Pennsylvania		(1894)	1
Marquette University		(1919)	1
McGill University		(1902)	1
University of Amsterdam		(1910)†	1

* Received certificate of four years' work; will receive M.D. degree on completion of intern year.

† Graduation not verified.

Wisconsin October Meeting

Dr. John M. Dodd, secretary of the Wisconsin State Board of Medical Examiners, reports that 3 candidates were licensed by reciprocity and 17 candidates were licensed by virtue of a commission in the Medical Corps, at the meeting held Oct. 27, 1919. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Rush Medical College		(1919, 2)	Illinois
St. Louis University		(1917)	Missouri

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Chicago Homeopathic Medical College		(1897)	U. S. Army
Hahnemann Medical College, Chicago		(1916), (1917)	U. S. Army
Northwestern University		(1909), (1916, 2)	U. S. Army
Rush Medical College		(1916, 2)	U. S. Army
University of Louisville		(1917)	U. S. Navy
University of Minnesota Medical School		(1912), (1917)	U. S. Army
Washington University		(1916), (1917)	U. S. Army
Columbia University		(1917)	U. S. Navy
New York Homeopathic Med. Coll. and Flower Hosp.		(1917)	U. S. Army
University of Pennsylvania		(1916)	U. S. Army
Vanderbilt University		(1915)	U. S. Army

Book Notices

REPORT ON THE PRESENT STATE OF KNOWLEDGE CONCERNING ACCESSORY FOOD FACTORS (VITAMINES). Medical Research Committee, Special Report Series. No. 38. Boards. Pp. 103, with illustrations. London: His Majesty's Stationery Office, 1919.

This gives an excellent summary of our knowledge of these unknown essential substances, which go by various names and are concerned in different clinical conditions. A sentence selected from the introduction emphasizes our need for future investigation in this field, and expresses well the feeling of all investigators of this topic: "The practical importance of the facts will not be understood unless it be recognized that a deficiency in food, which when complete or extreme leads to actual disease, may, when only relative, be responsible for ill health of a vague but still important kind." The accessory food factors are classified according to the division made by McCollum, that is, fat-soluble A and water-soluble B, evidence being set forth that the latter is identical with the antiberiberi factor. In addition, the antiscorbutic vitamin is given an equally prominent place as a third distinct factor. The chemical and resistant properties and the distribution among foodstuffs of each are discussed. In the table on the protective value of various foodstuffs against scurvy, the tomato is not included. Since Hess has demonstrated the value of this food as an antiscorbutic, it ought to appear in such a table. Two instructive chapters on the application of experimental work to the practical problems of adults' and infants' diets give many useful data for the dietitian. Rickets is classified as a deficiency disease in which the antirachitic factor has a possible identity with the fat-soluble A factor. Pellagra is likewise considered a deficiency disease, but one in which the underlying cause is more or less undetermined. The appendix is a guide for those who wish to know what foods are rich in the accessory food factors, and gives instructions on the prevention of the well-known deficiency diseases.

PRAKTIKUM DER MEDIZINISCHEN CHEMIE. Einschliesslich der Forensischen Nachweise für Mediziner und Chemiker. Von Dr. Sigmund Fränkel, Professor der Medizinischen Chemie an der Universität in Wien. Paper. Price, 18 marks. Pp. 439, with illustrations. Berlin: Urban & Schwarzenberg, 1918.

By those familiar with Fränkel's "Arzneimittelsynthese," the Praktikum der medizinischen Chemie will be examined with interest. The book aims to be sufficiently comprehensive to be used as a guide book in the instruction of physicians and chemists who desire more than usual knowledge of pure and applied medicinal chemistry. It contains methods for qualitative and quantitative inorganic analysis, the detection and analysis of many organic substances used in medicine, and the methods used in physiologic, pathologic and forensic chemistry. In a work of less than 450 pages the subdivisions in such a comprehensive task must necessarily be brief; yet no subject important to the field appears to have been omitted. The methods are given without much discussion concerning the interpretation of results, the latter being left to the teacher and analyst using the book. No bibliography is given, although usually the methods are described under the author's name. The work should prove useful to the chemists of municipal and public health laboratories, but will not be of much value to practicing physicians.

ANAPHYLAXIS AND ANTI-ANAPHYLAXIS AND THEIR EXPERIMENTAL FOUNDATIONS. By A. Besredka, Professor at the Pasteur Institute. Preface by Dr. E. Roux. English Edition by S. Roodhouse Gloyne, M.D., D.H.P., Pathologist, City of London Hospital for Diseases of the Chest, Victoria Park. Cloth. Price, $2.25 Pp. 143. St. Louis: C. V. Mosby Company, 1919.

For a monograph of 130 pages this book is abundantly introduced, there being four introductions, one each by Vaughan, Roux, the author and the translator. It is principally valuable as summarizing the important work of Besredka and his associates on anaphylaxis up to a time shortly before the war. There is a brief chapter by the translator which purports to bring the work up to date, but it is by no means complete or adequate in this respect. It is far from being a full statement of our present knowledge of this subject but does give much information in a very readable form. Besredka is among those who hold that there is no anaphylactic poison or anaphylatoxin, believing that the antibody makes possible the entrance of the antigen into certain nerve cells, where it causes the observed disturbances. He discusses at particular length the resistance conferred to man or animals by injection of a nonfatal dose, for which condition he uses the term "antianaphylaxis," although the term "desensitization" is to be preferred. The work is attractively written and well translated, although there are several errors to be noted.

DIGEST OF COMMENTS ON THE PHARMACOPOEIA OF THE UNITED STATES OF AMERICA AND ON THE NATIONAL FORMULARY FOR THE CALENDAR YEAR ENDING DECEMBER 31, 1915. By A. G. DuMez. Hygienic Laboratory Bulletin No. 118. Paper. Price, 35 cents. Pp. 456. Washington: Government Printing Office, 1919.

DIGEST OF COMMENTS ON THE PHARMACOPOEIA OF THE UNITED STATES OF AMERICA AND ON THE NATIONAL FORMULARY FOR THE CALENDAR YEAR ENDING DECEMBER 31, 1916. By A. G. DuMez. Hygienic Laboratory Bulletin No. 119. Paper. Price, 20 cents. Pp. 316. Washington: Government Printing Office, 1919.

Reviews of this annual volume have appeared in THE JOURNAL from time to time. The digests were formerly prepared by M. I. Wilbert, who died in 1916. The interruption caused by his death and the selection of a successor delayed the appearance of the 1915 volume until now, so that the volumes for 1915 and 1916 have appeared simultaneously. A part of the manuscript on the former volume had been prepared by Mr. Wilbert, and Dr. DuMez has continued the compilation according to the system inaugurated by his predecessor. The digests contain not only the abstracts of criticisms that have been made on drugs that are described in the U. S. Pharmacopeia and National Formulary, but also comments on all kinds of substances that are used in medicine or which are likely to be so used. The abstracts are unbiased, commendatory and condemnatory comments being given equal prominence. The physician or pharmacist who owns the work has at his command the consensus on the therapeutic status of drugs, as well as their market quality, tests for their identification and purity, and methods for making their preparations. Within certain limits for free distribution, copies may be obtained by application to the Surgeon-General of the Public Health Service, Washington, D. C. They may also be obtained at a nominal price from the Superintendent of Documents, Washington, D. C.

NERVOUS AND MENTAL DISEASES. By Archibald Church, M.D., Professor of Nervous and Mental Diseases, Northwestern University Medical School, Chicago, and Frederick Peterson, M.D. Ninth edition. Cloth. Price, $7 net. Pp. 949, with 350 illustrations. Philadelphia: W. B. Saunders Company, 1919.

The authors state that no radical changes have been made in the new edition, and that they are suspending judgment concerning certain advanced views until time and experience have determined whether or not these matters are to become established. The subjects of general paresis and traumatic insanity have been rewritten. There is brief mention of the newer views concerning lethargic encephalitis. The work is a standard text of well merited popularity.

THE OPERATIVE STORY OF GOITRE. The Author's Operation. By William S. Halsted. The Johns Hopkins Hospital Reports, Volume 19, Fasciculus 2. Price, $3.50. Paper. Pp. 257, with illustrations. Baltimore: Johns Hopkins Press, 1919.

As might be surmised from a glance at the title, in this book is presented a historical account of the development of the operative treatment of goiter. It brings out in a striking manner the enormous influence of the introduction of general anesthesia, and with it a more deliberate method of operating; of the development of aseptic technic, and of a third factor of which little is written, namely, the invention of the artery clamp. Hemorrhage, with or without infection, was the cause of death in most of the early strumectomies, and it might almost be said that the invention of the artery clamp made goiter operations possible. To the shallow faddist who gets his information from the advertising pages of his med-

ical journals, and whose chief aim therefore is to be "up to the minute," this book will make no appeal; to the earnest student of surgery, to the man who appreciates broad, deep foundations, to the real builders in medicine, it will afford inspiration to increased effort and better work.

Social Medicine and Medical Economics

THE PHYSICIAN'S BURDEN UNDER WORKMEN'S COMPENSATION ACTS

M. L. HARRIS, M.D.
CHICAGO

The physician, as a rule, gives too little attention to the affairs of life outside his own line of work. Even when the matter is one that concerns him more or less directly, he seldom gives it sufficient thought or study to protect his own interests, and he often submits to injustice uncomplainingly rather than take the time and trouble to assert his rights.

This characteristic indifference of the profession is well known to legislative bodies, and as a result, when economic questions in which the physician should be interested are before these bodies for legislative action, the profession receives little or no consideration and, in fact, is often not even consulted. I need not now take the time to analyze the reason for this persistent indifference of the profession to matters of this kind, but will simply state that in many instances it has resulted in great detriment to the welfare of the people as a whole and to the medical profession in particular.

THE WASHINGTON WORKMEN'S COMPENSATION ACT

A good illustration of what amounts almost to contempt of the medical profession is shown in the first workmen's compensation act which was passed by the state of Washington in 1911. As is well known, workmen's compensation laws were enacted for the purpose of providing some compensation to workmen for injuries arising out of and in the course of their employment.

The first thing that an injured person needs in the way of compensation is medical attention for his injuries; but in the Washington act, not only was no provision made for paying a physician for his services to the injured, but many onerous duties were thrust on him which he was obliged to perform gratuitously. Naturally, the physician is the first person who is usually called when a workman is injured, and under the law he was required to make out an elaborate report of the case on blanks furnished for the purpose and send these to the industrial commission. On the blank form the following note was printed:

> This form should be made out and forwarded to the office of the commission in Olympia as soon as the surgeon has made such careful examination as will enable him to make an intelligent report of the case. No fee is paid for making out this blank, but the commission respectfully urges the cooperation of attending physicians in getting the real facts of each case before it. N. B. Your patient cannot receive any compensation from the state until this form is received and passed upon by the chief medical officer of the commission.

How gently the physician is sandbagged into making out his report for nothing: no report, no money for the injured workman—the inference, of course, being: no money for the patient, no money for the physician. When the patient was discharged by the surgeon, the surgeon was obliged to make out another elaborate report and send it to the office of the commission. In this report, in addition to other facts, the physician was required to state the cost of medical and surgical treatment, cost of medicine, medical and surgical supplies, cost of crutches and apparatus, hospital charges, ambulance charges, and cost of nursing. There was still another "form of surgeon's special report with charts," to be made out and sent to the commission; and finally, in case of death, the physician was obliged to fill out and file "form of proof of death by physician." In addition to his duty as a physician, the law stated:

> . . . and it shall be the duty of the physician to inform the injured workman of his rights under this act and to lend all the necessary assistance in making out his application for compensation and such proof of other matters as required by the rules of the department without charge to the workman.

Commenting on this last section, the industrial board naively remarked that what the physician does is simply a duty which he owes to the state; hence no payment is allowed therefor. The physician must not only take care of the injured workman, but under the act he was made the agent of the commission for the purpose of collecting and furnishing it with information, and was made the legal adviser of the injured workman and had to inform him of his rights under the act and "assist in making such proof of other matters as required by the rules of the department," for all of which services he was not only not allowed any compensation by the state, but was prohibited from making any charge to the workman for the simple reason that it was all a duty which he owed the state.

In order that physicians might not delay in performing their "duty to the state," the law provided that any person who fails to furnish the information and reports required by the commission shall be deemed guilty of a misdemeanor, the penalty for which is imprisonment in the county jail not to exceed ninety days or by fine not to exceed $250. This would certainly be amusing were it not a fact and were it not of such vital importance to the economic welfare of the profession. When did it become a "duty which the physician owes the state" to work for nothing? When did it become a duty of physicians to give legal advice to injured workmen and to assist them in making out their claims for compensation and to assist them in furnishing proof of such other matters as may be necessary, and all without recompense? It seems that in the state of Washington it was thought that the physician owed it to the state to work for nothing, and was encouraged to do it under a penalty of ninety days in the county jail or a fine of $250. If the physician is only meek and lowly enough he will soon have sufficient duties and obligations thrust on him by the state so that he will eventually be able to work his way into the state poorhouse. Such an absurd law as the Washington workmen's compensation act of 1911 never could have passed had the physicians been alert to their own welfare. It took some years to change that law so that the medical profession was given some consideration.

PRINCIPLE UNDERLYING WORKMEN'S COMPENSATION LAWS

While no other state has passed such a shameful workmen's compensation law as the Washington act of 1911, in the majority of the states the physician under workmen's compensation acts is meekly performing "the duty which he owes to the state" by caring for injured workmen for nothing. The fundamental principle underlying workmen's compensation acts is that the industry should bear as part of the cost of production the expense incident to injuries to workmen arising out of and in the course of their employment. In other words, the workman is to be looked on as a part of the general machinery of the industry and, like any other piece of machinery when injured, he should be repaired if possible, the cost of the repairs to be charged to general operating expense. The only difference between the human machine—the workman—and the inhuman machine is that the human machine loses his earning power while laid up during repairs, but must live at an expense to himself; hence he is allowed as part compensation a certain percentage of the wages he was earning when injured to tide him over until

he is again able to earn as before; or in case he is permanently incapacitated, until a predetermined amount has been paid to him.

It will be granted that the principle underlying workmen's compensation laws is sound. All state legislative bodies in enacting such laws recognize the principle that the burden of caring for accidental injuries to workmen arising out of and in the course of their employment is a legitimate expense of the industry chargeable to production. Such being the case, why is it that the majority of the workmen's compensation acts, which are based on the principle just announced, deliberately take a large part of the burden off the industry or the employer, and put it on the medical profession? Why should the medical profession, which has nothing to do with production, be compelled by law to assume a large part of the expense of caring for injured workmen, which expense, the same law announces on principle, should be borne by the industry or the employer? If the principle is correct, then the employer should pay all the expense and not a part of it while the physician pays the balance. How is it that the physician is obliged to assume without remuneration a large part of the expense of caring for injured workmen under workmen's compensation acts?

HOW IT WORKS OUT

In defining the amount and terms of the compensation to be paid, the acts state that the injured workmen shall receive medical and surgical care, including drugs, medicines and surgical appliances, hospital care and nursing, however, not to exceed $100, or $200, as some states have it. Any intelligent person knows that $100 or even $200 will not pay hospital and nursing bills and the expense of drugs, medicines and surgical dressings and appliances, and leave anything for the physician in a serious injury requiring one or more surgical operations and several weeks' careful attention. What happens is something like this:

A workman is injured, and a physician is called and told to do everything he can for the patient. It is necessary to have him removed to a hospital, and perhaps a serious operation must be performed, such as an amputation of a leg or, what even is more difficult, the repair of a bad compound fracture with the necessary subsequent care, etc. The hospital has its bills paid weekly, and after a time the physician sends in a bill, possibly, on account. He shortly receives a letter from the employer, who seems quite grieved to think that he should be sent a bill, for he has already paid the bills at the hospital, amounting to so and so much, which of course he thought included medical and surgical services. When informed to the contrary, he comes back with the statement that he has already paid all that the law requires, namely, $100 or $200, as the case may be, and has therefore discharged his liability and that the physician will have to look to the injured person for his bill. As the man is out of employment for many weeks or months on account of his injury; as the cash compensation which he received was barely sufficient to keep his family in food while he was laid up; as he is back in house rent and other necessary living expenses, and as he was working under the compensation act which he supposed paid for medical care when injured, the physician is left, as is said in the vernacular, "to hold the bag."

Another way in which some of these cases work out is this: A man is injured and the physician is called as before. When the bill is sent to the employer the physician is informed that the employer is insured in the X Y Z accident insurance company, to which the physician is referred. The insurance company asks the physician kindly to fill out numerous blanks giving all the details of the accident, the character and extent of the injuries, the duration of the disability, if any, etc., and when it has obtained all the free information it desires out of the physician it breaks the news to him that it has already paid hospital bills, etc., to the extent required by law and that it has no further liability in the case. Or if the insurance company cannot hide behind that technicality, it asks the physician for the amount of his bill so as to have it on record, and then informs the physician that the rules of the home office require that all doctors' bills be fully itemized, and that it will be necessary for him to itemize his bill, setting forth the exact charge made for first aid and for every subsequent attention and exactly what was done each time. When this is done the reply comes back that the company allows only so much for first aid, so much for this operation and that, and so much for subsequent care, etc., which fees are about 30 per cent. of what they should be for the work actually done, and the physician may accept that or not as he likes.

NEED OF COOPERATION BY PHYSICIANS TO SECURE JUSTICE

These are merely some of the ways physicians are carrying, without remuneration, a large part of the burden of workmen's compensation acts which should fall on the industries. And they will be obliged to submit to this imposition and to carry this burden, and others which seem imminent in the way of compulsory health insurance acts, unless they wake up and are willing to cooperate to secure common justice.

Medicolegal

Privilege as to Physician Employed Prior to Injury

(Hirschberg v. Southern Pac. Co. (Calif.), 183 Pac. R. 141)

The Supreme Court of California, in affirming a judgment in favor of the plaintiff, in this action to recover damages for personal injuries, holds that, under the statute with regard to privileged communications which was in force when the cause of action arose, the plaintiff did not, by testifying as to her injuries and by permitting a physician who treated her for them to testify regarding them, waive her privilege with reference to a physician who had treated her several years before her injury. The court says that it has been held that if a patient offers the testimony of one of several physicians attending the case at the same time, or who were present at a consultation, the privilege has been waived, so that the testimony of all of them will be received. Likewise, when different physicians have treated the patient at different times for the same injury and the patient calls one of the physicians to testify, it has been held that this constitutes a waiver as to all the physicians. But the court has found no authority supporting the contention in this case that because the plaintiff and her physician testified fully as to her condition after her injury, the ban of privilege was thereby waived as to information acquired by another physician while acting as her physician several years prior to the injury complained of. Nor does the court think that it ought to hold otherwise in this case than as stated, although the tendency of the decisions in recent years has been toward a less liberal application of the ban of privilege, and in California privilege in cases of damages for personal injuries has been abrogated since this cause of action arose (Statutes of 1917, p. 954).

Evidence of Violating Harrison Narcotic Law

(Thompson v. United States (U. S.), 258 Fed. R. 196)

The United States Circuit Court of Appeals, Eighth Circuit, in affirming a judgment of conviction of defendant Thompson of violating the Harrison Narcotic Law, says that a careful reading of the testimony was convincing beyond a doubt that the defendant, under the cloak of a practicing physician, sold narcotics, and not in the regular practice of

his profession for the purpose of curing addicts, and it was the duty of the trial court to submit the issues of fact to the jury, whose finding was conclusive in this court. It was assigned as error that physicians were permitted to testify as experts as to the well-recognized methods among the medical fraternity of treating persons addicted to the use of narcotic drugs for the purpose of curing them of the habit. Such evidence was admissible, but not conclusive. If physicians and the others mentioned in the exceptions of Section 2 can sell and dispense these narcotics, regardless of the fact whether it is done in good faith for the relief of a patient, then the moral object of the act is entirely defeated. It certainly cannot be claimed that a physician selling these narcotics, not in good faith, for the purpose of securing a cure of one suffering from an illness, or to cure him from the morphin habit, is doing so "in the course of his professional practice only," as prescribed by the express language of the act. For the purpose of establishing the intent and bad faith of the defendant, the testimony of other witnesses to having purchased narcotics from him, without his personally attending them, he sending the narcotics to them by express, they living in other states, was admissible. The defendant requested that the jury be instructed that under the act of Congress a physician cannot be convicted for dispensing the prohibited narcotics in the treatment of a patient, whose application is made by letter, and although the physician never comes into personal contact with such patient, provided he reduces the amount on each succeeding shipment of morphin, and furnishes it as in treatment for a morphin habit, in the course of professional practice only. But this requested instruction was in conflict with the act. It lacked two indispensable conditions: first, that the physician furnished the drug in good faith; and, second, that he made and kept the required record.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, New Orleans, April 26-30.

Air Service Medical Assn. of the U. S., New Orleans, April 26.
Alahama State Medical Association, Anniston, April 20-22.
American Association of Anatomists, Washington, D. C., April 1-3.
American Assn. of Pathologists and Bacteriologists, New York, April 2-3.
American Dermatological Association, Asheville, April 22-24.
American Proctologic Society, Memphis, Tenn., April 22-23.
American Radium Society, New Orleans, April 26.
American Urological Association, New York, March 23-25.
Assn. for Study of Internal Secretions, New Orleans, April 26.
Assn. of Amer. Teachers, Diseases of Children, New Orleans, April 27.
Assn. of Military Surgeons of the U. S., New Orleans, April 24.
Louisiana State Medical Society, New Orleans, April 24-26.
Missouri State Medical Association, Jefferson City, April 6-8.
National Tuberculosis Association, St. Louis, Mo., April 22-24.
New York State Medical Society, New York, March 23-25.
North Carolina State Medical Society, Charlotte, April 20.
South Carolina Medical Association, Greenville, April 20-21.
Tennessee State Medical Association, Chattanooga, April 6-8.
Texas State Medical Association, Houston, April 22-24.

NEW YORK ACADEMY OF MEDICINE

Stated Meeting, held Feb. 19, 1920

The President, DR. GEORGE DAVID STEWART, in the Chair

The Prevention and Serum Treatment of Lobar Pneumonia

DR. RUSSELL L. CECIL: The old theory was that most persons carry pneumococci in the upper respiratory tract, and that with lowered resistance autogenous infection occurs; more recent studies indicate that the normal mouth rarely harbors a virulent type of pneumococcus except when the person has been exposed to the disease, Types I, II and III being rarely found in healthy persons except among physicians and nurses who have been caring for some one with the disease. In the treatment of pneumonia, the patient should be isolated. Everything that has come in contact with him should be sterilized. Prophylactic vaccination may possibly offer more effective protection against pneumonia than is afforded by sanitary measures. Observations were made as to the value of prophylactic vaccination against Types I, II and III pneumonia at Camp Upton, where about 40 per cent. of the camp strength of 12,500 men were vaccinated and 60 per cent. remained unvaccinated. Those vaccinated received three injections of a pneumococcus saline vaccine of Types I, II and III, the first dose being 3 billion, the second 6 and the third 9 billion. The plan was to keep the men under observation for five or six months; but they departed at the end of ten weeks, during which time no case of pneumococcus Type I, II and III infection developed among the men who had received the three inoculations of the vaccine. There were only seventeen cases of pneumonia of all types among those receiving the vaccines, while there were 173 cases of pneumonia among the unvaccinated. Among the unvaccinated the mortality was 28 per cent., as against 11 per cent. among the vaccinated.

Further experiments at Camp Wheeler under somewhat different conditions, and with the use of a lipovaccine instead of the saline vaccine used at Camp Upton, indicated that the lipovaccines did not possess so great a degree of antigenic action as the saline vaccine. Here there were under observation about 16,000 men, 80 per cent. of whom were vaccinated against Types I, II and III pneumonia. Among the vaccinated there were thirty-two cases of pneumonia, and among the unvaccinated, forty-two cases. The mortality among the vaccinated was 21.7, and among the unvaccinated, 22.3. In connection with the use of the lipovaccines, it was found that the antibodies did not develop until a week after vaccination. A revision of their figures on this basis showed eight cases of pneumonia of the types vaccinated against.

Dr. Blake and I have conducted animal experiments at the Army Medical School at Washington with a view to confirming these results. The monkey is especially suited to such investigation, as it has pneumonia almost like man. When given large doses of the pneumococcus the monkey always died, and at necropsy the same kind of consolidation of the lung was found as in man. We were able to protect monkeys with vaccine made from living cultures of pneumococci, but with the killed cultures we have not been able to get a satisfactory immunity. When, however, large doses of killed culture were administered in three subcutaneous injections, none of the monkeys thus protected by vaccination got pneumonia, but the controls did. Experiments on Philippine monkeys showed them much more susceptible than the rhesus monkey. Small doses of pneumococcus vaccine given intravenously to rhesus monkeys gave complete protection. These experiments gave a rational basis for human pneumococcus vaccination. The reactions following these injections were about the same as those following antityphoid inoculations, but larger doses were required. There is certainly indication for vaccination against pneumonia in the army, in recruiting stations, during epidemics of influenza, in institutions, and in outdoor workers. It is perhaps also indicated for nurses, physicians and hospital attendants exposed to pneumonia, and in persons subject to repeated attacks of pneumonia. Vaccination against pneumonia is contraindicated in those suffering from pulmonary tuberculosis and in acute respiratory infections. Type I antipneumococcus serum is effective against Type I pneumonia, and by its use in the work at the Rockefeller Institute the mortality of that type of pneumonia has been reduced from 30 to about 7 per cent. All the monkeys treated with Type I serum recovered, though they had been infected with lethal doses of Type I culture. The controls died. If serum was given early, the disease was practically aborted.

DISCUSSION

DR. FRANCIS G. BLAKE: This study of prophylactic vaccination in influenza and pneumonia offers great hope of supplying us with the means of preventing pneumonia, at least to a certain extent. These experiments have brought out three points very definitely: 1. The importance of beginning treatment early, a point which cannot be too strongly emphasized. The serum treatment should not be regarded as a last minute effort to rescue the patient from the grave, and that is the general rule in any disease treated by serum. 2. There should also be a great deal of enthusiasm in maintaining persistent treatment at least three times a day and

not desisting until the patient is well. 3. Even though, through unavoidable circumstances, treatment cannot be begun early, it should always be tried in the hope that severe cases may be saved as in the monkeys.

DR. HENRY T. CHICKERING: In the clinical study of pneumonia, Dochez and others have found that immune bodies and agglutinins last for only a short period; but these may not be the only index of immunity. It is important to emphasize the advantage of early use of the serum. If one is able to type the case within forty-eight hours of the chill and there are signs of incomplete consolidation, one or two treatments with the serum may be sufficient, whereas later on eight or ten treatments will be required. The time to get the sputum is at the first examination when, in attempts at deep breathing during percussion, coughing and expectoration are usually started. Treatment should be continued as long as the temperature is above 101 F. and one is certain it is not due to complications. There is an impression that empyema occurs more frequently in pneumonia cases treated with serum than in those not receiving this treatment, and it has been observed that empyema is rather infrequent in Type III pneumonia. The reason is that, in the severe cases of Type III pneumonias, death usually supervenes before the empyema stage is reached. When serum is used, more of the cases are saved and reach the empyema stage. In working with mice, it has been observed that there are certain maximum doses of pneumococci above which the serum exerts no effect. The same thing is probably shown in patients seen late when seventy-five or a hundred colonies of the pneumococci are found in the field, and in whom serum, even if given persistently, has no apparent effect, the patient dying either of pneumonia or of some complication.

DR. RUSSELL L. CECIL: My impression is that pneumococcus immunity lasts several months, and that it will be necessary to repeat vaccination every year in order to give protection during the season when pneumonia is prevalent. This is a subject we expect to investigate in the near future. There seems to be no relation between the degree of immunity and the amount of protective substance in the serum of the monkeys. An argument against the influenza bacillus as a cause of influenza is that it is difficult to obtain this organism by culture. We have found that with monkeys the influenza bacillus in some instances appeared and then suddenly disappeared, and that it spread rapidly from one part of the respiratory tract to another.

Relation of the Influenza Bacillus to Influenza

DR. FRANCIS G. BLAKE: None of the objections usually raised can be maintained as valid reasons for abandoning the conception of the possible etiologic importance of the Pfeiffer bacillus in relation to influenza, since it is well known that many bacteria whose etiologic relationships to various diseases affecting the respiratory tract is fully established may be found in the upper respiratory tract of healthy persons, and are often found in association with other pathologic conditions than those which they commonly cause. It has been thoroughly established that *B. influenzae*, at least certain strains of the organism, may be pathogenic for man, since it has been found as the only organism present in cases of meningitis, endocarditis, pneumonia and other conditions. That during the epidemic many laboratory examinations failed to show the presence of this organism is probably due to the fact that such examinations were carried out under the stress of war conditions, frequently without the use of adequate mediums or sufficient attention to the cultural peculiarities of the influenza bacillus. The failure to reproduce the disease in animals may be explained by the fact that in the majority of animal experiments reported in the literature, the methods of inoculation have been subcutaneous, intraperitoneal or intravenous, and it is not to be expected that a disease that may safely be classified as a respiratory infection could readily be reproduced in animals by the introduction of the virus by other than the natural mode of infection. That attempts to reproduce the disease by inoculation of the mucous membranes of the respiratory tract have been unsuccessful may be due to failure to take into consideration that such pathogenicity as the influenza bacillus possesses may be rapidly lost on artificial cultivation outside the animal body. Our experiments show that *B. influenzae*, when attention is paid to maintaining it at a proper grade of virulence, can initiate in healthy animals an infection of the mucous membranes of the upper respiratory tract which may spread by continuity to the lower respiratory tract, producing a tracheobronchitis and, in a certain proportion of the cases, a characteristic type of bronchopneumonia. Control experiments with highly virulent strains of pneumococci and hemolytic streptococci have shown that these organisms do not possess this property, and that they must gain admission to the bronchi before they can initiate an infection of the respiratory tract. The disease experimentally produced by inoculation of the nasal and buccal mucous membranes with *B. influenzae* was essentially identical with influenza in man with respect to its symptoms, clinical course and complications. *B. influenzae* can produce in animals a characteristic type of bronchopneumonia which is identical with the kind of pneumonia that has been described as typical influenzal bronchopneumonia of man and has been ascribed to infection of the lungs with *B. influenzae*. In short, *B. influenzae* can produce in animals the clinical syndrome of influenza. As harmonizing apparently opposing facts, I would suggest that the pandemic disease was primarily initiated by a yet undiscovered organism, and that there resulted under the influence of this virus a concomitant infection with *B. influenzae* which was responsible for the principal clinical manifestations of the disease influenza. Only future investigation can determine whether this assumption is correct.

DISCUSSION

DR. WILLIAM H. PARK: Four of our laboratory assistants at different times have been sprayed with fresh cultures of influenza bacilli accidentally. Two of these persons developed a moderate infection, and in both of these the type of culture which was sprayed into the nostrils was the type obtained during the infection and for many days afterward. The other two did not develop the infection, although one became a carrier for several weeks. Dr. Blake spoke of the fact that the early fulminating cases might show during the first day the Pfeiffer bacillus in pure culture or nearly pure culture, and later would show mainly the streptococcus, pneumococcus or other organisms. We have not found this always to be the case. Only a minority of our acute cases (20 per cent.) at death showed only influenza bacilli in the lungs. Dr. Williams and her associates have tried to find a filtrable virus, but with negative results. Inoculations in students of filtrates from nasal washings had also not produced infection. The simple finding of a filtrable virus in a few cases would, of course, prove nothing more as to the etiology of influenza than finding an unidentified new pathogenic microbe. It would still be necessary to prove that such a virus was the cause of the pandemic and not one of the complicating infections. One of the questions that must be considered in etiologic investigations is: "What are the marks of a case of epidemic influenza?" Dr. Williams has searched the cultures from over 100 cases but has not found the epidemic strain. When investigators have spoken of the significance of the Pfeiffer bacillus in 100 per cent. of the cases, they used the name in a very liberal way; they really meant that they had found very different types of the organism. These could not be from the same epidemic source. These findings supported strongly the belief that these persons were influenza bacillus carriers before they were attacked by influenza. Earlier investigations have always indicated this. The Pfeiffer bacillus has been found in virtually every case of whooping cough, in 90 per cent. of measles cases, and also in a large percentage of cases in other respiratory infections. In her search for the epidemic strain, Dr. Williams has taken cultures from separate groups and has isolated ten or twenty colonies from the cultures of each. In order not to miss the infecting strain, she selected those developing first on the plates, those developing later, and those developing last. She has picked out these colonies from the cultures from undoubted epidemic influenza; but instead of finding an epidemic strain, she found a multitude of types. These findings have convinced us that the Pfeiffer

bacillus has not been established as the cause of influenza, and have led us to believe that it was some other micro-organism. These experiments of Drs. Cecil and Blake have to my mind been very important in designating that lesions can be formed in monkeys by the Pfeiffer bacillus similar to those seen in the pneumonias occurring in influenzas.

DR. HANS ZINSSER: Drs. Cecil and Blake have, indeed, carried out Koch's postulate with the influenza bacillus and have produced lesions similar to those produced by this organism in some human cases, but the question as to whether the condition they have produced is true epidemic influenza or corresponds merely to a secondary condition analogous to pneumococcus and streptococcus lesions is still open. The conditions that Dr. Cecil and Dr. Blake produced in the monkeys' lungs, and the similar condition often spoken of as influenza at the present time, are not those seen in the cases of influenza during its early epidemic stages in France, and as I understand in this country as well, a condition characterized by rapid dissemination, sudden onset, violent headache, muscular pain and fever, but absence of respiratory or other local symptoms. It usually lasted three days, and all the patients recovered. Later, throat symptoms appeared; and in these, influenza bacilli were found. This was certainly not the disease that was seen later in the camps in this country and is being seen in the hospitals, associated with the pneumococcus or the hemolytic or other streptococcus. It is difficult to understand why a patient should be so terribly ill with nothing but a small focus of influenza bacilli in the throat; this can be explained only on the basis of the production of a poison by the organisms comparable to exotoxins of other bacteria. Recent work in the Columbia Medical School laboratory by Mrs. Parker shows that the influenza bacilli produce powerful poisons in the early stage of their growth in liquid mediums, which are toxic for rabbits. Just what these poisons are is not yet clear to us; but it is not impossible that they may actually be formed in the body, and would account for severe symptoms accompanying the localized infections. At Dr. Longcope's clinic we are beginning to examine convalescent patients by complement fixation with influenza bacilli. A great many of them seem to have shown complement fixation with various antigens, but the work is just beginning and it is very difficult to obtain serums from any one at present and be sure that they are normal. The work of Drs. Cecil and Blake has made it seem somewhat more likely that the influenza bacillus is responsible for what is commonly spoken of as influenza, but it does not bring positive proof of this particular phase of the problem; and while I am inclined to favor the etiologic significance of the influenza bacillus, final judgment must be withheld until some of the apparently contradictory points of evidence have been more thoroughly cleared up.

DR. FRANCIS G. BLAKE: The point to be emphasized is that although we can produce pneumonia by the influenza bacillus, this bacillus was able to initiate an infection of the upper respiratory tract which seemed the same as the type that appeared in the spring of 1918. I saw a great deal of that type at Fort Sam Houston, and believe it was the same as the type they were having in France. Is it not possible that a number of strains of the influenza bacillus were responsible for the epidemic? In an epidemic of pneumonia among monkeys, at least four types of the pneumococcus were concerned.

Treatment of Influenza

DR. SAMUEL A. BROWN: In the treatment of influenza, toxicity is the factor to be kept in mind from the beginning of the disease to the very end. Treatment must be directed first toward the destruction of the invading organism locally and generally. All cases, though very mild, should be regarded seriously. The treatment should consist of rest in bed, a cathartic, and local treatment of the nasal and respiratory mucous membranes with alkaline irrigations and a solution of argyrol or other preparation of silver. Of the drugs of value in the constitutional treatment, the preparations of quinin stand out as fundamentally the nearest to a specific which we have, though we are entirely unable to prove its destructive power on the specific bacteria. Quinin should be given in 2 or 3 grain doses every two or three hours until there is evidence of cinchonism. In addition, phenacetin for the control of pain, headache and temperature, small doses of codein for control of the cough and salicylates as analgesics may be given as required. Another plan of treatment in which there is dryness of the skin, cough and restlessness consists in the administration of Dover's powder, 3 grains, and 3 grains of quinin every three or four hours. The former plan seems preferable. It is important to increase elimination by the ingestion of alkaline waters and by means of high colonic irrigations. The depression associated with the end of the active stage should be counteracted in the beginning by moderate alcoholic stimulation and forced feeding. The treatment during the convalescent stage is most important and often neglected. Associated with the use of quinin, camphor may be used hypodermically. During convalescence the hypodermic administration of strychnin or arsenic on alternate days should be prescribed, together with absolute rest and stimulating massage. In recent prescribing many have omitted to use some of the old-fashioned preparations which have been useful for generations and which are just as useful today if selectively applied.

DISCUSSION

DR. HUBERT V. GUILE: Influenza is of such short duration, and the outcome is so invariably favorable, that it is difficult to say just how much the results are due to treatment and how much to the patient's own immunity. One is almost justified in regarding any case of influenza that has persisted more than five days as more than likely to have developed pneumonia. Here, again, with the exception of pneumonia of Type I, the treatment is purely symptomatic. At present I fear the great bulk of treatment in pneumonia is directed to the prevention of circulatory and heart failure when it is by no means certain that this is a frequent cause of death. Haldane has recently brought to notice the importance of the administration of oxygen inhalations in the treatment of anozemia, which he defines as a condition in which the rate of supply of oxygen to the tissues by the blood in the systemic capillaries is insufficient for the normal processes of life. This he maintains is a common situation in the bronchopneumonias of the so-called influenzal type. Another procedure that has proved useful, the result of our experience abroad, is the use of intravenous hypertonic glucose solution. This seemed to be of distinct value in the critically ill presenting marked toxic symptoms, its beneficial effects being attributed to the restoration of dehydrated tissues, to its slight caloric value, and to its possible tonic effect on the heart muscle. Nonspecific protein therapy has been applied in bronchopneumonia, and seems to promise some assistance along these lines. The same statement holds true of passive immunity obtained by the use of the serum of convalescent patients. Lumbar puncture is occasionally of value in delirious patients, and is of value in ruling out the possibility of meningeal involvement. For emergency stimulation in pneumonia, camphor and caffein in my experience are most efficient, with epinephrin if the blood pressure is unduly low. Pituitary extract has been useful in combating tympanites. The patient should, of course, be digitalized early in the course of the disease.

Obstetric Teaching Hospitals in London.—By all means let the small number of hospitals which can do so enlarge their existing accommodation for maternity cases and at the same time take steps to improve their teaching, which at present is admittedly defective; but the total number of beds which these hospitals will be able to set aside for midwifery will be quite inadequate to fill the demand. It would be suicidal for all the medical schools of London to try to esablish maternity wards with a sufficient number of beds; this should be attempted by not more than three or four schools and the students of the other schools should obtain their clinical instruction either at one of the schools furnished with a maternity ward, or, better, at one of the new and large midwifery institutions, of which at least half a dozen will be required in the different areas of London.—*Lancet*, Dec. 13, 1919.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Review of Tuberculosis, Baltimore

January, 1920, **3**, No. 11

*Occult Tuberculosis. H. Sewall, Denver.—p. 665.
*Serologic Studies on Tuberculosis. Complement Fixation. S. A. Petroff, Trudeau, N. Y.—p. 683.
*Early Roentgen Ray Diagnosis of Ulcerative Tuberculous Colitis. L. Brown and H. L. Sampson, Trudeau, N. Y.—p. 698.

Occult Tuberculosis.—A large group of patients suffer symptoms from a tuberculous infection which is nonprogressive. The symptoms are caused by a subtle intoxication which undermines the functional powers and coordination of all vital tissues. This condition Sewall terms "occult tuberculosis." The patients, as a rule, are not definitely sick. There is a general functional insufficiency with lack of staying power that is brought out by slight physical strain. Neuralgic pains, headache, dizziness, undue fatigue and nervousness are common symptoms. In women, menstruation is apt to be scanty, or is frequently missed. The temperature is usually not elevated but may rise slightly after exercise. The lungs are rarely suspected, but they give auscultatory and roentgen-ray evidences of slight sclerosis involving, especially, the hilum lymph nodes and the upper bronchial radiations. The symptoms may often be traced to circulatory or hormonic insufficiency. Many of these patients, Sewall says, have probably been classified under the title of "effort syndrome" or "neurocirculatory asthenia." The most valuable objective sign of occult tuberculosis is the reaction of the blood pressure to slight strain, such as changing from the supine to the erect position. Most of these patients have vascular hypotension but the most significant feature is an abnormal lowering of pulse pressure and its tendency to progressive subsidence when the erect posture is assumed. This may be due to inordinate fall of systolic pressure or to rise of diastolic pressure in the upright as compared with the recumbent position. This pressure change is not specific of occult tuberculosis, but after exclusion of focal infection, it should suggest this condition and lead to the application of diagnostic methods.

Complement Fixation in Tuberculosis.—Petroff reviews a number of antigens that have been employed and discusses their nature and chemical composition. He has isolated substances corresponding to lecithin, kephalin, sphyngomyelin, carnithin and cuorin from tubercle bacilli, and compared their antigenic properties with those of various tuberculoproteins. Lipins are anticomplementary in large doses, and have no antigenic properties in small doses. Proteins do not give as strong reactions as proteins combined with lipins. The primary incubation time is very important and from one and one-half to two hours is best. Complement fixing antibodies are probably globulins or substances absorbed with the globulins. To get satisfactory results, it is important to have a proper hydrogen ion concentration of the salt solution, to have the glassware thoroughly cleaned and to incubate at a temperature of between 35 and 40 C. Petroff claims that the test in tuberculosis is more specific than the Wassermann test in syphilis.

Roentgen-Ray Diagnosis of Tuberculous Colitis.—According to Brown and Sampson, the clinical picture in the early latent stages of tuberculous colitis contributes little to diagnosis. However, certain roentgen-ray shadows seen from six to twenty-four hours after a barium meal show definitely the presence of colonic ulceration, although their absence does not exclude it. They also show hypermotility and spasm of filling defects, and such a picture in a patient with pulmonary tuberculosis should lead to a definite diagnosis of colonic tuberculosis. The condition is far more frequent than has been hitherto taught, and must be excluded in all advanced as well as early cases with abdonimal symptoms, before submitting them to radical treatment. No examination of a patient with pulmonary tuberculosis can be considered complete without a roentgen-ray study of the intestines.

Boston Medical and Surgical Journal

Feb. 19, 1920, **182**, No. 8

Bodily Mechanics and Nutrition. L. T. Brown, Boston.—p. 187.
Illegitimacy from Standpoint of Physician. F. S. Keller, Boston.—p. 191.
Report of Neurologic Sequels of Influenza in Boston City Hospital Neurological Outpatient Department from July, 1918, to July, 1919. M. D. Ordway, Boston.—p. 194.
*Placental Tumor. R. D. Margeson, Boston.—p. 200.
*Rupture of Pectoralis Minor Muscle. W. P. Coues, Boston.—p. 200.

Placental Tumor.—Margeson reports what he believes to have been an angioma of the placenta. The tumor measured 10 by 6 by 3 cm. and was completely surrounded by amniotic membrane, being attached to the placenta by a structure similar to the umbilical cord, containing vessels, and measuring 6 cm., thus differing from a succinturiata by having no uterine attachment. The specimen was destroyed by mistake before a microscopic examination could be made.

Rupture of Pectoralis Minor Muscle.—While lifting on a tackle and falls with the left arm high in the air, Coues' patient gave a quick jerk on the rope and felt a sudden severe pain above the nipple of the left breast. The load was between 800 and 900 pounds. The patient complained of pain about the left breast on attempting to use his arm since that time, eight months ago. The region of the left breast was distinctly more prominent than the right. There was a diffuse globular swelling under the breast, extending from the anterior border of the axilla to just above the nipple line. The mass was soft, doughlike and somewhat tender to direct pressure. It was most marked near the axillary line. Its general shape was somewhat that of a cucumber. Elevation of the shoulder was possible but painful. Adduction of the arm caused distinct pain in the pectoral region. The grip of both hands was equal and strong. There was no disturbance of sensation of hand, forearm or shoulder. There was no atrophy. The greater pectoral muscle was very well developed, and seemed to be functionating perfectly well. The nature of the injury and appearance of the soft tumor mass in the direct position of the lesser pectoral muscle, would seem to make the diagnosis of this unusual injury fairly certain.

California State Journal of Medicine, San Francisco

Februry, 1920, **18**, No. 2

Botulism. E. C. Dickson, San Francisco.—p. 40.
*Pneumoperitoneum: Roentgenographic Study of Abdominal Organs After Inflation of Peritoneal Cavity. W. A. Alvarez, San Francisco.—p. 42.
Practitioner's Contribution to Embryology. A. W. Meyer, Palo Alto.—p. 44.
Problem of Uterine Cancer. F. W. Lynch, San Francisco.—p. 47.
*Refinement of Colorimetric Methods; Indigocarmine as Functional Test. G. G. Reinle and E. S. DePuy, San Francisco.—p. 49.

Pneumoperitoneum.—According to Alvarez, the first one to show roentgenograms taken after injecting air into the abdomen of a patient who had been tapped for ascites was Lorey in 1912. Weber began to work out this technic on animals and cadavers in 1912. The harmlessness of this procedure in suitable cases seems to have been well established, as no accidents have been reported from the clinics in which it has been used extensively. Rabbits and guinea-pigs can be distended with oxygen or carbon dioxid to a degree not approachable in man, without producing any signs of distress or concern. The rapid absorption of these large quantities of gas does not bother their respiratory centers. Alvarez is convinced that this is the biggest advance in roentgenologic technic since the introduction of the bismuth meal by Cannon in 1898.

Indigocarmin as a Functional Test.—Two standards are used by Reinle and DePuy in each determination: (1) a standard aqueous phenolsulphonephthalein, 0.006 to 1,000; (2) a standard dark amber urine phenolsulphonephthalein, 0.006 to 1,000. By a dilution of the urine standard with the water standard, a separate standard was established in each case, and that standard was compared with the urine under investigation. In one of the parallel tubes to the colorimeter the patient's urine, diluted to some multiple of 1,000, is brought up to the 10 c.c. mark. In the opposite tube is

placed 4 or 5 c.c. of either of the standards. A glance shows whether there is too much or too little yellow coloring matter, and either the aqueous standard or the urine standard is added until an exact match is obtained. The whole process is said to occupy probably five minutes, and is so easily accomplished that the test can be performed by any trained attendant. Having solved the problem of actually matching colors, which the authors are able to do within 0.5 per cent., they then check their findings with reflected light against the findings of transmitted light. The authors use indigocarmin instead of phenolsulphonephthalein. The amplified indigocarmin test is not offered as in any wise a substitute for the phenolsulphonephthalein test, except under conditions where the latter cannot be used, but it is proposed as either an alternative test or as a supplementary test when urine is uncontaminated by blood.

Georgia Medical Association Journal, Atlanta

December, 1919, **9**, No. 8

What the Public Should Know About Cancer. J. L. Campbell, Atlanta.—p. 1.
Treatment of Gunshot Wounds of Abdomen. M. C. Pruitt, Atlanta.—p. 5.
Degenerative Diseases: The Most Formidable Foe of Human Life. O. M. Haywerd, Reeves.—p. 9.
Radium in Uterine Cancer and Other Gynecologic Conditions. C. C. Harrold, Macon.—p. 14.
Present Status of Meningococcic Infection. A. H. Bunce, Atlanta.—p. 16.

Illinois Medical Journal, Oak Park, Ill.

February, 1920, **37**, No. 2

Report on Otolaryngologic Features of Influenza at Camp Hancock, Ga., September-December, 1918. G. Fetterholf, Philadelphia, and W. J. Rideout, Freeport, Ill.—p. 77.
Spasmophilia. J. W. Van Derslice, Oak Park.—p. 82.
Influenza and Its Relation to Septic Laryngitis. C. H. Long, Chicago.—p. 85.
Acute Mastoiditis. R. J. Tivnen Chicago.—p. 87.
Diagnosis and Treatment of Gastric and Duodenal Ulcers. E. F. Stevenson, Waterloo, Iowa.—p. 96.
Early Recognition and Treatment of Intussusception. C. S. Krause, Cedar Rapids, Iowa.—p. 98.
Typhoid and Paratyphoid in Vaccinated Troops; Report of Twenty-Five Cases in Army of Occupation. L. Unger, Chicago.—p. 101.
Typhoid Fever at Moline. M. C. Sjoblom, Springfield.—p. 103.
General Health Activities and Their Effect in Tuberculosis. G. T. Palmer, Springfield.—p. 106.
Tuberculosis Infection in Relation to Public Health. W. B. Metcalf, Chicago.—p. 111.
Hyperesthetic Ethmoiditis. H. L. Pollock, Chicago.—p. 113.
Definite Treatment of Pneumonias; Treatment of Influenza. S. S. Cohen, Philadelphia.—p. 117.
Oral Foci of Infection from Dentist's Standpoint. H. H. Schumann, Chicago.—p. 119.

Journal of Mental and Nervous Diseases, Lancaster, Pa.

January, 1920, **51**, No. 1

Tonus of Autonomic Segments as Causes of Abnormal Behavior. E. J. Kempf, Washington, D. C.—p. 1.
Paranoid Psychoses. K. A. Menninger, Topeka, Kan.—p. 35.
*Dilatation of Lateral Ventricle as Common Brain Lesion in Epilepsy. D. A. Thom, Palmer, Mass.—p. 41.

Dilatation of Lateral Ventricle in Epilepsy.—The brains of seventy-five epileptics were examined postmortem by Thom. Fifty-seven of these specimens presented gross brain lesions; thirty-one presented cortical lesions as well as dilated ventricles; sixteen presented lesions of the cortex alone, while fourteen, with normal appearing cortex, presented dilated lateral ventricles. Of the whole number of forty-three brains presenting cortical lesions, the hind portion of the brain was by far the most frequently affected, especially the occipital lobes. The convolutional shrinkage in this region was often marked on the brains so that the condition was acquired rather than of congenital origin. Next in order of frequency was the general cerebral gliosis, where the entire cerebellum appeared to be involved. Softenings were noted only six times, once being general and five times focalized. In only two cases of the seventy-five was there evidence of arterial rupture. Gliosis and atrophy of one hemisphere alone was noted in eight cases of the forty-one with dilated ventricle; twenty-seven brains presented abnormalities of the cortex; in fourteen instances the cortex was not grossly abnormal but the ventricular dilatation was of such a degree as to leave no doubt of its abnormality, thus raising the question whether the lesions affecting primarily the white matter can be a factor in the production of epilepsy.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

December, 1919, **14**, No. 4

*Active Principles of Pituitary Gland. H. W. Dudley, London, England. p. 295.
*Perfusion of Medulla of Turtle with Atropin, Caffein and Strychnin. A. D. Bush, Columbia, Mo.—p. 313.
*Comparative Toxicity of Local Anesthetics and of Antipyretics for Earthworms. T. Sollmann, Cleveland.—p. 319.
*Anthelmintic Action of Benzyl Alcohol and Benzyl Esters. D. I. Macht, Baltimore.—p. 323.
Modification of Action of Epinephrin on Heart by Morphin. W. J. R. Heinekamp, Chicago.—p. 327.
*Action of Curara on Output of Epinephrin from Suprarenals. G. N. Stewart and J. M. Rogoff, Cleveland.—p. 343.
Cocain Intoxication in Rabbit. C. A. Mills, Cincinnati.—p. 355.

Active Principles of Pituitary Gland.—A method of peparing crystalline residues, very active physiologically, from extracts of the posterior lobe of the pituitary gland is described by Dudley. It consists in extraction of the dried and powdered infundibulum with acidulated water, treatment of the solution with colloidal ferric hydroxid and subsequent continuous extraction of the filtrate with butyl alcohol at reduced pressure. This extract yields a crystalline residue which contains all the uterine stimulant, together with some of the pressor principle and contaminating substances. Dudley claims the uterine stimulant and histamin are not identical, as suggested by Abel and Kubota, but are two distinct chemical substances. The only point of similarity observed is that both are readily extracted from alkaline solution by butyl alcohol. The pituitary uterine stimulant is more readily extracted from acid solution than the pressor principle.

Perfusion of Medulla of Turtle.—The experiments reported by Bush seem to indicate that on the isolated medulla of the striped turtle, atropin, 0.02 per cent., and caffein, 0.04 per cent., exert little or no registrable influence; whereas strychnin, 0.0033 per cent. produces a prompt, though temporary, stimulation of the cardio-inhibitory center.

Comparative Toxicity of Local Anesthetics and of Antipyretics for Earthworms.—The investigation made by Sollmann furnishes data of the toxic concentrations of local anesthetics and of antipyretics for earthworms. These are not paralleled to the toxicity for mammals, since the mechanism of the fatal effects is different.

Anthelmintic Action of Benzyl Alcohol and Benzyl Esters.—Experiments were made by Macht on both earthworms and roundworms of the pig with benzyl alcohol, benzaldehyd, benzyl acetate and benzyl benzoate. It was found that all of these drugs exerted a toxic effect on the worms but not in the same degree. The least effective was benzyl benzoate. Its weak action, however, must be for the most part due to its poor solubility and penertating power. Benzyl alcohol was found to be the most powerful anthelmintic of the drugs studied. A 0.5 per cent. solution of it, and even weaker solutions, killed earthworms rapidly. Benzaldehyd came next in its efficiency and benzyl acetate was third.

Action of Curara on Output of Epinephrin from Suprarenals.—Stewart and Rogoff found the curara in doses sufficient to paralize the skeletal muscles in the cat markedly depresses the output of epinephrin from the suprarenals. The depression begins promptly and may be still well marked when paralysis of the muscles has begun to wear off. While no attempt was made to compare exactly the doses required to paralyse the epinephrin secretory fibers and the cardio-inhibitory fibers, a marked diminution in the epinephrin output was observed in samples of blood collected from the suprarenals at a time when stimulation of the vagus caused inhibition of the heart.

Kentucky Medical Journal, Bowling Green

February, 1920, **18**, No. 2

Extensive Carbuncle of Neck. J. G. Sherrill, Louisville.—p. 38.
Value of Neuropsychiatric Examination in Certain Obscure Cases of Internal Medicine and Surgery. B. L. Jones, Detroit.—p. 40.

Medical Record, New York

Jan. 31, 1920, **97**, No. 5

Epidemic of Influenza Occurring in the U. S. Naval Hospitals in Philadelphia in 1918. J. Daland, Philadelphia.—p. 173.
Dispensary Situation in New York City. E. H. Lewinski-Corwin, New York.—p. 180.
Barbarous Custom of Smoking. W. A. Bloedorn, M. C., U. S. Navy.—p. 185.
*Unusual Symptoms and Signs Observed in the Last Influenza Epidemic. D. Greenberg, New York.—p. 188.
*New Method of Treating Remote Manifestations of Gonorrheal Infections. M. Stern and I. S. Ridler, New York.—p. 190.

Unusual Symptoms and Signs Observed in Last Influenza Epidemic.—The cases cited by Greenberg were: influenza with intestinal hemorrhages; influenza with onset of hematemesis; influenza followed by acidosis and toxic vomiting; influenza with acute nephritis and suppression of urine in a patient suffering from pulmonary stenosis and paroxysmal tachycardia (auricular fibrillation).

New Method of Treating Remote Manifestations of Gonorrheal Infections.—For nearly one year, Stern has been treating all cases of arthritis with intravenous injections of 20 c.c. of a solution of sodium iodid, 2 gm. in 20 c.c. of water. This treatment was repeated every four days. After having treated ten arthritis patients with extraordinary results, intravenous injection of sodium iodid was resorted to in cases of acute orchitis, with rapid subsidence of the acute symptoms. Prostatic infections also behaved in a manner quite different from that which Stern had been accustomed to seeing. By thus extending the field of application of this treatment he now has records of 100 patients discharged germ free and apparently cured, though no follow-up system was possible.

Feb. 7, 1920, **97**, No. 6

Bronchoscopic Treatment of Bronchiectasis and Pulmonary Abscess. H. L. Lynah, New York.—p. 215.
Dilatation and Plication of Caput Coli. D. H. Stewart, New York.—p. 218.
Angioma of Stomach. W. S. Lemon, Rochester, Minn.—p. 220.
*Case of Congenital Total Hemihypertrophy. H. R. Coston, Birmingham.—p. 222.
Amaurotic Family Idiocy or Infantile Amaurotic Idiocy. J. Epstein, New York.—p. 224.
*Desirability of Instituting a Special Medical Board Which Should Correspond to the Patent Office. A. L. Soresi, New York.—p. 227.
Anesthesia in Cerebral and Spinal Surgery. A. M. Palermo, New York.—p. 231.
Wine in François Rabelais' Day. D. W. Montgomery, San Francisco.—p. 233.
Influenza; Confirmatory Report on Abortive Action of Quinin Dihydrochlorid. W. F. and E. C. Burrows, New York.—p. 235.

Case of Congenital Total Hemihypertrophy.—Coston's patient was 22 months old, the fourth child of healthy parents of rather low mentality. The other three children were normal and healthy, and mentally above their parents. This one had never been sick, and seemingly was of good mentality. The mother was well during the pregnancy. There is no history of defective development in any member of the family, except a second cousin of this child's on the mother's side, who has six toes on his right foot. This child was born after a very quick and easy labor. It was observed immediately on his birth that one side was much larger than the other. This involved the whole left side from the crown of the head to the soles of the feet.

Special Medical Board, Corresponding to Patent Office.—Soresi's idea is that the function of this medical board should be to establish and protect the priority of ideas relating to medical subjects.

Philippine Journal of Science, Manila

July, 1919, **15**, No. 1

Philippine Bees of Genus Noami. T. D. A. Cockerell.—p. 1.
Metallic Colored Halicitine Bees of Philippine Islands. T. D. A. Cockerell.—p. 9.
New Records and Species of Philippine Membracidae. W. D. Funkhouser.—p. 15.
Osteologic and Other Notes on the Monkey Eating Eagle of Philippines, Pithecophaga Jefferyi Grant. R. W. Shufeldt.—p. 31.
General Facts in Biology of Philippine Mound Building Termites. L. B. Uichanco.—p. 59.
Malayan Machaerotine (Cercopidae). C. F. Baker.—p. 67.
Habits of Tropical Crustacea: III. R. P. Cowles.—p. 81.
Milk Produced in Southern China. C. O. Levine.—p 91.
Analysis of Portland Cement Raw Mixture. J. C. Witt.—p. 107.

Milk Produced in Southern China.—Three classes of milk animals were studied by Levine: European cattle, the native water buffalo (known in the Philippine Islands as carabao) and the native humped cattle. The work has been done chiefly in the vicinities of Canton and Hongkong, the only regions in Kwangtung (which is the southernmost province in China) where dairying has yet developed into an industry of any extent. The milk of the Canton buffalo contains nearly four times as much fat as the European cow, twice as much protein, but only two thirds as much sugar. The ash content is about the same; the water content is slightly less. The food value of the milk of the water buffalo was discussed fully in an article by Cadbury, published in the *American Journal of Diseases of Children*, January, 1920, and abstracted in THE JOURNAL, Jan. 17, 1920, p. 202.

Southern Medical Journal, Birmingham, Ala.

February, 1920, **13**, No. 2

Focal Infection. T. D. Coleman, Augusta.—p. 79.
*Subacute Combined Degeneration of Spinal Cord. W. G. Somerville, Memphis.—p. 84.
*Three Cases of Spinal Muscular Atrophy Probably of Werdnig-Hoffman Type. J. H. M. Knox, Jr., and G. F. Powers, Baltimore.—p. 86.
*Infectious Meteorism. M. Einhorn, New York.—p. 92.
An Improved Stomach Tube. G. C. Mizell, Atlanta.—p. 96.
State Department of Health and Child Welfare Problem of South. E. A. Hines, Seneca.—p. 98.
*Uncinariasis and Manifest Tuberculosis. R. D. Adams, Washington.—p. 105.
Treatment of Acute Abdomen. J. P. Runyan, Little Rock.—p. 110.
Plastic Surgery of Face. E. D. Highsmith, Atlanta.—p. 113.
Urologic Treatment of Vesicovaginal Fistula. J. R. Caulk, St. Louis.—p. 116.
Ureteral Stones. E. P. Merritt, Atlanta.—p. 118.
*New Uses of Scrotum. J. E. Johnson, Memphis.—p. 120.
Pruritus Ani. E. H. Terrell, Richmond.—p. 123.
Interpreting Muscular Imbalance. H. Woods, Baltimore.—p. 126.
Two Cases of Eye Inflammation Due to Infected Teeth. C. M. Miller, Richmond.—p. 132.
Relation of Medical Education to Group Medicine. S. R. Roberts, Atlanta.—p. 136.
National Board of Medical Examiners. L. A. LaGarde, Washington, D. C.—p. 138.
National Board of Medical Examiners. J. S. Rodman, Philadelphia.—p. 140.

Subacute Combined Degeneration of Spinal Cord.—Under this heading Somerville cites a case of anemia and a combined degeneration of the posterior and lateral columns of the cord, running a fairly acute or subacute course. The patient was a woman, aged 55 years. Her trouble began insidiously fifteen months previously, with numbness and tingling in the feet and legs, which has gradually extended up above the umbilicus. Recently, there developed numbness and tingling of the hands and wrists, weakness of the lower extremities and a rather marked ataxia; some difficulty in voiding urine, but no retention nor incontinence. She complained of a sensation in the lower extremities as if they were tightly bound with bandages. She had had intestinal attacks with some rise of temperature at intervals of every few weeks. Her color was pale and sallow; heart and lungs were negative. Hemoglobin was 63 per cent.; red blood corpuscles numbered 2,300,000, with slight variation in size, but no nucleated cells. In every stool examined there was found the *Cercomonas intestinalis*. Somerville calls attention to the very great importance of examination of the intestinal discharges of these patients, because of the possibility that the symptoms are produced by an intestinal parasite.

Spinal Muscular Atrophy Probably of Werdnig-Hoffman Type.—Knox and Powers report three cases occurring in one family, one boy and two girls, aged 14 months, 6 weeks and 3 months, respectively. The authors incline to the belief that the symptoms in these three cases, namely general symmetrical muscular weakness, noted at birth, with loss of reflexes and diminution in response to electrical stimulation, can be explained most satisfactorily on the assumption of a primary spinal atrophy and secondary muscular involvement, although the possibility of a reverse process cannot be excluded. The third patient, who is still living, has apparently improved somewhat, which is accounted for by the development of certain intact and enervated muscle fibers.

It would seem to the authors, from a consideration of the growing literature, that many transitional cases do occur between the group of cases described as amyotonia congenita (Oppenheim) and those of infantile spinal muscular atrophy (Werdnig-Hoffman); that both these conditions may be due to a congenital defect in development of the lower motor neuron tract, affecting both certain ganglion cells of the cord and the muscles they supply. In general, it is true that the cases of amyotonia congenita represent the less intense and progressive involvement.

Infectious Meteorism.—In the two cases cited by Einhorn a laparatomy was performed. There existed no mechanical obstruction along the digestive tract. The small intestine in parts and the entire colon were filled with gas, and the peritoneal covering of these organs looked glittering and reddish, showing the presence of peritonitis. Both patients died soon after the operation. The disease, appearing in both patients in an acute form with the accompaniment of fever, suggested an infection (probably bacterial) as its cause. Einhorn also cites one case in which this condition followed an attack of influenza. Treatment should be directed toward combating the infection and relieving the bowel difficulty. Absolute rest, flushing of the system with water, and relieving the digestive tract of accumulated gas and stagnant contents are the main aims to be accomplished.

Uncinariasis and Manifest Tuberculosis.—In forty-six cases of suspected tuberculosis, Adams failed to find any evidence justifying the diagnosis of tuberculosis but established the presence of existing infection with hookworm in thirty-two cases, and developed clear histories of previous infections of considerable severity in the remaining fourteen cases. The provisional diagnosis had been made in each instance chiefly because of the presence of adventitious sounds over the upper chest. Investigation disclosed the entire absence of râles and demonstrated the presence of joint sounds ranging from coarse grating to fine crepitations, the latter distinguished only with difficulty from true râles. The majority of these sounds are to be heard over the sternocostal articulations and are transmitted out to the ribs, especially in the vicinity of the clavicle. A comparative study, on one hand, of 100 individuals with clinical evidence of uncinariasis, and of 100 normal subjects, on the other, showed a preponderance of confusing crepitations of about three to one in favor of the former. In old cases of hookworm infection the adventitious joint sounds are not confined to the shoulder girdle and adjacent parts, but are to be heard over several or many of the articulations. In Adams' opinion there is no evidence establishing any specific relationship between the two diseases, and, he says, inasmuch as it has been demonstrated that the mortality from tuberculosis may be reduced by a measure so simple as elimination of hookworm where double infection exists, the obligation of the physician with regard to diagnosis and treatment is apparent.

New Uses of Scrotum.—Two cases are reported by Johnson in which an excess of scrotum was used to advantage in relieving two conditions which have not yielded always to the usual treatments. The first case was one of intractable pruritus ani, in which the skin of the involved area had to be removed. A pendulous scrotum was used to supply the defect. The second case was one of lymphedema of the leg following an operation for right inguinal adenitis. During the operation, which had been performed about six months before, the saphenous vein was injured and the hemorrhage was controlled by sutures en masse. There was an obstruction of the lymph return through the right inguinal lymphatics. The leg did not recede to normal when elevated. The scrotum was not edematous. As the return lymph could not go through the right groin, the problem was to find another course. Finding an unusually long scrotum, Johnson decided to use the entire left side of the scrotum with its subcutaneous tissues and lymphatic channels as a tissue flap below the obstructed area, with the idea of carrying the lymph, which normally returns through the right groin, through the left groin. At the end of two months the edema was entirely relieved.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Tuberculosis, London

January, 1920, **14**, No. 1

Some Aspects of Tuberculosis Problem in Life Assurance. O. May.—p. 1.
*Roentgen Rays in Early Diagnosis of Pulmonary Tuberculosis. M. Berry.—p. 12.
Reformation in Sanatorium Management. G. B. Roatta.—p. 16.
Next Stage in Tuberculosis Movement: A Criticism and a Suggestion. W. M. Crofton.—p. 19.
City of Liverpool Sanatorium for Tuberculosis at Fazakerley. V. Hooper.—p. 25.

Diminution of Diaphragm Movement in Tuberculosis of Lungs.—Air entry into the lung is dependent on diaphragmatic and costal movements, hence any diminution in these movements will give rise on the fluorescent screen to diminution of the difference in illumination between inspiration and expiration, and on percussion to the difference in the notes obtained during these two phases of respiration. Berry claims to have seen this many times. Therefore, he regards the use of the roentgen ray as of value in the early diagnosis of pulmonary tuberculosis because this functional derangement of the diaphragm may be seen before there is any evidence of organic change. The same observation has also been made by others.

British Medical Journal, London

Jan. 31, 1920, **1**, No. 3083

Psychopathology and Dissociation. W. Brown.—p. 139.
*Importance of House Fly as Carrier of Endameba Dysenteriae (Histolytica). P. A. Buxton.—p. 142.
*Analysis of One Hundred Consecutive Cases of Cardiac Disease. W. B. Jones.—p. 145.
*Direct Cultivation of Tubercle Bacilli from Tissues. G. H. Wilson.—p. 146.
Nasal Drill: An Investigation of Its Value in Treatment of Adenoids. G. H. Hickling.—p. 147.
Case of Ectopia Vesicae Treated by Implantation of Ureters in Rectum. C. C. Holman.—p. 149.

House Fly as Carrier of Endameba Dysenteriae.—It appears from Buxton's research that in a well sanitated area in lower Mesopotamia more than 60 per cent. of all the flies carry human feces; more than 4 per cent. of them carry actual human entozoa and probably at least 0.5 per cent. the cyst of *Endameba dysenteriae*. He believes it justifiable to regard the fly in that country as not only a potential, but an actual and major factor in the carriage of the bowel disorders which are there so numerous. In fact, the egg of any human intestinal worm, or the cyst of any protozoan may be found in the fly if only one looks long enough.

Analysis of One Hundred Consecutive Cases of Cardiac Disease.—Of the 100 patients cared for by Jones, seventy-three complained of pain over the heart or neighboring part of the chest; nine complained of pain in the region of the lower ribs on the left side; in many of the cases the pain was only a dull ache; in all the pain was intermittent. Of these seventy-three patients, thirty-three experienced an increase in the area of the pain; thirty referred the pain to the left arm, two to both arms, and one to the right arm only. Fifty-one patients attributed the pain to exertion. Thirty-six persons stated that mental excitement caused the pain. Thirty-four persons attributed attacks of pain to digestive disturbances. Twenty-one patients complained of pain in bed. Eighty-nine patients complained of shortness of breath after slight exertion. Exhaustion after exertion occurred in eighty-five cases. Palpitation was noticed by thirty-six persons. Faintness was noted in six cases. Giddiness occurred in twenty-nine cases. The rate of the pulse was 76 or under in seventy-one cases; it was above that rate in twenty-nine cases. In two of the latter it was markedly irregular owing to auricular fibrillation. Thirty-six persons had high blood pressure; of these, twenty-five had symptoms of anginal pain. In sixty-one cases the heart was dilated, and in twenty-two of these a murmur was present. Albumin was present in the urine in three cases and sugar in one case.

Direct Cultivation of Tubercle Bacilli from Tissues.—The method of isolating tubercle bacilli from tuberculous tissues devised by Wilson depends on the use of (*a*) special medium for culture, and (*b*) the trituration of the tissue with dry quartz sand before the application of antiformin to destroy contaminating organisms. The tissue is cut up into small pieces and is thoroughly rubbed up in a mortar with a small amount of dry sterile quartz sand. The fibrous tissue is disintegrated as far as possible, and the material forms a slightly moist, crumbling mass. The contents of the mortar are then washed into a wide test tube with from 15 to 20 c.c. of sterile saline solution. The sand is allowed to sediment for a few minutes; as it falls, it carries down with it any coarser particles of tissue which remain. The supernatant fine suspension is then pipetted off, and thoroughly mixed with an equal volume of 15 per cent. antiformin. After five minutes, during which it should be stirred continuously, the mixture is centrifugalized at high speed for a few minutes, and the supernatant fluid is discarded. The sediment is shaken up with sterile saline solution and centrifugalized three times so that no trace of antiformin remains. The sediment resulting from the final centrifugalizing is used for making cultures, or, after emulsifying with a convenient amount of sterile saline solution, it is injected into a suitable animal. The medium used is a modification of Dorset's medium in which the contents of eggs are mixed with a three weeks' tryptic digest of horse heart instead of with water.

Journal of Industrial Hygiene, London

February, 1920, **1**, No. 10

Industrial Diseases Under Mediaeval Trade Guilds. T. M. Legge.—p. 475.
Mortality of Bituminous Coal Miners from Influenza Pneumonia, October to December, 1918. L. I. Dublin, New York.—p. 483.
Influenza in Eastern Group of Telephone Companies, Bell System, 1918. J. S. Billings and S. W. Wynne, New York.—p. 484.
*Unreported Cause of Occupational Dermatosis. R. P. White.—p. 498.
Pneumokoniosis in Man and Horse. R. P. White.—p. 500.
Control of Infectious Diseases in Industrial Communities. H. Zinsser, New York.—p. 501.

Unreported Cause of Occupational Dermatosis.—Attention is directed by White to a skin complaint which attacks certain employees engaged in the fellmongers yard. From four to twelve small ulcers, the size of a split pea, will be seen on the sides of the knuckles and on the interdigital skin of the fingers. The pullers scrape off the hair or wool by rubbing down the woolly skin with the balls of the naked thumbs and the ulnar edges of the palms of both hands. The characteristic rash and holes appear on these parts in the pullers. If neglected, the ulcers penetrate deeply, the sores easily becoming infected, causing inability to work. An effective trade-shop remedy is a drop of Stockholm tar applied to each hole. This appears to act as a protective, enabling the men to "carry on." Frequent washings of the hands in a weak solution of vinegar and water, followed by the thorough rubbing in of an ointment are helpful preventives. The ointment White prefers is as follows:

	Gm. or Cc.	
℞ Zinci oxidi	30	℥ j
Acidi oleici	270	℥ ix
Emplastri plumbi	300	℥ x
Parenol (petrolatum 65; wool fat, 15; warm water to make 100 parts)	1140	℥ xxxviij
Hydrargyri ammoniati	180	℥ vj

Misce. Fiat unguentum.

Lancet, London

Jan. 31, 1920, **1**, No. 5031

Position of Medical Profession in Relation to National Physical Education. K. D. Bell.—p. 231.
*Indications for Cesarean Section. H. B. Whitehouse.—p. 235.
Cerebrospinal Fever in Infants and Young Children. Treatment and After Effects. H. M. M. Mackay.—p. 238.
*Edema as Symptom in So-Called Food Deficiency Diseases. A. D. Bigland.—p. 243.
*Treatment of Chronic Gonorrheal Rheumatism by Vaccines Given Intravenously. A. R. Fraser and A. G. B. Duncan.—p. 248.
*A New Pylorus; Posterior Gastrojejunostomy with Jejunojejunostomy as a Routine in All Cases of Pyloric Obstruction; Duodenal or Pyloric or Chronic Gastric Ulcer. G. G. Gillon.—p. 251.
Case of Mediastinal Tumor Associated with Acute Leukemia. C. R. Harrison and D. McKelvey.—p. 252.

Indications for Cesarean Section.—During the past twelve months Whitehouse performed cesarean section eleven times. The indications were as follows: pelvic contraction, flat pelvis, two cases; pelvic contraction, round pelvis, five cases; placenta praevia (central), one case; eclampsia, three cases. The maternal mortality was nil, and only one baby was lost. This baby died on the fifth day, and its death was caused by neglect on the part of the nurse. Four cesarean sections were performed in the patients' own houses, as emergencies, without any preparation, such as is the usual routine before a prearranged abdominal section. There was no mortality and no morbidity, which, Whitehouse says, goes to prove that the operation may be performed with safety, provided that adequate surgical principles are observed at the time. There were two cases of maternal morbidity, both in nursing homes. One was a case of eclampsia in which the patient's doctor had ruptured the membranes before admission. The other was a case of flat pelvis, where intra-uterine sepsis occurred on the eighth day, in spite of the fact that no vaginal examination had been made prior to operation and the membranes were intact. In this instance the infection was traced to a nurse with a septic finger who was attending the patient. Both patients, however, recovered, and the morbidity cannot be attributed to the choice of the method of operation.

Edema as Symptom in So-Called Food Deficiency Diseases.—His observations led Bigland to the belief that epidemic dropsy is a condition due to affection of the suprarenal glands as a result of inanition arising from starvation, complete or partial. It may be that the suprarenals hypertrophy at the expense of the other endocrine organs, and by their increased function give rise to dropsy. Possibly also, this hyperactivity may in time give place to a suprarenal insufficiency, as exophthalmic goiter gives place to myxedema. This second condition may be pellagra. Whatever the true explanation may be, it is extremely probable that food deficiency, together with disordered function of certain endocrine organs, plays a large part in the causation of epidemic dropsy and pellagra.

Treatment of Gonorrheal Rheumatism by Vaccines Given Intravenously.—Fraser and Duncan think that giving vaccines intravenously secures a greater protection and that almost at once. The mechanism would seem to consist of a selective stimulation of the hemopoietic system by nonspecific bodies. Probably no single factor is responsible for all the changes that occur, but the intravenous injection upsets the balance of the serum constituents, and the series of changes thus caused establishes a condition favorable to recovery from infection. The vaccines they used had been stored for some months after their preparation, and they were, therefore, probably more or less detoxicated. Whether a detoxicated vaccine has any specific properties or not requires proof. They suspect that a vaccine minus its endotoxin consists simply of nonspecific proteose in a colloidal form. Clinically, they seemed to get the same results from injections of T. A. B. vaccine as from a gonococcus or mixed vaccine. The chief reason for using a gonococcus vaccine was that a supply was available, and its use afforded a great facility for graduating dosage. Freshly prepared typhoid vaccine often causes so severe a reaction that they would not risk giving it intravenously. Injections of endotoxins always produce toxic symptoms with but little or no increase of antibodies. Marked improvement followed in all of the fifteen cases treated. No benefit seemed to result from an injection that was not followed by pyrexia. At the time treatment was commenced, the patients were extremely debilitated with a rather fast and weak pulse, which was easily accelerated. The injections were all intravenous. The vaccines used were not freshly prepared. As a result of storing probably the toxins contained had broken down more or less. The injection of these, possibly nonspecific germ constituents, would seem to have caused the production of specific antibodies. The size of the doses used, compare favorably with the doses recommended by Thomson for his detoxicated vaccines. The largest dose of gonococci was 2,000 millions.

A New Pylorus.—Gillon does a posterior gastrojejunostomy with jejunojejunostomy as a routine in all cases of pyloric

obstruction whether duodenal or pyloric or chronic gastric ulcer. The results are said to be uniformly good, and the patients are not only well, but very well. They put on weight. They develop a great capacity for swallowing large quantities of liquids without discomfort.

Bulletin de l'Académie de Médecine, Paris

Jan. 6, 1920, **83**, No. 1

*Recrudescence of Lethargic Encephalitis. A. Netter.—p. 45.
*Desiccated Eggs. A. Sartory and L. Flament.—p. 46.

Lethargic Encephalitis.—Netter states that in less than six weeks he has encountered twelve cases of lethargic encephalitis and knows of twenty other cases. They come from different parts of the city. Fever and somnolency were noted in every case, but the motor center for the eye does not seem to be affected as constantly as when the disease was observed in 1918. Two of the patients recovered without sequelae of any kind and two died.

Bacteriology of Desiccated Eggs.—Sartory and Flament found a number of aerobic micro-organisms in the egg powders examined, but no anaerobes. They warn that unless the desiccation is complete, these powders invite molds, etc. In making omelets or similar dishes the cooking will sterilize the egg powder, but when used for such dishes as ice cream, there is reason to fear the contamination inevitable with the present mode of packing and handling.

Jan. 13, 1920, **83**, No. 2

*Motor Plastic Amputations. T. Tuffier.—p. 51.
*Plague and Leprosy in the Bible. Boinet.—p. 57.
*Dose of Ultraviolet Rays in Therapeutics. H. Bordier.—p. 59.
*Modern Treatment of War Wounds. H. Reyuès.—p. 62.

Motor Plastic Amputations.—Tuffier expatiates on the sound principles involved in modeling the amputation stump to form loops, etc., which permit volitional control to some extent of the prosthetic appliance. In his recent trip to Italy he studied this cinematization and its results in the home of the method. The muscular force that these loops can exert is remarkable. In the leg, for example, he was unable to prevent the contraction of the loop even by applying all the force in his fingers. In the forearm and arm, the muscular power in the cinematized sets of muscles was also remarkable. Under the influence of the contraction of the loop in the stump, the fingers of the artificial hand can be flexed enough to grasp an article. But this grasp is very weak; it represents only 5 or 10 per cent. of this muscular force expended. The whole question and the future of these motor plastic operations depend on whether the prosthetic appliances can be perfected to transmit the muscular force in its entirety, or at least prevent such wasteful loss of power as at present. The prehensile force of the artificial fingers, even now, is enough for holding a pen or cigarette, wielding a fork, and lifting the hat, but in none of the cases he examined was there power enough in the fingers for manual work. However, the results already accomplished are a great gain for professional men, especially after bilateral amputation.

At the Rizzoli clinic at Bologna, Putti presented fifteen men who had been cinematized from six months to three years before, and at Milan Galeazzi gave demonstrations with ten others. Among them was one mechanic who was working a strong steel clamp with the cinematized biceps and triceps of his right arm, eighteen months after amputation of the arm. The precision of his movements was remarkable, and the clamp already showed signs of wear. Absolute fixation of the prosthetic appliance on the stump is indispensable to approximate natural conditions. The motor plastic operations are simple and easy. It may yet be possible to utilize separate muscles separately, and thus restore the play of the active and the antagonist muscles, instead of depending on the whole group at once. Surgeons must aim in their amputations henceforth to save as much as possible of the skin and soft parts, sacrificing the esthetic aspect of the stump to leave enough muscle and tendon material for ulterior and active utilization of the muscular force left in the stump. In conclusion Tuffier remarks that no mechanical genius has as yet concentrated his attention on prosthetics, and the appliances in use are still clumsy.

Plague and Leprosy in the Bible.—Boinet's quotations show that the connection between bubonic plague and rats was known to the ancient Hebrews, and he ascribes to leprosy Job's "sore boils from the sole of his foot to his crown." The makers of false antiques in Palestine offer tourists silver mice which they claim to have excavated.

Unit for Ultraviolet Ray Doses.—Bordier utilizes for his unit the action of the ultraviolet rays on silver nitrate. This chromo-actinometer unit, as he calls it, corresponds to the quantity of ultraviolet rays which are able to reduce 1 mg. of silver to the square centimeter in a tenth-normal solution of silver nitrate 1 cm. thick. He tests for this unit with blotting paper impregnated with a 20 per cent. solution of potassium ferrocyanid. The color scale with this corresponds to 0.5, 2, 6, 12 and 18 units of quantity, representing the slight erythem dose, the erythem followed by desquamation; the photo-epidermitis, and intense photo-epidermitis. The 18 unit dose represents actual photodermatitis. He found with this color scale that a current of 6.5 amperes corresponded to 1 unit; 6 amperes to 0.8 unit; 5 amperes to 0.5 unit, and 4 amperes to 0.3. An old mercury vapor lamp yields only 0.5 unit while a new lamp yields 3 units during the same period of exposure. With this unit, he remarks, there is no further need for empiricism and guesswork in dealing with ultraviolet rays.

Modern Treatment of War Wounds.—Reynès presents data to prove that as early as November, 1914, he introduced in his service the method of clearing out at once all the devitalized tissues in a war wound, and thus claims priority for this method, which was generally adopted later.

Bulletins de la Société Médicale des Hôpitaux, Paris

Dec. 19, 1919, **43**, No. 37

*Multiple Syphilitic Bone Lesions. A. Gilbert and F. Saint-Girons.—p. 1091.
*Familial Amyotrophy. Crouzon and Bouttier.—p. 1097.
*Alcoholic Meningitis. M. Villaret and others.—p. 1112.
*Glandular Functioning. H. Claude and S. Bernard.—p. 1116.
Share of Neo-Arsphenamin in Jaundice. H. Eschbach.—p. 1120.

Multiple Syphilitic Bone Lesions.—In the case reported by Gilbert and Saint Girons, in a woman of 52, there were seven foci of necrosis of bone, in the skull, radius, ulna, metacarpus and sternum.

Familial Amyotrophy.—Three sisters between 25 and 32 present different degrees of what Crouzon and Bouttier describe as a new variety of amyotrophy. The first symptoms appeared at 14, 22 and 12 years of age, and the older sister is unable to stand on account of the motor and atrophic disturbances. The speech is also spasmodic and panting, scarcely more than a whisper; the reflexes are abnormal, and there are choreiform movements.

Alcoholic Meningitis.—The subacute meningitis was explained by the alcohol found in the cerebrospinal fluid in the woman of 45. The symptoms were those of typical meningitis; syphilis and tuberculosis could be excluded, and the alcohol alone seemed to be responsible.

Tests of Endocrine Functioning.—Claude and Bernard have been giving organ extracts to healthy subjects and to those with various endocrine disturbances, seeking by these biologic tests to throw more light on the functioning of the different glands with an internal secretion. The responses differed widely from the normal after injection of pituitary extract in exophthalmic goiter, in hypothyroidism, and with suprarenal insufficiency. The different results obtained with organ extracts in different cases are readily explained by the varying preceding conditions in some of the endocrine glands. Among the practical results thus learned is that preliminary administration of thyroid extract or gland tissue enhances the action of the pituitary and suprarenal extracts.

Journal de Médecine de Bordeaux

Jan. 10, 1920, **91**, No. 1

*Surgery on Native Africans. L. Verdelet.—p. 7.
Pulmonary Sequelae of Mustard Gas Poisoning. H. Mallié.—p. 9.
*Hydrocyanic Acid. Chelle.—p. 14.

Surgical Experiences with Natives of French Colonies.—Verdelet was impressed with the extraordinary tendency to suppuration displayed by Africans on the slightest provocation. Suppurating hepatitis was common, and any lesion was liable to set up suppuration and cause the flaring up of old malaria or the onset of new, while the malaria in turn impeded the healing of the lesion. The malaria sometimes appeared disguised as acute appendicitis, orchitis, peritonitis or arthritis. He mentions further the ocular complications of malaria, and urges the advisability of preparing the subject for any operation by a preliminary course of quinin.

Toxicology of Hydrocyanic Acid.—Chelle reports experimental research which demonstrated that hydrocyanic acid and the alkaline cyanids become transformed under the influence of putrefaction processes into sulphocyanic acid. This is reversible under the action of a suitable oxidizer. After the death of a dog that had died ten minutes after taking 20 c.c. of a I per cent. solution of potassium cyanid, the organs were examined for hydrocyanic acid the second hour, and the eighth and thirteenth day. It had all disappeared, having become transformed to sulphocyanic acid, but it was easily transformed back again. This may prove useful in suspected cases of hydrocyanic poisoning.

Journal d'Urologie, Paris

December, 1919, **8**, No. 5

*Anatomic Results of Prostatectomy. L. Phélip.—p. 353.
*Prolonged Hematuria with Calculi. L. Escudié.—p. 381.
*Hematomas of the Spermatic Cord. J. Martin.—p. 387.

Anatomic Results of Prostatectomy.—Phélip has collected sixty cases in which necropsy (twenty-five cases), a second operation, or cystoscopy plus radiography disclosed the conditions left by the prostatectomy. They explain the recurrences in some cases; a second operation is generally successful, and completes, he says, "the fine anatomic findings after operations for hypertrophied prostate, whatever the route." In only two cases was a fistula left where the rectum had been injured during a perineal operation shortly before. In all the others with a fistula it had solidly healed.

Prolonged Hematuria.—Escudié reports four cases in which hematuria appeared suddenly without known cause, and without pain; it kept up during repose the same as when up and about; was refractory to all medical measures, and persisted for weeks and even months without much impairment of the general health, and it sometimes subsided and reappeared capriciously. The only clue to its nature was some incident in the past suggesting lithiasis or the roentgen discovery of a calculus. The influence of congestion was evident in some of his cases, as also in Hartmann's case in which hematuria kept up while the boy of 14 was in a plaster cast. Necropsy three years later disclosed a large stone in the right kidney.

Hematoma of Spermatic Cord.—Martin had two cases of this rare pathologic condition in two negro soldiers within two days, but no cases of the kind before or since. No cause for the hemorrhage could be discovered.

Lyon Médical

December, 1919, **128**, No. 12

Harmlessness and Value of Large Doses of Diphtheria Antitoxin. Péhu and P. Durand.—p. 592.

January, 1920, **129**, No. 1

Operative Indications in Acute Appendicitis. E. Villard.—p. 6.
*Hysteric Paralysis. J. Froment.—p. 21.

Hysteric Paralysis.—Froment reiterates the importance of treating promptly and curing, usually in a few hours, hysteric paralysis, as otherwise it may drag along and become indelibly fixed. The opportunities for such "miraculous cures" as are possible with hysteria are too few and far between for any of them to be neglected. There is no use wasting time in seeking for stigmata of hysteria; the search is liable to impress unfavorable ideas. They are far from constant in hysteria, and the search for them may do harm by its effect as suggestion. It must be borne in mind that although hysteria may simulate all kinds of nervous disturbances, it generally simulates them in an incomplete form, and the absence of certain phenomena which we have reason to expect in a given clinical picture will reveal its hysteric nature, and show that it is pure fiction, although unconscious fiction, and often sincere. The subject is merely the victim of a simple illusion. The paralysis varies in its intensity from moment to moment, and according to the act required, and it may disappear completely at certain moments. In some movement, for example, or some attitude, we may detect the intervention of some group of muscles which seemed before to be totally impotent. Such paradoxical findings, along with the anatomic and physiologic integrity of the limb affected, speak in favor of hysteria. It is important, however, to detect any associated organic disturbance which would hamper or annul the measures directed to the hysteria. The treatment requires on the part of the physician an inflexible will, patience, tenacity, kindliness, iron energy, absolute confidence in the outcome, skill and self-possession. It is useless to reason with the patient. By varying the points of attack we seek to detect some movement in the paralyzed limb and convince the patient of his ability for movement, and start on from this for further progress. The hysteric paraplegic, for example, should be stood on his feet, and by aiding and making him walk, demonstrate to him that he can walk. Skill and tact are necessary to keep him from falling and from fruitless attempts, which confirm him in his conviction of his absolute paralysis. Sometimes it may take three or four hours to accomplish the result, but the session should not be concluded until some striking result has been attained, so that there can be no going back.

Médecine, Paris

January, 1920, **1**, No. 4. Ophthalmology Number

*French Ophthalmology. A. Cantonnet.—p. 195.
Advancement for Strabismus. Duverger and Mettey.—p. 200.
*Purulent Ophthalmia in Adults. Aubaret.—p. 202.
Dacryocystectomy. R. de Saint Martin.—p. 205.
*Cauterization for Dacryocystitis. L. Vacher and M. Denis.—p. 207.
*Foreign Bodies in the Eye. Vinsonneau.—p. 208.
*Harvesters' Keratitis. Chenet.—p. 210.
*Dilation of Orbit. P. Jeandelize.—p. 213.
Trephining in Glaucoma. A. Cantonnet.—p. 214.
*Iodin Treatment of Corneal Ulcer. A. Cantonnet.—p. 215.

French Ophthalmology, 1914 to 1920.—This entire number of *Médecine* is devoted to ophthalmology. Cantonnet lists among the lessons from the war the importance of fatigue and emotional stress in bringing on hemeralopia, and the frequent involvement of the eyes in dysentery, etc.: conjunctivitis and iritis in dysentery, keratitis and iritis in malaria, and recurring iritis in spirochetal jaundice. Similar complications ascribed to antityphoid vaccinations have been numerous, but analysis of them always disclosed a preexisting taint or predisposing factors or defective technic. The conclusion is obvious that the condition of the uveal tract should be ascertained before vaccinating against typhoid, especially subjects over 35 years old. He discusses further the disturbances in vision with pituitary enlargement, and the benefit from radiotherapy. Pituitary treatment may yield good results. If operative measures are necessary, access through the nose is less dangerous, and sometimes merely trephining the posterior wall of the sphenoidal sinus relieves the compression enough without exposing the pituitary. The cure of squint by exercising the eyes, without an operation, has been reported by several. Bailliart has invented an oscillometer which, pressed on the eyeball, renders visible the pulse in the retina. Terson has added another sign to those in vogue for determination of actual death: One or two drops of a mixture of copper glycerolate and ethylmorphin glycerolate are instilled in the conjunctival culdesac. If life is still present, the conjunctiva turns red. New, also, Cantonnet adds, are the aviation tests for the velocity of the visual acuity, for nocturnal vision, and for vision facing sun glare.

Treatment of Gonococcus Ophthalmia in Adults.—Aubaret insists on the importance of rinsing out the eye thoroughly whenever pus reappears. Every two hours, day and night, the conjunctival culdesacs should be cleaned out with a

cotton pad, or with a douche can and glass cannula, using a tepid 1:2,000 solution of potassium permanganate, or 1:3,000 of mercuric cyanid. He describes further the specialist treatment, and warns the physician to use protecting goggles.

Suppurating Dacryocystitis.—Vacher and Denis describe how to clear out the purulent secretion in the lacrimal sac and to disinfect it with ⅓ c.c. of chromic acid in a 1:50 solution, injected by the inferior canaliculus while an assistant at the same time instills hydrogen dioxid into the eye to neutralize any excess of the acid. After allowing two or three minutes for the acid to act on the lacrimal passages, he rinses them out with hydrogen dioxid. Preliminary cocainization of the eye and lacrimal passages is necessary, and mechanical clearing out of the inferior canaliculus. The following days the eyelids and eyes are laved in hot water, squeezing out the contents of the lacrimal sac by pressure on the internal angle of the eye. This cauterization with chromic acid has often rendered dacryocystectomy unnecessary in their experience, while it has always proved harmless and effectual.

Foreign Bodies in the Eyes.—Vinsonneau says that any practitioner can remove a foreign body from the eye if it is not embedded too deep and is recent. When it is located deep or has been in the eye several days, he should not attempt its removal, but send the patient at once to the specialist.

Harvest Keratitis.—Chenet warns that the slightest excoriation of the cornea when there is an infectious process in the lacrimal passages is liable to induce a serious corneal ulcer. Eleven such cases were recently under observation during harvest time, all requiring surgical measures, and all impairing vision to a certain extent. All the men had chronic lesions in the lacrimal passages.

Dilation of the Orbit.—Jeandelize stretches the too narrow orbit by progressive dilation with vulcanite casts of increasing sizes, made from a paraffin cast.

Iodin Applied to the Cornea.—Cantonnet reiterates that the cornea tolerates perfectly a 1:20 or 1:30 tincture of iodin, after preliminary application of 3 or 4 per cent. cocain. The iodin is taken up on a probe or glass rod and is held in the air for a minute or two to give the alcohol time to evaporate. Then the corneal ulcer is touched with it. The iodin cannot diffuse, as it is almost solid, and the conjunctiva thus escapes. The tincture should be less than 15 days old.

Presse Médicale, Paris

Jan. 7, 1920, **28**, No. 2

*Tuberculosis of the Spine. J. Calvé.—p. 13.
*Electro-Optic Rectoscope. D. Pamboukis.—p. 15.

Tuberculosis of the Spine.—Calvé insists that operative measures are useless and harmful in the early stages of Pott's disease in children. On the other hand, they are directly indicated in adults in the same conditions, as adults do not possess the faculty of spontaneous complete recovery which is peculiar to childhood. Orthopedic treatment with immobilization for three or four years results in complete consolidation in children, but the adult spine requires support as it never regains its full strength. The child with Pott's disease should be given general treatment for tuberculosis as well as the local orthopedic treatment. The organization of enough sanatoriums to allow this is the solution of the problem. For adults, the slight tendency to destructive processes and the lack of compensating processes are further reasons for reinforcing the spine by a grafting operation. He gives an illustrated description of his modification of the Hibbs technic. He makes a bed for the implant by cutting out the spinous process, leaving a right-angled cavity. Then he slits the lamina to each side, to the base of the transverse process, and turns back the piece thus pried up. This leaves a long, large freshened bed in the diseased vertebrae and in the sound vertebrae above and below. This gives a solid hold for the implant. The spinous processes resected are cut up into small pieces and are scattered along the whole length of the graft. This does away with the objections to the ordinary Hibbs method, which seems to be better adapted than the Albee method to the dorsal region. Lower than this, the Albee technic has given fine results in his hands. The article is illustrated.

Rectoscope.—The four branches of Pamboukis' rectoscope spread apart after the instrument has been introduced closed. One branch is graduated, and the electric light is shielded from the eyes, while a telescope system magnifies the findings.

Jan. 17, 1920, **28**, No. 5

*Dextrocardia and Dextroversion. H. Vaquez and Donzelot.—p. 41.
*Albumin Content of Cerebrospinal Fluid. Ravaut and Boyer.—p. 42.
Aseptic Pleural Effusion after Influenza. G. S. Coskinas.—p. 43.

Dextrocardia and Dextroversion.—Vaquez and Donzelot report two cases in which the long axis of the heart pointed to the right side, and yet the electrocardiograms were normal. Inversion of the cavities of the heart is the result of abnormal embryonal development, but when there is not inversion of the cavities, then the mirror aspect of the heart is always merely a mechanical displacement, with or without secondary malformation of the orifices. This seems to be the condition in these cases, both being apparently merely instances of congenital dextroversion of the heart.

Albuminimeter.—Ravaut and Boyer estimate the percentage of albumin in the cerebrospinal fluid by comparing the opacity of the fluid with that of a mixture of a solution of silver nitrate and of sodium chlorid. Two test tubes are graduated specifically for the calculation, and the whole procedure takes only a few minutes. The findings are as exact, they declare, as with any of the current methods, and no more than 1 c.c. of the spinal fluid is required for the test.

Revue Franç. de Gynécologie et d'Obstét., Paris

October, 1919, **14**, No. 10

*The Brussels Congress. L. M. Pierra.—p. 377.

The Brussels Congress.—This entire number of the *Revue* is devoted to the preceedings at the First Congress of the Association of French-Speaking Gynecologists and Obstetricians, held at Brussels last September. Most of the communications have been summarized in The Journal from various journals or in the special correspondence.

Revue Médicale de la Suisse Romande, Geneva

December, 1919, **39**, No. 12

*Intradermal Urine Test for Tuberculosis. F. Miche.—p. 567.
*Case of Codein Poisoning. L. Boissonnas.—p. 581.
Protracted Peritonitis from Typhoid Perforation. P. Gautier and P. Brutsch.—p. 587.
Vincent's Angina Simulating Hard Chancre. G. Cornaz.—p. 591.

Intradermal Urine Test for Tuberculosis.—Miche has simplified the technic for using urine from a tuberculosis suspect in place of or to control the tuberculin test, and reports that the findings paralleled those with the latter test in seventeen cases in which both were positive, and in four cases in which both were negative, but in four other cases they conflicted. With the urine extract the reaction is more pronounced in the very active cases, and it is weak in the cases with a more favorable prognosis, thus throwing light on the outcome. He explains this by the fact that the urine is a tuberculin-antituberculin, more potent in the more active cases. He evaporates fresh urine and uses the desiccated urine with 2 c.c. of distilled water, forming a 10 per cent. solution, and applies it for the test by the skin or the intradermal tuberculin technic.

Case of Codein Intoxication.—The boy of 3 was given 0.04 gm. of codein by mistake for calomel. There were no symptoms for forty-five minutes, then intense headache, stiffness and unconsciousness, imperceptible pulse, contracted pupils, and stiffness of the neck, the head thrown back, testified to the severity of the toxic action. The muscles in the legs were relaxed. The heart was beating at 120 and râles were heard at the hilum. Half an hour after a tepid enema and injection of camphorated oil, the child became conscious. The injections of camphorated oil were continued every two hours, and wet cups were applied to the dorsolumbar region, and the child was made to drink freely of black coffee,

diuretic teas and mineral waters. There were several convulsions but the symptoms had all subsided in three hours except for anuria and drowsiness. The anuria persisted for two days; the distended bladder was punctured the first evening, and 400 c.c. of urine withdrawn, as repeated attempts to introduce the catheter had failed. The nature of the substance given in place of the supposed calomel was not known until after several hours, the sugar with the powder interfering with the chemical tests. The literature on codein poisoning is reviewed. The loss of consciousness is constant in such cases; if this stage does not end in the fatal collapse, agitation, vomiting and gastralgia, convulsive movements and exaggeration of the reflexes are the usual symptoms. Dilation of the pupils was noted in some cases and contraction in others. In dogs, the narcotic stage is accompanied by miosis which changes to mydriasis in the stage of agitation. Retention of urine has been noted with 0.1 to 0.2 gm. of the drug.

Pediatria, Naples

January, 1920, **28**, No. 1

Malta Fever. G. di Cristina and S. Maggiore.—p. 1. To be cont'd.
*Symptoms from Cavity in Child's Lung. C. L. Rusca.—p. 23.
*Spina Bifida. R. Vaglio.—p. 33.

Symptoms from Cavities in the Lungs in Children.—Rusca expatiates on the misleading findings with a cavity in a child's lung, as the walls and tissues are so elastic that the vibrations are transmitted to remarkable distances. There is actually no absolutely pathognomonic sign of a cavity; the presumptive signs have to be considered in connection with the roentgen findings.

Spina Bifida.—In the last six years twenty-three cases of spina bifida have been under treatment at the children's clinic in Naples. In one case it was double, both cervical and lumbar; in another, the tumor returned as hydrocephalus developed after the operation for the spina bifida. In 52 per cent. there were other malformations; inherited syphilis was manifest in 39 per cent. This suggests the advisability of specific treatment preliminary to operation when there is the least suspicion of the inherited taint. Vaglio thinks it is wiser to defer operating for spina bifida until the infant is a little older, unless one's hand is forced.

Revista Española de Obstet. y Ginecología, Madrid

October, 1919, **4**, No. 46

*Extra-Uterine Pregnancy at Term. P. Nubiola.—p. 433.
Radium Treatment of Uterine Cancer. Vital Aza.—p. 440. Cont'n.
*Delivery of Thoracopagus Monster. Roig-Raventos.—p. 449.

Delivery of Viable Child from Extra-Uterine Pregnancy.—Nubiola ascertained that the pregnancy was continuing apparently normally although the fetus had slipped into the abdominal cavity. The woman was kept under surveillance, and was delivered by a laparotomy at term. The left tube was adherent to the membranes; the ovum had probably been embedded primarily in this tube. It was resected, and the placenta was separated by hand—a most tedious task as it was attached besides to the posterior surface of the uterus, the Douglas pouch, to portions of the rectum and cecum and to several loops of the bowel. Step by step, with numerous ligatures, the placenta was pried loose, leaving an extensive raw surface with merely slight oozing of blood. The child seems to be normal, and at 4 months weighed 5 kg. Marsupialization and abandoning the membranes and placenta may be required in exceptional cases, but only when conditions are too grave to remove them at once. Nubiola reviews what others have written on the subject, including Harris' thirty cases (1888) and R. Costa's monograph (1915), and nine in recent Spanish literature. In his case he irrigated the abdominal cavity by the Carrel-Dakin method, commencing the seventh day when the temperature had begun to rise. At the third week a scrap of gangrenous membrane tissue was expelled, and, after this, recovery was soon complete.

Thoracopagus.—Roig-Raventos describes the maneuvers necessary for extraction of the united twins. The membranes had ruptured four days before. The cause of the obstruction to delivery was not recognized until the united trunks came into view. The total weight was 7,500 gm. and the placenta weighed 1,800 gm. When he saw the case there was no circulation in the cord, and evisceration aided delivery.

Mitteilungen aus der Med. Fak. der Univ. zu Tokyo

Jan. 27, 1919, **21**, No. 1

*Morphology of Spleen Tumors. Y. Nishikawa.—p. 1.

Morphology of Spleen Tumors.—Nishikawa's monograph fills the 216 pages of the issue, and is accompanied by twenty-nine photomicrographs and a bibliography of the titles of 154 articles. The morphology is compared of the various chronic tumors of the spleen, enlargement with malaria, cirrhosis of the liver, leukemia and simple congestion of central or peripheral origin, syphilis, schistosomiasis and Banti's disease—a total of 116 cases. The regular and even fibrous degeneration of the spleen in Banti's disease is so constant and so extreme that it may be regarded as almost pathognomonic. The enlarged spleen is the primary site in this disease, and consequently splenectomy is the rational treatment of Banti's disease. The characteristic microscopic findings in this and other diseases are compared in fourteen folding tables, the cases listed under eighteen headings, including the blood and marrow findings, duration, and various clinical symptoms.

Berliner klinische Wochenschrift, Berlin

Oct. 27, 1919, **56**, No. 43

*Comparison of Wassermann and Sachs-Georgi Tests. A. Raabe.—p. 1012.
*Stages of Pulmonary Tuberculosis. K. Engelmeier.—p. 1014.
*Tuberculosis of the Larynx. J. W. Samson.—p. 1018.
*Erythema Dose in Hard-Ray Roentgenotherapy. F. M. Meyer.—p. 1020.
Increasing Spread of Quackery. Neumann.—p. 1021.

Comparative Investigations with the Wassermann and Sachs-Georgi Tests.—Raabe reports the results of a series of comparative Wassermann and Sachs-Georgi tests, and gives a detailed description of the modified technic for the latter. It is applied with physiologic sodium chlorid solution and natural cholesterinized organ extracts. Of the 1,750 parallel tests, 569 were positive by both the Wassermann and the Sachs-Georgi reaction, while 1,005 cases were negative by both tests. Of the 569 positive cases, 519 had been clinically diagnosed as unquestionably syphilis. In view of the close agreement between the results secured by the two methods, the writer concludes that, from the standpoint of diagnosis, therapy and prognosis, the Sachs-Georgi precipitin test deserves ample recognition, but she does not think that it can be regarded, even with its simplified technic, as a substitute for the Wassermann reaction. Its value as a control of the Wassermann reaction is, however, already established.

The Clinical Value of Recent Classifications of the Stages of Pulmonary Tuberculosis.—The clinical need of a practical classification of the various stages of pulmonary tuberculosis has long been felt and many attempts at classification have been made. Engelmeier describes in detail several methods of classification and the principles on which they are based. He favors Ranke's classification, who, he thinks, is without doubt on the right track, in that he considers not only the organ in question—the lungs—but also the behavior of the whole organism. Ranke's views need, however, further elaboration and confirmation in order to make them more valuable to the practicing physician. More important than the classification of the disease is the proper evaluation of the patient. We must remember that we are not treating a disease, but a sick person.

Tuberculosis of the Larynx.—Samson confirms previous reports that the increase in tuberculosis during the war period in Germany has been very marked. This has attracted the attention of all concerned to the various complications under which the disease appears, and Samson finds that our views with respect to tuberculosis of the larynx, especially, need some revision, owing to the exceptional danger of infection from it. It is estimated that the percentage of

patients with laryngeal tuberculosis whose sputa contain tubercle bacilli is twice as great as the number of patients with pulmonary tuberculosis of whom this is true. According to Bingler the proportion is even greater (75.8 per cent. as compared with 30 per cent.). These figures show the great importance of measures for the protection of the patients' families and the general public. For the purpose of early diagnosis of tuberculosis of the larynx, which thus becomes imperative, it is desirable that the lung specialist should also be a throat specialist. Samson emphasizes the need of isolation of such patients in the family, as the danger of spreading the infection is a thousand times greater than in the case of pulmonary tuberculosis. With the latter, care in collecting and disposing of the sputum will accomplish much in the way of prophylaxis, but with tuberculosis of the larynx such care is in vain, owing to the danger of infection from sudden coughing spells and the increased respiratory effort in speaking, as has already been pointed out by Friedrich. The need of isolation applies to hospitals and sanatoriums as well as to families.

Erythema or Normal Dose in Hard-Ray Roentgenotherapy.—Meyer is convinced that widespread uncertainty exists as to what constitutes an erythema, or normal, dose in hard-ray roentgenotherapy. He thinks this uncertainty is due to the fact that formerly roentgenotherapy with medium soft rays prevailed, and that here there was an accidental correspondence between the desired biologic effect and the effect on a certain chemical substance—barium platinocyanid—in a dosage that produced a certain definite coloring, known as Tint B, when applied to a patient caused an erythema of the skin (allowing, of course, for idiosyncrasies and the fact that certain parts of the body—the face, for instance—are more sensitive than others). Meyer fears that these same conditions are still being applied by some to the hard-tube irradiation, with the result that, from a practical standpoint, the technic is defective and too small doses are given. The harm lies not only in the fact that patients are thus deprived of the maximal benefit, but also in the added fact that in the treatment of malignant growths an underdose, instead of paralyzing or destroying malignant cells, may be just suited to incite them to increased proliferation. Meyer states further that if a disease does not react to one form of irradiation, one should not assume on that account that it will not react at all. A change in our therapeutic program and our technic will often bring about the desired results.

Deutsche Zeitschrift für Chirurgie, Leipzig

March, 1919, **149**, No. 1-2

*Gastric and Duodenal Ulcer. A. Troell.—p. 1.
Gas Cysts in Brain from War Wounds. Goldammer.—p. 86.
Emergency Treatment of War Fractures. O. Braun.—p. 100.
Ileus from Shellac in Small Intestine. W. Bellmann.—p. 127.
*Dislocation of First Tarsometatarsal Joint. Girgensohn.—p. 135.

Surgery of Gastric and Duodenal Ulcers.—Troell reviews the experiences at the Serafimer Hospital at Stockholm since 1907 with operative measures for gastric and duodenal ulcers, a total of 234 cases, and compares them with results reported by others. His bibliography includes 191 works. Multiple ulcers were found in 5 per cent. There was appendicitis in only 9 cases, and gallstones only in 2. The time of onset of the pains did not correspond infallibly to the location of the ulcer, although there was some evidence which suggested that the degree of the acidity or disturbance in motor functioning determined the character of the pains. Pronounced hyperacidity with an extrapyloric ulcer may induce pains like those of a juxtapyloric ulcer. On the other hand juxtapyloric duodenal ulcers may induce pains of the extrapyloric gastric ulcer type. He queries whether this is a general rule or not. In many of the cases there had been no pains or they had been slight. He queries further whether there is any special region in the stomach where ulceration never induces pain. Attenuation of the pains on change to reclining on the left side was noted with 3 extrapyloric gastric cancers; 3 patients were relieved by lying down; 1, with a duodenal ulcer, by standing up. In 26 cases, including 11 extrapyloric gastric ulcers, the pains were relieved by eating something; in 38 cases, by vomiting. A connection with constipation was evident in a few cases, the pains being relieved by defecation. There had been diarrhea in 27 cases. The symptoms that never proved misleading included tenderness over the duodenum, the protruding or receding pocket, the air bubble at the top of the duodenum, the retraction in the wall at one point, and rapid passage of the chyme through the duodenum, or antiperistalsis. But displacement of the pylorus to the right may occur with gastric ulcer, and the chyme may linger in the duodenum.

The mortality of the ulcer operations was 8.5 per cent. before 1916 and 6 per cent. since then, mostly from peritonitis and lung complications. Troell's conclusion from the gastric ulcer cases is that resection, with gastro-enterostomy, guarantees best complete recovery, and this without any more operative risk than gastro-enterostomy alone. This applies both to transverse and to segmental resection, plus the gastro-enterostomy. All this material is tabulated under various headings, as also the roentgen findings in 64 cases, reexamined later. The latter group teach the necessity for making the gastro-enterostomy well toward the right to avoid production of a blind pouch. Another point learned is the unreliability of measures to shut off the pylorus, and it is a question whether there is any use in attempting it. The experiences related show further the possibility of secondary hour-glass constriction of the stomach after terminal suturing together of the stumps. In 13 per cent. of the total ulcer cases, with long survival, the operation did not improve conditions. This group included 10 per cent. of the hour-glass stomach cases; 10 per cent. of the antral gastric ulcer cases; 10 per cent. of the pyloric duodenal ulcers, 11.5 per cent. of the extrapyloric gastric ulcers; 20 per cent. of the extrapyloric duodenal ulcers, and 41 per cent. of all the cases with dubious operative findings. Thus, no improvement followed the operation in 41 per cent. of all the cases with inconclusive operative findings, and this teaches, Troell declares, the advisability of refraining from any operation when the exploratory incision fails to show any crater, scar, or other evidence of ulcer.

Dislocation of the First Tarsometatarsal Joint.—Girgensohn advocates immediate reduction, giving the roentgen findings in a case. A fall from a horse is the most frequent cause of the luxation. The prognosis is good with proper treatment.

April, 1919, **149**, No. 3-4

*Gastric and Duodenal Ulcers. W. Reinhard.—p. 145.
Habitual Dislocation of Patella. F. Lückerath.—p. 236.
Irrigation Treatment of Inflammation in Abdominal Cavity. J. J. Stutzin.—p. 265.
The Murmur in Aneurysms. A. Israel.—p. 281.

Gastric and Duodenal Ulcer.—Reinhard devotes ninety pages to a critical summary of the experiences at the Hamburg clinic with 68 cases of gastric ulcer; 36 of pyloric; 33 of duodenal and 13 of dubious duodenal ulcer with 9 cases of cicatricial stenosis of the pylorus. The symptoms and clinical picture in practically all pointed unmistakably to ulcer, but not to its location. The symptoms with gastric ulcer were often those supposed to be typical of duodenal ulcer and vice versa. Palpation gave instructive findings in 79.8 per cent. but not as to the location. The chemistry of the stomach was normal in nearly 50 per cent. Roentgen findings were conclusive as to the ulcer but were not always a reliable guide to its site.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Nov. 8, 1919, **2**, No. 19

*To Prevent Loss of Vitreous Fluid. J. van der Hoeve.—p. 1426.
*Testing Permeability of Lacrimal Canal. G. F. Rochat.—p. 1429.
*Metastatic Sarcoma in the Eye. G. ten Doesschate.—p. 1432.
*Refraction in Semidarkness. F. Wibaut.—p. 1437.
*Syphilis of the Stomach. G. O. E. Lignac.—p. 1441.
Emergency Tracheotomy on Account of Goiter. H. van der Tak.—p. 1448.

To Prevent Loss of Vitreous Fluid in Operations on the Eyes.—Van der Hoeve gives an illustrated description of the four threads method with which he lifts up the anterior wall of the eyeball. The vacuum made by lifting up the wall aspirates back any of the vitreous fluid that is on the point

of escaping. Each thread is passed through the outer layers of the cornea, close to the iris, to form four loops with which the two assistants lift up the wall when loss of the fluid is impending. The loops are useful also for other purposes, as he describes.

Test for Permeability of the Lacrimal Canal.—Rochat comments on the difficulty sometimes experienced in determining whether the lacrimal canal is normally permeable, as the pressure required to force fluid through the canal varies so widely. His own research seems to show that the pressure required in normal conditions is from 17 to 22 cm. water. When greater pressure than this is required, the lumen is certainly pathologically narrow.

Metastatic Sarcoma in the Eye.—Ten Doesschate reports a case, in a woman of 49, of primary melanosarcoma in the right eye with multiple metastases, including one in the left eye. In a second case, a woman of 50, a pigmented nevus below the right breast became transformed into a sarcoma, and was excised in 1914. In 1917 metastases developed in the brain and skin and in the uvea of one eye and in the retina of the other eye, but the papilla escaped. He does not know of any record of similar metastasis in the retina from a tumor elsewhere. A few cases are cited of metastases in the eye from sarcomatous degeneration of a nevus on the cheek, parotid region, etc., but none were on the retina. Primary sarcoma in both eyes has been reported by Fuchs and five or six other writers.

Refraction in Semidarkness.—Wibaut asserts that the refraction increased by 0.5 to 1.5 D in semidarkness in seven persons tested. Charpentier reported eighteen years ago that myopia becomes exaggerated in the dark; he found differences up to 3 D in some, and in himself up to 2 D. Wibaut explains the mechanism of this.

Syphilis of the Stomach.—Lignac resected the middle third of the stomach for supposed cancer in a man of 52, and the latter has been in good health during the nine months to date, but the resected portion showed merely chronic gastritis, gummas and syphilitic ulcers, no signs of malignant disease. Dubuc gave specific treatment in a case of supposed cancer of the stomach and the results were excellent, as also in several of Fenwick's cases of supposed gastric cancer. Lignac queries whether we ought not to rank gastric syphilis beside ulcer, gastric cancer, and gastric crises in studying puzzling cases of pathologic conditions in the stomach. The absence of tertiary manifestations elsewhere should not exclude syphilis. This lesson was taught by the case here reported in which there was nothing to suggest syphilis before the operation; even the Wassermann test was negative. Benefit from specific treatment should be evident in five days, but relapses are liable. The great danger is hemorrhage from an eroded vessel. Fränkel has reported a case of peritonitis from perforation of a gummatous ulcer. In Nathan's case, mercurial treatment of a tertiary syphilitic lesion on the arm cured at the same time pathologic conditions in the stomach which had been causing symptoms for ten years. The pains may be severe, especially at night, and the clinical picture in general may simulate gastric ulcer, cancer or tabetic crises.

Hospitalstidende, Copenhagen

Jan. 7, 1920, **63**, No. 1

*Bromid Infusion in Psychoses. C. Jørgensen.—p. 12.

Bromid-Saline Infusion in Treatment of Psychoses.—Jørgensen relates that bromid by the mouth has not been satisfactory in the treatment of psychoses in Jacobsen's service. Since they have been giving it by the subcutaneous route, the results have been immeasurably better. They give it in saline infusion, and assert that this treatment is more potent in controlling maniacal attacks than any other simple and harmless measure known to date. The mother solution is made with 150 gm. sodium bromid; 7 gm. calcium chlorid; 3 gm. potassium chlorid, and distilled water to 300 c.c. For the infusion they use 20 or 30 c.c. of this solution in a liter of water. It is thus a slightly hypotonic or isotonic saline solution with a content of 15 gm. sodium bromid. This infusion once or twice a day aids in combating the toxic factors responsible for the exacerbation, while the substitution of the bromid for the usual sodium chlorid in the saline solution has an exceptionally prompt sedative action. Nine cases are described to show the efficacy of this treatment, arresting convulsions and delirium. Some of the patients responded in cases refractory to the usual narcotics with a slight rise in temperature, and one, a previously healthy woman of 46 with acute mania for a week, developed a slight and briefly transient collapse condition after one of the bromid-saline infusions, but she also had the same after an ordinary saline infusion. As 103 gm. sodium bromid is the equivalent of 58.5 gm. sodium chlorid, the solution used is equivalent to an ordinary 8.5 per thousand solution of sodium chlorid. In the two latest cases they gave 80 gm. and 105 gm. of the bromid in the course of four days, and the acute mania subsided.

Jan. 14, 1920, **63**, No. 2

*Cholelithiasis and Achylia. F. Rydgaard.—p. 17. Begun No. 1, p. 2.

Cholelithiasis and Achylia.—Rydgaard found achylia in 47.4 per cent. of Rovsing's operative gallstone cases, and in 52 per cent. of a total of 471 cases compiled, including the Rovsing cases in 26 men and 132 women. The sex and age do not seem to influence the achylia, but 74 per cent. of the 135 patients with stones obstructing the cystic duct had achylia or hypochylia. In some cases the achylia developed as the cystic duct became obstructed, showing the special dependence of the former on the latter. It seems plausible to assume that the incontinence of the sphincter papillae, which is so often entailed by the stretching of the cystic duct by the gallstones, upsets the physiologic process of the neutralizing of the acid stomach content by the bile. The former is poured out unneutralized into the duodenum, and the irritation of the duodenal wall from its acidity sets up reflex action which entails the achylia. When the sphincter is normal, there is no achylia notwithstanding the presence of gallstones. Other arguments are presented which sustain Rovsing's conviction that the gallbladder is a physiologically important organ, and that it should not be removed without imperative indications for this. Cholecystotomy is all that is necessary in many cases to cure both the gallstone disturbances and the achylia. Even if there should be recurrence of stones, this is not enough of a reason for removing the gallbladder, any more than the kidney under similar conditions. The experiences related and the theoretical reasoning all emphasize the necessity for early operative measures in cholelithiasis, getting rid of the stones before the cystic duct has been stretched to a degree that entails incontinence. An early operation also wards off achylia and, in warding this off, prevents infection. As soon as the first symptoms warn of the presence of gallstones, operative measures should be applied at once, Rydgaard reiterates in conclusion.

Norsk Magazin for Lægevidenskaben, Christiania

January, 1920, **81**, No. 1

*Cesarean Section at Christiania. K. Brandt and C. Smith.—p. 1.
*Diet with Insufficiency of the Kidneys. K. Motzfeldt.—p. 13.
*Vital Staining of Nerve Cell and Its Consumption of Oxygen. G. H. Monrad-Krohn.—p. 36.
Pathologic Anatomy of Influenza and Its Complications. F. Harbitz.—p. 46.

Cesarean Section.—Brandt and Smith analyze the record at Christiania of sixty-two classical cesarean sections and forty vaginal in the last thirteen years in a total of 18,140 childbirths. In 87.5 per cent. the operative delivery was the last resort in eclampsia, and 80 per cent. of the women were saved by it; in 10 per cent. of the others, necropsy disclosed irreparable lesions of internal organs. Central placenta praevia was the indication for the classic section in two cases, with recovery in both. They regard vaginal section as irrational for placenta praevia; the difficulty is to recognize the central placenta in time.

Dietetic Treatment of Insufficiency of the Kidneys.—Motzfeldt insists that functional tests of the kidneys must be the guide for treatment, varying the diet to conform to the individual conditions at the time. He recalls that restriction

to milk in systematic treatment of Bright's disease was preached by Chrestien of Montpellier four years after Bright's publication. His motto was "Milk or death"; but we know now that abstention from salt and a low protein diet are the essential features of dietetic treatment, and that milk does not conform entirely to either essential. Carbohydrates and fats can be disregarded and be allowed, free from restrictions, but the water balance, the mineral metabolism, and the nitrogen intake must all be studied and regulated according to the tolerance. Retention of salt may be a secondary phenomenon, and extrarenal factors probably play a large part in it, so that it is scarcely correct to speak of the kidney's "permeability for sodium chlorid." From the therapeutic point of view this is of minor importance, but it is still a question whether the sodium or the chlorid element is the responsible factor. Thorling regards the sodium as more directly influencing the water balance, so that attempts to substitute sodium chlorid with sodium bromid or citrate or other sodium salt are not rational. Motzfeldt warns against the routine use of a salt-free diet, saying that it has not fulfilled the anticipations roused by Widal's cases, and even at the best, the conditions may be so grave that the strictest reduction may not have any effect. It should be given a trial, however, and be continued for several weeks. The outcome was most striking in one case of acute nephritis in a young man; on the salt-free diet he lost 27 kg. in weight in twenty-two days. He eliminated 250 gm. of chlorids in the urine, which corresponds to 27 liters of a 9 per thousand saline solution. Widal has reported a case with loss of 28 kg. in seventeen days. Widal regards 1.5 gm. as the ordinary sodium chlorid requirement, below which it is unwise to go for a long period; Romberg says that 5 gm. is the limit; Strauss, 2 gm. In uremia with convulsions, if the phenolsulphonephthalein test shows normal conditions, the protein intake need not be restricted. But otherwise a low protein diet is indispensable, down to 20 or 30 gm. temporarily; 50 gm. seems to be the lowest limit that can be borne for any length of time. Restriction of the protein reduces the uremia, attenuates the clinical symptoms, and renders the prognosis more favorable, as Motzfeldt shows by four cases. The effect can never be definitely determined beforehand, and it should always be given a trial, especially in the acute exacerbations of chronic nephritis. It may take several days for the effect on the uremia to become manifest. When the nitrogen content of the blood has been brought down to normal, the patient's tolerance for protein should be carefully determined. His charts give the protein intake curve, the degree of azotemia and the phenolsulphonephthalein findings curve. In conclusion he reiterates that the diet with kidney insufficiency should be determined and enforced with as much care as in diabetes.

Vital Staining and Oxygen Consumption of Nerve Cells.—Krohn describes Mott's recent research on the consumption of oxygen by nerve cells and the transformation of chromatomethylene blue into leukomethylene blue in the living nerve cell, and the reversive transformation when oxygen is supplied. In Mott's work on shell shock he explained how the smaller nerve cells are particularly susceptible to deprivation of oxygen, as they have so little reserve oxygen to draw on, in comparison to the larger cells.

Ugeskrift for Læger, Copenhagen

Jan. 8, 1920, 82, No. 2

*Hysteria in Children. Monrad.—p. 31. Begun in No. 1, p. 1.
*Torsion of the Omentum. H. O. Wildenskov.—p. 40.
*Inherited Neurosyphilis. K. Baagøe.—p. 42.

Hysteria in Children.—Monrad gives a brief review of the recorded history of hysteria in children, the etiology and the pathogenesis and then describes the extremely varied manifestations of hysteria in children. He emphasizes that in children it is monosymptomatic, that is, there are merely single or a few manifestations while there are none of the permanent symptoms, the so-called stigmata. Over 200 cases of hysteria in children have been encountered in his practice in the last ten years. It simulated in the different cases almost the entire range of organic pathologic conditions in the nervous system, the urogenital and digestive apparatus, and the abdomen, besides various surgical processes. Numerous instances of each type are described and the treatment found most effectual. The prognosis of hysteria is far more favorable in children than in adults. Treatment has to be exclusively psychotherapy and this requires skill and tact, and usually removal of the child to some wholesome environment where he will not be the central figure. The transference to a hospital may make the child forget his hysteria completely. The psychotherapy may be masked with some local application to cause a little pain or shock, but the main thing is to impress the physician's authority on the child while convincing him that the doctor is his friend. Sometimes a child with astasia-abasia can be cured by standing him up on the floor and categorically commanding him to walk. A promised reward may aid in some cases. A sudden cold douche or electric shock on the region affected may succeed, but Monrad warns that when any of the above measures fails, it is useless to repeat it.

In a paroxysmal form of hysteria, systematic ignoring of the child often proved effectual; especially when the child was allowed to overhear the persons in the room speaking of what would have to be done to him if the attacks continued. Examination under a general anesthetic, besides roentgenoscopy and tuberculin tests, may be necessary to exclude organic bone disease. One little girl had a hysteric sacrocoxitis, others hysteric neuralgia in the knee, hip joint, heel or spine. There was usually a history of some trauma attracting attention to the region and the cure is often tedious then as the local measures applied had anchored the hysteria more firmly. In the case of one girl of 5 a specialist had diagnosed cervical spondylitis and insisted on orthopedic treatment. The symptoms became so alarming that the child was taken into the general hospital where the diagnosis was changed to hysteria from the negative tuberculin and roentgen findings, the history of pediculosis with impetigo and swelling of the glands in the neck, causing pain when the head was moved. The torticollis, etc., were only the hysteric prolongation of a previous reflex torticollis, and the cure was complete in a few weeks. In infants about a year old, hysteric anorexia may be connected with weaning or be a hysteric prolongation of some gastro-enteritis. Removal to another environment usually cures it at once. One girl of 11 had become so emaciated and weak from the hysteric anorexia that the pulse was only 40, respiration 16. Isolation in the hospital did not help until she was told that she would have to be fed through a "snake," the Danish word for "snake" and "tube" being the same. Then she began to eat normally until she coaxed an attendant to show her the "snake"; no more eating after that. Finally Monrad told the nurse in her presence that if she did not begin to eat soon she would get decubitus. The girl inquired about decubitus and was shown the large loathsome sores. This cured her anorexia, and she gained 1,900 gm. in weight in two weeks, but the anorexia returned a few months later. In three cases there were hysteric strictures in the esophagus. Hysteric vomiting is usually cured by removal from home, even when the vomiting has kept up for years. In five cases the hysteria simulated appendicitis, the children having heard older people describe the symptoms.

Torsion of the Omentum.—Wildenskov urges detorsion and resection of the omentum, saying that with this the mortality was only 4.5 per cent. among the 89 cases on record, exclusive of the 3 per cent. fatalities explained by other causes. In the personal case reported the diagnosis had been appendicitis. In 65 of 80 cases there was concomitant hernia, as also in his case. The long pedicle of the clump of omentum in his case had made six complete turns toward the left.

Inherited Neurosyphilis.—Baagøe queries as to the connection between the inherited syphilis and the imbecility plus the extreme backwardness; the aphasia; or the juvenile tabes, plus sudden blindness, in the three children described. Some of them testify anew to the fact that these severe forms of neurosyphilis from the inherited taint occur in the children of parents whose syphilis was so mild it escaped detection or was disregarded.

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INTERPRETATION OF ROENTGEN-RAY FINDINGS IN THE DIAGNOSIS OF PEPTIC ULCER

SOME DIFFICULTIES *

C. W. McCLURE, M.D.
AND
LAWRENCE REYNOLDS, M.D.
BOSTON

One of the most important advances in the diagnosis of gastro-intestinal lesions has been the development and application of roentgenographic methods in this field. As is likely to occur when any method is devised which demonstrates new objective signs of disease, certain findings obtained by roentgen-ray studies create new diagnostic problems. Most important of the problems is the significance of roentgen-ray findings and their relative value, to those obtained by other procedures, in the diagnosis of gastric and duodenal lesions. These have been discussed in former communications.[1] Our purpose in this paper is to present some of the difficulties and errors into which roentgen-ray findings may lead in relation to the diagnosis of peptic ulcer.

Temporary muscle spasm occasionally produces distortion in the outline of the duodenum or stomach like that produced by an ulcer. An example of this condition is pictured in Figures 1 and 2. In this case the deformity pictured was present throughout one examination but absent in another made two weeks later, although the symptoms remained unchanged. When such deformities occur in cases in which the clinical findings are not those usual for peptic ulcer, the roentgen-ray studies should be repeated at a later date. At the second examination, especially if atropin has been given to the physiologic limit, the deformity usually will have disappeared. If this precaution is not taken, one may be forced erroneously to consider the presence of organic disease where it does not actually exist. This is illustrated in Case 1:

CASE 1.—Diagnosis, *gastric neurosis*.—F. R. G., white man, aged 32, salesman, with unimportant family and past medical histories, from February to November, 1914, had had attacks of slight dizziness with some nausea and occasionally vomiting, but no hematemesis, or bloody or tarry stools. The attacks recurred every two or three weeks and lasted for about half a day. In November, 1914, severe epigastric burning from two to three hours after meals began; this symptom persisted for two weeks. The patient was then placed on a diet by a New York physician, which was followed for several months with finally complete relief from symptoms. The patient remained well until the present illness, October, 1919. About the first of that month the onset of mild burning in the epigastrium, from two to three hours after meals, began. The symptoms gradually increased in severity until at the end of three weeks the patient sought medical advice. The appetite was good. There had been no vomiting. The bowels were constipated. There had been no loss in weight.

Physical examination was essentially negative.

Roentgen Report: The stomach was normal in position and tone. Its outlines were regular. There was active peristalsis, and the pyloric sphincter closed normally. There was constantly present a definite irregularity of the lesser curvature side of the first portion of the duodenum. Otherwise the duodenum appeared normal.

Interpretation: The findings are those usual in ulcer of the first portion of the duodenum.

Roentgen-ray studies were repeated in two days and again one month later. On both occasions the duodenum filled normally and its outline was regular.

Clinical Pathology: Gastric analysis was not made. The stools gave a negative benzidin test for blood. The usual examinations of the urine and blood were negative. The Wassermann reaction in the blood serum was negative.

Progress: Treated on the basis of a neurosis, without special dietary measures, the patient became free from all symptoms within one week. During this period he carried on business as usual. He remained well, while under observation, for the ensuing three months.

This case shows the value of cooperation between the roentgenographer and the clinician. The clinical history was not typical of ulcer, yet the first roentgen-ray findings were characteristic of that condition. The discrepancy led to a repetition of the roentgenographic examination. The result was such as to show that the first findings were transient, probably the result of temporary muscle spasm and not due to an ulcer.

There is a type of case in which a persistent duodenal deformity, resembling that due to ulcer, exists and yet is probably due to some cause other than ulcer, such as adhesions, congential or acquired. Case 2 furnishes an example of this:

CASE 2.—Diagnosis, *duodenal ulcer*.—J. J. C., Med. No. 11061, white man, aged 47, expressman, admitted to the Peter Bent Brigham Hospital, May 12, 1919, and discharged, May 15, 1919, complained of distress in the abdomen. The past medical history was essentially unimportant. Gastric symptoms began seven years prior to admission. The symptoms had occurred in periodic attacks, usually at intervals of about every two months and persisting for from one to six weeks. The interval between the last two attacks had been one year. The last attack began three weeks before admission, and was of the same character as the preceding ones.

* From the medical clinic and roentgenographic department of the Peter Bent Brigham Hospital.

1. McClure, C. W.: Certain Diagnostic Aspects of Medicosurgical Diseases of the Gastro-Intestinal Tract, Boston M. & S. J. **181**: 399 (Sept. 25) 1919. McClure, C. W., and Reynolds, Lawrence: Gastric and Duodenal Ulcer: Typical and Atypical Forms: The Relative Value of Diagnostic Procedures, ibid., to be published.

Dull, aching distress in the epigastrium occurred at variable periods of the day or night, and without relation to food except for a tendency to appear just before meals. The distress was partially relieved by food and to a greater extent by soda. Belching of considerable amounts of gas was a prominent symptom. The appetite was usually good. There had been no vomiting, no hematemesis, no jaundice, and no bloody or tarry stools. The bowels were regular. The patient was usually able to trace a connection between gastric symptoms and emotional stress, such as worry over business affairs.

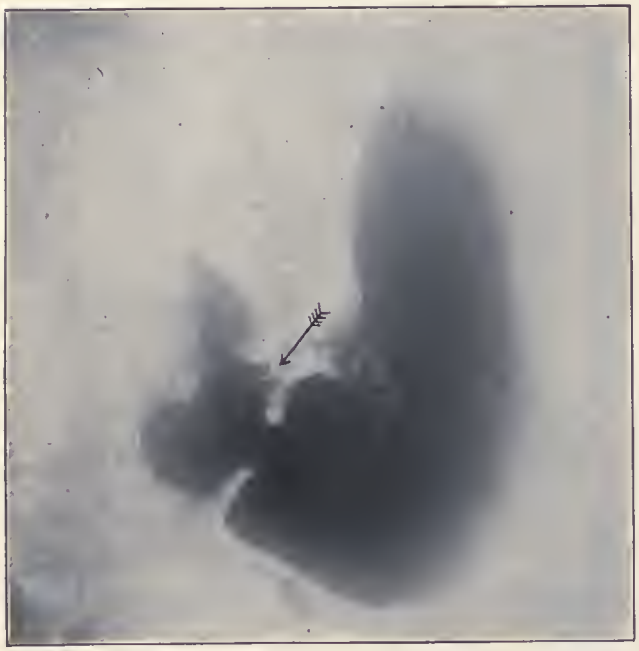


Fig. 1 (E. W., O. P. D. 60463).—Antral incisura, due to temporary muscle spasm, in a case of gastric neurosis.

Roentgen Report 14735 (Fig. 3): The stomach was normal in position, outline and tone. It was freely movable, and hyperperistalsis was present. The pyloric sphincter showed no abnormalities. The outline of the first portion of the duodenum was persistently irregular. The ileum was normal in position, freely movable, and contained the entire six-hour barium meal. At the twenty-four hour observation, the head of the barium column had reached the rectum. The cecum and the colon were normal. The appendix was not seen. A second roentgen-ray examination, one week later, gave the same findings.

Interpretation: The findings are those of either periduodenal adhesions or duodenal ulcer.

Clinical Pathologic Findings: The fasting stomach contents contained free hydrochloric acid, 15, and total acidity, 26. The guaiac test for occult blood was negative. After an Ewald test breakfast, free hydrochloric acid was 3 and total acidity 30.

The stools showed no occult blood. The Wassermann reaction in the blood serum was negative. The examinations of the blood and urine were negative.

Progress: The patient was in the hospital three days. During this period he was given the usual hospital soft diet and was free from all symptoms. After leaving the hospital he took a short vacation and then returned to work. In a letter, four months later, he stated that he had been free from all gastric symptoms since leaving the hospital.

That this case was one of duodenal ulcer cannot be denied, but the rapid recovery makes the correctness of that diagnosis problematic. This is emphasized by the failure to demonstrate at operation the presence of an ulcer in a case (Case 6, M. M. Mc., Med. No. 10448) reported elsewhere,[2] in which the clinical and roentgenographic findings were almost identical with those in the case just described.

Such cases as these demand intensive study and long observation. The patient's reaction to medical treatment is a practical guide to follow. It has been thought that rest in bed, combined with dietary measures, is indicated in all cases in which there is considerable evidence of the presence of ulcer, such as existed in the case just reported. That this line of therapy will often produce quick results is shown by the results obtained in this case. However, there are patients on whom exclusion from business works a great hardship. Since the correctness of the diagnosis of ulcer is somewhat questionable in such cases, it seems justifiable to try ambulatory treatment provided the patient is kept under close observation. That such a course is not only justifiable, in selected cases, but that good results may be obtained is illustrated by Case 3:

CASE 3.—Diagnosis, *gastric ulcer*.—F. E. M., Med. No. 8260, white man, aged 21, student, admitted to the Peter Bent Brigham Hospital, May 6, 1918, and discharged May 25, 1918, whose family history was unimportant, since early childhood had lunched between meals because of hunger; also, the bowels had been more or less constipated, frequently requiring the employment of cathartics. During the twelfth year of age there had been frequent nausea and vomiting immediately after breakfast. The patient was slightly under weight.

The present illness had begun one year prior to admission to the hospital. The predominating symptom was dull pain, occurring from two to three hours after eating, accompanied by belching. The pain was always in the umbilical region. It was relieved by taking hot water, soda or food. There was no night pain. The pain persisted for three months and then disappeared. It reappeared four weeks prior to admission, and was of the same character as during the first attack.



Fig. 2 (E. W., O. P. D. 60463).—Normal outline of antrum disclosed when stomach was roentgenographed two weeks later.

The physical examination was essentially negative.

Roentgen Report: There was a moderate six-hour barium residue. There was a deep incisura in the prepyloric region. The incisura extended from the greater curvature, and divided the stomach almost into two cavities. The incisura was present throughout the fluoroscopic examination, and was seen on the plates. No irregularities in the stomach

2. Footnote 1, second reference.

outlines were made out. The duodenum could not be more than partially filled.

Interpretation: The findings are due to muscle spasm, and suggest gastric and duodenal ulcer.

Clinical Pathology: Twenty-six c.c. of fasting gastric contents were obtained, and they contained some food



Fig. 3 (Case 2).—Irregularity in outline of duodenum.

residue. The benzidin test for blood was negative. After an Ewald test breakfast, free hydrochloric acid was 3 and total acidity 24. The stools contained no occult blood. The usual examinations of the blood and urine were negative. The Wassermann test in the blood serum was negative.

Progress: After admission to the hospital, the patient was placed on a Sippy diet. Within seventeen days he was able to take a general diet without producing symptoms. The patient remained free from symptoms until April, 1919. At this time there appeared fairly severe epigastric pain every few days about two hours after meals. This condition continued for three months; then the epigastric pain became more or less constant. It remained of fairly severe intensity. This condition continued for two weeks. Then the patient went into the mountains on a vacation. There he tramped and ate liberally of a general diet. In spite of this he quickly became free from all symptoms and remained so until December, 1919. There then appeared either fairly sharp pain or marked discomfort in the epigastrium two hours after food. The pain or discomfort was relieved by soda or food. There was occasional vomiting and some belching of gas. Roentgenographic studies were made at this time. The stomach was found to be markedly atonic and contained a medium sized six-hour residue. Aside from these findings, the gastro-intestinal tract presented no abnormalities. It was now learned that the patient was subjected to much nervous strain and that he had been so prior to the onset of his trouble in 1918. He was told that, although he probably had a gastric ulcer, his symptoms might all be due to a neurosis. He was given treatment for gastric neurosis and was instructed to eat liberally of a bland diet for two weeks, after which time he was placed on a general diet. Within a few days after beginning treatment the patient became free from symptoms and remained so one month later.

Two other cases were observed in which the symptoms were those of peptic ulcer, but the roentgen-ray findings revealed only gastroptosis and atony. As in the case just reported, these two patients became free from symptoms under treatment for neurosis. Whether or not these three cases were peptic ulcer could be determined only by operative methods. The subsequent courses of these cases and of Case 2 were like those of gastric neuroses. In all four cases the basis for a neurosis was present. On the other hand, the histories and roentgen-ray findings suggest the diagnosis of ulcer in two of the cases. The diagnosis in these cases must be left an open question in the absence of surgical exploration. But, as regards treatment, unless such cases quickly respond to other forms of therapy, it would be best to institute a medical regimen for peptic ulcer.

Roentgenographic findings may be very atypical and assist materially in the making of an incorrect diagnosis. Case 4 illustrates such an instance:

CASE 4.—Preoperative diagnosis, *malignancy superimposed on an old ulcer;* postoperative, *gastric ulcer and benign pyloric stenosis.*—J. C. B., Med. No. 11906, white man, aged 78, retired, admitted to the Peter Bent Brigham Hospital, Sept. 26, 1919, and transferred to the surgical service, October 14, entered the hospital complaining of "stomach trouble." The past medical history was unimportant. The symptoms consisted of anorexia, belching, and occasionally epigastric distress occurring from three to four hours after meals. The epigastric distress was temporarily relieved by soda or food. These symptoms had persisted with remissions and exacerbations for a period of six years. There had been no vomiting and no bloody or tarry stools. During the eight months preceding admission, distress from three to four hours after meals, flatulence and belching had been present continuously. There had been nausea occasionally, but no vomiting. During the latter three months of the present illness the patient had lost 35 pounds in weight.

Physical Examination: Other than the evidence of considerable loss in weight, the physical examination was essentially negative.

Roentgen Report 16090: Two fluoroscopic examinations were made. The stomach was dilated and atonic. Peristalsis on one examination was practically absent, while in the second it was vigorous and of the obstructive type. There was a constant filling defect in the region of the antrum, the margins of which appeared irregular in outline. The sphinc-

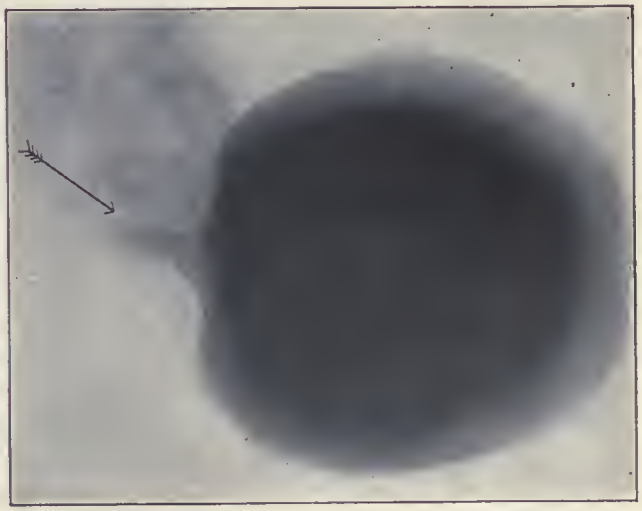


Fig. 4 (Case 4).—Appearance of stomach in a case that proved to be gastric ulcer and benign pyloric stenosis.

ter was not seen. Virtually the entire six-hour barium meal was in the stomach, and at the twenty-four observation the stomach was still outlined by barium.

Interpretation: The findings are those of a carcinoma involving the sphincter and causing pyloric obstruction.

Clinical Pathology: The fasting stomach contents contained remnants of food eaten fourteen hours previously.

Free hydrochloric acid was 10, and total acidity, 43. After an Ewald test breakfast the gastric contents contained, free hydrochloric acid, 40 and total acidity, 60. The benzidin test for occult blood was negative. Hemoglobin was 80 per cent. and the white cells 8,000 per cubic millimeter. The



Fig. 5 (J. S., Med. No. 12180).—Stomach in a case of duodenal ulcer. Arrow points to the duodenum which, together with the region of the pyloric sphincter, was pulled upward by a congenital band of adhesions.

Wassermann reaction in the blood serum was negative. The urine contained no pathologic elements.

Surgical Note: The preoperative diagnosis in this case was malignancy superimposed on an old ulcer. At operation the pylorus was found to be obstructed by a mass of scar tissue resulting from an old ulcer, and no evidences of malignancy were found.

In this case both clinical and roentgen-ray findings were distinctly those of carcinoma, yet the case was one of ulcer. This case illustrates that even the most typical roentgen-ray findings do not necessarily make a correct diagnosis. A correct preoperative diagnosis does not seem to have been possible. The roentgen-ray findings are portrayed in Figure 4.

In a case of pyloric ulcer (Case 2, J. S., Med. No. 12180), reported in a previous communication,[2] the pylorus and duodenum were adherent to the gallbladder by a congenital band of tissue. In the roentgenogram the deformity produced obscured that due to the ulcer and gave the appearance of the presence of an extragastric process, such as a tumor mass or adhesions. The condition found is presented in Figure 5. The symptoms present in the case were those typical of gallbladder disease, and the roentgen-ray findings seemed to confirm that diagnosis. In this case the roentgen-ray findings led away from, rather than toward, a correct diagnosis.

There is a gastric roentgen-ray finding of which three examples have been observed. The finding consists of an area on the lesser curvature over which peristaltic waves do not pass (Fig. 5). No irregularity in the outline of the stomach exists. Case 5 is an example of such a case:

CASE 5.—Diagnosis, *gastric ulcer*.—P. J. B., Med. No. 10993, white man, aged 46, watchman, a year and a half before, following a fall, had symptoms similar to the present attack, during which 15 pounds in weight were lost. The present illness began seven weeks prior to admission to the Peter Bent Brigham Hospital, and again followed mild trauma. The symptoms had consisted of burning epigastric pain coming on about half an hour after meals. Occasionally nausea had been present, but no vomiting. The patient had lost 12 pounds in weight during the present illness. The physical examination was essentially negative except for some tenderness in the midepigastrium.

Roentgen Report 14697: The stomach was normal in position, tone and outline, and was freely movable. The peristalsis was irregular and sluggish; at times three waves were visible. There was a small six-hour residue. On the lesser curvature, proximal to the antrum, there was an area in which no peristalsis occurred, although peristaltic waves were seen to pass over the greater curvature opposite this area. The same phenomena were noted on a second examination one week later. There was no irregularity in outline of the stomach. A good sphincter and first portion of the duodenum was seen. At the six-hour observation, the ileum contained the entire barium meal. The cecum was not seen.

The laboratory findings in the blood, urine and stools were negative. The fasting gastric contents were 34 c.c. in amount and showed no free hydrochloric acid. The contents removed after a test breakfast contained: free hydrochloric acid, 30, and total acidity, 45. There was no occult blood. The Wassermann reaction in the blood serum was negative.

Progress: The patient was under observation in the hospital for two weeks. During this period he was on a general diet. He complained of more or less constant, dull epigastric pain.

Whether or not this case was one of ulcer was not determined, although the history and roentgen-ray findings make the accuracy of such a diagnosis probable. In a second case with identical roentgen-ray findings there was a history of dyspeptic symptoms, like those usual for a gastric neurosis of several years' duration. In a third case the symptoms were those of ulcer, and a gastric ulcer in the antral region was found at operation.

Cases such as the one reported above demand continued, careful study and observation. The character of the treatment will depend on the medical and financial conditions of each patient. Ambulatory treatment



Fig. 6 (Case 5).—Tracing of stomach made with the aid of the fluoroscope. Arrow points to the region on the lesser curvature over which no peristaltic waves were seen to pass.

may be tried first, as was done in Case 3. If this fails, then rest treatment and finally a medical regimen for ulcer should be instituted.

SUMMARY AND COMMENT

The findings in the cases reported demonstrate that:

1. Cases occur in which either the presence of an ulcer is not diagnosed, or in which the presence or

absence of an ulcer cannot be definitely determined except by exploratory operation.

2. It is necessary to interpret roentgen-ray findings in relation to the data obtained by careful and thorough clinical studies.

3. In certain cases roentgen-ray findings are more confusing than helpful in diagnosis.

It is obviously necessary for the internist to become familiar with roentgen-ray findings. But he can scarcely hope to become as adept as the expert roentgenographer, for roentgenology is specialized work requiring much knowledge, large experience and great skill on the part of the physician engaged in it. The best results are obtained by the proper cooperation of clinician and roentgenographer. The proper cooperation consists:

1. On the part of the roentgenographer, in the accurate description of roentgen-ray findings present, portrayal of the most probable conditions which they represent, and the exclusion of artefacts.

2. On the part of the clinician, in the integration of roentgen-ray findings into symptomatology and diagnosis.

THE USE OF BEEF-BONE SCREWS IN FRACTURES AND BONE TRANSPLANTATION

M. S. HENDERSON, M.D.
ROCHESTER, MINN.

In recent years, bone grafting has become established in surgical practice as firmly as the more simple operation of skin grafting, and, as in the latter, it has been found that the autogenous graft is the best. Practically all failures can definitely be attributed to technical errors, such as too small a graft, infection, inadequate fixed bony approximation of the graft to fragments, and poor postoperative fixation of the part. I have found beef-bone screws to be a great aid in attaining this fixed approximation of the graft to the bone, and I believe that they would be employed more if their uses and methods of preparation were more generally known. I am well aware of the fact that a few surgeons have used them, but I present this article on their preparation and use believing that it may be of interest to others.

There can be no doubt that, from a purely theoretical point of view, screws made from the bone of the patient, such as the bone pegs advocated by Albee, would be better than beef-bone screws. The theory when put into practice, however, has so many objections, such as the difficulty of making the screws or pegs properly, and the extra amount of bone used, that I have come to the conclusion that the beef-bone screws are to be preferred. The question of whether the beef bone is suitable for a graft does not enter into this discussion, for all that is demanded of the screws is that they provide fixation of the autogenous graft to the fragments. They are usually absorbed completely within from six months to a year.

We know that the bone transplant must be held firmly in position and have broad contact with the bone to which it is to be grafted. While in theory an inlay graft is best and occasionally it is possible to obtain a perfectly fitting inlay by the use of the double bladed circular saws, in actual practice this is not easy. If the blades of the twin saw are out of line there will be a considerable discrepancy in the size of the graft and the slot. It is necessary to employ some means of securing the graft to prevent it from moving. Kangaroo tendon or catgut sutures thrown about the fragments and the graft are not satisfactory. Beef-bone screws properly placed are well-nigh ideal for the purpose.

PREPARATION OF SCREWS

Fresh beef bone is obtained usually from the tibia, the joint ends are sawed off, and the shaft is boiled for one and one-half hours to remove the tissue and the marrow. The shaft is sawed into pieces 3¾, 2⅜ and 1¼ inches long for the large, medium and small size of screws, respectively. The medium sized screw is of aid in many situations, and many more of these are used than of either the large or the small screws. The sizes used by us are standard, and in mechanical terms the large screws are known as 5/16 by 18, the medium size as 10 by 24, and the small as 6 by 32. The lengths



Fig. 1.—Piece of beef-bone with strips, blanks and screws: *A*, medium sized screw, 10 by 24; *B*, large sized screw, 5/16 by 18.

adopted are arbitrary and may be varied to suit the needs of the case. The pieces are sawed lengthwise into strips; their width varies according to the diameter of the screw to be made. The strips are roughly sized in the vise by filing, and are then turned to the proper size, pointed, and the head rounded in the lathe. These finished blanks are placed, for one-half hour, in petrolatum brought to the melting point in a double boiler, in order to replace to some extent the natural oils removed by the boiling. This renders the bone a little less brittle and less likely to crumble when being threaded. The heat must not be extreme or the bone will be overheated and rendered almost chalky.

The blanks are placed in the lathe and threaded by using a standard machine screw die. Petrolatum is freely used on the die while the threads are being cut. The large blank is threaded with a standard 5/16 inch by 18 die. The head is 5/16 inch long and is flattened on two sides to ¼ inch in thickness to fit a special wrench. The large screw when finished is ordinarily 3½ inches long, but this may be varied. The medium sized blank is finished into a screw 19/100 inch in diameter and 2¼ inches in length (Fig. 1). A little more care is necessary in putting the threads on this size than on the large screw, and

we have found it necessary to step down the threads by using three dies: 12 by 24, 11 by 24, and 10 by 24. The small blank is for a screw 14/100 inch in diameter and 1⅛ inches long. It is necessary to step down the threads for this screw as follows: 8 by 32, 7 by 32, to 6 by 32. The heads of the two smaller screws are ¼ inch long and ¼ inch in diameter to allow for hexagonal shaping to a 3/16 inch standard. These fit a specially made socket wrench fitted to the end of a small brace. When the screws are received from the machine shop they are thoroughly scrubbed with soap and water and boiled in water for thirty minutes. They are then kept in the instrument case and boiled as required, just as any instrument is boiled. The screws are cheap, easily made and well tolerated by bone. The one objection to them is that they are brittle and will not withstand any great amount of stress, particularly if there is any torsion with the strain. For his interest and skill in the actual manufacture of the screws we are indebted to Mr. George Little, chief of the instrument shop of the Mayo Clinic.

SURGICAL USES

Even though the beef-bone screws are well made, they cannot be successfully used unless there are at hand the proper instruments for placing them. Above all, it must be remembered that they withstand very little twisting force, and if they bind when being screwed in, they will break. For the large size, 5/16 by 18, a special socket wrench is used. I have used the large screws only in situations such as the head of the femur or the condyle of the femur. If not passed through any cortical bone, they are of sufficient strength to make their own threads in the soft bone, and the drill hole bored by a 9/32 inch twist drill does not need to be tapped. Since the medium sized screws, 10 by 24, and the small screws, 6 by 32, have a hexagonal head of the same size, the same wrench fits the two (Fig. 2 *D* and *E*). For the medium sized screw the holes in the graft and fragment are bored by a No. 17 twist drill (Fig. 2 *A*) and the hole is tapped by a 10/24 tap (Fig. 2 *B* and *C*). For the small screw the hole is bored by a No. 29 twist drill and the hole tapped by a 6/32 tap. The drills can be used on the electric motor or on the hand drill. The tapping must be carefully done by hand. Handles of different styles for the wrench and taps will be found convenient for the different situations (Fig. 2 *B* and *C*). If the subcutaneous structures are scanty, the heads of the bone screws may be removed either by bone-biting forceps or a Gigli saw.

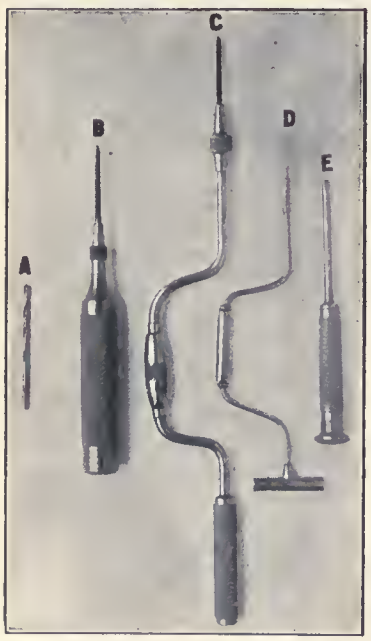


Fig. 2.—Instruments necessary for the placing of beef-bone screws: *A*, No. 17 twist drill; *B*, straight handled 10 by 24 tap; *C*, offset handle 10 by 24 tap; *D*, offset handle wrench with hexagonal headed beef-bone screw in socket; *E*, straight handle wrench.

In recent spiral or oblique fractures of the long bones, recent fractures of the neck of the femur, of the olecranon process, and in certain fractures of the patella, the screws are an excellent means of obtaining coaptation of the fragments. They are a splendid means of fastening the bone graft to the spinous processes, as is necessary in the operation advanced by Albee for tuberculosis of the spine, and are the only means known to me whereby proper bony approximation can be assured (Fig. 3). They are not so ideal in delayed union or for ununited fractures. It has been my experience that in fractures of these two groups, it is best to accept no compromise but to employ a large graft so that when the operation is completed there is from 20 to 25 per cent. more bone in the fractured region than is normal (Fig. 4). When we are dealing with a case of long standing nonunion of the humerus or of the bones of the forearm, the bones are often osteoporotic and smaller than normal. In such cases every surgeon of experience has seen his inlay or intramedullary grafts thin out and finally break at the line of fracture. The absorption of the graft takes place so rapidly, or perhaps it would be better to say that the deposition of new bone is carried on so slowly, that the graft is partially absorbed and cracks on slight stress, and a technically well performed operation in a properly selected case is discredited. In such a predicament the surgeon should not be dismayed and give up all hope of obtaining union, but he should at once see that the part is thoroughly immobilized for at least two months more. In the majority of cases, and particularly if the transplant has been of good size, union will occur. I believe that

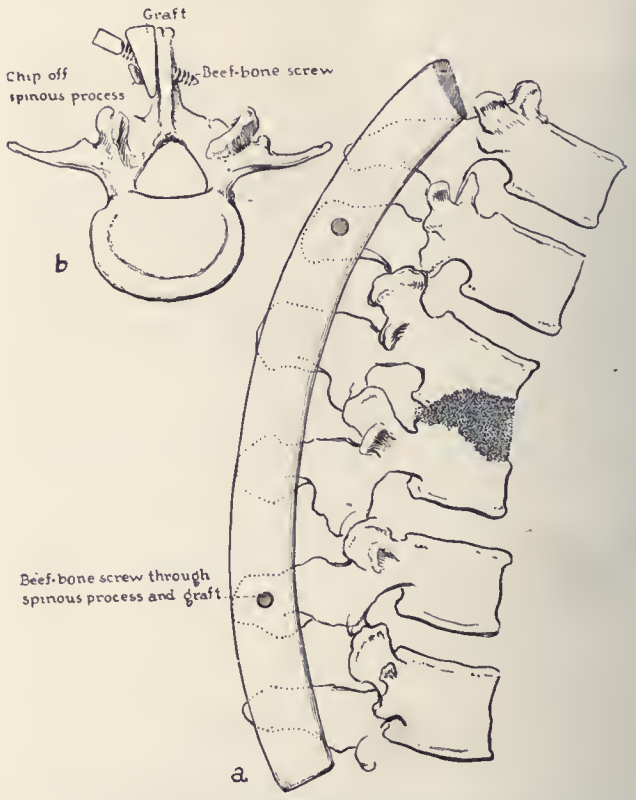


Fig. 3.—Curved tibial bone graft (*a*) held securely in place by the aid of two beef-bone screws placed through the graft and spinous processes; *b*, transverse section showing the relative positions of the graft, spinous process and beef-bone screw.

the excess of bone elements brought to the devitalized area is an important causative factor in bringing about union, and this is my reason for so strongly emphasizing the large graft. If the roentgen ray discloses very marked osteoporosis of the fragments, exercises should be instituted prior to operation, regardless of the fracture, because it is only by this means that the osteoporosis will be overcome. Many failures to obtain bony union are due to operating on bones that are far below par in bone salts and bone forming elements. Obviously, the simplest way to prevent a fracture of the transplant is to place a very large graft, and by this I mean large in diameter as well as in length (Fig. 4 *b*). The discredit of the bone graft found in some of the recent writings, particularly from abroad, is more than likely due to the authors' experiences with fracturing of the grafts, the cause of which is probably the use of too small transplants.

The technic of the inlay graft will not permit the placing of a very broad piece in the fragments (Fig. 4 *c*). On account of failure and accidents with the ordinary intramedullary and inlay grafts, and the belief that it is most important to place more bone in the fractured area than is normally there, it has been my custom for some time to proceed as follows: The bone ends are carefully freshened so that as broad an area of their surface as possible will be in firm contact. The medullary cavity in each fragment should be opened. From one fifth to one fourth of the entire thickness of the bone from each fragment on one side is removed for a goodly distance above and below the fracture. This should not remove the entire cortical wall. The graft, which is a piece of healthy bone from the tibia or the entire thickness of the fibula, flattened on one side, is greater in thickness than the amount of bone removed from the fragments, and is placed against their freshened surfaces, the ends of which are in firm apposition and the medullary cavities in line. It is held in place by two or more beef-bone screws through the graft and through the remains of the proximal cortex and the opposite cortex of each fragment (Figs. 5 and 6).

SUMMARY

1. Beef-bone screws are a great aid in securing firm fixation of the bone graft to the fragments in fractures, and of the graft to the spinous processes in the operation for fixation of the spine.

2. They are well tolerated by the bone and are gradually but completely absorbed.

3. Bone screws have not the strength of metal and must not be expected to stand great stress. Careful provision must be made for postoperative fixation of the extremity.

4. Drills, taps and wrenches of the proper size are essential for the placing of beef-bone screws.

5. The bone graft as commonly used in the intramedullary and inlay methods is too small. Fracture of the graft rarely, if ever, occurs if the graft is large enough so that when the operation is completed there is from 20 to 25 per cent. more bone in the fracture area than there is normally.

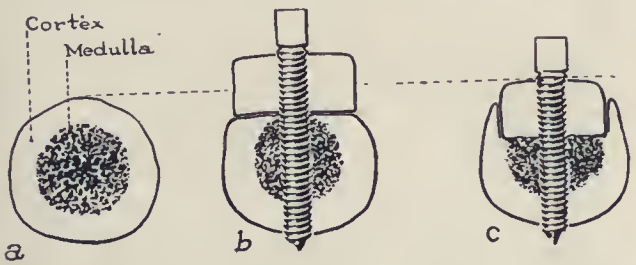


Fig. 4.—*a*, transverse section of bone; *b*, large bone graft in apposition to fragment from which part of cortex has been lifted to permit broad contact; graft held in place by beef-bone screws through the opposite cortex; *c*, inlay graft; beef-bone screw placed through graft and the opposite cortex.

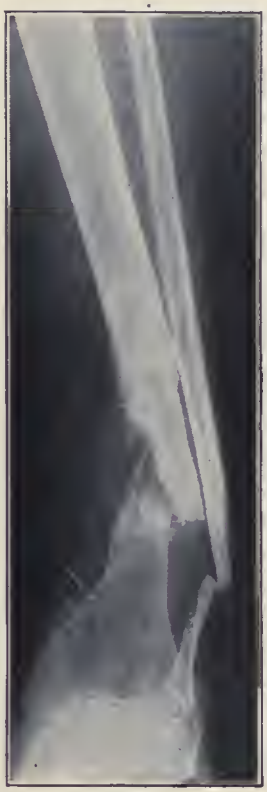


Fig. 5.



Fig. 6.

Fig. 5 (Case 279058).—Roentgenogram of ununited fracture of lower third of tibia and fibula of eight years' standing in a woman, aged 20.

Fig. 6 (Case 279058).—Roentgenogram of tibia and fibula shown in Figure 5. Fixation, by means of four beef-bone screws, of piece of entire thickness of fibula from upper fragment, placed against fragments of tibia.

Liquid Disinfectants.—Liquid disinfectants may be substances either in solution or suspension. There are certain principles to be observed in the use of liquid disinfectants. A hot liquid disinfectant acts much more powerfully and quickly than a cold one. A disinfectant that is efficient at a certain percentage must be in that percentage in the mixture; for example, a disinfectant that will effectively disinfect at 2 per cent. strength must be present in a 2 per cent. strength in the resulting mixture. An emulsion is, as a rule, more germicidal than a solution because the germs come in contact with the crude drug, but a solution has more penetrative power than an emulsion. Each type of disinfectant has its own time necessary for efficient disinfection, e. g., a disinfectant that requires one-half hour to disinfect will not disinfect in fifteen minutes. The following disinfecting solutions are most commonly used: mercuric chlorid solution, 1:100 dilution or 1:1,000 solution for one-half hour (can not be used in albuminous medium or on metals, as it corrodes them); phenol, 5 per cent. solution for one-half hour; cresol, 2 per cent. emulsion for one-half hour; liquor formaldehydi, 10 per cent. solution for one-half hour; chlorinated lime, 5 per cent. solution for one hour (for disinfection of water, 1:150,000 solution for one-half hour is effective).—*U. S. Naval Medical Bulletin*, January, 1920.

BOTULISM

PRELIMINARY REPORT OF A STUDY OF THE ANTITOXIN OF BACILLUS BOTULINUS *

ERNEST C. DICKSON, M.D.
AND
BEATRICE M. HOWITT
SAN FRANCISCO

The experiments recorded in this report were performed during the year 1917-1918, but on account of war conditions it was not possible to carry them further or to record them at that time. We had planned to delay publication until further experimental data could be obtained concerning a number of points that are obviously unsettled; but on account of the widespread interest that has recently been aroused in the subject of botulism, and the expression of various theories and speculations concerning the value of botulinus antitoxin as a therapeutic agent, we are offering this as a preliminary report with the hope that it may draw attention to certain facts that have been established.

THE PRODUCTION OF ANTITOXIN

Kempner,[1] in 1897, for the first time demonstrated that susceptible animals may be immunized to the toxin of *B. botulinus* (he used the Van Ermengem strain), and that a potent antitoxin may be produced. He was unsuccessful in his attempt to immunize the smaller laboratory animals, but succeeded in immunizing goats and in obtaining a potent antitoxin, 1 c.c. of which would protect against 100,000 minimal lethal doses for guinea-pigs.

Forssman and Lundstrom [2] succeeded in immunizing rabbits and guinea-pigs by using toxin that had been attenuated by heating for the first injection. They also immunized goats, and found that they obtained more rapid antitoxin formation if they injected the toxin subcutaneously than when they employed intravenous injections, and if they gave comparatively small amounts of toxin at comparatively longer intervals than were used by Kempner.

Wassermann [3] and Leuchs [4] were both successful in immunizing horses, and Leuchs recorded a comparative study of the toxin-antitoxin relationships of the Van Ermengem strain and the Darmstadt strain of *B. botulinus* in which he showed that the two strains were distinct in that the toxin of one was not affected by the specific antitoxin of the other, and vice versa. Leuchs was therefore the first to recognize that there are at least two types of *B. botulinus*, and that if immune serum is to be used therapeutically it should be a polyvalent serum.

In this country several investigators have prepared botulinus antitoxin for experimental purposes, but as yet none is available for commercial distribution. Graham, Brueckner and Pontius [5] prepared antitoxin by injecting sheep, goats and cattle with toxin of the Niven strain (Strain VI of our series) and with toxin from strains which they isolated in outbreaks of forage poisoning. Buckley,[6] at the U. S. Department of Agriculture, has prepared an antitoxin for the strain which was isolated by Thom, Edmonson and Giltner from asparagus which caused the poisoning at Boise, Idaho. Hart,[7] at the University of California Department of Agriculture, has immunized horses to strains that were obtained from our laboratory. Meyer, Hurwitz and Taussig [8] successfully immunized dogs against the toxin of our Strain III, and Mrs. Burke [9] reports the immunization of rabbits.

We obtained the antitoxin used in our experiments by inoculating Goats 1, 2 and 3 with Strains III, IV and VI, respectively, of our strains of *B. botulinus* over a period of several months. We were unable to follow out any previously determined plan for inoculating, as the goats reacted so differently to inoculation that we were forced to regulate the dosage and interval by the condition of each animal at the time. We did not obtain as highly potent antitoxins as Kempner or Forssman and Lundstrom report, although they were of sufficient potency for experimental purposes.

TABLE 1.—IMPORTANT DATA CONCERNING THE HISTORY OF THE STRAINS OF B. BOTULINUS STUDIED IN THIS INVESTIGATION

Strain	Date	Location	Persons Ill	Persons Died	Poisoned Fowl	Poisoned Animals	Cause of Poisoning	B. Botulinus Recovered From
III	1915	San Jose, Calif.	1	1	8	.....	Home-canned string beans	Contents of chicken crop
IV	1914	Hillsboro, Ore.	1	1	50	.....	Home-canned corn	Contents of chicken gizzard
VI	1915	Albany, N. Y.	?	?	..	.....	Cheese	Cheese (the Niven strain)
VII	1917	Seattle	3	3	20*	.....	Home-canned asparagus	Contents of chicken crop
VIII	1918	Berkeley, Calif.	..	..	12	.....	Home-canned string beans	Unopened jar of same lot of beans
IX	1918	Madera, Calif.	8	6	25	.....	Home-canned apricots	Contents of chicken crop
X	1918	Hollister, Calif.	..	..	..	2 hogs	Home-canned peas	Feces of hogs

* Approximately.

TABLE 2.—PRODUCTION OF SPECIFIC ANTITOXIN FOR TOXIN OF STRAIN III

Guinea-Pig	Weight, Gm.	Toxin III, C.c.	Antitoxin III, C.c.	Results
1	200	0.00033	(Toxin control)	Died in approx. 30 hours
2	300	0.00033	(Toxin control)	Died in approx. 40 hours
3	325	0.00033	1	Survived
4	275	0.00033	0.1	Survived
5	325	0.00033	0.01	Survived
6	250	0.00033	0.001	Survived
7	240	0.00033	0.0005	Survived
8	220	0.00033	0.00033	Survived
9	200	0.00033	0.0002	Died in approx. 8 days
10	200	0.00033	0.0001	Died in approx. 36 hours

The potency of our three antitoxins, and the fact that they will neutralize the effect of the toxin when multiple proportions of the test dose of toxin and of antitoxin equivalent are mixed in vitro and injected into animals, are shown in Tables 2 to 7, inclusive. In all our experiments, unless it is otherwise stated, the toxins and antitoxins were mixed in vitro before

* Aided by a grant from the California State Council of Defense.

* From the Laboratory of Experimental Medicine, Leland Stanford Junior University School of Medicine.

1. Kempner, W.: Weiterer Beitrag zur Lehre von der Fleischvergiftung, Das Antitoxin des Botulismus, Ztschr. f. Hyg. u. Infektionsk. **26**: 481, 1897.

2. Forssman, J., and Lundstrom E.: Sur la marche de la courbe d'antitoxine dans l'immunisation active contre le botulisme, Ann. de l'Inst. Pasteur **16**: 294 1902.

3. Wassermann, cited by Leuchs Footnote 4).

4. Leuchs, J.: Bacillus Botulinus (Immunität), in Kolle, W., and von Wassermann, A.: Handbuch der pathogenen Mikroorganismen, Jena, Ed. 2, **4**: 939, 1912.

5. Graham, Brueckner and Pontius: Studies in Forage Poisoning, V and VI, Bull. 207, Kentucky Agr. Exper. Sta., 1917. Graham, Robert, and Brueckner, A. L.: The Relation of B. Botulinus to Forage Poisoning or Cerebrospinal Meningitis in Horses, J. Bacteriol. **4**: 1 (Jan.) 1919.

6. Buckley, J., cited by Armstrong, Charles; Story, R. V., and Scott, Ernest: Botulism from Eating Canned Ripe Olives, Pub. Health Rep. **34**: 2877 (Dec. 19) 1919.

7. Hart, George: Personal communication to the authors.

8. Meyer, G. F.; Hurwitz, S. H., and Taussig, L.: Studies on Blood Proteins: Albumin Globulin Ratio in Antitoxic Immunity, J. Infect. Dis. **22**: 1 (Jan.) 1918.

9. Burke, G. S.: Notes on Bacillus Botulinus, J. Bacteriol. **4**: 555 (Sept.) 1919.

being injected, and all inoculations were given subcutaneously. It was assumed that complete protection had been given if the animal showed no illness within a month after the injection.

From Tables 2, 4 and 6 it will be noted that the potency of our antitoxins may be defined as approximately 3,000, 5,000 and 600 for Strains III, IV and VI, respectively, the number indicating the respective antitoxin equivalents in 1 c.c. of serum, as tested

TABLE 3.—PROTECTION AGAINST TOXIN III AFFORDED BY ANTITOXIN III WHEN TEST DOSE OF TOXIN AND EQUIVALENT OF ANTITOXIN ARE INCREASED IN MULTIPLE PROPORTIONS

Guinea-Pig	Weight, Gm.	Toxin III, C.c.	Antitoxin III, C.c.	Proportions	Results
11	300	0.001	(Toxin control)	..	Died in approx. 40 hours
12	200	0.001	0.0005	1	Survived
13	250	0.002	0.001	2	Survived
14	250	0.005	0.0025	5	Survived
15	250	0.010	0.005	10	Survived

TABLE 4.—PRODUCTION OF SPECIFIC ANTITOXIN FOR TOXIN IV

Guinea-Pig	Weight, Gm.	Toxin IV, C.c.	Antitoxin IV, C.c.	Results
16	275	0.00033	(Toxin control)	Died in approx. 48 hours
17	300	0.00033	0.01	Survived
18	250	0.00033	0.001	Survived
19	250	0.00033	0.0002	Survived
20	175	0.00033	0.0001	Died in approx. 70 hours

TABLE 5.—PROTECTION AGAINST TOXIN IV AFFORDED BY ANTITOXIN IV WHEN TEST DOSE OF TOXIN AND EQUIVALENT OF ANTITOXIN ARE INCREASED IN MULTIPLE PROPORTIONS

Guinea-Pig	Weight, Gm.	Toxin IV, C.c.	Antitoxin IV, C.c.	Proportions	Results
21	325	0.00025	(Toxin control)	..	Died in approx. 40 hours
22	275	0.00025	0.0005	1	Survived
23	275	0.0005	0.001	2	Survived
24	250	0.00125	0.0025	5	Survived
25	250	0.0025	0.005	10	Survived

TABLE 6.—PRODUCTION OF SPECIFIC ANTITOXIN FOR TOXIN VI

Guinea-Pig	Weight, Gm.	Toxin VI, C.c.	Antitoxin VI, C.c.	Results
26	250	0.001	(Toxin control)	Died in approx. 40 hours
27	250	0.001	0.01	Survived
28	250	0.001	0.002	Survived
29	225	0.001	0.00125	Survived
30	200	0.001	0.0002	Died in approx. 48 hours

TABLE 7.—PROTECTION AGAINST TOXIN VI AFFORDED BY ANTITOXIN VI WHEN TEST DOSE OF TOXIN AND EQUIVALENT OF ANTITOXIN ARE INCREASED IN MULTIPLE PROPORTIONS

Guinea-Pig	Weight, Gm.	Toxin VI, C.c.	Antitoxin VI, C.c.	Proportions	Results
31	325	0.001	(Toxin control)	..	Died in approx. 40 hours
32	250	0.001	0.00125	1	Survived
33	250	0.002	0.0025	2	Survived
34	250	0.005	0.00625	5	Survived
35	250	0.01	0.0125	10	Survived

against one test dose of its homologous toxin. Our figures are only approximate, however, as it was impossible to obtain a sufficient number of guinea-pigs of the same weight to standardize our injections accurately. On this account we adopted the rule of using our heaviest animal for the toxin control, or, when the variation in weight was too great, of using two or more animals of different weights as toxin controls. In subsequent experiments we hope to establish more accurately standardized results.

EXPERIMENTS TO TEST THE EFFECT OF ANTITOXINS III, IV AND VI ON THE TOXINS OF OTHER AVAILABLE STRAINS OF B. BOTULINUS.

In our experiments we have investigated the toxins of seven strains of *B. botulinus,* six of them strains that were recovered in our laboratory from various home-canned vegetables and fruits that had caused outbreaks of food poisoning on the Pacific Coast, and one that was recovered by Niven from cheese in New York State. We did not test Strains I, II and V of our series because of the very low virulence of their toxins. The histories of the strains investigated are abstracted in Table I.

(*a*) Experiments to test the action of Antitoxin III against the toxins of Strains IV, VI, VII, VIII, IX and X, respectively (Table 8): The experiments show that Antitoxin III has a protective action against

TABLE 8.—PROTECTION BY ANTITOXIN III AGAINST ACTION OF TOXINS IV, VII AND IX, BUT ABSENCE OF PROTECTION AGAINST TOXINS VI, VIII AND X

Guinea-Pig	Weight, Gm.	Toxin, Strain	Toxin, C.c.	Antitoxin III, C.c.	Results
36	225	IV	0.00033	(Toxin control)	Died in approx. 48 hours
37	200	IV	0.00033	0.0002	Survived
38	200	IV	0.00033	0.0001	Ill but recovered
39	325	VI	0.0135	(Toxin control)	Died in approx. 40 hours
40	325	VI	0.0135	0.5	Died in approx. 66 hours
41	225	VI	0.0135	1	Died in approx. 40 hours
42	275	VII	0.0076	(Toxin control)	Died in approx. 40 hours
43	250	VII	0.0076	1	Survived
44	250	VIII	0.00135	(Toxin control)	Died in approx. 40 hours
45	250	VIII	0.00135	1	Died in approx. 60 hours
46	225	IX	0.6	(Toxin control)	Died in approx. 18 hours
47	200	IX	0.6	1	Survived
48	325	X	0.75	(Toxin control)	Died in approx. 18 hours
49	325	X	0.75	1	Died in approx. 18 hours

TABLE 9.—PROTECTION BY ANTITOXIN IV AGAINST ACTION OF TOXINS III, VII AND IX, BUT ABSENCE OF PROTECTION AGAINST TOXINS VI, VIII AND X

Guinea-Pig	Weight, Gm.	Toxin, Strain	Toxin, C.c.	Antitoxin IV, C.c.	Results
50	300	III	0.00033	(Toxin control)	Died in approx. 40 hours
51	225	III	0.00033	0.0002	Survived
52	225	III	0.00033	0.0001	Died in approx. 90 hours
53	250	VI	0.0135	(Toxin control)	Died in approx. 36 hours
54	250	VI	0.0135	0.5	Died in approx. 48 hours
55	250	VI	0.0135	1	Died in approx. 48 hours
56	275	VII	0.0076	(Toxin control)	Died in approx. 40 hours
57	250	VII	0.0076	1	Survived
58	250	VIII	0.00132	(Toxin control)	Died in approx. 40 hours
59	250	VIII	0.00132	1	Died in approx. 60 hours
60	225	IX	0.6	(Toxin control)	Died in approx. 18 hours
61	200	IX	0.6	1	Survived
62	325	X	0.75	(Toxin control)	Died in approx. 18 hours
63	325	X	0.75	1	Died in approx. 18 hours

the toxins of Strains IV, VII and IX as well as against its own Toxin III. Although the tables have been abbreviated, sufficient data are given to show that 1 c.c. of Serum III protects against approximately 5,000 test doses of Toxin IV, an even higher degree of protection than was obtained in our tests of Antitoxin III against Toxin III (Table 2). Quantitative tests against Strains VII and IX are not given.

It is also shown that Antitoxin III has no appreciable effect in protecting against the action of Toxins VI, VIII and X, although an antitoxin equivalent of 3,000 test doses was given in each case. This has been confirmed by many trials.

(*b*) Experiments to test the action of Antitoxin IV against the toxins of Strains III, VI, VII, VIII, IX and X, respectively (Table 9): The experiments show that Antitoxin IV protects against the same toxins as Antitoxin III, namely, against III, VII and IX as well as against its own toxin. Like Antitoxin

III it does not show any appreciable protective action against Toxins VI, VIII and X.

(*c*) Experiments to test the action of Antitoxin VI against the toxins of Strains III, IV, VII, VIII, IX and X, respectively (Table 10): The experiments show that Antitoxin VI has no appreciable protective action against the toxins that are counteracted by Antitoxins III and IV, namely, III, IV, VII and IX, but that it does protect against Toxins VIII and X, which are not affected by Antitoxins III and IV.

TABLE 10.—PROTECTION BY ANTITOXIN VI AGAINST ACTION OF TOXINS VIII AND X, BUT ABSENCE OF PROTECTION AGAINST TOXINS III, IV, VII AND IX

Guinea-Pig	Weight, Gm.	Toxin—Strain	Toxin—C.c.	Antitoxin VI, C.c.	Results
64	325	III	0.00033	(Toxin control)	Died in approx. 30 hours
65	300	III	0.00033	1	Died in approx. 30 hours
66	275	IV	0.00028	(Toxin control)	Died in approx. 60 hours
67	250	IV	0.00028	1	Died in approx. 48 hours
68	275	VII	0.0076	(Toxin control)	Died in approx. 40 hours
69	275	VII	0.0076	1	Died in approx. 42 hours
70	250	VIII	0.00132	(Toxin control)	Died in approx. 40 hours
71	250	VIII	0.00132	1	Survived
72	225	IX	0.6	(Toxin control)	Died in approx. 18 hours
73	175	IX	0.6	1	Died in approx. 18 hours
74	325	X	0.75	(Toxin control)	Died in approx. 18 hours
75	325	X	0.75	1	Survived

From the foregoing experiments it is clear that there are in this country at least two types of *B. botulinus* which can be easily differentiated by toxin-antitoxin tests. The seven strains which we investigated fall into two homologous series of four and three, respectively, and have been described as Types A and B. So far as our investigations have gone, there appears to be very little if any cross protection afforded by the antitoxin of either type for the toxin of the other, a fact that will be referred to later in discussing the therapeutic value of botulinus antitoxin.

EXPERIMENTS TO TEST THE EFFECT OF THE ADMINISTRATION OF SPECIFIC ANTITOXIN AT VARYING INTERVALS AFTER THE INJECTION OF TOXIN

In the following experiments the toxin and antitoxin of Strain III were employed. The amount of antitoxin is indicated in every case in terms of the antitoxin equivalent of one test dose of toxin when mixed in vitro. The antitoxic serum of Strain III was such that 1 c.c. gave complete protection against 3,000 test doses.

TABLE 11.—RELATIVE AMOUNTS OF ANTITOXIN NECESSARY TO PROTECT AGAINST ONE TEST DOSE OF TOXIN, WHEN ANTITOXIN AND TOXIN ARE MIXED IN VITRO, AND ARE INJECTED SEPARATELY

Guinea-Pig	Weight, Gm.	Toxin III, C.c.	Antitoxin III, C.c.	Method of Administration	Results
76	300	0.001	(Toxin control)	.....	Died in approx. 36 hours
77	250	0.001	0.0005	Mixed in vitro	Survived
78	250	0.001	0.0005	Separately	Died in approx. 60 hours
79	250	0.001	0.001	Separately	Died in approx. 60 hours
80	275	0.001	0.002	Separately	Ill but recovered

(*a*) Experiments to show the relative proportions of antitoxin necessary to protect against one test dose of toxin when the toxin and antitoxin are mixed in vitro before injection, and when the toxin and antitoxin are given simultaneously but injected separately (Table 11): It was found that it requires at least four times as much antitoxin to neutralize one test dose of toxin in vivo as is necessary when the two are mixed in vitro. In all our experiments, therefore, in which we have attempted to determine the interval after the injection of toxin during which the administration of antitoxin may be of value, we have employed at least five times the antitoxin equivalent of one test dose of toxin when the two are mixed in vitro.

(*b*) Experiments to test the value of injecting antitoxin at varying intervals after the administration of toxin: 1. In the first series of experiments, slightly more than one test dose of toxin was injected subcutaneously (the animals died in from thirty-three to forty hours after the injection, whereas if one test dose had been given they should have survived for forty-eight hours); and at intervals of six, twelve, eighteen and twenty-four hours thereafter, varying amounts of antitoxin, from 5 to 250 antitoxin equivalents, were injected, also subcutaneously. Guinea-pigs were used for the experiments, and a toxin control animal was injected for each group (Table 12).

TABLE 12.—EFFECT OF INJECTING VARYING AMOUNTS OF ANTITOXIN AT VARYING INTERVALS AFTER ADMINISTRATION OF SLIGHTLY MORE THAN ONE TEST DOSE OF TOXIN

Guinea-Pig	Weight, Gm.	Toxin III, C.c.	Antitoxin III, C.c.	Multiple of Antitoxin Equivalents	Interval After Toxin	Results
81	225	0.0005	(Toxin control)	...	.....	Died in approx. 33 hours
82	225	0.0005	0.0025	5	Simultaneous	Survived
83	200	0.0005	0.025	50	Simultaneous	Survived
84	200	0.0005	0.125	250	Simultaneous	Survived
85	225	0.0005	(Toxin control)	...	.....	Died in approx. 33 hours
86	225	0.0005	0.0025	5	6 hours	Survived
87	200	0.0005	0.025	50	6 hours	Survived
88	200	0.0005	0.125	250	6 hours	Survived
89	225	0.0005	(Toxin control)	...	.....	Died in approx. 34 hours
90	225	0.0005	0.0025	5	12 hours	Survived*
91	200	0.0005	0.025	50	12 hours	Survived*
92	200	0.0005	0.125	250	12 hours	Survived*
93	225	0.0005	(Toxin control)	...	.....	Died in approx. 40 hours
94	225	0.0005	0.0025	5	18 hours	Survived*
95	200	0.0005	0.025	50	18 hours	Survived*
96	200	0.0005	.....	...	.....	Died in approx. 18 hours
97	225	0.0005	(Toxin control)	...	.....	Died in approx. 35 hours
98	225	0.0005	.....	...	.....	Died within 24 hours
99	200	0.0005	0.025	50	24 hours	Died in approx. 36 hours
100	200	0.0005	0.125	250	24 hours	Died in approx. 36 hours

* The animals were ill but recovered.

The experiments indicate that when slightly more than one test dose of toxin is injected, the lives of the animals may be saved if the antitoxin is given within eighteen hours after the toxin, although it does not prevent the onset of symptoms even when given twelve hours after. They also indicate that an excess of antitoxin affords no greater protection than smaller amounts, provided the smaller amount is sufficient to neutralize the amount of toxin administered.

2. In a second experiment, one test dose of toxin was injected subcutaneously (the control animal died in forty-eight hours), and an excess of antitoxin was injected at intervals of six, twelve, eighteen and twenty-four hours thereafter (Table 13). The animals all survived, showing that when a smaller amount of toxin is injected, the length of time during which the antitoxin may exert its influence is lengthened, and that, under such circumstances, if given within

twenty-four hours after the toxin, it may afford full protection.

3. A third experiment was performed in which rabbits were fed sufficient toxin to kill the control in approximately forty-five hours, and at varying intervals thereafter an excess of antitoxin was injected subcutaneously (Table 14).

The animals all survived, showing that when the toxin is administered by feeding as well as when it is injected subcutaneously, the administration of antitoxin may be of value if given within twenty-four hours after approximately one test dose (by mouth) of toxin.

THE THERAPEUTIC VALUE OF BOTULINUS ANTITOXIN

So far as we have been able to learn, there is no great amount of published data concerning therapeutic or prophylactic use of botulinus antitoxin. In this country, until very recently, the only available supplies of specific antitoxin have been at the Department of Animal Husbandry, University of Illinois, and at our own laboratory; but as stated earlier in this report, several investigators are now preparing antitoxin for experimental purposes. An attempt has been made in several outbreaks to combat the intoxication by administering antibotulinus serum, but without any very satisfactory results. Feb. 2, 1918, we gave 85 c.c. of immune goat serum [10] (Mixture of A and B) by subcutaneous injection to each of two patients at Madera, Calif.[11] Both patients recovered; but as the antitoxin was given very late, in fact, after all the more seriously poisoned patients had succumbed, there is no definite evidence that the course of the illness was favorably influenced by the antitoxin, although it was later shown that the toxin of the strain recovered from the food was Type A.

TABLE 13.—EFFECT OF INJECTING LARGE AMOUNT OF ANTITOXIN (3,000 ANTITOXIN EQUIVALENTS) AT VARYING TIMES AFTER ONE TEST DOSE OF TOXIN

Guinea-Pig	Weight, Gm.	Toxin III, C.c.	Antitoxin III, C.c.	Interval After Toxin	Results
101	250	0.00014	(Toxin control)	.....	Died in approx. 48 hours
102	250	0.00014	1	Simultaneous	Survived
103	250	0.00014	1	6 hours	Survived
104	250	0.00014	1	12 hours	Survived
105	250	0.00014	1	18 hours	Survived
106	250	0.00014	1	24 hours	Survived

TABLE 14.—EFFECT OF INJECTING LARGE DOSES OF ANTITOXIN AT VARIOUS INTERVALS AFTER ADMINISTRATION OF ONE LETHAL TEST DOSE (BY MOUTH) OF TOXIN

Rabbit	Weight, Gm.	Toxin III by Mouth, C.c.	Antitoxin III, Subcutaneously, C.c.	Multiple of Antitoxin Equivalents	Time After Toxin	Results
1	1,250	1	(Toxin control)	.....	.....	Died in approx. 45 hours
2	1,250	1	1.5	4,500	Simultaneous	Survived
3	1,250	1	1.5	4,500	6 hours	Survived
4	1,300	1	1.5	4,500	12 hours	Survived
5	1,300	1	1.5	4,500	18 hours	Survived
6	1,300	1	1.5	4,500	24 hours	Survived

McCaskey [12] has reported the administration of small doses of antitoxin to three patients who were poisoned by home-canned string beans at Decatur, Ind. The antitoxin was given in small doses, from 5 to 10 c.c. One of the patients died and two recovered, and McCaskey believes that the serum was of some aid. Graham's antitoxin, which was Type B, was used in this outbreak, and the organism that was later recovered has proved to be of the same type.

At Detroit, in October, 1919, Jennings, Haass and Jennings [13] administered antitoxin which was obtained from Graham at the University of Illinois. They injected 42 c.c. of serum intravenously in one case without any apparent effect, and 20 c.c. in two injections to another patient, who recovered. They state that in the latter case the illness was so mild that they could "not state that the serum had any influence on her recovery."

TABLE 15.—TYPES OF STRAIN OF B. BOTULINUS RECOVERED FROM FOODS PREPARED FOR HUMAN CONSUMPTION

No.	Strain	Obtained From	Place of Poisoning	Food Material	Type
1	III	.....	San Jose, Calif.	Home-canned string beans	A*
2	IV	.....	Hillsboro, Ore.	Home-canned corn	A*
3	VI	Buckley (Niven strain)	Albany, N. Y.	Cheese	B*
4	VII	.....	Seattle	Home-canned asparagus	A*
5	VIII	.....	Berkeley, Calif.	Home-canned string beans	B
6	IX	.....	Madera, Calif.	Home-canned apricots	A*
7	X	.....	Hillsboro, Ore.	Home-canned peas	B
8	XI	Burke	Berkeley, Calif.	Home-canned string beans	A
9	XII	Burke	Sacramento, Calif.	Home-canned string beans	B
10	Boise	U. S. Dept. Agriculture	Boise, Idaho	Home-canned asparagus	A*
11	B. H.	Graham, Univ. Ill.	Decatur, Ind.	Home-canned string beans	B*
12	B. B. 12-8	State Dept. Health, Columbus, Ohio	Canton, Ohio	Bottled olives	A*
13	XXI	.....	Detroit	Bottled olives	A*
14	XXII	.....	Santa Maria, Calif.	Home-canned string beans	A

* Human beings were fatally poisoned.

There are newspaper reports that the Graham antitoxin has been used again in a recent outbreak of botulism in New York; but so far as we could learn, these have been all the instances recorded in the medical literature in this country.

It has been stated that there are two types of *B. botulinus* in this country, Types A and B, and that the antitoxin of one type has no apparent effect on the toxin of the other. We have had an opportunity of testing a sample of the Graham antitoxin and found it to correspond to our Type B, and Mrs. Burke [9] has shown that eight of Graham's strains of *B. botulinus* belong to Type B. It is probable, therefore, that, except in our own cases, only Type B serum has been administered in all of the cases in this country, a point that must be remembered before one arrives at any definite conclusion concerning the value of botulinus antitoxin as a therapeutic agent.

In Table 15 we have tabulated all the strains of *B. botulinus* which we have been able to obtain from outbreaks in which food prepared for human consumption was the carrier of the toxin. A survey will show that of all the outbreaks in which the serum has been used, with the exception of that at Decatur, Ind., the toxin was produced by a strain of Type A, and consequently when Type B serum was used it could not

10. One c.c. of antitoxin was equivalent to approximately 3,000 minimal lethal doses for a guinea-pig.

11. Dickson, E. C.: Botulism, a Further Report of Cases Occurring in the Pacific Coast States, Arch. Int. Med. **22**: 483 (Oct.) 1918.

12. McCaskey, G. W.: Bacillus Botulinus Poisoning: with a Report of Seven Cases, Four of Which Proved Fatal, Am. J. M. Sc. **158**: 57 (July) 1919.

13. Jennings, C. G.; Haass, E. W., and Jennings, A. F.: An Outbreak of Botulism: Report of Cases, J. A. M. A. **74**: 77 (Jan. 10) 1920.

be expected to give any satisfactory results. As it is impossible, except by laboratory experiments which consume valuable time, to know what type of toxin is responsible for the poisoning in a given outbreak, it will obviously be necessary to have a polyvalent antitoxin if satisfactory results are to be obtained.

It is our opinion that large doses of antitoxin should be given since the amount of toxin ingested is unknown, and that it should be given intravenously. In case we have an opportunity of observing any more cases we propose to follow the following plan: The usual precautions for the administration of horse serum will be observed, and the patient will be tested by intracutaneous injection for evidence of hypersensitiveness. When no hypersensitiveness is shown, the serum will be given at once and will be injected into the veins very slowly, not more than 1 c.c. a minute, until the full amount is given. When hypersensitiveness is shown, preliminary subcutaneous, intramuscular and intravenous injections of 1 c.c. at one hour intervals will be given, and one hour after the last injection the full amount will be injected intravenously at the rate of not more than 1 c.c. a minute.

CONCLUSIONS.

1. A true antitoxin may be prepared for the toxin of *Bacillus botulinus*.
2. There are at least two types of *B. botulinus*, which are distinct so far as their toxin-antitoxin relationships are concerned.
3. Experiments show that in the laboratory the antitoxin may protect against the action of the toxin for at least twenty-four hours after the administration of one test dose of toxin, but that the effectiveness is, to a certain extent at least, dependent on the amount of toxin injected.
4. For therapeutic administration a polyvalent antitoxin should be employed, and it should be given in large amounts and intravenously.

DIVERTICULITIS

REPORT OF A CASE WITH ACUTE PERFORATION

CLARENCE F. BALL, M.D.
RUTLAND, VT.

Diverticula of a viscus may be either congenital or acquired, and they occur rather more frequently in the intestinal tract than in any other of the hollow viscera. A diverticulum is in reality a hernia outward through the wall of the viscus, carrying before it the mucous, atrophied muscularis and serous layers; or, as in some instances, only the mucous coat extrudes through the muscularis, carrying with it the serosa. The larger number, undoubtedly, are acquired, and it has been suggested that they occur more frequently where the artery penetrates the wall. They are complete or incomplete, depending on the extent of the evagination. When acquired, they occur almost invariably past middle life. Diverticula of various portions of the digestive tract are occasionally discovered in the course of an intensive roentgenologic study of the digestive tract. Multiple diverticula not giving rise to a definite set of symptoms constitute a condition termed diverticulosis, in contrast to diverticulitis, which should apply only to diverticula that do give rise to symptoms.

Diverticula of the digestive tract are found to involve the colon more frequently than any other portion. The sigmoid is the most common seat of location, and the transverse colon, cecum and rectum, in the order named, are the next most common locations. Diverticula of other portions are the exception. Diverticula in diverticulosis fill with and empty of bowel content without symptoms. The frequency with which roentgenologic studies are made of the gastro-intestinal tract for gastric disturbances demonstrates that diverticulosis is not uncommon.

A roentgenologic study is essential in making a differentiation between nonsurgical diverticulosis and surgical diverticulitis cases. True or complete diverticula, having a rather constricted opening, ultimately give rise to a set of symptoms either acute, subacute or chronic. False or incomplete diverticula rarely cause symptoms. Diverticula with retained fecal matter are potential sources of danger, the same as an appendix containing a fecal concretion. Sooner or later an acute inflammatory process takes place with rupture, if surgical interference is not resorted to early. In acute diverticulitis, operative interference is essentially the same as for acute appendicitis—that is, the diverticulum should be isolated from within the folds of the inflamed and indurated peritoneal tissues and clamped off close to the intestine, tied, and phenolated.

Some acute and almost all subacute and chronic manifestations, from the literature on the subject, seem clinically to be confused more with malignant processes than with any other single condition. In fact, one author gives statistics wherein the larger portion of the cases reported were considered, prior to operation, in one sense or another as probably malignant, the true nature of the condition not being determined until after resection of the mass involved. Since a diverticulum seldom occurs alone, except in the esophageal type, one should always, when operating on other portions of the digestive tract, make search for other diverticula which might possibly contain fecal concretions without inflammatory manifestations.

Small diverticula containing fecal concretions may readily be considered, when found adjacent, as enlarged glands incident to an acute or malignant process. These should be incised to determine their true nature and not left as a potential source of future trouble. Uncertain peritoneal fat accumulations also should be investigated by incision. Since diverticulitis may be confused with malignant processes, one must not consider, even in acute cases, any apparent associated glandular enlargements as such without incising them to determine their true nature. Further, if one was uncertain relative to a mass with *supposed glandular* enlargements, one could make the differential diagnosis by opening it. The presence of a fecal calculus would be practical evidence that the associated process was due to an advanced diverticulitis instead of to a malignancy.

REPORT OF CASE

History.—R. A. W., man, aged 58, who was 5 feet 10 inches in height and weighed 180 pounds, erect and well proportioned, with good habits and negative early history, had worked hard in the packing department of a scale works up to the day before the operation. The patient's recent history had been negative except for the presence of an "uncomfortable feeling" in the left lower abdomen for some months previous,

with an occasional sharp pain lasting a few minutes. There was no diarrhea. The patient was slightly constipated at times, which condition had no relation to his abdominal discomfort. No blood had been noted in the stool at any time. He had a mild attack of "bowel trouble" during the influenza epidemic in September, 1918, at which time he was away from work about a week. I attended him then, but his true condition was not even suspected, much less recognized. A mild cathartic, rest in bed, and restricted diet relieved the entire situation. He had no other attack until the present one, May 14 and 15, 1919. I saw the patient early on the morning of the 15th. He had had a bad night and seemed desperately ill, with pain and tenderness in the left lower abdomen. On manual examination the entire abdomen was rigid, but more so on the left side. The legs were drawn up and respiration was short and grunting. The patient could extend his legs, but complained on straightening out his left leg. There was faulty left leg flexion on the abdomen with manual pressure over the tender area. He had a temperature of 100.4, pulse 88, respiration from 22 to 24. A tentative diagnosis of an acute pathologic condition of the structures in the left side of the abdomen was made, and the patient was taken to the hospital. Morphin sulphate, one-fourth grain, was administered hypodermically before he left home, and blood and urine examinations were made immediately on his arrival. The urine was negative except for a few hyaline and granular casts. The heart and lungs also were negative. Blood counts revealed 15,000 leukocytes per cubic millimeter, with 83 per cent. polymorphonuclears, which indicated the necessity of immediate operation.

Operative Findings.—At noon, the abdomen was opened in the median line. The bowels were distended with gas and the peritoneum was markedly congested, especially to the left of the incision. The omentum was adherent over a mass in the left flank. There was a moderate increase of fluid. The mass was found adherent to the sigmoid, a part of which it seemed to be when the hand was first put into the abdomen. A cleavage line soon freed the sigmoid of suspicion as to a possible perforating malignant process. As the mass in the hand was freed from the sigmoid and brought up into the wound, it had more the appearance of a malignant process with perforation of the colon into the indurated mass surrounding it than of an acute process. An adjacent *enlarged gland* rather added to this suspicion when I first inspected the mass.

Palpation of the colon from the cecum to the location of the mass showed it to be located in the ascending loop of the transverse colon opposite to and adherent to the sigmoid colon, from which it had just been freed. As the result of a further attempt to determine the exact nature of the lesion, another cleavage line allowed of a partial separation of the mass from the wall of the intestine down to what appeared to be extruded intestinal wall tissue. It was at this time that the actual pathologic condition first dawned on me. Finger dissection, carried around the mass, freed it from the intestinal wall except for rather a short pedicle. The pedicle was double clamped and was cut between the clamps, freeing the indurated mass from the bowel. After removal it was immediately opened and found to contain a fecal concretion, the size of a small filbert, protruding through the ruptured end of the diverticulum. The stump of the pedicle was then tied and phenolated. This completed, the adjacent supposed *enlarged gland,* surrounded by a considerable amount of fat, was investigated by incision through its uninflamed covering. It also was found to contain a fecal concretion. The entire colon was then investigated and found to contain numerous filbert-sized fat accumulations along the surface. These were suspected of being other diverticula, not obstructed. This was later demonstrated to be the case, as shown by a roentgenogram that was taken after the patient had recovered and resumed his former duties. Operative recovery was complicated by superficial wound sepsis, but otherwise recovery was excellent. The postoperative history to date has been negative. The patient considers himself "better than for years."

ROENTGEN-RAY STUDY OF THE GREAT VESSELS

CHARLES L. MARTIN, E.E., M.D.
House Physician, Roentgen-Ray Department, Massachusetts General Hospital
BOSTON

Roentgen-ray investigation of the living heart was begun more than a decade ago. Groedel,[1] Dietlen,[2] Moritz,[3] Claytor,[4] Merrill,[4] Veith,[5] Bordet[6] and Vaquez[6] were active in forwarding the work. The late Dr. Walter James Dodd took up the subject at the Massachusetts General Hospital some ten years ago, and established a routine method of cardiac examination. A few years later Dr. George W. Holmes[7] added his efforts to those of Dr. Dodd, and has continued the work since the untimely death of the latter. A careful comparison of the percussion outlines with the roentgenographic outlines of the heart was rendered possible through the cooperation of Dr. George C. Shattuck of the medical service of the Massachusetts General Hospital. His findings and an excellent review of the literature were published[8] in 1916. The work of these investigators was for the most part directed toward the study of the heart itself, and the great vessels were considered of secondary rather than of primary importance.

The accurate percussion of supracardiac dulness is often extremely difficult, especially in the presence of obesity. Even when the width of this dulness can be determined with some certainty and the clinician is sure that it is increased, he is sometimes at a loss to interpret the finding. This is due to the comparatively large number of pathologic conditions that may occur in the upper mediastinum. These conditions may be roughly divided into (1) those not involving the great vessels, and (2) those caused by changes in the great vessels.

The first classification includes such conditions as substernal thyroid, enlarged thymus, mediastinal tumor, and enlarged mediastinal glands. The value of the roentgen ray in establishing these diagnoses is well recognized.

It is my object here to describe the roentgen-ray findings in a series of cases falling under the second classification. Six causes of increase in the width of the shadow of the great vessels have been observed, namely, chronic lesions of the mitral valve, causing a dilated pulmonary artery and left auricle; arteriosclerosis; syphilitic aortitis, which may or may not have reached the stage of aneurysm; long continued hypertension; a high diaphragm; and a dilated pulmonary artery, such as occurs with some congenital hearts.

All of the drawings used to illustrate these conditions are traced from "7-foot-plates" made by the teleroentgenographic method. The patient sits erect, with the anterior surface of the chest placed against a casette containing a plate and an intensifying screen. The tube stand is placed behind the patient so that the focal spot of the tube is at a distance of 7 feet from the casette and centered a short distance above a point

1. Groedel: Die Röntgendiagnostik der Herz- und Gefässerkrankungen, Berlin, 1912.
2. Dietlen: Deutsch. Arch. f. klin. Med. **88**: 55, 1906-1907.
3. Moritz: Deutsch. Klin., 1904, Part 2, p. 31.
4. Claytor and Merrill: Am. J. M. Sc. **138**: 549 (Oct.) 1909.
5. Veith: Jahrb. f. Kinderh. **68**: 205, 1908.
6. Vaquez and Bordet: Le cœur et l'aorte, ed. 2, 1918.
7. Holmes, G. W.: The Use of the X-Ray in the Examination of the Heart and Aorta, Boston M. & S. J. **179**: 478 (Oct. 10) 1918.
8. Shattuck, G. C.: How We Can Detect Slight Enlargement of the Heart, Boston M. & S. J. **174**: 384 (March 16) 1916.

midway between the angles of the scapulae. The exposure is made during normal respiration in order that there may be no errors due to abnormal positions of the diaphragm. It is important that the patient be placed squarely against the casette, because slight rotation will cause distortion of the cardiac shadow. Exposures of from fifteen to twenty seconds are used.

A silhouette of the heart and great vessels is obtained which is practically free from distortion and may be used for mensuration. In order to emphasize the shape of the silhouettes, outline drawings have been traced from the plates. These drawings represent the borders of the heart and great vessels, the approximate positions of the diaphragmatic domes, and the inner borders of the thoracic cavity. The histories and clinical findings are taken from the clinical records of the Massachusetts General Hospital.

Although this paper deals for the most part with the roentgenographic appearance of the heart, the reader is not to infer that fluoroscopic examinations are not of considerable value. A fluoroscopic tracing of the outline of the heart and great vessels made while the patient faces the observer is a routine procedure used by the roentgen-ray department at the Massachusetts General Hospital. A second tracing is made of the aortic arch with the patient rotated until the shadow of the structure has attained its narrowest transverse dimension. The latter procedure sometimes makes possible a differential diagnosis between a dilated tube and a tortuous one. The patient possessing the dilated aorta cannot be rotated into any position in which the shadow of the aortic arch does not seem wider than normal. The arch which appears wide in an anteroposterior view, as a result of tortuosity, is likely to possess a normal width when viewed laterally because the tube is not dilated. The lateral observation may be a difficult one to make particularly when the subject is obese and the hilum markings are much thickened.

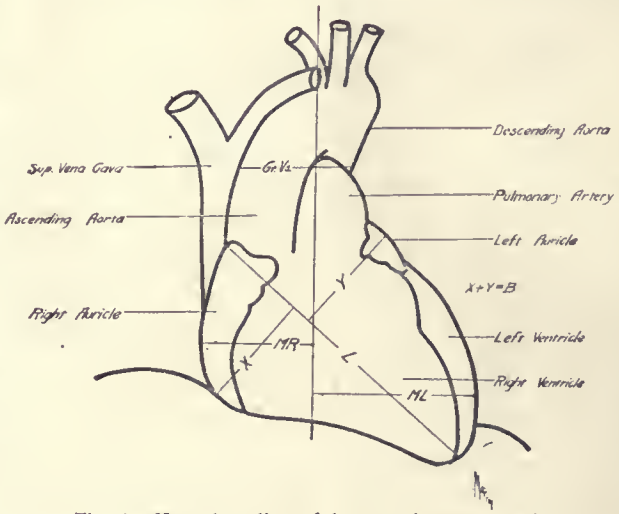


Fig. 1.—Normal outline of heart and great vessels.

Before speaking of the abnormal, it is perhaps best to describe the normal heart silhouette. Figure 1 represents the shape of the heart and great vessels as they lie in the thorax after the sternum has been removed, the lungs and pleura retracted, and the pericardium dissected away. It is evident that all of the chambers of the heart, except the right ventricle, form portions of the silhouette outline.

In considering the great vessels, it is important to remember that the superior vena cava casts little or no shadow on a roentgen-ray plate, and that the right border of the vessels, as shown in the roentgenogram, is in reality the right border of the ascending aorta. Comparison of this drawing (Fig. 1) with the cardiac outline shown in Figure 2 reveals the meaning of each curve in the roentgenogram, i. e., the right auricle below and the ascending aorta above form the right side of the shadow, while the left side is made up of the descending aorta, the pulmonary artery, the left auricular appendage, and the left ventricle. Of course, not all of these structures are always sufficiently prominent to be made out. The pulmonary artery and the left auricular appendage rarely stand out so that they may be differentiated, except in disease of the mitral valve.

It is well in the beginning to establish the normal width of the aortic arch. This cannot be done with absolute accuracy, but within broad limits it may be said that for persons weighing between 100 and 200 pounds the greatest distance between the right border of the ascending aorta and the left border of the descending aorta, as seen on a 7-foot-plate, is normally between 4.5 and 6 cm.

CHRONIC ENDOCARDITIS

When the mitral valve is damaged, whether the lesion be stenosis, insufficiency, or a combination of the two, there results a derangement of the mechanical balance in the cardiac apparatus. After a time the auricles and pulmonary artery increase in size. The left auricular appendage and the pulmonary artery may become so large that they overlie the left border of the descending aorta and extend upward to the crest of the arch. When this occurs, the supracardiac dulness is definitely increased to the left. This condition is well illustrated by Figures 2 and 3, which represent chronic cases of double mitral disease.

In Figure 2 the pulmonary artery has not become sufficiently enlarged to overlie completely the left side of the arch, but Figure 3 illustrates this more advanced condition. It is of interest to note that the width of the aortic arch is 6.3 cm. in the first case, and 5 cm. in the second, while the actual width of the great vessels is considerably greater in both cases.

ARTERIOSCLEROSIS

Arteriosclerosis is primarily a disease of the intima, and consequently no great changes in the diameter of the aortic tube are to be expected. However, after fibrosis and calcification set in there may be a derangement of the course of the tube, especially when hypertension is present, and tortuosity of the aorta results. The appearance seems to suggest that the artery has increased in length. This tortuosity shows itself in the roentgenogram as an increased prominence of the aortic "knob" (that is, the portion of the ascending aorta which passes backward to the left of the spine just before becoming the descending aorta) and in a tendency of the descending aorta to swing well to the left of its normal position. In the oblique view the upper portion of the arch may be "clubbed," but the width in the midportion is usually normal. Calcified plaques can be shown only very rarely.

Figure 4 shows a tracing of the heart of a man past 60 years of age who had suffered from attacks of anginoid pain. The heart is not enlarged, the blood

pressure is not elevated, and there is nothing normal made out on physical examination of the heart. No evidence of syphilitic infection is obtainable at present. The aortic arch is definitely widened, and the left border of the descending aorta lies to the left of its normal position. This finding, taken with the history of lead poisoning and the thickening of the peripheral arteries, points to the presence of arteriosclerosis.

The amount of arteriosclerosis as indicated by the shape of the aortic arch is slight in this case, and yet the presence of any sclerotic process in the arch makes it seem probable that an involvement of one or both of the coronary arteries may be causing the attacks of anginoid pain.

Figure 5 portrays the shape of the heart and great vessels of another man about 60 years of age who complains of no cardiac symptoms, and yet shows a marked tortuosity of the arch, an enlarged heart, and a high blood pressure. Here also are found a systolic murmur in the aortic area and an accentuated aortic second sound which accompany a diseased intima and a high blood pressure. The aortic arch measures 1.1 cm. more in this case than in the previously mentioned one, and yet there are no symptoms. This may be explained by assuming that the process is a diffuse one which has not involved the coronary arteries so much as the aorta itself.

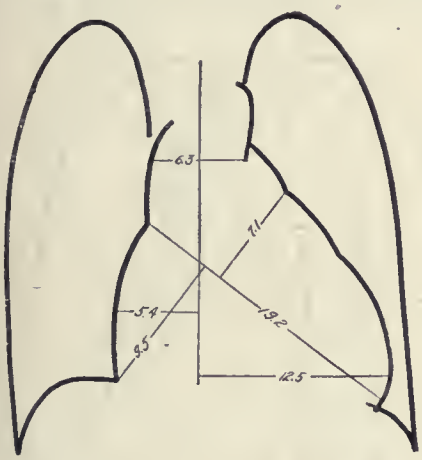


Fig. 2.—Tracing in Case 1, double mitral disease.

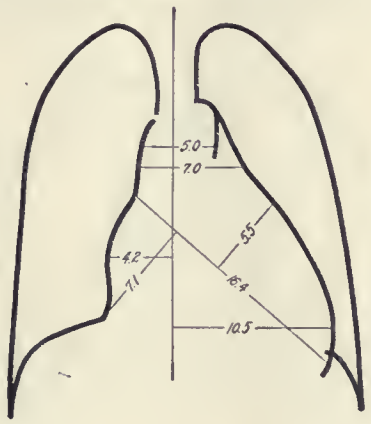


Fig. 3.—Tracing in Case 2, double mitral disease with increased supracardiac dulness.

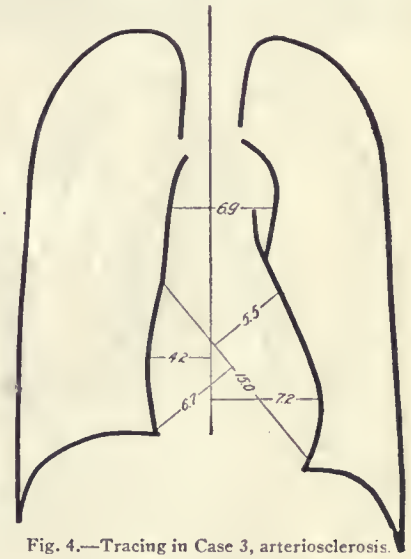


Fig. 4.—Tracing in Case 3, arteriosclerosis.

The roentgenogram is of no direct value in ascertaining the condition of the coronary arteries, and is, therefore, of more diagnostic than prognostic importance. It is clear that the width of the sclerotic arch indicates little as regards the general condition of the patient, but it offers another link in establishing the diagnosis of arteriosclerosis of the aorta.

It is customary to look for arteriosclerosis in patients past 60 years of age, and yet the condition occasionally occurs in younger persons. Figure 6 shows the heart and great vessels of a woman of 39 who is known to have had hypertension and external signs of arteriosclerosis for six months. Here, as in Figure 5, the outlines of the "knob" are covered by a prominent descending aorta. It is very probable that the aortic tube itself is somewhat widened as a result of the hypertension. The heart is enlarged principally in its long diameter. The physical signs seem to indicate that this heart is very similar to the one shown in Figure 5. The only added feature is a relative insufficiency of the mitral valve. No definite clinical signs of kidney damage are obtainable, and there is no evidence pointing to syphilitic infection.

Still another case of marked arteriosclerosis is shown in Figure 7. The symptoms in this case practically all point to sclerotic changes in the cranial vessels, and the laboratory findings indicate that the kidneys are damaged, also probably as a result of renal blood vessel changes. The roentgenogram shows a definite "knob" at the crest of the aortic arch, and the left border of the descending aorta swinging well to the left. The long diameter of the heart is increased. The vascular system in such a case would doubtless show extensive generalized sclerosis at necropsy.

SYPHILIS

The predilection of *Spirochaeta pallida* for the aortic arch is well known. Douglas Symmers [9] found syphilitic aortitis in 55.7 per cent. of 314 old syphilitic cases coming to necropsy.

Arthur R. Elliott [10] says:

> From the practical clinical standpoint, accumulating evidence is forcing the conclusion that a persistently positive Wassermann reaction in a patient without evidence of syphilis in the skin, mucous membranes or nervous system points to the aorta as the next most probable seat of the disease.

Lenz writes that, in large cities, 25 per cent. of all syphilitic deaths is due to aortitis and its consequences.

Warthin is said to have discovered active lesions in the aorta of every case of latent syphilis that he examined.

Syphilis of the aorta is certainly not uncommon, but it is sometimes difficult to recognize. The process is likely to originate in the ascending aorta, often just above the aortic valve. The organisms enter the walls of the vessels by way of the vasa vasorum, destruction occurs after a time, and the stiffness of the wall slowly disappears. As a result, the pressure of the blood stream coming from the left ventricle causes a dilatation and change in outline of the great vessel. If the spirochete always limited its activities to one small portion of the aorta, the discovery of this localized dilatation by means of the roentgen ray would make the diagnosis fairly certain. However, different

9. Symmers, Douglas: Anatomic Lesions in Late Acquired Syphilis, J. A. M. A. **66**: 1457 (May 6) 1916.
10. Elliott, A. R.: Syphilitic Aortitis, M. Clinics of N. Am. **1**: 1305, 1918.

authorities give the percentage of cases of aortitis which is so localized as between 15 and 30 per cent. of all of those coming to necropsy. It seems possible that the percentage may be higher among the living, for it often takes more than a localized dilatation to produce death and bring the subject to the postmortem table.

Sir Clifford Allbutt [11] has called attention to cases of dilatation of the aorta noted in the French and British literature in which the etiology was thought to be rheumatic fever, septicemia, phlegmonous inflammation of the hand, and influenza. If such cases are authentic, they are extremely rare.

In most cases one is probably safe in assuming syphilis to be the cause of a localized bulging of the aorta, particularly when this abnormality occurs just above the aortic valve. Figures 8, 9 and 10 illustrate this type of case. Each roentgenogram shows a definite prominence at the base of the ascending aorta. Some of the signs of arteriosclerosis are also present, but early arteriosclerosis is not unusual in syphilitics.

The patient showing aortitis usually is between 30 and 50 years of age, and gives a history of infection some fifteen to twenty years previously. One expects to find a systolic murmur in the aortic area and also a diastolic murmur, together with a diminished to absent aortic second sound if the aortic valve is involved. It is often true that these signs may be elicited only in certain positions, with the lungs deflated.

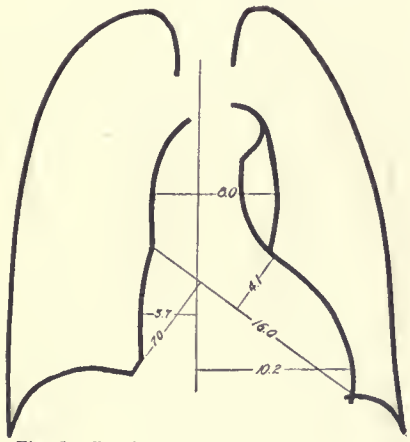


Fig. 5.—Tracing in Case 4, arteriosclerosis.

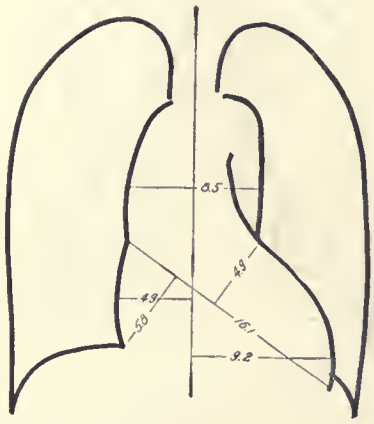


Fig. 6.—Tracing in Case 5, precocious arteriosclerosis with hypertension.

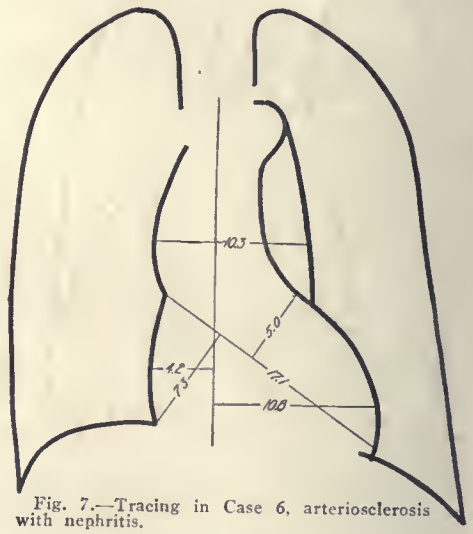


Fig. 7.—Tracing in Case 6, arteriosclerosis with nephritis.

Figure 10 is rather interesting because of the numerous diagnoses made. This woman was in and out of the hospital during a period of eight years, and the very multiplicity of diagnoses would argue against their correctness. Her precordial pain and dyspnea on exertion should have suggested the possibility of aortitis. This possibility was probably ruled out because of the negative Wassermann reaction; but it is now a rather general belief that a negative Wassermann reaction does not rule out syphilis.

It is the diffuse dilatation of the arch that offers the greatest difficulties in diagnosis from the roentgenologic point of view. Syphilis is not the only condition producing a wide aortic arch. When a diffuse dilatation does occur, it should be explained on the basis of the clinical findings and the patient's story. Figure 11 illustrates this point. The arch appears to be dilated and is definitely wider than normal, but is also tortuous, and shows the characteristics of arteriosclerosis. The auscultatory findings, the blood pressure, and the condition of the peripheral arteries point to arteriosclerosis. There are two pulsating masses in other parts of the body thought to be aneurysms. The definite bulging of the ascending aorta to the right is more characteristic of a dilated tube than of a tortuous one. It seems probable that both arteriosclerosis and syphilis are etiologic factors in the production of this picture.

Syphilis of the aortic arch is usually a progressive process, and it may go on to one or more of three endpoints, namely, aneurysm, partial or total occlusion of the coronary arteries, and sclerosis and retraction of the cusps of the aortic valve. Aneurysm, except when it occurs in some rare location, can be shown without difficulty on the roentgenogram. No direct evidence of involvement of the coronary arteries can be obtained; but when aortic regurgitation occurs, the increased length of the heart and the prominence of the curve of the left ventricle suggest its presence.

Figure 12 presents the combination of such a heart, with a wide aortic arch and the clinical signs of a diseased aortic valve. It would seem reasonable to explain this picture by assuming that the widening of the arch occurred first as a result of a syphilitic aortitis, which process later extended down to the aortic valve, causing sclerosis and retraction of the cusps and giving rise to aortic regurgitation. Later, the increased load on the left side of the heart caused lengthening of the cardiac outline and hypertrophy of the left ventricle.

HYPERTENSION

Hypertension is often spoken of as a cause of dilatation of the aorta. The ascending portion receives the full force of the blood expelled from the left ventricle, which is usually much hypertrophied in cases of hypertension, so that it seems reasonable to expect a certain amount of stretching of the aorta. The process is in all probability a slow one, and the small number of cases studied indicates that it requires months rather than days for its completion. Smith and Kilgore,[12] in 1915, called attention to the wide

11. Allbutt, Sir Clifford: Diseases of the Arteries, Sect. 1, p. 143.

12. Smith and Kilgore: Dilatation of the Arch of the Aorta in Chronic Nephritis with Hypertension, Am. J. M. Sc. **149**: 503 (April) 1915.

arches observed in a series of fourteen cases of chronic nephritis with hypertension. These patients had systolic blood pressures between 185 and 250, were between 30 and 50 years of age, and all showed negative Wassermann reactions.

Syphilitic aortitis is likely to occur between the ages of 30 and 50 years, and often is accompanied by some hypertension. Both conditions are therefore to be kept in mind when one is considering a widened arch in a person of middle age.

Arteriosclerosis in a more or less marked degree is not an uncommon finding in cases of hypertension, especially after the age of 50. The dilatation might be explained in some cases as a result of the influence of a high tension exerted against a weakened, sclerotic vessel wall.

Figures 13 and 14 show the hearts and great vessels of two patients with chronic cardiorenal disease, in which hypertension is an outstanding feature. The width of the great vessels is greater than normal in both cases. It is impossible to divide the left border into its component parts in this picture, and the border of the descending aorta cannot be definitely located. The aortic knob stands out prominently, and the heart is much enlarged, and presents a prominent left ventricular curve. The prominent knob suggests arteriosclerosis, and the part which that process plays in the widening of the shadow of the great vessels cannot be definitely stated. Suffice it to say that hypertension is at least a factor in the production of increased supracardiac dulness.

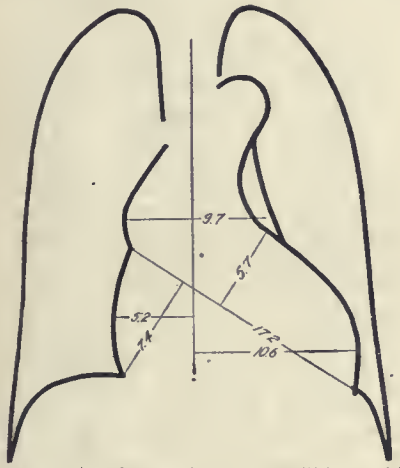


Fig. 8.—Tracing in Case 7, syphilitic aortitis.

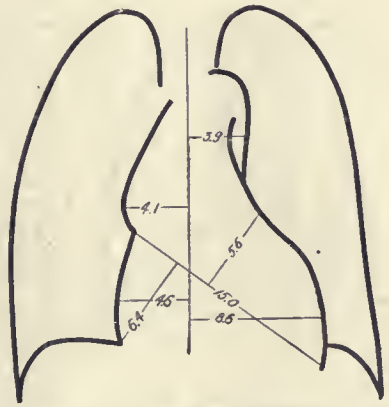


Fig. 9.—Tracing in Case 8, syphilitic aortitis and tremor of syphilitic origin.

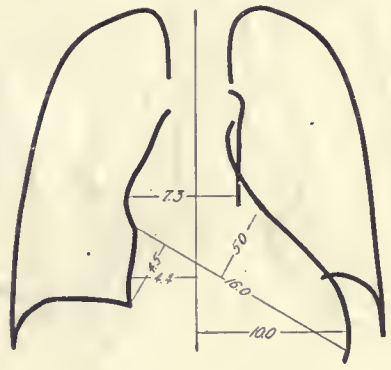


Fig. 10.—Tracing in Case 9, long unrecognized syphilitic aortitis.

HIGH DIAPHRAGM

The frequency with which wide aortic arches occurred in obese persons who showed no definite evidence of cardiac disease made it seem probable that obesity might be related to the width of the great vessels. After some study it became apparent that the wide arches usually occurred in the type of patient who possessed a high diaphragm as a result of a large amount of abdominal fat. The outlines of three arches of this kind are shown in the upper portion of Figure 15.

The larger drawing in Figure 15 was prepared to show the effect of a high diaphragm on the width of the aortic shadow in a normally proportioned person. It is evident that the dotted outline traced from a plate made in full expiration is much wider than the solid outline, which represents the size of the great vessels during normal breathing. Obesity in itself probably has no influence on the width of the great vessels. The cardiac outline shown in Figure 16 was traced from a 7-foot plate of an active, rather obese man weighing 220 pounds. The diaphragm was normally placed, and showed normal excursion when studied fluoroscopically. There was no abnormal width of the aortic shadow in this case. It seems, therefore, that a high diaphragm is in itself a cause of widening of the aortic arch. This fact should be kept in mind in such conditions as pregnancy, abdominal tumor, subphrenic abscess, ascites, extensive pleural adhesions, and extreme obesity.

DILATED PULMONARY ARTERY

The increased supracardiac dulness resulting from an enlargement of the pulmonary artery and left auricle in mitral disease has already been discussed. There are certain rare conditions in which the pulmonary artery alone is dilated; and when this occurs, the dulness extends much farther to the left than it should normally.

A striking example of this type of heart is shown in Figure 17. This man, aged 26, gives a history of repeated pulmonary infection during the greater part of his life. The pulmonic second sound is markedly accentuated, and a definite shock, synchronous with the second sound, may be felt when the hand is placed on the chest in the precordial area. The electrocardiogram shows a definite right ventricular preponderance. These signs point to an elevated blood pressure in the pulmonary circulation which might produce a dilatation of the pulmonary artery. Such dilatation should produce a picture similar to that shown in Figure 17.

This case has been variously diagnosed as congenital heart, obstruction in the pulmonary circulation, and mitral stenosis. Be the diagnosis what it may, the roentgenogram seems to identify the enlarged pulmonary artery as the cause of the increased supracardiac dulness. Here, then, is a rare condition in the upper mediastinum which presents roentgen-ray evidence of no little diagnostic value.

DIFFERENTIAL DIAGNOSIS

The roentgenologist can draw some conclusions from his findings without clinical aid. The mitral type of heart and the type presenting a dilated pulmonary artery give rather typical silhouettes, and can usually be recognized. A high diaphragm is an evident condition, especially when viewed fluoroscopi-

cally. The sclerotic arch presents a prominent "knob" and descending portion when seen anteriorly: a clubbing at the crest and a normal width when seen obliquely. There are left the two conditions that produce dilatation of the aortic tube, namely, hypertension and syphilitic aortitis. A localized dilatation indicates the latter condition. A general dilatation may be due to either.

A large, hypertrophied heart accompanies a widened arch resulting from long continued hypertension. A diffusely dilated arch accompanied by a small normal, or slightly dilated heart is therefore likely to be caused by syphilis. Of course, after the syphilitic process has involved the aortic valve and the left ventricle becomes hypertrophied, the general appearance resembles that caused by hypertension.

In aortic regurgitation, the hypertrophy of the left ventricle is much greater than that of the right. In hypertension, both ventricles show hypertrophy to about the same degree. As a result, the distance across the base of the heart as well as the length is increased, and a generally enlarged organ results. The heart outline in regurgitation is increased downward and to the left, but the distance across the base (*B* in Fig. 1) is not much greater than normal. This difference is not always outstanding, but it sometimes gives a clue to the correct diagnosis in difficult cases.

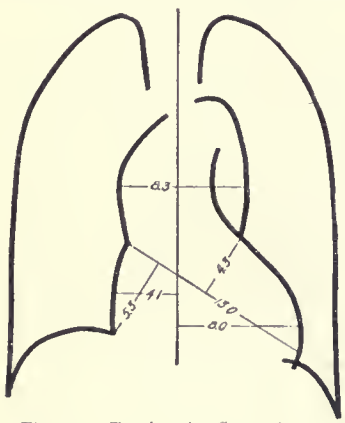


Fig. 11.—Tracing in Case 10, multiple aneurysms.

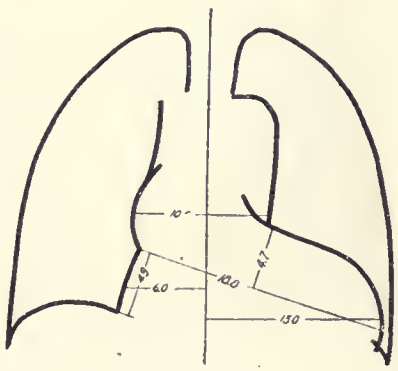


Fig. 12.—Tracing in Case 11, syphilitic aortitis and aortic regurgitation.

This system of differential diagnosis seems simple and so it would be were it not for the fact that widening of the great vessels is practically never due to a single etiologic factor. Syphilis is quite often accompanied by arteriosclerosis. A certain degree of arteriosclerosis is a very common finding in cardiorenal disease with hypertension. The obese patient with a high diaphragm is the one most likely to show a high blood pressure, and he may also have a syphilitic infection. Obviously, the problem is not always a simple one.

SUMMARY

There has in recent years been an ever increasing tendency to use the roentgenogram in the diagnosis of syphilitic aortitis. That it is a very valuable adjunct to the clinical findings there can be no doubt; but I wish to emphasize the importance of a conservative interpretation of a widened shadow of the great vessels.

Arteriosclerosis, hypertension, chronic endocarditis, a high diaphragm, or a dilated pulmonary artery may give a similar picture, and it is perhaps wiser for the roentgenologist to suggest the diagnosis of aortitis only in those cases that show a localized prominence at the base of the ascending aorta.

It is the exception rather than the rule to find a single cause underlying increased supracardiac dullness.

The occurrence of syphilitic aortitis, arteriosclerosis, hypertension, and a high diaphragm in the same patient is not so very uncommon.

REPORT OF CASES

CASE 1 (231479, Fig. 2).—*Double mitral disease.*—A white man, weighing 172 pounds, had had an attack of precordial pain, not very severe, at the age of 12; gonorrhea at 17 and again at 18, and a second attack of precordial pain at 20. He drank much whisky, beer, tea and coffee. There was no history of children's diseases or tonsillitis. Seven months before examination he had been in bed one week with dyspnea, palpitation and precordial pain. There was no cough, edema, hemoptysis or fever. One week before he had had a more severe attack beginning with a feeling of constriction in the epigastrium followed by dull precordial pain and palpitation. He could sleep only in the sitting position. The pulse rate was 102. The sounds were irregular. The pulmonic second sound was greater than the aortic second sound. There was a loud, blowing, systolic murmur at the apex transmitted to the axilla. There was a short presystolic roll. There were no thrills. The systolic blood pressure was 100, the diastolic, 70. The arterial walls were not palpable. The renal function was 45 per cent., the Wassermann test, negative.

CASE 2 (233383, Fig. 3).—*Double mitral disease.*—A white girl, aged 16, had had severe attacks of chorea at intervals during the greater part of her life, and pneumonia and pleurisy about a year before examination. She began to complain of nausea, epigastric pain, edema of the feet and hands, and dull aching pain in the hands, elbows and knees about four months before. About two months before, she began to have dyspnea, palpitation and precordial pain, and went to bed, where she had remained ever since. During the past three weeks there had been much vomiting, some cough, and a sharp knifelike pain between the scapulae. The patient weighed 98 pounds and possessed a very ruddy complexion which bordered on cyanosis. The tonsils were ragged and hypertrophied. The sounds were regular, rapid and of fair quality. The pulmonic second sound was greater than the aortic second sound and accentuated. There was a presystolic roll at the apex followed by a soft, musical systolic murmur transmitted to the axilla. There was a thrill at the apex. The arterial walls were not palpable. The systolic blood pressure was 105, and the diastolic, 70. There was edema of the feet and ankles. The throat consultant noted that pus could be squeezed from the tonsils. The white blood count ranged from 13,000 to 14,000 per cubic millimeter. The Wassermann test and blood culture were negative. Roentgenoscopy revealed many pus pockets about the roots of the teeth.

CASE 3 (232013, Fig. 4).—*Arteriosclerosis.*—A white man, aged 62, had diphtheria at 9 years of age; scarlet fever (?) in childhood; gonorrhea at 20; pneumonia at 40; penile sores at 45, and painters' colic at 50. His wife has had three miscarriages and one stillborn child. He chewed tobacco, but did not use alcohol. Sensations of constriction in the chest accompanied by hot, swollen sensations in the hands began one and one-half years before examination. The attacks lasted only a few minutes, and occurred about once a week. Nitroglycerin gave relief. The attacks had been becoming worse and more frequent, and seemed to be brought on by exertion. They were now accompanied by dyspnea and palpitation. There was no edema. He was much more comfortable while in bed. The patient weighed 120 pounds. The cardiac impulse was seen and felt in the fifth space. The sounds were regular and of fair quality; not rapid. The pulmonic second sound equaled the aortic second sound; not accentuated. There were no murmurs or thrills. The

arterial walls were sclerotic. The brachials were not tortuous. The systolic blood pressure was 150; the diastolic, 74. The liver edge was palpable and slightly tender. The knee jerks were equal and active. The renal function was 60 per cent.; the urine, negative; hemoglobin, 75 per cent.; the Wassermann test, negative.

CASE 4 (233131, Fig. 5).—*Arteriosclerosis.*—A white man, aged 60, with no history of "rheumatism," and who denied venereal infection, had had some nocturia for several years, but no illness except attacks of pain in the right upper quadrant twelve years ago. These attacks were severe enough to require morphin. He now complained of burning pain in the right lower quadrant occurring in attacks during the past eight months. He had had occasional dizzy spells, but no dyspnea, edema, precordial pain, headaches or visual disturbances. He was well nourished and weighed 154 pounds. The heart sounds were regular and not rapid. The aortic second sound was greater than the pulmonic second sound and accentuated. There was a soft systolic murmur at the base transmitted to the neck. The systolic blood pressure was 220, and the diastolic, 110. The palpable arteries were sclerotic and tortuous. The pulse was of good volume and tension.

The urine showed nothing definitely abnormal. The nonprotein nitrogen in the blood was 44.8 mg. per hundred c.c. The Wassermann test was negative. A cardiogram detected no ventricular preponderance.

CASE 5 (233568, Fig. 6).—*Precocious arteriosclerosis with hypertension.*—A white woman, aged 39, with no history of "rheumatism" or miscarriages, who denied venereal infection and whose "tubes and ovaries" had been removed eleven years before for pelvic abscess, had been weak and tired and subject to "hot flashes" and "cold sweats" since the age of 18. Dyspnea began three years before we saw her. About two years before she began to have palpitation and severe headaches accompanied at times by vomiting, dizziness, staggering and stars before the eyes; and on two occasions, everything turned black before her eyes. During the past year these symptoms had been less marked, but there had been some edema of the ankles, and a numb feeling in the right leg and arm at intervals. There had been no nocturia or other urinary symptoms. The patient was pale, and weighed 112 pounds. There was marked venous pulsation in the neck. The sounds were regular and rapid and of good quality. The aortic second sound was greater than the pulmonic second sound and much accentuated. There was a reduplicated first sound and a systolic murmur at the apex transmitted to the axilla. There was a systolic murmur in the aortic area not transmitted. Very questionable thrills were observed at the apex and at the aortic area. No presystolic murmur was detected. The arterial walls were palpable. The brachials were tortuous. The systolic blood pressure was 270 and the diastolic, 190, six months before, and now 210 and 140. The urine showed nothing abnormal except the slightest possible trace of albumin and rarely a white cell at numerous examinations. There was no fixation of gravity or retention of chlorids. The renal function was 60 per cent. Nonprotein nitrogen was 35.9 mg. per hundred c.c. of blood. The Wassermann test was negative twice.

CASE 6 (232022, Fig. 7).—*Arteriosclerosis with nephritis.*—A white man, aged 64, had had scarlet fever in childhood; was ill several months twenty years before we saw him with nausea, diarrhea, vomiting and abdominal pain; had had "grip" four years before, and generalized edema with headache, blurring of vision and delirium three years before. A "shock" occurred one year before, when he was unconscious for twenty-four hours. There had been some weakness in the left arm and leg since. The patient denied venereal infection. He felt weak and tired. He still had weakness of the left arm and leg, and had attacks of dizzy sensations accompanied by vomiting, a feeling of pressure in the head, and a general numb feeling. He weighed 175 pounds. The pupils were irregular. The cardiac impulse was seen and felt in the sixth space. No thrills were heard. The sounds were regular and of fair quality, but rapid. The aortic second sound was greater than the pulmonic second and accentuated. No murmurs were detected. The arterial walls were palpable, the brachials not tortuous. The systolic blood pressure was 208, and the diastolic, 120. The knee jerks were normal. The urine, at two examinations, showed a trace of albumin, a specific gravity of 1.020 and 1.023, and frequent hyaline and granular cases. The renal function was 12 per cent. The Wassermann test was negative.

CASE 7 (Outpatient Department 392675, Fig. 8).—*Syphilitic aortitis.*—A negro man, aged 45, gave no history of "rheumatism." He had sore throats as a child. He drank much alcohol. He had gonorrhea at 25, and a penile sore at the same time that lasted for one month. He had had some precordial pain, occasional headaches, attacks of weakness and shortness of breath for the last year. He weighed 136 pounds. The pupils were equal, and reacted. The right epitrochlear gland was palpable. There was a systolic murmur at the apex transmitted toward the base and the axilla. The pulmonic second sound was accentuated. There was a short systolic murmur at the base transmitted to the neck. No definite diastolic murmurs were made out. The liver edge was palpable. The knee jerks were equal. The urine showed the least possible trace of albumin and a few white blood cells. The Wassermann test was negative.

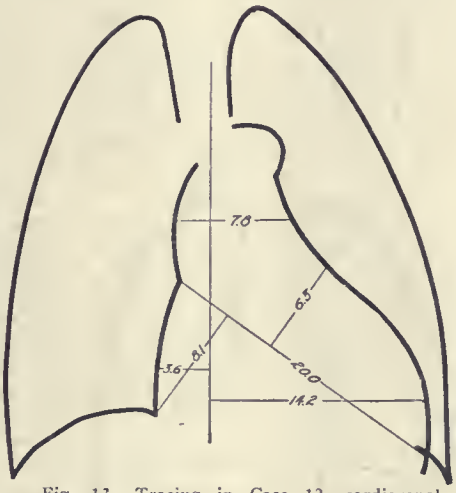


Fig. 13.—Tracing in Case 12, cardiorenal disease.

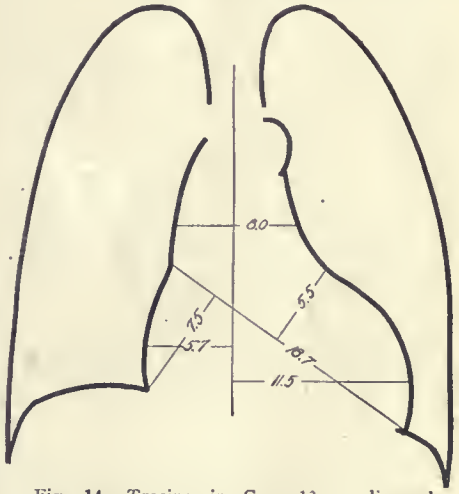


Fig. 14.—Tracing in Case 13, cardiorenal disease.

CASE 8 (Outpatient Department 392688, Fig. 9).—*Syphilitic aortitis and a tremor of syphilitic origin.*—A white man, aged 43, had had typhoid, scarlet fever and gonorrhea; also a penile sore some years before. A slight tremor appeared in the left arm five years before, and remained constant and of the same intensity for three years. It then extended to the left leg and right arm, and for two years had been getting worse. There had been some shooting pains recently in the legs. Otherwise the patient felt well and strong. He weighed 140 pounds. The left arm showed a constant tremor. The right arm and left leg showed the same phenomenon to a less degree. The tremor diminished while purposeful movements were being performed. The right pupil was slightly irregular. There was no reaction to light and distance. There was a slight systolic murmur in the aortic area. The aortic second sound was greater than the pulmonic second sound. The systolic blood pressure was 170; the diastolic, 110. The lungs were negative. The knee jerks were absent. The blood Wassermann test was moderately positive. The spinal fluid

showed 31 cells per cubic millimeter, an increased pressure, and a strongly positive Wassermann reaction.

Case 9 (Outpatient Department 181357, Fig. 10).—*Syphilitic aortitis long unrecognized.*—In 1911 a Jewish woman, aged 50, weighing 155 pounds, complained of continual cough with nonpurulent sputum, dyspnea, pain in the throat and back, and some incontinence of urine. The aortic second sound was accentuated; the heart was not enlarged to percussion. The systolic blood pressure was 150, and the bases of the lungs were full of râles. A diagnosis of bronchitis was made.

In 1912 the cough was still present, and was worse at night. The patient raised little and felt weak. No murmurs could be made out on heart examination. The blood pressure was noted as 130/80.

In 1913 the cough was worse but nonproductive. There was marked dyspnea on exertion. The aortic second sound was greater than the pulmonic second sound. A soft systolic murmur was heard in the aortic area. The blood pressure was noted as 135/90.

In 1914 the old symptoms were still present. Pain had appeared in the left part of the back and in the wrists and ankles.

In 1915 the systolic blood pressure was noted as 180. The patient was treated in the dental clinic for apical abscesses; in the throat room for pain in the throat, without a definite diagnosis, and in the orthopedic department for pains in the wrist and ankles. All of this treatment failed to clear up the original symptoms.

In 1916 the patient was admitted to the hospital for study. The Wassermann test was negative. After a week the patient was discharged with a diagnosis of: question of cholecystitis, chronic pyelitis, cystitis, and a question of mitral disease.

In 1917 the patient was admitted to the hospital the second time and was discharged with the diagnosis of senile heart, chronic arthritis, obesity and a question of myxedema. The blood pressure was noted as 140/90.

In 1919 the patient complained of hoarseness, cough, a feeling of anxiety, dyspnea, and some palpitation. The heart sounds were regular and distant; a systolic murmur was heard all over the precordia, transmitted to the neck; there was a diastolic murmur in the aortic area.

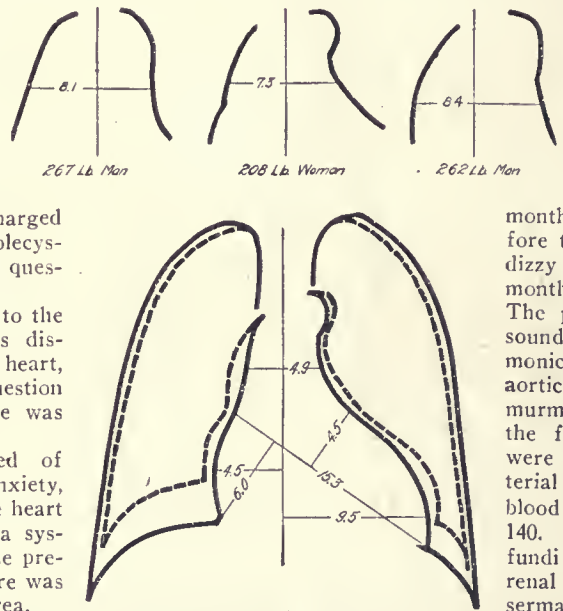


Fig. 15.—Tracings in Cases 14, 15, 16 and 17, with widening of the shadow of the great vessels due to a high diaphragm.

Case 10 (231966, Fig. 11).—*Multiple aneurysms.*—A white woman, aged 50, who had been married thirty years, whose husband, she said, was well, who had had one child that lived to be 21 but died of tuberculosis, and four miscarriages, who had had no diseases of childhood, but "gastric catarrh," evidenced by abdominal distress and backache for many years, and who did not use alcohol, for the last five months had had an attack of dizziness and vomiting about once a week. The attacks lasted one or two days. She was well between the attacks. At times she had a pain in the back which was made worse by exertion and which on several occasions had been transmitted down the left arm and had been accompanied by tingling in the fingers. There had been progressive loss in weight, amounting to 70 pounds in four years, and the patient now weighed 100 pounds. A small, pulsating mass could be felt and seen in the base of the neck on the right side. A systolic bruit was heard over this tumor. There was a firm, round, somewhat tender pulsating mass in the right upper quadrant of the abdomen about the size of an orange. No bruit was heard over this tumor. The heart sounds were regular, rapid and of fair quality. The aortic second sound was greater than the pulmonic second sound and slightly accentuated. There was a loud, blowing, systolic murmur at the base, heard best over the aortic area and transmitted to the neck. There were no thrills. The systolic blood pressure was 225, and the diastolic, 140. The arterial walls were palpable, tortuous and markedly sclerosed. The urine showed a slight trace of albumin and a few red and white cells at two examinations. The red count was 3,000,000. Hemoglobin was 70 per cent. The Wassermann test was negative.

Case 11 (Outpatient Department 404570, Fig. 12).—*Syphilitic aortitis and aortic regurgitation.*—A negro, man, aged 61, had had pneumonia twice, and gonorrhea twenty-five years before. He had been married thirty years; the wife had never been pregnant. For about eight months he had been suffering from epigastric distress, dyspnea and palpitation on exertion. There was no edema. He weighed 185 pounds. The systolic blood pressure was 200; the diastolic, 80. The knee jerks were absent, the pupils sluggish. The brachial arteries were sclerosed and tortuous. The patient had a Corrigan pulse. There was a double murmur in the aortic area and a diastolic murmur to the left of the sternum. The aortic second sound was absent. There was a pistol shot sound in the groin. There were visible pulsations in the neck. At one examination, the urine was not definitely abnormal.

Case 12 (231934, Fig. 13).—*Cardiorenal disease.*—A white man, aged 49, who had had diphtheria at 25, tonsillitis at the same time, and syphilis at the age of 20, and who did not drink steadily but who went on alcoholic sprees, reported that nocturia had begun one year before and had become progressively worse. Severe frontal morning headaches had begun seven months before; there had been attacks of dyspnea during the last seven months; blurring of vision and spots before the eyes for the last three months; dizzy vomiting spells for the last two months, and cramps in the legs recently. The patient weighed 150 pounds. The sounds were regular and rapid. The pulmonic second sound was greater than the aortic second sound. There was a systolic murmur over the precordia heard best in the fourth left interspace. The pulses were equal and of high tension. The arterial walls were palpable. The systolic blood pressure was 210, and the diastolic, 140. The brachials were tortuous. The fundi showed albuminuric retinitis. The renal function was 10 per cent., the Wassermann test negative.

Case 13 (233130, Fig. 14).—*Cardiorenal disease.*—A man, aged 52, who had no diseases except scarlet fever in childhood, who had always been a heavy meat eater, who used much alcohol until two years before, and who was a heavy smoker, began to complain of dyspnea and a "lazy" feeling about three years before. He had been in the hospital twice before because of a worn-out feeling. Orthopnea became noticeable two weeks before and was accompanied by nocturia and edema of the ankles, lower legs and thighs. There had not been precordial pain at any time. The patient weighed 196 pounds. In January, 1917, the sounds were regular and of good quality. The rate was normal. There was a soft systolic murmur at the apex. The second sounds were accentuated. The liver edge was palpable 2 cm. below the costal margin. An electrocardiogram disclosed left ventricular preponderance. The Wassermann test was negative. The renal function was 30 per cent. The urine showed a specific gravity between 1.020 and 1.024, albumin from a very slight trace to a slight trace, and many hyaline casts. The systolic blood pressure was 180, and the diastolic, 110. In May, 1919, the pulmonic second sound and the aortic second sound were equal. There was a shrill, high-pitched murmur in the mitral area. There was no thrill. The brachials were tortuous. The systolic blood pressure varied between 210 and 230; the diastolic was 140. The renal function was

from 20 to 25 per cent. The urine showed hyaline and granular casts and a specific gravity between 1.012 and 1.020. In October, 1919, the second sounds were accentuated. There was a blowing musical systolic murmur at the apex transmitted to the axilla. The radial arteries were sclerotic and beaded. The systolic pressure was 220, the diastolic, 150. There were râles in the bases of the lungs. There was edema of the ankles and thighs. The fundi showed sclerosed and tortuous arteries and small sclerotic plaques. The urine showed a specific gravity from 1.010 to 1.014, from a trace to a very slight trace of albumin, and hyaline and granular casts. The renal function was 25 per cent.; the hemoglobin, 70 per cent.

CASES 14, 15, 16 and 17 (Fig. 15).—*Widening of the shadow of the great vessels due to a high diaphragm.*—The three upper tracings represent the size and shape of the great vessels in patients weighing more than 200 pounds. In each case there was a high diaphragm probably the result of a large amount of abdominal fat. These sketches are traced from the 7-foot plates. In well-built persons weighing more than 200 pounds and possessing a normally placed diaphragm, the great vessels rarely measure more than 6 cm. in width.

The large drawing represents the shape and size of the heart, great vessels and thoracic cavity of a well-built man, aged 39, weighing 142 pounds. The solid outline was made from a 7-foot plate taken during normal breathing, while the broken outline was traced from a 7-foot plate of the same patient made during forced expiration. This man was a recently discharged soldier who had been leading an active life, and he had a good diaphragmatic excursion. During expiration the diaphragm rises and the chest walls are drawn in. The heart is forced upward, but apparently the upper portion of the aortic arch remains fixed. As a result, the heart and great vessels are compressed, and a widening of their transverse diameters results.

This patient came in complaining of a feeling of fulness in the chest which was worse after meals and had been present for about a year. There were no other symptoms. On auscultation there was a double murmur in both the aortic and mitral areas, and the aortic second sound was sharp. The pulse pressure was a little higher than normal. There was no rheumatic or syphilitic history. The electrocardiograph detected nothing abnormal. The patient was thought to have an early involvement of both the aortic and the mitral valves of rheumatic origin.

CASE 18 (Fig. 16).—*An aortic arch of normal width in an obese man who possessed a diaphragm that was not abnormally high.* — This tracing was made from a 7-foot plate of the heart of a young, active man weighing 220 pounds. He was not of an athletic type and showed considerable subcutaneous fat, but the diaphragm seen fluoroscopically was not pushed up abnormally high as a result of excessive abdominal fat. There were no symptoms, and the man seemed to be normal in every way.

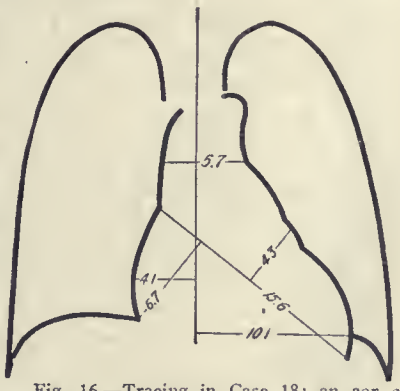


Fig. 16.—Tracing in Case 18; an aortic arch of normal width in an obese man who possessed a diaphragm that was not abnormally high.

CASE 19 (145038, Fig. 17).—*Dilated pulmonary artery.*—A white man, aged 26, who had croupous pneumonia at 12, typhoid and diphtheria at 13, bronchopneumonia (?) at 25, no history of "rheumatism," chancroid (?) eight months before, who had been in the hospital with a "cold" for two weeks about four months before, who had been working but was never "up to snuff," and who had had some precordial pain and dyspnea for the last two years, had complained for the last four days of headaches, "hot and cold" sensations, pains all over the body, and a cough accompanied by pain in the left lower chest. This condition was diagnosed as a mild bronchopneumonia. The patient weighed 124 pounds.

At the age of 12, the heart was outside the nipple line 3½ inches from the midsternum. There was no increase to the right. The action was rapid and regular. The second sound at the apex was accentuated. The pulmonic and aortic second sounds were equal. There was a systolic murmur at the apex not transmitted. The patient had been in the hospital with croupous pneumonia at this time.

At the age of 13 the heart was in the fifth space in the anterior axillary line. There was no increase to the right. The action was rapid and regular. The pulmonic second sound was very much accentuated and equaled the aortic second sound. The first sound was replaced by a systolic murmur heard all over the precordia, loudest in the mitral areas and transmitted to the axilla. The spleen was palpable. The patient was in the hospital at this time with diphtheria and typhoid.

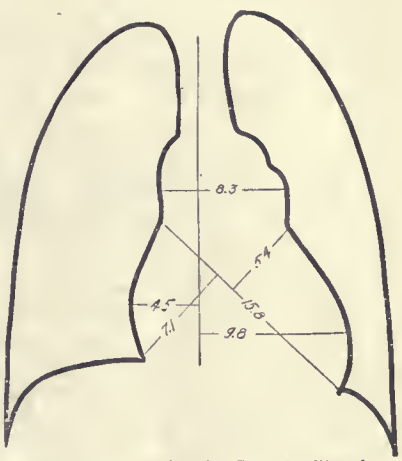


Fig. 17.—Tracing in Case 9, dilated pulmonary artery.

At the age of 25, the heart apex impulse was felt and seen 13 cm. to the left of the midsternal line. The sounds were regular and of poor quality. The pulmonic second sound was accentuated and reduplicated, and equaled the aortic second sound. A short systolic murmur at the apex was transmitted to the axilla. There was a short diastolic murmur just to the left of the sternum. The systolic blood pressure was 110, the diastolic, 60. Roentgenoscopy revealed a prominence of the pulmonary artery and a thickening of the hilum shadows and lung markings. A diagnosis of mitral insufficiency and bronchopneumonia (?) was made at this time.

At present, the impulse is heaving. A sharp slap is felt half way between the pulmonary area and the apex. The pulmonic second sound is greater than the aortic second sound and much accentuated. There is a soft systolic murmur at the apex. The second sound is loudest where the slap is felt, and is synchronous with it. There is no thrill. The systolic blood pressure is 148, and the diastolic, 110. The sputum shows the Type IV pneumococcus, and blood culture, *Staphylococcus albus.*

Children Born Out of Wedlock.—Questions about the legal obligations of parents and of the state to children born out of wedlock are answered in a bulletin entitled "Illegitimacy Laws in the United States and Certain Foreign Countries," issued by the Children's Bureau of the U. S. Department of Labor. Attention is called in this report to the fact that legal provisions for the support of the child born out of wedlock are inadequate—the payments prescribed are often too low, and in most of the states the period of support is too brief, sometimes reaching only to the child's tenth or twelfth year. The report suggests that illegitimacy legislation in the United States might be improved by uniform provision for the establishment of legitimacy; the legitimation of children of null or subsequent marriages; possibility of adoption by the father, and declaration that the relation of mother and child is the same whether the child is legitimate or not. In addition to a critical analysis of illegitimacy legislation in this country, the report contains an analysis of certain phases of the various state laws in tabular form, the complete text of all the state laws, the illegitimacy provisions of the codes of France, Germany and Switzerland, and a reference index to the U. S. illegitimacy laws.

ENCEPHALITIS LETHARGICA IN PREGNANCY *

MARGARET SCHULZE, M.D.
SAN FRANCISCO

The case which I wish to report occurred in a pregnant woman of 35. In reviewing the recent literature, I have found records of only seven other cases of encephalitis lethargica occurring in pregnant women. In the nona epidemic of 1890, no cases complicating pregnancy are mentioned.

Though the fact is not always brought out in the smaller series, the disease appears to be far more common in the male sex than in the female, a point that was emphasized by Neal.[1] Of 189 cases in recent English and American reports, only sixty-seven occurred in women and girls, and of these only thirty-three were in women of the child-bearing age. The mortality is, however, considerably higher in women than in men. Of 122 men, seventy-two recovered, twenty-three died, and in twenty-seven the outcome of the disease had not been determined at the time of the report; of the sixty-seven women, twenty-seven recovered, twenty-four died, and in sixteen the outcome was not yet known. The mortality rate in the pregnant women appears to be particularly high. Of the eight recorded cases, including my own, one recovered, five died, and in two the outcome was not reported.

The first case in this series was reported by Harris.[2] This case occurred in the British epidemic in the spring of 1918, and was considered botulism, as were many of the earlier cases in England.

A young woman who was pregnant, almost at term, ate heartily of tinned salmon, March 28. The following morning she developed diplopia, bilateral ptosis, marked drowsiness, and pyrexia up to 103 F. She was delivered, April 2, without influence on the course of the disease, which had continued with double third nerve paralysis, drowsiness, pyrexia of 100 F., retention of urine and increasingly active delirium up to the time of writing. Examination of the suspected food had shown a large gas-producing, anaerobic gram-positive, probably spore-bearing bacillus which had not as yet been identified.

Duncan [3] in May, 1918, reported a case of a married woman several months pregnant, who had been ill a few days. When first seen she was sitting by the fireside with both eyes closed. She was dull, but spoke when she was addressed. She could raise her eyelids, the right more than the left. There was herpes of the upper lip. The outcome of this case is not stated.

Neal [1] has reported the only case with recovery at the time of writing.

This was a woman of 25 who was five months' pregnant. She had had an attack of influenza two weeks before the onset of the encephalitis, which began gradually with headache, chills and fever, vomiting, sweating and delirium. The spinal fluid showed great increase in cells and protein, a negative Wassermann test and negative guinea-pig inoculation for tuberculosis. Her condition remained the same for two weeks or more. Then she gradually recovered; the facial paralysis cleared up, and she had a normal delivery at term.

Sachs,[4] in a series of seven cases, had three fatalities, of which two occurred in pregnant women. The duration of pregnancy is not stated in either case. In one there was a distinct history of influenza three months before the onset of the attack. Both of these cases presented all the ocular symptoms, the lethargy, and the ataxic and cerebellar symptoms. In one of the cases, in addition to the symptoms of poliencephalitis superior, there was also marked wasting of the muscles of the upper extremity and tremor of the hands. One case showed a spinal fluid with 20 cells. Acetone and diacetic acid were present in the urine in both cases. Both patients were extremely toxic. The question of inducing abortion was considered but rejected, and it was very questionable whether anything would have been gained by it. The total duration of the disease in each case was about four weeks.

Putnam's [5] case was in a woman of 26, who had had two previous normal pregnancies and whose present pregnancy had been normal.

She was found lying on the floor apparently asleep. When aroused, she was weak and dizzy and took no notice of her surroundings. She had no pain except a slight headache and no visual disturbances. Her face was expressionless and her eyes closed. The pulse was 114 and the temperature 99.4 F. The pupils were contracted and she tended to assume cataleptic postures. Her symptoms were at first thought merely hysterical, but her condition did not change, and the pulse rate and temperature remained elevated. Examination disclosed no paralyses, but some rigidity of the extremities and a slight Kernig reflex with some pain on full extension. The eye muscles and face were normal. The leukocyte count was 14,000; the urine was negative; the Widal test proved negative; the spinal fluid showed 11 cells, gave a negative Noguchi reaction and reduced Haines' solution. For the first few days, she awoke spontaneously for food and defecation; later she could be aroused for these functions.

She was delivered three weeks after the onset of her illness. She did not arouse during the four hour labor. The child was stillborn; its heart had not been heard the whole day previous. Four days after delivery the patient died.

Bassoe [6] reports a fatal case with postmortem examination in a woman of 34, an octipara in the sixth month of pregnancy.

This patient complained of listlessness, fatigue and headache. She had some nausea but no vomiting, and moderate fever. The facial expression was dull, and there was a slight facial palsy on the right side. The protrusion of the tongue was weak. The back was somewhat rigid, the deep reflexes on the left side were increased, but there was no rigidity of the extremities. The pupils and eyegrounds were normal. She was mentally dull, slightly confused and disoriented for time. Five weeks after the onset of the disease, hyperpyrexia and pulmonary edema developed and the patient died.

Postmortem examination revealed marked congestion of the veins of the pia, with edema and congestion of the brain and minute hemorrhages visible on the cut surfaces, especially in the white matter of the centrum ovale and the basal ganglions. The ventricles and their ependyma were of normal appearance. Sections from the frontal lobe showed marked distention of the vessels, especially the veins, but there were only very small lymphocytic infiltrations around some of the smaller vessels. In the left motor cortex, the pia was loose in texture with slight increase of cells. There was no definite sign of inflammation in the cortex itself. The left optic thalamus showed very extensive inflammation with large collections of mononuclear cells about the distended vessels. There were no large hemorrhages. All the sections

* From the Woman's Clinic, University of California Hospital.

* Owing to lack of space, this article is abbreviated in The Journal by the omission of introductory notes on the history of the disease. The complete article appears in the author's reprints.

1. Neal, Josephine B.: Lethargic Encephalitis, Arch. Neurol. & Psychiatry **2**: 271 (Sept. 1) 1919.
2. Harris, W.: Lancet **1**: 568 (April 20) 1918. McCaw, H. J.: Ibid. **1**: 616 (April 27) 1918.
3. Duncan, J. W.: Brit. M. J. **1**: 551 (May 11) 1918.
4. Sachs, B.: New York M. J. **109**: 894 (May 24) 1919.
5. Putnam, O.: J. Missouri M. A. **16**: 260 (August) 1919.
6. Bassoe, Peter: Epidemic Encephalitis (Nona), J. A. M. A. **72**: 971 (April 5) 1919.

of the pons showed marked inflammatory changes, most pronounced in the dorsal portion, with numerous small hemorrhages. The bulb showed no inflammatory changes.

REPORT OF AUTHOR'S CASE

The case which I wish to report is the following:

Mrs. N. A., a pregnant woman aged 35, entered the obstetric service of the University of California Hospital, April 23, 1919, complaining of edema of the legs and hands of one month's duration, and aching pains in both arms during the previous week. The pregnancy was one month past term. She had had one full term pregnancy six years before, complicated with marked edema, and some eye symptoms and pains in the legs during the last month, which had disappeared shortly after delivery. Her past history was otherwise negative. She had not had influenza, nor had any one in her immediate family.

Physical examination was negative except for the presence of a full term fetus in the left occipito-anterior position, varicosities of both legs with more edema of the legs than these could account for, and moderate edema of the hands.

Her mentality was rather low, but her mind seemed clear. Sensory examination disclosed a slight hyperesthesia to touch and pain over the posterior part of each shoulder; elsewhere sensation was normal. The pupillary reactions were normal. The deep reflexes were somewhat exaggerated, with a false patellar clonus. The left abdominal reflex was increased, the right was doubtful. There was a right sided Babinski reflex. Both hands showed a constant tremor, which increased if the patient tried to control it, but decreased if her attention was diverted. The blood pressure was 140 systolic and 95 diastolic. The urine showed the faintest possible trace of albumin with no casts. Both blood and urinary nitrogen were normal, and blood and urine cultures sterile. As all her teeth had been extracted dental roentgenograms were not taken and there were no other foci of infection demonstrable. The hemoglobin was 55 per cent. Sahli; the blood Wassermann reaction was negative. The temperature on the day of entry was 37.5 C. (99.5 F.), on the following day 37.2 C. (98.9 F.). After this it was normal for five days, until delivery. The pains in her arms persisted and at times were so severe as to require morphin for sleep. April 30, after five hours of normal labor, she was delivered of a child weighing 4,600 gm. (10 pounds). Following delivery she had a low grade fever, never higher than 37.6 (99.7 F.) and therefore not requiring a uterine culture. On the tenth day the temperature reached 38 C. (100.4 F.). It was now noticed that she had become very dull mentally and seemed in a sort of stupor most of the time. She was easily aroused, and when addressed answered rationally and was clearly oriented. She complained of diplopia, and said that the pain in her arms kept her awake at night. A slight ptosis of the left lid and a right sided facial paralysis developed. The Babinski reflex had now disappeared, the other reflexes and the sensory findings remaining about the same. There were no signs of meningeal involvement.

A spinal puncture, May 15, yielded a clear fluid under slightly increased pressure. The Nonne and Noguchi reactions were negative, the cell count was twenty-six and Fehling's solution was reduced. The Wassermann reaction was negative and cultures were sterile. There was no web. A second puncture, May 15, was again sterile. There was a moderate leukocytosis, varying from 12,000 to 18,000 with 80 per cent. polymorphonuclears. A nasopharyngeal culture showed *Bacillus influenzae*. The neurologic signs varied. She developed weakness of the muscles of mastication, tremor of the tongue with protrusion to the right, and then a right external rectus palsy.

About May 23, she began to improve markedly. Her mentality was much clearer, the tremor decreased, the tongue could be protruded normally, and the external rectus palsy was much less marked. The right arm reflexes were still increased, but the other reflexes were normal except for an atypical Oppenheim sign on the right side. The temperature became normal.

May 26, after getting up and walking about her bed without permission, she suddenly developed symptoms of pulmonary embolism and died in twenty minutes, twenty-six days after delivery.

Postmortem examination revealed thrombosis of both femoral veins and extensive bilateral pulmonary emboli, which occluded almost the entire pulmonary circulation. Macroscopically the brain was practically normal except for a few punctate hemorrhages on cut section in the region of the midbrain. The cerebrospinal fluid was normal in appearance and amount. Microscopic examination revealed the characteristic changes of lethargic encephalitis. There was congestion and slight round cell infiltration of the leptomeninges. There were marked perivascular infiltration and a few small hemorrhages about the vessels, especially of the midbrain and pons. There was no degeneration of the nerve cells. The medulla showed much less marked changes; the cerebral cortex was normal.

Clinical Notes, Suggestions, and New Instruments

ADMINISTRATION OF DIGITALIS BY "EGGLESTON METHOD"

CARY EGGLESTON, M.D., NEW YORK

Many requests have been received for information as to the practical application of this method of administering digitalis, and therefore it seems advisable to publish a brief statement regarding the details involved. The reader is referred to the original paper[1] for the data on which the method is based, and to the papers by S. Marx White and R. Edwin Morris,[2] and by R. Edwin Morris,[3] for comments on the method.

This method of digitalis dosage and administration is designed especially for rapid digitalization by oral administration. It depends on the establishment of an average total amount of digitalis which is required to produce full digitalization, or the minor toxic actions of digitalis. This total amount is expressed in terms of the activity of the drug and the patient's body weight in pounds. The activity of the drug is determined by the cat method of Hatcher,[4] described in the *American Journal of Pharmacy*, the unit being the weight of dry drug, in milligrams, which is required to kill 1 kg. of cat when a solution is injected slowly and continuously intravenously. This amount is called a cat unit. High grade specimens of digitalis, when not assayed by the cat method, may be regarded as having an average activity of 100 mg. to the cat unit. The average total amount of digitalis required for oral administration to man is 0.15 of one cat unit per pound of body weight.

CALCULATION OF AVERAGE TOTAL AMOUNT

The calculation of the average total amount required by any given patient may be as follows:

1. The patient's weight is determined in pounds.
2. The cat unit of the digitalis is determined.
3. One of the following formulas is applied:

Formula I: $\frac{C.\,U. \times 0.15 \times W}{1{,}000}$ = Grams of powdered leaf in total amount

Formula II: $\frac{C.\,U. \times 0.15 \times W}{100}$ = Cubic centimeters of tincture in total amount

Formula III: $\frac{C.\,U.}{100} \times W$ = Cubic centimeters of infusion in total amount

In these formulas, *C. U.* is the number of milligrams in one cat unit, and *W* is the patient's body weight in pounds.

1. Eggleston, Cary: Digitalis Dosage, Arch. Int. Med. **16**: 1 (July) 1915.
2. White, S. M., and Morris, R. E.: The Eggleston Method of Administering Digitalis, Arch. Int. Med. **21**: 740 (June) 1918.
3. Morris, R. E.: Clinical Pharmacology of Digitalis, Minnesota Med. **1**: 125 (April) 1918.
4. Hatcher, R. A., and Brody, J. G.: The Biological Standardization of Drugs, Am. J. Pharm. **82**: 360, 1910.

The following example illustrates the use of these formulas: A patient weighs 150 pounds, and the digitalis available has an activity of 100 mg. to the cat unit. Applying Formula I for the powdered leaf, we have $100 \times 0.15 = 15$; $15 \times 150 = 2{,}250$; $2{,}250 \div 1{,}000 = 2.25$ = grams of leaf in total amount. Applying Formula II for the tincture, we have $100 \times 0.15 = 15$; $15 \times 150 = 2{,}250$; $2{,}250 \div 100 = 22.5$ = cubic centimeters of tincture in the total amount. Formula III gives $100 \div 100 = 1$; $1 \times 150 = 150$ = cubic centimeters of the infusion in the total amount.

ADMINISTRATION OF AVERAGE CALCULATED TOTAL AMOUNT

1. When the patient has received no digitalis within the preceding ten days.

A. *In urgent cases.*—From one third to one half of the total calculated amount is administered at the first dose. After an interval of six hours, from one fifth to one fourth of the total is administered. After a second six hours, from one eighth to one sixth of the total is administered. Thereafter, if more digitalis is needed, about one tenth of the total may be repeated every six hours until maximal digitalization is secured. In the case of the example given above with the total amount being 22.5 c.c. of tincture, the first dose would be from 7 to 11 c.c.; the second from 4 to 5 c.c.; the third from 2.5 to 3.5 c.c., and thereafter about 2 c.c. every six hours if required.

B. *Rapid, for nonurgent cases.*—About one fourth of the calculated total is to be given at each of the first two doses, six hours apart. Thereafter about one tenth to one eighth of the total is given every six hours.

2. When the patient has been taking digitalis within the preceding ten days.

Before further digitalis is prescribed, the patient is to be subjected to the most careful examination, including the use of polygraphic or electrocardiographic records if available, to determine whether or not there are any evidences of digitalis action.

A. *When evidences of digitalis action are absent.*—The procedure is the same as outlined above, except that the total amount of digitalis required is to be reduced to 75 per cent. of the total calculated. Thus, in the example used the total would be reduced to 17 c.c. instead of the calculated 22.5 c.c., and the fractions prescribed at each dose would be based on the former figure (17 c.c.). The usual one tenth of the total every six hours may then be prescribed if necessary.

B. *When evidences of partial digitalization are present.*—It is best not to attempt to administer more than one half of the total calculated amount of digitalis, divided equally between the first three doses. In urgent cases in this group, however, one may administer 75 per cent. of the calculated amount, preferably in three equal doses, and then if digitalization is not quite complete, one tenth of the total amount may be prescribed every six hours.

SAFEGUARDS

The appearance of one or more of the following criteria of adequate digitalization, or of minor digitalis intoxication, indicates the cessation of further administration, either permanently or temporarily:

1. Nausea or vomiting (except when due to splanchnic congestion and present before treatment is begun).
2. Fall of heart rate (not pulse rate) to or below 60 a minute.
3. Appearance of frequent premature contractions; of definite heart block; of marked phasic arrhythmia, or of coupled rhythm.

The observance of a six-hour interval between doses allows time for complete absorption of the preceding dose and the development of its full action on the heart so that if the patient is examined just before the administration of each dose, dangerous intoxication can be absolutely prevented. In practice it is perfectly safe to give the first three doses without personally examining the patient before the second and third doses if the one nursing the patient is properly instructed to look for nausea, vomiting, or slowing of the pulse to 60 or less a minute before giving the succeeding dose, and to stop administration if any of these phenomena appear.

When a leaf, tincture, or infusion the cat unit of which is unknown is employed, 100 mg. may be taken as the cat unit; but not more than 75 per cent. of the calculated total amount should be given in the first three doses.

When the patient cannot be weighed, or when marked edema or general anasarca is present, the body weight (exclusive of edema fluid) must be estimated as closely as possible and the total amount of digitalis calculated as usual. Not more than 75 per cent. of the calculated amount should then be given in the first three doses.

COMMENT

The employment of this method of administering digitalis is without danger to the patient if the directions are followed in detail and if the safeguards are carefully observed. By its employment it is usually possible to produce maximal digitalis action in from twelve to eighteen hours, and marked therapeutic effects frequently appear within six hours after the initial dose. By its use it is possible to dispense with the intravenous or intramuscular administration of ouabain, amorphous strophanthin, or other digitalis body in the great majority of cases of heart failure.

412 West End Avenue.

TRANSFUSION OF "ANTIBACTERIAL BLOOD"; REPORT OF CASE *

GEORGE F. LITTLE, A.B., M.D., BROOKLYN

M. K., a girl, aged 11 years, whom I first saw, Nov. 3, 1918, in consultation with Dr. Paul E. Wesenberg, had been suddenly seized with epidemic influenza, October 28. In a few days there was evidence of pneumonia at both bases. November 3 there was well marked consolidation on the right side posteriorly. A similar condition soon showed on the left, and by the 7th the patient gave signs of massive consolidation of both lower lobes. The case seemed hopeless. Oxygen was used freely; the windows were kept wide open. Moderate doses of morphin, with large doses of atropin, were being tried out at one of the army camps, in cases of massive influenzal pneumonia. The patient was given $\frac{1}{24}$ grain of morphin sulphate and $\frac{1}{150}$ grain of atropin sulphate every four hours for a day, and every six hours the second day. Morphin was then discontinued and atropin reduced to $\frac{1}{100}$ grain at four hour intervals, replaced after a day or two by 4 minims of tincture of strophanthus. Three grains of caffein sodiobenzoate were administered midway between the doses of atropin and strophanthus. Three grains of camphor in oil, and 5 minims of a 1:1,000 solution of epinephrin were employed hypodermically, as conditions warranted. Eliminative measures were freely used.

After a few days of treatment, the lung consolidation lessened and the child slowly improved. At the end of two weeks, râles at both bases were the only finding. In the meantime, however, there were other complications: an acute laryngitis; a dry pleurisy of the upper right chest, and a suppurative glossitis. November 12, swellings were noted on the back, right thigh and both ankles. The right ankle was incised on this date by Dr. Wesenberg, and pus was found. A blood culture was ordered, and mixed influenza serobacterin was administered for several consecutive days, without noticeable benefit. Dr. Horace Greeley reported the culture as showing a staphylococcus and a bacillus, the latter not identified. On account of the patient's extreme weakness, he doubted reaction to an autogenous vaccine, and suggested transfusion of blood from a donor whom the vaccine might cause to react.

An incision in the left popliteal space, November 15, revealed a quantity of pus. On the 17th, an abscess in the lumbar region was opened. A first injection of autogenous vaccine was given on this day. Two days later, incisions showing pus were made in the right side of the chest, left arm, left forearm and right hip. A considerable quantity of mucus in the stools gave evidence of an enteritis. November 20. Dr. Max Bender tested the blood of seven family

* Read in part before The Brooklyn Pediatric Society, Dec. 18, 1918.

donors with that of the patient. In only one case was there no agglutination. On the following day Dr. George I. Miller made an attempt at transfusion. The donor had no visible veins at the bend of either elbow, and dissection brought to light veins of infantile size, capable of no flow of blood. Two days later the patient's left ear drum perforated.

Professional donors were tested and one found whose blood was available for the child. Three hundred c.c. were passed from vein to vein, November 23, by Dr. Miller and Dr. Benjamin E. Wolfort. Five-tenths c.c. of the patient's vaccine was then injected in each arm of the donor, with marked reaction.

At this stage of the case, the bronchopneumonia was of low grade, with some râles at the bases, apparently needing only increased resistance for clearance. The septicopyemia, however, was overwhelming, and the prognosis indicated a fatal outcome.

From the transfusion there was a slight general betterment. Both eyes, however, became infected. November 25, 400 c.c. of blood were transferred. The patient became cyanotic at the close of the operation, and in the following twenty-four hours the pulse was of poor quality, with a tendency to cardiac collapse. Possibly a little too much blood was passed. During the following week the temperature continued of septic type; the right ear drum perforated, and abscesses were reopened on the back and left arm.

December 3, 340 c.c. of blood were transfused, the donor having received 1 c.c. of vaccine in each arm four days previously. The child took the donation well, with apparent improvement in the general condition, but the temperature showed diurnal variation from 100 to 103 F. Incision, by Dr. Wesenberg, in the left popliteal space, December 5, brought pus in quantity. Drs. Miller and Wolfort again transfused, December 8, giving to the patient 390 c.c. of "antibacterial blood" from the donor, who had been "primed," as on the last occasion. There was difficulty in locating a receptive vein, the internal saphenous finally being utilized, after delicate dissection. Local anesthesia sufficed, as in previous transfers. Owing to prolonged procedures, apparently, the heart developed a condition requiring most active stimulation, and creating anxiety as to future interference. Cardiac weakness had been more or less a feature in the septic involvement. On the same date, the right ankle required incision.

Following this transfusion, the marked septic temperature curve disappeared, the râles at the bases cleared, and the patient took nourishment well and gained daily in flesh and strength. For months, however, while not in danger as to life, she was entirely disabled by continuance of local infections. Dr. Wesenberg incised at intervals—the right leg above the ankle, the right ankle again, the lower spinal region, the right side, the right ankle still again, and the left hip. January 2, and on several subsequent occasions, roentgenograms of the infected joints were taken by Drs. Eastman and Bayles. At the indication of the plates, Dr. Wesenberg, assisted by Drs. Edwin B. Wilson and Richard M. Mills, operated under general anesthesia, January 4. The right hip joint was opened; the head of the femur, displaced upward, was brought down, and the leg straightened and put in Buck's extension. The opening into the left knee joint permitted removal of dead bone. This leg was straightened and similarly extended.

Rib resection was called for, January 30, through development of an abscess of the lung. This apparently cleared up in a few weeks, but filled again and required reopening, February 28. Further operative measures became necessary, February 19, as roentgenograms revealed considerable destruction of the surgical neck and articular surface of the left femur. This hip had been opened and drained, February 3. The incision was enlarged by being carried transversely toward the rectum. Right hip drainage had ceased and the wound had closed: the presence of pus was apparent in the plates, indicating reincision. Lieut.-Col. Edwin H. Fiske, M. R. C., saw the patient in consultation, March 10. He did not advocate further operative interference. There was no additional development of localized infection. The affected joints were slow in clearing up—the last to heal, the left knee, ceasing to drain in July. Limitation of motion was naturally expected, loss of function of the left hip being especially feared.

The outcome of the case, as shown in the present condition of the patient, is better than expected and reflects credit on the surgery. There is good motion in both hip joints. The right leg is shortened 1¾ inches; this is partly compensated for by a 1-inch shortening of the left leg; a thick shoe sole completes the balance. There is a right talipes equinus, probably capable of correction by tenotomy. A slight interference with the left knee flexion may be overcome.

COMMENT

The possible effect of several more transfusions on the local processes would have been of interest. It was not feasible, however, to go further.

"Antibacterial blood" seems worthy of trial in any severe general infection, other measures having failed of control.

CONCLUSIONS

Those in professional attendance certainly reached the conclusion that life was saved by the transfusions.

Possibly blood, without attempted action on it, might have accomplished the result. It is rational to conclude, however, that the patient's vaccine, injected into the donor, produced antibodies in his blood which were of specific value to the patient in overcoming her septicopyemia.

469 Clinton Avenue.

HITHERTO UNDESCRIBED SIGN IN DIAGNOSIS OF LETHARGIC ENCEPHALITIS

THOMAS F. REILLY, M.D., NEW YORK

While there is no great difficulty in arriving at a diagnosis in the cases of encephalitis presenting a history of double vision, ptosis and other cranial nerve phenomena, a not inconsiderable number of patients are encountered in hospital practice who are brought in unconscious or delirious, and from whom no such history is obtainable. In such instances the patient presents a picture closely simulating that of one in the third week of typhoid fever. There are no focal symptoms pointing to a local central lesion. The leukopenia, so frequently present, is also strongly suggestive of typhoid fever.

In children the picture is almost identical with tuberculous meningitis. I have noticed in the majority of cases of encephalitis a sign that is very startling when recognized. It consists of a rhythmic convulsive twitching of the muscles of the abdomen in the neighborhood of the eighth and ninth ribs. It often simulates the muscular movement of hiccup, except that it is onesided. In two cases it involved the trapezius. Even in the conscious patient, it is beyond voluntary control. It has been present in the mild as well as in the severe cases, although in two patients it was not elicited when I observed them.

The term "lethargic" is unfortunate, as many of the patients having encephalitis are never lethargic; on the contrary, they are frequently delirious and often have choreiform movements of the limbs.

In some cases there are almost no cerebral symptoms, not even the ordinary placidity; in others a curious fear and apprehension may be evident, and again the patient presents only the painful sensations of an ordinary neuritis confined to certain peripheral nerve tracts, the central origin of which is evident by reason of its rapid transference to other regions of the border.

Often in these doubtful cases the convulsive twitching mentioned above is the only symptom that may serve to suggest that the patient is suffering from encephalitis.

It may be too early to regard this symptom as of absolute diagnostic value; but it has been present so frequently in the cases that I have observed that I am certain that it is at least a strongly suggestive sign.

34 West Eighty-Eighth Street.

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SATURDAY, MARCH 13, 1920

INFLUENZA OF 1918 AND 1920

The epidemic of influenza in 1920 in this country reached its maximum, so far as the large cities of the country are concerned, in the week ending February 14. According to the Bureau of Census Reports, the number of combined deaths from influenza and pneumonia in that week was 7,059, while in the following week the number of deaths from these causes in the same cities had dropped to 5,088. These figures compare with the February weekly average in 1917 of 1,489. Although cases of typical influenza seem still to be appearing in various parts of the country, the peak of the epidemic has certainly been passed. As previously pointed out, the total mortality throughout the country has been much lower in 1920 than it was in 1918. Certain localities, however, have suffered quite severely, notably Kansas City, Minneapolis, Detroit, Milwaukee and St. Louis, all of which had a higher death rate from influenza and pneumonia than in 1918. Columbus, Ohio, and Indianapolis also suffered severely, although the actual excess rates did not reach quite as high a point as in 1918. Unofficial reports from small towns and villages show substantially the same conditions as observed in the larger cities. Most communities were less seriously affected than in 1918, but certain localities apparently without regard to geographic distribution were very seriously stricken.

The epidemic of respiratory disease of January, 1920, differed from the epidemic of 1918 in that the total number of persons affected was less, the proportion of acute rapidly fatal cases was smaller, and the period of the epidemic was somewhat shorter. Symmers,[1] in a study of the pathologic findings in a series of fatal cases of pulmonary disease of the recent recurrent epidemic in New York, noted certain clinical as well as pathologic differences between the types of the disease of the two epidemics:

> The recurrent disease, while it incapacitated thousands, pursued a milder course, complicating pneumonias were relatively few, and the death rate, of course, did not approach the appalling figures of the previous eruption. On the other hand, the recurrent disease was characterized by a greater variety of pulmonary lesions—among other things, by concomitant semipurulent pleural exudates, by multiple pleural and subpleural abscesses, by frequent and extensive purulent invasion of the interlobar and interlobular septums of the lungs, by the formation of solitary, oftener multiple, discrete or confluent abscesses of the parenchyma, and by an extraordinary range of pneumonic lesions.

This experience in New York was no doubt duplicated in many other localities, usually those in which the epidemic of 1918 was of like severity. In other communities the epidemic of 1920 presented a proportion of severe rapidly fatal cases approaching that of 1918. As was pointed out in these columns,[2] the case fatality in several large cities equaled that of the epidemic of 1918.

Apparently the differences between the original and the recurrent epidemic depended to a considerable extent on the relative susceptibility and exposure of the population of a community at a given time. The first wave of influenza in 1918 affected a large proportion of highly susceptible persons, and in these the course was particularly severe and fatal. The early fatal termination precluded the development of purulent complications, which require a somewhat longer time for development. The records in certain army camps showed that of those dying late in the epidemic, at a time when the proportion of purulent complications was larger, many had become ill early in the epidemic, but had survived their fellows only to succumb later to more slowly fatal complications. The effect of individual resistance on the type of pulmonary lesions has been noted by MacCallum[3] in his studies on pneumonia following measles and on the pneumonias following influenza. Some communities suffered relatively little in 1918, and in some at least of these, in which there presumably remained a considerable number of highly susceptible persons, the influenza of 1920 produced many severe fulminant cases of the type seen early in the epidemic of 1918.

So far as now available, reports from different communities on the bacteriology of the 1920 epidemic show the same diversity of results as was the case in the 1918 epidemic. Symmers found *Streptococcus hemolyticus* in most of the lesions; *Staphylococcus aureus* was found occasionally in intrapulmonary abscesses. "In the pneumonic exudates themselves, the prevailing micro-organism was a streptococcus. In occasional instances, influenza bacilli and pneumococci were isolated in combination with one another or with streptococci." These findings resemble those of the later portion of the epidemic of 1918 in some army camps. On the other hand, Small and Stangl[4] report from Chicago a higher proportion of Pfeiffer bacilli, in some of their groups from 75 to 100 per cent. In a group made up of cases of pneumonia chosen at

1. Symmers, Douglas; Dinnerstein, Morris, and Frost, A. D.: Differences in Pathology of Pandemic and Recurrent Forms of So-Called Influenza, J. A. M. A. **74**: 646 (March 6) 1920.

2. The 1920 Influenza, Current Comment, J. A. M. A. **74**: 607 (Feb. 28) 1920.

3. MacCallum, W. G.: Pathology of the Pneumonia Following Influenza, J. A. M. A. **72**: 720 (March 8) 1919.

4. Small, J. C., and Stangl, Fred: The Bacteriology of Epidemic Influenza, abstr. J. A. M. A. **74**: 622 (Feb. 28) 1820.

intervals throughout the 1920 epidemic, pneumococci occurred in 84 per cent., hemolytic streptococci in 18 per cent., and Pfeiffer bacilli in 75 per cent.

In 1918, a clear bacteriologic picture of the epidemic as a whole was difficult on account of the diverse findings in different localities. However, the clinical features of the primary disease, influenza, were the same wherever it occurred, varying only in degree of severity, and there is much evidence in favor of the view that influenza has a demonstrable pathology of its own, as described by LeCount,[5] Goodpasture [6] and others, the outstanding features of which are capillary necrosis and hemorrhage, with resultant edema, and that the succeeding pneumonias result from infection by such organisms, whether streptococcus, pneumococcus, Pfeiffer bacillus, or others, as happen to be resident in the respiratory tract of the patient, and are able to grow on the soil prepared by the preceding influenzal lesions.

It seems probable that when complete reports of the 1920 epidemic are available we shall find that, on the whole, the severity is much less than in the epidemic of 1918, but that here and there groups of cases in 1920 were fully as severe and presented the same fulminant characteristics as in 1918. It should also be borne in mind that in larger communities, especially, there will be included with the cases of the epidemic influenza that group of cases of respiratory disease which would normally occur during the winter season, including a varying proportion of lobar pneumonias, streptococcal pneumonias similar to those of 1917-1918, and a host of cases of colds and tonsillitis which in nonepidemic periods would be passed with less remark.

IS FAT INDISPENSABLE FOR WELL BEING?

In a recent issue of THE JOURNAL, Hindhede [7] of Copenhagen discussed the effects of the food restrictions that were imposed on the Danish people as a result of the blockade existing during the latter years of the war. Despite the fact that Denmark was a noncombatant neutral nation, the interference with the international transfer of food, brought about by the food administrations of the allied governments and the shipping situation, prevented the importation of the usual quota of bread cereals and of the large amounts of cattle feeds that had been used before the war to maintain the stock of domestic animals used directly as food or kept to supply dairy products. Although the situation was somewhat similar in Germany, it would appear that the outcome of the shortage was far more serious in the latter country than in Denmark. The greater success attained in Denmark in maintaining the populace in health under unexpected changes in food supply is attributed to what Hindhede commends as the wiser policy of a government "converted to the newer ideas on nutrition."

We shall not review at this time the various methods suggested by the nutrition experts of the affected countries for meeting the emergencies that arose. They have become the subject of somewhat acrimonious debate between the adherents of different schools of physiologic thought. Essentially, the plan of the Danes consisted in reserving the available cereals, notably rye, wheat and barley, as well as a large proportion of the potatoes grown in Denmark, for the people themselves instead of feeding them to the domestic animals, particularly cattle and hogs. As a consequence of this decision to use the vegetable products directly instead of first converting them into animal tissue for human consumption, so many of the hogs were killed that the number of swine in Denmark was soon reduced to one fifth of the prewar stock. Consequently the supply of meat was greatly reduced, and likewise that of fats, which are derived so largely from animal products.

This scheme involved the placing of the Danish nation on a preponderatingly vegetarian basis. Almost inevitably this necessitated a lowering of the protein content of the dietary. In addition to this, furthermore, there resulted a large deficit in the fat content of the ration. To prevent an unduly low protein intake, the cereals were milled only slightly, so as to retain a maximum of the outer nitrogenous layers, which are commonly removed in the preparation of barley, wheat and rye for human consumption. Wheat bran was actually added to flour to increase the protein content of the bread made from it. "Bran," Hindhede writes, "was considered to be a very valuable food, one which was well digested by man." [8]

In this respect the reports differ from the experience of American investigators. They have repeatedly found that the amount of protein digested varies in flours according to the character of the particles of the bran. In a recent series of experiments on man at Washington,[9] the bran protein itself was digested to the extent of 44 per cent. in the case of fine bran only, whereas nearly three quarters of the protein of coarser wheat bran remained unutilized. Although it is safe to say, in harmony with recent observations of Langworthy and Deuel,[10] that the finer a bran-containing flour is ground, the more completely it is utilized by the human body, yet American physiologists would probably hesitate to urge a very liberal inclusion of bran in the dietary as a source of protein. Indeed, bran has acquired a quite different significance of late among physicians.[11]

5. LeCount, E. R.: Disseminated Necrosis of the Pulmonary Capillaries in Influenzal Pneumonia, J. A. M. A. **72**: 1519 (May 24) 1919.
6. Goodpasture, E. W.: Am. J. M. Sc. **158**: 863 (Dec.) 1919.
7. Hindhede, M.: The Effect of Food Restriction During War on Mortality in Copenhagen, J. A. M. A. **74**: 381 (Feb. 7) 1920.
8. Hindhede, M.: Skand. Arch. f. Physiol. **33**: 59, 1915.
9. Bull. 751, U. S. Dept. Agric., 1919. Bread and Bran, editorial J. A. M. A. **73**: 36 (July 5) 1919.
10. Langworthy, C. F., and Deuel, H. J.: Proc. Nat. Acad. Sc. **5**: 514, 1919.
11. Use and Abuse of Cathartics: Bran, Therapeutics, J. A. M. A. **73**: 1768 (Dec. 6) 1919.

Another outcome of the Danish regimen will seem far more significant to most readers. "While fat was regarded as a very valuable addition to the dietary, it was not considered as being necessary." [7] This thesis, which has been defended by Hindhede for several years,[12] is likely to meet opposition from many, particularly those who have attributed some of the types of malnutrition consequent on "war diets" to lack of fat in the ration. Nevertheless, Hindhede [12] has furnished the records of a number of persons who have actually been maintained for many months in good health and vigor on diets of bread, potatoes, vegetables and fruits without any added fat whatever. It might seem as if we were face to face with an inexplicable contradiction here, especially since it is now believed that a fat-soluble vitamin plays an important part in nutrition, at least in the periods when growth or tissue production are concerned. Recent developments in the study of the physiologic value of different foods may give a clue to a possible explanation. So long as the fat-soluble vitamin (fat-soluble A) was supposed to be present only in natural fats and oils, it seemed inevitable that some modicum of suitable fat should be furnished in the diet. However, the studies of McCollum [13] and particularly the more recent investigations of Osborne and Mendel,[14] and of Steenbock [15] and his co-workers, have clearly demonstrated that the vitamin under discussion is present in considerable abundance in many vegetables. Herein may lie the answer to the possibility of successful nutrition on diets poor in fats. The Danish ration is said to have abounded in vegetables. Doubtless in other places during the war the lack of fat-soluble vitamin was averted during stringency in the fat supply when milk, butter, eggs, and other animal sources of this food factor were lacking, by the inclusion of vegetables, notably cabbage and similar products, in the ration. Whether fat as such, apart from the other substances which it may include in solution, is an indispensable in nutrition is still an unanswered question. Hindhede's investigations have brought it into new prominence.

12. Hindhede, M.: Fettminimum, Skand. Arch. f. Physiol. **39**: 78, 1919.
13. McCollum, E. V.: The Newer Knowledge of Nutrition, New York, 1919.
14. Osborne, T. B., and Mendel, L. B.: J. Biol. Chem. **37**: 187 (Jan.) 1919.
15. Steenbock, H., and Gross, E. G.: J. Biol. Chem. **40**: 501 (Dec.) 1919; **41**: 149 (Feb.) 1920.

QUININ: 1820-1920

In the Paris *Journal de Pharmacie* of May, 1820—a hundred years ago—Joseph Pelletier, professor at the Ecole de pharmacie, who two years earlier had discovered strychnin, stated in a letter to one of the editors:

> I take occasion to announce in your journal, in the name of MM. Labillardiere, Caventou and myself, the discovery of a base ["une substance alcaline"] in gray cinchona. This is perhaps the substance which Gomès first found and named cinchonin, or the pure resin obtained by Laubert; but these chemists did not recognize the true character of the substance for which the basic nature remained to be discovered and most of the properties to be investigated. The yellow cinchona likewise contains a substance capable of combining with acids and forming crystalline compounds; but this substance differs from cinchonin (the base of gray cinchona) in several features.

Soon after the successful chemical isolation of the two distinct alkaloids, quinin and cinchonin, in the different kinds of cinchona bark which had up to the beginning of the nineteenth century been used in its crude powdered state, although many efforts were made to discover the medicinal principles therein, Pelletier established a factory for the production of quinin. From there the demand of the world for the isolated drug was thus supplied until, in 1826, J. D. Riedel began the preparation of quinin in Berlin. This venture was not very successful, owing to the failure of the producer to recognize the variability of alkaloid in the cinchona bark. Later Zimmer of Frankfort engaged more successfully in competition with the French trade.

The cinchona alkaloids, of which twenty or more have been described, have been termed "a South American gift to humanity."[1] It is related that in 1640 the Count of Chinchon, who was at the time viceroy of Peru, returned to Spain with his wife, who took with her a quantity of the medicinal cinchona bark and thus was the first person to introduce it as a specific into Europe. Until 1867, English manufacturers were entirely dependent on South American sources for their supply. Uncultivated trees in Bolivia, Peru and Ecuador furnished the bark. In that year the first importations of cultivated bark arrived from India

The year 1920 marks the centenary of the first isolation of the most valuable alkaloid of the cinchona bark. Its therapeutic virtues need not be extolled to medical readers. In 1826, Pelletier and Levaillant together produced about 177 kilograms (390 pounds) of salts of quinin.[2] During the year ending in June, 1914, the United States alone imported cinchona bark to the amount of 3,648,868 ounces, valued at $464,412, and quinin sulphate and other alkaloids or salts of cinchona bark to the amount of 2,879,466 ounces, valued at $624,125.[1] If medicine were to think of quinin in relation to malaria alone, not to mention the value of the drug in the management of other diseases, she would well be justified in pausing to give worthy recognition to the French pioneers in pharmaceutic chemistry who first gave her this useful therapeutic product in isolated form a hundred years ago.

1. Bulletin of the Pan American Union, Washington, D. C. **42**: 61 (Jan.-June) 1916.
2. The statistics are from Schelenz, H.: Geschichte der Pramazie, Berlin, 1904, p. 623.

Hazardous Occupations.—The physical reexamination of workers in hazardous occupations will result in the accumulation of scientific facts of known value with which to replace the oftentimes erroneous opinions now held regarding the dangers and hazards of certain occupations.—F. L. Rector: *Public Health Rep.*, Jan. 9, 1920.

Current Comment

PUBLIC HEALTH ORGANIZATION AND THE MEDICAL PROFESSION

It will probably still be a long time before the desirability of protecting the public health will make the same appeal to the legislators controlling public funds as does the necessity of protecting property. Nevertheless the tendencies of the times are making it almost impossible for even the most unprogressive community to fail to take notice of the growing demands for greater and better service in the interest of public health. The health officer of a decade ago, and the board of health to which he was responsible, are undeniably experiencing an evolution into something more active, more efficient and more important than they were in the past. In the coming years our communities will no longer be satisfied with merely the control of epidemics and the proper disposal of garbage and other wastes as the work of their health experts. Professor Winslow[1] of Yale, in an illuminating vice presidential address before the American Association for the Advancement of Science at St. Louis, forecast the future of the movement for greater accomplishment in the domain of public health by thus defining its scope:

> Public health is the science and art of preventing disease, prolonging life, and promoting physical health and efficiency through organized community efforts for the sanitation of the environment, the control of community infections, the education of the individual in principles of personal hygiene, the organization of medical and nursing service for the early diagnosis and preventive treatment of disease, and the development of the social machinery which will insure to every individual in the community a standard of living adequate for the maintenance of health.

This represents no mean program. It calls for a corps of experts rather than a single officer, who has in too many instances in the past been as untrained as he has been underpaid. With the physician, the earliest health officer to be recognized in the development of the public health field, the bacteriologist was the first to become affiliated for greater usefulness. Subsequently came the epidemiologist, trained "to trace out the subtle pathways of infection by which they spread from one person to another through the complex web of community life." The public health nurse, who has already more than justified her special province, is likewise here to stay; and Winslow will not permit us to be content until the sanitary engineer, the statistician and the social worker are included in the coterie of highly qualified persons who must cooperate to make of the movement for public health, as defined, something as influential and wholesome as are the conservation and development of mental efficiency in the educational organizations of the country. He would be blind, indeed, to the forces of progress who would deny that these things may come about. The public health campaign is going forward rapidly. It will be interesting to observe how its outcome affects the medical profession in the coming years. We must not be blind to the fact that the ordinary physician alone cannot and will not be expected to carry forward the new projects in their entirety. The public health physician must already be specially trained for his duties if he is to rise above the level of mediocrity in the work. Sanitary experts and others without special training in clinical medicine must find a place in the new scheme of organization. Who can foretell how the plans and performances of the "sanitary statesmen" of the coming generation will modify the practice of medicine?

1. Winslow, C.-E. A.: The Untilled Fields of Public Health, Science **51**: 23 (Jan. 9) 1920.

GAS CYSTS OF THE INTESTINE

The difficulties of abdominal diagnosis are already so great that it seems almost criminal to call attention to any new conditions that must be taken into account in reaching a conclusion as to the nature of a given case of disease in the abdomen. Since 1876, when Bang of Copenhagen described the first case in the human being, the literature has contained an increasing number of references to a peculiar abdominal condition characterized by the formation of multiple gas-containing cysts in connection with the peritoneum and the walls of the stomach and the intestine. Tuffier and Letulle[1] have recently described two new cases and discussed both the clinical manifestations and the pathologic anatomy of this strange malady. There is nothing characteristic about the symptomatology of the disease. Many of the patients have no symptoms whatever, and the presence or absence of symptoms depends on the location of the process and its mechanical effect on the stomach and intestine. Those patients who have symptoms complain of digestive disturbances, such as diarrhea and vomiting, and finally present the picture either of intestinal obstruction or of an abdominal neoplasm. Such cases usually fall into the hands of the surgeon who, on opening the abdomen, finds large numbers of gas-containing cysts connected with the peritoneum or digestive canal which may be of sufficient size to cause intestinal obstruction or to produce a palpable tumor. A few cases in which a second operation has been necessary have demonstrated the strange fact that the mere opening of the peritoneal cavity and handling of its contents results in the disappearance of the cysts. This at least is one explanation of such observations, although another possibility is that the disease naturally tends to recovery after a certain length of time. The studies of Letulle[2] on the pathology of the condition show that the primary lesion is an inflammation which involves the peritoneal lymphatics, causing obstruction in some places and dilatation in others. The mysterious aspect of the process is the origin of the gas with which the cysts are filled. This gas consists of various combinations of carbon, oxygen and hydrogen. It is quite odorless, and obviously is not of intestinal origin. Nobody has yet been able to bring forward any reasonable explanation of its presence, although no very

1. Tuffier and Letulle: Sur une maladie caractérisée par des kystes gazeux de l'abdomen, Bull. de l'Acad. de méd. **82**: 5 (July 1) 1919; abstr. J. A. M. A. **73**: 795 (Sept. 6) 1919.

2. Letulle, Maurice: Les kysts gazeux de l'intestin et du péritoine, Presse méd. **27**: 781 (Dec. 20) 1919; abstr. J. A. M. A. **74**: 494 (Feb. 14) 1920.

careful bacteriologic studies seem to have been made. Tuffier and Letulle do not seem to consider the condition analogous to the gas cysts of rapid formation which are sometimes found in the intestinal wall in connection with the gas bacillus. It would seem, however, that the bacteriologic side of the disease should be carefully investigated, as bacterial action seems to be the most likely explanation of the formation of the gas.

THE REACTION OF THE SWEAT

Although it has been taught that the skin is an organ of excretion in cooperation with the lungs and kidneys, there seems to be little evidence to substantiate the importance of the cutaneous tissue in this function. There is no uncertainty, of course, regarding the liberal output of water that may occur by way of the skin through the agency of the sweat-glands; but this loss of water is mainly determined by the need for regulating the temperature of the body. Variations in external temperature or the work done and heat produced by the body, rather than the quantity of the fluid intake, determine the extent to which perspiration takes place. There is a small quantity of nitrogenous waste present in the sweat. Its quantity is, however, too small to play any significant part in the excretory functions. The same conclusion applies to the small content of saline constituents which have been discovered in the secretion from the skin. In speaking of the popular overestimation of the share of the skin in the removal of waste, Stiles[1] has naively remarked that the belief that "the pores must be kept open" lest poison gather in the system has been so fruitful of wholesome practices that one is reluctant to question it. Nevertheless, it is perhaps too soon to dismiss entirely the possibility that the skin may play some part, even if only a minor one, in the regulatory functions other than that of heat regulation. Our knowledge of the composition of the sweat is still all too meager, particularly so far as it may be varied by changes in the condition or activities of the organism. For example, the statements as to the reaction of sweat have been conflicting. Obviously if the skin, like the kidneys, is to be considered as engaged in removing the undesirable waste from the body, one would expect an acid excretion since a preponderant number of the end-products of metabolism are acid in character. Recent experiments on man by Talbert[2] leave no doubt as to the acid reaction of sweat. It matters not whether the secretion is caused by work or by heat; in health it is acid, and the degree of acidity is greater than has been assumed. This reaction, which is represented by a hydrogen-ion concentration of $p_H =$ from 5 to 6, is not due to products from the sebaceous glands which have, in the past, sometimes been charged with causing the result; but why, as Talbert found, the sweat caused by external heat is always more acid than that provoked by muscular effort remains a physiologic mystery.

1. Stiles, P. G.: Nutritional Physiology, Philadelphia, W. B. Saunders Company, 1912, p. 168.

2. Talbert, G. A.: The Effect of Work and Heat on the Hydrogen Ion Concentration of the Sweat, Am. J. Physiol. **50**: 433 (Dec. 1) 1919.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARIZONA

Personal. — Dr. George E. Goodrich, Phoenix, has been appointed state superintendent of health.

Plans for Sanatorium.—A number of physicians of Casa Grande are planning to carry out a tuberculosis sanatorium project. The site for the enterprise is half a section of land northeast of Casa Grande on a mesa. On this site it is proposed to build 100 houses each to cost about $3,000 furnished and to be rented to families and individuals at $50 a month. This will include the service of a resident physician. There will also be constructed a hospital, an electric light plant, an office building and an experimental laboratory.

CALIFORNIA

Chiropractic Measure on Ballot.—With 55,094 signatures (47,744 of which are of residents of Los Angeles) the chiropractic initiative measure has qualified for a place on the ballot at the next general election in California. The measure contemplates creating a chiropractic board and providing for the licensing of all chiropractors now in practice.

Chiropractors Arraigned. — Linden L. D. McCash, chiropractor of Berkeley, has been arrested on a charge of practicing without a state medical certificate.——It is reported that E. Burnard Hubley, a chiropractor of Los Angeles, was found guilty of practicing without a state license, February 5. He was arrested about a year ago on a similar charge and found not guilty.

CONNECTICUT

Tuberculosis Clinic.—The board of health of New Haven, February 24, voted to establish a tuberculosis clinic at Grace Hospital, New Haven, as soon as arrangements could be made with the hospital authorities, and the board of finance sanctioned the expenditure, which is estimated at about $3,000.

New Officers.—At the annual meeting of the New Britain Medical Society, Dr. Walter J. Robbins was elected president; Dr. Frederick J. Mann, vice president, and Dr. George W. Dunn, secretary-treasurer.——New Haven County Medical Society at its annual meeting held, January 21, was given a bust of Dr. Jonathan Knight by Dr. Louis M. Gompertz and Donald W. Carmichael. The following officers were elected: president, Dr. Robert E. Peck; vice president, Dr. Raynham Townshend; recording secretary, Dr. Frank L. Phillips; corresponding secretary, Dr. Samuel J. Goldberg, and treasurer, Dr. Frank H. Wheeler.

Personal.—Dr. George Blumer, New Haven, for thirteen years in service as professor of medicine at Yale University Medical School, has requested to be relieved from duty at the close of the academic year. His resignation has been accepted. Dr. Blumer was chosen dean of the school in 1910, and during his deanship the annual budget has increased from $43,000 to $225,000 and the endowment from $225,000 to $2,700,000. Dr. Blumer desires to be relieved of the burden of administrative duties in order to devote time to his consultation practice.——Dr. Clarence E. Skinner, New Haven, has been made medical director of the Postal Life Insurance Company, New York City.——Dr. Edward H. Kirshbaum, Waterbury, has been appointed medical examiner (coroner) for the town of Walcott, succeeding Dr. Edward W. Goodenough, resigned.

GEORGIA

Sanatorium Taken Over by Government.—The formal transfer of the Cheston King Sanatorium, Peachtree Road, Atlanta, has taken place and the hospital is now known as the U. S. P. H. S. Hospital No. 48.——Lenwood Hotel, Augusta, has been leased to the United States government for use by the Public Health Service in the care of disabled soldiers.

ILLINOIS

Physicians Will Not Prescribe Liquor.—The members of Will County Medical Society at the meeting, March 3, agreed not to prescribe liquor in their practice.

New Government Hospitals.—The Livingston Hotel and the laboratories of the Leslie E. Keeley Company, Dwight, have been leased to the U. S. Public Health Service and will be converted into a hospital with accommodation for about 200 patients.

Venereal Disease Statistics.—Among the 11,915 cases of venereal disease reported to the Illinois State Department of Public Health during the year ended June 30, 1919, 656, or about 5.5 per cent. of those affected, were employed in the handling of foodstuffs. Of the total number, 7,756 were males and 4,159 females.

Personal.—Dr. Edwin B. Godfrey, Springfield, sailed from New York, February 26, for the Balkan States for service as major in the Medical Corps of the American Red Cross. ——Dr. Letitia A. Westgate, Aurora, formerly city chemist and bacteriologist of Aurora, is reported to have sued the city for $30,000 damages.

Chiropractor Fined.—Joseph Langley, La Harpe, is reported to have been arrested recently for practicing medicine without a license and was fined $100 and costs. Langley's advertisement to sell "a six months' practice, yielding over $200 monthly," was called to the attention of the Department of Registration and Education and led to his arrest. Langley, it is said, had paid $100 for membership in the Illinois Association of Chiropractors and had been assured that such membership would protect him in his practice. After his office had been closed and his signs had been taken down by order of the court, Langley said he was going back to Burlington, Iowa, "where it was not necessary to have a license to practice chiropractics."

Chicago

Chicago Woman Appointed Chief Nurse.—Miss Helen Scott Hay, formerly superintendent of the Illinois Training School for Nurses and chief nurse of the Red Cross commission to the Balkans, has been appointed chief nurse to the American Red Cross Commission in Europe.

Haggard in Chicago.—Dr. William D. Haggard, Nashville, Tenn., presented a paper before the Chicago Medical Society at its meeting, March 10, on "The Consideration of the Toxic Non-Exophthalmic Goiter," illustrated by lantern slides. An informal dinner in honor of Dr. Haggard was given at the University Club, preceding the meeting of the society.

Pathologists Meet.—At the meeting of the Chicago Pathological Society and section on pathology of the Chicago Medical Society held, March 8, the subjects of discussion were: ectopic pregnancy, hydronephrosis and lymphatic tumors. A new anaerobic technic was demonstrated and an improved method of cultivating gonococci under partial oxygen-tension was described.

Personal.—Dr. Saul A. Koppnagle, national organizer and secretary of the Chicago chapter of the Communists Party, surrendered, March 3, and gave bonds of $10,000 in answer to the charge of conspiracy to overthrow the government.—— Dr. John H. Curtis has been selected as superintendent of the New Britain (Conn.) Department of Health, succeeding Dr. William M. Stockwell, resigned.

Prescription Doctor Arrested.—R. M. Carroll, charged with having issued promiscuously prescriptions for whisky, was arraigned, March 4, and held in bonds of $2,000. It is claimed that this man issued at least 200 prescriptions a day and claimed that he charged "anywhere from $1 to $7 for the prescription, depending on the condition of the patient's cough."——Dr. Joseph A. Khamis, held on the charge of violation of the liquor law, protested that he had not written prescriptions without thoroughly examining the patient, and said that he had been robbed of a number of signed prescription blanks by men posing as revenue officers.

KENTUCKY

All-Time Public Health Service.—Daviess, Christian, Scott, Boyd and Harlan counties have taken advantage of the offer of the state board of health to appropriate $5,000 annually to establish an all-time public health service provided a like amount is subscribed by the county.

Board of Health Appointments.—The following have been appointed members of the state board of health: Dr. Isaac A. Shirley, Winchester, 1918-1923; Dr. William W. Richmond, Clinton, 1918-1923; Dr. Joseph E. Wells, Cynthiana, 1919-1921; Dr. John G. South, Frankfort, 1920-1925, and Dr. George S. Coon, Louisville, 1920-1925.

MARYLAND

Negro Staff for Colored Schools Appointed.—Dr. C. Hampson Jones, Baltimore, commissioner of health, has announced the selection of a staff of negro physicians and nurses for medical inspection of negro schools.

Coroners Appointed.—The following coroners for Baltimore city have been appointed by Governor Ritchie: Drs. James M. Fenton, Henry L. Sinskey, John J. Morrissey, Jr., Harry K. Gorsuch, William T. Riley, Otto M. Reinhardt, James K. Insley, Jay T. Hennessy and George C. Blades.

New Hospital Opened.—The Morrow Hospital, Baltimore, opened February 18. The institution is for the advancement of social hygiene and the treatment of venereal disease, and is under the charge of the United States Public Health Service, the State Board of Health, and the Health Department of Baltimore.

Johns Hopkins to Get Appropriation.—The general education board of the Rockefeller Foundation has announced from its New York office that an appropriation of $400,000 is to be made to Johns Hopkins University. The money will be devoted to the women's clinic, which will be built in the spring. This amount was promised by the board last year if the university could raise $600,000, which has been donated. Plans for the erection of the building are in process of preparation.

Increased Hospital Accommodation under Consideration.—Because of the urgent need for additional hospital facilities in Baltimore, the advisability of taking over some twenty-three semifireproof buildings on the south side of the Fort McHenry reservation, now a part of U. S. Army General Hospital No. 2, which could be altered at comparatively small expense, perhaps $100,000, and be made to fulfil the city's needs for some years to come, has been taken under consideration by the commission appointed by the mayor to study hospital conditions. It is thought that these buildings can be obtained from the government for a nominal sum and within a very short time.

Fort McHenry Hospital to Remain.—Because of the many rumors concerning the abandonment by the Army Medical Service of U. S. Army General Hospital No. 2, Fort McHenry, Col. Henry Page, the commanding officer, has recently made the announcement that there is hardly a possibility of the closing of the hospital, at least until Congress provides the soldiers at Camp Holabird with a post hospital. Discharges at the rate of about 600 a month for the last few months have reduced the number now under care in the hospital to about 1,200. Hardly more than half of these are from overseas; the remainder are patients from Camp Holabird, from the Fort McHenry detachment, and casuals from various outfits.

Personal.—Plans are being made by physicians and surgeons of Baltimore for the celebration of the seventieth birthday of Dr. William H. Welch, one of the notable group of men who have made the Johns Hopkins Medical School known throughout the world. The writings of Dr. Welch will be collected and published in three volumes, the edition being limited to the subscribers.——Dr. Lewis J. Rosenthal, Baltimore, has been appointed inspector of throats for the Baltimore City Health Department to succeed Dr. J. B. Culberson.——Dr. Benjamin M. Jaffe has been appointed health warden for the fifth ward of Baltimore.——Col. Clarence J. Manly, Medical Corps, has been ordered to U. S. Army General Hospital No. 2, Fort McHenry, to command the post in place of Col. Henry Page, who has been directed to take up his duties as commandant of U. S. Army General Hospital No. 21, Denver.——Dr. Clarence R. Dufour has been reappointed chairman of the public health committee of the Baltimore chamber of commerce.

NEBRASKA

Roentgenologists to Meet.—The Omaha Roentgen-Ray Society will hold a meeting in Omaha, March 20.

Personal.—Dr. Allan B. Anderson, Pawnee City, has retired from active practice.——The office of Dr. Frank Tornholm, Wahoo, was destroyed by fire, January 4.

NEW JERSEY

Personal.—Capt. Oscar G. Frundt, M. C., U. S. Army, Jersey City, has been awarded the Distinguished Service Cross for extraordinary heroism in action while commanding a

hospital train in Eastern Siberia, in June, 1919. The award was made on account of Captain Frundt's care and treatment of the wounded and handling of the hospital train while under fire.

Illegal Practitioners Fined.—During December, 1919, six illegal practitioners, including one physician and two osteopaths, are reported to have been arrested and fined $200 each for practicing medicine in New Jersey without a license. They are Vincenzo D'Amico, Elizabeth; Gustave H. Heckman, osteopath, Mt. Holly; Morris Katz, Newark; Gerald Richardson, osteopath, Jersey City; A. Sassaman, New Brunswick, and Chester I. Ulmer, M.D., Gibbstown.

NEW YORK

Women to Meet.—The fourteenth annual meeting of the Women's Medical Society of New York State will be held at Hotel McAlpin, New York City, March 22; under the presidency of Dr. Elizabeth B. Thelberg, Poughkeepsie. Dr. Winifred Cullis of London, England, will be one of the speakers.

Bill to Help Brooklyn Hospital.—Governor Smith has signed the bill appropriating $500,000 for the Creedmoor division of the Brooklyn State Hospital. This is the same item vetoed by the governor last year. He states that the plans of the hospital development commission are matured so that it is safe now to proceed with the Creedmoor construction.

Prize Offered for Poster.—The bureau of venereal disease of the New York State Department of Health offers a prize of $100 to the person who best interprets the expression "Healthy Parents Head Happy Families," in a colored drawing that can be reproduced as a poster in public health work. Drawings must not be smaller than 12 by 18 inches. The winner will be chosen from among those whose drawings are received at the New York State Department of Health, Albany, before May 1, 1920.

Commission Recommended to Study Health Insurance.—The National Civic Federation, which has made a study of social insurance, has recommended to the state legislature the appointment of a state commission to study the relation between sickness and society. The cause and extent of sickness, prevention, treatment, and replacement of the wage loss are suggested as proper subjects for investigation. The federation's committee is opposed to compulsory health insurance in the forms in which it has been presented.

Senate Committee Discusses Nurses' Titles.—The Mullen bill which seeks legal classification of nurses was advanced to a hearing recently at which considerable opposition to the bill was voiced by physicians. Howard Townsend, representing the Hospital Conference of New York City, with a membership of about fifty hospitals, spoke in opposition to the measure. He suggested the creation of a council of advice to consist of three nurses and the same number of physicians and hospital representatives, which should be empowered to advise the state board of regents in matters affecting hospitals and the education of nurses, as a means of securing proper classification. The bill it is claimed would prevent the free use of trained attendants in the care of the sick, and this it is pointed out would be unfortunate in view of the shortage of registered nurses.

New York City

Personal.—Dr. Chester Ford Duryea has been appointed associate director of the New York Radium Institute.

Immunization Against Diphtheria in Schools.—Arrangements have been made for the administration of the Schick test and the active immunization against diphtheria of susceptible children in 100 public schools of the city.

Reminder of Necessity to Report Communicable Disease.—By order of the health commissioner, perpetual calendars, on which are printed reminders of the necessity of reporting communicable and occupational diseases, have recently been mailed to all the physicians in the city.

Functional Reeducation Work.—The first annual report of the clinic for Functional Reeducation of Disabled Soldiers, Sailors and Civilians shows that of the 1,150 patients treated the first year, about one-half were disabled working men, and the remainder disabled soldiers and sailors.

Clinic for Drug Addicts Closes.—The health department announces the closure of the clinic for the treatment of drug addicts which it has maintained at 145 Worth Street. The attendance at the clinic has fallen to fewer than 100 patients, and these will be transferred to the Riverside Hospital.

Course in Industrial Nursing Service.—The New York University School of Commerce, Accounts and Finance started February 2, a course in standardization of nursing service in industry. The course is arranged for industrial workers, welfare workers and those contemplating entering the field of industrial welfare work.

Distribution of Hospital Fund.—The United Hospital Fund, because of the shortage of funds of many of the institutions, will make a preliminary distribution of approximately $400,000 at once. This represents about double the amount the forty-six institutions received from the fund last year. According to present plans the remainder of the fund will be disbursed about May 1.

Brooklyn Hospital Seeks Endowment Fund.—The Methodist Episcopal Hospital of Brooklyn, in its annual report, seeks an addition of $500,000 to its endowment fund. During the past year the hospital staff has treated in all 12,072 persons. One gift during the year was a $50,000 Liberty bond, the income from which is to be used to meet the expenses of free treatment for the poor.

Annual Report of Mount Sinai Hospital.—The report of the board of trustees of Mount Sinai Hospital, presented at the recent annual meeting, outlined the progress being made on the new buildings being erected on property adjoining the hospital. These buildings will cost $3,250,000 instead of $2,000,000, the amount estimated before the war. Emphasis was laid on the preparations being made for a study of the best methods of disease prevention.

Postgraduate Medical School Seeks Fund.—The board of directors of the New York Post-Graduate Medical School and Hospital have begun a drive to raise an endowment fund of $2,000,000. The institution has purchased the property on the southwest corner of Twentieth Street and Second Avenue, which is the first step toward the enlargement of the facilities of the school, which is no longer adequate for the demands made on it. The enrolment this year is 1,692, double the attendance of last year.

NORTH CAROLINA

Chiefs of Staff Elected.—The following chiefs of staff of the Memorial City Hospital, Winston-Salem, have been appointed: chief of the medical staff, Dr. Sylvester D. Craig, Winston-Salem; chief of the surgical staff, Dr. Everett A. Lockett, Winston-Salem, and chief of the gynecologic and obstetric staff, Dr. Henry S. Lott, Winston-Salem.

Personal.—Dr. Andrew J. Crowell, Charlotte, has been appointed a member of the state board of health, succeeding Dr. Edward C. Register, deceased.——Dr. Joseph Howell Way, Waynesville, is convalescent after an attack of acute lobar pneumonia.——Dr. Andrew J. Warren, Raleigh, has been made head of the state health department of Charlotte, succeeding Dr. C. Curtis Hudson, Charlotte.

Semicentennial of Academy.—The Raleigh Academy of Medicine celebrated its fiftieth anniversary by a dinner at the Yarboro Hotel, February 2, in honor of Drs. Wisconsin I. Royster, Richard H. Lewis and Augustus W. Knox. The after dinner program included: "Greetings from the State Society," by Dr. Carl V. Reynolds, Asheville; "A Historical Sketch of the Academy," by Dr. Hubert A. Royster, Raleigh; "Every Physician a Philanthropist," by Dr. Cyrus Thompson, Jacksonville; "Personal Reminiscences of the Founders," by Dr. Wisconsin I. Royster; "Medicine and the State," by Dr. Richard H. Lewis, and "Our Present and Our Future," by Dr. Augustus W. Knox. Tributes were also paid to Drs. G. G. Thomas, Wilmington, Lewis B. McBrayer, Sanatorium, and Charles O'H. Laughinghouse, Greenville, honored fellows of the academy.

PENNSYLVANIA

Influenza Cases.—More than 50,000 cases of influenza were reported to the state department of health between January 26 and February 28. In the epidemic of 1918 and 1919 a million cases of influenza were reported. The figures for this year's outbreak in the state were: influenza, 50,176; pneumonia, 3,271, and deaths from influenza and pneumonia, 3,068.

Baby Clinic for Ardmore.—A baby clinic was opened in Ardmore, February 10, under the financial auspices of Main Line Branch No. 1, Southeastern Pennsylvania Chapter of the American Red Cross. It is conducted in cooperation with a committee of physicians and visiting nurses. Clinics are conducted from 2 to 3 p. m., Tuesdays and Fridays, in

the Ardmore Red Cross headquarters. Later it is hoped to develop a similar clinic in Bryn Mawr.

Safety Congress.—The Pennsylvania Safety Congress for 1920 will be held in Harrisburg, March 21 to 25, inclusive, under the auspices of the Department of Labor and Industry of the Commonwealth of Pennsylvania. The congress is a continuation of the welfare and efficiency congresses held in the past, which were discontinued during the war. The topics to be discussed are those which are faced in industrial life today and will include the relation of industry to religion; the cost of industrial accidents; the cooperation of the employer and employee in safety; the future of industry; the public utility and its hazards; Americanism; women in industry; organized labor and the safety movement; the rehabilitation of the industrial crippled; health education and industry, and occupational diseases.

Philadelphia

Influenza Epidemic Over.—With comparatively few cases of influenza and pneumonia reported, the health department has removed the restrictions which were put into effect several weeks ago as measures of precaution against the spread of the disease.

Two Thousand Vaccinated.—Because of the discovery of a case of smallpox, March 2, 2,000 persons were vaccinated in West Philadelphia, March 3. Thirty-six Hog Island workers were vaccinated, March 2. The patient was an employee on a ship at Hog Island.

Measles Hospital Needed.—There have been 4,000 cases of measles since January 1, and the health officials say there is no sign of abatement. There have been at least 12,000 additional cases not reported. The department of health is considering the ultilization, exclusively for measles cases, of one of the buildings of the Philadelphia Hospital for contagious diseases.

Osler Memorial Meeting.—At the stated meeting of the College of Physicians of Philadelphia, March 3, Dr. Thomas McCrae read a memoir of the late Sir William Osler; Dr. Hobart A. Hare read a paper on "Sir William Osler as Teacher and Clinician"; Dr. Charles W. Burr, one on "Sir William Osler as a Man of Letters"; Francis R. Packard one on "Sir William Osler, and the Library of the College of Physicians of Philadelphia," and Dr. George W. Norris, one on "Sir William Osler as Host to the Americans in England During the Great War."

Personal.—Dr. Charles L. Furbush, director of the department of health, who has been seriously ill with influenza, has gone to Atlantic City to recuperate.——Dr. George Victor Janvier has been appointed assistant obstetrician to the Philadelphia General Hospital.——Dr. Elmer J. Presper has been appointed medical director of the Civil Service Commission to succeed Dr. William A. Swalm, who resigned.——Dr. Neva R. Deardorff, for nearly two years assistant to the director-general of the Department of Civilian Relief of the Red Cross, has been appointed assistant to the general manager at the national headquarters.——Dr. Charles C. Hart has been elected surgeon of the Pennsylvania Commandery, Military Order of Foreign Wars, of the United States.

Woman's Medical College Campaign Fund Closed.—The extension fund campaign of the Woman's Medical College of Pennsylvania, Philadelphia, for quarter of a million dollars came to a successful close, March 11, when a joint celebration was held to mark the end of the drive and the seventieth anniversary of the founding of the college. Founder's day exercises were held in the afternoon and a final campaign dinner in the evening. The establishment of the department of preventive medicine which was one of the objectives of the campaign has been assured by the recent action of the National American Women's Suffrage Association which, at its recent convention in Chicago, voted $30,000 as a memorial to Dr. Anna Howard Shaw.

To Check Milk Adulteration.—Drastic steps for the checking of the alleged practice of watering milk, recently brought to light through the activities of the bureau of health, are now being taken by that department. Twenty-eight prosecutions have been lodged during the past six weeks. According to John Vogelson, chief of the bureau, it is not the big milk companies that are responsible, but it is the small dealers who buy milk in cans and bottle it themselves that are to blame. Inspectors have found a large number of cases of this violation of the law in all parts of the city, but the greatest number has been reported from downtown. Many samples tested at the Phipps Institute have been found to contain butter fat below the legal standard of 3.25 per cent.

SOUTH CAROLINA

Building for Physicians.—An office building has just been completed at the corner of Brown and North streets, Greenville, by a company whose president is Dr. R. E. Houston and secretary and treasurer Dr. Samuel G. Glover. The building will be occupied by seven physicians, who are joint owners of the building.

State Association Meeting.—The annual meeting of the South Carolina State Medical Association will be held at Greenville, April 20 to 21, under the presidency of Dr. Ebenezer W. Pressly, Greenville. The address in medicine will be delivered by Dr. Edward H. Goodwin of the University of Pennsylvania, Philadelphia, and that on surgery by Dr. Stuart McGuire, Richmond, Va.

TENNESSEE

Physician's Bureau Elects Directors.—At the annual meeting of the Physician's Business Bureau of Memphis, Drs. John L. Jelks, Otis S. Warr, Hiram B. Everett, Louis Leroy, William T. Black, William Britt Burns, John C. Ayres, Louis Levy, Arthur G. Hudson, Rufus W. Hooker, Abraham L. Blecker, Frank D. Smythe, John J. Huddleston and Alfred B. DeLoach were elected directors.

Campaigns for Hospitals.—The campaign for the Jewish Hospital at Memphis, when it had raised $400,000, was delayed temporarily on account of the prevalence of influenza. The campaign will be reopened, however, and an additional $100,000 will be raised.——In order to raise the half million dollars for the completion of the Methodist Hospital at Memphis, now in course of construction, the conferences of Memphis, North Mississippi and Arkansas will again be asked to contribute, in addition to the gifts already made.

WISCONSIN

Physicians' Club Organized.—The Ripon Physicians' Club has been organized, with Dr. Sidney S. Hall, president, and Dr. Orvil O'Neal, secretary.

Eye and Ear Men Elect.—At the annual meeting of the Milwaukee Oto-Ophthalmic Society, February 6, Dr. Gustavus L. Hoague was elected president; Dr. Richard J. Muenzner, vice president, and Dr. John E. Guy, secretary. At the next meeting of the society, March 16, Dr. Justus Matthews, Minneapolis, will conduct a clinic.

Personal.—Dr. Otho A. Fiedler, Sheboygan, has been reappointed a member of the state board of health.——Dr. Nicholas J. Hamilton, Madison, convicted several years ago of second degree manslaughter and sentenced to seven years' imprisonment at the state prison, Waupun, has been restored to citizenship by the governor, but will not be permitted to practice medicine.——Dr. N. J. Malloy has been appointed health officer of Fond du Lac, succeeding Dr. Frank L. McGauley, resigned on account of illness.

GENERAL

American Physicians Decorated.—The king of Greece visited the American Red Cross Dispensary of Saloniki, March 7, and decorated the officers of the medical staff.

Military Surgeons to Meet.—The twenty-eighth annual meeting of the Association of Military Surgeons of the United States will be held at New Orleans, April 22 to 24, with headquarters at the Hotel Grunewald under the presidency of Col. Joseph A. Hall, M. C., N. G., Ohio.

Issue Themselves Licenses.—Just prior to a complete change in the personnel of the Oklahoma State Board of Medical Examiners recently, the outgoing board consisting of eight members, including an osteopath, are reported to have issued to themselves complimentary licenses recorded as having been based on a written examination. The record indicates that the papers of each one were graded at exactly 92 per cent.

National Tuberculosis Association Meeting.—The annual meeting of the National Tuberculosis Association will be held at the Hotel Statler, St. Louis, April 22 to 24, under the presidency of Dr. Victor C. Vaughan, Ann Arbor, Mich. Dr. Vaughan has appointed the following committee to make nominations of twelve directors to serve for a term of five years: Dr. Vincent Y. Bowditch, Boston, chairman; Drs. Edward R. Baldwin, Saranac Lake, N. Y., Walter Jarvis Barlow, Los Angeles, Hoyt E. Dearholt, Milwaukee, and Henry W. Hoagland, Colorado Springs, Colo.

Certification of Clinical Thermometers.—The fact that many clinical thermometers of faulty workmanship are offered for sale has been repeatedly discussed. An effective remedy for this evil has been found in Massachusetts, after careful tests of 10,000 thermometers by the state commissioner of weights demonstrated that 25 per cent. were defective. Under a new state law, no clinical thermometer may be offered for sale in Massachusetts unless its accuracy has been attested by the certificate and seal of the state commissioner of weights and measures. The penalty for violation of the act is a fine of $50 for each uncertified thermometer offered for sale.

Civil Service Examination.—Application will be received until June 29 by the United States Civil Service Commission for an open competitive examination for bacteriologist and junior bacteriologist in the United States Public Health Service, the salary for bacteriologist ranging from $130 to $180 a month; for associate bacteriologist, from $90 to $130 a month; for assistant bacteriologist, from $70 to $90 a month; for junior bacteriologist, $70 a month, and for junior bacteriologist part time, at $30 to $50 a month. Appointees will be allowed subsistence and one room, or $15 or $20 for commutation and quarters, according to grade of station.

Wood Alcohol Poisoning.—The National Committee on the Prevention of Blindness sent recently a request for authoritative information to the health officers of each state, the health officers of 100 of the largest cities, state commissions for the blind, associations for the blind, hospitals, and to prosecuting attorneys asking for the number of deaths and the cases of total or partial blindness occurring since Aug. 1, 1919, from alcohol, wood alcohol "whisky," denatured alcohol and forms of wood alcohol poison unknown. Up to date answers have been received from about one third of the questionnaires sent out:

No. of deaths from wood alcohol poisoning	145
Wood alcohol straight	10
Wood alcohol "whisky"	61
Denatured alcohol	4
Form of wood alcohol poison unknown	68
Florida toilet water	1
Extracts	1

Bequests and Donations.—The following bequests and donations have recently been announced:

Jewish Hospital, Philadelphia, $10,000 for the endowment of a room in memory of himself and wife, Mt. Sinai Hospital, $3,000, and Jewish Sanatorium, Eaglesville, Pa., $1,000 by the will of Herman Prager.

St. Barnabas Hospital, Newark, N. J., $3,000 by the will of Miss A. A. Westervelt.

Julia F. Burnham Hospital, Champaign, Ill., a gift of $75,000 by Mrs. Newton M. Harris, with an additional $25,000 conditional on the subscription of a like amount by the community.

Sanatorium for blind babies, $2,500; Harvard Dental School, $500 by the will of Mrs. Louisa A. Beal.

Harrisburg, Pa., Hospital, $25,000 by the will of Mrs. Andrew J. Dull.

St. Luke's Hospital, Bethlehem, Pa., $5,000 to endow a bed to be known as the Josiah Bachmann Free Bed, by the will of Josiah Bachmann.

Bryn Mawr, Pa., Hospital, $50,000 by the will of Mrs. Lois Buchanan Cassatt.

Miami County, Ind., Hospital, Peru, $1,000 for the endowment fund by the will of Ner Black.

Physicians Needed in Orient.—The Interchurch World Movement (45 West Eighteenth Street, New York City) has issued an appeal for physicians for five years' service in the near and far eastern countries. The appeal is directed chiefly to recent graduates and to physicians discharged from military service who have not yet become reestablished in practice. In addition to general practitioners, specialists in pathology, neurology and psychiatry are urgently needed for service in Turkey, Syria, Palestine, Persia, Siam, Indo-China, Malaysia, Philippine Islands, India, Africa, China, and Japan. There are places for more than 600 physicians, men and women. Married physicians who enlist for five years will be provided with a home and an annual salary equivalent to $3,000 in United States currency. Single physicians will be allowed an annual salary of $2,000. All traveling expenses will be paid. A grant from the Rockefeller Foundation for a course in postgraduate work in America may be available to those who give five years' service in China.

The Influenza Epidemic.—During the week ending February 21, the incidence of epidemic influenza declined definitely in thirty-seven of forty states from which reports were received by the Public Health Service. Increases were recorded in Georgia, Oregon and Vermont, and only relatively small decreases were noted in Maine, New York and Louisiana. Taking the forty-six large cities as a whole the peak of mortality was reached in the week ending February 14, when there was an excess of 1,322 in the annual mortality rate per hundred thousand of population as compared to the norm for the corresponding week of the median period 1910-1916. In the weeks immediately preceding and following this the excess rates were 1,241 and 853, respectively. At the height of the epidemic of 1918, the excess annual mortality rate in the three peak weeks was 4,592, 4,695 and 3,332 per hundred thousand. A statistical comparison of the epidemics of 1920 and 1918 reveals a striking constancy in the ratios of the excess mortality rates. Although the peak rates for the different cities vary from 5 to 152 per cent. as compared to those for 1918, the mortality chargeable to the present epidemic is so far under 30 per cent. of that in 1918. In five cities—St. Louis, Kansas City, Detroit, Milwaukee and Minneapolis—the peak rate in this epidemic has exceeded that in 1918, while the excess of mortality in Albany, N. Y., Baltimore, Boston, Cleveland, Richmond, Va., San Francisco and New Orleans, was less than 20 per cent. of that recorded in the first epidemic, New Orleans having the lowest ratio, 5 per cent. There was a definite geographic movement of the epidemic, which developed in two well separated areas, one along the Great Lakes and the other in the Middle Atlantic region represented by New York City and Washington, D. C.

Medicines and Hospital Supplies for Sale by the Government.—The Surplus Property Division, Office of the Quartermaster General of the Army, offers for sale to all classes of buyers a quantity of surplus drugs and medical supplies on which fixed prices have been established. The present offer will be in effect from March 5 to April 5, 1920. No official forms are required; orders may be made by letter or telegram. Full shipping instructions should accompany all orders. No deposit will be necessary on orders amounting to less than $1,000.

A list of articles for sale contains the prices and minimum quantities of drugs, of which the following are a few examples: boric acid tablets (324 mg.) 500 for $0.60; ammonium chlorid, $0.20 a pound; silver nitrate crystals, $0.76 an ounce; barbital tablets (324 mg.), 100 for $1.50; caffein citrate tablets (0.65 mg.), 500 for $3.30; chloral hydrate, $0.06 an ounce; chloroform (one-fourth pound tins), $0.25 a pound; collodium, $0.02 an ounce; iodin, $0.23 an ounce; nitroglycerin tablets (65 mg.), 20 for $0.10; phenol (5 pound tins), $0.16 a pound; aromatic spirit of ammonia (one-half pound bottle), $0.65 per pound; strychnin sulphate (1 mg. hyp. tablets), 20 for $0.05. Also listed are surgical instruments, rubber aprons, operating tables, litters, bandages and crape paper.

Further information may be obtained from and orders may be sent to the "Zone Supply Officer" at any of the following addresses: Army Supply Base, Boston; 461 Eighth Avenue, New York City; Twenty-First Street and Oregon Avenue, Philadelphia; Coca Cola Building, Baltimore; Transportation Building, Atlanta, Ga.; Army Building, Fifteenth and Dodge Streets, Omaha; Fort Mason, San Francisco; Seventeenth and F Streets N.W., Washington, D. C.; Newport News, Va.; Jeffersonville, Ind.; 1819 West Thirty-Ninth Street, Chicago; Second and Arsenal Streets, St. Louis; Audubon Building, New Orleans; San Antonio, Texas; New Cumberland, Pa.; Columbus, Ohio, or to the Surplus Property Division, Medical and Hospital Section, Munitions Building, Washington, D. C.

FOREIGN

Hospital Shelled by Turks.—An Associated Press telegram of February 29 states that the American Hospital at Marasch was shelled by Turkish nationalists, January 22 and 23.

Edinburgh College of Surgeons Admits Women.—At an extraordinary meeting of the College of Surgeons of Edinburgh held, March 3, it was resolved that women should be admitted to fellowship in the college.

Coordination Between Hospitals in France.—Dr. Tuffier of Paris has been charged with the permanent task of technical inspection and supervision of the public health service hospitals of the country, to arrange for effectual coordination.

Council on Natality.—The French authorities have appointed a Conseil supérieur de la natalité in the public health service. Our exchanges comment on the fact that only three physicians are included in the thirty members of the council.

Chemical Companies Merge.—Plans are well under way for the amalgamation of two of the largest chemical companies in Great Britain, Brunner Mond & Co., with a capital of more than $48,665,000 and the Castner Kellner Alkali Co., with a subscribed capital of $4,866,500.

Tax on Roentgen-Ray Plates.—The *Archives d'électricité* of recent date brings a vigorous protest by Dr. de Courmelles against the "iniquity" of the present luxury tax in France of 10 per cent. on the plates used in radiography. "As if," he exclaims, "it is a luxury to have a diagnosis cleared up by radiographic examination."

Night Medical Service at Paris.—The night medical service in Paris has been reorganized and thirty physicians under 30, or 35 if they have served in the war, are to be appointed to serve in turn, with an automobile at their disposal. The term of service is for three years, and the salary is 3,000 francs. This amounts to 50 francs for each night of service, the number falling to each physician being about sixty. Provision is also made for five substitutes. The service is connected with the police department.

Medical Cooperative Society.—The physicians of Brussels, Antwerp and Liége have founded in each of these cities a cooperative store for the benefit of physicians, pharmacists, veterinarians, midwives, and widows of members of these professions, and also docteurs en sciences. The society at Liége is affiliated with the Association contre la vie chère at Antwerp, and the Coopérative médicale at Brussels, and the store will carry samples of goods to be ordered, besides a large stock of canned goods, cigars, etc. The shares are 100 francs each and no one is allowed to buy more than ten shares. The Prévoyance médicale, of Liége, as it is called, started with 183 shareholders and the store opened in January.

Deaths Abroad.—Sir **Thomas Peter Anderson Stuart,** University of Edinburgh, 1882; D.Sc., University of Durham, 1911; LL.D., University of Edinburgh, 1900; aged 63; professor of physiology and dean of the medical faculty of the University of Sydney, New South Wales; who organized the expedition of the Royal Society of London, to Funafuti, an island of the Ellice Group in the Pacific, which by boring to a depth of 1,000 feet into coral rock secured confirmation of the Darwinian theory of reef formation; died, March 3.——Dr. **Knud Poulsen,** a leading physician in Denmark, succumbed to fulminating infection after droplets from a streptococcus sore throat had been coughed in his face, aged 48.——Dr. **Braun,** inspector-general of the public health service in Morocco, and recently appointed director of the same service at Strasbourg.

The Nursing Profession in Europe.—With the assistance of the American Red Cross, the first school for nurses in Czecho-Slovakia has been established at Prague under the direction of American nurses. It is expected that within three years the training school will be in charge of Czecho-Slovakian nurses, for two native women have been sent to the Massachusetts General Hospital to prepare for this eventuality. In Poland there are now over fifty nurses' aides in training at various hospitals under the direction of the American Red Cross and more than 130 volunteers are receiving preliminary instruction. The need for nurses is felt keenly in Eastern Europe, for fighting is still going on and thousands of sick and hungry refugees are returning from their exile in Russia, bringing with them typhus fever, cholera and dysentery.

Memorial Tributes to Baccelli.—A national committee in Italy has charge of the task of honoring the memory of Guido Baccelli, and on the fourth anniversary of his death a notable meeting was held in the capitol where a bust of Baccelli was unveiled and his important and pioneer work as physician, medical teacher and research worker, and as statesman was extolled by leading men of the nation. It is the third time that a special celebration in his honor has been held in the capitol—two of them during his lifetime—an unprecedented tribute. A tablet was also placed on his late residence, and a special public meeting was planned in the Baths of Caracalla, among the excavations of ancient Rome which Baccelli inaugurated and superintended. To him are due also the laws relating to the draining of the marshes around Rome; he inaugurated also the administration of heroic drugs by the vein.

Red Cross Items.—The first meeting of the General Council of the League of Red Cross Societies was held in Geneva, Switzerland, March 2 to 10. Two main topics were discussed at the meeting. The first related to the improvement of public health and the prevention of disease according to the program outlined at the Cannes meeting in April, 1919, and the second was the consideration of the program of service in peace time, the most effective means of extending the membership and resources of the Red Cross. In addition to these general topics the thirty societies which are members of the league supplied samples of posters, pamphlets, moving picture films, and other material used during or since the war by the national societies.——The National Red Cross Society of Czecho-Slovakia and Uruguay have joined the League of Red Cross Societies.——Dr. Octave Monod of the Pasteur Institute, Paris, has been appointed assistant chief of the department of tuberculosis.——Mr. C. R. Hewitt, formerly librarian of the Royal Society of Medicine, London, has been made librarian of the league.

Scientific Publications in Germany.—The *Münchener medizinische Wochenschrift* quotes Prof. von Harnack, the librarian, speaking at a recent convocation of the University of Berlin on the plight of German science. He explains it as follows: "(1) Because we are unable to buy any more foreign books and periodicals; the library with its present resources can subscribe only to 170 foreign periodicals instead of 2,300. The library had appropriated 112,000 marks to purchase works that had been published in other countries during the war, but it would take over a million marks to buy these works now. (2) Our scientific journals in Germany are in a most precarious condition (auf dem Aussterbeetat) as the publishers are no longer able to take the risks. (3) No more scientific monographs can be published as the scientific academies are no longer able to subsidize them. (4) The books already on hand in Germany, especially the great collected works on scientific subjects, are flowing out of the country in great numbers. Even the textbooks, when the editions dating from cheaper times are exhausted, will become unbelievably expensive."

LATIN AMERICA

Lethargic Encephalitis in Peru.—The Lima Academy of Medicine states that several cases of lethargic encephalitis have occurred in Lima.

Branch of American College of Surgeons in Peru.—During the visit of Drs. Mayo and Martin to Lima, Peru, there was organized in that city a branch of the American College of Surgeons.

Death of Dr. Coyula.—Dr. Luis Coyula, mayor of the city of Mexico, died suddenly on March 3 of heart disease. Dr. Coyula was a former professor of physiology in the school of medicine.

Medical Expert Wanted in Paraguay.—Among various experts whose services are desired by the government of Paraguay, one should be an expert in tropical diseases. The minister in Washington is in charge of the matter.

Influenza in Mexico.—The epidemic of influenza in Mexico is abating rapidly. All churches, theaters and schools have been reopened. The official reports show that there have only been sixty-six deaths from the disease recently.

Brazilian Hospital Items.—Dr. Graciano Feliciano, present head of the public health service of Bahia, has been appointed assistant director of the Central Military Hospital.——The new military hospital at S. Paulo will soon be open, with Lieut.-Col. Brenno Moniz as its first director.

New Asylum for Infants in Santo Domingo.—An infant welfare association under the name of *Gota de Leche* has recently been established in Santo Domingo. At its headquarters it has accommodations for twelve children, in addition to a medical dispensary, milk station, and a public bath department.

Enforcement of Patent Medicine Regulation.—An executive resolution was promulgated in Havana, February 11, by which the following articles of the pharmacy regulations of 1913, enforcement of which had suspended were finally put into effect:

ART. 46.—Foreign patent medicines must be registered with the Bureau of Health by agents or importers, and their circulation in the country shall be permitted only upon fulfilment of the following conditions: (*a*) The labels must name the constituents to which the patented article owes its medicinal property; (*b*) the labels must also state the name of the manufacturing druggist or company in the country of origin.

ART. 47.—No patent medicine shall be put on sale before its registration with the Bureau of Health. A certificate of registration will be issued by the said bureau within three days from date of application.

Gold Medal Presented to Dr. Pérez Araníbar.—The Sociedad de Beneficencia Pública of Lima, Peru, recently presented its former director, Dr. A. Pérez Araníbar, with a jeweled gold medal in token of appreciation of his indefatigable and efficient management of this official system of organized charities. In commenting on the event, the *Crónica Médica* remarks that the tribute is simple justice, as he took a very

active part in carrying through a number of works and improvements of a medicosocial nature while he was in office during 1917 and 1918.

Changes in the "Brazil-Medico."—Our Rio de Janeiro exchange enters on 1920 and its thirty-fourth volume with a change of management, the former general manager for twenty-six years, Dr. Bulhoes Carvalho, having been obliged to resign his connection with the journal as he has been appointed director of the state department of statistics. The editor in chief of the *Brazil-Medico*, Dr. Azevedo Sodré, remains in charge and his two sons have assumed the management. They have already enlarged the journal and introduced an extensive news department and current literature department, following the style of THE JOURNAL to some extent. The management announces further that arrangements have been made for special correspondence from four of the principal cities of Brazil, and from Paris, Berlin and New York.

Government Services

Base Hospital Receives Appropriation

Seventy-five thousand dollars has been appropriated from the funds of the construction division of the War Department for the improvement of the base hospital at Fort Sam Houston.

Hospital Discontinued

The Surgeon-General's recommendation to discontinue U. S. General Hospital 43, Hampton, Va., has been approved and the director of real estate service has been instructed to cancel the lease and return the property to the board of managers of the National Home for Disabled Volunteer Soldiers.

Medical Veterans of the World War

Col. Frederick F. Russell, M. C., U. S. Army, secretary of the Medical Veterans of the World War, states that during February, 169 new members joined, making a total membership of 2,711 divided as follows:

Medical Corps, U. S. Army	1,245
Medical Corps, U. S. Navy	51
Medical Corps, U. S. P. H. S.	62
Contract Surgeons, U. S. Army	88
Acting Assistant Surgeons, U. S. P. H. S.	47
Members Local Board	527
Members Examiner, Local Board	183
Members Medical Advisory Board	508

Bill to Purchase Land of Army Hospital at Azalea, N. C.

Senator Wadsworth, chairman of the Committee on Military Affairs, introduced a bill, March 6, authorizing the payment of $55,000 for the purchase of land on which the army hospital at Azalea, North Carolina, is located. The hospital buildings at this site cost the government $2,600,000, but no arrangement has ever been made for the purchase of the land on which the buildings are located. Secretary of War Baker wishes to use this camp as a permanent one, and has asked Congress for authorization to purchase the land, which consists of 360 acres. It is located at an altitude of 2,000 feet and is well situated for the treatment of army tuberculosis patients. The hospital has a capacity of 1,300 beds and there are 900 patients there at present.

HONORABLE DISCHARGES, MEDICAL CORPS, U. S. ARMY

Note.—In the following list, L., signifies lieutenant; C., captain; M., major; L. C., lieutenant-colonel, and Col., colonel.

ALABAMA

Chancellor—Austin, B. F. (L.)
Mobile—Brown, R. D. (C.)

ARKANSAS

Fayetteville—Wilson, D. R. (L.)
Forest City—Bridgeforth, D. O. (M.)
Hartford—Routh, H. P. (C.)
Mellwood—Cliatt, J. N. (C.)
Scranton—Lipe, E. N. (L.)

CALIFORNIA

Berkeley—Kierulff, H. N. (C.)
Calexico—Sims, P. N. (L.)
Los Angeles—Currie, A. H. (L.)
Dow, J. N. (C.)
Koehig, W. C. S. (C.)
Oakland—Hamilton, G. B. (M.)
Milliken, W. P. (C.)
Placentia—Thibodo, F. H. (C.)
Redlands—Ide, C. E. (C.)
San Francisco—Griffin, C. F. (C.)
Reinstein, A. H. (C.)
Topping, F. P. (M.)
Sanger—Madden, T. F. (L.)

COLORADO

Denver—Lee, G. F. (L.)
Wescott, O. D. (M.)

CONNECTICUT

Hartford—Owens, W. T. (M.)
Seigall, H. A. (L.)

DISTRICT OF COLUMBIA

Washington—Covey, C. B. (L.)
Ford, R. H. (C.)
King, H. C. (C.)
Tilton, J. A. (L.)
White, L. M. (C.)

FLORIDA

De Land—McDaniel, R. F. (L.)
Jacksonville—Day, G. (C.)
Gilbert, R. E. (L.)

GEORGIA

Augusta—Davis, T. L. (M.)
Talbotton—Douglass, W. C. (L.)

ILLINOIS

Cambridge—Hawks, J. D. (C.)
Chicago—Carlin, H. W. (L.)
Culver, F. E. (C.)
Greenberg, P. B. (L.)
Hans, E. (L.)
Karatz, M. B. (L.)
McLean, G. M. (C.)
O'Connor, T. P. (L.)
Phillips, D. C. (C.)
Pilot, I. (L.)
Roberg, O. H. (M.)
Stam, N. C. (L.)
Thexton, L. (M.)
Woodnick, G. W. (M.)
Fairland—Murphy, L. J. (C.)
Kankakee—Riach, T. J. (M.)
Marseilles—Weirick, A. J. (C.)
Mount Carroll—Clay, W. E. (L.)
Wilmette—Conley, B. M. (C.)

INDIANA

Anderson—O'Neill, T. J. (L.)
Evansville—Whitledge, H. E. (C.)
Jasonville—Hadley, A. W. (C.)
Kokoma—Peters, B. J. (L.)
Kramer—Martin, W. D. (L.)
Lapaz—Tallman, H. H. (C.)
Linton—Thomas, A. A. (C.)
Madison—Davis, R. E. (L.)
Onward—Badders, A. C. (C.)
Valparaiso—Evans, H. M. (L. C.)

IOWA

Farragut—Beatty, J. J. (L.)
Keswick—Negus, A. (C.)
Lake City—Middleton, H. E. (L.)
Millerton—Corbin, S. W. (M.)
Monroe—Billingsley, J. W. (L.)
Sioux City—Rhodes, F. G. (C.)

KANSAS

Galva—Gore, L. M. (L.)
Lawrence—Barnes, R. E. (L.)
Ensign, C. F. (L.)

LOUISIANA

Baton Rouge—Hyes, A. S. J. (L.)
Buras—Ballowe, H. L. (C.)
New Orleans—Kemp, R. S. (L.)

MAINE

Portland—Nichols, N. E. (L. C.)

MASSACHUSETTS

Boston—Carney, H. E. (C.)
Strong, R. P. (Col.)
Ullian, L. J. (L.)
Northampton—Greene, E. C. (M.)
Westboro—Clark, A. U. F. (C.)

MICHIGAN

Battle Creek—Read, A. J. (C.)
Detroit—Des Rosiers, A. L. (L.)
Krohn, A. H. (L.)
Mallow, O. B. (C.)
Oill, G. V. (C.)
Wehenkel, A. M. (C.)

MINNESOTA

Rochester—Walker, J. C., Jr. (L.)
Sauk Center—Lamh, H. L. (M.)
St. Paul—Beaudoux, H. A. (C.)

MISSISSIPPI

Lucien—Lofton, A. C. (L.)
Oakvale—Polk, P. R. (C.)

MISSOURI

Bel Air—Holligsworth, W. Y. (C.)
Bowling Green—Butzke, E. J. (L.)
Kansas City—Lynn, W. J. (M.)
St. Louis—Farrell, J. A. (L.)
Kuhlmann, F. C. E. (M.)

NEBRASKA

Marion—Bartholomew, W. S. (L.)
Oconto—Wade, J. C. (C.)

NEW JERSEY

Jersey City—Henderson, R. D. (L.)
Montelair—Mount, W. B. (L.)
Newark—Liebmann, W. C. (L.)
Passaic—MacGuffie, R. N. (L.)
Trenton—Gosline, H. I. (M.)
Rosenthal, L. V. (L.)

NEW MEXICO

Fort Bayard—Little, O. W. (C.)
Gallup—Allison, D. (C.)
Mescalero—Callaway, J. R. (M.)

NEW YORK

Albany—Van Winkle, H. L. (M.)
Brooklyn—Bogan, R. (L.)
Logue, J. (C.)
Moore, W. V. (L.)
Piquet, S. D. (L.)
Buffalo—DeGraff, R. M. (L.)
Thoma, E. W. (L.)
Dannemora—Robert, H. R. (L.)
Elmhurst—Graves, L. K. (M.)
Franklinville — Reimann, L. E. (L.)
Gowanda—Johnson, H. W. (M.)
New Bridge—Stygall, J. H. (C.)
New York City—Baughman, W. H. (M.)
Hansen, H. B. (L.)
Irish, C. G. (L.)
McGovern, F. X. (L.)
Osincup, G. S. (C.)
Richardson, F. A. (C.)
Strowger, C. W. (C.)
Thornley, J. P. (C.)
Webster, C. E. S. (M.)
Spencer—Terwilliger, F. (C.)

NORTH CAROLINA

Greensboro—Compton, B. S. (L.)
Newland—Long, M. I. (L.)

OHIO

Cleveland—McCleery, J. M. (L.)
Columbus—Philips, D. P., Jr. (L.)
Gallipolis—Rose, E. J. (C.)
Orwell—Sellers, R. R. (M.)
Springfield — Dornblaser, H. B. (C.)
Miller, E. (L.)

OKLAHOMA

Arnett—Stoll, A. A. (C.)
Muskogee—Nicholson, H. M. (L.)

PENNSYLVANIA

Hepburnville—Waltz, A. D. (L.)
Lancaster—Brown, H. C. (L.)
Lemoyne—Everhart, E. S. (M.)
Philadelphia—Grimes, R. B., Jr. (M.)
McFarland, J. (M.)
Shamokin—Yeager, W. H. (M.)
Sharon—Millikin, H. W. (L.)
Spearman, J. F. (C.)
Stroudsburg—Van Etten, H. S. (L.)
Wyncote—Bower, J. O. (C.)

RHODE ISLAND

Newport—Cole, N. B. (M.)
Providence—Mulligan, E. W. (L.)

TENNESSEE

Chattanooga—Sullivan, B. (L.)
Irving College — Brown, P. D. (M.)
Memphis—Bender, C. A. (C.)
Robinson, C. W. (L.)

TEXAS

Abilene—Howser, J. P. (C.)
Goose Creek—Culpepper, W. L. (L.)
Houston—Hamilton, G. (M.)
Lone Oak—McCrum, S. S. (L.)
Vernon—Reger, H. J. (C.)

VERMONT

Ludlow—Kerrigan, J. P. (C.)

VIRGINIA

Elk Creek—Rhudy, B. E. (C.)
Uno—Dovell, E. B. (C.)

WASHINGTON

Seattle—Hansen, M. M. (L.)
Tooker R. N. (C.)

WEST VIRGINIA

Sistersville—Boice, R. H. (L.)

WISCONSIN

Milwaukee—Grosskopf, E. C. (C.)

Foreign Correspondence

LONDON

Feb. 13, 1920.

The Study and Treatment of Mental Disorders in Early Stages

In a joint letter to the *Times*, Allbutt, Barlow, Savage, Mott, Armstrong-Jones and others draw attention to the urgent need of reform in the methods of dealing with mental disorders. In 1918, the Medico-Psychological Association of Great Britain and Ireland, after considering the amendment of the existing lunacy laws, reported that there are few facilities for patients threatened with mental breakdown to obtain skilled treatment until they are certified as insane and placed in asylums, whereas the early symptoms often occur long before certification is possible; that, owing to delay in treatment, the most valuable time for securing early recovery is lost; that the public, being alive to the material and moral damage which certification often inflicts on the patient and his relatives, refuses to resort to it even when it has become possible, still further postponing efficient treatment; that the subsequent course often shows that certification might have been avoided had there been facilities for treatment under other conditions, and that many physicians, having had no opportunity of gaining knowledge of the manifestations and treatment of mental disorders in their early stages, fail to recognize the seriousness of the condition and are, further, deterred by the necessity of certifying the patient from advising suitable treatment. The signatories of the letter endorse the proposals made by the association for the provision of treatment in the early and curable stages without certification, the provision of psychiatric clinics, especially in connection with large hospitals and medical schools, and the extension of the system of voluntary admission (which now obtains in respect of licensed houses and registered hospitals for the insane). Of these proposals, the establishment of psychiatric clinics is considered the most important. In regard to these, this country is deplorably backward compared with other European countries and the United States.

Vocal Therapy

The therapeutic value of singing, both by causing full expansion of the lungs and by its invigorating effect on mind and body, is not sufficiently appreciated. A "Vocal Therapy Fund" has been formed with a committee containing several well known leaders of the profession, including Mott, Dundas Grant and Martin Flack. In appealing for funds, the committee points out that the work is partly curative, consisting of individual training, under medical supervision, of men suffering, through shock and strain, from stammering, aphonia or mutism, and partly restorative, by instruction in choral singing, taking advantage of the well known power of song to cure ailments affecting speech and respiration. Trained choirs have been organized which give concerts both in and out of hospitals, and "song centers" have been started at general and special hospitals and hostel centers in London and the provinces. It is thought that the treatment would be especially applicable to the many thousands of medically unfit men discharged from the military hospitals who are unable to return to the full use and enjoyment of life.

A Diploma in Medical Radiology and Electrology

The increasing importance of electricity and the roentgen rays in therapeutics is being recognized in several ways. A movement is on foot to give full staff rank to the medical officers in charge of the departments devoted to these agents at the hospitals. The University of Cambridge has instituted a diploma in medical radiology and electrology, the first examination for which will be held next July. A course of instruction in physics and electrotechnics was begun at Cambridge in January, and one on radiology will begin in April. Most of the leading workers in these subjects are taking part in the teaching.

Australasian Medical Congress

After a lapse of more than six and one-half years, the Australasian Medical Congress will again meet. The eleventh session will be held at Brisbane from August 23 to 28, under the presidency of Hon. W. F. Taylor, M.D. A resolution of the congress that future meetings shall be meetings of the branches of the British Medical Association has been declared informal, but opportunity will be given for a formal decision as to whether the functions of the congress and its assets shall be taken over by the British Medical Association. Preparations for the Brisbane session were begun in July, 1914, with the intention of holding it in 1917, but the outbreak of war postponed the meeting. The work of the congress has been divided into eleven sections, of which one is on Naval and Military Medicine and Surgery, to which a large contribution is expected from returned army and navy medical officers.

Flying Laboratories

The Cairo to Cape aeroplane flight across the whole of Africa from north to south, in which Dr. Chalmers Mitchell, the well known zoologist, is carried for purposes of scientific observation, has led Sir Ronald Ross to suggest in the *Times* that the time has come when it is feasible to consider the possibility of using aeroplanes for the medical exploration of Africa and other dark countries. He cannot say how far the suggestion would be practicable, especially in countries largely covered with bush and not at present possessing cleared landing places. But such an exploration would be of great use. He suggests that each exploring plane should carry not only a pathologist and a small portable laboratory, but also one or more clinicians, for the purpose of relieving the sickness of the poor natives who otherwise might never hope for the benefits of medical science. Research would, of course, go hand in hand with clinical work. It would be necessary ultimately to establish base hospitals and laboratories at the main aerodromes along the route.

Prohibition of the Importation of Japanese Shaving Brushes

In view of the fact that cases of anthrax have resulted from the use of shaving brushes manufactured in Japan, as reported in previous letters to THE JOURNAL, the government has prohibited the importation of shaving brushes from that country.

Physicians Among the German War Criminals

The list of German war criminals whose surrender is demanded by Great Britain contains the names of several commanders of submarines who sunk hospital ships. The general principle that has been followed is not that of demanding men who carried out any system, however inhuman and contrary to the rules of civilized warfare, under superior orders, but of demanding only those who, in addition, committed atrocities on their own account. For offenses against prisoners of war in German camps, eighteen physicians are wanted.

PARIS

Feb. 5, 1920.

Renewed Efforts to Increase the Birth Rate in France

J.-L. Breton, the newly appointed minister of social hygiene, social assistance and social prevision, recently submitted to the president of the republic for his signature a proposed decree providing for the establishment of a Conseil supérieur de la natalité, whose duty it shall be to investigate and promote all measures that may serve to combat the decrease in population, to increase the birth rate, to aid child welfare, and to give added protection to large families. In giving the reasons that moved him to propose this decree, the minister refers to the many serious disadvantages that result from the low birth rate in France, especially in view of the fact that the war has deprived France of at least 2,000,000 young men. This serious situation in France, he stated, had already been the subject of much study. It has long been recognized that it could not be attributed to a single cause, but that a multiplicity of causes was involved. Likewise, in order to combat the situation, a single remedy would not suffice, but that a series of remedies must be applied, some of a moral, and some of a material and economic nature. The Conseil supérieur de la natalité consists of thirty members, among whom are Dr. Pinard, member of the chamber of deputies, and formerly professor of the Faculté de Médecine de Paris; Dr. Jacques Bertillon, president of the Alliance national pour l'accroissement de la population, and Dr. Charles Richet, professor of the Faculté de Médecine de Paris. Professors Richet and Pinard have been appointed vice presidents of the council.

Duties of Pharmacists in the Matter of First Aid

There is no law compelling a pharmacist to dress the wounds of any person. However, from a recent decision of the Cour de Cassation, it would appear that a pharmacist who is summoned by the police cannot repudiate the summons thus served. The case in question was that of a pharmacist of Grenoble, who was summoned one night to

dress a slight wound that a young man had received. The pharmacist had refused to furnish the service required. The police court reached the decision that, the benign character of the wound being known, there was no reason why the pharmacist should not have dressed it. The pharmacist was found guilty and sentenced in consequence of his neglect. When the case came before the Cour de Cassation (the supreme court of appeal) the pharmacist pleaded the fact that, not being a physician, he could not legally be required to perform the service in question. The Cour de Cassation, however, rejected his appeal, holding that a single act of intervention in the treatment of the wound would not have constituted an illegal act in the exercise of the rights of the medical profession. This decision has been severely criticized by lawyers who are experts in medicolegal and pharmaceutical matters of this nature. One such expert compares the case of the pharmacist of Grenoble to that of another pharmacist of the same region who was sentenced, a few years ago, for having dressed a wound, which was also of benign character—at least, to all appearances. It is true, in the second case, the patient died of tetanus a few weeks after the dressing was applied by the pharmacist. The points of resemblance in the two cases show that it is difficult for a judge to base a verdict on the supposedly benign character of the wound.

The Use of Ether in the Treatment of External Infections

For several years Dr. C. Souligoux, surgeon to the hospital of Beaujon, has been employing ether as a routine in the treatment of external infecions (wounds, compound fractures, lymphangitis, erysipelas) and of peritoneal infections. The treatment of generalized peritonitis by ether lavage of the peritoneum has even come into general use. In view of this fact it may be of interest to review the circumstances under which this method of treatment came into use. In 1892, a patient who had been run over by a heavily loaded dray was admitted to the Hôpital de la Pitié. He was treated in the service of Professor Le Fort. Both legs of the patient were badly crushed. There were comminutive fractures, complicated by wounds filled with the mud of the street, and it seemed useless to hope for the recovery of the patient unless both legs were amputated at once. The patient refused point blank to have the amputation done, and would not listen to reason. Souligoux, therefore, proceeded to cleanse the wounds, using for this purpose alcohol and ether. A plaster cast was applied to each leg. To the profound surprise of the surgeon, the patient developed no infection and recovered. Souligoux concluded that this unhoped-for success was due to the fact that the ether, by rapid volatilization at body temperature, had disinfected the wound throughout, in that it had penetrated to the uttermost recesses. This, then, was the beginning of the ether treatment, which has been regularly used by Souligoux ever since.

Lethargic Encephalitis

Dr. A. Netter, agrégé professor of the Faculté de médecine de Paris and physician to the hospitals, recently called attention to the reappearance of lethargic encephalitis, a slight epidemic of which in May, 1918, he had already reported. The disease exists at present in epidemic form at Lille and in the vicinity. At Paris, and in the suburbs of Paris, there are more than 100 cases, scattered through various quarters of the city. The disease is characterized mainly by three symptoms: somnolence, paralysis of the cranial nerves (especially the oculomotors), and a more or less accentuated febrile state.

Dr. Achard, professor of the Faculté de médecine de Paris, likewise has had an opportunity of observing several cases of lethargic encephalitis, and he has called attention to certain interesting manifestations that accompany the disease, more especially the possibility of the existence of a meningeal reaction, while two of his patients presented a marked lymphocytosis. These findings have practical diagnostic value, as it is evident that a diagnosis of lethargic encephalitis must not be excluded merely because of a meningeal reaction or a lymphocytosis; nor should one be led into making a diagnosis of tuberculous meningitis, which one might otherwise be tempted to do, at times. Achard also reports the coexistence of a recurrence of lethargic encephalitis with a second attack of influenza. The reports of lethargic encephalitis accompanying influenza are still a subject of much controversy. Without wishing to go so far as to utter an opinion on the question as to whether it is the influenza virus that produces the pathologic changes in the brain or whether these are due to a superadded virus, Achard is nevertheless convinced that a relation exists between lethargic encephalitis and influenza. Moreover, it had been pointed out by Netter in 1918 that a coincidence, at least, existed, in that the conditions favorable to the expansion of the two diseases appeared analogous.

Dr. Pierre Marie, professor of the Faculté de médecine de Paris, states, in this connection, that when one encounters an affection with soporose manifestations, associated with cephalalgia and ocular troubles and accompanied by a pronounced meningeal reaction, one should suspect, first, either tuberculous meningitis, or—in adults more especially—syphilitic meningitis, which is of frequent occurrence and is accompanied by manifestations analogous to those of lethargic encephalitis. Marie added that he had known of distinguished physicians failing to make a proper differential diagnosis under such circumstances, and that he feared such errors would become more frequent now that lethargic encephalitis was so much in vogue.

BELGIUM

Liége, Feb. 20, 1920.

The Cancer Problem

The campaign that has been undertaken in this country to stay the progress of cancer continues to exert a favorable influence on medical studies calculated to throw light on the etiology and the therapeusis of this disease. The cancer commission has announced to the medical profession that, owing to the funds placed at its disposal by the government, it has in its hands the bestowal, annually, of several prizes to be given as awards to the authors of the best works on various questions pertaining to the knowledge of cancerous affections. Aside from questions that can be effectively taken up only in special laboratories, there are many others that rest on observation, pure and simple, and to which, therefore, any observing practitioner can make a useful contribution. To the second class belong such questions as: (1) the geographic or regional distribution of cancer in our country; (2) the conditions favoring the genesis and the further development of cancer; (3) questions of heredity, contagion and epidemicity; (4) the critical examination of various forms of treatment recommended against cancer, and (5) the duration of so-called "cures." The purpose of the commission is not only to favor, to the extent of its resources, every investigation of the true nature of cancer, but also to collect and coordinate the vast amount of authentic but scattered information in regard to the ravages caused in Belgium by cancerous affections and with respect to the best means of combating them. To accomplish these ends, the commission has issued an urgent appeal to the Belgian medical profession, as a whole, to take an active part in the campaign that has been launched.

The Coagulation of Blood in the Serous Cavities

The question of the coagulation of blood discharged into the serous cavities, and especially into the pleural cavity, gave rise to numerous investigations and much discussion during the progress of the war just closed. Delrez *(Archives médicales belges)*, Stassen and Voncken (*Laboratorio*) were agreed that all blood effusions coagulated in a normal manner on account of a slight abrasion of the serous membrane, the wounding of which constituted the first cause of the coagulation, whereas Grégoire and Courcoux *(Coll. Horizan)* thought that blood extravasated into the serous cavities lost the property of coagulating and acquired, on the contrary, anticoagulating properties. At a recent meeting of the Société Belge de Biologie, M. Gratia brought up the question again. He says that ordinarily an aspirated traumatic pleural effusion remains in a fluid state. He maintains that the effusion consists of defibrinated blood which no longer contains any of the elements of coagulation; no fibrinogen, no cytozym, no thrombogen, no thrombin. It contains, however, large quantities of antithrombin, and when heated at a temperature of 56 C. it possesses the property of flocculating the fibrinogen. When an effusion is coagulable in vitro it is either because it contains blood freshly discharged by the wound as the result of an evacuative puncture that was carried too far or because an exudate has been added which did not coagulate in the cavity owing to the protection of the endothelium of the serosa which has cicatrized in the meantime.

Medical Printing

Owing to the annoyances that constantly arise in connection with the ever increasing scarcity of labor and the difficulties of production in general, the Belgian medical federation has formed an incorporated joint-stock company, with a capital of 400,000 francs, for the purpose of founding a medical and

scientific printing establishment, with a view of facilitating the work of printing and publishing for physicians and pharmacists. One of our medical journals, the *Scalpel*, is already being published by the corporation. The corporation expects to provide not only for the editing and publishing of medical works, but will also conduct, in connection, a stationery department, a book-store and a bookbinding department. This innovation is only the natural outgrowth of a movement toward medical reciprocity which is manifesting itself in all the large cities of the country. Since the signing of the armistice, in order to combat the high cost of living, Brussels, Antwerp and Liége have established cooperative societies, which handle not only groceries and foodstuffs, but also clothing and other articles of prime necessity. These cooperative societies are beginning to get into full working order.

Cancer of the Prostate Treated by Radiotherapy

Dr. Le Clerc Dandoy has communicated to the Société belge d'urologie his observations of a case of cancer of the prostate, in which radium exerted a favorable effect. The rarety of the case makes it worthy of mention. Three exposures to the roentgen ray and six applications of radium, by the prostatic urethra and by the rectum as well, all within three hours, was the technic employed. The symptoms improved rapidly. The pain which was unbearable subsided almost completely. The gradnal disappearance of the tumor could be followed by rectal palpation. Strange to relate, running parallel with the breaking up of the tumor, the general health of the patient was much affected. Fever, oliguri and delirium were present, but gradually disappeared. This parallelism between the regression of the cancerous tissue and the appearance of general symptoms was maintained up to the end of the treatment.

A National Congress for the Study of Questions Pertaining to Disabled Soldiers and Sailors

Now that the normal affairs of life have been completely resumed, and now that the situation of all those who returned, after the war, to their abandoned firesides has been stabilized, the solution of all questions pertaining to disabled soldiers and sailors should be brought about with as little delay as possible. All those who had been called on to devote their time and energies to these questions were recently summoned by the minister of war to meet together in a national congress, to which the Association des Invalides was also asked to send delegates. The reports presented to the congress emphasized the necessity of close collaboration between the surgeon, the physiotherapist, the reeducator and the prosthetist. The value of collaboration between various specialists had been brought out by the war in all branches of medicine. In the case of disabled soldiers and sailors, more than anywhere else, collaboration was needed; in fact, it was indispensable. Unity of treatment should be everywhere present, from the time the men are injured, right up to the time when, provided with such prosthetic apparatus as they may need, they leave the school of reeducation, where they have learned to make ready use of prosthetic appliances and where they have been trained, if necessary, for a trade or profession. Dr. Hendrix gave an outline of the great work that had been accomplished by the Belgian Army Medical Corps at the famous center Bonsecours-lez-Rouen, and also described the newly established center at Woluwe (Brussels) to which all the services formerly at Bonsecours have been transferred. The services at Bonsecours were known to all the allies, and they served as models for all who wished to familiarize themselves with the organization and practical workings of reeducation centers.

In this connection a new question has arisen. Shall the state as such continue to manufacture the prosthetic appliances for the crippled and disabled? Or shall production be decentralized and private industries be permitted to develop and manufacture orthopedic equipment? This question, being one of great present interest, provoked a lively discussion, and it did not take the members of the congress long to reach a common agreement as to the desiderata required in the premises. It was agreed that, in order to assure every guaranty of safety and quality, the manufacture of prosthetic apparatus for the use of disabled men should be entrusted solely to such manufacturers as would accept medical direction and control. It was further agreed that the state could best secure a full and complete guaranty as to quality of workmanship by turning over to the Oeuvre nationale des invalides, and to it alone, the necessary funds for the equipment with, and for the upkeep and the renewal of prosthetic appliances, etc., required by disabled soldiers and sailors. The manner of using such funds should be left entirely to the Oeuvre nationale des invalides, which would act through a mixed commission appointed to study into the details of manufacture of the required equipment and into the best methods of regulating the matter of upkeep and renewal of apparatus. This commission would be composed of army experts, members of the Belgian Red Cross, delegates of the Belgian orthopedic industry, and representatives of the disabled soldiers and sailors. In order to furnish a concrete exhibit of the progress that is being made daily in the manufacture of prosthetic appliances, it was proposed that a museum be established which should contain samples of all prosthetic appliances used by disabled soldiers and sailors. The congress also took up the study of certain financial questions pertaining to the disabled men. It considered especially the matter of government aid, which has been proposed, to assist them in the construction of simple dwellings, in the securing of small garden tracts, the opening of small shops and the purchasing of equipment in line with their profession.

MEXICO CITY

Feb. 28, 1920.

The Academy of Medicine

During the recent sessions of this association the following subjects have been discussed: Dr. Godoy Alvarez read an interesting paper on the symptomatology, and the medical and surgical treatment of the common duct obstructions, which was very widely discussed and served to bring to the fore again the virtues of the springs of Tehuacan in lithiasis. Dr. B. Vasconcelos reported a case of probable syphilitic reinfection following treatment with intravenous injections of arsphenamin and intramuscular injections of mercury. The case was in a young man who about the middle of 1917 had an indurated chancre, the syphilitic character of which was demonstrated by the presence of spirochetes. The patient had no secondary manifestations and received six injections of arsphenamin and about ten of mercurial oil. In December, 1919, after exposing himself again and after an incubation period estimated at fourteen days, he presented a new chancre at a different site on the penis, without any bubo. The spirochete was again isolated from this chancre and the Wassermann reaction was very strongly positive in the blood serum. It was not possible to persuade the patient to have a Wassermann made between the appearance of the first and second chancre; so it is not known whether the reaction was constantly negative, as should be the case before a patient is pronounced definitely cured. For this reason and because of absence of a bubo (which was lacking also in the first instance) it cannot be stated with certainty that it is one more case of reinfection to add to the large number collected by Emery in his recent pamphlet, "Traitement abortif de la syphilis" (Paris, Vigot Frères, 1914), and those observed more recently, such as that of Schamberg (described in THE JOURNAL). Another communication on syphilography condemns with strong reasons, at least provisionally, the use of Query's serum, which is considered as lacking sufficient scientific basis and should be mistrusted because of the silence maintained about it by all well-known French syphilologists.

Child Welfare Congress

Owing to the initiative of Sr. Palavicini, editor of a local newspaper, the first Mexican child welfare congress is to be held in September, 1920. Not only physicians but all persons interested in social matters are invited to participate. The congress will be divided into sections which will be devoted to eugenics, infant hygiene, medical and surgical pediatrics, pedagogy, and legislation. The congress will be presided over by Sr. Palavicini and among the members of the organizing committee are Sr. E. Chávez, former undersecretary of public instruction, and Drs. Rafael Carrillo, Roque Macouzet, and others. The secretaries of the committee on organization are Drs. Luis S. Viramontes and S. Uribe Rivera, whose address is: Apartado postal No. 909, Mexico City, Mexico.

The Study of Typhus Fever

The Comisión Central para el Estudio del Tabardillo has received a subsidy from the federal government amounting to 25,000 *pesos* (about $12,500) for the present fiscal year, which will be expended subject to the discretion of the dean of the National University. This gift from the authorities has impressed physicians very favorably and it is hoped that it may yield some positive results, especially in view of the fact that Noguchi has offered to aid the commission with his advice in regard to parasitologic investigations.

Marriages

ABRAHAM I. WEINSTEIN, Richmond, Va., to Miss Virginia Elizabeth May of Charleston, S. C., February 1.

EARL C. WATERBURY, Newburgh, N. Y., to Miss Elmina Elizabeth Benoit of Ottawa, Ont., February 4.

HARVEY S. KOONS, New Castle, Ind., to Miss Izetta Harrigan of Bloomington, Ind., January 20.

EFFIE LOUISE ABBOTT to Mr. Gilbert Wilson Morton, both of Jacksonville, Ill., February 21.

ISAO HIRATA, New Haven, Conn., to Miss Misao Kawasaki of Cincinnati, February 18.

Deaths

Lewis E. Lemen ⊕ Denver; Washington University, St. Louis, 1871; aged 70; once president of the Colorado State Medical Society; clinical professor of surgery in Denver and Gross College of Medicine; surgeon to the Union Pacific and Denver, Texas and Gulf railroads; president of the Denver school board for twelve years; a member of the state board of health, a member of the staff of St. Joseph's and Mercy hospitals; consulting surgeon to St. Luke's Hospital; health commissioner of Denver in 1893 and 1894; president of the Board of Commissioners of the Colorado Insane Asylum; died February 17, from aneurysm of the aorta.

Edward Geary Tuttle, New York; New York Homeopathic Medical College, New York, 1889; aged 57; emeritus professor of gynecology in his alma mater; attending gynecologist to Flower Hospital; attending surgeon to the Yonkers Homeopathic Hospital and Maternity; consulting surgeon to St. Mary's Hospital, Passaic, N. J.; Middletown State Homeopathic, White Plains, and White Plains Hospital, New York, and Ann May Memorial Hospital, Asbury Park, N. J.; died, February 29.

John Dean Hall, Colonel, M. C., U. S. Army, retired, Washington, D. C.; College of Physicians and Surgeons in the City of New York, 1867; aged 77; who entered the Army as assistant surgeon, November 16, 1868; was promoted to captain in 1871, to major in 1889, to lieutenant colonel and deputy surgeon general in 1901, and to colonel and assistant surgeon general in 1903, and was retired by operation of law, March 18, 1906, on attaining the age of 64; died, February 25.

Harry Rodgers Lemen, Alton, Ill.; Washington University, St. Louis, 1893; aged 49; a member of the Illinois State Medical Society; Captain M. R. C., U. S. Army; a veteran of the Spanish-American War; later serving in the Philippine Islands, in the Boxer Rebellion in China, and in the Russo-Japanese War; while driving his automobile over a grade crossing in Alton, February 21, was struck by a train and instantly killed.

Albert Weil ⊕ Peoria, Ill.; Rush Medical College, 1893; aged 55; a member of the staff of the Deaconess and Proctor hospitals, also a druggist; county physician of Peoria County for sixteen years; once health commissioner of Peoria; local surgeon of the Chicago and Alton, Burlington, Peoria and Pekin Terminal and Illinois Traction systems; died, February 20, from heart disease.

Ver Nooy Wayland Weed ⊕ Brooklyn, N. Y.; College of Physicians and Surgeons in the City of New York, 1900; aged 42; associate surgeon to the Bushwick, Jamaica and Swedish hospitals, and a member of the staff of the Consumptives' Home; died in the Neurological Hospital, Manhattan, February 26, from cerebral hemorrhage.

John Oliver Sandercook, Oklahoma City, Okla.; St. Louis, 1871; aged 70; contract surgeon U. S. Army, with service in Indian campaigns under Generals Merritt and Crook; superintendent of the Board of Health of Canadian County, Okla., from 1902 to 1908; died in Denver, February 6, from pneumonia.

Alonzo Festus Burnham ⊕ Quincy, Ill.; Rush Medical College, 1878; aged 66; for many years connected with the state hospitals at Jacksonville and Bartonville, and more recently physician at the Old Soldiers and Sailors' Home, Quincy; died February 20, from bronchopneumonia.

Augustus F. G. Zurhorst, Oakfield, N. Y.; Western Reserve University, Cleveland, 1869; aged 72; a member of the Medical Society of the State of New York; a veteran of the Civil War; once supervisor and postmaster of Oakfield from 1914 to 1919; died, February 21, from peritonitis.

Livingston Spraker Hinckley ⊕ Newark, N. J.; Bellevue Hospital Medical College, 1878; aged 64; for seventeen years medical superintendent of Essex County Hospital for the Insane, Newark; died in St. Barnabas Hospital, Newark, February 22, from pneumonia.

John Carroll McGinnis ⊕ Martin's Ferry, Ohio; Miami Medical College, Cincinnati, 1901; aged 41; who served during the World War as Captain, M. C., U. S. Army, and was discharged, March 20, 1919; died in the Cincinnati Sanatorium, February 21.

David Gildner, Rockwood, Pa.; University of Wooster, Cleveland, 1883; aged 71; disappeared mysteriously, Nov. 8, 1919, and is believed to have been murdered. His dismembered body was found encased in ice in a swamp near Searight, Pa., February 15.

Paul Henry Piper ⊕ Detroit; University of Michigan, Ann Arbor, 1918; aged 28; an intern in St. Mary's Hospital, Detroit; while delirious from pneumonia, leaped from a third story window at the hospital, February 14, and was instantly killed.

Charles William Hadley, Columbus, Ohio; Ohio State University, Columbus, 1912; aged 36; a member of the Ohio State Medical Association; instructor in obstetrics in his alma mater; died, February 20, from pneumonia following influenza.

Thurman Ross Beaver, Akron, Ohio; Indiana University, Bloomington and Indianapolis, 1910; aged 31; captain, M. R. C., U. S. Army, during the World War, and discharged, June 21, 1919; died, February 13, from pneumonia following influenza.

Alfred Hugh Fowler, Chicago; Rush Medical College, 1904; aged 42; a member of the Illinois State Medical Society; died in Wesley Memorial Hospital, Chicago, March 3, from chronic nephritis, complicated with cholecystitis and hepatitis.

Henly W. Allen, Boulder, Colo.; College of Physicians and Surgeons, Keokuk, Iowa, 1867; aged 82; a member of the Colorado State Medical Society; formerly president of the board of education of Boulder; also a druggist; died, February 14.

George W. Bean, Kansas City, Kan.; Eclectic Medical University, Kansas City, Mo., 1902; aged 78; a veteran of the Civil War; also a Presbyterian clergyman; died in the Soldiers' Home Hospital, Leavenworth, Kan., February 16.

Howard A. Wilson, Woodbury, N. J.; Jefferson Medical College, 1884; aged 60; a member of the Medical Society of the State of New Jersey; once coroner of Gloucester County; died in his office, February 21, from cerebral hemorrhage.

Frederick M. Brougher, Belen, Miss.; Memphis, Tenn., Hospital Medical College, 1900; aged 62; a member of the Mississippi State Medical Association; health officer of Quitman County; died, February 14, from heart disease.

Wiley A. Jones, Cantril, Iowa (license, Iowa, practitioner, 1887); aged 78; a practitioner for fifty-three years; once mayor of Cantril; surgeon of the Tenth Iowa Volunteer Infantry during the Civil War; died, February 17.

Thomas Rutledge Bass, Lafayette, Ind.; Indiana University, Bloomington and Indianapolis, 1909; aged 36; surgeon in chief of the Indiana State Soldiers' Home Hospital, Lafayette; died, February 15, from pneumonia.

Wallace Miles Knowlton, Newton, Mass.; University of Vermont, Burlington, 1880; a member of the Massachusetts Medical Society and of the American Medico-Psychological Association; died in Boston, February 6.

Joseph M. Finarty, Knoxville, Iowa; College of Physicians and Surgeons, Keokuk, Iowa, 1877; aged 72; a member of the Iowa State Medical Society; a veteran of the Civil War; died, February 16, from angina pectoris.

Moses Zeller, Mt. Vernon, N. Y.; Fordham University, New York, 1919; aged 26; an intern in the Lincoln Hospital and Home, the Bronx; died in that institution, February 27, from encephalitis lethargica.

Elisha Price Merritt ⊕ Atlanta, Ga.; Atlanta (Ga.) School of Medicine, 1912; aged 34; secretary of the Fulton County

⊕ Indicates "Fellow" of the American Medical Association.

Medical Society; a specialist in genito-urinary diseases; died, February 15, from pneumonia.

Charles William Weaver, Grand Rapids, Mich.; Fort Wayne (Ind.) College of Medicine, 1887; aged 55; died in the Detention Hospital, Grand Rapids, February 16, from poisoning by denatured alcohol.

Louis A. Turnbull, St. Louis; Missouri Medical College, St. Louis, 1888; aged 55; for many years a resident of Mexico; died in the Alexian Brothers' Hospital, St. Louis, February 17, from pneumonia.

George Washington Brown, Pratt City, Ala.; Atlanta (Ga.) Medical College, 1877; aged 72; a member of the Medical Association of the State of Alabama; died at an infirmary in Birmingham, February 15.

Harvey George Alexander, Deal Island, Md.; University of Maryland, Baltimore, 1891; aged 50; a member of the Medical and Chirurgical Faculty of Maryland; died, February 12, from influenza.

Harvey G. Hieber ⊕ Los Angeles; Northwestern University Medical School, Chicago, 1903; aged 40; formerly of Thief River Falls, Minn.; died in Monrovia, Calif., January 17, from tuberculosis.

Howard Miles Jump ⊕ Kelley's Island, Ohio; Toledo (Ohio) Medical College, 1895; aged 52; physician of Kelley's Island for two years; died, February 21, from pneumonia following influenza.

James Evans Kendrick, Luverne, Ala.; University of Alabama, Mobile, 1869; aged 74; a member of the Medical Association of the State of Alabama; a Confederate veteran; died, February 15.

John E. Douglass, Cincinnati; Medical College of Ohio, Cincinnati, 1883; aged 59; medical director of the Western and Southern Life Insurance Company for thirty-two years; died, February 14.

John Waldo Booth, Binghamton, N. Y.; Northwestern University Medical School, Chicago; 1870; aged 84; a member of the Medical Society of the State of New York; died, February 14.

Edward Dormenio Hall, Meriden, Conn.; Harvard University Medical School, 1873; aged 68; a member of the Connecticut State Medical Society; died, February 19, from pneumonia.

Michael F. Murray, Chicago; Rush Medical College, 1891; aged 59; a member of the Illinois State Medical Society; died, March 3, from gangrene of the foot following arteritis obliterans.

Frank M. Brundage, Conyngham, Pa.; Jefferson Medical College, 1874; aged 68; for eight years United States consul at Aix la Chapelle, Germany; died in Scranton, Pa., February 21.

Walter Meeker Cress, Clark's Summit, Pa.; University of the City of New York, 1893; aged 55; a member of the Medical Society of the State of Pennsylvania; died, February 17.

Nathaniel George McManus, Philadelphia; University of Pennsylvania, Philadelphia, 1901; aged 42; died in St. Joseph's Hospital, Philadelphia, February 18, from heart disease.

Peleg Francis Walker, Providence, R. I.; Boston University, 1881; aged 60; for thirty years a member of the school committee of Providence; died, February 27, from heart disease.

Guy Marshall McDowell, Bay City, Mich.; Ohio Medical University, Columbus, 1906; aged 39; a member of the Michigan State Medical Society; died in Detroit, February 16.

William Adolph Myers, Brooklyn; University of the City of New York, 1888; aged 53; one of the founders of the Bushwick Hospital; died, February 16, from heart disease.

David Hamilton Lewis, Washington, Pa.; Jefferson Medical College, 1877; aged 69; died in St. Francis' Hospital, Pittsburgh, February 17, the result of a nervous breakdown.

Matthew N. Alexander, Pleasant Shade, Tenn.; University of Tennessee, Nashville, 1896; aged 61; a member of the Tennessee State Medical Association; died, February 10.

Jokshan Freymann, Kansas City, Mo.; Cincinnati College of Medicine and Surgery, 1877; aged 73; a member of the Missouri State Medical Association; died, February 13.

Sharps M. Snyder, Greenwich, N. J.; University of Pennsylvania, Philadelphia, 1865; aged 78; died about January 24.

Charles Zuppann, Ballwin, Mo.; Rush Medical College, 1877; aged 57; a member of the Missouri State Medical Association; died, February 15, from heart disease.

John Blake McKay, Marion, Ind.; Trinity Medical College, Toronto, 1904; aged 47; died in the Grant County Hospital, Marion, February 14, from pneumonia.

Robert S. Knode, Omaha; Miami Medical College, Cincinnati, 1867; aged 77; formerly secretary of the American Rhinological Association; died, January 26.

William C. Hodges, Chesterville, Ohio; Columbus, Ohio, Medical College, 1881; Homeopathic Hospital College, Cleveland, 1892; aged 61; died, February 15.

Alfred Walton, Philadelphia; Harvard University Medical School, 1879; aged 62; died at his country home, Woodbury, N. J., February 22, from heart disease.

John Havemeyer Daniels ⊕ Buffalo; Niagara University, Buffalo, 1895; aged 51; died in Buffalo General Hospital, February 13, from cerebral hemorrhage.

Thomas Walter Scott ⊕ Rushville, Ill.; Missouri Medical College, St. Louis, 1884; aged 71; once mayor of Rushville; died, February 19, from heart disease.

Benjamin Franklin Makepeace ⊕ Farmington, Me.; University of the City of New York, 1887; aged 60; died February 16, from lobar pneumonia.

Edward C. Pearse, Braddock, Pa.; New York Homeopathic Medical College, New York City, 1900; aged 45; died, February 14, from pneumonia.

Frederick Kenner Fisher ⊕ Galveston, Texas; Tulane University, New Orleans, 1873; aged 67; died, February 11, from valvulus heart disease.

Frank Hamilton Whittemore ⊕ New Haven, Conn.; Bellevue Hospital Medical College, 1874; aged 65; died, February 26, from pneumonia.

Milton Keim, Philadelphia; University of Pennsylvania, Philadelphia, 1872; aged 74; a graduate in dentistry in 1866; died, February 24.

John Wellington Moriarty, Churubusco, N. Y.; University of Vermont, Burlington, 1891; aged 62; died, February 9, from pneumonia.

Mary Johnson Cochran, Chester, Pa.; Homeopathic Hospital College, Cleveland, 1889; died, February 12, from pneumonia.

Jennie Holman Griffin, Troy, N. Y.; Cleveland Medical College, Homeopathic, 1895; aged 52; died, February 17, from pneumonia.

Frederick William Ritter ⊕ Tannersville, Pa.; Jefferson Medical College, 1901; aged 52; died, February 23, from pneumonia.

George W. Bahn ⊕ Spring Grove, Pa.; University of Maryland, Baltimore, 1881; aged 63; died, February 13, from pneumonia.

Belle Ogden Constant, Chicago; Hahnemann Medical College, Chicago, 1917; aged 49; died, February 19, from osteosarcoma.

Mark Rowe, Paris, Ill.; Eclectic Medical Institute, Cincinnati, 1866; aged 85; died, February 14, from bronchitis.

Giacomo Abraham Senigaglia ⊕ Nyack, N. Y.; Cornell University, New York, 1909; aged 31; died, February 24.

Bernard Daly, Lakeview, Ore.; University of Louisville, Ky., 1887; aged 61; died in Livermore, Calif., January 26.

Frank Amos Rhoads, Pittsburgh; College of Physicians and Surgeons, Baltimore, 1882; aged 60; died, February 6.

Herbert Daniel Dieterle, Ann Arbor, Mich.; University of Michigan, Ann Arbor, 1918; aged 26; died, February 26.

Frank Edward Fletcher ⊕ Ashland, Wis.; University of Michigan, Ann Arbor, 1865; aged 76; died, February 18.

Clarence R. Seeley, Attica, N. Y.; University of Buffalo, N. Y., 1873; aged 71; died in Miami, Fla., February 6.

J. Rodley Rundlett, Delavan, Wis.; Rush Medical College, 1868; aged 74; died, February 8, from septicemia.

Frank Warren Merritt, Jay, Me.; University of Vermont, Burlington, 1889; aged 62; died, January 25.

Fred Swartzlander, Omaha; Jefferson Medical College, 1872; aged 72; died, February 23.

Ira Hersia Leslie, Verona, Wis.; Rush Medical College, 1887; aged 58; died, January 8.

Edwin B. Reed, Asbury Park, N. J.; Jefferson Medical College, 1884; died, March 1.

The Propaganda for Reform

In This Department Appear Reports of The Journal's Bureau of Investigation, of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Fraud on the Public and on the Profession

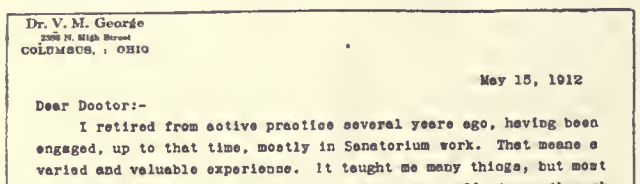
HEPATOLA

A physician in Saskatoon, Saskatchewan, sends The Journal an advertisement from a local paper, reading:

OPERATIONS UNNECESSARY

HEPATOLA removes Gall Stones, corrects Appendicitis in 24 hours without pain. Registered under Pure Food and Drug Acts. $6.00.

Profitable quackery dies hard. In the United States "Hepatola" was declared a fraud by the federal authorities in 1917 and the Hepatola Company was denied the use of the United States mails. Hepatola was claimed as the discovery of one "Dr. V. M. George" of Columbus, Ohio. So far as The Journal's records show, and they are the most complete extant and based on official data, V. M. George is not, and never has been, licensed to practice medicine. In 1912 George was sending out letters to physicians stating that he had "retired from active practice several years ago" and that the "varied and valuable experience" that he had obtained while in practice had taught him "many things." Especially had it resulted in his discovering "a treatment



Dr. V. M. George
2366 N. High Street
COLUMBUS, : OHIO

May 15, 1912

Dear Doctor:-

I retired from active practice several years ago, having been engaged, up to that time, mostly in Sanatorium work. That means a varied and valuable experience. It taught me many things, but most of all needed was a treatment that would remove gall stones through the bowels. This, I have succeeded in doing in 24 hours, without pain or danger, or the use of poisonous drugs. The same treatment, with slight modification, will apply to both appendicitis and Typhlitis. I make no exception to the claims of this treatm

Reproduction (greatly reduced) of the letter head and opening statements made by V. M. George in 1912 when he attempted to interest physicians in his "cure" for gallstones.

that would remove gallstones . . . in twenty-four hours without pain or danger or the use of poisonous drugs." Further, "the same treatment with slight modification, will apply to both appendicitis and typhlitis." George's proposition was that physicians, instead of sending their gallstone patients to the hospital for operation, should let him treat them by his nonsurgical method. Apparently, George was not very sanguine of his venture for he said:

"The knife treatment has apparently so ossified any nascent ambition because of the hospital fees, that the average doctor is fearful to even think of any other modus operandi, lest it might destroy the very source of his existence."

In order, presumably, to fight the devil with his own weapons—and incidentally reap the reward of virtue—George suggested that

". . . you permit me to work in harmony with you and give you the same percentage of fees as is given by the hospitals."

At the same time that V. M. George was attempting to interest the medical profession under his own name—an unsuccessful attempt as it proved—he was, under the name "Hepatola Company" appealing to the public to take Hepatola for the cure of gallstones and appendicitis. In fact, he also recommended it to persons who were perfectly well. The slogan of the Hepatola concern was "Avoid the knife." At the bottom of each page, set off from the reading matter and printed in italics one read:

"Avoid the knife—and save money"
"Avoid the knife—save your appendix"
"Avoid the knife—honeycombed with danger"
"Avoid the knife—everything for goin"

And then there were these warnings:

"When you once notice a suspicious pain in the right side, radiating to the back, that spells trouble. If you consult your physician, he will tell you right away, gall stones, appendicitis, or serious abdominal trouble. That means an operation. Don't entertain it for a minute, investigate Hepatola."

"Some fine day there is going to be an end to this promiscuous cutting by the doctors. The law protects them, and if you happen to die that closes the chapter—for the doctor. Not for the stricken family, however, who might have been relieved had they known of 'Hepatola.'"

The postoffice authorities finally got around to Mr. George and his Hepatola Company. Hepatola itself was turned over to the federal chemists for analysis and, as might have been expected, was found to be the same old fake gallstone trick—that of giving the victim a large dose of some bland oil and following it up with a saline. The soapy concretions that are voided following this dosing, are the "gallstones" which the "treatment" removes. Here is what the federal chemists reported:

"Powder: This is an ordinary seidlitz powder, containing rochelle salts, sodium bi-carbonate and tartaric acid.

"Liquid: This is an ordinary olive oil colored with a coal tar dye and slightly flavored with peppermint."

The same old humbug with ingredients essentially identical with "Fruitola" and "Mayr's Wonderful Stomach Remedy." Hepatola was a mail-order proposition and thus laid itself open to action on the part of the postoffice authorities. Fruitola and Mayr's Stomach Remedy, although, in the past, sold under claims just as ridiculous have always been handled through the "recognized channels" of the retail drug trade. They are still doing business; the Hepatola Company has been debarred from the use of the United States mails. The Canadian authorities might well investigate this Saskatoon industry. Possibly such an investigation would save, if not lives, at least money, for our northern neighbors.

Correspondence

SARCOMA OF THE UTERUS AND ITS RELATION TO ROENTGEN THERAPY*

To the Editor:—In a paper published in the *American Journal of Obstetrics and Diseases of Women and Children* (March, 1914) it was pointed out that the occurrence of sarcomas or of sarcomatous change in uterine fibromyomas was relatively frequent.

A careful study of 250 cases was made at that time, and twelve sarcomas were found that had been removed by operation. In only two instances was the diagnosis made, and then only at the time of operation. It was shown that symptomatically these malignant cases as a rule offered no distinctive diagnostic criteria, and for that reason it was difficult to differentiate clinically the malignant from the nonmalignant cases. In other words, it was practically impossible to say definitely that a case supposedly a fibromyoma and therefore amenable to roentgen-ray therapy was not really harboring a malignant tumor. Two of the patients after operation developed extensive recurrences and died; all the others apparently did well.

In view of the frequency of these malignant cases and because of the difficulty of preoperative diagnosis, it was urged that the roentgen-ray treatment of fibroid, especially about the period of the menopause, was hazardous.

In a subsequent study of 290 additional cases there were found ten sarcomas, making a total of 540 cases with a percentage of 4.07 sarcomas. These figures, which embody the results of a study of the material in a large metropolitan hospital, represent a frequency that cannot be set aside arbitrarily. In view of these figures, what must be our attitude toward the roentgen treatment of uterine fibroids that are unassociated with the usual diagnosticable compli-

* Work done under tenure of a George Blumenthal, Jr., fellowship.

cations, such as diseased adnexa, ovarian cysts, or other tumor conditions of the ovaries or tubes?

That the sarcomas occurring in fibroids are malignant there can be no doubt; cases in my own series and the many published reports show that they recur after operation, metastasize and lead ultimately to the death of the patient. On such a basis and because of their inaccessibility, one would be inclined to say that it is temporizing or worse to irradiate a patient who may have a malignant tumor.

The literature on the roentgen treatment of fibroids now teems with statistics, and the results are the quoted observations over long periods of time. To my knowledge there are no cases in the literature of fibroids in which, after or during the roentgen treatment of fibroids, a malignant condition has developed locally. Nor are there any reported cases that during the roentgen-ray treatment or subsequently showed metastatic deposits from a primary uterine tumor. These reports must be accepted as showing that a series of cases, now mounting into thousands, undoubtedly with undiagnosed sarcomas among them, have been irradiated and cured or at least rendered innocuous, for the period of observation. It cannot be argued that the bad results have not been reported, and we must therefore alter our point of view as regards the roentgen-ray treatment of fibroids. It must be stated that, in view of the frequency of sarcomas in the cases in which operation is performed, the same percentage must occur in the cases in which irradiation has been employed. If after irradiation and prolonged periods of observation no malignancy develops in the uterus and no metastases occur, then we are bound to say not only that the roentgen ray causes a beneficent result in the treatment of fibroids but also that in those cases complicated by sarcomatous change or those cases of sarcoma not diagnosed, the same arrest in growth and retrogression of size and disappearance of symptoms takes place as in the ordinary fibroid. Whether or not subsequent observation will show that these conclusions are erroneous one cannot say; but at least if the reports of the roentgenotherapist are comprehensive, then roentgen-ray therapy has a decided place in the treatment of fibroids irrespective of whether or not the diagnosis of sarcoma or of sarcomatous degeneration was overlooked.

In a previous paper it was stated that the sarcomatous elements may not be giving rise to any special symptoms, and that thus temporarily one is lulled into a feeling of false security. It was contended that until it was proved by a long period of observation that the roentgen ray might have a curative effect on uterine sarcomas, it was unfair to expose a patient to the unnecessary risk and delay that the roentgen treatment in those cases would entail. It seems that such a period of observation has now passed and that we must realize that the roentgen ray, when applied in the approved method to uterine fibroids whether or not complicated by sarcoma, is productive of favorable results in properly selected cases.

S. H. GEIST, M.D., New York.
Adjunct Gynecologist and Associate in Surgical Pathology, Mount Sinai Hospital.

REVISION OF THE PHARMACOPEIA

To the Editor:—Your recent announcement concerning the coming meeting of the U. S. Pharmacopeial Convention (THE JOURNAL, Feb. 28, 1920, p. 613) is most timely. It is important that every medical society and college privileged to send delegates to the convention should do so. The Pharmacopeia should furnish standards of purity and strength of drugs needed by the profession. It also should tell how to make standard preparations of them.

Drugs that are useful are those which possess physiologic or pathologic action. Unfortunately, the Pharmacopeia still contains some that possess neither. It is still more encumbered by a multiplicity of preparations that must now be learned by pharmacists and physicians. Two preparations, or in some instances three or four of each drug, are all that are needed. The Pharmacopeia should point out these best preparations and necessary drugs; others should be omitted.

The latest revision of the Pharmacopeia was about five years in making. If cut to proper proportions, the revision could be made much more promptly, for it takes as long to prepare the description of unnecessary and superfluous drugs and preparations as of necessary ones. It is so important for medical men to possess standards for the drugs and preparations which they use that they must take interest in the revising of the Pharmacopeia. This should not be left altogether to retail or manufacturing druggists and, above all, the manufacturers of trade-marked and proprietary preparations.

I hope that you will continue to agitate this subject until the medical profession takes the active part in the affairs of the Pharmacopeia which it should.

N. S. DAVIS, M.D., Pasadena, Calif.

"WHAT IS SO-CALLED SCIENTIFIC DRINK CONTROL?"

To the Editor:—Your editorial "What Is So-Called Scientific Drink Control?" in THE JOURNAL, February 14, is presented at a time when this question is uppermost in the minds of many thoughtful students, and when the question as to what is an intoxicating beverage is being submitted for a correct answer to the medical profession. The national prohibition act has raised the question, What is an intoxicating beverage? It would appear that the term "intoxicating" is used in the ordinary, reasonable and accepted sense, and is synonymous with drunkenness. Doubtless this question will finally be officially determined as a result of scientific tests made by competent medical authorities. Only the other day the New York State Bureau of Health was requested by the legislature of that state to study this phase of the alcohol question and to report its findings, in order to guide the legislature in arriving at a conclusion as to what is an intoxicating beverage. As you rightly say, it is remarkable that, while much has been written with reference to alcohol, there is yet much to learn with reference to its action. This would appear to apply especially to alcohol in dilute solutions and to alcohol when it appears in combination with other substances, as in the malt beverages. Practically all the available data of experimental work done prior to 1919 refer to relatively strong solutions of alcohol.

That the effects of different doses of alcohol may yield different results at times is referred to by Dodge and Benedict, from whose work I quote:

> In addition to the main experimental precautions we systematically varied the alcohol dose. This was done for the following reasons. In the first place, it is a fact that different doses of some drugs produce quite different physiological effects amounting even to a change of sign. That this is true of alcohol seemed to be indicated in more than one experimental investigation.

When one considers the complex chemistry of beer, there is reason for believing that its alcohol is modified and that for this reason beer with a low alcohol content is rendered nonintoxicating. Recent experiments have been conducted in this country to determine whether or not a beverage with an alcohol content of 2.75 per cent. by weight of alcohol is intoxicating. As a result, the conclusion was reached that malt beverages with an alcohol content of 2.75 per cent. by weight are not intoxicating as that term is ordinarily used, and the reasons assigned for this are in the main in accord with the work of Mellanby which you refer to. These were published in the "Hearings before the Subcommittee of the Committee of the Judiciary of the United States Senate, 66th Congress, First Session on the Bills to Prohibit the Liquor Traffic, and to Provide for the Enforcement of such Prohibition and the War Prohibition Act." Part 3. Government Printing Office Washington, D. C.

While it is, of course, true that these experiments have dealt with a limited number of subjects, and it is also true, as you state, that nowadays scientific experiments are being conducted on a national scale, it is also a fact that for some years past there has been conducted a scientific experiment on a national scale with reference to the effects of malt beverages of low alcoholic content. I refer to the people of

Norway, who are held up to us as models of righteousness, thrift and sobriety, and among whom there is sold, with practically no restrictions whatsoever, beer with an alcoholic content of 2.75 per cent. by weight.

CHARLES A. ROSEWATER, M.D., Newark, N. J.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

NERVE AND SPINAL CORD COMPLICATIONS OF MALARIA

To the Editor:—What are the principal nerve or cord lesions following malarial fever. I believe I read a paper in THE JOURNAL some time ago, but I cannot recall it at present.

SAMUEL GINSBURG, M.D., Buffalo.

ANSWER.—Among the rarer complications of malarial fever which have been observed are: paraplegia, which may be due to a peripheral neuritis or to changes in the spinal cord; hemiplegia, which may occur in the pernicious comatose form or, occasionally, at the very height of a paroxysm; spinal irritation; paresis; meningitis; psychoses; aphasia; acute ataxia, and, in a few cases, symptoms of disseminated sclerosis.

REQUEST FOR MATERIAL TO AID MALARIA INVESTIGATION

To the Editor:—The undersigned would like to enter into communication with physicians who may be located in malarial districts, in reference to securing postmortem material from fatal cases of malaria, for purposes of investigation. Any aid that may be afforded us in this connection we should deeply appreciate.

C. E. SIMON, M.D.; R. W. HEGNER, PH.D., Baltimore.
School of Hygiene and Public Health, The Johns Hopkins University.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARIZONA: Phoenix, April 6-7. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.

COLORADO: Denver, April 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

DISTRICT OF COLUMBIA: Washington, April 13-15. Sec., Dr. Edgar P. Copeland, the Rockingham, Washington.

FLORIDA: Jacksonville, March 16. Sec., Homeo. Bd., Dr. Geo. A. Davis, East Port.

IDAHO: Boise, April 6. Commissioner, Hon. Robert A. Jones, Boise.

IOWA: Iowa City, March 29-31. Sec., Dr. Guilford H. Sumner, Capitol Building, Des Moines.

MINNESOTA: Minneapolis, April 6-8. Sec., Dr. Thos. McDavitt, Lowry Bldg., St. Paul.

MONTANA: Helena, April 6. Sec., Dr. S. A. Cooney, Power Bldg., Helena.

NEW MEXICO: Santa Fe, April 12-13. Sec., Dr. R. E. McBride, Las Cruces.

OKLAHOMA: Oklahoma City, April 13-14. Sec., Dr. J. M. Byrum, Shawnee.

RHODE ISLAND: Providence, April 1-2. Sec., Dr. Byron U. Richards, State House, Providence.

WEST VIRGINIA: Charleston, April 13. Sec., Dr. S. L. Jepson, Masonic Bldg., Charleston.

New Jersey Reciprocity Report

Dr. Alexander Macalister, secretary of the New Jersey State Board of Medical Examiners, reports that 68 candidates were licensed by reciprocity and 2 candidates were licensed on presentation of a certificate from the National Board of Medical Examiners from July 3 to Nov. 8, 1919. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
George Washington University		(1913)	Dist. Colum.
Chicago College of Medicine and Surgery		(1915)	Illinois
Hahnemann Medical College and Hospital, Chicago		(1915)	Illinois
University of Louisville		(1908)	Illinois
Bowdoin Medical School		(1915)	Maine
University of Maryland		(1914)	Maine, (1917) W. Virginia
Harvard University		(1899)	New Hamp.
Tufts College Medical School (1916)			Massachusetts, Vermont.
University of Michigan Homeopathic Medical School		(1910)	Kentucky
Albany Medical College		(1913), (1916), (1917)	New York
Columbia University		(1914, 2), (1915), (1917, 2)	New York
Cornell University		(1915), (1918)	New York
Fordham University		(1915), (1917), (1918, 2)	New York
L. I. Coll. Hos.		(1893), (1907), (1910), (1914), (1918, 2)	New York
New York Homeopathic Medical College and Flower Hospital		(1902), (1914), New York, (1915), (1916), (1918, 2)	Connecticut New York
New York Med. Coll. and Hosp. for Women		(1907)	New York
University and Bellevue Hospital Medical College		(1909), (1917), (1918, 3)	New York
University of Buffalo		(1915)	New York
Starling-Ohio Medical College		(1908)	Ohio
Hahnemann Med. Coll. and Hosp. of Philadelphia		(1899) (1906)	New York Penna.
Jefferson Medical College, (1904) North Carolina, Pennsylvania, (1905) Pennsylvania, (1910) North Dakota, Pennsylvania, (1911) Pennsylvania.			
Medico-Chirurgical College of Philadelphia		(1912), (1913)	Penna.
University of Pennsylvania (1899) Georgia, Pennsylvania, (1917) New York, (1918) New York, Pennsylvania.			
Woman's Medical College of Penna.		(1910), (1914)	Penna.
University of Tennessee		(1917)	Tennessee
University of the South		(1906)	*Philip. Isl.
Vanderbilt University		(1914)	Kentucky
Baylor University		(1917)	Texas
University of Vermont		(1915, 2)	Vermont

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
University of Pennsylvania		(1916), (1918)	N. B. M. Ex.

*License not verified.

Pennsylvania July Examination

Dr. Thomas E. Finnegan, secretary of the Pennsylvania Bureau of Medical Education and Licensure, reports the written and practical examination held at Philadelphia and Pittsburgh, July 8-10, 1919. The examination covered 5 subjects and included 50 questions. An average of 75 per cent. was required to pass. Of the 192 candidates examined, 172 passed and 20 failed. Seven candidates were licensed on Army and Navy credentials. The following colleges were represented:

College	PASSED	Year Grad.	Number Licensed
George Washington University		(1914)	1
Howard University		(1917), (1918 3)	4
University of Louisville		(1917)	1
College of Physicians and Surgeons, Baltimore		(1915)	1
Johns Hopkins University		(1917)	1
Southern Homeo. Med. Coll., Baltimore		(1905)	1
University of Maryland		(1906), (1917, 2) (1918)	4
Tufts College Medical School		(1914)	1
Cornell University		(1916)	1
New York Homeopathic Medical College		(1907), (1918)	2
University and Bellevue Hosp. Med. Coll.		(1916), (1917)	2
University of Buffalo		(1915)	1
Ohio State Univ. Coll. of Homeo. Med.		(1918)	1
Hahnemann Med. Coll. & Hosp. of Phila.		(1917, 4), (1918, 6)	10
Jefferson Med. Coll.		(1915,2), (1916,7), (1917,11), (1918,28)	48
Medico-Chirurgical Coll. of Philadelphia		(1916, 2)	2
Temple University		(1917, 4), (1918, 7)	11
University of Pennsylvania		(1913, 2), (1915, 2), (1916, 4), (1917, 13), (1918, 32)	53
University of Pittsburgh		(1917), (1919, 20)	21
Woman's Med. Coll. of Philadelphia		(1917), (1918)	2
Medical College of Virginia		(1914)	1
University of Toronto		(1904)	1
University of Wurzburg, Germany		(1901)	1
University of Tomsk, Siberia		(1913)	1
	FAILED		
Kentucky School of Medicine		(1893)	1
University of Louisville		(1917)	1
Leonard Medical School		(1904), (1906), (1907)	3
Cleveland Homeo. Medical College		(1902)	1
Ohio State University Coll. of Homeo. Med.		(1918)	1
Hahnemann Med. Coll. and Hosp. of Philadelphia		(1917)	1
Jefferson Medical College		(1918)	2
Temple University		(1918)	2
University of Pennsylvania		(1917, 2), (1918, 3)	5
University of Pittsburgh		(1917)	1
Woman's Medical College of Pennsylvania		(1918)	1
Medical College of the State of South Carolina		(1907)	1

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
University of Maryland		(1917)	U. S. Army
Jefferson Medical College		(1915), (1916), (1917)	U. S. Army
Medico-Chirurgical College of Philadelphia		(1916)	U. S. Army
University of Pennsylvania		(1915), (1916)	U. S. Army

Connecticut November Report

Dr. James E. Hair, secretary of the Connecticut Eclectic Medical Examining Board, reports that 3 candidates were licensed by reciprocity at the meeting held at New Haven, Nov. 11, 1919. The following colleges were represented.

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Kansas City College of Medicine and Surgery		(1918)	Arkansas
Eclectic Medical College of the City of New York		(1892, 2)	New York

Miscellany

THE "CRIME OF VACCINATION"

Old St. Joe Does Not Take the Antis Seriously

A few weeks ago the lady propagandist who goes over the country giving a series of talks against vaccination, was in St. Joseph, Mo. At one of the meetings various speakers attacked vaccination as a "crime" and dilated on its fearsome effects on the minds of its victims. While pausing for breath one of the speakers, mistaking a physician in the audience for the city health officer, accused him of being afraid to say anything. The physician in question was Dr. W. L. Kenney of St. Joseph, who immediately arose to the occasion. Here, according to the St. Joseph *Gazette*, is what happened:

"How many of us adults have submitted to this crime of vaccination?" he asked.

"Here, here," cries arose, and about fifty raised their hands. None were louder than the speaker who had just finished.

"How many of these have been 'crippled in the mind' by this vaccination?" Dr. Kenney then asked, smiling. In the hush that followed, the doctor said, "Thank you," and left the room.

The indignation that followed is well described by the newspaper, but can as easily be imagined. As a result, Dr. Kenney was challenged by the lady propagandist previously mentioned to debate the question of vaccination. Dr. Kenney's only reply was a statement which he gave to the *Gazette*. It is worth reproducing:

David went to his challenger with much greater confidence than I can. Who am I to match this Goliath of the anti-orthodox? I am only an oculist. But chiefly I am afraid to debate with the lady. I have lost a daily debate with one certain lady for twenty years and I know the odds are too heavy.

Besides, the crippling effect of vaccination on the mind is recalled to me every time I see that scar on my arm. It isn't fair of an unvaccinated, uncrippled antivaccinationist to pull me into a hopeless argument.

WHO HAS FOOLED THEM?

Now, if it were a question of facts and proofs instead of debate, there could be a decision rendered. But a decision *has* been rendered on proofs before the public for several generations, so that the man in the street, as a matter of common knowledge, knows that vaccination will check an epidemic by preventing smallpox. Millions of people for half a dozen generations and in various climes and countries have voted for compulsory vaccination. Who has fooled these millions? Why haven't the antis saved past generations? They were more active then than now, yet generation after generation votes to vaccinate the other fellow. Doctors are chumps to cut off a source of profit by preaching to the people. They prevent typhoid by vaccination, and typhoid used to be always with us. Poor business men, these doctors! However, the antis claim that mammoth trusts control the doctors, so that they are willing to lose a $200 case of typhoid for a $5 vaccine fee.

FEEL A PROFESSIONAL RESPONSIBILITY

Why can't the antis believe that doctors feel a professional responsibility toward humanity, and when knowledge comes to them they give it to the world? That is what the antis claim to do, so why can't they understand that others may feel the zeal of the proselyter. But the antis protest that only the compulsory feature is objectionable to them and that they favor sanitation and lots of good things.

Yes, and they favor compulsory quarantine, for they know full well no other is effective. And they favor compulsory sanitation, for who will pay for expensive sanitation except the law requires it? Even then the doctors continually campaigning for enforcement of sanitation laws—the sneaking poisoners! Why, the evil-minded trust of medical men has eradicated yellow fever, a deadly disease indeed, and malaria, too, by urging compulsory laws they have suggested. Of course, it was for dollars or else some other trust bade them do it!

OTHER COMPULSORY LAWS

Don't antis know that we must have compulsory laws to raise taxes and we have compulsory traffic laws, compulsory educational laws, compulsory Sunday laws, compulsory military laws, compulsory prohibition laws, and compulsory monogamy laws? And each one is necessarily compulsory, too. Besides the compulsion, the antis have urged that the vaccination may transfer bovine qualities. I grant that many do bellow like a calf at the time. The antis made this claim contemporaneously with the experiments on monkeys and arm-to-arm inoculation, and corpse-monkey-calf sequence of inoculation as quoted in recent handbills of the antis.

Recent speakers also claim the transference of the following, as taken from my notes: leprosy, tuberculosis, foot-and-mouth disease, influenza, typhoid, syphilis, cancer, heart and kidney diseases. And solemnly read the assertion of an outlaw doctor that the sore on the arm is nothing else than the chancre or initial sore of syphilis. We can so easily show the germs of syphilis and the blood tests are so dependable that any anxious anti can find out positively. However, I have yet to meet a case of real honest-to-goodness syphilis that couldn't tell me confidentially the precise source.

AS TO CANCER

Now, cancer next. Oh, cancer! what chills can be thrown by thy name! But the microscope shows positively and easily what tissue is cancer and what is not. It is very hard to inoculate and remains as a local tumor at the point of inoculation. It is possible to inoculate mice with their own kind of cancer, but almost impossible to inoculate cancer into the human family.

The antis solemnly say doctors can't say what causes cancer, therefore they can't say that vaccination doesn't. Well, they can't say what causes twins, but they do say that vaccination doesn't. The antis take statistics and show that cancer and pneumonia and insanity have been on the increase since vaccination came in. Well, so have divorces! Also the high cost of living! It seems more probable that in the past cancer was not diagnosed or reported. In fact, it is hard to get diseases reported in this present century.

In all debates the burden of proof is on the one who assaults an established thing or custom. I challenge the antis to bring the one-armed veterans of the antivaccination war who reside in St. Joseph into a gigantic parade on Saturday, each squad of four carrying in their right and lonesome hands a stretcher supporting a cripple less fortunate. Let them be captained by those who *nearly* lost an arm and let the battalions be marshaled by those who had smallpox despite vaccination. Let the nurses be ladies with pock-marked faces and a banner proclaiming the advantages of scars on the faces rather than on the arm. And for a general, try to find an anti who has been vaccinated and escaped without a crippled mind. Let this army parade into the east door of the courthouse and from the north or west door I will advance with an equal number of cases of smallpox, man for man. Then let all hold up their hands who object to vaccination!

THE CAMPAIGN AGAINST VENEREAL DISEASE IN SWITZERLAND

An association to combat the spread of venereal disease was formed in French-speaking Switzerland in 1918, and in October, 1919, it launched a vigorous general campaign over the whole of this part of the country by means of numerous local committees for small sections. The local group comprises physicians, teachers, clergy, and delegates from athletic and other clubs, etc., besides the municipal authorities. Each local committee works under general direction from the headquarters at Lausanne, and material for propaganda is provided. The aim is to decentralize the work as much as possible, starting innumerable foci for propaganda throughout the country.

Lantern slides are loaned and the lectures are widely advertised on the billboards: "Social Danger of the Venereal Diseases. Free public lecture by Dr. X and Senator X." A state or municipal authority always speaks in addition to the medical speaker. Pamphlets and circulars are distributed in assemblies of men and in factories. Series of conferences are given also for the sexes separately. Public lectures have thus already been delivered, according to a writer in the *Paris Médical*, to a total of twelve at Geneva, twenty at Neuchatel and Lausanne, and from one to five at other points.

The fact that no protests are heard against the billboard announcements shows, the writer says, that the time is ripe for this open campaign. The halls are constantly crowded.

The expense is borne by subsidies from factories, etc., donations from individuals, and state appropriations. German-speaking Switzerland has an association of its own for the purpose, but it works on the centralization system, instead of the scattered foci plan of the Lausanne headquarters.

Medicolegal

A Valid Food and Soft Drink Health Ordinance

(City of Portland v. Traynor (Ore.), 183 Pac. R. 933)

The Supreme Court of Oregon, in affirming, in two cases considered together, judgments of conviction of violating Ordinance 35013 of the city, providing for the licensing of persons conducting or working in food and soft drink establishments, holds that, under its charter, the city had a legal right to adopt the ordinance. The charter also makes it the duty of the bureau of health to enforce such an ordinance, and vests it with power to make the necessary rules and regulations for its enforcement. The ordinance provides that it shall be unlawful for any person to open for business, conduct or maintain, or cause to be opened, conducted or maintained, any food establishment in the city of Portland without first securing a license therefor. If, on investigation, the proposed location is found to be suitable for a food or soft drink establishment, and in proper sanitary condition, according to the ordinances of the city and the rules and regulations of the United States with reference to plumbing, water supply, ventilation and cleanliness, the bureau of health shall issue to the applicant a permit for such establishment. The ordinance also provides that it shall be unlawful for any individual to be employed or to work in any food establishment without having first obtained a health certificate, or for any employer to hire any individual without such certificate, and it is specified that the certificate is to be renewed quarterly, and that no certificate more than three months old shall be recognized by any employer. Any person desiring to secure a certificate of health shall present himself to the bureau of health at least once every three months, and, if the person is found by the bureau to be physically fit and free from diseases that are dangerous to the public, the bureau of health shall issue to such person a certificate of health entitling such person to work in a food establishment or soft drink establishment. The term "food establishment," whenever used in the ordinance, shall mean and include every place in the city where food products are sold or offered for sale or served to the public, or manufactured, produced, concocted, prepared or cooked for the public. The term "soft drink establishment" shall be deemed to mean every place in the city where drinks are sold, manufactured or served or offered for sale to the public. The word "person" shall mean any person, firm, or corporation. To carry out the provisions of the ordinance the city was divided into seven districts, and inspectors were appointed for each. It was their duty to examine all the food and soft drink establishments in the city, to ascertain whether the owners thereof were complying with the municipal health ordinances in the construction of their buildings and sale of their merchandise, and in particular to note whether employees coming in contact with soft drinks, groceries, fruit and vegetables with their hands were healthy and free from contagious or infectious diseases. A card index system was established, and after inspection the employees were required to report to the bureau of health, and to submit to physical examination, for which, under the terms of the ordinance, a nominal charge was made. If it was found by the inspectors that the premises where the business was to be conducted were sanitary and complied with the ordinances of the city, a license was then granted to conduct the business on the payment of an annual fee. If on examination an employee was found to be free from contagious or infectious diseases, a certificate was then issued to him by the bureau of health, authorizing him to handle and sell such merchandise in bulk, as distinguished from canned or carton goods. The defendant was engaged in conducting a grocery store in the city, and refused to obtain a license for his business. He raised constitutional questions to the validity of the ordinance, but the court holds that it was valid. The defendant's contention that the medical examiners were careless and negligent in the discharge of their duties was not supported by the evidence; but, assuming that to be true, it would go only to the administration, and not to the validity, of the ordinance, and would not be a defense to the charge against him. Nor was it for this court to say whether or not the measure should have been enacted; that was a legislative, and not a judicial, question.

Stenographer Not Able to Bind Company for Operation

(Producers' Oil Co. v. Green (Texas), 212 S. W. R. 68)

The Court of Civil Appeals of Texas, in reversing a judgment for $150 that was obtained by the plaintiff, Dr. Green, against the oil company, says that the action was brought against the corporation and one Sherman to recover the reasonable value of services rendered in the performance of a surgical operation, known as suture of the patella, on one Earp, one of the company's employees who had been injured while in its service. The plaintiff sought judgment against Sherman individually only in the event that the corporation was not held. The undisputed testimony showed that Sherman was merely a stenographer and clerk in the office of one Clayton, the latter being a general officer of the company and head of the department in which Sherman worked, the actual operation of the corporation's business being divided into departments, each having a head. The jury found, on special issues submitted to it, that Sherman, before the service was rendered, requested Dr. Green to perform the operation on Earp under statement that the company would pay him for it, and that Sherman was authorized by the company to make such request and statement. But the evidence showed that at the time he made the request and statement the company was a subscriber to the workmen's compensation act, and had provided for the insurance of all its employees thereunder, which facts were then communicated to Dr. Green; and that, aside from such authority as legally might and actually did come to him from his superior officer, Mr. Clayton, Sherman had none whatever to bind the company to pay for medical services rendered to Earp, and Mr. Clayton had turned over to him only the matter of attending to the accident report in Earp's case, and not the management of it generally. Under all the circumstances, the court concludes that the jury's finding that Sherman was authorized by the oil company to make the arrangement stated with Dr. Green had no support; that the company was not liable, and that its request for a peremptory instruction embodying that view of the law should have been given. Private corporations with the limited charter powers of operating, drilling for and producing oil, as this one was shown to be, may not become bound on the mere ipse dixit or statement of such an underling for medical services, rendered, or to be rendered, under the circumstances here presented, to another of its employees. Corporations can be bound by their agents only when acting within the scope of their authority, and those dealing with such agents are not only chargeable with notice of, but, in case of controversy, have the burden of showing, the authority assumed to have been in fact possessed. Manifestly no such burden was met in this case. Even if it had been shown that Clayton knew all that Dr. Green said occurred between himself and Sherman, and had delegated to the latter every power he himself possessed for the corporation, a majority of the court is of the opinion that it would still not have been bound; this for the reason that the company had previously provided a method of caring for such contingencies by means of the insurance it had taken out for the benefit of its employees under the compensation act; and not even one of its general officers could substitute a different provision, or impose a liability on account of services rendered an employee, particularly in the absence of special authority from the board of directors.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, New Orleans, April 26-30.

Air Service Medical Assn. of the U. S., New Orleans, April 26.
Alabama State Medical Association, Anniston, April 20-22.
American Association of Anatomists, Washington, D. C., April 1-3.
American Assn. of Pathologists and Bacteriologists, New York, April 2-3.
American Dermatological Association, Asheville, April 22-24.
American Proctologic Society, Memphis, Tenn., April 22-23.
American Radium Society, New Orleans, April 26.
American Urological Association, New York, March 23-25.
Assn. for Study of Internal Secretions, New Orleans, April 26.
Assn. of Amer. Teachers, Diseases of Children, New Orleans, April 27.
Assn. of Military Surgeons of the U. S., New Orleans, April 24.
Louisiana State Medical Society, New Orleans, April 24-26.
Medical Veterans of the World War, New Orleans, April 26.
Missouri State Medical Association, Jefferson City, April 6-8.
National Tuberculosis Association, St. Louis, Mo., April 22-24.
New York State Medical Society, New York, March 23-25.
North Carolina State Medical Society, Charlotte, April 20.
South Carolina Medical Association, Greenville, April 20-21.
Tennessee State Medical Association, Chattanooga, April 6-8.
Texas State Medical Association, Houston, April 22-24.
The Radiological Society, New Orleans, April 23-24.

ANNUAL CONGRESS ON MEDICAL EDUCATION AND LICENSURE

Joint Annual Conference of the Council on Medical Education of the American Medical Association with the Association of American Medical Colleges and the Federation of State Medical Boards of the United States, held in Chicago, March 1-3, 1920

The conference met in the Congress Hotel and was called to order at 10 a. m. by Dr. Arthur Dean Bevan, Chicago, chairman of the Council on Medical Education.

Further Development of Medical Education

DR. ARTHUR DEAN BEVAN, Chicago: In calling your attention to certain tendencies and weaknesses, which I have felt should be pointed out and corrected, I do so with the feeling of optimism for what our medical schools are accomplishing and what we shall certainly accomplish within the near future. I feel strongly, however, that in developing the medical school as we are now very properly doing, as the medical department of the university, we must do so on very broad and practical lines and keep in mind the interests of the patient, of the profession, and the community and remember that medicine is not only a science but also an art.

At present in this country we are in a condition in which the professor in anatomy, physiology and the other laboratory branches and the laboratory worker in clinical medicine have been given too large a part in the task of reorganizing the university medical schools and in developing the medical curriculum. This tendency should be corrected. We should keep constantly in mind the fact that the first and highest duty of the medical school is to train competent practitioners of medicine, and this cannot be done by the college professor of embryology and comparative anatomy, or by the chemist working in a clinical laboratory or by the research worker in some isolated medical institute. These men are not competent to develop and control medical education along sound lines. Yet, that is unfortunately the tendency of the time. This problem should be met by placing the control of medical education where it belongs, in the hands of medical men.

First, we should insist that the teachers of the laboratory branches shall have a medical training, a medical point of view; that they keep in touch with the medical profession and the art and science of medicine, and that they realize that their first duty is to assist in training practitioners of medicine.

Secondly, we should insist that the teachers of the clinical branches shall have a broad training in both the science and the art of medicine; that they be great clinicians in their special fields, and that they be trained to understand not only what the medical student needs to know in their particular specialty, but also what anatomy and physiology, pathology and pharmacology the student needs to acquire to become an expert practitioner in any particular field. Such teachers would bring about a better correlation of the clinical and laboratory branches. Fortunately, in the last twenty years, we have trained many such men in this country. There is an abundance of high class, well trained men to fill the places of the clinical teachers required.

The back bone of a medical faculty should consist of the professors of medicine, surgery, obstetrics and pathology. Such a group should control a teaching hospital and outpatient department, with adequate clinical and pathologic material and well equipped laboratories. The plant should be located where it can secure ample clinical material with little or no cost to the medical school. The affiliation of a large municipal, state or sectarian hospital with a medical school would be of mutual benefit, not only to the hospital and medical school but also to the community in which they are located

The laboratory branches in medicine are important, but a medical school is a school to train physicians and not anatomists or physiologists. If the training of physicians is well done it will frequently result in training teachers and research workers at the same time as important and desirable by-products.

THE FINANCIAL SIDE OF MEDICAL EDUCATION

Many plans are now being developed apparently without any consideration of the cost of medical education. Fees of students average about $150 a year, and the cost of a medical education is about $450, and in many institutions $1,000 or more, and is still mounting. The cost of running a hospital for medical teaching should never be charged to the medical school. It is not in the interest of the community for a medical school to create and maintain a hospital primarily for the teaching of medicine. The first purpose of a hospital is to take proper medical care of patients, and this function is best performed if it also fulfils the functions of medical teaching and medical research. The great municipal, state and sectarian hospitals should be placed at the disposal of our medical schools for teaching and research.

A state hospital in Iowa, operated primarily for the purpose of furnishing the best medical care to the people of the state, is very properly placed under the control of the State University of Iowa, and becomes the teaching hospital of the medical school. The Iowa plan has been well thought out and is so sound that many of our older medical schools might adopt it with profit to themselves.

The much discussed plan of all-time clinical teachers is a very costly one. It is so extravagant that it cannot be generally adopted by the medical schools of the country. Unless it has unlimited resources, a medical school should not consider the plan at all. Even a school with large resources can secure better results by adopting the more practical part-time plan for its clinical teaching. The all-time clinical teacher scheme has proved to be exceedingly costly; it is also exceedingly difficult to secure the most desired men with the restrictions that at once exclude the holder from the rewards of professional work well done. The all-time plan is an experiment that should be tried out in a few schools that can obtain the large endowments necessary.

The majority of medical schools should adopt the part-time plan. The teachers in the clinical departments should receive the same salaries as the professors in the other departments in the university, and should be required to devote the necessary amount of time to their positions. The college should insist, however, that their clinicians maintain positions as great clinicians and keep in contact with both the medical profession and the community. The clinician should be provided with a limited number of private beds in the hospital, and to these his private work should be limited. If the professor abuses his privileges, the university authorities should correct or eliminate him.

GRADUATE MEDICAL EDUCATION

There is a growing demand for graduate instruction in medicine which must be met by the universities of the country. Fifteen or twenty universities are so situated that they could establish satisfactory graduate medical schools.

The plan proposed includes the following propositions:

1. A complete and separate department for graduate work should be established. Certain men might work in both undergraduate and graduate departments, and certain laboratories and hospitals might be used in common; but in order to develop a graduate department of the best type, a complete separate faculty and plant is required.

2. This graduate school of medicine should furnish instruction of various kinds, as follows:

(*a*) For recent graduates who have completed their hospital internship and who desire to specialize in some clinical or laboratory field, a course of three years should be provided in a well organized clinic, where each assistant would be an essential part of the machinery, where he does clinical work, teaching and research work, and is given a real opportunity and responsibility in the handling of patients. At the end of such a three years of training, the assistant would be competent, in the absence of his superior, to conduct the clinic. At the end of such a course the student should be given a degree, Master of Science in Surgery, Ophthalmology, etc., or, if the assistant has taken a three-year course in a laboratory branch, a degree of Doctor of Philosophy, in Anatomy, Pathology, etc.

(*b*) For physicians who have been practicing for three or more years, a concentrated course of one to one and a half years should be provided in the clinical branches, leading to the same degree as granted to the men in the preceding group.

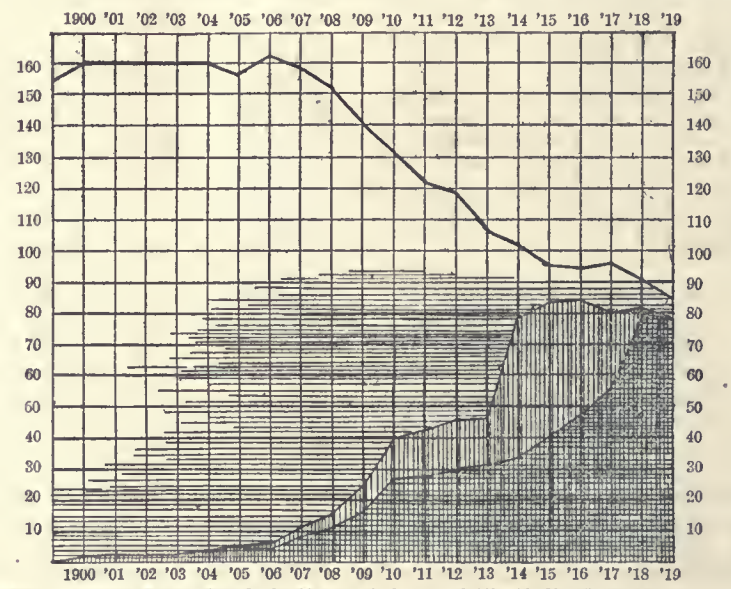
(*c*) A well planned course of from three to six months should be provided, in which practitioners could take special and thorough work in some limited field. For this they should receive no degree, but they might possibly be given letters stating that they have taken such a special course.

(*d*) There should be courses in which practitioners can brush up on several subjects, selecting their own subjects, the amount of time they devote being optional but ranging from a month to six weeks. This will numerically be probably the largest group. These practitioner courses are on the whole of great value to the medical profession and to the community. Of course, no degree or statement of attendance of any kind should be given for this work.

3. Courses should be provided for general practitioners who live near enough to the medical school to come once or twice a week to some clinical or laboratory course on some special subject.

CHART 1.—MEDICAL SCHOOLS AND ENTRANCE REQUIREMENTS

The heavy line at the top shows the total numbers of medical schools existing in the various years. The horizontal shading (indefinite) shows those requiring for admission a four-year high school education; the vertical shading those requiring one year of college work and the heavy shading those requiring two years of college work.



	1900	'01	'02	'03	'04	'05	'06	'07	'08	'09	'10	'11	'12	'13	'14	'15	'16	'17	'18	'19
Totals	160	160	160	160	160	158	162	139	151	140	131	132	118	107	106	96	95	96	90	85
Totals (a)	158	158	158	157	156	153	156	148	135	116	91	80	72	60	24	12	10	10	9	6
Totals (b)	..	..	..	..	..	..	1	2	5	8	13	14	16	16	44	44	38	30	1	..
Totals (c)	2	2	2	3	4	5	5	9	11	16	27	38	30	31	34	40	47	56	80	79

Figures show (*a*) those requiring for admission a high school education *or less;* (*b*) those requiring one year of college work; (*c*) those requiring two or more years of college work.

Improvements in Medical Education in Sixteen Years

DR. N. P. COLWELL, Chicago: About forty of the 162 medical schools existing in 1906 were without laboratories and without clinical material. Nevertheless, in 1907 these institutions turned out from twelve to 105 graduates. Now most of the medical schools have five or more well equipped laboratories, and there is not one which does not have at least three laboratories. As to clinical material, most medical colleges now actually own or control a teaching hospital, and there is not one which does not have relationship with a hospital in which at least amphitheater clinics can be held.

Methods of clinical teaching have been greatly improved. Formerly the amphitheater clinic largely prevailed in which the professor gave a lecture-clinic, or performed an operation before a large body of students. This has given way to the smaller group clinics at the patient's bedside. Patients are now regularly assigned to senior students, who write the histories, make the physical and laboratory examinations and suggest the diagnosis and treatment.

Since 1904 the proportion of medical schools requiring any college work for admission increased from only four, or less than 3 per cent., of the 160 medical colleges, to seventy-nine, or 92 per cent., of the eighty-five colleges now existing. All but one of the medical schools require that the premedical work be taken in a college of arts and science. (See Chart 1.)

The advantages in requiring that the premedical work be taken in approved colleges of arts and sciences are:

1. The physics, chemistry and biology are taught without reference to their special bearing on medicine. It is not known today what particular facts obtained in the study of these sciences will be most useful in the medical research of tomorrow.

2. The quality of the premedical work is assured since it is carried in the courses leading to the degree of Bachelor of Science in reputable colleges of arts and sciences. This provides also a satisfactory standard for measuring the value of irregular or so-called "equivalent" courses.

3. The student is free to make a final choice of his life work until he is best qualified to do so. He enters the classes leading to the Science degree; he has a chance to compare notes with those studying for other callings, and may find that some other line of endeavor appeals to him more than medicine. If so, he can make the change without any loss of time, since his premedical courses are equally acceptable for admission to other departments. This freedom of choice is of great importance to the students, since from 10 to 30 per cent. change to some other calling before their two-year course is completed.

4. Students now enter medical schools with the benefit of two years in the college atmosphere, the contact with students in other departments, the social life, and the athletics, which are bound to influence their entire lives.

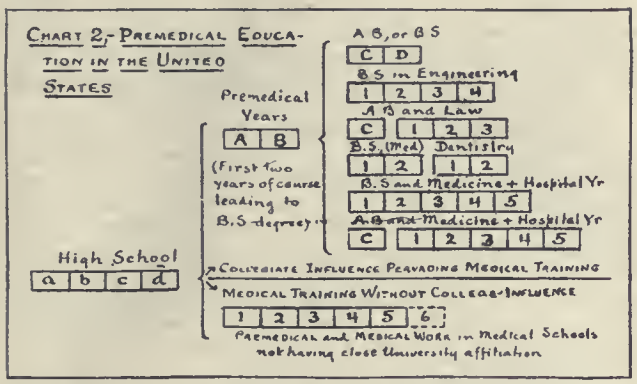
5. The arrangement is a safeguard against medical cults. It is seldom that a student who has studied genuine science in his courses in physics, chemistry and biology will be misled by the fallacious claims advanced by unscientific cults.

The one disadvantage of the arrangement is the lack of uniformity in the courses in physics, chemistry and biology given in different colleges or universities. This disadvantage will be corrected through the plan to secure more uniformity.

NO DEARTH OF MEDICAL STUDENTS

Early in the campaign for higher requirements of preliminary education, some feared that medical schools would

be unable to secure students. A reduced enrolment in the first session naturally followed the adoption of the higher requirement; but in subsequent sessions, in all the better medical schools, enrolments have returned to normal proportions.



This chart shows (*a*) that the student is under the influence of college life and atmosphere during his two premedical college years; (*b*) that he is not required to make a final decision in regard to his life work until he has finished all premedical work, and (*c*) that at any time he can change to some other calling without difficulty.

LIMITATION OF ENROLMENTS

The limitation of enrolments by medical schools and reports of excessive numbers of premedical students have caused some alarm lest medical schools may not be able in future to admit all the well qualified students who apply. An investigation shows that the sixteen Class A medical schools which have limited their enrolments can care for 4,559 students. Thirty-nine medical schools report that their highest capacity with efficiency of teaching would enable them to care for 9,061 students. An estimate based on the inspection of thirteen other medical schools shows they can enroll and properly train about 1,810 students. The sixty-eight medical schools in Class A, therefore, can enroll without overcrowding 15,430 medical students or approximately 2,000 more than are at present enrolled in the eighty-five medical schools of the United States. By the addition of more teachers; or by the enlargement of laboratories, or by the completion of college buildings being planned or already in course of construction, the numbers of medical students who

CHART 3.—CAPACITY OF MEDICAL SCHOOLS UNDER LIMITED ENROLMENTS

Medical Colleges	No. Colleges	Total Enrolment 1st Yr.	2d Yr.	3d Yr.	4th Yr.	Total Enrolments 4 Yrs.	Average Enrolment per College
Enrolments limited.....	16	1,136	1,121	1,151	1,151	4,559	285
Report highest capacity with efficiency:							
4-year colleges.....	31	2,222	2,109	2,063	2,056	8,450	273
2-year colleges.....	8	307	304	.....	.....	611	76
Estimated highest capacity with efficiency:							
4-year colleges.....	10	430	430	410	410	1,680	168
2-year colleges.....	3	65	65	.....	.....	130	43
Totals, Class A colleges....	68	4,160	4,029	3,624	3,617	15,430	227
Class B colleges:							
Capacity reported.....	5	240	240	240	240	960	192
Capacity estimated.....	5	135	135	140	140	550	110
Totals, Class B colleges....	10	375	375	380	380	1,510	151
Totals, A and B Colleges..	78	4,535	4,404	4,004	3,997	16,940	

can be satisfactorily taught could be further increased to 17,000 or 18,000 students. The existing medical schools, therefore, are more than adequate to meet present needs and in future as the numbers of students may increase, ample provision can be made for them.

There is a real demand for medical graduates to serve as interns in hospitals, but this demand could not be met even if the number of medical colleges and the number of graduates annually should be doubled or trebled. The intern problem requires some other remedy:

(*a*) The internship might be extended to eighteen months or two years, by which the annual output of graduates would supply about twice as many hospitals.

(*b*) The hospitals might employ recent graduates to remain for several years as resident physicians or surgeons.

(*c*) Hospital assistants or nurses might be trained to do much of the work now devolving on the intern.

(*d*) The situation is relieved in some hospitals by the employment of stenographers who, at the time the patients are examined, take down histories from dictation by the members of the attending staff.

The Needs and Future of Medical Education; Ideals and Their Function in Medical Education

GEORGE E. VINCENT, President of the Rockefeller Foundation, New York: In order to measure achievement and to guide progress, there is need of ideals or standards. Without tests there is danger that opportunism, provincialism, even a narrow nationalism, will prevent the development of medical education on a broad, international basis.

In human institutions there are no absolute standards. The highest ideal may be approximated in a few medical schools in which methods may be tested and leaders trained, but it would be a serious mistake not to recognize various degrees of achievement. The influence of local conditions, the possibilities of economic support, and relations with other university units must be taken into account. All that can be confidently affirmed is that some institutions fall below any standard that can be recognized as guaranteeing results which will safeguard the public and protect the profession. The number of such schools in the United States grows steadily smaller.

There is danger that the existence of a standard may force a formal rather than a real compliance with ideals. A premature effort to conform to an accepted standard may do positive harm. For example, there is reason to believe that in the case of medical schools in the South, where high school systems have had to be developed within a brief period, there has been an overstimulation of secondary and college education; that three-year high schools have changed to a four-year curriculum with little or no additional resources or increases in numbers and efficiency of teaching staff, and that colleges have offered courses which they are not prepared to give efficiently. Moreover, the Class A of the American Medical Association, having been accepted by state boards of medical examiners and thus become a part of the official machinery has been extended in such a way as to produce serious anomalies. These will doubtless be largely removed as a result of the new survey which has recently been completed.

One of the ideals of modern medical teaching which needs constant emphasis is the provision of the best type of medical care for the sick. Laboratory and clinical methods must be thought of as a protection to the patient. Careful diagnosis, resourceful treatment, constant watchfulness are sources of safety and hope to those who come under the care of a modern university hospital. The prestige of the clinical teachers who are in charge is always at stake. The mutual scrutiny of members of the teaching staff, and the alertness of students, together with unremitting search for new truth and its application to disease, make the teaching hospital the best place for the sick.

In medical education, the relation of the laboratory and clinical years is organic. The antithesis which is often set up between these two aspects of medical education is most unfortunate. In the first and second years, the chief emphasis is laid on work in the laboratories; but this training ought to be extended right into the clinical phases of the curriculum. While it will usually happen that laboratory teachers will be graduates in medicine, many able laboratory men without the M.D. degree have demonstrated their capacity to develop cooperative and sympathetic team-work with clinical departments.

As to the hospital, it is recognized that effective teaching can be secured only in an institution which is under the

complete control of the medical school. The devices of clinical clerkships, the individual responsibility of students, close relations between bedside and laboratory, the proper organization of the teaching staff, permanence of tenure, team-work, necropsy conferences, and case conferences with physicians and social service workers are all factors in the development of clinical training of the right type.

In spite of the overcrowding to which reference has been made, there is an increasing demand for the introduction in undergraduate teaching of such subjects as preventive medicine, psychiatry, institutional administration, and some knowledge of social amelioration through clinics, popular education, improved housing, better food, recreation, and the development of community responsibility. The introduction of medical sociology in the premedical course would be of distinct value.

Judged by the criteria which are suggested in this paper, existing medical schools fitting the present need fall into two general groups:

1. University centers for teaching and investigation. The chief characteristics of these institutions are: broad and thorough preparation; limitation of numbers in proportion to faculties and staff; well rounded laboratory equipment with professional teaching corps; complete control of adequate hospital and dispensary facilities with vocational leadership in the clinical departments, which include the chief specialties; practitioner or avocational clinical teachers organized systemically into a unified staff; geographic concentration of all phases of plant and instruction; laboratories and clinics in close relations of cooperation and interdependence; research a conscious purpose; facilities for graduate study.

2. Training centers, parts of academic institutions. Two-year college requirement; limitation of numbers; fundamental laboratory facilities with professional teachers; control of appointments to hospital and dispensary staff; practitioner clinical teachers well organized in long service periods; assisted by full-time resident and other assistants; concentration of buildings and work; cooperation between laboratories and clinics; some opportunity for research by staff members.

As to the policy of the General Education Board and the Rockefeller Foundation with regard to assistance to medical education, it may be said that there is no one, inflexible type of organization which it is proposed to suggest to all institutions. Aid has been given and will continue to be given to a few centers of the higher type, but assistance is also being considered with respect to a number of institutions less highly developed. The General Education Board cooperates with medical schools in the United States, while to the Rockefeller Foundation falls the opportunity to work with medical centers in Canada and in other countries.

DISCUSSION

Dr. Ray Lyman Wilbur, President, Leland Stanford Junior University, Stanford University, Calif.: Medical education is characterized in that it must be built up around a close personal relationship between the physician and the patient. In addition to the laboratory, the library and the lecture room, it requires for its development a whole group of social agencies including the hospital and the clinic. Consequently, the medical school is unique among university departments in the immediate service rendered in the solution of the day to day physical problems of the individual and of society. The whole essence of clinical teaching is to bring together the teacher, the patient, the nurse and the student in an environment most favorable for all of them. The future of medical education depends largely on the way this environment is financed and controlled. The union of the four elements is inevitable. Society, with its heavy burden of suffering, will insist on this in some form or another.

We put tens of thousands of the mentally sick into great isolated institutions, largely without medical students or training schools for nurses. Through competent administrators we care for them reasonably well, but we have learned and are learning but little of mental disease. The ignorance of the average medical man of psychology and psychiatry is painful. Every such hospital should be a live optimistic center for study and not a pen for the lingering care of the hopeless or semihopeless. We cannot think of medical education in the future without bringing the stimulus of the student to all such hospitals, and likewise bringing one such hospital into the closest of contact with every university medical school. Perhaps with the establishment of such conditions we can gradually place the decisions on the questions of mental conditions in the hands of physicians instead of in those of untrained judges and emotional juries.

No city with a population of half a million will rest content until its medical men have at their disposal suitable hospital and other facilities for superior medical care. It is also inevitable that there will be some medical instruction wherever good medical work is done. The master in medicine needs students as much as they need a master. This does not mean a medical school in every city, but it does mean at least teaching hospitals for interns and the physicians of the neighborhood and good training schools for nurses—in other words, an educational center of prime value to the community.

Community welfare depends on the engineer and the physician more than on the politician. No physician or nurse can do his or her duty in the ordinary professional routine without training in disease from the community or public health standpoint. Every medical center, be it hospital, clinic or medical school, cannot be complete unless it offers such opportunity.

During the period immediately before us, no greater disaster could come to medical education than to have it and all of its necessary accessories fall completely into the hands of the state. The glory of American education lies in the bold initiative of such institutions as Harvard and Johns Hopkins. Picture medicine in America today had there been no Johns Hopkins, Harvard, Physicians and Surgeons of New York, or University of Pennsylvania to lead the way, so that legislatures could be stimulated to vote the money for the medical schools that have developed around the state universities. We may look ahead to a democratic state with governing bodies and a public wise enough to provide leadership in medicine; but for several generations we cannot safely trust the future of medical education with all of its needed accessories to the chances of politics.

The safety of the state university medical schools will come from the active presence of those independently endowed setting the standards in various parts of the Union. The greater burden, though, of medical education must fall on state or city controlled hospitals and universities. Through them the public will gradually learn to do its full duty in medical teaching, and in the care of patients and in research, as it is learning to spend its money to get back the return in increased production that has come from the agricultural schools.

Charles F. Thwing, President, Western Reserve University, Cleveland: If we define education as the power to think, I think that we have a right to define medical education as the power to think in terms of medicine. I think we also have a right to say that legal education is the power to think in terms of law, both common and statute. To think is not to know simply, but it is to assess and relate knowledge. It is to know and relate fact to fact, and from fact to infer new facts. To think in terms of medicine is to think in terms of diagnosis, or understanding, of the proper evaluation of symptoms or the result of observation, each result related to every other; to assess the result of the thinking in terms of therapeutics and in terms of prognosis.

Every year at the faculty meeting in June we in Western Reserve University have this fact to contend with. We are now graduating our students at 27½ years of age. Can we get these men into the medical profession at an earlier day? We can if we will adopt the proper means; and the means lies away back of the high school; it lies in the grammar school or the grades. Boys and girls ought to enter the high school at the age of 12 and not of 14. The only way to secure that result, in my humble opinion, is not a change in the curriculum of the grammar school, but a change in the

advancing power to teach in these grammar schools; that power of advanced teaching lies in the smaller schools, the worth of the teacher lies in the element of cost, and the cost lies in the purse of the man who pays taxes. American communities ought to assess twice the present assessment in the improvement of the schools for boys and girls before the age of 12, and American communities I think are willing to do that, provided they be assured that the money is spent effectively. We are always glad to pay money in taxes for education if only the education be good. France has proved to us that their boys of 12 are as far advanced intellectually as boys of 14 in America, by reason largely of improved teaching before that age. It may be well for us in the medical school to persuade men of rather unique power to continue their education far beyond the graduation period. There are men known to every teacher who hold forth great promise. Those men should be encouraged to stay and become shepherds for the communities.

SURGEON-GENERAL WILLIAM C. BRAISTED, Washington, D. C.: We are deeply interested in the subject of medical education. We have had magnificent institutions, with full staffs of the finest type of men from the Reserve Corps. We have had perhaps the best the colleges could give us to carry on our work during the war. I feel a great degree of comfort and satisfaction in having that type of men; with the end of the war, however, we should not desist, but try to reestablish and maintain the splendid organization we had during the war. To do that we shall have to educate as quickly as possible young men for the positions of specialists. The organization I am trying to maintain is something like this: There should be an extensive laboratory. There should be specialists in operative surgery, eye, ear, nose and throat; there should be a psychiatrist, a roentgen-ray man, and the like. What I am trying to do is to have all these specialists associated and work together. For instance, in the Washington Hospital, Admiral Stitt is not only a very fine laboratory man, but one of the finest diagnosticians we have. The time has come when we in our premedical institutions should select or cull men of particular worth for work of a particular character.

SURGEON-GENERAL M. W. IRELAND, Washington, D. C.: Medical education is of the greatest importance to us. Very early in the history of the Medical Department of the Army the Surgeon-General called attention in his annual report to the better class of men we were getting. Away back in 1840, the Medical Department of the Army had something to do in creating a better and higher standard for students who were studying medicine. In the last twenty years, medical men have been coming into the Medical Department of the Army at the average age of 28. They should enter earlier in life. In many of our army hospitals we can now give good training in diseases of women and children, as well as in the other departments of medicine. We will take men from medical colleges and give them certain compensation in addition to their upkeep while in the hospital. That is the proposition we have to present to young graduates in medicine who come into the Medical Department of the Army to complete their hospital experience.

DR. VICTOR C. VAUGHAN, Ann Arbor, Mich.: Dr. Bevan, if I understood him correctly, spoke rather slightingly of the showing that the civilian medical profession made in the war, particularly the laboratory men. I am not going to say a word about what the clinicians did in the war. When Surgeon-General Gorgas wanted me to formulate rules for the sterilization of water in all camps in the army, to whom could I turn? I summoned three men to Washington—Whipple, Sedgwick and Phelps, not medical men but laboratory men—men skilled in preventive medicine. I do not believe any one of them has a medical degree. These men formulated rules and gave details for the sterilization of water in all the camps and in all the field hospitals. It was done in three days. The chlorination of water was decided on.

We are building a hospital now in Ann Arbor that will have 800 beds; but this is a relatively small part of the hospital. Most of it will consist of laboratories for professors of bacteriology, pathology, clinical medicine, scientific medicine, chemistry, etc. There is no one who has greater admiration for the surgeon and the clinician than I have, but it does seem to me that we overlook sometimes the valuable services rendered by the laboratory men to the surgeon and clinician. The pathologist, the chemist and the bacteriologist are just as important in their respective fields as the man who gives medecine or uses the knife.

DR. H. GIDEON WELLS, Chicago: I have been authorized to read into the minutes of this joint conference the resolutions passed by the National Research Council, composed of both clinicians and laboratory men:

WHEREAS, A committee composed of Drs. Erlanger, Jackson, Lusk, Thayer and Vaughan appointed by the Division of Medical Sciences of the National Research Council to study the situation in regard to the supply of assistants in preclinical departments have made a thorough study of conditions in the medical schools of the country and submitted a report setting forth existing conditions and analyzing suggestions as to improvements; and

WHEREAS, This study shows that there is a serious scarcity of men of proper caliber for assistants in preclinical sciences seeking such positions; be it

Resolved, By the Division of Medical Sciences of the National Research Council:

1. That this deficiency in assistants constitutes a very serious menace to medical education because not alone are there insufficient assistants for the present needs of instruction in the precilinical sciences, but the deficiency of the present inevitably must result in an inadequate number of men qualified for higher positions in the preclinical sciences and a consequent deterioration in these departments in a very few years.

2. That since the clinical departments are in many ways dependent for their efficiency on the instruction afforded and the investigation conducted in the preclinical sciences, deterioration in the preclinical sciences will result in deterioration in the clinical departments.

3. That since these conditions enumerated under 1 and 2 exist, it is very essential that steps be taken to provide for a more satisfactory supply of assistants in the preclinical sciences.

4. That since directly or indirectly the remedy for these conditions depends to a large degree on increased budgets for salaries for assistants, instructors, assistant professors and professors, technicians and supplies, it is highly important that funds be secured for these purposes to prevent deterioration in the entire structure of medical education.

5. That, since this need for funds for the preclinical sciences seems so pressing, the larger proportion of funds available for developing medical education should be applied to the preclinical rather than to the clinical departments of the medical schools for the present and until such time as a more satisfactory situation is obtained in the preclinical sciences.

DR. LOUIS B. WILSON, Rochester, Minn.: I should like the privilege of supporting these recommendations of the Council on Medical Research. Since Jan. 1, 1919, I have had 1,121 applications for fellowships in the Mayo Foundation. Four were for work in the fundamental sciences. This is not the general ratio. So far as we can determine, there are in the United States today not one-fourth as many young men engaged in laboratory work as there should be to fill the places which are now vacant.

DR. GEORGE M. KOBER, Washington, D. C.: We are all proud of the achievements in scientific medicine in the United States which have been brought about very largely through experimentation on the lower animals in determining the causes, prevention and treatment of disease. A bill has been introduced in Congress, known as Senate Bill 1258, and in connection therewith I wish to present the following for adoption:

The Annual Congress on Medical Education, composed of the Council on Medical Education of the American Medical Association, the Association of American Medical Colleges, and the Federation of State Medical Boards of the United States, has learned with regret that serious efforts are being made to enact Senate Bill 1258, "A bill to prohibit experiments upon living dogs in the District of Columbia and in any of the Territorial or Insular Possessions of the United States."

The highest aim of scientific medicine is the eradication of preventable diseases. The average span of life in the United States has been lengthened fully eight years during the past twenty-five years, largely the result of animal experimentation in the study of the causes, prevention and treatment of communicable diseases.

A careful examination of the law now in force in the District of Columbia shows that the provisions of the current law are ample and sufficient to prevent cruelty to animals, and since the enactment of the bill would be the death knell to the progress of scientific medicine, this congress respectfully but earnestly protests against its enactment as unnecessary legislation and detrimental to the best interests of the human family, and to animal husbandry.

The resolution was put to a vote and adopted unanimously.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Roentgenology, New York

December, 1919, **6**, No. 12

Roentgenologic Study of Metastatic Malignancy of Bones. A. B. Moore, Rochester.—p. 589.
Case of Myxochondrosarcoma of Femur. A. Cotton and S. McCleary, Baltimore.—p. 594.
*Dislocation of Innominate Bone. J. T. Murphy, Toledo.—p. 601.
Arithmetical Computation of Roentgen Dosage. G. M. MacKee, New York.—p. 602.
Treatment of Diseases of Thyroid; So-Called Hyperthyroidism. J. A. Lichty, Pittsburgh.—p. 608.
Treatment of Goiter by Radiation. R. H. Boggs, Pittsburgh.—p. 613.
*Early Roentgen-Ray Diagnosis of Ulcerative Tuberculous Colitis. L. Brown and H. L. Sampson, Trudeau, N. Y.—p. 625.
Teleroentgenography of Head. P. M. Hickey, Detroit.—p. 641.
Safety Device for Roentgen Ray Tubes. G. C. Johnston, Pittsburgh.—p. 643.
Multiple Myeloma of Bones. W. A. Evans, Detroit.—p. 646.

Dislocation of Innominate Bone.—A boy, aged 6 years, fell from the seat of a farm wagon loaded with 3,200 pounds of coal, and the front wheels passed over his abdomen. Shock and prostration were marked. The patient could not be moved for ten days. The leg was flexed and the foot was everted. A large hematoma covered the entire lumbar region. The roentgen rays revealed a dislocation of the left innominate bone. Attempted reduction failed; fixation in plaster for three weeks brought about recovery with normal function.

Early Roentgen-Ray Diagnosis of Ulcerative Tuberculous Colitis.—While in many cases of ulcerative tuberculous colitis a positive diagnosis by clinical or laboratory methods cannot be made, Brown and Sampson claim that the roentgenologic method has enabled them to make a diagnosis positively in many cases in which otherwise the diagnosis would have remained uncertain. The roentgenologic diagnostic criteria are filling defects and hypermotility.

Archives of Internal Medicine, Chicago

Feb. 16, 1920, **25**, No. 2

*Study of Colloidal Gold Reaction and Its Clinical Interpretation. M. Warwick and C. E. Nixon, Minneapolis.—p. 119.
Analysis of Spread of Excitation Wave in Human Ventricle. G. Fahr, Madison, Wis.—p. 146.
*Yellow Fever Observations Made in Guayaquil, Ecuador, in 1918. C. A. Elliott, Chicago.—p. 174.
*Pericarditis with Effusion. An Experimental Study. C. S. Williamson, Chicago.—p. 206.

Study of Colloidal Gold Reaction and Its Clinical Interpretation.—While Warwick and Nixon believe that the colloidal gold test is the most delicate of the routine spinal fluid reactions, it does not replace any other test but, on the other hand, is of independent value. It is of especial importance in the early diagnosis of neurosyphilis. A colloidal gold curve may be obtained with or without other positive findings after provocative treatment. It does not parallel clinical signs nor give definite evidence of improvement under treatment. Patients with no involvement of the central nervous system, or who are nonsyphilitic, give no colloidal gold curve. Clear cut clinical cases of tabes dorsalis may show all the spinal fluid reactions negative both before and after treatment. A curve in Zone III, with a negative cell count and negative or faintly positive globulin, is strongly suggestive of a brain or cord tumor or myelitis. Curves in Zones I and II may be found in nonsyphilitic conditions, such as multiple sclerosis and brain abscess. A cell count above five is pathologic, but the cell count is of no value in indicating duration or severity of the process or improvement. The authors recommend that this reaction should be included in every spinal fluid analysis and neurologic examination as well as in all cases of general syphilis.

Yellow Fever in Guayaquil, Ecuador, in 1918.—The clinical and pathologic findings are summarized by Elliott from a study of about seventy cases of yellow fever observed in Guayaquil, Ecuador, during the summer of 1918. Clinically, yellow fever is similar to infectious jaundice. The differences existing between the two diseases appear to be chiefly those of degree. There is more marked jaundice and less hemorrhage in yellow fever than in infectious jaundice. Although hemorrhage is a usual occurrence in all severe cases, yellow fever is not a true hemorrhagic disease. The hemorrhage apparently follows necrosis of parenchymatous tissues and endothelial cells. The jaundice of yellow fever appears to be of a nontoxic dissociated, hepatic (suppression) type. Death appears to be due to uremia. It is usually preceded by anuria. There is an intense degeneration of the epithelium of the convoluted tubules. The glomeruli and collecting tubes remain relatively free from degeneration. Convalescence in all patients who survive is prompt. The complete restitution of all organs to normal is remarkable. No evidences of impaired liver or kidney function remained in the cases studied, although Elliott says that intense parenchymatous changes must have occurred. Many cases are analyzed.

Pericarditis with Effusion.—By means of experimental research, Williamson found that in pericardial effusion the fluid accumulates first along the lower margin of the heart and about the apex, particularly on the diaphragmatic surface of the heart. With small effusions, this is the only place in which fluid accumulates with regularity. The result of the accumulation of the fluid in this position is to push down the left lobe of the liver. This was demonstrable in practically every case, and in many cases it was a very conspicuous feature. Special stress should be laid on this as an early diagnostic sign. The second place in which fluid accumulates is over the great vessels at the base. With small effusions it is occasionally present in sufficient amount to be detected by percussion. With medium sized effusions this layer is generally thick enough to be demonstrable by percussion, and this retrosternal dulness is an important diagnostic sign. With both small and medium sized exudates Williamson was unable satisfactorily to demonstrate percussion dulness in the fifth right interspace (Rotch), nor could a rounding of the cardiohepatic (Ebstein) angle be made out in a single case. The behavior of the fluid is practically independent of the position of the patient. In at least fourteen of the thirty-three cases studied the anterior surface of the heart, in spite of the exudate, remained, in part, uncovered by the fluid so that a pericardial friction rub could readily exist. This pericardial rub is to be anticipated in cases in which the heart is relatively large, so that it fills out the space between the vertebral column and the sternum. From the standpoint of the most readily reached small amounts of fluid, the most appropriate sites for puncture are either just outside the apex or in the chondroxyphoid angle.

Boston Medical and Surgical Journal

Feb. 26, 1920, **182**, No. 9

Surgery of Genito-Urinary Tract Observed at Base Section 2, France. R. F. O'Neill, Boston.—p. 213.
Mental Factor in Chronic Intestinal Invalid. J. Bryant, Boston.—p. 219.
Specific Diagnosis and Treatment of Acute Lobar Pneumonia. L. H. Spooner, Boston.—p. 224.

Canadian Medical Association Journal, Toronto

February, 1920, **10**, No. 2

Focal Infections; Ileal and Colonic Stasis. G. E. Armstrong, Montreal.—p. 106.
Chronic Intestinal Stasis. D. T. Smith, Ottawa.—p. 111.
*Winnipeg Epidemic of Lethargic Encephalitis. W. Boyd, Winnipeg.—p. 117.
Obstetric Paralysis. J. W. Sever, Boston.—p. 141.
Treatment of Empyema in Lobar Pneumonia by Early Aspiration. T. McCrae, Philadelphia.—p. 162.
Blood Transfusion. C. K. P. Henry, Montreal.—p. 166.
Cases of Syphilitic Aortic Insufficiency and Cerebrospinal Fever Supervening on (?) Erythema Nodosum. J. C. Meakins, Montreal.—p. 179.
System in Care of Sick. R. D. Rudolf, Toronto.—p. 185.

Winnipeg Epidemic of Lethargic Encephalitis.—In the Winnipeg epidemic of sixty cases there were twenty-three deaths, a mortality of 38 per cent. The characteristic case presented fever, drowsiness, strabismus, ptosis, diplopia, tinnitus, some degree of facial weakness, constipation and,

perhaps, some urinary and spinal fluid changes. The fleeting nature of the disturbances was very typical. Sensory disturbances were present in a number of cases. Some of the cases were atypical, suggesting cerebral tumor, apoplexy and other brain lesions. The brain was examined in eighteen cases, and showed marked congestion, perivascular infiltration with lymphocytes and plasma cells, and occasionally hemorrhage. Degeneration of the nerve cells was variable. The changes were most marked in the midbrain. Marked lesions were also found in the kidneys. A remarkable epidemic of hiccup occurred in Winnipeg at the same time as the outbreak of encephalitis.

Colorado Medicine, Denver

February, 1920, **17**, No. 2

Empyema at Camp Kearney During Recent Epidemic of Influenza. T. E. Bailly, J. R. Arneill, A. S. Granger, L. Shulman and F. E. Smith, M. C., U. S. Army.—p. 30.
Diagnosis of Empyema. J. N. Hall and S. B. Childs, Denver.—p. 36.
Treatment of Corneal Conditions by General Practitioner. W. H. Crisp, Denver.—p. 44.
Vincent's Angina. I. D. Scott, Boulder.—p. 47.

Delaware State Medical Journal, Wilmington

Oct., Nov., Dec., 1919, **10**, No. 4

Roentgen-Ray Treatment of Hyperthyroidism. G. C. MacElfatrick, Wilmington.—p. 6.
Tuberculosis Problems Confronting the General Practitioners. A. Robin, Wilmington.—p. 11.

Georgia Medical Association Journal, Atlanta

January, 1920, **9**, No 9

Digitalis Administration. W. C. Pumpelly, Macon.—p. 33.
Importance of Urologic Examination in Abdominal Diagnosis. G. Y. Massenburg, Macon.—p. 34.
Mental Hygiene. W. L. Funkhouser, Atlanta.—p. 36.
Importance of Early Correction of Club Feet. T. Toepel, Atlanta.—p. 38.
Part and Profit of Family Physician in Public Health. M. F. Haygood, Atlanta.—p. 42.
Early Recognition and Treatment of Neuroses and Psychoneuroses. N. M. Owensby, Atlanta.—p. 43.
Early Diagnosis of Carcinoma of the Uterus and Its Treatment with Radium. W. C. Gewin, Birmingham.—p. 49.

Iowa State Medical Society Journal, Des Moines

Feb. 15, 1920, **10**, No. 2

Influenza in an Army Camp. E. T. Edgerly, Ottumwa.—p. 31.
Bacteriology and Pathology of Influenza. H. Albert, Iowa City.—p. 35.
Control of Influenza Epidemics. J. H. Hamilton, Iowa City.—p. 38.
*Relation of Influenza to Tuberculosis. J. H. Peck, Des Moines.—p. 42.
Surgical Complications in 1,030 Cases of Influenza. C. J. Rowan, Iowa City.—p. 44.

Relation of Influenza to Tuberculosis.—A resumé of the cases seen in private and clinical practice during the past four months leads Peck to the conclusion that while a fair proportion of patients admitted a recent attack of influenza and every respiratory infection short of a frank pneumonia has been called the "flu," it has appeared that in some the tuberculosis has been evidently aggravated, but in the large majority the intercurrent influenza has apparently not been the actual causative factor in the acute exacerbation of tuberculosis.

Journal of Bacteriology, Baltimore

January, 1920, **5**, No. 1

Nitrogen Metabolism of Actinomycetes. S. A. Waksman.—p. 1.
Changes in Reaction as Result of Growth of Actinomycetes on Culture Mediums. S. A. Waksman and J. S. Joffe.—p. 31.
*Sterilization of Oils by Means of Ultraviolet Rays. L. T. Fairhall and P. M. Bates, Washington, D. C.—p. 49.
*Bacillus of Morgan No. 1; A Metacolon-Bacillus. Th. Thjøtta, Bergen, Norway.—p. 67.
*Method of Isolation and Identification of Members of Colon-Typhoid Group of Bacteria. J. Bronfenbrenner, M. J. Schlesinger and D. Sõletsky, Boston.—p. 79.
*Extracts of Pure Dry Yeast for Culture Medium. S. H. Ayers and P. Rupp, Washington, D.C.—p. 89.
Modified Procedure for Preparation of Testicular Infusion Agar. G. W. Clark, Berkeley, Calif.—p. 99.
Apparatus for Obtaining Samples of Water at Different Depths for Bacteriologic Analysis. F. C. Wilson, Madison, Wis.—p. 103.

Sterilization of Oils by Means of Ultraviolet Rays.—Experimental research by Fairhall and Bates has shown that certain oils, such as olive oil, cottonseed oil and almond oil, can be sterilized effectively by means of relatively short exposure to ultraviolet rays. The abiotic power of the ultra rays is not restricted to the vegetative bacterial cell alone but extends to the spores as well as to certain molds, such as *Penicillium*, *Aspergillus* and *Mucor*. Lipolytic enzymes in oil are sensitive to, and their action is inhibited by, exposure to ultraviolet rays. Except for a slight bleaching, the oil is unchanged physically and chemically by this exposure. The sterilizing effect of ultraviolet rays is still apparent after they have been filtered through layers of oil 4 mm. in thickness. Olive oil when exposed for long periods of time shows an increase in acidity, and this increase is directly proportional to the length of exposure.

Bacillus of Morgan No. 1: A Metacolon Bacillus.—Nine cases of diarrhea or dysenteriform colitis are analyzed by Thjøtta. Two of these ended fatally and the postmortem examination showed the existance of a severe colitis. From these cases of intestinal disturbance, typical strains of the bacillus No. 1 of Morgan were isolated, while it was impossible to discover the presence of other pathogenic germs. Seven of these strains were studied immediately after isolation as well as after one and one-half years of growth on artificial mediums, and most of them altered their characters considerably during this time. They could culturally no longer be recognized as belonging to the Morgan group, but had to be looked on as dysentery strains. Serologically, there could not be detected any relation between these strains and other pathogenic microbes, such as typhoid, paratyphoid A and B, dysentery I, II and III or colon bacilli. Neither was it possible to find any considerable relation between the various strains themselves, nor did any of the strains show the slightest agglutination in the serum from the patients. Thjøtta concludes that the Morgan bacillus is simply a *Bacterium coli* of a certain fermenting type. Consequently, he says, it would be better to give it the Danish name "metacolon organism" as this name points to the large group of the colon bacilli, while the name of Morgan bacillus gives the idea of a microbe of a certain special type.

Methods of Isolation and Identification of Members of Colon-Typhoid Group of Bacteria.—According to these authors the bactericidal power of CR (China blue-Rosolic acid) is due entirely to the action of rosolic acid. Moreover, the inhibition of growth seems to be directed only against gram-positive bacteria. Almost all gram-negative bacteria tested grow readily on a medium containing twenty-five times the amount of rosolic acid which is inhibitive for gram-positive organisms. This apparent selective action of rosolic acid, coupled with its failure to inhibit the growth of *B. dysenteriae* renders this dye particularly suitable for the preparation of selective mediums to be used for the isolation of intestinal bacteria.

Extracts of Pure Yeast for Culture Mediums.—The value of using extracts made from dried pure yeast, that is, yeast which has been washed and then dried at a low temperature without the addition of starch or other fillers, is emphasized by Ayers and Rupp. This extract may be used alone as a basis for more complicated mediums when necessary. Extracts of pure yeast contain, besides amino-acids and other proteins, fermentable material in small amounts, probably present in the yeast cell which makes them valuable for general bacteriologic purposes. The fermentable material probably stimulates growth but renders the extract valueless as an ingredient of mediums for fermentation tests.

Journal of Cancer Research, Baltimore

January, 1920, **5**, No. 1

*Pathologic Changes Accompanying Injections of an Active Deposit of Radium Emanation. Intravenous and Subcutaneous Injections in White Rat. H. J. Bagg. New York.—p. 1.
Relation of Pregnancy and Reproduction to Tumor Growth Incidence and Inheritability of Spontaneous Tumors in Mice. M. Slyce, Chicago.—p. 25.
*Relation of Inbreeding to Tumor Production: Studies in Incidence and Inheritability of Spontaneous Tumors in Mice. M. Slyce, Chicago.—p. 53.

Pathologic Changes Accompanying Injections of Active Deposit of Radium Emanation.—Gagg claims that following

injections of an "active deposit" of radium emanation there is a diffusion of the radioactive substance throughout the animal body, which results in pathologic changes in the various organs. The most interesting changes were those that were found in the liver, and resulted from comparatively small doses of radium injected subcutaneously. A fatty degeneration, associated with many giant cells and hyperchromatic nuclei, was found in the liver for a comparatively long time after the treatment. Following large doses of radium, congestion and hemorrhages were frequently found in practically all the organs and in the severe, acute cases the animals died after showing symptoms of marked enteritis. The most frequent pathologic condition that occurred in the kidney was a granular degeneration and erosion of the renal cells. It was found that injections of radium resulted in the destruction of the cells of the bone marrow, and replacement by blood. Congestion of the spleen was the most constant feature following radium treatment, and in some cases this was associated with hemorrhages, and the destruction of red blood cells. The method of injection appears to determine, to a certain extent, the severity of reaction in certain organs. For example, following subcutaneous injections there was comparatively no pathologic reaction, of an appreciable extent, in the lungs, but with intravenous doses, of about the same strength, the lung lesions were severe, and consisted of proliferation and desquamation of the epithelial cells of the bronchi, marked edema, congestion and hemorrhage. The results of this investigation tend to show that the liver, gastro-intestinal tract, kidneys, lungs and spleen receive the greatest amount of radioactivity.

Relation of Inbreeding to Tumor Production.—Inbreeding is demonstrated by Slye not to be an influence in the increase or the incidence of cancer, but merely a method of analyzing a strain. Strains consistently inbred may produce 100 per cent., or 50 per cent., or 0 per cent. of cancer according to how much cancer is bred in, not in accordance with the method used. The real effect of inbreeding is to eliminate cancer by eliminating the strain. It is hybridization which increases cancer by increasing the output of cancer progeny. The ratio of tumor "takes" in increasingly later generations from hybrid crosses of low grade productivity, proves nothing, Slye claims, with reference to the inheritability of cancer, but demonstrates the biologic relation between race vigor and the number of tumor "takes." As the cancer ancestry behind a generation broadens and deepens, the individuals of that generation tend to run more and more to cancer production. This is equally true of inbred and of hybrid generations, since the amount of cancer which comes out in the progeny depends on the amount which is put into the ancestry, whether the method is inbreeding or hybridization. It is, therefore, possible wholly to eliminate cancer from the race by not putting it in through the ancestry; this is true both in inbreeding and in hybridization. In demonstrating the inheritability of cancer and of other tumor types in mice, Slye has demonstrated their inheritability also for man and for every other species in which they occur, since the cancer and noncancer tendencies which segregate out in mice must segregate out also in every other species in which they occur, and this is the test of heredity.

Kansas Medical Society Journal, Topeka

February, 1920, **20**, No. 2

Diagnosis and Treatment of Syphilis. N. F. Ockerland, Topeka.—p. 25.
Nonspecific Therapy. W. A. Myers, Rosedale.—p. 30.

Laryngoscope, St. Louis

January, 1920, **30**, No. 1

Five Cases of Lateral Sinus Thrombosis. C. R. Holmes and H. M. Goodyear, Cincinnati.—p. 1.
Otogenic Facial Paralysis. I. W. Voorhees, New York City.—p. 14.
Effect of Repeated Rotation on Nystagmus. C. R. Griffith, Urbana.—p. 22.
Laryngology and Rhinology in France. R. H. Skillern, Philadelphia.—p. 26.
Italian Contributions to Etiology and Therapy of Ozena. C. Caldera, Modena, Italy.—p. 31.
Cerebral Abscess of Frontal Sinus Origin. F. L. Christiana, Norway.—p. 38.

Maine Medical Association Journal, Augusta

February, 1920, **10**, No. 7

Control of Venereal Disease in Maine. H. E. Hitchcock, Augusta.—p. 199.

Medical Record, New York

Feb. 14, 1920, **97**, No. 7

Applied Calcium Therapy: Study of Deficiency Diseases. J. Aulde, Philadelphia.—p. 257.
Blood Transfusion in Obstetrics. J. R. Losee, New York.—p. 265.
Conservative Remedial Measures in Most Acute Infectious Diseases. In Particular for Adults and During Influenza. J. M. Taylor, Philadelphia.—p. 268.
Prognosis in Pulmonary Tuberculosis. A. Henry, Indianapolis.—p. 272.
Local Anesthesia in Radical Cure of Hernia. C. T. Souther, Cincinnati.—p. 274.
Dreams. H. Laveson, New York.—p. 275.
Case of Huntington's Chorea. M. H. Frantz, New York.—p. 277.

Feb. 21, 1920, **97**, No. 8

Experimental Study in Mental Therapeutics. L. P. Clark, New York.—p. 299.
Some Present Day Cardiologic Topics. T. E. Satterthwaite, New York.—p. 305.
Cases from Orthopedic Clinic of Lebanon Hospital. J. Grossman, New York.—p. 309.
Hippocratic Medicine. J. H. Hare, Evansville.—p. 313.
Latent Tuberculosis. O. W. McMichael, Chicago.—p. 317
Ulcer of Esophagus. J. E. Sheehan, New York.—p. 319.

Mental Hygiene, Concord, N. H.

January, 1920, **4**, No. 1

Colony and Extra-Institutional Care for the Feebleminded. C. Bernstein, Rome, N. Y.—p. 1.
Some New Problems for Psychiatric Research in Delinquency. T. W. Salmon, Boston.—p. 29.
Movement for Mental Hygiene of Industry. E. E. Southard, Boston.—p. 43.
The "Nervousness" of the Jew. A. Meyerson, Boston.—p. 65.
Anxiety and Fear. F. E. Williams.—p. 73.
Problems Confronting a Psychoeducational Clinic in a Large Municipality. J. E. W. Wallin, St. Louis.—p. 103.
Comparative Statistics of State Hospitals for Mental Disease, 1918, H. M. Pollock and E. M. Furbush, New York.—p. 137.

Michigan State Medical Society Journal, Grand Rapids

February, 1920, **18**, No. 2

Radicalism Versus Sound Judgment. R. R. Reed, Bay City.—p. 59.
Syphilis at U. S. Army Base Hospital, Camp Greene, Charlotte, N. C. C. F. Ross, Richmond, Va., and W. A. DeFoe, Detroit.—p. 60.
*Surgery of Supraspinatus Muscle. A. S. Kitchen, Escanaba.—p. 64.
*Intestinal Drainage (Enterotomy) for Intestinal Obstruction. H. J. V. Berg, Grand Rapids.—p. 67.
Etiology of Organic Heart Disease. M. A. Mortensen, Battle Creek, Mich.—p. 71.
*Why the Pain of Peptic Ulcer Is Best Accounted for by Corrosion of Gastric Juice Rather than by Hunger Contractions and Hypertonus. C. E. Vreeland, Detroit.—p. 74.
Inversion of Uterus. H. W. Yates, Detroit.—p. 75.
Reminiscence of Sir William Osler. B. N. Epler, Kalamazoo.—p. 79.

Surgery of Supraspinatus Muscle.—Among about 100 cases of injuries to the shoulder in which the roentgenograms were used for diagnosis, Kitchen found the insertion of this muscle torn out in about ten cases, as indicated by the separation of the topmost portion of the greater tuberosity of the humerus. In Kitchen's cases of dislocation of the shoulder, separation of the insertion of the supraspinatus occurred in one half of the cases.

Intestinal Drainage (Enterotomy) for Intestinal Obstruction.—Berg has modified Moynihan's method of tube drainage of the intestine so that it can be accomplished without any soiling.

Pain of Peptic Ulcer Is Best Accounted for by Corrosion of Gastric Juice.—Thirteen reasons are given and discussed by Vreeland in support of the corrosion theory of the formation of gastric ulcer.

New Jersey Medical Society Journal, Orange

February, 1920, **17**, No. 2

Application of Rehabilitation Methods from War to Civil Life. F. H. Albee, New York.—p. 37.
Epithelioma of Tongue. E. D. Newman, Newark.—p. 41.
*Tropical Sprue in New York. M. Sturtevant, New York.—p. 44.
Cardiac Sequels of Influenza. G. P. Curtis, New Haven, Conn.—p. 45.

Tropical Sprue in New York.—Two cases of sprue seen in New York are reported by Sturtevant. One of the patients had been in Havana and the other had been in Florida for a few weeks each winter. Both the patients had symptoms

of sore mouth and diarrhea, coming in attacks. They had both lost weight. Both had a curious earthy color to their skin. Their stools were largely fat with normal pancreatic ferments. They responded in striking manner to milk diet. One of the patients showed characteristic improvement on strawberries. The other patient found the addition of salt to his milk made the milk more palatable and developed a sort of salt hunger or craving so that he would take from 40 to 70 gm. or more of sodium chlorid in twenty-four hours.

New York Medical Journal

Feb. 7, 1920, **111**, No. 6

Introduction of Study of Endocrines in Gynecology. S. W. Bandler, New York.—p. 221.
Indications for Internal Gland Therapy. W. Timme, New York.—p. 226.
Endocrine Neuroses and Their Treatment. J. Rogers, New York.—p. 229.
Endocrinology in Daily Practice. W. V. P. Garretson, New York.—p. 232.
Pineal Body. S. E. Jelliffe, New York.—p. 235.
Endocrine Tropisms; Adrenotropisms. D. M. Kaplan, New York.—p. 241.
Case of Acromegaly. M. W. Barr, Elwyn, Pa.—p. 248.
Interdependence of Function of Ductless Glands; Etiologic Factor in Toxic Goitre. J. C. O'Day, Honolulu, Hawaii.—p. 250.

Ohio State Medical Journal, Columbus

February, 1920, **16**, No. 2

Bringing Health to People. L. K. Frankel, New York.—p. 78.
Medical Service with Rainbow Division. H. D. Jackson, Circleville.—p. 82.
New Hope in Heredity. M. H. Fischer, Cincinnati.—p. 88.
Is Epilepsy Curable? C. W. King, Dayton.—p. 95.
Infection During Child Birth. H. J. Lower, Marion.—p. 98.

Texas State Journal of Medicine, Fort Worth

February, 1920, **15**, No. 10

Reporting Syphilis to State Boards of Health. R. Blue, Washington, D. C.—p. 355.
Early Diagnosis and Treatment of Syphilis. I. L. McGlasson, San Antonio.—p. 356.
Early Diagnosis and Treatment of Syphilis as Taught in U. S. Army. N. Snyder, Brownwood.—p. 358.
*Syphilis of Tracheobronchial Tree; Case of Gumma of Trachea. S. Israel, Houston.—p. 362.
Neurosyphilis Prophylaxis. G. H. Hampshire, Marlin.—p. 365.
Syphilitic Heart Disease. C. M. Grigsby, Dallas.—p. 368.

Gumma of Trachea.—The symptom for which Israel's patient came to the hospital was a severe attack of dyspnea. On examination, a swelling about the size of a hen's egg, was found in the upper third of the trachea. The blood Wassermann was ++++ positive. Under antisyphilitic treatment, arsphenamin injections and potassium iodid, the mass seemed to melt away. Only a slight thickening remained.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

January, 1920, **24**, No. 8

Perihilar Bronchopneumonic Pseudolobar Phthisis. W. Overend.—p. 241.
Special Points in Technic for Roentgenography of Clavicle and Lateral Aspect of Ribs for Detection of Injuries. R. K.—p. 248.
*Roentgenotherapy of Uterine Fibroids; Results of Four Hundred Cases. Béclère.—p. 254.
*Roentgen-Ray Treatment of Case of Early Acromegaly. J. H. D. Webster.—p. 261.
Fetish of Central Ray. M. Berry.—p. 264.

Roentgenotherapy of Uterine Fibroids.—In 400 cases treated by Béclère with the roentgen ray, the two principal results obtained have been the suppression of the metrorrhagia and the reduction in the volume of the tumors. He believes that radiotherapy of uterine fibroids is one of the most important of the uses of roentgen rays in the treatment of neoplasms. Its principal rôle is to induce the destruction and disappearance of the neoplastic cellular elements of which the fibromas consist; this is the direct effect of this form of treatment, and is the earliest manifestation of its action. It is, however, nearly always necessary to continue the radiations up to the point of the destruction of the normal cellular elements of the primitive ovarian follicles. When the treatment is suspended after the cessation of the periods, and the appearance of the hot flushes which characterize the menopause, the uterine tumors usually continue to decrease, sometimes much more slowly than during the treatment. But, if, after a more or less long interval the periods reappear, this return is very frequently accompanied by a revival of the activity of the fibroid, and it again increases in size. Béclère recommends that patients, especially those under the menopause age, should not wait until the periods return before they resume treatment, but that they should submit themselves for a fresh examination if the hot flushes prematurely cease. In a similar manner the discovery that the uterine tumor has increased in size is an indication for the immediate resumption of the treatment.

Roentgen-Ray Treatment of Case of Early Acromegaly.—In acromegaly, roentgen-ray treatment at present rests almost entirely on a theoretic basis. Webster contends that it should be eminently a disease suitable for roentgen-therapy, especially in its early stages, when the anterior lobe of the pituitary would show merely a simple chromophil hyperplasia, and before secondary tumor-like formation, local pressure damage, and much skeletal change has been produced. In his case so treated the disease had been of almost four years' duration. She had sixteen treatments with hard filtered rays from temporal and frontotemporal areas, the first eleven at weekly intervals, then fortnightly, latterly at monthly or longer periods. The effect was remarkable. The severe headache was rapidly relieved, and soon entirely disappeared. The "queer feelings" almost entirely left her: from two or three weekly they dropped to about one a month. The irritability and depression almost completely left her. She lost about seven pounds in weight. The most striking changes were in the eyes, the optic discs returned practically to the normal, while the fields of vision (especially for red) greatly enlarged. The right eye still presented some irregular contraction, chiefly inferior temporal. Apart from one or two bromid powders there was no treatment beyond irradiation. The patient was lost sight of for nearly two years; her condition, subjectively and objectively, had become aggravated again. She was then operated on successfully by the nasosphenoidal route.

British Journal of Children's Diseases, London

October-December, 1919, **16**, Nos. 190-192

Poliomyelitis and Polioencephalitis. Report of Cases. E. Cautley.—p. 193.
*Sequel in Case of Lipodystrophia Progressiva. P. Weber, T. H. Gunewardene, and H. M. Turnhull.—p. 200.
School Dental Clinic. C. E. Wallis.—p. 204.
*Lymphangioma of Tongue. B. W. Howell.—p. 213.
*Case of Leukodermia and Melanodermia Associated with Leukonychia. H. C. Samuel.—p. 217.

Sequel of Lipodystrophia Progressiva.—It is claimed by the authors that this seems to be the first published post-mortem examination of a case of lipodystrophia progressiva. The patient, a girl, aged 13 years, was operated on for a purulent otorrhea. Soon afterward there developed a septic type of pyrexia. The patient died about three months after operation. In the sections of the scalp and abdominal wall, the only evidence detected of fatty tissue was the presence in the scalp of a few small areas which may have been occupied by fat cells. One of the sections of the suprarenal bodies included a little of the surrounding retroperitoneal tissue. Definite fatty tissue was present in this. In no section were there lobules of embryonic fatty tissue such as are found in the fetus, and in infants during the first and even second year of life. No abnormality was detected in the ovary. In the suprarenal bodies there appears to be less lipoid than usual in the cortex. In the thyroid glands there was an excess of secretion of colloid. The authors consider it reasonable that such a pathologic condition of the thyroid was connected with the abnormality in the subcutaneous fat.

Lymphangioma of Tongue.—Howell's patient was only 6 years old. There was no family or personal history of disease. He gave a negative Wassermann reaction. He had congenital nevus of the lower lip, which involved the mucous membrane of the gum. This got fuller when the child cried,

and bled occasionally. The swelling of the tongue was first noticed when the child was 3 years of age. It commenced on the posterior aspect and had grown forward slowly. It became stationary, vesicles continually broke down and ulcerated, causing pain, and on that account the boy bolted his food, which was always minced. He ate most things and took a rather large amount of salt, of which he was fond, but avoided sauces. Occasionally, the tongue was enlarged without apparent cause, and protruded from the mouth. It was then excessively painful, and was a source of anxiety to the patient and his parents. Salivation was excessive and articulation impaired. The tonsils were much hypertrophied, the submaxillary lymphatic glands were much enlarged, and the submental glands were palpable.

Case of Leukodermia and Melanodermia Associated with Leukonychia.—A boy, aged 6 years, presented in the left lower costal and lumbar regions a melanodermic sheet on which were small leukodermic spots arranged in lines. On his nails were some early spots of leukonychia. The elder brother also exhibited the early stages of leukonychia striata on several of the finger nails. The father had recently developed well marked leukodermia and melanodermia at the angle of his lower jaw, and some leukonychia of his fingers. The father's brother had every well-marked leukonychia striata of all his finger nails.

British Medical Journal, London

Feb. 7, 1920, **1**, No. 3084

Flail Joints and Their Treatment. R. Jones.—p. 175.
*Tumors Complicating Pregnancy, Labor and the Puerperium. H. R. Spencer.—p. 179.
*Penetrating Wound of Chest; Thoracotomy; Suture of Pericardium. J. B. Haycraft.—p. 184.
Acute Intestinal Obstruction Due to Pregnancy in a Bicornuate Uterus. C. E. S. Jackson.—p. 185.
Antistreptococcic Serum in Puerperal Fever. O. Hilton.—p. 185.
*Simple Treatment of Ringworm of Nails. R. Craik.—p. 185.
Mode of Infection in Pulmonary Infection. T. Campbell.—p. 185.

Tumors Complicating Pregnancy, Labor and Puerperium.—It is Spencer's belief that the great majority of cases require only careful supervision during pregnancy, periodical examination of the urine, rest, mild aperients and anodynes if the tumors become painful. Induction of abortion, premature labor and forcible delivery past obstructing tumors are contraindicated. Forceps may be required for inertia but should never be used to overcome resistance caused by tumors. Craniotomy and embryotomy are called for only in cases in which the fetus is dead and the mother not affected. Polypi and pedunculated subperitoneal tumors should be removed. Vaginal myomectomy may be required for cervical fibroids, but should not be performed for retrocervical tumors. Abdominal myomectomy is rarely needed, and usually only for very large or twisted or necrobiotic tumors. It not infrequently leads to abortion and to hysterectomy in order to stop the hemorrhage from the bed of the tumor, and it often fails to remove all the tumors present in the uterus. Before performing myomectomy, as also before conservative cesarean section, the tumor should be examined bacteriologically, and if it is infected, the whole uterus should be removed. Hysterectomy during early pregnancy, in the absence of hemorrhage or infection, is rarely called for. Conservative cesarean section is rarely indicated by the fibroids alone, but may be performed when fibroids are associated with contracted pelvis or malpresentations of the child, especially in elderly primiparae. In the case of a single myoma, it might be possible to remove the myoma and child through the same incision. In the puerperium, vaginal myomectomy is usually the best treatment for submucous tumors even when they are infected or invert the uterus. It should usually be tried before resorting to hysterectomy, which Spencer has never found to be necessary. In infected subperitoneal or intramural tumors total abdominal hysterectomy should be performed.

Penetrating Wound of Chest: Thoracotomy: Suture of Pericardium.—Haycraft regards his case as of interest as throwing light on the question whether it is necessary to close a large traumatic communication between the pericardial and pleural cavities. He was obliged to suture a tear in the right lung at the lower part of the junction of the anterior and basal borders, with fine linen thread, and a tear in the pericardium about 2 inches in length from above downward, through which was protruding the right auricular appendix and part of the right auricle. This was closed by a continuous suture of fine linen thread, but with considerable difficulty, owing to the extremely rapid beating of the heart and the attempts of the auricular appendix to get outside the pericardium at each beat.

Treatment of Ringworm of Nails.—In the two cases cited by Craik, the disease had existed for months in one patient, for years in the other. They were given a lotion consisting of 1 dram of salicylic acid in 1½ ounces of methylated spirit, to be painted on after scraping every night, and without scraping every morning, and to be used for three months or longer. Both patients were cured.

Japan Medical World, Tokyo

*Modified Silver Method of Staining Cilia and Spirochetes. K. Imai and H. Hidaka.—p. 57.
Nature of Hematemesis. K. Yoshida.—p. 57.
Absorption of Stains by Vital Embryonic Tissues. Special Reference to Carmine and Allied Stains. K. Kiyona.—p. 58.
Transplantation and Growth of Poultry Tumors, Especially Their Transplantation to Wing Bone. T. Kato.—p. 58.
Influence of Opium on Experimental Sugar in Blood. Furukawa and Unei.—p. 58.

Modified Silver Method of Staining Cilia and Spirochetes.—Hidaka makes use of silver in the form of an ammonium salt. Not only the cilia of the typhoid becilli and allied bacteria, but also soirochetes and the cilia of cholera vibrios take the stain very easily. The following solusions are employed: (A) 100 parts of a 10 per cent. acetic potassium solution; (B) 100 parts of a 3 per cent. phenol solution; 10 parts of tannic acid; (C) 20 parts of a 2 per cent. stibiokalium tartaricum. Solution A is put in a 200 c.c. flask and heated at 40 C. While heating, solution B is poured into the flask and heating is continued until the white precipitate is completely dissolved. Solution C is then added; a thick white precipitation occurs. This cloudy solution is the required macerating solution and may be used without being filtered. The solution thus obtained is stored in a brownish dripping bottle and is shaken before use. The residue is more efficacious than the filtrate. This residue may be desiccated and the dried substance may be employed by dissolving in water. This solution is poured over the entire surface of the smear to be stained, and is heated over the flame until vapor arises from the surface of the fluid, which becomes granular in appearance. Usually from one-half to one minute heating will effect this. Then the smear is washed with water. The ammonium silver is poured over the smear and heated; washed in water. Ammonium silver solution is prepared as follows: Ammoniac water is poured into a 3 per cent. silver nitrate solution enough to effect the dissolution of all the precipitate that is formed by the adding of the former for the first time. Then the 3 per cent. silver nitrate solution is dropped into the mixture until it turns cloudy. The mixture thus prepared is stored in a brown bottle. The bacterial bodies appear black and the cilia dark brown.

Journal of Tropical Medicine and Hygiene, London

Feb. 2, 1920, **23**, No. 3

The "Tenue" Phase of Plasmodium Vivax (Grassi and Feletti 1890). A. J. Chalmers and R. G. Archibald.—p. 33.
Three Cases of Filariasis in Which Intravenous Injections of Tartar Emetic Were Given. J. W. S. Macfie.—p. 36.
Ulcus Tropicum Treated with Tartar Emetic. A. Mei.—p. 38.

Lancet, London

Feb. 7, 1920, **1**, No. 5032

*"Bone Setting"; Practice and Results of Forced Movement. J. B. Mennell.—p. 297.
Dental Sepsis in Children. F. St. J. Steadman.—p. 303.
Pauchet's Method of Gastrectomy. I. MacDonald.—p. 308.
*Case of Hydatid Disease of Bone. C. E. Corlette.—p. 311.
War Edema in Turkish Prisoners of War. J. I. Enright.—p. 314.
Acute Glanders in Man. T. Hunter.—p. 316.
An Operation Under Difficulties. N. Crichlow.—p. 317.
*Four Cases of Intestinal Obstruction. A. C. Perry.—p. 318.
Case of Corneoscleral Cyst. H. H. Bywater and P. E. Gorst.—p. 319.

"Bone Setting" Forced Movement.—The whole subject of treatment of after-effects of injury, Mennell says, is interwoven with that of the administration of forced movement, and this in turn is intimately connected with the art of what is commonly known as "bone-setting," and until the time has come when the old teaching of absolute and prolonged rest after injury shall have been supplanted by Lucas-Championniere's doctrine of the scientific combination of rest with mobilization, the type of disability which fills the "bone-setter's" rooms will never disappear. The first golden rule in manipulation under anesthesia should, therefore, be that no further attempt at movement is to be made in any direction when once a definite adhesion has been felt to give way. If this rule is ignored, injury will inevitably be inflicted on the fibrous tissue which forms a large bulk of the muscles which oppose the movement. Movement in other directions may, however, be continued. Mennell discusses the choice of time anesthetic and technic, the general procedure and the movement used for individual joints in detail.

Hydatid Disease of Bone.—In Corlette's case hydatid cysts were found in the femur, the right pelvic bones and the thigh, reaching from the level of the upper end of the bone above nearly to the popliteal space below; between the spleen and the diaphragm, the top of the spleen forming its floor, and the under surface of the diaphragm forming its roof. The kidneys and liver were entirely free from any sort of hydatid growth or deposit. So was the left lung. But the right lung presented a very remarkable appearance. The whole of the apical part looked like marble, giving the impression that a series of small hydatid cysts were lodged beneath the pleural surface. At the lower margin of the upper lobe another hydatid mass could be seen, about the size of a pigeon's egg and elastic in consistency. This was incised and found to contain a densely packed mass of crumpled looking hydatid membrane, cutting like a solid jelly. No free fluid exuded from the section, and there was no sign of an enveloping mother cyst. The brain was not examined.

Cases of Intestinal Obstruction.—Perry cites a case of atresia of the small intestine discovered in a child eighteen hours after birth. The small intestine ended blindly. Enterostomy was performed but the child died after six hours. A second case was one of strangulated sciatic hernia in a woman, aged 27, who was eighteen weeks pregnant.

Medical Journal of South Africa, Johannesburg

August, 1919, **15**, No. 1

Principles of Psychanalysis and Modern Psychotherapy. H. Goodman.—p. 1.

September, 1919, **15**, No. 2

Trench Fever in Salonica and France. H. T. H. Butt.—p. 33.

October, 1919, **15**, No. 3

Medical Boarding of "Heart Cases." G. D. Maynard.—p. 57.
Case of Pseudohypertrophic Muscular Dystrophy in a Native. M. D. Utrecht.—p. 60.

November, 1919, **15**, No. 4

Case of Chronic Abscess Caused by Nocardia Foulertoni. A. Pijper.—p. 82.

South African Medical Record, Cape Town

Dec. 27, 1920, **17**, No. 24

*Agar: A Fluid Medium. A. Pijper.—p. 372.

Jan. 10, 1920, **18**, No. 1

Cases Treated by Roentgen Rays, Radium and Electrotherapeutics. de V. Hugo.—p. 4.
Poisoning of Cooper's Dip. P. H. Walker.—p. 12.

Agar: A Fluid Medium.—Pijper maintains that the so-called water of condensation found at the bottom of agar slants and on the surface of agar plates is not water and not merely the product of a process of condensation. This so-called water of condensation, Pijper says, ought to be called agar serum, and it is mainly the product of a process of secretion caused by the syneresis of the agar gel. The micro-organisms planted on the medium are bathed in this agar serum, which provides them with nutrient substances. Agar mediums, therefore, are not solid, nor simply liquefiable mediums, but they are fluid mediums, in which the production of the fluid available for the nutrition of the microbes proceeds very slowly and follows certain rules. The secretion of this serum, and the concentration of its constituents, and therewith the value of an agar medium from a bacteriologic point of view, are dependent on various factors, which ought to be investigated.

Archives Médicales Belges, Brussels

September, 1919, **72**, No. 9

War Gases. H. Fredericq.—p. 229. Conc'n.
*Serotherapy of Tetanus. M. Stassen and J. Voncken.—p. 255.
*Artificial Eyes in Antiquity. Van Duyse.—p. 262.
Clinical Examination in Disease of Nervous System. M. Molhant.—p. 27. Conc'n.

Serotherapy of Tetanus.—Stassen and Voncken emphasize that the fear of serum sickness and even the development of serum accidents should not deter from pushing the antiserum treatment in tetanus, both by the intraspinal and the subcutaneous routes, as in it lies the only hope of influencing the disease.

Artificial Eyes in Antiquity.—Van Duyse recalls that no authentic specimen of an artificial eye supposed to have been worn by a living person has been found in the excavations in Egypt. But the marble and glass, terra cotta and enamel eyes found in mummies and in funeral masks are indirect testimony in favor of the ancient Egyptians having known and used prostheses for the eyes, as they were so particular about their appearance.

Bulletin Médical, Paris

Jan. 17, 1920, **34**, No. 3

*Vaccine Therapy of Osteomyelitis. R. Grégoire.—p. 41.
Clinical Examination of the Constipated. J. Génévrier.—p. 42.

Vaccine Therapy of Acute Staphylococcus Osteomyelitis.—Grégoire warns that time should not be wasted on vaccine therapy when septicemia has undetermined the system so that it is unable to respond to the stimulus of the vaccine. Even when the general aspect is good, he does not persist with the vaccine if the fever does not show signs of abating in forty-eight hours. The abscess should not be opened, as this invites secondary infection. Even very large swellings subsided completely under the vaccine treatment; in three cases he punctured to relieve the distention. His experience has not indicated that any better results are obtained with large doses than with small, while there may be disagreeable reactions to the larger doses, especially on the part of the heart. The pulse always ran up, sometimes to 140 or 150, but without disturbing the patient, and it kept high for two, three or four days. He never ventured a new injection until the pulse had returned to its former rate. Nine cases of acute or subacute osteomyelitis have been treated in this way, beginning with a stock vaccine; sometimes the abscess was punctured two or three times before the final complete retrogression. Some of the patients recovered without hyperostosis, and it never amounted to much. From two to nine injections were given in the different cases, and the total of 400 millions was never surpassed. The cure was complete in five or six weeks and the general condition was far better than in the surgical cases.

Bulletins de la Société Médicale des Hôpitaux, Paris

Dec. 26, 1919, **43**, No. 38

*Congenital Senile Skin. G. Variot and Cailliau.—p. 1125.
*Spirochetal Jaundice with Rash. M. Garnier and J. Reilly.—p. 1128.
*Transfusion of Blood in Malignant Measles. E. Terrien.—p. 1134.
*Erosive Angina. P. Harvier and de Léobardy.—p. 1136.
*Malaria and Amebiasis. E. Joh and L. Hirtzmann.—p. 1139.
Ouabain in Cirrhosis of Liver. H. Dufour and G. Semelaigne.—p. 1143.

Congenital Senile Skin.—Variot and Cailliau state that the corrugated senile skin in the case reported was noted at birth, while in cases of geromorphism that have been published by others, the senile aspect of the skin developed in the children later, after several years of a normal aspect.

Spirochetal Jaundice with Rash.—Garnier and Reilly say that a scarlatiniform rash preceded the jaundice in a case they relate. The young civilian recovered completely in

about a month. The urine contained the spirochetes, confirmed by inoculation of guinea-pigs but agglutination tests were negative. The differential diagnosis was difficult as the symptoms for five days were merely gastro-intestinal disturbance, fever, depression and myalgia, headache and herpes, and then came the rash. As this became generalized, the eyes showed the tendency to jaundice. There was no desquamation later, and the assumption of superposed scarlet fever has no basis.

Measles and Transfusion of Blood.—Terrien found that the infant of 13 months was developing a malignant form of measles. The rash lasted only one day, and the most vigorous measures, including mustard packs, failed to bring it out again. The child's strength was kept up with camphorated oil and daily glucose-epinephrin injections. The condition growing constantly worse, a subcutaneous injection was made the fifth day of 20 c.c. of whole blood from a brother who had had measles six months before. By evening the infant was playing in its bath, and he slept that night for the first time. The temperature began to go down, and by the next day the child was cured. Terrien emphasizes the rapid improvement after this plasma-therapy, the efficacy of the subcutaneous route for infants, and the fact that the antitoxins had persisted for six months in the donor. The subcutaneous route avoids the danger of the shock from intravenous administration, and it also renders unnecessary any preliminary testing of the donor's blood for hemolytic properties.

Erosive Angina.—Harvier has encountered three cases recently which do not fit into the frame of any known type of sore throat. The infectious process affected only the anterior pillar, and only on one side. The oval lesion is more an erosion than an ulceration, and there is no false membrane formation, but the onset is febrile and stormy, and the glands nearby show slight congestion. The lesion does not spread, but it lasts for three weeks and then subsides, regardless of the local measures applied. Bacteriologic tests showed cocci and an occasional staphylococcus.

Malaria and Amebiasis.—Job and Hirtzmann comment on the puzzling character of the sickness when amebiasis is associated with malaria. Proper treatment is extremely important as emetin will cure the one and quinin the other, or at least this will attenuate them, as a rule. In some cases, however, the intestinal or liver amebic disease complicated with malaria proves inevitably fatal.

Journal de Chirurgie, Paris

December, 1919, **15**, No. 5

*Minor Displacements of the Vertebrae. E. C. Cyriax.—p. 457.
*Tuberculous Lesions in Temporal Bone. Bellin, Aloin and Vernet.—p. 486.
*Ligneous Phlegmons. S. Mercadé.—p. 499.
*Buried Shoe-Lace Suture. W. Dubreuilh.—p. 509.

Minor Displacements of Cervical Vertebrae.—Cyriax' experience with hundreds of cases of incomplete dislocation of the cervical vertebrae has confirmed its unsuspected frequency, and that it can occur without any symptom, although usually it causes more or less disturbance analogous to similar minor displacements in the bones and cartilages of the limbs. The pathology and the necessity for reduction and the technic for the latter are practically the same in all. The pain, stiffness, and inability to move the head may all disappear as compensation becomes established. In one of his cases there were no functional symptoms except change in the voice, rebellious to all treatment. Palpation in the dorsal position is most instructive. One transverse process in front, the other at the back, signifies rotation on the axis; one in front, with the other in normal position, signifies rotation with unilateral forward displacement. He lists the other displacements liable to be encountered, with radiograms of each, and four typical case histories. The displacement can generally be reduced by the appropriate maneuvers with little or no pain.

Tuberculous Lesions in Temporal Bone.—Bellin and his co-workers have encountered four types of tuberculous osteitis in the temporal region and ear, and cite a fifth type described by Bernard. They give an illustrated description of a case in each type: (1) latent tuberculous mastoiditis, often revealed by deafness; (2) tuberculous mastoiditis with necrosis, sometimes revealed by facial paralysis; (3) the same with fistulas; (4) chronic osteitis of the middle ear with hyperostosis of the mastoid, and (5) osteitis of the auditory meatus or of the scala tympani. The cases reported terminated fatally, the mastoid lesion being usually accompanied with tuberculous lesions elsewhere. The only exception is a case in which the outcome is not known although the immediate results of a radical operation were good. The lesion seemed to be limited to the external meatus and scala tympani, except where the condyle of the lower jaw had been touched by the osteitis. As a general rule, reliance must be on general measures until we can learn to detect these processes in their incipiency and remove the focus before there is extensive destruction.

Woody Phlegmon.—Mercadé is confident that some foreign body is the primary factor in a ligneous phlegmon. Medical measures have always failed, and there is scant hope for resorption until the tumor with its foreign body has been excised. The incision can be sutured at once and the cure is complete in a few days, unless the phlegmon has assumed such dimensions that its entire removal is impracticable. In the ten personal cases described, the phlegmon was on the thigh, forearm, buttocks or neck, and it had developed after a war wound.

Buried Shoe-Lace Suture.—Dubreuilh uses very fine catgut and an extremely curved needle, and sutures the deeper layers of the incision together, the course of the threads exactly like the lacing of a shoe. The stitches must be as close together as possible—less than 1 cm. apart—as the threads cross and recross each other. To ensure even coaptation he ties the threads together at every fourth or fifth stitch. In three or four of the 100 cases in which he has applied this shoe-lacing suture in operations on the face, the catgut was cast off; in a few others the lips separated anew but only for a short distance, thanks to the relay knots. On the other hand, the superficial sutures have sometimes suppurated, especially in operations on the mouth, but the buried shoe-lacing suture held. This suture is a little more tedious than others but it interferes less with the circulation, and has several other advantages for operations on the face.

Journal de Radiologie et d'Electrologie, Paris

November, 1919, **3**, No. 10

*Roentgen Treatment of Uterine Fibromyomas. Béclère.—p. 433.
*The Fluorometer. H. Guilleminot.—p. 440.
*Roentgen Treatment of Localized Tuberculosis. Cottenot.—p. 447.
*Roentgenoscopy of the Tender Points. M. Jaulin.—p. 455.
Gastrocolonic Fistula from Early Cancer. L. Nahan.—p. 458.
Diaphragmatic Hernia. M. Audan.—p. 460.
*The Pylorus with Duodenal Ulcer. E. Constantin.—p. 462.
Calculation of Depth of Foreign Body. M. Ozil.—p. 463.

Roentgen-Ray Treatment of Uterine Fibromyomas.—Béclère's communication supplements his previous one at the London medical congress in 1913. He now has a record of 500 cases of uterine fibromyomas treated by irradiation, and the interval since in 400 of the cases has been long enough for a decisive verdict. In 84.5 per cent. of the cases the fibromas projected into the abdomen from 1 to 30 cm. above the pubis. They began to subside in size even from the second or third sitting, shrinking about 1 cm. a week, but menstruation usually was not arrested under two or three months. In 60 per cent. of the total cases only twelve or fourteen sittings were required, so that the course took only from ten to twelve weeks, and the women continued their usual life all the time, and there was no suffering of any kind. The fibromas subside much more rapidly than at the natural menopause, so that the treatment must act on the tumors directly, as well as indirectly through the ovaries.

The Fluorometer.—Guilleminot's fluorometer determines the dose of the roentgen rays by the power of the rays to render fluorescent a small luminous screen.

Roentgen Treatment of Bone, Joint and Gland Tuberculosis.—Cottenot has been able to compile a long list of local tuberculous lesions which have been benefited by roentgen

treatment. It is still a question whether tubercle bacilli are destroyed by the rays, but there is general agreement that the cells of the tubercles are destroyed by them while proliferation of connective tissue is promoted. He deplores that notwithstanding the fine results realized from irradiation of bone and joint tuberculous processes during the last ten years, this treatment has not yet won the place that its efficiency and harmlessness deserve. It would avert the necessity for surgical measures and prolonged courses of heliotherapy. The best results have been realized to date with tuberculous processes in the small bones, as they are more accessible to the rays. He has cured many cases of processes in long bones and joints by combining roentgen irradiation with immobilization after evacuating pus and sequesters. The hip joint is almost beyond the reach of the rays; only Schede has reported two successful cases of coxalgia. Iselin has reported more than 800 cases of cured tuberculous ostearthritis.

Roentgenoscopy of Painful Points.—Jaulin advises the roentgenologist to pay special heed to the tender points, and to outline them with a metal ring, as an important aid in the differential diagnosis.

Functional Insufficiency of the Pylorus with Duodenal Ulcer.—Constantin found that the pylorus allowed the contrast suspension to pass at once into the duodenum in six cases of duodenal ulcer. This insufficiency may be spontaneously manifest or can be induced by pressing on the prepyloric region. It may be latent and transient, but it seems to accompany duodenal ulcer often enough to have differential importance. In two other dubious cases, this insufficiency was not evident.

Presse Médicale, Paris

Jan. 21, 1920, **28**, No. 6

*Internal Treatment of Psoriasis. R. Sabouraud.—p. 53.
*Ulcerating Mouth and Throat Lesions. David and Hecquet.—p. 54.
Angina Pectoris. R. Benon.—p. 56.

Internal Treatment of Psoriasis.—Sabouraud affirms that the treatment of psoriasis has entered on a new era of late with the discovery that certain measures which have nothing in common, except that they all give a kind of shake-up to the organism, are proving effectual in certain cases, although not in all. The list includes injection of mercurial salts, of antitoxic serums, and of emulsions of killed microbes from the patient's stools. There is hope that still more effectual means of inducing the shake-up or shock may yet be found. The field of experimentation seems immense and almost unlimited. Danysz' enterovaccine from the stools seems to be harmless, and great improvement under it seems to occur in more cases and to last longer than with any other measures yet known.

Ulcerative Lesions in the Mouth.—David and Hecquet write from Roumania to tell of their finding Vincent's fusiform bacilli in ulcerating lesions in the mouth and pharynx, which at first were ascribed to the prevalent scorbutus. In a recent twenty days, they encountered twelve cases of Vincent's angina. Glycerin solutions of arsenobenzol have proved useful.

Annaes Paulistas de Med. e Cirurgia, S. Paulo, Brazil

November, 1919, **10**, No. 11

*Pulsating Exophthalmos. P. Gomes.—p. 241.
Therapeutics in 1918. C. Ferreira.—p. 247.

Ligation of Carotid for Pulsating Exophthalmos.—Great improvement followed ligation of the right common carotid to control an arteriovenous aneurysm of the internal carotid, communicating with the cavernous sinus, and entailing pulsating exophthalmos. Gomes adds that the latter was only attenuated by the treatment, but the other symptoms subsided.

Archivos Brasileiros de Medicina, Rio de Janeiro

September, 1919, **9**, No. 9

*Abnormal Forms of Appendicitis. A. Possollo.—p. 707.
*Sugar Treatment of Pulmonary Tuberculosis. Ramiro Magalhães.—p. 736.

Abnormal Forms of Appendicitis.—Possolo reviews the unusual clinical picture that may be presented when the appendix is not in its normal place but is pushed to the left or is involved in a hernia or is adherent to pelvic organs, etc., or some infectious process elsewhere modifies the symptoms, or a tumor, constitutional disease, tuberculosis or actinomycosis may modify it, or the age may affect it, as when appendicitis develops in the infant or the aged. He remarks that while the diagnosis of appendicitis is not always easy under the most normal conditions, it is sometimes almost impossible under some of those just described. He has found the Abderhalden reaction a valuable aid in certain puzzling cases; in one, the presence in the blood of the special appendicular ferments gave the clue to the disease, confirmed by the operation. In another case the negative findings were confirmed by the operation which revealed right salpingitis. In a third, the positive findings conflicted with the presumptive diagnosis of colitis, but time proved the Abderhalden findings the correct ones. In a fourth case the findings were still positive two months after the appendix had been removed. Mariaute's experience has also confirmed that abnormal cases of appendicitis can be elucidated and confirmed by the Abderhalden reaction. In one case described in detail the young woman for two years had been having intense pain in the right iliac fossa at each menstrual period, but was free from pain during the intervals. It was so severe in the right hip and leg that she could not use them while it lasted. Possollo incriminated the appendix, and it was found pathologic, with a grape stone in it. In another case the septicemic appendicitis showed no local symptoms, no digestive disturbance, nor rigid abdominal wall. The only symptoms were those of acute nephritis, pain in the lumbar region and blood in the urine.

Sugar Treatment of Tuberculosis.—Ramiro Magalhães applied Lo Monaco's method of injections of sugar solution in forty-eight cases of pulmonary tuberculosis with negative results.

Archivos de Ginecopatía, Obstet. y Ped., Barcelona

July, 1919, **32**, No. 7

*Ophthalmia Neonatorum. F. Vidal Solares.—p. 149.
*Pubiotomy in Extreme Case. A. Agusti Planell.—p. 153.

Prophylaxis of Ophthalmia Neonatorum.—Vidal emphasizes the necessity for laws in Spain making compulsory the disinfection of the eyes of the newly born, and other measures for collective prophylaxis of blindness.

Pubiotomy in Extreme Case.—The rachitic lumbar kyphosis and anteflexion of the uterus, with transverse diameter of only 8 cm., were combated by pubiotomy and stretching the severed bone apart for 6 cm. The child was safely delivered and the wound healed with only a slight febrile reaction. Fifteen days after delivery an apical tuberculous process became manifest and rapidly spread through the lungs, with death the fortieth day after delivery.

Brazil-Medico, Rio de Janeiro

Nov. 15, 1919, **33**, No. 46

*Case of Actinomycosis. O. Torres.—p. 361.

Cervicofacial Actinomycosis.—The lesions in the case reported by Torres were on the face and neck of a working man of 43, the third case of actinomycosis he has encountered. As in the other cases, the diagnosis had been cancer at first. Treatment with sodium iodid and arsphenamin has been begun.

Dec. 6, 1919, **33**, No. 49

*Ichthyosis. Werneck Machado.—p. 385.
Epidemic Poliomyelitis in Uruguay. V. Escardo y Anaya.—p. 389. Cont'n.

Ichthyosis.—Werneck Machado gives an illustrated description of three cases of ichthyosis in children now under treatment in his service. He knows of only five other cases in Brazil. Two of his own three cases are brother and sister, and others tell of cousins with the same trouble. In two of these eight Brazilian cases the infants were 2

and 4 months old, but one patient is a young man. The parents were cousins in one case, and inherited syphilis was evident in two others. In treatment, besides the general tonics and special measures, efforts to rouse the skin to better functioning are indicated, and among these he commends in particular jaborandi and its alkaloid, pilocarpin. Fox ascribes to thyroid treatment the recovery in his case. Polyglandular treatment might prove more effectual in other cases. Great improvement was realized under mercury and potassium iodid in one child with a syphilitic father. In addition to other external measures, steam baths and Russian baths have proved useful.

Crónica Médica, Lima, Peru

October, 1919, **36**, No. 676

*Bacillary Dysentery in Peru. E. Escomel.—p. 339.
*Urinary Calculi. C. Morales Macedo.—p. 342.
*Pathogenesis of Delirium Cordis. M. Arias Schreiber.—p. 350.
Forensic Case of Oxalic Acid Poisoning. L. Avendaño and M. A. Velásquez.—p. 353.
*Case of Hirschsprung's Disease. E. P. Manchego.—p. 359.

Bacillary Dysentery in Peru.—Although Escomel has made it his routine practice for fifteen years to examine the stools in cases of dysentery, he never found any bacilli that could be incriminated except in an epidemic of dysentery at Yura in 1917, and this did not spread beyond the limits of the town. The dysentery proved amenable to the treatment which has yielded such constantly good results in trichomonosis by his technic. His method has been described in these columns, May 17, 1919, p. 1501. It consists essentially in three enemas daily composed of 15 or 20 drops of oil of turpentine emulsioned with the yolk of one egg and 60 gm. of distilled water, and from 5 to 20 drops, according to age, of laudanum. Each enema is retained as long as possible. An astringent, bismuth salicylate, and camphorated tincture of opium are given by the mouth, with hot applications to the abdomen every two hours. The prompt recovery under this combined treatment seems to indicate that these bacilli live in the rectum, as a rule. The liver returned to normal as the other symptoms subsided, which testifies that the liver complications are of toxic origin, the hemorrhoidal veins providing a ready means of access for the toxins from the rectum. Escomel was recently awarded a prize by the Académie de médecine at Paris for his notable contributions to the knowledge and treatment of tropical diseases.

Operative Indications for Calculi in Kidneys or Ureters.—Morales reviews nine different conditions that may be induced by renal lithiasis, and the indications with each. As general contraindications he cites syphilis and tuberculosis, which should be given treatment before operating for stone, outside of emergency cases. The operation also should be postponed with gonorrheal arthritis, or very violent gonococcus infection of any kind. The temperature and lack of any recent great loss in weight are also instructive. The heart, blood pressure, blood count, etc., should never be neglected, and with very nervous patients, it may be advisable to delay the operation until a course of psychotherapy has been given.

Delirium Cordis.—Arias presents evidence to show that fibrillation may be of nervous origin in some cases. This explains the cases in which the general condition keeps good, notwithstanding the permanently irregular pulse.

Megacolon.—Manchego's patient was a man of 38 and the Hirschsprung disease was not recognized until the abdomen had been opened by an exploratory laparotomy.

Medicina Ibera, Madrid

April 26, 1919, **7**, No. 77

Traumatic Shock. E. Diaz y Gómez.—p. 61. Cont'n.
Syphilitic Facial Paralysis. Miguel F. Criado.—p. 63.
The Manic-Depressive Psychoses. R. Alvarez Salazar.—p. 64.
Nervous Disturbances in Children. H. Rodriguez Pinilla.—p. 78. Conc'n.

Dec. 6, 1919, **9**, No. 109

Auscultation of the Pulse. A. Crespo Alvarez.—p. 177.
Expulsion of Giant Gallstone. Santiago Carro.—p. 179.

Prensa Médica Argentina, Buenos Aires

Nov. 30, 1919, **6**, No. 18

*Treatment of Fractured Leg. A. F. Celesia.—p. 181.
*Liver Tumor in Infant. Casaubon and Bacigalupo.—p. 183. Conc'n.
*Psychology of Aphasia. Enrique Mouchet.—p. 187.
*Wiring of Aneurysm. Nicolas Tagliavacche.—p. 189.

Fracture of the Tibia.—Celesia is delighted with the results obtained in twenty cases with a light plaster cast applied to allow free use of the knee and ankle after fracture of the tibia. The patient could walk about while the fractured bones were healing under the immobilization, the plaster collar above and below fitting against the tuberosities of the tibia and the malleoli. The patients are walking by the second or third day, and the muscles keep well nourished and strong.

Liver Tumors in Infants.—Casaubon and Bacigalupo report a liver tumor in a 10 months babe. Several photomicrographs are given, and 33 cases of neoplasms in the liver in children are tabulated as compiled from the literature, and 11 cases of metastatic liver cancer. The primary tumor was in the right kidney in 4; in the left in 5, and in the pancreas in 2. In one infant of 2 months a sarcoma had developed in both liver and suprarenal at the same time. These cases supplement the 28 compiled by Steffen.

The Psychology of Aphasia.—Mouchet describes a case of aphasia in a man of 63 and lists sixty-six titles on the psychology of aphasia.

Wiring an Aneurysm.—Tagliavacche gives an illustrated description of an aneurysm of the descending aorta in which marked improvement followed wiring, introducing 21 meters of copper wire. The patient is a man of 64 in such a grave general condition that long survival is not to be expected.

Dec. 30, 1919, **6**, No. 21

*Chronic Mediastinitis from Tardy Inherited Syphilis. M. R. Castex and J. J. Beretervide.—p. 213.
*Chronaximeter. V. Tedeschi.—p. 217.
Influenza Bacillus Meningitis in Infant. J. P. Garrahan and C. Gourdy.—p. 220.
Arrhythmias. P. M. Barlaro.—p. 221. Continuation.

Chronic Mediastinitis from Tardy Inherited Syphilis.—Castex and Beretervide say that chronic mediastinitis of syphilitic origin in children has been well studied and also from acquired syphilis in adults, but they do not know of any case like the one they describe in a man of 28 in which there were other manifestations of inherited syphilis, and the mediastinitis was a recent tardy development. The compression of the vena cava dominated the clinical picture. The slow but progressive improvement under specific treatment showed that the trouble was from gummas rather than from irreparable sclerosis.

Electric Device for Electrodiagnosis.—Tedeschi gives an illustrated description of his apparatus which, he says, avoids the errors of other chronaximeters and similar apparatus. The current passes merely during the impact of two elastic balls.

Semana Médica, Buenos Aires

Nov. 6, 1919, **26**, No. 45

*Ankylosis of the Knee. J. M. Jorge.—p. 539.
*Poisonous Anise. J. V. Negrete and C. F. Velarde.—p. 554.
*Percutaneous Tuberculin Treatment. S. de Madrid.—p. 565.
*Cyst in Infant's Spleen. J. Bacigalupo and A. Grosso.—p. 576.
Resolutions Adopted by Argentine Tuberculosis Congress.—p. 578.
*Eugenics. L. Mathé.—p. 581.

Ankylosis of the Knee.—Jorge gives roentgenograms of ten cases of ankylosis calling for surgical treatment. He warns that it must not be forgotten that the tissues around the joint are less resistant than normal, and cannot stand much pressure. He warns further that typical resection of a joint should not be done on a child either for arthritis or ankylosis. One of the illustrations shows the irreparable damage done by resecting the knee for a tuberculous process at the age of 14. Jorge reiterates that the epiphyseal cartilage should always be held absolutely sacred and left unmolested.

Toxicity of Japanese Star Anise.—Negrete and Velarde have been studying samples of *Illicium religiosum* which had caused sickness in a number of children. It is evidently a poison for the central nervous system, inducing in all the

laboratory animals tested periodical or subcontinuous convulsions and paresis. The symptoms are so typical that it might prove useful as a drug for biologic tests.

Tuberculin Treatment by the Percutaneous Route. — De Madrid has given this treatment in hundreds of cases and here defines its indications and contraindications, and extols its importance as an adjuvant to other measures.

Cyst in Spleen.—The cyst was found in an infant cadaver, the child having died from bronchopneumonia. No symptoms had called attention to the spleen.

Eugenics.—Mathé defines eugenics as applied physiology and biology extended to include collective life. Physicians must take the lead in the new science, he declares, but they must secure the cooperation of sociologists and legislators. Eugenics is closely connected with the fight against alcohol and overcrowding, tuberculosis, and syphilis.

Siglo Médico, Madrid

Dec. 20, 1919, **66**, No. 3445

Incontinence of Urine in Children. F. González Aguilar.—p. 1097. Conc'n in No. 3446.
*Epidemic Poliomyelitis. G. Hurtado.—p. 1101.

Epidemic Poliomyelitis.—Hurtado has applied in a number of cases of advanced poliomyelitis, treatment by light, heat and repose according to the method advocated by Flexner and Lucy O. Wight. The details of a few typical cases are given, the paralyzed children regaining the use of their limbs, although some still tire easily and there is a little atrophy of the members. But even in these, the condition is immeasurably improved.

Berliner klinische Wochenschrift, Berlin

Nov. 3, 1919, **56**, No. 44

*Radiotherapy in Erythremia. Forschbach.—p. 1034.
*Staining of Guarnieri's Bodies. E. Hesse.—p. 1035.
*Kidney Function in Diabetic and Postdiabetic Conditions. P. Weil. —p. 1037.
*Pleural Tumors. E. Kornitzer.—p. 1039.
Critical Studies on Malaria and Staining Technic. H. Simons.—p. 1041. Begun in No. 43, p. 1009.
Proposed Reforms in Medical Course. O. Lubarsch.—p. 1044. Conc'n.

Exceptionally Long Roentgen-Ray Treatment Finally Successful in Case of Polycythemia.—Forschbach reports a case of erythremia that required an unusually long period of roentgenotherapy before the cure was finally realized. The patient, a man of 61, was admitted to the hospital in 1912, complaining of pains in the epigastrium, dizziness and rush of blood to the head. The findings in May, 1912, were: cyanotic appearance of the face; mild peripheral arteriosclerosis; enlargement of the spleen and liver; blood pressure, 165; erythrocytes, 6,000,000. The diagnosis was the hypertonic form of erythrocythaemia rubra. By July, 1916, his condition had grown much worse. At times, on account of dizziness, the patient could not walk alone. The erythrocyte count now varied from 7,000,000 to 12,500,000; hemoglobin was from 100 to 150 per cent.; the white cell count was from 10,700 to 13,600; the urine contained, from time to time, albumin and casts. Venesection brought no relief. July 22, 1916, deep roentgen irradiation of the long bones was begun. The irradiation period usually covered eight days, and was followed by a week's rest, at first; later, the intervals depended on the appearance of the blood picture. The first two periods of treatment had no effect whatever on the blood picture, so the treatments were discontinued, although the patient himself protested that irradiation had brought subjective relief. In the meantime Forschbach's attention was called to the case of Tancré, in which a reduction of the red corpuscles from 14,200,000 to 6,600,000, and of the hemoglobin from 175 to 163 per cent., was brought about. Forschbach was thus encouraged, after the lapse of a year, to recommence treatment in September, 1917. The long bones were treated in the same manner as before, but with longer pauses. Not until after the eighth period of treatment, given from April 9 to May 11, 1918, did the red cell count begin to fall rapidly. By Sept. 13, 1918, it had fallen to 3,300,000 and the hemoglobin to 62 per cent. The treatments were discontinued and by April 23, 1919, the red cell count was 4,796,000 and the hemoglobin 90 per cent. There was also very great improvement in the subjective symptoms. For duration of treatment Forschbach thinks that his case surpasses all reported thus far. He warns that an exceedingly careful control of the red and white cell count must go hand in hand with the use of roentgenotherapy in erythremia in order to avoid serious leukopenia. Premonitory lowering of the white cell count is an indication to lengthen the intervals of rest between the exposures to the rays.

Staining of Guarnieri's Bodies.—Hesse has been trying to improve on previous methods of staining Guarnieri's bodies (vaccine bodies arising in the corneal epithelium of rabbits inoculated with vaccine lymph). He sought a quick method by which only the Guarnieri bodies would be stained, the cell nuclei, leukocytes and the products of cell degeneration remaining unstained. In preparing his stain he used 10 c.c. of a saturated alcoholic solution of cresyl-fast violet (Grübler) added to 90 c.c. of a 5 per cent. phenol solution. The stain is thoroughly mixed and filtered, and can then be used at once. After the slides have been washed with xylene to remove the paraffin, and the xylene has been removed by means of absolute alcohol, the sections are stained for from fifteen to twenty minutes with the cresyl-fast violet; and, without being rinsed in water, a fresh 2.5 per cent. aqueous solution of ammonium ferric sulphate is used as a mordant. The slides are now rinsed in distilled water and are put for differentiation in a 60 per cent. aqueous solution of acetone. The differentiation requires from twenty to thirty minutes, and, until one is thoroughly experienced, should be observed under the microscope. Thus the moment when the cell nuclei and leukocytes have given off the last bit of stain may be ascertained; while, it will be noted, Guarnieri's bodies are distinctly differentiated by a rather dark violet hue. Hesse's investigations with the above described stain lead him to the conclusion (which he considers important) that Guarnieri's bodies are not derived from the nuclei of leukocytes or epithelial cells. The fact that Guarnieri's bodies have entirely different staining characteristics, together with their peculiar structure, indicates, Hesse thinks, their specific origin.

Kidney Function in Diabetic and Postdiabetic Conditions.—Weil distinguishes three forms under which albuminuria may be combined with diabetes: (1) A harmless albuminuria, associated with glycosuria and receding with the disappearance of the sugar, or with the decrease of the high sugar content (saccharogenic albuminuria so called); (2) albuminuria caused by a complicating arteriosclerosis or arteriolosclerosis (diabetic nephrosclerosis), and (3) albuminuria produced by genuine nephritic processes (diabetic nephritis or nephrosis). He states that recent progress in the examination of diabetics has made possible a closer differentiation between benign and malignant forms of nephrosclerosis. He thinks, therefore, that in diabetic nephrosclerosis kidney function tests should be made more frequently than has been done in the past. Often the functional activity will be found to be the same as in simple nephrosclerosis, so that, for the time being at least, the prognosis is more favorable than it would otherwise appear. In other words, from the diagnostic and prognostic standpoint, diabetic nephrosclerosis may be viewed in much the same light as nondiabetic nephrosclerosis.

Myoma of the Pleura.—Kornitzer was unable to find in the literature any descriptions of pleural myomas, as in a case reported. His patient, a man, aged 40, was admitted to the hospital, July 27, 1917. Examination revealed dulness over the right thorax, and respiratory and vocal fremitus could not be elicited. Subfebrile temperatures were noted. Puncture revealed hemorrhagic fluid. The diagnosis was hemorrhagic pleuritis. The disease took a rapid course. August 13, pleural puncture was done and one-half liter hemorrhagic fluid was removed. August 16, the patient died. Necropsy revealed a poorly nourished but strongly built man. On loosening adhesions of the left lung, a round, apple-sized tumor of tough, elastic consistency was found on the posterior surface of the inferior lobe. The tumor,

which Kornitzer calls a fibroleiomyoma, was enclosed in a hard capsule. There were no very firm adhesions between the tumor and the surrounding tissues, but it was attached to the lung by a fibrous strand. This fibrous strand and the free surface of the tumor were covered with pleural endothelium, which was connected with the endothelium enveloping the lung. At the cut surface the tissue was grayish yellow. In the center of the tumor were cavities as large as a cherry, though not sharply outlined. In the right pleura an endothelioma was found, from which, besides numerous other metastases, one of microscopic size had developed in the above described fibromyoma. Kornitzer thought, at first, that the subpleural tissue might perhaps be assumed to be the point of origin of the fibromyoma, but he found in the textbooks on comparative anatomy and embryology no reference to smooth muscle fibers occurring in the pleural tissue. He thinks, therefore, that we must assume that muscle cells, cast off from the walls of blood vessels, constituted the tissue from which the tumor took its origin.

Münchener medizinische Wochenschrift, Munich

Nov. 7, 1919, **66**, No. 45

*The Spring Apex of Tetany. E. Moro.—p. 1281.
*Treatment of Surgical Tuberculosis. E. Kisch.—p. 1283.
*Urology and the General Practitioner. F. Schlagintweit.—p. 1284.
*Human Fat (Humanol) in Surgery. F. Loeffler.—p. 1290.
*Extirpation of Enlarged Spleen. F. Kleeblatt.—p. 1291.
*Gangrene of the Bladder Following Carcinoma Operation. H. Hisgen. —p. 1292.
*Treatment of Old Ulcerating Wounds. R. Pürckhauer.—p. 1293.
Splint for Fractured Radius. Asam.—p. 1293.
So-Called Ulcer Carriers. G. B. Gruber.—p. 1294.
*Abuse of Phenolphthalein. L. Schliep.—p. 1294.

The Spring Peak of Tetany.—Moro's curves confirm the seasonal prevalence of tetany, its gradual increase during the fall and winter months, to its apex about March, when it falls sharply, and then drops off more gradually until midsummer. In adults with a tendency to tetany, as spring approaches, the skin of the hands often feels dead or leathery. Moro connects these facts with the markedly increased irritability of the vasomotor nerves and the vegetative nerve system, and with the increased activity of internal secretions that regularly occur in spring. He adds, "It has been said, 'Night is the time of the unstriated muscle,' and the awakening of the instincts in the animal kingdom shows that it can be said likewise, 'Spring is the time of the internal secretions.'"

Treatment of Surgical Tuberculosis.—The conditions of the war period in Germany, Kisch says, have caused not only a deplorable increase of tuberculosis, but the disease appears also in more serious forms. In surgical tuberculosis, the patients usually have, either simultaneously or consecutively, several foci of infection, often as high as seven or more, and they are characterized by profuse suppuration. The large number and wide extent of the foci, together with the weakened general condition of the patients, and their vast numbers, make it impossible to apply operative measures in all the cases of tuberculosis of the bones, joints, and glands. Kisch employs heliotherapy (natural and artificial) aided by passive hyperemia, and administers sodium iodid. As regards tuberculin treatment, he thinks it will, when used alone, effect a cure only in selected cases. He himself has effected cures by its exclusive use in spina ventosa and scrofuloderma in children, and beginning soft swellings of the lymphatic glands have disappeared. Heliotherapy is applicable to all cases. Kisch states that in the sanatorium associated with the Berlin university surgical clinic, in the majority of cases, immediately after a tuberculous focus has cleared up, or even before, tuberculin treatment is instituted to prevent new foci. Occasionally, because of unfavorable reactions, further tuberculin treatment is contraindicated. Under heliotherapy as described by Kisch, patients with unusually severe tuberculosis of the joints have been cured, and a normal, or at least adequate, function of the joints has been restored. A number of patients over 50 and even 60 years old, with severe tuberculosis of the spine, have been cured. Patients with severe tuberculosis should always be treated in sanatoriums far removed from large cities, where they can get the maximal benefit from sunlight and fresh air. Mild cases may be treated in sanatoriums located at the edge of large cities, so that patients, if necessary for financial reasons, may continue to follow their calling.

Urology and the General Practitioner.—This six-page article is made up of material used by Schlagintweit in a graduate course of lectures. He regrets that most general practitioners have never taken a thorough course in urology. By the average practitioner the kidneys are looked on and studied as one connected organ, whereas the urologist carefully considers the function of each kidney separately. He says that 33 per cent. of all chronic, suppurative processes of the urinary apparatus are of a tuberculous nature. The presence of white corpuscles in the urine is the most significant urinary symptom. Pollakiuria in the daytime, but not at night, can be only of nervous origin, especially if micturition is not painful or difficult, for any inflammatory irritation or congestion of the bladder or the region of the vesical sphincter will awaken the patient at night by the desire to urinate. Under such conditions, when the bladder fills to a certain degree, it manifests itself as regularly as an alarm clock. In the case of an old man, frequent desire to urinate at night, provided he has to strain and wait for the flow to begin, or has to walk around a while first, may be taken as a sign of hypertrophy of the prostate. The cardinal urologic symptoms which Schlagintweit regards as indicating the urgency of a thorough instrumental diagnosis and therapeusis, possibly necessitating local or general anesthesia are: (1) acute retention of urine; (2) unendurable pain, especially colicky pain; (3) fever; (4) total anuria; (5) chronic uremia; (6) rapid emaciation, and (7) severe hemorrhage. Aside from the foregoing indications, all urologic diseases may be profitably treated by rest in bed, application of heat and the administration of mild narcotics, for two or three weeks, until the true condition of affairs can be cleared up. Urologic diseases, especially those of the lower urinary passages, that do not clear up promptly following rest in bed, are usually due either to some mechanical cause or to some pathologic condition of the upper urinary passages; for example, a cystitis arising from a pyelitis or prostatitis. We must never assume that a pyelitis that has existed for years is incurable without considering that the condition may be unilateral, and that it may be cured by unilateral nephrectomy.

Value of Fluid Human Fat (Humanol) in Surgery.—This article is a preliminary report of Loeffler's experimental use of humanol (fluid human fat) in surgery. He has been using humanol for three years and it has given excellent results. Humanol is obtained from the fatty tissue secured in connection with operations (abdominal fat, lipomas, etc.). All connective tissue is removed, and the fat is then heated for three hours over a water bath and filtered. Only the fat of healthy persons is used. Good results were secured by using humanol for the isolation of tendons and nerves from adhesions, and to prevent the formation of new adhesions. After the tendon or nerve has been removed from surrounding adhesions and all hemorrhage has been stopped, the wound is closed, leaving a pinhead opening just large enough to admit the tip of the syringe. The suture is drawn tighter, the humanol is injected, and the suture is then tied. Light effleurage spreads the humanol around. The wound heals well, and the cicatrix is soft and elastic. In numerous tendon transplantations on the foot, in infantile paralysis, humanol was used, and there were no disturbances caused by adhesions. In hand and finger injuries humanol found its widest application. Loeffler has not been able to discover that humanol softens scars as claimed by Wederhake. In joint injuries (arthritis deformans, arthrogenous contractures) it was found useful. Iodoform glycerin had come to be regarded as most valuable in treating the rapidly increasing number of cases of tuberculosis of the bones and joints. But glycerin became scarce and was of poor quality. Then again, a high fever was often caused by the injection of small quantities of iodoform glycerin. Accordingly, Loeffler used 5 or 10 per cent. "iodoform humanol," injections of

which gave exceptionally good results. Iodoform glycerin has therefore been discarded. As humanol is absorbed within from five to seven days after subcutaneous injection, Loeffler cannot recommend its use for plastic purposes. If mixed with animal and vegetable fats (e. g. tallow), the humanol is absorbed, while the other ingredients are left as a foreign body.

Indications for Splenectomy. — Kleeblatt states that the spleen is being removed nowadays in all sorts of cases, without very clear indications therefor. However, after other forms of treatment have failed, tumors of the spleen, associated with kala-azar and malaria may justly be removed for mechanical reasons; for example, on account of rupture or too great size. Now that we assume that leukemia is a systemic disease affecting the lymphatic glands and the bone marrow, and that the enlargement of the spleen is only an accompanying phenomenon, the failures following extirpation of the spleen should no longer cause surprise. Removal of the spleen for polycythemia is not indicated, for the reason, he says, that the disease, though it has various etiologic factors, has nothing to do with the spleen. Küttner and others have reported cases of polycythemia arising after extirpation of the spleen. In isolated tuberculosis of the spleen, removal of this organ rests on a good basis. It is also indicated in all diseases attended with severe hemolytic processes; for example, hemolytic icterus, hypertrophic cirrhosis of the liver and atrophic cirrhosis (Banti's disease) in the first and second stages, but only as a last resort in the third stage. In pernicious anemia the good effects are transitory. Splenectomy is contraindicated in thrombosis of the portal vein and all disease processes caused by primary portal stasis. The urobilin excretion as a measure of the hemolytic processes in the body (Eppinger), Kleeblatt thinks, may eventually make clear the indications for extirpation of the spleen.

Gangrene of Bladder Following Vaginal Carcinoma Operation.—A long convalescence followed an uneventful operation for carcinoma of the portio vaginalis performed by Hisgen on a 28-year-old nullipara. After the operation the patient presented a septic appearance. The urine contained more and more blood, and by the seventh day had a strong odor. Bladder lavage was done and hexamethylenamin was administered. On the seventeenth day the lower end of the abdominal incision began to swell, and on the twenty-fifth day it broke open, and an incredible quantity of foul-smelling fluid was evacuated. A piece of necrotic tissue almost the size of a man's hand appeared in the wound and was removed. The palpating finger was able to touch through the fistula a catheter introduced through the urethra. It was thus evident that there was an extensive defect in the bladder wall. A retention catheter was inserted in the urethra and lavage several times daily was done. The temperature gradually became normal, the urine clearer, and the odor less noticeable. In three weeks the fistula in the abdominal wall had closed and the catheter was removed. Two months after the operation the temperature was normal. The patient was free from subjective symptoms, but was much emaciated. The cystoscopic examination, just before the patient was dismissed, revealed that the region of the trigonum was scarcely changed; both ureters were functioning normally. At the base of the bladder, next to the posterior wall, there was whitish, shiny tissue (doubtless scar tissue). In three months the patient had completely recovered. The primary cause of the condition was doubtless deficiency of the blood supply owing to the bladder wall having been detached to such an extent. Secondarily, an infection from the wound cavity in the pelvis destroyed completely the badly damaged portion of the bladder wall. Whether adhesions had roofed the space could not be definitely ascertained, but, in any event, the patient can now retain the same amount of urine as before the operation.

Treatment of Old Ulcerating Wounds.—Pürckhauer reports his success in using Drehmann's method of treating old ulcerating wounds, and regrets that the method is not better known, as the prompt results secured make it worthy of the widest recognition. The physiologic principle on which the method is based is the securing of a better blood supply by removing obstructing factors. The wound is scraped with a sharp curet, and then a circular incision is made in the surrounding healthy tissues down to the fascia, and even through the fascia, in case there are strongly supporting bones, as, for example, in the front of the leg. The edges of the wound are approximated by means of adhesive strips. After about five days the strips are removed, showing surprisingly good results. The base of the wound, which had presented a dead appearance, is covered with fresh, lively granulations, and the surface of the wound is considerably smaller. Fresh adhesive strips are applied and in a short time the wound is healed. Rest in bed must be strictly observed. Pürckhauer has thus succeeded in causing wounds to heal that had defied all other treatment for months and even years. Some of the ulcerating surfaces had been as large as a saucer.

The Abuse of Phenolphthalein.—In view of the fact that Fuld's warning uttered in 1909 does not seem to be heeded, Schliep calls renewed attention to the fact that phenolphthalein even in small doses of 0.1 gm. [the U. S. P. average adult dose is 0.15 gm.] may cause serious hemorrhagic nephritis attended by severe anemia. He regrets especially that phenolphthalein is used as an ingredient of biscuits, cakes, chocolate confections, bonbons, drops, etc., as these are given to children in indiscriminate quantities without a physician's prescription. Schliep has compiled a list of seventy-two proprietaries containing phenolphthalein, which he reports in full, and cites a few cases of severe phenolphthalein poisoning in Germany. One man of 59 had transient heart failure and nephritis after he had taken only 0.6 gm. in the course of twenty-four hours. In two other cases there were hemorrhagic nephritis and jaundice with serious collapse.

Therapeutische Monatshefte, Berlin

November, 1919, **33**, No. 11

*Intraspinal Medication. G. Neumann.—p. 401. Conc'n.
*Thermal Baths in Cardiovascular Disease. Grunow.—p. 406.
*Puncture Treatment of Anasarca. R. von den Velden.—p. 417.
*The Capacity for Synthesis of the Human and Animal Cell. Grumme. —p. 421.

Intraspinal Treatment Exclusive of Serotherapy.—The first instalment of Neuman's article was briefly summarized on page 143. The final conclusions of the article state that the outcome of intraspinal treatment of tuberculous meningitis with tuberculin and of tetanus with silver preparations is dubious, and that intraspinal treatment with magnesium sulphate is fraught with danger and can be replaced by other methods. Intraspinal administration of drugs seems to have benefited in treating meningitis with sodium chlorid solution, Ringer's fluid, optochin, and silver preparations. But the number of cases to date is too small for a conclusive judgment. A decision is most difficult in respect to the effects of intraspinal administration of arsphenamin. It has proved unquestionably successful in certain cases of neurosyphilis, but this generally responds well to treatment by the vein. The clinical symptoms in tabes and progressive paralysis do not always keep pace with the serologic improvement. To date there is no evidence to prove that tabes and paralysis can actually be arrested by intralumbar treatment, as some maintain. She concludes the article with the remark that the dangers of intraspinal treatment seem great, and out of all proportion to the benefit therefrom. It should be applied only after failure of other measures. A bibliography giving the titles of sixty-six articles is appended, including three from THE JOURNAL.

Thermal Baths with Cardiovascular Disease. — Grunow refers to thermal mildly saline, noncarbonated waters, supposed to be strongly radioactive, and discusses the indications and contraindications. An especially favorable influence may be expected with arteriosclerosis and intermittent limping; aortic defects; syphilitic vascular lesions; gout and obesity, provided the myocardium with the latter is functionally capable; and neuroses of the heart and vascular system. The waters soothe the tendency to spasm and dilate

contracted vessels, but special care is necessary when there is a neurotic tendency. The finest results have been realized in Raynaud's disease and similar conditions.

Puncture in Treatment of Edema.—Von den Velden comments on the dread which general practitioners so often display in respect to tapping anasarca. He gives the tracings from two of twenty-three cases in which the benefits from puncture were particularly striking. In one, the weight dropped 16 kg. in three days after puncture of the skin on both legs; in the other case 13 liters of edema fluid drained away in one day, to a total of 25 liters by the sixth day. The puncture is done with a fine trocar, 0.5 to 1.5 cm. deep, in a series of from five to fifteen rows of puncture holes, 1 or 2 cm. apart, on the foot or leg where the edema is the most pronounced. From fifty to eighty puncture holes were thus made on each leg, as a rule, and the results far surpassed those with incisions and cannulas. Small incisions heal up too quickly; large ones heal badly. The patient is prepared three or four hours beforehand by shaving the legs and wrapping them in cloths moistened with alcohol or mercuric chlorid solution, as he sits in an easy chair, the feet on a soft stool. The punctures take only a few minutes, only two minutes with practice, and the legs are then wrapped anew and the patient stays in the chair for at least a day. The dressings are changed twice in twenty-four hours, and no disinfectants are used. A little morphin beforehand may be advisable.

Assimilation of Inorganic Mineral Salts.—Grumme presents arguments to prove that inorganic iron cannot be assimilated, as also all mineral salts not combined with albumin, and he refuses to accept the statements in the literature to the contrary. He declares that the experiments and experiences on record do not justify the conclusions that have been drawn from them. Inorganic iron, he insists, has merely a stimulating action. The only iron or calcium that is assimilated is that in the food, as it is combined with groups of albumin atoms. Animals perish when they are deprived of organic iron, even although they may be getting large amounts of inorganic iron. It may be possible, he suggests, to add to iron-poor food some artificially prepared combination of albumin and iron which might be readily assimilated and bring the food up to the required level of organic iron.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Nov. 15, 1919, **2**, No. 20

*Examination and Diplomas. G. van Rijnberk.—p. 1513.
*Whooping Cough. B. H. Sajet and J. van Gelderen.—p. 1525.
Hospitals and Sickness Insurance. C. W. Vrendenberg.—p. 1546.

Examinations.—Van Rijnberk discusses what examinations are good for and what they should be. A passage from a recent work by B. Fischer is quoted which states that in Germany the incompetents are not weeded out by the examinations, "so that there is no one so feebleminded or incompetent (aside from the insane requiring internment) that cannot in time and finally pass the examination for the medical degree."

Whooping Cough and Its Prevention.—Sajet and van Gelderen analyze the statistics in regard to whooping cough at Amsterdam since 1890. Among the curious facts thus brought out is the increase in the mortality from whooping cough from 3.81 to 5.99 per cent. of the general mortality in 1890-1899 and 1907-1916, respectively. Another fact is the higher mortality in the northern and western parts of the country, and in the bleaker months. Children of the poorer classes contract whooping cough from their mates while quite young. Only 10 per cent. developed it during the school years, while the children of the well-to-do escaped it young, 37 per cent. acquiring it in school. As whooping cough grows less and less dangerous for a child after the age of 5, this testifies to the graver danger from whooping cough for the children of the masses. The mortality under 1 year was 42.3 per cent.; from 1 to 5, 55.9 per cent., and above the fifth year only 1.8 per cent. It is mentioned further that the mortality from whooping cough was three and a half times smaller in Jewish families than in others. In prophylaxis they urge the special importance of protecting the younger children against infection with whooping cough. Every child admitted to an institution for quite young children should be regarded as suspected of various acute infectious diseases until time proves the contrary. They advocate that compulsory notification should be enforced, and a service for combating acute infectious diseases should be organized, as also ample hospital facilities for whooping cough children.

Acta Medica Scandinavica, Stockholm

Jan. 23, 1920, **52**, No. 5

*Muscular and Reflex Segmentation of Abdominal Wall. G. Söderbergh.—p. 647.
*Changes in the Blood After Experimental Feeding with Spleen Tissue. A. Brinebmann.—p. 689.

Neurology of Abdominal Wall.—Söderbergh's article is in French. He reviews his previous researches and adds the results of new on the innervation of the abdominal reflexes, according to the segment of the spinal cord and roots involved. Eleven clinical cases of spinal paresis or meningitis are analyzed. It must be borne in mind, he says, that the motor and reflex symptoms are more objective than the sensory symptoms. Also that the extramedullary tumors are almost all located in the dorsal region of the cord. The extent of the area of rigidity is instructive.

The Blood on a Spleen Tissue Diet.—Brinchmann fed guinea-pigs and rabbits on fresh beef spleen, and devotes nearly a hundred pages to minute analysis of the changes in the blood on this diet. Within two hours after the meal the number of both red and white corpuscles is much reduced, the reds dropping off by 11 per cent. and the whites by 21 per cent. on an average, the lymphocytes by 37 per cent. The blood usually had returned to normal by the end of two hours.

Hygiea, Stockholm

Jan. 16, 1920, **82**, No. 1

*Operative Treatment of Embolism. H. Sundberg.—p. 1.
*Some Ancient Remedies. H. Kjerrulf.—p. 12.

Operative Removal of Embolus.—Sundberg reports another successful case to add to the 6 on record in which an embolus was removed from an artery (exclusive of the pulmonary artery), with a permanent cure. These 6 are the only permanent cures from arteriotomy in the total of 20 cases he has compiled, and in 4 of this group of 6 the operation had been done by a Swedish surgeon. In his own case the patient was a man of 63 with myocarditis and extensive arteriosclerosis, and the embolus was drawn out, and the artery sutured afterward with button sutures, the suture taken only through the outer and middle coats, using a fine curved needle and extremely fine silk lubricated with petrolatum. There was no bleeding, and the man has had no further disturbances from it since. Sundberg ascribes the lack of thrombosis later to the exact coaptation of the walls of the artery and the fact that no sutures entered the intima. The patient was the oldest one on whom such an operation has been performed, and the heart disease and arteriosclerosis and the long interval render the success all the more striking. In Proust's case the interval was fourteen hours and the thrombus was 12 cm. long; in Lundmark's case, ten hours, and 3 cm. long, and in the present case, twelve hours and the thrombus was 86 cm. long. The operation was done under local anesthesia and 0.015 gm. morphin. The longitudinal incision was 2 cm. long, just at the point of the bifurcation of the common femoral artery. The upper end of the embolus was drawn out and the spurting blood was arrested by clamping above, and clamping the deep femoral. The continuation of the thrombus in the superficial femoral was then seized with forceps and gently pulled out in one piece. Convalescence was retarded by a slight thrombophlebitis, but since then there have been no disturbances in the leg.

Ancient Remedies.—Kjerrulf gives a historical sketch of the acqua magnanimitatis of the seventeenth century, and of the use of formic acid as a drug, which was of still older origin.

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GENERAL PROGNOSIS OF SYPHILIS IN THE LIGHT OF RECENT PROGRESS

SIGMUND POLLITZER, M.D.

NEW YORK

The additions to our knowledge of syphilis during the last two decades are: (1) the discovery of the spirochete; (2) the Wassermann test, and (3) the new organic arsenic compounds. To these achievements of primary importance may be added the use of the dark-field microscope and the employment of spinal puncture for diagnostic and therapeutic purposes.

DISCOVERY OF THE SPIROCHETE

The discovery of the spirochete is one of those fundamental additions to our knowledge, the ultimate effect of which it is impossible to gage. The whole field of experimental syphilis has been placed on a scientific basis, and progress is as inevitable as it was in other fields after the discovery of the germs of diphtheria, tetanus, etc. A vista of unlimited possibilities has been opened.

In the meantime this discovery has added a factor that has enormously improved the general prognosis of syphilis. It may be stated that there is no factor in the prognosis of syphilis that is comparable in importance with early and energetic treatment. The syphilis that has been generalized in the system, that has infected every organ and tissue, that, in the course of years, has induced sclerotic changes in important structures, presents an entirely different prospect of cure from the disease in its incipience. The treatment of syphilis by the vigorous exhibition of arsphenamin in its primary stage, while the disease is still largely a local infection and before the organisms have acted long enough on the tissues even to provoke the development of a positive Wassermann reaction, results in the immediate cure of the disease in practically every case. It is in its primary stage that the prognosis of a properly treated case of syphilis is at its very best. On this point there is universal agreement among syphilographers.

Twenty years ago this golden opportunity for the cure of the disease, even if we had then possessed the potent remedies now at our command, would have been allowed to pass. Twenty years ago it was the accepted practice to await the development of secondary lesions before instituting treatment. This practice was entirely justified in the existing state of knowledge. It was, as it is today, an admitted fact that the diagnosis of syphilis based on the clinical aspects of the initial lesion cannot be made with absolute certainty. On the one hand, the supposed chancre might not be syphilitic and the patient therefore was subjected unnecessarily to the anguish and the hardship of a prolonged course of treatment; or, on the other hand, the institution of treatment in the primary stage, by suppressing the secondary manifestations, would in the majority of cases result in a doubt of the diagnosis on the part of the patient with consequent neglect to pursue the treatment to its end.

It is today a common experience for syphilologists to hear from a tabetic or an old cardiac syphilitic the story of a slight sore, its cauterization by the physician, the taking of some pills for a few weeks, and then nothing more in the way of treatment or of symptoms till the grave and possibly hopeless lesions of the late syphilitic made themselves manifest. It was, therefore, correct practice twenty years ago to await the development of secondary lesions, not only for the purpose of establishing the diagnosis on a firm basis, but also to convince the patient of the correctness of the diagnosis and thereby insure a greater fidelity to treatment. Waiting until the appearance of secondary lesions, however, meant waiting until there was a wide invasion of the system, waiting until a profound spirochetal septicemia was established. In the case of any other local infection, no one would think of postponing for a single moment the steps necessary to prevent systemic infection. Today, through our knowledge of the spirochete, with the aid of the dark-field microscope, we are able in a few minutes to make a positive diagnosis of syphilis in every case of untreated chancre and to take the necessary measures to cut short the further systemic infection.

The prognosis of syphilis has been immeasurably improved, in this respect alone, by the discovery of the spirochete.

At the other end of the scale of syphilitic lesions, Noguchi's discovery of the spirochete in the tissues of the central nervous system has definitely placed tabes and paresis—the affections formerly spoken of as parasyphilitic—in the group of syphilitic affections, bringing to an end the fifty years' controversy as to their nature. The new studies of the spinal fluid have brought out the fact that the foundation for these late lesions of the central nervous system is laid in the early stage of the disease, probably at the time of the first great generalization of the spirochetes; more than half the cases of syphilis show evidence of disturbance in the spinal fluid at this early period. On the other hand, it is a common observation that cases of tabes and paresis give a history of little or no treatment in the early days of their disease, and though there are exceptional cases that seem to have been well treated by the former methods, early neglect is the rule. The time to cure paresis and tabes is the time at which the

central nervous system is first invaded and before the anatomic lesions that follow many years later have developed. I venture to predict that with the diffusion of the knowledge of the supreme importance of early energetic treatment by the new remedies, the incidence of these terrible and generally hopeless effects of syphilis will greatly diminish, and the general prognosis of syphilis be proportionately improved.

THE WASSERMANN TEST

The second great achievement of recent years is the application of the Bordet-Gengou method of complement fixation to syphilis—the Wassermann test.

In all the fluctuations of opinion as to the significance and value of this test one fact has remained clear, namely, that a strongly positive Wassermann reaction is found practically only in syphilis, and that a strongly positive Wassermann reaction means syphilis.[1] This test has aided in the proof of the syphilitic nature of the late lesions of the central nervous system, of the sclerotic changes of the cardiac valves and of aortic aneurysm; it has abolished Colles' and Profeta's laws by showing that in these cases both mother and child are protected against infection because they are already syphilitic. It has awakened the profession and the public to the unsuspected extent of the prevalence of syphilis in every community in which a systematic investigation has been made, and by increasing our knowledge of the extent and gravity of the disease has served as the great stimulus to the administration of proper treatment and to this extent has benefited the prognosis of the disease in the individual. Never in the history of syphilis has there been so extensive a knowledge of its nature and so general an effort to curb its spread by education and other prophylactic measures along the lines of "social hygiene."

Furthermore, the Wassermann reaction is used as an index of the efficacy of treatment and thus as a prognostic sign. On the theory that the Wassermann reaction is due to the presence of certain bodies in the blood that are produced as the effect of an interaction of the spirochetes and the tissues, it is an obvious deduction that the disappearance of the Wassermann bodies from the blood indicates the disappearance of the spirochetes. Unfortunately, this deduction goes too far; the disappearance of the Wassermann bodies from the blood of the syphilitic, the occurrence of a negative Wassermann reaction, indicates only the cessation of the interaction of tissues and spirochetes and not necessarily the eradication of the spirochetes. It seems that a negative Wassermann reaction in a syphilitic means only that there are no foci of spirochetes in the patient sufficiently active to bring about the formation of an appreciable quantity of Wassermann bodies in the blood; but it affords no proof of the eradication of the spirochetes. We know that the late syphilitic with a gumma in the skin, or with obvious symptoms of syphilis of the central nervous system, frequently presents a negative Wassermann reaction. We know, furthermore, that vigorous treatment in the secondary or the later stages commonly results in a negative Wassermann reaction which subsequently may become positive. As an index of the complete spirochetal disinfection of the patient, a negative Wassermann test at a given moment is relatively useless. On the contrary, however, as an index of failure to eradicate the spirochetes, a positive Wassermann reaction in the syphilitic under treatment has the greatest value and demands the continuance of treatment.

This brings us to the question of the significance of a positive Wassermann reaction in the old asymptomatic syphilitic. I have in mind two classes of cases:

First, the syphilitic who has been well treated for several years, whose spinal fluid is negative, who presents no physical evidence of his disease, but whose blood serum persistently shows a strongly positive Wassermann reaction, which energetic courses of treatment have been able at most to render temporarily a little less strongly positive. I have seen so many of these resistant Wassermann-positives become Wassermann-negative as the result of further treatment, that in my opinion systematic treatment should be continued for at least three years before we can think of relegating the patient to the class of the permanently Wassermann-positive. It is possible that such a patient harbors spirochetes in his viscera and that occasional short courses of treatment maintained for a number of years will serve to prevent the manifestation of any syphilitic lesions; but further energetic treatment of the kind that is demanded in the first years of his infection seems to me no longer required.

Second, a class of elderly patients in whom, as the result of a thorough clinical examination, a strongly positive Wassermann reaction is discovered, as it were, by accident. These patients present no clinical evidence of syphilis whatever; they give no history of infection, or they may perhaps recall a genital sore of thirty years before, and perhaps present a genital scar, for which they never received treatment and from which they never observed any effects. What is the proper line of conduct to pursue with these old untreated asymptomatic Wassermann-positives? The question, in my opinion, resolves itself into a judicious weighing of possibilities and balancing of evils. The man who has carried his spirochetes for thirty or forty years without even being aware of his condition may well be allowed to carry them undisturbed for the rest of his days. When we consider the prognosis of his case, we must admit the possibility that he will die of cerebral hemorrhage as the effect of syphilitic changes in his arteries at the age of 60 or 65 instead of going on to the full span of life. But we cannot be sure even of that; and against this simple possibility we must weigh the great distress which a prolonged course of antisyphilitic treatment necessarily involves and, in the end, the grave doubt as to the ability of such treatment to eradicate the spirochetes. The asymptomatic Wassermann-positive who is well past his fiftieth year, as a rule, should be let alone.

With regard to this class of case as well as with the somewhat younger syphilitic who remains Wassermann-positive in spite of the most energetic treatment, yet presenting no evidence of visceral syphilis, the question arises whether we may not be dealing with a condition analogous to that of the healthy carriers of meningitis, diphtheria or typhoid bacilli; whether there is not a class of spirochete carriers who, while harboring the germs, are themselves immune to their effects. There is a growing conviction among syphilologists that there is indeed a class of harmless spirochete carriers, harmless to themselves, because the spirochetes are merely saprophytes in their host and harmless to others, because, unlike the carriers of meningitis, diphtheria and typhoid, their germs have no way of leaving their host to infect others. However, we must not too lightly

1. In yaws the Wassermann reaction is always positive, in nodular leprosy generally; but with these diseases a question of differential diagnosis from syphilis is not likely to occur, at least in this country.

assume that a given case, asymptomatic and Wassermann-positive, belongs to this class till we have really subjected the patient to adequate treatment and by examination of the spinal fluid excluded the possibility of a still latent syphilis of the central nervous system.

As an aid in the diagnosis of syphilis and as a means of showing the necessity for further treatment in our cases, the Wassermann reaction has enormously enhanced the general prognosis of syphilis.

THE ORGANIC ARSENIC COMPOUNDS

We come now to the third achievement: the employment of the organic arsenic compounds to which the name of arsphenamin has been officially assigned. The extravagant hopes that were entertained ten years ago when this remedy was first announced have not been realized, and in the disappointment of our expectation that a single injection of arsphenamin would permanently sterilize the patient infected with spirochetes, the pendulum has swung too far and we have lost sight of the fact that a complete spirochetal sterilization is, indeed, a frequent achievement. While, in the great majority of cases; prolonged treatment is necessary, every syphilologist can point to some cases in which the disease, attacked in its initial stage, has been eradicated by a single injection or a single short course of injections. The proof of cure in these cases rests on the permanence of the negative Wassermann reaction, on the freedom from symptoms extending already up to nearly ten years, and finally on the frequent occurrence of reinfection with syphilis in these cases. When we consider the enormous chronicity of syphilis, the fact that lesions may occur after an interval of freedom from symptoms lasting for thirty or forty years, it is evident that freedom from symptoms alone cannot be considered a proof of cure. The provocative arsphenamin injection is a futile and often misleading procedure.[2] The only positive proof of cure is a fresh infection. As long as the patient is syphilitic he cannot acquire syphilis; he is immune to a fresh infection with spirochetes. Conversely, the occurrence of a fresh infection is a proof that he was free from syphilis. In the old days, reinfections of syphilis were such rare events that many syphilographers questioned the possibility of their occurrence, and sought to explain the symptoms as relapses in a syphilitic; but the best authorities, including Fournier, finally recognized reinfection as a possible, though rare, accident. Since the introduction of the new remedies, reinfections with syphilis have become a relatively frequent event. Such a case occurred in my own practice only a few days ago:

The patient had acquired a cephalic chancre in 1902. He was treated by pills, which he continued taking intermittently until I saw him in 1914. At that time he presented several patches of a scaling serpiginous syphilid on the neck and scalp, and a positive Wassermann reaction. A course of arsphenamin and mercury by injection rapidly removed his lesions and brought about a negative Wassermann reaction. During the year he received three more courses of treatment, the Wassermann reaction remaining negative. During the next two years he was under observation without treatment, and his blood, examined at intervals, was negative. He was discharged in April, 1917. I saw him again, January 17 of this year. He had been venereally exposed about December 12, and four weeks later noticed a sore on the prepuce. Five days later when I saw him he presented a lesion which no syphilologist would have hesitated to pronounce a syphilitic chancre. Shape, border, floor and induration were characteristic, and on dark-field examination spirochetes were found abundantly present. The Wassermann reaction was negative.

Such occurrences must in the nature of the case be extremely rare. By the time a man has been cured of his syphilis, he has grown older and usually wiser. He is less likely to expose himself quite so carelessly as before; he has had a severe lesson which has sobered him; perhaps he has married. The cured syphilitic, in short, is not so good a target for infection as he was before. But where in the old days we had one case of reinfection we now have a hundred. Every one of these cases, of course properly authenticated, is an absolute proof of the efficacy of treatment, and their greatly increased number in recent times is a proof of the superiority of our present methods over the past. The prognosis of syphilis has been incalculably enhanced by the new remedies.

With this statement of a strong conviction we must be content. It is impossible to give figures of comparison. We know that the majority of syphilitics were symptomatically cured by the use of mercury alone. But we see our hospitals and asylums still filled with the victims of syphilis uncured by this treatment.

BENEFITS OF IMPROVED PROGNOSIS

The recent additions to our knowledge have made it possible to attack the disease by prophylaxis at the moment of infection; to make an infallible diagnosis before the system is swarming with spirochetes; to recognize the necessity for further treatment even in the absence of symptoms; to detect the disease in the central nervous system before clinical symptoms are manifest, and, finally, in arsphenamin, have given us a remedy incomparably superior to mercury in speed of action as well as in efficacy.

It is inconceivable that the next generation will not reap the benefit of the improved prognosis of syphilis.

1 West Seventieth Street.

2. Pollitzer, Sigmund, and Spiegel, L.: The "Provocative" Wassermann Test, Am. J. Syph. 3: 252 (April) 1919.

THE RÔLE OF CARBOHYDRATES IN THE TREATMENT OF TOXEMIAS OF EARLY PREGNANCY *

PAUL TITUS, M.D.

GEORGE L. HOFFMANN, PH.D.

AND

M. H. GIVENS, PH.D.

PITTSBURGH

Nausea with occasional vomiting early in pregnancy is undoubtedly a manifestation of mild toxemia, but the condition is so familiar to every one that it attracts little attention. Patients often demand medical care because they are seriously annoyed by their "morning sickness," without arousing much concern on the part of the physician. On the other hand, many patients, because they think that this condition is to be expected during pregnancy, fail to seek advice until vomiting has progressed to the point at which it may be classed as "pernicious" or "intractable."

Despite the fact that fairly severe toxemia is not at all uncommon, and that mild toxemia is met con-

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* From the Department of Obstetrics, and the Research Laboratories of the Western Pennsylvania Hospital.

stantly, there are many problems presented in this connection that are still without adequate explanation. There are, for instance, the questions of when to interfere and when not to interfere; which is to be a mild case of vomiting that may be expected to cease spontaneously, and which is to become a case of uncontrollable vomiting with inanition, acidosis, dehydration and death; and, in fact, why women should suffer at all during pregnancy from even mild nausea. Undoubtedly there is a relationship between the milder and the graver types of toxemia of early pregnancy, and there is a problematic relationship between these toxemias and those of later pregnancy which we know as acute yellow atrophy of the liver, preeclamptic toxemia, and eclampsia.

It seemed reasonable, on this account, to hope that a study of the milder types of toxemia might disclose important facts regarding the origin of the more serious toxemias. Despite the tremendous amount of work that has already been done along these lines, we felt impelled to begin this study in order to explain, if possible, the success of a purely empiric line of treatment which has given unusually good results in our clinic.

A series of seventy-six cases of toxemia of early pregnancy was treated along certain definite lines. That is to say, our method of approaching this condition underwent a gradual process of development during a period of about five years, one point suggesting another, until the time came when all our patients were subjected to a consistent, well-outlined course of treatment which varied only in being more or less rigid according to the severity of the woman's illness. Further attention to certain details made it possible to apply the same general principles that had been developed to more profoundly toxic conditions, not only during early pregnancy but also late in pregnancy, still obtaining beneficial results with progressively fewer failures.

THEORIES REGARDING ETIOLOGY OF TOXEMIA OF EARLY PREGNANCY

A review of the extensive literature on this subject, with the ingenious theories that have been advanced to explain all toxemia of pregnancy, is the best possible demonstration of the fact that no single idea is sufficiently comprehensive to cover this unquestionably complex matter.

Certain unknown toxic substances are supposed to be elaborated somewhere in the metabolism of a pregnant woman. The presence of these substances in the body is considered to be the cause of the vomiting and of the pathologic changes that result if the diseased condition is prolonged. There are four main theories as to the source of these toxic substances. The first is that they are of gastro-intestinal origin and akin to an ordinary autointoxination; the second, that they occur as the result of disturbances in the various glands of internal secretion; the third, that they are of fetal origin; and the fourth, that they result from disturbance in liver function. Dirmoser[1] was the first to assert that these toxins were the result of intestinal putrefaction, and it is still agreed that autointoxication may be an exciting cause of pernicious vomiting of pregnancy. The thyroid, the parathyroids, the suprarenal glands and the ovaries have all been credited with responsibility without actual confirmatory evidence, while the fetus itself, because of its demands on the mother and because it casts off foreign protein into the maternal blood stream, has been plausibly blamed. So far as the fourth theory is concerned, it is manifest that liver function is disturbed, but the theory offers no explanation of the manner in which this occurs. Disturbance in liver function might as readily be an effect as a cause of toxemia.

Considerable work has been done by Williams,[2] Stone[3] and Ewing[4] on the pathologic changes in the liver and their significance, and the work of these authorities on maternal metabolism is familiar to every one. This is especially true of that done by Williams,[5] who still classifies vomiting of pregnancy as reflex, neurotic and toxemic. Reflex and neurotic types fall into one of two main groups, while toxemic vomiting constitutes the other, and Williams distinguishes between the two by changes in the relation of the ammonia nitrogen to the total nitrogen of the urine, this being termed the ammonia coefficient. It is hardly necessary to consider in detail the questions which Williams' views have brought up, because their importance aroused marked interest, and at the same time no little controversy. No classification should be too sharply defined, and it is probable that all neurotic vomiting of pregnancy has an underlying element of toxemia. On the other hand, toxemic vomiting of pregnancy is usually accompanied, in its beginning at least, by a certain degree of neurosis. In many cases, particularly if seen in the early stages, it remains to be determined, therefore, whether it is the neurosis or the toxemia which predominates in the combination. Symptomatically the two groups are alike, because even a simple starvation is accompanied by acidosis, inanition, and another most important factor, dehydration.

While it is true that no one of these various theories is sufficient to account for the origin of the toxemia of pregnancy which is manifested by nausea and vomiting, nevertheless they offer many clues which must be of value at some time in solving this preplexing problem. We have merely endeavored to follow some of these clues.

DEVELOPMENT OF TREATMENT FROM A DIETETIC STANDPOINT

It has been recommended for some time, especially by Dr. Whitridge Williams, that women suffering from nausea, or the so-called "morning sickness," be directed to eat some simple thing, such as one or two soda crackers and a glass of water, before arising in the morning. Williams suggests that the mental effect of this simple course is important; but benefit follows so often and an elaboration of this procedure gives such significant results that it must be physical rather than psychic in its action.

The first nausea of pregnancy usually affects the patient early each day, soon after she arises. This is after the longest period of fasting in the twenty-four hours. An over-night fast can produce only moderate hunger but any hunger may be considered mild starvation. If eating before making any exertion relieves this morning nausea, it is obvious that there is a relation between starvation and the occurrence of the nausea.

Having relieved some patients of "morning sickness" by directing them to eat either the crackers and

1. Dirmoser: Wien. klin. Wchnschr. **16**: 405, 1903.

2. Williams: Bull. Johns Hopkins Hosp. **17**: 71, 1906.
3. Stone: Med. Rec. **48**: 295, 1905.
4. Ewing: Am. J. Obst. **51**: 145, 1905.
5. Williams: Obstetrics, 1917, p. 551.

water or their regular breakfast in bed, it was a natural step to suggest to those patients who had nausea throughout the entire day, either with or without vomiting, that they eat regularly between meals as well as at the usual mealtimes. It is necessary to specify what and when the patient shall eat, because it is by the use of carbohydrates that the best results are obtained. Excessive amounts of proteins are not demanded or well tolerated, and, indeed, the higher the protein intake the more rapidly does the toxemia progress from bad to worse. This is probably due to the greater nitrogen elimination made necessary by protein metabolism and intestinal putrefaction, and also because of the proportionately lessened carbohydrate intake.

GENERAL OUTLINE FOR DIET HIGH IN CARBOHYDRATES

Article of Diet and Amount	Percentage of Protein	Fat	Carbohydrates	Calories
7:30 a. m.				
2 soda crackers	1.4	1.2	10.2	55
Breakfast, 8 a. m.				
Stewed prunes (6 large)	1.4	...	47.0	200
or 1 baked apple	0.4	0.5	14.0	64
3½ oz. oat-meal	3 8	1.4	17.8	101
or 3½ oz. cream of wheat	3 0	0.2	19.1	93
with ½ oz. sugar and 1 oz. cream	0 8	5.7	16.4	122
Cup chocolate with sugar	4.1	7.5	22.0	325
2 slices toast	5.8	...	32.0	140
1 oz. honey	...	...	25.0	101
10:30 a. m.				
2 slices toast	5.8	...	32.0	140
or 2 crackers	1.4	1.2	10.2	36
1 glass milk	6.2	7.0	9.4	128
Lunch, 12:30 p. m.				
Cream of celery soup	1.8	2.5	4.5	50
or potato soup	8.7	7.1	30.7	225
4 crackers	5 6	4.8	40.8	144
2 slices bread and butter	5 8	...	32.0	140
Lettuce, ½ head	1.2	0.3	2.9	20
1 cup custard	5.1	7.7	32.0	100
or 1 cup cornstarch pudding or 1 cup apple tapioca	0.2	0.07	23.0	100
or 1 cup ice cream	4.9	6.4	23.4	172
or 3 oz. gelatin with cream and sugar	5.0	5.7	29.0	187
"Tea," 4 p. m.				
Tea with sugar	...	...	10.0	40
2 slices toast	5.8	...	32.0	140
1 slice sponge cake	6.3	10.7	66.0	384
Dinner, 6:30 p. m.				
1 cup cream of pea soup	3.6	0.7	7.6	50
or other soups as at lunch				
2 crackers	1.4	1.2	10.2	36
2 slices toast	5.8	...	32.0	140
Baked potato, sweet or white (large)	1.7	...	16.0	100
or 3 oz. rice	1.7	0.1	20.5	92
3 oz. stewed carrots	0.9	0.3	7.5	50
or 3 oz. beets	1.9	0.1	6.1	38
Desserts as at lunch				
or 1 oz. dates	0.7	0.9	26.0	116
or 1 oz. raisins	0.8	1.0	24.0	100
Supper, 9:30 to 10 p. m.				
2 slices bread	5.8	...	32.0	142
or 2 soda crackers	1.4	1.2	10.2	57
1 glass milk	6.2	7.0	9.4	128

This point may be questioned by those who agree with Lynch.[6] He emphasizes in a recent publication the importance of diet in toxemia, but urges absolute restriction of sweets and fruits, giving a diet of proteins and a limited amount of fats in what he calls the hyperacidity group of cases. Hyperacidity or subacidity will have little influence if gastric lavage is employed with any regularity, and the improvement in Lynch's cases was probably due more to the fact that he administered large amounts of glucose and soda by rectum, than to the dry solid diet which he considered essential. It is common knowledge that excessive meat eating is inadvisable during pregnancy, and absolutely to be interdicted in such a toxemia as a preeclamptic state.

6. Lynch, F. W.: Treatment of the Severe Vomitings of Early Pregnancy, J. A. M. A. 73: 488 (Aug. 16) 1919.

The usual outline for the day was a soda cracker breakfast before rising, a light breakfast at the regular time, unsalted soda crackers and milk in the middle of the morning, and a light lunch without meat or pastry at lunch time, the dessert being cornstarch or rice pudding or custard. Afternoon tea with arrowroot biscuits or bread and butter sandwiches was followed at the usual time by a light dinner or supper similar to the luncheon, with some sweets and possibly raisins or dates for dessert. A bowl of bread and milk at bedtime, and some crackers and water on the bedstand for use during the night, complete the twenty-four hour schedule. This was usually sufficient to relieve an ordinarily mild case of nausea and vomiting, if due attention was also paid to elimination by the bowels. It will be noticed that this is not a strictly protein-free diet, but rather, a diet high in carbohydrates.

The accompanying table is presented for the purpose of demonstrating the preponderance of carbohydrates in the diet which has been suggested for these patients. It is scarcely necessary to point out that this is merely a general outline, and that considerable variety is possible if this outline is used as a working basis in the arrangement of menus. It is by no means essential that proteins and fats should be entirely eliminated. Glucose and soda solution supplements the carbohydrate intake to the extent of about 10 gm. of glucose if the patient is given, as is directed below, 1,000 c.c. of 10 per cent. glucose and 2 per cent. sodium bicarbonate solution per day.

More aggravated cases of vomiting may result in spite of this dietetic treatment by direct progression from the one condition to the other, or because the patient fails to carry out these directions. Women whose vomiting is becoming progressively worse require more detailed care and observation. At first all food should be withdrawn for a period of from twenty-four to thirty-six hours in order to give the stomach a complete rest. Gastric lavage should be carried out two or three times daily to remove food residue, bile and mucus, because these patients all present a certain amount of reverse peristalsis. Furthermore, such cathartics as magnesium sulphate are necessary in order to reestablish peristaltic movements downward, and to open the bowels. This may be passed in through the tube, and is usually retained if the stomach has been washed out before its introduction. Enteroclysis of glucose and soda solution, as well as the usual rest in bed is required, and the employment of sedatives in the form of bromids and chloral is customary when indicated.

After the initial period of rest, during which the vomiting usually subsides, the stomach requires reeducation in precisely the same way that it does in any person who has been slowly starving for days or weeks. Either stomach is intolerant of food and would reject any great amount put into it. Consequently small amounts of nourishment are given at frequent intervals after the period of rest seems to have accomplished its purpose. An ounce to an ounce and a half of whey, peptonized milk, skimmed milk and vichy, or buttermilk are given alternately with two ounces of 10 per cent. glucose and 2 per cent. sodium bicarbonate solution every two hours. By mouth or by rectum an effort is made to give the patient at least one quart of the latter solution daily; but if her condition is at all urgent, plain glucose is

given by intravenous injection, and repeated as often as indicated. Wilder and Sansum [7] have demonstrated that as much as 0.8 gm. of glucose may be given intravenously per hour per kilogram of body weight without causing a glycosuria. They have given a large number of such injections, as have Erlanger and Woodyatt [8] in their work on the intravenous injection of glucose in shock. Litchfield [9] has used intravenous injections of glucose in pneumonia, and we have employed it extensively in our work on toxemia, including eclampsia, as well as in normal pregnant women in connection with some research work to which we shall refer presently. In none of the work of the authorities referred to nor in our clinic have there been serious reactions, and with proper technic no reaction should follow. One of the chief precautions necessary is to give the injection slowly. We usually allow one-half hour to inject from 15 to 20 gm. of glucose in 250 c.c. of water. It is also absolutely essential that glucose for intravenous injection should not be a commercial product, but chemically pure, and the solution should be sterilized in an autoclave.

If patients find glucose hard to tolerate, and glycosuria appears, we do not feel that this should influence the treatment more than to indicate a need for a reduction in the amount given, and the intravenous injections may be repeated as often as necessary, while the ingestion by mouth may be continued in lessened quantity. Litchfield has referred to the importance of dehydration in all toxic or starved persons, and this cannot be too strongly emphasized. Water is urgently demanded, and should be given frequently in small amounts during the initial period of rest referred to above. If it is rejected from the stomach, it must be given by enteroclysis or by intravenous injection. In the latter case it is usually given by being used as the solvent for the glucose which we consider necessary.

Ordinarily, by the third or fourth day these patients may have such soups as cream of celery or purée of potatoes added to their diet, with stewed fruits, cornstarch pudding, or ice cream, still continuing the glucose and soda by mouth and by bowel. Crackers, milktoast, cream of wheat and various other gruels, custards and sugar are added next, the important feature of the entire course of treatment being a strict adherence to the regimen laid down, and a careful observation of details. An early return to a substantial diet high in carbohydrates is soon accomplished in most cases.

This lengthy explanation of the dietary procedure that has given the best results in our work has been made solely to point out the reasons for believing that a deficiency in carbohydrate intake is an important factor in the etiology of toxemia of pregnancy. So many of the facts that we have outlined, and so many of the suggestions for treatment which we have made, are known in a general way that it might seem as though nothing new had been offered. This is largely true; but the fact remains that these points, many of them thoroughly familiar to the profession, have not been correlated and put into practice in anything more than a haphazard way, and then are used empirically. Glucose and its usual concomitant soda are ordinarily employed on the ground that there is an acidosis present. It must be remembered, however, that acidosis is a symptom and not a distinct entity in itself, and that it is difficult to be contented with the mere treating of symptoms.

APPLICATION OF THE CARBOHYDRATE DEFICIENCY THEORY

Observing that the free use of carbohydrates in various forms was followed by a large measure of success in toxemia, it was only natural to seek an explanation of this. It was felt that any sound reason which might be offered for the results we were obtaining might give light on the origin and cause of toxemia of pregnancy.

Toxemia of pregnancy is a condition presenting vastly different degrees of severity in different persons, and also some variation depending on the manner in which such organs of the body as the liver, kidneys and gastro-intestinal tract behave under the strain of pregnancy. On these points quite definite statements may be made; but the influence of the various glands of internal secretion is still more or less problematic.

Pregnancy as a condition is a constant of a woman with a growing fetus within her uterus. There must be some variable which affects different women in this state in the different ways just outlined. This variable can hardly be individual or personal resistance to this strain, although that may play a part, for it is quite impossible to predict from a woman's general physical condition or appearance at the time her pregnancy begins whether or not toxemia is to be a serious menace to her. Furthermore, that toxemia which develops at this time is peculiar to pregnancy and not more than distantly related to those which accompany nephritis, diabetes, etc.

Toxemia of pregnancy is favorably affected by regulation of the diet, and there is no one thing in the daily life of various persons that is so variable as their diet. So-called "autointoxication" occurs in both men and women who habitually overeat, especially if they overindulge in proteins. Toxemia of pregnancy may be thought of as being markedly influenced by an improperly balanced diet, and at the same as being peculiar to pregnancy, because the establishment of a growing fetus within the uterus has made a new and profound demand on the metabolism of the mother.

For fear of being thought faddists in this matter of the influence of diet, we are anxious to reiterate that we believe all four of the main theories outlined earlier in this paper have a direct bearing on toxemia. It is a complex matter, and undoubtedly the organs of internal secretion, the demands of the growing fetus, the condition of the gastro-intestinal tract, and lastly the condition of the liver, all have more or less influence, either directly or indirectly. The balance between normal and abnormal pregnancy is so delicate, however, that it requires only some slight disturbance to upset this equilibrium. We believe that a deficiency in carbohydrates is usually the disturbing element, and that the mechanism by which carbohydrate starvation produces toxemia of pregnancy is quite definite.

Carbohydrates are not only well tolerated but actually demanded in the metabolism of a pregnant woman. This carbohydrate demand is apparently in excess of that of ordinary life, and may be explained

7. Wilder, R. M., and Sansum, W. D.: d-Glucose Tolerance in Health and Disease, Arch. Int. Med. **19**: 311 (Feb.) 1917.
8. Erlanger, Joseph, and Woodyatt, R. T.: Intravenous Glucose Injections in Shock, J. A. M. A. **69**: 1410 (Oct. 27) 1917.
9. Litchfield, Lawrence: Glucose Intravenously as a Therapeutic Measure, J. A. M. A. **71**: 503 (Aug. 17) 1918.

by the fact that the growing fetus urgently requires unusually large amounts of glycogen. This subject has been closely investigated by Slemons in his work on "The Nutrition of the Fetus." [10] He finds that the fetal tissues synthesize their protein from material in the fetal blood which has been acquired by diffusion from the blood of the mother, and that fats and lipoids do not cross the placenta but are almost certainly manufactured in the body of the fetus. They are manufactured from carbohydrates which have passed through the placenta from the maternal blood stream, and the fact that Slemons found a slightly higher mean glucose value on the maternal side than on the fetal side indicates the mechanism by which a steady flow of glucose may be and is maintained toward the fetus. It not only uses it but stores it, the placenta being the glycogen storing organ until the fetal liver can function in this capacity, according to the investigations of Lockhead and Cramer.[11] Glinke [12] and others have shown that glycogen is especially abundant in fetal tissues, and McAllister [13] has demonstrated by his analyses that glycogen, present in the uterus and tubes independent of pregnancy, is most abundant at the time of childbirth, also being especially marked in the placenta.

This demand is an abrupt and unaccustomed drain on the patient, who is called on at no time other than during pregnancy to supply glycogen at this rate to any tissue or organ of the body. The uterus is enlarging rapidly, and in its muscular hypertrophy is making an extra demand for glycogen, while the fetus is growing far more rapidly than the child ever does in its extra-uterine life, thus being another example of unusual hypertrophy.

That the placenta is responsible for this glycogen demand, its object being to obtain this for the benefit of the fetus, is shown by the fact that any condition, such as twin pregnancy, syphilis, or hydatidiform mole, in which there is placental overgrowth, is usually accompanied by undue toxemic manifestations. That is to say, many of these patients give a history of profound or prolonged nausea and vomiting, and some of them exhibit the more serious phases of intoxication. Women with hydatidiform mole, in which there is a proliferation of chorionic tissue, have given us the history of marked nausea and vomiting, beginning shortly after impregnation and continuing up to the time of operation. There are on record [14] a number of cases of eclampsia occurring in the presence of a vesicular mole with no fetus present, and this phenomenon is quite readily understood if this theory of carbohydrate demand and supply be accepted.

If the extra glycogen demand of pregnancy is met by a diet containing a liberal carbohydrate supply, there should be little or no trouble from toxemia. If the demand is not met, the liver will be called on as the glycogen storing organ of the body to make up the deficit. Any glycogen storage in the muscles of the body is only temporary, and here again the liver is depended on for a reserve supply. Glycogen supply to the muscles must be maintained because it is consumed in the functioning of a muscle, so that rest in bed should be valuable treatment from the standpoint of conservation.

As the liver gives up more and more of its glycogen without adequate replacement, whether this is due to fetal demand or to ordinary starvation, a certain amount of fatty replacement, and eventually degeneration, occurs in those cells which originally stored the glycogen. Pflueger [15] has found that glycogen disappears almost entirely during experimental starvation, to be rapidly reformed after rich carbohydrate feeding. The experimental production of a fatty infiltration of the liver cells by means of phlorizin or by chloroform poisoning is familiar to all physiologists, and Rosenfeld,[16] in 1902, stated that after producing this lesion by means of phlorizin he found it possible to clear up the fatty infiltration in one day by giving the animal a meal rich in carbohydrates. The recent publications of Davis, Hall and Whipple [17] have been a most comprehensive contribution to this subject. These authors tested the effect on the liver of various poisons under varying circumstances, and found that they were far more toxic and produced yellow atrophy of the liver more readily if the dogs utilized in the work had been fed a diet high in proteins than if they had been living on a carbohydrate diet. Furthermore, the ingestion of carbohydrates in various forms caused the central necrosis of the liver lobules in poisoned dogs to disappear much more rapidly than in control animals. Roger [18] has made the contention that the liver loses its detoxicating power if made glycogen-free by hunger or other experimental methods, and conversely that all substances introduced produce a less toxic action if the glycogen content of the liver is increased by the simultaneous administration of glucose.

In pregnancy there is at first a relative hunger, brought about by a sudden increase in demand rather than a decrease in supply of certain food elements. Hunger or starvation tends to make the stomach intolerant of food, and the lack of supply is thus promptly augmented. It is, however, a specific starvation or deficiency with which we are concerned, namely, that of carbohydrates. If an exhaustion of the stores of carbohydrates in the body is combined with dehydration of the tissues, acidosis is certain to result. Liver functions are seriously impaired under such circumstances, and the body is flooded with toxins. No food or water is being taken, the patient is feeding on her own body tissues, and thus presents the typical picture of so-called "pernicious" or "intractable" vomiting of pregnancy.

In an article appearing while this was in preparation, Duncan and Harding [19] of Montreal have reported work done along practically identical lines as those of ours, with equally favorable results. They report a series of seventy cases, to which may be added seventy-six that we have to report. The fact that similar theories were formulated and common results obtained in a total of 146 cases, by two groups of investigators

10. Slemons, J. M.: The Nutrition of the Fetus, Am. J. Obst. **80**: 194 (Aug.) 1919.
11. Lockhead, J., and Cramer, W.: The Glycogenic Changes in the Placenta and the Fetus of the Pregnant Rabbit: A Contribution to the Chemistry of Growth, Proc. Roy. Soc. Series B, **80**: 263, 1908.
12. Glinke: Biol. Ztschr., Moscow **2**: 1, 1911.
13. McAllister: J. Obst. & Gynec. Brit. Emp. **34**. 1913.
14. Hitschmann: Zentralbl. f. Gynäk. **28**: 1089, 1904. Gross: Prag. med. Wchnschr. **34**: 365, 1909.
15. Pflueger: Arch. f. d. ges. Physiol. (Pflueger's) **119**: 1, 1909.
16. Rosenfeld: Ergebn. d. Physiol., 1902-1903.
17. Davis, N. C., and Whipple, G. H.: The Influence of Fasting and Various Diets on the Liver Injury Effected by Chloroform Anesthesia, Paper I, Arch. Int. Med. **23**: 612 (May) 1919; The Influence of Drugs and Chemical Agents on the Liver Necrosis of Chloroform Anesthesia, Paper II, ibid., p. 636. Davis, N. C.; Hall, C. C., and Whipple, G. H.: The Rapid Construction of Liver Cell Protein on a Strict Carbohydrate Diet Contrasted with Fasting: Mechanism of Protein Sparing Action of Carbohydrate, Paper III, ibid. **23**: 689 (June) 1919. Davis, N. C., and Whipple, G. H.: Liver Regeneration Following Chloroform Injury as Influenced by Various Diets: Mechanism of Protein Sparing Action of Fat, Paper IV, ibid., p. 711.
18. Roger: Thèse de Paris, 1887.
19. Duncan and Harding: Canad. M. A. J. **7**: 1057, 1918.

working independently, does much to strengthen the force of our argument.

They, too, suggest that a deficiency in carbohydrates is largely responsible for toxemia of pregnancy. We do not, however, agree with them in respect to the physiologic working of what is perhaps the most important point in the carbohydrate deficiency theory. The typical pathologic changes in toxemia of pregnancy are not due, apparently, to the fact that the fetus is greedy of unsaturated fat, for, if correct, this could have little or no bearing on a fatty degeneration of the liver. Nor is it merely because a moderate degree of fatty degeneration of the liver occurs as the result of a few hours' fasting.

We believe that this lack of glycogen in the liver is the result of a direct demand on the part of the fetus for glycogen. This call for glycogen is sent to the liver precisely as it would be from any organ requiring glycogen for consumption or combustion, and its place is taken in the liver by fat deposits. The mechanism by which a vicious circle may be established is quite evident.

REVIEW OF CASES

It has been found convenient for the purpose of study to separate these patients into groups according to the severity of the symptoms at the time each woman was first seen and treatment begun. For the sake of brevity, the record of the cases will be summarized, with a mere statement of the outcome. Women who suffered from nausea without vomiting are not included in this series. All were less than eighteen weeks pregnant.

Group 1.—This group is composed of patients complaining of irregularly occurring nausea and vomiting. This appeared most often in the morning, but might be troublesome to the patient at other times during the day. Dietetic treatment as outlined above was sufficient for most of these patients, although a few, especially latterly, were directed to take 1 or 2 ounces of 10 per cent. glucose and 2 per cent. sodium bicarbonate solution at three hour intervals.

Thirty-two patients appear in this group. Twenty-nine of them showed immediate improvement, whereas three required from seven to fourteen days for relief. All obtained permanent relief. One patient required appendectomy.

Group 2.—Twenty-nine women comprise these cases. In them the vomiting was persistently growing worse, and nausea was constant. Considerable loss of weight occurred in two, while one woman was slightly jaundiced. It developed later that two of these patients had twin pregnancies. Both of them fell into labor prematurely, and one of them showed some symptoms of toxemia near the end of her pregnancy. Prompt relief from nausea and vomiting was obtained by our treatment in twenty-three cases, while five patients recovered more slowly, as in Group 1. One patient failed to show improvement, and suffered from constant nausea with considerable vomiting, occasionally relieved for only a short time. This woman had been a trained nurse and was the only one of this group who did not go to the hospital. She was nursed by a sympathetic friend who would carry out some of the disagreeable features of the treatment with great vigor, only to relax her efforts as soon as the patient showed temporary improvement. Nausea never completely abated, but pregnancy continued to term.

Group 3.—This is composed of fifteen cases of the most serious type. All of these patients exhibited acetonuria, the majority having albumin and casts in the urine. Many were jaundiced and all were emaciated, while food and water were being retained by none. All of the patients were seen in consultation, and immediate therapeutic abortion was expected by most of the attending physicians. Fourteen of these women recovered entirely within from seven to fourteen days.

A therapeutic abortion was performed on one patient. This woman had been under treatment for five weeks in a hospital where a religious objection to abortion existed, and when sent to my service she was deeply jaundiced and emaciated. She was then three months' pregnant and had developed a multiple neuritis with paresthesia of hands, arms, feet and legs. Knee-jerks were absent, and she complained of intense pain on attempts to move her legs. In view of her condition and on the advice of the obstetrician who had been caring for her, an abortion was performed. A transfusion of blood was deemed necessary a few days later on account of her general condition, and she was obliged to remain in the hospital for weeks. The neuritis has not entirely left her after a period of two years, but she has since gone through a pregnancy with success, being one of the patients listed in Group 1 as having been treated for mild toxemia of early pregnancy.

PRELIMINARY REPORT OF CHEMICAL AND EXPERIMENTAL INVESTIGATIONS

Being convinced from clinical experience of the potency of carbohydrates in the treatment of toxemia of pregnancy, and having theorized as to the physiologic mechanism of their action, we have endeavored to prove this by certain experimental and chemical investigations. We desire to make a brief preliminary report of this work at this time, and plan to follow this paper with one that shall deal with our investigations and their application to toxemia of both early and late pregnancy.

We are attempting to produce the pathologic lesions of toxemia in pregnant experimental animals, and have had moderate success. This work is being continued, and if successful will be extended.

The procedure of our chemical investigations has been based on two established facts, namely, (1) the liver is the carbohydrate storage organ of the body, and (2) according to necropsy findings in fatal toxemias, the liver undergoes fatty degeneration. It is evident that fat is first substituted for glycogen in the cells, and finally when liver function is seriously impaired by glycogen depletion, this pathologic change may well be classed as an actual degeneration.

On this basis we have endeavored to devise a test for liver efficiency and deficiency. We have established a normal time curve of the liver's ability to store a definite amount of glucose given intravenously to normal pregnant women. A study of similar curves in cases of toxemia points to the conclusion that the prognosis is good if the liver can store within thirty minutes as much as from 75 to 105 mg. of glucose per hundred cubic centimeters of blood, this ratio of storage being approximately equivalent to, or slightly more rapid than that of a normal pregnant woman. If only 30 to 40 mg. of glucose can be handled, a grave condition is faced, this being much less than normal. We have reasoned that a need for carbohydrates exists in both instances. In the first the liver has been taxed but is able to restore itself if carbohydrate is supplied, whereas in the second case the depletion of glycogen and the deposit of replacement fat has been so extensive that the cells have lost their function, and the damage may be termed necrosis or degeneration.

The cases we have studied include eclampsia, pernicious vomiting, nephritis complicating pregnancy, chorea, and one case of accidental separation of the placenta with kidney involvement. A control series of tests is being carried out on all patients after recovery, and these, without exception, have corresponded to the normal cases.

CONCLUSIONS

1. The problematic relationship between mild and profound toxemias of pregnancy warrants a study of the former in order to gain information regarding the latter.

2. The development of a course of treatment, the success of which seemed to depend on the use of carbohydrates in large amounts, led to the assumption that a deficiency in carbohydrates has an important bearing on the origin of toxemia of pregnancy.

3. Carbohydrate deficiency during pregnancy is of twofold origin; (1) a relative deficiency due to an unexpected demand for glycogen on the part of the fetus and the uterus, and (2) an actual deficiency, augmented in the presence of nausea and vomiting, from lessened carbohydrate intake.

4. Carbohydrate deficiency in the maternal organism causes a glycogen depletion of the liver, because this is the organ in which carbohydrates are stored for use as needed.

5. There is experimental evidence to show that liver function is impaired and the body flooded with toxins after carbohydrate starvation.

6. Pathologic changes in the liver lobules which are similar to those of fatal toxemias of pregnancy can be produced experimentally by the use of certain chemical poisons. These changes can be made to disappear rapidly by the ingestion of carbohydrates.

7. Mild cases of nausea and vomiting may be controlled by so regulating the diet that there is a preponderance of carbohydrates, and an avoidance of more than short intervals of fasting by the taking of food more frequently than under ordinary circumstances. This increased carbohydrate intake should be augmented by giving the patient from 8 to 16 ounces of 10 per cent. glucose and 2 per cent. sodium bicarbonate solution daily by mouth. This may be given in 1 or 2 ounce doses.

More severe cases require more rigid attention. After an initial period of rest, gastric lavage and the introduction of saline cathartics through the stomach tube, small amounts of liquid food are allowed alternately with from 1 to 2 ounces of the glucose and soda solution, described above, every two hours. By mouth or by bowel it should be possible to give the patient 1 quart of this solution daily.

In the seriously toxic patients the treatment is pushed even more vigorously with the addition of intravenous injection of from 15 to 25 gm. of glucose in from 250 to 300 c.c. of water. This is given from one to three or more times daily, according to the needs and response of the patient. The injections should be made in close accordance with the directions in the body of this paper. Other treatment is carried out along much the same lines as that for the second group.

8. Not only is intravenous injection of glucose solution a valuable therapeutic measure, but the rate of its absorption and storage by the liver is an index of liver efficiency which is of prognostic value. More rapid storage than normal is favorable because it indicates that the liver, depleted as it has been of glycogen, is nevertheless still able to restore itself. Storage which is slower than normal offers an unfavorable prognosis, since this is evidence that liver efficiency is impaired. Our clinical evidence regarding these views is still too limited to permit a definite conclusion, but our experience thus far has been entirely confirmatory.

1915 Highland Building, E. E.

THE THERAPEUTIC USE OF CARBON DIOXID AFTER ANESTHESIA AND OPERATION*

YANDELL HENDERSON, PH.D.

HOWARD W. HAGGARD, M.D.
NEW HAVEN, CONN.
AND
RAYMOND C. COBURN, M.D.
NEW YORK

There is ample experimental evidence that inhalation of carbon dioxid, properly diluted with air or oxygen, should be a therapeutic agent of great potency. In fact, however, aside from the indirect use of this gas in the rebreathing methods of anesthesia, particularly with nitrous oxid, inhalation of carbon dioxid is not used in surgery. Likewise in internal medicine it is not employed, except perhaps in the Nauheim bath treatment of cardiac conditions; and here there is no agreement as to whether or not the inhalation is a factor.

This lack of use is the more striking when we note the present deficiency in therapeutic agents to stimulate breathing, and the great need for one; for carbon dioxid is Nature's own stimulant to the respiratory center.[1]

On the circulation its influence is equally important—particularly on the venous return to the right heart. It is the insufficiency of this return which chiefly gives to postoperative depression its similarity to the effects of hemorrhage. Thus, recovery of the circulation and a rapid return of a normal arterial pressure are the results to be expected from the restoration to the blood and tissues of the carbon dioxid lost during anesthesia and operation.[2] At least, this is the result which we have obtained.

The reason for the neglect of carbon dioxid is not far to seek. It lies in the fact that without a reliable method and apparatus, or without the acquisition of great skill and tact in a practically unexplored field, the administration of carbon dioxid might be dangerous. Indeed, if insufficiently diluted with air or oxygen, it would be quickly fatal. Doubtless, in the not distant future it will seem almost incredible that progress should have been halted for a long period for want of an apparatus for controlled gas administration. In fact, however, only recently, after ten years of effort in the laboratory where two of us work, has an apparatus

* In the text of this paper we deal only with such degrees of functional depression as commonly occur after anesthesia and operation. Mention should, however, be made here of work done by us during the winter of 1917-1918 which, although itself negative in result, was nevertheless an essential preliminary to this. It was a study of accident cases brought in by the ambulance. It revealed not a single case of "shock," other than hemorrhage or concussion, during ten weeks at a very large and active hospital in a field where such cases would be expected. Apparently this ignis fatuus of physiology is the product—at least in discoverable amounts—only of the battle field and the operating room, arising doubtless on the one from unrelieved pain, hemorrhage or cold, and in the other largely from some element in anesthesia. Our work had the approval of the Surgeon-General of the Army and was carried out at Bellevue Hospital, New York. We take this occasion to express our thanks to the directors of that hospital, to Dr. Charles Norris and Dr. Adrian V. S. Lambert, and to Col. F. F. Russell of the Surgeon-General's Office.

1. Henderson, Yandell: Bull. Johns Hopkins Hosp. **21**: 235, 1910.

2. Henderson, Yandell: Am. J. Physiol. **27**: 152, 1910. Henderson, Yandell, and Harvey, S. C.: Ibid. **46**: 533 (Aug.) 1918. Henderson, Yandell; Prince, A. L., and Haggard, H. W.: Observations on Surgical Shock, J. A. M. A. **69**: 965 (Sept. 22) 1917. Henderson, Yandell, and Haggard, H. W.: J. Pharmacol. & Exper. Therap. **11**: 189 (April) 1918. Henderson, Yandell; Prince, A. L., and Haggard, H. W.: Ibid. **11**: 203 (April) 1918. Haggard, H. W.: Low Levels of Alkaline Reserve under Surgical Conditions, Tr. Sect. Surg., Gen. & Abd., A. M. A., 1918, p. 139.

at all suited to clinical use become available; and yet it is very simple. It needs only a single operator; but he must be an expert in the vital signs of anesthesia and of the powerful functional effects of carbon dioxid, and he must at all times be keenly observant of the patient under treatment.

The first apparatus which we employed was, on the contrary, quite complicated, requiring the constant attention of three or four operators. It involved an air blower, electric motor, tank of carbon dioxid, gas meters, and accessory devices,[3] and was unsuited, therefore, to general clinical use. It had, however, the experimental advantage that with it any volume of air of any desired percentage of carbon dioxid could be delivered into the mask from which the patient inhaled.

With this apparatus we were enabled, through the courtesy of Drs. John F. Erdmann and Thomas H. Russell, to make, at the Post-Graduate Hospital, New York, what we believe are practically the pioneer observations (excepting those of Cotton [4] and of Levy [5]) on the effects of administration of carbon dioxid after ether anesthesia and major surgical operations.

Obviously, in order to show the effects of inhalation of carbon dioxid it was essential that we should first establish, as a standard of comparison, how patients usually behave. In this there is considerable difficulty; for, as we found and as indeed every one knows, there are the widest variations according to the length of anesthesia, its depth, preliminary medication, the character of the patient, and the severity of the operation. Below is presented the abbreviated protocol of a case fairly typical of conditions which are, however, frequent:

PROTOCOL OF CONTROL CASE IN WHICH NO CARBON DIOXID WAS ADMINISTERED

W. M., man, aged 34; double hernia; ether administration. sixty minutes.

Time Minutes	Arterial Pressure Mm. of Mercury	
..	132	Before operation
0	...	In bed, after operation
5	120	Gasps and apneas; cyanotic
25	...	Vomiting
30	108	Depressed respiration; cold, cyanotic, pallid skin
55	102	No improvement
65	...	Vomiting
80	110	Signs of returning consciousness

It is here to be seen that, after the patient was back in bed, arterial pressure continued to fall for an hour—to a level 30 mm. below normal. Respiration during this time was notably depressed. The elimination of ether was correspondingly slow.

EFFECTS PRODUCED BY THE INHALATION OF CARBON DIOXID

While other control cases, after operations for appendicitis, hernia, gallstones, etc., showed these features in more or less marked degree, this case, in our observations, is by no means an unusual or extreme illustration of postoperative depression. Using it as a rough standard of comparison, we give the protocols of four cases illustrative of the effects observed under inhalations of carbon dioxid.

3. Parts of a Connell nitrous oxid-oxygen apparatus were used, for the loan of which and for assistance in assembling the whole apparatus we are indebted to Mr. C. A. Mandolini of the Scientific Apparatus Company, New York City.

4. Cotton, F. J.: Acapnia: Its Surgical Importance, Boston M. & S. J. **167**: 432, 1912.

5. Levy, Ettore: The Clinical Use of Carbon Dioxide with Oxygen, J. A. M. A. **58**: 773 (March 16) 1912.

PROTOCOLS OF CASES IN WHICH CARBON DIOXID WAS GIVEN

As it seemed that the benefits hoped for from inhalation of carbon dioxid might possibly involve also grave danger during the inhalation—an anticipation which fortunately was not verified—every precaution was taken to minimize the risk. In all cases the mask was held by one of us (R. C. C.), who has had an extensive experience as an anesthetist, and particularly in the administration of nitrous oxid and rebreathing. At least one other of us kept an uninterrupted watch on the patient, while one kept his eyes on the gages and meters of the apparatus and his hands on its cocks and switches. In this work we are indebted to Dr. W. H. Taliaferro for assistance.

CASE 1.—S. S., man, aged 46; double hernia; ether administration, seventy minutes; postoperative administration of carbon dioxid.

Time Minutes	Arterial Pressure Mm. of Mercury	
..	136	Before anesthesia
0	120	In bed, after operation
1	...	Inhalation of 10 per cent. CO_2 begun
2	...	Marked respiratory augmentation
3	136	Breathing 35 liters of air per minute
4	160	Inhalation reduced to 6 per cent. CO_2 Warm, pink skin; Sweating
31	...	CO_2 stopped; patient fully conscious, but emotionally unbalanced; crying; wanted to get out of bed
33	132	
	136	Four days later

No nausea, vomiting or gas pains; an uneventful recovery.

CASE 2.—R., woman, aged 20; appendicitis and adhesions; prolonged illness; patient weak; ether administration, forty minutes; postoperative administration of carbon dioxid.

Time Minutes	Arterial Pressure Mm. of Mercury	
..	100	Before anesthesia
0	96	In bed, after operation; 10 per cent. CO_2 started
2	110	
4	130	Breathing 40 liters per minute; CO_2 reduced to 8 per cent.
18	...	Struggling; breathing 40 liters per minute
19	122	Conscious; CO_2 stopped
24	122	
	104	Three days later

No nausea, vomiting or gas pains; water given as asked for; an uneventful recovery.

CASE 3.—L. S., man, aged 26; appendicitis and adhesions; ether administration, sixty minutes.

Time Minutes	Arterial Pressure Mm. of Mercury	
..	115	Before anesthesia
0	108	In bed after operation
5	102	Cyanotic
8	96	Inhalation of 8 per cent. CO_2 begun
15	112	No respiratory augmentation
18	...	Respiration augmented
19	...	Fine pink skin color
21	118	Breathing 35 liters per minute; talks rationally
43	116	CO_2 stopped
45	112	
	115	Three days later

No nausea, vomiting, or gas pains; allowed to drink water freely; an uneventful recovery.

CASE 4.—A. S., woman, aged 32; exploratory laparotomy and removal of appendix and gallstones; ether administration, fifty minutes; uneventful recovery.

Time Minutes	Arterial Pressure Mm. of Mercury	
..	118	Before anesthesia
0	116	In bed, after operation
1	...	Inhalation of 8 per cent. CO_2 begun
2	...	Slight increase of respiration; color pale
6	...	Increased respiration
11	126	Breathing 30 liters per minute; pink skin
20	134	Struggling; responds to verbal suggestions
28	136	Answers questions rationally
31	134	CO_2 stopped
32	...	Vomited a little yellow fluid
180	118	
	120	Four days later

No subsequent nausea, vomiting or gas pains; bowels easily stimulated to function; uneventful recovery.

In these four cases, typical of a total of seventeen so treated, certain points deserve notice:

Within a few minutes after the initiation of the inhalation of carbon dioxid, there was a great augmentation of respiration. Knowing the volume of air delivered to the mask by our apparatus, we could estimate quite accurately the volume of the patient's breathing. A normal well-developed adult at rest in bed breathes from 6 to 8 liters of air a minute. In our control cases, observed without treatment, the volume of breathing was estimated often at less than half as much: hence the common cyanosis. Under the inhalation of carbon dioxid, the volume of breathing was increased to amounts from 35 to 70 liters per minute, volumes corresponding to those which the subjects would have breathed under vigorous physical exertion.

The greater part of the ether was thus rapidly ventilated out of the blood. In from fifteen to twenty-five minutes the patient was conscious, although prone to emotional disturbances, sometimes of anger, but oftener of hilarity. Frequently the patient fell asleep fifteen or twenty minutes after the termination of the inhalation. Presumably there was a slight secondary rise of ether in the blood due to continued diffusion from the muscles, adipose tissue, etc.

Immediately after the operation, the arterial pressure was usually from 5 to 15 mm. below normal, with a tendency to fall further. Under inhalation of carbon dioxid it rose rapidly, sometimes 30 or 40 mm. within four or five minutes; and at the end of the first ten or fifteen minutes it was often 10 or even 20 mm. above normal. It then tended gradually downward again, although remaining above the normal level. After the termination of the inhalation it returned in a few minutes to a practically normal value. It never fell appreciably thereafter.

To the observer, the return of a normal pink skin color [6] was one of the most striking effects of the inhalation of carbon dioxid, indicating a return of the normal capillary circulation, a feature of fundamental importance in the recovery from postoperative circulatory depression.

As the patients came off the operating table, they showed invariably the inadequately filled veins which indicate a reduced venous return to the right heart. To combat this condition effectively is, in our opinion, to solve practically the whole problem of the treatment of postoperative circulatory depression. Under inhalation of carbon dioxid, the veins became filled to an extent even exceeding that seen after vigorous physical exertion. We limited the strength of the carbon dioxid administered by this sign, in order not to overload the right heart with blood.

Although vomiting was not entirely absent, it was much less than in untreated patients. The patients were allowed to drink water freely. The inhalations seemed to diminish greatly the usual postanesthetic thirst.

We anticipated from previous experimental observations on animals that one of the benefits to be derived from inhalations of carbon dioxid would be found in the restoration of normal tonus in the stomach and intestine, and thus in the prevention of gas pains and constipation.[7] While no patient developed gas pains, and all recovered normal bowel movements easily, our total of only seventeen cases treated is not sufficient to warrant a definite conclusion on this point.

6. Bryant, John, and Henderson, Yandell: Closed Ether and a Color Sign, J. A. M. A. **65**: 1 (July 3) 1915.
7. Henderson, Yandell: Am. J. Physiol. **24**: 66, 1909. Cotton (Footnote 4).

BLOOD ALKALI

We turn now to a matter of profound theoretical significance. It is well established that under anesthesia and operation there is frequently a considerable reduction in the alkali of the blood as measured by its carbon dioxid combining power.[8] But the cause, the nature and the significance of this reduction are not established.

Recent work by Henderson and Haggard [9] has demonstrated experimentally that a reduction of blood alkali may be induced by two distinct processes: (*a*) The entrance of acids into the blood may partially neutralize the alkali. This is the acidotic process. Or (*b*) excessive breathing with blowing off of the carbon dioxid of the blood, reinforced perhaps by diminished carbon dioxid formation in the tissues under anesthesia, leaves the blood abnormally alkaline. In compensation, alkali passes out of the blood, partly perhaps into the urine, but chiefly presumably into the tissues. This is the acapnial process.

To distinguish between these two—superficially similar but fundamentally unlike—conditions of low blood alkali or, as we term it, hypocapnia, experiments on animals have afforded a simple and conclusive test. It consists in the inhalation of 6 or 8 per cent. carbon dioxid. If the condition is of acidotic origin the extreme acidosis, due to the summation of carbonic acid and fixed acids, aggravates the symptoms, and, if pushed, may kill the subjects in half an hour. On the other hand, if the low blood alkali is of acapnial causation, the increase of carbonic acid in the blood induces a compensatory process by which alkali is recalled, presumably from the tissues, into the blood in normal, or even supernormal, amounts. During the period of inhalation of carbon dioxid and high hydrogen ion concentration, recovery of the circulation, respiration and intestinal motility occurs.

With this distinction in mind it was only after very cautious preliminary tests on patients (of which we have omitted an account) that we ventured to push the inhalations with the intensity indicated in the cases reported. As none suffered any ill effect, but all the patients were rapidly restored to a condition of approximate functional normality, their low blood alkali, so far as it occurred, was clearly not of acidotic, but rather of acapnial origin.

To clinch this point we report observations which we were enabled to make at the New Jersey State Hospital for the Insane, Trenton, through the courtesy of Dr. Henry A. Cotton, medical director, and Dr. John W. Draper, of New York, attending surgeon:

CASE 5.—M. F., female, underwent operation for developmental reconstruction, involving the removal of 150 cm. of terminal ileum, about one third of the colon, and a number of mesenteric glands. Ether was administered for 120 minutes. Immediately after the patient was returned to bed, carbon dioxid inhalation was begun and continued for half an hour with the simplified apparatus. Samples of blood were drawn from an arm vein (*a*) before anesthesia, (*b*) at the end of operation, and (*c*) after termination of the carbon dioxid inhalation. They were equilibrated with air containing 5.6 per cent. of carbon dioxid at room temperature, and were analyzed for their carbon dioxid content, that is, the alkali in use.

Analytic results: $a = 53$; $b = 48$; $c = 58$ per cent. carbon dioxid by volume.

8. Morriss, W. H.: The Prophylaxis of Anesthesia Acidosis, J. A. M. A. **68**: 1391 (May 12) 1917. Reimann, S. R., and Bloom, G. H.: J. Biol. Chem. **36**: 211 (Oct.) 1918.
9. Henderson, Yandell and Haggard H. W.: J. Biol. Chem. **33**: 333, 345, 355, 365 (Feb.) 1918; **39**: 163 (Aug.) 1919.

CASE 6.—M. A., female, was operated on as in the previous case. Ether was administered for 120 minutes.

Blood samples: $a = 56$; $b = 42$; $c = 57$ per cent. carbon dioxid by volume.

CASE 7.—S. McK., female, had a 5.6 kg. abdominal fibroid tumor and 12 liters of ascitic fluid removed. Ether was administered for fifty-five minutes. The arterial pressure before operation was 154 mm.; after removal of the tumor, 100; after carbon dioxid inhalation, 160.

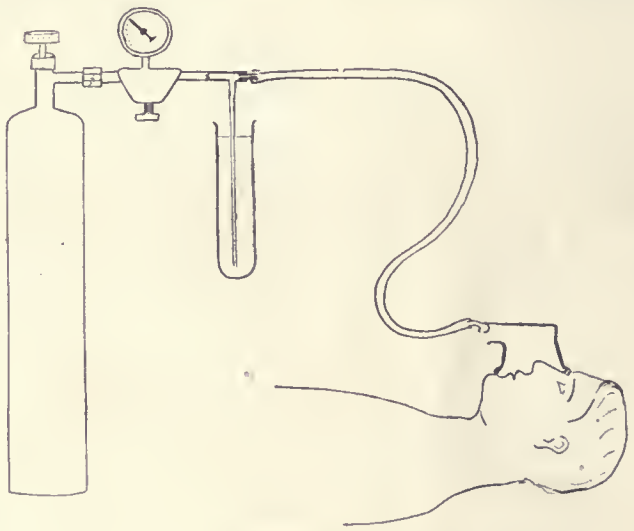
Blood samples: $a = 56$; $b = 48$; $c = 64$ per cent. carbon dioxid by volume.

CASE 8.—M. M., female, was operated on for appendicitis. Ether was administered for fifty-five minutes.

Blood samples: $a = 59$; $b = 52$; $c = 61$ per cent. carbon dioxid by volume.

THE APPARATUS

The simplified apparatus used in the last series of observations is shown in the accompanying illustration. It involves a tank of carbon dioxid of the best beverage quality, and a reducing valve. From the valve the gas passes to a T-tube, one limb of which leads to a capillary tube 1.8 mm. in diameter and 10 mm. long, and the other limb to a glass tube projecting down into a vessel of water. The latter serves both as a gage and as an escape valve, preventing any excessive pressure on the capillary. Under the maximum pressure possible, not more than 8 liters of gas pass through the capillary, which in turn is connected to the mask by a 5 or 6 mm. rubber tube.



Simplified apparatus.

The construction of the mask is simple, but involves the idea of preventing any possibility of accumulation of gas in the mask, with consequent excess administration. It depends on the subject's own breathing to draw the gas in and to mix it with air. These purposes are achieved by delivering the gas through a number of small openings just outside the open end of a short, large tube (from 2 to 3 cm. in diameter) connected with the mask. During expiration, or apnea, the gas merely wastes into the outside air; during inspiration it mixes with the inspired air. The operator controls the administration according to the reactions of the patient. With this apparatus the patient receives approximately one half of the gas which the apparatus measures off per minute. The percentage of carbon dioxid in the inspired air depends on the volume of breathing, and the administration must be controlled accordingly.

These investigations are being actively continued at St. Bartholomew's Hospital for Diseases of the Alimentary Canal, New York, where every facility has been provided for the further development of the carbon dioxid therapy.

CONCLUSIONS

The observations here reported indicate that the inhalation of carbon dioxid, properly diluted with air, is a highly beneficial and, with care, a safe treatment after anesthesia and operation.

The beneficial effects observed are: (*a*) an augmentation of breathing which rapidly ventilates the anesthetic out of the blood; (*b*) a powerful stimulant effect on the circulation, particularly on the venous return, and a rapid restoration of arterial pressure, without subsequent relapse or unfavorable consequences; (*c*) marked decrease of postoperative nausea, vomiting and thirst, and (*d*) a possible restoration of intestinal tonus.

TETANY IN A CASE OF SPRUE*

A. L. BARACH, M.D.
AND
H. A. MURRAY, JR., M.D.
NEW YORK

Early in 1919, Bassett-Smith [1] reported a case of sprue in which tetany developed shortly before the death of the patient. The author stated that his was the first published account of this complication of the disease. As no similar reports have been found in the literature since that time, it was considered that this case might be of interest both on account of its rarity and because of certain significant features bearing on the question of the etiology of tetany.

REPORT OF CASE

History.—R. W. C., an American medical missionary, aged 41, entered the private ward of the Presbyterian Hospital, Sept. 20, 1919, complaining of abdominal pain and diarrhea. As in all previous visits, he was cared for by Dr. David Bovaird. The patient had had measles and scarlet fever as a child; dengue in 1909, and bacillary dysentery in 1912. Since 1907, when the patient arrived in the Philippine Islands, small ulcers had been continuously present in his mouth, and he had been bothered by diarrhea of a greater or less degree. In 1914, his condition became very much aggravated. The tongue became red, swollen and tender, and the small white ulcers along its margin merged. Moderate abdominal tenderness with slight distention accompanied a troublesome diarrhea. The stools were large, white, semifluid and frothy, with an offensive odor. He suffered from hemorrhoids, and fissures appeared in the margin of the anus. In the six months preceding his first entrance to the Presbyterian Hospital, the patient lost 40 pounds.

First Admission.—The patient was admitted, July 24, 1914, and discharged, Aug. 17, 1914. The lips were cyanotic; there were white spots on the tongue; on the buccal mucous membrane were two shallow ulcerations with a narrow zone of inflammation around them. There was a systolic murmur at the apex and the base; the abdomen was tender and tympanitic. The systolic blood pressure was 114; the diastolic, 70. Blood examination revealed: hemoglobin, 88 per cent.; red blood cells, 4,800,000; white blood cells, 9,200; polymorphonuclears, 56 per cent.; lymphocytes, 39 per cent.; eosinophils, 5 per cent. The stool contained no ova or parasites; the Cammidge test was positive; amylase was diminished. The diagnosis was "sprue." Under a regulated dietary regimen of fruit and proteins, the patient

* From the Presbyterian Hospital and the Laboratories of Surgical Research, Columbia University College of Physicians and Surgeons.

1. Bassett-Smith, P. W.: Lancet 1: 178 (Feb. 1) 1919.

improved considerably, and on leaving the hospital went to live in New Jersey, where he seemed to be on the road to recovery. Exercise, however, brought on renewed attacks, and the patient was forced to reenter the hospital in 1916.

Second Admission.—The patient was admitted, March 31, 1916, and discharged, Aug. 5, 1916. He presented about the same symptoms as on his previous admission, with the addition of anemia. Blood examination revealed: hemoglobin, 68 per cent.; red blood cells, 3,600,000; white blood cells, 9,200; polymorphonuclears, 71 per cent.; lymphocytes, 28 per cent.; eosinophils, 1 per cent.; blood Widal test, negative; blood culture, negative. Throat culture revealed no Klebs-Loeffler bacilli. The Wassermann test was negative. The stool was light and frothy; it contained no ova, parasites, blood or pus; trypsin and amylopsin were markedly diminished; starch granules, striated muscle fibers and fatty acid crystals were seen. Total fat was 39.0; neutral fat, 14.09; fatty acids, 24.91; 60 per cent. or more of the organisms noted were gram positive. A serial test meal was given. The gastric contents after one-half hour showed: free hydrochloric acid, 38; total acid, 62; after one hour: free hydrochloric acid, 41; total acid, 58. A roentgenogram of the stomach revealed a small amount of residue five hours after eating. The diagnosis was "sprue." The patient had occasional attacks of nausea and vomiting. Improvement began with a low fat diet, composed mostly of fruits and lime-water, and continued up to the time he left the hospital.

Third Admission.—The patient returned to the Philippines in October, 1917, where he seemed to do well until January, 1919; at this time his trouble returned with renewed force. He had from two to four light, frothy stools a day, and for the first time was troubled with pain in the upper part of the esophagus. In the late summer, he returned to the United States and reentered the Presbyterian Hospital. He was weak, emaciated and anemic, and his speech was feeble. The tongue was red and raw, with numerous ulcerations, and the buccal mucous membrane was marked by erosions. A faint blow was audible over the mitral ring. Liver dulness was diminished. The abdomen was distended and tender, but there was no mass or rigidity. The spleen was not palpable. The testes were tender.

September 21, blood examination revealed: hemoglobin, 65 per cent.; red blood cells, 3,700,000; white blood cells, 10,100; polymorphonuclears, 69 per cent. There were from one to three foul smelling, light brown and frothy stools a day; they contained no blood or parasites. The Wassermann test was negative. The blood was of Group II. Proctoscopic examination revealed a uniform, curdy, milklike film covering the mucosa, which was dry and shiny; there were no ulcerations; there were internal hemorrhoids.

October 1, 800 c.c. of blood were transfused without reaction.

October 6, the hemoglobin was 70 per cent.; red blood cells, 3,500,000. The patient had occasional attacks of nausea and vomiting.

October 30, he vomited. Examination of the vomitus revealed: free hydrochloric acid, 0; total acid, 24; guaiac test; negative. The sores of the mouth became worse.

October 31, hemoglobin was 63 per cent.; red blood cells, 2,600,000; no abnormalities of the red blood cells were noted.

November 17, in the evening, the patient vomited and complained of generalized abdominal pain. The abdomen was retracted and tense; deep pressure in every part gave pain, which was somewhat relieved later by a poultice.

November 18, 4:30 a. m., a stool of the usual appearance was passed; at 6 a. m., the patient vomited fluid with dark brown particles; at 6:30 a. m. he was in great distress. He said he had been in pain all night both from his abdomen and on account of contractures which had appeared in his extremities. On examination the patient presented the picture of tetany. The upper extremities were extremely spastic, drawn up and flexed at the elbows, flexed and rotated outward at the wrists. The fingers were flexed at the metacarpophalangeal joints, and the interphalangeal joints were extended. The lower extremities were also spastic, with flexion at the knees and extension at the ankles. The retraction and general tenderness of the abdomen, because there was no fever or localization of the pain, was looked on as an expression of a generalized state of muscular hypertonicity. The patient vomited again. Examination of the vomitus revealed free hydrochloric acid, 0; total acid, 0. Spasms of the extremities disappeared in the late morning. The temperature was between 98 and 99 F.; the pulse, from 70 to 90. The serum calcium was 8 mg. per hundred c.c. (normal, from 9 to 11 mg. per hundred c.c.). An infusion of 400 c.c. of a 0.2 per cent. calcium lactate solution was performed. Thirty minutes later the serum calcium was 8.3 mg. per hundred c.c.

November 19, hemoglobin was 70 per cent.; red blood cells, 3,000,000; polymorphonuclears, 68 per cent. The patient still had abdominal pain, but on account of the normal temperature and low pulse rate, no new abdominal complication was suspected. The serum calcium was 6.5 mg. per hundred c.c. An infusion of 400 c.c. of a 0.2 per cent. solution of calcium lactate was performed. Thirty minutes later the serum calcium was 6.5 mg. per hundred c.c. The patient had frequent involuntary stools during the day. The plasma carbon dioxid capacity was 57.6 per cent. by volume.

November 20, the temperature for the first time rose above normal (102 F.). The pulse was 130. Tetanic contractions reappeared. A transfusion of 400 c.c. of blood was performed. Thirty minutes later the serum calcium was 7.5 mg. per hundred c.c. An infusion of 350 c.c. of a 0.2 per cent. solution of calcium lactate was performed.

November 21, the temperature was 103.4 F.; pulse, 124. There was twitching of the extremities. An infusion of 800 c.c. of a 0.1 per cent. solution of calcium lactate in 0.4 per cent. saline was performed. The patient died.

During the last forty-eight hours, the patient vomited almost constantly except after lavage. The vomitus was first dark green, and later, dark brown. The fever which developed during the last twenty-four hours, by which time the abdomen had relaxed, was considered secondary to the constant vomiting.

The final diagnosis was: tetany; acute dilatation of the stomach, and sprue.

Summary of Postmortem Findings.—There were sprue (clinical); atrophic enteritis; atrophy of the papillae of the tongue, and general purulent peritonitis. The abdomen contained about 300 c.c. of dirty, yellow, purulent fluid. The intestines were matted together with yellowish fibrin and covered with a purulent exudate. The appendix was gangrenous, with rupture; it was hanging over the pelvic brim; in its middle it was necrotic and perforated. There was acute dilatation of the stomach and intestines; the stomach, the duodenum and 2 feet of the jejunum were hugely dilated with fluid and a little gas. The gastric musculature was not thickened; there were cardiac hypertrophy; chronic cardiac valvular disease (aortic valve), and generalized arteriosclerosis. The bone marrow was hypertrophic. The parathyroids were normal.

COMMENT

A diminished concentration of calcium in the blood has been shown to produce tetany, and in the case under discussion, the lack of this element was demonstrated by analysis of the blood. As bearing on the question of the cause of the disturbance of calcium metabolism in this particular individual, the following points are emphasized:

1. According to von Noorden, calcium is absorbed in the upper part of the small intestine, combined with phosphoric and carbonic acids, but more especially with fatty acids in the form of soaps. Sprue patients, however, and many stool examinations proved it in this case, cannot readily digest fats. Is it not conceivable, then, that calcium was carried on with the fats, and that its absorption through the diseased intestinal mucosa was insufficient to maintain the proper balance? This is mentioned as a possible predisposing factor.

Calcium is mostly excreted into the large bowel; and in the present instance, owing to the prolonged intes-

tinal irritation lasting over six or more years, the excretory rate of the substance by this outlet may have been abnormally increased. Such abnormal elimination would have tended to disturb still further the calcium equilibrium.

2. Clinically, tetany is occasionally associated with gastric dilatation, usually following pyloric obstruction and accompanied by considerable vomiting. We have produced pedal spasms in dogs by simply closing the pylorus with a ligature, and have found, as did McCann,[2] that an increased concentration of carbon dioxid bound as bicarbonate in the plasma, and a gradual diminution and final loss of free or combined hydrochloric acid in the gastric contents, resulted from this procedure. Gastric tetany is not known to be associated with a diminished calcium concentration in the blood, although calcium therapy relieves it.[3] Comparison with this case reveals certain similarities and decided differences as well. There was some vomiting, and at necropsy the stomach as well as the duodenum was found hugely dilated, but with no pyloric obstruction. A specimen of vomitus examined shortly after the onset of tetany showed that there was no acid present; however, in the presence of a patent pylorus this may well have been due to duodenal regurgitation. A Van Slyke carbon dioxid determination revealed no alkalosis (57.6 c.c.). Furthermore, there was an actual decrease in the calcium concentration of the serum unrelieved by calcium lactate infusions. These findings are opposed to the classification of this case as one of simple so-called "gastric tetany," even though the factors involved may have had some causal influences.

3. Tetany occurs as a rare complication of acute infectious diseases, but in this instance it seems far fetched to attribute any direct etiologic significance to the appendicitis and general peritonitis found at necropsy.

4. Calcium infusions can usually be counted on to abolish the seizures of tetany, but in this case there was no abatement, and the failure was mirrored in the blood analyses. It was a great surprise to find that injections of as much as 400 c.c. of a 0.2 per cent solution of calcium lactate, which theoretically should increase calcium to the extent of about 5 mg. per hundred c.c., had no such effect. Within thirty minutes after both infusions, the quantity of the calcium introduced had left the blood flowing through the peripheral circulation. Was the calcium excreted in that short period into the intestine, was the condition of the blood colloids such that the calcium present existed in saturated solution and any additional calcium was immediately precipitated, or was calcium immediately claimed by lime-starved tissue cells? That this is not the case in parathyroid tetany is shown by the following analyses, made at the same time as the foregoing determinations:

In a dog in acute tetany, the serum calcium was 5.1 mg. per hundred. Infusion of 40 c.c. of 1 per cent. calcium chlorid solution was followed by complete cessation of symptoms. The serum calcium, thirty minutes later, was 9 mg. per hundred.

That the condition of the blood was an important factor is suggested by the rise in calcium following the transfusion of normal blood. We consider some of these points suggestive, but not conclusive enough to form any hypothesis for explaining the course of events which led up to the state of tetany.

2. McCann, W. S.: J. Biol. Chem. **35**: 553 (Sept. 18) 1918.
3. Kinnicutt, F. P.: Am. J. M. Sc. **138**: 1, 1909.

AGREEMENT IN RESULTS OF THE WASSERMANN REACTION

A STUDY OF TESTS PERFORMED BY TWO LABORATORIES IN THREE THOUSAND SUCCESSIVE HOSPITAL ADMISSIONS *

HARRY C. SOLOMON, M.D.
Member of the Massachusetts State Psychiatric Institute
BOSTON

It has been the custom at the Psychopathic Department of the Boston State Hospital, for the past few years, to have the blood of each patient examined by two independent laboratories. This was done primarily for the safeguarding of the patient against erroneous conclusions based on one test; and, secondarily, in order to obtain information which would be valuable to ourselves in estimating the results of the laboratories; that is, to put us in a position in which we would be able to interpret the findings more correctly. The two laboratories selected for this purpose were the laboratory of the Massachusetts Department of Health and the laboratory of the Boston City Department of Health. Dr. Hinton and Dr. Castleman, of the respective laboratories, were most cooperative and desirous of having this work carried out, both for our own information and for what service it would be to them in estimating their own work. The spirit of these men cannot be too highly commended, and the results that are presented herewith are indicative that not only in this respect, but in all others, they have attempted to bring a high standard into their laboratories.

A Wassermann test made on each patient admitted to the hospital is, and has been, a routine since the opening of the hospital. During the time that the tests were made in the two laboratories, it was customary to bleed the patient into two test-tubes, one tube being sent to the city laboratory, the other to the state laboratory, conditions thus being as nearly similar as possible. To date, 3,000 patients have had their blood tested in this way. In some cases the test was repeated several times, especially in those cases in which there was a difference in the report.

Without going into any details of the technic used by these two laboratories,[1] it may briefly be stated that Laboratory A uses three cholesterinized antigens of different sensitivities to check each positive reaction; Laboratory B, in addition to the cholesterinized antigen, employs an acetone insoluble antigen.

Whenever possible, those cases in which the reports were not the same from the two laboratories were retested, in an endeavor to get a report free from technical error. Unfortunately, the patients, as a rule, stayed only a few days at the hospital, and it was not possible to carry this out as far as was desired in many instances. However, in a number we were able to get a uniformity of results after the first test, rather indicating that the result of the first test might have been due to some technical error; and this, as a possible explanation, is further borne out by the fact that some cases were tested many times by one laboratory, with the result that occasionally a case giving consistently positive results for ten, fifteen or more tests, would suddenly give a negative reaction, to be followed again

* From the Massachusetts State Psychiatric Institute.

1. The designations Laboratory A and Laboratory B are used throughout as this is not intended as an attempt to show relative merits of the two laboratories, but rather to indicate the value of the Wassermann test.

by a series of positive tests. It is possible, of course, that this may have been due at times to some change in the patient's serum, a condition which is not so very likely, and which, at any rate, is not explicable. Of especial interest in this work is a group of tests which we have made on children suspected of congenital syphilis, and who all fall into a class of poorly nourished and mentally retarded children. In this group, we found a series of reactions differing from one another somewhat as follows: doubtful, negative, positive, negative. We have never noticed this result in adults or in apparently healthy children. In these cases we have felt that the Wassermann reaction has not been of especial value in determining our diagnosis of congenital syphilis.

The tests are reported a little differently in the two laboratories. Laboratory A reports "positive, doubtful and negative," the positive test representing what is sometimes spoken of as a ++++ reaction, which is a strongly positive test in the three antigens used.

VARIATIONS IN THREE THOUSAND CASES

	No.	Per Cent.
Total number of variations, including those reported positive, moderately positive, or doubtful by one laboratory and negative by the other	197	6.56
Cases reported positive or doubtful by Laboratory A and negative by Laboratory B	70	2.33
Cases reported positive, moderately positive, or doubtful by Laboratory B and negative by Laboratory A	127	4.23
Cases reported moderately positive or doubtful by either laboratory and negative by the other laboratory	77	
Cases reported straight positive by either laboratory and negative by the other laboratory	120	4.0
Cases reported straight positive by Laboratory A and negative by Laboratory B	42	1.4
Cases reported straight positive by Laboratory B and negative by Laboratory A	78	2.6
Cases in variation group known to be syphilitic	35	
Cases in variation group known to be syphilitic reported positive by Laboratory A and negative by Laboratory B	20	
Cases in variation group known to be syphilitic reported positive by Labratory B and negative by Laboratory A	15	
Possible false positives (including positive and doubtful) from Laboratory A (70—20)	50	1.66
Possible false positives (including positive, moderately positive, and doubtful) from Laboratory B (127—15).	112	3.4
Considering only the 42 straight positives from Laboratory A and subtracting the 20 known to be syphilitic (these happened to give straight positive reactions) the possible false positives are	22	**0.73**
Considering only the 78 straight positives from Laboratory B and subtracting the number of these known to be syphilitic (5), the possible false positives are	73	**2.43**

The doubtful reaction is reported in those cases in which one or two of the antigens gave a strong inhibition of hemolysis, with complete or nearly complete hemolysis in the other one or two antigens. Laboratory B reports "positive" for the strongly positive reactions; "moderately positive" for the reactions not so markedly positive, and "doubtful" when there is not a complete uniformity in the reactions of the different antigens. In both laboratories, "negative" represents the condition interpreted as the absence of the test for syphilis.

The accompanying table summarizes the results obtained in these 3,000 cases. (Approximately 15 per cent. of the cases tested positive.)

It seemes only fair to state that a moderately positive or doubtful Wassermann reaction is not sufficient evidence on which to base a diagnosis of syphilis, unless backed by other strong points. It is always advised that in such a case the test be repeated until either a strongly positive or a definitely negative reaction is established. Hence, in considering the possibilities of going wrong in accepting the reactions of one laboratory, one would consider only the cases that are reported as straight positives. As the table indicates, the percentage variations between the two laboratories, considering the straight positives, is only 4, a percentage which we consider exceedingly low, and justifying the technic of these laboratories to a high degree.

If the possibility of making an erroneous diagnosis of syphilis, based on a positive reaction from but one laboratory, is considered, we see that this is reduced greatly, in that the percentage from the one laboratory is 1.4, and from the other, 2.6. This is stated on the assumption that when one laboratory gives a negative reaction and the other a positive, the positive does not represent syphilis. This is obviously not a correct hypothesis, as we have to deal with cases which are undoubtedly syphilis, but which give negative reactions in one laboratory, due either to the weakness of the the antigen, or to a technical error. We therefore went over the cases in which this discrepancy occurred, from the clinical standpoint, and considered only those cases in which very definite evidences of syphilis were obtained. This included cases in which the history was absolute, such as patients that had been known to have syphilis and had given a positive Wassermann reaction in the past and had been under treatment, or cases of syphilis of the central nervous system, in which the spinal fluid findings were positive. Many cases highly suggestive of syphilis, from the fact either that the patients were prostitutes or that they had had symptoms on which one would practically be justified in making a diagnosis of syphilis, were considered as not syphilitic, in order not to prejudice the conclusions in favor of the laboratory. Deducting the cases, then, that were undoubtedly syphilitic, we find that of the 3,000 cases tested, Laboratory A returned twenty-two positive reactions which were reported negative in the same cases by Laboratory B, and which did not give definite evidence of syphilis. This would make a possible "false positive" report (i. e., a positive reaction, due to an error in the performance of the test, on a nonsyphilitic serum) in only 0.73 per cent. From Laboratory B this percentage [2] was 2.43. These low percentages are undoubtedly higher than the facts justify, as there can be no doubt that some of these cases were syphilitic. However, if we accept these figures as the worst possible, they are still such that we can place a great deal of confidence in the reports of the laboratories. This study shows that it is possible to obtain "false negative" or "false positive" reactions. It should be emphasized strongly that these figures as given represent a discrepancy between the two laboratories on the first test. In the majority of cases, a uniformity of report was obtained on repetition.

While these figures are exceedingly low, and therefore very satisfactory, it is true that no matter how small the percentage of error may be, if it affects any given individual it is a 100 per cent. error for that individual, and therefore it is the duty of the clinician to protect him as far as is possible. This can be accomplished in a number of ways. Several repetitions of the test giving uniform results is very good evidence that the result as reported is correct. Secondly, having the blood tested by two laboratories simultaneously affords a good check. If there is a discrepancy, that is evidence that one or the other test may be an error, and a repetition of the test is indi-

2. The blood frequently did not reach Laboratory B for three or four days after being taken. There is evidence that blood which has stood for some time may give positive results in nonsyphilitic cases because of contamination.

cated. It should be emphasized that a knowledge of the laboratory and its standards, technic and method of reporting is more important in obtaining the information desired than the reports from a number of laboratories which may not be careful or accurate. In other words, it is the clinician's duty to know the possibility of error in the laboratory that he is using. It is much better to have a test repeated several times in a laboratory to whose technic one is accustomed than to have a single test made in several laboratories, which will only lead to confusion, especially when one remembers that the sensitivity of the antigens plays a considerable rôle.

It is true that occasionally on certain days things do not go entirely well in a laboratory, and it is found that one particular day may give a high percentage of positives. This affords a means of checking up the results, and is commonly used by the laboratory chiefs. Thus, it is usual to run known positive and known negative serums for this purpose. It is possible for the clinician to use a similar check on the laboratory. In hospital practice, in which a great number of tests are made each day, it is possible to draw a conclusion as to whether too high or too low a percentage of positives is received. For example, on a certain day, if we find that a number of cases in which there is no reason to suspect syphilis are reported as giving positive Wassermann reactions, we may be suspicious that something may have gone wrong in the laboratory. On the other hand, if our known syphilitics give negative reactions, this is also highly suggestive. Thus, the patient may be amply protected against incorrect reports, and the value of the Wassermann test greatly enchanced by the clinician himself.

A comparison of the results as shown in this study with results expected from other laboratory tests seems to us to be extremely satisfactory. The results would seem to be as good as one would expect from a Widal reaction, a Schick test, a diphtheria smear, or a single examination of the urine in a case in which nephritis is suspected. It is only fair to admit that we were somewhat surprised to find how well the tests of these two laboratories checked. Until we really added up the figures, our impression was that there were very many more variations. This was undoubtedly the result of the individual equation. Each instance in which there was a discrepancy stood out strongly and clearly, whereas those that agreed were passed over without any consideration whatsoever.

SUMMARY

The blood serums of 3,000 patients were subjected to the Wassermann tests by two independent laboratories. An analysis of the results showed that there was a complete uniformity in the findings of the two laboratories in 93.44 per cent. The 6.56 per cent. variation included cases reported as doubtful. Considering only the variation of cases reported positive by one laboratory and negative by the other, the percentage variation was 4. This was 1.4 per cent. positive in one laboratory and 2.6 per cent. positive by the other laboratory. Some of the cases reported positive by one laboratory and negative by the other were known to be syphilitic, so that the negative reaction was the incorrect one. Considering, then, the cases that either laboratory may have reported as positive in nonsyphilitic cases, the percentage was 3.16. This is probably a higher percentage for false positives than actually occurred, as some of these cases were presumably syphilitic. This percentage variation is based on only one test. Repetitions resulted in a uniformity of findings in the majority of cases. This is considered a good testimonial for the accuracy of the tests as performed in these two laboratories.

DUODENAL PERFORATION (FISTULA) TREATED BY DUODENAL (JEJUNAL) ALIMENTATION

ANOTHER CASE

MAX EINHORN, M.D.

Professor of Medicine, New York Post-Graduate Medical School; Visiting Physician, Lenox Hill Hospital

NEW YORK

About a year ago I reported a case of duodenal perforation successfully treated by jejunal alimentation.[1] As these cases are rare and of difficult management I take the liberty of reporting another case with duodenal fistula which I recently had under observation in conjunction with Dr. Willy Meyer.

REPORT OF CASE

History.—A. P. P., man, aged 50, born in the United States, seen, May 10, 1919, was first seized twenty years before with an attack of pain and gas in the epigastrium, which lasted several hours. Eight years later, he had three attacks in a period of three months. Five years later, the attacks came on more frequently and then disappeared until the past six or seven years, when they came on two or three times a year. The attacks were sudden, lasted at the utmost twenty-four hours, disappeared, and would not recur for a long period. During the attacks there was severe pain in the epigastrium, radiating across both sides of the abdomen. There had been no vomiting, but continuous belching of gas. The patient said that when he walked 2 or 3 miles the attack would disappear more readily than otherwise. The pain had no relation to food. The bowels were usually constipated. There was never any jaundice. During the attack the patient would lose 6 or 7 pounds, which, however, he would quickly regain. The chief complaints at the time of the examination were distress in the epigastrium, and constipation.

Physical Examination.—The only positive relevant finding was epigastric pain on deep pressure. The gastric contents were positive for hydrochloric acid; hydrochloric acid, 24; acidity, 54; blood, negative; there were numerous starch granules, a few leukocytes, bile, mucus and epithelial cells. The duodenal contents were greenish yellow and very turbid; alkalinity, 30; amylopsin, 5; steapsin, 2; trypsin, 4; there were cholesterin crystals, calcium bilirubin crystals and bacteria. Bacteriologic examination yielded colon bacillus and staphylococcus. The duodenal bucket revealed bile stain, 53-63; no blood stain. Contents from duodenal bucket: amylopsin, 0; steapsin, 0; trypsin, 0; hydrochloric acid ±. The white blood count was 9,800; polymorphonuclears, 61 per cent.; lymphocytes, 39 per cent.; hemoglobin, 80 per cent. Roentgen examination was negative with regard to the gastro-intestinal tract and the gallbladder. The Wassermann test was negative. In the urine, albumin varied from negative to a trace; there were a few red blood cells and a few white blood cells; sugar was negative. The systolic blood pressure was 115; diastolic, 74. The feces was negative for blood; mucus was present; there were no ova.

Based on the findings of the duodenal contents, very turbid bile in the fasting condition, and the history, a diagnosis of cholecystitis with probable gallstones was made, and an operation advised.

1. Einhorn, Max: A Case of Duodenal Perforation Successfully Treated by Duodenal (Jejunal) Alimentation, Med. Rec. 94: 927 (Nov. 30) 1918.

Operation and Result.—Dr. Willy Meyer, May 26, performed a cholecystectomy. The gallbladder was found filled with stones. The pathologic diagnosis was chronic catarrhal cholecystitis. The patient was discharged from the hospital, July 12. Three weeks after the operation, the last tampon was removed. After that, bubbles of air came from the upper angle of the wound. Then a persistent discharge developed from this part of the wound. Frequently a great many bubbles of gas would come up from the same source and annoy the patient greatly. He was first seen by me with this discharge, October 11. The discharge was examined and found to contain food, was alkaline, and looked rather grayish.

EXAMINATIONS OF DUODENAL CONTENTS AS OBTAINED FROM THE FISTULA AND THROUGH THE DUODENAL TUBE

Discharge from the Fistula					
Date	Reaction	Amylopsin	Steapsin	Trypsin	Comment
10/11/19	Alkaline	2	0	0	Food present; many pus corpuscles; few red blood cells
10/15/19	Alkaline	—	—	—	Direct smear; white blood cells; milk; red blood cells; mucus
10/26/19	Alkaline	—	—	—	No food; pus corpuscles; few red blood cells
Duodenal Contents Obtained Through the Tube					
Date	Reaction	Amylopsin	Steapsin	Trypsin	Comment
10/21/19	Alkaline	5	2	1	Yellow; slightly turbid; mucus; pus corpuscles
10/24/19	25	9	1	3	Golden-yellow; mucus
10/25/19	20	9	1	3	Yellow, bile-stained cells; white blood cells; goblet cells
10/25/19	25	6	1	2	Here the duodenal contents were yellow, brown and turbid

The accompanying table shows the result of examination of the fistula discharge as contrasted with the duodenal contents proper obtained through the tube.

The discharge being slightly alkaline, containing food, and hardly any traces of bile, the diagnosis of a duodenal fistula in the ascending portion of the duodenum, probably not very far from the pylorus, was made. The patient was then given duodenal (jejunal) feeding. A duodenal tube (44 inches long) was inserted, October 15. Duodenal feeding was started, October 17.

October 22, a roentgen examination was made by William H. Stewart. The tube, inserted through the fistula, entered the duodenum and ran parallel with the duodenal tube.

October 27, the tube, being clogged, was removed, cleaned and reinserted. It was left in place until November 19; another tube was introduced, November 23.

December 4, the wound closed by itself; the tube was removed.

December 12, the patient was discharged from the hospital.

December 22, I saw the patient. The wound had healed perfectly, and the patient had gained in weight and strength.

COMMENT

The diagnosis of a duodenal fistula situated between the pylorus and the papilla of Vater was established by the character of material oozing from the fistula. It was of alkaline reaction and contained food particles and usually no bile. As the patient had enough acid in his stomach the fistula must have come from the duodenum. The frequent absence of bile in it demonstrated that the opening must be situated above the papilla of Vater. This conclusion appears to find corroboration in the roentgen-ray examination and also in the clinical syndrome of the case.

The roentgen ray shows the catheter inserted into the fistula, meeting the duodenal tube a short distance from the pylorus.

Among the symptoms the patient presented from the fistula, the intense inflammation of the skin around the duodenal fistula usually encountered was missing here, the skin preserving its natural color. This must be explained by the fact that the secretion did not contain pancreatic juice, as is in fact seen from the examinations of the fistulous material given in the table. The lack of pancreatic juice likewise speaks for the location of the fistula above the papilla of Vater.

The treatment consisted of atropin in conjunction with the jejunal alimentation. The patient first lost considerable weight (20 pounds). After three weeks of jejunal alimentation, the tube was pulled up to some extent so that the capsule end was now situated in the duodenum proper. We now had real duodenal alimentation, which agreed with the patient much better, as he did not lose any more in weight.

A short while after the jejunal alimentation had been begun there was no food found in the secretion from the fistula, although some pus corpuscles and a few red blood corpuscles were always encountered. A little while later, December 4, the opening closed up by itself and has remained closed ever since. The patient is now enjoying perfect health. He eats and drinks anything he chooses, without any discomfort. He has regained his lost weight, and there is no trace of the fistula left, excepting the visible scar on the abdomen.

The healing of the fistula by duodenal alimentation, in the case described and in the one reported a year ago, shows that we have in the duodenal tube, and the method of feeding through it, an important aid to overcome this very tedious and what was formerly thought to be an almost intractable condition.

20 East Sixty-Third Street.

GUMMA OF THE BREAST

REPORT OF A PROBABLE CASE

LOYD THOMPSON, M.D.
HOT SPRINGS, ARK.

The paucity of references, particularly by American writers, to the subject of syphilis of the breast makes this report and a review of the subject at this time desirable.

REPORT OF CASE

History.—Mrs. W. E. S., aged 33, housewife, came to me, Oct. 27, 1919, complaining of "nervousness" at times, pains in the arms and neck, frequent headache and a lump in the breast. An older sister was operated on for cancer at 36. The mother was living and well at 65. The father died following an injury. Five brothers and sisters were living and well. The patient had had appendicitis nine or ten years before, followed by several attacks. After the lapse of eighteen months, the appendix was removed. She had had measles as a child. She had been married twelve years and had had a miscarriage at seven months during the first year, and a second miscarriage at two months during the second year. I treated the husband for syphilis during the early spring of 1917. He had suffered from this disease for three years before marriage, but was assured by his family physician that he was cured. The patient never showed any outward manifestations of the disease, had enjoyed quite good health all her married life, and at the time I treated her husband, her blood Wassermann reaction was negative. About January, 1918, she began to notice pains and nervous twitchings in the neck, arms and legs. These were never severe. The lump in the breast was noticed in November, 1918, at which time it was about the size of a walnut. It gradually became larger, and during the summer of 1919 she was examined by a surgeon and had a Wassermann test made. This was reported as weakly positive. A short time

before coming to me she was examined by another physician, at which time her blood Wassermann reaction was strongly positive, and in spite of this he advised her to have an operation at once. This she refused, and came to me for treatment.

Examination.—The external genitals were negative. The superficial lymphatic glands were not palpable. The skin and mucous membranes were negative. An examination of the bones revealed a slightly tender spot on the sternum. The heart, lungs and abdomen were negative. The systolic blood pressure was 110; diastolic, 80. The eyegrounds were negative. The pupils reacted to light and accommodation. The left knee jerk was quite sluggish; otherwise the neurologic examination was negative. An examination of the left breast revealed a tumor of horseshoe shape, about 4 inches long and from 1 to 1½ inches in diameter, in the lower left quadrant of the breast. This was not tender, and the axillary glands on the left side were not enlarged. The blood Wassermann test by the classical method, with cholesterinized antigen, was ++++; in the ice-box and by the Thompson modification, ++++. A diagnosis of gumma of the breast was made and the patient placed on treatment.

Treatment and Course.—Mercuric benzoate was administered intramuscularly in doses of 0.02 gm. daily. Potassium iodid was given by mouth, 10 drops three times a day, increasing 5 drops daily until 100 drops three times a day were reached. Neo-arsphenamin in 0.6 gm. doses was administered at weekly intervals for six weeks. At the end of this time, Dec. 8, 1919, the tumor had decreased in size until it was about one fourth of its original dimensions, when the patient was forced to leave for her home, but promised to return for further treatment if the tumor began to increase in size. About six weeks after leaving Hot Springs the patient began taking "mixed treatment," which was continued more or less regularly till Feb. 26, 1920, when I again saw her during a visit to her home city. At this time the tumor had become considerably smaller and had divided into two parts, one being about the size of a walnut and the other one about half that size.

In view of the history of syphilis in the husband, the two miscarriages, the positive Wassermann test and the result of the therapy, there seems to be no doubt that this case was one of gumma of the breast.

HISTORICAL

Most writers on the subject of breast syphilis state that Sauvages,[1] in 1768, was the first to recognize this condition. However, Astruc,[2] as early as 1736, speaks of cancer of the breast as one of the symptoms of syphilis peculiar to women, but does not mention any specific instances. Sauvages' case undoubtedly was one of gumma of the breast. An unmarried woman of 30, who had contracted syphilis ten years before, presented a hard and knobby tumor in each breast, the the size of a hen's egg, both of which were painful. There were also present small ulcerations in the mouth and the vagina. All symptoms of lesions cleared up in six weeks under mercury, and never recurred.

The leading syphilographers who followed Astruc in the latter part of the eighteenth and the early part of the nineteenth centuries, notably Hunter,[3] Bell,[4] and Swediaur,[5] do not mention syphilis of the breast; but about the middle of the nineteenth century gummas of the mammae began to be recognized, and cases were reported by Yvaren,[6] Verneuil,[7] Richet,[8] Velpeau,[9] Lancereaux[10] and others. The latter author, in his Traité de la syphilis, published in 1867, gives a very good description of the condition and mentions five or six cases which had been reported. Since that time, reports of less than forty cases have appeared, and these mainly in the French and German literature.

PATHOLOGY

The only description of the pathology of syphilis of the breast which I have been able to find is that of Reinecke,[11] who described a case of syphilitic mastitis. The patient was a woman of 37, who died from uremic coma. The kidneys and spleen were extensively amyloid, and the liver the site of gummas and deep scars. The upper half of the breast was very hard, the tissue on the cut surface dry, while numerous red or yellowish-red, circumscribed foci, the size of a pinhead or larger, projected above the cut surface. These red, firm nodules were found to be due to proliferation of the interlobular and intralobular connective tissue, with degeneration and destruction of the glandular cells whose place was being taken up by connective tissue. The vessels, especially the arteries, were markedly thickened. While this description is not that of gumma, in the strictest sense, the nodules may be considered as small gummas, and there is no reason to believe that larger gummas of the breast would show any essentially different histopathology than similar lesions of other regions.

CLINICAL HISTORY

While gummas of the breast are more common in women (about three fourths of the reported cases occurring in that sex), they are sometimes seen in men. One or both breasts may be affected; and the tumors may be single or multiple, varying in size from a pea to an orange, or larger. They may be subcutaneous or intraparenchymatous. They may occur in any portion of the breast, and usually appear as hard, well circumscribed, movable tumors, which slowly increase in size. As a rule there is no pain, but in a few cases this has been a rather marked symptom. This was true in one of Bissell's[12] cases, in which the pain was sharp and always occurred at night. Sometimes, while there is no pain, the tumor is exceedingly tender on pressure. Usually there is no involvement of the lympathic glands of the axilla, but this has been reported in some cases.

If untreated, these tumors go on to softening ulceration and sloughing. The ulcerations present the typical punched-out appearance of ulcerating gummas of other regions, with more or less infiltration of the borders. When sloughing occurs the lesion is most foul smelling and filled with a grumous, brownish fluid. A most remarkable case of this kind was reported by Bryant,[13] in which the entire breast sloughed out and left a clear, granulating surface. Actual gangrene also has been noted, as in Robinson's[14] case.

Usually the tumors are not adherent to the overlying skin, and they are freely movable. As a rule, also, the nipples are not retracted, but this does sometimes occur, as in the case of Gay.[15]

1. Sauvages: Nosologia Methodica, Amsterdam **1**: 149, 1768.
2. Astruc: De morbis venereis, Libri sex, Paris, 1736, p. 296.
3. Hunter: A Treatise on the Venereal Diseases, Philadelphia, 1791.
4. Bell: Treatise on Gonorrhea Virulenta and Lues Venerea, London, 1796.
5. Swediaur: Traité des maladies syphilitiques, Paris, 1801.
6. Yvaren: Des métamorphoses de la syphilis, Paris, 1854, p. 435.
7. Verneuil: Bull. Soc. anat. de Par. **30**: 96, 1856.
8. Richet: Traité d'anatomie chirurgicale, Paris, 1857, p. 513.
9. Velpeau: Traité des maladies du sein, Paris, 1860, p. 534.
10. Lancereaux: Traité de la syphilis, Paris, 1867, p. 180.
11. Reinecke: Centralbl. f. allg. Path. u. path. Anat. **10**: 316, 1899.
12. Bissell: Syphilitic Tumors of the Breast, Med. Rec. **72**: 14, 1907.
13. Bryant: Diseases of the Breast, London, 1887, p. 72.
14. Robinson: Case of Syphilitic Gangrene of the Breasts, Med. Times & Gaz., London **2**: 261, 1864.
15. Gay: Syphilitic Mammary Disease, Report of a Case of Inherited Syphilis, Removal of Mammary Tumors by Thomas Method, After Treatment by the Iodides, Med. Rec. **24**: 91, 1883.

Gummas of the breast may also affect congenital syphilitics, and cases have been reported by Gay,[15] Gromo,[16] Neumann [17] and others.

The breast may also be the seat of gummas which have extended from gummatous lesions of the skin over the breast, or from gummatous lesions of the underlying ribs.

DIAGNOSIS

Any tumor of the breast should be looked on with suspicion, and careful anamnesis and examination for other evidences of syphilis, including the Wassermann reaction, should be made.

In women, the history is not of so much importance, as quite frequently women are not aware of a syphilitic infection, although a history of miscarriage would be at least suggestive. Too much reliance also is not to be placed on a negative history in men, as for various reasons the history may be given incorrectly.

Of course, the differential diagnosis of any breast tumor can be made by microscopic examination of a section; but it is unwise to perform a biopsy for such an examination unless preparation is made to perform at the same time a radical operation for carcinoma if the tumor is found to be such.

Gumma of the breast is to be differentiated from chancre, absess, benign tumor, carcinoma, sarcoma, tuberculosis, actinomycosis and sporotrichosis.

Gumma of the breast sometimes markedly resembles chancre and has been mistaken for this condition. However, as a rule, spirochetes can be demonstrated in chancre, while they are very hard to find in gumma, and the axillary lymph glands are more frequently enlarged. If the chancre is seen early, the Wassermann reaction will be negative, but later will become positive, while with gumma it may or may not be positive.

Abscess of the breast will present more pain than gumma, will fluctuate, and on aspiration, pus will be found.

Benign tumors may be most difficult of differentiation, as they never cause enlargement of the axillary lymph glands. The Wassermann reaction, however, is negative.

Carcinoma of the breast, as a rule, occurs later in life than does gumma. The process of ulceration is slower, the involvement of axillary glands more frequent and occurs earlier, while carcinoma is usually more painful than gumma.

Sarcoma of the breast is very rare; but the differentiation from gumma may be most difficult, and recourse to laboratory aid may be necessary.

In tuberculosis of the breast, the auxillary glands are virtually always enlarged. Sinuses and fistulas are usually formed by the gradual extension of the process to the surface, while an examination of the discharge, as a rule, will show tubercle bacilli.

Actinomycosis of the breast is rare, and is to be differentiated from gumma by the finding of rayfungus in the pus of the discharge.

Sporotrichosis of the breast is more rare, and its differentiation can be accomplished by the finding of the causative organisms.

Finally, in the diagnosis of gumma of the breast, it may be necessary to apply the therapeutic test. This is particularly true in the presence of a positive history or other clinical evidence of syphilis, or a positive Wassermann test.

16. Gromo: Contribution à l'étude des gommes du sein, Paris, 1878.
17. Neumann: Ueber die syphilitische Erkrankung der Brustdrüse, Allg. Wien. med. Ztg. **34**: 593, 1889.

PROGNOSIS

The prognosis of gumma of the breast in the main may be said to be good, though the prognosis for complete disappearance of the lesions depends on the recognition of the condition before ulceration has taken place. If the latter has occrred, while the lesions may, and usually do, heal under medication for syphilis there may be more or less scarring and, if the destruction of tissue has been great, considerable deformity.

TREATMENT

The treatment of gumma of the breast is the treatment of syphilis. It includes arsphenamin, mercury and iodids in some form or other. Sodium iodid intravenously in doses from 1 to 2 gm. and larger is to be highly recommended when large doses of potassium iodid by mouth are not well borne. In ulcerating lesions, local application of some powder, such as calomel and bismuth, equal parts, boric acid, acetanilid and calomel, equal parts, or aristol (thymol iodid) is highly beneficial.

It goes without saying that general hygienic measures should be instituted in gumma of the breast as in other types of syphilis.

Thompson Building.

LARYNGEAL CRISIS WITH AN UNUSUAL COMPLICATION

REPORT OF CASE

LEWIS T. GREGORY, M.D.
EVANSTON, ILL.

History.—Mrs. G. (27804), American, white, aged 39, widow, laundress, admitted as a suspicious case of tuberculous laryngitis to the Isolation Department of the Evanston Hospital, on the service of Dr. S. V. Balderston, complained of sudden attacks of difficulty in breathing; "tightness" in chest; hacking cough and hoarseness. She had not been well since an attack of influenza in the preceding fall. The present trouble dated back only about one month, when the patient developed a "cold" in the head, but paid little attention to it, as she was bothered with chronic catarrh. Four days before admission, the patient had a sudden attack of difficulty in breathing, which passed off in a few minutes. These paroxysms became more frequent and of greater severity. She had eight attacks during the first forty-eight hours after admission to the hospital, and about an equal number at home before coming to the hospital. She was unable to describe the "tightness" in her chest, but stated that the sensation was noticed only during the paroxysm. The cough was a more or less continuous hacking cough, and the hoarseness had become progressively worse until the patient was scarcely able to speak above a whisper. The patient had had the illnesses of childhood; "chronic rheumatism," chiefly in the legs, and worse at night; an abdominal disturbance leading to the removal of an ovarian cyst and the appendix four years before; sore throat several years before, which resisted treatment for a long time, and influenza last fall. The family and menstrual histories were negative. The patient had never been pregnant, and denied venereal infection. Her appetite was good, she slept fairly well, and there was no gastro-intestinal, pulmonary, cardiovascular or genito-urinary trouble not already mentioned.

Physical Examination.—The patient was well developed; she was somewhat hoarse, and occasionally gave a dry hacking cough. The temperature was 98 F., the pulse rate 88, and respiration 24. There was a large perforation of the nasal septum. The patient stated that she had had several operations on the nose for catarrh. Very slight symmetrical

edema of the vocal cords was found. There were many small atrophic scars all over the chest and back. The patient said that these came from "pimples" that she had had several years previously. There were marked tenderness and slight roughening over the tibia of both legs. Examination of the throat, mouth, neck, lungs, heart and abdomen, and of the urine and blood yielded negative results. The neurologic examination was negative except for a slightly sluggish reaction of the pupil to light.

Treatment and Course.—Syphilis was suspected, and a Wassermann test was ordered. Before the report from the laboratory was received from this, a report of the nose and throat cultures (taken as a routine on admission) was positive for diphtheria. Ten thousand units of antitoxin were given.

As mentioned in the foregoing, during the first forty-eight hours after admission she had eight paroxysms of difficult breathing. I saw her in three of these. She would suddenly become very hoarse, and within a few seconds would have air hunger, which became progressively severe, until respiration was almost impossible, and the lips and face became markedly cyanosed. Before a hypodermic injection of atropin could be administered, the paroxysm was over. The average duration of these paroxysms was about three minutes. Between attacks she felt perfectly comfortable except for the slight cough and hoarseness.

On the third day, the Wassermann report came back ++++ with fresh and inactivated serum and with two antigens. A diagnosis of syphilitic laryngeal crisis (laryngeal stroke of Charcot) was made, and antisyphilitic treatment was instituted. Neo-arsphenamin, 0.45 gm., was given intravenously, and daily mercury rubs were started. After the first injection, the hoarseness started to clear up, and she had no further paroxysms.

It was necessary to keep her in quarantine for twenty-seven days before diphtheria bacilli had disappeared from the throat and nose.

To date she has kept up the weekly intravenous injection and daily rub, and so far has had no return of any of the symptoms, and the tenderness over the tibia and the nightly pains in the legs have entirely disappeared.

SYPHILITIC LARYNGEAL LESIONS

Conner,[1] in 1903, reviewed the literature of syphilis of the larynx, and found that 128 cases had been reported. None of these, however, appear to be of a tabetic type, but were syphilitic lesions localized in the larynx proper.

Weinstein,[2] in 1916, reported a case more like the one reported above. The patient lost his voice, and a week passed before a diagnosis was made. Neo-arsphenamin was administered intravenously, and within five hours his power of speech had returned.

Kyle,[3] in 1918, gave a summary of the various syphilitic laryngeal lesions. He distinguished: (1) mucous patch; (2) thickening of the vocal cords; (3) paresis, variable from week to week; (4) gumma; (5) ulceration; (6) cicatricial changes, and (7) invasion of contiguous parts. He also stated that a primary syphilitic laryngeal lesion has not been reported, and that gumma is the most frequent type.

COMMENT

The case reported was apparently a syphilitic laryngeal paresis, corresponding to a gastric crisis, so frequently seen. It might have been an unusual type of diphtheritic paresis, but this is not likely, as there was no history of any diphtheritic process and no local evidence of diphtheria in an active form. Furthermore, it was a paresis, transient in type, and not a paralysis, as usually seen following diphtheria. Finally, the Wassermann reaction was strongly positive with other evidence of syphilis as seen in the sluggish pupil, perforated septum, scars on the back and chest, and painful and roughened tibia, with a history of chronic sore throat and nocturnal pains in the lower extremities. The immediate response to antisyphilitic treatment confirms the diagnosis. As the left recurrent laryngeal nerve hooks around the arch of the aorta, one interesting possible explanation of the paroxysm is that a beginning syphilitic aortitis at this point caused an irritation to that nerve.

Evanston Hospital.

1. Conner, L. A.: Syphilis of the Trachea and Bronchi, Am. J. M. Sc. **125**: 57 (July) 1903.
2. Weinstein, Joseph: Syphilis of the Larynx, New York M. J. **104**: 165 (July 22) 1916.
3. Kyle, J. J.: Syphilis of the Larynx, Am. J. Syphilis **2**: 727 (Oct.) 1918.

A METHOD OF TREATMENT FOR NEUROSYPHILIS*

JOHN A. KOLMER, M.D.
PHILADELPHIA

A criticism of the Swift-Ellis system of intraspinal therapy of neurosyphilis may be made because of the minute amounts of arsphenamin detectable as arsenic, carried over in serum secured by drawing blood one hour after the intravenous injection of arsphenamin. This objection is removed by the technic of Ogilvie, who adds arsphenamin, and by that of Marinesco, who adds neo-arsphenamin, to serum in vitro prior to intraspinal injection; but in both methods the patient may be deprived of the beneficial effects of the intravenous administration of these drugs, which probably constitutes a valuable part of the Swift-Ellis treatment. For more than a year, I have used a plan of combined treatment with mercurials and arsphenamin by which I believe that these objections are corrected. In addition, advantage is taken of the very probable value of spinal drainage treatment advocated by Dercum and Gilpin, which is based on the assumption that the rapid withdrawal of cerebrospinal fluid is followed by an increase in the vascularity of the cord, resulting in improved nutrition and facilitating the possible passage of arsphenamin or mercury in the blood to the tissues of the cord and brain and cerebrospinal fluid. Dercum and Gilpin thoroughly drain the subarachnoid space by spinal puncture immediately after the intravenous injection of arsphenamin or during mercurial treatment, but do not inject anything intraspinally; spinal drainage alone has been reported by them as yielding beneficial results.

PLAN OF TREATMENT

Due care is taken to exclude all cases of probable brain tumor:

1. A "course" of treatment covers four weeks; during this period, twenty-four inunctions of mercury, 360 grains of potassium iodid and four combined intravenous and subdural injections of arsphenamin are given, followed by an intermission. Treatment begins with daily inunctions of mercury for one week and the oral administration of 5 grains of potassium iodid three times a day. At the end of this week the first intravenous and subdural injections of arsphenamin are given, and they are repeated at intervals of a week until four have been administered. Mercurial inunctions and potassium iodid are given throughout, excepting on the days when arsphenamin is administered.

* From the Dermatological Research Laboratories.

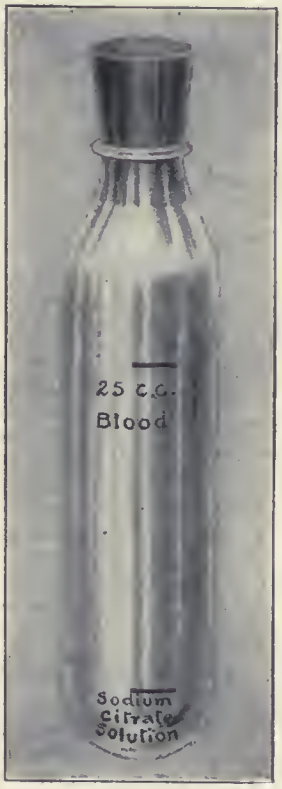
The urine is examined at least once a week for evidences of renal irritation. If intolerance to mercury or iodid or both develops, the doses are reduced or the administrations are given every other day.

2. On the day when the intravenous and subdural injections of arsphenamin are given, the patient is put to bed at noon and lunch is omitted; light supper is generally permitted, and additional refreshment is given at 9 p. m. if food is desired. If the patient is constipated, a mild cathartic is given the day before to insure an evacuation of the bowels during the morning hours.

3. Six-tenths gm. of arsphenamin is dissolved in 150 c.c. of sterile physiologic sodium chlorid solution prepared of freshly distilled water [1] and a 15 per cent. solution of sodium hydroxid is added until the solution is just completely cleared, the amount of alkali being measured as drops or one-tenth cubic centimeters; after complete neutralization (clearing), three or four drops more of the alkali are added to the solution. *Sterile saline solution is now added to bring the total volume to exactly 200 c.c.;* each cubic centimeter of the solution contains, therefore, 0.003 gm. of arsphenamin, and 1 c.c. is removed to a sterile test tube to be used about one hour later in dose of 0.1 c.c. (0.0003 gm.) for arsphenamizing the serum in vitro.

4. The solution of arsphenamin is now administered by intravenous injection, the dose being approximately 0.6 gm., well diluted.

5. *Immediately after the intravenous injection,* 25 c.c. of blood are removed from a vein of the opposite arm with a sterile record or Luer syringe and expelled into a sterile 50 c.c. centrifuge tube fitting the international centrifuge. The tube has a narrow neck facilitating the use of a sterile rubber stopper, as shown in the illustration, and carries 4 c.c. of a sterile 10 per cent. solution of sodium citrate in physiologic sodium chlorid solution to prevent coagulation of the blood.



Centrifuge tube for the aseptic collection of plasma and serum.

6. The blood is at once gently mixed with the citrate to prevent coagulation, and immediately centrifuged at high speed for at least twenty minutes, 10 or 12 c.c. of the clear plasma being pipetted aseptically to a sterile test tube. Sodium citrate may be omitted and the coagulum of blood gently broken up with a sterile glass rod before centrifuging, but from ten to fifteen minutes are required for coagulation before breaking up the clot, and the resulting serum is usually tinged with hemoglobin; the latter, however, is not harmful.

7. *One-tenth c.c. of the solution of arsphenamin* held in readiness is now added to the plasma or serum and thoroughly mixed; the dose is 0.0003 gm. (⅓ mg.), which is safe for the first injection. Subsequently the dose may be increased to 0.2 c.c. (0.0006 gm.) and occasionally to 0.3 c.c. (0.0009 gm.); I have never given a larger amount.

8. The arsphenamized serum is placed in a water bath at 56 c. (132.8 F.) for thirty minutes.

9. Spinal puncture is now performed in an aseptic manner in the lateral posture with a gage No. 19 Babcock needle; the diameter of this needle is about 1 mm., which insures a slow rather than rapid flow of spinal fluid and consequently a gradual drop in cerebrospinal fluid pressure, and the needle fits the record syringe. Preliminary to puncture in the third or fourth lumbar interspace, the skin and subcutaneous tissues are infiltrated with about 1 c.c. of sterile 1 per cent. procain by means of a No. 26 needle, which renders spinal puncture almost painless. Spinal fluid is allowed to flow until about 30 c.c. are secured; at this time, the flow is usually quite slow, many seconds being required for the formation of a single drop. The warm arsphenamized serum (usually from 10 to 12 c.c.) is now slowly injected by gravity or with a record syringe. As a general rule the *slow* injection of 12 c.c. of serum under these conditions is almost painless. Each specimen of spinal fluid is submitted for total cell count (fresh fluid being used), protein determinations, and Wassermann and colloidal gold tests.

10. The foot of the bed is elevated and the patient requested to lie on his back for several hours and to stay in bed until the following day. In every instance but one the patient has been able to leave the hospital the following morning, feeling no ill effects, except the soreness resulting from the needle punctures.

The time required for the operative procedures is about two hours, thus distributed:

(*a*) About thirty minutes for the intravenous injection of arsphenamin and the withdrawal of blood.

(*b*) About one hour to secure and arsphenamize the serum.

(*c*) About one-half hour to conduct spinal puncture, drain the canal, and inject the arsphenamized serum.

The 1 c.c. of solution of arsphenamin carried over in a sterile test tube for arsphenamizing the serum may be used for this purpose with safety any time within three hours of its preparation.

ADVANTAGES

The advantages of this method may be thus summarized:

1. The patient receives arsphenamin both intravenously and intraspinally.

2. Blood is removed at once, insuring in the serum a larger amount of arsphenamin than is secured after an interval of an hour, as in the Swift-Ellis method.

3. Plasma or serum is secured at once, rendering the complete treatment possible within two or three hours instead of an interval of over night between the intravenous and intraspinal treatments.

4. The removal of from 20 to 30 c.c. of cerebrospinal fluid, followed by the injection of but 10 to 12 c.c. of arsphenamized serum, very probably leaves cerebro-

1. Kolmer, J. A., and Yagle, E. M.: Hemolytic Activity of Solutions of Arsphenamin and Neo-Arsphenamin (J. A. M. A. **74**: 643 [March 6] 1920). The use of sterile physiologic sodium chlorid solution instead of water, and the addition of only a slight excess of alkali over that required for complete clearing of the solution instead of one third excess, reduce the hemolytic activity of the solution, which is probably a factor of importance in the intravenous injection of 200 c.c.

spinal fluid pressure reduced for some time, producing increased vascularity of the cord and probably also of the brain, with the beneficial effects ascribed alone to spinal drainage. Indeed, injection of arsphenamized serum within an hour of the intravenous injection may increase extravasation from the meningeal vessels by reason of irritation produced by the serum and arsphenamin in the subarachnoid space, in addition to the increased vascularity and transudation ascribed to reduction alone of cerebrospinal fluid pressure.

5. The patient receives the benefit of treatment with mercury and iodids and of spinal drainage conducted while under the influence of these antisyphilitic medicinals.

CONTRAINDICATION TO THE METHOD

The disadvantage of the method (encountered once in my experience) is the inadvisability of giving the intraspinal treatment in the presence of a reaction following the intravenous injection of arsphenamin. The administration of arsphenamin as described has been only exceptionally followed by a reaction of flushing and chills, and with one exception the patients have expressed a desire for the intraspinal treatment and have enjoyed a good sleep and rest, toward which a psychic element due to the realization that the ordeals were over has contributed in no slight degree.

In the one case in which a reaction following the intravenous injection of arsphenamin prevented the intraspinal treatment, a second specimen of blood was drawn later in the afternoon after the subsidence of the reaction and placed in a refrigerator over night, followed by separation of the serum next day and arsphenamizing by the addition of 0.1 c.c. of a solution of arsphenamin prepared by dissolving 0.1 gm. in 30 c.c. of 0.8 per cent. salt solution, neutralizing with a normal solution of sodium hydroxid (about 4 per cent.) [2] adding two or three drops more of alkali, and then salt solution to bring the total volume to exactly 33 c.c.; 0.1 c.c. of this solution added to the serum represents 0.0003 gm. of arsphenamin (⅓ mg.). After heating the arsphenamized serum at 56 C. for thirty minutes, spinal puncture, drainage and intraspinal injection were conducted as described above, and the patient was kept in bed for another twenty-four hours, which I regard as a wise precaution after intraspinal treatment or even simple spinal puncture and the removal alone of 5 c.c. or more of spinal fluid for laboratory examinations.

1720 Lombard Street.

2. A normal solution of sodium hydroxid, or one of approximately 4 per cent. strength, is better than a 15 per cent. solution for the purpose of preparing solutions of small amounts of arsphenamin, as 0.1 gm.

Influenza in Alaska.—The annual report of the governor of Alaska shows that thousands died in an influenza epidemic through want of care. Influenza broke out early in October in practically all the coastal towns following the lines of steamer travel. Travel to the interior was stopped and so it escaped the outbreak. It is estimated that there have been 1,500 deaths, chiefly among the natives, on the Seward Peninsula and vicinity. There were over thirty deaths among the passengers on the last trip of the steamer *Victoria*. At Kodiak and on Cook Inlet the mortality was extremely high. Whole villages of Eskimos lost their entire adult population. Many infants were frozen in their dead mothers' arms. Medical relief was given where possible; destitution was relieved, and the orphan children gathered up and placed in institutions until appropriations should become available for their permanent care. The burial of dead natives alone cost approximately $20.000.—*U. S. Bull.*, Dec. 15, 1919.

AN ANALYSIS OF FIFTY-SIX CASES OF BREECH PRESENTATION

DESCRIPTION OF A METHOD OF DELIVERY IN WHICH MANUAL EXTRACTION OF EXTENDED ARMS IS RARELY NECESSARY

HARBECK HALSTED, M.D.
NEW YORK

These cases of breech delivery occurred at the Manhattan Maternity and Dispensary on the services of Drs. J. Clifton Edgar, Austin Flint and R. E. Brown, during my time as resident surgeon (June 3, 1915, to July 1, 1916).[1] In cases of fetal death, the necropsies were performed by Dr. L'Esperance of Cornell University.

A large number of the deliveries of the Manhattan Maternity and Dispensary are performed on the outdoor service, by interns whose service is only three months. Therefore an effort was made to find or devise a standard method of breech delivery that was as near "fool proof" as possible.

As a large part of the delay in breech delivery is due to the more or less common practice of manually going up past the head through the pelvic inlet to deliver extended arms, an attempt was made to find a method whereby this was seldom, if ever, called for. The use of the delivery described herewith has practically eliminated this necessity, except when there is a nuchal hitch.

METHOD OF DELIVERY

Until the breech delivers from the vulva, the procedure is the same as with any other breech delivery. As soon as the breech delivers, the child is covered with a warm, wet towel, and gentle traction is made downward and backward, assisted by pressure from above, until the umbilicus is delivered; then a loop of the cord is pulled down, the child is grasped about the pelvic girdle, and strong traction is made downward and backward. The bisacromial diameter of the body is kept in the anteroposterior diameter of the maternal pelvis until the anterior scapula is seen to slip under the symphysis; at this point it is very easy to deliver the anterior arm from the vagina. Now the child's body is lifted over the mother's abdomen, whereupon the posterior arm will slip out. The occiput is allowed to rotate under the symphysis, and the body to go with it. The child is placed along the right forearm, the index finger is put in the child's mouth, with the fingers of the left hand over the child's shoulders, care being taken not to fracture the clavicles, and moderate traction is made downward and backward until the mouth can be delivered by flexion upward. After the mouth is delivered, one should go slow unless there is some indication for speed.

Before the delivery is begun, the position of the child should be accurately made out so that there will be no danger of allowing the occiput to rotate posteriorly. This can be prevented by always delivering the anterior hip first and assisting the rotation of the occiput forward by rotating the body in the proper direction. In left sacral positions, the child's body should be rotated to the right and anteriorly. In right sacral positions, to the left and anteriorly.

Before any traction is made from below, an assistant makes firm pressure on the child from above; this pressure is continued until the child's mouth is delivered. It is made in such a manner that the head will remain flexed on the chest and the arms will not extend. This pressure is a very important part of the delivery.

The main points to remember are:

1. As soon as any traction is made, it should be made downward and as far backward as possible. To do this it is

1. The reason I did not complete this paper earlier is that I have been on active duty in the United States Naval Reserve Forces for two years.

always necessary to have the woman's hips on or just over the edge of the operating table, or, if done in a home, over the edge of a kitchen table. The delivery will be facilitated, especially the traction backward, if the legs of the woman are held by two assistants so that the thighs are slightly flexed on the abdomen and the legs on the thighs with the feet on a level with the buttocks, and not in the ordinary lithotomy position with the legs in stirrups. A breech delivery should never be performed in bed.

2. One should not go up after the extended arms, unless certain that there is a nuchal hitch, that is, an arm caught back of the occiput; for in all other positions the arms will squeeze through the pelvic inlet with sufficient traction from below.

3. Firm pressure should be maintained from above, applied in such a way as to keep the head flexed.

No originality is claimed for this method, but if it is used conscientiously, breech delivery will lose a great many of its terrors, and the fetal mortality will be decreased.

The method was used in nearly all of the cases here reported. Versions and multiple births are not included in this series.

The position was left sacro-anterior in thirty cases; left sacroposterior in one; right sacro-anterior in twenty-one, and right sacroposterior in four. As the majority of these patients lived in tenements, and so were not often seen early in labor, the number of sacroposterior positions reported is probably much too small.

REPORT OF STILLBIRTHS

In this series there were nine stillbirths.

CASE 1 (Breech L. S. A. 198). The fetus, born at the seventh month, was macerated and weighed 3 pounds.

Necropsy: The fetus was too decomposed for microscopic section.

CASE 2 (Breech L. S. A. 204). The mother, a quintipara, lived in a tenement house. When the intern arrived at the bedside, all the baby had been born but the head, and although this was very easily delivered it was too late, and the baby was dead.

Necropsy: The child was a large, normally developed boy. There were punctate hemorrhages in the thymus, lungs, liver and suprarenals, and fluid blood. The thymus was very large, almost double normal size. This may have been a predisposing factor in the cause of death.

Anatomic Diagnosis: Asphyxia in new-born; fluidity of blood; enlarged thymus.

CASE 3 (Breech R. S. A. 115). The fetus was a marked specimen of an encephalic monster that never breathed. The labor was very easy, lasting only one hour and fifty-five minutes.

CASE 4 (Breech L. S. A. 206). The mother was a primigravida. The membranes ruptured during the first stage. Labor lasted thirteen hours and forty minutes. The head stuck at the pelvic inlet for a full ten minutes. The heart was beating at birth, but the baby could not be resuscitated. The arms were flexed on the chest.

CASE 5 (Breech L. S. A. 209). The mother, aged 19, was a secundigravida. The membranes ruptured at the second stage of labor. The delivery was spontaneous after a labor lasting eight hours and forty-five minutes. The cord was around the baby's neck. The baby weighed 7 pounds and 8 ounces.

CASE 6 (Breech L. S. A. 211). The mother was a tertigravida. The two previous deliveries were instrumental. The baby weighed 11 pounds and 11 ounces. The patient was ten days overdue. The membranes ruptured two days before the onset of labor. Labor lasted seventeen hours and eighteen minutes. Delivery was very difficult. The arms were extended, gone up after, and manually extracted. The head was extracted with difficulty. This stillbirth was due to the excessive size of the child.

Necropsy: The baby was a very large boy with excessive development of fat and purplish discoloration of the entire skin. The liver was large and showed multiple hemorrhages. The spleen was large and congested. The suprarenals were entirely destroyed by hemorrhage, forming almost a hemorrhagic sac. The kidneys were deeply congested. The bases of both lungs showed hemorrhages. The remaining portions of the lungs showed some areas of emphysema, as if a pulmotor had been used. The thymus was large. The brain showed diffuse hemorrhage over its entire surface.

Anatomic Diagnosis: Asphyxia; overdevelopment.

CASE 7 (Breech L. S. A. 212). The mother was a quadrigravida with a generally contracted pelvis. The baby weighed 9 pounds and 11 ounces. The membranes ruptured early in the first stage. The arms were extended, gone up after, and manually extracted with great difficulty. Then the head stuck at the pelvic inlet for some time. In this case we had a large child and a small pelvis.

Necropsy: The body was that of a full term, well developed girl. The organs, especially the kidneys and the suprarenals, showed congestion. There were punctate hemorrhages in the lungs and the thymus. The heart was normal. The brain showed diffuse meningeal hemorrhages.

Anatomic Diagnosis: Cerebral hemorrhage; asphyxia.

CASE 8 (Breech L. S. A. 222). The mother had had ten previous labors. The delivery seemed very easy, but the baby could not be resuscitated. The membranes ruptured in the first stage. The labor lasted nine hours and forty minutes. The arms were extended, but caused no delay.

Necropsy: The child was a well developed girl. There were no skin lesions. The area of aeration in the lungs was small; the remaining portion was atelectatic. The bronchi were filled with thick, greenish, tenacious mucus. There were small punctate hemorrhages in the thymus. The other organs were apparently normal.

Anatomic Diagnosis: Asphyxia; mucous plugs in the bronchi.

CASE 9 (Breech L. S. A. 227). The labor occurred four weeks prematurely in a quintipara. The labor lasted four hours and fifteen minutes, and terminated spontaneously. The baby was born dead. It weighed 6 pounds and 12 ounces.

OTHER DATA

No babies that were born alive died while still under our care. There were fourteen primiparas and forty-two multiparas, the latter being thus divided: secundiparas, 9; tertiparas, 9; quadriparas, 6; quintiparas, 9; sextiparas, 2; septiparas, 2; octiparas, 2, and 1 nonipara, 1 decipara and 1 undecipara.

The ages of the mothers ranged from 18 to 44 years. The age did not seem to have any influence either on the frequency or on the ease of delivery.

The fetal heart sounds were mentioned as being heard fourteen times above the level of the umbilicus; at the level of the umbilicus, six times, and below the level of the umbilicus, twenty times. It was not heard seven times, and not mentioned nine times.

The living babies varied from 3 pounds and 8 ounces to 10 pounds. The stillborn babies' weights ranged from 3 pounds (a macerated premature baby) to 11 pounds and 11 ounces. The average weight for all cases was 7 pounds and 2 ounces; for the stillborn babies, 7 pounds and 12 ounces, and for babies born alive, 7 pounds.

No note was made of whether or not the arms were extended unless they gave trouble. They were manually extracted in two cases. (These were both described under stillbirths, Cases 6 and 7.) There is one case described in which there seems to have been a nuchal hitch:

The breech was born as usual up to the shoulders, the scapula appearing from under the symphysis before reaching for the anterior arm. This, the anterior (left), was extended

and lay behind the occiput. The posterior arm was delivered first in the usual manner, then the anterior flexed and pulled down.

The term "usual manner" means the delivery described above.

The after-coming head was mentioned as being delivered by the Smellie-Veit method in twenty-four cases. The delivery was recorded as spontaneous in twelve cases. No mention was made of the delivery of the head in twenty cases. No craniotomy was done on an after-coming head.

The forceps were never applied to either the head or the breech, although they were frequently held in readiness when we expected trouble. The only three cases in which the head stuck and forceps might have been of help occurred in tenements when forceps were not at hand. It might be a good rule always to have forceps ready before starting a breech delivery.

Chloroform was used in twenty-six cases, ether in one case. There was no anesthesia in nineteen cases. No mention was made as to any anesthesia being used in the remaining eleven cases. I myself prefer the patient well anesthetized for the actual delivery.

The longest labor in the series lasted thirty-three hours and fifteen minutes. This was in the case of a primipara, aged 23. The membranes ruptured one day before she went into labor. Finally, a breech extraction was done and she was torn through the sphincter ani. The shortest labor was two hours and fifteen minutes. This occurred in a tertipara. The baby weighed 5 pounds and 9 ounces. The average length of labor in the primigravidae was seventeen hours and four minutes. The average length of labor in the multigravidae was nine hours and eight minutes. From these figures it would seem that the length of labor was not much influenced by the presentation.

The time of rupture of membranes was: in the second stage of labor, seventeen cases; in the late first, ten cases; during the first stage, ten cases; at the onset of labor, one case, and before labor began, three cases, in one of these two days and in another one day, before labor began. The time of rupture was not mentioned in fifteen cases.

There were only two cases of definite prematurity. In both, the baby was born dead; one was macerated. One case was ten days past term. This baby was also born dead after a difficult labor.

Of lacerations of the perineum, in the primigravidae there were six first degree; two second degree, and one third degree; in the multigravidae, four first degree and one second degree. It seems to me that there were as few lacerations in this series as there would have been in a similar number of vertex deliveries, with the exception of the third degree laceration.

In these cases, deformity of the pelvis seemed to play little part, as only one woman is recorded as having any deformity, and she only a moderately generally contracted pelvis.

One baby was a monster; two had club feet; and one of these also had spina bifida. Aside from these, there were no marked abnormalities.

CONCLUSIONS

1. The most dangerous condition in breech delivery seems to be disproportion between the size of the child and the pelvis.

2. Deformities of the pelvis and child did not seem to play much part in determining the breech presentation.

3. Early rupture of the membranes is a serious happening.

4. Manual extraction of extended arms is seldom indicated. Manual extraction of the arms was used twice in this series, and in both cases the child was stillborn.

221 West Fifty-Seventh Street.

DIGESTIBILITY OF STEAM-COOKED SOY BEANS AND PEANUTS*

ARTHUR D. HOLMES, M.D.
Specialist in Charge of Digestion Experiments, Office of Home Economics
WOODSTOWN, N. J.

The unusual demand for foods, coupled with the high price of labor and fertilizer, makes it necessary that each acre of land devoted to food crops produce the maximum amount. From an agricultural standpoint the legumes are considered a profitable crop, since they enrich the soil with nitrogen while producing valuable food for man and beast. The legumes in general have long been important sources of food, and on account of their high protein content are sometimes referred to as the "poor man's beefsteak"; but two valuable kinds, soy beans and peanuts, have been relatively little used in this country in the human dietary.

Studies of the food value of soy beans and peanuts have supplied considerable data relative to their dietary importance. A comparison [1] of the composition of legumes in general with the composition of soy beans and peanuts shows that the latter are much richer in protein and fat, the expensive constituents of the diet, and accordingly from this standpoint are very valuable. For dietary purposes, however, the nature as well as the quantity of protein is of importance, since incomplete proteins cannot serve over long periods of time as the sole source of tissue-forming material.

Studies of the amino-acids from legume proteins made by Osborne and co-workers [2] and by Johns and Jones [3] have shown that those from the proteins of soy beans and peanuts are in kind and proportion such as are believed to be essential to normal development. Such was not the case with the other legume proteins studied.

This belief is confirmed by biologic studies. McCollum, Simmonds, and Pitz,[4] in discussing the effects of feeding laboratory animals on a diet rich in navy beans, say: "We feel safe in saying that this legume should under no circumstances form a principal part of any relatively monotonous diet." McCollum and Simmonds [5] conclude that "the protein mixture from maize 80 and navy beans 20 per cent. has just about one-half the biological value for growth that the total protein mixture in milk possesses." Daniels and Nichols [6]

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* Prepared under the direction of C. F. Langworthy, Chief, Office of Home Economics, Department of Agriculture, Washington D. C.

1. Bull. 28, U. S. Dept. Agr., Office Exper. Sta., 1899, pp. 65-75. Farmers' Bull. 121, U. S. Dept. Agr., 1916, p. 17. Bull. 717, U. S. Dept. Agr., 1918, p. 5.

2. Osborne, T. B., and Co-Workers: Am. J. Physiol. **18**: 307, 1907; ibid. **19**: 468-474, 1907; ibid. **22**: 368, 1908; ibid. **22**: 424, 1908; J. Biol. Chem. **5**: 198, 1908.

3. Johns, C. O., and Jones, D. B.: J. Biol. Chem. **28**: 77, 1916; ibid. **30**: 33, 1917.

4. McCollum, E. V.; Simmonds, N., and Pitz, W.: J. Biol. Chem. **29**: 521-536 (April) 1917.

5. McCollum, E. V., and Simmonds, N.: J. Biol. Chem. **32**: 35 (Oct.) 1917.

6. Daniels, A. L., and Nichols, N. B.: J. Biol. Chem. **32**: 95 (Oct.) 1917.

find that "the protein of the soy bean appears to be quite as valuable as the casein of milk." Osborne and Mendel,[7] in discussing the use of soy beans as food, state that "the proteins of the soy bean, unlike those of the other leguminous seeds thus far investigated, are adequate for promoting normal growth." Referring to reproduction of laboratory animals restricted to soy beans as a source of protein, these investigators[8] say: "On diets containing either the soy-bean meal or the commercial soy-bean meal, together with fats and 'protein-free milk' or our 'artificial' salt mixture, several broods of vigorous young have been produced, and these young have grown normally on diets the same as those on which their parents were raised. This is a further demonstration of the nutritive efficiency of this legume, in striking contrast with the adverse results obtained with kidney beans and garden peas." Daniels and Loughlin,[9] in discussing feeding experiments with peanuts, report: "Good growth was secured also with a ration supplying 15 per cent. protein from the peanut meal. The proteins of peanuts are comparable to those of the soy bean, since it has been shown that both legumes supply the essential amino-acids in sufficient amounts for normal growth and reproduction."

Owing to the convincing results of a large number of carefully controlled metabolism studies with laboratory animals, students of nutrition are agreed that in order to maintain the well-being of the body through the processes of growth, maintenance and reproduction it is necessary that the diet supply in addition to an adequate amount of protein, fat, carbohydrate, and mineral matter, three as yet unidentified food accessories, which have been designated fat-soluble A, water-soluble B, and water-soluble C. In a number of the studies referred to already and in reports of others,[10] the value of legumes as sources of these accessories or vitamins is reported. Fat-soluble A is nearly, if not entirely, lacking in all legumes thus far reported on with the single exception of the soy bean. Water-soluble B is found in satisfactory amounts in all thus far investigated. Water-soluble C appears to be lacking in the dried seeds of all the legumes studied, but to be abundant during the sprouting state. Whenever present, it appears to lose its dietary efficiency when cooked at a temperature and under pressures such as were used in the experiments described in the present paper.

Studies of the digestibility of legume proteins have been made by Rubner,[11] Malfatti,[12] Prausnitz,[13] Snyder,[14] Richter,[15] Woods and Mansfield,[16] and Wait,[17] and the general conclusion to be drawn from the experimental data obtained by these investigators is that while the legume proteins are fairly well utilized by the human body, comparing favorably in this respect with the cereal proteins, they are not so completely utilized as the animal proteins supplied by meats, eggs and milk. Few studies have been made of the digestibility of proteins present in soy beans and peanuts. Oshima[18] reports three experiments in which the average digestibility of the total protein of a diet of tofu (soy-bean curd) and rice, of which 83 per cent. was soy-bean protein, was 95 per cent. Mendel and Fine[19] found the digestibility of soy-bean protein to be 85.3 per cent., as compared with 77.9 per cent. for that of the navy bean. Lyman and Bowers[20] have also studied the digestibility of soy-bean meal and report two digestion experiments with bread made with soy-bean meal in which the digestibility of the protein averaged 91.1 per cent. No data were found in the literature consulted regarding the digestibility of peanut protein.

During the period of unprecedented demand for foods occasioned by the recent war, it appeared to me that soy-bean and peanut press cakes could well be utilized for food purposes, especially the cakes that resulted from "cold pressing" sound soy beans and peanuts. Accordingly, experiments were conducted in the Office of Home Economics Laboratory of the Department of Agriculture to determine the digestibility of the proteins supplied by these legumes when the press-cake flours were blended with wheat flours and served in the form of an unleavened bread. Seven experiments with soy-bean flour and eleven with peanut flour showed the proteins to be 85.3 per cent. and 85.8 per cent. digested, respectively.[21] In view of the high digestibility of soy beans and peanuts and the possibility of using these legumes as vegetables served in the same manner as navy beans and garden peas, additional tests seemed desirable, and the experiments here discussed were conducted to determine the digestibility of soy beans and peanuts when cooked under conditions approximating those employed in the preparation of commercial canned beans.

GENERAL PROCEDURE

For these experiments whole mammoth yellow soy beans grown at the government field station at Arlington, Va., were obtained from the Bureau of Plant Industry, and raw shelled peanuts were bought from a local dealer. The soy-bean and peanut experiments were carried on separately, but the general procedure was the same. The peanuts were skinned and divided into half kernels, and both beans and peanuts were thoroughly washed and placed with sufficient salt and water in a pressure cooker under 15 pounds pressure for two hours, at which time they were thoroughly cooked.

The diet, so chosen that the accessory foods should supply a limited amount of protein and at the same time be typical of a simple mixed diet, consisted of soy beans or peanuts, bread, butter, sugar, oranges, and tea or coffee. Tea and coffee were taken hot; the rest of the diet was eaten cold. The experimental periods were of three days' duration. The six subjects were men from 19 to 41 years old who had acquired considerable experience in this type of work. They were informed that a large consumption of soy beans or

7. Osborne, T. B., and Mendel, L. B.: J. Biol. Chem. **32**: 373 (Dec.) 1917.
8. Footnote 7, p. 375.
9. Daniels, A. L., and Loughlin, Rosemary: J. Biol. Chem. **33**: 296 (Feb.) 1918.
10. Memorandum on Food and Scurvy by the Food (War) Committee of the Royal Society, Laucet **2**: 756 (Nov. 30) 1919. Chick, H.; Hume, E. M.; Skelton, R. E., and Smith, A.: The Relative Content of Antiscorbutic Principle in Limes and Lemons, Lancet **2**: 735 (Nov. 30) 1918. Chick, H., and Delf, E. M.: The Antiscorbutic Value of Dry and Germinated Seeds, Biochem. J. **13**: 199 (July) 1919. These and other articles on vitamins are summarized by Blunt and Wang: J. Home Econom. **12**: 1-14 (Jan.) 1920.
11. Rubner: Ztschr. f. Biol. **16**: 119-128, 1880.
12. Malfatti: Jahresb. f. Tier-Chem. **15**: 412, 1885.
13. Prausnitz: Ztschr. f. Biol. **26**: 227-232, 1890.
14. Snyder: Bull. 74, Minnesota Sta., 1902, p. 122; Bull. 92, 1905, pp. 267-270.
15. Richter: Arch. f. Hyg. **46**: 264-273, 1890.
16. Woods and Mansfield: Bull. 149, U. S. Dept. Agr., Office Expt. Sta., 1904, p. 60.
17. Wait: Bull. 187, U. S. Dept. Agr., Office Expt. Sta., 1907, p. 55.
18. Oshima: Bull. 159, U. S. Dept. Agr., Office Expt. Sta., 1905, p. 224.
19. Mendel, L. B., and Fine, M. S.: J. Biol. Chem. **10**: 438, 447, 1912.
20. Lyman and Bowers: Ohio J. Sc. **18**: 279, 1918.
21. Bull. 717, U. S. Dept. Agr., 1918, pp. 18, 24.

peanuts was desired and that they could follow individual inclination in regard to the remainder of the diet.

A record of the weight of food consumed and the weight and chemical analysis of feces resulting from the experimental diet supplied data for calculating the coefficients of digestibility of the ration as a whole. The digestibility of the protein supplied by the soy beans or the peanuts was estimated by making correction for the undigested protein remaining from the accessory foods according to a method fully outlined in previous papers.[22] It was assumed that the proteins of bread,[23] butter,[24] and oranges [25] were 88, 97 and 85 per cent., digested, respectively.

STEAM-COOKED SOY BEANS

The six digestion experiments that were conducted with soy beans were divided into two series of three tests each. The first series commenced on January 29 and the second on April 9. Uniform experimental conditions were maintained in both series, the soy beans were all from the same lot, and none of the subjects assisted in more than one experiment. The cooked beans were soft and tender, but in many the thin skin remained unbroken.

The results of these experiments are summarized in Table 1.

TABLE 1.—DIGESTION EXPERIMENTS WITH SOY BEANS (STEAMED) IN A SIMPLE MIXED DIET

Experiment Number	Subject	Digestibility of Entire Ration: Protein, per Cent.	Fat, per Cent.	Carbohydrate, per Cent.	Ash, per Cent.	Estimated Digestibility of Soy-Bean Protein Alone, per Cent.
769	P. K.	78.8	88.0	97.0	62.3	74.8
772	J. C. M.	79.5	90.3	95.9	49.7	76.0
773	W. O'C.	84.5	88.8	97.9	57.5	82.7
835	J. F. C.	85.2	88.6	98.3	81.3	82.9
837	T. G. H.	80.1	84.5	96.5	74.0	80.0
838	F. A. K.	85.7	90.0	98.1	81.4	83.4
Average.....		82.3	88.4	97.3	67.7	79.9

The ration as a whole supplied 103 gm. of protein, 114 gm. of fat, 415 gm. of carbohydrate, and 3,100 calories of energy for each man daily. Its digestibility was found to be 82.3 per cent. for protein, 88.4 per cent. for fat, 97.3 per cent. for carbohydrate, and 79.9 per cent. for soy-bean protein, a value somewhat lower than the 85.3 per cent. previously reported [26] for protein of soy-bean flour. One subject ate an average of 478 gm. of soy beans daily for three successive days and experienced no physiologic disturbance.

STEAM-COOKED PEANUTS

Six digestion experiments were conducted with peanuts cooked as already described. The peanuts prepared in this manner were rather mealy, very palatable, and apparently thoroughly cooked; but while they still retained their original form (half kernels), the interior cellular structure was obviously somewhat altered, for the peanut kernels could be reduced to a pasty mass by very slight pressure. A summary of the results of the experiments with peanuts is given in Table 2.

Considering the diet as a whole, the subjects ingested 92 gm. of protein, 162 gm. of fat, 354 gm. of carbohydrate and 3,240 calories of energy daily; the digestibility was found to be: protein, 90.7 per cent.; fat, 83 per cent.; carbohydrate, 99.0 per cent. One subject consumed an average of 457 gm. of peanuts on each of three successive days without noting any physiologic disturbance. Contrary to expectations, the digestibility of the protein of steam-cooked peanuts, 92.8 per cent., was much higher than 85.8 per cent., that previously reported [27] for the digestibility of the protein of peanut flour. No data are available for ascertaining whether the peanut flour if steam-cooked would have been equally well assimilated. These results show that steam-cooked peanuts, which furnish relatively large amounts of essential amino-acids, are of unusual value for human food.

TABLE 2.—DIGESTION EXPERIMENTS WITH PEANUTS (STEAMED) IN A SIMPLE MIXED DIET

Experiment Number	Subject	Digestibility of Entire Ration: Protein, per Cent.	Fat, per Cent.	Carbohydrate, per Cent.	Ash, per Cent.	Estimated Digestibility of Peanut Protein Alone, per Cent.
854	J. F. C.	90.8	80.2	99.2	88.2	92.7
856	J. J. D.	90.0	81.1	99.2	86.9	94.0
857	T. B. H.	89.2	79.1	98.9	84.4	89.7
858	F. A. K.	93.0	90.7	98.5	90.4	95.9
859	P. K.	89.3	84.9	98.5	86.5	90.0
863	W. O'C.	92.0	83.0	99.5	83.9	94.4
Average...		90.7	83.0	99.0	86.7	92.8

COMPARISON OF THE DIGESTIBILITY OF SOY BEANS AND PEANUTS WHEN STEAM-COOKED AND WHEN GROUND INTO FLOUR

The results of the study of the digestibility of steam-cooked soy beans and peanuts and flours prepared from soy-bean and peanut press cakes are summarized in Table 3.

The digestibility of the protein supplied by steam-cooked soy beans is apparently less than that of the protein of soy-bean flour, owing, perhaps, to the fact that the thin unbroken skin that surrounds the cooked soy bean is impervious to the action of the digestive juices. It also may be due to difference in cooking.

The digestibility of the protein supplied by steam-cooked peanuts was found to be higher than that of the protein of peanut flour; but since no data are available regarding steam-cooked peanut flour, it is impossible to judge whether the particular cooking process is responsible for the higher digestibility of the steam-cooked peanuts.

TABLE 3.—DIGESTION EXPERIMENTS WITH STEAM-COOKED SOY BEANS AND PEANUTS

Legumes	No. of Experiments	Digestibility of Entire Diet: Protein, per Cent.	Fat, per Cent.	Carbohydrate, per Cent.	Aver. Daily Consumption of Legume Protein, Gm.	Estimated Digestibility of Legume Protein, per Cent.
Steam-cooked soy beans.....	6	82.3	88.4	97.3	67	79.9
Steam-cooked peanuts.....	6	90.7	83.0	99.0	59	92.8
Soy-bean flour*.....	7	86.6	94.2	96.3	70	85.3
Peanut flour†.....	11	90.1	95.9	97.9	65	85.8

* Bull. 717, U. S. Dept. Agr., 1918, pp. 18 and 19.
† Bull. 717, U. S. Dept. Agr., 1918, pp. 24 and 26.

CONCLUSIONS

While the carbohydrate content of the diet was well utilized in each series of experiments, it was found

22. Bull. 470, U. S. Dept. Agr., 1916, p. 7. Bull. 525, 1917, p. 4. Bull. 717, 1918, p. 15.
23. An average of forty-five unreported experiments with white flour.
24. Bull. 310, U. S. Dept. Agr., 1915, p. 21.
25. Connecticut Storrs Sta. Report, 1899, p. 104.
26. Bull. 717, U. S. Dept. Agr., 1918, p. 18.
27. Bull. 717, U. S. Dept. Agr., 1918, p. 24.

that the carbohydrate of the entire diet of which steam-cooked peanuts formed a part was especially well utilized, 99 per cent. being digested.

The fact that large quantities of soy beans and peanuts were consumed daily for three successive days, without causing any physiologic disturbances, indicates that these foods cooked for two hours by steam at 15 pounds pressure are well tolerated by the human body.

The results of this investigation, considered in connection with the previously reported data regarding the nutritive and biologic values of these two legumes, gives evidence to justify the belief that soy beans and peanuts are especially valuable for human food, as compared with other legumes that have been studied with the same thoroughness.

Clinical Notes, Suggestions, and New Instruments

COMPLETE CLOSURE OF THE URINARY BLADDER AFTER COAGULATION OF TUMORS

GUSTAV KOLISCHER, M.D., AND J. S. EISENSTAEDT, M.D., CHICAGO
Attending Urologist and Associate Urologist, Respectively, Michael Reese Hospital

It has always been a cause of regret to genito-urinary surgeons that in most operations on the bladder it is impossible to deliver a finished product on account of the necessary or supposedly necessary tubal drainage of this viscus. This was one of the more important reasons for their taking up so enthusiastically the cystoscopic endovesical methods in the treatment of bladder tumors. Endovesical treatment today includes fulguration, galvanocauterization and diathermy.

There are cases, however, in which fulguration is not advisable on account of the character of the growth, or in which even the repeated application of the galvanocautery or the diatherm through the operative cystoscope is not successful, or cases in which, on account of the location or the extent of the tumor, an endovesical intervention *a priori* could not be expected to be sufficient.

The superiority of destruction by heat of vesical tumors over the excision with the knife is becoming more and more appreciated by urologists. The problem forced itself on our surgical judgment as to how to combine the advantages of this procedure with the elimination of the disagreeable features of the postoperative vesical drainage. In this endeavor we were guided by experiences in developing a method of complete closure of the bladder which quite constantly ensures primary union, even in the presence of vesical infection.

The essential features of this method are mattress sutures of the bladder wall with inversion of the mucosa edges, which union is reenforced by whipping over a simple continuous suture, and thorough subfascial drainage accomplished by placing a narrow rubber tube under the fascia of the recti and parallel to the incision. The ends of this tube are brought out at each end of the skin wound. The bladder is opened by suprapubic cystotomy in the usual manner. The seat of the tumor is freely exposed by retractors made of fiber or hard rubber, and the coagulation is thoroughly accomplished by the galvanocautery or by diathermy. The bladder and abdominal wall are then closed completely, except for the subfascial drainage.

The patient, after operation, urinates spontaneously or is catheterized at regular intervals. A permanent catheter is not used because of the danger of urethritis, vesical irritation and ascending infection. If cystitis occasioning marked or moderate symptoms is present, 20 per cent. argyrol solution is instilled into the bladder twice a day. The subfascial drainage tube is removed after twenty-four hours. The bladder incision and abdominal wound are usually entirely healed in seven or eight days. The condition and appearance of the former site of the tumor depends on the type of the destructive agent used. An eschar produced by the galvanocautery is exfoliated in from five to eight days, while that produced by the diatherm sloughs in from ten to sixteen days.

If malignancy is suspected or proved, radium or mesothorium is inserted into the bladder cavity by means of a urethral carrier.

It seems that the advantages of this procedure over the routine method of vesical drainage are obvious. Whether this technic is applicable to extensive carcinomas involving the base of the bladder remains to be proved by further experience.

A SUBSTITUTE FOR OPEN OPERATION IN SOME IRREDUCIBLE FRACTURES

J. STANLEY WELCH, M.D., LINCOLN, NEB.

Pursuant to the surgical principle of accomplishing most in the least radical manner, we have resorted to a simple method of reduction in several cases of fracture in which open operation seemed obligatory.

The mechanism of the reduction is a lever in the form of a small, strong, steel probe acting between the displaced fragment ends and retained in situ by the plaster cast. It is resorted to under surgically aseptic conditions with anesthesia, while being observed under the fluoroscopic screen. The instrument is introduced through the iodized skin on the side of the extremity most remote from large vessels. Its end is guided by watching in both axes under the fluoroscopic screen. It is carefully placed between the fragments in such a manner as best to pry them back into apposition. Then when they are reduced, the instrument may be withdrawn; or, in the event of a recurrence of displacement, it is surrounded with a small sterile dressing and the plaster splint is immediately applied. When this is firmly set, the protruding part of the instrument is cut off with a hack saw. No infection should occur, and in from seven to ten days we remove the probe with a pair of pliers without a change of the cast unless otherwise desired. No death of bone should occur in this time with the degree of pressure here necessary.

It is an occasional experience to find, in a fracture of both bones of the forearm or leg, an irreducible condition of one or both bones. It is a frequent experience to find that, once reduced, they do not so remain. We believe this simple method will satisfactorily retain many such fractures and prevent a much more radical operation or a more cumbersome dressing in extension.

PATHOLOGIC LYING IN A CRIMINAL*

A PSYCHOPATHIC PERSONALITY

N. S. YAWGER, M.D., PHILADELPHIA
Consulting Neurologist, Pennsylvania Eastern State Penitentiary

The case here reported shows emphatically the character deviation of a pronounced and persistent fabrication, abnormal in type; this is a degenerate condition and almost invariably accompanies other forms of degeneracy, as shall be illustrated in our subject, who was likewise guilty of the most hideous crimes.

It was Delbrück[1] who definitely isolated this form of falsification, and for it he coined the term "pseudologia phantastica," a name that has since been adopted by many German writers; others have styled the disorder "mythomania."

Kraepelin[2] under the caption of "pathologic liars and swindlers" says: "Here we have in general to deal not only with a hyperexcitability of the imagination and defective faithfulness of the memory, but also with a certain unsteadiness in the sphere of the emotions and of the will."

Swindling has not entered into the activities of our criminal, but this may have been due to lack of opportunity,—he has long been a convict.

* Read before the Philadelphia Neurological Society, Jan. 23, 1920.

1. Delbrück, A.: Die pathologische Lüge und die psychisch abnormen Schwindler, Stuttgart, 1891: p. 131.

2. Kraepelin, Emil: Psychiatrie, Leipzig, Johann Barth 2: 831, 1904.

There is a poverty in English literature on the subject, but in this country Healy[3] has contributed a monograph; his studies have for the most part been juvenile cases, and he frequently found accusation accompanying this type of prevarication. In our individual, who is an adult, accusation is a rather pronounced feature.

Ely[4] reports the case of a young woman referred by the juvenile court who it was said had always been feebleminded. She ran away from home early in life and was grossly immoral. One of her stories was to the effect that when about 16 years old she became pregnant with an illegitimate child; her confinement was recounted most vividly, together with her subsequent love for the child. There was no physical evidence that she had ever been pregnant, and it was regarded as one of her many inventions.

The life history of our criminal reveals an astonishing amount of character deviation. In addition to the abnormal fabrication, there were two attempts at homicide, one successful; three attempts at suicide; probably rape, and possibly simulation of insanity. Since real names are inadvisable, those given are fictitious.

Francis, the prisoner, is 42 years of age and was born in Lithuania. He said his mother's husband was a builder of church organs whose work kept him much from home, and, during one of these absences, she became pregnant with this son; but this statement, which blackens his mother's character and stamps him with illegitimacy, is not above question.

After passing through the Russian gymnasium he began work as a telegraph operator, but his restless nature tired and he entered a military academy; on leaving there, he enlisted in the Russian guard, and it was during this service that he became infatuated with a Lithuanian girl called Marie, which was the determining cause of his blighted career, since it led to her death and his life imprisonment.

A difference in religion had led the father of this girl to forbid Francis' attention to her. However, absenting himself from the army without leave, he called at her home, but the father ordered him away. In a frenzied moment he pulled an ornamental hatchet from the wall and hit Marie in the head; she was not badly injured and recovered. He then cut his own throat, and after being taken to the hospital made a determined effort to tear open the wound. When sufficiently improved, he was tried for attempt to kill, attempt to commit suicide, and for desertion from the army. He was sentenced to imprisonment. With the birth of the czar's son and the granting of amnesty, Francis was placed on parole. In an effort to escape him, Marie came to America; but he violated his parole and followed. Arriving in Philadelphia in March, 1907, he located her. Marie, after considerable persuasion, was induced to come to his room, where, as she subsequently charged, he ravished her. He countered with the charge of theft—that she had stolen his pocketbook. This he told me was a lie and that he had invented the story for revenge. From his knowledge of sexual matters, Francis also challenged her virginity. He was arrested and placed in Moyamensing prison. Subsequently, the affair was quashed by his agreeing never again to attempt to see her. On release, he failed in his promise and endeavored to get her consent to matrimony; she positively refused whereupon, he became desperate and determined to kill her. The act was consummated in April, 1907. Marie was shot four times, and he then shot himself. Both were taken to the Pennsylvania Hospital. Marie died on the way. He lay unconscious for four days, and when sufficiently recovered, was again placed in Moyamensing.

The complicated mental picture then presented led to one of the most remarkable medicolegal cases of our courts. The prisoner has told me that he was not insane at the time but had been advised to "play crazy," and that he acted the part. The verdict was "guilty of murder in the first degree but now a lunatic." He was ordered to Norristown State Hospital and detained for one year, after which, he was returned to Moyamensing.

Technical difficulties then led to his appearance before different courts, until finally a jury rendered a verdict of first degree murder. The case was appealed, but the decision was sustained. Five different times the day for execution was set. Finally, on request, a member of the state committee of lunacy reviewed his mental history, examined him, and reported to the governor. After careful consideration, this able report recommended the extension of clemency, with the result that the death sentence was commuted to life imprisonment, and he was ordered to the Eastern State Penitentiary.

Now as to his fabrications: All who come in contact with Francis aver that he is a stupendous liar; but his most astonishing invention was while in Moyamensing. It related to another atrocious murder in which the prisoner said he was implicated, and which he attempted to tell a priest; the latter refused to confess him until the authorities had been apprised of his crime. This he acceded to by describing the murder of a man named Galwitz by another named Zellner. The prisoner stated he had witnessed this murder and stood by while a 5-foot grave was dug and the body placed therein. The cause of this crime was jealousy; both men had been intimate with the girl Marie, and this led one to kill the other. A detective was detailed to investigate the case, and the spot was located; but the presence of water rendered it a physical impossibility to dig a grave there. The whole matter proved to be a fabrication, and the case was dropped in the belief that the prisoner was simply "exercising his imagination." The man still recalls the circumstance and regards it a good joke.

Physical examination discloses no positive anatomic stigmas. In fact, judging from nature's evidence, the prisoner measures up well. In appearance he is tall, erect and finely proportioned; his head is well shaped and his countenance is rather inviting; he is polite, quick-witted, of the utmost assurance, an incessant talker, and with a great deal of general but superficial knowledge which he uses with considerable linguistic ability. In his personal habits he is clean, industrious and methodical, attributes which are noticeably rare with the criminal class.

The only neurologic finding is a slight motor paralysis caused by severance of the temporal branch of the temporofacial division of the right facial nerve which resulted from his attempt at suicide in 1907. A roentgenogram reveals the presence of a foreign body in the left temporal region of the brain, probably inoffensive, despite the prisoner's statement that he cannot lie on his left side; cell-mates have told me that he lies equally well on either side; or, as an Irish prisoner expressed it, "the man lied on all sides."

Francis is suspicious, and is constantly making accusations against overseers and cell-mates; this has led to his being tried in many parts of the prison, but the trouble continues. Those in charge soon learn to give as little heed as possible to his many inventions. The notes of one overseer show his impression; he wrote: "This prisoner is an awful liar; . . . said he saw two convicts trying to cut through their door; . . . said another prisoner was going to stab him with a pair of shears; . . . he is a professional at lying and I have seen many bad prisoners but never one like this man." A frequent charge made by Francis had been that cell-mates have secreted in their cells substances that are contrabrand, such as coffee, cocoa, sugar and money.

Once, with grave concern, the convict reported that he saw another inmates hide tools in the sewer preparatory to an attempt at escape; on investigation, it was found that the cover of the sewer, which the prisoner said he had seen removed, was securely cemented and had been so for years; it was but another myth.

At a former examination he stated that he had knowledge of seven languages—Russian, Lithuanian, Polish, Finnish, German, French and English. When shown French he failed to recognize it, and when told to write that language he wrote what appeared to be some Slavish dialect, which he explained was called French where he had studied.

If questioned concerning his fabrications, he attempts to pass the subject off lightly; but when pressed for an explanation he has said: "I was bluffing"; that "others have lied to

3. Healy, William: Pathological Lying, Accusation and Swindling: Boston, Little, Brown & Co., 1915, p. 1.
4. Ely, Frank: The Pathological Liar, Proceedings of Alienists and Neurologists of America, Chicago, 1917, p. 128.

me first"; that "often I have lied to defend or to protect myself, which I considered a justifiable fraud"; and that "sometimes I have lied to develop a situation about which I was suspicious."

The prison classification of this man is a criminal of the homicidal type. The further mental classification is psychopathic personality. Outstanding features are: emotional instability; abnormal sexuality; pathologic lying; possibly, still suicidal. Neurologic findings are: paralysis of part of the right facial nerve; bullet in the left temporal lobe of the brain, probably nonsymptomatic.

2117 Chestnut Street.

A CASE OF INCARCERATED HERNIA INTO THE UMBILICAL CORD

WILLIAM J. STANTON, M.D., WASHINGTON, D. C.

M. T. H., a girl baby, born, Dec. 22, 1919, and weighing 8 pounds, presented a large tumor mass about the size of a fist, within the umbilical cord. Transillumination revealed coils of intestine. A diagnosis of hernia into the umbilical cord was made, and immediate operation was advised. This was at first refused, but next day the parents consented, and the baby was sent to Georgetown University Hospital, where I operated, just twenty-four hours after I had delivered her. Dr. Thomas F. Lowe administered the anesthetic.

The wall of the sac consisted of amnion and peritoneum. The sac contained about 2 feet of large and small intestine. The appendix, though present, was not removed. The intestine was adherent over about half the surface of the sac. The intestine was beginning to show a dark reddish discoloration.

An incision of the umbilical ring and abdominal wall above the cord was made. The intestine was replaced and the wound closed with three silkworm-gut inverted mattress sutures. The baby suffered little if any shock, and made an uneventful recovery. The after-treatment consisted in a regular four-hour nursing schedule. The baby was returned to her mother the same night.

3323 O Street N.W.

THE EFFECT OF WEAK ACETIC ACID ON SPIROCHAETA PALLIDA

PRELIMINARY COMMUNICATION

HERMAN GOODMAN, B.S., M.D., NEW YORK

I wish at this time to give the clinical and experimental evidence as to the effect of weak acetic acid on *Spirochaeta pallida,* in order that corroborative work may be carried on.

It is generally admitted that syphilitic chancres of the vagina are less frequent than chancres of the neighboring parts. Most textbooks make the statement, and the figures are easily available. It is also generally admitted that the secretion of the vagina of the adult woman is acid. The secretion of the adjacent parts is alkaline in reaction. Certainly the vagina is equally subject to trauma and to the deposition of *Spirochaeta pallida,* as the cervix uteri or the labia, the usual sites of chancre on the female genitals.

In the few reports of chancres of the vagina which give the exact location of the initial lesion, it is most often in the posterior culdesac. The alkaline cervix uteri secretion which may collect here is the factor in the neutralization of the protective acid vaginal secretion.

The immunity that the vagina apparently has for syphilitic manifestations has been commented on in the past, as has its comparative immunity to chancroids and to the gonococcus.

With the object of determining the action of weak acetic acid on *Spirochaeta pallida* prior to using this solution to hemolyze blood in attempting to recover *Spirochaeta pallida* in samples of circulating blood, I noted the following: As opportunities presented themselves, spirochetes were sought for under the dark field. When found, acetic acid prepared from chemically pure glacial acetic acid diluted to 2, 1 and 0.5 per cent. with distilled water was run under the cover glass of different preparations of fresh spirochetes. Currents were of course set up, which caused a general movement of the material under observation. However, as soon as I could recognize objects again (within fifteen seconds), it appeared that the spirochetes were much changed. They had lost the regularity of coil, they were no longer straight, they were immotile, and they were carried passively on the currents. The effect was much like that described by Reasoner[1] for soap solution.

It may be noted that the mediums for the growth of spirochetes must be alkaline.

I was led to believe that *Spirochaeta pallida* is unable to live in an acid environment even as low as 0.5 per cent. acetic acid. It would appear, then, that an acid solution, such as weak acetic acid, may be of use in the prophylaxis of syphilis. The advantages of a nonpoisonous, liquid, easily procurable and adaptable local spirocheticide should warrant a serious study. It is proposed to carry on this investigation with animal inoculation, and also to determine whether acetic acid penetrates farther into tissues such as the skin or mucous membranes than solutions of other known local spirocheticides.[2]

Therapeutics

A DEPARTMENT DEVOTED TO THE IMPROVEMENT OF THERAPY. A FORUM FOR THE DISCUSSION OF THE USE OF DRUGS AND OTHER REMEDIES IN THE TREATMENT OF DISEASE.

LAXATIVE FRUIT CAKE

DR. EDWARD J. ROGERS, Pittsford, Vt., writes: "In your issue of Dec. 27, 1919, p. 1938, you speak of 'senna leaves, figs, dates, prunes, raisins—of each, equal parts.' Does this mean by weight or measure?"

COMMENT.—Since the dose of this "laxative fruit cake" is a slice, large or small, according to the requirements of the individual, exact proportioning of ingredients is not essential. Either weight or measure might be used; the former, being more accurate, would be preferred.

1. Reasoner, M. A.: The Effect of Soap on Treponema Pallidum, J. A. M. A. **68**: 973 (March 31) 1917.

2. In addition to the reference already given, the following references will be found of interest:

Barbiani: L'immunita della vagina per la affezioni veneree e sifilitiche, Milan, 1900.

Belloir: Contribution a l'étude clinique de la syphilis vaginale, Paris, 1890.

Comandon: De l'usage de l'ultra microscope pour la recherche et l'étude des spirochetes, Paris, 1909.

Joseph: Lehrbuch der Haut und Geschlechtskrankheiten, Leipzig, 1905, p. 15.

Meningitic Form of Acute Poliomyelitis.—Every doctor realizes that the great fear at the back of his mind is tubercular meningitis. No disease is so deceptive, and the clinician has hardly a sure test by which he can guide his diagnosis, because the onset, though gradual, as a rule, may be as abrupt as in cerebrospinal meningitis, and any of the cardinal signs may be in abeyance. Examination of the cerebrospinal fluid may settle the diagnosis, but even this, in the absence of tubercle bacilli, may not be conclusive, because in this form of poliomyelitis the character of the fluid varies considerably. When taken early there is, as a rule, an increased cell count with a low globulin content, and the cell increase is in the lymphocytes and large mononuclear cells. In some cases, however, the polynuclear cells predominate. The absence of tubercle bacilli, of meningococci and other bacteria, will certainly suggest the possibility of poliomyelitis, and then the clinical signs will probably lead to the right conclusion.—*Clinical Journal,* December, 1919.

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SATURDAY, MARCH 20, 1920

NUTRITIVE REQUIREMENTS BASED ON ACCURATE STATISTICAL EVIDENCE

Few questions relating to nutrition and the bearing of the diet on human well-being have aroused more discussion in the last few years than has the subject of the protein requirement of man. Extremes of opinion have been advocated with much vigor. The assumed menace of a diet rich in protein has been pictured in the form of various nutritive dangers, such as the ills of the indefinable "autointoxication," the hypothetic "kidney overwork," arteriosclerosis and arterial hypertension developed by a surplus of nitrogenous waste products, and other equally indefinite factors. Instances of alleged benefit from reduction in the protein intake are often cited to substantiate the statements. Somewhat less aggressive, though by no means wanting in enthusiasm, are the counter claims of those who believe that the welfare of the race is bound up with liberality in the protein factor. Pointing to the parallel occurrence of low protein dietaries and undersized races, the advocates of abundant nitrogenous intake look on protein as a veritable stimulus to growth, vigor and even happiness. "Underfeeding produces gloom and moroseness unless other circumstances are more influential and oppose it." Such are some of the dicta of the opposing extremists.

The medical man is, or ought to be, sufficiently familiar with human psychology to appreciate the element of bias in many of the propagandas relating to health. At one time, not many months ago, the experience of the Germans with the enforced low-protein dietary of war time was proclaimed as clear cut evidence of the safety and, in cases, even the benefit of such a regimen. Later, when disease undoubtedly attributable to improper nutrition began to make its appearance in many places, the interpretations began to swing in a different direction with respect to the need of protein. The blame for many of the ills was now laid at the door of the inadequate supply of this foodstuff. As a matter of fact, so many variables are concerned in the malnutrition of central Europe—the inadequate calorific intake, the inappropriate and extremely limited variety of food, with a consequent reduction of quantity and defect of quality, including perhaps vitamin and mineral nutrients as well as the energy-yielding foods—that a rational interpretation of the causes is by no means easy in all cases. Otherwise the diversity of phenomena represented by beriberi, rickets, scurvy, war edema and pellagra might readily be ascribed to a single cause, such as low protein or inadequate calories.

There is something singularly satisfying in evidence that is essentially objective in character and does not require the consideration of the psychologic or human factor of interpretation. For this reason, well controlled experimental data from intelligently conceived investigations are always welcomed in the study of nutrition. In connection with the protein requirement of man, Sherman [1] of Columbia University has completed the desirable task of compiling the dependable statistics of the observations in which the protein intake appears to have been barely sufficient or not quite sufficient to result in equilibrium of intake and output, provided the total diet was adequate. Such figures must approximate the minimum requirement. This will, of course, necessarily vary with the character of the diet and certain other factors; but, on the whole, variations due to these must be offset to a considerable degree when the number of observations is large. Sixty-seven experiments on men show an average "indicated protein requirement" of 0.633 gm. per kilogram, while the forty-two experiments with women average 0.637 gm. per kilogram of body weight. It seems unnecessary, therefore, to distinguish between the sexes in this discussion since we are dealing with data calculated to a uniform basis of body weight. The general average of the 109 experiments shows an indicated requirement of 0.635 gm. of protein per kilogram of body weight, or 44.4 gm. for the "average man" of 70 kg., daily.

Such conclusions drawn from an unusually large number of observations, in which the personal equation of interpretation has been minimized, must not be regarded as representing the index for optimal protein intake; on the contrary, they must be looked on as the rock bottom or irreducible minimum in all considerations of adequate rationing, particularly when large groups of persons are to be provided for.

A similar survey made by Sherman [2] with respect to the phosphorus requirement of man deserves notice in this connection. The data from ninety-five experiments range from a minimum of 0.52 to a maximum of 1.20 gm., with an average of 0.88 gm. of phosphorus per 70 kg. of body weight daily. The experiments on men average 0.87 gm., and those on women average 0.89 gm. per 70 kg. daily. Sherman believes that we are probably justified in concluding that we now know

1. Sherman, H. C.: Protein Requirement of Maintenance in Man and the Nutritive Efficiency of Bread Protein, J. Biol. Chem. **41**: 97 (Jan.) 1920.

2. Sherman, H. C.: Phosphorus Requirement of Maintenance in Man, J. Biol. Chem. **41**: 173 (Feb.) 1920.

the phosphorus requirement with about the same probable accuracy that the protein requirement is known, and that about one-fortieth to one-fiftieth as much phosphorus (reckoned as element) as of protein is required in the maintenance metabolism of man. Such investigations of the dietaries of typical American households indicate that with few exceptions they appear to provide a somewhat more liberal margin of protein than of phosphorus. Nevertheless, the minimum requirement of the latter is apparently rarely approached. At any rate, as the conventional diet supplies phosphorus in forms entirely suitable for utilization by man, there is no ground for any commercial exploitation of unique types of phosphorus compounds that exhibit little advantage other than that of a large monetary return to a persistent promoter.

THE PHYSIOLOGIC SIGNIFICANCE OF A RECORD AEROPLANE FLIGHT

A few days ago an aeroplane carrying Major R. W. Schroeder of the American army aviation service reached an altitude of 36,020 feet, about 5,000 feet higher than the previous world's record for such a mode of flight. Only a few years ago this marvelous performance would have been rated as virtually impossible because of the limitations of the human organism at great heights. In the oft quoted balloon ascension of the meteorologist Glaisher, in 1862, an altitude of about 30,000 feet was reached. When the balloonist attained a height of 26,000 feet, he first noticed that he could not read his instruments properly. Shortly after this his legs became paralyzed, and then his arms, though he could still move his head. Then his sight failed entirely, afterward his hearing, and he became unconscious. Glaisher's companion, Coxwell, likewise incapacitated in the upper air, managed to open a valve which permitted the balloon to descend, and thus saved the lives of the men. Another historic instance of a record balloon ascension concerns the experience of Tissandier, the sole survivor of a party of three in the fatal trip of 1875. The balloon ascended 28,820 feet, but all the occupants of the car began to suffer before an altitude of 23,000 feet was reached, and two of them died.

The baneful effects on life in the rarefied air of higher altitudes usually makes itself manifest at a barometric pressure considerably lower than that represented in the classic instances just cited. In a review of the medical aspects of aviation, the experts of the Medical Research Laboratory of the Division of Military Aeronautics [1] assert that mountain sickness befalls some persons at a lower, others at a higher altitude; but it is also certain that no one who proceeds beyond a certain elevation—the critical line for him—escapes the malady. An elevation of 10,000 feet or even less might provoke it in some; others may escape the symptoms up to 14,000 feet, while only a very few, possessed of unusual resisting power, can without much distress venture upward to 19,000 feet. We are further reminded that the symptoms of mountain sickness depend not only on the nature of the individual and his physical condition, but also on various intricate contingencies, especially on the amount of physical exertion made in ascending; that is, on whether the ascent is performed by climbing or by passive carriage on horse, on railway train, or in an aeroplane.

What has made possible the penetration of the higher reaches of the atmosphere in these newer flights of man, including Rohlfs' ascent to 31,000 feet and Casale's unofficial record of 33,000 feet last year, and culminating in the splendid achievement of Schroeder in rising nearly seven miles above the earth? It has been the scientific demonstration that the predominant physiologic upset at high altitudes, whether it be exhibited as mountain sickness (mal des montagnes) or aviator's disease (mal des aviateurs) is primarily due to the deprivation of oxygen in the rarefied air. As long ago as 1878 the eminent French physiologist Paul Bert furnished clear experimental proof that the abnormal symptoms and dangers experienced under conditions of lowered barometric pressure are those of want of oxygen. Despite the various attempts to invoke other factors, the accumulated scientific evidence today supports Bert's conclusion that the essential cause of altitude sickness is lack of oxygen. Consequently, he who would attempt the conquest of the air several miles above the earth must be supplied with oxygen in sufficient abundance.

The adaptation of man to life at altitudes has occasionally been discussed in THE JOURNAL.[2] Important as they undoubtedly are for the mountaineer and, latterly, for the aviator under ordinary circumstances of flying, these adaptive responses cannot satisfy the needs of the organism in those record flights represented by Schroeder's attainment. Accordingly, it is significant that his failure to ascend even higher in the world's record flight was due, according to the press dispatches, to the exhaustion of the aviator's oxygen tanks which supplied the needed respiratory gas. It is this failure, we may assume, in the absence of official information, which robbed him of consciousness and thus was responsible for the spectacular fall of several thousand feet which almost cost Schroeder his life.

The glowing accounts of the new conquest of the upper air have been replete with praises of the superior motors, the dependable air compressors, the unique recording instruments, the heating devices that made it possible for man to endure a polar climate of 67 degrees below zero, and other mechanical features. It is more than likely that the record will again be broken;

1. Manual of Medical Research Laboratory, War Department, Air Service, Division of Military Aeronautics, Washington, 1918, p. 8.

2. A New Record for Altitude, editorial, J. A. M. A. **72**: 496 (Feb. 15) 1919; The Medical Manual of the Air Service, ibid. **72**: 1368 (May 10) 1919; Deaths Incident to Aviation, ibid. **73**: 1444 (Nov. 8) 1919.

not, however, merely because these devices have been made more perfect and efficient, but also because science will have taught the aviator how to secure an unfailing supply of the indispensable oxygen. After the enforced consideration during the last few years of the abomination of noxious gases, it is a relief to return to the consideration of one that is truly beneficent.

APPLICATIONS OF CLINICAL CALORIMETRY

Several years ago (May, 1915), the *Archives of Internal Medicine* devoted a supplementary number solely to the presentation of pioneer results obtained by the method of clinical calorimetry. To some the subject seemed at that time to be far removed from any immediate application to the problems of medical practice. The technic of the investigations involved highly specialized training; the language in which some of the results were expressed had a novel and unfamiliar ring; and "basal metabolism" seemed at most a topic for the consideration of the trained physiologist and the pathologist.

In the few intervening years, the technic and the necessary apparatus for estimating the energy exchange in human subjects have been simplified so that they are no longer beyond the capacities of intelligent clinicians. To the uninitiated the methods sound more complex than they really are. They are not among the easiest of routine diagnostic procedures; neither is good surgery the work of a tyro; yet we do not relegate it to some superhuman person.

Recently the clinical importance of an estimation of basal metabolism in thyroid disease as an index of the toxicity factor has repeatedly been emphasized.[1] As McCaskey has pointed out, the differential diagnosis of many mild, atypical or very early cases of thyrotoxicosis by means of the ordinary clinical signs and symptoms can be made with only a varying degree of probability. The estimation of the basal metabolism furnishes the requisite objective data which verify a diagnosis and enable one to gage the value of therapeutic efforts. An excellent illustration is afforded by the studies of the basal metabolism in exophthalmic goiter which were started by Means and Aub[2] at the Massachusetts General Hospital nearly five years ago. It has been possible to contrast the more permanent effects of a variety of modes of treatment in a disease characterized by a high metabolism rate. Judging by this index of toxicity, it now appears that in the majority of cases the results after two or three years are equally as good with roentgen-ray treatment as with surgery. In securing the same end-results with surgery or with the roentgen ray, a lesser rest factor is necessary with the roentgen ray. With the roentgen ray there is practically no mortality. With surgery there is a definite one. Patients treated surgically do better, and the risk of operation is less, if they have previously had their thyroid and thymus glands irradiated. The risk of operation is greater and the need for preoperative roentgen-ray treatment is greater in cases with a very high metabolism and moderate tachycardia and moderate metabolism elevation.

From their studies with the aid of the respiration calorimeter, Means and Aub believe that the safest program for the treatment of exophthalmic goiter, as a whole, is the routine irradiation of thyroid and thymus glands, in all cases, with surgery held in reserve for patients who do not then do well. The Boston diagnosticians conclude that surgery is contraindicated with patients whose metabolism is rising in spite of complete rest in bed, and also patients of the type with moderate tachycardia and great metabolism increase, except when they have previously had the thyroid and thymus glands treated with the roentgen ray. If one is justified in asserting today that "in the management of exophthalmic goiter, periodic determination of the basal metabolism should be quite as much a routine as is the examination of the urine for sugar in diabetes mellitus," it must be admitted that clinical calorimetry has won a place for itself within an unexpectedly short period.

1. Means, J. H.: Studies of the Basal Metabolism in Disease, Boston M. & S. J. **174**: 864 (June 15) 1916. Means, J. H., and Aub, J. C.: A Study of Exophthalmic Goiter from the Point of View of the Basal Metabolism, J. A. M. A. **69**: 33 (July 7) 1917. Boothby, W. M.: Clinical Value of Metabolic Studies in Thyroid Cases, Boston M. & S. J. **175**: 564 (Oct. 19) 1916. McCaskey, G. W.: The Basal Metabolism and Hyperglycemic Tests of Hyperthyroidism, with Special Reference to Mild and Latent Cases, J. A. M. A. **73**: 243 (July 26) 1919.

2. Means, J. H., and Aub, J. C.: The Basal Metabolism in Exophthalmic Goiter, Arch. Int. Med. **24**: 645 (Dec.) 1919

THE PATHS BY WHICH TETANUS TOXIN AND ANTITOXIN ARE SPREAD IN THE BODY

It has long been recognized that tetanus poison has a special affinity for the nervous system. More than twenty-five years ago, Bruschettini[1] demonstrated that the toxin might be found in the nerves but not in the adjacent muscles and other tissues surrounding the point of subcutaneous injection. It is to Meyer and Ransome,[2] however, that medical science owes the complete proof that the tetanus poison is absorbed from the blood and tissues by the peripheral nerves and transported centrad along their paths. For example, when tetanus toxin is injected into the thigh muscles of an experimental animal, the poison is found at first only in the sciatic nerve of the same side and in the blood.

The process by which this transport of the tetanus toxins occurs has been widely discussed. For some time it was believed that the lipoids, which are conspicuously abundant in nervous tissues, are responsible for the selective transfer of the toxin. These com-

1. Bruschettini: Riforma med., 1892, referred to by Zinsser, Hans: Infection and Resistance, New York, the Macmillan Company, 1914, p. 41.

2. Meyer and Ransome: Arch. f. exper. Path. u. Pharmakol. **49**: 367, 1903.

pounds, like the fats, are known to have a specially marked solubility for certain types of compounds, notably some of the narcotic drugs. It was not unnatural, therefore, to assume some sort of chemical or physical affinity between the toxin and the lipoids of the nervous structures. The problems here at issue have more than merely academic interest, for the possibility of successful therapy largely depends on the solubility and mode of distribution of toxin and antitoxin in the tissues and fluids of the body. No amount of antitoxic substance, however large, and however potent it may be in vitro, will be effective if it cannot reach the *materies morbi* in the body itself. Obviously, if the nerves themselves offer a better point of therapeutic attack, antiserum might be injected more directly in the vicinity of the poison to be neutralized.

In the classic investigations on the action of tetanus toxin, it was found that when a nerve is cut, poison absorption ceases as soon as axis cylinder degeneration has set in. Meyer and Ransome concluded that tetanus toxin reaches the central nervous system solely by way of the axis cylinder of the motor nerves. Marie and Morax[3] had come to a similar conclusion. A reinvestigation of the problem at University College Hospital Medical School in London by Teale and Embleton[4] has emphasized the possible cooperation of other factors in the distribution of tetanus toxin. Their experiments show that although the poison ascends to the central nervous system by way of the axis cylinders of the nerves, it also to a great extent passes up the nerves to the cord by way of the perineural lymphatics. Blocking the latter paths greatly delays, and in some cases completely prevents, the occurrence of tetanus in the part corresponding to the nerve for which the lymph path has been blocked. Although tetanus toxin passes rapidly from the blood vessels into the connective tissue spaces and thence to the thoracic duct, the toxin does not pass from the capillaries of the central nervous system to its tissues.

The British investigators feel justified, further, in concluding that tetanus antitoxin is not carried in any degree to the cord either by the axis cylinders or by the neural lymphatics when inoculated directly into the nerve, but that its sole action when thus introduced appears to be the local neutralization of the toxin coming up the neural lymphatic sheaths. According to Teale and Embleton, this appears to be further evidence that tetanus toxin travels in the neural lymphatic sheaths; hence they conclude that antitoxin acts on the toxin in the circulation and tissues, and prevents its spread from there into the nerves and central nervous system, and that it has no effect on the toxin already traveling along the nerve or present in the central nervous system.

3. Marie and Morax: Ann. de l'Inst. Pasteur **16**: 818, 1902.
4. Teale, F. H., and Embleton, D.: Studies in Infection, II, The Paths of Spread of Bacterial Exotoxins with Special Reference to Tetanus Toxin, J. Path. & Bacteriol. **23**: 50 (Oct.) 1919.

Current Comment

THE NEW ORLEANS SESSION

The American Medical Association will hold its seventy-first annual session in New Orleans, April 26 to 30. A description of the features of the session and the preliminary programs appear in this issue. This is the fourth time the Association has convened in New Orleans. The twentieth annual session under the presidency of Dr. William Owen Baldwin in 1869 aided much in bringing the members of the medical profession in the South into cordial relationship with the national association following the Civil War. Then, in 1885, under the presidency of Dr. Henry F. Campbell, the thirty-sixth annual session was held in the Crescent City. In 1903, for the third time the Association met in New Orleans in its fifty-fourth annual session under the presidency of Dr. Frank Billings. Now we are to enjoy New Orleans hospitality for the fourth time; on this occasion the session will be opened under the presidency of Dr. Alexander Lambert of New York, and Dr. William C. Braisted, Surgeon-General of the U. S. Navy, will be inducted into the office of President. The physicians of New Orleans propose to maintain the reputation of their city for hospitality. They are resolved that the Fellows of the Association who attend the coming annual session will not only enjoy the program of the Scientific Assembly, but will also find every moment intervening between the scientific meetings fully occupied with social features which shall mark this annual session as providing an all-around good time socially. While the hotels of themselves may not be able to accommodate all those who will be in New Orleans, the Local Committee on Arrangements has undertaken and is accomplishing the Herculean task of assuring every visitor comfortable lodgings during the time of the meeting. Not only has there been provided a list of approved boarding houses, but the physicians themselves as well as other citizens of New Orleans, are opening their homes for the accommodation of the visiting profession. New Orleans is proud of the hospitality it extends to visitors who attend the Mardi Gras, and a like welcome awaits every one at the coming session of the Association.

THE SANITARY CONSCIENCE

In that superb series of essays which was to honor Osler in the life, but which his eyes never beheld and which is now lamentably enough a memorial to the great physician, Sir Auckland Geddes, the new ambassador of Great Britain to the United States, deplores that physicians in general lack the spirit of citizenship: They are unwilling, he says, to share governmental burdens; they feel but little of that mass emotion which is concerned for physical and mental development, for closer human relationship, and which is finding expression "in centers for child welfare, in schemes for housing the working classes, in the establishment of ministries of health, in reconstruction and research work, in the growth of the labor party, in the spread of socialism and, incongruous though it may seem, in

bolshevism and in the great ideal struggle to express itself through the League of Nations." With "brilliant exceptions," the medical profession, Geddes considers, is made up of men whose citizenship, such as it is, "is as divorced from their technical knowledge as is that of the speculator when he jerry-builds new slums." [1] Surely there is here no stricture as to the medical profession in the United States, which, in the last decade at least, has shown itself so zealous in the communal interest. Consider a few data in point: The medical profession several years ago sought most earnestly and with no selfish motive for the establishment of a national department of public health, with representation in the President's cabinet. This movement, promising so much nationwide beneficence, was frustrated through the efforts of agencies which can hardly be said to have been saturated with zeal for the welfare of our people. Also, there is even the insistence, by the informed physician, on the fact that tuberculosis is far from being only a doctor's affair, but that it is probably the most degenerating social and economic factor in civilization. Many, no doubt most medical societies, have their public health sections or committees in which the application of twentieth century preventive measures to the correction of untoward communal conditions has been thoroughly promulgated, in which factory insanitation, woman and child labor, impure air and water, and a thousand and one other aspects of general unhealthfulness are exhaustively considered. There does, indeed, appear to be in our body politic some indication of an upsurging "mass emotion" making for human physical and mental betterment. Rosenau, of Harvard has better characterized this salutary and promising emotion as an awakening sanitary conscience among our people. "The modern science of preventive medicine," he has said, "teaches the lesson of the unselfishness of community interest and has been a potent biological factor underlying the present trend toward socialism." Such teaching, by physicians interested in the larger aspects of medical science, is now in the way of bearing fruit.

1. Geddes, Sir Auckland: Social Reconstruction and the Medical Profession, Contributions to Medical and Biological Research, Dedicated to Sir William Osler, in Honor of His Seventieth Birthday, by His Pupils and Co-Workers, July 12, 1919, p. 70.

Child Labor and the War.—The seventh annual report of the chief of the Children's Bureau of the U. S. Department of Labor points out that the federal child labor law which had gone into effect, Sept. 1, 1917, prohibited the employment of children under 16 years of age in mines and quarries and of children under 14 years of age in factories; limited the working day to eight hours for children under 16 years of age employed in factories, and prohibited work for them between 6 p. m. and 7 a. m. But this law was declared unconstitutional by the supreme court, June 3, 1918. The immediate effect of the supreme court decision in states where the state child labor standards were lower than those imposed by the federal law was the prompt restoration of the longer working day for children under 16 and an increase in the number of working children. In a number of states there was an appreciable increase in the violation of state laws. It was in recognition of the seriousness of this increasing employment of young children that the war labor policies board voted that compliance with the standards of the former federal child labor law should be required of establishments engaged on government war contracts made after the date of the decision.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

DISTRICT OF COLUMBIA

Personal.—Dr. Marcus W. Lyon, Jr., has taken charge of the pathologic work at South Bend, Ind.

Bill on Chiropractic.—There has been introduced by Congressman Esch a bill regulating the practice of chiropractic in the District of Columbia. This measure is similar to the one recently introduced relative to the practice of osteopathy in the district. It provides for the organization of a chiropractic examination and registration board; that applicants for chiropractic licenses shall be graduates of reputable schools of chiropractic, that the applicants will be required to give a demonstration of vertebral palpation, nerve tracing and adjusting, and such other subjects as the board may prescribe. A fee of $25 is required of all applicants seeking licenses. A renewal fee of $5 each year is required.

FLORIDA

Kansas City Physician in Florida.—Dr. Richard L. Sutton, Kansas City, Mo., was the guest of Dade County Medical Society at Miami, February 25, and delivered an address on "Cancer of the Skin," illustrated by lantern slides.

Personal.—Dr. John Keeley, health officer of the East Coast Congressional District, has resigned.——Dr. Daniel C. Campbell, Jacksonville, has been appointed head of the bureau of venereal diseases, succeeding Dr. Lorin A. Greene, Gainesville, resigned.

Puhlic Health Service Takes Lake City Property.—The Columbia College property, Lake City, was taken over March 1, by Dr. Goff, U. S. P. H. S. The work of renovating and remodeling is to be pushed ahead as rapidly as possible. The hospital will be operated directly under the Bureau of War Risk Insurance.

GEORGIA

Ellis Law Adopted.—Decatur County has adopted the Ellis health law and will begin operating with a full-time commissioner of health very shortly. Decatur is the seventeenth county to adopt this law.

Judgment Against Physician.—The damage suit brought by Mrs. Marie W. Whitman against Dr. William B. Crawford, Savannah, in which $20,000 damages were claimed, is said to have been decided in favor of the plaintiff, January 28, a jury awarding her damages of $2,000.

Free Clinic.—The Chamber of Commerce of the city of Fitzgerald held a special meeting, at which the members of the Ben Hill County Medical Society were guests, in an endeavor to organize against vice and venereal diseases. The meeting was addressed by Dr. Josephus P. J. Bowdoin, Adairsville, director of the venereal disease control department of the state board of health. As a result of the meeting a free clinic will be organized in Fitzgerald.

ILLINOIS

Physician Arrested for Sedition.—Dr. Oscar J. Brown, DeKalb, leader of radicalism in his section of the state, is said to have been indicted by a special grand jury, March 9, charged with violation of the Illinois sedition act.

Physician's License Revoked.—Monday, March 1, 1920, the Department of Registration and Education revoked the license of Dr. Warren D. Scott, Decatur, on the ground that he had been conducting offices in different parts of the country under the name "United Doctors."

Personal.—Dr. Frederick H. Lamb, Davenport, Iowa, has been appointed pathologist to St. Anthony's Hospital, Rock Island.——Dr. Edmund Summers, Mattoon, while driving his automobile across the tracks of the Illinois Central Railroad near Mattoon, February 27, was struck by a train and seriously injured. He is under treatment in the Mattoon Hospital.

Public Nurses Provided.—As a result of a recent conference between Dr. C. St. Clair Drake, Springfield, state director

of public health, and Miss Helen Fox, Washington, superintendent of the public health nursing service of the American Red Cross, every community in Illinois of more than 5,000 population will be provided with a community nurse. Miss Etta Lee Gowdy was chosen supervising nurse for the state, and Miss Minnie Ahrens for the Chicago district.

Chicago

Honor Dr. Gilmer.—The Chicago Dental Society will give a dinner in honor of Dr. Thomas Lewis Gilmer, March 23, in the gold room of the Congress Hotel.

Physician Arrested for Sedition.—Dr. Karl F. M. Sandberg is said to have been indicted by a special grand jury, March 9, charged with violation of the Illinois sedition act.

Physician Fined.—Dr. Alois C. Rasmussen is said to have been fined $100 and costs by a police magistrate in Oak Park for failure to report a case of scarlet fever to the health commissioner of that village.

Personal.—Dr. Hugh N. MacKechnie has resigned from the medical department of Loyola University.——Dr. Effie L. Lobdell has been appointed professor of obstetrics in the Illinois Post-Graduate Medical School.

Dr. Wile in Chicago.—An informal dinner in honor of Dr. Udo J. Wile, Ann Arbor, was given at the University Club, March 17. After the dinner Dr. Wile presented a paper before the Chicago Medical Society on "A Critical Study of Two Obscure Phases of Hepatic Syphilis."

Effect of Prohibition.—It is announced that the Washingtonian Home closed its doors, March 15, and moved to much smaller quarters at the Martha Washington Home on Irving Park Boulevard. The home was founded in 1863, and since that time has cared for 50,000 liquor and drug addicts.

Research Club Meeting.—The Medical Research Club of the University of Illionis held its fifty-second meeting, March 12, at the City Club. Prof. Louis Kahlenberg of the University of Wisconsin detailed "The Result of Experiments in the Passage of Substance Through the Skin by Osmosis," and Dr. Edward H. Ochsner spoke on "Osmosis in Relation to Clinical Medicine."

Medical School Changes Name.—Aug. 1, 1919, legal authority was granted to the Chicago Hospital College of Medicine, an institution rated as Class "C" by the Council on Medical Education, to change its name to the Chicago Medical School. The certificate filed in the office of the Secretary of State of Illinois, Feb. 5, 1915, grants this college authority for

"Education and general contracting, including the operation of hospitals, sanitariums, laboratories, preparatory and professional schools and the conferring of the degrees of Bachelor, Master and Doctor of Sciences, Arts, Laws, Medicine, Surgery, Public Health, etc."

INDIANA

County Hospital Favored.—At the city session, March 9, the residents of Blackford County voted for the erection of a county hospital to cost $80,000. The proposal won by a majority of 782, the total votes cast being 2,262.

Deaths in Indiana.—The registrar-statistician of the state board of health reports that there were 9,184 fewer deaths in the state in 1919 than in 1918, the respective figures being 37,077 and 46,261. There was also a decline of 5,623 in births in 1919, as compared with the previous year, the respective figures being 58,690 and 64,313.

Personal.—Dr. George S. Bliss, Fort Wayne, superintendent of the state school for the feebleminded has resigned to accept the position of superintendent of the school for feebleminded of Honolulu, Hawaii, and Dr. Melvin Druckmiller has been appointed acting superintendendent.——Dr. Charles G. Beall has been appointed a member of the medical corps of the institution.——Dr. Osborne T. Brazelton, Princeton, while returning with his family in his car from Patoka, January 29, was shot at, the bullet crashed through the windshield of his car and he suffered a number of slight wounds of the face.——Dr. Alembert W. Brayton, Indianapolis, celebrated his seventieth birthday anniversary, March 3.——Dr. George W. Frederick, Kokomo, was operated on at the Good Samaritan Hospital, Kokomo, February 24, for the removal of gallstones.

MARYLAND

Personal.—Dr. Allen W. Freeman, Columbus, commissioner of health for Ohio, lectured on the public health administration of Ohio, March 8, at the School of Hygiene and Public Health, Johns Hopkins University.——Dr. Edgar M. Parlett, Baltimore, formerly supervisor of sanitation in the relief department of the Baltimore and Ohio Railroad at Baltimore, has been appointed manager of the health and sanitation bureau of the Carnegie Steel Company, with headquarters at Pittsburgh.—— Dr. William S. Halsted, Baltimore, has been elected to honorary foreign membership in the Royal Academy of Medicine, Belgium.

Colleagues Honor Professor Welch.—In April Dr. W. H. Welch reaches his seventieth birthday. As a recognition of this event, his friends have determined to preserve in suitable form the chief contributions of Dr. Welch to medical literature. They have been brought together for publication in three volumes. Friends and former pupils of Dr. Welch are invited to subscribe. The volumes will be issued by the Johns Hopkins press under the editorial supervision of a representative committee. The three volumes, bound in linen, are offered to subscribers at $16.50. Copies, which will be numbered and assigned in order of subscription, may be secured by addressing the press.

MASSACHUSETTS

Personal.—Dr. Michael F. Burke, Natick, sustained serious injuries of the head and back when his sleigh was struck by a Boston and Worcester street railway car in Natick, February 9.——Dr. Frederick R. Barnes, Fall River, has been appointed associate medical examiner (coroner) for the Third Bristol District, succeeding Dr. John H. Gifford, deceased.

MICHIGAN

Medical Building for Flint.—Twenty-five physicians and dentists of Flint have incorporated the Flint Medical Association with a capital stock of $50,000, the purpose of which is to erect a six story building to be devoted exclusively to professional purposes.

Personal.—Members of the Pontiac Medical Club, February 25, gave a dinner in honor of Dr. Joseph G. Knapp, former secretary of the club who is moving to Cleveland, and presented him with a leather traveling case. Dr. Carlton D. Morris, Pontiac, was selected president; Dr. John W. Fox, Pontiac, vice president, and Dr. Harry B. Yoh, Pontiac, secretary.——Dr. Vilda S. Laurin has been appointed acting city physician of Muskegon, succeeding Reuben J. Harrington.

The Care of Children's Teeth.—The Genessee County Medical Society, at a recent meeting in Flint, adopted a resolution agreeing to take every opportunity to instruct those coming under the care of the members with reference to the need of beginning the care of the teeth of their children at 2½ or 3 years of age, or as soon as erupted; agreeing to give all children coming under their care competent and conscientious attention; endorsing the start made by the dental division of the health department of Flint, in the establishment of free dental clinics; recommending the extension of this work, and the need of competent care with more frequent examinations, and advice as to matters which cannot readily be made practical in the public dental clinic. The dental division of the department of health now has three full-time dentists and one dental hygienist. The aim of the department is to build it up, so that free dental care may be given to all children whose parents wish to take advantage of it.

MISSISSIPPI

Funds Provided for Malarial Survey.—The city council of Columbus, February 17, made an appropriation of $3,000 for carrying out a malarial survey.

Colony for Epileptics.—The state senate, February 25, passed a bill for founding, equipping, and conducting a state institution or colony for the feebleminded and epileptics.

State Board Meeting.—At the annual meeting for organization of the state board of health held in Jackson, February 27, Dr. J. Harvey McNeill, Olive Branch, was elected president of the board, and Dr. Waller S. Leathers, University, was reelected secretary and executive officer.

New Hospital Building for Soldier's Home.—The delegation from the state legislature which visited the Jefferson Davis Soldiers' Home, Beauvoir, February 28, expressed themselves as being in favor of providing the home with a new hospital, the present structure being regarded as inadequate and unsafe. It is proposed to erect a new brick hospital to cost $125,000.

Personal.—Dr. John A. Mead, Logtown, has been appointed health officer of Hancock County, to succeed Dr. Joseph W. Moody, Kiln, resigned.——Dr. George Y. Hicks, Vicksburg, has been appointed superintendent of the State Charity Hospital, Vicksburg.——Dr. James O. Ringold has been elected health officer of Montgomery County.——Dr. James A. Toole, Marks, has been elected health officer of Quitman County. ——Dr. William I. Marsalis, Centerville, has been elected health officer of Wilkinson County.

NEW MEXICO

Personal.—Walter M. Connell, chairman of the city commissioners of Albuquerque, has been appointed first vice president of the New Mexico Public Health Association to fill the vacancy caused by the death of Dr. Oliver T. Hyde. ——Dr. Frank N. Carrier, Santa Rita, has been elected secretary, and David R. Boyd, treasurer, of the New Mexico Public Health Association.——Dr. Le Roy S. Peters, Albuquerque, has been appointed medical director of St. Joseph's Hospital, succeeding Dr. Oliver T. Hyde, deceased. Dr. Arno Klein, Albuquerque, has been appointed assistant medical director of the hospital.

New Health Law.—Senate bill No. 5, which passed the senate with a vote of seventeen to five and the house of representatives unanimously and was signed by the governor, March 1, provides that, whenever in the opinion of the commissioner of health, conditions require the employment of persons in addition to county and city health officers to carry out the health laws, rules and regulations, these may be employed by the governing boards of counties and incorporated municipalities. To provide for the current expenses of the health department, boards of county commissioners are authorized to levy a tax not to exceed one-half mill on each dollar of taxable property in the county, exclusive of that within incorporated municipalities. The governing bodies of such municipalities may levy a tax not exceeding one-half mill on each dollar of taxable property within their boundaries.

NEW YORK

Personal.—Dr. William L. Munson, Granville, sanitary supervisor who was taken ill with pneumonia while in Plattsburg in connection with the public health course for nurses at the Champlain Valley Hospital, is convalescent and has returned home.

Civil Service Examinations.—The state civil service commission announces that examinations will be held, April 10, for the positions of bacteriologist-pathologist, state department of health, with a salary of $2,500 to $3,000; laboratory assistant and bacteriologist, state department of health, with a salary of $900 to $1,320, and laboratory apprentice, state department of health, with a salary of $840.

Beneficiaries of Dr. John Van Der Poel's Will.—The will of Dr. John Van der Poel, who died, February 23, disposes of an estate of more than $200,000, and many family heirlooms, one of which is "an old English pepper grinder," which had been in the family many generations, and which is bequeathed to his attorney Edward R. Boise. A painting on wood by Egbert Van der Poel, dated 1640, and Rembrandt's "Lessons in Anatomy" go to the Albany Institute and Historical Society.

New York City

Appointed City Bacteriologist.—Miss Margaret F. Upton, formerly connected with the laboratory of the New York Post-Graduate Hospital, has been appointed city bacteriologist of Utica.

Encephalitis Lethargica.—According to the records of the New York City Health Department there have been reported from January 1 to March 9, 175 cases of encephalitis lethargica with forty deaths. It is said that there are more cases at present than at any previous time.

Drug Clinic Closed.—The drug clinic of the municipal health department which was opened last April after a series of federal raids which lessened the illicit traffic in narcotics and caused suffering among drug addicts, was closed, March 6, since the need for the clinic has apparently passed.

Personal.—Dr. Wilfred T. Grenfell of the Grenfell Annual Surgical and Health Mission to Labrador arrived in New York on the *Carmania* after a three months' lecture trip abroad.——Dr. John M. Wheeler has been elected ophthalmic surgeon to the New York Eye and Ear Infirmary, succeeding Dr. John E. Weeks, who has been appointed consulting surgeon to the institution.

New York University Medical Alumni to Organize.—A meeting has been called by the organization committee, of which Dr. Robert J. Carlisle is chairman, for March 24, at the Carnegie Laboratory for the purpose of organizing the medical almuni of New York University. There are more than 6,000 living alumni of the medical school and it is believed it will prove one of the strongest alumni organizations among medical schools in this country.

PENNSYLVANIA

Chemists Die.—Leonard Merritt Liddle, aged 26, research chemist of Mellon Institute, Pittsburgh, died, February 21. ——Dr. Francis C. Phillips, aged 69, retired dean of the chemistry department of the University of Pittsburgh, and a member of the faculty for more than forty years, died, February 16.

Pennsylvania Bacteriologists Organize.—March 9, the bacteriologists of Eastern Pennsylvania met in the laboratory of hygiene of the University of Pennsylvania, Philadelphia, and organized a local branch of the Society of American Bacteriologists, electing Dr. David H. Bergey, Philadelphia, chairman; Dr. Courtland Y. White, Philadelphia, secretary-treasurer, and Dr. Claude P. Brown, Ambler, a member of the executive committee. The society will meet on the second Tuesday of each month, excepting June, July and August.

Philadelphia

Four Physicians Held.—Charged with violation of the state advertising act, four physicians were held under $600 bail for court yesterday by Magistrate Macleary. They are: Drs. David Weissman, Lawrence Kauffman, Marshall A. Davis and Harry Y. Messec. The arrests followed written complaints to Mayor Moore.

Obstetric Societies Joint Meeting.—March 9, the Philadelphia Obstetrical Society was the guest of the New York Medical Society. Clinics were held throughout the day in New York. In the evening a dinner was held at the Hotel Pennsylvania. Dr. Edward P. Davis read a paper entitled "Intestinal Infection in Pregnancy, Labor and Puerperium."

Memorial to Dr. Wood.—A special meeting of the College of Physicians was held, March 19, as a memorial to Dr. Horatio C. Wood. Dr. George E. de Schweinitz read a memoir of Dr. Wood. "Recollections of a Pioneer in Pharmacology in the United States," was read by Dr. Hobart A. Hare; "An Appreciation," by Dr. Francis X. Dercum, and "Reminiscences, Chiefly Neurological and Medico-Legal," by Dr. Charles K. Mills.

Personal.—Charles R. Stockard, Ph.D., professor of anatomy at Cornell University Medical School, New York City, read a paper on "Growth Rate and Its Influence on Structural Perfection and Mental Reactions" before the Philadelphia Psychiatric Society, March 12.——Dr. Judson Daland presented his resignation as a censor of the Philadelphia County Medical Society at its meeting, February 25, after twenty years of service in that office.

More Arrests in Sanitation Drive.—March 8, thirteen persons were arrested for violation of sanitation laws, bringing the total of arrests in the last three weeks, under the direction of the health department, to more than 150. Most of the cases recently were scavengers caught in the downtown section upsetting receptacles and strewing the streets with waste. They were fined and released with a reprimand if it was their first offense. Dr. Charles L. Furbush, director of public health and charities, is determined that all violators of sanitation rules shall be vigorously prosecuted and all householders who dump ashes in the streets or who do not provide proper receptacles shall be subject to arrest.

CANADA

Health Budget.—The estimates of the Toronto board of health for 1920 amount to $1,067,216, but the board of control cut more than $100,000 from the estimates. For epidemics $100,000 is allowed, and of this amount $74,000 has already been spent.

Hospital News.—Montreal is to have a Chinese hospital. The accommodation is to be for twenty-five beds. The temporary institution has already ten patients. It is claimed to be the first Oriental hospital in Canada.——Chatham, Ont., will raise $50,000 this year for the endowment of its general hospital.

Public Health News.—Medical inspection of schools has been inaugurated in Brantford, Ont., with Dr. Alexander in

charge.——Dr. C. Achille Daigle, Montreal, has been elected a member of the central board of the Roman Catholic School Commission of that city.

University News.—Owing to the fact that he has been appointed British ambassador to the United States, Sir Auckland C. Geddes has resigned the presidency of McGill University, Montreal. A new principal is being sought and preference will be given to a graduate of McGill, and a Canadian.

Influenza.—Up to Monday, March 1, it was announced that in Montreal during the influenza epidemic there were 657 deaths from influenza, pneumonia, and bronchopneumonia. About fifty cases a day were being reported, March 1.—— Quebec City, March 4, it was announced, had had 500 cases of influenza with only two deaths.——The total number of deaths for influenza and pneumonia in Toronto for February was 656, out of a total death rate for the month of 1,191.

Sale of Liquor.—The Manitoba liquor act has been amended. Sale of liquor by wholesale druggists has been abolished. Medical men are limited to 2 quarts a day for professional purposes and 100 prescriptions a month; hospitals, 5 gallons a day.——Hon. J. R. Boyle, attorney-general of Alberta, recently announced in the legislature of that province that the profits on the government sale of liquor had been more than $2,000,000 in 1919; and that the illegal sale of liquor had amounted to about $3,500,000.

Public Health Notes.—The province of Quebec has lifted the ban on Ontario residents and others journeying into Quebec. Vaccination is now no longer required.——The Superior Board of Health of the province of Quebec will shortly inaugurate a compaign against tuberculosis in that province. A committee has been appointed consisting of Drs. E. M. Desaulniers, St. Lambert, Chambly; Charles R. Paquin, Quebec; Joseph E. Laberge, Montreal, and J. A. E. Beaudoin, Montreal, as secretary, to study the question and to advise what steps should be taken to make the campaign effective.

University News.—The fund for the University of Montreal (Laval), recently destroyed by fire, has attained to more than $3,500,000.——Toronto University needs $4,000,000 for its reorganized medical department. Dr. George E. Vincent of the Rockefeller Foundation has been in Toronto the past week and has been conferring with the special committee of the medical department presided over by Dr. Alexander Primrose, C.B. It is planned to pay whole-time professors in medicine, surgery, obstetrics, pathology, and perhaps one or two others, $10,000 a year. Representatives from Queens, Western at London, and from Winnipeg interviewed Dr. Vincent as to their likelihood of participating in the $5,000,000 to be alloted to Canada for medical education from the foundation.

Personal.—Dr. Edward C. Arthur, Vancouver, B. C., has been appointed traveling medical health officer of the province.——William James Chapman, Kenora, has been D. A. M. S. Military District No. 1, Winnipeg since July last.——Dr. William Harold Graham Aspland, London, has attained the rank of lieutenant-colonel and is now living in Middlesborough, Yorkshire, England.——Dr. Howard Green Barrie has returned to Shanghai after nearly five years' service in Serbia, Egypt and Alexandria.——Herbert Eldon Roaf, London, has been appointed to the chair of physiology in the University of London, England.—— Dr. George Barnes Archer has returned to Ranaghat, India, and resumed his prewar activities as medical missionary. ——Gerald Allison, Picton, Ont., M. B. Tor., 1915, after serving with the R. A. M. C., has returned to Toronto and received an appointment on the staff of the Toronto General Hospital.

GENERAL

Radiologists to Meet.—The Radiological Society of North America will hold its annual meeting in New Orleans, April 23 and 24.

Thoat, Nose and Ear Men to Meet.—The annual meeting of the American Laryngological, Rhinological and Otological Society will be held in Boston, June 2, 3 and 4, under the presidency or Dr. Harris P. Mosher, Boston.

Legislation on Child Welfare.—The legislative appropriation bill which has just passed the House of Representatives contains a provision appropriating $80,000 for the investigation and report on matters pertaining to the welfare of children and child life and especially to the question of infant mortality within the District of Columbia. This work is to be undertaken by the Children's Bureau of the Department of Labor.

Chairman Chosen.—The following chairmen have been selected for the various sections of the annual meeting of the National Tuberculosis Association to be held in St. Louis, April 22 to 24: medical section, Dr. George Dock, St. Louis; pathologic section, Dr. Eugene L. Opie, St. Louis; advisory council, Dr. Allen W. Freeman, Columbus, Ohio, and sociologic section, Dr. Hibbert W. Hill, St. Paul.

Opportunities for Physicians in China.—The Interchurch World Movement of North America has issued a special appeal for services of medical women in the Orient. There is great need for American medical women in orthopedic surgery, and there is also great opportunity for laboratory trained women. The medical schools of Canton, Hankow, Nanking, Peking and Soochow also offer some practical opportunities.

American Life Convention.—The tenth annual meeting of the medical section of the American Life Convention was held at French Lick Springs, Ind., March 10 to 12, under the chairmanship of Dr. C. Naumann McCloud, Minneapolis. The following officers were elected: Dr. Frank L. Truitt, Indianapolis, chairman; Dr. Calvin H. English, Fort Wayne, vice chairman; Dr. Frank L. B. Jenney, Chicago, secretary (reelected), and Dr. Henry Wireman Cork, Minneapolis, a member of the board of managers.

Christmas Seals.—At a conference of representatives of state associations and the National Tuberculosis Association in Chicago, January 8 to 10, it was reported that the proceeds of the 1919 sale of Christmas seals would amount to more than $4,100,000.——The chairman of the central committee of the American Red Cross has notified the National Tuberculosis Association under date of January 27, that the American Red Cross will discontinue the sale of seals as a means of raising funds for the organization.

Mortality Statistics.—The Bureau of the Census has just issued Bulletin No. 41, giving the mortality statistics for 1918. The bulletin includes the most important facts relative to deaths recorded in the death registration area. The states of Illinois, Louisiana and Oregon have been added to the area, so that the bulletin concerns a population of 81,868,104, or 77.8 per cent. of the total population of the United States. The total number of deaths for this area, including 26,209 soldiers, sailors and marines, was 1,471,367, corresponding to a death rate of 18 per thousand population, or 3.8 higher than the rate for 1917, which was 14.2. The great increase in the death rate was believed to be entirely due to the high mortality caused by the pandemic of influenza.

National Board of Medical Examiners Incorporated.—Senate Bill No. 3959 has been introduced by Senator Kellogg to incorporate the National Board of Medical Examiners of the United States of America. It provides that Rear Admiral William C. Braisted, U. S. Navy; Major-Gen. Merritte W. Ireland, U. S. Army; Surg.-Gen. Rupert Blue, U. S. P. H. S.; Admiral Edward R. Stitt, U. S. Navy; Col. Louis A. LaGarde, M. C., U. S. Army, retired; Asst. Surg.-Gen William Colby Rucker, U. S. P. H. S., and Drs. Herbert Harlan, Baltimore; Isadore Dyer, New Orleans; Victor C. Vaughan, Ann Arbor, Mich.; Walter L. Bierring, Des Moines, Iowa, and such other persons as may be chosen who are members of the National Board of Medical Examiners, an unincorporated, nonprofit association known as the National Board of Medical Examiners, and their successors, are hereby created and declared to be a body corporate.

Bequests and Donations.—The following bequests and donations have recently been announced:

Blackford County Hospital, Hartford City, Ind., a donation of three city blocks in Hartford City and $5,000 for improvements thereon by Mrs. H. B. Smith in memory of her husband.

For a free hospital for Indians near Henrietta, Okla., $1,000,000 by Jackson Barnett, an Indian of Oklaboma made wealthy by oil.

McGill University, Montreal, $5,500 for a scholarship in medicine in memory of his son, Lieut. Walter W. Hoare, by Dr. Charles W. Hoare, Walkerville, Ont.

Harbin Hospital, Rome, Ga., a donation of radium costing between $6,000 and $10,000 by J. P. Cooper.

Mercy Hospital, Chicago, $250,000 by the will of Charles E. Haines, St. Charles.

Women's Medical College of Pennsylvania, Philadelphia, $4,000 for an endowment to educate a woman medical missonary for work in China, by the Board of Foreign Missions of General Synod of the Reformed Church.

Michael Reese Hospital, Chicago, $200,000 by the will of Otto Baer.

American Hospital, Paris, a donation of 4 946,000 francs by Mrs. Robert Bacon, widow of the late American ambassador to France for

the endowment, in memory or Colonel Bacon, of twenty-four beds in free wards of the hospital to be built at Neuilly. Mr. Henry P. Davison of the American Red Cross has transferred 750,000 francs, the remainder of one of the war funds of which he was chairman, to the American Red Cross Hospital in France to that part of the hospital devoted to the Bacon free wards.

Lankenau Hospital, Philadelphia, $5,000 by the will of Gustaf A. Schwartz.

Legislation on Mailing of Chemicals.—Congressman Halvor Steenerson of Minnesota has favorably reported from the Committee on Post Offices and Post Roads a bill amending the penal code of the United States which forbids the transmission through the mails of "all kinds of poison" and "chemicals." The bill as reported will permit the postmaster-general to make regulations on this general subject. In a letter to Congressman Steenerson, Postmaster-General Burleson says:

"There is a widespread public demand for the admission to the mails of certain classes of matter, and the proposed legislation is designed to meet this demand. Many requests from manufacturers, chemists, physicians, surgeons, druggists, dealers in medicines and their associations, etc., to extend to them the facilities of the parcel post for the transportation of medicines and drugs, have been received, it being urged that the exclusion of such matter from the mails works a peculiar hardship on physicians, druggists, dentists and veterinarians who are located at points remote from express offices, they having no direct way under the present law of getting small shipments of drugs. The manufacturers and dealers are equally interested, as the parcel post is the only direct way of communicating with persons authorized to handle habit-forming drugs."

The law as amended will permit the sending through the mails of poisons, chemicals, and other articles hitherto forbidden, under special regulations relating to the subject made by the Post Office Department. The bill specifically provides, however, that these articles are to be sent "from the manufacturer thereof or dealer therein, to licensed physicians, surgeons, dentists, pharmacists, druggists and veterinarians."

FOREIGN

Vaccination Compulsory in Czechoslovakia.—It is said that a law of date of last July makes vaccination compulsory in Czechoslovakia during the first year and again at the completion of the seventh and of the fourteenth years.

Credé Centennial.—Both the method of placental expression and the silver nitrate prophylaxis of ophthalmia neonatorum were introduced by K. S. F. Credé of Berlin, the centennial of whose birth was recently celebrated in Germany.

British Medical Association Meeting.—The next annual meeting of the British Medical Association will be held in the University of Cambridge in the last week in June under the presidency of Sir Thomas Clifford Allbutt, who was president of the association at the opening of the war, since which time no meeting has been held.

Requirements to Practice in Hayti.—A communication from a reliable source states that physicians of the United States who desire to enter practice in Hayti may become qualified to do so by presenting their original diploma of graduation from medical schools and evidence of their preparation and licensure to the National School of Medicine, Port au Prince, Hayti.

Predetermination of Sex.—The German medical society organized at Berlin for research on sexual science and eugenics has offered a prize of 1,000 marks for the best article on the subject, "Has Man Two Kinds of Spermatozoa?" The question is to be studied by the light of modern views on predetermination of sex. The secretary of the society is Dr. M. Hirsch, Motzstr. 34, Berlin.

Poisoning from Beans.—The German medical journals state that Professor Lewin of Berlin warns that beans should not be allowed to be imported that contain more than 20 mg. hydrocyanic acid in 100 gm. of the beans. There have been several cases of vomiting and diarrhea keeping up for ten or twelve hours after ingestion of imported beans of the *Phascolus lunatus* family. This includes butter, sugar and lima beans and the bitter or Egyptian bean.

Personal.—A gold medal and 5,000 francs, representing the Lannelongue prize, was awarded recently by the French Society of Surgery to Dr. H. Gaudier of Lille, for his pioneer work in the excision and immediate suture of war wounds. ——Dr. Léon Bernard, professor of medicine, Faculty of Medicine, Paris, has been elected a member of the Academy of Medicine, and Drs. Lesbre, Lyons, and Lignières, Buenos Aires, have been elected corresponding members. ——Prof. Thomas Swale Vincent has been appointed to the university chair of medicine tenable at the Middlesex Hospital Medical College, London.

Deaths in the Profession Abroad.—Dr. **W. Busse,** professor of gynecology at the University of Jena, aged 46.——Dr. **H. Weicker,** physician in chief of the Göbersdorf sanatorium. ——Dr. **P. Mayet** of Berlin, a statistician and writer on social hygiene. He is credited with the initiative for the government pension now granted to parturients.——Dr. **L. Pinatelle,** formerly professor of surgery at the University of Lyon, aged 46.—Dr. **Cecil Rupert Chaworth Lyster,** director of the radiotherapeutic department of Middlesex Hospital, London, died, January 26, from the effects of roentgen-ray burns for which repeated operations had been performed.

Tribute to the Heroes in the Profession During the War.—A subscription has been opened under the auspices of all the medical schools and organizations of France to collect funds to honor the memory of the medical victims of the war. It is planned to issue a souvenir volume, the Livre d'or, to contain the names and citations of all the physicians and medical students who died for France, in whatever service they may have been engaged. Dr. Caboche, 372 rue Saint-Honoré, Paris, is in charge of this part of the work, collecting private data to control the state archives. A copy of the volume will be presented to every one who subscribes at least 40 francs. A monument is also planned and subscriptions are being received for this purpose throughout France. The treasurer general is Dr. Bongrand, 6 rue Villaret-de-Joyeuse, Paris.

Foreign Guests Visit the United States.—At the invitation of members of the National Board of Medical Examiners, who visited England and France during 1919, several prominent physicians from abroad will visit America and make a tour of the country and attend the annual meeting of the American Medical Association in New Orleans. These guests are:

Sir Humphrey Rolleston, F.R.C.P., London; appointed by the president of the Royal College of Physicians, London.

Col. H. J. Waring, F. R. C. S., London; appointed by the president Royal College of Surgeons, England. Representing Conjoint Board of England.

Dr. Norman Walker, Edinburgh, representing the Triple Qualification Board of Scotland.

Professor Gregoire, surgeon, and Professor Roussy, physician; appointed by the dean of the faculty of medicine, University of Paris.

This commission will be joined by Prof. J. C. Connell, Kingston, Ontario, president of the Medical Council of the Dominion of Canada.

Merger of French Journals of Gynecology.—It is announced that a new journal, to be entitled *Gynécologie et Obstétrique,* is to be issued as a merger of the three leading French journals in this field. It takes the place of the *Archives mensuelles d'Obstétrique et de Gynécologie* which Bar and Faure have been guiding so long and which in turn was the successor of the *Obstétrique;* also of the *Revue de Gynécologie,* Pozzi's handsome journal which stopped with the war and his death, and of the *Annales de Gynécologie et d'Obstétrique,* the directors of which included Pinard, Hartmann and Pollosson, with Couvelaire and Lecène in charge. The new journal is to appear monthly, to be issued by Masson et Cie, 120 boulevard Saint-Germain, Paris. The subscription is 50 francs. All the three journals which it succeeds have been regularly indexed in the Current Literature department as they were issued, practically since the department was founded.

LATIN AMERICA

Influenza Epidemic in Panama.—Influenza has assumed an epidemic form in Panama, and the hospitals of Colon are filled with patients.

Epidemic of Meningitis in Havana.—The epidemic of cerebrospinal meningitis in Havana continues to spread. During the last few days a number of deaths have occurred among the personnel of the Cuban navy.

Personal.—Prof. B. A. Houssay of the University of Buenos Aires has been elected corresponding member of the Société de Pathologie exotique at Paris in token of appreciation for his extensive research on snake venom and on scorpion and spider poisons.

Deaths in the Profession.—Dr. **J. J. Mon** of Buenos Aires, hospital physician and writer, aged 40.——Dr. **F. Castro Rabello Kock,** professor of therapeutics at the University of Bahia and official of the state public health service, aged 39. ——Dr. **J. de Verney Campello,** professor of microbiology at the University of Rio de Janeiro, aged 37.——Dr. **A. de Arruda Beltrão,** a prominent physician at Rio de Janeiro and official health officer, aged 54.——Dr. **E. J. Corbellini,** formerly *profesor suplente* of surgery in the University of Buenos Aires, *consejero* of the university and a leading surgeon of the capitol, aged 47.

Government Services

Changes in Public Health Service

The President has sent to the Senate the nominations of former Surgeon-General Rupert Blue and Joseph H. White to be assistant surgeon-generals at large of the public health service.

Disease Conditions in the Army

For the week ending March 5, a few cases of influenza were reported from nearly all of the large camps and stations. At Camp Taylor the epidemic appeared to be subsiding much more slowly than at other camps, the personnel at this camp being nearly twice as large as at any other. The whole epidemic is considered at an end, so far as it affects the military service.

Influenza in the Navy Personnel

The influenza epidemic of 1920 affected the Navy as it did the civilian population. The recurrence began during the week ending January 17 at Great Lakes, Ill. On January 12 there were fifty-one cases. The peak was reached on the third day with the admission of 182 new cases during twenty-four hours. Although the peak came earlier than in the 1918 epidemic, the decline was less rapid and there were four secondary peaks, the outbreak terminating on the twenty-fourth day. It is reported that on the whole the epidemic was less severe and the cases milder during 1920 than during 1918. Pneumonia was a complication in about 10 per cent. of the reported cases of influenza. In addition to the epidemic at Great Lakes, which included in all 1,415 cases, there were 3,354 cases in other stations.

European Health Conditions

Surgeon-General Hugh S. Cumming, U. S. P. H. S., returned from his duties in Europe, where he has been stationed for two years, to assume his new position in Washington, March 10. Dr. Cumming says that typhus is far from being checked and seems to be increasing, so that there is imminent danger of an epidemic raging over Europe on a large scale, unless the most strict quarantine and other control measures are enforced. With the disease entrenched in European ports, the next danger point will be the United States, and he believes that nothing should be left undone to keep out this disease as well as bubonic plague. An agency is soon to be established under the League of Nations which will coordinate and strengthen the health work of all nations and will particularly improve the reporting of diseases and maintenance of international quarantine. April 12, a meeting is to be held in London, to which representatives of the health departments of various nations have been invited, when it is believed a permanent organization will be formed.

Contract Surgeons Under Army Reorganization Bill

Pressure is being brought to bear on members of the House of Representatives for recognition in the Army reorganization bill of former contract surgeons of the Army. The Army bill as it was reported to the House fails to credit contract surgeons and assistant surgeons for their service in the Army, which service in part determines their claim for longevity pay and retirement. The Army reorganization bill now pending in the Senate gives full credit to contract surgeons for their service in the Army, but the Army reorganization bill pending in the House is silent with reference to such recognition for contract surgeons. It is the general feeling that contract surgeons have not received justice in the House bill nor been accorded the recognition which is due them. When the American soldiers went to the Philippines and later to China the greater part of the work of the medical department was performed by acting assistant surgeons. It was seldom if ever that a regular medical Army officer was at that time on active duty with troops.

The War Department asked for volunteer acting assistant surgeons to meet the demand for medical officers. Physicians who thus entered the service signed a contract with the surgeon-general to perform the duties of a first lieutenant. Technically, however, such physicians were not army officers but were termed contract surgeons, although they performed the duties and were exposed to the hardships of the regular medical officer in the Army. As it does not seem likely that the House bill can be amended at this late time, it is felt that the Senate committee on military affairs will insist on recognizing the claims made in behalf of the contract surgeons.

Foreign Correspondence

LONDON

Feb. 21, 1920.

The Prevention of Venereal Disease

The prevention of venereal disease is still a burning topic. A largely attended public meeting, convened by the Society for the Prevention of Venereal Disease, has been held at the Mansion House under the presidence of the lord mayor. A resolution was carried unanimously that venereal disease had become a menace to national health and prosperity, and in view of the fact that infection can be prevented by self-disinfection immediately after exposure, it is necessary to instruct the public as to the importance and method of doing this. These instructions for immediate self-disinfection have been issued by the society: Materials required: cotton wool; a solution of potassium permanganate, in 1:1,000; calomel ointment, 33 per cent. (A) If exposure takes place outdoors or where complete disinfection is impracticable: (1) Make water. (2) Soak a swab of cotton wool with the solution. Draw back the foreskin, carefully swab the head of the penis and undersurface of the foreskin, especially at the opening of the pipe. These steps must be taken within an hour of exposure. (3) On returning home, thoroughly wash the sexual organs with soap and water and well rub the ointment into the penis, drawing back the foreskin. This must be done within six hours of exposure. (B) If exposure has taken place within doors, a more complete immediate disinfection should be made: (1) Make water. (2) Wash the sexual organs and parts around with soap and water. (3) Swab with the solution. (4) Rub the ointment well into the penis. The swabbing with the permanganate is the most important measure. An additional safeguard is to apply the ointment before intercourse. If exposure has occurred under the influence of alcohol, so that the precautions recommended have not been promptly taken, the chances of infection may be considerably lessened by carrying out "B," well rubbing in the ointment for ten minutes and in addition syringing the pipe with permanganate solution of half the strength recommended for the outside, and holding the solution in for two minutes by pinching the lips of the pipe. This method is useless after twelve hours. If none of these precautions have been taken, and there is reason to believe that infection is probable, a physician should be consulted at once.

The subject has also been considered by the Medical Women's Federation, which has issued a pamphlet stating that the chief and most important part of the task with which society is faced is such a reform of our social structure and moral habits as will gradually eliminate conditions which have led to the prevalence of venereal disease. In regard to prophylaxis, the federation associates itself with the findings of the interdepartmental committees on infectious diseases in connection with demobilization. The committee found that even under the conditions of discipline of men on active service, the "prophylactic packet system" was a failure. The provision of clinics open at all hours of the day and night for early preventive treatment so that sterilization may be carried out within a short time of the act is also condemned as encouraging and countenancing promiscuous intercourse. "The sale by chemists of calomel ointment or permanganate solution is a matter with which we have no concern as long as the public is aware that these things are not remedies for venereal disease."

Graduate Teaching Units

The reorganization of the teaching of several of the London hospitals by the formation of medical and surgical units under directors who, with their assistants, are entirely engaged in this work, has been described in previous letters to THE JOURNAL. An incentive to this reform is the fact that educational grants toward the expense can be obtained from the government. The London School of Tropical Medicine, the teaching of which is entirely graduate, is also adopting

the scheme. Whole-time directorships have been instituted in protozoology, helminthology, entomology and tropical pathology.

War Section of the Royal Society of Medicine

An innovation at the Royal Society of Medicine has been the formation of a war section. At the first meeting a discussion on gas poisoning in warfare was opened by Sir Wilmot Herringham, who described his introduction to this method when in April, 1915, he came across three French (Algerian) soldiers in a Canadian ambulance suffering from the effects of chlorin gas sent over by the Germans in the form of clouds or drifts. Three days later he found 600 or 700 men in hospital at one center, all suffering from its effects. They were gasping for breath, coughing, and expectorating yellow, frothy fluid, which often ran out of their mouths when they lay on their sides. No treatment seemed to avail. The method of using oxygen customary in pneumonia was not of the slightest use. Experiments were immediately made in England to elucidate the pathology, and it was shown that the chief symptoms might be explained by the difficulty of oxygen entering the blood through the great wall of edema. The mainstay of treatment was oxygen, which was administered at first by a makeshift apparatus of gasoline tins until Dr. Haldane's apparatus became available. It appeared that as far back as 1909 the Germans were preparing to use gas in war. In that year a research chemist from this country, who periodically visited Germany, was walking in the country when he detected a strange odor. He came to a small hill on which were soldiers and some sheep, of which several appeared to be dead. He was not allowed to go farther. Evidently he had come on some poison gas practice for military purposes.

Prophylactic Inoculation Against Influenza

Sir William Leishman, director of pathology at the War Office, has published the first records of the results of prophylactic inoculation against influenza according to the method described in a previous letter:

	Number of Men	Ratio per Thousand — Incidence of Attack	Lung Complications	Deaths
Inoculated	15,624	14.1	1.6	0.12
Noninoculated	43,520	47.3	13.3	2.25

Not only do these figures show a great advantage for the inoculated, but there is the additional fact that nearly one half of them received only a third part of the dose considered necessary.

A Majority of Women on the General Health Council

The Consultative Council on General Health Questions, established under the Ministry of Health, has held its first meeting. Dr. Addison, who presided, asked the council to put before him a statement of the main defects in existing provisions for safeguarding the health of the people, and to suggest remedies from the standpoint of the general public. Women form a large majority of the council and represent a number of trade organizations, such as the United Textile Factory Workers, the Women's Cooperative Guild, the National Council of Women of Great Britain and Ireland, and the Labor Party.

War Patients Still in the Hospital

Impressed by the fact that many medical and surgical cases have remained in military hospitals beyond the period when benefit is being derived, the medical authorities of London district have appointed a board of consultants to investigate the matter. They will visit the hospitals and advise the best method to be adopted for the patient's recovery and disposal. The board will consist of Col. H. J. Waring, president (surgeon); Major W. E. Wynter (physician); Capt. C. M. Hinds Howell (neurologist), and Col. T. H. Openshaw (orthopedic surgeon).

Election of Honorary Fellows of the Royal College of Surgeons

A. Depage, Brussels; Pierre Duval and A. Gosset, Paris; J. M. T. Finney, Johns Hopkins University, and Charles H. Mayo, Rochester, Minn., have been elected honorary fellows of the Royal College of Surgeons. It is hoped that they may be able to attend the meeting of the council in July for the presentation of diplomas.

VIENNA

Feb. 24, 1920.

Death of Professor Wertheim

A few days ago, Professor Ernst Wertheim, the famous gynecologic surgeon, died rather suddenly from the effects of an attack of the so-called influenza, which at present is prevalent in Vienna. He was only 58 years of age. Wertheim's reputation was worldwide, and there will be a large number of men in the United States who will regret to hear of his death. His chief line of work was the surgical treatment of cancer of the uterus, and his method of operation was at one time regarded as the best operation for this disease. Wertheim was a critical and exact scientist. As an operator he was bold and original, and as a teacher he was unique. With his death, which followed so soon after the death of Professor Schauta, there has occurred a rare condition in the University of Vienna. Both clinics for diseases of women are now free as both directors are dead. It will be difficult to find two suitable men to fill the vacancies. In Austria there is just now no abundance of such men, as no physician from Germany will at present be willing to come to Vienna, which does not offer much financial attraction. On the other hand, only a first-class man, who is able to teach and to do research work, can be appointed to this important post.

Influenza and Lethargic Meningitis in Vienna

At present a wave of influenza (grip) is raging in Vienna, which is not quite as bad as last year, and is distinctly different in its clinical manifestations. A new feature of the disease besides the well-known complications of the lungs and the brain is a spasmodic condition of the intestines, as reported by Dr. Massery in a paper read recently before the Medical Society of Vienna. He has seen six patients in the Samaritan Hospital who, when first seen, showed a condition resembling most closely acute strangulation of the intestine, severe pains all over the abdomen, spasms, and continual and absolute constipation. Pulse and temperature, however, remained not far from normal. Operation proved that the occlusion was due not to an obstacle, but to severe spasms of the intestinal muscles. Two cases could not be saved; death was probably due to the spasmophilic condition so often observed in cases of grip.

Another group of cases showed complications of another type of spasms; these resembled chorea. Spasms occurred in different groups of muscles, the flexors or extensors of the limbs, or of the abdominal walls. The patients were delirious, the temperature rose to 40 C. and higher and severe somnolence was always present. Seventy-one cases, of which thirty-one were fatal, were reported by Dr. Dimitz, from the neurologic clinic, at the above-mentioned meeting. The postmortem findings showed only a more or less marked hyperemia and sometimes edema of the brain, chiefly in the lenticular region. Similar epidemics appeared in various towns of Austria, lasting six weeks altogether. Lethargic meningitis is now also often observed. The patients are mostly young or middle aged persons (12 to 50 years); the mortality is rather high—20 per cent.—as etiologic treatment has not yet been possible. Pneumococcus serum seems to have a beneficial influence.

Medical Men Strike

The political weapon, the strike, which so often has been adopted with more or less success in economic warfare between capital and labor, has now been taken up, for the first time in this country, by medical men anxious to secure a modest living. The first strike was arranged by physicians of the "Krankenkasse" or sickness insurance society, who demanded an increase of their moderate fee at the rate of trebling their antewar fee. It must be added that at present the cost of living is forty times as great as before the war. As these physicians devote only part of their time to this "panel" work, their demands have been low. Hitherto the "Krankenkasse" has refused the new rate of remuneration, and so the medical men no longer treat the members on the old terms but as private patients. Public feeling is in favor of the physicians, so the result is not doubtful. A similar "difference of opinion" has sprung up in our clinics. Hitherto only the assistants and two house physicians were paid in the clinics. All other physicians, the outpatients' assistants as well as other physicians working in the clinics and, so to speak, making the thing "run," were working gratuitiously. Now the enormous cost of living is so heavy that these men, too, demand from the board of education, to whom the

clinics belong, a moderate remuneration and free board. As the work of these doctors is indispensable for the good working order of the clinics and since the government has refused to comply with the wishes of the men, they applied to the "Medical Organization," comprising 99 per cent. of all medical men of Vienna, for help. The organization proclaimed, after futile negotiations, a clinical strike, which lasted only a few hours. They attained their object. The leading rule in the new understanding is: "No work without payment, but only those men will be admitted whose work is required for the clinics, and the number will be restricted to the actual needs."

PARIS

Feb. 12, 1920.

Symbiosis, a Biologic Theory

A book that appeared recently entitled "Les symbiotes" has awakened a lively discussion. The personality of the author has been known for many years in the scientific world. The name of the author in question is Paul Portier, "maitre de conférences" on the Faculté des sciences de Paris and professor at the Institut océanographique, who took a prominent part in the investigations of Prof. Charles Richet on anaphylaxis. The above mentioned work would overthrow completely the ideas heretofore entertained concerning the rôle of microbes. To be sure, it was already known that all microbes are not pathogenic and that certain phenomena of life depend on the existence of bacteria. But the theory of Portier has a much more general application, for he states that every living cell is composed in reality of two cells that are associated in symbiosis; the human organism must be regarded, then, as the host of innumerable microbes dwelling in the protoplasm of the cells. The presence of the symbionts is constant and necessary, Portier thinks; without them life would be impossible. All the phenomena of intercellular organic changes, and more especially the phenomena of intercellular synthesis depend, accordingly, on the symbionts. The phenomena of "deficiency," which in recent times have attracted attention to the consideration of the interesting subject of vitamins, would likewise be explained, it is maintained, by the rôle of the symbionts. They play a part, it would seem, in the process of fecundation, in experimental and physiologic parthenogenesis, and also in the phenomena of immunity. Portier has succeeded in isolating and cultivating the symbionts, which are nothing more than the elementary structures of the cells and the blood described by the biologists under such names as "mitochondrias" and "globulins." However, it is only proper that I should add that this biologic theory has been attacked by Auguste Lumière of Lyons, who has written a book entitled "Le mythe des symbiotes" (The Myth of the Symbionts).

Physicians as Affected by the Tax on War Profits

A law dated July 1, 1916, put a special tax on war profits. It has been an undecided question whether physicians were subject to this tax. The matter has now been threshed out before the Conseil d'Etat, where a physician upheld the view that this special tax affected only those engaged in industrial and commercial pursuits. The counsel of the physician pleaded that it was not the intention of the law to include the professions, and much less the medical profession, which is bound by the right of privileged communication. But the minister of finance stated in reply that the text of the law would indicate that it applied in general to persons, subject to licensure, whose benefits and profits during the war exceeded those of normal times. The Conseil d'Etat, therefore, reached the decision that, in view of the general terms of the law, it was right and proper to tax all subject to licensure whose emoluments exceeded those that their profession normally produced, without making any distinction as to the nature of the profession and without considering the attitude usually taken toward the resources from which they derive their income. The decree adds that, even though it could be shown that the emoluments realized by certain persons thus included, by reason of the conditions under which they exercised their profession, would, of necessity, require a special limitation in the application of the law, such fact would not be of such a nature as to exonerate them completely. Consequently, the medical profession, which, according to the law of 1880, is subject to licensure, has been declared subject to the tax on war profits.

The Reorganization of Night Medical Service

So far the organization of night medical service in Paris has been anything but satisfactory. The present service dates back to 1876, and since that time it has undergone no changes by way of reform. The main features of the service as it has existed in the past were that, in each quarter of the city, physicians were asked to state whether they desired to respond to night calls or not. The names and the addresses of those who had signified a willingness to give night service in any given quarter of the city were inscribed in a directory which was kept at the police station of that quarter. The person who was in need of a physician at night went to the police station, and a policeman was delegated to accompany such person to the home of the physician and also went with the physician to the home of the patient. When the physician had finished his visit, the policeman gave him an order on the prefect of police for 10 francs. It is almost needless to say that this mode of service was primitive. The fact of having accepted night service did not put the physician concerned under any obligations to stay at home nights in anticipation of a call; so that it often happened that the physician to whom the delegated policeman and the person in need of medical assistance went was not at home. It thus became necessary to call on another physician, who might also be away as was the first. In view of the weaknesses of the old system, an endeavor has been made to reorganize the service with the following two prerequisites as a basis: 1. It was realized that in order to make a night medical service effective it would be necessary that certain physicians should be "on call" during the entire night and ready to render service to any patients who were in urgent need of attention. 2. It was equally apparent that the service should be organized in such a manner that physicians could be summoned quickly and also be in a position to reach the patient promptly.

With these ideas in view, the old system by which the names of physicians willing to do night service were inscribed in a special directory has been abolished, and a panel of physicians selected by a competitive examination and directly subject to the authority of the prefect of police has been established. These physicians so selected will serve for three years, at most, and will receive a fixed annual compensation of 3,000 francs. The city of Paris has been divided into five sections, in each of which a physician will be found (when not otherwise on duty) from 10 p. m. to 7 a. m., from October 1 to March 31, and from 10 p. m. to 6 a. m., from April 1 to September 30, at the disposal of patients who make request for medical service at night. The office of such physicians will be at a police station centrally located. A room with a bed will be provided, so that physicians will have the opportunity of resting, if they so desire, when not on active duty. A request for a physician is made at the nearest police station, which immediately communicates the request by telephone to the central police station. An automobile is sent to convey the physician to the residence of the patient and back to his post of duty. Each automobile used for this purpose is provided with a first-aid medical chest containing a small supply of drugs and surgical instruments. The night service is so organized that a physician is on duty only one night out of six. Each physician will therefore be on duty sixty nights a year, so that with 3,000 francs per year he will be receiving 50 francs for each night that he serves. This compensation is sufficient to secure the services of young physicians who have not an established practice as yet. The regulations provide that physicians serving on this panel shall be under 30 years of age, though former hospital interns may be up to 35.

Marriages

ALVAN LOTHAIR CHAPMAN, Hermanville, Miss., to Miss Mary Belle Hollingsworth of Crystal Springs, Miss., February 28.

JEROME J. ROBBINS, Gulfport, Fla., to Mrs. Elizabeth Tabor of Hubbardston, Mich., at Gulfport, recently.

ROBERT WILLIAM O'DONNELL, Monroe, La., to Miss Jennie May Conway of Shreveport, La., February 19.

G. C. MCCLURE, Ball Ground, Ga., to Miss Pearl Gober of Dawsonville, Ga., at Atlanta, February 25.

MYER NORMAN MOSKOVICH, St. Paul, to Miss Elizabeth Garfinkel of Philadelphia, January 5.

LYMAN JACKLIN SPALDING, New York City, to Miss Dorcas Parker of Bryan, Texas, recently.

Deaths

Louis Anatole LaGarde, Col., M. C., U. S. Army (retired); while returning from attendance at the meeting of the National Board of Medical Examiners in Chicago, was stricken with cerebral hemorrhage, March 7, and died just as the train was entering Pittsburgh. Colonel LaGarde was born in Bayou La Fourche, La., April 15, 1849, and after attending the Louisiana Military Academy, was graduated from Bellevue Hospital Medical College in 1872. After his internship in Roosevelt Hospital he entered the Army as contract surgeon in 1874, and served during the Sioux War. He received his appointment in the Army as first lieutenant and assistant surgeon, June 6, 1878, and then served on frontier duty for twenty years, during which time he was promoted to captain and major. In 1892 and 1893, he was detailed by the War Department to test the new rifle for the Army. During the war with Spain, he was in command of the divisional reserve hospital of the Fifth Army Corps at Siboney, Cuba, and was in charge of the evacuation of sick and wounded to northern hospitals, until he was stricken with yellow fever. Since 1899 he has been professor of military surgery in the University of the City of New York, and was also lecturer on gunshot wounds and ophthalmology in the Army Medical School from 1901 to 1902. In 1903 and 1904, Colonel LaGarde was made president of the board to determine the stopping power of bullets for pistols and revolvers with a view to a more effective service weapon. From 1904 to 1905, he was superintendent of the Ancon (Canal Zone) Hospital, and from 1905 to 1908, was the chief surgeon of the Department of the Visayas, Philippine Division, and while on this detail was made lieutenant-colonel and deputy surgeon-general. He was then made chief surgeon of the Department of Colorado, was promoted to Colonel, M. C., Jan. 1, 1910, and was retired by operation of law, on attaining the age of 64, April 15, 1913. Since that time Colonel LaGarde has been active as superintendent of the National Soldiers' Home, Washington, D. C., and as a member and treasurer of the National Board of Medical Examiners. He was recalled to active service during the World War, and in addition to his other duties delivered lectures on the medical reserve corps, and on military surgery at various medical colleges, throughout the country. He was an authority on ballistics, and his work on gunshot wounds was a standard textbook up to the time of the World War. He was a Fellow of the American Medical Association and in 1903 was a member of the House of Delegates representing the Army. He was also a charter member of the Association of Military Surgeons of the United States, and served for a time in 1918 as interim treasurer and editor of the *Military Surgeon*. Colonel LaGarde was a Southern gentleman of the old school, a charming companion and a most delightful personality.

Kenneth Alexander J. MacKenzie ⊕ Portland, Ore.; McGill University, Montreal, 1881; aged 61; L.R.C.P. and L.R.C.S. (Edin), 1882; second vice president of the American Medical Association in 1905, a member of the House of Delegates in 1904, 1912 and 1913, and chairman of the committee of arrangements for the Portland meeting; a fellow of the American Surgical Association; president of the Portland Academy of Medicine in 1909 and 1910; once president of the Oregon State Medical Association, and Portland City and County Medical Society; captain, M. C., U. S. Army, and discharged, Jan. 31, 1919; aide to the governor of Oregon under the Selective Service Act; professor of theory and practice of medicine from 1887 to 1907, professor of operative and clinical surgery since 1917, and dean of the faculty of the University of Oregon since 1912; surgeon to St. Vincent's Hospital, Portland, since 1883; chief surgeon for Oregon and Washington of the Oregon Railroad and Navigation Company since 1895; a director of the United States National Bank; head of the relief corps of physicians and nurses at the time of the San Francisco fire and earthquake, and in charge of the Harbor View relief station; and medical director of the Lewis and Clarke Exposition; director of the Portland Free Dispensary; died, March 15, from heart disease following influenza.

Charles Knox Cole, Chelsea-on-Hudson, N. Y.; Miami Medical College, Cincinnati, 1879; aged 67; at one time president of A. Schrader's Son, Inc., Brooklyn, the largest manufacturers of submarine divers' apparatus in the world; founder and director of the Rocky Mountain Club in New York City; for many years a prominent figure in Montana, where he was a member of the city council of Helena, president of the Montana Senate, president of the state board of examiners, and chief surgeon of the Montana Central Railway; president of the American Academy of Railway Surgeons in 1894, and secretary and treasurer of the American Association of State Examining and Licensing Boards in 1892; died in Pasadena, Calif., March 1.

William King Rogers ⊕ Columbus, O.; University of the City of New York, 1889; aged 53; a member of the American Academy of Ophthalmology and Oto-Laryngology; American Ophthalmological Society, and American Otological Society; professor of otology in the Medical Department of the Ohio State University, Columbus, since 1900; attending surgeon to Mt. Carmel, and St. Francis hospitals, and consulting surgeon to the Children's Hospital, Columbus; formerly president of the Ohio State Board for the Relief and Benefit of the Needy Blind; died in Mt. Carmel Hospital, Columbus, February 27, from septicemia.

Herbert William Yemans ⊕ Major, M. C., U. S. Army, Alcatraz, Calif.; Detroit, Mich., Medical College, 1878; aged 62; a member of the Association of Military Surgeons of the United States; an officer of the United States Marine Hospital Service from 1882 to 1887, and from 1892 to 1894; contract surgeon, U. S. Army since 1903; formerly a member of the council of the Manila Medical Society and Philippine Islands Medical Association; an expert on Esperanto; who was retired from the Army recently on account of physical disability; died at Fort Rosecrans, Calif., January 29.

George Clarke Ober, Washington, D. C.; Georgetown University, Washington, D. C., 1882; aged 59; a member, secretary, and once first vice president of the Medical Society of the District of Columbia; from 1891 to 1903 professor of materia medica and therapeutics and later of practice of medicine in the National University; for nine years secretary and later president of the District Board of Medical Examiners; formerly president and for four years secretary of the Board of Medical Supervisors for the District; died in Providence Hospital, February 25, from erysipelas.

Thomas Amory DeBlois, Boston; Dartmouth Medical School, Hanover, N. H., 1878; University of the City of New York, 1878; aged 72; a member of the Massachusetts Medical Society; a member and once vice president of the American Laryngological Association; a graduate of the United States Naval Academy in 1868; laryngologist and surgeon to the Boston City Hospital; instructor in laryngology at Harvard University Medical School; Lieutenant-Commander and Surgeon of the Naval Brigade, Massachusetts Volunteer Militia; died about February 29.

Joseph Eddy Clark, Utica, N. Y.; Harvard University Medical School; a member of the Medical Society of the State of New York and the Massachusetts Medical Society, 1882; a specialist in diseases of the nervous system; for twelve years in charge of the Vanderbilt Clinic, New York City; for several years chairman of the Board of Health of Medford, Mass.; since 1914, sanitary supervisor of the New York State Department of Health for Oneida, Herkimer and Madison counties; died in the Utica General Hospital, March 4.

Peter Lawrence Schenck, Brooklyn; College of Physicians and Surgeons in the City of New York, 1865; aged 76; a member of the Medical Society of the State of New York; a life member of the American Academy of Medicine; acting assistant surgeon U. S. Army during the Civil War; medical superintendent to Kings County Hospital from 1872 to 1881, and consulting surgeon to the institution from 1882 to 1914; visiting physician to the Kings County Penitentiary from 1889 to 1905; died March 6.

William Edwards, Bowdle, S. D.; College of Physicians and Surgeons, Keokuk, Ia., 1873; Northwestern University Medical School, Chicago, 1875; aged 70; a member of the South Dakota State Medical Association and a life member of the Mayo Surgeons' Club; president of the Board of Councillors of the State Medical Society; first mayor of Bowdle; state senator in 1892 and later a member of the state board of health; died, February 8, from carcinoma of the stomach.

Gustav Adolph Thiede, Baltimore; Maryland Medical College, Baltimore, 1901; aged 47; a member of the Medical and Chirurgical Faculty of Maryland; formerly health warden, and school inspector of Baltimore; for thirteen years assistant surgeon to the Presbyterian Eye, Ear and Throat Hospital; then for twelve years health warden of the city and later inspector for four years; died February 16.

⊕ Indicates "Fellow" of the American Medical Association.

William Arthur Wade, Murray, Utah; St. Louis College of Physicians and Surgeons, 1888; aged 73; for many years a pharmacist and a member of the first state board of pharmacy; an examiner for the first medical board of Utah; formerly local surgeon to the San Pedro, Los Angeles, and Salt Lake and Rio Grande Western railroads; at Payson, Utah; died February 23.

George Turner Meacham, Taylorville, Ill.; Rush Medical College, 1893; aged 49; Lieutenant, M. R. C., U. S. Army, and discharged January 11, 1919; a member of the Illinois State Medical Society; formerly an alderman of Taylorville; died, March 8, from the effects of carbolic acid self-administered, it is believed, with suicidal intent, while despondent on account of ill health.

Silas Blaisdell Hull ⊕ Asst. Surg., Lieut., M. C., U. S. Navy, Brooklyn, N. Y.; Long Island College Hospital, Brooklyn, 1916; aged 24; who served for two years in foreign waters in the mine sweeping service; a member of the Association of Military Surgeons of the United States; physician for the National Bank of Commerce, Brooklyn; died, March 6, from encephalitis.

Albert F. Koetter ⊕ St. Louis; Missouri Medical College, St. Louis, 1892; aged 48; a member of the American Otological Society; instructor in otology in Washington University and chief of the ear clinic of O'Fallon Dispensary; aurist to the Evangelical Deaconess Hospital; once president of the St. Louis Medical Society; died in Barnes Hospital, St. Louis, February 28.

Samuel Richard Guthrie, Franklin, Ky.; Vanderbilt University, Nashville, Tenn., 1913; aged 32; a member of the Kentucky State Medical Association; Captain M. R. C., U. S. Army, with service in the British Army from 1917 until the close of the World War; and discharged July 9, 1919; died at the home of his parents in Franklin, February 21, from pneumonia.

Flavel Shurtleff, Pekin, Ill.; Rush Medical College, 1865; aged 78; assistant surgeon of U. S. Volunteers during the Civil War; from 1877 to 1891 county clerk of Tazwell; for twenty years one of the publishers of the *Pekin Times;* vice president of the Farmers National Bank for many years and a director in the Herget National Bank, Pekin; died February 24.

Henry A. Newbold, Philadelphia; University of Pennsylvania, Philadelphia, 1893; aged 74; demonstrator of practical pharmacy in the University of Pennsylvania; assistant in nervous diseases in the University and Polyclinic hospitals; a committing physician for the psychopathic ward of the Philadelphia Hospital; died, March 3, from arteriosclerosis.

Charles Philip Henry, Philadelphia; University of Pennsylvania, Philadelphia, 1882; aged 59; assistant surgeon, U. S. Navy, and retired Dec. 20, 1889, on account of incapacity resulting from an incident of service; a noted linguist; head of the Latin department of the Catholic High School for Boys, Philadelphia; died, February 26, from pneumonia.

Hosea Ballou Burnham, Manchester, N. H.; Vermont Medical College, Woodstock, 1853; aged 90; a member of the New Hampshire Medical Society; formerly consulting physician to the Elliot Hospital, Manchester, and physician to Rockingham County House of Correction and Insane Asylum; died February 29.

Alique C. Matchette, Bourbon, Ind.; Northwestern University Medical School, Chicago, 1863; aged 82; surgeon of United States Volunteers during the Civil War, and chief surgeon of the military division of West Tennessee; secretary of the local board of health for twenty-five years; died February 16.

William Alhanan Smith, Springfield, O.; Cincinnati College of Medicine and Surgery, 1877; Bellevue Hospital Medical College, 1883; aged 68; a member of the Ohio State Medical Association; a member of the medical staff of the Springfield City Hospital; died, February 25, from heart disease.

Charles Edgar Blanton, New Market, Ala.; Vanderbilt University, Nashville, Tenn., 1882; aged 66; a member of the Medical Association of the State of Alabama; for several terms president of the Madison County Medical Society; died, February 20, from pneumonia.

Walter H. Parcels, Lewistown, Pa.; Medical College of Ohio, Cincinnati, 1873; aged 71; a member of the Medical Society of the State of Pennsylvania; a veteran of the Civil War; twice representative in the state legislature from Mifflin County; died February 2.

Albert D. Marks, La Mesa, Calif.; College of Physicians and Surgeons, Baltimore, 1885; aged 69; died, February 18, from the effects of a stab wound of the heart believed to have been self-inflicted with suicidal intent, while despondent on account of ill health.

William Allen Deas, Richmond, Va.; Medical College of Virginia, Richmond, 1879; aged 85; a member of the Medical Society of Virginia; formerly coroner of Henrico County, and physician at the Soldiers' Home; died in Williamsburg, Va., February 17.

Henry Leo Keyes Carey, New York City; Eclectic Medical College of the City of New York, 1894; Bellevue Hospital Medical College, 1897; aged 52; for fifteen years examining physician for tuberculosis in the Department of Charities; died March 6.

Willis W. Munson, Otisco, N. Y.; George Washington University, Washington, D. C., 1869; aged 79; a veteran of the Civil War; once president of the Onondaga County Medical Society; died in the Soldiers' Home, Bath, N. Y., February 28.

H. A. Moorman, Owenboro, Ky.; Louisville, Ky., Medical College, 1889; aged 76; a member of the Kentucky State Medical Association; for many years president of the Sacramento, Ky., Deposit Bank; died, February 24, from heart disease.

John W. Dulaney, Greenwood, Miss.; Tulane University, New Orleans, 1873; aged 73; a member of the Mississippi State Medical Association; died in St. Joseph's Hospital, Memphis, Tenn., March 2, after an operation for appendicitis.

Thomas Elwood Taylor ⊕ Denver; University of Michigan, Ann Arbor, 1879; aged 64; professor of obstetrics in the University of Colorado, Denver and Boulder, and later emeritus professor; died, February 2, from cerebral hemorrhage.

Leonard Frederick Schmauss ⊕ Alexandria, Ind.; Rush Medical College, 1897; aged 52; while driving his automobile across the Big Four tracks, two miles north of Alexandria, February 27, was struck by a train and instantly killed.

Samuel B. Flynt, Meridian, Miss.; Memphis, Tenn., Hospital Medical College, 1898; aged 57; died in a hospital at El Paso, Tex., February 14, from injuries received in an automobile accident near Newman, N. M.

John M. Fitzgerald ⊕ Clarion, Pa.; Western Reserve University, Cleveland, 1872; aged 71; once treasurer of the Clarion County Medical Society; died, February 27, from pneumonia following influenza.

Samuel Hunt, Jr., ⊕ Knoxville, Tenn.; Vanderbilt University, Nashville, Tenn., 1914; aged 29; Lieutenant M. R. C., U. S. Army, with service in France, and discharged May 4, 1919; died February 23.

Charles John McGuire, Altura, Minn.; University of Illinois, Chicago, 1902; First Lieutenant, M. R. C., U. S. Army, and discharged August 9, 1919; died, February 25, from cerebral hemorrhage.

Elisha H. Coombs, Morgantown, W. Va.; Hahnemann Medical College, Philadelphia, 1860; aged 84; president of the Monongahela Valley Bank, Morgantown; died about February 19.

William Brown Maney, Nashville, Tenn.; University of Nashville, Tenn., 1856; aged 85; chief surgeon of the First Tennessee Infantry, C. S. A., during the Civil War; died February 22.

John B. Draper, Oswego, Kan.; Rush Medical College, 1868; aged 77; formerly surgeon of the State Soldiers' Home, Fort Dodge; a veteran of the Civil War; died about February 25.

Thomas R. Plumer, Farmington, Ill.; (license, years of practice, Illinois, 1873); a member of the Illinois State Medical Society; a practitioner for sixty years; died about March 1.

Charles Edwin Bleakley, Detroit; Michigan College of Medicine and Surgery, Detroit, 1889; aged 63; also a graduate of the Ontario College of Pharmacy; died February 25.

Edward Remson Seasongood ⊕ Naper, Neb.; John A. Creighton Medical College, Omaha, 1910; aged 34; also a graduate in pharmacy; died, February 27, from pneumonia.

John Campbell Brewer, Lytton Springs, Tex.; Medical College of Georgia, Augusta, 1871; aged 72; a member of the State Medical Association of Texas; died February 3.

James F. Harris ⊕ Ogden, Ill.; Kentucky School of Medicine, Louisville, 1877; aged 67; a member of the Illinois State Medical Society; died, February 28, from influenza.

The Propaganda for Reform

In This Department Appear Reports of The Journal's Bureau of Investigation, of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Fraud on the Public and on the Profession

MORE MISBRANDED DRUGS

Boericke & Runyon Tablets.—In September, 1917, Edward A. Runyon, New York City, who traded as Boericke & Runyon, shipped some tablets in interstate commerce that were adulterated and misbranded. "Santonin and Calomel Tablets," labeled as containing ½ grain each of santonin and calomel to each tablet, were found, in fact, to have approximately only 0.402 grain santonin and 0.352 grain calomel to each tablet. "Acetanilid and Quinine Compound Tablets," labeled as containing ¼ grain caffein citrate and 1 grain of quinin sulphate in each tablet, were found to contain approximately only 0.201 grain caffein citrate and 0.842 grain quinin sulphate. Some 5 grain "Aspirin Tablets" were found on examination to contain no aspirin at all but to be composed of salicylic acid, milk sugar and talc. "Kali Hydroid Tablets" (potassium iodid) declared to have 1 grain of potassium iodid to each tablet, were found to have in fact only 0.566 grain potassium iodid. Some ¼ grain "Morphin Sulphate Tablets" contained in fact approximately only 0.071 grain morphin sulphate to each tablet. Runyon pleaded guilty to the charges of adulteration and misbranding and was fined $25.—[*Notice of Judgment No. 6551; issued Feb. 21, 1920.*]

Sulferro-Sol.—Sulferro-Sol, fourteen cases of which were alleged to have been shipped in February, 1918, by the Sulferro-Sol Co., Inc., Birmingham, Ala., was declared misbranded by the federal officials. It was charged that the claims made for the product "falsely and fraudulently represented it as a remedy for pellagra, dyspepsia, indigestion, anemia, chronic abscesses, and all forms of stomach, kidney, skin, blood and nervous troubles; whereas, in truth and in fact it was not." No claimant appearing for the property, the court ordered it condemned and forfeited and instructed that the stuff itself should be destroyed while the empty containers should be sold at public auction.—[*Notice of Judgment No. 6564; issued Feb. 21, 1920.*]

Santal Pepsin Capsules.—Augustus R. Kaylor and Clara J. Sadd, Bellefontaine, Ohio, who did business under the trade name Santal Pepsin Co., shipped in interstate commerce a quantity of "Santal Pepsin Capsules" in May, 1917. When analyzed by the Bureau of Chemistry these were found to consist of soft gelatin capsules containing about 10 grains of a mixture of santal oil, methyl salicylate, salol and a tablet containing pepsin. It was falsely and fraudulently claimed on the trade packages that the preparation was a specific for all kidney and bladder troubles, gonorrhea, gleet, inflammation of the ovaries, rheumatism, Bright's disease and a number of other conditions. In November, 1918, Kaylor and Sadd pleaded guilty and were fined $175 and costs.—[*Notice of Judgment No. 6569; issued Feb. 21, 1920.*]

Principles of Hygiene.—One of the main principles of hygiene is to bring about a consistent common-sense observance by individuals and communities of cleanly methods of living to prevent the erupted matter from the bodies of infected persons from being conveyed to and becoming "dangerous dirt" in the bodies of other persons. Another important matter is the establishment and maintenance of conditions in respect to air, water, food, exercise, and sleep, which tend to fortify individuals with vigorous health and the power to overcome invasion of the body by "dangerous dirt."—L. L. Lumsden, "Rural Hygiene," *Public Health Rep.*, Nov. 7, 1919.

Correspondence

THE NATIONAL FORMULARY, USEFUL DRUGS, AND THE COMING REVISION OF THE PHARMACOPEIA

By the federal Food and Drugs Act and by state acts, two books are made the official or legal standards for drugs and their preparations, namely, the Pharmacopeia and the National Formulary. The Pharmacopeia does not standardize all drugs and preparations. On the contrary, it is highly selective; and while at each decennial revision it has admitted some new and approved remedies and their preparations, it has also sought to eliminate from its pages those remedies that have failed to combine both worth and extensive employment. In the last revision it gained much by eliminating many of those preparations, formerly so much in vogue, that had a shotgun make-up or were combinations which forbade simplicity in prescribing.

The National Formulary, revised and issued by the American Pharmaceutical Association, is in a sense supplementary to the Pharmacopeia, for its drugs and preparations are those which have been discarded from the Pharmacopeia in the different revisions, together with some other compound preparations which are frequently prescribed or are extensively called for by the laity. In a large measure it is a book of convenience for the pharmacist, enabling him to furnish preparations of definite strength and uniformity for those physicians who still prescribe the discarded formulas of the Pharmacopeia or stick to the old-fashioned galenicals. In addition, since it can be depended on to some extent as a standardizer for the discards of the pharmacopeial revision, it gives added freedom to the pharmacopeial revisers in their design to exclude preparations not fully approved, even though much used.

As these two books are the legal or official standards, their drugs and preparations can be obtained of definite strength and uniformity of manufacture throughout the United States. It follows, then, that their preparations should be the ones preferred in prescribing. But who would care to memorize the Pharmacopeia or the National Formulary? It would be a waste of time and energy, for nearly all the matter in both books relates to tests for purity and identity, and the technic of manufacture. This is material for the supply houses and the pharmacists, to enable them to select drugs of high quality, and to manufacture preparations of uniformity. All that the physician needs out of the official books is the names of the substances standardized, and the strengths of approved preparations. He does not require either the National Formulary or the Pharmacopeia. But he does require some book that from the vast amount of matter embodied in the Pharmacopeia and the National Formulary furnishes him with the names of such drugs and the strengths of such preparations as he may need for intelligent prescribing. He also requires a book so constituted that it will permit of frequent revision, and thus include remedies recently introduced to the profession and not yet adopted by the Pharmacopeia.

Such a book is "Useful Drugs," published by the Council on Pharmacy and Chemistry of the American Medical Association. It is of pocket size, gives the names and strengths of approved official preparations, and includes some drugs and preparations of recent introduction that are not official. In addition, it gives brief summaries of the actions and uses of all the drugs of which it treats, with their properties, incompatibles and doses. It is essentially a selective compendium and should, for the present at least, be the practitioner's Pharmacopeia. Without in any way intending to speak disparagingly of the Pharmacopeia or the National Formulary, I believe that "Useful Drugs" is the best book for the physician. But it has no control over standards and must depend for these almost wholly on the Pharmacopeia. Hence a proper revision of the Pharmacopeia is of the greatest interest and importance to us.

The Pharmacopeial Revision Convention meets in Washington in May of this year. It is made up of delegates

from the medical and pharmaceutical colleges, the state and national medical and pharmaceutical societies, and certain other selected societies, and the Army, Navy and Public Health services. Its function is to determine the principles which shall govern the next revision of the Pharmacopeia, and to elect officers and a Committee of Revision. As we physicians are the ones to prescribe the drugs and preparations of the Pharmacopeia, it is beyond cavil our function to exert ourselves and make certain that the principles adopted shall suit us, and that the revision committee elected shall be in sympathy with our desires. To accomplish this the first thing to do is to see to it that every medical college and every medical society selects interested delegates to the convention, and pledges them to attend the convention. If this is done we need not fear for the result.

I would suggest that when we meet in the convention, we should stand together for two demands: 1. That it is the right of the prescribers of drugs as represented by the medical delegates to the convention to say what drugs and what preparations are to be considered by the Committee of Revision. This done, we can safely leave the methods of manufacture and the tests and other matters to the pharmaceutical, chemical and other delegates. 2. That every means be employed to abolish dilatory methods in the revision, so that we shall not again, as in the last revision, have the amazing lapse of more than six years between the meeting of the convention and the establishment of the revised book as the official Pharmacopeia.

For details of changes to be urged I would suggest:

1. That glandular drugs and their pure principles be introduced as far as possible, e. g., epinephrin, corpus luteum, ovarian extract, etc.

2. That the name of each alkaloidal salt be accompanied by a statement of its percentage of pure alkaloid. For example, quinin tannate contains only 30 to 35 per cent. of quinin, and morphin sulphate contains only three-fourths its weight of morphin.

3. That drugs and preparations which do not combine decided worth with use be dropped. A tentative list of such is: acetum scillae, acidum stearicum, althaca, aqua creosoti, arnica, calcium bromid, calcium hypophosphite, chondrus, cimicifuga, emulsum asafetidae, eriodictyon, guaiac, guarana, humulus, liquor iodi compositus, manna, matricaria, mel, mel depuratum, mel rosae, mezereum, mistura glycyrrhizae composita, oleatum hydrargyri, pepo, petroselinum, pyrethrum, sabal, sinapis alba, stillingia, syrupus hypophosphitum, taraxacum, trituratio elaterini (not elaterinum itself; elaterin can be prescribed without an official dilution quite as well as any of the potent alkaloids), trochischus sodii bicarbonatis, unguentum hydrargyri nitratis, xanthoxylum, zinci sulphocarbolas, zincum, and all oleoresins except that of aspidium. Substances of pharmaceutical value only, such as stearic acid, althaea and honey, should not cumber the body of the book. It is to be borne in mind that most of the substances dropped will still find a place for standardization in the National Formulary, and will therefore continue to be available in standardized form for those who wish them. But they should not receive the recognition of a highly scientific and exclusive book such as we desire our Pharmacopeia to be.

4. That all fluidextracts with dose below 5 minims be dropped, and if necessary replaced by a 10 per cent. tincture. It is agreed that many fluidextracts, because of their concentration, cannot be made to hold all the active principles of the drug from which they are made, and that they are subject to material changes of strength from precipitation or evaporation. The requirement of assayed strength does not change these facts. It has been shown repeatedly that the average fluidextract of digitalis is not ten times as strong as the tincture, as it should be, but perhaps only about three times as strong! With potent drugs this is a serious matter.

5. That newly introduced chemical substances of proved worth be included. It is a crying shame that our Pharmacopeia does not yet recognize solution of epinephrin (adrenalin) chlorid, argyrol, acetylsalicylic acid, arsphenamin, etc. Even though they are patented preparations they should be given some recognition, the Pharmacopeia stating that they are patented and giving the time of expiration of the patent.

6. That the genitive of all titles be appended. How many of us, for example, in prescribing milk of magnesia, know that in a prescription the official preparation should be written "Magmatis magnesiae" and not "Magmae magnesiae"?

7. That whisky and brandy be restored. With our new prohibition laws these medicinal liquids will be as precious as potent tinctures, and will need standards if they never did before.

I make these suggestions for the medical delegates, and urge that we take our next month's pharmacopeial convention seriously. For the sake of the best medical practice, all medical colleges, all state medical associations, and any other medical body which has the privilege of sending delegates to next year's pharmacopeial convention should appoint these without delay and see to it that they attend the convention with some understanding of their responsibilities.

W. A. BASTEDO, M.D., New York.
Fifth Vice President, U. S. Pharmacopeial Convention of 1920; Assistant Professor of Clinical Medicine, Columbia University College of Physicians and Surgeons.

STOLEN SURGICAL INSTRUMENTS

To the Editor:—Two bags of instruments, dressings, etc., and a small mahogany clock were stolen from my office three weeks ago. I have recovered one of the bags with many instruments, but they are not mine. It seems that somebody is gathering these for resale. I would suggest that if second-hand instruments are offered to any physician for sale, he should appear to be too busy to pass judgment at the time, regardless of the story told, but ask the person to return in an hour or two, and, retaining the instruments, in the meantime call an officer: all this, of course, to be modified according to circumstances. Perhaps a central reporting place for lost and found instruments would discourage theft. The owner of the instruments that I have may obtain them by calling at my office.

WILLARD MANFORT, M.D., Detroit.

LEPROSY IN THE AGED

To the Editor:—I have before me the issue of THE JOURNAL for Nov. 15, 1919. In the second column on page 1547 appears: "DR. H. R. CARTER, Baltimore: There is good reason to believe that leprosy is *rarely* or *never* communicated to elderly persons. In taking care of lepers I would suggest that elderly nurses be employed, as the risk of such people contracting the disease is *absolutely nil.*"

The italics are mine. Probably most workers among lepers would agree with a general statement to the effect that elderly persons are less likely to become infected with the disease than are young persons. Perhaps the speaker only wished to make his idea stick in the minds of his hearers by making it overstrong; but I want to protest against the use of the words that I have italicized, as being likely to mislead our confrères in America.

Having seen the usual number of cases of leprosy that come to medical missionaries here, during thirty years' residence in Foochow, where leprosy is a very common disease, I cannot refrain from saying that such experience quite contradicts the very positive statements made above. Just recently an old Bible woman that has been working among lepers here for years, a woman who was very careful about her contacts with them, who was unusually cleanly in every way, has developed the disease. Her contact with the lepers could not have been as intimate as that of persons caring for such cases, for that was not her duty at all, and the years that she had been engaged in the work might have seemed to justify a statement almost as strong as the one to which I object; but there is no doubt that the woman is now infected. Other cases have come to my attention in the past, but this is the latest one and answers, as well as any

number, to emphasize the point that I make. Elderly persons *may* and *do* contract leprosy, though they are probably less likely to do so than younger persons.

H. N. Kinnear, M.D., Foochow, China.

INTERNATIONAL COMMITTEE OF THE RED CROSS OF GENEVA, AND THE LEAGUE OF RED CROSS SOCIETIES

To the Editor:—My attention has been called to an article in The Journal, Jan. 31, 1920, p. 334, concerning the coming meeting of the General Council of the League of Red Cross Societies. A confusion exists in the mind of the writer of this article between the International Committee of the Red Cross of Geneva and the League of Red Cross Societies, which also has its headquarters in Geneva. These two institutions are entirely distinct, and there is no official connection between them. The International Committee of the Red Cross of Geneva is composed of seventeen citizens of Switzerland, and has been in existence since the founding of the Red Cross by Henri Dunant in 1863. During the war the International Committee of the Red Cross of Geneva served as intermediary for the exchange of prisoners. The League of Red Cross Societies is constituted by thirty national Red Cross Societies, as follows: Argentina, Australia, Belgium, Brazil, Canada, China, Cuba, Czechoslovakia, Denmark, France, Great Britain, Greece, Holland, India, Italy, Japan, New Zealand, Norway, Peru, Poland, Portugal, Roumania, Serbia, South Africa, Spain, Sweden, Switzerland, the United States, Urugnay and Venezuela.

William R. Hereford, Geneva, Switzerland.
Director, Department of Publicity and Publication, League of Red Cross Societies.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

BOOKS AND PERIODICALS ON OTORHINOLARYNGOLOGY

To the Editor:—1. I intend specializing in the ear, nose and throat. What textbooks do you advise me to get on these subjects?

2. Is there an atlas of anatomy, pathology or surgery (of one, two or all three) published of the ear, nose and throat?

3. Who publishes "The Nose and Throat in Medical History," by Jonathan Wright?

4. Is there a book published containing the biographies of the great men in medicine or "Who's Who" in medicine?

5. What journals on otology, rhinology and laryngology would you advise me to subscribe to?

6. Who publishes the *British Journal of Otology, Rhinology and Laryngology?*

M. L. Sowers, M.D., Allston, Mass.

Answer.—

1. Packard: Nose, Throat and Ear, Philadelphia, J. B. Lippincott Company, $4.
Ballenger: Ear, Nose and Throat, Philadelphia, Lea & Febiger, $5.50.
Kyle: Nose and Throat, Philadelphia, W. B. Saunders, $5.
2. Krieg: Atlas of Diseases of Nose, New York, Paul B. Hoeber, $12.
3. Wright: Nose and Throat in Medical History, St. Louis, L. S. Matthews, $2.
Wright: History of Laryngology, Philadelphia, Lea & Febiger, $4.
4. Garrison: History of Medicine, Philadelphia, W. B. Saunders Company, $7.50.

Medical men are also included in the ordinary editions of "Who's Who."

5. The following journals are published in America:

Annals of Otology, Rhinology and Laryngology, Jones H. Parker, Mermod-Jaccard Bldg., St. Louis, $6.
Laryngoscope, 3858 Westminster Place, St. Louis, $6.
6. The *British Journal of Otology, Rhinology and Laryngology,* published by Adlard & Son and West Newman, Ltd., Bartholomew Close, London, E. C. N., £1.

Good Health.—Euphonious definitions of good health are numerous. Clear conceptions of good health are rare. It is easy to define; difficult to conceive.—W. S. Rankin, *Tr. Assn. Life Ins. Presidents,* 1919.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

Arizona: Phoenix, April 6-7. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.
Colorado: Denver, April 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.
District of Columbia: Washington, April 13-15. Sec., Dr. Edgar P. Copeland, the Rockingham, Washington.
Idaho: Boise, April 6. Commissioner, Hon. Robert A. Jones, Boise.
Iowa: Iowa City, March 29-31. Sec., Dr. Guilford H. Sumner, Capitol Building, Des Moines.
Louisiana: New Orleans, May 4. Sec., Homeo. Bd., Dr. F. H. Hardenstein, 702 Machesa Bldg., New Orleans.
Minnesota: Minneapolis, April 6-8. Sec., Dr. Thos. McDavitt, Lowry Bldg., St. Paul.
Montana: Helena, April 6. Sec., Dr. S. A. Cooney, Power Bldg., Helena.
Nevada: Carson City, May 3. Sec., Dr. Simeon L. Lee, Carson City.
New Mexico: Santa Fe, April 12-13. Sec., Dr. R. E. McBride, Las Cruces.
Oklahoma: Oklahoma City, April 13-14. Sec., Dr. J. M. Byrum, Shawnee.
Rhode Island: Providence, April 1-2. Sec., Dr. Byron U. Richards, State House, Providence.
West Virginia: Charleston, April 13. Sec., Dr. S. L. Jepson, Masonic Bldg., Charleston.

New York May and June Examination

Mr. Herbert J. Hamilton, assistant, professional examinations, New York State Board of Medical Examiners, reports the written examinations held at New York City, Buffalo, Syracuse and Albany, May 21-24 and June 25-28, 1919. The examination covered 8 subjects and included 10 questions. An average of 75 per cent. was required to pass. Of the 384 candidates examined, 306, including 2 osteopaths, passed, and 78, including 1 osteopath, failed. The following colleges were represented:

College	Year Grad.	Number Licensed
PASSED		
Leland Stanford Junior University	(1917)	1
George Washington University	(1916)	1
Rush Medical College	(1915)	1
University of Illinois	(1919)	1
Tulane University	(1914)	1
Johns Hopkins University	(1914), (1915), (1916), (1919)	4
College of Physicians and Surgeons, Baltimore	(1913)	1
Harvard University	(1910, 2), (1913), (1918), (1919, 2)	6
Tufts College Medical School	(1913), (1918, 3)	4
University of Michigan Medical School	(1918), (1919, 2)	3
Albany Medical College	(1917), (1919, 11)	12
Columbia Univ. (1914), (1915), (1917,5), (1918,7), (1919,36)		50
Cornell University	(1917), (1918, 4), (1919, 12)	17
Fordham University (1914), (1916), (1917), (1918, 2), (1919, 7)		12
Long Island College Hospital (1917, 2) (1918, 4), (1919, 38)		44
New York Homeo. Med. College and Flower Hospital (1915), (1916, 3), (1917, 5), (1918, 6), (1919, 13)		28
Syracuse University	(1919)	19
University and Bellevue Hospital Medical College.. (1917), (1918, 4), (1919, 29)		34
University of Buffalo	(1917, 2), (1918, 2), (1919, 37)	41
University of Oklahoma	(1918)	1
Jefferson Medical College	(1915), (1917), (1919)	3
University of Pennsylvania	(1908), (1913), (1918, 3)	5
Woman's Med. Coll. of Penna.	(1913), (1915), (1919)	3
University of Tennessee	(1917)	1
Vanderbilt University	(1912)	1
University of Vermont	(1915), (1917), (1918, 2)	4
University of Virginia	(1916)	1
Queen's University	(1910), (1918), (1919)	3
University of Toronto	(1915), (1918)	2
FAILED		
Georgetown University	(1917)	1
Howard University	(1916), (1918, 2)	3
Chicago College of Med. and Surg.	(1914)	1
College of Phys. and Surgs. Chicago	(1902)	1
Rush Medical College	(1895)	1
Kansas Medical College	(1903)	1
University of Louisville	(1908)	1
College of Physicians and Surgeons, Baltimore	(1912)	1
University of Maryland	(1917)	3
Harvard University	(1908), (1918, 2)	3
Tufts College Medical School	(1917, 3); (1919)	4
University of Michigan Homeopathic Medical School	(1918)	1
Albany Medical College	(1909), (1914)	2
Columbia University	(1919)	3
Cornell University	(1917), (1919)	2
Fordham University	(1912), (1913), (1916, 2), (1918)	5
Long Island College Hospital	(1917), (1919, 4)	5
New York Homeopathic Medical College and Flower Hospital	(1915, 3), (1916, 5), (1917), (1918, 7)	16
New York Medical College and Hospital for Women	(1917)	1
University and Bellevue Hospital Med. Coll.	(1915), (1919)	2
Eclectic Medical College	(1916)	1
Jefferson Medical College	(1899), (1914), (1916)	3
Medico-Chirurgical College of Philadelphia	(1916)	1

University of Pennsylvania	(1918)	1
Vanderbilt University	(1910), (1917)	2
University of Vermont	(1901), (1916), (1918)	3
Medical College of Virginia	(1914), (1915, 2)	3
Queen's University	(1904), (1916), (1918)	3
McGill University	(1917)	1
University of Bologna	(1912)	1
University of Berne	(1910)	1

Mr. Hamilton also reports that between May 1 and Nov. 17, 1919, 62 candidates were licensed by endorsement of their credentials. Of these, 5 were granted reregistration licenses, 28 were granted licenses by reciprocity with other states, 8 were licensed by endorsement of their diplomas, and 21 by endorsement of their licenses on the basis of eminence and authority in the profession. Of those licensed by reciprocity and endorsement of credentials, the following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Chicago College of Medicine and Surgery		(1912)	Wisconsin
Columbia University		(1915)	Virginia
New York Homeo. Med. Coll. and Flower Hosp.		(1917)	Delaware
Univ. and Bellevue Hosp. Med. Coll.		(1913), (1915)	New Jersey
College of Physicians and Surgeons, Baltimore		(1907)	Ohio
Johns Hopkins University		(1916)	New Jersey
Harvard University		(1915)	Wisconsin
Eclectic Medical Institute		(1905)	Ohio
Western Reserve Univ. (1910), (1912), (1913, 2)		(1916)	Ohio
Jefferson Medical College		(1915)	New Jersey
Woman's Med. Coll. of Pennsylvania		(1908)	New Jersey
University of Nashville		(1909)	Virginia
University of Vermont		(1914)	Virginia
Medical College of Virginia		(1913), (1914)	Virginia
Univ. Coll. of Med. Richmond		(1902), (1909), (1911)	Virginia
University of Virginia		(1914)	Virginia
Milwaukee Medical College		(1912)	Wisconsin
National University, Athens		(1898) New Jersey, (1909)	Ohio
University of Naples		(1908)	New Jersey

College	ENDORSEMENT OF DIPLOMAS	Year Grad.
Harvard University		(1892)
Bellevue Hospital Medical College		(1875), (1886)
University of the City of New York		(1886)
Woman's Medical College of the New York Infirmary for Women and Children		(1891)
Jefferson Medical College		(1876), (1891)
University of Turin		(1892)

College	ENDORSEMENT OF LICENSES	Year Grad.	Endorsement with
Yale University		(1912)	Connecticut
Georgetown University		(1905), (1909)	Dist. Colum.
Northwestern University		(1898)	Louisiana
Drake University		(1909)	Iowa
University of Louisville		(1910), (1913)	Kentucky
Tulane University		(1904)	Alabama
University of Maryland		(1910)	Penna.
University of Michigan Homeo. Med. School		(1914)	Michigan
University of Michigan Medical School		(1912)	Michigan
University of Minnesota		(1914)	Minnesota
John A. Creighton Medical College		(1895)	Missouri
Albany Medical College		(1893)	Vermont
Hahnemann Med. Coll. and Hosp. of Phila.		(1899)	Connecticut
Jefferson Medical College		(1894)	Mass.
Vanderbilt University		(1902)	Oklahoma
University of Vermont		(1894), (1905)	Vermont
McGill University		(1899)	Quebec
University of Central Spain		(1897)*	Porto Rico

*License not verified.

Maine November Examination

Dr. Frank W. Searle, secretary of the Maine State Board of Registration in Medicine, reports the written examination held at Portland, Nov. 12-13, 1919. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 11 candidates examined, 9 passed and 2 failed. Three candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Medical School of Maine		(1883)	82
Johns Hopkins University		(1900)	82
Tufts College Medical School		(1919)	80
Columbia University		(1913)	86
University and Bellevue Hospital Medical College		(1910)	84
Jefferson Medical College		(1914)	89
University of Vermont		(1917)	79
Laval University		(1919)	78
McGill University		(1917)	79
	FAILED		
Tufts College Medical School		(1919)*	78
Montreal School of Medicine and Surgery		(1919)*	76

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Starling Medical College		(1897)	Ohio
Boston University		(1915)	New Hamp.
University of Maryland		(1917)	S. Carolina

* Fell below sixty in one branch.

Book Notices

LES LÉSIONS DES NERFS: TRAITEMENT ET RESTAURATION. Par Mme. Athanassio-Benisty, Ancien Interne des Hôpitaux de Paris. Paper. Price, 7 francs net. Pp. 156, with illustrations. Paris: Masson et Cie, 1919.

In this small volume, Mme. Athanassjo-Benisty presents much that was included in the second volume of her work on peripheral nerves as it appeared in the Horizon Collection and in the English translation in the Medical War Manuals. The subject-matter has been brought up to date, particularly with reference to the surgical treatment, the prognosis, medicomilitary decisions, and the important work of Dustin on intraneural localization. Each of the chapters constitutes a comprehensive and adequate review of the author's wide experience and the recent literature. The description of the signs of restoration of function in peripheral nerve lesions is exhaustively treated, and at this time will be found of great value to American neurologists and surgeons who are following the results obtained in the treatment of injuries of peripheral nerves in the late war. The observations are in accord with the experience of the reviewer, but do not seem to be entirely in accord with the theories of Head, Rivers and others relative to the return of sensation, although an attempt is made to fit the clinical findings to their theory. In this volume, as in the preceding publications, there is an exhaustive description of orthopedic apparatus, which is preeminently applicable at this time in our treatment of lesions of the peripheral nerves.

THE URETHROSCOPE IN THE DIAGNOSIS AND TREATMENT OF URETHRITIS. By Major N. P. L. Lumb, O.B.E., R.A.M.C. Cloth. Price, $2.75. Pp. 51, with 40 illustrations. New York: William Wood and Company, 1919.

The author asserts that he derived the incentive for writing this booklet from the fact that in no work that has come to his notice has an attempt been made to show the effect of treatment on the lesions of urethritis which can be observed with the urethroscope. Authors of special textbooks on this subject will regret that their work has been thus unnoticed. The illustrations, though somewhat schematic and considerably magnifying the natural size of the field of view, come up to a fair standard. Inflammatory granulomas, so often observed, and known as maintaining obstinate gonorrheal inflammation, have not found a place in this treatise. Many urologists will be surprised at the author's assertion that it is usually possible to clear up a prostatic abscess by massage and general treatment. Inaccuracies in the text, as "the vascular striation is seen to best advantage in this region and consequently any abrasion of the surface . . . leads to considerable bleeding" (page 7), or, as in the discussion of gonorrheal epididymitis, "when the testicle has settled down" (page 47), should not occur in a treatise that pretends to be the last word in systematic treatment of gonorrhea.

EXPERIMENTAL PHARMACOLOGY. By Hugh McGuigan, Ph.D., M.D., Professor of Pharmacology in the University of Illinois, College of Medicine. Cloth. Price, $2.75. Pp. 251 with 63 illustrations. Philadelphia: Lea & Febiger, 1919.

A period of relative stagnation in the production of works on experimental pharmacology has been replaced by one of relative productivity. Within the last few years a number of commendable texts have either been thoroughly revised or written anew. Most of them have been overwhelmingly personal, so that it is gratifying to find one in which "no claim to originality is made." Rather an effort has been made to include standard exercises. To a certain extent this book is a synopsis of drug action on various anatomic systems. It is sufficiently brief so that the student is not robbed of the opportunity to display his originality. It is a fairly satisfactory guide in his work. One regrets that the proof-reading was not done with greater care. For example, the careful student may be mystified by the "apparatus for anesthesia by *intracranial* insufflation" (p. 33).

Kompendium der Topischen Gehirn und Rückenmarksdiagnostik. Kurzgefasste Anleitung zur klinischen Lokalisation der Erkrankungen und Verletzungen der Nervenzentren. Robert Bing, a.o. Professor an der Universität Basel. Vierte, neu durchgesehene Auflage. Mit 97 zum Teil mehrfarbigen Abbildungen.

The author states that this edition is practically a replica of the third, such a short time having elapsed between the two. The book remains, then, what it was: first, an excellent outline of the essentials of the structural anatomy and applied physiology of the central nervous system; secondly, a rather full summary of localizing diagnosis of lesions of cord, brain stem, cerebrum and cerebellum. Fully to cover the subject and at the same time make every part of the text clear to the tyro is impossible. The author's attempt is quite as successful as one could expect. The internist and surgeon generally will find what they are looking for, and the neurologist may here quickly pick up some strand dropped from memory's thread. The illustrations are well chosen and easily understood, and the index is adequate.

Medicolegal

Validity of Law Relative to Disfigurement

(New York Cent. R. Co. v. Bianc (U. S.), 40 Sup. Ct. R. 44)

The Supreme Court of the United States holds constitutional the provision of the workmen's compensation act of the state of New York that, in case of an injury resulting in serious facial or head disfigurement, the state industrial commission may in its discretion make such award or compensation as it may deem proper and equitable in view of the nature of the disfigurement, but not to exceed $3,500. The court says that the sole contention here was that this provision deprived the employer of property without due process of law, in contravention of the fourteenth amendment of the constitution of the United States. The argument was that an award for disfigurement, made wholly independent of the claimant's inability to work, was not based on impairment of earning power; that only such impairment could justify imposing on an employer without fault compulsory payment by way of compensation to an injured workman; and hence that the disfigurement clause was not a reasonable exercise of the police power, but was arbitrary and oppressive. But even were impairment of earning power the sole justification for imposing compulsory payment of workmen's compensation on the employer in such cases, it would be sufficient answer to the present contention to say that a serious disfigurement of the face or head reasonably may be regarded as having a direct relation to the injured person's earning power, irrespective of its effect on his mere capacity for work. Under ordinary conditions of life, a serious and unnatural disfigurement of the face or head very probably may have a harmful effect on the ability of the injured person to obtain or retain employment. Laying aside exceptional cases, such a disfigurement may render one repulsive or offensive to the sight, displeasing, or at least less pleasing, to employer, to fellow employees, and to patrons or customers. But this court cannot concede that impairment of earning power is the sole ground on which compulsory compensation to injured workmen legitimately may be based, although unquestionably it is a rational basis. In this court's opinion, the "due process of law" clause of the fourteenth amendment does not require the states to base compulsory compensation solely on loss of earning power. The court sees no constitutional reason why a state may not, in ascertaining the amount of such compensation in particular cases, take into consideration any substantial physical impairment attributable to the injury, whether it immediately affects earning capacity or not. Whether an award for such disfigurement should be made in combination with or independent of the compensation allowed for the mere inability to work is a matter of detail for the state to determine. The same is true of the question whether the compensation should be paid in a single sum, or in instalments.

Indemnification Against Liability for Malpractice

(Schambs v. Fidelity & Casualty Co. of New York (U. S.), 259 Fed. R. 55)

The United States Circuit Court of Appeals, Sixth Circuit, says that a surgeon carried with the defendant company a policy of so-called liability insurance, limited to $5,000. An action for malpractice was brought against him by one Rainsford. The company assumed the defense of the suit. Rainsford obtained judgment for $10,000. The company, with the consent of the surgeon, decided not to prosecute any proceeding for review. Thereupon the surgeon filed a voluntary petition and was adjudged a bankrupt. He scheduled this judgment as his only debt, and showed assets of some $400. The trustee in bankruptcy, after providing for expenses, paid a 2 per cent. dividend on this claim—the only one proved—and thereupon brought this action to recover from the company the $5,000 named in the policy. The company contended that it was liable only for what the surgeon or his trustee had paid to Rainsford, namely, $200, and the trial court took that view.

That portion of the policy which directly imposed liability read as follows: "[The company] does hereby agree: (1) To indemnify . . . assured against loss from liability imposed by law on assured for damages on account of bodily injuries or death suffered by any person or persons in consequence of any malpractice, error or mistake of the assured. . . . (2) To defend, in the name and on behalf of the assured, any suit brought against the assured, etc." Later clauses specifically provided (7) that the company would continue the defense of any such suit "until a final decision is rendered in the assured's favor, or until the case has been appealed to the highest court to which an appeal can be taken, or until the suit has been settled with the written consent of the assured," and (9) that the assured should not "voluntarily assume any liability nor incur any expense, . . . nor, except at his own cost, settle any claim, nor . . . interfere in any negotiations or legal proceedings conducted by the company on account of any claim."

On the merits, the controlling question was this: Did the company indemnify against any part of the Rainsford judgment which the surgeon or his estate had not paid? The question, in somewhat analogous cases, has been considered to be whether the indemnity was against liability or was only against ultimate loss, and there is supposed to be a sharp conflict of authority between the cases which classify such policies in one or the other category, although, when the court comes to consider the peculiar language of this policy, it does not find any embarrassing conflict. In policies of this nature, the distinction was early recognized between insurance against liability and indemnity against damages. In view of this distinction, it became common to insert in such policies the provision known as the "no action" clause, which provided that, for example: "No action shall lie against the company as respects any loss under this policy, unless it shall be brought by the assured himself to reimburse him for loss actually sustained and paid by him in satisfaction of a judgment after a trial of the issue."

Under such "no action" policy, it was held, in Massachusetts, that the plain and express language of the policy must be given effect, and that the duty to indemnify did not arise until the judgment was paid, and this conclusion has been quite generally adopted in cases involving "no action" policies. But in the present instance the company omitted the "no action" clause from the policy. The court does not find any substantial inconsistency between clause 1 and the later clauses mentioned; but it does think it clear that, as the word "loss" is used in clause 1 it is ambiguous, and it holds that when the parties, in clause 1, referred to a "loss from liability," they intended that kind of a loss which, in ordinary nomenclature and thought, comes into existence when the liability of the assured becomes irretrievably fixed, so that the plaintiff, who was the trustee in bankruptcy of the surgeon's estate, was entitled to prosecute this action at law; in accordance with which view the judgment of the court below is reversed, and the case remanded for a new trial.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, New Orleans, April 26-30.

Air Service Medical Assn. of the U. S., New Orleans, April 26.
Alabama State Medical Association, Anniston, April 20-22.
American Association of Anatomists, Washington, D. C., April 1-3.
American Assn. of Pathologists and Bacteriologists, New York, April 2-3.
American Association of Physicians, Atlantic City, May 4-5.
American Dermatological Association, Asheville, April 22-24.
American Gastro-Enterological Assn., Atlantic City, May 3-4.
American Proctologic Society, Memphis, Tenn., April 22-23.
American Radium Society, New Orleans, April 26.
American Surgical Association, St. Louis, May 3-5.
American Therapeutic Society, Philadelphia, May 7-8.
American Urological Association, New York, March 23-25.
Assn. for Study of Internal Secretions, New Orleans, April 26.
Assn. of Amer. Teachers, Diseases of Children, New Orleans, April 27.
Assn. of Military Surgeons of the U. S., New Orleans, April 24.
Georgia Medical Association, Macon, May 6-8.
Iowa State Medical Society, Des Moines, May 12-14.
Kansas Medical Society, Hutchinson, May 5-6.
Louisiana State Medical Society, New Orleans, April 24-26.
Medical Veterans of the World War, New Orleans, April 26.
Mississippi State Medical Association, Jackson, May 11-12.
Missouri State Medical Association, Jefferson City, April 6-8.
National Tuberculosis Association, St. Louis, Mo., April 22-24.
New Hampshire Medical Society, Concord, May 12-13.
New York State Medical Society, New York, March 23-25.
North Carolina State Medical Society, Charlotte, April 20.
South Carolina Medical Association, Greenville, April 20-21.
So. Section Am. Laryn., Rhin. & Otol. Society, New Orleans, Apr. 27.
Tennessee State Medical Association, Chattanooga, April 6-8.
Texas State Medical Association, Houston, April 22-24.
The Radiological Society, New Orleans, April 23-24.

ANNUAL CONGRESS ON MEDICAL EDUCATION AND LICENSURE

Joint Annual Conference of the Council on Medical Education of the American Medical Association with the Association of American Medical Colleges and the Federation of State Medical Boards of the United States, held in Chicago, March 1-3, 1920

(Continued from p. 761)

Report of Committee on Medical Education and Pedagogics of the Association of American Medical Colleges

DR. W. S. CARTER, Chairman, Galveston, Texas: It did not seem practicable to prepare reports on all the subjects of the medical curriculum at this time, and hence these were limited to the fundamental medical sciences which are taught by laboratory methods during the first and second years, with the exception of public health and preventive medicine, which is usually taught in the years devoted to clinical subjects. The preparation of these reports is in no way a duplication of the work done by the committee of one hundred appointed by the Council on Medical Education in 1909. The purpose of the reports to be presented is not to standardize, but to consider the methods of teaching the subjects that occupy the preclinical years.

Teaching of Gross Human Anatomy

DRS. C. M. JACKSON, WILLIAM KEILLER and C. R. BARDEEN: The chief factor in teaching gross human anatomy is the professor. His most essential natural endowments are executive capacity and ability for constructive scientific research. His special training, in addition to a thorough grounding in gross and microscopic anatomy, embryology and physiology, should embrace the broader aspects of biology and anthropology, on the one hand, and pathology and clinical physiology, on the other hand. To keep up an adequate supply of teachers of this type it will be necessary to have salaries for those who make good on a par with those offered full-time clinical teachers. The education of the medical student in gross human anatomy has to do with work in (*a*) technic; (*b*) terminology and topography; (*c*) comprehension, and (*d*) initiative:

Education in technic should include (1) preparation of material for study, (2) methods of study, and (3) expression of observations and ideas. The chief training in technic of preparation for students of gross human anatomy is training in dissection. As a rule, this is well taught in our schools at present. The training in methods of study is fairly well done so far as the student is taught to make use of textbook and guide while dissecting. The student, should be encouraged to go beyond this and to make use of reference books, special preparations, roentgenograms and similar facilities. It is more important for a student to learn to know how to seek light on an obscure question of structure than it is to commit to a memory necessarily imperfect a vast amount of detail well recorded in every textbook. Training in technic of expression is more neglected than it should be in our anatomic departments if we consider its importance from the standpoint of practice of scientific clinical medicine.

By training in terminology and topography we mean acquiring the use of anatomic terms in association with a visualization of the structures to which these terms refer. It is now generally recognized that in order to aid this association of ideas, anatomic terms should be learned in the dissecting room. The old fashioned didactic lecture has practically disappeared in teaching gross anatomy.

One of the most difficult tasks in teaching gross human anatomy is to lead the student to comprehend the subject. For the average medical student the comprehension of structure from the standpoint of function seems most important. For this purpose the living model, and the fluoroscope and roentgenogram are of great help.

Gross human anatomy offers an unusual opportunity for training in initiative. If granted considerable freedom, the student may waste some good anatomic material; but he has not the opportunity to injure physically either himself or other people or valuable property he would have if granted the same freedom in most laboratories or in the clinic. Since initiative is so important a quality for a physician, it seems clear that advantage should be taken of the opportunity for encouraging initiative in gross human anatomy.

Teaching of Histology and Embryology

DR. F. C. WAITE, Cleveland: By means of questionnaires, the subcommittee collected the opinions of teachers in forty-four of the fifty-nine medical schools then in membership in the Association of American Medical Colleges. The following preliminary conclusions are reached after a digestion of these opinions:

TERMINOLOGY

The word embryology is a sufficient title for the courses in embryology given in the medical schools, without any designation as to whether it is vertebrate, mammalian, human, etc. The course on the gross and microscopic anatomy of the nervous system and sense organs is best designated by the term neuro-anatomy, since the term neurology is so largely used to designate courses in diseases of the nervous system. The part of the course on the finer anatomy of the organs exclusive of the nervous system and sense organs is best designated by the term organology. The part of the course on the fundamental tissues is best designated as histology, and this term should be restricted to this field and not used as a general term to include organology also. If the term is not so restricted, then the term general histology should be applied to that part of the course on the fundamental tissues. In the course in histology and organology, histologic technic should not be a required part; but the laboratory should furnish loan collections to the student to be returned at the end of the course.

HISTOLOGY AND ORGANOLOGY

The course in histology and organology, exclusive of any histologic technic, requires at least 180 scheduled hours, of which from 35 to 40 per cent. should be devoted to histology and from 60 to 65 per cent. to organology. Of the scheduled time, approximately 25 per cent. should be given to didactic work and 75 per cent. to laboratory work. For efficient teaching, the number of instructors must be such that in the laboratory there are not more than from twenty-two to twenty-four students to each instructor; and if the best results are to be obtained, there should not be more than from

sixteen to eighteen students to each instructor in the laboratory. The course in histology and organology should be given in moderate concentration extending over from sixteen to eighteen weeks.

EMBRYOLOGY

The course in embryology should be a separate course given either parallel with or following organology. The course should occupy approximately 100 hours of scheduled time. From 30 to 40 per cent. of this time should be devoted to the development of forms below mammals, and the balance to mammalian embryology. Embryology lends itself to greater concentration of schedule than do histology and embryology, and the course should be covered in from eight to twelve weeks.

The courses in histology, organology and embryology should be given in the first year, beginning either at the beginning of the year or sometime in the first half year. The shortness of time available and the varied wishes of the clinical instructors make it impossible to make the first year courses in this field courses in applied organology. They must primarily prepare for physiology and pathology (for which this work should be prerequisite), and therefore be on a broad basis rather than planned to prepare separately for each of the several clinical subjects and specialties.

RESEARCH

There apparently is little time that is available for elective courses in this field. Research in this field cannot be expected from the ordinary undergraduate medical student. Only students who are exceptional in preparation and ability and who can give additional time should be expected to do research.

Teaching of Neuro-Anatomy

DR. IRVING HARDESTY, New Orleans: The name neuro-anatomy is accepted for the course by 56 per cent. of the colleges answering the questionnaire, while 24 per cent. specify the term neurology. Others suggest excellent but more cumbersome terms. Doubtless, nearly all prefer neurology in that it is shorter and carries the more suitable meaning—knowledge or discussion of the nerves or nervous system—while neuro-anatomy carries the untrue inference that the subject is wholly anatomy. The minimum time necessary should be given as from 120 to 132 hours at least. Neuro-anatomy requires more concentrated and consecutive effort on the part of the student and instructor than any other division of anatomy. It deals with one continuous functional apparatus, knowledge of which must be added to day by day, with as little break in effort and as little diversion by other courses as possible. We urge that concentration of hours is very profitable for the student learning it.

From the very nature of what the course should be, it is obvious that the courses in histology and embryology should be required as prerequisite to entering the course in neuro-anatomy. The dissection of the entire body should be completed before neuro-anatomy is begun, certainly the head, neck and thorax. A supplementary review course in neuro-anatomy is advisable in the later years of the curriculum, introductory to the work in nervous and mental diseases. Cooperation in teaching among the staffs of neuro-anatomy, physiology, pathology and the staff of nervous and mental diseases is necessary. Anatomic names used should be as short as possible and each carry the proper functional significance in its meaning. The tracing of nerve paths is by far the most important object of the course.

Teaching of Physiology

DR. E. P. LYON, Minneapolis: A teacher of physiology should have (1) thorough training in biology, chemistry, mathematics and physics; (2) several years' study in a physiologic laboratory presided over by a productive and stimulating professor, and (3) appreciation of the aims and problems of practical medicine. For the latter purpose, clinical training is desirable, but not indispensable. No amount of clinical training can take the place of the first and second elements of a physiologist's education. It does not matter what degree the physiologist attaches to his name, provided he has brains and proper training. The head of a department of physiology, in addition to the training outlined above, should be an inspiring leader to his staff and students. The quality of scientific imagination is essential in this connection. Select a man with this education and these qualities, gives him freedom and security of tenure. Do not "teach" him to death. Give him an adequate salary. Supply a well trained staff. Don't forget that his leading subordinates should be strong men and should have good salaries, not a third or half, but three quarters or 90 per cent. that of the chief. Supply such salaries, not only because they are deserved, but because from this group of assistants come the future leaders. We must have a "school" or physiology and some future for its students, or they will leave pure science, as they are now doing.

As to methods of teaching, freedom must be permitted. The lecture is valuable for those who possess good power of exposition. The laboratory course is important and needs most careful and skilful teaching. It should not be left to subordinates. The laboratory work should be quantitative so far as possible. Problems for mathematical solution are valuable.

The course should include a judicious selection of frog, turtle, mammalian and human experiments. Demonstrations should be used to a considerable extent. Students should assist and be required to work up quantitative data on demonstrations. The laboratory and demonstration work must be used to form the background for a large amount of necessary didactic work. The field is too large for a student actually to see every part of it; but unless a basis of observation is provided, visualization from description cannot be even approximately correct. This thought should always determine the relation of didactic to laboratory work. Any device, such as theses, required reading and special problems that will send students to the library should be used. The entire course in physiology should be developed from the standpoint of "principles" rather than that of "technic" or that of "useful information." Principles are just the underlying facts. They are not theoretical abstractions or unproved hypotheses. Physiology teachers can and should introduce useful special facts and useful methods into their teaching; but unless they give their students a thorough knowledge of the facts of universal application, i. e., principles, they will not furnish a fitting background for modern clinical training.

DISCUSSION

DR. BURTON D. MEYERS, Bloomington, Ind.: The time has come to establish a course in neuro-anatomy, but it must depend on the equipment which the department has for teaching the subject. You cannot teach neuro-anatomy without having a complete series of sections from the cervical nerve up beyond the anterior commissure to be used in the projection apparatus. Then, one can give the course in neuro-anatomy in from eighty-five to 105 hours.

DR. H. GIDEON WELLS, Chicago: The committee on teaching anatomy made a mistake in selecting its sources of information. It should have sent the questionnaires to pathologists in order to get a heartfelt constructive criticism, because the pathologist is the man who has to handle the work of the anatomist. He acts as a buffer between the anatomist and the clinician. A large proportion of pathologists feel that an undue proportion of the time assigned to them in the curriculum, if not most of it, is spent in remedying the deficiencies in instruction in anatomy.

DR. J. P. JOBLING, New York: Students come to us with an excellent knowledge of the relation which one tissue bears to another, with the vascular and nerve supply; but if you take a fresh liver at necropsy, make a section of it throughout, and separate the lobule, students want to know what it looks like. They know what it is histologically; they do not visualize what fresh tissue looks like. My suggestion is that in the course on anatomy we should show students a fresh liver, make sections, show the appearance of the normal organ, and compare it with the abnormal. It is not only important from the standpoint of the pathologist, but also from that of the surgeon. When he operates he wants to

know what the tissues are, yet the anatomist does not give him any information from his pickled organ of what such a tissue should look like.

DR. JAMES EWING, New York: I agree with Dr. Wells that the committee made a fundamental error in the selection of its sources for information. It should have referred the questionnaire to the students and got their reaction. I am a teacher of laboratory subjects and am aware of the weaknesses of technic that students fall into. We become enamored of our methods of putting knowledge into the heads of students, and sometimes we forget what the object of our work is.

DR. W. F. R. PHILLIPS, Charleston, S. C.: As a teacher of anatomy, the only method I know of is that indicated by Vesalius when he used his own hands in teaching anatomy. I know of no other way to teach anatomy than to put the student before the subject and say, "There it is: go to it."

DR. IRVING S. CUTTER, Omaha: I have asked some practitioners and students where they learned the most anatomy and learned it best, and I was astonished at the answer, namely, at the postmortem table.

Teaching of Biologic Chemistry

DR. OTTO FOLIN, Boston: Closely associated with the problem of the necessary entrance requirements in chemistry is the question as to the amount of time that should be allowed for the teaching of physiologic chemistry in the medical school. Physiology and physiologic chemistry should have about the same time, and one fourth of a college year should be given to each of these two subjects. The time allotted to a laboratory subject like biochemistry is meaningless unless individual space and equipment for uninterrupted individual work are provided. It is also necessary that there should be in the laboratory at least 10 per cent. of unoccupied desk space available for miscellaneous uses for extra reagents, polariscopes, colorimeters, scales, etc.

The course in physiologic chemistry should consist of from seventy-five to eighty lectures and conferences (except so far as some of the lecture periods are used for one-hour written examinations), and an equal number of laboratory periods, two and one-half hours each (except so far as some of these are replaced by practical examinations). The first two weeks in the laboratory are needed for the preparation of standard solutions involving the use of the balance and for learning volumetric analysis. The lectures during this time must be partly instructions concerning the laboratory technic, but should deal mainly with the chemistry of solutions, the theory and practical use of indicators, and such topics as osmosis, reversible reactions, and the law of mass action. The work in volumetric analysis leads directly to the subject of quantitative nitrogen determinations, and the students can at once apply and fix their newly acquired experience by working on pure nitrogenous compounds. The lectures and reading at this time can advantageously cover the field of catalysis leading up to a general consideration of the field of enzymes. This work covers about three weeks, or from fifty-five to sixty hours, and trains the student as no other kind of work can train him in precision and attention to details.

The elementary first course in physiologic chemistry, coming as it generally does during the second half of the first year or first half of the second year, is not a course in pathologic chemistry, yet it includes the principles and methods on which the later applications to clinical materials are based. The student should not examine stomach contents, yet he studies pepsin and peptones, he learns to differentiate between hydrochloric acid and lactic acid, and he acquires some familiarity with the pigments of bile. He need never see a urine representing diabetes or nephritis, yet if given such a urine at the end of his course in physiologic chemistry he should be able to make a better chemical examination than he would four years later, when he is engaged as an intern in a hospital.

The examinations in biochemistry should be partly practical, partly written. These examinations should be numerous enough to permit a partial classification of the students by the time the course is half over. The practical examinations can advantageously consist, in part, of problems which the student solves when he gets ready, at a time chosen by himself; but, in part, they must consist of general examination sessions. Four such general examinations (besides the final) are a large enough number. These may be thus distributed: The first, volumetric analysis (including nitrogen determinations), the differentiation between strong and weak acids, and the use of different indicators. Second, the reactions of fats and carbohydrates, including sugar titrations. Third, identification of protein materials and milk constituents, including quantitative milk analysis. Fourth, urine analysis and other topics. It is not possible to take more than one-half the class at a time for these practical examinations. They will therefore occupy either eight laboratory periods, or four lecture plus laboratory periods.

There is urgent need for some constructive recommendations as to how the great and growing demand for well trained and productive biochemists by medical schools and hospitals may be met.

DISCUSSION

DR. A. P. MATTHEWS, Cincinnati: The need of medical institutions in this country is research. The future of medical education lies in research. All the problems of instruction will solve themselves as soon as we realize that the development of the research spirit is at the bottom of all good education.

DR. FRANK BILLINGS, Chicago: The practitioner or clinician who does his work most efficiently is found to have been well grounded in the fundamentals in medicine. We have in this country an enormous number of physicians practicing medicine. The greater number of them graduated before we had made much, if any, advance in medical education. They do not think in terms of anatomy, physiology, pathology, physiologic chemistry or normal physiology. They think only of a patient and of an opportunity to prescribe some drug. I do not think we have time enough in two years in which to teach the fundamentals of medicine properly, and we are embarrassed when we speak of a curriculum of both the fundamental and clinical branches to find enough time to teach both, so that the product is the best that can be turned out.

The Larger Function of State University Medical Schools

DR. WALTER A. JESSUP, Iowa City: Our experience in Iowa leads to these conclusions: First, in view of the great rapidity with which the demands on our hospital and university staffs have grown, it is important that any state, in attempting to provide this type of service, should make liberal provision in space and staff for adequate service not only to indigents, but also to the ever growing number of pay patients. Second, future plans should include ample provision for the vigorous prosecution of medical research. Otherwise the teaching staff may easily be overwhelmed with routine, with a consequent slump in growth. Furthermore, the unusual clinical demands serve as a constant challenge to the student of medicine. Third, since the success of the work is absolutely dependent on skill and devotion of the staff, it is essential that many adjustments in the conditions of teaching must be made. The problem of full time clinical teaching becomes more acute.

Other departments of technical education have had to meet the same situation. Indeed, in the field of agricultural education a very large part of the function has been the providing of service for the public. So much is this true that it would be hard at the present moment to conceive of a college of agriculture without its elaborate organization in the direction of special agricultural service to the state. Within the next few years we may expect in many state universities just such close coordination in the problems of the training of physicians, furthering research that will contribute to the knowledge of the field and extending health service to the public. In the degree that the colleges of medicine of the state universities are alert to these new demands and effective in their responses will they become real leaders in this present movement looking toward the highest type of physical and mental efficiency.

Full-Time Teachers in Clinical Departments

Dr. William Darrach, New York: In regard to clinical teachers, there exists considerable ambiguity in the conception of the full-time or university basis, as is evidenced by the widely divergent plans of organization now in force or planned in the various schools of the country. In several medical schools the departments of medicine, surgery and pediatrics are being reorganized on what is spoken of as the "full-time" or "university" basis. It is being widely accepted that such an arrangement is necessary for the best type of teaching, for the most successful clinical investigation and for the most skilful care of the sick. The essential principle of this arrangement is that the dominating group of men in the main clinical departments must be free to concentrate their energies on their university and hospital work. A year ago I was frankly opposed to the university basis being applied to the clinical departments of a medical school. But as a member of a committee which has been earnestly seeking light on medical school organization, I have become completely converted to the principle.

There are two main factors which tend to interfere with this freedom, no matter how sincere the intentions of the men may be. These factors are insufficient assistants and the distractions of private practice. By providing the full-time men with sufficient assistants, professional, clerical, technical and menial, he may relieve himself of such unnecessary details as he desires. He must also be protected from the demands of private practice. The main purpose is to obtain a more truly university type of clinical teacher. The full-time plan is a means to this end—a method by which it may be obtained.

The various so-called full-time plans may be thus summarized: (1) no private practice and no outside employment; (2) private practice at the discretion of the clinician, but no fee paid for such service; (3) as in Plan 2, except that the fee is paid to the university; (4) private practice for fees allowed in such limited amounts that it does not interfere with the thorough, efficient and sincere fulfilment of his academic duties; (5) unlimited private practice within the hospital.

The specific plan which we have proposed and hope to put into effect is as follows: The fundamental principle on which these departments shall be reorganized is that the control of each main clinical department shall be vested in a director, associated with a differentiated group of men who are devoting all their time to the school and hospital, that they may build up and maintain a department in which the best intensive clinical investigation and scientific research may be carried on with the teaching of students and the care of the sick. Of more importance than salary for either type of man is the proper arrangement of his work, so that he shall be freed from unessential details and useless waste of time. In the end the opportunity to carry on teaching and research under wholesome surroundings is the most effective force for bringing into the medical school men of ability and ideals. The head of the department with these associates should form an administrative board, which could relieve him of as much of the administrative details of the hospital and of the teaching as he chose. Unless he is so relieved and protected from the innumerable distractions of departmental matters he will prove sterile as a producer and will soon cease to be the inspiring and stimulating leader so necessary in a department of this kind. These men should have as much time for constructive thought and productive leisure as the head of a large industrial concern. By such a combination and coordination the department would become a well-rounded unit, which should result in great progress along all three lines—research, teaching and care of the sick.

(*To be continued*)

Reporting Communicable Diseases.—Whenever a physician fails to report a communicable disease, the entire community is unnecessarily exposed to the contagion. Such failure may be attributed to sheer negligence, to wilful disregard of the obligations imposed by statute, or to a mistake in diagnosis.—*Connecticut Health Bull.*, October, 1919.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Insanity, Baltimore

January, 1920, **76**, No. 3

*Epidemic Encephalitis and Catatonic Symptoms. E. D. Bond, Philadelphia.—p. 261.
*Histopathologic Findings in Dementia Praecox. E. Rawlings, Talmage, Calif.—p. 265.
War Neuroses: Environment and Events as the Causes. L. V. Briggs, Philadelphia.—p. 285.
Should the Plea of Insanity as a Defense to an Indictment for Crime Be Abolished? C. F. MacDonald, New York.—p. 295.
*Larceny; An Effort to Compensate for Emotional Repression. E. R. Spaulding, Philadelphia.—p. 303.
Proposed Reorganization and Consolidation of State Institutions in Massachusetts. G. M. Kline.—p. 321.
New Jersey Plan in Operation. B. G. Lewis, New Jersey.—p. 335.
Activities of War Risk Insurance Bureau and U. S. P. H. Service Relative to Mentally Disabled Ex-Military Men. W. L. Treadway, Washington, D. C.—p. 349.

Epidemic Encephalitis and Catatonic Symptoms.—Five cases are cited by Bond. He says that his aims in presenting these cases are to inquire into the difficulties in the descriptions of postures and motor symptoms, and to suggest the plausibility of cerebral disturbance as a basis for "catatonic" episodes. In three of the cases, episodic disturbances of the brain were located by cranial nerve involvement; in another case, by this and necropsy. Most important is the fact brought out by these cases that very mild and transient, but definite, symptoms are usually missed in excited, seclusive or indifferent patients. In one case, strabismus went unrecognized at home; another patient, because she had no psychosis, was able to give information which would have been lost in a person less clear. It is interesting that these patients began to improve after dental attention, one after thyroid therapy and one immediately after lumbar puncture.

Histopathologic Findings in Dementia Praecox.—The twelve cases studied by Rawlings gave quite uniform pathologic findings which are due neither to arteriosclerosis, senility nor a long continued grave toxic process. This pathologic process is essentially a chronic one, resulting in an atrophy of the nerve cell body and its nucleus, a disappearance of its stainable substance, an attenuation, with partial fragmentation, of its neurofibrils and an atrophy with distortion of its protoplasmic prolongations; the process terminating in either extreme pyknotic atrophy in which the shrunken cell and its prolongations are seen covered with incrustations or in a fragmentation of the nerve cell to the extent that it is either a shadowy outline or an atrophic nucleus surrounded simply by a fragmented rim of pale granular protoplasm. While no special effort is made by Rawlings to trace the disease process, a general impression is obtained from the study of the various types of cells in all strata that the initial process is one of moderate swelling of both cell body and nucleus followed by a gradual breaking down of the normal nuclear chromatin structure and later, by an atrophy and fragmentation of the neurofibrils with subsequent granular degeneration and irregular clumping of the Nissl granules. The final stage terminates in one of two conditions according to the degree of the vicious influences or the original resistance of the cell, namely, moderate atrophy, followed by more or less acute fragmentation and extreme pyknotic atrophy.

Larceny and Emotional Repression.—The three cases reported by Spaulding represent attempts to compensate for emotional repression, which has been associated with a distressing mental conflict. In the first case, there was an internal fermentation, which bubbled over in an antisocial way when the patient, because of unusual strain in her environment that made her past more oppressive than usual, was unable to obtain an emotional outlet and a feeling of compensation through her religion. That she chose the outlet she did instead of others apparently resulted from the

fact that this particular act typified to her the worst thing she could do and represented an attempt to win back favor and effect a reconciliation. The patient's married life was marred by her difficulty in adjusting herself to marital conditions and her inability to obtain children by adoption. In the third case, emotions had been aroused at an early age in a way in which there was such a strong association to shame that everything even remotely connected with the sexual sphere had in consequence been repressed. The energy that had been repressed as a result of the conflict had expressed itself asocially in several ways, one of which was stealing. The outlets that she chose seemed to furnish her in some way with what is called an illusion of compensation.

American Journal of Public Health, Boston

February, 1920, **10**, No. 2

Economics of Health Administration. H. B. Hemenway, Springfield, Ill.—p. 105.
Popularizing Vital Statistics. C. St. Clair Drake, Springfield, Ill. —p. 112.
*Mosquito Work of Bureau of Entomology. D. L. Van Dine, Mound, La.—p. 116.
*Drainage as an Antimalaria Measure. J. A. LePrince, Memphis.—p. 120.
Sanitation in Serbia. E. Stuart, Paris, France.—p. 124.
Venereal Disease Control: Methods, Obstacles and Results. C. C. Pierce, Washington, D. C.—p. 132.
Rôle of Latrine on Control of Uncinariasis. J. A. Ferrell, New York. —p. 138.
Rôle of Sanitary Privy in Control of Typhid. C. E. Smith, Columbia, Mo.—p. 140.
*Uses, Possibilities and Limitations of Bacteriology in Food Control. E. O. Jordan, Chicago.—p. 142.
Pollution of Deep Wells at Lansing, Mich. E. D. Rich, Lansing. —p. 147.
Studies in Clarification of Milk. C. E. Marshall, Amherst, Mass.—p. 152.
Schools for Health Officers: What Has Been Done at Syracuse. F. W. Sears, Syracuse, N. Y.—p. 155.
Insurance Company in Industrial Hygiene. A. D. Reiley, New York. —p. 160.

Mosquito Work of Bureau of Entomology.—This paper was abstracted in THE JOURNAL, Nov. 22, 1919, p. 163.

Drainage as an Antimalaria Measure.—This paper was abstracted in THE JOURNAL, Nov. 22, 1919, p. 163.

Bacteriology in Food Control.—In summing up the future outlook for the application of bacteriology in food control, it seems probable to Jordon that increasing emphasis will be laid on bacterial methods as an aid to the interpretation of the sanitary inspection of foodstuffs and as a guide to satisfactory sanitary procedure. Continued laboratory investigation of the two best known instances of so-called "food poisoning" traceable to primary bacterial food contamination, botulism and paratyphoid meat poisoning, seems urgently called for since both are intimately connected with the vital problems of food conservation. Finally, the nature and sanitary significance of the products generated by bacteria, particularly the so-called saprophytic bacteria, in foodstuffs affords a practically untouched field for investigation.

Archives of Dermatology and Syphilology, Chicago

February, 1920, **1**, No. 2

Case of Monilia Candida Infection of Mouth; Moeller's Disease and Others. M. F. Engman and R. S. Weiss, St. Louis.—p. 119.
*Case of Burning Tongue. M. F. Engman, St. Louis.—p. 137.
Syphilis of Liver. U. J. Wile, Ann Arbor.—p. 139.
*Ulcerating Granuloma of Pudenda. H. Goodman, New York.—p. 151.
*Erosive Vulvitis. T. L. Driscoll, Richmond.—p. 170.
*Solar Keratoses and Cutaneous Cancer. J. N. McCoy, Vincennes, Ind. —p. 175.
*Dermatologic Misnomers. M. Scholtz, Los Angeles.—p. 182.

Burning Tongue.—Eleven cases of burning tongue are reported by Engman. None of these patients showed any lesions of the tongue, except enlarged papillae from constant feeling for the sensation against the teeth, and all of them were in an almost terror stricken condition for fear of carcinoma of the tongue. Engman's course of procedure in the treatment of such patients has been to be frank with them by stating that several such instances have been observed, and that the condition is no doubt due to a subconscious fixing of the mind on the anterior portion of the tongue, suggested by some instance which they have not consciously observed—possibly a remark from some one as to cancer of the tongue, or hearing or reading of such cases. It is somewhat similar to the "idée fixée" of French writers. However, one possible cause of this sensation in the anterior portion of the tongue may be inflammation of the lingual tonsil on either side, as was pointed out by Sluder.

Ulcerating Granuloma of Pudenda.—Goodman presents a review of the literature with a bibliography and some observations of the disease as seen in Porto Rico. Four cases of ulcerating granuloma of the pudenda are reported. In three of these cases, *Calimatobacterium granulomatis* was demonstrated for the first time in the United States or its dependencies. In one case, the spirochetal organism described by Wise was observed. Goodman emphasizes that the disease is not syphilis, although it may be associated with syphilitic lesions, or be present in a Wassermann positive syphilitic, free of syphilitic manifestations. Arsphenamin and mercury are ineffective in its treatment. Antimony and potassium tartrate was not given a sufficiently thorough trial to warrant any positive expression of its efficacy.

Erosive Vulvitis.—Three cases of this disease are reported by Driscoll. In each of the three cases, the Wassermann reaction was negative. There was no response to antisyphilitic treatment, including arsphenamin treatment. In each case the characteristic spirochete and fusiform bacilli were isolated from the serum of the ulcers. Driscoll urges that any persistent erosive ulceration with negative Wassermann reaction should be regarded as suspicious, and some of the serum should be obtained for bacteriologic study. If the serum shows spirochetes and fusiform bacilli, the diagnosis is conclusive. The infection might, of course, be superimposed on other lesions of the genitals.

Solar Keratoses and Cutaneous Cancer.—From a study of the clinical histories of patients, McCoy is convinced that cancers of the mucocutaneous margin of the lip, or cancers commencing at that point, are in no way due to solar light. Further, the lips near the margin seem to be immune to the development of keratoses. He has never seen a keratosis at or near the lip margin. He also calls attention to the significant fact that while a large percentage of cutaneous cancers of keratosic origin are of the basal cell type, most cancers of the lip margin are of the cuboidal cell type. However, cutaneous cancer of covered parts is quite rare and, when found, is nearly always traceable to traumatism, while 37.7 per cent. of all cancers, both deep seated and superficial, have occurred on the face (exclusive of the lip margins), the hands and neck, parts exposed to solar light; and that they have attacked persons whose vocations or habits involved insolation to a considerable degree. McCoy agrees with Unna and others that insolation produces keratoses and that these are the most frequent of precancerous lesions. Sixty-two per cent. of his patients were blondes, 7 per cent. were dark-skinned persons, and 31 per cent. were chatains, or persons having a skin only slightly pigmented. In as much as the keratosis is an admitted precancerous lesion, McCoy advises that it should unfailingly be removed.

Dermatologic Misnomers.—Scholtz submits what he terms the most glaringly inconsistent and misleading misnomers of dermatologic nomenclature, such as erythema induratum, erythema nodulare and erythema multiforme, infectious eczematoid dermatitis, dermatitis repens, and other dermatitides, acne rosacea, sycosis vulgaris, etc., and pleads for their revision and correction.

Boston Medical and Surgical Journal

March 4, 1920, **182**, No. 10

Meaning of the Normal. A. L. Johnson, Boston.—p. 237.
Clinical Bacteriology of Pneumostreptococcus Group. D. M. Lewis, New Haven.—p. 240.
Use of Portable Respiration Apparatus. F. G. Benedict, Boston. —p. 243.

Journal of Biological Chemistry, Baltimore

February, 1920, **41**, No. 2

Preparation of *p*-Dimethylaminobenzaldehyd. T. Ingvaldsen and L. Bauman, Iowa City.—p. 145.
Oxidation of Sugars by Mercuric Acetate in Presence of Ammonia. T. Ingvaldsen and L. Bauman, Iowa City.—p. 147.

*Fat-Soluble and Water-Soluble Vitamin Content of Green Plant Tissues. H. Steenbock and E. G. Gross, Madison, Wis.—p. 149.
*V. Thermostability of Fat-Soluble Vitamin in Plant Materials. H. Stenbock and P. W. Boutwell, Madison, Wis.—p. 163.
Phosphorus Requirement of Maintenance in Man. H. C. Sherman, New York—p. 173.
Rôle of Pentose Fermenting Bacteria in Production of Corn Silage. W. H. Peterson and E. B. Fred, Madison, Wis.—p. 181.
*Hydrogen Ion Concentration of Human Duodenum. F. J. Meyers and J. F. McClendon, Minneapolis.—p. 187.
Studies of Acidosis. XV. Carbon Dioxid Content and Capacity in Arterial and Venous Blood Plasma. W. C. Stadie and D. D. Van Slyke, New York.—p. 191.
Effect of Calcium on Composition of Eggs and Carcass of Laying Hens. G. D. Buckner and J. H. Martin, Lexington, Ky.—p. 195.
Modification of Official Chlorin Method for Feeds, Feces, and Urine. J. O. Halverson and E. B. Wells, Wooster, Ohio.—p. 205.
*Comparative Study of Hemoglobin Determination by Various Methods F. S. Robscheit, San Francisco.—p. 209.
*Digestibility of Certain Miscellaneous Vegetable Fats. A. D. Holmes and H. J. Deuel, Jr., Washington, D. C.—p. 227.
*Method for Determination of Methemoglobin in Blood. W. C. Stadie, New York.—p. 237.
Nephelometric Values of Cholesterol and Higher Fatty Acids. H. F. A. Csonka, Pittsburgh.—p. 243.
Heptoses from Gulose and Some of Their Derivatives. F. B. LaForge, Washington, D. C.—p. 251.
*Secretion of Gastric Juice. S. J. Cohen, Chicago.—p. 257.
Direct Quantitative Determination of Potassium and Sodium in Small Quantities of Blood. B. Kramer, Baltimore.—p. 263.

Fat-Soluble Vitamin Content of Green Plant Tissues.—It appears that of the plant structures the leaves are generally richest in the fat-soluble vitamin; some roots are next in order, and last, at least of those investigated by Steenbock and Gross, are grains. Where certain yellow plant pigments occur there fat-soluble vitamins may be looked for. In harmony with this, it is seen that cabbage in the head, containing little pigment, is not to be compared in physiologic activity with the other leafy substances, and of these latter, lettuce, also somewhat etiolated, is the poorest.

Thermostability of Fat-Soluble Vitamin in Plant Materials.—A process of heat treatment, consisting of autoclaving for three hours at 15 pounds pressure, does not destroy any of the fat-soluble vitamin as found in yellow maize. Neither does this treatment cause any noticeable destruction of the vitamin in chard, carrots, sweet potatoes and squash. Experiments by Steenbock and Boutwell demonstrated that the fat-soluble vitamin as found in the plant kingdom in a grain, leaf and stem tissue, fleshly roots, and cucurbital vegetables is comparatively stable at a high temperature.

Hydrogen Ion Concentration of Human Duodenum.—The reaction of the duodenum between three and four hours after meals was usually found to fluctuate around the neutral point, but the extreme range on the acid side was greater than on the alkaline side, possibly due to the spurting of gastric contents into the duodenum.

Value of Hemoglobin Determination by Various Methods.—Various methods used for estimating hemoglobin percentage were compared by Robscheit. The Sahli hemoglobin method, when using the color tubes accompanying the instrument, gives very inaccurate results because of the decided variance in color density of the standard tubes, the result of fading. The Palmer method offers a very satisfactory means of hemoglobin determinations if the standard solutions are freshly prepared. Newcomer's method obviates many difficulties heretofore observed with other procedures, and gives good results with the glass 0.96 mm. in thickness, although the color is quite pale. A method is presented applying Palmer's procedure to Sahli's principle which has proved most satisfactory. It removes the difficulty encountered with Palmer's method, the lack of stability of color in the standard solutions. It has the advantage of an easier color match than that of red tint. The standards prepared have remained sufficiently unchanged for a period of eleven months to insure accurate hemoglobin determinations during this long period.

Digestibility of Certain Vegetable Fats.—The digestibility of several fats and oils has been studied by Holmes and Deuel. The digestibility coefficients obtained were: avocado fat, 87.9 per cent.; cohune oil, 99.1 per cent.; capuassu fat, 94.1 per cent.; hempseed oil, 98.5 per cent.; palm kernel oil, 98.0 per cent., and poppy seed oil, 96.3 per cent. The digestibility of the protein and carbohydrate of the entire ration was essentially the same as that in other experiments of a similar nature, indicating that the fats exercised no unusual effect on the utilization of these constituents. These fats and oils, with the possible exception of capuassu fat, which caused slight disturbances, produced no abnormal physiologic effects, and may be regarded as satisfactory for food purposes. Cohune, hempseed, palm kernel and poppy seed oils especially are very highly utilized by the human body.

Method for Determination of Methemoglobin in Blood.—A colorimetric method for the determination of blood pigments is given by Stadie which is simple and rapid, and which, combined with a simultaneous determination of the hemoglobin by the gasometric method of Van Slyke, gives the methemoglobin content of the blood. The method depends on the fact that both hemoglobin and methemoglobin are changed quantitatively to cyanhemoglobin by dilute solutions of potassium cyanid.

Secretion of Gastric Juice.—Cohen claims that the total chlorids of gastric juice are secreted more or less constantly regardless of the free acidity of the gastric juice. They vary from 0.39 to 0.54 per cent. This may corroborate Pawlow's view that gastric juice is secreted with a constant acidity, and that variations are due to secondary neutralization. A large volume of juice secreted rapidly has a higher acidity than a smaller volume secreted slowly, other factors remaining constant (confirmatory of Pawlow).

Journal of Orthopedic Surgery, Lincoln, Neb.

February, 1920, **18**, No. 2

*Arthritides and Focal Infection. V. P. Gibney, New York.—p. 63.
Chondromas; Report of Cases. H. W. Meyerding, Rochester, Mnn. —p. 77.
Focal Putrefactions and Their Bearing on Osteoarthritis and Other Diseases. S. L. McCurdy, Pittsburgh.—p. 92.

Arthritides and Focal Infection.—Some of the points emphasized by Gibney are: A focus of infection should be diligently sought for in every case of arthritis where tuberculosis, malignancy or trauma are not self-evident as causes or at least controlling factors. While the finding of a focus and the proper handling of the same may not be followed sooner or later by relief, it cannot be assumed that the infection is at an end. The arrest of the infection does not mean that the exudates in and around a joint will disappear unless orthopedic measures are employed to bring about resolution and restoration of function. The finding of one focus does not mean that this is the only focus bearing on the case. Many organs are exposed to bacteria of a pus producing nature, and that a careful study of these organs should be the rule.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

January, 1920, **14**, No. 5

Constituents of Lathyrus Sativus Seeds and Their Action. W. J. Dilling, Glasgow, Scotland.—p. 359.
*Restoration of Frog's Heart in Chloroform Poisoning. F. Ransom, London, England.—p. 367.
*Anaphylactoid Phenomena from Intravenous Administration of Various Colloids, Arsenicals and Other Agents. P. J. Hanzlik and H. T. Karsner, Cleveland.—p. 379.

Restoration of Heart in Chloroform Poisoning.—It is shown by Ransom in perfusion experiments that frogs' hearts depressed by chloroform may be restored to nearly or in some cases quite normal activity by adding to the chloroform solution small quantities of epinephrin, tyramin, strophanthus, diuretin, caffein or strontium chlorid (pituitary extract failed). In the case of epinephrin and tyramin, the restored hearts will continue beating well in the presence of toxic amounts of chloroform for some hours. The other substances when added to the chloroform solution cause, first, restoration and then characteristic toxic symptoms of their own, but this latter difficulty may be overcome if, as soon as restoration has taken place, the perfusion fluid is changed to plain Ringer's solution. By this method of giving a small quantity of the antagonist and following with plain Ringer's solution restoration is much quicker than when the chloroform is simply washed away.

Anaphylactoid Phenomena from Intravenous Administration of Colloids, Arsenicals and Other Agents.—Mild ether

anesthesia and the intravenous injection of physiologic sodium chlorid solution are practically harmless to the circulatory and respiratory systems of guinea-pigs, but the remaining twenty-nine of the thirty-one agents studied by Hanzlik and Karsner were found to be distinctly harmful in varying degrees. The results obtained by the authors are decidedly against the promiscuous and unwarranted use of the intravenous method of administering drugs as a routine therapeutic measure, particularly for new and untried remedies or those of doubtful efficacy, and even those which chemically and pharmacologically appear to be inert or inactive. When taken together with the explanations supplemented throughout the text, these results indicate that it is quite erroneous to regard the disturbances produced by the intravenous injection of sundry agents in the same category with true anaphylaxis or bearing any causal relationship to it whatsoever, or vice versa. On the basis of the results obtained with atropin and epinephrin, Hanzlik and Karsner claim that the mechanism of action of agar and similar agents bears no relationship to true anaphylaxis or anaphylactic shock.

Medical Record, New York

Feb. 28, 1920, **97**, No. 9

Treatment and Management of Neurastbenic Individual. C. F. Neu, Indianapolis.—p. 341.
Cancer Enigma. R. Bell, London, England.—p. 346.
Blood Counts in Diagnosis and Treatment. Greeley, Brooklyn.—p. 348.
Focal Infections of Head as Sources of Systemic Diseases. J. J. King, New York.—p. 353.
Anesthetics in Obstetrics with Special Reference to Nitrous Oxid. R. C. Coburn, New York.—p. 356.
Willems' Method of Active Mobilization in Surgical Joints. E. B. Mumford, Indianapolis.—p. 357.

Military Surgeon, Washington, D. C.

February, 1920, **46**, No. 2

Constipation as an Army Problem. W. R. Woodbury, M. C., U. S. Army.—p. 119.
*Sputum-Borne Disease Transmission with Epidemiologic and Bacteriologic Research. J. G. Cumming, M. C., U. S. Army.—p. 150.
Museum and Art Service. L. B. Wilson, Rochester, Minn—p 165.
*Six Cases of Traumatic Aneurysm. R. E. Flannery, Chicago, and A. R. Tormey, Madison Wis.—p. 173.
Comments on Army Field Ration. C. C. Mason, S. C., U. S. Army.—p. 178.
Treatment of Catarrhal Deafness. P. Rice, San Francisco.—p. 185.
Military Hygiene. A. L. Benedict, Buffalo.—p. 191.
Cases of Seasonal Hay-Fever Diagnosed and Treated with Pollen Extracts. W. C. Williams, S. C., U. S. Army.—p. 199.

Sputum Borne Disease Transmission.—This experimental research shows the facility with which a nonpathogenic organism may be transmitted from donor to recipient through the use of warm mess-kit wash water. The results of these tests, in conjunction with the epidemiologic research, indicate that mess-kit water was the most prolific source of distribution of pathogenic organisms and virus infections among troops. These results are wholly corroborative of the previously advanced theory of transmission through warm mess-kit wash water, and the paramount importance of the use of boiling water as a means of closing the major avenue of disease distribution.

Traumatic Aneurysm.—Of the six cases reported by Flannery and Tormey, three were arteriovenous, one was arterial, one was venous and one was diffuse. Four patients were discharged, cured; one patient died of meningitis, secondary to compound comminuted fracture of skull, and one died of shock, following loss of blood after operation. All vessels involved were ligated following long periods of complete rest, immobilization and pressure over the mass. The period of rest, varying from eleven to sixty-two days (an average of thirty-three and five-tenths days), was sufficient to allow collateral circulation to become fully established, thereby diminishing the risk of postoperative gangrene. The authors insists that it is essential that all clots be removed, thereby relieving pressure on the remaining vessels and lessening the chances of gangrene from the interference of circulation below. Postoperative treatment is very important: (*a*) The wound should have a large, soft, sterile dressing applied. (*b*) The extremity should be allowed to lie in its natural position. Splints are contraindicated, as pressure necrosis is apt to occur. (*c*) No hot-water bags should be used, except to warm the bed before the patient is returned from the operating pavilion, as sloughing may occur in those parts of the extremities in which collateral circulation is not fully established. (*d*) If heat is thought necessary to aid the circulation in the extremity, the therapeutic light is advised.

Modern Medicine, Chicago

February, 1920, **2**, No. 2

Rehabilitation in Its Relation to Physician. A. C. Burnham, New York.—p. 93.
Sanitarian's Definition of Living Wage. D. B. Armstrong, Framingham, Mass.—p. 96.
Medical Service in Hotels. E. M. Statler, Buffalo.—p. 102.
Medical Aspects of Health Insurance Administration. E. H. Lewinski-Corwin, New York.—p. 113.
Status of Influenza. D. M. Lewis, New Haven.—p. 116.
So-Called Shell Shock in Great War. T. A. Williams, Washington, D. C.—p. 121.
Simple Goiter; Public Health Problem. P. C. McCord and R. G. Walker, Cincinnati.—p. 124.
Human Engineering; New Medical Speciality. F. L. Rector, Brooklyn.—p. 133.
Emergency Service of J. I. Case Threshing Machine Company. J. E. Konnak, Racine.—p. 136.
Restaurant Facilities for Shipyard Workers. F. S. Crum, Philadelphia.—p. 138.
Relation of Medical Department to Company. H. W. Cook, Minneapolis.—p. 142.
Practical Application of Immunity in Tuberculosis. W. H. Watterson, Washington, D. C.—p. 152.
*Coating for Poison Tablets for Prevention of Accidental Poisoning. G. Phillips, Brooklyn.—p. 155.
Medical Inspection in Big Horn Country, Montana. W. A. Russell, Hardin, Mont.—p. 159.
Hospital and Health Survey. H. Wright, Cleveland.—p. 160.
Neurologic Girl. J. Taft, Philadelphia.—p. 162.
Women Seek Careers in School of Occupational Therapy. M. Neall, Philadelphia.—p. 170.
Law for the Doctor. L. Childs, Indianapolis.—p. 1723.

Coating for Poison Tablets to Prevent Accidental Poisoning.—Phillips has developed a coating intended to render poison tablets innocuous when swallowed, but which interferes in no way with their use for making germicidal solutions. The contrivance consists of a coating of wax, the wax having a melting point above the highest climatic temperature, one which is not brittle and, therefore, which will not crack or scale from the tablet in handling; and, above all, which not only is insoluble in water, but is not affected by the digestive juices. Tablets coated with such a wax pass through the alimentary tract unchanged and consequently prevent any solution or absorption of the tablet substance while in the body. By breaking the tablets they may be dissolved readily when it is desired to prepare solutions from them. After many trials during which a large variety of substances has been rejected as unsuitable for this purpose, a coating has been developed which not only satisfies all theoretical requirements but which meets every demand for practicability. By mixing equal parts by weight of candelilla wax and a paraffin having a melting point of 56 C., a wax is obtained which melts at 70 C., which has a low coefficient of expansion and, therefore, little brittleness, which is unaffected by dilute acids and alkalies and which is not attacked by digestive ferments. Furthermore, the device presents no serious difficulties as to the manufacture. The machines employed for coating pills with gelatin are equally well adapted for applying the wax coating to tablets, while the combined cost of the materials and the process for quantity production is negligible. The perfected coating has the added advantages of protecting the tablet from moisture, and from breaking or crumbling in the container. Deterioration is prevented, and exact dosage is assured.

Philippine Journal of Science, Manila

September, 1919, **15**, No. 3

Physiochemical Valoration of Tikitiki (Rice Polishings) Extract. M. V. del Rosario and Joaquin Maranon.—p. 221.
Kwangtung Flora. E. D. Merrill.—p. 225.
Hoya Imbricata Callery Ex Decasine and Hoya Pseudomaxima Kds. in the Philippines. S. H. Koorders.—p. 263.
Black Halictine Bees of Philippine Islands. T. D. A. Cockerell.—p. 269.
Swarming of Anopheline Mosquitoes. C. S. Banks.—p. 283.
Two Philippine Leaf Mining Buprestids, One Being New. C. S. Banks.—p. 289.
Fulgoroidea, II: Genus Trobolophya. C. F. Baker.—p. 301.
Soy Sauce Manufacturing in Kwangtung, China. E. H. Groff.—p. 307.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Indian Journal of Medical Research, Calcutta

January, 1920, 6, No. 3

*Anaphylactic Reactions in Course of Antirabic Treatment. J. W. Cornwall.—p. 237.
*Pharmacodynamics of Quinin. R. McCarrison and J. W. Cornwall. —p. 248.
*Study of Distribution of Bagdad Boils on Body Made with View to Discover Transmitting Agent. H. W. Acton.—p. 262.
*Pathogenesis of Deficiency Disease. R. McCarrison.—p. 275.
Bacteriology of Prevailing Epidemic in Bombay; Technic of Isolating and Growing Microbe in Bulk. R. Row.—p. 356.
*Treatment of Various Types of Endameba Dysenterica Infection by Combined Hypodermic and Oral Administration of Emetin Hydrochlorid. W. MacAdam.—p. 363.
Enteromonas Found in Human Intestinal Contents. G. C. Chatterjee. —p. 380.
*Production of an Influenza Vaccine. W. F. Harvey, H. C. Brown and J. Cunningham.—p. 383.
Endolimax Williamsi: Ameboid Form of Iodin Cysts. S. L. Brug. —p. 386.
*Studies in Ankylostomiasis. G. R. Wrench.—p. 393.
Bacteriologic Examination of Accessory Sinuses of Nose, Middle Ear, and Cerebrospinal Fluid in Cases of Influenza. E. D. W. Greig and G. C. Maitra.—p. 399.
*Preparation of Two Mediums for Growth of B. Influenza (Pfeiffer). G. L. Liston.—p. 418.

Anaphylactic Reactions in Course of Antirabic Treatment.—It is suggested by Cornwall that the local cutaneous and subcutaneous tissue reaction, the general dermal reaction, the general systemic reaction in the form of malaise and a reaction of the central nervous system in the form of temporary heart failure, occipital pain and nausea, occurring in the course of antirabic treatment are anaphylactic in nature. The antigen may be either normal brain matter or the products of metabolism of the rabies organism. Attempts to reproduce the central nervous system reaction in rabbits have so far been unsuccessful. Similarly, attempts to demonstrate a state of shock in sheep were without success. In untreated sheep intravenous injections of fixed virus brain extracts caused greater disturbance of the cardiovascular and respiratory centers than extracts of normal brain substance. These disturbances are not invariable whether fixed virus brain extracts or normal brain extracts are injected.

Pharmacodynamics of Quinin.—An experimental investigation made by McCarrison and Cornwall showed that the usual salts of quinin employed for intravenous medication are dangerous to life if given in large doses. The respiratory center is more gravely affected than the cardiac center. The acid hydrobromid is less noxious in its action on the respiratory center than the hydrochlorids of quinin. All the salts of quinin employed caused a profound fall of blood pressure not accompanied by a cessation, or even much diminution in the strength of the heart beat, except in two instances in which the respiratory center failed. The fall of blood pressure is usually recovered from in four or five minutes, but the period of cardiovascular depression may last for a considerable time. The dilution of the quinin with a large volume of salt solution does not compensate for its depressor action: nor does dilution with 6 per cent. gum arabic solution. The authors advise that intravenous injections of quinin should be given very slowly. They should be administered with great caution when the general condition of the patient is bad and when the blood pressure is low. All such injections should be controlled by blood pressure observations. Epinephrin, given intravenously with the quinin, is able to counteract, to some extent, the immediate and dangerous fall of pressure which may result from quinin alone. The intravenous employment of quinin should be reserved for cases of special urgency, and where possible the hydrobromid, in doses not exceeding 15 grains, should be used, and the injection combined with not more than 0.3 c.c. of the commercial solution of epinephrin in all cases where the blood pressure is less than 100 mm. of mercury. These experiments indicate that quinin is a much more poisonous drug than is generally supposed, and that the massive dosage so generally employed today cannot fail to depress, by whatever route administered, the cardiovascular and respiratory systems, and to retard the development of that natural immunity on which the cure of the disease is dependent.

Transmitting Agent of Bagdad Boils.—From the fact that the Bagdad boil is only found on exposed parts of the body, Acton is led to believe that the transmitting agent is some blood sucking diptera. The distribution of these Bagdad sores corresponds more closely with sandfly bites than with the bites of other blood sucking diptera.

Pathogenesis of Deficiency Disease.—After having made a very detailed study of this subject, the results of which are given in full, McCarrison is convinced that the absence of certain accessory food factors from the dietary—improperly termed "antineuritic"—leads not only to functional and degenerative changes in the central nervous system but to similar changes in every organ and tissue of the body. The morbid state to which their absence gives rise is not a neuritis. The symptom-complex resulting from the absence of these substances, is due (*a*) to chronic inanition, (*b*) to derangement of function of the organs of digestion and assimilation, (*c*) to disordered endocrine function especially of the suprarenal glands, and (*d*) to malnutrition of the nervous system. Certain organs undergo hypertrophy; others atrophy. Those which hypertrophy are the suprarenals. Those which atrophy, and in the order of severity named, are the thymus, the testicles, the spleen, the ovaries, the pancreas, the heart, the liver, the kidneys, the stomach, the thyroid and the brain. The pituitary gland showed a slight tendency to enlargement in adult male pigeons only. Gastric, intestinal, biliary and pancreatic disorders are important consequences of a dietary too rich in starch and too poor in vitamins; this state is due to the imperfect metabolism of carbohydrates and to acid fermentation of starches in the intestinal tract. Clinically, it is evidenced in pigeons by progressive slowing and deepening of the respirations. Great atrophy of muscular tissue results from deficiency of antineuritic vitamins; it is due, in part, to the disturbance of carbohydrate metabolism in consequence of disordered endocrine function, in part to the action of the suprarenals in supplying blood to the vegetative organs of the body at the expense of the muscles. The central nervous system atrophies little: the paralytic symptoms are due mainly to impaired functional activity of nerve cells; much more rarely to their degeneration. It is thought that because of their atrophy out of all proportion to other tissues the thymus, the testicles, the ovaries and the spleen provide a reserve of accessory food factors for use on occasions of metabolic stress. This reserve, however, is rapidly exhausted. The bones are thinned and there is a loss of bone marrow. The red cells of the blood are diminished by about 25 per cent. The whole morbid process is believed to be the result of nuclear starvation of all tissue cells. Finally, although deficiency of certain accessory food factors is the essential etiologic factor in the genesis of beriberi, it is held that infectious and parasitic agencies may often be important causes determining the onset of symptoms. Vitaminic deficiency renders the body very liable to be overrun by the rank growth of bacteria. It is probable that varying metabolic disturbances may determine the character of these growths.

Treatment of Endameba Dysenterica Infection by Emetin Hydrochlorid.—Eighty cases of *Endameba dysenterica* infection have been treated by MacAdam by a course of 18 grains of emetin, spread over twelve days, 1 grain being given hypodermically and ½ grain orally each day. The endameba of both primary dysenteric attacks and of acute relapses disappeared on the average in one and one-half days; while the average period of persistence of infection in cyst carriers was two and one-half days. The symptoms in the acute cases rapidly disappeared also, their average duration being four days. Eighteen of the eighty cases showed signs of persistent infection during the laboratory examinations. Eleven of these relapses occurred among thirty-six chronic dysenteries. Thirteen of the eighteen relapses occurred within four weeks of the completion of treatment. There was no difference between the time of relapse of acute cases

and of cyst carriers. These results show a considerable improvement on those obtained after a course of emetin by injection alone; while they compare favorably with the results obtained by various workers after full courses of emetin bismuth iodid.

Production of Influenza Vaccine.—Harvey and his associates found that the bacillus of influenza in symbiosis with either *Pneumococcus* or *Streptococcus pyogenes* grows much more luxuriantly than in unmixed culture. The fact of a culture's being mixed is no bar to its use for vaccine purposes, when the mixture contains the components required. The mixed organisms are easily separated by plate methods. The symbiotic method seems to afford a simpler method of obtaining a good yield than the preparation of a complicated medium.

Value of Drugs Used in Treatment of Ankylostomiasis.—The drugs ordinarily used in the treatment of ankylostomiasis were investigated by Wrench and his observations lead him to conclude that the "cures" of ankylostomiasis, so frequently reported and in such large numbers, are not justified in the name, if cure means freedom of the stools from ova. Research is necessary to determine and standardize what is meant by a cure, and then to discover, if possible, a means of cure which is practicable for present purposes. Chenopodium oil is a dangerous drug. In 151 treatments there were thirty-two instances of vomiting, many cases of giddiness and occasionally slight collapse. On nine occasions two capsules only could be given as a treatment and on one occasion one capsule only could be given. Manson's mixture failed to "cure" a single case. Thymol, Wrench says, is superior to Manson's mixture, and inferior to chenopodium oil. As a means of sterilization, thymol is unreliable. The following drugs were also tested in from five to ten cases each: methylene blue, embelia ribes, veronia anthelmintica, butea seeds, various bitters, camphor in combination with menthol and thymol, turpentine, clove oil, peppermint oil, and copaiba. None of these drugs, except turpentine, effected a cure. Turpentine, given in 20 minim doses, three times a day, to seven patients for ten days, "cured" one patient.

Culture Mediums for Growth of B. Influenzae (Pfeiffer).—The two mediums described by Liston were prepared by his assistants, Soparkar and Gore. One medium consists of ordinary nutriment agar mixed with a preparation of human blood. The other medium is almost identical with Mathews's medium.

Bulletin de l'Académie de Médecine, Paris

Jan. 20, 1920, **83**, No. 3

*Lethargic Encephalitis. C. Achard.—p. 67; Idem. Combemale and E. Duhot.—p. 71.
*Comparative Wassermann Tests. C. Simon.—p. 73.
Trachoma at Marseilles. Auharet.—p. 75.
*Poisonous Musbroom. A. Sartory.—p. 76.

Lethargic Encephalitis.—Summarized in Paris Letter, p. 748.

Comparative Wassermann Test in Blood and Urine.—Simon applied the Bordet-Wassermann test to the blood serum and the urine of 166 syphilitics and 35 healthy persons. The reaction was parallel in both blood and urine in 53 per cent., and it was positive in the urine and negative in the blood in 15 cases; positive in the blood and negative in the urine in 62 cases. The positive reaction in the urine was obtained in larger proportions of cases the longer the interval since infection. It seems rational, he says, that treatment should be continued until the reaction is negative in the urine as well as in the blood and spinal fluid. The findings were constantly negative in the healthy controls except that the urine of one man of 70 gave a positive reaction while the blood serum was negative.

Poisonous Mushrooms.—Sartory warns of the extremely poisonous nature of *Tricholoma tigrinum Sch.*, and describes the features of the poisoning therefrom, and means to identify this mushroom. It is particularly dangerous on account of its close resemblance to the edible terreum groups.

Bulletin Médical, Paris

Jan. 21, 1920, **34**, No. 4

*Teaching of Dermatology at Paris. A. J. L. Brocq.—p. 55.
*Anaphylaxis from Pancreas Insufficiency. M. Nathan.—p. 59.

Teaching of Skin and Venereal Diseases at Paris.—Brocq comments on the danger that either dermatology or venerology will predominate, to the practical exclusion of the other, when there is only one chair for both, as is the case at Paris. He mentions Fournier's incumbency as an example.

Anaphylaxis from Pancreas Insufficiency.—Nathan cites Lesné's experimental research which demonstrated that egg albumin injected into a sensitized animal induced anaphylaxis even after it had been digested with pepsin. But when the egg albumin had been subjected to the action of pancreatic juice, there were no signs of anaphylaxis. This experimental experience has been duplicated in a clinical case, Nathan here reports, in which a boy of 8 had always had diarrhea, rash and eruptions after eating eggs or any dish made with eggs. Examination of the stools showed defective functioning of the pancreas, and the child was given 40 cg. of pancreas extract daily, and dishes made with eggs and gradually whole eggs were added to his diet, with no further signs of intolerance. Whenever the pancreas extract was dropped, the symptoms of anaphylaxis reappeared, but under pancreas extract treatment conditions have been kept normal during the two years to date. Lesné has had a similar experience, the child finally outgrowing the tendency after a few months and not requiring the pancreas treatment further. When the stools show incomplete digestion of muscle fibers, this may give the clue to successful treatment of a certain class of cases of alimentary anaphylaxis.

Jan. 24, 1920, **34**, No. 5

*Lethargic Encephalitis. D. Denéchau.—p. 69.

Lethargic Encephalitis.—Denéchau remarks, in commenting on the four cases in his own practice, that the mortality was 37 per cent. in the twenty-nine cases reported at the Société médicale des hôpitaux. Only nine survived of the eighteen cases followed to date, and four were left with contractures or uncertain gait, ptosis or persisting somnolency. Only five seemed to have recovered completely by the third or fourth month. One died in his own four cases, and one, ten months later, still has paralysis of the two internal rectus muscles, tremor, and cerebellar disturbances in gait, etc. The others, seen last at the fifth month, still displayed numerous sequelae. Dieting and hygiene are the main reliance, but Netter and Lhermitte have reported good results from hexamethylenamin by the vein and by the mouth, with repeated lumbar puncture aiming to draw the drug into the subarachnoid spaces.

Journal de Médecine de Bordeaux

Jan. 25, 1920, **91**, No. 2

*Disability after Injury of the Skull. H. Verger.—p. 31.
*Tardy Tetanus. H. L. Rocher.—p. 37.
*Sudden Death after Fracture of Long Bone. R. Villar.—p. 43.
Clinical Pictures with Trauma of the Brain. H. Duret.—p. 52.

Disability After Injury of the Skull.—Verger enumerates the different forms of permanent disability after trauma of the brain, and their evaluation from the pension standpoint. When the disturbances are vague and are of the concussion type or traumatic neuroses, the majority recover in time. Preexisting syphilis, atheroma, or alcoholism, reducing the resisting powers and providing points of lesser resistance, form another group in which the evaluation of the disability is more difficult. The courts here go farther than medicine can follow. They assume that the traumatism must be incriminated for the disability, as when paretic dementia develops in a syphilitic after an accident, if the medicolegal experts are unable to affirm positively that the paretic dementia would have developed without the trauma. The medicolegal expert thus has his task reversed: Instead of establishing the presumption between cause and effect, he has to seek for proof to the contrary.

Tardy Tetanus.—In Rocher's seven cases the tetanus developed from seventeen to sixty-four days after the wound and

two injections of antiserum. They teach that preventive antiserotherapy should be kept up until all the scraps of foreign bodies have been removed.

Sudden Death After Fractures.—Villar excludes fat embolism in his three cases of death after fracture of long bones, as fat embolism is so rare. Even with the extensive fractures of the war and curetting the marrow cavity, fat embolism very seldom occurred. It develops also in the first few days, and death does not follow until several hours after the first symptoms. The robust men in his cases died in from five to fifteen minutes after the fractured right tibia and fibula had been examined and the callus palpated, or the man had been sitting up in bed to wash his face. Embolism from thrombosis would explain the fatal phenomena. They warn that thrombosis should be suspected in all cases of fracture, especially when the edema persists, and the possibility of embolism therefrom should guide the management of the case.

Journal de Radiologie et d'Electrologie, Paris

December, 1919, **3**, No. 11

*Technic for Radium Treatment. C. Regaud and R. Ferroux.—p. 481.
*Radium Emanations in Ampules. S. Laborde.—p. 501.
*Roentgen-Ray Treatment of Pituitary Tumors. M. Jaugeas.—p. 508.
Practical Notes and New Instruments. Strohl and others.—pp. 516-519.

Technic and Record of Radium Treatment.—Regaud and Ferroux are in charge of the *Institut du Radium* at Paris which lends out radium tubes, and they emphasize the importance of a uniform style of record for all radium work. The quantity or dose is the product of the intensity multiplied by the time, but greater precision is realized when the dose (with radium emanations) is calculated from the millicuries lost during the application, that is, the difference between the millicurie power of the tube before and after. With radium itself, by the loss in emanations, that is, the emanations destroyed in the course of an hour (calculated by multiplying the weight in milligrams by the constant 0.00751). The filter, the area exposed, the distance, etc., must be recorded separately.

Condensed Radium Emanations.—Laborde is in charge of the radium service at the Hôpital Villemin, and he reports his experience with radium emanations in closed ampules. Of course they cannot compete with radium itself, but they have many advantages, especially that they can be supplied in any shape to fit any lesion, as in the form of a number of fine needles to be driven into a deep neoplasm. He has found that the annoying feature of the progressive loss of energy when emanations were used was often counterbalanced by the lesser risk from loss of the capsule.

Radiotherapy of Pituitary Tumors.—The death of Jaugeas was reported recently. He said in this article that the action of the roentgen rays can be estimated with greater precision in the effect on a tumor in the hypophysis region than in any other field of application of deep irradiation. The changes in the visual field parallel the benefit otherwise, and form a gage for the efficacy of the treatment. He describes a case of tumor in the pituitary with acromegaly in a woman of 25. The history of the case is shown by the charts of the field of vision at one and two year intervals, the visual acuteness finally approximating normal. Similar findings in another case rayed in 1914 show that the benefit has been permanent, so that the term "cure" is not out of place applied to such cases. The visual acuity is even better now, five years later, than when the patient was first dismissed. The acromegaly has not retrogressed, but it was arrested. Roentgen-ray treatment in these cases has to be applied early, when symptoms of hyperactivity become manifest, before the elements of the gland are destroyed. The raying must be cautious, to refrain from destroying the functional elements, as otherwise symptoms of deficiency would follow, analogous to experiences with the thyroid. The pulse in exophthalmic goiter and the visual field with pituitary tumors should be the guide to treatment. It should be suspended when these findings enter a stationary phase. It can be resumed if headache and impairment of vision indicate a new *poussée évolutive*. The exposures should thus be given and suspended according to the individual findings from week to week, without any arbitrary regularity.

Lyon Médical

Jan. 25, 1920, **129**, No. 2

*Dissociated Retention of Elements of the Bile. L. Bouchut and Lamy.—p. 53.
*Radioscopy in Diagnosis of Tuberculosis. A. Dumas and A. Corone.—p. 61.

Dissociated Retention of Bile Elements.—Bouchut and Lamy explain the progressive jaundice in the case they report as the result of injury of the liver cell itself. The urine abounded in bile pigments but no bile salts were found in it, while the stools were clay colored and there was nothing at the time or in the history to suggest gallstones. Hemolytic jaundice could also be excluded, but there were indications of alcoholism, and necropsy confirmed the liver disease, revealing cirrhosis of the hypertrophic, alcoholic type in the woman of 47, a cook. They describe how the conception of dissociated elimination of the elements of the bile throws light on a number of clinical pictures in which jaundice is a prominent symptom. Nothing but defective secretion or excretion in the liver itself will explain dissociated retention. Lyon and others have confirmed this experimentally with phosphorus, and with injection of cytotoxins acting on the liver. By thus electively injuring the liver cells, they induced dissociated retention just as it is observed in the clinic.

Radioscopy in Tuberculosis.—Dumas and Corone summarize their conclusions from roentgen-ray examination of 2,000 men suspected of pleuropulmonary tuberculosis at Saloniki in 1918. They emphasize that there is no pathognomonic picture, and that the greatest value of radioscopy is when the findings are negative. In the established cases, it yields important information as to the extent, evolution, etc., and in dubious cases may reveal a lesion when auscultation is negative.

Paris Médical

Jan. 10, 1920, **10**, No. 2

*Rating Disability. R. Van Roy.—p. 37.
*Catarrhal Jaundice. E. Chabrol and J. Dumont.—p. 41.
*Urticaria from Emetin. R. Savignac and A. Alivisatos.—p. 43.
*Hemoglobin Reactions. L. Boyer.—p. 47.

Rating Disability.—Van Roy discusses the standards adopted by the French government and Belgium, and shows certain inconsistencies in the figures for the fingers and metacarpus.

Familial Epidemic of Catarrhal Jaundice.—The three cases in the family indicated an unmistakable infectious origin. A few spirochetes were found in the urine of one child but not in the others. The spirochetes did not show the characteristics of the icterohemorrhagiae type, and serologic tests were negative, as also with all other micro-organisms which have been incriminated in the etiology of infectious jaundice.

Emetin Urticaria.—Savignac found emetin in the urine up to three months after the last injection, and hence thinks there can be no doubt that it was responsible for the urticaria which developed fifteen days after some of the later injections, subsiding as they were suspended and returning on resumption of the drug. The urticaria at first was in the region of the injections but later became symmetrical and finally general. The last attack of urticaria occurred five months after the close of the emetin course (1919) and there has been no recurrence since. During the course there was also an attack of neuritis in one arm, but the chronic dysentery seemed to be finally cured by the treatment which had been continued at intervals for nearly a year.

Hemoglobin Reactions.—Boyer describes a number of reactions with hemoglobin and peroxidases with various stains, and commends particularly for detection of blood a mixture of diamino or triaminotriphenylmethane, sodium acetate, acetic acid, and zinc. The reaction is based on the peroxidating faculty of oxyhemoglobin or its derivatives, and avoids the errors with other reactions of the kind.

Presse Médicale, Paris

Jan. 14, 1920, **28**, No. 4

*Treatment of Puerperal Infection. F. M. Cadenat.—p. **33**.
*Tuberculosis of the Spine in Adults. J. Doche.—p. 35.

Vaginal Hysterectomy for Puerperal Infection.—Cadenat asserts that too many women die from puerperal infection. Aside from the fulminating fatal cases, there are many, he declares, that might be saved by early vaginal hysterectomy, and he describes with illustrations the exact technic for this, saying that it takes only from three to fifteen minutes in experienced hands; avoids contamination of the peritoneum, and insures ample drainage. It should be done whenever there is no appreciable improvement in twenty-four hours after clearing out the uterus with the curet, the temperature keeping high, with chills, and the pulse fast. The fear of injuring the bladder should not deter from the operation. It is better to have the patient live, even with a vesicovaginal fistula, than die because we are too timid to remove the focus of the infection.

Pott's Disease in Adults.—Doche found no tenderness on pressure in about 33 per cent. of thirty-one cases of caries of vertebrae in the dorsal region, and in 25 per cent. of 102 in the lumbar region in his 140 cases of Pott's disease in soldiers. Many of the men had been treated for months and even years for neuralgias of different kinds, gastralgia, kidney and liver colic, sciatica and torticollis, before any one had thought of incriminating the spine. Lateral curvature was evident in thirty of the 140 cases, and two thirds of the men were unable to bend the trunk forward or sideways, but not one of the total number was able to stretch his spine; hyperextension was absolutely blocked. All were given the regular helio-marine course of treatment at the sanatorium in his charge at Arcachon, and all without fistulas recovered, while the mortality was high among the men with infected fistulas. A tragic feature was that, among the forty-three with fistulas, in some they had been deliberately induced by opening up a closed and cold abscess in the iliac or lumbar region. The strain and privations of the war had reduced the vitality, but notwithstanding this the results of treatment were uniformly good when there was not some grave tuberculous lesion elsewhere or a spontaneous or operative fistula. Immobilization was with a cast in two parts. The front part was removed for the general sun bath; then it was replaced and the patient turned over, and the posterior part of the cast removed for exposure to the sun anew. Thus the sun baths were total while the immobilization was complete throughout. The neuralgic pains were not modified by the heliotherapy; and sometimes they compelled extension. All were kept reclining until six or eight months had elapsed since the last clinical symptoms. The abscesses were punctured; spontaneous resorption was very rare. In the cases with infected fistula, ample drainage and irrigation by the Carrel-Dakin method seem to offer a promise of better results, but his experience with this is too recent for a decisive judgement.

Progrès Médical, Paris

Jan. 4, 1920, **35**, No. 1

*Tumors in Greater Omentum. A. Aimes.—p. 1.
Syphilitic Disease of the Stomach. M. L. Ramond.—p. **7**.

Jan. 31, 1920, **35**, No. 5

Treatment of Epidemic Meningitis. Aynaud.—p. 45.
Test for Sulphur in Urine. Rabaut and Stillmunkés.—p. 50.

Tumors in the Omentum.—Aimes classifies thirteen varieties of tumors found in the greater omentum, citing cases from international literature, and discussing the symptoms. The malignant tumors are large and very vascular by the time they reach the surgeon, and 25 per cent. of the patients succumbed to the operation, and only two lived for over a year. All forms of omental tumors demand prompt operative removal, he reiterates.

Revue de Médecine, Paris

September-October, 1919, **36**, No. 5

*Generalized Muscular Atrophy After Concussion. A. Leri, J. Froment and Mahar.—p. 481.
*Tender Point in Neck with Abdominal Disease. A. Cade and G. Parturier.—p. 495.
*Malignant Slow Endocarditis. R. Debré.—p. 508. Conc'n.
*Maternal Serotherapy in Hemophilia. J. Chalier.—p. 522.
*Sequence of Psychopathologic Phenomena. R. Benon.—p. 531.

Atrophy of Muscle from Concussion.—The shell concussion without direct injury was followed by complete muscular impotency for three months, and muscular atrophy developed and became generalized, but it has gradually receded in the course of the years.

Tender Points in Neck with Abdominal Disease.—Cade and Parturier report experiences which seem to show that the point in the neck where several nerves are accessible to pressure becomes tender when there is some painful pathologic condition in the upper region of the abdomen, on that side. This tender point on the right side coincided with painful disease in liver or gallbladder, especially from gallstones. When the tender point was exclusively or predominantly on the left side, it coincided with painful disease in the stomach or duodenum. In some of the cases reported, the organic lesion was an ulcer or cancer or cicatricial stenosis with fibrous bands. The tender points in the neck may be found with neuralgia or other nervous affections, but in these conditions the tenderness is bilateral and alike on both sides, and it subsides under atropin. The absence of the tender point does not exclude organic disease, as the causal lesion may be in a period of remission, even with a gastric cancer. The point in question is at the base of the neck, between the two heads of the sternocleidomastoid muscle. Several nerves pass here, and the cervical ganglion is anchored in the depths. Among the twenty-nine persons tested, the point was never tender with simple ptosis or simple enlargement of any organ.

Slow Endocarditis.—Debré here concludes his long report of his study of malignant endocarditis running a protracted course. The streptococcus in the blood settles on an already damaged endocardium, and the third phase of the disease is characterized by macroscopic and microscopic emboli which cause various symptoms in different organs. No treatment to date has displayed any durable efficacy, drugs, vaccines, etc. The only case of a cure on record was reported by Hemsted in the *Lancet*, Jan. 4, 1913. He combined an autovaccine with an antiserum obtained from horses immunized with the patient's own streptococci. This seems to be the only line which offers any chance of success. Debré's own experiences with it were failures, but better results may be anticipated when treatment is begun in an earlier stage.

Maternal Serotherapy in Hemophilia.—Chalier proclaims that serum from the mother's blood is the most effectual treatment known to date for congenital hemophilia. He applied it to a youth of 17 who from birth had been subject to hemophilia, and it was growing constantly worse. The mother's serum caused the son's blood to coagulate normally in the test tube, and he was given eleven intravenous injections of from 25 to 40 c.c. of the mother's serum in the course of eleven months. There was never any local or general reaction, and the young man's condition is now more favorable than at any time in his life. Chalier declares that this success encourages systematic infusion of maternal serum every tenth or fifteenth day, kept up for two years at least. In the present case the treatment was not as regular as he wished, owing to the distance from the home. The mother came to him to have the blood drawn, and the next day he took the serum to the patient for injection.

Significance of Sequence of Psychopathologic Phenomena.—Benon reports two cases in which the patients' introspection aided in the clinical and practical study of the pathologic condition, showing the succession and connection between the psychopathologic phenomena.

Schweizerische medizinische Wochenschrift, Basel

Jan. 8, 1920, **50**, No. 2

What Are Vitamins? A. Tschirch.—p. 21.
*Prognosis with Mammary Cancer. H. Iselin.—p. 22.
*Etiology of Actinomycosis. W. Odermatt.—p. 26.
*Sodium Chlorid Diuresis. S. Pollag.—p. 29.
*Auto-Urine Test for Tuberculosis. Debré and Paraf.—p. 32; Idem. Wildholz.—p. 32.

Pathologic Anatomic Findings in Prognosis of Mammary Cancer.—Iselin reviews the literature on the ultimate fate of breast cancers classified according to their histologic structure, and discusses the conflicting presumptions as to the prognosis based on the pathologic anatomic findings. In his own experience with recent reexamination of 102 patients with mammary cancer given both operative and roentgen-ray treatment, all but 4 of the 27 patients with scirrhous cancer had died within five years, while of the 56 with simple hard cancer 33 per cent. were living after five years and more, and 10 per cent. were alive from ten to fifteen years later. Of the 13 with medullary cancer, 66 per cent. survived for from five to sixteen years. Scirrhous cancers grow slowly and cause so little disturbance that they do not reach the surgeon until far advanced, while with the other forms of cancer the interval between detection and operation was only from a few weeks to three months at longest. The small cells of the scirrhus spread in all directions almost continuously, and thus involve the regions around more readily than other cancers. In all the cases in which there was long survival, the cells had been large, but in a few of the early fatal cases the cells had also been large, so that this is not the only factor in the prognosis. The fact that so many of the irradiated—even of those with involvement of the farthest glands in the supraclavicular fossa—survived for longer intervals is impressive testimony to the value of postoperative irradiation. Even without a radical operation or roentgen-ray treatment he has had survivals up to nine years. In one case the medullary cancer was excised, but the glands were involved to such a distance that no attempt was made to clear out the supraclavicular fossa, and no roentgen exposures were made; but the woman has been in perfect health during the thirteen years since. On the other hand, he has seen cases in which as late as nine years after both excision and roentgen exposures, internal metastasis and recurrence developed.

Actinomycosis.—Odermatt has met with a number of cases of actinomycosis of the mouth which had been mistaken for a dental affection; teeth had been drawn, etc., to no avail. Sleeping on straw or hay is a frequent mode of contamination, although the lesions may not become manifest for months up to two years afterward. He describes eight cases in soldiers in which this etiology was evident; in one case the incubation had been eight months long. Schlegel found that the dry spores germinated even after 238 hours of exposure to sunlight. The neck, jaws and the cheek are the most frequent localizations of the lesions, and toothache and swelling are among the first symptoms.

Salt Diuresis.—Pollag recalls that sodium chlorid has long been known to have a powerful diuretic action, and he has been using it systematically for this purpose as a last resort in advanced nephritis. The mechanism, he explains, is like that with ingestion of a single large amount of water in oliguria. It induces such a freshet that the kidneys are flushed open and may stay open. We have no means of knowing, however, which cases will respond favorably to this and which will only be aggravated by it. The same is true of the salt treatment. It is a last resource in desperate cases, seeking to modify conditions with a substance that is not alien to the organism, and which may induce the resorption of edema from heart disease. Four cases showing striking benefit are reported; all the patients had been for some time on a salt-free diet. In one case he believes that it saved the woman's life, transforming a menacing subacute nephritis into the second stage of chronic nephritis, with good concentration and compensation. The woman had taken 15 gm. salt in one day, and the diuresis increased from 250 or 600 to 1,500 c.c., and then to more than 3,750 c.c., for a month, while the edema subsided and the weight dropped by 15 kg. Pollag adds that when no benefit has been realized by abstention from salt, giving a single large amount of salt during one day or three days during the week may jolt conditions back to approximately normal. There were never any untoward effects in his cases, such as have been observed with the "water freshet jolt" but of course such are theoretically liable to occur. No other treatment was being given at the time in his cases.

Urine Test for Tuberculosis.—Debré and Paraf criticize Wildbolz' article on this subject (summarized in these columns, Aug. 9, 1919, p. 456) and Wildbolz replies.

Gazzetta degli Ospedali e delle Cliniche, Milan

Nov. 6, 1919, **40**, No. 89

Pregnancy and the Statics of the Abdomen. M. Pavesi.—p. 963.

Nov. 9, 1919, **40**, No. 90

Endocrine Origin of Rhizomelic Spondylosis. G. Radice.—p. 974.

Policlinico, Rome

Dec. 21, 1919, **26**, No. 51

*Hemiplegia in Infant from Malaria. L. Spolverini.—p. 1507.
Atypical Forms of Typhoid. E. Mondolfo.—p. 1511. Conc'n.

Malarial Hemiplegia in Infant.—Spolverini comments on the rarity of malarial hemiplegia, even in adults, and reports a case in an infant in which only the blood findings gave the clue to the nature of the nervous disease. Under quinin the symptoms retrogressed in twenty-five days with merely slight limitation in the movement of one arm as the only trace left. Both parents had malaria at the time.

Riforma Medica, Naples

Nov. 8, 1919, **35**, No. 45

Gunshot Wound of Liver and Bile Ducts. D. Maragliano.—p. 970.
*Sugar Infusion. E. Zagari.—p. 972.
*Pathogenesis of Orbital Cysts. V. Cavara.—p. 978.
*Acetonuria from Fatigue. Azzo Azzi.—p. 981.
Cicatricial Stenosis of Larynx. E. Aievoli.—p. 984.

Infusion of Sugar Solution.—Zagari reproduces the ergograms and other records of a number of patients with postmalarial anemia, chlorosis or movable kidney, after subcutaneous injection of an isotonic solution of glucose. The record of the muscular exertion showed considerable increase after each injection and more after a series. There was usually a general and febrile reaction by the next day after the first injection but not after the others, and no other by-effects were noted. The output of urine increased after each injection and kept high for some days after suspension. The dose was from 500 to 700 c.c. of a solution of 47 gm. glucose with distilled water to 1,000 c.c. The improvement in energy and the diuresis that followed suggest the wisdom of substituting glucose for sodium chlorid in the so-called physiologic solutions, even when there is no special reason for dropping salt.

Orbital Cysts.—Cavara's case represents, he says, the first instance of a congenital orbitopalpebral cyst in which the entire eyeball was represented by the cyst.

Acetonuria from Fatigue.—Azzi found an average elimination of acetone bodies amounting to 0.0136 gm. in the twenty-four hours in a healthy man in the ordinary conditions of life. After becoming much fatigued, the amount increased to 0.9 and even 1.44 gm. and on repeated fatigue to 2.5 gm. The tests were made on himself during three weeks of mountain climbing. The ammonia content and the acidity of the urine varied irregularly, but the increase in the acetone output paralleled regularly the exertions inducing fatigue. The acetonuria persisted as long as the sensation of fatigue lasted, disappearing when he felt completely rested. The presence in the blood of the acetone bodies generated during the extra physical exertion is therefore probably one of the causes of the sensation of weariness.

Archivos Españoles de Pediatría, Madrid

November, 1919, **3**, No. 11

*Prophylaxis of Tuberculosis. Genaro Sisto.—p. 641.
Needed Hygienic-Sociologic Reforms. F. Criado Aguilar.—p. 651.
Dystrophy of the Teeth in Inherited Syphilis. J. González J. Meneses.—p. 662.
*Tardy Eruption in Scarlet Fever. J. Mut.—p. 666.

Prophylaxis of Tuberculosis.—This article was written for conditions in Argentina.

Tardy Eruption in Scarlet Fever.—In Mut's case all the symptoms of scarlet fever developed in the child of 4, but

not in their regular order. There was an interval of three weeks before the eruption appeared, and the typical sore throat appeared at the close of the clinical picture, the sore throat of the onset and a long gastro-intestinal phase rendering the diagnosis dubious.

Archivos Latino-Amer. de Pediatría, Buenos Aires

November-December, 1919, **13**, No. 6

*Meningeal Mask of Acute Nephritis. J. Bonaha.—p. 501.
*Infantilism. A. Carrau.—p. 505.
*Hydatid Cyst of Brain. Ponce de León.—p. 518.
*Little's Disease. R. Berro and W. Piaggio Garzón.—p. 524.
*Pericarditis in Typhoid. M. Ponce de León.—p. 530.
*Dystrophies with Inherited Syphilis. V. Zerbino.—p. 539.
*The Pneumococcus in Meningitis. J. Bonaba.—p. 546.
*Child Welfare Work in Argentina. M. Avila Méndez.—p. 550.
*Breast Milk Given Out at Milk Station. E. Gaing.—p. 569.

Meningeal Mask of Acute Nephritis.—Bonaba relates that two children were brought to the hospital on succeeding days with symptoms of meningitis, in a comatous condition. The disease had begun five days and fifteen days before, with headache, fever, and edema, and one had had convulsions the last night. The spinal fluid was normal, but the urine showed casts and other signs of nephritis. On restriction to milk both children rapidly recovered. This meningeal mask of the acute nephritis, and the coincidence of the two cases were striking features, as also the independent development of the nephritis.

Infantilism.—Carrau incriminates thyroid deficiency as responsible for the infantilism in one of the two cases he describes, and polyglandular deficiency in the other. Both of the patients, in body and mind, seem very much younger than their actual age (13 and 17). Thyroid treatment or polyglandular treatment seems the only hope in such cases.

Death After Spinal Puncture with Cerebral Cyst.—Ponce de León applied lumbar puncture to clear up a puzzling case of headache and vomiting in a boy of 11. The headaches had begun three months before, and the child preferred to lie down all the time. In the last six weeks the headache had grown worse, especially at night, and vomiting was frequent, and there was hypertonicity and also exaggeration of the reflexes. The region of the frontoparietal sutures was tender, and the legs were somewhat stiff but there was no paralysis. Lumbar puncture released 10 c.c. of normal fluid, but a few hours later the headache became intense and the child died, just twelve hours after the puncture. Morquio recently cited a very similar case in which he refrained from lumbar puncture, but the child died in this same sudden way.

Little's Disease.—The mind seems normal in the young child with congenital spastic paraplegia whose case is described by Berro and Piaggio. The child was born prematurely, and they ascribe the paraplegia to this fact, the pyramidal tracts not having had time to reach their full development.

Tuberculous Pericarditis in Typhoid.—Ponce de León witnessed the development of a primary tuberculous pericarditis which passed into a chronic phase in the girl of 10. It first appeared during convalescence from typhoid fever. The liver was also enlarged but there was no ascites, the clinical picture suggesting Hutinel's tuberculous cardiohepatic cirrhosis. Until ascites develops this may often escape detection.

Defective Development in Inherited Syphilis.—Zerbino gave specific treatment to an infant that seemed normal at birth and thrived on breast milk at first. Then it began to show digestive disturbance and lose weight. Under specific treatment it began to thrive again, even on artificial food. Even with negative Wassermann reaction, he says, the possibility of this *distrofia heredo-sifilitica* should be borne in mind whenever an infant does not seem to be thriving and yet no other cause for this can be discovered.

Meningitis with Pneumococcus Invasion.—Bonaba emphasizes the importance of disinfection of the nasopharynx in cases of meningitis, as otherwise the pneumococcus may invade the meninges as in the child described. Netter suggests adding a little antipneumococcus serum to the antimeningococcus serum. Twenty-two cases are on record in which the pneumococcus invaded the meninges in the course of meningococcus meningitis.

Child Welfare Work in Argentina.—Avila Méndez describes the organization, development and functioning of the various *institutos de puericultura* and the dispensaries for sick and for well babies.

Distribution of Bottled Breast Milk.—Gaing expatiates on the advantages of distribution of breast milk, saying that the *Instituto de Puericultura Güemes* thus distributed over 4,000 bottles of breast milk in 1917 and nearly 3,000 in 1918. This practice was begun in 1914, and long since demonstrated the transcendent importance of this supply of human milk from healthy women under medical supervision.

Prensa Médica Argentina, Buenos Aires

Dec. 20, 1919, **6**, No. 20

*Ascites with Inherited Syphilis. C. Bonorino Udaondo and J. E. Carulla.—p. 201.
*Tertiary Syphilis of the Liver. H. L. Carretti.—p. 203.
*Reinfection in Inherited Syphilis; Two Cases. J. Palacio.—p. 207.
Influenza in Orphan Asylum. R. Ortega Belgrano.—p. 210.
Arrhythmias. Pablo M. Barlaro.—p. 210. Cont'n.

Ascites with Inherited Syphilis.—Bonorino and Carulla report the case of a man of 39, a hard drinker, who developed venous cirrhosis of the liver with a stormy onset and rapid ascites. There were evidences of inherited syphilis and the ascitic fluid was milky. The duodenal contents seemed to be normal, confirming further the syphilitic nature of the cirrhosis, and it promptly subsided under specific treatment, as in a second case with similar alcoholism and inherited syphilis. The alcohol had reduced the resisting powers of the liver and allowed latent syphilis to flare up and settle here. These experiences, they remark in conclusion, emphasize the importance of giving specific treatment a trial at least in all cases of cirrhosis of the liver of the atrophic type. It has often failed to relieve, but in many cases the benefit amounted to a practical cure.

Tertiary Syphilis of the Liver.—Caretti enumerates the various clinical pictures which may be induced by tertiary manifestations of syphilis in the liver. The examples he cites show that the clinical pictures with either inherited or acquired syphilis may resemble those of all the known types of liver disease and also of disease of organs in the vicinity of the liver. Tentative specific treatment should be instituted, he insists, in every case of liver disturbance in a person with or suspected of inherited or acquired syphilis, and also in every case of cancer of the liver with an unfavorable prognosis even where there is nothing to suggest syphilis. Among the personal cases reported, is one in which a supposed hydatid cyst in the liver vanished under mercury and iodid; the man of 30 had certain stigmata of inherited syphilis.

Repertorio de Medicina y Cirugía, Bogota

December, 1919, **11**, No. 3

Intraspinal Treatment of Neurosyphilis; Four Cases. F. Lleras Acosta and J. del C. Acosta V.—p. 115.
*Low Blood Pressure in Typhoid. R. Sanmartín L.—p. 148.

Low Blood Pressure in Typhoid.—Sanmartin noted unusually low blood pressure in six recent cases of typhoid. Assuming that the suprarenals were suffering from the disease, he gave a 1:1,000 solution of epinephrin to supplement their deficient functioning. The output of urine decreased during the low pressure period but returned to normal after the epinephrin was given. Five drops every three hours were given at first and then 5 or 10 drops daily to keep the pressure normal. In one very grave case, 10 drops were given four times one day by the mouth, and later 40 drops were injected subcutaneously, with a maintenance dose of 30 drops by the mouth daily, and camphorated oil was injected daily after the seventh day as the blood pressure dropped dangerously when drugs were suspended. The blood pressure in this person was normally very low, which explained the peculiarly grave situation during the typhoid. All the six patients recovered; in the one case with a six day relapse the tenth day after defervescence, no effect on the blood pressure was apparent then from the epinephrin.

Revista Médica del Uruguay, Montevideo

December, 1919, 22, No. 12

*Radiologic Diagnosis of Appendicitis. R. Duque Estrada.—p. 827.
*Prophylactic Serotherapy for Parturients. H. Garcia San Martin. —p. 834.
*Epidemic and Tuberculous Meningitis. L. Morquio.—p. 847.

Roentgen-Ray Diagnosis of Appendicitis.—Duque Estrada has examined with the roentgen rays over 2,200 cases in which appendicitis was suspected, and relates that the findings were instructive except in the acute cases. Here they served merely to eliminate displacement of the cecum as responsible for the disturbances. The diagnosis of appendicitis cannot be reduced to an algebraic formula that pain at McBurney's point = appendicitis. Many other factors must be taken into account, including the shape, mobility, and time of evacuation of the appendix. The roentgen picture cleared up the diagnosis in 60 per cent. of his cases.

Prophylactic Antistreptococcus Serum for Parturients.—García has been making a practice of injecting from 20 to 40 c.c. of antistreptococcus serum in every woman entering the maternity in labor. A series of 100 parturients, all in exclusively physiologic conditions, and all injected with the antiserum, are compared with 100 absolutely analogous cases but without the antiserum. He was amazed to find that the number of cases of puerperal infection was nearly twice as large (twelve) in the injected series as in the noninjected (seven). He theorizes to explain this, suggesting that the antiserum may have depressed the resisting powers, or induced changes in the depths of the tissues like the urticaria and other superficial phenomena of serum sickness. We know that the antiserum modifies the blood picture, and the reaction may change from the early high leukocytosis to actual leukopenia. Cases have been recorded in which the leukocytosis of 13,640 at first dropped to 2,530 as symptoms of serum sickness developed. The preventive antiserum may thus reduce the organic resistance and actually promote infection, allowing it to get a firm foothold.

Epidemic and Tuberculous Meningitis.—Morquio has encountered twenty-three cases of tuberculous meningitis within little more than a month in children from 6 months to 15 years old, an unprecedented number in such a short period, but all had had influenza from a few days to two or three months before. Some had seemed to be entirely healthy previously. It is not always easy to differentiate it from epidemic meningitis; it may develop suddenly and run a fulminating course, fatal in a week. On the other hand, he has had cases of epidemic meningitis which dragged along with a subacute attenuated course with exacerbations and remissions like those of tuberculous meningitis. But, with the latter, lymphocytes predominate in the limpid cerebrospinal fluid, which contains from 100 to 500 elements. With epidemic meningitis, the cerebrospinal fluid may finally assume these characteristics, spontaneously or under the influence of the antiserum. This may lead to the assumption of tuberculous meningitis unless lumbar puncture has previously demonstrated the characteristics of the epidemic form. The differential diagnosis is exceptionally important in these cases, as all depends on the prompt use of the antimeningococcus serum. In a case described, the lumbar fluid at the sixth day of the sickness was turbid and contained innumerable formed elements, polynuclears predominating. Twenty-four hours later the fluid was clear, with only 192 elements, and lymphocytes predominated. This pointed to tuberculous meningitis, but on the basis of the first findings, he injected antimeningococcus serum and the cure was prompt and complete. In another case, likewise at the sixth day, the lumbar puncture fluid was purulent, with 79 per cent. polynuclears, but the next day the fluid was clear, with 480 elements, and 95 per cent. of them were lymphocytes. The meningococcus was cultivated from the fluid and a complete cure followed a single dose of 15 c.c. of the antiserum. He comments on the rapidity of the change in the cerebrospinal fluid, and the liability of mistaking for tuberculous meningitis cases of the epidemic form with clear fluid, with or without polynuclears, and the form with lymphocytosis and rapid recovery. The onset may have been typical, but by the time the physician sees the case, the clinical picture may have become modified into an abortive, atypical form, difficult to label.

Semana Médica, Buenos Aires

Nov. 13, 1919, 26, No. 46

*Surgery for Children. J. M. Jorge.—p. 585.
*Survival of Fetus after Loss of Pulsation in Cord. E. A. Boero.—p. 594.
Vaccine Treatment of Diphtheria. L. A. García.—p. 595.
*Sarcoma of Eyelid. Paulina Satanowsky.—p. 600.
*Mishaps with Induced Pneumothorax. A. Cetrángolo.—p. 603.
Surgery of Semilunar Cartilages. Artemio Zeno.—p. 609.
*Transient Unilateral Amaurosis. P. B. Ferro.—p. 611.

Surgery for Children.—Jorge remarks that it is distressing to hear the parents tell of the conflicting advice they have received from the different medical men they have consulted in regard to congenital defects or acquired deformities of their children. Physicians in general, he says, seem to have such vague and erroneous ideas in regard to them and they allow the deformity to progress, or exaggerate it by some mutilating operation, or merely advise taking the child to Europe or North America. His article is a plea for the founding of a chair of surgery for children and orthopedics at Buenos Aires.

Survival of Fetus when there is no Pulsation in the Cord.—Boero confirms Balard's recent statement that the blood stream may be passing through the prolapsed cord even when no pulsation is apparent in it. The fetal heart can be felt or heard beating on intra-uterine exploration or through the walls. The survival of the fetus can thus be determined, instead of taking its death for granted when the cord ceases to pulsate.

Sarcoma of Eyelid.—The melanic sarcoma had grown from the conjunctiva of the upper lid, and it was successfully removed by Cisnero's *electro-coagulo-ignicion* method, charring a circle of tissue all around the tumor and thus preventing hemorrhage. There were several papillomas on both the upper and lower lid, and all were burnt off by this same method. The sarcoma had developed to a size of 10 by 13 mm. in less than a month after it had first been discovered.

Mishaps with Induced Pneumothorax.—Cetrángolo agrees with Morelli in the assumption that instances of disagreeable by-effects with therapeutic pneumothorax are not always published. The physician should not be too timid nor overconfident in applying the procedure, relying too exclusively on the manometer. In his own extensive experience there have been several cases in which hemoptysis or subpleural and subcutaneous emphysema developed, four of secondary valve formation, and one of gas embolism. Faulty technic was responsible in this latter case; the young man had long been returning weekly for insufflation of 200 or 300 c.c. of oxygen and was doing finely, having gained 10 pounds in weight and the fever having disappeared. As Cetrángolo introduced the needle he felt the usual sensation of having traversed the pleura, but the manometer did not waver. Instead of waiting for the usual fluctuations, he began the insufflation. The patient complained at once of intense precordial pain and numbness in his arm. The needle was withdrawn, but the young man became unconscious after some convulsive movements, with complete arrest of the heart action and breathing. Under artificial respiration, injection of camphorated oil and inhalation of oxygen, he promptly revived but seemed dazed. This and facial paralysis persisted till night, and there was some vomiting. But all was normal the next day and he had no remembrance of the mishap. The lesson from it is that the gas must not be pumped in before the manometer gives the signal. If a little is allowed to enter, it should merely flow in gently. The whole storm passed over in three minutes; probably the fact that oxygen was the gas being used had a great influence on the promptness of the recovery.

The symptoms from secondary valve formation are those of progressive suffocation, an opening allowing the gas to pass, but a valve shutting off its return. Intense pain at the site of the insufflation and progressive dyspnea half an hour to two hours afterward compelled puncture to release the

gas, unless relief was obtained by a spontaneous subcutaneous emphysema. The pressure had increased from 0 to 20 in one of these cases, and the heart was much hampered. The symptoms kept recurring through three days in this case. In all of this group of four the pulmonary lesions were grave and of long standing; the traction on fibrous bands evidently tore out a piece from the parenchyma of the lung during coughing. Hemoptysis was due to pricking a blood vessel, or to activation of the focus in the other lung from traction by bands, or to inadequate compression. In one case described, severe hemoptysis followed insufflation of small amounts of gas, 300 or 500 c.c., but it ceased when the amount was increased, and marked improvement followed.

The Curtain Visual Phenomenon.—Ferro asks for the explanation of the phenomenon he describes which he has encountered in three men of about 50, two of them physicians and all apparently healthy, with normal urine and fundus findings. Once in a while vision seems to be gradually shut off in one eye, and then it gradually returns, the sensation resembling the lowering of the asbestos curtain in a theater.

Deutsche medizinische Wochenschrift, Berlin

Nov. 13, 1919, 45, No. 46

*The Origin of Tumors. H. Ribbert.—p. 1265.
*Trauma in Relation to Arteriosclerosis. E. Fraenkel.—p. 1268.
*Tuberculosis in Cold-Blooded Animals. F. Klopstock.—p. 1269.
Dinitrobenzene Poisoning. A. H. Hübner.—p. 1272.
*The Sachs-Georgi and the Meinicke Reactions. K. Merzweiler.—p. 1273.
The Rumpel-Leede Scarlet Fever Phenomenon. H. Müller, Jr.—p. 1275.
*Persistent Salvarsan Exanthems. Dora Fuchs.—p. 1276.
*Remarkable Case of Apparent Death. E. Rautenberg.—p. 1277.

The Origin of Tumors.—Ribbert regards the hereditary factors of all diseases as qualities common to mankind in general, and believes that they are transmitted from one generation to another in the same manner as normal qualities. We must not imagine, he says, that mankind was originally perfectly healthy, but rather assume that from the beginning man was more or less affected by countless anomalies, which, with certain interruptions or skips, manifest themselves in successive generations. We can establish the conditions under which tumors occur, which is as far as we can go with any so-called explanations in the realm of science. A tumor cannot be produced experimentally unless the predisposition thereto exists beforehand, and only so far as such predisposition exists; is it possible for any exciting cause to act on germ cells in such a manner as to cause a tumor to develop. If cancer is hereditary in certain cases, which, in the face of accumulated evidence, can scarcely be denied, it is probably hereditary in all cases. Cancer resulting from industrial contact with pitch, paraffin and arsenic indicates that an external agent sometimes plays a secondary rôle in the development of cancer. This type of cancer suggests also that carcinogenetic deviations from the normal structure of various epitheliums are much more widespread than is commonly supposed, and that by far the majority of the anomalous predisposing germ cells remain quiescent and never develop into cancer. Ordinarily, however, tumors develop "spontaneously" without exciting cause, that is, owing solely to the presence of anomalous predisposing germ cells.

Trauma in Relation to Arteriosclerosis.—While Fraenkel admits that there is no connection between general arteriosclerosis and previous trauma, and still holds fast to the view that sclerosis of the cranial arteries following head trauma is absolutely unproved, he does believe that the case he reports in detail furnishes strong evidence for the assumption that localized sclerosis of the abdominal aorta following trauma does occur. Fraenkel's patient, aged 29, was paralyzed from a gunshot wound of the spine. A year and a half afterward, necropsy revealed changes in the lower segment of the abdominal aorta, which he describes, and which experts declared to be typical arteriosclerosis, but the process was localized exclusively in the region which might easily have been affected by the trauma from the shell wound, a scrap of shell having been found in the lower dorsal cord.

Tuberculosis in Cold-Blooded Animals.—An extensive series of investigations leads Klopstock to the conviction that the tubercle bacillus of man and warm-blooded animals may change into the type found in cold-blooded animals.

The Sachs-Georgi and the Meinicke Reactions.—After examining over 700 serums by the Sachs-Georgi and 366 by the Meinicke method, Merzweiler reaches the conclusion that the Meinicke reaction in its present form cannot be considered an adequate substitute for the Wassermann test. The Meinicke reaction gives a larger percentage of unspecific positive results than the Wassermann reaction. However, Merzweiler found that the Sachs-Georgi reaction, as used in large laboratories where two or three series of tests with fresh extracts are made each week, may be regarded as a complete substitute for the Wassermann reaction. A weak point in the Sachs-Georgi reaction is that it is not reliable when applied to extracts five days old.

Persistent Localized Salvarsan Exanthems.—Fuchs reports the case of a patient who in 1915 was admitted to treatment with a beginning paralysis. Immediately after every neosalvarsan injection (0.45-0.6 gm.) a reddening of the bulbar and palpebral conjunctiva and lacrimation occurred, always in the right eye, disappearing in a few hours. In 1916 the patient was treated with 0.45 and 0.3 gm. of sodium salvarsan, respectively, without any conjunctival reaction. In 1917 there was no unfavorable reaction following repeated sodium salvarsan injections. After 0.45 gm. of neosalvarsan, however, the same conjunctival reaction occurred as in 1915. February 20, 1917, three minutes before the injection of 0.45 gm. of neosalvarsan, 0.5 c.c. of a 1:1,000 epinephrin solution was administered. The reaction of the conjunctiva appeared less promptly and less intensively, and passed off sooner. The patient was then given daily from 1 to 3 gm. of hexamethylenamin and no reaction occurred. February 25, with the same dose of neosalvarsan, the same observations were made as on February 20. September 2, before the injection of 0.45 gm. of neosalvarsan, 1 c.c. of a 1:1,000 epinephrin solution was administered. A very slight irritation of the conjunctiva followed. September 19, after the usual 0.45 gm. dose of neosalvarsan, given four minutes after the injection of 0.5 c.c. of a 1:1,000 epinephrin solution, there was no reaction, confirming the prophylactic importance of epinephrin in warding off side effects from arsphenamin treatment.

A Remarkable Case of Apparent Death.—Rautenberg reports the case of a nurse, aged 23, who, Oct. 27, 1919, took in one dose 1.7 gm. of morphin and 5 gm. of barbital. When found in the park next day, life was almost extinct. She was thought to have died in the ambulance. The indications of death were: rigidity; intense pallor; absence of reflexes, pulse, respiration and heart beat. Hot sealing wax gave no skin reaction. After fourteen hours in the morgue, an official desiring to identify the body, October 29, the coffin was opened. The cheeks had a purplish tinge, and the larynx moved slightly. There were no respiratory movements nor pulse beat, but muffled heart sounds were audible. At 10 a. m. the patient was taken to the hospital. Camphor and caffein were given subcutaneously and stomach lavage was done. A hot bath was given and a flesh brush was applied vigorously, with artificial respiration and oxygen inhalation. At 11 a. m. the pulse could be felt, and short, jerky inspiration was noted. Rigidity of the limbs abated. At 12 the pulse was above 50. October 30, the patient regained consciousness and made a few statements. There were no signs of pneumonia, but persistent leukopenia was present. How is it possible for a human being to live more than twenty-four hours without respiration and blood circulation? Rautenberg explains the strange condition as due to the effect of the narcotic and the cold which, acting together, brought about a paralysis of the vasomotor nerves and thus reduced the needs of the body to a minimum, the narcotic paralyzing the central nervous system, and the cold effecting the rigid paralysis of the organs. He thinks the cold may have prevented rapid resorption of the alkaloid.

The condition was similar to that of hibernation of animals, and this fact tided the organism past the danger of pneumonia.

Deutsche Zeitschrift für Chirurgie, Leipzig

May, 1919, **149**, No. 5-6

*The Loose Bodies with Arthritis Deformans. Lucia Hahn.—p. 289.
*Treatment of Pseudarthrosis. H. E. Brunzel.—p. 394.
*Incarcerated Pectineal Hernia. W. Lehmann.—p. 409.
*Spastic Ileus. H. F. Brunzel.—p. 414.
*Salivary Fistula. H. Weitz.—p. 419.

Loose Bodies in Joints.—Hahn analyzes the findings in knee or elbow in eight cases of deforming arthritis and in a number of other joint cases. Her findings confirm the two modes of origin of the loose bodies with deforming arthritis, from a nucleus of cartilage, or of spongy bone tissue. She states that they were always multiple, while the traumatic loose bodies are single.

Treatment of Pseudarthrosis.—Brunzel regards direct injection of tincture of iodin as the most effectual means to induce fibrinous inflammation, and thus accelerate the healing of pseudarthrosis. In his experience with it he injected up to 20 c.c. of the 5 per cent. tincture of iodin (diluted with an equal amount of 96 per cent. alcohol), distributing the fluid throughout the area, depositing some under the periosteum at each end of the pseudarthrosis. In stimulating the healing of fractures and pseudarthrosis which are tardy in consolidating, he has found obstructive hyperemia very useful, but he restricts it exclusively to the site of the fracture. He accomplishes this by applying a close fitting plaster cast with a window over the lesion. The tissues swell up in this window and a localized passive hyperemia results, which he thinks aided materially in hastening the healing. This passive hyperemia is under constant control, the "window tumor" increasing or subsiding as the leg is used, or is raised. This alternation of passive and active hyperemia through the region seemed to be an important factor in the prompt healing in the four cases described. The method did not display the same efficacy when applied to the arms, or to gonorrheal arthritis. The successes were with simple fracture or pseudarthrosis in the legs.

Pectineal Crural Hernia.—Lehmann adds another to the comparatively few cases on record of successful operation for an incarcerated Cloquet hernia.

Laparotomy for Spastic Ileus.—Brunzel's patient was a nurse of 30, of a nervous and hysteric temperament, with repeatedly recurring attacks of ileus, one finally so severe that the abdomen was opened. Nothing pathologic was found, but she supposed that a strangulated loop had been corrected, and she has been free from all disturbances during the five months since the laparotomy to date.

Treatment of Parotid Fistulas.—Weitz reports a case in which he applied Leriche's method of treating chronic salivary fistulas, by resecting the auriculotemporal nerve which presides over the secretion of saliva. In Weitz' case the fistula had persisted for twenty years. The secretion from the fistula stopped at once, and the fistula soon healed.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Dec. 6, 1919, **2**, No. 23

The Language of Medical Writings. VI. A Kluyver.—p. 1857.
*Reform in Medical Teaching. IV. G. van Rijnberk.—p. 1861.
Phenylethylbarbituric Acid in Therapeutics. S. Koster.—p. 1866.
*The Attendants on Contagious Diseases. M. Niemeijer.—p. 1873.
*Fatal Familial Icterus Neonatorum. G. A. Prins.—p. 1880.

Reforms in Medical Teaching.—Van Rijnberk declares that the medical curriculum was planned at a time when the general practitioner was supposed to know something of every branch of medicine, and be prepared to treat everything that turned up. He insists that this is an anachronism now, and he urges that everything should be dropped from the regular medical course except what is basic to all medicine and to all specialties. This would materially lighten the medical course by eliminating everything suggesting any of the individual specialties. The first ten semesters would be the same for all; then the course would branch. The eleventh semester given mainly to obstetrics would entitle to the degree of general practitioner. Addition of a twelfth, given to gynecology, to the degree of specialist in gynecology. The eleventh and twelfth semesters devoted to roentgenology would give the degree of radiologist. At present, he says, many of those wielding the dangerous rays are like children playing with fire. Other specialties would require the eleventh and twelfth semesters in special studies. He adds that although this plan he knows is a *utopie-fantasie*, yet it has a number of vital advantages, not the least of which is that the patient would be handed over to the specialist at once, the practitioner not only knowing his incompetency but being restrained by law from experimenting in the specialty without the special diploma.

Prophylaxis of Contagious Diseases.—Niemeijer discusses whether it is safe to allow nurses and other attendants in contagious disease isolation hospitals to go to church or mix with people elsewhere during the daily hours off duty. The nurse is in such intimate contact with the patient that the danger of becoming a carrier is much more acute than in the case of any other person, and he is inclined to agree with those who think that with scarlet fever, at least, the nurse should be isolated the same as the patient. A committee of five physicians appointed in his town by the national public health authorities took the opposite view, allowing the nurses to come and go provided extremely strict measures to prevent infection are observed in regard to changing clothing, etc. The committee advise further that a special place in the church should be set apart for them. The only exceptions specified by the committee are smallpox and bubonic plague. In conclusion he cites from a German textbook to the effect that there is no evidence that scarlet fever occurs any more frequently in physicians' families than in the general population.

Familial Icterus Neonatorum.—Prins thinks that nothing but a familial constitutional inferiority of the liver parenchyma will explain the cases related. The woman's first two children were normal but then she met with an accident, falling on her back, and since then the children born were normal at first but by the third day intense jaundice developed. One threw it off in a few days, but a following pair of twins developed the jaundice the third day and both died. The last child also developed the icterus the third day although it seemed otherwise normal in every respect, and it died two days later. The only pathologic finding at the necropsy was an extremely thick and tenacious bile, with bile thrombi in the biliary capillaries, and evidences of phagocytosis in the spleen.

Ugeskrift for Læger, Copenhagen

Jan. 29, 1920, **82**, No. 5

*The Lesions in a Railroad Accident. J. Fog.—p. 145.

The Injured in a Railroad Accident.—Fog describes the case-histories of forty-five persons injured in an accident, including 4 persons in whom the mind alone was affected; the others required surgical measures. There were 26 with fractures, and 78 fractured bones in the 40 that were killed at once. All the injured complained of intense thirst and cold, but they said they did not feel pain from their injuries. The screaming was from the fright. Meisen compares the lesions and traumatic neuroses with those of the war, saying that the mental condition was exactly like that of shell shock, and also the physical shock seemed to be the same, as evidenced by the pallor, chilliness, imperceptible pulse and mental confusion. The latent period before the mental phenomena developed was also like that observed in the war wounded or shell shocked. He emphasizes the necessity for distinguishing between shock conditions and those from internal hemorrhage.

Upsala Läkareförenings Förhandlingar

Jan. 10, 1920, **25**, No. 1-2

Illumination of Tumor in Choroid. C. Lindahl.—p. 1.
The Separation of the Senses. H. Ohrvall.—p. 21.
The Proteolytic Enzyme of Fibrin J. Möllerström.—p. 55.
Normal and Pathologic Depression and Depression-Psychoses. H. Sjöbring.—p. 73.

THE NEW ORLEANS SESSION

AMERICAN MEDICAL ASSOCIATION, SEVENTY-FIRST ANNUAL SESSION
NEW ORLEANS, APRIL 26-30, 1920

OFFICIAL CALL

TO THE OFFICERS, FELLOWS AND MEMBERS OF THE AMERICAN MEDICAL ASSOCIATION

The seventy-first annual session of the American Medical Association will be held in New Orleans, La., April 26-30, 1920.

The House of Delegates will convene at 10 a. m., Monday, April 26. In the House the representation of the various constituent associations for 1920 is as follows:

Alabama	3	New Hampshire	1
Arizona	1	New Jersey	3
Arkansas	2	New Mexico	1
California	3	New York	11
Colorado	2	North Carolina	2
Connecticut	2	North Dakota	1
Delaware	1	Ohio	6
District of Columbia	1	Oklahoma	2
Florida	1	Oregon	1
Georgia	2	Pennsylvania	9
Idaho	1	Rhode Island	1
Illinois	8	South Carolina	1
Indiana	3	South Dakota	1
Iowa	3	Tennessee	2
Kansas	3	Texas	5
Kentucky	3	Utah	1
Louisiana	2	Vermont	1
Maine	1	Virginia	3
Maryland	2	Washington	2
Massachusetts	5	West Virginia	2
Michigan	4	Wisconsin	3
Minnesota	2	Wyoming	1
Mississippi	1	Canal Zone	1
Missouri	5	Hawaii	1
Montana	1	Philippine Islands	1
Nebraska	2	Porto Rico	1
Nevada	1		

The fifteen scientific sections of the American Medical Association, the Medical Department of the Army, the Medical Corps of the Navy and the Public Health Service are entitled to one delegate each.

The Scientific Assembly of the Association will open with the general meeting to be held at 8:30 p. m., Tuesday, April 27. The Sections will meet on Wednesday, Thursday and Friday, April 28, 29 and 30, as follows:

CONVENING AT 9 A. M. THE SECTIONS ON

Surgery, General and Abdominal
Ophthalmology
Diseases of Children
Nervous and Mental Diseases
Pharmacology and Therapeutics
Preventive Medicine and Public Health
Urology.

CONVENING AT 2 P. M. THE SECTIONS ON

Practice of Medicine
Obstetrics, Gynecology and Abdominal Surgery
Laryngology, Otology and Rhinology
Pathology and Physiology
Stomatology
Dermatology
Orthopedic Surgery
Gastro-Enterology and Proctology.

The Registration Department will be open from 8:30 a. m. until 5:30 p. m., on Monday, Tuesday, Wednesday and Thursday, April 26, 27, 28 and 29, and from 8:30 a. m. to 12 noon, on Friday, April 30.

ALEXANDER LAMBERT, President.
HUBERT WORK, Speaker, House of Delegates.
ALEXANDER R. CRAIG, Secretary.

MEMBERS OF THE HOUSE OF DELEGATES

A Preliminary Roster of the Legislative Body of the American Medical Association

The list of members of the House of Delegates for the session is incomplete, as a number of the state associations are yet to hold their meetings at which delegates will be elected. The following is a list of the holdover delegates and of the newly elected members who have reported to THE JOURNAL in time to be included:

STATE DELEGATES

ALABAMA
S. G. Gay, Selma.
F. W. Wilkerson, Montgomery.

ARKANSAS
R. C. Dorr, Batesville.
William R. Bathurst, Little Rock.

CALIFORNIA
A. B. Spaulding, San Francisco.
C. Van Zwalenburg, Riverside.
Victor Vecki, San Francisco.

COLORADO
J. N. Hall, Denver.

CONNECTICUT
John E. Lane, New Haven.
Walter R. Steiner, Hartford.

DELAWARE
P. W. Tomlinson, Wilmington.

DISTRICT OF COLUMBIA
William Gerry Morgan, Washington.

FLORIDA
John S. Helms, Tampa.

GEORGIA
S. R. Roberts, Atlanta.
H. H. Martin, Savannah.

ILLINOIS
R. J. Coultras, Mattoon.
T. D. Doan, Scottville.
E. B. Coolley, Danville.
C. E. Humiston, Chicago.
L. Hektoen, Chicago.
C. W. Leigh, Chicago
J. H. Rice, Quincy.
M. L. Harris, Chicago.

INDIANA
Joseph R. Eastman, Indianapolis.
George W. Spohn, Elkhart.
Albert E. Bulson, Jr., Fort Wayne.

IOWA
John C. Rockafellow, Des Moines.
M. N. Voldeng, Woodward.
Wm. B. Small, Waterloo.

KANSAS
Charles S. Huffman, Topeka.
W. S. Lindsay, Topeka.
R. J. Morton, Green.

KENTUCKY
L. S. McMurtry, Louisville.

LOUISIANA
W. H. Seemann, New Orleans.
Clarence Pierson, Jackson.

MAINE
Bertram L. Bryant, Bangor.

MARYLAND
Thomas S. Cullen, Baltimore.
Randolph Winslow, Baltimore.

MASSACHUSETTS
J. B. Blake, Boston.
H. G. Stetson, Greenfield.
L. F. Woodward, Worcester.
F. B. Lund, Boston.
E. F. Cody, New Bedford.

MICHIGAN
A. W. Hornbogen, Marquette.
F. C. Warnshuis, Grand Rapids.
Guy Connor, Detroit.
J. D. Brook, Grandville.

MINNESOTA
W. H. Magie, Duluth.
J. W. Bell, Minneapolis.

MISSISSIPPI
Willis Walley, Jackson.

MISSOURI
W. J. Ferguson, Sedalia.
A. R. McComas, Sturgeon.
Franklin E. Murphy, Kansas City.
R. M. Funkhouser, St. Louis.

MONTANA
E. W. Spotswood, Missoula.

NEBRASKA
Joseph M. Aikin, Omaha.
LeRoy Crummer, Omaha.

NEVADA
M. A. Robison, Reno.

NEW HAMPSHIRE
D. E. Sullivan, Concord.

NEW JERSEY
Frank J. Keller, Paterson.
George E. Reading, Woodbury.

NEW MEXICO
W. T. Joyner, Roswell.

NEW YORK
James W. Fleming, Brooklyn.
Dwight H. Murray, Syracuse.
Frederic E. Sondern, New York.
George W. Kosmak, New York.
Arthur J. Bedell, Albany.
James F. Rooney, Albany.
Thomas H. Halsted, Syracuse.
George D. Stewart, New York.
William F. Campbell, Brooklyn.
E. Eliot Harris, New York.

NORTH CAROLINA
H. A. Royster, Raleigh.
C. P. Ambler, Asheville.

NORTH DAKOTA
E. A. Pray, Valley City.

OHIO
J. H. J. Upham, Columbus.
Ben R. McClellan, Xenia.
C. D. Selby, Toledo.
Rufus B. Hall, Cincinnati.
George E. Follansbee, Cleveand.
Granville Warhurton, Zanesville.

OKLAHOMA
LeRoy Long, Oklahoma City.
L. S. Willour, McAlester.

OREGON
W. T. Williamson, Portland.

PENNSYLVANIA
Edw. B. Heckel, Pittsburgh.
John D. McLean, Philadelphia.
David N. Dennis, Erie.
John M. Baldy, Philadelphia.
William F. Bacon, York.
George R. S. Corson, Pottsville.
Herbert B. Gibby, Wilkes-Barre.
George G. Harman, Huntingdon.
Wilmer Krusen, Philadelphia.

PORTO RICO
Jocinto Aviles, San Juan.

SOUTH CAROLINA
Edgar A. Hines, Seneca.

SOUTH DAKOTA
H. J. G. Koobs, Scotland.

TENNESSEE
E. T. Newell, Chattanooga.
L. A. Yarborough, Covington.

TEXAS
I. C. Chase, Fort Worth.
M. L. Graves, Galveston.
W. B. Russ, San Antonio.
W. W. Ralston, Houston.

UTAH
Joseph R. Morrell, Ogden.

WASHINGTON
D. E. McGillivray, Pt. Angeles.
S. E. Lambert, Spokane.

WEST VIRGINIA
Chester R. Ogden, Clarksburg.

WISCONSIN
Horace M. Brown, Milwaukee.
Rock Sleyster, Wauwatosa.
Charles H. Lemon, Milwaukee.

WYOMING
Earl Whedon, Sheridan.

DELEGATES FROM THE UNITED STATES GOVERNMENT SERVICE

United States Army, F. F. Russell.
United States Navy, Frank E. McCullough.
United States Public Health Service.

DELEGATES FROM THE SECTIONS

PRACTICE OF MEDICINE
Roger S. Morrison, Cincinnati.

SURGERY, GENERAL AND ABDOMINAL
Raymond P. Sullivan, Brooklyn.

OBSTERICS, GYNECOLOGY AND ABDOMINAL SURGERY
Lewis S. McMurtry, Louisville. Ky.

OPHTHALMOLOGY
Lee Masten Francis, Buffalo.

LARYNGOLOGY, OTOLOGY AND RHINOLOGY
John F. Barnbill, Indianapolis.

DISEASES OF CHILDREN
Isaac A. Abt, Chicago.

PHARMACOLOGY AND THERAPEUTICS
W. A. Bastedo, New York.

PATHOLOGY AND PHYSIOLOGY
E. R. LeCount, Chicago.

STOMATOLOGY
William C. Fisher, New York.

NERVOUS AND MENTAL DISEASES
Hugh T. Patrick, Chicago.

DERMATOLOGY
George M. MacKee, New York.

PREVENTIVE MEDICINE AND PUBLIC HEALTH
C. St. Clair Drake, Springfield, Ill.

UROLOGY
Edward L. Keyes, Jr., New York.

GASTRO-ENTEROLOGY AND PROCTOLOGY
Alois B. Graham, Indianapolis.

ORTHOPEDIC SURGERY
John Ridlon, Chicago.



THE WHARVES AT NEW ORLEANS

NEW ORLEANS—THE CRESCENT CITY

When the American Medical Association met in New Orleans in 1903, the city was just beginning to feel the good effects of that portion of its new drainage system which began operation in 1900. Today, with this system completed, it is one of the most healthful and attractive cities in the United States. The location, both climatically and commercially, is ideal. The winters are not severe, and while the summers are rather long, the temperature does not reach the excessive heights experienced in summer elsewhere. Sun strokes and heat prostrations are practically unknown. The foliage is such as to indicate that the climate is both temperate and tropical. An analysis of the temperature for the month of April during the last five years indicates a most equable climate:

HIGH, LOW AND MEAN TEMPERATURES, APRIL 20-30, FOR LAST FIVE YEARS

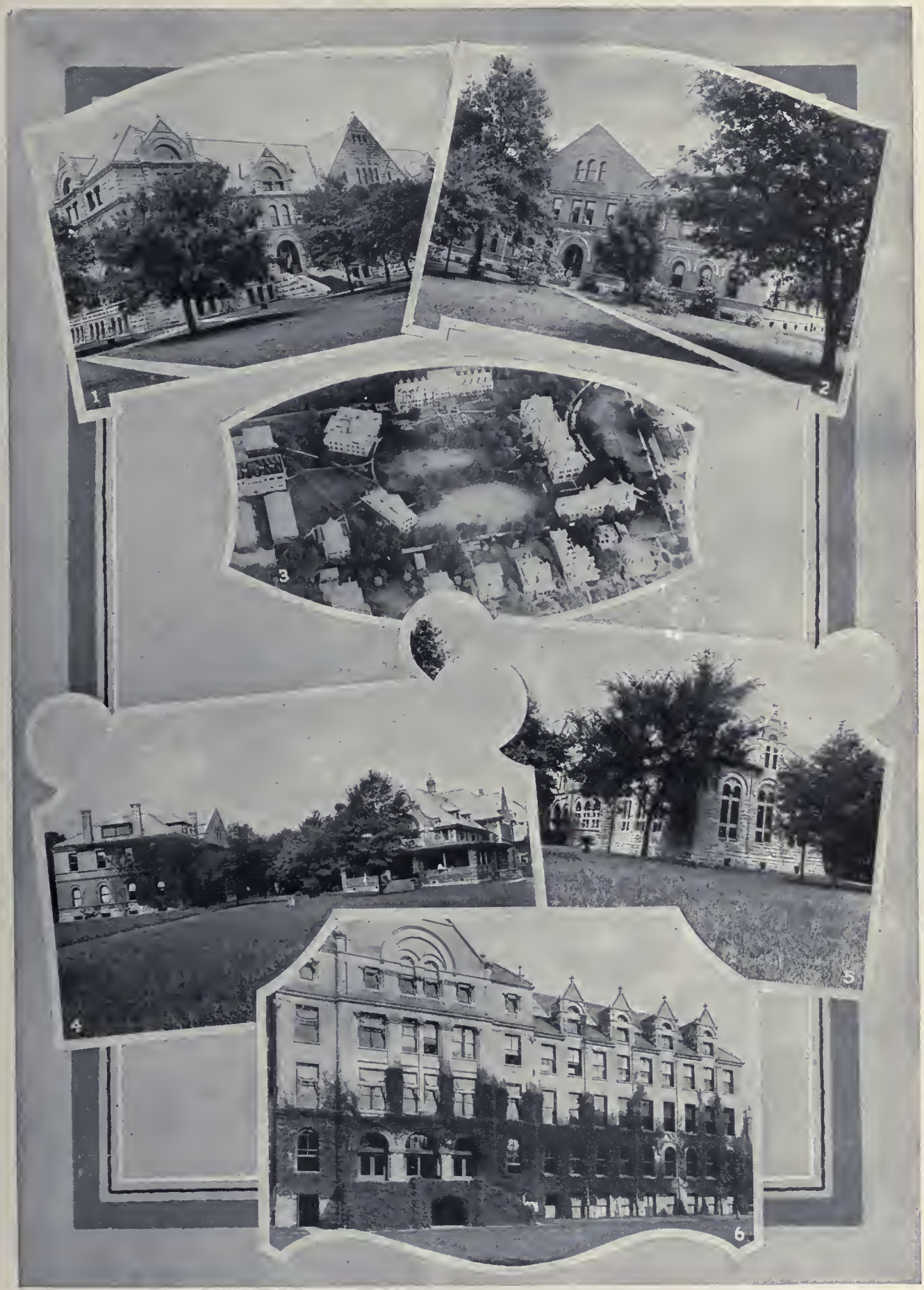
April	1915			1916			1917			1918			1919		
20	80	62	71	80	72	76	79	65	72	65	57	61	75	59	67
21	82	65	74	79	65	72	74	64	68	64	50	57	79	63	71
22	83	69	76	82	63	72	76	60	68	73	56	64	83	64	74
23	79	66	72	84	64	74	82	63	72	80	56	68	84	65	74
24	78	66	72	81	67	74	84	60	72	72	61	66	85	63	74
25	82	65	74	79	67	73	83	64	74	79	63	71	86	68	77
26	82	64	73	78	62	70	84	65	74	84	65	74	71	60	66
27	82	64	73	69	60	64	82	66	74	85	66	76	78	61	70
28	86	65	76	70	58	64	83	68	76	82	64	73	83	66	74
29	90	66	78	75	58	66	86	69	78	81	66	74	75	70	72
30	89	70	80	79	58	68	85	69	77	76	65	70	71	63	67

COMMERCE AND MUNICIPAL OWNERSHIP

Municipal ownership has probably been developed to a higher extent here than in any other city in the United States. Among the municipally owned enterprises are the wharves, covered with steel sheds, Public Belt Railroad, public cotton warehouses, public grain elevators, waterworks, sewerage and drainage, and, in the course of construction, an inner harbor for the location of factories and shipbuilding plants. An enormous amount of money has been expended to make the city secure from inundation from both the river and from Lake Pontchartrain. Rat-proofing has practically been completed at a great expense, and the city has been placed in such physical condition that it will be impossible for any imported pestilence ever again to secure a foothold. Natural gas, which has been found in abundance within less than a hundred miles of New Orleans, will soon be introduced. Since the last meeting of the Association here, the natural resources of Louisiana have come into their own, and have proved to be of such a nature as to make Louisiana one of the richest mineral producing states in the country, particularly for salt, sulphur, oil and gas. Naturally, the timber interests of the state have increased along with other classes, and wonderful fishing and game resources have been developed. The state has been wise in having all of its natural resources under the control of what has proved to be an efficient conservation commission. Available to the visitor are the finest oysters in the world, to be had at any oyster stand or restaurant in the city, and to be eaten with absolute impunity.

SCHOOLS AND UNIVERSITIES

The two principal universities are Tulane and Loyola. Loyola has recently expanded its curriculum extensively, so that, in addition to the ordinary academic courses, it gives courses in some of the special sciences, and has recently established a graduate school of medicine; also certain research laboratories are under way.



TULANE UNIVERSITY BUILDINGS

1. Academic Department, Gibson Hall.
2. Richardson Chemistry Building.
3. Aerial View, Tulane Buildings and Campus.
4. Refectory and Physics Buildings.
5. Tilton Memorial Library.
6. Medical Department, Tulane Campus.

New Orleans has one of the best public school systems in the country, with a great many modern school buildings, both for white and for colored pupils.

TULANE UNIVERSITY

Tulane University of Louisiana during the last fifteen years has developed from a group of loosely coordinated colleges, with varying standards of admission and graduation, into a highly organized university of the first rank. Within this period the attendance has increased from 1,191 in the session of 1904-1905 to 2,500 in the session of 1919-1920; and if we add the summer school, which was begun in 1908, the attendance in 1919 will be 3,762.

Tulane University of Louisiana comprehends the college of Arts and Sciences, the College of Technology, the H. Sophie Newcomb Memorial College for Young Women, the Faculty of Graduate Studies, the College of Law, the College of Medicine, the College of Commerce and Business Administration, and the Summer School. The College of Medicine includes the Schools of Medicine, Pharmacy, Dentistry, and the Graduate School of Medicine (Polyclinic). The College of Technology includes the Schools of Mechanical and Electrical Engineering, Civil Engineering, Chemical Engineering, and Architecture. The H. Sophie Newcomb Memorial College includes, in addition to the usual college course, the Schools of Arts, Music and Household Economy.

During this period the increase in endowment has included only one considerable bequest, for the Newcomb College for Women. There have been within the same period eight buildings erected for educational purposes.

In the past ten years the College of Arts and Sciences has increased its attendance from 96 to 234; Technology, from 164 to 220; Newcomb, from 278 to 537; Law, from 59 to 90; Commerce, from 0 to 681. The School of Medicine, after many variations in attendance due to the raising of standards and fees, and to the effect of the war, has increased its attendance from 355 in 1918-1919 to 416 in 1919-1920.

The College of Technology was organized in 1894. To June, 1919, there have been 440 graduates in technology. Of these, 124 became engineer officers in the late war (2 colonels; 3 lieutenant-colonels; 4 majors; 24 captains and 91 first and second lieutenants and ensigns).

The School of Medicine was established in 1834. To June, 1919, there have been 4,936 graduates. Of these, 578 were in military service in the late war (3 colonels; 11 lieutenant-colonels; 42 majors; 104 captains, and 418 first lieutenants). This school has solved problems in malaria, leprosy, hookworm, pellagra and beriberi, and cooperated in the investigation and eradication of yellow fever. Its students have been coordinated with the Louisiana State Board of Health in training for public health work.

The Tulane Hospital unit was the first base hospital fully organized in the South (mobilized, September, 1917).

During the war session from June 1, 1918, to June 1, 1919, Tulane trained 7,145 students, of whom nearly 5,000 were trained directly for war service.

HOSPITALS

The city has been noted for its true charity, and the most noteworthy of its charities has been the care of the sick. The Charity Hospital, in the course of its fifty years' existence, has treated gratis, as bed patients, many times more than the present population of 435,000, including many patients from other states than Louisiana. The principal hospitals in the city are, first, naturally the Charity Hospital; then Touro Infirmary, which recently received $600,000 to be expended in securing added facilities and space, both for their private and free clinic work; the Hotel Dieu; Eye, Ear, Nose and Throat Hospital; the Presbyterian Hospital; the French Hospital; the Illinois Central; Belvedere; the Flint-Goodridge (colored) and Providence (colored), besides a number of private sanatoriums; the City Hospital for Mental Diseases; the Isolation Hospital, and the Louisiana Retreat. Nearly all of these institutions are available for teaching purposes.

THE OLD FRENCH QUARTER

Naturally, with the increase of land values, many of the old buildings have had to give way to improvements. Still, the old French quarter, with its narrow streets and overhanging balconies ornamented with wonderful iron work, retains most of its charm and quaintness, and is a source of great interest and pleasure to the stranger. While ample provision will be made for trips to the various publicly owned institutions and river trips for viewing the harbor, and while guides will be provided for visitors to the French quarter, the casual visitor may be interested to know that he may, for himself, approximately judge of the age of the buildings he is looking at by the character of the iron work of the balconies. The beautiful wrought iron work denotes that the building is colonial; the cast iron work that the building was constructed some time between colonial days and the outbreak of the Civil War, and all other ornamentation on the building indicates that it was erected after the close of the Civil War. The Civil War fixes the date for the cessation in the use of iron work for ornamental purposes, as all of the foundries at that time devoted their attention to the manufacture of munitions, and, after the war devoted their energies to the manufacture of sugar mills and other implements needed for the material prosperity of the state.



JACKSON SQUARE, THE CABILDO AND CATHEDRAL

WATER SUPPLY

Prior to 1900, the soil of the city was saturated, always practically to the surface; and prior to 1908 there were no sewers. Vaults and cesspools existed on all premises, and the main reliance for a water supply was on rain water caught from the roof of the houses and stored in wooden cisterns, built on foundations well above ground level. There was a water works system, but not one twelfth of the premises of the city used it at all, and not half of the streets had water mains. Through these mains the natural Mississippi River water (and mud) was available to those who wanted it, but it had to be filtered for almost any use, and hardly constituted a water supply at all.

BEGINNING OF SANITATION

In 1895, the city of New Orleans really started the inauguration of her sanitary improvements by the development of general plans for an effective drainage system. Construction was started in 1897, and was sufficiently advanced by 1900 to begin operation. This at once entirely changed the conditions existing in the well built areas of the city.



THE OLD FRENCH QUARTERS

1 and 2. Old French Court Yards. 3. Dumaine Street, Old French Quarter. 4. Absinthe House. 5. Famous Old French Market.

In 1899, the sewerage and water board law was enacted and a tax and plan started for the development of these improvements also, and for the further development of the drainage system. The fund for these uses is a common fund, and the three systems are under a common management. On account of limitation of funds, and the times when they became available, it has been necessary to bring the three systems to their present stage of development gradually.

By 1909, the sewerage and water systems were fully ready to receive connections over the whole built-up area of the city. Since 1909, the drainage system has been greatly enlarged and extended, and the sewerage and water systems have been constantly extended. They have gradually been fully utilized by all of the people, without any legal steps to compel such use, except in the matter of the abolition of a few of the many original roof water cisterns which certain of the citizens wanted to retain for one purpose or another, but which the city desired to eliminate because of the difficulty of preventing the breeding in them of stegomyia mosquitoes, which in the possible event of the importation of a yellow fever case would favor the spread of this disease.

To this time, about $32,000,000 has been expended on the construction of the sewerage, water and main drainage system, including the cost of water meters, which are furnished on every water connection, and the cost of water and sewerage connections from the mains to the property line. The systems today could not be duplicated for $50,000,000 and only $20,000,000 of 4 per cent. bonded indebtedness exists against them.

At present about 600 miles of streets are served with water and sewerage facilities and effective fire protection through fire hydrants at each street intersection, and about 93 per cent. of the premises of the city are connected with the sewers and 96 per cent. with the water works system.



THE CHARITY HOSPITAL

SEWERAGE AND DRAINAGE

New Orleans lies between the Mississippi River and Lake Pontchartrain, which is a slightly brackish tidal lake. One third of the city has its surface elevation at or below mean tide level in the lake, another third has its surface elevation at or below high lake tides in Lake Pontchartrain, and since "tides" in Lake Pontchartrain are the product of prevailing winds acting on the Gulf of Mexico and may be high or low a week at a time and have a range of nearly 7 feet, it is obvious that anything at or below tide level in the lake, depending on a gravity outlet for drainage into the lake, would itself be just a part of the lake. The remaining third of the city is that portion along the bank of the Mississippi River which at various points is naturally from 2 to 8 feet above high tide level in Lake Pontchartrain, and, roughly speaking, from 13 to 7 feet below high water in the Mississippi River. The city, therefore, is protected by substantial earthen embankments, or levees, against inundation both from the lake behind it and from the river in front of it, and is under the necessity of pumping all of its storm water drainage which it discharges into the tidal waters to the rear or to the eastward, because this is the only practical method of getting rid of the vast volume of storm water which semitropical rains frequently furnish.

The sewage also has to be pumped, and because it would tend rapidly to create a nuisance, if discharged into our shallow tidal lakes, it is discharged against a greater lift, through cast iron force mains, into the Mississippi River, entering the river well under the low water surface, in a direct downstream current at three points along the lower city river front. Sewage so discharged is at once disposed in the vast volume of muddy river water, and does not even appear at the surface.

In order to obtain effective drainage with rainfalls sometimes as much as 3½ inches in an hour, 7 inches in five hours, or 9 inches in twelve hours, over an area of 30,000 acres, there are six major drainage pumping stations having capacities ranging from 1,700 cubic feet to 3,000 cubic feet a second, with individual pumping units up to 700 cubic feet a second for storm duty, and down to 40 cubic feet a second or less for constant duty pumping. The aggregate capacity of these storm drainage pumps is about 7,000,000,000 gallons a day. Some of the drainage is lifted four times, and most of it at least twice, before it is finally delivered into the tide level leveed outfall canals, the aggregate lift probably averaging about 18 feet. These drainage pumps are operated electrically from two power stations, owned by the sewerage and water board, which have a maximum capacity of about 12,000 horse power. These drainage pumps constitute the greatest and most economical aggregation of low lift pumping machinery that exists. Seven billion gallons of water is equal to a lake having an area of a square mile over a depth of 33 feet, or to a column of water 10 feet square passing a given point at a rate of more than 1¼ miles every minute. Most of the drainage pumps were designed especially by the mechanical engineer of the sewerage and water board to meet local requirements, and were built in accordance with these designs, without any guarantee that they would even pump water at all. They are, in effect, siphons over a division wall between the low level drain from which they pump and the higher level drain into which they discharge. At the summit of these siphons, properly designed screw blades, operated by a motor through a horizontal shaft, impel the water forward after the pump has been primed by the exhaustion of the air from its case, accomplished by a vacuum pump.

This arrangement results in accessibility of all parts for maintenance and repairs, in the avoidance of gates and check gates and of great depths of excavation and foundation costs, and the simplification of the starting of the various units as they are needed. The greatly increased economy and efficiency which this type of pump and this arrangement have now demonstrated are fully recognized.

The main drains of the drainage system are called locally "covered and lined canals." They are built of concrete, reinforced with steel, and are often 25 feet wide and from 9 to 10 feet deep, with V-shaped bottoms to facilitate the movement of small or dry weather flows. These and all other drains, as well as the sewers in New Orleans, operate purely by gravity with good falls or slopes to the pumping stations, each station, by its performance, creating artificially a low outlet where none could exist otherwise. There is no reservoir capacity other than the drains or sewers in either case; as the water reaches each pumping station it must be lifted.

On the sewerage system there are seven intermediate lift pumping stations which pump the sewage from the low level gravity sewer, leading to them, into the higher level gravity sewer, leading away from them, through lifts of from 8 to 15 feet; and there are three final discharge sewage pumping stations which discharge the sewage, under pressure, through cast iron pipe lines into the river. The pumps at the latter stations make lifts of from 40 to 80 feet, depending on the level of the water in the river, and the friction in the long pressure mains through which they discharge.

The seven intermediate lift sewage pumping stations are interesting, because they are operated without any screening of the sewage and without any attendants, the pumps being automatically started or stopped one at a time by float-operated switches actuated by the level of the sewage in the low level sewer. The pumps are located in dry wells, and set down deep enough to be self priming. One of the most difficult problems to be solved has been to design pumps that would operate satisfactorily under these conditions. People will throw rags and similar matter into the sewers, and rags so seriously obstruct the usual type of low lift pump that screening of the sewage alone will permit it to operate with reasonable efficiency; and screening calls for an attendant at each station all the time and for an objectionable screening removal service. To avoid this, an entirely new type of centrifugal pump has been devised by the board's mechanical engineer, and installed at these stations. It is called a "trash pump," and is just that. These pumps at the New Orleans stations have 12-inch suction and discharge openings; and a 12-inch ball or a succession of 12-inch balls, or a few table cloths or napkins or old clothes or kitchen or toilet utensils, are all the same to these pumps; any trash that can get into them at all is bound to go through and has no effect to decrease their efficiency, which is high through a wide range of lifts.

The water supply of New Orleans is taken from the Mississippi River at the extreme upper end of the city. Mississippi River water is very muddy, averaging 650 parts per million of suspended matter, and rather hard, but not so bad as river waters generally are in number of bacteria, and especially in the number of *B. coli* indicative of pollution. The suspended matter in the river water, however, is mostly very finely divided clay, and is impossible to remove in any practicable time by plain subsidence.



THE PARKS OF NEW ORLEANS

1. City Park from Delgado Art Museum. 2. Tropical Road, City Park. 3. West End Park, Lake Pontchartrain.

TREATMENT OF WATER SUPPLY

The method of treatment at New Orleans is a continuous process: The raw water pumped from the river first passes through a grit chamber having a capacity of about one hour's supply; then it passes the chemical flow governing apparatus on its way to the mixing channels. This apparatus governs flows of solution of ferrous sulphate and of milk of lime which enter the main flow of water proportional to the flow of water. The lime is added at the point where the main flow of water enters the mixing channels, and the iron at the point about half way through the mixing channels. These channels are a series of passage ways which cause the water to flow back and forth and up and down through a distance of about a mile, and which require about an hour of travel. This results in a perfect mixture of chemical solutions with the water and in perfect and uniform chemical reactions without any such violent agitation as would tend to break up flakelike hydrates, which act to entangle and bring together the suspended matter which the water contains. Passing out of the mixing channels, the water goes through settling basins of about seven hours' capacity, where the subsidence of the suspended matter is rapidly effected.

The use of lime as applied in New Orleans is not only to assist in coagulation of the suspended matter in the water but also for the softening of the water, the dissolved carbonates of lime and magnesia in the effluent being reduced always to about 40 parts per million.

After the water passes the settling basins it goes directly to the filters, which are of the so-called mechanical type, but are open gravity sand filters. The water passing to the filters usually does not carry more than 30 parts per million of suspended matter, and this is so effectually coagulated that in rapid passage through very coarse sand every particle of suspended matter and practically all bacteria are removed, the resulting effluent being clear, relatively soft, and of excellent sanitary quality.

After filtration, on its way to the pumps, which deliver it into the city distribution system, the water is given a treatment, proportional to the flow of water, of chlorin, roughly, about 1½ pounds per million gallons, for sterilization. This general process has been in use since 1909, and has given most excellent results in every way. The New Orleans plant is among the first of the larger plants of this character, many of which are now in operation, and it has fully met the hopes and expectations of those who planned it.

In this system the cleaning of the filters is effected by sending filtered water backward through them at a very rapid rate for a short period. The "wash water" used for this purpose, of course, has to be wasted. Usually an appreciable percentage of the water filtered has to be utilized for filter washing. The New Orleans plant has the exceptionally low record of only 0.5 per cent. of the water filtered required for filter washing.

The soil of New Orleans is all alluvial, composed of varying proportions of very fine sand and of soft or softer clay, with peaty strata frequently, and often with cypress stumps or logs in very large number. The construction and main-

tenance of sewers, drains, water mains and other underground structures, and of reservoirs, etc., under these soil conditions has itself been an interesting and often a difficult and expensive problem. Work under these conditions, particularly where resources were limited and the dollar had to be extended to cover the greatest possible results in service, is certain to carry some surprises and some grief.

The New Orleans water, sewerage and drainage systems, however, have from the day of their first tryout gone into service and given service continuously ever since. Clear, safe water under adequate pressure and up to the United States Public Health Service standard has been constantly available since Feb. 7, 1909, when the filters and purification systems were first tried for their intended use. Sewage removal from all premises from the first day of their connection with the sewers has been effective and continuous, and the storm water drainage system has never failed to go to the limit of its capacity in the prompt removal of accumulating storm flows.

The water consumers of New Orleans are all metered; but the water rates are so low that the small consumer, especially, is not sufficiently interested to prevent a good deal of needless waste, and the consumption per capita supplied has been gradually increasing for the last four or five years, having increased nearly 25 per cent. in that period.

EFFECT OF WATER SUPPLY ON MORTALITY RATE

The accompanying tabulation of local mortality statistics illustrates, probably better than anything else, the vital bearing of sanitary conditions on one question in which every one has a real interest, namely, the duration of the average human life in the community in which he lives, because it has a very close connection with the health, comfort, prosperity and probable length of life of his loved ones and of himself.



SUGAR CANE READY FOR THE MILL

If the death rate of New Orleans, as proved in this tabulation, before either of these systems was put into effect, that is, from 1890 to 1899, was such that the average expectancy of life was only 36.7 years, and if, as one after another these systems have been put into use and brought gradually to their maximum usefulness, the general death rate has gradually reduced until in 1919 it was at that point which indicates an average expectancy of life of fifty-five years, it would seem that the foundation work without which this increase in life expectancy of eighteen years could not have possibly been obtained, is, from this point of view alone, worth its cost.

Calculated exactly in dollars, the average per capita cost paid either in taxes or water rates by the people of New Orleans for the sewerage, water and drainage systems for construction, maintenance and operation and interest to attain this result from 1895 to date has been about $87, gradually increasing as more and more benefits to more and more people were provided, from about $1 per annum per capita from 1895 to 1900, before any benefits were felt, to $6.60 per capita per annum in 1919, when very nearly the whole population received the full benefit of all three systems

According to the 1918 financial statistics of cities, compiled by the United States Census, cities of 300,000 or over of population collected from their people on an average, 79 per cent. per capita more for their water supply than New Orleans collected, and in net revenue available for expenditure for every form of municipal service, 73 per cent. more than New Orleans. In both of these items, New Orleans shows the lowest per capita collections of any of the twenty-two cities of 300,000 population or over.

MORTALITY STATISTICS

Date	Death Rate Per 100,000 from Malaria	Typhoid*	Per 1,000 All Causes	Corresponding Life Expectancy Based on Total Death Rate Years	Comment
1880–1889	156	21	28.6	35.0	No adequate drainage and vaults; cesspools, foul gutters and rain water cisterns were everywhere with mosquitoes abundant †
1890–1899	104	39	27.2	36.7	
1900–1909	26	38	22.6	44.2	From 1900, drainage improvements were effective and increasing
1910–1919	7	21	20.4	49.0	Connections to sewers started in 1906 and to water mains in 1909, with gradual increasing utilization of both systems
1919	4	13	18.2‡	55.0	93% of population served by sewers; 90% by water

* Typhoid in New Orleans appears never to have been water borne, but to have been due to importation and local communication through milk, food, etc., by insects or by carriers. An abundant supply of perfectly safe water with adequate facilities for cleansing and prompt removal of all infected material through the sewerage system are the only helpful influences which the sewerage or water system can contribute toward its further reduction. The increased typhoid from 1890 to 1909 was probably due to the gradual introduction of toilets draining to cesspools, which too frequently overflowed (illegally) into the old open street gutters to get rid of their surplus water.

† Since 1900, the decrease in the number of mosquitoes of all kinds has been marked and progressive as drainage has been extended and improved, as the sewers have acted to subdrain the soil, as rain water cisterns have gradually disappeared, and as open gutters have given place to pipe drains or been provided with outlet conditions which prevented standing water in them. Also, as a matter of great importance following the subsurface drainage, burials above ground are no longer necessary, and cellars can be dug and used in any part of the city, thus affording an enormous increase in property values through the increased space available.

‡ Of this 18.2, 1.75 was due to influenza exclusive of 100 additional due to pneumonia. It would appear, therefore, as though an average death rate of 18 per thousand is not too good to hope for in the early future, notwithstanding the too high mortality among the colored (one third of the population), and the large number of deaths in city hospitals of nonresident patients brought in from Louisiana and surrounding states. Better education and housing facilities for the colored and less well to do population generally should bring still further improvement.

VACATIONING AROUND NEW ORLEANS

On the shores of Lake Pontchartrain, easily accessible by electric car or automobile is West End, one of the delightful breathing spots which surround New Orleans. There is a great seawall, in back of which is a wide area of beautiful driveways, gardens and trees. Here, and also at Spanish Fort or Milneburg are excellent facilities for lounging and resting, for fishing, or other vacation delights.

Convenient also to the city are Waveland, Pass Christian, Gulfport, Long Beach and Ocean Springs—famous resorts whose names are so familiar as to conjure up at once thoughts of golf, tennis, bathing, fishing, boating, or the other pastimes of the convention vacationist.

New Orleans promises true Southern hospitality. Its facilities for instruction, for entertainment and for pleasure will be fully at the service of its guests.



THE SANITARY FACILITIES OF NEW ORLEANS

1. Head House, Water Purification Station. 2. Filters, Water Purification Station. 3. Municipal Water Filtration Plant.
4. Exterior, one of large Drainage Stations. 5. Main Water Works Pumping Station and Power Stations.

TRANSPORTATION

Winter Tourist Rates Announced

The managers of the several passenger bureaus and traffic committees have advised that winter tourist fares will be in effect to New Orleans for the coming annual session of the American Medical Association. Tickets will be on sale at principal railroad centers up to April 30. They will be limited for return passage to May 30.

Round trip fares from Chicago, it is announced, will be $51.03; from St. Louis, $38.02; from Indianapolis, $46.70; from Omaha (via Chicago), $78.15, and (via St. Louis) $58.50; from Louisville, Ky., $40.35; from Cleveland, $58.34; from Boston, $83.94; from New York, $73.14; from Washington, D. C., $60.93; from Philadelphia, $68.28; from Denver (via Chicago), $87.70, (via St. Louis) $74.05; from Portland, Ore., $147.73; from San Francisco or Los Angeles, $113.85. To all the foregoing fares, a war tax of 8 per cent. should be added. At a slight additional cost and in some instances for the same fare, diverse routes may be had from points from which tourists fares are quoted. The rates named above apply when going and returning by the same route.

These winter tourist rates are not in effect from points in certain Southern states. The following one way fares are announced: from El Paso, Texas, $38.70; from Dallas, Texas, $18.28; from Jackson, Tenn., $13.27; from Augusta, Ga., $19.17; from Birmingham, Ala., $10.65. To these rates 8 per cent. war tax must also be added.

Consult Local Ticket Agent

Those who are planning to go to New Orleans should consult the local ticket agent in their home town in order to obtain full information regarding rates, time limits, extensions and stop-over privileges which may be had on the railroad tickets to New Orleans. It is advisable to make these inquiries at an early date as local ticket agents may have to ask for information desired, and except in the larger cities, it may be necessary to obtain a special form of ticket from some central ticket office. Neglecting to arrange for railroad tickets until just before the time for leaving home may make it necessary for the ticket agent to sell a full fare one way ticket since he may have neither the proper form nor the authority to sell these winter tourist excursion tickets. The importance of an early inquiry is emphasized.

Special Trains

Special trains from Chicago to New Orleans, to be known as the "American Medical Special" and the "Chicago Special," will be arranged to run over the Illinois Central Railroad Lines as sections of the regular trains—or special cars will be carried on these regular trains—as Pullman reservations warrant. There are three trains leaving Chicago daily for New Orleans: at 8:45 a. m., at 12:30 p. m. and 6:15 p. m. These trains are scheduled to arrive in New Orleans, respectively, at 11 a. m., 11:15 a. m. and at 8:45 p. m. Pullman reservations can be made either through the railroad ticket office at your own home, or by addressing Mr. J. W. Stevenson, district passenger agent, Merchants Loan and Trust Building, 112 West Adams Street, Chicago. Members of the House of Delegates should plan to leave Chicago not later than 6:15 p. m., Saturday, April 24. Those who are interested chiefly in the meetings of the Scientific Assembly will reach New Orleans in ample time for the general opening meeting, which will be held on Tuesday evening, if they leave Chicago as late as 12:30 p. m., Monday, April 26.

Sleeping Cars to Be Parked

The R. & S. Tourist Company, 107 West Jackson Boulevard, Chicago, is arranging to run a special train leaving Chicago on Sunday, April 25, about noon, via the Illinois Central Railroad, and to arrive in New Orleans during the afternoon of Monday following. This train will return, leaving New Orleans about 7 p. m., April 30, and arriving in Chicago, Saturday evening, May 1. Arrangements will be made so that the cars will be parked in New Orleans at a convenient location. This will permit of the cars being used as sleeping quarters during the time of the annual session. The cost covering railroad fare, Pullman accommodations going and coming and during the days spent in New Orleans, is announced to be $102.75 and up in accordance with the Pullman accommodations reserved. Particulars and definite information can be obtained by addressing the company. This use of Pullman sleeping cars by organized parties is commonly followed at the time of the Mardi Gras and other large gatherings at New Orleans.

Going to New Orleans by Boat

The *Comas,* one of the steamships of the Morgan Line, is announced to sail from New York, April 21, for New Orleans, and from New Orleans on the return trip on the morning of May 1. This boat can carry seventy-one first class passengers. In addition, there is space for thirty second class passengers. Particulars regarding time of sailing, rate of passage and other matters can be obtained by addressing Mr. A. J. Poston, general agent, Southern Pacific Lines, 165 Broadway, New York.

Dr. Ira J. Haynes, P. O. Box 24, Richmond, Va., who has undertaken to arrange for a party to go by boat from Boston to New Orleans, advises that he is experiencing some difficulty in securing a first class ship for the trip. However, he has in prospect a 3,000 ton vessel and states that if practical rates can be secured, the prospects are that this boat will be filled to capacity when it leaves Norfolk.

REGISTRATION

The Importance of Registering Early—A Few Suggestions Which Will Facilitate Registration

The Bureau of Registration will be located in the Josephine Hutchinson Memorial Building, Canal Street, between Villere and Robertson streets. A committee of local physicians will assist those desiring to register. A branch postoffice will be opened, and a bureau of information established in connection with the Registration Bureau. Here may be secured copies of the *Daily Bulletin,* which announces the names of visitors and other important convention material.

Every one who registers will be required to fill out completely the spaces on both parts of the double registration cards, which will be found on the tables in front of the Registration Bureau. These entries should be written very plainly, or printed, as the cards are given to the printer to use as "copy" for the *Daily Bulletin.*

1. Fellows who have their pocket cards with them can be registered with little or no delay. They should present the filled out registration card, together with their pocket card, at one of the windows marked "Registration by Pocket Card." There the clerk will compare the two cards, stamp the pocket card and return it, and supply the Fellow with a copy of the official program and other printed matter of interest to those attending the annual session.

2. Those Fellows who have forgotten their pocket cards should present the filled in registration card at the window marked "Paid—No Card." The work of registration at this window will be conducted as rapidly as possible; but the necessity of finding the Fellow's name on the Fellowship roster may occupy a considerable time and will occasion inconvenience to those who neglect to bring their pocket cards with them.

3. The Fellow whose 1920 dues are unpaid should present his filled in registration card with the amount of his Fel-

lowship dues ($5) at one of the windows and marked "Cash." Here, too, there will be occasioned some delay; but the work of registering will be conducted as promptly as possible.

4. It will assist in registering if those who desire to qualify as Fellows will file their applications and qualify as Fellows by writing directly to the American Medical Association, 535 North Dearborn Street, Chicago, so that their Fellowship may be entered not later than April 19. Any applications received later than April 19 will be given prompt attention, but the Fellowship pocket card may not reach the applicant in time so that he can use it in registering at the New Orleans Session, and he may be required to make a second payment of his Fellowship dues, which must be held until the records at the headquarters can be consulted after the close of the session, when any excess payment will be satisfactorily adjusted.

If, however, a member of the Association neglects to qualify as a Fellow before reaching New Orleans he may be entered as a Fellow at the meeting by the following procedure: He should present a filled in registration card, together with a formal application for Fellowship at the window marked "New Fellows." These applications for Fellowship can be obtained at Window No. 1 of the Registration Bureau or from the members of the Committee on Registration. In order to qualify as a Fellow, the applicant must be officially reported as a member of the constituent association of the state in which he resides, and in addition to filing this formal application, he must pay his annual Fellowship dues for the current year; if already a subscriber to THE JOURNAL, with his subscription paid for a term to or beyond Jan. 1, 1921, no additional payment is necessary. If subscription is not paid in full for the current year, the payment of a sum to extend it to Jan. 1, 1921, is required.

Those who will apply for Fellowship at New Orleans should provide themselves, before leaving their homes, with certificates of membership signed by the secretary of their state association certifying to their being members in good standing for 1920 in the state and county branches of the organization; a membership card for 1920 issued by the constituent association will be accepted. Failure to provide themselves with such a certificate will necessarily subject them to considerable delay in registering, if it does not preclude their being able to qualify for Fellowship at the time of the meeting. It will not only subject them to great annoyance, but will also be an imposition on other physicians desiring to register and attend the meetings of this session.



THE JOSEPHINE HUTCHINSON MEMORIAL BUILDING

Scientific Exhibit, Registration, Commercial Exhibit, Information Bureau and Postoffice in This Building
Meeting Place of the Sections on Stomatology, Dermatology, and Urology

HOTEL ACCOMMODATIONS

Dr. J. J. Wymer, 921 Canal St., New Orleans, Chairman of the Committee on Hotels, will handle promptly requests for reservations for lodgings. In writing to Dr. Wymer, he should be advised of the number who will be in the party, the time of arrival in New Orleans and how long the party will stay in that city, as well as the character of the lodgings desired. In addition to the available accommodations in the hotels, this committee has arranged to make available a large number of rooms in well appointed boarding houses as well as in private homes. Those who plan to attend the annual session are urged to make their reservations as promptly as possible. It is desirable that when New Orleans is reached, the party shall know exactly where they expect to be lodged. There will be an information bureau at each railroad station during the days of the session. These will be in charge of medical students from Tulane who will assist incoming Fellows to secure lodgings or direct them to the places where these are reserved.

POSTOFFICE

An Association Postoffice will be maintained in connection with the Registration Bureau in the Josephine Hutchinson Memorial Building. Guests are requested to order mail addressed to them "Care American Medical Association, Josephine Hutchinson Memorial Building, New Orleans, La.," or to their hotels, as preferred.

CLINICS IN NEW ORLEANS

The Local Committee on Arrangements reports that the medical profession of New Orleans is arranging a series of clinics to be conducted by members of the local profession on April 22 to 24, inclusive, and also on April 26 and 27 and May 1. These clinics will be open to Fellows of the Scientific Assembly from other states as well as to the members of the Louisiana State Medical Society, whose annual session is called for the week before the Association's session.

MEETING PLACES AND SECTION HEADQUARTERS

The following have been designated as general and section hotel headquarters, and as meeting places* for the New Orleans session—April 26 to 30:

HOUSE OF DELEGATES: *Orleans Parish Medical Society Building.*

PRACTICE OF MEDICINE: St. Charles. *Elks Hall.*

SURGERY, GENERAL AND ABDOMINAL: Grunewald. *Grunewald, Convention Hall.*

OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY: Grunewald. *Grunewald, Convention Hall.*

OPHTHALMOLOGY: Monteleone. *Moose Hall.*

LARYNGOLOGY, OTOLOGY AND RHINOLOGY: Monteleone. *Moose Hall.*

DISEASES OF CHILDREN: St. Charles. *Elks Hall.*

PHARMACOLOGY AND THERAPEUTICS: Planters. *Grunewald, Green Room.*

PATHOLOGY AND PHYSIOLOGY: Grunewald. *Grunewald, Green Room.*

STOMATOLOGY: Lafayette. *Hutchinson Memorial Building, Faculty Room.*

NERVOUS AND MENTAL DISEASES: Lafayette. *Charity Hospital Amphitheater.*

DERMATOLOGY: De Soto. *Hutchinson Memorial Building, Lower Amphitheater.*

PREVENTIVE MEDICINE AND PUBLIC HEALTH: De Soto. *Loyola Hall.*

UROLOGY: St. Charles. *Hutchinson Memorial Building, Lower Amphitheater.*

ORTHOPEDIC SURGERY: Grunewald. *Charity Hospital Amphitheater.*

GASTRO-ENTEROLOGY AND PROCTOLOGY: Lafayette. *Loyola Hall.*

GENERAL HEADQUARTERS: Grunewald.

SCIENTIFIC EXHIBIT, REGISTRATION BUREAU, COMMERCIAL EXHIBIT, INFORMATION BUREAU AND BRANCH POSTOFFICE: Hutchinson Memorial Building.

*Meeting places in italics.



KEY TO MAP

1. Hutchinson Memorial Building.
2. Charity Hospital.
3. Loyola Hall.
4. Moose Hall.
5. Orleans Parish Medical Society Building.
6. Elks' Hall.
7. Ear, Nose and Throat Hospital.
8. Grunewald Hotel.
9. Planters Hotel.
10. Monteleone Hotel.
11. Cosmopolitan Hotel.
12. St. Charles Hotel.
13. Southland Hotel.
14. Osborne Hotel.
15. De Soto Hotel.
16. Lafayette Hotel.
17. The Shrine Mosque.
18. The Atheneum.

NONAFFILIATED ORGANIZATIONS

The following organizations have announced that they will hold meetings in New Orleans during the days immediately preceding those on which the Scientific Assembly of the American Medical Association will meet: Air Service Medical Association of the United States; American Radium Society; Association for Study of Internal Secretions; Association of American Teachers, Diseases of Children; Association of Military Surgeons of the United States; Louisiana State Medical Society; Medical Veterans of the World War, and the Radiological Society.

GUESTS FROM FOREIGN COUNTRIES

Among others, Sir Humphrey Davy Rolleston and Col. H. J. Waring of London; Drs. Norman Walker and A. H. Freeland Barbour of Edinburgh; Prof. Victor Morax, Paris; Prof. J. C. Connel, Kingston, and Alexander Primrose, Toronto, are expected to be in attendance at the New Orleans Session. It is anticipated there will also be a number of physicians from Mexico and South America. Accredited physicians from foreign countries will be registered as "invited guests" and may participate in the functions of the annual session.

ENTERTAINMENT

(NOTE.—The official badge will be required for admission to entertainments and other places to which entrance is granted to those in attendance on the annual session.)

The President's Ball

While there will be many and varied entertainments provided for amusement of the Fellows, and their wives, daughters and friends, an original and characteristic program has been perfected for an event to be known as the President's Ball. This will be a carnival ball with a number of tableaux representing medical subjects or interest, humor, and perhaps a little satire. The indications are that this ball will be fully as beautiful as any heretofore given, even in the halcyon days of prewar carnival revelry. It will be carried out in exact accordance with the historical procedure for such affairs. The scenery and settings will be specially painted and prepared to suit the theme. There will be the king with his royal court who will preside over the cast, limited to 150 of the most worthy subjects, all of them gorgeously costumed as will be befitting the characters they portray and the illustrious onlookers before whom they will have the honor of appearing. The king will have his queen and the dukes of his court, their maids, and after the completion of the tableaux they with the maskers will dance in a series until every one of the fair guests has been called out. After this has been accomplished the maskers will gradually disappear, black coats will come on, and the dancing will continue. Dr. Amedee Granger, Chairman of the Committee on Entertainment, 921 Canal Street, requests that there be submitted to him the names of ladies who will be interested in taking part in the "Carnival Ball," in order that they may be informed concerning the unique features of this event and that they may be assigned "call out seats."

This form of entertainment is novel so far as the American Medical Association is concerned. It is essentially characteristic of the happiest life in the Crescent City. The ball will be given on the evening of April 28.

Fete Champetre

On April 29, a Fete Champetre will be given at the City Park and the Committee on Entertainment is doing all in its power to make this fete both entertaining and instructive.

Entertainment for Visiting Ladies

Trips are being arranged through the historical and beautiful sections of New Orleans for the visiting ladies. These will be personally conducted by members of the Louisiana Historical Society in the forenoon. In the afternoons there will be receptions and automobile rides.

AMERICAN MEDICAL GOLF TOURNAMENT

The Sixth Tournament of the American Medical Golf Association will be held at the New Orleans County Club, April 26, under the auspices of the Local Committee: Clyde Lynch, chairman; Larry DeBuys; John Elliott, Jr., secretary, 803 Audubon Building, New Orleans.

The events will take place both morning and afternoon. They consist of the Association championship, thirty-six holes gross, "Frisco" trophy; Association handicap, thirty-six holes, Detroit trophy, and choice score handicap, thirty-six holes, New Orleans trophy. By order of the 1919 meeting, the members of the Handicap Committee are: Charlton Wallace, Eastern District, 11 East Forty-Eighth Street, New York; J. J. Coons, Central District, 122 East Broad Street, Columbus, Ohio, and Fred Bailey, Western District, 816 University Club Building, St. Louis.

Any Fellow of the American Medical Association in good standing, who has a degree of M.D. becomes automatically a member of the American Medical Golf Association, on acceptance of the by-laws and payment of the enrolment fee. The enrolment fee consists of $2, payment of which confers life membership. A playing fee of $1 is charged on entrance in the tournament.

THE SCIENTIFIC EXHIBIT

The Scientific Exhibit will be located on the third floor of the Josephine Hutchinson Memorial Building of the Medical Department of Tulane University, on the north side of Canal Street, between Villere and Robertson Streets, about three blocks from the Grunewald Hotel. The exhibitors who have so far made application for space are as follows:

MEDICAL DEPARTMENT, U. S. ARMY, Washington, D. C.: Exhibit on Scientific War Material.

LOUISIANA STATE BOARD OF HEALTH, New Orleans: Educational Exhibit.

AMERICAN MEDICAL ASSOCIATION:
- Council on Pharmacy and Chemistry.
- Propaganda Department.
- Chemical Laboratory.
- Council on Medical Education.
- Council on Health and Public Instruction.
- Exhibits showing the activities of the Association.

PRUDENTIAL LIFE INSURANCE COMPANY, New York: Exhibit on Graphic Charts, Showing Statistics of Leprosy, and the Sanitary Progress of New Orleans.

AMERICAN SOCIETY FOR THE CONTROL OF CANCER, New York: Exhibit Showing the Activities of the Organization.

ASSOCIATION FOR THE PREVENTION AND RELIEF OF HEART DISEASE, New York: Exhibit of Charts and Folders Explaining Development of Work.

MAYO CLINIC, Rochester, Minn.: Exhibit of Charts and Photographs.

DR. MARTIN H. FISCHER, Cincinnati General Hospital, Cincinnati: Exhibit on Colloid Chemistry in the Analysis of Various Problems in Physiology, Pathology and Pharmacology.

DR. VICTOR D. LESPINASSE, Chicago: Exhibit on Spermatogenesis and Sterility.

DR. ANGELO L. SORESI, New York: Scientific Exhibit—Specimens—Illustrations—Instruments.

DR. WILLIAM H. MERCUR, Pittsburgh: Exhibit on the Method of Classification and Indexing of Case Records and Reprints.

DR. ALFRED A. STRAUSS, Chicago. Exhibit on Stomach and Intestinal Surgery—Sterility—Muscle and Tendon Transplantation.

DR. CHARLES WINFIELD PERKINS, New York: Exhibit on Gunshot Injuries of the Long Bones, Showing Osteogenesis.

DR. JAMES T. CASE, Battle Creek Sanitarium, Battle Creek, Mich.: Exhibit on Diet and Nutrition.

DR. HENRY A. COTTON, New Jersey State Hospital, Trenton, N. J.: Exhibit on Medical and Surgical Work of the Institution.

In addition, scientific material presented by New Orleans institutions and members of the local profession will be shown in Professor Bass' private laboratory.

The amphitheater on the third floor will be used for movin pictures, lantern slides and roentgen-ray exhibits during the time of the meeting A detailed program of the moving picture exhibit will be announced later, and a final program and complete list of exhibitors will appear in the official program.

PRELIMINARY PROGRAM OF THE SCIENTIFIC ASSEMBLY

PROGRAM OF THE OPENING MEETING

SHRINERS' TEMPLE, ST. CHARLES AVENUE AND CLIO STREET

Tuesday, April 27—8:30 p. m.

Music.

Call to Order by the President, ALEXANDER LAMBERT, New York.

Invocation. Most Reverend J. W. SHAW, Archbishop of New Orleans.

Announcements, ALBERT E. FOSSIER, Chairman of the Local Committee of Arrangements.

Address of Welcome. HON. MARTIN BEHRMAN, Mayor, City of New Orleans.

Address of Welcome. President, Louisiana State Medical Society.

Address. HON. JOHN M. PARKER, Governor-Elect of Louisiana.

Music.

Introduction and Installation of President-Elect WILLIAM C. BRAISTED, U. S. Navy.

Address. WILLIAM C. BRAISTED.

Music.

THE PROGRAMS OF THE SECTIONS

Outline of the Scientific Proceedings—The Preliminary Program and the Official Program

The following papers are announced to be read before the various sections. The order here is not necessarily the order which will be followed in the Official Program, nor is the list complete. The Official Program will be a pamphlet similar to those issued in previous years, and will contain the final program of each section with abstracts of the papers, as well as lists of committees, programs of the General Meeting, lists of entertainments, map of New Orleans and other information. To prevent misunderstandings and to protect the interest of advertisers, it is here announced that this Official Program will contain no advertisements. It is copyrighted by the American Medical Association and will not be distributed before the session. A copy will be given to each Fellow on registration.

SECTION ON PRACTICE OF MEDICINE

MEETS IN ELKS' HALL

OFFICERS OF SECTION

Chairman—JAMES S. MCLESTER, Birmingham, Ala.
Vice Chairman—JOSEPH H. PRATT, Boston.
Secretary—G. CANBY ROBINSON, St. Louis.
Executive Committee—HENRY A. CHRISTIAN, Boston; LAWRENCE LITCHFIELD, Pittsburgh; WALTER L. BIERRING, Des Moines, Iowa.
(Stenographer—Dr. G. G. TAYLOR, Chicago)

Wednesday, April 28—2 p. m.

1. Chairman's Address. JAMES S. MCLESTER, Birmingham, Ala.
2. The Clinical Interpretation of Basal Metabolic Rate Estimations. HENRY S. PLUMMER, Rochester, Minn.
3. The Nature of Fever. WILLIAM D. SANSUM, Chicago.
4. Types and Treatment of Pellagra. STEWART R. ROBERTS, Atlanta, Ga.
5. The End-Results of Focal Infections. BRYCE W. FONTAINE, Memphis, Tenn.
6. Abscess of the Lung. U. J. W. PETERS, Birmingham, Ala.
7. The Clinical Diagnosis of Obstruction of the Hepatic Veins. CHARLES F. HOOVER, Cleveland.
8. Phlebectasis of the Diaphragmatic Area and of the Lower Thoracic and Upper Abdominal Regions. WILLIAM GERRY MORGAN, Washington, D. C.

Thursday, April 29—2 p. m.

9. An Address. SIR HUMPHREY DAVY ROLLESTON, London.
10. Oxycephaly: Its Occurrence in Negroes. GEORGE DOCK, St. Louis.
11. Clinical Experience with a Standardized Dried Aqueous Extract of Digitalis. JOSEPH H. PRATT, Boston.
12. A Study of the Bile Pigments in Pernicious Anemia. JOHN P. SCHNEIDER, Minneapolis.
13. Spondylitis and Abdominal Pain. DOUGLAS VANDERHOOF, Richmond, Va.
14. The Influence of Quantitative Methods in the Advance of Clinical Medicine. EUGENE S. KILGORE, San Francisco.
15. Frozen Sections from Two Cases of Aneurysm of the Thoracic Aorta. GEORGE W. NORRIS and GEORGE FETTEROLF, Philadelphia.

Friday, April 30—2 p. m.

Election of Officers

16. Hints for the Diagnosis of Disease of the Gallbladder. LEWELLYS F. BARKER, Baltimore.
17. Gout: A Clinical Study of 116 Cases. CHARLES SPENCER WILLIAMSON, Chicago.
18. Renal Glycosuria. JAMES E. PAULLIN, Atlanta, Ga.
19. The Treatment of Diabetes Complicated by Pulmonary Tuberculosis. NELSON W. JANNEY, Santa Barbara, Calif.
20. Arterial Hypertension Associated with Endocrine Dyscrasia. WILLIAM ENGELBACH, St. Louis.
21. Syphilis of the Kidney. LOYD THOMPSON, Hot Springs, Ark.
22. Angina Abdominalis and Other Abdominal Manifestations of Arteriosclerosis. ALFRED STENGEL, Philadelphia.
23. The Effect of Tonsillectomy on the Recurrence of Acute Rheumatic Fever and Chorea in Children. WILLIAM P. ST. LAWRENCE, New York.

SECTION ON SURGERY, GENERAL AND ABDOMINAL

MEETS IN GRUNEWALD, CONVENTION HALL

OFFICERS OF SECTION

Chairman—DEAN D. LEWIS, Chicago.
Vice Chairman—MALVERN B. CLOPTON, St. Louis.
Secretary—GEORGE P. MULLER, Philadelphia.
Executive Committee—WILLIAM D. HAGGARD, Nashville, Tenn.; E. STARR JUDD, Rochester, Minn.; JOHN T. BOTTOMLEY, Boston.
(Stenographer—Miss LIDIE C. ALEXANDER, Philadelphia)

Wednesday, April 28—9 a. m.

1. One Hundred Goiter Operations: Mistakes in Retrospect. JAMES T. MASON, Seattle.
2. Diagnosis and Management of Intrathoracic Thyroid Growths (Lantern Demonstration). FRANK H. LAHEY, Boston.
3. Advantages of Local Anesthesia in Thyroid Operations (Lantern Demonstration). JOSEPH R. EASTMAN, Indianapolis.
4. Technic of Thyroidectomy (Lantern Demonstration). WILLARD BARTLETT, St. Louis.
   Discussion of papers 1, 2, 3 and 4 to be opened by HENRY S. PLUMMER, Rochester, Minn.; WILLIAM D. HAGGARD, Nashville, Tenn.; EMIL GOETSCH, Brooklyn, and EDWARD G. JONES, Atlanta, Ga.
5. Chronic Cystic Mastitis (Lantern Demonstration). JOSEPH C. BLOODGOOD, Baltimore.
   Discussion to be opened by WILLIAM C. MACCARTY, Rochester, Minn.
6. Brain Abscess. ALFRED W. ADSON, Rochester, Minn.
   Discussion to be opened by HARVEY CUSHING, Boston, and ARTHUR C. STRACHAUER, Minneapolis.
7. Hemangioma and Lymphangioma: Their Response to the Injection of Boiling Water (Lantern Demonstration). FRANCIS LE S. REDER, St. Louis.
   Discussion to be opened by JOHN A. WYETH, New York; RUDOLPH MATAS, New Orleans, and CURTIS F. BURNAM, Baltimore.

Thursday, April 29—9 a. m.

8. Chairman's Address. DEAN D. LEWIS, Chicago.
9. Squamous-Cell Carcinoma of the Kidney. ALEXANDER PRIMROSE, Toronto.
   Discussion to be opened by ARTHUR D. BEVAN, Chicago.
10. Congenital Hypertrophic Pyloric Stenosis in Infants: Review of 175 Cases in Which the Fredet-Rammstedt Operation was Performed. WILLIAM A. DOWNES, New York.
    Discussion to be opened by DEAN D. LEWIS, Chicago.

11. Ulcer of the Jejunum Following Gastro-Enterostomy.
WALLACE I. TERRY, San Francisco.
Discussion to be opened by E. STARR JUDD, Rochester, Minn.
12. Surgery of Cancer of the Large Intestines.
ARTHUR D. BEVAN, Chicago.
13. Operation for Carcinoma of the Rectum.
GEORGE W. CRILE, Cleveland.
Discussion to be opened by DANIEL F. JONES, Boston.
14. Roentgenologic Experience with Pneumoperitoneum (Lantern Demonstration).
ARTHUR STEIN and WILLIAM H. STEWART, New York.
Discussion to be opened by WILLY MEYER, New York, and GEORGE E. PFAHLER, Philadelphia.
15. Ether Oil Colonic Anesthesia.
WALTER LATHROP, Hazleton, Pa.
Discussion to be opened by JAMES T. GWATHMEY, New York.

Friday, April 30—9 a. m.

Election of Officers

16. Report of Gunshot Wounds of the Chest.
ARTHUR M. SHIPLEY, Baltimore.
Discussion to be opened by JOHN L. YATES, Milwaukee, and JAMES T. GWATHMEY, New York.
17. Importance of the "Vital Capacity" in Thoracic Surgery (Lantern Demonstration).
EVARTS A. GRAHAM, St. Louis.
18. Prevention and Treatment of Pleurisy.
JOHN L. YATES, Milwaukee.
19. Observations on the Relative Value of the Various Operative Procedures Employed in Acute Empyema.
CARL EGGERS, New York.
Discussion to be opened by ALEXANDER LAMBERT, New York; MARTIN B. TINKER, Ithaca, N. Y.; ARVINE E. MOZINGO, Indianapolis, and JAMES F. MITCHELL, Washington, D. C.
20. Fracture of the Femur: A Plea for a Better American Standard. KELLOGG SPEED, Chicago.
Discussion to be opened by JOHN B. WALKER, New York.
21. Mobilization of Injured, Infected or Fractured Joints.
CLARENCE A. MCWILLIAMS, New York.
22. The Use of Bone and Fascia Grafts in the Reconstruction of Bones and Joints (Lantern Demonstration).
ADDISON G. BRENIZER, Charlotte, N. C.
23. Mechanic Stability of Fractures Following Operation (Motion Picture Demonstration).
PAUL B. MAGNUSON, Chicago.

SECTION ON OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY

MEETS IN GRUNEWALD, CONVENTION HALL

OFFICERS OF SECTION

Chairman—REUBEN PETERSON, Ann Arbor, Mich.
Vice Chairman—FRANCIS LE S. REDER, St. Louis.
Secretary—SIDNEY A. CHALFANT, Pittsburgh.
Executive Committee—HOWARD W. LONGYEAR, Detroit; BROOKE M. ANSPACH, Philadelphia; THOMAS J. WATKINS, Chicago.
(Stenographer—Miss LIOIE C. ALEXANDER, Philadelphia)

Wednesday, April 28—2 p. m.

1. Chairman's Address: The Future of Obstetrics and Gynecology as a Specialty.
REUBEN PETERSON, Ann Arbor, Mich.
2. Chronic Leukorrhea: Its Pathology and Treatment (Lantern Demonstration). ARTHUR H. CURTIS, Chicago.
3. Conservation of the Menstrual Function.
WILLIAM J. MAYO, Rochester, Minn.
Discussion to be opened by C. JEFF MILLER, New Orleans.
4. Relation of Hyperplasia of the Endometrium to So-Called Functional Uterine Hemorrhage (Lantern Demonstration). EMIL NOVAK, Baltimore.
5. A Plea for Total Hysterectomy in the Operative Treatment of Fibroid Tumors of the Uterus in Parous Women. JOHN OSBORN POLAK, Brooklyn.
Discussion to be opened by EDWARD E. MONTGOMERY, Philadelphia.
6. Hernia of the Ovary. WILLIAM W. GRANT, Denver.
7. Results of the Exposure of Animal Ovaries to the Rays of Radium (Lantern Demonstration).
JOHN M. MAURY, Memphis, Tenn.
Discussion to be opened by FRANCIS CARTER WOOD, New York.

Thursday, April 29—2 p. m.

8. The Sectional Anatomy of Labor (Lantern Demonstration). A. H. FREELAND BARBOUR, Edinburgh.
9. A Consideration of Stillbirths and Neonatal Deaths in Their Relation to Obstetric Practice (Lantern Demonstration). FRED L. ADAIR, Minneapolis.
Discussion to be opened by EDGAR J. HUENEKENS, Minneapolis, and N. SPROAT HEANEY, Chicago.
10. Abnormal Lactation (Lantern Demonstration).
MATHIAS J. SEIFERT, Chicago.
11. Intra-Uterine Insufflation of Oxygen (Artificial Pneumoperitoneum) for the Determination of Patency of the Fallopian Tubes in Cases of Sterility.
ISADOR C. RUBIN, New York.
Discussion to be opened by EDWARD REYNOLDS, Boston.
12. The Treatment of Obstinate Occipitoposterior Positions.
JOSEPH B. DELEE, Chicago.
Discussion to be opened by RALPH H. POMEROY, Brooklyn.
13. The Policy of Noninterference in the Treatment of Postabortive and Puerperal Infections.
EDWARD L. KING, New Orleans.
14. The Management of Acute Appendicitis in the Later Weeks of Pregnancy. Report of Case Treated by Cesarean Section and Appendectomy.
JAMES M. MASON, Birmingham, Ala.
Discussion to be opened by NORBORNE PAGE COCKE, Birmingham, Ala.

Friday, April 30—2 p. m.

Election of Officers

15. Prolapse of the Urethra in the Female (Lantern Demonstration). RICHARD R. SMITH, Grand Rapids, Mich.
Discussion to be opened by S. M. D. CLARK, New Orleans.
16. An Operation for Pruritus of the Vulva and Anus.
CARROLL W. ALLEN, New Orleans.
17. The So-Called Cases of Nephralgia.
DEWITT B. CASLER, Baltimore.
Discussion to be opened by JOHN T. GERAGHTY, Baltimore.
18. Primary Suture of the Renal Pelvis and Ureter After Removal of Stones.
LE GRAND GUERRY, Columbia, S. C.
Discussion to be opened by BENJAMIN A. THOMAS, Philadelphia.
19. Cysts of the Pancreas (Lantern Demonstration).
JOHN J. GILBRIDE, Philadelphia.
Discussion to be opened by ALBERT J. OCHSNER, Chicago.
20. An Improved Technic for Cholecystectomy Based on an Anatomic Study (Lantern Demonstration).
MOSES BEHREND, Philadelphia.
Discussion to be opened by JABEZ N. JACKSON, Kansas City, Mo., and ALFRED C. WOOD, Philadelphia.
21. Appendicitis Caused by Amebae Dysenteriae. Postoperative Perforation of an Amebic Ulcer of the Cecum (Lantern Demonstration).
EDGAR P. HOGAN, Birmingham, Ala.
Discussion to be opened by WILLIAM F. SHALLENBERGER, Atlanta, Ga.

SECTION ON OPHTHALMOLOGY

MEETS IN MOOSE HALL

OFFICERS OF SECTION

Chairman—ALLEN GREENWOOD, Boston.
Vice Chairman—NELSON M. BLACK, Milwaukee.
Secretary—GEORGE S. DERBY, Boston.
Executive Committee—WILLIAM ZENTMAYER, Philadelphia; ALEXANDER DUANE, New York; CASSIUS D. WESCOTT, Chicago.
(Stenographer—Miss F. E. DILLAN, Indianapolis)

Wednesday, April 28—9 a. m.

1. Chairman's Address. ALLEN GREENWOOD, Boston.
2. Optic Nerve Disturbances in Diseases of the Posterior Nasal Sinuses. JAMES BORDLEY, JR., Baltimore.
Discussion to be opened by GEORGE E. DE SCHWEINITZ, Philadelphia.

3. Optic Neuritis Associated with Disease of the Nasal Sinuses. EDWARD C. ELLETT, Memphis, Tenn.
Discussion to be opened by LEE M. FRANCIS, Buffalo.
4. Ocular Symptoms in Ophthalmic Goiter.
JOHN H. CLAIBORNE, New York.
Discussion to be opened by ALBERT E. BULSON, JR., Fort Wayne, Ind.
5. Mercurochrome-220. A Clinical Laboratory Report on Its Use in Ophthalmology.
WALTER B. LANCASTER, FRANCIS L. BURNETT and LOUIS H. GAUS, Boston.
Discussion to be opened by HUGH H. YOUNG, Baltimore.

Thursday, April 29—9 a. m.

DEMONSTRATION SESSION. EXHIBITION OF NEW INSTRUMENTS AND APPLIANCES

6. Address: Extraction of Cataract in Glaucoma.
VICTOR MORAX, Paris.
7. Thermophor Studies in Glaucoma.
WILLIAM E. SHAHAN and LAWRENCE POST, St. Louis.
Discussion to be opened by JOHN O. MCREYNOLDS, Dallas, Texas.
8. Diagnosis of Chronic Intra-Ocular Tuberculosis.
HARRY H. STARK, El Paso, Texas.
Discussion to be opened by WILLIAM C. FINNOFF, Denver.
9. Ethylhydrocuprein in Diseases of the Eye.
ARTHUR J. BEDELL, Albany, N. Y.
Discussion to be opened by HARRY S. GRADLE, Chicago.
10. Communicating Vessels Between Retina and Choroid in Certain Cases of Chorioretinitis, with Remarks on a Fold of the Inner Limiting Membrane.
MARCUS FEINGOLD, New Orleans.
Discussion to be opened by EDWARD JACKSON, Denver.

Friday, April 30—9 a. m.

Election of Officers

Reports of Committees

11. Effect of Cold on the Temperature in the Orbit.
LUCIEN HOWE, Buffalo.
Discussion to be opened by ERASTUS E. HOLT, Portland, Maine.
12. Early Diagnosis of Pituitary Tumor with Ocular Phenomena. WILLIAM L. BENEDICT, Rochester, Minn.
Discussion to be opened by F. PHINIZY CALHOUN, Atlanta, Ga.
13. Four Cases of Sympathetic Ophthalmia with Reference to Treatment with Large Doses of Salicylate of Sodium. HERBERT MOULTON, Fort Smith, Ark.
Discussion to be opened by JAMES M. PATTON, Omaha.
14. A New Operation for the Relief of Dacryocystitis Through the Nasal Route.
MEYER WIENER and WILLIAM E. SAUER, St. Louis.
Discussion to be opened by WILLIAM H. WILDER, Chicago.
15. Restoration of the Margin of the Eyelid by a Free Graft from the Lower Part of the Eyebrow.
JOHN M. WHEELER, New York.
Discussion to be opened by NELSON M. BLACK, Milwaukee.

SECTION ON LARYNGOLOGY, OTOLOGY AND RHINOLOGY

MEETS IN MOOSE HALL

OFFICERS OF SECTION

Chairman—JOSEPH C. BECK, Chicago.
Vice Chairman—GEORGE M. COATES, Philadelphia.
Secretary—WILLIAM B. CHAMBERLIN, Cleveland.
Executive Committee—FRANCIS P. EMERSON, Boston; GREENFIELD SLUDER, St. Louis; LEE WALLACE DEAN, Iowa City.
(Stenographer—MISS F. E. DILLAN, Indianapolis)

Wednesday, April 28—2 p. m.

1. Chairman's Address. JOSEPH C. BECK, Chicago.
2. Plastic Surgery: Its Relation to the Otolaryngologist (Lantern Demonstration).
FERRIS N. SMITH, Grand Rapids, Mich.
3. Plastic Surgery of the Face.
MILLARD F. ARBUCKLE, East St. Louis, Ill.
4. Mixed Tumors of the Throat, Mouth and Face.
GORDON B. NEW, Rochester, Minn.
Discussion to be opened by LEE WALLACE DEAN, Iowa City.
5. Thyroid Surgery, Especially as Related to Laryngology.
JOHN F. BARNHILL, Indianapolis.
Discussion to be opened by GEORGE W. CRILE, Cleveland.
6. The Use and Possible Abuse of Radium in the Treatment of Malignant Tumors of the Nose and Throat.
ROBERT SONNENSCHEIN, Chicago.
Discussion to be opened by WILLIAM L. CLARK, Philadelphia, and DUNBAR ROY, Atlanta, Ga.
7. Misleading Symptoms and Roentgen-Ray Findings in Suspected Mastoid Abscess.
RICHMOND MCKINNEY, Memphis, Tenn.
Discussion to be opened by SAMUEL IGLAUER, Cincinnati.

Thursday, April 29—2 p. m.

8. Present Status of Neuro-Otology from the Borderline Standpoint. JOSEPH D. HEITGER, Louisville, Ky.
Discussion to be opened by HAROLD I. LILLIE, Rochester, Minn.
9. Intracranial Lesions Involving the Auditory Vestibular Apparatus. EUGENE R. CARPENTER, Dallas, Texas.
Discussion to be opened by HARVEY CUSHING, Boston.
10. Neurolabyrinthitis Syphilitica.
GEORGE W. MACKENZIE, Philadelphia.
Discussion to be opened by GEORGE M. COATES, Philadelphia.
11. Clinical Manifestations of Infection of the Lateral Sinus.
FRANCIS P. EMERSON, Boston.
Discussion to be opened by WILLIAM E. SAUER, St. Louis.
12. Arthritis Deformans of the Larynx.
HENRY L. LYNAH, New York.
Discussion to be opened by EMIL MAYER, New York.
13. The Indifference of the Laryngologist Toward Tuberculous Laryngitis and the Tuberculosis Problem.
WILLIAM V. MULLIN, Colorado Springs, Colo.
Discussion to be opened by JOHN B. MCMURRAY, Washington, Pa.
14. The Diagnosis and Prognosis of Loss of Vision from Accessory Sinus Disease. LEON E. WHITE, Boston.
Discussion to be opened by HARRY H. STARK, El Paso, Texas, and HANAU W. LOEB, St. Louis.

Friday, April 30—2 p. m.

Election of Officers

EXHIBITION OF NEW INSTRUMENTS AND APPLIANCES

Report of Committees

Special Report on Local Anesthesia by the Committee on Therapeutic Research.
EMIL MAYER, New York, Chairman; ROSS HALL SKILLERN, Philadelphia, and ROBERT SONNENSCHEIN, Chicago.
Discussion to be opened by RUDOLPH MATAS and CARROLL W. ALLEN, New Orleans.

15. Harelip and Cleft Palate. OWEN SMITH, Portland, Me.
Discussion to be opened by THOMAS E. CARMODY, Denver.
16. New Method of Closing an Enlarged Tooth Root Opening into the Maxillary Antrum.
CULLEN F. WELTY, San Francisco.
Discussion to be opened by JOSEPH A. STUCKY, Lexington, Ky.
17. Relative Value of Transillumination and Roentgenography in the Diagnosis of Disease of the Maxillary and Frontal Sinuses; with Description of an Orbito-palatal Route of Transilluminating the Maxillary Sinus (Lantern Demonstration).
HENRY H. BRIGGS, Asheville, N. C.
Discussion to be opened by J. WILKINSON JERVEY, Greenville, S. C.
18. Nerve Blocking for Nasal Surgery.
ROBERT G. REAVES, Greensboro, N. C.
Discussion to be opened by HENRY H. MARTIN, Savannah, Ga.

SECTION ON DISEASES OF CHILDREN

MEETS IN ELKS' HALL

OFFICERS OF SECTION

Chairman—FRITZ B. TALBOT, Boston.
Vice Chairman—JULIUS H. HESS, Chicago.
Secretary—E. C. FLEISCHNER, San Francisco.
Executive Committee—JULUIS P. SEDGWICK, Minneapolis; LAURENCE R. DEBUYS, New Orleans; FRANKLIN P. GENGENBACH, Denver.
(Stenographer—Dr. G. G. TAYLOR)

Wednesday, April 28—9 a. m.

1. Chairman's Address: The Future of Pediatrics.
FRITZ B. TALBOT, Boston.
2. The Treatment of Indigestion in Children.
JOHN LOVETT MORSE, Boston.

3. The Treatment of Indigestion in Children from Six to Twelve Years of Age.
HARRY M. MCCLANAHAN, Omaha.
4. The Relation of Acquired Food Dislikes of Childhood to the Diseases of Middle Life.
C. HILTON RICE, JR., Montgomery, Ala.
5. A Few Pertinent Questions on Maternal Feeding.
WILLIAM A. MULHERIN, Augusta, Ga.
6. How Pediatric Teaching of Nutrition May Affect the Nation's Welfare.
HENRY DWIGHT CHAPIN, New York.
7. Vegetable Fats in Infant Feeding.
GEORGE DOW SCOTT, New York.

Thursday, April 29—9 a. m.

8. Observations on Tumors of the Kidney in Children.
WILLIAM E. CARTER and LANGLEY PORTER, San Francisco.
9. Chronic Nephritis in Children.
LEWIS WEBB HILL, Boston.
10. Local Anesthesia in Surgery in Infancy and Childhood.
ROBERT E. FARR, Minneapolis.
11. Infantile Spinal Progressive Muscular Atrophy (Werdnig-Hoffmann). EDGAR J. HUENEKENS, Minneapolis.
12. Human Heart with only Two Chambers (Cor Biloculare).
HARRY H. DONNALLY, Washington, D. C.
13. Acrodynia. WILLIAM WESTON, Columbia, S. C.

Friday, April 30—9 a. m.

Election of Officers

14. The Temporary Teeth: Disorders Due to Their Neglect.
J. ROSS SNYDER, Birmingham, Ala.
15. The Coagulation Time of Blood in the New-Born with Special Reference to Cerebral Hemorrhage.
FREDERICK C. RODDA, Minneapolis.
16. Studies of the Effect of Diphtheria Toxin on the Heart.
HUGH MCCULLOCH, St. Louis.
17. The Antiscorbutic Value of Proprietary Baby Foods.
JOSIAH J. MOORE, Chicago.
18. Intramuscular Injections of Blood as an Aid to Nutrition.
THOMAS D. PARKE, Birmingham, Ala.
19. Intubation of the Larynx: Analysis of 440 Cases in Private Practice
HENRY J. CARTIN, Johnstown, Pa.

SECTION ON PHARMACOLOGY AND THERAPEUTICS

MEETS IN GRUNEWALD, GREEN ROOM

OFFICERS OF SECTION

Chairman—GEORGE W. MCCOY, Washington, D. C.
Vice Chairman—LEONARD G. ROWNTREE, Minneapolis.
Secretary—CARY EGGLESTON, New York.
Executive Committee—A. W. HEWLETT, San Francisco; ARTHUR D. HIRSCHFELDER, Minneapolis; W. A. BASTEDO, New York.
(Stenographer—Miss MARGARET I. MALONEY, Chicago)

Wednesday, April 28—9 a. m.

1. Chairman's Address
GEORGE W. MCCOY, Washington, D. C.
2. The Actions of Some Homologues of Benzyl Alcohol.
ARTHUR D. HIRSCHFELDER, Minneapolis.
3. Some Observations on the Pharmacology of a Digitalis Body. ROBERT A. HATCHER, New York.
4. Clinical Observations on the Absorption of Digitalis.
CARY EGGLESTON, New York.
5. Cancer Ameliorations and Cancer Immunity.
ARTHUR F. HOLDING, Madison, Wis.
6. The Treatment of Combined Diabetes and Nephritis.
FREDERICK M. ALLEN, J. W. MITCHELL and J. W. SHERRILL, New York.
7. Deficiencies in Our Methods of Treatment of Chronic Nephritis. HENRY A. CHRISTIAN, Boston.
Discussion to be opened by LEWELLYS F. BARKER, Baltimore, and GEORGE DOCK, St. Louis.

Thursday, April 29—2 p. m.

JOINT MEETING OF SECTIONS ON PHARMACOLOGY AND THERAPEUTICS AND ON DERMATOLOGY

Meeting Place—Hutchinson Memorial Building, Lower Amphitheater

OLIVER S. ORMSBY, Chairman of Section on Dermatology, Presiding.

CARY EGGLESTON, Secretary of Section on Pharmacology and Therapeutics, Officiating.

SYMPOSIUM ON ARSPHENAMIN

8. The Chemical Composition of Arsphenamin and Neo-Arsphenamin and Its Relation to Toxicity (Lantern Demonstration).
GEORGE W. RAIZISS, Philadelphia.
9. The Pathology of Arsphenamin and Neo-Arsphenamin Intoxication: An Experimental Study (Lantern Demonstration).
JOHN A. KOLMER and BALDUIN LUCKE, Philadelphia.
10. Some Salient Facts Regarding the Toxicity of Arsphenamin and Neo-Arsphenamin.
GEORGE B. ROTH, Washington, D. C.
11. A Comparison of the Merits of Arsphenamin and Neo-Arsphenamin: Laboratory and Clinical Studies (Lantern Demonstration).
JAY F. SCHAMBERG, Philadelphia.
12. Therapeutic Applications and Limitations of the Arsphenamins. JOHN H. STOKES, Rochester, Minn.
13. Effects of Arsphenamin on Renal Function in Syphilitic Patients. JOSEPH A. ELLIOTT, Charlotte, N. C.
14. The Use of Arsphenamin in Nonsyphilitic Diseases.
HENRY J. NICHOLS and MATHEW A. REASONER, Washington, D. C.
Discussion of papers 8, 9, 10, 11, 12, 13 and 14 to be opened by WILLIAM A. PUSEY, Chicago, and WILLIAM H. GUY, Pittsburgh.

Friday, April 30—9 a. m.

Election of Officers

15. The Underlying Pathology of Arthritis and Rheumatoid Conditions as a Basis of Treatment.
RALPH PEMBERTON, Philadelphia.
16. Factors Affecting the Basal Metabolic Rate (Lantern Demonstration).
LEONARD G. ROWNTREE, ALBERT M. SNELL and FRANCES FORD, Minneapolis.
17. Clinical Observations on the Digitalis-Like Action of Squills. PAUL D. WHITE, Boston.
18. The Management of the Circulation in Pneumonia.
HARLOW BROOKS and JOHN H. CARROLL, New York.
Discussion to be opened by JOSEPH A. CAPPS, Chicago.
19. Quantitative Studies in Chemotherapy (Lantern Demonstration).
CARL VOEGTLIN and HOMER W. SMITH, Washington, D. C.

SECTION ON PATHOLOGY AND PHYSIOLOGY

MEETS IN GRUNEWALD—GREEN ROOM

OFFICERS OF SECTION

Chairman—HOWARD T. KARSNER, Cleveland.
Secretary—JOSIAH J. MOORE, Chicago.
Executive Committee—JAMES EWING, New York; LOUIS B. WILSON, Rochester, Minn.; FRANCIS CARTER WOOD, New York.
(Stenographer—Miss MARGARET I. MALONEY, Chicago)

Wednesday, April 28—2 p. m.

1. Chairman's Address: Teaching the Pathology of Function.
HOWARD T. KARSNER, Cleveland.
2. Increasing the Pathologist's Usefulness and Rewards.
BENJAMIN TAYLOR TERRY, Nashville, Tenn.
Discussion to be opened by JAMES EWING, New York; FRANCIS CARTER WOOD, New York, and WILLIAM C. MACCARTY, Rochester, Minn.
3. Experimental Pellagra in White Male Convicts.
JOSEPH GOLDBERGER and GEORGE A. WHEELER, Washington, D. C.
4. Review of the Recent Reports on Pellagra.
JAMES W. BABCOCK, Columbia, S. C.
5. The Pathology of Pellagra.
MARVIN L. GRAVES, Galveston, Texas.
Discussion of papers 3, 4 and 5 to be opened by MARTIN F. ENGMAN, St. Louis, and MARCUS HAASE, Memphis, Tenn.

6. Recent Advances in Clinical Blood Pressure Measurement.
CLYDE BROOKS and ALBERT M. BLEILE, Columbus, Ohio.
7. An Experimental Study of Acidosis Produced by Ether Anesthesia. WILLIAM S. CARTER, Galveston, Texas.

Thursday, April 29—2 p. m.

8. The Development of the Bactericidal Power of Whole Blood and of Antibodies in the Serum.
JAMES H. BLACK, Dallas, Texas.
9. Some Characteristics of Certain Epidemic Micro-Organisms. DAVID J. DAVIS, Chicago.
10. The Toxic Substances Produced by Hemolytic Streptococci. LUDVIG HEKTOEN, Chicago.
11. Penetration of the Intestine and Formation of Abdominal Abscess by Entameba Histolytica.
KENNETH M. LYNCH, Charleston, S. C.
12. Localization of Malarial Parasites in the Tissues.
CHARLES C. BASS, New Orleans.
13. A Mathematical Terminology for Neoplasia.
WILLIAM C. MACCARTY, Rochester, Minn.
14. Chronic Nephritis with Special Reference to the Interstitial Form. LOUIS A. TURLEY, Norman, Okla.

Friday, April 30—2 p. m.

Election of Officers

15. Bacterial Vaccines: Their Uses and Abuses.
ADELBERT M. MOODY, Chicago.
16. The Wassermann Reaction: Prolonged Incubation in the Icebox Versus a Short Period over the Water Bath.
WARD T. BURDICK, Denver.
17. The Value of the Postmortem Wassermann Reaction.
F. STUART GRAVES, Louisville, Ky.
Discussion to be opened by EDWIN R. LECOUNT, Chicago.
18. Observations on the Quantitative Nature of Complement Fixation. JOHN J. SEELMAN, Milwaukee.
Discussion to be opened by JOHN A. KOLMER, Philadelphia.
19. The Complement Fixation Reaction in Tuberculosis.
W. WARNER WATKINS and CLARENCE N. BOYNTON, Phoenix, Ariz.
20. Transplantation of the Kidney and Ovary.
I. CARLETON DEDERER, Bay City, Mich.
21. Inhalations of Carbon Dioxid in Combating Postoperative Shock.
YANDELL HENDERSON and HOWARD W. HAGGARD, New Haven, Conn., and RAYMOND C. COBURN, New York.

SECTION ON STOMATOLOGY

MEETS IN HUTCHINSON MEMORIAL BUILDING, FACULTY ROOM

OFFICERS OF SECTION

Chairman—VILRAY P. BLAIR, St. Louis.
Vice Chairman—HENRY S. DUNNING, New York.
Secretary—ARTHUR D. BLACK, Chicago.
Executive Committee—ARTHUR D. BLACK, Chicago; FREDERICK B. NOYES, Chicago; EUGENE S. TALBOT, Chicago.
(Stenographer—Mr. ARTHUR J. CHAPMAN, New Orleans)

Wednesday, April 28—2 p. m.

1. Chairman's Address. VILRAY P. BLAIR, St. Louis.
Discussion to be opened by G. V. I. BROWN, Milwaukee.
2. Emergency Splinting of Jaw Fractures: Intra-Oral Appliances. LEO B. WINTER, New York.
3 Emergency Splinting of Jaw Fractures: Extra-Oral Appliances.
WILLIAM C. SPEAKMAN, Wilmington, Del.
4. Treatment of Fractures of the Angle and Ramus.
J. D. EBY, Philadelphia.
5. Gradual Reduction of Fractures of the Maxilla and Mandible. A. L. MILLER, Fort McHenry, Md.
6. Treatment of Comminuted Fractures of the Mandible.
HERBERT A. POTTS, Chicago.
Discussion of papers 2, 3, 4, 5 and 6 to be opened by THOMAS L. GILMER, Chicago.

Thursday, April 29—2 p. m.

7. Epithelial Inlays versus Skin or Mucous Membrane Flaps for Replacing Lost Mucous Membrane in the Mouth.
GEORGE M. DORRANCE, Philadelphia.
8. Plastic Repair of Soft Tissue Injuries of the Face.
J. D. WHITHAM, Washington, D. C.
9. Final Report of War Cases of Comminuted Open Fractures of the Jaws and Those with Loss of Substance: Results of Bone Graft. ROBERT H. IVY, Philadelphia.
Discussion to be opened by M. I. SCHAMBERG, New York.
10. Adenoma of the Mucous Glands of the Mouth and Macrocheilia. EDWARD H. HATTON, Chicago.
Discussion to be opened by FREDERICK B. MOOREHEAD, Chicago.
11. Surgical Treatment of Maxillary Sinusitis of Dental Origin. HENRY S. DUNNING, New York.
Discussion to be opened by HERBERT A. POTTS, Chicago.

Friday, April 30—2 p. m.

Election of Officers

12. Progress in Dental Education.
H. E. FRIESELL, Pittsburgh.
Discussion to be opened by EUGENE S. TALBOT, Chicago.
13. Dental Care of Children in Our Hospitals.
HAIDEE WEEKS GUTHRIE, New Orleans.
14. Training Public Schoolchildren in Mouth Hygiene.
A. C. FONES, Bridgeport, Conn.
15. Public Education in Mouth Hygiene.
OTTO U. KING, Chicago.
Discussion of papers 13, 14 and 15 to be opened by ARTHUR D. BLACK, Chicago.

SECTION ON NERVOUS AND MENTAL DISEASES

MEETS IN CHARITY HOSPITAL, AMPHITHEATER

OFFICERS OF SECTION

Chairman—ELMER E. SOUTHARD,* Boston.
*Deceased.
Vice Chairman—ARTHUR S. HAMILTON, Minneapolis.
Secretary—CHARLES W. HITCHCOCK, Detroit.
Executive Committee—BERNARD SACHS, New York; CHARLES EUGENE RIGGS, St. Paul; ARCHIBALD CHURCH, Chicago.
(Stenographer—Miss ADELAIDE FOLSOM, Ripon, Wis.)

Wednesday, April 28—9 a. m.

1. Chairman's Address.
ARTHUR S. HAMILTON, Minneapolis.
2. Reduction of Nervous Irritability and Excitement by Progressive Relaxation.
EDMUND JACOBSON, Chicago.
3. Influenza and Feeblemindedness.
KARL A. MENNINGER, Topeka, Kan.
4. Conjugal Syphilis of the Nervous System.
ALFRED GORDON, Philadelphia.
5. Discussion of Therapeutic Agents in Chronic Nervous Diseases. WILLIAM A. JONES, Minneapolis.
6. Congenital Facial Paralysis: Two Additional Cases.
FRANK R. FRY, St. Louis.
7. The Causes of Emotivity and Their Management.
TOM A. WILLIAMS, Washington, D. C.

Thursday, April 29—9 a. m.

8. A Theory of the Neuroses as Instinctive Reactions.
SIDNEY I. SCHWAB, St. Louis.
9. Prognosis of Traumatic Neurosis.
LOUIS A. MILLER, Toledo, Ohio.
10. Experiences with Luminal in Epilepsy.
JULIUS GRINKER, Chicago.
11. The Paraplegic Type of Multiple Sclerosis.
ARCHIBALD CHURCH, Chicago.
12. Endocrine Imbalance in the Feebleminded.
OSCAR J. RAEDER, Boston.
13. The Amnesias in Head Injuries.
HAROLD N. MOYER, Chicago.
14. The Physiologic Significance of the Babinski Toe Response. I. LEON MEYERS, Chicago.

Friday, April 30—9 a. m.

Election of Officers

15. Nervous and Mental Diseases: A Challenge to the Medical Profession.
FRANKWOOD E. WILLIAMS, New York.

16. Symptomatology of Spinal Cord Tumors with Illustrative Cases.
I. ABRAHAMSON and H. CLIMENKO, New York.
17. The Physician and the Neuropath.
CHARLES R. BALL, St. Paul.
18. Outline of a Scheme for Writing the Natural History of Syphilis. SANGER BROWN, Chicago.
19. Measles: Brain Complications.
A. L. SKOOG, Kansas City, Mo.
20. The Relation of Worms to Epilepsy.
E. BATES BLOCK, Atlanta, Ga.
21. Encephalitis Lethargica.
EDWARD LIVINGSTON HUNT, New York.

SECTION ON DERMATOLOGY

MEETS IN HUTCHINSON MEMORIAL BUILDING, LOWER AMPHITHEATER

OFFICERS OF SECTION

Chairman—OLIVER S. ORMSBY, Chicago.
Vice Chairman—JOHN E. LANE, New Haven, Conn.
Secretary—WALTER J. HIGHMAN, New York.
Executive Committee—HENRY R. VARNEY, Detroit; HENRY H. HAZEN, Washington, D. C.; OTTO H. FOERSTER, Milwaukee.
(Stenographer—Mrs. IRENE H. SNYDER, Chicago)

Wednesday, April 28—2 p. m.

1. Chairman's Address: A Valuable Method of Employing Arsphenamin in Syphilis.
OLIVER S. ORMSBY, Chicago.

SYMPOSIUM ON SYPHILIS

2. Polyneuritis Plus Dermatitis Exfoliativa Following Neo-Arsphenamin. B. BARKER BEESON, Chicago.
3. Arsphenamin Dermatitis.
GEORGE M. OLSON, Minneapolis.
4. A Study of the Absorption of Mercury Injections by Means of the Roentgen Ray.
HAROLD N. COLE, Cleveland.
5. The Value of the Provocative Wassermann Test in the Diagnosis of Obscure Syphilis.
PAUL A. O'LEARY, Rochester, Minn.
6. Protein Sensitization in Eczema.
HOWARD FOX, New York, and J. EDGAR FISHER, Pittsburgh.
7. Infectious Eczematoid Dermatitis.
RICHARD L. SUTTON, Kansas City, Mo.
8. Eczema of the Vermilion Border of the Lips.
DOUGLASS W. MONTGOMERY and GEORGE D. CULVER, San Francisco.
9. Venipuncture as an Occasional Adjuvant in the Treatment of Certain Diseases of the Skin.
JEROME KINGSBURY and PAUL E. BECHET, New York.

Thursday, April 29—2 p. m.

JOINT MEETING OF SECTIONS ON PHARMACOLOGY AND THERAPEUTICS AND ON DERMATOLOGY

SYMPOSIUM ON ARSPHENAMIN

For Program See Page 855

Friday, April 30—2 p. m.

Election of Officers

SYMPOSIUM ON NEW GROWTHS

17. A Clinical Study of Epitheliomas of the Lower Lip (Lantern Demonstration).
EVERETT S. LAIN, Oklahoma City.
18. Malignant Degeneration of Benign Dermatoses.
CHARLES M. WILLIAMS, New York.
19. Malignant Tumors of the Skin.
EARL D. CRUTCHFIELD, Galveston, Texas.
20. On Production of Tumors in the Absence of Parasites.
ERWIN F. SMITH, Washington, D. C.
21. The Treatment of Keloid and Hypertrophied Scars by Radiotherapy Alone or Combined with Excision.
GEORGE E. PFAHLER, Philadelphia.
Discussion of papers 17, 18, 19, 20 and 21 to be opened by NORMAN WALKER, Edinburgh.
22. Acidosis in Skin Diseases.
SAMUEL E. SWEITZER and HENRY E. MICHELSON, Minneapolis.
23. Lichen Spinulosus and Folliculitis Decalvans: A Clinical Combination. FRANCIS E. SENEAR, Chicago.
24. The Association of Herpes Zoster and Varicella.
ERNEST L. MCEWEN, Chicago.
25. The Histogenesis of Molluscum Contagiosum (Lantern Demonstration).
LYLE B. KINGERY, Ann Arbor, Mich.

SECTION ON PREVENTIVE MEDICINE AND PUBLIC HEALTH

MEETS IN LOYOLA HALL

OFFICERS OF SECTION

Chairman—JAMES A. HAYNE, Columbia, S. C.
Vice Chairman—J. D. MACLEAN, Harrisburg, Pa.
Secretary—CLARENCE D. SELBY, Toledo, Ohio.
Executive Committee—OTTO P. GEIER, Cincinnati; W. S. RANKIN, Raleigh, N. C.; CLARENCE ST. CLAIR DRAKE, Springfield, Ill.
(Stenographer—Mrs. M. C. REPP, Philadelphia)

Wednesday, April 28—9 a. m.

1. Chairman's Address: The Rights of the Child.
JAMES A. HAYNE, Columbia, S. C.
2. What the American Red Cross Can Contribute to the General Health Program.
ERWIN A. PETERSON, Washington, D. C.
3. Mortality and Incidence of Leprosy Throughout the World. FREDERICK L. HOFFMAN, Newark, N. J.
Discussion to be opened by ISADORE DYER, New Orleans.
4. Desirable Trend of National Health Policies.
BENJAMIN S. WARREN, Washington, D. C.
5. Minimum Standards of Organization for Municipal Health Departments. CARROLL FOX, Boston.
6. Sanitation in Poland. FRANCIS E. FRONCZAK, Buffalo.
7. The Training of Industrial Physicians.
J. A. WATKINS, Cincinnati.
Discussion to be opened by OTTO P. GEIER, Cincinnati.

Thursday, April 29—9 a. m.

8. The Carrier Question in Epidemic Meningitis and Diphtheria. CHARLES M. ABBOTT, Alexandria, La.
9. Typhoid Reduction in South Carolina: Results in Counties with Health Organization.
LUTHER A. RISER, Columbia, S. C.
Discussion to be opened by KNOX E. MILLER, Raleigh, N. C.
10. Heart Disease as a Public Health Problem.
LEWIS A. CONNER, New York.
Discussion to be opened by ALEXANDER LAMBERT, New York.
11. Eradication of Malaria: A National Health Problem.
LUNSFORD D. FRICKS, Memphis, Tenn.
12. Trachoma: A Public Health Problem of the States (Lantern Demonstration). JOHN MCMULLEN, Louisville, Ky.
Discussion to be opened by ARTHUR T. MCCORMACK, Louisville, Ky., and ALLEN W. FREEMAN, Columbus, Ohio.
13. Industrial Epidemiology.
W. A. SAWYER, Rochester, N. Y.

Friday, April 30—9 a. m.

Election of Officers

14. The Work of the Department of Health of the Tennessee Coal, Iron and Railroad Company.
LLOYD NOLAND, Birmingham, Ala.
Discussion to be opened by CLYDE E. FORD, New York.
15. The Difficulties of Public Health Administration.
GROVER C. MCKINNEY, Lake Charles, La.
16. An Ambulatory Clinic.
RALPH N. GREENE, Jacksonville, Fla.
17. Lessons Taught by Measures for Control of Venereal Diseases and Suggestions for the Future.
CLAUDE C. PIERCE, Washington, D. C.
18. The Necessity for the Reporting of Venereal Disease by Physicians. WILLIAM EDLER, New Orleans.
Discussion to be opened by OSCAR DOWLING, New Orleans.
19. The Differential Diagnosis of Conjunctival Folliculosis and Trachoma.
J. WILKINSON JERVEY, Greenville, S. C.
Discussion to be opened by HENRY DICKSON BRUNS, New Orleans, and THEODORE OERTEL, Augusta, Ga.

SECTION ON UROLOGY

MEETS IN HUTCHINSON MEMORIAL BUILDING, LOWER AMPHITHEATER

OFFICERS OF SECTION

Chairman—WILLIAM E. LOWER, Cleveland.

Vice Chairman—RICHARD F. O'NEIL, Boston.

Secretary—E. O. SMITH, Chicago.

Executive Committee—HUGH CABOT, Ann Arbor, Mich.; EDWARD L. KEYES, JR., New York; WILLIAM F. BRAASCH, Rochester, Minn.

(Stenographer—Mrs. IRENE H. SNYDER, Chicago)

Wednesday, April 28—9 a. m.

1. Chairman's Address: Disposition of the Ureter in Surgical Conditions of the Bladder Involving the Ureteral Orifices. WILLIAM E. LOWER, Cleveland.
2. Results of Surgical Treatment of Tumors of the Bladder. E. STARR JUDD and WALTER E. SISTRUNK, Rochester, Minn.
3. Radium Treatment of Bladder Carcinoma. BENJAMIN S. BARRINGER, New York.
4. Bladder Tumors: Pathology and Radiumtherapy. JOHN T. GERAGHTY, Baltimore.
5. The Treatment of Bladder Tumors with Analysis of Cases. BENJAMIN A. THOMAS, Philadelphia.
   Discussion of papers 2, 3, 4 and 5 to be opened by LOUIS E. SCHMIDT, Chicago, EDWARD L. KEYES, New York, and HUGH CABOT, Ann Arbor, Mich.
6. Papillomatous Epithelioma of Kidney Pelvis. PERCY E. MCCOWN, Indianapolis.
   Discussion to be opened by E. STARR JUDD, Rochester, Minn., and WILLIAM E. LOWER, Cleveland.

Thursday, April 29—9 a. m.

7. Abdominal Pain in Diseases of the Kidney and Ureters. ARTHUR B. CECIL, Los Angeles.
   Discussion to be opened by ALFRED I. FOLSOM, Dallas, Texas.
8. Studies of Pyelitis in Infancy. HERMAN L. KRETSCHMER, Chicago.
   Discussion to be opened by WILLIAM C. QUINBY, Boston, and WILLIAM F. BRAASCH, Rochester, Minn.
9. Nephrectomy: Based on the Record of 250 Cases. ABRAHAM HYMAN and EDWIN BEER, New York.
   Discussion to be opened by ALEXANDER RANDALL, Philadelphia.
10. Ureteral Obstruction and Dilatation in the Male. ALBERT E. GOLDSTEIN, Baltimore.
    Discussion to be opened by BRANSFORD LEWIS, St. Louis, and JOHN G. KELLER, Toledo, Ohio.
11. Occluded Renal Tuberculosis (Lantern Demonstration). WILLIAM F. BRAASCH, Rochester, Minn.
    Discussion to be opened by JOSEPH HUME, New Orleans.
12. Developmental Factors in the Formation of Certain Vesical Diverticula (Lantern Demonstration). ERNEST M. WATSON, Buffalo.
    Discussion to be opened by OSWALD S. LOWSLEY, New York.
13. Diverticulum of the Bladder (Lantern Demonstration). FRANCIS M. MCCALLUM, Kansas City, Mo.
    Discussion to be opened by COURTNEY W. SHROPSHIRE, Birmingham, Ala.

Friday, April 30—9 a. m.

Election of Officers

14. Contraindications to Prostatectomy (Lantern Demonstration). JAMES A. GARDNER, Buffalo.
    Discussion to be opened by HUGH H. YOUNG, Baltimore.
15. Ulcer of the Bladder—Hunner Type. HARRY A. FOWLER, Washington, D. C.
    Discussion to be opened by GUY L. HUNNER, Baltimore.
16. Bladder Findings in Central Nervous System Diseases. JOHN R. CAULK, St. Louis.
    Discussion to be opened by BUDD C. CORBUS, Chicago, and HARRY W. PLAGGEMEYER, Detroit.
17. Urological and Venereal Idiosyncrasies in the Negro. GEORGE H. DAY, Louisville.
    Discussion to be opened by CARL L. WHEELER, Lexington, Ky.
18. Gonorrhea of the Lower Genito-Urinary Tract in Women, with Special Reference to the Glands of Bartholin. WILLIAM E. STEVENS and MAURICE HEPPNER, San Francisco.
    Discussion to be opened by GEORGE G. SMITH, Boston, and RUFUS L. RIGDON, San Francisco.
19. Orchitis from Mumps: Conservation of the Testes by Incision of the Tunica Albuginea. EDGAR G. BALLENGER, Atlanta, Ga.
    Discussion to be opened by FRANCIS R. HAGNER, Washington, D. C.
20. Spermatogenesis in Relation to Childlessness (Lantern Demonstration). VICTOR D. LESPINASSE, Chicago.
    Discussion to be opened by MAX HUHNER, New York.

SECTION ON ORTHOPEDIC SURGERY

MEETS IN CHARITY HOSPITAL, AMPHITHEATER

OFFICERS OF SECTION

Chairman—GEORGE W. HAWLEY, New York.

Vice Chairman—ROLAND HAMMOND, Providence, R. I.

Secretary—HENRY BASCOM THOMAS, Chicago.

Executive Committee—EDWIN W. RYERSON, Chicago; ALBERT H. FREIBERG, Cincinnati; EMIL S. GEIST, Minneapolis.

(Stenographer—MISS ADELAIDE FOLSOM, Ripon, Wis.)

Wednesday, April 28—2 p. m.

1. Orthopedic Conditions Directly Due to Sterilized Food in Infancy (Lantern Demonstration). FRANK E. PECKHAM, Providence, R. I.
   Discussion to be opened by MAURICE L. BLATT, Chicago, and EDWARD S. HATCH, New Orleans.
2. Operations for Repair of Bone Defects: Results Obtained at Letterman General Hospital (Lantern Demonstration). LEO ELOESSER, San Francisco.
   Discussion to be opened by J. PAUL JONES, Camden, Ala.
3. Results of Bone Graft at U. S. Army Hospital No. 3 (Lantern Demonstration).
   JOHN SPENCER DAVIS, Dallas, Texas, and JACOB J. SYBENGA, Pella, Iowa.
   Discussion to be opened by PAUL B. MAGNUSON, Chicago, and ERASMUS D. FENNER, New Orleans.

SYMPOSIUM ON TREATMENT OF INFANTILE PARALYSIS

4. Transverse Horizontal Section of the Tarsus in Paralytic Calcaneus and Flail Foot (Lantern Demonstration). DEFOREST P. WILLARD, Philadelphia.
5. Operative Treatment of Infantile Paralysis. ROBERT W. LOVETT, Boston.
6. Indications for and End-Results of Surgical Operations in Infantile Paralysis (Lantern Demonstration). H. WINNETT ORR, Lincoln, Neb.
7. Sling Suspension Method of Exercises in Infantile Paralysis (Lantern Demonstration). FREDERICK J. GAENSLEN, Milwaukee.
   Discussion of papers 4, 5, 6 and 7 to be opened by JOHN D. RIDLON, Chicago; FRANK D. DICKSON, Kansas City, Mo.; JAMES O. WALLACE, Pittsburgh; WILLIS K. WEST, Oklahoma City; ARTHUR STEINDLER, Iowa City; CLARENCE W. EAST, Springfield, Ill.; PHILIP D. WILSON, Boston, and HENRY B. THOMAS, Chicago.

Thursday, April 29—2 p. m.

8. Anterior Bow-Legs. WALLACE BLANCHARD, Chicago.
   Discussion to be opened by WILLIS C. CAMPBELL, Memphis, Tenn., and H. WINNETT ORR, Lincoln, Neb.
9. Chairman's Address: Constructive Versus Reconstructive Surgery of the Extremities. ROLAND HAMMOND, Providence, R. I.
10. Some of the Difficulties in the Diagnosis of Osteosarcoma (Lantern Demonstration). ROBERT B. COFIELD, Cincinnati.
    Discussion to be opened by DEAN D. LEWIS, Chicago, and FREDERICK J. GAENSLEN, Milwaukee.
11. Dislocation of the Carpal Semilunar Bone (Lantern Demonstration). WALTER G. STERN, Cleveland.
    Discussion to be opened by SAMUEL KLEINBERG, New York, and EDWARD S. HATCH, New Orleans.

12. Recurrent Dislocations and Allied Chronic Conditions of the Shoulder. T. TURNER THOMAS, Philadelphia.
Discussion to be opened by WILLIAM J. MERRILL, Philadelphia; MELVIN S. HENDERSON, Rochester, Minn., and ALFRED C. WOOD, Philadelphia.
13. The Objective Symptoms of Foot Strain (Lantern Demonstration). ALBERT H. FREIBERG, Cincinnati.
Discussion to be opened by JOHN L. PORTER, Chicago, and JOHN CARLING, Los Angeles.
14. Unstandardized Versus Standardized Splints.
HORACE R. ALLEN, Indianapolis.
Discussion to be opened by CLARENCE W. HOPKINS, Chicago.

Friday, April 30—2 p. m.

Election of Officers

15. Operative Treatment of Peripheral Nerve and Associated Bone Lesions in One Stage.
JOHN O. BOWER, Philadelphia.
Discussion to be opened by WILLIAM W. BABCOCK, CHARLES H. FRAZIER, Philadelphia, and HARRY HYLAND KERR, Washington, D. C.

SYMPOSIUM ON RESTORATION OF THE DISABLED

16. Restoration of the Disabled in War as Applied to Industrial Disability. ELLIOTT G. BRACKETT, Boston.
17. Reclamation Service for Workmen Permanently Handicapped in Industry. HARRY E. MOCK, Chicago.
18. Progress in the Care of Cripples.
CARROLL L. STOREY, Detroit.
Discussion of papers 16, 17 and 18 to be opened by CLARENCE ST. CLAIR DRAKE, Springfield, Ill.; ALBERT H. FREIBERG, Cincinnati; JOHN T. O'FERRALL, New Orleans, FRANK G. MURPHY, Chicago, and FREDERICK C. KIDNER, Detroit.
19. Intra-Articular Fractures. ROBERT D. SCHROCK, Omaha.
Discussion to be opened by PAUL A. MCILHENNY, New Orleans; HENRY C. MARBLE, Boston; NATHANIEL ALLISON, St. Louis, and NORMAN KERR, Chicago.
20. The Occurrence and Causes of Functional Scoliosis in College Men.
WILLIAM L. ESTES, South Bethlehem, Pa.
Discussion to be opened by ROBERT W. LOVETT, Boston, and EDWIN W. RYERSON, Chicago.

SECTION ON GASTRO-ENTEROLOGY AND PROCTOLOGY

MEETS IN LOYOLA HALL

OFFICERS OF SECTION

Chairman—FRANK SMITHIES, Chicago.
Vice Chairman—LOUIS J. HIRSCHMAN, Detroit.
Secretary—HORACE W. SOPER, St. Louis.
Executive Committee—DWIGHT H. MURRAY, Syracuse, N. Y.; ANTHONY BASSLER, New York; WILLIAM M. BEACH, Pittsburgh.
(Stenographer—Mrs. M. C. REPP, Philadelphia)

Wednesday, April 28—2 p. m.

1. Chairman's Address: The Significance of Etiologic Factors in the Treatment of Peptic Ulcer.
FRANK SMITHIES, Chicago.
2. Principles of Gastric Analysis.
MARTIN E. REHFUSS, Philadelphia.
Discussion to be opened by ANTHONY BASSLER and G. A. FRIEDMAN, New York.
3. Fractional Gastric Analyses.
GEORGE REESE SATTERLEE, New York, and WALTER B. JENNINGS and HENRY A. COTTON, Trenton, N. J.
Discussion to be opened by BURRILL B. CROHN, New York; MARTIN E. REHFUSS, Philadelphia, and JOHN P. SAWYER, Cleveland.
4. The Differential Diagnosis of Amebiasis, Tuberculosis, Syphilis and Carcinoma as Manifested in the Rectum and Pelvic Colon. J. RAWSON PENNINGTON, Chicago.
Discussion to be opened by CHARLES J. DRUECK, Chicago; CHARLES E. HYNDMAN, St. Louis, and HOLLAND H. DONALDSON, Pittsburgh.
5. Hemorrhoidectomy: Composite Operation.
EDWARD G. MARTIN, Detroit.
Discussion to be opened by LOUIS J. KROUSE, Cincinnati; JAMES A. DUNCAN, Toledo, Ohio, and GEORGE W. COMBS, Indianapolis.
6. Diverticula of the Small Intestines other than Meckel's Diverticulum. JAMES T. CASE, Battle Creek, Mich.
Discussion to be opened by WILLIAM J. MAYO, Rochester, Minn., and DUDLEY D. ROBERTS, New York.
7. Hypotension Headache in Relation to Constipation.
ERNEST CLYDE FISHBAUGH, Los Angeles.
Discussion to be opened by ALBERT BERNHEIM, Philadelphia; JOHN D. DUNHAM, Columbus, Ohio, and ELSWORTH S. SMITH, St. Louis.

Thursday, April 29—2 p. m.

8. Further Studies on Gastric and Duodenal Ulcer.
A. C. IVY, Chicago.
Discussion to be opened by CHARLES H. NEILSON, St. Louis, and WALTER C. ALVAREZ, San Francisco.
9. Gastrojejunal Ulcer: Clinical Study of Eighty-Four Cases. GEORGE B. EUSTERMAN, Rochester, Minn.
Discussion to be opened by JULIUS FRIEDENWALD, Baltimore; CHARLES H. MAYO, Rochester, Minn., and WILLARD BARTLETT, St. Louis.
10. Critical Review of 500 Cases of Gastric and Duodenal Ulcer. ELMER L. EGGLESTON, Battle Creek, Mich.
Discussion to be opened by JAMES TAFT PILCHER, Brooklyn, and SIDNEY K. SIMON, New Orleans.
11. Specialization in the Medical and Surgical Treatment of Ulcer of the Stomach and Duodenum.
ANGELO L. SORESI, New York.
Discussion to be opened by CHARLES D. AARON, Detroit, and E. STARR JUDD, Rochester, Minn.
12. Insufficiency of the Cardia. JOSEPH SAILER, Philadelphia.
Discussion to be opened by HARRY G. WALCOTT, Dallas, Texas; EDWARD H. SKINNER, Kansas City, Mo., and SEALE HARRIS, Birmingham, Ala.
13. Rectocolonic Therapy. ALFRED J. ZOBEL, San Francisco.
Discussion to be opened by LOUIS J. HIRSCHMAN, Detroit; WILLIAM M. BEACH, Pittsburgh; DWIGHT H. MURRAY, Syracuse, N. Y., and J. RAWSON PENNINGTON, Chicago.
14. The Evidence in Favor of Water Drinking with Meals.
ELBRIDGE G. CUTLER, Boston.
Discussion to be opened by JOHN M. BELL, St. Joseph, Mo.; ERNEST ZUEBLIN, Cincinnati, and JOHN W. BELL, Minneapolis.

Friday, April 30—2 p. m.

Election of Officers

15. Mucous Colitis. WILLIAM H. STAUFFER, St. Louis.
Discussion to be opened by J. DAWSON REEDER, Baltimore; JOHN M. FRICK, Toledo, Ohio, and J. COLES BRICK, Philadelphia.
16. Modification of Intestinal Flora.
J. RUSSELL VERBRYCKE, JR., Washington, D. C.
Discussion to be opened by WILLIAM GERRY MORGAN, Washington, D. C., and ANTHONY BASSLER, New York.
17. Arthritic Changes in the Spine and Their Relation to the Roentgenologic Study of the Gastro-Intestinal Tract.
WILLIAM S. NEWCOMET, Philadelphia.
Discussion to be opened by SHERWOOD MOORE, St. Louis; JAMES T. CASE, Battle Creek, Mich., and JOHN BRYANT, Boston.
18. What Is Being Done for the Insane by Means of Surgery.
JOHN W. DRAPER, New York.
Discussion to be opened by HENRY A. COTTON, Trenton, N. J., and JEROME M. LYNCH, New York.
19. The Roentgenology of the Appendix: The Significance of the Opaque Filling in Chronic Appendicitis.
EDWARD H. SKINNER, Kansas City, Mo.
Discussion to be opened by R. WALTER MILLS, St. Louis; GEORGE E. PFAHLER, Philadelphia, and MARSH PITZMAN, St. Louis.
20. Visualization of the Duodenum by Means of the Duodenal Tube. ISRAEL D. PALEFSKI, New York.
Discussion to be opened by MAX EINHORN, New York, and CLEMENT R. JONES, Pittsburgh.
21. The Treatment of the Chronic Intestinal Invalid.
JOHN BRYANT, Boston.
Discussion to be opened by JEROME M. LYNCH and JOHN W. DRAPER, New York, and J. C. JOHNSON, Atlanta, Ga.
22. Diaphragmatic Hernia Diagnosed During Life.
M. MILTON PORTIS and SIDNEY A. PORTIS, Chicago.
Discussion to be opened by GEORGE E. PFAHLER, Philadelphia, and LEWIS GREGORY COLE and SEYMOUR BASCH, New York.

THE EXHIBITS—*ALLONS!*

"Allons," said Dr. Voolayvoo, as the discussion of the last paper of the first morning dwindled to a close, "let us depart quickly from here."

"Why the haste?" I asked.

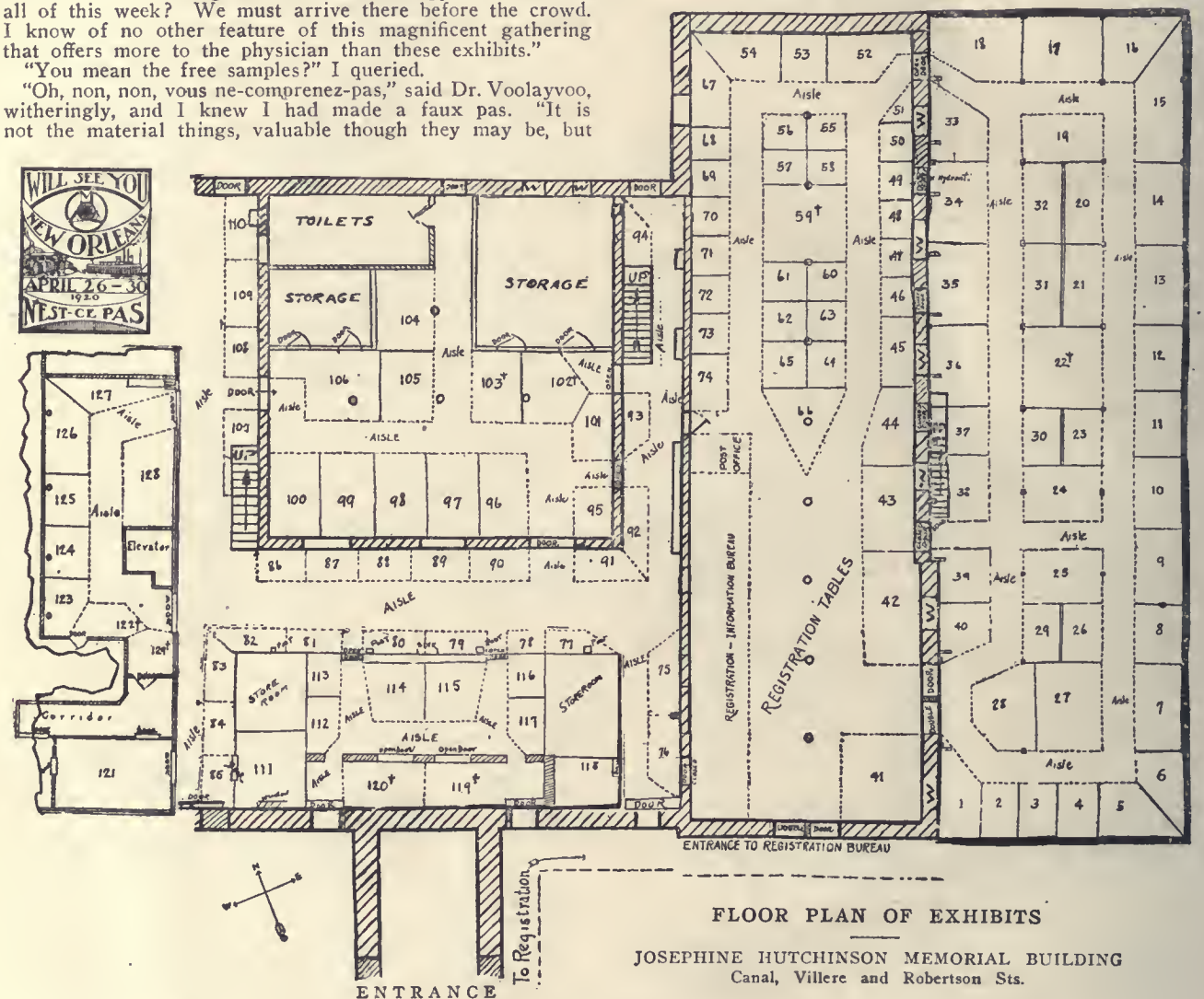
"The exhibits, the exhibits, my friend. Do you not know that in them is enough of interest to occupy our full time all of this week? We must arrive there before the crowd. I know of no other feature of this magnificent gathering that offers more to the physician than these exhibits."

"You mean the free samples?" I queried.

"Oh, non, non, vous ne-comprenez-pas," said Dr. Voolayvoo, witheringly, and I knew I had made a faux pas. "It is not the material things, valuable though they may be, but rather the new ideas one finds at these commercial exhibits that make them of value."

"But, I really don't want to buy anything," said I weakly.

"Ma foi, that is not necessary," answered Voolayvoo. "Perhaps you have been wrongly impressed by that word



FLOOR PLAN OF EXHIBITS

JOSEPHINE HUTCHINSON MEMORIAL BUILDING
Canal, Villere and Robertson Sts.

List of Exhibitors

Space No.

Abbott Laboratories, The, Chicago, Hospital tent
Allison Co., W. D. 85-111
Aloe Co., A. S.....68-69-70-71
American Surgical Specialty Co., Chicago.. 33
Anatomik Footwear Co., New York..... 99
Appleton & Co., D., New York.....91-92
Armour & Co., Chicago..... 7
B. B. Culture Laboratory, Yonkers, N. Y.. 2
Bard-Parker Co., New York..... 25
Baum Co., Inc., Wm. A., New York..... 95
Bausch & Lomb Optic. Co., Rochester, N. Y. 6
Becton-Dickinson Co., Rutherford, N. J.... 20
Berger Bros. Co., New Haven, Conn....23-30
Betz Co., Frank S., Hammond, Ind...19-31-32
Blakiston's Son & Co., P., Philadelphia.. 43
Boehm Surgical Inst. Co., Rochester, N. Y.127
Brady & Co., Geo. W., Chicago..... 8
Buzzell Flanders Co., Boston.....112-113
Calco Chemical Co., The, New York.....114
Campbell Electric Co., Lynn, Mass.....121
Chicago Medical Book Co., Chicago..... 45
Crain Publishing Co., Chicago..... 86
Cummings Chem. Co., W. L., Lansdowne, Pa. 77
Davis Co., F. A., Philadelphia..... 9
Dennison Mfg. Co., Framingham, Mass... 5
Dennos Products Co., Chicago..... 75
DeVilbiss Mfg. Co., The, Toledo..... 44
Dry Milk Co., The, New York..... 76
Earnshaw Knitting Co., Chicago..... 53

Space No.

Eastman Kodak Co., Rochester, N. Y....10-11
Everhart, Laurence, Atlanta 107
Fischer & Co., H. G., Chicago..... 14
Foregger Co., The, New York.....119
Fraas, Aug. E., New York..... 81
General Electric Co., Schenectady 106
Hanovia Chem. Co., Newark, N. J..... 22
Hardy & Co., F. A., Chicago..... 59
Heyden Chem. Wks., New York..... 47
Hoeber, Paul B., New York..... 3
Hollister-Wilson Lab., Chicago..... 4
Horlick's Malted Milk Co., Racine, Wis..39-40
Hynson, Westcott & Dunning, Baltimore.37-38
Jaeckh Mfg. Co., Cincinnati, Ohio..... 89
Johnson & Co., Mead, Evansville, Ind....105
Kelley-Koett Co., Covington, Ky.....12-13
Kny-Scheerer Co., New York.....128
Leitz, E. Inc., New York.....100
Linen Underwear Co., Greenwich, Conn..108
Lippincott Co., J. B., Philadelphia..... 41
Lungmotor Co., Boston 79-80
Lyons & Co., I. L., New Orleans.....109
Malthie Chemical Co., Newark, N. J.....50-51
Marshalltown Lab., Marshalltown, Ia..... 82
McDermott S. Ins. Co., N. Orleans 124-125-126
Mellin's Food Co., Boston.....55-56-57-58
Metz Laboratories, H. A., New York..... 18
Meyrowitz, Inc., E. B., New York.....16-17
Moshy Co., C. V., St. Louis.....72-73-74

Space No.

Mueller & Co., V., Chicago.....60-61-62-63
Nelson & Son, Thos., New York.....96-97
Oxford University Press, New York...64-65-66
Patterson Screen Co., Towanda, Pa..... 21
Pulvola Chemical Co., Jersey City, N. J... 90
Radio Chem. Corp., New York.....122-123
Radium Chemical Co., Pittsburgh.....54-67
Radium Co. of Colorado, The, Denver..26-29
R. & E. Mfg. Co., The Cleveland..... 78
Safety Anesthesia App. Concern, Chicago..115
Sanborn Co., Boston 93
Saunders Co., W. B., Philadelphia..... 42
Scientific App. Co., N. Y.....101
Sealy Mattress Co., Sugarland, Tex.....118
Sorensen Co., Inc., C. M., New York..102-103
Southworth Co., The, Troy, N. Y..... 84
Squibb & Sons, E. R., New York.....27-28
Takamine Laboratories, Inc., New York.. 98
Taylor Instr. Cos., Rochester, N. Y..... 24
Thompson-Plaster Co., Leesburg, Va..... 15
Thoro Corporaton, The, Chicago.....104
Toledo Technical App. Co., Toledo....116-117
Victor Electric Corporation, Chicago..34-35-36
Waterproof Fabric Co., Chicago..... 88
Weder Mfg. Co., Philadelphia..... 46
Welch Grape Juice Co., The, Westfield N.Y. 52
Wilson & Wilson, Boston..... 83
Wood & Co., Wm., New York.....48-49
Year Book Publishers, Chicago..... 87

'commercial.' You must understand, my friend, that these exhibit gentlemen are here to serve us, to show us new ideas, new and better ways of doing things—and with all due respect to the intelligence of our noble profession, I may add—to help us."

"All right, *let's go*, then," I said.

WITHOUT RESERVATIONS

Dr. Voolayvoo was right. He seemed to be an "old timer" conventionist. I, being a novitiate, placed myself implicitly under his guidance. When we stepped into the Exhibit Hall I guess I looked like a child gazing at a Christmas tree—so many things, I simply stared. I was brought back to earth by the sound of my friend's voice. "Is it not wonderful," said he, "to see so much all in one unified exhibition arranged solely for the benefit of ourselves and our colleagues?"



"It sure is," I replied. "But, how in the world are we going to see it all?"

"Listen to me, my friend," said the Doctor, "we cannot see it all in one trip around. But we could ill afford to miss any one of these exhibits. Take my advice and concentrate on one exhibit at a time. And then you must come back tomorrow and each of the remaining days. Ah, voila, right before us is the Saunders exhibit."

"Say, I've been reading the announcements of those new Saunders books. Wonder if they have them here," I said.

BOOKS BOOKS BOOKS

They surely had—it was a regular bookstore. Warbasse's "Surgical Treatment," Burton-Opitz' "Textbook of Physiology," Mock's "Industrial Medicine and Surgery," the new "Mayo Clinic Volume," Dunton's "Reconstruction Therapy," and all the others were there. I could have camped at that exhibit alone for a good half day. But just across the aisle was another attractive book exhibit which I knew I must see—that of the Lippincott Company, and I also remembered some of the other book men who, too, would doubtless have attractive exhibits.

The Lippincott books were conveniently arranged for quick reference, and included a large line of practical medical, pharmaceutical and nursery texts. A courteous representative called our special attention to Buckley's "The Basis of Psychiatry," Sharp's long-wanted volume on "Brain Injuries," and Wilson and Potter's "Internal Medicine." Also, we could not deny ourselves the privilege of studying the splendid collection of fifty hand-colored Anatomical Charts from Piersol's "Human Anatomy."

CULTURE—THE B. B. KIND

Leaving the book exhibits, we stopped to examine the exhibit of the the B. B. Culture Laboratory. "This preparation I find very useful as a biological antiseptic for both internal and external uses," said Voolayvoo. "What, you have not yet tried it? Indeed, you must leave your name and address and have a complimentary bottle sent you."

"Happy thought," said I, "but now tell me who is the tall brunette gentleman in this next booth?"

"That, my friend, is Paul B. Hoeber. You have heard of "The American Journal of Roentgenology," the "Annals of Medical History" and the "Neurological Bulletin," n'est-cepas? Mr. Hoeber publishes these journals and is showing them here." We stopped and besides these different journals I found some very interesting books, one of which I had been wanting for some time—Mackenzie's "Symptoms and Their Interpretations." So I ordered a copy right then and there.

EVERYTHING BUT GOAT GLANDS

"Do you employ the animal derivatives such as corpus luteum, pituitary extract, thyroids, etc., in your practice?" asked my guide and conductor as we passed on. "If so, you must not fail to see this interesting exhibit by the Hollister-Wilson Laboratories." He was right. Not until then did I realize how exacting were the requirements for producing dependable animal derivatives. I was specially interested in the set of original specimens showing the different phases of production in this field.

Proceeding farther, we stopped at the Bausch & Lomb exhibit, Space 6, where trained, scientific men were demonstrating physicians' microscopes, a new model microtome, ophthalmological apparatus and hemacytometers of B. & L. manufacture. This was an opportunity I welcomed, for I have been thinking for some time I ought to have a microscope. The B. & L. instrument appealed to me strongly.

In the next booth was the Armour exhibit—endocrine gland and organotherapeutic preparations.

"Ah, my friend, you must hear the story of how some of these products are made," said Dr. Voolayvoo. "It is really wonderful—fascinating. For one pound of their suprarenalin alone, the glands of 135,000 sheep are required." We spent a full half hour there.

A BIG SPHYG

At the Taylor Instrument Companies' Booth we saw a demonstration of their new Office Type Sphygmomanometer. This is an instrument worthy of every physician's attention. Some other very interesting instruments for home use were shown—particularly the Recording Hygrometer and Bath Thermometers in new patterns. Across the aisle we stopped to examine the new (8th) revised edition of Sajous' "Analytic Cyclopedia of Practical Medicine," shown by F. A. Davis Company. The handsome appearance of this eight-volume set appealed strongly to my guide's aesthetic sensibilities. We also got deeply interested in the new books displayed by this firm, particularly "Regional Anesthesia" by Sherwood-Dunn.

BETTER BELTS FOR BAGGY ABDOMENS

In Spaces 23 and 30 was an exhibit of Abdominal Supports which attracted our attention. This was the well known Spencer line, manufactured by Berger Brothers Company, and included abdominal belts (not corsets) for men and women, abdominal supporting corsets, sacro-iliac corsets and belts, maternity supports, etc. "You will note," said Dr. Voolayvoo, "that these supports are non-elastic and depend on correct design for comfort and efficiency." "Good idea," I thought.

Just then I noticed the Hanovia Chemical & Manufacturing Company's exhibit of the Alpine Sun Lamp and the Kromayer Lamp. I had never seen one of these in action, hence greatly appreciated the actual working demonstration by a competent representative. I found out that these lamps have a wide range of usefulness in applying quartz ultraviolet light for therapeutic purposes.

"Ah, sapristi, what clear, sharp X-ray negatives," enthused Dr. Volayvoo, as his eye fell on the Eastman Kodak Company's exhibit, "and made on films, too, which are so convenient, so easy to preserve." I readily agreed with him and before leaving, jotted down in my note book the words, "Dupli-Tized Films—Eastman."



THE X-RAY BEGINS TO PENETRATE

Very smoothly our attention switched to the neighboring exhibit, Spaces 12 and 13, for it was X-Ray machines—the new Kelley-Koett Unit and several other X-Ray specialties shown for the first time. I carried away one of their descriptive booklets. The demonstration of the K. K. Unit, together with those of Eastman negatives, had set up a powerful thinking within me.

Across the aisle was another X-Ray exhibit—The Patterson Screen Company with their Fluoroscopic and Intensifying Screens. Their screens for double screen work have been giving wonderful results, I understand. They had a new catalog on screens and their care. I was glad to get a copy.

MR. FISCHER ENTHUSES

This section seemed to be a veritable X-Ray stronghold. For the very next exhibits to catch our eye were those of the H. G. Fischer & Company and Thompson-Plaster Company. I had seen a full page announcement in THE JOURNAL OF THE A. M. A. regarding the Fischer Universal Machine, and that had whetted my desire to see an actual demonstration. Here I saw it and readily understood why it is called "Universal." Mr. Fischer was quite enthusiastic over their new building, too. Said it would enable them to turn out a greater quantity of machines and give better service than ever before. The Thompson Plaster Company had several models, from their portable C up to the big Type F machine which does all kinds of X-Ray work and furnishes

practically every modality that the electrotherapeutist could desire. The idea of an X-Ray equipment all my own, was indeed growing on me. More catalogs.

"But, come, come, my friend. The time is passing," Dr. Voolayvoo reminded me. "Here is the Becton, Dickinson & Company's exhibit of thermometers, Luer syringes, Yale needles, Ace bandages and Asepto plungerless syringes. And improved, too. Oh, c'est étonnant, how progressive these people are."



Adjacent in Spaces 16 and 17 was a veritable treat for the Eye, Ear, Nose and Throat men—the exhibit of E. B. Meyrowitz Co. Of particular interest were the Braun Snaretome, the Braun Adenotome, a non-luminous Rheostat and a pneumatic Test Type Cabinet with perfect illumination.

WE DO THE BETZ BOOTHS

Next we saw the large and complete display of the Frank S. Betz Company. Previous to that, I had a good catalog acquaintance with the Betz Co., but here were the goods themselves — instruments, apparatus, surgical merchandise, hospital furniture, electrical apparatus—and even a large line of pharmaceutical products. They told me that their line is limited only by the maximum demands of the profession. I believe it, for they seem to have everything a physician needs. Prices reasonable, too.

"See what a splendid set of electrically lighted instruments," said Dr. Voolayvoo, pointing to the Electro-Diagnostoset of the American Surgical Specialty Company across the aisle. We watched the demonstration. It is really remarkable the help one can have from these instruments in tonsillectomies and all other orificial operations or examinations. They can be used in the office, hospital or home.

In the corner space nearby, was the H. A. Metz Laboratories exhibit of Arsphenamine, Neoarsphenamine, Anesthesin, Novocain, Holocain and Pyramidon. This exhibit was of great practical value, because laboratory men were in constant attendance to demonstrate procedures for making solutions of Arsphenamine and Neoarsphenamine.

Going down the aisle, we stopped at Spaces 34, 35 and 36 to visit the Victor Exhibit of X-Ray and Electro Medical apparatus. Again I got to thinking about an equipment all my own. The high quality of materials and fine workmanship evident in the Victor apparatus impressed me very favorably. Just before leaving, Dr. Voolayvoo and myself were rewarded with a pleasant little surprise, especially prepared for Victor visitors. I also asked them to send me a catalog.

BACK, BACK TO BALTIMORE

"Ah, here is the Hynson, Westcott & Dunning exhibit," said my colleague as we started on. "We must see their products, particularly the new germicide Mercurochrome-220 soluble which seems so promising and their Benzyl Benzoate, the non-narcotic antispasmodic." Time was well spent, and I received some valuable information.

"What is this?" I asked, as I saw some steel wafer-like objects lying on a table.

"Those are detachable blades for the Bard-Parker Knife, the safety razor idea applied to the operating knife," said Dr. Voolayvoo. We stopped and the idea seemed so sensible that I ordered a set of the knives and blades, yet wondered why someone hadn't thought of it long ago.

"Do you know," asked Dr. Voolayvoo, "that the Radium Company of Colorado is now producing over one thousand milligrams of radium element per month? Here is their exhibit." The representative showed us various applicators of the latest and most approved types, and explained that the company has recently established service stations in several cities. Time well spent.

In Spaces 27 and 28 was the Squibb Exhibit. It seemed as if they were prepared to furnish any drug, chemical or biologic the physician might need. Their demonstration of the blood clotting powers of Thromboplastin impressed me in particular. "That's something I don't want to forget," said I to my companion, and asked the representative to let me have a sample and descriptive literature.

HORLICK'S THE ORIGINAL

"Ah, here are our old friends, the Horlick's Malted Milk Company," said my colleague as we approached Booths 39 and 40. This exhibit showed "Horlick's Malted Milk" in powder and tablet form; also, Horlick's Food and Horlick's Diastoid. Representatives were busy distributing literature and answering inquiries concerning the various uses of these well known products.

Just then a thought flashed into my mind, and almost convulsively I grasped at my coat pocket.

"What is it, my friend? What is it?" asked my guide somewhat excitedly. "This is it," said I, drawing forth a post card written to my wife on arrival at New Orleans, but still unmailed.

"Ah, that is easily taken care of," said Voolayvoo, "right over here is the Convention post office where your belated missive can be dispatched immediately." That done, we turned to the Oxford University Press exhibit. This had an educational feature in its display of old and rare bibles, religious books and ancient works on medicine. But to me their most interesting and practical features were the famous "Oxford Loose-Leaf Medicine" and the "Oxford Loose-Leaf Surgery." Dozens of standard as well as new works were there, too.

"Sh—sh—", I heard in a nearby booth.

"Ah, that reminds me, we must see De Vilbiss Atomers demonstrated," said Dr. Voolayvoo. "What is an Atomer?" I asked. "An Atomer," answered my colleague, "is a De Vilbiss spray." After seeing these atomizing devices demonstrated, I could readily understand why they merit a name all their own—Atomers.

Next door to the Atomers was Blakiston's book exhibit. I liked the atmosphere and spirit of this exhibit. Their representative made me feel perfectly at home, and I found that we had quite a bit in common. Some of the new books he told me about were quite closely related to my everyday problems.

HOW HEYDEN DOES IT

"Ah, here, my friend, is something 'instructive,'" said Dr. Voolayvoo, as he noticed the Heyden Chemical display of frames showing the products entering into the manufacture of well known medicinal chemicals such as Salicylic acid, Salol, etc. We studied with great interest this part of the exhibit as well as the display of fine chemicals for medicinal and technical use.

Across the aisle was a great showing of instruments by V. Mueller & Co., for general surgery and for specialists in the different branches such as eye, ear, nose and throat; genito-urinary and obstetrics. Mr. Mueller was giving a most interesting explanation of some new instruments discovered in use abroad on a recent trip by a member of the firm.



Adjoining was another instrument exhibit — that of F. A. Hardy & Company. This was certainly an interesting spot for the Eye, Ear, Nose and Throat surgeons. Mr. Wilhelm, Mr. Frenzel and Mr. Rooney were busy indeed, but not too busy to be courteous.

In the next space we found out some new facts about Mellins Food. As we left, Dr. Voolayvoo said, "How fair and how reasonable are those Mellins people. They present the facts about their preparation and without unduly urging their side of the question, leave the physician to form his own opinion relative to the usefulness of Mellins Food in infant feeding. That is fine, fine indeed."

"But come, we have not yet examined these books in the William Wood & Company exhibit," my conductor said. This proved to be a delightful half hour, for there we found a complete line of medical and surgical books, including the latest works on Medicine, Surgery, Industrial Hygiene, Tropical Medicine, War Repair Work, etc.

Nearby was a demonstration of a little device that interested me keenly—the De Lyte Surgeon. Voolayvoo told me that its manufacturers, the Weder Mfg. Co., had exhibited each year for the last five years and that conventionists always seemed to appreciate greatly the opportunity to see this splendid little contrivance for diagnostic work.

"Do you know Mr. Maltbie?" asked Voolayvoo, as we turned about. "I think not," I answered, and he took me to the Maltbie Company exhibit. Mr. Maltbie was there extending a warm welcome to his old friends, and making lots of new ones. I became much interested in Calcreose

because it permits a very heavy creosote medication but is free from the characteristic nauseating effects. "I prescribe it wherever creosote is indicated," said my colleague.

DOWN WHERE THE WELCH'S FLOWED

"Ah, mon ami, voila," exclaimed Dr. Voolayvoo, as he looked across the aisle, "here it is at last."

I looked up, and right before us was the Welch Grape Juice Booth, with lots of Welch's on tap. "I will tell the world that that is one fine drink," said Voolayvoo, as he imbibed. "It refreshes us here in full health and strength; think how pleasing it must also be to the sick or convalescent." Grapelade, a pure grape spread, seemed to be another Welch "comer."

"Hello, what have we here?" I asked as my eye fell upon a display of baby clothing.

"That, my friend, is the Vanta line of garments for infants," said Voolayvoo. "You wonder that they are exhibited here? Do you not realize that we medical men can be of great assistance to mothers by showing them the better way to dress their babies? The Earnshaw Knitting Company have developed unique and original ideas in infant dressing that physicians should know about. With their Vanta garments, the baby is dressed from top to toe without one single pin or button, or once turning him over." Voolayvoo was right. I was glad indeed to have Mr. Earnshaw tell me he would send me a sample Vanta Abdominal Binder.



EMANATIONS OF RADIUM FACTS

Next to this booth was the Radium Chemical Company's exhibit. They were displaying new applicators, screens and other paraphernalia for therapeutic application of radium. But the most interesting thing to me was the fifteen-minute talk I had with a member of the company's technical staff. After all, radium isn't such a mysterious subject, and with the service of this company, its use by physicians is greatly simplified and facilitated.

Occupying Spaces 68, 69, 70 and 71 was the A. S. Aloe Company exhibit. With the liberal terms this firm offers, there really is no reason why any doctor should deny himself the usefulness of any desirable instrument, apparatus or piece of equipment. Aloe will furnish it on easy rental purchase plan.

In the adjoining spaces was another St. Louis exhibitor, the C. V. Mosby Company, with a complete line of medical, surgical and nursing publications. I had already seen a good many new boks, but Bartlett's "After Treatment," Hertzler's "Peritoneum," Hazen's "Syphilis," and Warfield's "Arteriosclerosis and Hypertension" were too attractive and interesting to pass up. So we did ourselves full justice by taking plenty of time for the Mosby book exhibit.

IN A TENT, BUT NO SIDE SHOW

"Suppose we step out and smoke a bit," I suggested at this point. "Bonne idée," agreed my guide. Coming back toward the building, we noticed a tent pitched on the lawn. In it was the exhibit of the Abbott Laboratories. We were glad indeed to visit this exhibit. They were showing motion pictures every hour, demonstrating the clinical uses of their Dichloramine-T, Cholazene-Parresine, the wax dressing for burns, and Parresined Lace Mesh Dressing. After an hour here we stepped back into the exhibit building.

BOONS FOR BABIES

Entering by a different door, we saw the exhibit of the Dry Milk Company in Space 76. "Do you know," said Dr. Voolayvoo, "that dry milk has become quite a factor in the feeding of infants and invalids?" We stopped, examined the preparation and received some very interesting information. A striking demonstration was that showing the curd of dry milk in comparison with that of liquid milk. Sterling Brand Milk Sugar was also on display here.

"And right here," said Voolayvoo, "is Dennos Food, the whole wheat milk modifier. It has been on the market for about fifteen years now, and has won a well merited place in infant feeding. You must see this exhibit." The Dennos booth was modest in its decorations, but Dr. Voolayvoo and I both carried away a neat souvenir gift as we left, and a good impression of the "whole wheat milk modifier."

Turning the corner, we noticed in space number 77 an interesting display of Radium Applicators and Radium Needles by the W. L. Cummings Chemical Company. Special features here were the new and approved radium applicators for treatment of uterine and bladder conditions.

Adjoining this booth was an exhibit of the Dr. Beachler Standard Sphygmomanometer by the Reliable and Efficient Mfg. Co. This is a mercurial instrument and is so simple, so easy to operate, and is so convenient that I ordered one. It is small and compact enough to carry in one's pocket or bag.

WHERE DOCTORS MEET DOCTORS

"By the way, are you familiar with the Calco pharmaceutical products?" asked Voolayvoo. "This company has been very well received by the profession." Drs. F. Elbert Davis, B. A. Oliver and J. H. Seibert were in charge, and we listened with interest to the facts they presented about Cinchophen, Albutannin, Acetannin, Chloramine, Dichloramine-T, and other Calco products.

Halting me at the Marshalltown Laboratories booth, Dr. Voolayvoo exclaimed, "Ah, here is something fine—a transparent, flexible, waterproof tissue that will not adhere to a wound." I took down the name "Cellosilk" and noted, too, that it comes in an impervious form, and in a perforated form for dressing wounds requiring air and drainage.

FIRST AID FOR THE NEO-NATI

"Say, here is something we must not pass up," said I as I glimpsed a Lungmotor demonstration. We stayed here for some time, and I found out, somewhat to my surprise, that over 6,000 Lungmotors are now in service in hospitals, municipalities, and industrial plants. "Voila la petite," exclaimed Voolayvoo, pointing to the New-Born Infant Lungmotor. "That is a device that every obstetrician should have as a necessary part of his equipment," he added. I remembered a bad case of asphyxia-neonatorum that I had recently had, and lest I should forget, took with me a descriptive circular.

Next, we stopped at the booth of the Foregger Company, and saw a demonstration of the No. 66 "Gwathmey" anesthesia outfit. They were showing some of the very latest developments in anesthesia appliances and our time here was well spent.

Over at the Buzzell-Flanders Company booth, we found out some new things about sutures and ligatures. For years this firm has prepared all of Dr. Henry O. Marcy's Kangaroo Tendon under his direct supervision, and I was glad indeed to see this tendon and have its advantages told me. They are also headquarters for surgeons' needles and hypodermic needles. I'm going to keep them in mind.

THE X-RAY IDEA PENETRATES DEEPER

At the Southworth Company's exhibit, my mind again reverted to the thought of an X-Ray machine all my own, for here were some authoritative and practical books on roentgenology, "X-Ray Examination of the Alimentary Tract," by Dr. James T. Case; and "X-Ray Examination of the Chest for Pulmonary Tuberculosis," by Dr. Kennon Dunham. A number of other helpful and instructive books were displayed, among them being "Pediatrics" by Dunn, and "Rational Therapy" by Lerch..



MEETING THE SOUTHERN EXHIBITORS

"Now let us step in here and see a real New Orleans Exhibit," said Voolayvoo. He pointed out the booth of the McDermott Surgical Instrument Co. Being at home, this firm was able to have one of the most complete exhibits at the meeting. There were surgical instruments, the most modern makes of operating tables, hospital furniture and also specialties such as the Cave-McDermott Ether Outfits, Lynch Suspension Outfits and Matas Jaw Splints. A full force of representatives were on hand, and with characteristic Southern courtesy and hospitality took great pains to see that we got the most out of their exhibit.

Down the aisle, in Booth 107, we came across another interesting exhibit of surgical instruments. This was by Lawrence Everhart of Atlanta, Ga. His Pacquelin Cautery and American made Killman Dilator seemed to be very popu-

lar, and well they might be, for he was selling them at the popular price of $35.00 each.

"I take it that you are interested in matters pertaining to hospital work, yes? Then we must step back here to Space 86 and talk with Mr. Crain of 'Hospital Management,'" said my guide. The suggestion was good, and we found the Crain Publishing Company were performing a real service to Conventionists by showing them how to keep better posted on hospital matters. I was presented with a copy of the April issue of "Hospital Management," and found it so good that I subscribed for a year before leaving.

TO KEEP AMERICANS DRY

"Sapristi, what is the gentleman doing?" exclaimed my friend Voolayvoo, pointing to the booth of the Waterproof Fabric Company. We stopped and watched. Here was a pan of water boiling. Sagging into it was a piece of thin, white fabric. The gentleman struck a match, laid it burning on the fabric, and much to our surprise, it continued to burn quite undisturbed by the boiling water beneath. The fabric is called Sani-Dri, and I found out that surgeons' aprons made of it are available.



Adjoining this booth was the Pulvola Chemical Company's exhibit. This was very attractive and the unique demonstrations were commanding the interest and attention of many of my colleagues. No wonder, the way those medicated powder ointments resist moisture was indeed convincing. Before leaving, I jotted down in my note book "Dolomol Dry Dressing" and "Pulvola Powder."

Just at the doorway to the next room, we found the exhibit of D. Appleton & Company. They were showing the new medical books of this season and last year as well as new revisions of many of the standard editions now famous throughout the world. A novel and interesting feature of their display was an historical exhibit presenting manuscripts, rare first editions, autographed letters, etc. Really, it does one good to get into the spirit of these great publishing houses by learning something of their history.

THAT LOOSE-LEAF IDEA AGAIN

"Ah, here is the Nelson Loose-Leaf Medicine," said my guide, as we stepped into the next room, "a complete system of Living Medicine by Leading Medical Authorities of the world." A representative showed us in a very interesting way the service this system gives the doctor, and how it is kept continually up-to-date by the loose leaf device, and supplemented by abstracts, special articles and by the services of the Research Bureau. I liked it very much.

In the next booth, Space Number 98, the Takamine Laboratory representatives were exhibiting Arsaminol and Neoarsáminol. I was greatly impressed with the great care taken in testing these products. According to regulations, they are tested at the Takamine Laboratories and by the U. S. Puhlic Health Service, and "to make assurance doubly sure", each lot is tested clinically by a recognized authority.

In the next booth were "Anatomik" shoes, displayed in a number of different styles. There were specialties particularly suited to the requirements of the Southern trade. The manufacturers have been very successful in producing "attractive" footwear for prevention and relief of foot troubles. "They have, as it were, sugar coated the pill of wearing orthopedic footwear," commented Dr. Voolayvoo, as we turned to the exhibit of E. Leitz, Inc. Here was a variety of fine apparatus now of Leitz manufacture, but formerly imported. Voolayvoo called my attention especially to the new "Elei" Colorimeter, a modified Duboscq.

THE BOOTH BLANCHE

"Ah, how beautiful, how appropriate," exclaimed Dr. Voolayvoo, as he noticed the Mead Johnson & Company booth—all pure white, decorations, tables, chairs and everything. It seemed particularly fit as a setting for the display of their infant diet materials, which are now so well known by members of the profession. I'm glad I visited the 'white booth.'

"Now," said my guide, "we have not much more time." It was true. For in addition to the exhibits already mentioned we had tarried at the booths of the Boehm Surgical Instrument Co.; had looked over the X-Ray supplies of the George W. Brady Co.; had seen a demonstration of one of the Campbell X-Ray Units; had examined the tissue dressings and bandages of the Dennison Mfg. Co.; had talked with a General Electric representative about their new X-Ray tube; had seen the Jaeckh Mfg. Co. compressed air cabinets and the Sanborn Blood Pressure Outfits demonstrated; had purchased some iridio-platinum needles from Mr. Wilson of Wilson & Wilson; had looked over the Practical Medical Series of the Year Book Publishers; and had carefully studied the anatomy and physiology of a Sealy mattress. And every exhibit had netted us some new ideas.

"Yes it has been one big day," said Voolayvoo, "but we must see the Sorensen Exhibit here in Spaces 102-103." Representatives were showing the different models of Sorensen Tankless Air Compressors. "Are they not a great improvement and convenience?" asked my friend. "Indeed so," I replied and asked the representative to send me literature. Another interesting feature here was a Specialist's chair, this being its first appearance on the market.

MEASURED ANESTHESIA—WHY NOT?

"Here, too, my friend, you must see the famous Connell Gas Oxygen Apparatus—the machine with the meters," said Voolayvoo, pointing to the Scientific Apparatus Company booth. "Meters," I said, "good idea, charge 'em so much per thousand."

"Ah, no, my friend, you are facetious," rejoined Dr. Voolayvoo, "and this is a serious matter. We measure with great exactitude our dosages of liquids, solids or powders—why not of Nitrous Oxide, Oxygen or Ether?" After seeing the machine demonstrated and noting the ease with which one may keep tab on the amount of gas being delivered, I felt like apologizing to my good colleague for my facetious remark. He was looking at his watch.

THOROLY CONVINCED BY "THORO"

"Just one thing before we go," he said, "over here is a treat I have reserved for you until the last." He led me to the exhibit of the Thoro Corporation. I understood. This was Thoro—the new, hygienic skin cleanser that I knew so many physicians, dentists and other particular people are now using. "See the handsome white enamel holder, and here is the powder itself," said Voolayvoo, "so pure and cleanly." In the adjoining washroom I had my first "Thoro" washup, but not my last, I assure you. For on the way out, I ordered two Thoro Holders, and a supply of Thoro Powder for my office and home.



The End of a Perfect Day.

We started toward the elevator. A great crowd was there. I heard the bell ringing at regular intervals, buzz—buzz—buzz, it continued on and on. I thought it strange to ring an elevator bell like that, I became confused. Someone punched me in the ribs—then another punch—and all the time that confounded bell buzzing—I felt strange—"Voolayvoo, Voolayvoo, where are you," I called—another unmerciful punch in the ribs and I jumped violently.

"—— for heaven's sake," a familiar feminine voice was saying, "why don't you go down and answer that midnight call? That phone's been ringing for the last five minutes."

"Yes, my dear," I answered, composing my variegated emotions as best I could, "it's surely 'fierce' to be called out like this, but after all, being a doctor has some compensations, at least."

The above *dream* is guaranteed to be correct in its details, if advance information regarding the New Orleans exhibits is to be depended on. Not all firms were able to supply such information, but it can be taken for granted that every exhibit will be worthy of the conventionist's close and careful study.

WILL C. BRAUN,
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LETHARGIC ENCEPHALITIS

HISTORY, PATHOLOGIC AND CLINICAL FEATURES, AND EPIDEMIOLOGY IN BRIEF *

SIMON FLEXNER, M.D.
NEW YORK

It is of more than ordinary interest that within the last dozen years at least two epidemic diseases, affecting chiefly the central nervous system, have prevailed widely in Europe and America. The first is poliomyelitis, which since 1907 has passed through several phases in the United States and culminated in the outbreak of unparalleled severity, centering in New York State, in 1916. The second is lethargic encephalitis, apparently only recently introduced in and already widely distributed through this country. It is highly desirable that the main facts known about the latter disease should be given publicity; and it may well be that the experience, often of tragic nature, gained with poliomyelitis, may serve us in dealing more effectively with the encephalitis peril. Hence, by way of introduction, I shall sketch the recent history of poliomyelitis.

POLIOMYELITIS

The occurrence of poliomyelitis in America and generally in Europe beginning in 1907 followed, it now appears, the severe epidemics of Norway and Sweden, which reached a first climax in 1905. Indeed, poliomyelitis became so widespread after 1905 that it may be regarded as having become pandemic. Besides Europe and the United States, South America, Australasia and the far eastern countries all were involved. Poliomyelitis, it is true, had been mildly epidemic in the United States before 1907; but the most severe of the earlier outbreaks were inconspicuous as compared with the later ones, both as regards the number of persons affected and the territory invaded. Thus, the severe Vermont epidemic of 1894 included 130 cases; and it is worth noting that no extension into distant territory followed in its wake.

It is customary to ascribe to Wickman, who studied the Swedish epidemic of 1905, and gave to the world in 1907 his remarkable book on epidemic poliomyelitis,[1] the first account of the so-called abortive cases of poliomyelitis. But Caverly, who studied the Vermont outbreak,[2] clearly described cases which did not go on to frank paralysis, but terminated in prompt recovery after symptoms which seemed to presage the onset of paralysis. As these "imperfect" or nonparalytic instances arose along with the frankly paralytic cases, it seemed to Caverly that they belonged in the same category with the latter. This conception is now abundantly justified. And it is due to Wickman that the abortive type of cases of epidemic poliomyelitis is so widely recognized. The epidemiologic significance of the abortive cases is considerable, since many are ambulatory and most are invalided for a few days at most; they thus furnish a ready means of distributing freely the inciting microbic agent or virus of poliomyelitis in their surroundings. From the public health point of view, the abortive and ambulatory cases of poliomyelitis are more dangerous than the frankly paralytic, since by the very nature of the circumstances the latter are restricted in their contact with healthy persons.

We may think that the forerunners of these epidemics of poliomyelitis were imported into the United States about 1906 or 1907; that the cases of the disease or carriers of the virus first had merely local distribution, but that gradually the conditions favoring a wider spread of the disease became more extensively developed; that thus the more numerous and severer outbreaks arose; until finally, conditions in certain localities having become highly favorable, the terrific explosion with its thousands of paralyzed patients occurred in 1916, since which time the disease, while still present, has reverted to a relatively quiescent state.

The medical profession in general in the United States in 1907 was not informed and ready to deal with the epidemic of poliomyelitis. Practically none of the profession had had previous experience with the disease except in its rare sporadic form, which at first seemed improbably connected etiologically with the epidemic affection. Few physicians knew of the succession of outbreaks, small and large, that for many years had been going on in Norway and Sweden. When, therefore, the epidemic appeared in the United States, there was inevitable confusion of diagnosis, lack of understanding of the infectious nature of the disease and the degree of its communicability, uncertainty as to the public health policy to be pursued, and, finally, in places an undue harshness in the endeavor to curtail its ravages.

Gradually a deeper knowledge of the disease by the profession at large has removed many of these disabilities, and a wider understanding of its atypical forms is rendering feasible the early and more complete institution of those protective public health measures with which hope of better control of epidemics is inseparably connected.

LETHARGIC ENCEPHALITIS—HISTORICAL

With this introduction, I shall now consider certain historical points regarding lethargic encephalitis. It

* From the Laboratories of the Rockefeller Institute for Medical Research.

1. Wickman, I.: Beiträge zur Kenntnis der Heine-Medinschen Krankheit, Berlin, 1907.
2. Caverly, C. S.: Med. Rec. **46**: 673, 1894.

appears that the first cases of that disease recognized in the United States occurred in the winter of 1918-1919. In contradistinction to epidemic poliomyelitis, there is no reason to suppose that this epidemic affection of the central nervous system ever before existed in America. This point is an important one. At present the disease seems to be widely distributed, as cases have been reported from many states.

It is possible to trace the cases of lethargic, or epidemic encephalitis, now arising in this country, to an outbreak which occurred in Vienna and neighboring parts of Austria in the winter of 1916.[3] Because of war conditions, knowledge of this unusual disease did not at once reach western Europe and the United States; but nevertheless cases of the disease occurred in England and France in the early months of 1918, and in America about one year later.

Both in Austria and in England, in which countries the first cases were observed, respectively, in eastern and western Europe, the disease was first mistakenly attributed to food intoxications. In Austria the early cases were ascribed to sausage poisoning, in England to botulism arising from various foods.[4]

This error is not perhaps as remarkable as might at first sight appear. In the first place, both countries were laboring under unprecedented conditions of food shortage, Austria because of the blockade, England because of the submarine. Moreover, because of this shortage, preserved foods were employed on a scale never before equaled, and, of course, waste and refuse were reduced to a minimum. Furthermore, an early symptom of this encephalitis is third nerve paralysis—giving rise to diplopia, ptosis, etc.—which happens also to be an early symptom in certain forms of food poisoning and notably in botulism.

Ultimately, in both countries the notion of food origin became untenable, and the disease was recognized as arising independently of diet and other usual conditions of life, and came to be viewed as probably of microbic origin and of communicable nature.

PATHOLOGIC

The first fatal cases, which occurred in Vienna, supplied on histologic study a physical basis for the symptoms observed during life; and the first English and French cases similarly examined microscopically showed lesions identical with those described for the Austrian cases. In due time the anatomic study of cases arising in the United States and still other countries showed close agreement with the others, and now a histologic basis of the pathology of the disease, of remarkable concordance, has been provided. On this basis we may now regard lethargic encephalitis as representing a definite pathologic as well as clinical complex, and to consider it as a distinct disease.

The histologic changes or lesions of lethargic encephalitis may be both extensive and profound. Those so far described as confined to the central nervous system affect particularly the brain and especially the gray matter at the base of that organ. While, indeed, any part of the gray matter may be involved, and lesions are found in the cortex and in the cerebellum, the structures particularly affected are those about the third ventricle, the aqueduct of Sylvius, the lateral ventricle and optic thalamus, and the pons and medulla. The spinal cord is variably involved. In general, it may be stated that the severity of the cerebral lesions diminishes from before backward; the upper or cervical cord often shows changes; but it is still to be determined how often and to what extent the cord as a whole is affected.

The lesions themselves consist of cellular aggregations about the blood vessels, cellular infiltrations in the nerve tissues themselves, small, often microscopic hemorrhages, and an outpouring of plasma or lymph into the tissue interstices (edema). The cellular accumulations and invasions are chiefly mononuclear in nature (lymphocytes, plasma cells, polyblasts); polymorphonuclear cells are also encountered, but are relatively inconspicuous. The lesions themselves occur in nodular and in diffuse forms; and those of the tissues are at times clearly associated with the vascular affections and at other times are so extensive as not to be brought into relation with particular vascular involvements. The paralyses of the ocular, facial and other muscles which sometimes occur arise, with rare exceptions, from the cellular and other invasions of the nuclei of the corresponding nerves.

CLINICAL

The clinical phenomena or symptoms of lethargic encephalitis are referable to the lesions of the central nervous organs or the pathologic process, as sketched. It is perhaps too early in the study of the disease to set up hard and fast clinical varieties or types. However, attempts at classification have already been made. One of the most comprehensive is that of MacNalty,[5] which is reproduced here, as it is suggestive and may prove useful in practice. MacNalty distinguishes six groups of cases: (1) cases with general symptoms and without localizing signs; (2) cases with third nerve paralysis and general disturbance in the function of the central nervous system; (3) cases with facial paralysis and general disturbance in the function of the central nervous system; (4) cases with spinal manifestations and general disturbance in the function of the central nervous system; (5) cases with polyneuritic manifestations and general disturbance in the function of the central nervous system, and (6) cases with mild or transient manifestations (so-called "abortive" cases). To these should be added cases of paralysis of other motor cranial nerves than the third and fifth, such as those of deglutition and respiration.

Probably there is an incubation and prodromal period which precedes the onset of the striking subjective and objective symptoms of the disease; but thus far these have not been defined. Hence the so-called onset of the disease is usually described as sudden or acute. The latter is, indeed, so striking that the patient is able often to tell the precise hour of a particular day on which he fell ill. Actually the striking symptoms often develop more slowly than in poliomyelitis.

The initial symptoms are described as chills, lassitude and general malaise, headache and general pains, nausea and anorexia, associated often with the common symptoms of upper respiratory catarrhal affections. Fever is an irregular manifestation. It may be present at onset or may appear only later. The temperature range tends not to be high—from 101 to 102—but it sometimes swings to 103 or 104. As the symptoms develop there arise lethargy or drowsiness, vertigo, tinnitus, muscular weakness, blurred or misty vision, diplopia, photophobia, tremors and twitchings, ataxia, delirium, irritability, restlessness, mental depression and other

3. Von Economo, C.: Die Encephalitis Lethargica, Vienna, 1918.
4. Report of an Enquiry into an Obscure Disease, Encephalitis Lethargica, Report to the Local Government Board, No. 121, London, 1918.
5. MacNalty, A. S. (Footnote 4) p. 12.

alterations, difficulty in articulation and in swallowing, stiffness of neck and spasticity of other muscles, sweating, hiccup, etc. Among the earliest symptoms to arrest the attention of the patient and the physician are diplopia and ptosis with varying degrees of lethargy. But still other paralyses (e. g., facial) may appear, and the lethargy may arise independently of all localizing nervous signs.

The outstanding feature of the disease is the lethargy, which is progressive in character and present in the great majority of cases (80 per cent.?). It may appear suddenly, but usually is gradual in onset. The patient becomes apathetic and dull, appears dazed or stupid, the hours of sleep become prolonged, and he is hard to wake in the morning. Moreover, he may fall asleep at odd hours—while engaged at work or at mealtime. The lethargy may deepen into stupor or even into coma. Its duration is variable—a week, a month or even longer—up to four months. Even after long periods, recovery may still follow. During the lethargy, there may be lack of facial expression (masklike features). The usual state is one suggesting profound sleep, from which the patient can be aroused by loud speaking, prodding, etc., to partake of food or answer questions. But cases in which marked restlessness and even mania have been present followed by lethargy have been noted.

Symptoms referable to irritations of the meninges appear. Usually they are slight, and while sometimes arousing suspicion of acute meningitis, that condition is excluded by lumbar puncture and examination of the cerebrospinal fluid. The fluid tends to be under somewhat increased pressure, but clear. The number of cells is slightly increased (very rarely 100 per cubic millimeter), and the globulin content little and sometimes not at all excessive. The cells, which range usually around 10 to 20 per cubic millimeter, consist partly of mononuclear and partly of polymorphonuclear leukocytes. In addition, the important point of the rare presence of Kernig's sign should be mentioned.

The occurrence of paralyses of the face muscles has been mentioned. Paralysis of the extremities is rare: wrist drop has been noted in at least one instance. But a far more common symptom is rigidity or spasticity, chiefly of the extremities, which in a few cases has been observed to extend to the spinal and even the facial muscles, making a picture suggestive of paralysis agitans. This spasticity of the extremities is ascribable to involvement in the encephalitic process of the lenticular nucleus and the corpus striatum.

The duration of the stupor is very variable; it may last a few days, for weeks or even for months, and recovery still take place. The return to clear mentality is usually gradual; muscular power also tends to return slowly, and general convalescence tends to be prolonged. In paralytic examples of the disease, rapid, complete or partial clearing of the palsies has been noted.

The number of cases of undoubted lethargic encephalitis thus far reported is too small to indicate the age periods of greatest incidence. For the present it may be stated that the disease occurs at all ages, namely, from a few months to advanced years (over 70 years). Likewise, it appears as if the two sexes were about equally attacked.

The fatalities reported range from 20 to 35 or 40 per cent. Probably the higher mortalities refer to groups of the severer cases of the disease. Since knowledge of the disease is still very restricted and diagnosis still in its beginnings, probably many cases of lighter affection are overlooked or given other names and interpretations, thus making it impossible at present to arrive at an accurate estimation of the prognosis and mortality. At best, however, the disease is to be regarded as serious, whether from the point of view of long duration from onset to restoration to health, or of fatality. The chief immediate causes of death reported have been intercurrent pneumonia and paralysis of the respiratory center in the medulla.

Present indications are that the degree of communicability of lethargic encephalitis or susceptibility to the disease is low, possibly equaling that of epidemic poliomyelitis as observed in ordinary times. The seasonal incidence seems to be midwinter, in that respect resembling epidemic meningitis and differing widely from epidemic poliomyelitis, which prevails usually in midsummer and early autumn.

Explanations of the lethargic state have been offered. A toxic origin is, of course, possible. It seems more likely, however, in view of the nature and distribution of the lesions, that its source is rather a mechanical one. It is known that the sensory stimuli from the special and other senses pass by way of the thalamus to the cerebral cortex.[6] Since, therefore, the thalamus is so commonly the seat of the cellular infiltrative lesions described, it would appear that the stimuli are interrupted in that organ on the way to the cortex, whence a kind of sleep supervenes. The obstruction to the stimuli is not absolute, since the patient can be aroused by increasing their intensity (as by loud speaking, prodding, etc.)

EPIDEMIOLOGIC

It is now sufficiently obvious why the popular name of "sleeping sickness" has been applied to this malady. The disease is, of course, wholly distinct from African sleeping sickness, which is a trypanosomal infection carried from person to person by means of an insect vector—the tsetse fly.

When an apparently new disease arises, it is always important to inquire whether the particular set of symptoms that are taken to characterize it has been observed and recorded before.

In the present instance there are two significant records which may easily refer to a similar and possibly identical disease. The first one dates from 1712 and refers to an outbreak of so-called sleeping sickness centering about Tübingen in Germany. The second record dates from 1890 and deals with a rather puzzling malady called nona, which is described rather in the lay than the medical literature of the time and seems to have prevailed in the territory bounded by Austria, Italy and Switzerland. In respect to neither instance, however, do the records contain the minuter data which would admit of a certain identification of the disease described with the encephalitic malady we are considering.

One circumstance is, however, significantly suggestive. The location of the 1890 affection, "nona,"[7] which was characterized by somnolence, stupor and coma, coincides roughly at least with that of the first cases reported in the present epidemic. The question may, therefore, well be raised whether the endemic home of this epidemic variety of encephalitis may not be that corner of southeastern Europe overlapping the three countries mentioned. If this should prove to be prob-

6. Head, H., and Holmes, G.: Brain **34**: 102, 1911-1912.
7. The etymology of this term is not known. It has been suggested that it is merely a corruption of the term "coma."

able, the next questions to arise would relate to the circumstances under which the disease slumbered on in ordinary times, and to the conditions that favored a greater activity and a wider spread about the year 1916.

To deal with the first one will require particular and intensive studies carried out with the especial object in view to disclose hidden cases in the region originally affected. An answer can in the meantime be hazarded to the second question. The depressing effects of war, acting by way of hunger, cold, migrations of populations, and general insanitation, might initiate the conditions through which a low endemic might well be converted into a higher epidemic incidence of the disease.

In effect, a similar set of depressing and favoring conditions may be supplied by a highly debilitating and destructive epidemic, such as the periodic waves of pandemic influenza which recur from time to time. In this manner may possibly be explained the coincidence of the Tübingen epidemic of 1712, also called sleeping sickness, and of the "nona" of 1890 with epidemic influenza, just as the wider distribution of the encephalitic malady and the influenza epidemics of 1918 and of 1920 may be similarly associated. In other words, what the depressing circumstances of the war did for Austria-Hungary in 1916, the pandemic of influenza may have done for the rest of the world in 1918 and subsequently, namely, prepare the soil, as it were, for the growth in number of cases and for increase in intensity and capacity for spread of an infectious nervous disease ordinarily narrowly localized and moderately benign.

This relationship of lethargic encephalitis to the epidemic of influenza has, indeed, led to a discussion as to whether the former is not merely a sequel—early or late—attending a certain, if only small number, of cases of epidemic influenza.

Regarded merely chronologically, the question thus presents itself: In 1916, when the first cases of encephalitis appeared or at least were recognized in Austria, the epidemic of influenza which prevailed later, in 1918, had not yet been noted. In the instances of England, France, the United States and some other countries, the epidemic influenza and cases of lethargic encephalitis were more or less coincidental. Since influenza varies so much in degree of severity, it is of little moment to debate whether or not victims of the encephalitis had previously suffered from influenza.

On the other hand, there is no recognized numerical relationship between the extent of influenza and the number of cases arising, or at least identified, of the encephalitis. It is, of course, true that encephalitis has long been recognized as one of the sequels of epidemic influenza. Indeed, in the etiology of encephalitis, influenza occupies a prominent place; but in no other pandemic of influenza has this remarkable association of encephalitis occurred with certainty. Little weight can be given the supposed coincidence of influenza and the "sleeping sickness" of 1712; and it is highly improbable that the semimysterious affection, "nona," which dates from 1890, should have taken its origin from the influenza epidemic in southeastern Europe at that period and the association not have been observed elsewhere in Europe or even in America at the same time as a concomitant of the influenza epidemic, which raged with great intensity in those countries. Moreover, the occasional cases of encephalitis definitely observed to follow attacks of influenza have presented a more hemorrhagic character, and sometimes have been attended by Pfeiffer bacilli in the nervous tissues and meninges, which is not the case in the lethargic disease we are now considering.

Finally, should the reported experimental transmission of the encephalitis to animals be confirmed, a further distinction from the influenzal variety will have been established. Therefore, the outbreak of lethargic encephalitis either antedated (Austria) the pandemic of influenza of 1918, or (in other countries) the two diseases more or less overlapped, that is, although probably quite by accident, they prevailed concurrently. It is desirable, for the time being at least, to regard them as independent diseases.

The history of lethargic encephalitis indicates its infectious and also its communicable nature, but thus far single rather than multiple cases have been observed in family and other intimate groups of persons. However, two cases in a family have very rarely been noted; and in one instance an institutional outbreak has been reported in which among twenty-one inmates of a girls' home twelve cases arose, with five deaths.[8] Whether more accurate means of diagnosis, through which the nonlocalizing or "abortive" and the frankly paralytic lethargic cases would be more certainly associated and thus lead to a general revision of present views regarding multiple cases, can only be surmised. Obviously, in the interest of knowledge as well as of the prevention of the disease, close attention to this point is desirable.

It is now a matter of great importance to determine the precise nature or etiology of lethargic encephalitis. Many unsuccessful attempts have been made to communicate the disease to monkeys and other animals through the inoculation of nervous tissues showing the particular lesions, in the manner so readily and successfully employed in monkeys for poliomyelitis. This circumstance alone would serve to distinguish this epidemic encephalitis from epidemic poliomyelitis. But in two or three instances, what are stated to be successful transmissions of the disease to animals have been reported.

Von Wiesner [9] of Vienna inoculated a monkey subdurally with nervous tissue from a fatal case of von Economo's. This animal quickly became severely sick and died in about forty-eight hours. At necropsy a meningo-encephalitis was found, and from the lesions a diplostreptococcus was cultivated. While von Wiesner regarded this experiment as successful, further investigation has indicated that the infection with the bacteria was an accidental and secondary process, and the diplostreptococcus is not etiologically related to lethargic encephalitis.

Loewe, Hirshfeld and Strauss [10] inoculated rabbits and monkeys with filtered extracts of the nasopharynx of cases of the encephalitis and, also, with filtered nasopharyngeal washings, and have induced a meningo-encephalitis in those animals. Apparently they did not succeed in infecting those animals by inoculating the affected nerve tissues themselves. They also believe that they have cultivated a minute organism, resembling the globoid bodies of poliomyelitis, which they think may be the inciting microbic agent of the disease. Discrepancies exist between the positive results of these authors and the many failures of others with similar inoculations which only greater experience can clear up.

8. Forty-Eighth Annual Report of the Local Government Board, 1918-1919, Medical Supplement, London, 1919, p. 76.
9. Von Wiesner, R.: Wien. klin. Wchnschr. **30**: 933, 1917.
10. Loewe, Leo; Hirshfeld, Samuel, and Strauss, Israel: J. Infect. Dis. **25**: 377 (Nov.) 1919.

Finally, McIntosh,[8] of the London Hospital, announced that a monkey inoculated with the material from the fatal cases in the home for girls, already referred to, presented lethargic symptoms and tremors and died. The brain on examination is said to have shown lesions similar to those found in human cases of lethargic encephalitis.

CONCLUSION

The foregoing account represents, in brief, the present state of our knowledge of the interesting and important disease—lethargic or epidemic encephalitis. Obviously, that knowledge is still very imperfect. It is still too soon to say whether or not we are now at the threshold of the clearing up, by way of animal experiment, of the etiology and mode of communication of this menacing disease, as was accomplished so recently, and also by animal experiment, in the case of poliomyelitis. It is to be sincerely hoped that we are. But at this moment, and while waiting for the ultimate and convincing experimental results, one need entertain no doubt of the infectious and communicable nature of lethargic encephalitis.

The belief that lethargic encephalitis is a communicable disease imposes certain responsibilities on the medical profession to limit its spread. The outstanding obligation is perhaps the close study of suspected cases in order to determine their real nature, meanwhile holding them under such conditions of isolation as is usual with this class of diseases. Then every effort should be made to determine the existence of, and to detect and control the ambulant or abortive cases, having in mind that they may be more significant than the frankly lethargic and paralytic ones from the public health point of view. Since the nasopharyngeal secretions have become suspected of harboring the inciting microbic agent, adequate measures of controlling the distribution of those secretions into the surroundings of patients should be carried out. It is self-evident that the physician should invite the cooperation of pathologist and bacteriologist in attacking the unsolved problems presented by this unusual disease. It is to be hoped, indeed, that the disease may not secure a permanent lodgment in the country; on a wider knowledge of its occurrence and a deeper understanding of its nature, much, therefore, may depend.

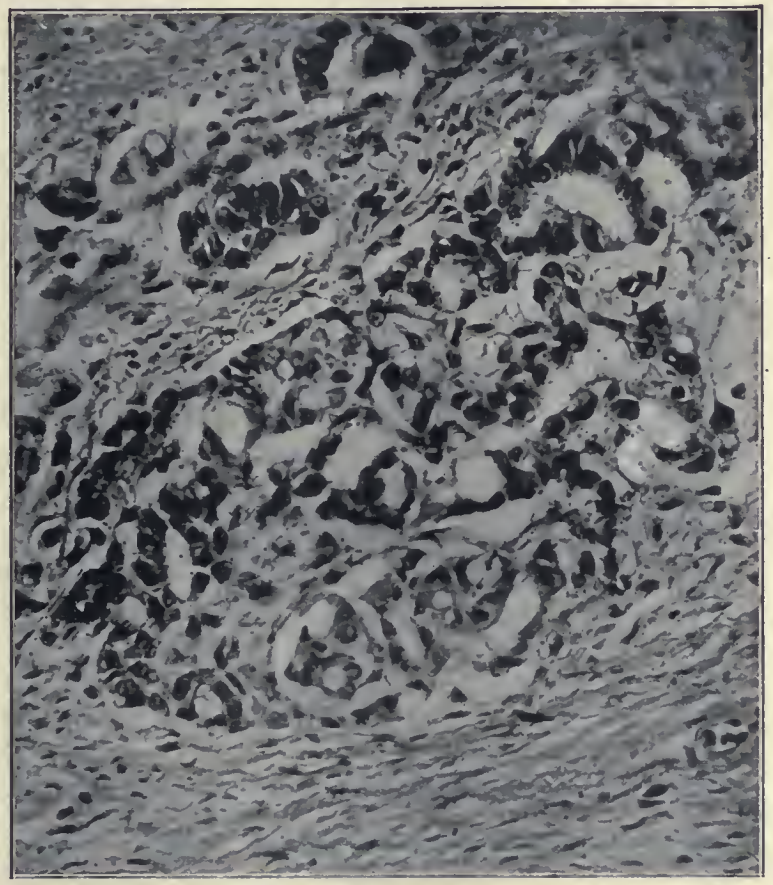


Fig. 1.—Section of stomach under high power: mass of cancer cells infiltrating muscular layers. Photomicrograph by Dr. W. P. Stowe.

CHYLOUS ASCITES DUE TO CARCINOMA OF THE STOMACH

H. V. HENDRICKS, M.D.
Assistant Physician, Traverse City State Hospital
TRAVERSE CITY, MICH.

The case here described is considered interesting enough to deserve a brief report.

REPORT OF CASE

History.—B. J. B., white man, farmer, with a negative family history in regard to malignant disease as far as known, with a brother, however, who was insane and a father who was alcoholic, had had measles, mumps and whooping cough early in life, had used alcohol to some extent, and at 16 years of age had suffered from insolation and had been called "queer" afterward. At 42 he had been kicked in the forehead by a colt, after which his peculiarities had gradually become more pronounced until he finally became more or less violent and, Oct. 28, 1907, at the age of 64, was committed as insane to the Traverse City State Hospital. His condition was regarded as a case of dementia praecox of many years' standing.

Physical Examination.—This was essentially negative except for a few hyaline casts in the urine and slight thickening of the radial arteries.

Clinical Course.—In July, 1915, it was observed that the patient, then 72 years of age, was becoming pale and thin, and that his skin was becoming slightly yellow. August 5, the urine showed a trace of glucose and a few casts; the left pupil was greater than the right and reacted to light better than the right. The knee jerks were very active and equal. August 6, examination of the blood revealed 65 per cent. hemoglobin and 2,912,000 red cells per cubic millimeter which showed a certain amount of variation in size and shape. August 20, after the patient had been kept in bed and given liquor potassii arsenitis (Fowler's solution), the hemoglobin had increased to 80 per cent. and the red cells to 3,832,000.

In September, the patient began to have trouble with his stomach; he vomited more or less, and at times had difficulty in retaining solid food. The improvement under Fowler's solution did not persist, so its use was discontinued. September 28, examination of the heart was negative; the pulse was 118 and of fair tension. On percussion, the lungs showed dulness. Fine crackling râles were heard in the right supraclavicular space, and there were scattered squeaking râles in the lungs. October 14, the blood showed 60 per cent. hemoglobin and 4,800,000 red cells; and the blood smear showed 82 per cent. of polymorphonuclears, 16 per cent. mononuclears,

1 per cent. eosinophils and 1 per cent. mast cells. There was still considerable variation in the size of the red cells. By December 3, the patient had become more emaciated and still had a yellowish hue. Examination of the chest then revealed a few râles in the apexes and diminished resonance at the right apex. On the left side of the neck just above the clavicular space, five or six firm, nontender glands could be felt and seen; the inguinal glands seemed prominent, probably on account of emaciation. The patient grew progressively worse, continued to have trouble with his stomach, and retained nourishment poorly. No blood was ever observed in the vomitus or in the stools, which were always a normal color. Jan. 24, 1916, there was slight dulness at the base of the right lung with a few scattered râles there. The legs and thighs were tender; the left leg was somewhat edematous. At that time, the blood showed 25 per cent. hemoglobin and 3,116,000 red cells; white count revealed 6,700 cells, with 57 per cent. of polymorphonuclears; the red cells were somewhat irregular in shape, but no nucleated red cells were found. The skin became a deeper yellow after this, and a slight puffiness appeared around the eyes. The patient died, Feb. 9, 1916.

Necropsy Findings.—Two and one-half hours after the death of the patient, Dr. F. C. Mayne and I performed the necropsy. The body was slightly built and showed marked emaciation. The thorax was slightly emphysematous and the abdomen was somewhat distended. There was a small trophic ulcer over the right trochanter and another over the sacrum. The skin was slightly atrophic and yellowish brown. The superficial veins of the abdomen were dilated, more so on the left than on the right. The muscles were small and atrophic. There was only a slight amount of rigor mortis. There was a slight amount of edema in the lower extremities, especially in the left.



Fig. 2.—Section of liver under high power: edge of metastasis with adjacent liver cells, which have been distorted by pressure. Photomicrograph by Dr. W. P. Stowe.

The abdominal cavity contained no free gas, but it did contain a milky fluid, evidently chyle. This was not measured, but was estimated to be several hundred cubic centimeters. The stomach was large and distended with a large amount of fluid contents. A small, hard mass could be felt at the pylorus. There were adhesions extending from the gallbladder to the duodenum. The omentum was normal, containing very little fat. The intestine was normal in outside appearance and to palpation. At the pyloric end of the stomach, just inside the sphincter, there was a thickening of the stomach wall over an area about 3 cm. in diameter with a depression in the center and a raised hypertrophic border. The head of the pancreas seemed larger and harder than normal. The liver was rather small, and did not extend down to the costal margin. Scattered over its surface were several raised yellow areas ranging from 2 to 20 mm. in diameter. On section the inside of the liver showed these areas also. At the hilum were a number of enlarged lymph glands. The mesentery contained only a little fat, but when it was cut, a milky fluid like that in the peritoneal cavity oozed out from dilated lymphatics. There were many enlarged mesenteric lymph glands, especially in the upper part of the abdomen. The kidneys and suprarenals were not especially remarkable in gross appearance. The spleen was about one-third the normal size, hard and lobulated and rather grayish-brown. The appendix was small and slightly adherent to the cecum.

The thorax contained a few hundred cubic centimeters of clear yellowish fluid in the pleural cavities. The thymus was absent. The pericardium was normal, and there was no excess of pericardial fluid. The heart was small and flabby. The heart valves appeared normal. The heart muscle was yellowish red. The right lung was strongly adherent at the apex and side and in the back. There were adhesions at the apex and at the base and front of the left lung. The latter adhesions were so dense that it was necessary to cut them. There were numerous calcified lymph glands at the hilum of each lung. The aorta showed only a small amount of arteriosclerosis. The thoracic duct was dilated and filled throughout with a milky fluid. There were a number of enlarged glands along the duct in the mediastinum. Just before the duct emptied into the left subclavian vein, it was pressed on by a mass of enlarged supraclavicular lymph glands, evidently causing stasis.

The brain was removed and, after being hardened in toto in formaldehyd, was sent to the state psychopathic hospital at Ann Arbor for examination. The report of Dr. A. M. Barrett was, "Slight leptomeningitis and cystic accumulations over the convexity."

Microscopic Examination.—The mass at the pyloric end of the stomach was found to be scirrhous adenocarcinoma infiltrating the muscle layers. Several portions of the lung were examined. One portion showed a hemorrhagic infarct with atelectasis about it; another portion showed a purulent exudate in the bronchi with scar tissue around them, some completely thrombosed blood vessels, and some blood vessels with thickened walls; and another showed small metastases consisting of carcinoma cells. Various enlarged lymph glands were examined and found to contain metastases. The yellowish areas in the liver when examined microscopically were found to be metastases. On section, the pancreas showed a certain amount of general atrophy and a number of small areas of recent hemorrhage. Some of these showed also abundant polymorphonuclear leukocytes. There were also, largely in the connective tissue, a few small areas of infiltration with small round cells. The spleen showed a thickened, dense capsule with dense trabeculae, and the walls of its blood vessels were dense and hyaline. There was a hypoplasia of the lymphoid elements. Sections of kidney showed an increased amount of connective tissue in the

cortex as well as in the medulla. There were a good many casts, the blood vessels were more or less hyalinized, and the glomeruli were somewhat shrunken. The heart showed probably an increase in connective tissue around the blood vessels.

COMMENT

The conditions found at necropsy were not anticipated during life, although carcinoma of the stomach was strongly suspected. The finding of chyle free in the thoracic cavity, or in the abdominal cavity, or in both, is quite uncommon.

Two articles on this subject have appeared in THE JOURNAL; the first, by Outland and Clendening,[1] and the second, by Tuley and Graves.[2] These articles are recommended to any one especially interested in this subject.

Outland and Clendening reported a case of chylous ascites and chylothorax due to carcinoma of the stomach. They referred to articles by Wallis and Schölberg,[3] who had collected reports of 176 cases (including three of their own) of chylous and chyliform ascites. I have not been able to consult these references, but, if I understand it correctly, in sixty of these cases there was also chylothorax. Seventeen of the 176 cases were due to carcinoma of the stomach, and in three of these seventeen, the chylous fluid was found in the thorax as well as in the abdomen. Outland and Clendening collected reports of eleven more cases, of which one was due to malignant cysts in the pelvis and one to Hodgkin's disease. The others are ascribed to trauma, cirrhosis of the liver, appendicitis, nephritis, tuberculous peritonitis and heart and liver diseases.

Tuley and Graves report a case of chylothorax, chylous ascites and lymphosarcoma. They quote Sale [4] as reviewing forty-two cases. The causes of these cases were given as new growths or tuberculous lymph glands in nine cases, thrombosis of the left subclavian vein, four cases, and secondary growths in the thoracic duct itself, nine cases. Other causes given were perforating lymphangitis, aneurysm of the duct itself, thrombosis of the duct, operation for removal of cervical glands, mitral disease, filariae, and inflammatory thickening of the mesentery.

I have not made a thorough review of the literature, but I have found the following articles since the publication of the two articles to which I have just referred. Lewin [5] reported a case of chylothorax due to lymphosarcoma of the mesentery with metastases in various glands and in the thoracic duct. A case of traumatic chylothorax was reported by Derganz [6] in 1915. Pisek [7] reported a case of chylothorax in an infant aged about 2 months. The milky fluid was found on aspiration, and the infant recovered. Bonorino Udaondo and Castex [8] reported five cases of milky ascites, some due to cancer of the stomach, and others to tuberculous peritonitis or other chronic processes.

It seems that malignant disease can be given as the cause of this condition in at least 10 per cent. of the cases. Outland and Clendening were unable to find the thoracic duct in their case, and they are inclined to doubt the reports in which it is said to have been found dilated. In our own case, there was no difficulty in demonstrating the dilated duct.

1. Outland, J. H., and Clendening, Logan: Chylous Ascites, J. A. M. A. **66**: 1833 (June 10) 1916.
2. Tuley, H. E., and Graves, Stuart: Chylothorax, Chylous Ascites and Lymphosarcoma, J. A. M. A. **66**: 1844 (June 10) 1916.
3. Wallis, R. L. M., and Schölherg, H. G.: Quart. J. Med. **3**: 301, 1909-1910; **4**: 153, 1910-1911.
4. Sale, L.: Interstate M J. **29**: 50 (Jan.) 1912.
5. Lewin, P.: Am. J. M. Sc. **152**: 71 (July) 1916.
6. Derganz, F.: Wien. klin. Wchnschr. **28**: 1320 (Dec. 2) 1915.
7. Pisek, G. R.: Chylothorax in an Infant, J. A. M. A. **69**: 310 (July 28) 1917.
8. Bonorino Udaondo, C., and Castex, M. R.: Rev. Assn. méd. argent. **26**: 58 (Jan.-Feb.) 1917.

SUMMARY

In a case of chylous ascites in a man, aged 72, the feature of special interest clinically was the appearance of enlarged glands in the left side of the neck a few weeks before death. Necropsy revealed milky fluid in the abdominal cavity, cancer of the stomach and metastases in the liver, lungs, mediastinal glands and the glands in the left side of the neck. The thoracic duct was dilated. Of the cases which have been reported with chylous fluid either in the thorax or abdominal cavity, or both, at least 10 per cent. have been due to malignant disease.

POLYPOID ADENOMA OF THE STOMACH

REMOVAL BY GASTROTOMY

EMIL NOVAK, M.D.
Instructor in Clinical Gynecology, Johns Hopkins University Medical Department
BALTIMORE

The frequency of cancer of the stomach is so very much greater than that of other gastric tumors that the benign neoplasms of this origin receive little attention in the diagnostic consideration of doubtful cases. Aside from their rarity, the accurate diagnosis of these benign tumors is rarely possible. Textbooks on medicine, and even the special works on diseases of the stomach, as a rule give scant attention to this group of tumors. Perhaps the most interesting neoplasms of this type are the adenomas.

The first undoubted case of adenoma of the stomach was that reported by Cruveilhier,[1] although earlier description of somewhat doubtful cases had been given by Morgagni and Lieutaud. Brissaud's excellent study [2] was based on the specimen from the case reported by Cruveilhier, which is preserved in the Dupuytren museum. One of the best modern articles on the subject is that of Menetrier.[3] Among other excellent contributions are those of Hayem,[4] Verse,[5] Michel,[6] Napp,[7] Finney and Friedenwald,[8] and Hauser.[9]

TYPES OF GASTRIC ADENOMA

A number of types of gastric adenoma have been described. Three groups may be recognized:

1. Polypoid adenoma, either single or multiple (*les polyadénomes polypeux*). In this type, the interior of the stomach presents one or more polypoid growths springing from the mucosa. As many as 300 have been reported in one case.

2. The so-called polyadenoma *en nappe* of Menetrier. This is characterized by involvement of large areas of stomach wall, measuring perhaps as much as

1. Cruveilhier: Traité d'anatomie pathologique, 1849, Tome 2, Livraison 30, p. 2.
2. Brissaud: Arch. gén de méd. **2**: 257, 1885.
3. Menetrier: Arch. f. Physiol., 1888.
4. Hayem: Presse méd. **2**: 53, 1897.
5. Verse: Arb. a. d. path. Inst. zu Leipzig, 1908.
6. Michel: Thèse de Montpellier, 1907.
7. Napp: Inaug. Diss., Freihurg, 1900.
8. Finney, J. M. T., and Friedenwald, J.: Am. J M. Sc. **154**: 683 (Nov.) 1917.
9. Hauser: Deutsch. Arch. f. klin. Med. **55**: 429, 1895.

10 or 12 cm. in diameter. In this way large plaques are produced, rather than isolated polypoid outgrowths.

3. The adenoma of the Brunner gland type, which was first described by Hayem in 1897. The point of distinction in this variety is that the gland tissue of the tumor, even though the latter be located in the stomach itself, is of the type of the Brunner glands which are found normally in the duodeum. This is the rarest of the three forms.

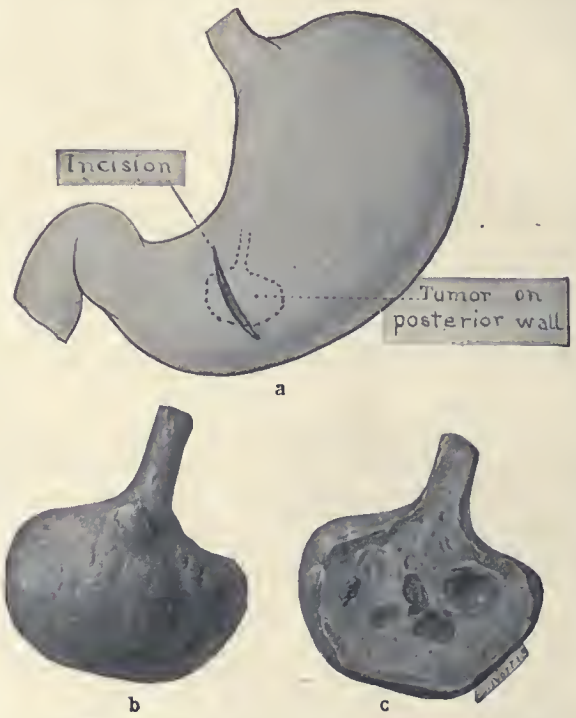
ETIOLOGY AND COURSE

Little of a definite nature is known concerning the etiology of this disease. It is, however, commonly believed to be most frequently the result of a chronic gastric catarrh. Napp believes that it is especially apt to be associated with the atrophic forms of chronic gastritis. While adenomas of the stomach may apparently remain for years and may cause no serious symptoms, it is generally conceded that they have a strong tendency to adenocarcinomatous degeneration.

CLINICAL SYMPTOMS

The disease is essentially one of advanced life, most of the reported cases having been observed in persons beyond the age of 50.

Perhaps the most extensive studies of the disease have emanated from pathologic institutes and have been based on specimens found at necropsy in patients who have died of other diseases. This is indicative of the infrequency with which the clinical diagnosis is made, for there are no distinctive symptoms. The usual manifestations of a chronic gastritis may be associated with severe epigastric pain, more particularly in the case of pedunculated growths, which may even cause pyloric obstruction. The specimen in the Dupuytren museum is said by Michel to show a polyp 10 cm. long which had partially traversed the pylorus, which it blocked. In the more marked cases of gastric polyposis, the roentgen ray may be of value in diagnosis.



Polypoid adenoma of the stomach: *a*, tumor on posterior wall of stomach, and incision for its removal; *b*, gross appearance of tumor, with pedicle; *c*, cut surface of growth, showing cystlike gland spaces.

SINGLE POLYPOID ADENOMA

The case which formed the incentive for the present summary was of the type of single polypoid adenoma. The size of tumors of this kind varies between wide limits. The largest one recorded is, no doubt, that of Chaput,[10] which was as large as a fetal head at term. It was pedunculated and its surface showed no ulceration. Although reported as an adenoma, a suspicion is expressed by Hayem and Lion [11] that this tumor was really an epithelioma. There seems to be no special site of predilection of these growths, although they are perhaps more common in the pyloric region. Their consistency is rather firm, the cut surface often being dry and at times almost lardaceous.

Microscopically, these tumors are formed chiefly of the overgrown glandular tissue of the gastric mucosa. The glands themselves are commonly of the pyloric type and are lined by cylindric epithelial cells, which are sharply marked off from the basement membrane. The nuclei are placed close to the latter, and goblet cells are numerous. A greater or less degree of cystic distention of the glands is common, and may be so marked as to give a honeycombed appearance to the cut surface of the tumor. The interglandular substance is a dense connective tissue, often showing moderate round-cell and leukocytic infiltration. The glandular tissue shows no tendency, in benign growths, to penetrate beyond the muscularis mucosae, a point emphasized by Napp.

SURGERY

Little need be said concerning the surgery of these growths in the rare instances in which they are discovered, for the surgery involved in their removal is in itself comparatively simple. In Chaput's case, already referred to, the large tumor which was found was removed by gastrotomy, as was done in the case of the much smaller growth in my own patient, as is described below. The same procedure was carried out in the case of Gibson [12] and also in that of Blake.[13] Both of these resembled my own in every way, so far as may be judged from the very brief and incomplete reports made in the course of a discussion at a meeting of the New York Surgical Society. The case of Lange, referred to by Hayem and Lion,[11] was one of the *en nappe* type, necessitating partial gastrotomy. These cases were all successful.

REPORT OF CASE

History.—E. B., a married woman, aged 45, seen in consultation with Dr. Benjamin O. McCleary, August 10, with nothing of significance in her family history, having enjoyed good health up to about four or five years before with the exception of infrequent attacks of tonsillitis, for the past four or five years had suffered with a gnawing pain in the epigastrium, occurring, usually, immediately after eating. There was also a great deal of eructation, but no vomiting.

Seven weeks before I saw her, the patient had been taken with a severe attack of pain in the right hypochondrium, associated with marked tenderness and some rigidity over this region. Morphin was necessary to control this pain, which Dr. McCleary felt was due to a cholecystitis. This attack had lasted for a number of hours and then subsided. Since then, the patient had continued to suffer with stomach symptoms, as noted above. The day that Dr. McCleary and I saw her she had suffered, early in the morning, an attack almost exactly similar to the one just described. The general condition was good, although there was some tendency to prostration. Vomiting had occurred once or twice. The pain over the gallbladder region was described as agonizing,

10. Chaput: Bull. Soc. anat. de Paris **70**: 534, 1895.
11. Hayem and Lion: Traité de médecine, Brouardel, Gilbert and Thoinot, 1913, p. 413.
12. Gibson, C. L.: Ann. Surg. **45**: 130, 1907.
13. Blake, J. A.: Ann. Surg. **45**:, 130. 1907.

and tenderness was definitely localized over this point. I concurred with Dr. McCleary in the diagnosis of cholecystitis and advised operation.

Operation and Results.—Aug. 14, 1919, the usual right rectus incision was made over the gallbladder. The gallbladder was found to be tightly distended and very thick walled. It did not, however, contain stones. Before the gallbladder was opened, it was considered advisable to explore the stomach and duodenum. There was no induration or other evidence of ulcer in either the pylorus or duodenum. Within the cavity of the stomach, however, some distance from the pylorus, could be felt a hard globular mass, about the size of a small walnut, which could be moved about very freely. Careful palpation revealed what seemed to be a thin, cordlike pedicle. The stomach was opened, as indicated at *a* in the accompanying illustration, and the tumor easily delivered into the incision. It was about 3 cm. in diameter and was attached by a pedicle 2 cm. long and about 0.5 cm. wide to a point on the posterior wall just below the lesser curvature of the stomach, somewhat closer to the pyloric than to the cardiac orifice (*a*). The tumor was removed by ligation of its pedicle and severing with the electrocautery. The gallbladder, being obviously diseased, was drained in the usual manner.

The patient made an uninterrupted recovery and, is now enjoying good health.

Pathologic Report.—The tumor was almost globular in shape, measuring about 3 cm. in diameter, the attached pedicle being 2 cm. in length and about 0.5 cm. in diameter. The surface showed a slight tendency to lobulation in places (*b*). For the most part it was quite smooth, although there were several small areas of erosion. The tumor, on being cut into, was found to be quite dense and dry, being apparently made up, for the most part, of connective tissue. The latter, however, was studded with numerous cystlike spaces, evidently dilated glands of varying size. This is well shown at *c*. The gland tissue had no tendency to extend beyond the muscularis mucosae.

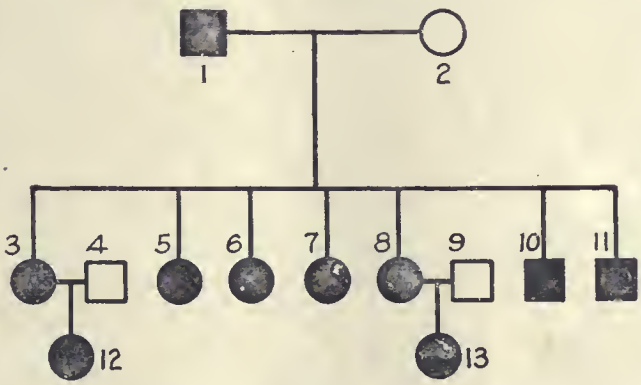


Fig. 1. Pedigree of polydactylism: Shaded symbols represent affected persons; surplusage of digits limited to the hands, and never more than one extra digit on each.

Microscopically, the lining epithelium was found to be of the usual columnar type, containing many goblet cells. In many places, however, it was eroded. Beneath the epithelial surface, and especially in the areas of erosion, there was marked injection of the blood vessels, with marked infiltration of leukocytes and small round cells. The gland tissue beneath the surface was arranged rather irregularly. In places the gland acini were rather closely packed, their outline being regular and the lining epithelium being similar to that found on the surface. Between the glands in these areas there was also much inflammatory infiltration. In other parts the glands were enormously dilated, forming cysts of considerable size, the largest being about 1 cm. In no part of the tumor was there any transformation of the epithelium which might suggest malignancy, nor was the gland pattern malignant in type. The tumor was apparently a benign pedunculated adenoma.

26 East Preston Street.

Factors Essential to Recovery from Tuberculosis.—Two things more frequently than any others work against the recovery of persons who have tuberculosis. One is that in so many cases of tuberculosis the true nature of the disease is not recognized while it is in the early stage, when it is much more easily cured than it would be later. The other is that many persons refuse to believe that they have tuberculosis until the evidence is so plain that the diagnosis of the physician is no longer needed.—*Bull. Maine State Dept. of Health,* October, 1919.

POLYDACTYLISM AND THE PHENOMENON OF REGENERATION

GEORGE F. ARPS, PH.D.
COLUMBUS, OHIO

Cases of polydactylism have been recorded since early times. Annandale [1] sees in Chaldean illustrations evidences of cases of supernumerary digits. Illustrations of double hands on each arm may find their origin in genuine cases of polydactylism. Beginning with the seventeenth century on down to the present, more or less authoritative cases multiply the records.

Many of the recorded cases [1] are extremely interesting. Forster sketches a hand with nine fingers and a foot with nine toes. Voight records an instance of thirteen fingers on each hand and twelve toes on each foot, making a total of fifty digits. Saviard, in 1687, reported the case of an infant with forty digits, ten to each member. It is not evident from the reports whether or not, in any of the foregoing, the extra digits constituted well developed organs. Meckel, however, offers a case in which a man possessed twelve fully developed fingers and toes. Scherer records the case of a girl baby, normally formed, with seven fingers on each hand, all united and bearing clawlike nails. On each foot there was a double hallux and five other digits, some of which were webbed.

HEREDITARY CHARACTER

According to Davenport [2] polydactyl traits appear to be inherited in nearly typical fashion, as indicated by the pedigree of a family cited by Lucas. Reaumer traces the influence of heredity in the Kelleia family of Malta through five generations. The trait is especially persistent in consanguineous marriages, illustrated by the family of Foldi in an Arabian tribe. In this stock, all acknowledged offspring possess twenty-four digits. An infant born with the normal number of digits is recognized as a product of adultery and is immediately sacrificed. The inhabitants of the village of Eycaux, France, have similarly perpetuated the anomaly in that the village was isolated by its inaccessible location in a mountainous region.

This anomalous phenomenon is not confined to man alone; apes, dogs, fowls and other lower animals possess it. The reported cloven-hoofed horses of Alexander and Caesar are suggestive cases of this trait.

REPORT OF CASE

History.—An Alabama negro boy, aged nearly 21, who, up to the time of his induction into the service of the army, had been employed as a section hand, attracted the attention of the psychologists at Camp Sherman because of his failure to negotiate successfully the Beta examination (for illiterates). The presence of the supernumerary digits was detected during the progress of a special individual examination.

1. Gould, G. M., and Pyle, W. L.: Anomalies and Curiosities of Medicine, Philadelphia, W. B. Saunders, 1897.
2. Davenport, C. B.: Heredity in Relation to Eugenics, New York, Henry Holt & Co., 1915.

A rather small but well-formed sixth digit was found on each hand at the knuckle of the little finger. Both digits were attached at the sides in the same relative position, the upper part of the attachment being on a level with the joint, while the lower point of attachment was about 1 inch distant, along the outer edge of the metacarpal bone. The two digits were exactly the same size and were identical in all other particulars. There was no bone and a very low degree of sensitivity. They were incapable of voluntary movements. Markings peculiar to the last phalangeal point were present, as were also small finger nails proportionate to the size of the digits. In all of these respects the two digits were symmetrical throughout. The identity was unvarying as to skin color and contour.

Family History.—The determiners of the polydactyl trait were not carried on the maternal side; the subject remembered seeing the deformity definitely only in the case of his father, his brothers, sisters and the children of his oldest and youngest sisters. He was very certain of these three generations, and appeared to remember having seen these "rooster's spurs" on his grandfather and one of his uncles. Two brothers, five sisters and two children of two of the sisters continue the peculiarity; eleven descendants, including the father and himself, carry the determiners of this trait.

Regeneration.—The subject reported that his father had the supernumerary digits removed, and that since then it has been necessary to trim them off, as they grow continuously. This fact is strongly indicative of the phenomenon of regeneration of parts, characteristic of lower forms of life—the regeneration of a lost leg in a crab, for example. We may find here some support for the view that in the fertilized ovum is found an aggregation of diversified materials known as formative stuffs, each of which is deterministically specific in the direction of structure. Speculation as to the bearing of this phenomenon on the theory of epigenesis versus that of evolution is left to the cell specialist for indulgence. Whether the entire digit would be regenerated if permitted to grow is, so far as I am aware, unknown.[3]

Health History of the Subject.—He reported that he had had but few of the diseases of childhood. He confessed promiscuity and acknowledged having had gonorrhea and bubo, once each. He was not a drug addict, nor did he use tobacco or alcohol. There were present prognathism, receding forehead and narrow skull usually found in the negro; but no unusual stigmas were found save the existence of supernumerary digits.

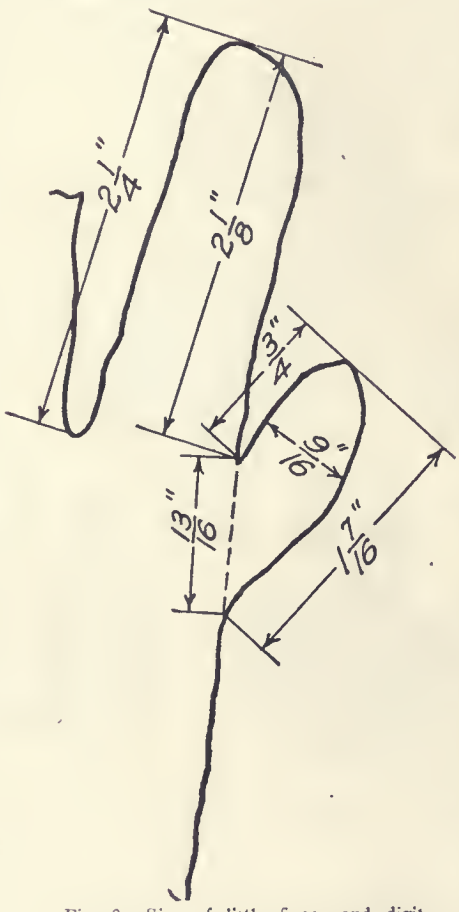


Fig. 2.—Size of little finger and digit, relative position of supernumerary digit, and place of attachment; left hand, palm upturned.

Mental Ratings of the Subject.—The range of information of the subject was extremely limited, since he had never attended school and could neither read nor write. Mental ratings were obtained by means of the short performance scale and the short Yerkes-Bridges point scale. In the former examination the subject did well in the ship, manikin and feature profile tests, fairly well in the digit symbol test and on the mazes, but very poorly in the remainder of the examination. The result obtained by the short point scale method are regarded as the more reliable, and these indicate a mental age of 10.3 years.

The subject of this report was recommended for general military service.

3. Unfortunately I was unable to confirm by direct observation the reported phenomenon, which, if correct, is most unusual and must be regarded with extreme skepticism unless confirmed by other investigators.

FOCAL INFECTION AND ITS RELATION TO OBSTETRICS

JOHN E. TALBOT, M.D.
WORCESTER, MASS.

Given a focus of infection in a pregnant woman, there are certain well-known possibilities. A focus of infection means a colony of pathogenic bacteria within the tissues of the body in the process of active multiplication. This colony of bacteria is kept alive by the destruction or digestion of the neighboring tissues of the body, and there is a by-product of this growth known as bacterial toxin which is known to be antagonistic to the proper functioning of the body cells. Any such colony may be the point from which bacteria may migrate into the blood stream and thus be scattered to different parts of the body, to cause disease in organs remote from the original focus. It is generally believed that such migration is of only occasional occurrence, whereas the absorption of the bacterial toxins into the blood stream is to a certain degree always present. I do not believe that focal infection is the only etiologic factor in the several complications of pregnancy which are here discussed. It does, however, have a tremendous influence on obstetrics; many complications, hitherto obscure as to etiology, can be attributed to the presence of a focus of infection. From a prophylactic standpoint, every obstetrician should study his patients to ascertain whether any such focus is present, and have it removed before it does harm.

The reader should interpret the term "focus of infection" as meaning exactly what it says, regardless of the location. I emphasize the teeth simply because I believe that they harbor these foci more commonly than do the tonsils, sinuses, ears, etc., and that they are actually of greater potential danger than the others. The roentgen ray has demonstrated that a high percentage of "saved teeth" have abscess formation at the ends of the roots. An abscess at the end of a crowned or pivot tooth is a different thing from a decayed tooth. In the first case the abscess must necessarily drain into the blood stream; in a decayed tooth there may be some drainage into the mouth and some into the blood stream. The former is therefore the more dangerous.

My subject naturally divides itself into two parts: (1) those complications which may be the result of a temporary bacteremia or septic embolus, and (2) those complications which may be the result of the presence of the toxins of chronic sepsis in the blood of a pregnant woman.

BREAST ABSCESS

It is impossible to produce conclusive evidence that any given breast abscess was due to a septic embolus

which had freed itself from a focus of infection elsewhere. However, it has undoubtedly been a common experience of many to observe a breast abscess develop most mysteriously without sore or cracked nipples and in the presence of painstaking care of the nipples. In one patient [1] a breast abscess developed fourteen days after delivery, although the baby died, and the breasts, which had not been used, had had careful treatment. In this case and in others I have been able to demonstrate a focus of infection elsewhere.

Breast abscess is much less common than that syndrome of symptoms classified as plugged duct or threatened breast abscess. It has been my experience to find most of these cases associated with a demonstrable focus of infection. I believe that they are for the most part actual infectious processes, and that the term "threatened abscess" is the correct one.

When we take into consideration how frequently the mother's milk becomes affected, with resulting illness of the baby due to these threatened abscesses, we must realize the far-reaching effect of an infected tooth, which may be the cause of illness in the baby through lack of proper breast milk or through nursing milk with bacteria contained therein.

I was called to see a breast-fed baby which was not gaining properly, crying a great deal, and showing little pustules on its head and body. I found that the mother had had two recent attacks of "threatened breast abscess." A roentgen-ray examination of the teeth revealed several apical abscesses. The milk remained so poor that I was forced to have the baby weaned.

Pyelitis is another complication of pregnancy which can frequently arise from a focus of infection. That pyelitis is known to be a more frequent complication of pregnancy than formerly can well be explained on the recent increase in the number of undrained foci of infection which have resulted from dental practices.

Certain obstetric patients, few in number, to be sure, have been known to die of puerperal sepsis in spite of careful aseptic treatment.[2] The causation has always remained a mystery; but if a focus of infection can be demonstrated in such a case, would it not be more reasonable to regard this as the cause than to assume that bacteria in the vagina should suddenly assume virulence sufficient to be fatal?

Women have died of pulmonary embolus before delivery. Thrombus formation implies infection in or around a blood vessel. If this occurs in an otherwise apparently healthy person, where does the infection enter? With a focus of infection demonstrable it is apparent that, on the principle of a temporary pyemia, it may be the primary cause.

One principle which may have a bearing has been established: bacteria injected into the blood stream of an animal, otherwise aseptically wounded, have a tendency to appear in and infect the aseptic wound or weakened part. It is also true that tissue in the process of production has a weak resistance to infection. If, therefore, bacteria in the blood stream reach the placenta, it is not improbable that they may cause inflammation in the villous membrane. The sluggishness of the blood stream at this point is a factor which tends to improve the opportunity for such a process.

It is my belief that a very large proportion of the uninduced miscarriages are due primarily to this cause. If the inflammation is sufficient in amount, it would result in rupture of the villous membrane with the formation of a hematoma, which in time may separate the placental tissue from the uterine surface sufficiently to cause internal, concealed hemorrhage or external hemorrhage, according to the location of the inflammatory process in the placenta.

Threatened miscarriage may be the result, or, if the hemorrhage is sufficient to terminate the pregnancy, a miscarriage is the result. I have been able to demonstrate foci of infection in a high percentage of those cases of miscarriage which have been in my charge.

So far as recent teaching has gone, *Spirochaeta pallida* has been granted the exclusive privilege of passing the villous membrane and infecting the fetus. Syphilis has stood out as the one disease which is clearly inheritable, the fetus actually containing the active infective agent. Why should the spirochete enjoy this exclusive privilege? There is evidence accumulating that this is not so, however, and once it is proved that other bacteria pass the villous membrane, then a focus of infection capable of throwing bacteria into the maternal blood stream becomes a danger and a menace to the life and welfare of the fetus.

Hydramnios, so frequently associated with the malformed and macerated fetus and with toxemia of pregnancy, is probably a secondary result of the same infective process.

Nearly every baby which in my experience has developed hemorrhage of the new-born has come from a mother in whom I have been able to demonstrate foci of infection in the teeth; and a high percentage of such mothers have shown some signs of toxemia during their pregnancy.

Pustular eruptions are fairly frequent in children not more than 48 hours old. Such cases of this as have come under my observation have been associated with foci of infection in the mother. Likewise, pustular eruptions are not infrequent sequelae to threatened breast abscesses.

If it can be proved, therefore, that the bacteremia originating from a focus of infection can result in inflammation of the placental tissue or villous membrane, a great many of the tragedies of obstetrics, hitherto unexplainable, can be given a reasonable etiology.

COMPLICATIONS OF PREGNANCY FROM TOXINS OF CHRONIC SEPSIS

Every focus of active bacteria within the body produces a by-product—toxin—which, in sufficient concentration is antagonistic to the proper functioning of the body cells. Disease is the outward manifestation of the effects of this toxin in the body.

The fact that a few days elapse before symptoms become apparent following infection is proof that toxins in lesser degrees of concentration are present in the system, doing damage gradually, and that the symptoms which declare the disease may be said to be the cumulative effect of low concentration of toxin, or the effect of the increase in the amounts of toxin to the point of causing symptoms. It must be a fact that these toxins in lesser degrees of concentration are injurious and will produce results in time, just as the lesser degrees of lead poisoning produce symptoms after the lapse of time.

1. Talbot, J. E.: A Theory on the Etiology of Toxemia of Pregnancy With or Without Convulsions, Surg. Gynec. & Obst. **28**: 165-174 (Feb.) 1919.
2. The Prevention of Puerperal Sepsis, editorial, Boston M. & S. J. **179**: 104 (July 18) 1918.

It would be a reasonable conclusion, therefore, that any focus of chronic sepsis must be a hindrance in some degree to the proper functioning of the body processes. By taking up those symptoms which manifest themselves as the result of high concentrations of bacterial toxin in the blood and working backward, we may thereby pick out those organs of the body which are undergoing damage during the prodromal stage of a disease. The situation is probably similar to the wear on the bearing of a machine. The signs of this wear do not appear until there is sufficient injury to cause wobbling or a break in the bearing. It is fair to assume, therefore, that if the kidney or the liver are the usual organs injured in a given disease, these organs are without doubt hindered in their proper functioning by these toxins when in low concentrations.

The fact that the urine of a severely sick person shows evidence of acute kidney irritation suggests that toxins of various types are damaging the kidney parenchyma. It is equally true that certain bacteria have a special tendency to cause damage to the kidney—witness the frequency with which scarlet fever is followed by kidney injury. This injury is generally not an immediate result, but a late result of the disease. In our endeavor to find the primary cause of the kidney inefficiency in toxemia of pregnancy and eclampsia, it seems significant that a streptococcus is so frequently associated with the scarlet fever lesions in the throat, and that the streptococcus is perhaps the most common type of bacteria in tooth root abscesses and chronic tonsillar abscesses.

Dr. James L. Huntington [3] has reported the case of a primipara who on her first visit showed a blood pressure of 150, which returned to normal only to rise again three months later. This rise was soon followed by a severe attack of abdominal pain and the appearance of jaundice and blindness. This was followed by external hemorrhage. The systolic blood pressure was 170. The diagnosis of detached placenta was made and verified by an abdominal operation, at which time a cesarean section was performed. A catheter specimen of urine showed a large trace of albumin. Forty-eight hours after the operation the patient died, a temperature of 103 occurring within twenty-four hours after the operation. The liver showed much destruction, and a streptococcus was recovered from the peritoneal fluid.

If this patient had recovered, the case would have passed as a severe toxemia of pregnancy accompanied by complete detachment of the placenta. The rise of temperature so soon after operation suggests strongly that the source of infection, which turned out to be a streptococcus, was in the system before the operation. I believe it was the activity of this streptococcus which was the cause of the condition. The elevation of the blood pressure three months before probably denoted the activity of this bacterium in some undetermined focus of infection. In such a case we are dealing with the fulminating type, the ordinary case of toxemia being of the same nature but of lesser degree of intensity.

La Vake,[4] who believes in the infectious basis of toxemia of pregnancy and eclampsia, quotes the work of Warnekros, who obtained eighteen positive blood cultures out of twenty-five taken antepartum in toxemia cases. The streptococcus group is prominent in the kinds of bacteria recovered by him. This evidence forms a basis for my belief that some of the bacteria of the streptococcus group may have a specific power to injure the kidney function and kidney parenchyma.

The metabolic processes of a pregnant woman are much in excess of the normal. This increase in activity must incur a corresponding increase in the metabolic waste products that must be excreted. In order to prevent a backing up of these waste products in the system, the kidney reserve power must be called into play. If, however, the kidney function is hindered by the presence of the toxins of chronic sepsis in the blood stream, it is reasonable to assume that there may be a time when the hindering effect of these toxins may be sufficient to cause a failure on the part of the kidneys to eliminate properly the increasing amount of waste products from the developing pregnancy. We are, therefore, in a situation similar to that of a city with the outlet of the sewer partially plugged. The remaining outlet might be sufficient to take care of the sewage of the city, if it were not a growing city; but the increase in the amount of sewage to be removed soon overwhelms the impeded outlet until there is backing up, with resulting damage coming, not from the reduced outlet, but from the unremoved sewage itself. We do not have to assume any special poison resulting from the developing pregnancy, for we know that excretory products retained in the system are injurious to that system. The symptoms which go to make up the disease of toxemia of pregnancy are, I believe, due to the retained waste products of the normal physiologic metabolism. The reported work of Slemons [5] shows, likewise, a retention of nitrogenous waste products in the blood of toxemic and eclamptic patients.

That a large proportion of uninduced miscarriages are due primarily to foci of infection is shown: first, by the frequency with which miscarriage appears in the obstetric history of toxic or eclamptic patients; secondly, by the frequency with which antepartum hemorrhage, by which I mean hemorrhage coming on after conception, is associated with toxemic or eclamptic patients, and thirdly, by the frequency with which infarcts in the placenta are found on the edge of the placenta, frequently showing an indentation in the circular outline of the placenta which strongly suggests an injury at that point which stopped the growth of the placenta in that direction.

These three observations can be successfully correlated if we assume that there is a primary focus of infection in the system. If the infarct can be interpreted as a point of damaged placenta with nature's healing process superimposed, and if we assume that that damage was primarily caused either by the lodgment of a small embolus of bacteria or by the toxins of sepsis in the blood stream, it is not at all difficult to understand why these three observations are associated. It is also plain that it is not impossible to have miscarriages, antepartum hemorrhage and infarcts in the placenta without other toxic symptoms.

Suppose that there is a septic embolus in the blood stream of the pregnant woman, and that this embolus reaches the placenta. The sluggishness of the blood stream in this organ would improve its opportunity

3. Huntington, J. L.: Certain Causes of Bleeding During Pregnancy: Their Significance and Treatment, Interstate M. J. **24**: 1161 (Dec.) 1917.

4. La Vake, R. T.: Infectious Theory of Preeclamptic Toxemia and Eclampsia, Journal-Lancet **36**: 600 (Oct. 15) 1916.

5. Slemons, J. M.: Analysis of the Blood in Eclampsia and Allied Intoxications, Am. J. Obst. **77**: 797 (May) 1918.

for finding lodgment in the villous membranes. This inflammatory process, if located near the edge of the placenta, would cause swelling and local thrombosis in the placental tissue. If this swelling is sufficient, it is possible that there may result a local hematoma, which is in reality a small area of internal, concealed hemorrhage. Should this hematoma be large enough to cause a rupture between the edge of the placenta and the uterus, there would be an external hemorrhage which would make its appearance in the vagina only when it was sufficient to dissect its way downward between the chorion and the uterine wall to the external os. Thus, we might have numerous infarcts formed without any external hemorrhage. Likewise, we might have numerous infarcts formed without any accompanying evidence of toxemia of pregnancy.

If this injury to the placenta is in the middle of the placenta, an infarct may form without symptoms unless the injury is sufficient to dissect sufficient of the placental tissue to terminate the life of the fetus. In such a case the miscarriage may not result for weeks after the injury.

The following case is an example of this kind:

A woman, aged 39, who had a bad upper left wisdom tooth and several devitalized teeth, had been pregnant three times. The first pregnancy went to full term and was said to be associated with uremic poisoning and the puerperium complicated by pyelitis. The second pregnancy resulted in a miscarriage at two months associated with edema. The third pregnancy resulted in a miscarriage at five months, followed by several months of anemia.

A fourth pregnancy resulted in a miscarriage at four months. Before this miscarriage occurred she reported to me that she had had a sudden onset of severe pain in the right lower quadrant which had lasted about three days, but was almost gone at the time she reported to me. No further symptoms occurred until she began to bleed profusely, one month later. The vagina was packed and the patient taken to the hospital. When the pack was removed, the placenta came away with the membranes intact. The whole center of the placenta was destroyed and showed signs of old hemorrhage.

The pain which the patient experienced the month before was probably caused by an area of internal concealed hemorrhage in the middle of the placenta. This patient had what was in all probability a toxemia with her first baby; none of her subsequent pregnancies have been sufficiently long to develop real toxemic signs. This case also represents an example of the association of miscarriage with toxemia of pregnancy.

Antepartum hemorrhage due to premature detachment, partial or complete, has long been recognized as a common accompaniment of toxemia of pregnancy. I believe that this phenomenon is due primarily to an injury done the placenta either by a local infectious process or by the toxins of sepsis in the blood stream, followed by a hematoma which may dissect the whole or a part of the placenta away from the uterine surface. Dr. Huntington's case, cited above, is a good example of this in its worst form.

A case recently reported by Cornell and Earle [6] of Chicago demonstrates exactly this modus operandi of a miscarriage:

A multipara, aged 36, in her sixth pregnancy had some bleeding at the end of the second month. An examination gave reason to believe that an extra-uterine pregnancy was present. Accordingly, the abdomen was opened and it was found that the patient had a bicornate uterus; in the right horn was a fibroid, in the left, a pregnancy. It was decided that hysterectomy was the best procedure, and the specimen was removed in toto.

This set of circumstances, that is, the removal of a uterus following so closely on a threatened miscarriage, is therefore exactly what could be desired in order to get a proper examination of the placental tissue following this threatened miscarriage.

The pathologic report is most complete:

The only abnormal feature of this placenta is the abundance of necrotic areas in the decidua adjoining the intervillous space. The margin of these areas is densely infiltrated with leukocytes. . . . They show profound necrosis centrally, there may be some hemorrhage, and there is always a margin densely infiltrated with polymorphonuclear leukocytes. . . . One small area . . . showed . . . a villous with edematous stroma. These observations point to a beginning abscess formation with spreading of the infection to the ovum. Slides stained with Gram's stain afford some inconclusive evidence of the presence of gram-positive cocci, but the histological appearance of the necrotic areas points clearly to their infectious origin.

Where did this infection come from? Besides mentioning that the patient had very bad teeth and some enlarged cervical lymph glands, the report tells of an acute infection, a "cold," which had lasted three weeks, and that the bleeding followed soon after this infection. The enlarged lymph glands in the neck might have become enlarged as a result of infection either in the teeth or in the tonsil. In all probability it was the infection in the tonsil which was the focus which threw off bacteria into the blood stream. I do not believe that the bad teeth can be thrown out of this case as a possible source of infection, unless the patient had other evidence of chronic disease of the tonsils. In her history she has stated that her first bady died of vomiting blood and her third pregnancy was a miscarriage. I would, therefore, read into her history a story of chronic infection either in her tonsil or in her teeth, antedating her first pregnancy. The incidence of a hemorrhagic baby associated with a later miscarriage, when viewed from the light of other experiences, forms an entity which justifies this supposition. If this is the true explanation of partial or complete detachment of the placenta, there is no reason for seeking another to explain the miscarriages which so frequently occur in the history of toxemic patients, or in patients who have a miscarriage without a demonstrable cause.

The three cases of pernicious vomiting of pregnancy which have come under my observation during my service at Memorial Hospital were so striking that I have classified this complication of pregnancy among the others attributed to the effects of chronic sepsis. In two of the cases observed, the mouth was full of carious teeth, the gums markedly inflamed and full of pus.

In one of these cases, twelve extractions of those teeth which were flush with the gums were made in the hope that the supply of toxins might be decreased sufficiently to improve the condition. In forty-eight hours the pulse had risen from 100 to 120 without marked improvement in the vomiting, and it was compulsory to terminate the two and a half months' pregnancy.

In the second case the patient was in extreme emaciation, having been sick for six weeks before entering the hospital. A five months' pregnancy was terminated and a macerated

6. Cornell, E. L., and Earle, W. C.: Uterus Bicornis Unicollis with Two Ova Implanted in One Horn and a Fibroid in the Other, Surg., Gynec. & Obst. **29**: 485 (Nov.) 1919.

fetus removed. As in the other case, the mouth was a mass of infection. On discharge, recommendation was made that these teeth be extracted. However, this was not carried out, and about one year later the patient appeared at the hospital again and had to be curetted for an incompleted miscarriage.

The third patient appeared at the hospital on account of severe vomiting at the second month of pregnancy. The case had previously been diagnosed as tuberculous kidney after catheterization of the ureters six months before the patient became pregnant. Abortion was recommended and performed in this case.

In a recent article, Dr. Eugene S. Talbot [7] says:

The number of focal infections and disturbances from faulty root fillings, local and systemic, is appalling. The average dentist, not being grounded in pathology, does not and cannot appreciate the seriousness of his faulty treatment. A different method of root filling must be immediately instituted or devitalized teeth must be extracted. A rule which I have adopted is that a patient's health is worth more than all the natural teeth.

From time to time, in the past thirty years, I have repeatedly called the attention of the profession to the fact that modern dentistry is producing more disease than any other one cause. The profession is beginning to realize the truth of this statement. Since the first dental college was established, there has gradually developed a method of practice of mechanics regardless of pathologic results. The method of practice, at best, has benefited the individual patient only for the time being. . . . Since our present methods of procedure are faulty, we must resort to radical changes in treatment and devote our entire attention to preventive measures.

CONCLUSION

One needs to be a believer in only a part of the statements made to be impressed with the seriousness of the situation and with the need for the removal of all known foci of infection when associated with pregnancy.

28 Pleasant Street.

TREATMENT OF DENERVATED MUSCLE*

FRANK A HARTMAN, Ph.D.
Professor of Physiology, University of Buffalo Department of Medicine
BUFFALO
AND
W. E. BLATZ, M.A.
TORONTO

In 1841, Reid [1] advanced the theory that the atrophy of denervated muscle was caused by inactivity. He found that in the frog, a denervated muscle that was exercised daily by galvanic stimulation did not lose weight. Untreated muscles were thought to decrease one half, but it is now known that frog's muscle does not atrophy nearly so rapidly as Reid believed.

Brown-Séquard,[2] working with rabbits, also came to the conclusion that galvanic stimulation prevented atrophy. The work of these investigators led to a general adoption of the disuse theory. This theory served as a foundation for all later treatment. Massage and passive movements were found to promote circulation in normal muscle, and therefore it was thought that similar treatment would benefit denervated muscle.

At the present time, the generally accepted methods of treatment for denervated muscles are either massage or electrical stimulation. Indeed, until the investigations of Langley and his collaborators, no experimental work seriously questioned the value of massage or electrical treatment in a muscle whose nerves had been destroyed. Although Schiff,[3] from observations which he had made on the tongue and the limb, concluded that fibrillation is a general phenomenon in muscle after nerve section, Langley [4] was the first to suggest that the atrophy is due to continuous fibrillation. Fibrillation begins four or five days after nerve section, and persists until some of the regenerating fibers make connection with the muscle. Such incessant activity might well cause wasting of the muscle. Langley and Kato [5] were able to check fibrillation by the intravenous injection of considerable amounts of calcium chlorid. They demonstrated no change from the feeding of calcium lactate. Ionization with calcium chlorid stopped fibrillation, but produced such trophic changes as to make its use inadvisable.[6]

The time-honored treatment by massage has been studied in a series of researches by Langley and his co-workers.[7] Their method has been to denervate two corresponding muscles in the same animal. After a period of treatment of the muscle on one side, the animal was killed and the corresponding treated and untreated muscles were carefully dissected out and then weighed. In this way, some idea of the relative amount of atrophy could be determined. They had to take into account the variations that might normally occur in the relative weights of the right and left muscles at the beginning. This method, moreover, assumed that the weight was a true measure of the unatrophied muscle because the connective tissue could not be ruled out.

Langley and Hashimoto [6] reach this conclusion:

Reviewing the effect of the various forms of treatment we have tried, there is, we think, only one which gives any hope of considerably reducing the rate of atrophy, viz., ionization with a potassium salt, and that is slender, for an (apparently) positive result was only obtained in one out of three experiments.

The general impression we get from our experiments, and from those made earlier by one of us, is that none of the methods of treatment of denervated muscle now in use—passage of galvanic current, production of contraction, passive movements and massage—can have more than a slight effect in delaying muscle atrophy.

In a recent study,[8] we have investigated the effects of massage on denervated muscle. Instead of depending entirely on the weight for comparison of the treated and untreated muscles, the work capacities were also determined. However, the method then used necessitated a sacrifice of the rabbit at the end of the functional test, since the muscles were dissected out for the purpose. The gastrocnemii were dissected free, with as little disturbance in the circulation as possible, and then with the leg in the foot-down position, the Achilles tendon was fastened to a weight pan while the tibia was clamped. The muscles also were weighed.

There was found to be a considerable discrepancy between the comparison by weight and the comparison

7. Talbot, E. S.: The Higher and Better Education of the Dental Student, J. A. M. A. **73**: 805 (Sept. 13) 1919.

* The work here reported was done in the physiology laboratory of the University of Toronto under the auspices of the Research Committee, Medical Services, Department of Militia and Defense, Ottawa, Canada.

1. Reid, John: Edinburgh Month. J. M. Sc., May, 1841.
2. Brown-Séquard: Compt. rend. Soc. de biol., 1841, p. 195.
3. Schiff: Arch. f. physiol. Heilk. **10**: 587, 665, 1851.
4. Langley, J. N.: J. Physiol. **50**: 337 (July) 1916.
5. Langley, J. N., and Kato, I.: J. Physiol. **49**: 417, 1915.
6. Langley and Hashimoto: J. Physiol. **52**: 15, 1919.
7. Langley, Kato and Hashimoto (Footnotes 4, 5 and 6).
8. Hartman, Blatz and Kilborn: J. Physiol. **53**: 108 (Sept.) 1919.

by function. With the functional test as the method for comparison, the massaged muscles were found to be stronger in 62 per cent. of the animals treated (thirty-seven rabbits). However, in view of our ignorance of the relative capacities of the two sets of muscles before treatment, a small preponderance of power in the treated muscles was considered inconclusive.

Believing that the functional test is a better method for determining the amount of active muscle tissue than that by weight, we have recently devised a method which makes it possible to study the relative strengths of the muscles at frequent intervals in the same rabbit. Thus, in the present research we have studied the effects of massage in sixty rabbits and the effects of galvanic stimulation in twenty-four, in all cases testing the treated and control muscles from every ten to fourteen days.

METHODS

Under anesthesia the flexor muscles below the knee in each hind limb were denervated either by crushing the sciatic nerve with a hemostat whose jaws were ground smooth, or by cutting the sciatic. Before cutting the nerve, a fine (000) catgut suture was passed through it at two points, a few millimeters apart. The nerve was then cut, and the two ends were drawn together by tying the suture. One suture included the two contiguous branches of the sciatic.

In a later series of rabbits in which we wished to delay the suturing, the proximal end was prepared in one of three ways: first, enclosed in a small sterile rubber tube which was doubled back and ligated to the muscle; second, enclosed in a tube which extended along the course of the muscle toward the knee, the tube being long enough to insure carriage of the growing proximal end beyond the peripheral cut end; third, the proximal end reversed and sewed to muscle without a tube.

The gastrocnemius muscle groups were tested on the day following the operation while the animal was lightly anesthetized with ether. The animal was placed in a ventral-side-down position on an animal board, with the hind limbs hanging freely over the end. Both hind feet were tied to aluminum sandals which swung from rigid horizontal rods (Fig. 1). The freely moving end of each sandal was attached by string to a scale pan and lever. The apparatus was so arranged that a record of the contraction could be made on a kymograph. The muscles were caused to contract by a supermaximal galvanic stimulation, the inactive electrode being placed on a moistened shaved area at the midline just in front of the tail, while the active electrode touched as nearly as possible the motor point for the gastrocnemius similarly prepared. A series of contractions at a wide range of loads with supermaximal stimulation (30, 40 or 50 volts) indicated very well the relative strengths of the two muscle groups. The amount of work calculated at the optimum load was used as a basis of comparison for the functional capacity of the muscles. Each rabbit was tested in this way at frequent intervals throughout the course of the experiment.

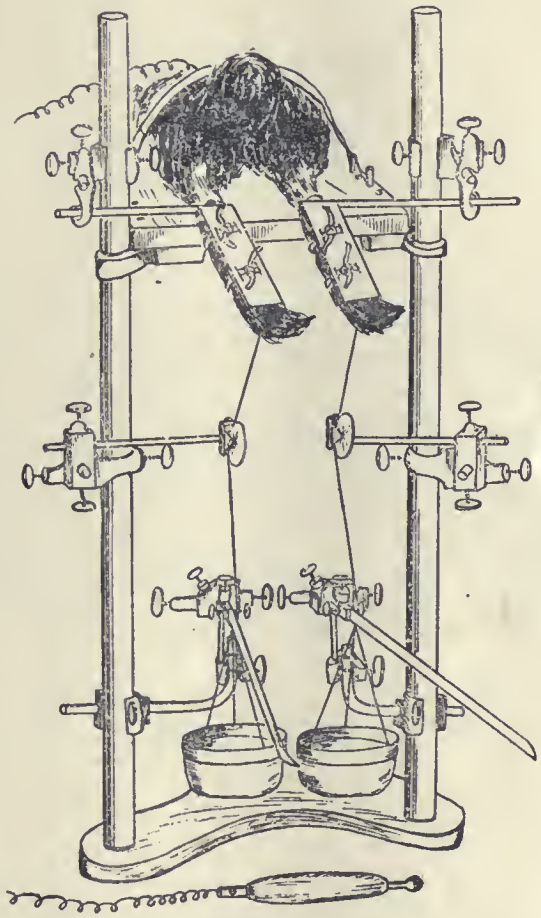


Fig. 1.—Apparatus for comparing the relative power of the muscles in the hind limbs of a rabbit, without dissection.

TREATMENT

Massage.—The right limb of each animal was massaged for a certain period of time each day, varying from two to twenty minutes. Both right and left limbs were given passive movements three times at each treatment to aid in preventing stiffening of the joints. The feet were always encased in aluminum boots.[8] Masseuses from the School of Massage, Hart House, Toronto, gave this treatment.

Galvanism. — A series of twenty-four animals was treated with the galvanic current. This treatment consisted of shocks produced by a metronome connected in the circuit, the aim being to secure a certain magnitude of contraction. This magnitude and the duration of the treatment varied in different rabbits. The contractions were roughly classified into minimal, moderate and vigorous. The duration varied from five to fifteen minutes, but in many cases each alternate minute was allowed for rest. The metronome made and broke the circuit once each second. The voltage ranged from 6 to 30 with 1 to 10 milliamperes of current. A greater voltage was required to produce the same magnitude of contraction as degeneration progressed.

RESULTS AND COMMENT

Both the electrical and the massage series may easily be discussed together, for neither treatment appeared to produce any greater effect than the other. This is easily explained when it is considered that the treated limb on the whole did not appear to be any better off than the control limb.

Within the first month after denervation, there was a very marked drop in the power to respond to galvanic stimulation. This occurred alike in the two limbs.

In addition to the series in which the nerves were crushed or cut and immediately sutured, we have studied a series of forty-one rabbits in which the proximal end of the nerve has not been permitted to unite with the distal end for periods varying from thirty to 100 days. These animals were treated either by massage or by electricity. The treated muscles lost their galvanic response just as quickly as did the controls. Moreover, neither massage nor electricity caused the denervated muscle to recover from the diminished response. Fourteen per cent. of the rabbits did show a slight advantage on the treated side, but it was no more than would be expected from accidental variation.

The recovery in the galvanic response in those animals with crushed or cut and sutured nerves is closely connected with the regeneration of some of the nerve fibers to the stage of union with muscle fibers, because such recovery was shown to be accompanied by reflex control over the muscles. This was determined by holding the rabbit by the ears and exerting sudden upward pressure against the hind feet. In the case of recovery, the animal would offer resistance against this pressure.

There was a very distinct difference in the rate of recovery of both "reflex resistance" and power of galvanic response between denervation produced by crushing the nerve and denervation caused by cutting. In spite of the fact that the cut nerves were immediately joined by suture, the rabbits in which the nerve was crushed almost invariably recovered about two months earlier. Howell and Huber,[9] in two experiments in which they crushed the nerve on one side and cut and sutured the nerve on the other side, found at the end of twenty-one days that the return of irritability was slightly better on the side on which the nerve had been crushed. They attributed the difference to a better coaptation of fibers.

Our observations indicate that coaptation of the nerve fibers is essential to rapid recovery. Moreover, some of our experiments seem to show that coaptation is essential to complete recovery for, whereas the rabbits with crushed nerves regain full power within a few months, those with cut and sutured nerves recover very slowly even after the time when some of the nerve fibers have become united with muscle fibers. In the time limit of our observations, many of the muscles had not regained the full power which they possessed before denervation (Fig. 2).

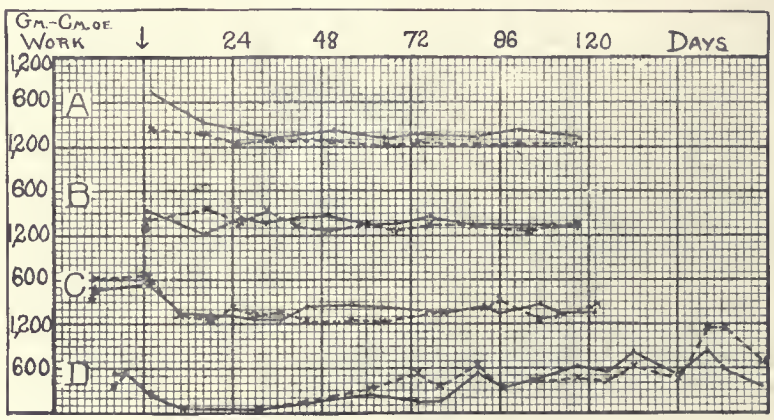


Fig. 2.—Typical curves obtained by plotting the work done at the optimum load in treated and untreated denervated muscle; solid line, treated muscle group; broken line, control group; arrow indicates day on which muscle was denervated; *A*, nerves cut and union with the peripheral end prevented by turning the proximal end aside after capping with a rubber tube; treatment, eight minutes massage, daily; *B*, nerves cut and sutured: treatment, vigorous contractions produced by galvanic shocks every second for ten seconds followed by a rest of ten seconds, the whole being continued for four minutes daily; *C*, nerves cut and sutured: five minutes' massage, daily; *D*, nerves crushed; fifteen minutes' massage, daily. The earlier recovery of the crushed nerve case is to be noted.

Such coaptation as occurs in a crushed nerve is obviously impossible in a cut nerve because there is not the precise chemiotaxis of peripheral over central nerve fibers. This is shown by the groping about of the central fibers, some growing into connective tissue and never succeeding in making connection with muscle fibers, while others find old sheaths, perhaps not their own. Some divide into branches which may eventually reach muscle and thus make up for those which have gone astray.

Again we wish to emphasize the fact that denervated muscle is not a muscle at rest. It is undergoing abnormal changes, of which fibrillation is perhaps only one. Such changes are probably the cause of muscle atrophy, for Langley and Itagaki[10] have shown that there is an increase in the rate of breakdown of the muscle substance.

We have examined the denervated muscles in three rabbits before and after massage periods ranging from five to twenty minutes (the skin always protected the muscle while it was being treated). There was no apparent reduction in the fibrillation. A similar study of fibrillation before and after galvanic stimulation in six rabbits has shown in no instance anything better than a transient reduction.

In the light of our present researches, we believe that massage in denervated muscle is futile. Galvanic treatment likewise appears to produce no beneficial effect.

SUMMARY

The sciatic or tibial nerve was cut or crushed on both sides of 123 rabbits. The denervated muscles on the right side were either massaged (eighty-six cases) or else stimulated by galvanic shocks (thirty-seven cases), daily.

Union of the cut nerve was prevented in forty-one animals, and in the others it was favored by suture or by crushing instead of cutting. The right and left muscle groups were compared from every ten to fourteen days by a determination of their power to do work when stimulated by supermaximal galvanic shocks while the animals were under the influence of ether.

Neither massage nor galvanic stimulation prevented the loss in galvanic response which normally develops a few days after denervation. Treatment likewise did not appear to cause a more rapid recovery of the muscle when the nerves were permitted to grow down to the muscle fibers. Galvanic response and voluntary function in the denervated muscle returned much earlier in crushed nerve cases than in cut and sutured cases.

In all of our work we have been unable to demonstrate benefit from massage or galvanic stimulation.

9. Howell, W. H., and Huber, G. C.: J. Physiol. **13**: 361, 1892.
10. Langley, J. N., and Itagaki, M.: J. Physiol. **51**: 202 (July) 1917.

Torpid Ulcers Heal Under Desiccated Normal Horse Serum.—Local treatment with desiccated normal horse serum for ulcers has been described by Dr. A. Amaral in the *Boletim da Sociedade de Medicina de S. Paulo*, **2**:83, 1919. All the ulcers in thirteen cases described in detail were on the legs. No antiseptics are used, or grafts; the lesion is merely powdered well with the desiccated serum after it has been aseptically cleansed. The application is repeated every second day at first and then every third day. From six to eleven applications usually answered the purpose. By the next day the ulcer is found bathed in a puriform fluid but the micro-organisms grow less and less numerous, and disappear by the sixth to the tenth application. The smooth, nonretracting scar tissue grows on an average 0.003 mm. at each application.

TORSION OF THE OMENTUM

REPORT OF A CASE AND A BRIEF REVIEW OF THE LITERATURE

FRANK BENTON BLOCK, M.D.
AND
HERBERT J. DARMSTADTER, M.D.
PHILADELPHIA

History.—Mrs. B. F., aged 36, admitted to the Jewish Hospital, Sept. 4, 1919, complained of pain in the lower part of the chest and in the epigastrium. She gave a history of a similar attack, but not so severe, five weeks previously. This improved in two days, but tenderness in the abdomen had persisted up to the time of admission. The present pain began on August 28, and at first was chiefly in the mid-epigastrium, but later moved down until it was quite low in the abdomen and more severe in the right iliac region. The pain was mild for four days and aching in nature; then it became much more severe, becoming a constant "cramp-like" or "doubling-up" pain. The abdomen was very tender, and any motion of it produced intense pain. The patient had been nauseated throughout the entire illness, but vomiting, expulsive in nature, occurred only once, having been induced by drinking hot water. The patient had been slightly constipated ever since the onset of the illness, and four days before admission she took a bottle of magnesium citrate and some cathartic pills, which caused the bowels to move and also increased her pain.

The patient had had a right inguinal hernia for twenty-two years which frequently descended, was often painful, and at times was difficult to reduce.

Examination.—On admission, the patient had the appearance of being quite ill. She was moderately obese, and her head, neck and chest presented nothing of significance. The abdomen was tender all over, but especially tender in the right lower quadrant. There was considerable rigidity of the muscles on the right side, preventing the palpation of any mass. A diagnosis of acute appendicitis was made, and the patient was operated on immediately.

Operation and Result.—The peritoneal cavity was opened through a right rectus incision. A little serosanguineous fluid escaped, and at the edge of the incision a greatly swollen mass of gangrenous omentum appeared. The omentum was found to be fixed by its distal extremity to the edge of the internal inguinal ring, and a considerable portion of it had been strangulated between the two points of torsion. The lower twist was just above the internal ring, where the omentum had been twisted into a cord not more than one-eighth inch in diameter. The portion of the omentum below this twist was healthy, probably having received a blood supply from adhesions. The upper twist had a thickness of about three fingers, and when unwound, was found to have undergone five and one-half complete turns. The gangrenous portion was ligated and removed, and a normal appendix was also removed. The uterus was found to be the seat of multiple fibroid tumors, but on account of the poor condition of the patient, these were not disturbed. There was a hernial sac on the right side, but this was empty at the time of operation. The patent internal inguinal ring was closed by suture from within the abdomen. The incision was closed without drainage. Convalescence was uneventful, and the patient obtained a complete recovery.

REVIEW OF LITERATURE

Since torsion of the omentum was first recognized by Oberst in 1882, new cases have been continually reported, so that in 1915 Bookman[1] was able to enumerate 131 cases in the literature, while an estimate of unrecorded or unrecognized cases would make the number much higher. The condition is therefore uncommon rather than rare, and not so interesting as a curiosity as it is from the standpoint of diagnostic significance. Richardson has defined torsion as a twisting of the omentum on itself, causing sufficient obstruction of the blood supply to cause strangulation. In general, the condition is more frequent in males, the ratio of preponderance being 3 to 1 (Corner and Pinches[2]), while F. D. Smythe[3] says that it is extremely rare in females. It usually occurs in middle aged persons, and its almost invariable association with hernia is a fact important both in etiology and in diagnosis.

The causation of torsion of the omentum is not clear. Some abnormal fixation of the omentum seems to be the universal and predisposing factor. Such a fixation is most frequent in the sac of a hernia, although all intra-abdominal adhesions are possible causes. The two fixed points of the omentum are poles between which the structure is swung (to use an apt comparison of Bookman's) in a manner similar to a hammock. Added to this static condition there must also be an active extrinsic mechanical element bringing about the torsion, since the omentum of itself is not motile. This active element is commonly believed to be the peristaltic action of the intestine. The normally attached omentum, being fixed at only one pole, is easily twisted by every peristaltic wave, and is equally free to untwist. The omentum that is fixed at two extremities, however, when turned about by violent peristaltic action is turned between two zones of torsion. Such a condition must necessarily cause the previously loosely hanging structure to be shortened and tightened between its points of fixation, thus itself impeding its unraveling. It is probably such a shortening and tightening of this band of tissue that prevents the structure (which under normal conditions can easily untwist) from falling back again into its normal position.

The pathologic changes occurring in the twisted omentum are those of strangulation, i. e., anemia or congestion with stasis terminating in gangrene. Infection is rare and is usually hematogenous. In addition, the transverse colon may be caught in the torsion and undergo similar changes, with symptoms of intestinal obstruction. The symptoms in any case will depend on the nature of the torsion; the most complete classification of the different types that may be found has been made by Payr:

1. Torsion without coexisting hernia:
   - (*a*) Of the omentum only.
   - (*b*) Of the omentum plus adhering viscera.
2. Torsion with coexisting hernia:
   - (*a*) Of the intra-abdominal portion only.
   - (*b*) Of the hernial portion only.
   - (*c*) Complicated cases:
     - (1) Involving both portions.
     - (2) Either type, associated with retrograde incarceration.

Corner and Pinches give a somewhat simpler division into:

1. Torsion purely abdominal, with no hernia present.
2. Torsion purely hernial. This is the type commonly not recognized as torsion, but diagnosed as strangulated omental hernia.
3. Abdominal torsion complicating a hernia. This is by far the largest group, and is the type usually referred to as torsion of the omentum.

In a condition of such a variable nature the symptomatology must be necessarily multiform. This is even more evident when we consider the complex nature of

1. Bookman: Ann. Surg. **61**: 730, 1915; Am. J. Surg. **29**: 304, 1915.
2. Corner and Pinches: Am. J. M. Sc. **130**: 314, 1905.
3. Smythe, F. D.: Surg., Gynec. & Obst. **3**: 531, 1906.

the mechanical factors. Bookman thinks that the symptoms are produced chiefly by the interference with the omental blood supply. It seems most probable, however, that the traction of the tightened band of omentum on the stomach, the transverse colon and their peritoneal attachments is the all-important factor in symptomatology. Pain is the first symptom to appear, usually the most conspicuous, and the only one constantly present. The pain is often sudden in onset, usually abdominal, and frequently referred to McBurney's point, although occasionally referred to the hernia. Corner and Pinches state that there is usually no history of previous illness referable to torsion, although sixteen cases are cited in which previous abdominal symptoms, chiefly pain, were continuous for several weeks. They mention others in which there were histories of recurrent attacks of pain over periods up to nine years. As many as ten complete twists have been found, probably each attack of pain representing an increment of torsion before the final straw brings the patient to operation. Thus, Hartwell [4] reports a case giving a fairly typical history of gastric ulcer lasting many years in which operation revealed a twisted omentum attached to the healthy wall of the stomach. Hale [5] reports a case with a similar attack twenty years previously. In Bookman's case there were indefinite cramplike pains for four months, while in our case there was a history of an acute attack followed by a subacute hiatus of five weeks before the final attack.

The pain is usually of an aching or pulling character, and cramps may be present if there is an attendant ileus. Vomiting, according to Corner and Pinches, is present in one third of the cases, although Bookman believes it is present in nearly one half. Usually the vomiting is frequent and violent; occasionally it is blood stained, although nausea without vomiting may occur. If torsion or knuckling of the intestine occurs, the symptoms of mechanical obstruction supervene. The condition of the bowels is variable. They are usually open, but constipation or even obstipation may occur; blood and mucus may appear in the stool if there is obstruction. The temperature is usually slightly elevated, and there is also a moderate acceleration of the pulse. Some rigidity of the abdomen occurs in well developed cases, but the most significant physical sign is the presence of an abdominal mass, especially when associated with a hernia. Mild leukocytosis, with an increase in the polymorphonuclear elements, is usually present.

The foregoing, in addition to a brief study of the literature of the subject, will indicate how difficult the differential diagnosis may be in these cases. The very infrequency of torsion seldom brings it to the mind of the diagnostician as a possibility. It is most frequently mistaken for appendicitis, since that is the most common surgical intra-abdominal condition and is itself often of variable symptomatology. Volvulus is also commonly diagnosed in this condition, and may actually be associated, as previously indicated. Torsion within the sac of a hernia is always diagnosed as ordinary strangulation, nor is the differentiation of any importance.

F. D. Smythe has tabulated the differential points between torsion and appendicitis. These, however, in the main, are purely relative, and while of general academic interest, they are of little value in the individual case. They indicate only an indefinite probability in diagnosis; but the rarity of torsion makes the probability of its presence infinitely less than that of appendicitis. The more rapid pulse, the lower temperature and leukocytosis, and the less marked septic symptoms, which are usually present in torsion, as well as the possibility of palpating or percussing an abdominal mass, are the most significant of the facts that the patient presents.

A feature in the histories of a number of cases presented in the literature, which seems to us to be of some diagnostic importance, is the nature of the onset. There is a progressive augmentation of symptoms by a series of sharp steps or jumps with intervals of varying length. Such a history is very suggestive of a mechanical disturbance with successive increments, in contrast to the steady and rather smoother continuous aggravation of symptoms in a mounting inflammatory condition. However, from a practical standpoint, there is only one thing that can give the diagnosis of omental torsion any degree of surety, namely, the coexistence of a hernia with the sudden appearance of an abdominal mass. Bookman's correct preoperative diagnosis was based on such a finding; without it a diagnosis is probably impossible. Corner and Pinches hypothesize a type of history, leading to an inferential diagnosis: a man of middle age with an inguinal hernia giving rise to symptoms suggestive in a general way of subacute intestinal obstruction. Examination reveals a painful or irreducible hernia, either incarcerated or strangulated, with a tumor, either in the scrotum or in the abdomen.

The treatment is, of course, operative. Unless there is delay, the condition is not likely to be a severe one, and the operation is technically easy; and it seems to be generally agreed that, in uncomplicated cases, the mortality is almost nil.[6]

4. Hartwell: Ann. Surg. **61**: 626, 1915.
5. Hale, Kelley: Torsion of the Omentum, J. A. M. A. **68**: 977 (March 31) 1917.

CESAREAN SECTION UNDER PROCAIN ANESTHESIA *

J. MORRIS SLEMONS, M.D.
NEW HAVEN, CONN.
AND
J. MURRAY JOHNSON, M.D.
BRIDGEPORT, CONN.

The choice of an anesthetic for cesarean section, always debatable, becomes more difficult in the presence of either cardiac or renal complications; and, if both exist, the problem is indeed a vexing one. Although pregnancy should carry with it some degree of immunity against the toxic effects of chloroform—which is doubtful—certainly its administration to any one suffering from a cardiac lesion would be very dangerous. Similarly, the administration of ether to a patient with pulmonary edema would be hazardous; in such cases even nitrous oxid anesthesia has been followed by pneumonia.

The respiratory distress accompanying decompensated cardiac lesions generally requires that the patient sit up, though confined to bed, and in this position the employment of general anesthesia becomes awkward

6. In addition to the references already given, the following will be found of interest.
Armstrong: Interstate M. J. **20**: 1148, 1913.
Mueller: Ann. Surg. **56**: 498, 1912.
Syms: Ann. Surg., **54**: 269, 1911.
Syme: M. J. Australia **5**: 368, 1918.

* From the Department of Obstetrics and Gynecology, Yale University School of Medicine.

at least. Toward the successful treatment of such patients, in urgent need of relief from the strain of pregnancy, no contribution could be more helpful than satisfactory local anesthesia, permitting a safe and speedy evacuation of the uterus. To be satisfactory the anesthesia must permit the patient to retain a posture both comfortable for herself and not unfavorable to the conduct of the operation. For the mother it must provide a greater factor of safety than does general anesthesia. And it must not deter the establishment of respiration in the new-born.

Recently in a case of broken cardiac compensation at the eighth month of pregnancy with pulmonary edema and increasing albuminuria, the method of anesthesia employed for the performance of cesarean section was put to a severe test; and procain met the requirements just enumerated satisfactorily. On the basis of a single case, ordinarily, we should be reluctant to predict how wide the field of application of a method would prove to be; but since we find that Dr. J. Clarence Webster [1] of Chicago announced its usefulness in 1915, and his opinion was confirmed by the experience of Dr. Hugh H. Trout [2] of Roanoke, we are convinced that our result was not exceptional. The former gynecologist employed it with excellent results in fourteen cases; the latter, among eighteen cases representing various obstetric complications, encountered three maternal deaths from eclampsia and eleven fetal deaths, the cause of which he does not discuss.

REPORT OF CASE

History.—The case which is the subject of this report was that of a young primiparous woman with mitral stenosis and insufficiency decompensated at the eighth month of gestation.

Jan. 3, 1920, she entered the hospital and found temporary improvement from the conservative treatment usually followed in such cases. Ten days later, pulmonary symptoms developed, and on January 15 her distress and her own appreciation of the seriousness of the illness was such that she readily consented to whatever therapeutic measures offered most for her recovery.

At the time she breathed comfortably only when propped upright in bed, and was coughing up a seromucous fluid tinged with blood. General anasarca had developed; the most extensive edema was that affecting the lower extremities and the vulva. The legs, swollen to the utmost, could not be brought together, and were placed comfortably only when abducted about 45 degrees. Each labium majus was distended with at least 300 c.c. of fluid. Through the chest walls, back and front, moist râles were audible everywhere. The area of cardiac dulness was increased; a loud systolic murmur was heard over the whole precardiac area as well as in the axilla; the second aortic sound was accentuated. The irregular pulse was counted between 120 and 140 to the minute; the respirations were 36. The temperature was 99.5 F. The urine, heavily loaded with albumin, contained numerous hyaline and granular casts.

The abdominal wall was edematous, and there were signs of fluid in the peritoneal cavity. The fundus of the uterus was five finger breadths above the umbilicus. The fetus was lying transversely with the head to the left, the small parts in front; the fetal heart, 35 to one-quarter minute, was difficult to distinguish from the maternal pulse. The position of the round ligaments indicated that the placenta was attached to the posterior surface of the uterus.

The clinical problem that the patient presented required an immediate solution, and one logical line of treatment without alternative was open to trial. Since the spontaneous onset of premature labor, which frequently brings relief, had not occurred, in this instance the pregnancy must be terminated by one of the rapid artificial methods. The vaginal route was out of the question, for in the first place the patient could not lie down without serious embarrassment to both respiratory and cardiac activity; and in the second place, edema of the birth canal precluded the requisite exposure for vaginal hysterotomy. Thus, with laparotomy the remaining route by which to evacuate the uterus, another obstacle was encountered in the risk of its performance under general anesthesia; consequently, local anesthesia was chosen. In the conduct of the operation the steps taken, the phenomena observed and the reaction of the patient will be treated more fully than usual; these technical details have an interest beyond this particular complication of pregnancy, and their description may prove useful to those who adopt the procedure, whatever the type of case.

Operation and Result.—Preliminarily, a half-grain of morphin and a hundredth of atropin were administered hypodermically. Then the patient was placed on the table comfortably in a half-sitting posture supported by pillows. The bladder was emptied by catheterization and the site of the operation prepared in accord with the usual tincture of iodin technic. One c.c. of pituitary extract was administered in the thigh as the operation began.

In the median line, from umbilicus to symphysis, the skin was infiltrated with procain solution, 1:400, to which epinephrin had been added in the proportion of 3 drops of epinephrin to each ounce of procain solution. For cutaneous anesthesia, approximately 30 c.c. of the solution were required, and that sufficed not only during the division of the skin but also of the subcutaneous fat, more than an inch in thickness. As the continuance of the incision caused discomfort, about 20 c.c. of the procain solution were used to infiltrate the fascial layer. Probably the position of the incision, directly in the midline, accounted for the fact that special treatment of the parietal peritoneum was not required; this structure may have been reached by the injection of the anesthetic into the fascia.

After the peritoneal cavity was opened, several hundred cubic centimeters of ascitic fluid were expelled, and loops of small intestine floated in front of the uterus into the upper angle of the wound. These were held back by abdominal pads. The uterus was not delivered through the abdominal incision. Without procain infiltration that portion of the organ which appeared was tested with regard to sensitivity and, as the patient was unable to detect when the knife was in use, after the membranes were exposed, the uterine incision was prolonged with bandage scissors until approximately 15 cm. in length. During this procedure the membranes ruptured and a fetal hand came into view. The fetus was delivered through the aperture in the uterine and abdominal walls by the method usually followed in breech extraction. Careful delivery of the arms, one at a time, and good flexion of the head simplifies the extraction and renders less likely the prolongation of the uterine incision with a ragged tear. The patient made no complaint after the abdominal fascia became anesthetized, was not aware that the fetus was being delivered, and subsequently, except for questions regarding the likely duration of the operation, made no comment.

The loss of blood was not excessive, probably not greater than 400 c.c. After the placenta was removed, the uterine cavity was wiped out with large gauze sponges to remove fragments of the membranes, if left behind, and also to remove blood clots. The internal os, almost closed, was not disturbed, for the uterus had retracted firmly, bleeding had nearly ceased, and we preferred to save time and run no unnecessary risk of causing pain.

The uterine wound was closed with two tiers of catgut sutures. The placing of the deeper interrupted sutures was awkward because the uterine incision retracted to a lower level than the abdominal incision; this difficulty was over-

1. Webster, J. C.: A Series of Abdominal Caesarean Sections Performed Under Local Anaesthesia, Surg., Gynec. & Obst. **20**: 221 (Feb.) 1915.
2. Trout, H. H.: Caesarean Section Under Local Anaesthesia, Surg., Gynec. & Obst. **27**: 95 (July) 1918.

come by using the sutures already in place for upward traction. The upper continuous suture approximated the peritoneal edges of the uterine wound. The abdominal wall was sutured in layers without further use of procain. The peritoneum was closed with a continuous catgut suture, and similarly the muscle edges were brought together. The fascia was united with interrupted catgut; the skin and subcutaneous tissue with interrupted silkworm gut. The postoperative convalescence of the mother was afebrile and without untoward complication.

COMMENT

We can confirm Heaney's observation [3] that resuscitation of the new-born requires less arduous measures after cesarean section under procain than under general anesthesia. In this instance the infant began to breathe immediately after its removal from the uterus. It weighed 2,000 gm (about 4½ pounds) and measured 42 cm. (16½ inches) in length.

In this case the successful local anesthesia, we believe, must take into account two facts, namely, the initial administration of morphin and the cooperative attitude of the patient. To the former we ascribe the complete control of coughing during the operation—a complication from which we had expected considerable annoyance. It is pertinent that the patient expressed great relief as soon as the uterus was emptied. A less cooperative subject, we can readily understand, would make the employment of local anesthesia impossible.

Certain features of our technic, differing slightly from that described by Webster and by Trout, probably served to spare the patient no little pain. The method employed here was the one we follow as a routine in the performance of cesarean section, and we were not aware that it differed from the technic of others until the papers in question were recently consulted. Thus, the grasping of the lower uterine segment, which Webster found to be a painful maneuver because it placed the ligaments under tension, was unnecessary in our case, for the degree of hemorrhage was not extraordinary.

The delivery of the uterus through the abdominal incision, which Trout described as a crucial step in the operation and the cause of severe pain, is rarely advisable even with general anesthesia. The procedure requires a longer abdominal incision than otherwise, renders more difficult the control of the intestine, and tends to increase the likelihood of infection. If this step in the operation under local anesthesia is omitted, the patient is spared at two points, namely, when the uterus is delivered and when the fetus is extracted. If it lies within the peritoneal cavity, traction on the uterus beyond a given degree is prohibited by the opposition of the abdominal wall, and the ligaments are not stretched.

In general, we agree with Webster and endorse his recommendation of procain whenever a general anesthetic would be unsafe. The solution he used was twice the strength of the one which gave us perfectly satisfactory conditions for an uninterrupted operation. We learn also from reports of its use in general surgery that a 0.5 per cent. solution has been employed without fear of toxic effects even when 200 c.c. were required. Since in that case the subjects were not suffering from cardiac lesions, they are scarcely comparable with our patient, and probably no mistake was made in limiting as far as possible the quantity of procain she received.

If the introduction of this method has any unfavorable results, probably they will be in the nature of extending too far the indications for cesarean section, namely, to cases in which the termination of pregnancy should be secured by the less radical methods for inducing the onset of labor. Therefore, it is important to emphasize the fact that the proper treatment of obstetric complications must not be confused with the question of anesthesia. The former problem must be solved in the light of sound teaching which will contrast the ultimate results obtained, on the one hand, by recourse to cesarean section and, on the other hand, by the use of more conservative procedures. The latter question requires an answer when a frank indication for laparotomy exists and the choice lies between general and local anesthesia. In these circumstances, if local anesthesia is preferable, procain may be employed with ease and confidence. To the mother it offers the requisite safety; and it has less influence toward prolonging the initial period of apnea in the new-born than has ether, nitrous oxid or chloroform.

3. Heaney, quoted by Webster (Note 1).

OBSERVATIONS ON A GREEN-PRODUCING COCCUS FROM THE BRAIN IN A CASE OF ENCEPHALITIS *

S. JOHN HOUSE, M.D.
CHICAGO

I wish to report the results of the bacteriologic examination in a case of encephalitis, diagnosed clinically as encephalitis lethargica.

The case was that of a woman, aged 70, who entered the Cook County Hospital, service of Dr. J. A. Wolfer, March 5, 1919, with impaired mentality, apparently complete loss of memory, and a broken forearm. The present illness was said to have come on suddenly one morning three weeks previously with dizziness. Following this, came mental changes that grew progressively worse. The forearm was broken while preparing her for the trip to the hospital. In the hospital, in addition to these changes, arteriosclerosis was found with increased knee jerk. She lived twelve days in the hospital. There was little or no fever (axillary) until the eighth day, when the temperature rose to 100 F., and also a few hours before death, when there was a sudden rise to 105 F. The respirations ranged between 19 and 22, rising to 38 five hours and dropping to 12 one hour before death. The pulse was about 80 most of the time, increasing in proportion to the temperature. She had no control over the bladder. She slept a great deal of the time, and when not sleeping was stuporous and talked at random. Nothing abnormal was found in the urine except a few white cells on one occasion. The white blood cell count on three examinations at two-day intervals was 8,800, 9,400 and 12,000. No Wassermann, Lange or Nonne tests were made. The duration of illness was five weeks.

Anatomic Diagnosis (Dr. E. R. LeCount).—Encephalitis (lethargic type?); congestion and edema of the leptomeninges; hemorrhages in the trachea and lungs; hyperplasia of the tracheobronchial lymph glands; foramen magnum pressure furrow of the brain stem; marked general anemia; Colles' fracture of the left arm; petechial hemorrhages of the lining of the stomach, trigon and rectum; senile arteriosclerosis; chronic diffuse nephritis; atrophy of the cerebral cortex; fibrous perivascular leptomeningitis with scars; external fibrous pachymeningitis.

Sections for microscopic study were taken from cortex of frontal and parietal lobes, lenticular nucleus and internal capsule, thalamus and hypothalamus, cerebral peduncles, pons,

* From the John McCormick Institute for Infectious Diseases.

and medulla, and stained by the toluidin blue, Gram-Weigert, and hematoxylin-eosin methods.

An encephalitis was present, characterized in the cortex by an increase in glia cells, neurophagia, a shrinkage of the nerve cells in their lacunea, and a marked reticulation of neuroglia tissue. These changes were present in other sections also but to a less marked degree. There was a small amount of perivascular infiltration in some sections. Many of the small venous channels were greatly congested; no hemorrhages or typical plasma cells were seen. There was no evidence anywhere of thrombosis of the cerebral vessels.

In the sections stained by the Gram-Weigert method a few large diplococci and ovoid forms, similar in size and shape to those isolated and studied in pure culture, were seen. There was no regularity in their association with the pathologic changes, as they occurred both in the interstitial tissue and in relation to the cells showing neuronophagia.

Material was taken from the brain for cultures eleven hours after death. This material was obtained by means of sterile capillary pipets which were plunged into the brain at places seared by a red-hot spatula. The sites selected for this were the insula, the cerebral peduncle (about 0.5 to 1 cm. proximal to the pons), and along the inferior lateral border of the temporal lobe. The direction and depth of insertion of the pipets were gaged by sections of a brain hardened in formaldehyd. Then by a few short jabbing motions, with suction at the same time, brain material was drawn into the pipettes and transferred to tubes of melted agar (10 c.c.), kept at 46 C., to which goat blood had been added (10 drops to the tube). The material was emulsified against the sides of the tubes, appropriate dilutions made and plates poured in the usual way. These were incubated for twenty-four hours and studied. A diplococcus developed in pure culture. Not one of the uninoculated plates yielded any growth.

The cerebrospinal fluid and heart blood obtained postmortem were sterile.

The diplococcus stains by Gram's method: The individual cocci vary in size from about 0.25 to 0.75 micron in diameter, the greatest variation being seen in the short chains which contain from four to eight elements. The diplococcic forms, although similar in shape, differ markedly in size. There are also a few large ovoid forms, 0.75 to 1.25 microns in diameter, which occur singly. All these variations are to be found in a twenty-four hour blood-agar culture.

On blood-agar plates, after twenty-four hours' incubation, pin-point colonies are formed surrounded by a 0.5 mm. greenish zone; the surface colonies are larger, 0.5 to 1 mm. in diameter, greenish and have a greenish zone about them; they are round, moist, and slightly convex. After seventy-two hours there is a small amount of true hemolysis around the colonies. In plain broth a smooth cloudy suspension is formed with some fine white sediment which is readily diffusible. On plain agar, a moderate growth occurs which is moist and slightly opaque to reflected light. On blood serum, the organism grows rapidly. Litmus milk is made slightly acid. Using a 1 per cent. solution of the various sugars in sheep-serum water, with litmus as the indicator, lactose, mannite, salicin, dextrose, and saccharose were fermented; inulin was not. The final readings were made after seventy-two hours.

Rabbits and guinea-pigs were injected by various routes, including the intracerebral, with a thick suspension of twenty-four hour cultures of the diplococcus recovered from the brain, but all remained well except one rabbit that died sixteen days after the injection, apparently from some other cause.

Normal rabbits were injected intravenously at weekly intervals with suspensions of this organism, heated at 56 C. for thirty minutes. The suspensions were made from blood-agar slants, the initial dose being one slant. After repeated injections, serum was drawn and its agglutinins and opsonins studied. In both the agglutination and opsonic tests, twenty-four hour dextrose broth cultures were used with normal rabbit serum and salt solution controls. The agglutination mixtures were incubated at 37 C. for two hours, placed at room temperature for eighteen, at which time the final readings were made. In the opsonic tests, fresh normal human leukocytes were used, and the final mixtures (diluted serum, leukocytes and dextrose broth suspension) were incubated at 37 C. for thirty minutes, smears made on slides and the point of opsonic extinction determined.

The results shown in the table indicate that immunologically the coccus isolated is distinct from similar green-producing cocci from poliomyelitis, influenza and other sources.

It is of special interest that von Wiesner,[1] the only observer that so far as I know has reported the results of bacteriologic studies of cases of epidemic encephalitis, recovered a gram-positive diplococcus from the brain of every case which he examined (he does not say how many). He does not state that he found the organism in the microscopic preparations.

It is to be noted that the type of changes in this brain are essentially the same as those described by Bassoe and Hassin[2] in their report of three cases, the chief difference being one of degree. It is also interesting to note that a careful review of the reported cases of epidemic (lethargic) encephalitis has failed to reveal any uniformity in the degree in which these changes may occur in the various portions of the central nervous system; nor is there any definite grouping of pathologic changes that can be described as occurring in all of the reported cases.

REACTIONS OF SERUM OF RABBIT INJECTED WITH ENCEPHALITIC COCCUS

Strains of Cocci	Agglutination	Opsonic Extinction
Encephalitic coccus used for immunization	50,000	6,400
Poliomyelitic coccus	800	150
Poliomyelitic coccus	100	75
Poliomyelitic coccus	400	300
Green producing streptococci from influenza:		
Brain	1 600	1,200
Brain	1,600	150
Brain	1,600	75
Brain	1,600	6
Lung	1,600	300
Lung	1,600	35
Sputum	1,600	15
Lung	400	0
Cerebrospinal fluid	200	35
Pneumonia	200	6
Cerebrospinal fluid	100	15
Blood	100	15
Sputum	50	0
Lung	50	0
Cerebrospinal fluid	50	35
Blood	0	0
Sputum	4	15
Several strains of green producing cocci from measles and rubella	0	0

With normal rabbit serum the encephalitic coccus was agglutinated at a dilution of 20 only; practically no phagocytosis.

The fact that the heart blood and cerebrospinal fluid were sterile indicates that the infection of the brain was not agonal.

The diplococcus isolated is a large green-producing streptococcus, similar in many respects to other green-producing cocci, but apparently different in its immunologic reactions.

1. Von Wiesner: Wien. klin. Wchnschr., July 26, 1917; quoted by Wilson, S. A. K.: Lancet **2**: 7 (July 6) 1918.
2. Bassoe, Peter, and Hassin, G. B.: A Contribution to the Histopathology of Epidemic ("Lethargic") Encephalitis, Arch. Neurol. & Psychiat. **2**: 24 (July) 1919.

Hospital Ventilation.—A highly successful hospital superintendent attributes a great amount of his success to the fact that he has made a study of, and has been able to recommend and put into operation, a plan for the systematic ventilation of hospitals of which he has had charge, and this arrangement has been so satisfactory that doctors give his hospital preference wherever possible. He has found, he says, that the condition of the air has more to do with the health of the patients than most of us have any idea of, and that instead of mechanical equipment rightly installed proving an expensive proposition, it is in reality a most economical method.—C. A. Eddy: *Hospital Management* **9**:45 (Jan.) 1920.

Clinical Notes, Suggestions, and New Instruments

A SCREW TRACTOR FOR USE WITH THOMAS' SPLINT

R. M. YERGASON, M.D., HARTFORD, CONN.
Associate Orthopedic Surgeon, St. Francis' Hospital

The Thomas splint and its recent modification, the so-called new model or high-bridge splint, require suspension in order to keep the ring, or its equivalent, beneath and against the tuber ischii as the point of countertraction. The entire extremity and splint are balanced to maintain this suspension by two or more weights, aggregating, let us say, 20 pounds. For the sake of clarity I shall speak of this as the upper, or balance, weight. If we desire to apply 15 pounds of traction to the extremity by means of weights and pulleys, this weight is added to that of the splint and leg and must be compensated by an equal amount added to the balance weight above.

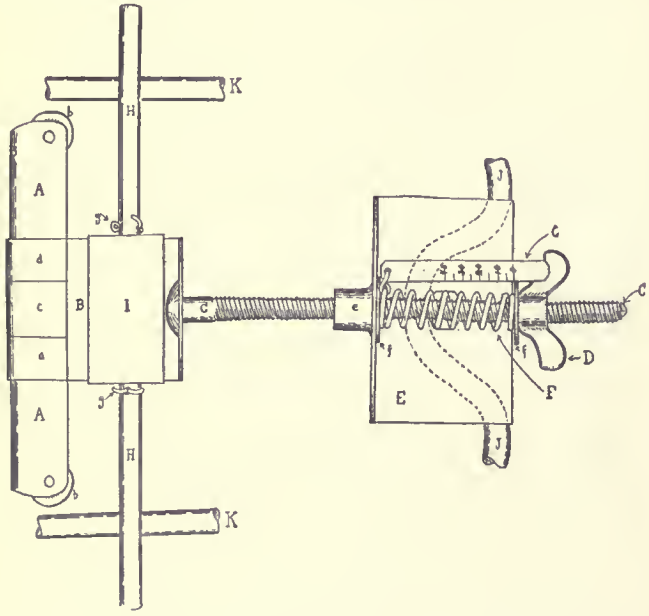


Fig. 1.—Details of tractor, viewed from above.

Should this be carried out we should have the weight of the extremity and splint plus 15 pounds, balanced by 35 pounds as an upper weight. This gives a total of close to 70 pounds to be carried by the Balkan frame. All this is heavy and a nuisance, and the patient justly feels that there is a great weight hanging over him. If a traveler is used to enable the patient to move up and down the bed, such a weight is out of the question. It therefore becomes necessary to do away with weight and pulley traction when using suspended splints.

To accomplish this desirable end, several tractors depending on a screw have been devised. Some of these lack a means of determining the amount of pull; others are heavy, clumsy or difficult to apply.

My purpose here is to describe a tractor which, in addition to eliminating some of these difficulties, is adaptable to various conditions and different splints.

The tractor consists of the following main parts, each of which I shall later describe somewhat in detail: A horizontal cross-piece (*A*) corresponding to the wooden block of the old Buck's extension; a hook-shaped piece (*B*) which furnishes a seat for both the cross-piece and the head of the screw; a screw (*C*), provided with a wing nut (*D*), by means of which the traction is applied; a carrier (*E*) for attaching the tractor to a Thomas splint; a spring (*F*), bearing a scale (*G*) for the purpose of measuring the amount of traction, and a transverse rod (*H*) carried by the bearing (*I*) for the purpose of preventing rotation out of the horizontal plane.

The cross-piece (*A*), corresponding to and taking the place of the foot block of the old Buck's extension apparatus, consists of a piece of 3/32 inch sheet iron (*A-A*), 5 by 1 7/8 inches, bent on itself lengthwise, and thus furnishing a mount for two small brass pulley wheels (*b-b*), which measure 5/8 inch in diameter by 1/4 inch thick. At its central part the cross-

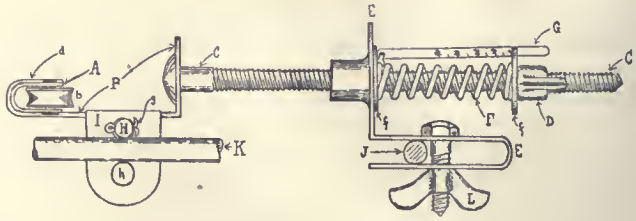


Fig. 2.—Details of tractor, side view.

piece is thickened by means of a second piece of 3/32 inch sheet iron (*c*), 3/4 inch wide, soldered to *A*.

The second part or hook-shaped piece (*B*) is made of 3/32 inch sheet iron. At one end (proximal) it is bent into two hooks (*d, d*) which serve as a seat into which the cross-piece (*A*) slips easily and is there firmly held. At the other (distal) end, this piece (*B*) is bent up at a right angle where a 3/8 inch hole allows the bolt (*C*) to be slipped into place. The top of this up-standing portion is rounded from side to side.

The bolt (*C*) is a standard 5/16 inch carriage bolt 6 inches long, threaded all the way down, and carrying the wing nut (*D*).

The carrier (*E*) is of 3/32 inch sheet iron. Its lower portion is quite wide (3 inches), and is so bent as to grasp the U-shaped bend at the end of the Thomas splint (*J*), to which it is clamped by means of a small bolt and wing nut (*L*). The upper part carries the bolt (*C*) through a sleeve of 3/8 inch tubing (*e*), which is braized on. The bolt slips loosely through this sleeve and is not threaded into it in any way. Above the sleeve the carrier (*E*) is rounded from side to side. The compression spring (*F*) slips easily over the bolt. Attached to the spring by means of one link of chain is a small copper tag or scale (*G*), the graduations of which denote the amount of traction in pounds. The washers (*f-f*) at each end of the spring serve as points between which the length of the spring may be conveniently measured.

Across the hook-shaped piece (*B*) is a saddle shaped bearing of sheet iron (*I*); through the two holes of which a 1/4 inch rod 8 inches long (*H*) is passed and held in place by two cotter pins (*g-g*). This rod rests on the side bars of the Thomas splint (*K*).

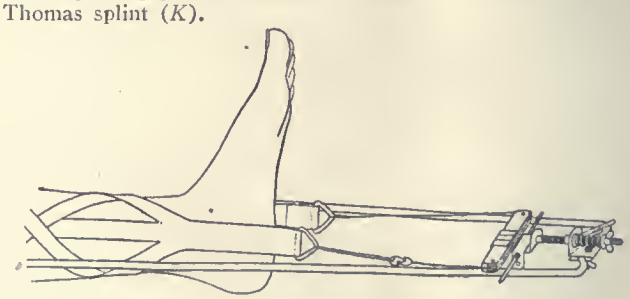


Fig. 3.—Manner in which tractor is attached to the extremity.

To attach the tractor to the extremity, wire triangles or D-rings are fastened to the adhesive plaster stickers. To one of these the end of a piece of picture wire is made fast. The other end of the wire passes through the D-ring of the opposite sticker and is attached to itself by means of a small jamb cut from a scrap of sheet iron (Fig. 3). The bight or free loop of the picture wire is laid over the two pulleys of the tractor, and all slack is taken up by means of the jamb. Traction may now be applied by means of the wing nut (*D*), the amount of the compression of the spring being read on the scale.

There are great advantages in this method of attachment. Should the adhesive slip or lengthen on one side of the leg, the wire will adjust itself around the pulleys and the result will be a slight lessening of the traction. The pull will remain steady, however, and equal on the two sides, as the cross-piece will not take the oblique position commonly appearing in the foot block of the Buck's extension. The nurse, observing the lessened pull, gives the nut a few turns and all is as before. Further, should the heel pin be used, the picture wire can be measured beforehand, boiled up with the instruments, and applied during the operation. In this case there will be no necessity for disturbing the dressings about the heel pin when the patient has returned to the ward.

As the cross-piece (*A*) is held simply by two hooks between which its reinforcement (*c*) is snugly jambed, it may be slipped out at any time and another style of cross-piece substituted.

The rod (*H*) carried by its saddle (*I*) rests on the side bars of the splint (*K*), thus preventing rotation of the cross-piece. By removing one of the cotter pins (*g*) the rod may be withdrawn and the saddle removed. This is convenient should it become necessary to reverse the tractor and attach it beneath, instead of above, the splint, in which case the saddle may be applied in the inverted position, bringing the rod above the side bars of the splint as before. In this case the holes (*h*) in the saddle are used for the passage of the rod so that the tractor will remain horizontal beneath the splint. By reversing the figured side view of the tractor, its arrangement when beneath the splint will be at once apparent.

The bolt can be slipped out and a longer one, or one of different thread, substituted should this be desirable. In use the bolt may become screwed up to the point where its head is close to the sleeve (*e*) of the carrier. In this event there will be no traction on the extremity, shortening of the spring simply indicating the amount of force with which the bolt head is drawn against the sleeve. This is a small point to guard against in the use of the tractor. Should it occur, all that is necessary is to turn the wing nut back to the end of the bolt and take up the slack of the picture wire by which the tractor is attached to the extremity.

As regards measurement of the traction, any spring of the compression type (in contradistinction to the expansion type) which will slip easily over the bolt may be used. An unknown spring is placed on the tractor, which is attached to the splint, and a spring balance substituted for the extremity of the patient. The blank copper tag is scratched to indicate the length of the spring under varying amounts of traction as shown by the spring balance. The tag is attached to the spring, constituting a scale to indicate the amount of traction on the leg. A spring which is compressed about ⅛ inch for each 5 pounds and is long enough to indicate 40 or 50 pounds of traction, before being completely pressed together, will be found most convenient.

To use the tractor with the high-bridge splint, the clamp of the tractor may be attached to the lower bar of the strap-iron rectangle at the distal end of the splint (Fig. 5 *M*). More satisfactory than this, however, is to fasten a bar of flat metal (*N*) across the rectangle. This bar should have a hole ⅜ inch in diameter at its middle point, through which the bolt (*C*) of the tractor is passed. This new bearing does away with the necessity of the clamp and sleeve (*E*), which is removed. The tractor may be attached to the movable leg-piece of the high-bridge splint, in a similar way, by simply boring a hole in the middle of the transverse part of the leg piece.

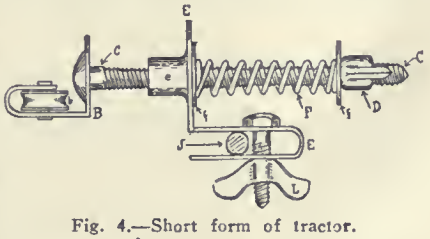


Fig. 4.—Short form of tractor.

The whole tractor as described is only 8 inches long. A much shorter form may be had by using a permanent cross-piece, eliminating the cross rod (*H*) and using a shorter bolt (Fig. 4). This makes possible its use with a splint only very slightly longer than the extremity.

ADVANTAGES

The advantages of the tractor may be thus summed up: It weighs only a few ounces, yet will produce any desired amount of traction. Although designed for use with the Thomas splint, it may be easily attached to any other metal splint. It is quite short, which economizes space in the length of apparatus, a by no means minor consideration. Various springs may be used, so that very light or extremely heavy traction may be applied. The compression spring has a distinct advantage over the expansion or spring balance type of tractor, for it occupies less room in the splint the greater the traction, whereas the expansion spring lengthens with greater tension, thereby necessitating a longer splint. The foot-piece with pulleys does away with the obliquity of the old Buck's extension foot-block, and eliminates torn adhesive stickers. The ease with which the tractor is assembled makes possible the substitution of different parts to meet special or varying conditions. The apparatus is simple and easy of construction. In use at the St. Francis Hospital we have found it satisfactory in every way.

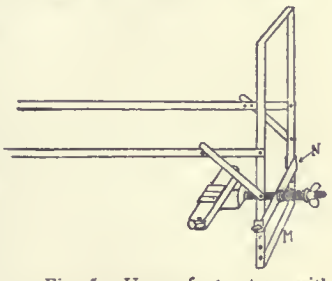


Fig. 5.—Use of tractor with high-bridge splint.

54 Church Street.

ACUTE HEMORRHAGIC NEPHRITIS SECONDARY TO MIDDLE EAR INFECTION

REPORT OF CASE

JOHN W. SHUMAN, M.D., SIOUX CITY, IOWA

Renal irritation, indicated by albumin, casts and red and white blood cells in the urine, and "focal infection" I have witnessed a number of times; but the case reported here offered the first opportunity to observe an acute renal irritation of such severity, secondary to suppurative otitis media, complicated by mastoiditis and lateral sinusitis, caused by the streptococcus micro-organism, from onset to recovery.

The child was examined, Dec. 2, 1919. About this time a very helpful article by Dr. Lewis Webb Hill[1] appeared in THE JOURNAL, in which were mentioned four cases of nephritis secondary to otitis media.

This case is reported as corroborative evidence of the material presented in that article, and for the aid it may give to those encountering the same or similar pathologic conditions. It emphasizes the fact that renal disturbance is a secondary rather than a primary disturbance.

REPORT OF CASE

A girl (Record No. 1948), aged 3½ years, was admitted Dec. 2, 1919, to the eye, ear, nose and throat service of Dr. J. B. Naftzger, St. Joseph's Hospital, Sioux City, Iowa, with the diagnosis of suppurative otitis media. The left ear was discharging. The temperature was 100 F., the pulse, 130. Blood examination revealed: white blood cells, 36,200; polymorphonuclear neutrophils, 74 per cent. Mastoid tenderness and "shadowed" cells, demonstrated by the roentgenogram, were present. These findings led to the diagnosis of mastoiditis complicating suppurating otitis media. But the urinalysis by Dr. Mortimer Herzberg (director of the laboratory) complicated things greatly: amount, 5 ounces; bloody; acid; specific gravity, 1.015; albumin present in large amounts. Microscopic examination revealed an enormous number of red blood cells and a number of granular casts.

It was decided at consultation that the renal condition was secondary to the ear infection, and mastoidectomy was performed under nitrous oxid anesthesia administered by Dr. R. M. Waters. The mastoid cells were necrotic. A report of cultures was: "a few isolated diplococci; a few short chains

1. Hill, L. W.: Acute Nephritis in Childhood, J. A. M. A. **73**: 1747 (Dec. 6) 1919.

of streptococci; some diphtheroid and staphylococcic microorganisms."

At the time of operation the lateral sinus was exposed and appeared not to be involved, but the symptoms did not disappear after the operation; in fact, they became more alarming. December 7, five days later, the temperature was 105.4 F., the pulse 140 and white blood cells, 22,500 (polymorphonuclear neutrophils, 82.1 per cent.). The urine (twenty-four hour quantity, 7 ounces) was very bloody and contained albumin + + + and many granular casts. Physical examination was otherwise negative. On account of these conditions it was thought that the lateral sinus was involved, so Dr. R. Q. Rowse ligated the left external jugular and Dr. Naftzger opened and cleared out the sinus which was thrombotic. Following this procedure, the temperature descended by lysis (normal, February 8), the urine changed and became "smoky" four days later, and the albumin was ++ instead of +++. A week later, the albumin was + and January 22 there was only a trace. The same decrease in pathologic evidence was observed in the microscopic findings. Jan. 25, 1920, the patient was discharged from the hospital.

LATER DATA

The urinalysis was negative January 9, and remained so until January 29, at which time the little girl complained of "a hurting" in the urinary bladder region and urinated small amounts frequently. Albumin and a number of red blood and pus cells were found in the voided specimen. That night the mastoid incision, which had healed over, "opened and drained pus." The urine of February 3 was negative except for an occasional red blood cell. This would appear as added evidence to substantiate the belief that the middle ear infection caused the pathologic condition of the kidney.

Frances Building.

THYROTOMY IN REMOVAL OF A SUBGLOTTIC LARYNGEAL EPITHELIOMA

BERTRAM C. DAVIES, M.D., LOS ANGELES

The question of routes in operating for the removal of laryngeal growths is one that cannot be settled by any fixed rule. A decision must be based largely on (1) location and (2) variety of growth.

Obviously a papilloma, located, as it usually is, on the vocal bands in the anterior part of the larynx, occupying the supraglottic region, and being more or less pedunculated, can be snared off by the direct or indirect endolaryngeal route. Other and more serious growths, depending on their location, may be removed by the same route. Occasionally there is an epithelioma that has a reasonably long pedicle, even though it be subglottic, that may be removed by direct laryngoscopy. No general rule applies, however, and specific consideration must be given in each case as to the route of operation.

The case here reported demonstrates, among other things, that some study is necessary at times before any decision can be reached.

REPORT OF CASE

History.—W. B., man, aged 66, bricklayer, seen May 4, 1919, whose father and mother were over 80 years old at death, weighed 170 pounds, and there had been no change in weight during the last two years. He had had the ordinary diseases of childhood. He denied venereal infection. When 21 he had bronchitis, which lasted several years; he was quite ill with abnormal temperature and considerable cough, raising thick mucus. He was unable to work. Recovery had been slow. He had been a heavy smoker for the last twenty-five years. About six months before, he had noticed his voice becoming hoarse and weak. There was no pain or cough and deglutition was normal. There had been gradual increase in hoarseness, which was more marked during the past month and was worse at night or when the patient was tired.

Physical Examination.—The nose and nasopharynx were negative. There was granular pharyngitis. There was marked "hooding" of the epiglottis, but no inflammatory condition. The mucous membrane of the arytenoids was injected and swollen, with superficial ulceration in the posterior commissure. The false cords were swollen; this swelling, together with the condition of the arytenoids, obliterated all but the anterior third of the true cords. Some injection of the true cords was noted. Examination of the chest gave evidences of healed pulmonary lesions, some emphysema, and fine râles over both apexes. Roentgenoscopy revealed scar tissue rather evenly distributed over both lungs, with a slight increase on the left side. The Wassermann test was negative. The von Pirquet reaction was ++. The blood count was normal; hemoglobin, 85 per cent. A tentative diagnosis of tuberculous laryngitis was made.

Treatment and Course.—The intratracheal use of argyrol, 30 per cent., daily, was prescribed, and tuberculin was given. Smoking was stopped. Phonation was discontinued. Alternating hot and cold packs were employed one-half hour at bedtime.

After four months' treatment the ulceration healed and the laryngeal swelling subsided, the true cords gradually coming into view. This was largely due, no doubt, to interdiction of the use of tobacco and the employment of voice rest.

Under cocain, 20 per cent., the direct laryngoscope was used and a positive diagnosis of epithelioma was made. The neoplasm was subglottic, lying under the left cord and not having a pedicle; it was white, papillary, and incorporated in the body of the cord for its full length, leaving the edge free. There was no inflammation of the cord or the surrounding tissue.

November 3, thyrotomy was performed under ether anesthesia by the open method.

Some authorities advise preparatory tracheotomy some days previous to this operation, but it was decided to perform the two at one time.

Operation and Result.—A median incision was made from the os hyoideum above to the level of the fourth ring. Careful dissection was then done, exposing the thyroid and cricoid cartilages and tracheal rings. Whenever possible, blood vessels were ligated before cutting. This was not always feasible; but the amount of blood lost did not exceed 2 ounces. When the field of operation was entirely exposed, the second tracheal ring was incised and a No. 4 tracheotomy tube inserted.

At this stage the anesthetist changed his position and administered the ether by means of a saturated pledget held over the opening of the tube.

The attempt was next made to incise the thyroid cartilage, passing a knife through the cricothyroid ligament; but in this particular case, ossification had taken place and bone had replaced cartilage. Several efforts were made with different instruments, keeping in mind the necessity of avoiding injury of the cords; finally separation of the lateral halves was accomplished with a heavy pair of Seiler's turbinal scissors. Even retraction of the lateral halves then gave a good view of the neoplasm, verifying the diagnosis as to the location and probable nature of the growth. At this juncture a gauze pack was introduced into the trachea at the cricoid level to prevent leakage of blood from above, as well as to aid the anesthetist by forcing respiration by way of the tracheotomy tube.

A wide and careful dissection was done, carrying the incision down to the lateral wall of the thyroid and back to the arytenoids, including the cord with the tumor mass, leaving, however, a narrow border of the upper portion of the cord. The tissue below the site of the tumor was dissected and the edge drawn up and sutured to this remaining portion of the cord, thus affording a line of articulation for the right cord. Subsequent events have justified this effort, as the patient's phonation is quite as good as before the operation.

The hemorrhage was very slight, and only three catgut sutures, No. 00, were necessary to produce closure of the tumor site.

The tracheotomy pack was now removed and the halves of the thyroid cartilage were brought together and held by chromicized catgut through the perichondrium and surrounding tissue. The skin was closed with silkworm sutures.

A stiff collar of several layers of adhesive plaster was applied over a dry dressing, immobilizing the thyroid carti-

lage. This collar was reapplied after each dressing until union of the halves was accomplished.

The tracheotomy tube was removed on the fourth day.

The patient made an uneventful recovery, having no respiratory difficulty at any time. The temperature at the highest point was 99.4 F. There was little, if any, postoperative pain and total absence of cough. The treacheotomy wound was closed in three weeks. The patient returned to his regular employment of bricklaying in four weeks.

1113 Los Angeles Investment Building.

A CASE OF IDIOSYNCRASY TO ACETYLSALICYLIC ACID

THURMAN D. KITCHIN, M.D., WAKE FOREST, N. C.

The extent to which acetylsalicylic acid (aspirin) is used, both by the profession and the public at large, and the infrequency with which untoward effects result from its use, warrant the report of this case.

REPORT OF CASE

On Thursday, Feb. 5, 1920, an influenza patient was admitted to the College Hospital. The next day he complained of so much pain in his back and head together with general aching, that at noon he was given 5 grains of acetylsalicylic acid. This dose was repeated at 4 o'clock and at 8 o'clock the same day. At 10 o'clock that night there were no untoward effects. The next morning (Saturday) a slight rash was noticed on the face and arms, and although acetylsalicylic acid was suspected, the patient was given another 5-grain dose. In two hours he exhibited a severe form of angioneurotic swelling of the face, especially marked about the eyes. This did not involve the mucous membrane of the mouth and throat. The entire trunk and limbs were covered with an urticaria. The wheals were of irregular shape, and varied in size from one-half inch to more than 2 inches in diameter, and were accompanied with intense itching. This condition lasted all day and did not begin to fade until 11 o'clock that night. By morning it had disappeared.

The patient was a medical student, and with his consent, and purely as an experiment, at this time (Sunday morning) he was given another 5-grain dose of acetylsalicylic acid. In less than an hour the picture described above was exactly reproduced, lasting until the following morning. The patient was then given 2½ grains, and in less than half an hour showed the same results as before, except that this time it lasted thirty-six hours. The patient was now given 1 grain, and in about an hour and a half the same effects resulted, but were less severe and disappeared in about ten hours. It might be added that during all this time the patient received no other drug whatever, and his elimination was apparently excellent.

At no time did the patient show any alarming symptoms, as is usual in such cases. The effect seemed to be entirely limited to the skin manifestations.

COMMENT

There are elements in this case which point either to a cumulative action of the drug or to a condition of anaphylaxis. The fact that so small a dose as 1 grain, given thirty-six hours after a 2½-grain dose, should produce the condition described suggests that either the drug was not eliminated or destroyed in the body as rapidly as is generally thought, or that the first doses rendered the patient hypersensitive to the drug—an anaphylactic reaction.

Rates of Mortality as Related to Conjugal Condition.—The effect of conjugal condition on mortality has often been discussed. The findings of Knibbs, statistician for Australia, are in accord with the usual ideas on the subject: "For males between 20 and 85 years of age the death rate is considerably higher for the 'not-married.' For females the advantage lies with the 'not-married' until the child-bearing period has been passed, after which it lies with the 'married.' The exact age at which the death rates become equal in the case of females is probably about 43 years."

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

PHENACAINE. — Holocaine Hydrochloride. — Ethenyl-Paradiethoxy - Diphenyl - Amidine Hydrochloride. — $CH_3C:(NC_6H_4OC_2H_5).(NH.C_6H_4OC_2H_5).HCl + H_2O$. — The hydrochloride of phenetidyl-acetphenetidin, a basic condensation product of paraphenetidin (para-ethoxy-amino-benzene) and acetparaphenetidin (phenacetin). Phenacaine was first introduced as holocaine hydrochloride.

Actions and Uses.—Phenacaine is a local anesthetic like cocaine but having the advantage of a quicker effect and an antiseptic action. Five minims of a 1 per cent. solution when instilled into the eye are usually sufficient to cause anesthesia in from one to ten minutes. It is said not to cause the scaliness of the cornea which sometimes results after the use of certain other local anesthetics.

Dosage.—It is applied in a 1 per cent. aqueous solution. Phenacaine is incompatible with alkalies and their carbonates and the usual alkaloidal reagents. Glass vessels should be avoided in preparing the solution, porcelain being used instead.

Phenacaine is prepared by the interaction of molecular proportions of paraphenetidin sulphate and acetphenetidin in the presence of phosphorous oxychloride, decomposing the resulting phenacaine sulphate with sodium hydroxide, crystallizing the base from alcohol, neutralizing it with hydrochloric acid, and crystallizing.

Phenacaine forms small, colorless crystals; odorless; faintly bitter and producing transient numbness on the tongue; permanent in the air.

Phenacaine is soluble in about 50 parts of water; freely soluble in alcohol and in chloroform; insoluble in ether. On boiling in glass vessels, the aqueous solution becomes turbid owing to a separation of a small quantity of the free base by the alkali derived from the glass. Phenacaine forms a clear, colorless solution in water, the solution having a neutral or faintly alkaline reaction on litmus.

The aqueous solution of phenacaine yields a white precipitate on the addition of silver nitrate test solution or of ammonia water.

The addition of a few drops of chlorinated soda solution to a saturated, aqueous solution of phenacaine produces a finely divided, flesh-colored precipitate. In a few minutes, this separates as a violet-colored precipitate, and if the mixture be shaken with ether, the ether is colored Burgundy-red.

Dissolve about 0.05 Gm. of phenacaine in 2 Cc. of concentrated hydrochloric acid, boil for two or three minutes, cool and add one drop of potassium dichromate test solution. No ruby-red precipitate is produced (*absence of 5 per cent. or more of acetphenetidin or paraphenetidin*).

Dry about 1 Gm. of phenacaine, accurately weighed, to constant weight at from 100 to 105 C. The loss does not exceed 7 per cent.

Phenacaine dried as above melts at 189 C.

To about 25 Cc. of water and 5 Cc. of ammonia water contained in a separator, add about 0.5 Gm. of phenacaine, accurately weighed, which has been previously dried to constant weight at from 100 to 105 C. Extract the free base by shaking with successive portions of chloroform. (Preserve the solution in the separator for the test for phosphorous compounds given below.) Collect the chloroform solutions in a beaker by passing them through a small funnel holding a pledget of cotton. Evaporate the chloroform and dry the free base at from 100 to 105 C. to constant weight. The weight obtained should be not less than 87.5 or more than 90.5 per cent. of the weight taken.

Purify the base by crystallization from hot alcohol, and after drying to constant weight, determine the melting point. It melts at from 116 to 117 C.

To the solution remaining in the separator, after the original extraction of the base, add an equal volume of concentrated nitric acid and boil for five minutes. Evaporate this solution to about 25 Cc. and add to it 25 Cc. of ammonium molybdate test solution. Keep the mixture at a temperature of about 60 Cc. for three hours. No yellow precipitate is produced (*phosphorus compounds*).

Incinerate about 0.5 Gm. of phenacaine accurately weighed. Not more than 0.1 per cent. of ash remains.

Phenacaine-Werner.—A brand of phenacaine complying with the N. N. R standards.

Manufactured by the Werner Drug and Chemical Co., Cincinnati, O. No U. S. patent or trademark.

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SATURDAY, MARCH 27, 1920

SPIRITS AND THE MEDICAL MIND

The linguistic devices by which we distinguish between a specialist in the laws of the behavior of matter, one who deals with the functions of the body, and still another who ministers to the body diseased, indicate that for human ends we must divide what in nature is joined. We call the one man a physicist, the second a physiologist, the third a physician. The names, like the pursuits, all begin alike, for they are but phases of a common nature. So when any doctrines come forward that threaten to overturn the common foundation of science, physicist, physiologist and physician are equally concerned, and with them in these days the psychologist, who shares somewhat of the habit of mind of all three. But so far as the psychologist has a special warrant to consider belief in spirit-agency or in telepathic or other unrecognized forces, he approaches the matter with the clinical sense congenial to the medical mind.

In this mood he is far more interested in noting why people believe in the revelations of mediums, and flock eagerly to listen to tales and to theories that support their inclinations, than he is in any patient analysis of the evidence to see what it really shows. In the larger aspect this is an anthropological interest, for we know that men in all stages of development have been believers in spirit-agency and have brought forward evidence and theory to hold together their beliefs. We know that this ancient world of folk-belief, of superstition, of readiness to think of things in occult terms, survives in all ultimate issues of human existence. Tap the stream where you will and it shows a common expression. No phase of it is more persistent than the medical; people always want health, and will go through amazing procedures to secure it, swallowing potions and theories with equal appetite. One could write a history of the human mind in terms of the cures that people underwent and the reasons offered for the cult. One could start with humors and temperaments, and wind through exorcism, laying on of hands, mesmerism, clairvoyance, homeopathy and Christian science, with any number of side excursions to delay one's progress. Spiritualist healers who in a trance state prescribe harmless drugs at hurtful prices are by no means obsolete.

But all this is relevant mainly because the type of mind inclining to such cults has in pronounced cases a clinical interest. When we come to mediums who invite a trance-like state to deliver their oracles, like Mrs. Piper, or find that Mrs. Curran can deliver herself of the "Patience Worth" phase of her personality more readily by some slight shunting of the mental gears, or find that Mlle. Smith utilizes a séance room as a stage for her dramatic instincts, we know that there is a psychiatric interest here; and we can the more readily anticipate that a similar or at least congenial trend may be common among their following, who obtain a satisfaction from the belief in the occult. The Freudians (that is, rational Freudians—for despite the common rumor to the contrary, there are such) are ready to see in such expression some compensation for the loss of more real satisfactions, or some converted or perverted outlets for wishes that find a harsh repression in the insistent pressure of a hopelessly complex life. In brief, the will to believe in the supernatural, now so conspicuously resurrected, is a symptom of the stresses and strains to which the minds of men have been put in recent years. The addresses of Sir Oliver Lodge have acted as a respectable mode of relief—that explicit act of confession which Freudians recognize as helpful to ingrowing ailments.

Since all movements take their impress from their leaders, we are particularly concerned with the diagnosis of the spokesmen of the cult. Several hundred years ago, the common or even the educated man who had some real belief in witchcraft or in the journeys of witches through space on brooms, would have been normal enough; but today we should find such belief a ground for mental examination. We should assume that a mind adjusted to the thought-habits of today would have set up a resistance to any such beliefs—assuming any trend toward them—so completely adequate as to reject them without effort. Education is the vaccination that confers immunity; but it does not always take. We are then properly amazed that a mind of superior training, especially in scientific discipline, should subscribe to beliefs on evidence that it is difficult to conceive as convincing to any but a prejudiced will to believe. That kind of predilection when strengthened and systematized, becomes akin to an obsession; it approaches the uncertain borderland in which psychologist and psychiatrist venture together in the hope of bringing order out of chaos. That a peculiarly imaginative man of letters like Maeterlinck should find in the occult an additional outlet for his fancies is not strange; that he should accept square-root-extracting horses as genuine, as men of former days accepted the unicorn as a plausible equine specimen, may indicate a lamentable failing in logic, but

nothing more serious clinically. That Dr. Conan Doyle, though he has long left the medical field for more interesting adventures, should be caught in the same web is in a measure surprising. Yet the conclusion that science does confer an immunity to such tendencies to believe personally engaging conclusions and blind oneself to the irrelevance of the evidence, is not really shaken. The very surprise is a token of the exceptional character of the association of physics or medicine with spirits. For here, too, there is dissociation with a wall rather than a cleft between; the physicist and the physician, though they keep house in the same tenement of clay with the believer in spirits, are not cooperative, though the one borrows utensils and recipes from the other.

In the dissemination of such views, the medical mind has alike an interest and a responsibility. The real illumination of these intricate and elusive relations lies in their clinical aspect; for the clinical sense is a cultivated variety of prospecting among human expressions, and diagnosis is merely an expert form of "sizing up" the sorts and conditions of men that impart variety to an otherwise dull existence. The fact that sanity and sanitation are alike the care of the physician indicates that the medical mind has an important social function. From its point of vantage it sees the ensemble of a forest in what to the wanderers in the jungle of human nature is only a tangle of trees. Beliefs also are symptoms that, placed in their setting, compose into "cases" illuminating and illuminated by collateral findings. In considering the sources and significance of the revival of belief in spirits and the increased tendency to credit varieties of belief and indulge in conclusions reminiscent of earlier stages of mental growth, the medical mind contributes not only an interest associated with its responsibility, but also something in the way of a map to plot the phenomena in an intelligible system.

THE CALCIUM METABOLISM OF INFANTS

Ever since present-day methods of modifying cow's milk for the use of infants have come into vogue, questions pertaining to the preferable proportions of the various milk components have been raised. It is probably no exaggeration to say that one could designate eras in which an undue content of protein, fat or sugar, respectively, in milk was in turn held responsible for various types of infant digestive disturbance or malnutrition. Pediatric progress has made it possible today to control with intelligent dietetic procedures each of the factors just referred to, and their rôle is continually becoming more clearly defined.

The mineral nutrients, especially the indispensable element calcium, likewise have not failed to be included in the controversies of infant nutrition. It will be recalled that cow's milk is decidedly richer in calcium than is the human mammary secretion, the latter containing only about one-fifth as much per fluid volume. The cereal foods so often fed to infants are decidedly deficient in this element. What, then, represents the optimal intake of lime for the artificially fed infant? Is a considerable departure from this detrimental to health? Obviously, a shortage of an indispensable building stone for the skeletal structure is undesirable; but one can also read of a menace from "too much calcium" for infants. Not only is it argued that a liberal intake of calcium may interfere with the alimentary utilization of fats by inducing an excretion of calcium soaps in the stools, but it has also been asserted that a larger intake of calcium leads to a storage in the body which may have injurious effect.

Here, as is so often the case in the medical sciences, scientific data are needed in place of, or at any rate to supplement, empiric conjecture. Holt and his associates have ascertained the average absorption of calcium by breast-fed infants to approximate 0.06 gm. (calculated as calcium oxid) per kilogram of body weight. This may be assumed likewise to be the requirement of infants receiving modifications of cow's milk. As a matter of fact, the average absorption of calcium oxid by healthy infants taking such diets has recently been found to average 0.09 gm. per kilogram.[1] Since, according to these investigations at the Babies' Hospital, New York, infants taking modifications of cow's milk absorbed on the average only about 45 per cent. of the calcium intake, it is necessary to provide for them a minimal intake of about 0.13 gm. of calcium oxid per kilogram to insure even the low average absorption of breast-fed infants. In general, the data correspond with the earlier calculations of Hoobler,[2] who estimated the requirement by an infant of 7 kg. at from 0.143 to 0.215 gm. of calcium oxid per kilogram of body weight. A pint of cow's milk furnishes nearly 1 gm. of calcium oxid.

According to the recent findings of Holt, Courtney and Fales, the best absorption of calcium was obtained when the calcium intake bore a definite relation to the fat intake, that is, when the food contained from 0.045 to 0.060 gm. of calcium oxid for every gram of fat, and when at the same time the fat intake was ample, not less than 4 gm. per kilogram. An excessive calcium intake apparently did not increase the calcium absorption, the excess being excreted. When the intake of calcium oxid was very low, less than 0.1 gm. per kilogram, the absorption of calcium oxid was less than the normal calcium requirement of the body. The total absorption of calcium oxid varied in general with the weight of the child; the absorption per kilogram did not vary regularly with either the age or the weight.

1. Holt, L. E.; Courtney, A. M., and Fales, H. L.: Calcium Metabolism of Infants and Young Children, and the Relation of Calcium to Fat Excretion in the Stools, Am. J. Dis. Child. **19**: 97 (Feb.) 1920.
2. Hoobler, B. R.: The Rôle of Mineral Salts in the Metabolism of Infants, Am. J. Dis. Child. **2**: 107 (Aug.) 1911.

It may come as a surprise to those who have been taught the interrelation between calcium and soaps in the stools that this was not found constant in these observations. The excretion of soap was directly related to the type of stool, that is, to the water content and to the reaction of the stool. The excretion of calcium was closely related to the calcium intake. As has been pointed out before, the calcium absorption was much lower when diarrhea was present. Furthermore, the calcium absorption by rachitic infants was much lower than that by healthy infants, and the administration of cod liver oil regularly increased the absorption of calcium, unless diarrhea was present. This is in accord with much accumulated clinical experience.

THE PREVENTION OF FOOD WASTE

One of the many lessons learned from the World War was the value of food conservation. For two years, during the war, the people of this country responded willingly to the efforts of the food administration, and there resulted a saving both of a vast amount of raw food materials and of large sums of money. This was accomplished not only through limitation in the use of various foodstuffs, but also through the elimination and prevention of waste. Today the cost of living has made necessary the institution of more careful methods of buying and using food, but apparently the importance of determining the food waste has been forgotten. When one considers that in a large civil institution the total garbage for one week amounted to 10,000 pounds, a large portion of which was edible food, it is readily seen that the prevention of a part of this food waste would mean the saving of an appreciable sum in dollars and cents.

Prevention of this loss is not impossible, as is shown by Irons,[1] who recently discussed the results of detection and prevention of food waste in some of our hospitals, where "waste of food does not usually result from deliberate intent to destroy, but occurs rather because of failure to recognize waste, and because the system of handling food takes too little acount of the needs, feelings and impulses of the ultimate consumer —the patient." Prevention of waste of necessity depends on its recognition. By a system of inspection and classification, the amount, character and source of the garbage can readily be determined, and the necessary waste separated from the unnecessary; and steps may then be taken to reduce or prevent this edible waste. In order to accomplish this, cooperation of the entire personnel is necessary, under adequate supervision of the persons in charge, who must be well acquainted with the patients, knowing many of their likes and dislikes, their needs and their peculiarities. The serving of good food on an attractive tray, soon after its preparation, and in amounts to suit the individual, will result in marked suppression of the edible waste. One method of accomplishing the latter is by stimulation of friendly competition among the various supervisors in the many wards.

How efficient such methods proved to be is shown by the fact that in one of our large base hospitals the average waste of edible food for each person daily was reduced in four months' time from 1.85 ounces to 0.15 ounce. In a civil hospital of about 400 beds, the total daily garbage was reduced in a short time from 743 to 357.8 pounds. This saving was accomplished mainly through improved methods of handling and serving food in the wards. Similar efforts in the serving of the occupants of private rooms resulted in but little reduction of the total garbage.

If results such as these can be obtained easily and in a short time, certainly there are many hospitals not managed so carefully that could reduce their expenses to a considerable extent by the institution of methods of waste prevention. Such a system of waste control should include, in addition to proper buying, preparation and distribution of food, methods of separation of waste at its source, so that responsibility for it may be determined, and friendly competition between the administration of ward units in the hospital be established. Waste control might profitably be extended to clubs, hotels and private homes, for, while the waste occurs under much different circumstances, it is often even more glaring than in hospitals, and with much less excuse.

1. Irons, E. E.: Detecting Hospital Food Waste, Mod. Hosp. **14**: 143 (Feb.) 1920.

Current Comment

CATS AND HUMAN DIPHTHERIA

It is a widely accepted belief that cats may suffer from diphtheria and convey the infection to human beings, but there appears to have been little or no exact experimentation on this question. Several observers, particularly in England, have reported finding true diphtheria bacilli in the throats of cats, but these observations for the most part were made several decades ago. The epidemiologic evidence connecting cats with human diphtheria is circumstantial and does not carry conviction, although some of the instances reported are suggestive of possible contagion. Savage has recently reexamined the whole subject.[1] He obtained uniform and definite results in experiments with young kittens. The implantation of vast numbers of diphtheria bacilli into the nasal cavities were ineffective in setting up any general or local lesions, and the same was true when massive doses were applied by throat swabbing. In point of fact, the bacilli not only failed to infect but survived for only a short period, usually disappearing within twenty-four hours. Savage's experiments not only do not support the view that diphtheria is a naturally occurring disease of cats,

1. Savage: J. Hyg. **18**: 448 (Feb.) 1920.

but suggest that the mucous membranes of the cat are peculiarly unfavorable to the growth and persistence of the diphtheria bacillus. Similarly, the alleged epidemiologic evidence as analyzed by Savage is regarded as quite valueless, and he concludes that the view that cats can suffer from a naturally acquired disease caused by the diphtheria bacillus is entirely without foundation. Consequently there is no ground for believing that cats can serve as carriers of diphtheritic infection.

INTERNATIONAL SCIENTIFIC TERMS

The editor of the *Nederlandsch Tijdschrift* has been appealing to the profession in his country to "purify" the language, and use Dutch terms instead of the foreign terms with which medical writings are now larded. He cites as examples "zenuwverzorging," and "zenuwknoopcel," which he would theoretically prefer to have used instead of "innervatie" and "gangliencel," the terms now in vogue. He admits that the latter sound better to the present generation, trained in their use, and states that the efforts for "purification" of the language must have the future in mind, striving for better things in the rising generation. Trenchant comment on his reactionary views is a news item in the same issue relating that a German army physician at Namen in Belgium, during the German occupation, gave a prescription to the Belgian pharmacist to make up which called for "Hydrargyrum chloratum, 50 cg., 10 stück." The pharmacist supposed that mercuric chlorid was meant, and dispensed mercuric chlorid tablets in the legal form, that is, in a brown octagonal bottle labeled *Usage externe* and *Poison*. He wrote on the label besides, *Hydrargyrum chloratum. . . . Sublimé corrosif*. The physician assumed that calomel had been dispensed, as he had ordered, and poisoning resulted. Calomel in German is hydrargyrum chloratum, while corrosive mercuric chlorid is hydrargyrum bichloratum. The pharmacist was accused of trying to poison the Germans, and was saved only by the Belgian chief inspector of pharmacies, Dulière, explaining the mistake. In connection with the affair, the latter has appealed for uniformity in the nomenclature of officinal drugs in all lands, and urges the appointment of an international pharmacopeia commission for the purpose. One of the dangerous pitfalls for pharmacists and translators is the term "calcium chloratum," which does not mean "calcium chlorate" but "calcium chlorid" in English.

IMPORTANCE OF CHANGES IN THE PLASMA IN HEMOLYTIC ANEMIAS

The fact that the origin of many forms of anemia is still wrapped in obscurity is indicated by the nomenclature of the disease. We still speak of idiopathic anemias or primary anemias, or else we describe certain forms of anemia by the name of the person who first recognized the particular type. In recent years it has been recognized that there is one special group of anemias associated with destruction of the red blood corpuscles and usually described as the hemolytic anemias. There are, of course, some forms of hemolytic anemia, particularly those varieties due to definite chemical poisons, the etiology of which is perfectly clear. On the other hand, there is a group of hemolytic anemias, of which the so-called "family jaundice" may be named as an example, wherein the method of action of the factors causing the hemolysis is still obscure. There are several possibilities in the method of production of abnormal blood destruction. It may be due to a normal mechanism acting on abnormally fragile corpuscles. It may be due to a hyperactivity of the normal blood-destroying function of the spleen. It may be due to substances in the plasma which either act as opsonins and render the red cells unusually susceptible to destruction or are themselves directly hemolytic. Gordon Ward[1] has attempted to group together a number of different blood syndromes which at first sight appear quite dissimilar, on the basis that all of them are due primarily to changes in the blood plasma rather than alterations in the blood-forming organs or in splenic blood destruction. The different conditions which Ward attempts to group together are the anemia of the family jaundice type; the anemia with sickle-shaped cells of Herrick; the condition described by Dresbach in which oval or elliptic cells occur in human beings; familial auto-agglutination, and the so-called Malin syndrome, in which anemia and splenomegaly are accompanied by the presence in the peripheral blood of large phagocytic cells. Ward's attempt to group these cases on the basis of similarity as regards their occurrence both as sporadic and as familial diseases, their intermittence in course, the fact that changes in the red cells peculiar to the disease occur and that all show plasma changes, is not entirely convincing. Nevertheless his article is an interesting and stimulating one, and calls attention to the necessity for more extended observations on the blood plasma in the anemias of this type.

AVOCADO FAT

Among the fruits that enter into the dietary of man the avocado, or alligator pear, takes an almost unique place because of its richness in fat. A few fruits may furnish a noticeable quota of real nutrients in the form of starch and, particularly, sugars; thus an ordinary sized banana is rated at a food value of 100 calories or more. But for the most part the fruits that enter into the ordinary regimen, however palatable, wholesome and dietetically valuable they may be, can scarcely be rated as significant sources of energy. The part that they play in nutrition must be estimated from other standpoints. Accordingly, an edible fruit that may exhibit as much as 20 per cent. of fat[2] in its make-up is worthy of special consideration. It may prove, for example, to become a valued adjuvant to the dietary of the diabetic, from which the carbohydrate content of many common fruits unfortunately excludes them. The possibilities of the avocado have been further promoted by recent investigations[3] in California and Washington, both of which agree in assigning an excellent utilization to avocado fat, even

1. Ward, Gordon: Proc. Roy. Soc. Med. (Sect. Med.) **13**: 1 (Nov.) 1919.
2. Condit, I. J., and Jaffa, M. E.: Bull. 254, California College Agr. Expt. Station, p. 381, 1915.
3. Mattil: Ann. Rep. California Avocado Assn., 93, 1916. Holmes, A. D., and Deuel, H. J., Jr: J. Biol. Chem. **41**: 227 (Feb.) 1920.

when as much as 124 gm. (about 4½ ounces) a day were consumed. Heretofore the market price of this fruit has prohibited a very widespread use of what now appears to be a nutritious as well as palatable food. The avocado is indigenous to tropical and subtropical regions in the western hemisphere; but it is being cultivated to an increasing extent in Florida and California, and may ultimately become available at more reasonable prices in harmony with the history of some other tropical fruits. Dietotherapy will testify that the enrichment of the dietary with a really palatable source of fat will not be unwelcomed in the management of certain nutritive disorders. Ordinary cream rarely exceeds the avocado in available fat content.

Association News

THE NEW ORLEANS SESSION

Special Arrangements for Golfers

The American Medical Golfing Association announces that entries will be received up to and including April 15 for the tournament to be held in New Orleans on Monday, April 26. The tournament fee ($1) must be deposited at the time the applicant submits his entry. His handicap must be approved by the handicap committee. Plans are being considered for engaging a summer hotel about a half mile from the golf course for the use of those who desire to be lodged near to the course. In order to obtain a reservation at this hotel, it is advisable to telegraph to Dr. John B. Elliott, Jr., 931 Canal Street, New Orleans, chairman of the golf committee, advising what space you would like to have. The consummation of the plan will depend on the demand for these accommodations. Address enrolment, entries and handicaps to the Secretary of the American Golfing Association, Dr. Will Walter, 1414 Chicago Avenue, Evanston, Ill.

Health Sunday

Governor Pleasant, without proclamation, has designated the setting aside of Sunday, April 25, as health Sunday for Louisiana. This is the Sunday preceding the Annual Session of the American Medical Association in New Orleans.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

ILLINOIS

Physician Taken to Prison.—Dr. George W. Alverson, Macomb, who was sentenced to life imprisonment in connection with the death of Lawrence Clugston, is said to have been taken to the state penitentiary, Joliet, March 16.

Municipal Venereal Disease Clinic.—The city council of Peoria, March 2, unanimously provided an ordinance for the establishment of a municipal clinic for the treatment and isolation of venereal diseases. The ordinance provides for a commissioner of the dispensary with a salary of $3,000 a year and with authority to declare quarantine if certain phases of the ordinance are not observed.

Hospital Notes.—The two-week drive for the Victory Hospital at Waukegan, which has been carried on under the leadership of Hon. C. C. Edwards, came to a close, March 22, with a total contribution of $300,000. The institution, which will be for soldiers and sailors, will, it is said, be erected within two years.——The contract has been let for the erection of a new modern hospital for the Cunningham Deaconess Home, Urbana.

Speedway Hospital.—Contracts have been signed turning over the Speedway Hospital to the U. S. Public Health Service. Congress has appropriated $3,500,000 for the acquisition of this plant and $1,500,000 in addition will probably be required before the institution is completed. The hospital site includes 320 acres, and the buildings are fireproof. The main building is 2,040 feet in length, 50 feet in width and four stories in height, and will accommodate between 2,000 and 2,500 patients. The institution will be completed within four months and will be known as the Broadview Hospital.

Chicago

Indicted for Failure to Report Disease.—Dr. Anna Sorna is said to have been indicted by the grand jury, March 18, for failure to report a case of scarlet fever.

Grenfell in Chicago.—Dr. Wilfred T. Grenfell, the medical missionary to Labrador, with Mrs. Grenfell, was a visitor in Chicago last week, and spoke at St. Chrysostom's Church and at the community house in Winnetka, March 21.

Midwives Fined.—Mrs. Wanda Grzybowski was fined $25 and costs, March 16, for failing to apply silver nitrate to the eyes of a new-born babe, and for failing to report the birth.——Mrs. Kate Kijowska was fined $15 and costs for a similar offense.

Midwife Freed of Charge.—Mrs. Catherine Schmidt, a midwife, was released from police custody, March 6, after having been held for two weeks in connection with the death of Mrs. Grace D. Frey, who died, February 24, supposedly as the result of a criminal operation.

Health Commissioner to Open Hospital.—Health Commissioner John D. Robertson announces that he will open a new charity hospital, April 1, with accommodation for twenty patients. This hospital will also afford means by which nurses may obtain a training course in three months. This will be conducted in the City School for Home and Public Health Nursing at Fulton and Ada streets. A charge of $50 will be made for the course.

Robert Koch Society Meeting.—The thirtieth annual meeting of the Robert Koch Society for the Study of Tuberculosis was held, March 25, at the City Club. Dr. Benjamin H. Orndoff spoke on "The Peritoneoscope in Diagnosis of the Diseases of the Abdomen"; Dr. Max Biesenthal discussed the "Use of Sodium Gynocardate 'A' in Pulmonary Tuberculosis," and Dr. James A. Britton spoke on "Occupation and Tuberculosis."

Relief for Suffering Vienna Physicians.—At a luncheon given by the Chicago Medical Society and affiliated organizations, March 15, the sufferings of the wives and families of Vienna physicians were detailed by Dr. Carl Beck, and a committee was appointed to solicit funds. The personnel of this committee is Dr. Rudolph W. Holmes, chairman of the committee of the specialist societies; Dr. Coleman G. Buford, chairman of the branch societies of the Chicago Medical Society; Dr. Effie L. Lobdell, chairman of the Chicago woman's medical societies and clubs, and Dr. Warren Johnson, chairman of the club and social associations. A contribution of $1,000 by Mrs. Catherine McCormick was announced by the association.

INDIANA

Fire Destroys Sanatorium.—The Mudlavia Springs Hotel and Sanitarium has been completely destroyed by fire. It was established in 1889 and had a capacity for 200 patients.

Venereal Disease Clinic Reopened.—The Fort Wayne Venereal Clinic reopened, February 23, in its quarters on the second floor of the Wayne pharmacy building with Dr. George Rea and a registered nurse in charge.

Public Health Association Election.—At the annual meeting of the Logansport Public Health and Welfare Association, March 9, Dr. John A. Little was reelected president; Mrs. W. J. Ballard and Mrs. Willard Wynne were made vice presidents; Mrs. William A. Gremelspacher was elected secretary, and C. W. Graves, treasurer.

War Histories of Medical Officers Wanted.—The Indiana Historical Commission is now engaged in collecting and compiling the official war history of the state and has entrusted to Post 26, Indiana Branch, the American Legion, the duty of preparing a complete military history of the physicians of Indiana who were in the service. All Indiana physicians who were in service are requested to write imme-

diately to Dr. John R. Newcomb, Commander, Post 26, American Legion, Indianapolis, for proper blanks on which to file their military records.

IOWA

Tuberculosis Clinic Established.—A tuberculosis dispensary clinic has been opened at the community hospital, Grinnell, under the care of Dr. Edwin E. Harris, secretary of the hospital staff. The clinic will be at the disposal of the American Red Cross for use during the tuberculosis survey. ——A free child welfare clinic has also been established at the hospital.

Personal.—Dr. Enos D. Miller, Wellman, suffered a fracture of two ribs and other injuries when his automobile backed down a hill and went into a creek, March 11.——Dr. Oscar A. Dahms has been reelected president of the Davenport school board.——Dr. Charles F. Applegate, superintendent of the Mount Pleasant State Hospital, has been appointed medical superintendent of the Norwalk State Hospital, Norwalk, Calif., and assumes his new duties April 1.

KENTUCKY

Hospital Purchases Y. M. C. A.—Madisonville Hospital Association has purchased the Y. M. C. A. building with the idea of making improvements and using it as a hospital.

Suit Settled.—Under terms of a settlement said to be $1,000, the damage suit for $30,000 brought by Mrs. Francis Jarnigan against Dr. Alex. C. Foster, Owensboro, has been dismissed.

Personal.—Dr. Thomas D. Moore, Hopkinsville, has been appointed to a fellowship in general medicine with the Mayo Foundation, Rochester, Minn.——Dr. John H. Hamilton, Owensboro, has been appointed full-time health officer of Davies County.

Venereal Quarantine.—A joint federal, city and county quarantine and sanatorium for the women now quarantined in the county jail, has been arranged for at the Louisville City Work House. Reduction in the number of prisoners from 250 before July 1 to fifty at the present time makes this possible. Sixteen to thirty women are constantly under segregation and treatment. Every effort to effect the moral and social regeneration of the women will be made.

Alumni Association Progress.—As a result of a concerted effort to reorganize the Alumni Association of the University of Louisville Medical Department, more than 1,000 graduates have been enrolled. Elaborate plans are being made for a meeting during commencement week, May 31 to June 5, when clinics and entertainments will be held. The clinics will consist of operative clinics at all of the hospitals; bedside clinics and ward walks; demonstrations in laboratory methods of diagnosis, lectures, etc. Over four hundred are expected to attend. The 1920 graduating class will be guests of honor at a banquet.

LOUISIANA

Office Building for Physicians.—A three-story office building to be used exclusively by physicians and dentists will be built at the corner of Prytania and Delachaise streets, New Orleans, across the street from the Touro Infirmary. The building will represent an investment of $150,000.

Parish Physicians Meet.—At the annual meeting of the Lafourche Parish Medical Society held in Thibodoux, March 15, Dr. Joseph M. Hubert, Allemands, was elected president, Dr. Ewell A. Kleinpeter, Thibodoux, vice president, and Dr. Philip J. Dansereau, Thibodoux, secretary-treasurer.

Personal.—Dr. Alexander R. Crebbin, New Orleans, has sailed from London for New York.——Dr. Elizabeth D. A. Cohen, New Orleans, who has been for thirty years at the Touro Infirmary celebrated her hundredth birthday, February 22.——Dr. Guy A. Darcantel has been appointed a member of the municipal health board of White Castle.

License Refused.—The refusal of the state board of medical examiners to reissue a license to practice to Dr. Antonio B. Jannarelli, New Orleans, is said to have been upheld in the civil district court, March 8, when the physician's suit to compel the board to license him was dismissed by Judge Parker.

Appropriation for Health Work.—The appropriation committee of the Senate has allowed $200,000 for the rat-proofing work which the U. S. Public Health Service is conducting in New Orleans.——The state council of defense has approved the recommendation of the executive council for the appropriation of $10,000 for the state board of health for use in the campaign against venereal disease and of $6,000 to combat bubonic plague.

MAINE

Personal.—Dr. Ludovic J. Dumont has been appointed health officer of Lewiston for three years, and the local board of health has been abolished.

Laboratory Soon to Be Opened.—The Aroostook branch laboratory of the state department of health at Presque Isle will soon be opened and will be in charge of a trained chemist and bacteriologist. In this laboratory, tests for typhoid fever, diphtheria, and tuberculosis and also examinations of water will be made.

MARYLAND

Libraries to be Consolidated.—According to plans now under consideration by the authorities at Johns Hopkins University, the libraries of the hospital, the school of hygiene and the medical school will be collected under one roof, in a new library building to be erected in the hospital group.

Osler Memorial Meeting.—A memorial meeting to the late Sir William Osler, regius professor of medicine at Oxford University, and for many years professor of medicine at the Johns Hopkins University, was held March 22, in the civil engineering building, Johns Hopkins University. President Frank J. Goodnow presided, and addresses were made by Henry Van Dyke, D.D., and Prof. William H. Welch.

Personal.—Dr. John M. T. Finney, Baltimore, has been elected an honorary fellow of the Royal College of Surgeons, England.——Dr. James A. Nydegger, Baltimore, in charge of the U. S. Public Health Service in Baltimore, has announced the addition of two physicians to the staff. Dr. George Walker has been appointed consultant neurologist and Dr. George Lane Taneyhill, Jr., neuropsychiatrist.——Dr. Ross McC. Chapman, chief executive officer of St. Elizabeth's Hospital, Washington, D. C., who has been appointed medical superintendent of the Sheppard and Enoch Pratt Hospital, will assume his new duties April 1.

Movement Launched for New Municipal Hospital.—A movement to have Baltimore take over the hospital at Fort McHenry for a general municipal hospital as soon as the War Department gives it up has been launched. Through a petition handed the mayor, the Baltimore City Medical Society has asked that hospital facilities for Baltimore city be provided as quickly as possible and endorsed the acquisition by the city of the hospital at Fort McHenry, if this could be effected. Dr. John M. T. Finney, Baltimore, has been named by the mayor as chairman of a committee to lay the plan before the Secretary of War and the Surgeon-General of the Army. It is said that this transfer could be made by July 1, provided the plan is put through at once. The only obstacle seen is a possibility that the U. S. Public Health Service may need the hospital for its war risk insurance work. This phase of the situation will be looked into by Dr. Finney and his committee. In the event that the Fort McHenry Hospital is acquired by the city, Sydenham Hospital, the city hospital for infectious diseases, will probably be put to other use.

MASSACHUSETTS

Animal Tuberculosis.—At the request of the mayor, of the director of public health and charities and other officials of Lawrence, Dr. E. A. Crossman of the Bureau of Animal Industry, Department of Agriculture, delivered an address, February 25, before the citizens of Lawrence and vicinity on "The Tuberculous Cow, a Menace to Public Health."

Personal.—Dr. George Forrest Martin, Lowell, has been nominated as a trustee of the state infirmary, succeeding Leonard Huntress, deceased.——Dr. William Hall Coon, Haverhill, has accepted a position of health commissioner in Bridgeport, Conn.——Dr. Otis P. Mudge has been elected a member of the board of health of Amesbury.

MICHIGAN

Hospital Burns.—The Red Cross Emergency Hospital at Mount Pleasant was recently destroyed by fire.

Medical Building Association Organized.—Twenty-five physicians and dentists of Flint have incorporated the Flint Medical Building Association for the purpose of erecting a six-story building to be devoted exclusively to the use of members of these professions.

Personal.—Dr. Mary J. Erickson, Newberry, has been placed in charge of the research work of the Iowa state board of health under the recent appropriation of the federal government for investigation in the field of venereal disease and has commenced her work at the University of Iowa, Iowa City.——Dr. Herbert L. Wright, city health director of Lansing, has resigned, his resignation to take effect March 15. He has been appointed director of a department of the state board of health of Texas, with headquarters at Austin.

MINNESOTA

Personal.—Dr. Charles H. Mayo, Rochester, has been elected an honorary fellow of the Royal College of Surgeons, England.——Prof. Frank C. Whitmore of the University of Minnesota has succeeded Prof. Harry A. Curtis as professor of organic chemistry in Northwestern University, Evanston, Ill.

MISSOURI

Dinner to Dr. Bowen.—The roentgenologists of St. Louis gave a dinner, March 23, in honor of Dr. Charles F. Bowen, Columbus, Ohio.

Health Center for Women.—Dr. Eva M. Blake, New York City, arrived in St. Joseph, March 8, and spent a week in cooperation with the Y. W. C. A. in establishing a health center for women. Public meetings of women of all ages were held during the week and intensive health work was done.

Salary Increase.—Taking advantage of an act of the last legislature conferring authority on the governor and state auditor, these officials have increased the salaries of the superintendents of state insane hospitals $50 a month, and have extended the same increase to the superintendents of the State Sanitarium for the Treatment of Incipient Tuberculosis, Mount Vernon, and the superintendent of the Missouri Colony for Feebleminded and Epileptics, at Marshall. The physicians at these institutions will also have an increase in salary of $300 a year.

Personal.—Dr. Eugene Lee Myers, formerly professor of otorhinolaryngology at the St. Louis College of Physicians and Surgeons, is no longer connected with that school.——Dr. Ulysses F. Kerr, Springfield, has been appointed deputy commissioner of health of Greene County.——Dr. Edward E. Mansur, Jefferson City, was operated on, February 21, at St. Mary's Hospital for appendicitis and has made a good recovery.——Dr. Frederick E. Woodruff, St. Louis, has been appointed chairman, and Dr. John Green, Jr., St. Louis, secretary of the consulting staff of oculists of the Missouri Council for the Blind.——Dr. Walter J. Hansen, St. Joseph, formerly county physician of Buchanan County has been appointed deputy state health commissioner.——Dr. G. Canby Robinson, dean of Washington University Medical School, St. Louis, has resigned to accept the position of dean and professor of medicine in Vanderbilt University, Nashville, Tenn.

NEW YORK

State May Buy Radium.—A bill known as the Gibbs bill is before the legislature which authorizes an appropriation of $250,000 for the purchase of 100 grains of radium. It is understood that the state finance committee will recommend this purchase. The radium will be for use in the State Institute for the Study of Malignant Disease, Buffalo.

Health Insurance Bill in Legislature.—Senator Frederick M. Davenport, Oneida, recently introduced a health insurance and public welfare bill into the legislature. In introducing the bill Senator Davenport said he would not urge its adoption at this session until "the hidden and selfish purpose behind the organized and powerful propagandism and lobbying of certain purely business groups opposed to health insurance could be disclosed." He believes that at present an honest opinion on the merits of the principle cannot be obtained inside the realm of industry. The bill now introduced is somewhat less wide in its scope than that of last year and applies to those employed persons who are defined as industrial workers under the existing workmen's compensation act. Senator Davenport asserts that this bill is not state insurance at all and that there is no state fund.

New York City

Encephalitis Epidemic.—Since January 1, about 175 cases of encephalitis lethargica have been reported in New York. This apparently followed the influenza epidemic and has caused forty deaths since the beginning of the year.

Harvey Society Lecture.—The eighth of the series of Harvey Society Lectures given by Dr. William McKim Marriott, professor of pediatrics in Washington University, St. Louis, at the New York Academy of Medicine, March 27, is on "Some Phases of the Pathology of Nutrition in Infancy."

Department of Public Charities Changes Name.—Mayor Hylan has approved the bill recently passed by the legislature amending the city charter so that the department of public charities hereafter will be known as the department of public welfare. The reason for this is that the name "public charities" had come to be a burden to the department. Commissioner Coler of this department announces that, owing to the influence of prosperity, prohibition and wood alcohol, the maintenance of the municipal lodging house is no longer necessary.

Nightingale Centennial.—Among the features of the celebration to commemorate the hundredth anniversary of the birth of Florence Nightingale will be the inauguration of a campaign to recruit 30,000 young women in training schools for nurses and the award of a prize of $500 for the best three act play by an American author based on incidents in the life of Florence Nightingale. Pageants, public meetings, and formal ceremonies will be held on the anniversary date, May 12, in which nursing organizations, women's clubs and colleges will cooperate.

NORTH CAROLINA

Personal.—Dr. John M. Manning, Durham, has been appointed state medical examiner for the Modern Woodmen of America.

State Society Meeting.—The annual meeting of the Medical Society of the State of North Carolina will be held in Charlotte, April 20 to 22, under the presidency of Dr. John P. Munroe, Charlotte.——The North Carolina Hospital Association will hold its annual meeting in Charlotte, April 19.

County Hospitals Advocated.—The bulletin of the University of North Carolina in a recent issue carries a report to the university club strongly advocating a system of county hospitals owned and operated at public expense as a statewide system, logically urging that only by public support through systematic taxation can the hospitals be freed from the everlasting grind and strain for funds adequate for maintenance, and also that only by such a system can all the people and property be caused to carry their proper burden of the care of the sick.

OHIO

Hospital Donated to Town.—Charles F. Kettering, a millionaire inventor and manufacturer of Dayton, has donated a hospital to Loudenville.

Hospital Plans Approved.—The city council of Youngstown, March 1, approved the original plans of the Youngstown Municipal Hospital to cost $620,000.

Scarlet Fever in Cleveland.—Dr. Harry L. Rockwood, city health commissioner of Cleveland, announces that there are about 400 cases of scarlet fever scattered about the city, and that the disease is epidemic in the state and especially in Cincinnati, Columbus and Toledo.

Fires in Epileptic Hospital.—A fire, March 9, destroyed one cottage and the dancing pavilion of the Ohio Hospital for Epileptics, Gallipolis. Eight patients are dead and two, who were injured, are expected to die. Twenty-five patients were in the cottage at the time. March 10, the hospital was again set on fire. No clew to the incendiary has been found.

Health Commissioners Organize.—A permanent organization of the county health commissioners of the northern district of Ohio was made at a meeting held in Canton, March 10, at which ten of the thirteen counties of the district were represented. Dr. K. N. Schwartz, Lisbon, was made president of the new organization and Dr. Chester M. Peters, Canton, secretary. The association will meet once a month.

Academy Activities.—March 5, Dr. George Walker, Baltimore, formerly colonel, Urological Division, M. C., U. S. Army, delivered an address before the Academy of Medicine in Cleveland on "Abolition of Venereal Disease by Medicinal Prophylaxis."——February 20, Dr. Carl A. Hedblom, Rochester, of the surgical division of the Mayo Clinic, Rochester, delivered an address on "Treatment of Chronic Empyema."——At the March 19 meeting of the academy, Dr. Harry G. Sloan, Cleveland, spoke on "Gas Cysts of the Intestine," and Dr. John Phillips, Cleveland, on "The Effort Syndrome."

Personal.—Dr. Roy L. Pierce, Mount Gilead, has resigned as health commissioner of Morrow County, as no funds were available to carry on the work.——Dr. John H. Elias, Murray City, has been elected health commissioner of Hocking County.——The home of Dr. Paul J. Hanzlik, Cleveland, assistant professor of pharmacology in Western Reserve University was entirely destroyed by fire, February 11. Dr. Hanzlik and his wife sustained burns and other injuries from which they are recovering.——Dr. Presley C. Ramsey, Alliance, has been appointed city health commissioner. ——Dr. Charles R. Keyser, Van Wert, has been elected health commissioner of Van Wert County.——Dr. William L. Dick, Columbus, will continue as acting city health officer and medical inspector of Columbus.——Dr. John T. McVey of the staff of the Ohio Hospital for Epileptics, Gallipolis, has been made a member of the staff of the Massillon State Hospital.——Dr. Roy K. Evans, McGuffey, has been selected health commissioner of Hardin County.——Dr. H. H. Pansing, Miamisburg, has been appointed health commissioner of Montgomery County.

OKLAHOMA

Shortage of Physicians.—Dr. Arthur A. Lewis, Oklahoma, state health commissioner, reports a serious shortage of physicians in the small towns in Oklahoma.

Personal.—Dr. James S. McFadin, Hollis, was struck and injured by a cab, March 3.——Dr. Virgil Berry, a pioneer practitioner of Okmulgee, announces his retirement from active practice.——Dr. William A. T. Robertson has been elected president of the Ponca City Medical Association.

Hospital Unveils Tablet.—The Sisters of St. Francis of St. Anthony's Hospital at Oklahoma City have recently unveiled a bronze tablet in memory or Major Robert Lord Hull and Capt. Frank Bruner Sorgatz, both of whom lost their lives in the military service during the influenza epidemic last winter.

PENNSYLVANIA

Personal.—Dr. Iden M. Portser, Greensburg, has resigned as a member of the state board of health.

State Health Organization Planned.—William J. Crookston, Pittsburgh, associate chief medical inspector of the department of health, outlined a plan at a recent conference of the field force of the department, whereby the state will be organized by counties for health education and preventive work and emergency service.

Physicians Indicted.—Dr. J. Newhall Kirk, Philadelphia, directing head of the "Associated Doctors," and two other physicians, Dr. Guy V. Payne and Dr. Grant F. Hartzell, are reported to have been indicted, January 27, charged with conspiracy to defraud. Dr. Payne is reported to have been indicted also for practicing medicine in Maryland without a license. The report states that Dr. Kirk is accused also by the Philadelphia authorities of violating the Pennsylvania law prohibiting the advertisement of cures and treatment for specific diseases and that on this charge he was held in $5,000 bail.

Philadelphia

Personal.—Dr. Lawrence F. Flick was awarded the Laetare medal for 1920 by the University of Notre Dame, Ind., March 13. The honor is regarded as one of the highest that can be conferred on any Catholic layman in America and is for "distinctive service in behalf of God, church and country." ——Dr. Thomas A. Shallow, chief physician of the medical department of the municipal court, will hereafter sit with the judge to give the benefit of an expert medical opinion at the regular Wednesday juvenile court hearings.

Medical Co-Eds Opposed.—On the ground that valuable parts of the courses have to be omitted lest they offend the sensibilities of the women, students and professors at the Medical School of the University of Pennsylvania are demanding the exclusion of co-eds from medical class rooms. A petition presented to Provost Smith and Dean Pepper has been referred to the board of trustees for action. The students and some of their instructors say women who desire to study medicine should go to a women's medical college.

UTAH

Personal.—Dr. James M. Elliott has been named as sanitary inspector and member of the board of health of Ogden, succeeding Mr. George Shorten.——Dr. Willard Christopherson has succeeded Dr. Samuel G. Paul as head of the city board of health of Salt Lake City.

VIRGINIA

Personal.—Dr. William F. Reasner, Portsmouth, who has served as health director of Norfolk County, has gone to Minneapolis to become assistant director of the health department of that city.——Dr. C. Curtis Hudson, Richmond, has been appointed chief health officer for Richmond.

Surgeon at Penitentiary.—The house committee on prisons and asylums has reported favorably a bill providing for a surgeon-general at the state penitentiary with a salary of $3,000 a year, whose time is to be devoted entirely to prison work. He will exercise supervision over all surgical and medical work at the state prison, state farm and convict road camps.

Health Campaign Opened.—Halifax County last month launched a twelve-month sanitation unit under the charge of Dr. Walter A. Newman as field director. One half the expense of this work will be borne by the county and the remainder jointly by the state department of health and the international health board.——The result of the year of intensive health work just closed in Fairfax County has been so successful that the county has determined to continue the work at its own expense and has appointed Dr. Edward L. Flanagan, Fairfax, to continue as field director.——Albemarle County is preparing for a similar health crusade.

CANADA

Personal.—Dr. Arthur Doull, Halifax, D.P.H., has been appointed provincial inspector of health for Nova Scotia.—— Dr. Allan C. Rankin, Edmonton, director of laboratories of the provincial department of health, Alberta, has been made dean of the medical faculty of the University of Alberta, Edmonton, Alta.——Dr. John J. Ower, Montreal, has been appointed professor of pathology in the medical faculty of the University of Alberta.——Dr. Arthur C. Jost, Guysborough, has been appointed provincial medical officer of health for the eastern health division of Nova Scotia.——Dr. John P. Brown, Toronto, D.P.H., has received an appointment in the dominion government quarantine service and has been assigned to duty at the quarantine station, St. John, N. B.

GENERAL

Anesthetists to Meet in New Orleans.—The American Association of Anesthetists will hold its eighth annual meeting at the Hotel Grunewald, New Orleans, April 26 and 27, under the presidency of Dr. Albert H. Miller, Providence, R. I. The annual dinner will be held on the evening of April 26.

Proctologists to Meet.—The twenty-first annual meeting of the American Proctologic Society will be held in Memphis, Tenn., April 22 and 23, under the presidency of Dr. Collier F. Martin, Philadelphia. The society will be the guest of Dr. John L. Jelks, and of the Memphis and Shelby Medical Society, with headquarters at the Hotel Gayoso.

Medical Intern Wanted.—The United States Civil Service Commission announces that an open competitive examination will be held for the position of medical intern in St. Elizabeth's Hospital, Washington, D. C., with a salary of $1,200 a year and maintenance. Appointees whose services are satisfactory may be allowed a temporary increase of $20 a month, granted by Congress.

Biography of Sir William Osler.—Dr. Harvey Cushing, Peter Bent Brigham Hospital, Boston, has been requested by Lady Osler to prepare a biography of Sir William Osler. He will be grateful to any one who will send him either letters or copies of letters, or personal reminiscences, or information concerning others who might supply such information. It is requested that a copy of all letters, no matter how brief, be sent, and that the dates be supplied whenever possible. If originals are forwarded they will be promptly returned by Dr. Cushing.

Coal Mine Fatalities.—Complete report of fatal accidents in coal mines during 1919 indicates a reduction of 273 fatalities, or 10.58 per cent., as compared with 1918, according to a statement issued by the United States Bureau of Mines. The decrease was noted mainly in accidents from mine cars and locomotives and in surface accidents, while increases are recorded in accidents due to gas and dust explosions and also explosives. While the actual number of deaths is con-

siderably less than in 1918, the ratio on the basis of tons of coal mined and number of working days is slightly higher.

Anesthesia Research. — At the meeting of the board of governors of the National Anesthesia Research Society held in Cleveland this month, it was voted that the annual convention of the society be held at Pittsburgh during the week of October 4, in conjunction with the meeting of the Interstate Anesthesia Association and the Medical Society of the State of Pennsylvania. The governors voted $200 to be apportioned in prizes for the best papers on research in anesthesia, and a committee was also appointed to prepare forms for uniform anesthesia charts.

Fraternity Favors Public Health and Sanitation Department.—At the recent convention of the Alpha Kappa Kappa Medical Fraternity, at Chicago, the following resolution was passed:

Whereas: The various industries, professions and labor of these United States have received official recognition, by the establishment of representatives in the President's cabinet: and

Whereas, The medical profession is not in any way recognized as a whole, but considered a part of the various departments; be it therefore:

Resolved, That the twentieth convention of Alpha Kappa Kappa Medical Fraternity does go on record as being in favor of the creation of a department of public health and sanitation, with a representative on the President's cabinet. Be it further:

Resolved, That a copy of this resolution be sent to the President of the United States, and the President of the American Medical Association.

Bequests and Donations.—The following bequests and donations have recently been announced:

Presbyterian Hospital, Chicago, and Evanston, Ill., Hospital, each $25,000 by the will of Frank H. Armstrong.

Presbyterian Hospital and New York Hospital, New York City, each at least one million dollars by the will of Charles D. Thompson.

Middlesex Hospital Medical School, London, $100,000 for the endowment of a chair of physics by Messrs. J. B. and S. B. Joel.

Presbyterian Hospital, Philadelphia, $40,000 for the endowment of a bed available after the death of his mother and two sisters, by the will of Robert Wilson.

Howard University, Washington, D. C., a gift of $250,000 for endowment fund by the Rockefeller Foundation.

Milwaukee Associated Charities, Milwaukee Children's Hospital, and Marquette University, Free Medical Dispensary, Milwaukee, each one third of the annual cash income of $10,868 from the estate of Helene M. Cudahy.

Vanderbilt Clinic of the College of Physicians and Surgeons and Presbyterian Hospital, Tuberculosis Clinic, New York City, each $9,000; New York Association for Improving the Condition of the Poor,—Home Hospital, New York City, $8,000; Loomis, N. Y., Sanatorium, and Trudeau, N. Y., Sanatorium, each $3,000; Stonywald Sanatorium, Lake Kushaqua, N. Y., $2,000; Hospital and House of Rest for Consumptives, Inwood, N. Y., $1,000, and Henry Street Settlement for Tuberculosis Nursing, New York City, $500, donations made at the annual meeting of the trustees of the East River Homes Foundation.

FOREIGN

Personal.—Prof. Hugo Fuchs, professor of anatomy at the University of Königsberg, has been transferred to the University of Göttingen, succeeding Professor Merkel.

Honorary Degree Conferred on Hoover.—The University of Cracow, Poland, has conferred the honorary degree of Doctor of Medicine on Mr. Herbert Hoover for services rendered to Poland.

Osler Institute to Be Established.—At a public meeting held March 7, at Oxford University, it was decided to establish the Osler Institute of General Pathology and Preventive Medicine as a permanent memorial to the late Sir William Osler.

Appropriation for East African Hospital.—The United States consul at Lourenco Marques, Portuguese East Africa, reports that the local government has authorized a special loan of $194,660 for electrotherapy, hydrotherapy and radiotherapy at the Hospital Miguel Bombarda of that city.

Second Centennial of Death of Lancisi.—A meeting in honor of the memory of the Italian physician and anatomist, G. M. Lancisi, who died in 1720, was held recently at Rome in the Lancisi library. Senator Marchiafava delivered the main address. Professor Lancisi is known by the nerve of Lancisi and his numerous published works, including the history of five great epidemics in Italy.

Seeks Relief for Germans.—Dr. O. Edward Janney, Baltimore, representing the American Friends Service Committee for the relief of suffering children in Germany is organizing citizens' relief committees to raise money for this work. One million dollars worth of supplies have already been sent to Germany by the committee and in the next three months $12,000,000 will be needed. The committee has already thirty relief workers in Germany.

Red Cross in Charge in Esthonia.—The American Red Cross Commission at Reval, Esthonia, has been invested with authority to take any measures, political or economic, to stamp out the epidemic of typhus fever raging there, to put the country under strict quarantine, to interdict travel and to enforce any other measures which may be deemed necessary by Lieut.-Col. Edward J. Ryan, chief of the commission.

Practice in Norway.—The *Deutsche medizinische Wochenschrift* states that the medical faculty of the University of Christiania has recommended that foreign physicians be allowed to practice in Norway provided that they locate at points where there is a pressing demand for physicians. The journal adds, "This seems to indicate that there is a scarcity of medical men in the rural districts of Norway."

Death of Morelli.—Prof. Enrico Morelli of Rome, who with Baccelli and Durante founded the *Policlinico* twenty-seven years ago, died February 13. He gave up most of his practice and his teaching to devote his energies to this leading medical journal which has always taken a high stand in science and in promoting the best interests of the profession. He was editor and manager both of the weekly practical section and of the monthly medical and surgical sections.

LATIN AMERICA

Influenza in Mexico.—The authorities announce that the influenza epidemic has come to an end. The number of deaths this year was 1,649, while last year there were more than 3,000.

Department of Health in Santo Domingo.—According to a measure approved by the military authorities, a department of public health and charities has been created in Santo Domingo to have complete charge of these matters.

Encephalitis Lethargica in Mexico.—There has been a case of encephalitis lethargica in Mexico City. The patient was taken as insane to the asylum, where the diagnosis was made. Other cases have occurred at Monterey and Laredo.

Sanitation Works in Peru.—A bill now pending in the Peruvian senate empowers the president to enter into contracts for the execution of the work necessary to provide Lima and thirty other cities with safe water, drainage, garbage disposal works, etc. The improvements contemplated involve an expenditure of several millions of dollars.

Quarantine Station in Colombia.—A recent law appropriates 30,000 pesos for the construction of a quarantine station and a hospital in the port of Riohacha. Eight thousand pesos are also provided to build a water works system, and an annual appropriation of 5,000 pesos for each milk station that may be established in the capitals of any of the different departments.

New Medical Journal in Central America.—Under the editorship of Dr. Rodolfo Espino, there has been founded in Managua, Nicaragua, a new medical journal, entitled *Revista de la Asociación Médica Centroamericana.* Its avowed purpose is to promote the union of the medical profession of the five Central American countries, and a medical congress, which will be held, Sept. 15, 1921, on the anniversary of the independence of the five republics.

Deaths in the Profession.—Dr. **Manuel Pérez,** director general of the public health service of Paraguay, delegate to various international medical congresses, and professor in the medical school at Asunción while it existed, aged 39.——Dr. **F. C. de Sá Ferreira,** the dean of the psychiatrists in charge of the insane of the Rio de Janeiro district, aged 77.——Dr. **Antonieta Dias Morpurgo,** a leading woman physician and pediatrist of Rio de Janeiro, aged 49.——Dr. **G. A. de Carvalho,** also of Rio, aged 70.

Personal.—Dr. Bernardo Etchepary, a prominent physician of Uruguay, who came to this country to conduct scientific studies on behalf of the Board of Health of Uruguay, has returned to his country, accompanied by his wife and son. While here, Dr. Etchepary visited the most important eastern cities.——Prof. P. Pereira, professor of histology at the University of Bahia and director of the *Gazeta Medica da Bahia,* was recently elected honorary member of the Academia Nacional de Medicina, on the fifty-third anniversary of his entering on his professional career.——Dr. J. Moreira da Fonseca of Rio de Janeiro was elected by the same Academia to the post left vacant by the death of Dr. Miguel Pereira. His address was on suprarenal insufficiency in influenza.

Government Services

Aeroplane Ambulances

Orders have been received to redesign and construct four DH-4 aeroplanes into models for ambulance purposes. Each machine will have accommodation for pilot, and two patients set in ship horizontally on Stokes Navy litters.

Health Conditions in the Army

The health of the troops continues excellent. A few cases of influenza appear, but in decreasing numbers. Measles is increasing in a few stations, twenty-two cases being reported from Camp Upton and fifteen new cases from Camp Knox. The admission and noneffective rates are as low as expected under normal conditions. Health conditions among troops in Germany and Siberia remain about the same.

Construction Work in Hospitals

In House Bill 8819, signed by the President, February 28, which provides for the purchase of property and certain construction for military purposes there appears a clause that "no provision contained in army appropriation act for June 11, 1919, be deemed or construed to prohibit the expenditure of the appropriation of $350,000 made therein for the purchase of land contiguous to the Walter Reed General Hospital, 26.9 acres more or less, and the acquisition of so much of said acreage for the amount appropriated as the Secretary of War in his discretion may deem to be in the public interest."

Citation for Service

Col. Charles F. Morse, M. C., U. S. Army, has been awarded the Distinguished Service Cross for exceptional meritorious and distinguished services "as director of the veterinary corps, by displaying exceptional energy, zeal and good judgment he organized and administered with marked success a veterinary service capable of meeting every need in home territory and in the theater of operations. He provided effective means for the treatment of sick and wounded animals and for the prevention of disease among well animals, for the inspection of meat and dairy products used by the army, and, through establishment of schools of instruction, placed the personnel of the veterinary corps of the Army on a high plane of efficiency."

Citations by King for Medical Corps

The king of England has ordered certificates issued in the following form to Cols. Christopher C. Collins; George W. Crile, Cleveland; Harvey Cushing, Boston; Mathew A. DeLaney; Robert U. Patterson; Harry L. Gilchrist; James D. Fife; Richard H. Harte, Philadelphia, and Lieut.-Col. Lucius L. Hopwood, M. C., U. S. Army, and to Miss Julia Stimson, superintendent of the nurses of the Medical Department, U. S. Army:

The war of 1914-1918. U. S. Army Medical Corps (name of recipient) was mentioned in a despatch from Field Marshal Sir Douglas Haig, K.T.G.C.B., G.C.V.C., K.C.T.E., dated Nov. 7, 1917, for gallant and distinguished services in the field. I have it in command from the king to record his majesty's high appreciation of the services rendered.

WINSTON S. CHURCHILL, Secretary of State for War.

War Office, Whitehall, R. W., March 1, 1919.

Medical Officers Under New Army Bill

According to the *Army and Navy Register* the Army reorganization bill, as it passed the House, contained a provision in the matter of promotion from a single list which, unless amended, would practically destroy the medical department. "In bringing medical officers into the single list for the purpose of equalizing promotion, which is the purpose of this new method of advancement, officers of the medical corps are placed on the list immediately below other officers of two years' longer service. This concession in the way of constructive service is altogether inadequate," says the *Register*, "and can only have a detrimental effect upon medical corps personnel. The provision in the Senate bill on Army reorganization, on which measure no action has been taken beyond reporting it from the military committee, is much more satisfactory and it is probable that when the two rival measures get into conference the Senate provision will be agreed upon, inasmuch as Messrs. Kahn and Anthony of the House military committee, who will be members of the conference, have given assurance that the defects in this respect in the House bill will be corrected."

Increased Appropriation Asked for Public Health Service

The Secretary of the Treasury, D. F. Houston, in a formal letter to Congress has asked that the appropriation for the Public Health Service for the fiscal year 1921 be increased from $8,000,000 to $10,000,000. The reasons set forth for this increased expenditure are stated in the following letter of the acting Surgeon-General addressed to the Secretary of the Treasury.

Sir:—I have the honor to request that a letter be sent to the Speaker of the House of Representatives, asking that the estimate for appropriation for medical, surgical, and hospital services and supplies for war-risk insurance patients and other beneficiaries of the Public Health Service, etc., for the fiscal year 1921 be increased from $8,000,000 to $10,000,000.

The estimate for $8,000,000 was made last August by the Surgeon-General and at that time it was thought it would be sufficient for the purpose, but since that time the number of patients has greatly increased and it has been found necessary to ask Congress for $10,000,000 to take care of this increased number of patients during the present fiscal year. The sum of $6,000,000 has already been appropriated, and the second urgency deficiency bill contains an item for the provision of an additional $4,000,000. There was a deficiency of $246,000 on Feb. 1, 1920, so that the whole of this additional $4,000,000 will undoubtedly be needed.

In view of the above fact, I ask that Congress be requested to grant this additional $2,000,000, in order that the sick and disabled discharged persons from the military and naval forces may be given proper care and treatment during the fiscal year 1921.

Respectfully,

J. C. PERRY,
Acting Surgeon-General, U. S. Public Health Service.

MEDICAL OFFICERS, U. S. NAVY, RELIEVED FROM ACTIVE DUTY

CALIFORNIA
San Leandro—Leahy, W. R.

ILLINOIS
Chicago—Soloway, S. S.

KANSAS
Wichita—Hazzard, L. R.

MARYLAND
Annapolis—Frank, J. R.

MICHIGAN
Alto—Reese, J. A.
Grand Rapids—Corey, P. V.

NEW MEXICO
Albuquerque—Davis, C. C.

NEW YORK
Brooklyn—Skeer, J.
New Brighton—Robillard, G. L.

SOUTH CAROLINA
Greenwood—Burnett, A. D.

VIRGINIA
Norfolk—Frothingham, E.
Richmond—Denton, A. L.
Simpson, W. A.
Williams, E. G.

Foreign Correspondence

PARIS

March 4, 1920.

Meeting of French Medical Journalists

The general meeting of the Association professionnelle des journalistes médicaux français was held recently at the Faculté de médecine de Paris under the presidency of Dr. Doumer, professor at the Faculté de médecine de Lille.

After the reading of the reports of the general secretary and treasurer, the assembly adopted the following code of ethics: 1. The members of the association shall afford each other mutual aid. 2. No members of the association shall agree to do the work of a colleague for less money than such colleague received. 3. A member of the association shall not accept the position of a colleague without having first informed such colleague and having learned the latter's reasons for leaving the position. 4. If a member of the association is appointed managing editor of a journal, or is requested to choose the members of the editorial staff, he shall give preference to the members of the association. 5. If the relative merit of articles by members of the association is the same as that of others, preference should be given to members of the association in the matter of abstracts and personal mention. 6. Members of the association will mention, whenever possible, the works of the association and of its individual members, and the events concerning the members of the association, in the journals on which they col-

laborate. 7. Every case at law between two members of the association shall be first taken up and discussed by the family council of the association before it is brought before any other jurisdiction. 8. In the case of litigation of a professional nature between a member of the association and an outsider, the association shall examine into the cause, and if it shall recognize the justice of its member's case, it shall give him its moral support, and, if the circumstances seem to warrant it, such financial assistance as may seem proper; and if it shall decide on such a course it shall hold a special meeting to decide what aid shall be given the members in question. 9. The foregoing articles must be accepted by every applicant for membership in the association.

The Crowded Condition of Paris Hospitals

During the war, the mobilization of a large number of physicians made it necessary for many people to have recourse to the hospital who could otherwise have been cared for at home. This circumstance gave them an opportunity of discovering that the hospitals, from the standpoint of medical skill, care and hygiene, offered all that could be expected. All classes of Paris society thus came in contact with the consultation service afforded by the hospitals. They learned that in the hospital one is better cared for than anywhere else, and also that such care does not cost them a sou. Consequently, they have continued to rely on the hospital, and the deplorable result has been that there is no longer sufficient room in the hospitals for the really needy.

The maternity hospitals are especially crowded. In order to remedy this condition, the prefect of the department of the Seine has adopted a series of measures with the view of giving special aid to women who will consent to be confined at home, such as the assumption by charitable organizations of the fee charged by midwives and the fixing of the ordinary medical fee at 20 francs a visit. Furthermore, M. Mesureur, director of the Assistance publique, has announced that he has been able to provide 300 more beds for confinement cases.

Number of Wounded Still Under Treatment in the Military Hospitals

In reply to a request for information received from a member of the Chamber of Deputies, the minister of war states that the number of demobilized wounded soldiers and sailors still under treatment in the military hospitals, under date of Jan. 15, 1920, was 7,133.

Measures to Promote an Increase in the Birth Rate

Adolphe Chéron, deputy of the department of the Seine, has presented a bill which is intended to promote an increase in the birth rate. Among the measures proposed I may mention the surveillance of lying-in hospitals; the repression of abortion and birth control, relieving physicians and midwives, under certain circumstances, from the obligations of professional secrecy, and aid to large-sized families.

Reorganization of Night Medical Service

In a previous letter (THE JOURNAL, March 20, 1920, p. 815), I referred to the reorganization of night medical service in Paris. The Syndicat des médecins of the department of the Seine, which had offered to take part in the competitive examination held in connection with the reorganization of this service, is protesting vigorously because the proffered collaboration of the Syndicat was systematically ignored by the administration.

Typhus Fever in Paris

A slight epidemic of typhus fever has been reported in the Saint-Sulpice seminary, where refugees have been lodged; among others, a number of Polish workmen. The epidemic seems now to have been brought to an end. The Assistance publique has given instructions that delousing in the hospitals shall be done with great care. In this connection, Senator Gaudin has asked the minister of hygiene what measures have been taken to protect France against typhus fever, which is raging in Poland and the Ukraine. The minister of hygiene has replied that, according to the most recent information, there is no epidemic of typhus fever in the countries of central Europe immediately contiguous to our borders. There were a few sporadic cases in Germany, but this did not constitute a menace to us. In Poland, however, it was true that an epidemic existed. There was danger of its being brought to France by emigrant Polish workmen if strict measures to prevent it were not taken. Besides the prophylactic measures taken in Poland when the workmen leave there, vigorous sanitary measures are carried out by the bureau of immigration when they arrive in Toul, which is especially, or one may say, exclusively, affected by Polish immigration. Owing to an understanding reached by the civil and military sanitary authorities, the bureau of immigration at Toul is abundantly provided with the necessary sanitary apparatus. The prophylactic measures taken consist of a medical examination, vaccination, shower baths, disinfestation, disinfection, and isolation of suspects.

Increase in Medical Fees

Owing to the increased cost of living, medical fees in Paris have been doubled. The Syndicat médical of Montpellier has gone even further and has decided to triple former rates, the fee for a simple office consultation being 15 francs; emergency calls or consultations on Sundays and holidays, 30 francs; night calls, 50 francs; special distance charge, 3 francs per kilometer. The foregoing rates represent the ordinary charges and do not affect famous consulting physicians nor specialists.

LONDON

Feb. 28, 1920.

Incidence of Influenza

The Ministry of Health has issued a long circular on influenza, stating that the disease is epidemic in many large American cities, but the proportion of severe or fatal cases is smaller than in 1918-1919. Our vital statistics show a slight increase, but the increments are so small and the uncertainty of classification so great that no unfavorable inferences can be drawn from these fluctuations. Notified pneumonia has increased, but here again it is not possible to say how much of this may be due to seasonal variations. There are no indications of epidemic influenza in factories, but some large schools in southern and southwestern England are affected. The disease is epidemic in a few localized communities, and the type is similar but less severe than that of 1918-1919. There is no evidence of a pandemic comparable to that occurring in America and certain parts of Europe. The ministry again draws attention to the warning previously given and the measures advised (as referred to in previous letters).

Reconstructing the Army

Many bitter complaints have been made of the obstruction to urgently required reforms offered by the higher command of the army, perhaps the most conservative body among a conservative people. But, above all, we are practical, and can learn in the dear school of experience. So the reformers had their way in the end, and the British army became as perfect and as modern a fighting machine as it was possible to make. There is now no backwardness in profiting by the lessons of the war. The war office has issued a memorandum showing how these have been applied in every branch of the service. The prewar establishment of officers of the medical corps was 1,068. On the date of the armistice the strength of officers was 14,461, and in addition 1,524 civil physicians were employed. There are at present employed 3,338 officers and 322 civil physicians, and this number is continually being reduced in conformity with the reduction in hospital population. The prewar establishment of other ranks was 3,895. The strength of warrant officers, noncommissioned officers and men of the medical corps on the date of the armistice was 131,361. This number was supplemented by the employment of 18,660 voluntary aid detachment, general service women in hospitals, and other formations in the United Kingdom, while large numbers of such women were also employed in France, Saloniki and Malta. The strength of other ranks, Feb. 8, 1920, was 18,412. There were in addition, employed in hospitals, etc., in the United Kingdom 4,771 voluntary aid detachment, general service women. Considerable numbers of the latter are still being employed in the Rhine army, Black Sea, and Malta. The medical section of the territorial army will be reorganized on its prewar basis, with such additions and alterations as the war has shown to be necessary.

DENTAL CORPS

Sound teeth in the soldier are of prime importance. An army dentally fit will have reduced rates of sickness and invaliding. A proposal has therefore been put forward for the formation of a dental corps to consist of 110 officers and 132 of other ranks (mechanics and orderlies) for which it is hoped approval will be obtained.

PATHOLOGY AND HYGIENE

New directorates of hygiene and pathology have been established within the army medical department, each with a director and deputy at headquarters, and assistants and deputy assistants in the important commands and districts at

home and abroad. It will now be possible for officers who have devoted their professional lives to the study and practice of these highly technical subjects to continue to work in them throughout their service, instead of, as has hitherto been the case, having to abandon them to take up ordinary administrative duties on attaining a certain seniority. Promotion to the highest rank is now open to such specialists.

VACCINE DEPARTMENT AT THE ARMY MEDICAL COLLEGE

The work of the vaccine department during the war developed enormously. More than 33,000,000 doses of vaccines against typhoid, cholera, dysentery and other conditions were prepared during the last five years and dispatched for the use of troops serving in all parts of the world. Among our great armies in France, from the beginning of the war till the end of 1918, there were only 7,423 cases of typhoid and paratyphoid, with 266 deaths. In the much smaller Boer War there were 57,684 cases, with 8,022 deaths. In the French army, before it was fully protected by inoculation, there were, from the commencement of hostilities till the end of October, 1915, 95,809 cases, with 11,690 deaths. Subsequent to that period their figures are more comparable with our own. Recent German statistics of mortality in their armies during the war mention 7,751 deaths from typhoid.

HOSPITAL ACCOMMODATION IN THE UNITED KINGDOM

The total number of beds of all kinds at the armistice was 364,133; Feb. 6, 1920, 43,497; the number closed since the armistice has been 320,636. The numbers in hospitals in the United Kingdom at the time of the armistice were 316,000; May 1, 1919, 112,000; Feb. 1, 1920, 28,000. At the time of the armistice there were also 8,619 patients on special leave, and 4,648 in billets. These were slightly ill or convalescing patients who were disposed of in this way owing to the pressure on the hospital accommodation.

CHEMICAL WARFARE

We must unfortunately continue our studies of what is known as chemical warfare. No nation has renounced the use of poison gases as the result of the peace conference. There are nations whose word we could not respect if they did renounce it. It is essential to study the offensive side of chemical warfare if we are to be prepared for defense. The great importance of adequate defensive appliances arises from the fact that preparations for the offensive use of gas can be made in peace time with great secrecy, and may have far reaching and even fatal results in the early stages of war.

Eugenics

At the Galton anniversary, Arthur Keith delivered the lecture. He said that while Charles Darwin, who was Galton's cousin, and those who championed the cause of evolution turned their attention to unveiling man's past, Sir Francis Galton devoted his life and genius to discover how the machinery of evolution which had raised man to his present estate could be used for his further advancement. Galton discovered the ladder whereby, if a nation were so minded, it could climb to a higher estate of both mind and body. The rungs of that ladder he fashioned out of the laws of heredity. Under nature's conditions, and amid the circumstances of modern life, we tried to climb blindly, and we stumbled, fell and suffered. Galton showed that the ascent could be made sure, easy and merciful. In his earlier days he was, perhaps, inclined to invoke the aid of the state and to resort to compulsory measures; but, as his knowledge grew and his experience ripened, he realized that mere artifices invented by statesmen could affect only the stragglers on the ladder—the main mass of the nation would be left untouched. The nation which would raise itself on the ladder must raise itself not piecemeal, but as a whole; every grade and section of a people must be made to move upward at the same time. Galton saw that to effect such a desirable change—one which would give the nation which adopted it an advantage over all its neighbors or rivals—the heart of the people must first be captured and a social avalanche set in motion. He was convinced that if a knowledge of his ideals, his aims and his discoveries could be made to sink into and leaven the minds of the people, the upward movement he longed to initiate would at length begin. That could be done only by education—education in the laws which govern the transmission and building up of the best qualities of the brain and body.

Removal of a Children's Hospital to the Country

The importance of country life to the sick is becoming more and more recognized. Though many hospitals maintain convalescent homes in the country, it has not happened before that a hospital has been moved bodily to the country. This has been done in the case of the Alexandria Hospital for Children with Hip Disease, an institution established in London many years ago.

Threatened Strike of Physicians

The tendency of a portion of the profession to adopt militant labor methods has been shown by the formation of the Medico-Political Union, a body registered as a trade union which, however, has not been able to attract more than a few members. Another example of the tendency has occurred in Ireland. The physicians in the Castle Comer Union have threatened to strike unless the guardians accede to their demand for increased salaries. At a large meeting of physicians in the neighboring town of Kilkenny, a resolution was passed expressing sympathy with these medical officers in their determination to cease work and refuse to attend any patient until their demands are acceded to. Medical trade unionists in England have not gone this length, for they have always explained that they have no intention of striking against the sick, but merely against working for the state when the terms are unsatisfactory, so that in case of a dispute their services would be available, though not under government arrangements.

BUENOS AIRES

Feb. 18, 1920.

Visit of Drs. Mayo and Martin

From February 4 to 8 Drs. W. J. Mayo and F. H. Martin, who came here from Chile, and went afterwards to Montevideo, were in Buenos Aires. Their trip had for its object to cultivate closer relations between the American College of Surgeons and the surgeons of South America. The School of Medicine of Buenos Aires designated Professors Arce, Chutro, Viñas and Palma to accompany our guests, who, while they were here, made a rather rapid survey of four of the local hospitals. While at Buenos Aires, Dr. Mayo called attention to the poor organization of the nurses' service in the municipal hospitals and the inadequate protection against flies.

Typhus Fever in Chile

In connection with several articles by Argentine physicians, the director-general of public health of Chile, Dr. Ramon Corvalán Melgarejo has published a report on the present epidemic of typhus fever. There are no cases of the disease in the northern provinces as far as Aconcagua, the disease having disappeared from Andes, Limache, Calera, San Antonio, La Victoria, Rengo, Peumo, San Carlos, Yungay, Florida, Coronel, Temuco and Conbarbala. There has been a recurrence of the epidemic at Valparaiso, with more than 160 cases. At San Fernando, Cunacó, Concepción, Talcahuano, Cabrero, Mulchen and Imperial the epidemic has decreased very much. At Santiago there were at one time as many as 580 hospital cases with an average of thirty-four cases a day, but the epidemic there has also decreased very much, there being now only 163 hospital cases with an average of ten new patients a day.

The enforcement of preventive measures, similar to those adopted last year, on the railroad station at the frontier, has been recommended to the National Department of Public Health.

Bubonic Plague

The increase of plague in all South American countries has also revealed itself in Argentina. The National Department of Public Health has put in force deratization measures at Buenos Aires, and has decided to establish disinfection stations in all the ports of the republic. The province of Santa Fe, which has suffered most from the disease, has been divided into three zones with headquarters at Santa Fe, Cordoba and Casilda, in charge, respectively of Drs. Ruiz Huidobro, Benchetril, and Bascary, who will carry out antirat measures throughout that district.

Marriages

HERBERT RANDOLPH UNSWORTH to Miss Elizabeth Elmer McCall, both of New Orleans, March 12.

THOMAS LAWTON, Hinsdale, Ill., to Miss Elizabeth A. Stage of Davenport, Iowa, March 16.

EDGAR CHRISTY, Hastings, Iowa, to Mrs. Elsa Riedelsberger, at Omaha, March 3.

Deaths

Philip Coombs Knapp, Boston; Harvard Medical School, 1883; aged 61; a member of the American Urological Association and its president in 1895, and a specialist in neuropathology; a fellow of the Royal Society of Medicine; visiting physician to the division of nervous diseases of the Boston City Hospital since 1885, and to the Boston Dispensary from 1886 to 1888; instructor in diseases of the nervous system in his alma mater from 1888 to 1913; consulting physician to the Massachusetts State Hospital for Insane Criminals since 1895; trustee of the Boston Insane Hospital from 1897 to 1902; died in the Boston City Hospital, February 22.

Clinton Tremaine Purdy, Moncton, N. B.; University of the City of New York, 1884; aged 60; formerly mayor of Moncton; coroner of Westmoreland County in 1897; president of the Moncton Medical Society in 1898; formerly president of the College of Physicians and Surgeons of New Brunswick; a member of the medical council of New Brunswick and alderman for the city of Moncton; died, January 12.

Richard Henry Lee Bibb ⊕ Saltillo, Coahuila, Mexico; Texas Medical College, Galveston, 1872; Bellevue Hospital Medical College, 1877; aged 71; for many years chief surgeon of the Mexican National Railroad, of the American Hospital, Mexico City, and of the national lines of Mexico; president of the International Medical Association of Mexico in 1911; died, March 2, from influenza.

Emile Schmoll, Livermore, Calif.; University of Basle, Switzerland, 1896; aged 47; a member of the Medical Society of the State of California; lecturer on internal medicine in Cooper Medical College and visiting physician of the San Francisco City and County Hospital; died, March 10, at a sanatorium in Livermore, from a nervous breakdown.

William Charles Hassler ⊕ San Francisco; Cooper Medical College, San Francisco, 1892; aged 51; health officer of San Francisco; a specialist in public health; assistant professor of hygiene and sanitary science in Hahnemann Medical College of the Pacific, San Francisco; died, February 11, from influenza.

Wade Doster, Capt., M. C., U. S. Army, Coldwater, Kan.; Jefferson Medical College, 1907; aged 39; on duty at Camp Furlong, N. M.; was shot and killed by his wife at Columbus, N. M., March 9, while she was defending herself from an attack made by him, in which she received a bullet wound of the breast.

Charles Sackett Starr, Rochester, N. Y.; College of Physicians and Surgeons in the City of New York, 1869; aged 75; a member of the Medical Society of the State of New York; physician to the Monroe County Jail in 1879 and 1880, and coroner's physician from 1880 to 1884; died, March 8.

Henry Wells Horn ⊕ San Francisco; Cooper Medical College, San Francisco, 1897; aged 48; a member of the American Ophthalmological, Rhinological and Otological Society; a well known ear, nose and throat specialist; died in St. Francis' Hospital, March 5, from influenza.

Hugo William Wightman ⊕ Scottsbluff, Neb.; Northwestern University Medical School, Chicago, 1901; aged 47; for ten years professor of anatomy in the John A. Creighton University, Omaha; surgeon to the Brazil Hospital; died in a hospital in Omaha, March 11, from influenza.

George W. Simpson, Mapleton, Pa.; Jefferson Medical College, 1876; aged 75; a member of the Medical Society of the State of Pennsylvania; for ten years local surgeon to the Pennsylvania system; a veteran of the Civil War; died in his apartment, March 6.

Henry Howard Wynne, Oklahoma City; College of Physicians and Surgeons in the City of New York, 1880; aged 60; a member of the Oklahoma State Medical Association; a specialist on diseases of the eye, ear, nose and throat; died about February 26.

Stafford Baker Smith ⊕ New York City; College of Physicians and Surgeons in the City of New York, 1905; aged 36; a member of the American Urological Association; surgeon, U. S. P. H. S.; died, February 29, from lobar pneumonia.

Benton Knox Jones, Kenton, Ohio; Eclectic Medical Institute, Cincinnati, 1889; aged 62; president of the Ohio State Medical Association in 1897, and for two terms coroner of Hardin County; died, March 6, from erysipelas.

⊕ Indicates "Fellow" of the American Medical Association.

Angus McD. Ford, Montreal; Bishop's College, Montreal, 1898; F.R.C.S., L.R.C.P. (Edin.), who had been on military duty with the Canadian Army Medical Corps since the beginning of the World War; died at sea, recently.

Herbert James Hamilton, Toronto; University of Toronto, 1886; L.R.C.P. (Lond.), 1886; aged 55; once president of the Ontario Medical Association; died in Wallesley Hospital, Toronto, from pneumonia, February 5.

Townsend F. Dickinson, Cincinnati; Miami Medical College, Cincinnati, 1881; aged 61; president of the Cincinnati Pension Examining Board during President Cleveland's administration; died, March 5.

Derrick G. Barkalow, Adel, Iowa; College of Physicians and Surgeons, Keokuk, Iowa, 1884; aged 62; once president of the Dallas County Medical Society; died about March 5, from cerebral hemorrhage.

Joseph Alexander Gendron, Ware, Mass.; Victoria University, Cobourg, Ont., 1888; aged 57; for several terms a member of the board of health of Ware; died in the Ware Hospital, March 7.

Edgar D. Seaman, Los Angeles; College of Physicians and Surgeons in the City of New York, 1884; aged 64; a member of the Medical Society of the State of California; died, February 20.

Donald Hoff Hoover, Cleveland; Western Reserve University, Cleveland, 1919; aged 26; an intern in the Lakeside Hospital, Cleveland; died in that institution, March 2, from pneumonia.

John Alva Allen, Medical Lake, Wash.; Trinity Medical College, Toronto, 1904; aged 42; captain, M. C., U. S. Army, and discharged, March 3, 1919; died, March 5, from pneumonia.

Abraham Lincoln Garver, Roaring Spring, Pa.; Jefferson Medical College, 1883; aged 61; a member of the State Industrial Board since 1916; died, March 2, from angina pectoris.

Charles Richard MacKimmie, Norfolk, Va.; Maryland Medical College, Baltimore, 1903; aged 51; died, February 12, from disease of the stomach and liver following influenza.

John J. McCarthy, Williamsport, Pa.; College of Physicians and Surgeons, Baltimore, 1896; died in the Renovo, Pa., Hospital, March 5, from pneumonia following influenza.

William Wickham Horton, Unionville, Conn.; University of the City of New York, 1879; aged 64; a member of the Connecticut State Medical Society; died, February 19.

Robert Joseph Dwyer, Toronto; University of Toronto, Ont., 1891; M.R.C.P. (Lond.), 1902; associate professor of clinical medicine in his alma mater; died, January 26.

Lachlin MacPherson, Antigonish, N. S.; Tuft's College Medical School, Boston, 1907; aged 44; died in St. Martha's Hospital, Antigonish, January 1, from pneumonia.

Sheldon B. Hewett ⊕ Girard, Kan.; University Medical College of Kansas City, Mo., 1904; aged 42; died, February 26, from cardiac embolism following influenza.

Edward S. Quinn, Kirksville, Mo.; Marion-Sims Medical College, St. Louis, 1896; aged 59; a member of the Missouri State Medical Association; died, February 24.

David Jenkins McCaa, Ephrata, Pa.; Jefferson Medical College, 1867; aged 74; died, March 10, from injuries received in a runaway accident in February.

Sam W. Adams, Rockland, Texas; University of Memphis, Tenn., 1894; aged 53; died in the Hotel Dieu, Beaumont, Texas, February 16, from septic meningitis.

Robert Kirkwood Robinson, Belair, Md.; University of Maryland, Baltimore, 1859; aged 87; a veteran of the Civil War; died, March 9, from senile debility.

James M. Robinson ⊕ Guthrie, Ky.; University of Louisville, Ky., 1882; aged 64; once mayor of Guthrie; died, February 26, from carcinoma of the stomach.

Henry A. Phillips, Chicago; Bennett Medical College, 1871; aged 75; a member of the Illinois State Medical Society; died, March 7, from pneumonia.

Abram Markle Blackburn, Steubenville, Ohio; Medical College of Ohio, Cincinnatti, 1864; aged 77; a veteran of the Civil War; died, March 5, from uremia.

Peter Lafayette Adams, Dawson, Texas; St. Louis College of Physicians and Surgeons, 1898; aged 77; died at the home of his daughter in Dawson, February 9.

Albert Harris Daniels, Mitchell, S. D.; University of Michigan, Ann Arbor, 1864; aged 79; for thirty-four years a practitioner of Mitchell; died, March 4.

William John Chambers, Calgary, Alta.; University of Toronto, Ont., 1902; was instantly killed in a railway accident at Sudbury, Ont., recently.

William Edward Everett, Brownsburg, Ind.; University of Michigan, Ann Arbor, 1869; aged 74; died, February 16, from pneumonia following influenza.

James R. Adams, Fort Worth, Texas; Medical College of Ohio, Cincinnati, 1841; aged 97; died at the home of his son in Fort Worth, February 27.

James Patrick Lane ⊕ Cascade, Iowa; John A. Creighton Medical College, Omaha, 1906; aged 40; died in Mercy Hospital, Dubuque, February 29.

David H. Clay Scott, Montgomery, Ala.; Meharry Medical College, Nashville, Tenn., 1895; aged 49; died, Dec. 25, 1919, from carcinoma of the liver.

Charles Baker Reid ⊕ Van Wert, Ohio; Fort Wayne, Ind., College of Medicine, 1881; aged 63; died, March 1, from cerebral hemorrhage.

Osmund Eells Goodrich, St. Joseph, Mich.; Hahnemann Medical College, Chicago, 1866; aged 75; died, February 27, from senile debility.

Almon L. Brown ⊕ Milwaukee; Rush Medical College, 1894; aged 54; a specialist in internal medicine; died, Dec. 1, 1919, from diabetes.

Joseph Mickler, Tampa, Fla.; University of Tennessee, Nashville, 1914; aged 33; a roentgenologist; died, March 5, from typhoid fever.

James Polk Von Stein, North Liberty, Iowa (license, years of practice, Iowa, 1887); aged 68; a practitioner since 1877; died, March 1.

James Edward Harper, Assumption, Ill.; Chicago Homeopathic Medical College, 1899; aged 50; died, February 21, from sarcoma.

Russell Hathaway, Wellington, Ohio; Homeopathic Hospital College, Cleveland, 1876; aged 72; died, February 27, from neuritis.

John H. MacDonald, Chicago; Jenner Medical College, 1898; aged 64; died, March 16, from carcinoma of the mouth and throat.

Louis William Knight, Baltimore; University of Maryland, Baltimore, 1866; aged 75; a noted numismatist; died, March 16.

James Louis Gilbert, El Paso, Texas; Baylor University, Dallas, Texas, 1911; aged 33; died, February 20, from influenza.

Louis E. H. Duffel, Napoleonville, La.; Tulane University, New Orleans, 1900; aged 44; died in New Orleans, February 28.

Edward Gomer Davies, Yankton, S. D.; Rush Medical College, 1879; aged 74; died, March 8, from valvular heart disease.

John T. McGrath, Scranton, Pa.; University of Pennsylvania, Philadelphia, 1896; aged 45; died, March 4, from heart disease.

William J. Brand, Detroit; University of Buffalo, N. Y., 1886; aged 63; died, February 29, from locomotor ataxia.

Warrick Barnett, Borden, Ind.; University of Louisville, Ky., 1911; aged 37; died, February 8, from pneumonia.

James C. Fish ⊕ Beaver Falls, Pa.; Jefferson Medical College, 1884; aged 58; died, March 1, from pneumonia.

Charles Naylor Abbott, McKinnie, Texas; University of Alabama, Mobile, 1875; aged 69; died, February 20.

Charles W. Tower, Marshfield, Ore.; Willamette University, Salem, Ore., 1870; aged 79; died, February 26.

John Abram Hunt, Taunton, Mass.; Boston University, 1893; aged 65; died, February 13, from carcinoma.

Oscar M. Waterman, San Francisco; University of Leipzig, Germany, 1893; aged 63; died, February 27.

Edward F. Christian ⊕ LaCrosse, Wis.; Rush Medical College, 1906; aged 36; died, February 25.

Joseph M. Ferguson, Sedalia, Mo.; University of Louisville, Ky., 1869; aged 80; died, March 6.

Correction.—Dr. Guy Marshall McDowell, Bay City, Mich., advises us that, notwithstanding the notice of his death which appeared in THE JOURNAL, March 13, he is "still alive and going strong." The Dr. McDowell who died was Dr. Guy McDowell who formerly lived in Bay City, but had been practicing in Detroit for about twenty years.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

PLATT'S CHLORIDES

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report on "Platt's Chlorides." It also declares the preparation inadmissible to New and Nonofficial Remedies because its composition is uncertain and indefinite and because the claims made for it are exaggerated and misleading.

W. A. PUCKNER, Secretary.

"Platt's Chlorides," marketed by Henry B. Platt, New York, is sold as a disinfectant and germicide. Only incomplete and contradictory statements have been made in regard to its composition. Many years ago (about 1899) the composition of Platt's Chlorides was given as "The Chlorids of Zn 40 per cent., Pb 20, Ca 15, Al 15, Mg 5, K 5." The statement that the preparation contained 20 per cent. of lead chlorid, is interesting in view of the fact that lead chlorid is soluble in water at ordinary temperatures to the extent of less than one per cent. In a booklet, also issued a number of years ago, the following "Formula of Platt's Chlorides" was given:

"A saturated solution of Metallic Chlorids combined in the following proportions:

"Sol. Zinc Chlorid	40 per cent.
"Sol. Aluminum Chlorid	15 per cent.
"Sol. Lead Chlorid	20 per cent.
"Sol. Calcium Chlorid	15 per cent.
"Sol. Magnesium Chlorid	5 per cent.
"Sol. Potassium Chlorid	5 per cent."

The label on a bottle purchased in 1911, describes Platt's Chlorides as:

"A Highly Concentrated Solution of the Chlorids of Aluminum, Calcium, Lead, Zinc, etc."

The label of a bottle purchased in 1919, reads:

"Contains Inert Material: Water 84.0%. Sodium Chlorid 4.8%. Calcium Chlorid 0.3%."

This statement is obviously made to meet the requirements of the federal Insecticide Act. This law requires either that the identity and the amounts of potent ingredients in disinfecting preparations be declared or else that the percentage of the inert ingredients of such preparations be given. The omission from the label of all statements with regard to the potent ingredients of the preparation and the absence of such a statement in recent advertising matter suggests either that the older statements about its composition were false or else that the composition has been changed.

Tscheppe published (Pharmaceutische Rundschau **8**:109, 1890) an analysis of Platt's Chlorides which has been quoted in other publications as indicating the composition of the preparation. He reported that he found each quart of the preparation to contain aluminum sulphate 6 ounces, zinc chlorid 1⅓ ounces, sodium chlorid 2 ounces, calcium chlorid 3 ounces.

Some years ago (about 1911) the company made the following statement relative to the germicidal power (phenol co-efficient) of Platt's Chlorides:

". . . for some time the carbolic acid co-efficiency of our output has been from 2.5 to 4.3; the average being about 3; namely about three times stronger than pure carbolic acid."

In 1912, the U. S. Public Health and Marine Hospital Service reported (*Bulletin 82,* Public Health and Marine Hospital Service, p. 69) that the phenol coefficient of a sample of Platt's Chlorides was so low that it could not be determined and also that the sample was found to contain some mercuric chlorid. In 1913, the North Dakota Agricultural Experiment Station reported (*Bulletin,* July, 1913, p. 292), that

Platt's Chlorides contained principally zinc chlorid, also some aluminum chlorid, calcium chlorid, and traces of mercuric chlorid. The phenol coefficient, determined by the Hygienic Laboratory method, was found to be 0.05.

The preceding suggests that the composition of Platt's Chlorides had been changed (without notice to the consumer) and that it had been fortified by the addition of mercuric chlorid. Years ago part of the advertising of this product was a testimonial from a health official which declared that, for disinfection, "bichlorid of mercury is useless in disinfecting sputum or discharges from the bowels, being rendered inert by the albumen present" and it lauded Platt's Chlorides as devoid of such drawbacks.

RECENT ANALYSES OF PLATT'S CHLORIDES

To determine the present composition of Platt's Chlorides and to compare it with that sold formerly, the A. M. A. Chemical Laboratory has made an analysis of a specimen purchased in 1919 and also of one that was purchased in 1911 and since kept unopened in the files of the Council on Pharmacy and Chemistry. The following table contains the results of these analyses (all quantities given are Gm. per 100 c.c.):

	1911 Specimen	1919 Specimen
Color	Colorless	Straw Color
Odor	None	None
Specific Gravity at 25 Cc.	1.1229	1.1313
Total Solids (residue at 100 Cc.)	16.49	18.33
Chlorid (Cl^-)	7.60	10.74
Sulphate (SO_4^{--})	1.11	.16
Aluminum (Al^{+++})	.22	.90
Calcium (Ca^{++})	.19	.13
Zinc (Zn^{++})	5.11	3.93
Lead (Pb^{++})	.046	Traces
Mercury (Hg^{++})	.....	.0086
Sodium (Na^+)	1.01	1.39

These quantities transposed to hypothetical combinations would indicate that Platt's Chlorides has the following composition:

	1911 Specimen	1919 Specimen
Aluminum Sulphate	1.32	.18
Aluminum Chlorid	.07	4.29
Calcium Chlorid	.54	.37
Zinc Chlorid	10.66	8.19
Lead Chlorid	.06	Traces
Mercury Chlorid	.....	.0116
Sodium Chlorid	2.57	4.81
Hydrogen Chlorid	.43	None

In the past, the advertising has suggested, more or less directly, that, as chlorinated lime (bleaching powder) may be made to give off chlorin gas which disinfects, so the air in a room may be disinfected by evaporating Platt's Chlorides. Thus the label of the 1911 specimen contains the following:

"FOR STORE ROOMS, Refrigerators, and Closets, keep a sponge saturated with the pure liquid in a saucer on an upper shelf."

On the label of the 1919 specimen, the statement reads:

"REFRIGERATORS AND STOREROOMS—As a disinfectant wash regularly with one part Chlorides to eight of water. As a deodorant, keep in an open vessel a sponge or cloth saturated with the Chlorides full strength."

That the owner of Platt's Chlorides really believes that the vapors of the preparation have disinfecting properties is seen from a letter over the name of Henry B. Platt printed in the New York *Tribune* in 1916. This read, in part:

". . . by keeping in a dish or saucer on radiators Platt's Chlorides diluted one-half, the hot solution will evaporate and purify the air, thus destroying the grip germ which is the cause of all the trouble."

From the analysis of Platt's Chlorides, it is evident that when the preparation is evaporated, water vapor only escapes.[1] Whatever disinfecting or germicidal action the preparation may possess is exercised only when the solution is brought in direct contact with the substance to be disinfected.

The aluminum and zinc salts present may be useful as deodorants but they are not effective as germicides. The presence of mercuric chlorid in a concentration of 1 to 10,000 is hardly to be considered as materially increasing the efficiency. The directions recommend the use of a mixture of 1 part of Platt's Chlorides to 10 parts of water for rinsing the hands, and a mixture of 1 part to 4 parts of water for the disinfection of discharges. It is further stated that 1 quart makes 2 gallons sufficiently strong for general use. It is evident that such dilutions decrease considerably the feeble germicidal action of the original fluid.

1. It is well known that when a solution of mercuric chlorid in water is evaporated, mercuric chlorid passes off with the water vapors, but under any condition the amount is but a fraction of the whole. As in Platt's Chlorides other metallic chlorids are present, the formation of complex mercuric compounds which is bound to have occurred, should retard or prevent the volatilization of mercuric chlorid. That this actually occurs was confirmed by the following experiment: When 1 gm. mercuric chlorid was dissolved in 1 liter of water and the solution distilled, the distillate contained a very small amount of mercury. Then the experiment was repeated after adding sodium chlorid to the solution to simulate the conditions in Platt's Chlorides. In this case no mercury was found in the distillate. Even were all the mercury in a bottle of Platt's Chlorides volatilized in a room 10 by 12 by 9 feet, this would be equivalent to only about 1/600 grain mercuric chlorid per cubic foot.

Correspondence

"GOLAY'S MODIFIED WASSERMANN REACTION"

To the Editor:—In the description in Queries and Minor Notes of the Golay modification of the Wassermann reaction (THE JOURNAL, Feb. 21, 1920, p. 543) you say the "complement is obtained from a rabbit." I take it that this is an error and should be "amboceptor." In the titration of the amboceptor I presume a known negative active human serum is used. It is this feature that has attracted my attention. The hemolytic factor is completed with the active native human complement. In a series of experiments over a period of ten months I have found that the quantity of human complement varies in different individuals, and in some it is absent. The estimation of the quantity of complement in a given serum is based in general on the Hecht modification of the Wassermann reaction, with modification of details adaptable to the human system. The reagents used were 2.5 per cent. human red cell suspension, one unit of amboceptor, and beef heart antigen cholesterinized to the extent of 0.072 per cent. in dilutions of 1 : 10. The serum to be tested should be fresh, but I have found complement still active after traveling 400 miles in the mail in moderately warm weather.

To determine the complementary value of a serum, six tubes are set up in the front row. Each tube receives 0.1 c.c. of active serum and one unit of amboceptor. The first receives 1 c.c. of salt solution, and each succeeding tube 0.1 c.c. less than the preceding tube. In the first tube is placed 0.1 c.c. of human red cells, and in each succeeding tube 0.1 c.c. more, so that the last tube will receive 0.6 c.c. of cells. These tubes are then incubated for one hour at 37 C., during which time they are repeatedly shaken. At the end of this period that tube is sought in which there is the greatest amount of complete hemolysis. If the last tube shows complete hemolysis, which rarely happens, 0.3 c.c. is used in the actual test for that particular serum. Two rear tubes are set up at the time the series of six are prepared; one receives 0.1 c.c. of the same active serum, 0.1 c.c. of antigen, and 0.7 c.c. of salt solution; the other tube receives 0.1 c.c. of serum and 0.8 c.c. of salt solution; both are then placed in the refrigerator for a period of three or four hours. At the end of that period these tubes receive the required amount of red cells, one unit of amboceptor and salt solution to 1.3 c.c. If the particular serum contains sufficient complement to hemolyze 0.6 c.c. of cells so that 0.3 c.c. is used in the test, no salt solution is added. The control tube always clears. If the maximum amount of cells is used as determined in the series, for instance, 0.6 c.c., the control tube often will not clear with negative serum. If complete hemolysis does not occur in any of the series of tubes, it signifies no complement.

My purpose of describing this test is to state that it is unsatisfactory as compared with the Wassermann reaction, using the antihuman system. When applied in this manner the human complement apparently is not as easily fixed as is the guinea-pig complement as used in the Wassermann reaction. The use of guinea-pig red blood cells to determine the

hemolytic index of human serum, and with this means determine the syphilitic factor of the serum, gives a much higher percentage of positive results than the test described above, but the guinea-pig system does not give any higher percentage of positive results than the Wassermann using the antihuman system.

JOHN FUNKÉ, M.D., Atlanta, Ga.

LOW TYPHOID DEATH RATE OF RICHMOND, VA.

To the Editor:—I wish to express my gratification in connection with what you have to say concerning Richmond's 1919 typhoid record (THE JOURNAL, March 6, 1920, p. 672). I am glad that you agree that our rate of 3.7 is quite an extraordinary one for a Southern city.

It is gratifying to see in Table 6 that Richmond is the only city south of the Potomac and Ohio rivers appearing in the first rank, and that even those Southern cities which appear in the second rank come in at the tail end, while the third rank and fourth rank are composed entirely of Southern cities. In other words, if the cities of over 100,000 population are ranged in the order of their typhoid death rates, Southern cities, with the exception of Richmond, are found entirely at the bottom.

Your statement that "it is evident that the maintenance of a low typhoid death rate is not to be taken as a matter of course without the exertion of constant vigilance by the local health authorities" is certainly true. I know that in the case of Richmond our constantly decreasing rate has been due to constant effort and watchfulness. This year we shall have a hard job holding down to last year, and, in fact, there is little, if any, chance of our duplicating our 1919 rate. Unfortunately, our first three cases this year all terminated fatally, and besides this, we have had one more death, so that, although only seven cases have been reported this year, we have already had four deaths, against a total of six in 1919.

As an illustration of the desire on our part to have accuracy at all cost, I may state that the death certificate in the case last mentioned came in to us with influenza and septicemia given as the cause of death. The blood specimen taken on the last day of illness, however, showed the presence of the typhoid bacillus. We had considerable difficulty in persuading the physician to change his diagnosis to typhoid fever, but eventually accomplished this object.

When I entered office in 1906, every physician with an average practice treated at least half a dozen typhoid cases every summer, and our busiest practitioners counted it a poor year when they did not have twice that many cases. In recent years we have had only about one case to every three or four physicians, and scarcely this number in private practice. One result of this, I fear, is going to be that the average physician will not see enough typhoid fever to become reasonably skilful in its handling, and this may result in an increased case fatality. This can be obviated only by hospitalization of all typhoid cases, a course which has many other things to commend it.

E. C. LEVY, M.D., Richmond, Va.
Director of Public Welfare.

"HITHERTO UNDESCRIBED SIGN IN DIAGNOSIS OF LETHARGIC ENCEPHALITIS"

To the Editor:—I was much interested in the description by Dr. Thomas F. Reilly (THE JOURNAL, March 13, 1920, p. 735) of a hitherto undescribed sign in lethargic encephalitis. This sign (the abnormal involuntary twitching of muscle bundles) was apparently not present in last year's epidemic, but has been noted with regular frequency in the cases coming under observation this year. There are apparently three types of influenzal invasion of the central nervous system which have, as a distinguishing feature in common, these myoclonic movements: One type is associated with a diffuse neuralgic syndrome, toxic delirium and a fatal termination. Another type presents only myoclonic movements and a neuralgic syndrome which proceeds to an early recovery. The third type presents the foregoing symptoms, which after a variable time become merged into a pure syndrome of lethargic encephalitis. There is no doubt that all these phenomena are simply the expression of the same infectious agent.

Dr. Reilly considers the term "lethargic" unfortunate, as the condition of the patient belies the designation. In this connection I would consider the term "encephalitis" equally misleading. I refer particularly to those cases which present only diffuse myoclonic movements and neuralgic symptoms. As stated before, this type of case reveals no evidence of "encephalitis" on close scrutiny. Lethargic encephalitis is becoming a sort of junk-heap on which every infection with neural manifestations is being dumped. In the interest of scientific and clinical accuracy, a revision of the nomenclature would indeed be welcome.

CHARLES ROSENHECK, M.D., New York.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

SYRUP OF THYME

To the Editor:—A short time ago I received a sample of "Pertussin" and used some in an obstinate case of bronchitis with excellent results. I have since received a catalog from a pharmaceutical firm, which advertises syrup of thyme. I have searched for a formula to make my own syrup of thyme, but have not been able to find one. Will you publish one?

E. F. BENNER, M.D., Salfordville, Pa.

ANSWER.—The subjoined formula yields a product very similar to "Pertussin" in taste, flavor, composition, and probably in activity as well:

Fluidextract of thyme	15 c.c.
Glycerin	15 c.c.
Syrup to make	100 c.c.

The original German preparation contained 1.5 gm. of sodium bromid in each hundred cubic centimeters, and this might be added to the foregoing formula with advantage, so far as action is concerned. However, a sample of "Pertussin" purchased in the open market in the United States failed to respond to tests for bromids.

As fluidextract of thyme is not official, this formula is presented as furnishing an acceptable preparation:

Thyme, in No. 60 powder	100 gm.

Moisten with a mixture of:

Water	25 c.c.
Alcohol	15 c.c.
Glycerin	10 c.c.

After standing five hours, pack in a percolator. Exhaust with a menstruum of alcohol, 1 volume, and water, 3 volumes. Reserve the first 85 c.c. of percolate. Concentrate the weak percolate to a soft extract and dissolve in the reserved portion. Make up to 100 c.c. by addition of a mixture of alcohol, 1 volume, and water, 3 volumes.

Other aromatic expectorants, such as terebene, terpin hydrate or creosote, might be expected to have similar but greater effect in chronic bronchitis.

Care of the Eyes.—To read or study when tired or drowsy is to strain the eyes to a dangerous degree. Avoid evening study whenever possible. If you are using your eyes by artificial light, be sure the light does not shine directly into the eyes, and try to have it come from behind and to the left side so as to avoid the harmful glare. Never sit with the gas or electric light directly in front of you. If electric light is used, the bulbs should be wholly or partly frosted. The best form of artificial illumination for the eyes is the so-called indirect system, where the light is reflected from the ceiling and walls of the room in a soft glow and where all glare is entirely hidden by an opaque shield.—W. M. Carhart, *Pub. Health,* Michigan, September, 1919.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

Arizona: Phoenix, April 6-7. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.

Arkansas: Little Rock, May 11-12. Sec. Regular Bd., Dr. I. J. Stout, Brinkley. Sec. Eclectic Bd., Dr. C. E. Laws, Fort Smith.

Colorado: Denver, April 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

District of Columbia: Washington, April 13-15. Sec., Dr. Edgar P. Copeland, the Rockingham, Washington.

Idaho: Boise, April 6. Commissioner, Hon. Robert A. Jones, Boise.

Iowa: Iowa City, March 29-31. Sec., Dr. Guilford H. Sumner, Capitol Building, Des Moines.

Louisiana: New Orleans, May 4. Sec., Homeo. Bd., Dr. F. H. Hardenstein, 702 Machesa Bldg., New Orleans.

Minnesota: Minneapolis, April 6-8. Sec., Dr. Thos. McDavitt, Lowry Bldg., St. Paul.

Montana: Helena, April 6. Sec., Dr. S. A. Cooney, Power Bldg., Helena.

Nevada: Carson City, May 3. Sec., Dr. Simeon L. Lee, Carson City.

New Mexico: Santa Fe, April 12-13. Sec., Dr. R. E. McBride, Las Cruces.

Oklahoma: Oklahoma City, April 13-14. Sec., Dr. J. M. Byrum, Shawnee.

Rhode Island: Providence, April 1-2. Sec., Dr. Byron U. Richards, State House, Providence.

West Virginia: Charleston, April 13. Sec., Dr. S. L. Jepson, Masonic Bldg., Charleston.

Kansas February and June Examinations

Dr. H. A. Dykes, secretary of the Kansas State Board of Medical Registration and Examination, reports the written examination held at Topeka, Feb. 11, 1919. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Four candidates were examined, all of whom passed. Fourteen candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	No. Licensed
University of Illinois		(1919)	1
St. Louis University		(1918)	1
Meharry Medical College		(1918)	2

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Hering Medical College, Chicago		(1909)	Oklahoma
Loyola University		(1916)	Illinois
Rush Medical College		(1914)	Missouri
State University of Iowa College of Medicine		(1904)	Iowa
University of Kansas		(1918)	Missouri
American Medical College		(1911), (1912)	Missouri
Missouri Medical College		(1885) Missouri, (1894)	W. Virginia
St. Louis University		(1912)	Oklahoma
University of Oklahoma		(1918)	Oklahoma
Meharry Medical College		(1918)	Kentucky
Vanderbilt University		(1916)	Tennessee
Baylor University		(1916)	Texas

Dr. Dykes also reports the written examination held at Topeka, June 17, 1919. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 31 candidates examined, 28 passed and 3 failed. Twelve candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	No. Licensed
Gross Medical College		(1901)	1
Northwestern University		(1919)*	1
University of Kansas		(1919)	20
University of Louisville		(1907)	1
Medical School of Maine		(1895)	1
Harvard University		(1918)	1
Barnes Medical College		(1904)	1
John A. Creighton Medical College		(1919)	1
University of Oklahoma		(1915)	1
	FAILED		
Beaumont Hospital Medical College		(1902)	1
Kansas City Medical College		(1901)	1
University of Heidelberg		(1914)†	1

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Georgetown University		(1906)	Dist. Colum.
University of Illinois		(1916)	Illinois
Tulane University		(1917)	Louisiana
St. Louis Coll. of Phys. & Surgs.		(1888) Oklahoma, (1902)	Illinois
		(1908) New Mexico, (1918)	Missouri
St. Louis University		(1916)	Missouri
Washington University		(1915), (1917)	Missouri
University of Nashville		(1899)	Kentucky
Marquette University		(1915)	Wisconsin

Dr. Dykes also reports that 31 candidates, including 1 undergraduate, were licensed by reciprocity at the meeting held at Topeka, Oct. 14, 1919. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Howard University		(1909)	Texas
Chicago College of Med. and Surg.		(1914), (1916),	(1918) Illinois
College of Phys. and Surgs., Chicago		(1903)	Illinois
Northwestern University		(1905), (1917, 2)	Illinois
Rush Medical College		(1912), (1919)	Illinois
University of Illinois		(1916)	Illinois
Central Coll. of Phys. and Surgs., Indianapolis		(1904)	Indiana
Louisville Medical College		(1907)	Kentucky
Tulane University		(1916)	Louisiana
Baltimore Medical College		(1908)	Maine
Barnes Medical College		(1911)	Tennessee
St. Louis University		(1917), (1919)	Missouri
University Medical Coll. of Kansas City		(1910)	Missouri
Washington University		(1909), (1910),	(1918) Missouri
John A. Creighton Medical College		(1906)	Oklahoma
		(1916)	Nebraska
University of Oklahoma		(1916) Utah, (1917)	Oklahoma
University of Pennsylvania		(1910)	Penna.
College of Phys. and Surgs., Memphis		(1911)	Tennessee
University of West Tennessee		(1910)	Oklahoma
Vanderbilt University		(1916)	Tennessee
Undergraduate			Oklahoma

*Diploma withheld pending completion of hospital internship.
†Graduation not verified.

Georgia October Examination

Dr. C. T. Nolan, secretary of the Georgia State Board of Medical Examiners, reports the written examination held at Atlanta, Oct. 14-15, 1919. The examination covered 10 subjections and included 100 questions An average of 80 per cent. was required to pass. Of the 14 candidates examined, 13 passed and 1 failed. Twenty-one candidates were licensed by reciprocity. One candidate, a graduate of the University of Virginia in 1917, was licensed on presentation of a certificate from the National Board of Medical Examiners. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Birmingham Medical College		(1915)	80.9
Chicago College of Medicine and Surgery		(1917)	87.3
Loyola University		(1919)	90.3
Tulane University		(1915)	89.4
Johns Hopkins University		(1919)	86.2
University of Maryland		(1916)	88.9
Tufts College Medical School		(1919)	84.7
University of Pennsylvania		(1916)	87.2
Med. Coll. of the State of So. Carolina		(1881) 81.6, (1917)	88.4
Vanderbilt University		(1914)	92.1
Medical College of Virginia		(1919)	83.8
University of Virginia		(1917)	85.7
	FAILED		
Southern College of Medicine and Surgery		(1913)	68.4

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Alabama		(1904)	Alabama
Indiana University		(1914)	Indiana
Tulane University		(1916), (1919, 2)	Louisiana
Johns Hopkins University	(1910) Alabama, (1912), (1913), (1916),	(1917)	Maryland
University of Maryland		(1915)	Maryland
University of Minnesota		(1894)	Minnesota
University Medical College of Kansas City		(1908)	Kansas
Jefferson Medical College		(1907)	Penna.
University of Pennsylvania		(1916)	Penna.
Meharry Medical College		(1919)	Arkansas
Vanderbilt University		(1915), (1916, 2)	Tennessee
University College of Medicine, Richmond		(1901)	Virginia
University of Virginia		(1909)	Alabama

Nevada November Examination

Dr. Simeon L. Lee, secretary of the Nevada State Board of Medical Examiners, reports the written examination held at Carson City, Nov. 3-5, 1919. The examination covered 13 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 6 candidates examined, 5 passed and 1, a chiropractor, failed. Seven candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
College of Physicians and Surgeons, San Francisco		(1918)	79.3, 83
College of Medical Evangelists		(1918)	94.2
University of Michigan Medical School		(1903)	92
St. Louis College of Physicians and Surgeons		(1918)	83.5

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Leland Stanford Junior University		(1919)	California
University of Southern California		(1903)	California
Northwestern University		(1910), (1912)	Illinois
College of Physicians and Surgeons, Baltimore		(1910)	Penna.
Homeopathic Medical College of Missouri		(1898)	Illinois
Bellevue Hospital Medical College		(1888)	W. Virginia

Social Medicine and Medical Economics

COMPULSORY HEALTH INSURANCE

M. L. HARRIS, M.D.
CHICAGO

In THE JOURNAL, March 6, attention was called[1] to the economic burden which workmen's compensation acts impose on the medical profession, owing to the inertia of the profession when it comes to economic matters. Tradition seems to have blinded the medical profession to everything but its work. Workmen's compensation acts were agitated publicly some time before they were made into laws, but physicians took no action in the matter. At the present time a proposition of much greater magnitude than workmen's compensation acts and of infinitely greater importance to the profession is being quite extensively agitated throughout the country, and unless the medical profession is alert it will wake up later to find itself again suffering under a burden from which it will be difficult or impossible to extricate itself.

THOSE INTERESTED IN HEALTH INSURANCE

Compulsory health insurance is one of the most important economic problems that has ever confronted the American people; therefore, it should be carefully studied in all its aspects. Without considerable thought and study, it is impossible for one fully to comprehend the magnitude of the undertaking. There is scarcely a class of persons who would not be affected more or less directly by it. There would be the great hordes of independent, free thinking individuals, who would be compelled to accept and pay for the insurance, whether they wanted it or not; the thousands of industries that would be forced to contribute to the fund; the medical profession that would be obliged to assume the responsibility of carrying out the terms of the insurance; the innumerable officials composing the working machinery, and finally, everybody else who would be taxed for the enormous upkeep of it all. The effect that a scheme of this kind would have on each of these groups is a study by itself. It is by no means clear that it would be an advantage even to the class that it is intended to benefit.

INDIVIDUALISM

That good health and a good physique are most desirable qualities in an individual and even essential to the welfare of a nation will be admitted without argument; hence, no time need be wasted on that phase of the subject; but if the events of the last few years have taught us anything, they have taught us that individualism is likewise an essential qualification of a people's greatness. Individualism, independence, freedom of thought and action are necessary to the upbuilding of a race of people sufficiently resourceful to meet successfully all the obligations and duties of life. Every time the state relieves the individual of a responsibility in life, it weakens the individual's character, which must inevitably react detrimentally on the evolutionary development of the people. The only restrictions to individualism which should be enforced are those made necessary by community existence, and that is too elementary a subject to require consideration here.

Before discussing further the effects of compulsory laws on the development of the individual, let us review briefly the arguments of the proponents of compulsory health insurance. The statement is frequently made that compulsory health insurance is but another step in the same direction as workmen's compensation acts, and if the latter are sound in principle and beneficial in their effects, the former, being but a step forward in the same direction, must likewise be sound in principle and beneficial in its effects. This conclusion is erroneous because of a lack of relation between the premises. The principle underlying workmen's compensation acts is definite and distinct, namely, injuries to workmen arising out of, and in the course of, their employment are a direct charge on the cost of production; but no such principle underlies compulsory health insurance. If accidental injuries to workmen were always preventable, it would be the duty of the state to enforce such rules and regulations as would effectually prevent their occurrence, instead of enacting laws to compensate the workmen in some manner for the damage done. It would not only be much cheaper to prevent the damage but infinitely more humane.

Arguing along this line, the proponents of compulsory health insurance claim that as some diseases may be directly connected with the character of the work, all diseases in workmen should be compensated for the same as accidental injuries. There are many fallacies in this line of argument. In the first place, the diseases which are directly caused by the character of the work are very few indeed, and these can be readily prevented by proper working conditions. If a disease can be prevented by having proper working conditions, it is plainly the duty of the state to see that such conditions are provided, and not tax the people to cure a disease when it would be much easier and cheaper to prevent it. If there should be a disease which was caused directly by a particular line of work in an industry, and it were not preventable, then the care of a workman thus made ill should be a direct charge on the cost of production in the same manner as an accidental injury.

INFLUENCE OF ECONOMIC CONDITIONS

Much has been written about economic conditions and the influence which they may have in causing disease. Among these may be mentioned working conditions which cause fatigue; morbidity and mortality statistics according to occupation; effects of irregular employment on health; inadequate diet; bad housing conditions and overcrowding, and unfavorable community environment. It will be admitted that these conditions and others that might be mentioned may be factors of greater or lesser degree in the causation of some diseases, but it is not shown that compulsory health insurance would modify or change any of these conditions or in any way mitigate their effects. Bad housing conditions and overcrowding, unhealthful working conditions, and unfavorable community environment are all matters which are, or should be, under the supervision of municipal and state public health departments; irregular employment and unemployment are industrial problems, and inadequate and improper diet are matters of intelligence and education. A lack of intelligence and of education, both general and moral, and a disregard by the educated, as well as the uneducated, of the ordinary common sense rules of hygiene are much greater causative factors in the production of disease than all of those previously mentioned, but it is impossible to legislate effectually against conditions such as these. Certainly compulsory health insurance would be more likely to increase than to decrease the tendency to them, by reason of the removal of restraint and responsibility.

PREVENTIVE MEDICINE, THE PROPER ACTIVITY OF THE STATE

Wages and poverty and disease are familiar terms much used in the discussion of this subject. Wages below a certain point, which, though relative, is always definable, spell poverty, and morbidity and wages are associated within certain limitations in inverse ratio. The lower the wage, the

1. Harris, M. L.: The Physician's Burden Under Workmen's Compensation Acts, J. A. M. A. 74: 694 (March 6) 1920.

higher the morbidity; as wages rise, morbidity falls, until it reaches what may be termed the "normal" rate. Other things being equal, this ratio between wages and morbidity in general terms is quite constant. The point at which the normal morbidity line crosses the wage line indicates what may be called a living wage. It is recognized that this is not a fixed point for all individuals, or for all classes of individuals; but when dealing with numbers, the principle holds good. When the wage or the income falls below the point mentioned, poverty begins, and sickness increases. With increased sickness comes a further decrease in income, and consequently greater poverty. Thus a vicious circle becomes established, from which it is often difficult to escape.

These are fundamental facts in economics. The question now arises: What should be done to help those whose income falls below the normal living wage and who thereby suffer from increased morbidity? It is plainly the duty of the state to study this problem and to solve it if possible. Shall the state by a system of compulsory medical treatment simply attempt to cure the ills of the unfortunate, or shall it, by proper preventive measures and by aiding in the adjustment of sociological and industrial conditions, enable the people to rise to or above the normal income point, so that they may, by their own resources, fulfil their responsibilities and obligations in life? Viewed from the standpoint of the ultimate good of the people, it would seem that there can be no question as to the course the state should pursue. If the state will extend the work of its health department to a legitimate extent along the line of preventive medicine and endeavor to correct insanitary working and housing conditions and educate the public in personal hygiene, there will be no occasion for compulsory health insurance. These are all legitimate functions of the state. There are certain responsibilities and obligations in life that must always rest with the individual if he would remain free; and when the state attempts to assume these, even though it may seem expedient at the time, it does so to the eventual detriment of the individual.

The statistics of the draft showing physical defects sufficient to disqualify for the army in about 30 per cent. of the young men of this country is often used as an argument in favor of compulsory health insurance. It should be remembered, however, that ours was a select army, and only the most perfect specimens of manhood were taken. It does not mean that all those rejected were unfit for the usual occupations of life. The largest single cause of rejection was defective vision, due simply to errors of refraction, a condition which may be relieved by the use of glasses but which cannot be prevented or cured. The defects were found among the rich who have always been well taken care of medically, as well as among the poor; hence it is perfectly evident that compulsory health insurance would not have prevented the defects, but some of them might have been obviated by a reasonable amount of proper physical training. The same kinds of defects were found with equal frequency in men of the countries which have been the longest under compulsory health insurance; on the other hand, no finer specimens of young manhood, both physically and mentally, ever formed an army than composed the American Expeditionary Forces. It is certain, therefore, that compulsory health insurance finds no support in the draft statistics.

LOCAL NATURE OF THE DISPENSARY PROBLEM

There are a few eminent members of our profession who believe compulsory health insurance to be desirable. These gentlemen have studied the subject from the point of view of the large city dispensary and clinic. They see a large number of poor people who visit these dispensaries daily and who, they believe, are not receiving adequate medical treatment. They argue that if all these patients were insured they would be able to pay the dispensaries for their treatments; the dispensaries would then be able to build up larger institutions, which could pay the attending physicians for their services, and thus provide the sick with better collective medical care. Any one who is familiar with the dispensary evil and the suffering of the poor in the tenement districts of large cities will appreciate the point of view of the gentlemen who earnestly desire the betterment of the condition of these people; but isn't the dispensary question rather a local one? The same conditions certainly do not obtain throughout the country or even throughout a state. The commissions that have been appointed by several of the states to investigate the question of health insurance report that conditions vary greatly in different states and in different parts of the same state, and some of the commissions see no necessity for the adoption of compulsory health insurance. It will be admitted that the dispensary question and inadequate medical care of the poor in large cities are serious problems, and it is even possible that compulsory health insurance might bring temporary relief; but it would be at the expense of future harm. In matters of such weighty importance, isn't it a short-sighted policy that acts only for today and disregards tomorrow? Why should a measure that is ultimately detrimental in its effects be imposed on an entire country or state for the temporary relief of a condition that is local, and which should be remedied by prevention rather than cure? It should not be inferred from this that there are no poor in small communities; but the conditions are very different from those existing in large cities. Again, no measure of the magnitude and importance of compulsory health insurance, the effects of which are in any way doubtful, should be thrust on a people, for it is a well known fact that a principle once written into the law seldom becomes erased, and the baneful influence of such laws are cumulative, and eventually drag a people down.

In a subsequent article the effects of compulsory health insurance on the medical profession will be discussed.

Medicolegal

Osteopath Not a Physician

(Ex parte Rust (Calif.), 183 Pac. R. 548)

The Supreme Court of California, in denying in this habeas corpus proceeding the petitioner's application for release from custody on a conviction of violating the optometry law, says that he was licensed in 1907 to practice osteopathy, and contended that he was a physician and was entitled to practice optometry by reason of the exception contained in the optometry law that its provisions should not be construed to prevent duly licensed physicians and surgeons from treating or fitting glasses to the human eye. To support his contention that the practice of osteopathy was the practice of medicine, and hence that he was a physician, the petitioner relied on the general definition of a physician as one who practices the art of healing, and on cases in which those engaged in the practice of osteopathy have been held guilty of violating laws regulating the practice of medicine. He also claimed that he was a "physician" practicing "medicine" within the meaning of the Medical Act of 1901, in force at the time his license to practice osteopathy was issued, which provided that those, among others, should be deemed as practicing medicine or surgery within the meaning of this act who, for a pecuniary or valuable consideration, "perform any operation for the relief or cure of any bodily injury or disease." The question thus raised was not free from difficulty, for the reason that neither the medical act of 1876 nor any of the succeeding acts defines a "physician," or "surgeon," or a "physician and surgeon," or expressly provides for the

license of a "physician." The optometry law of 1903, in stating the exception, is similar to that of 1913, as is the amendment of 1907, in using the term "physician and surgeon"; but the amendment thereto in 1909 uses the expression "physician or surgeon." There was therefore some basis for the claim that at the time of the issuance of the petitioner's license (March 6, 1907) these terms "physician" and "surgeon," not being defined by statute, should be construed in their broad and general acceptation. However, the same legislature which adopted the optometry law of 1913 also adopted a law regulating the practice of all systems of healing. By this law provision was made for the issuance of a certificate known as a "physician and surgeon's" certificate, and another to be known as a "drugless practitioner's" certificate, the latter certificate covering the right to practice osteopathy; and the court holds that the provision of the optometry law of 1913 mentioned above refers to those holding a "physician and surgeon's certificate," as authorized by the medical act of the same year. Moreover, the court thinks it fairly apparent that the legislature has, in effect, always used the terms "physician" or "surgeon" and "physician and surgeon" as applied to those practicing medicine and surgery within the meaning of the various medical acts, as contradistinguished from the practitioners of osteopathy. Wherefore, the court holds that the license of the petitioner, although issued before the optometry act and the medical act of 1913, did not authorize him to practice optometry under the exception in favor of physicians and surgeons. Nor did the license to practice osteopathy issued under the law of 1901 authorize the licensee to practice every known healing art which did not involve the use of drugs, or major surgery, including optometry. The present laws authorize the petitioner to practice osteopathy, and nothing more, by reason of his license issued under the law of 1901. The court cannot say that the science of osteopathy includes optometry. The discrimination between the holder of a physician and surgeon's certificate and the holder of a certificate to practice osteopathy is not unreasonable, for it is based on different training.

Paralysis of Face Following Mastoid Operation

(Finke v. Hess (Wis.), 174 N. W. R. 466)

The Supreme Court of Wisconsin, in affirming a judgment on a verdict directed for the defendant in this action for alleged malpractice, says that it was insisted by the plaintiff that the defendant, in performing a mastoid operation, severed the seventh or facial nerve. At the close of the evidence, a verdict was directed for the defendant. The question was whether there was sufficient evidence to carry the case to the jury. Paralysis of the face was shown, and there was evidence that severance of the nerves would cause such condition. But the evidence also showed that the paralysis might, from other causes, well follow an operation skilfully and properly performed. It was shown that paralysis might have been caused by a dehiscence, or by bandaging after the operation, or by cold drafts, and possibly other causes. In order to warrant the court in submitting the case to the jury there must be some evidence that the defendant severed the facial nerve, and there was none in the record. On the other hand, there was positive evidence, not only by the defendant, but also by a specialist of Chicago, who opened up the old scar in an effort to relieve pressure on the nerve, that the nerve was not severed. It was contended that this specialist admitted that the nerve was severed, but the evidence did not support that contention. It was based on the testimony of a woman, but her evidence as to what the specialist said when he was not under oath was not competent, except as laying a foundation for impeachment. Moreover, she admitted on cross-examination that the specialist might have said that the nerve was injured, not severed. Some reliance was placed on the opinion of another physician, but his opinion could not raise a conflict with the positive undisputed evidence that the nerve was not severed, and that other causes existed for the paralysis. Proof of a bad result raised no presumption of negligence in this case.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, New Orleans, April 26-30.

Air Service Medical Assn. of the U. S., New Orleans, April 26.
Alabama State Medical Association, Anniston, April 20-22.
American Association of Anesthetists, New Orleans, April 26-27.
American Association of Anatomists, Washington, D. C., April 1-3.
American Assn. of Pathologists and Bacteriologists, New York, April 2-3.
American Association of Physicians, Atlantic City, May 4-5.
American Dermatological Association, Asheville, April 22-24.
American Gastro-Enterological Assn., Atlantic City, May 3-4.
American Proctologic Society, Memphis, Tenn., April 22-23.
American Radium Society, New Orleans, April 26.
American Surgical Association, St. Louis, May 3-5.
American Therapeutic Society, Philadelphia, May 7-8.
Assn. for Study of Internal Secretions, New Orleans, April 26.
Assn. of Amer. Teachers, Diseases of Children, New Orleans, April 27.
Assn. of Military Surgeons of the U. S., New Orleans, April 24.
California State Medical Society, Santa Barbara, May 11-13.
Connecticut State Medical Society, New Haven, May 19-20.
Georgia Medical Association, Macon, May 6-8.
Illinois State Medical Society, Rockford, May 18-20.
Iowa State Medical Society, Des Moines, May 12-14.
Kansas Medical Society, Hutchinson, May 5-6.
Louisiana State Medical Society, New Orleans, April 24-26.
Medical Veterans of the World War, New Orleans, April 26.
Mississippi State Medical Association, Jackson, May 11-12.
Missouri State Medical Association, Jefferson City, April 6-8.
National Tuberculosis Association, St. Louis, Mo., April 22-24.
New Hampshire Medical Society, Concord, May 12-13.
North Carolina State Medical Society, Charlotte, April 20.
Oklahoma State Medical Association, Oklahoma City, May 18-20.
South Carolina Medical Association, Greenville, April 20-21.
So. Section Am. Laryn., Rhin. & Otol. Society, New Orleans, Apr. 27.
Tennessee State Medical Association, Chattanooga, April 6-8.
Texas State Medical Association, Houston, April 22-24.
The Radiological Society, New Orleans, April 23-24.
West Virginia State Medical Association, Parkersburg, May 18-20.

ANNUAL CONGRESS ON MEDICAL EDUCATION AND LICENSURE

Joint Annual Conference of the Council on Medical Education of the American Medical Association with the Association of American Medical Colleges and the Federation of State Medical Boards of the United States, held in Chicago, March 1-3, 1920

(Continued from page 826)

Research in the Teaching Laboratories

DR. OSCAR KLOTZ, Pittsburgh: My plea is for a closer cooperation of the various laboratories in modern medical schools. We are still working under the handicap of the tradition of the past, when the researches were undertaken by isolated individuals in apartments with closed doors. There are many problems of medical research which can be carried out equally well, without regard to the location of the institution. Certain necessary factors are essential: the personnel, the laboratory with all its accessories, and a library. But there are other problems which do not lend themselves to this ready approach. The yellow fever problem could not have been undertaken in Canada, nor industrial diseases in Washington. The present time lends itself very well to directing the energies of our laboratory system in the study of problems most nearly related to the local community life. For example, there is no better place to continue the study of shock than in our large industrial centers. The tropical and subtropical diseases logically belong to the South and the large seaport towns in close commercial contact with endemic centers. Can we not make greater headway by studying the questions which lie at our door? Jenner's opportunity was just such a one. Against advocating such a plan, and one whose disposition would best be placed in the hands of the National Research Council, may be brought the argument that we should be forgetting the emphasis to be laid on a study of the everyday fundamentals related to less localized problems. It is not intended to advocate the restricting of the activities of any one or group of individuals to concrete practical problems, but that each would also continue his investigations in the field of his personal choice. Moreover, the correlation of two such

divergent fields of investigation would tend to make the researchers broader men.

Problems for investigation and the opportunity for attacking them lie before every department of our medical schools, and there can remain only two reasons why more is not accomplished: We "cannot make brick without straw," and although our universities are realizing the value of research and are making the facilities available as quickly as funds will permit, this in not a few institutions has been a slow process. Rarely does a university appreciate the value of research to an extent to add to the departmental budgets money to be devoted for this purpose. The endowment of research fellowships within the teaching departments is to be encouraged, and sufficient money to provide the necessary equipment must be urged. Some schools of medicine have found it easier to obtain a research budget by establishing certain definite research departments whose personnel has no teaching responsibility nor a working relation to any particular department in the institution.

A word about undergraduate research in the medical sciences: From time to time a plea has been made by medical educators for the recognition of student researches, either as a part of their laboratory exercises or as a final thesis prior to graduation. Student research is distinctly different from the research performed by the graduate scholar. For the undergraduate, the carrying out or verifying of a technic previously devised, or his acting in the capacity of personal assistant to his instructor, may be perfectly adequate methods of training for research. It is inadvisable to assign true research problems to the undergraduate not only because of his inadequate training but also because of his essential studies in other departments. However, the summer months often offer an opportunity for the occasional student, and advantage is taken of this.

What is true of the fifth year in the hospitals may also apply to the laboratories of the teaching departments of medical schools. It should be possible in all states to credit work done in the fifth year under the direction of the medical school laboratories at the same rating as the hospital service. With such an arrangement it would be possible to produce a larger number of scientifically trained men for practice, and give them their first real insight into original laboratory research.

Research in Clinical Medicine

Dr. G. Canby Robinson, St. Louis: The establishment of clinical medicine on a university basis necessitates a revision of the usual divisions of the subject. Internal medicine, pediatrics, surgery and the specialties which have grown up about them must be brought close together, and all must be considered part of the science of clinical medicine, the study of disease in living human beings. The technic of treatment has made the division into the various groups desirable and necessary, and this division must be maintained. On the other hand, the study of all human disease affecting all organs of the body must be included in the science of clinical medicine and be pervaded by the same spirit of scientific research. No special consideration should be reserved for internal medicine which is not shared by surgery and by all the medical and surgical specialties. Obstetrics is excluded by our definition, but only so far as childbearing is to be excluded as a disease. There are many medical problems associated with it.

The department of clinical medicine should consist of a group of men which, by virtue of the special training of its individual members, can bring to bear on the problems of disease a knowledge of all the ancillary or contributing sciences. It is essential that there be men trained in chemical, physiologic, bacteriologic and biologic methods who have a knowledge of the present day conceptions of these sciences. Physical chemistry and physics are also becoming more and more necessary for the solution of clinical medical problems. This group of men must work together as a team, in order to bring research to its greatest development. That this is now being done is one of the most hopeful signs. The unit system, as the English call it, has great possibilities. The group must be presided over by a man who has gained the headship of the department by virtue of scientific attainments and achievements, and because of demonstrated ability in the performance of the manifold duties he is called on to discharge. He should be alive to the contribution which each member of the group can make. He should not only coordinate the whole department, and himself participate in research, but he should also bring each member of the department and his work into sufficient intimacy with all the other members so that the entire group will go forward together in the study of clinical medicine.

The facilities necessary for the development of a university department of clinical medicine consist in an adequate hospital and outpatient plant under the control of the head of the department, and organized especially for carrying out the primary objects of the department, namely, research and teaching. The department must be built up about this plant and the needed laboratories and accessories must be conveniently placed and adequately equipped. It is very desirable that the hospital wards should constitute an integral part of the department. Even the most carefully planned affiliation between the university and a hospital controlled by an outside board of trustees may prove to have its disadvantages, no matter how much in accord each party in the agreement may be.

If research is recognized as an essential factor in education, then every effort should be made to foster it from this point of view alone. If clinical medicine is to be developed along the lines indicated in this paper, there can remain no arguments relating to the desirability of the so-called whole-time plan of clinical teaching. The head of the department and the principal members of the staff must devote their entire time to the demands of the hospital and laboratories and to the training, directing and teaching of the younger students. The salaries of men devoting themselves to research and teaching of clinical medicine should be adequate for their needs, and should be adjusted with consideration for the many added duties and responsibilities that arise from their care of and contact with sick and injured persons.

DISCUSSION

Mr. Abraham Flexner, New York: Nothing is too good in respect to ideals and equipment, facilities and resources for a medical school. A practical question in connection with the realization of any of these ideals or standards or criteria, is how, in a country in which educational funds are derived as they are in America, these things are to be paid for. We have told these medical schools what they ought to do and what to have in the way of equipment and facilities to remain in good standing. They have said: "That is all very well, but consider what these things cost, and who is going to pay for them?" The Council on Medical Education is the main factor in setting up criteria as to what is decent and desirable in respect to medical schools, but it has not yet, so far as I know, created a committee on finance which will help these schools in different parts of the country to find the means to do the things which the Council assures them ought to be done. The situation is different from that which exists, for instance, in Germany, where the government tells the medical school what it ought to do and what it ought to be, and then says, "Here is the money with which to do it." One of the devices that the Council on Medical Education early and properly resorted to in the efforts to secure ultimately the funds needed to finance medical schools was to take the position that a properly equipped, endowed and thorough medical school ought to be a department of a university. It does not mean that all medical schools have got immediately to be of one type. This is quite possible in Germany, where they have a sort of paternalistic government that does things, to which there is no opposition, to carry out these things on a more or less uniform basis; but in a country in which higher education is developed, as in American, that is physically impossible. We have enormous discrepancies in both private and taxable wealth; we have enormous discrepancies in public sentiment; and it is impossible for a public educational system, or a university system, to detach itself completely from these

varying local conditions. We must therefore accept the fact that for many years we are not going to have in America, in all probability, short of a miracle, of which I see no signs, standardized medical schools, but we are going to have considerable varieties. We hope to embody minimum standards in the way of preparation of students, preparation of teachers, and facilities, laboratory and clinical; but there is going to be a much greater discrepancy in this country for a long time to come than existed in Germany, where homogeneity was brought about by the leveling and elevating action of a powerful central government. I am a believer in the virtues of the full-time plan under certain conditions. It has never entered my mind that there will be in this country for a long time to come anything like a general uniform movement toward the installation of a rigid full-time plan in clinical branches. The fact of the matter is that the full-time plan covers relatively a small part of the activities of either school or hospital. It is, I think, a luxury, if we may call it so, to develop the highest possible improvement, because it promises to promote scientific development, to produce an improved teacher and investigator, and perhaps gradually to raise the entire level; but any premature movement toward the attainment of this end would in my judgment be a great mistake.

DR. FRANK BILLINGS, Chicago: Dr. Jessup did not mention some of the factors and functions of a state university when he omitted the question of prevention. I do not think he used the word prevention throughout his paper. During the last year the Illinois legislature enacted a law which enabled the state to go forward with the reconstruction and rehabilitation of the crippled. It defines those who are disabled as not only those injured but those who are disqualified because of disease, and those who were interested in the passage of that bill had no word put in it concerning prevention. One wonders, therefore, if in the function of the state through its university or officials we are going to care for the disabled without any question as to the prevention of these things, as was done so well in the army during the war.

The full-time clinical teaching policy originated twenty-two years ago in the brain of Dr. William R. Harper, who, as president of the University of Chicago, became interested in medical teaching. The founder of the University of Chicago, and the board of trustees at that time were not in favor of it; but President Harper persisted in a thing which he considered right, and hence Rush Medical College became affiliated with the University of Chicago. In this way President Harper thought he could more quickly carry out his ideas of medical teaching. He advanced the requirements for admission to that medical school rapidly. In 1902 he presented a proposition to the board of trustees, which was accepted, of making the university medical school with full-time teachers. I have been an advocate of full-time medical teaching since that time.

DR. J. WHITRIDGE WILLIAMS, Baltimore: The reason the full-time scheme became necessary was because, as Dr. Bevan has said, the men who attended to their business, giving half of their time to business, and the other half to teaching, knew perfectly well at the end of the year that they had done their duty neither to the university nor to their patients. The really provocative thing for the full-time plan was the fact that many of our best clinicians were financial hogs and prostituted their university positions for money, and expected their younger colleagues to do the work which they capitalized. We have had the full-time scheme in operation in Johns Hopkins for a number of years, and I have no hesitation in saying that, on the whole, it has been an unqualified success. Nothing is perfect, but there is no doubt about the general success of it.

DR. O. F. HENDERSON, Toronto, Ont.: If we are going to teach fifty or a hundred students adequately with only full-time men, it will mean a very large budget in the way of salaries, etc. I think it will be some time before we shall be able to carry out a full-time scheme on an extensive scale.

DR. RAY LYMAN WILBUR, Leland Stanford University, Calif.: One difficulty we have to contend with is the confusion between college and university. We have comparatively few universities and comparatively few university men in the United States. The larger proportion are college men. The college teacher does not understand a medical school. The university teacher understands a medical school. There is a distinct difference in the type of men. Most of the criticism of medical schools comes from the college type of teacher. The same thing is true of members of boards of trustees in various institutions. I was much interested in what Dr. Flexner said about medical schools being taken over by universities, because I happened to have the unique position of being an individual who held a flirtation with the university, and now I have an opportunity to take care of a medical school, and while it has distinct problems of its own, it is probably the most pleasant duty I know of. There should be some definite, tangible result of the full personal service type rendered by the clinician. In carrying out the full-time plan we must remember the point Dr. Billings brought out—leadership outside the walls of the hospital from the great clinicians just as we get leadership in all other fields. If we lose track of that, we shall develop specialized branches of medicine, men that will be college men that will be interested in the medical field. The university must keep in touch with everything that is going on and supply the leaders, and in medicine we must particularly keep that in mind.

DR. E. P. LYONS, Minneapolis: With regard to the full-time proposition, in thinking the matter over in our environment, I have been influenced mostly by the Mayo Clinic, where no patient is a private patient. All classes and types of patients go there. I should like to see in our school a big university clinic to which people can come and go. I should dislike to have the university give its services to people free who can afford to pay. I should like to see that clinic developed as a service to all people—everybody who wants to go there—and that brings me to the plan outlined by Dr. Darrach, according to which the fees from patients are paid to the clinic. I think it is perfectly possible with that ideal in mind to have such a distribution that every man who is immediately taking care of an individual case will have the advantages of all the specialties, the laboratory and clinical departments, that can be of any assistance to him. The patient should not be referred from one specialist to another, receiving a separate bill from each specialist, but should have one bill for the whole work. That would be the scheme I would formulate to accomplish if I could in the University of Minnesota, and the only objection to it would come from the medical profession itself.

DR. ARTHUR DEAN BEVAN, Chicago: I am very optimistic. I think we are making wonderful progress. Mr. Pritchett told us a few years ago that we had accomplished more for education by these annual conferences than had been done by any other agency during the same period. The problem of inducting a medical school into a university is a difficult one, because medicine is more than a science. If it were simply a science it would be a simple matter to introduce it into a university and handle it without difficulty, just as the science of physics is handled; but it is an art, and it is a profession by which men make their livelihood. We cannot practice medicine as we would make matches or make shoes. We cannot practice medicine by machinery. There is an enormous personal element in medicine. We should attempt to develop our medical schools on business-like, common-sense, economical lines, and make such a combination with a great state for the interests of the people of the state as has been made in Iowa between the hospital that takes care of the people of the state and the medical school. I think that is a splendid scheme and should be copied widely wherever it is feasible.

Coordination of Effort in Medical Licensure

DR. DAVID A. STRICKLER, Denver: It should be the effort of every board to make it easily possible for a good man to obtain a license in any state and vice versa, increasingly difficult for a bad man to extend his field of labor. Each state must determine for itself the value of credentials presented; but in the matter of practice record, moral character and

those qualities which make the man and citizen, very important information may be best ascertained by his home board, the endorsement of which, under proper conditions, should mean much to the individual and to the board receiving it. My plea is for an interstate endorsement which shall represent the facts as they are ascertained on investigation or as based on personal knowledge of the executive officer, and not simply a statement of what the records show, though this should be included when of value to the board which is to determine whether a license shall or shall not be issued.

It has seemed to me that with the consistent efforts of the Council of Medical Education of the American Medical Association, combined with the Association of American Medical Colleges and other like bodies from the homeopathic and eclectic schools, a standard should be reached which may be accepted as evidence of medical knowledge without requiring an examination each time a man from choice or necessity changes his residence to a new state.

Report of Committee on Graduate Medical Education in the United States

Dr. Louis B. Wilson, Rochester, Minn.: Owing to conditions since the war, probably 10,000 medical graduates sought opportunity for further study in 1919. This is probably three times the annual number in normal years. Probably 3,000 medical graduates are doing work in short courses in the United States during the current year. The supply of short courses in graduate schools is at present sufficient to take care of those seeking the kind of instruction offered, but probably more than as many more desire short courses of better grade. More good university schools might well offer opportunities for brief periods of study in limited fields to more adequately prepared general practitioners or practicing specialists.

Of 1,021 physicians recently requesting opportunity for graduate study for long terms, a large majority requested surgery. About one-sixth as many applied for medicine and one-tenth for otolaryngology. Only four applied for work in the fundamental medical sciences.

The average age at graduation of the 174 medical graduates in the University of Minnesota is 25.8 years, just a year less than the average age at graduation of the total number of graduates in 1916 from all medical schools which in 1912 required two or more years of collegiate work for entrance.

A questionnaire to representative men in special clinical fields shows that their average age at graduation was 24 years, though their average date of graduation was 1894. The respondents to this questionnaire advise a minimum of three years' graduate study after a year's general internship before beginning the practice of a clinical specialty. This is from one to two years less than the respondents themselves took for their own preparation. Of the respondents less than one-third as many advise foreign graduate medical study as had it during their own graduate preparation. Of the surgeons responding, half as many as had it advise special graduate work in anatomy. One-half more advise special work in pathology than had it. Of the internists, twice as many as had it advised special graduate work in biochemistry and physiology, and one-fourth less than had it advise special training in pathology. General practice preceding a specialty is advised by only 6 per cent. of the respondents. Seventy-six per cent. advise hospital residency or assistantship in the special field desired. Twenty-five per cent. advise assistantship to one specialist.

Attention is called to the urgent need of increasing the number of competent men in the fundamental medical sciences. To this end it is recommended that adequate endowments of teaching positions and fellowships be sought that full-time professorships in the fundamental medical sciences may pay the same salaries as proposed full-time professorships in surgery and internal medicine.

Interallied Medical Relations

Dr. Walter L. Bierring, Des Moines, Iowa: The impressions gained by observation of the English plan of medical education are, first, that the fundamental and general education of the English physician is on a higher plane than his medical colleagues in the United States applying particularly to those graduating previous to 1912; second, the emphasis given to the practical application of pathology, bacteriology and anatomy in the qualifying examinations has led to a lessened interest in special research studies in pure pathology, pure bacteriology and the other fundamental medical sciences.

Medical licensure in Great Britain is distinctive and vested entirely in the general council of medical education and registration of the United Kingdom, established when the first comprehensive British medical practice act was enacted in 1858. The general council does not conduct any examinations, but it decides which medical schools are in good standing, and by means of inspectors appointed from its membership determines whether courses of study and the examination of the faculties of the different medical schools as well as the three qualifying boards are satisfactory.

This plan has certain distinct advantages, the final licensure examination is done away with; and with such a representative body as the general council, with excellent means of supervising medical teaching and qualifying examinations, it is eminently fair to the interests of the profession, and the public is well protected.

An entirely different situation obtains in France. Medical education and the right to practice medicine are entirely under the control of the state, the one being dependent on the other, as the conferring of the degree of Doctor of Medicine from an authorized French university carries with it the privilege to practice.

Interstate Relations in Medicine

Mr. Francis W. Shepardson, Springfield, Ill.: In considering interstate relations in licensure for medicine it was not the purpose to discuss the subject of reciprocity which, on first thought, might be associated with the topic. Even a casual examination, however, of the various application blanks for reciprocity required by the boards of medical examiners of various states suggests that there is much yet to be done in this field before ideal conditions are secured. The blanks differ materially in their form, language and requirements. It is at least worth a question whether it might not be possible through interstate cooperation to secure a greater degree of uniformity in these blanks and a much simpler type of application than that now generally used.

These are some of the matters relating to interstate relations in medicine which it seems to me might be worthy of consideration. The need of harmony and united effort on the part of licensing authorities of adjacent states of the Union is apparent. Through such harmony and united effort many of the evils which have attended medical licensure in the past, some of which still exist, might be ended forever.

DISCUSSION

Dr. Arthur Dean Bevan, Chicago: As chairman of the Council on Medical Education, I had the opportunity to inspect a number of these institutions with Dr. Wilson. From inspection of these graduate schools, the kindest thing that one can say is that they are entirely inadequate to perform the functions which seem at this time to be required. It is quite clear this work should not be done by independent schools or by commercial schools. There is a legitimate and growing demand for the right sort of graduate instruction. The reason we have the class of institutions that we now have is that the universities of the country have not done their duty. The problem clearly belongs to the medical departments of our universities.

Dr. George H. Meeker, Philadelphia: The University of Pennsylvania has been considering this subject for a number of years, and in 1916, as a result of this movement, the Medico-Chirurgical College of Philadelphia ceased to exist as an undergraduate institution. In 1918 the former Philadelphia Polyclinic and College for Graduates in Medicine similarly joined the movement, but the war prevented any real progress from being made. At present we are giving

what we believe to be meritorious courses in internal medicine, neurology, ophthalmology, and otolaryngology, each of four months' duration, and of intensive work leading to degrees or certificates. The aim of the university is to supply the tremendous demand, although there will have been 100 such men handled during the present university session. Under the plan which the committee has been preparing for the University of Pennsylvania, it will involve a deficit of $200,000 per annum. The income from students is estimated at a maximum of $10,000 per annum, which is hardly a paying proposition financially. The University of Pennsylvania has about two and a half million dollars already invested in this work, and has expended in preparation for it about $150,000 in equipment for teaching up to the present time, which by no means represents an idea of the final expenditure.

DR. HORACE D. ARNOLD, Boston: One point has not been sufficiently emphasized: Before the war a large number of our enterprising and best medical men were going to Germany and Austria for improvement in their medical knowledge and experience in various lines. Now that whole current has been disjointed by the war. Those men do not want to go to Germany and Austria at the present time, and yet that current is still in existence, and a number of men that have become interested in the improvement of their medical knowledge through the war experience are seeing and using better methods of dealing with the sick. They recognize their deficiencies, and where are those men going? It seems to me that it is up to the profession of the country, and particularly to the medical schools and universities of this country, to organize to meet this demand and to do it quickly.

DR. H. W. BRIGG, Wilmington, Del.: Dr. Strickler says it would be well to have a survey of the methods employed by the different state boards in licensing candidates after examination. This is an excellent suggestion because it would enable us to compare notes. That is the way progress has been made by the Council on Medical Education. If such a survey is to be made and brought to one of these meetings, we can derive benefit from it by analysis and comparison. His second recommendation is that we proceed with propaganda on legitimately advertising the better things of the medical profession; in other words, a propaganda of publicity.

DR. GEORGE M. KOBER, Washington, D. C.: It has occurred to me that new channels might be opened for graduate instruction in connection with the Public Health Service. This service is now preparing a large number of hospitals in different medical and industrial centers which need unquestionably to be properly supplied with an able consulting staff, and it is really the policy of that service to call to its aid the various medical and special surgical authorities as a consulting staff for these hospitals. In addition to the work in the hands of the Public Health Service, there is also a great work being done by the government of the United States in the operation of the workmen's compensation acts, which means the proper and adequate care for the sick and for the relief and recovery of men who have incurred accidents or diseases in the line of their duty when employed by the United States government.

DR. JOHN M. DODSON, Chicago: The proper line of action is to make use of our proper resources for graduate instruction for these various groups. The most interesting experiment along this line which has ever been instituted in this country is in connection with the Mayo Clinic and the University of Minnesota. It is unfortunate that we do not have more clinics of the sort that can supply their own funds and then give to the universities ample promise of support, in Boston, Philadelphia, New York, etc. I think it should be the existing medical schools, strongly established, seeking to utilize the larger resources of the hospitals in those cities. Many of the outlying hospitals in smaller cities are available for this purpose. I should like to see a continuation of the work in these numerous hospitals, now very well organized under the auspices of or with the advice and help of existing university medical schools.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Ophthalmology, Chicago

February, 1920, **3**, No. 2

Methodical Examination of Pupils. M. Landolt, Paris.—p. 81.
Hypotony After Trephining. A. Knapp, New York.—p. 87.
Ocular Manifestations in Cerebellar Syphilis. W. G. Dickinson, Syracuse, N. Y.—p. 89.
Experimental Production of Iritis and Its Treatment with Foreign Protein. P. L. Veach, Minneapolis.—p. 93.
Atypical Coloboma of Iris and Choroid. S. R. Gifford, Omaha.—p. 97.
Multiple Vaccination of Eyelids. A. J. Bedell, Albany.—p. 103.
Proliferating Endophlebitis and Retinal Hemorrhage. Microscopic Examination of Excised Globe. B. S. Guyton, University, Miss.—p. 111.
Unusually Large Primary Epithelioma of Ocular Conjunctiva. C. A. Veasey, Spokane.—p. 113.
Possibilities of Muscle Operations. R. O'Connor, Oakland, Calif.—p. 116.
Removal of Foregn Bodies from Eye. F. Allport, Chicago.—p. 118.
Ophthalmic Education and Text Books. C. Loeb, Chicago.—p. 121.
Keratoconus Consecutive to Vernal Conjunctivitis. J. de J. Gonzalez Leon, Guanajuato, Mexico.—p. 127.
Five Ciliæ in the Anterior Chamber. A. E. Bulson, Jr., Fort Wayne, Ind.—p. 128.
Unilateral Progressive Myopia. A. O. Pfingst, Lousville.—p. 129.

American Journal of Physiology, Baltimore

February, 1920, **51**, No. 1

*Studies on Cerebrospinal Fluid. F. C. Becht, Chicago.—p. 1.
*Id. F. C. Becht and P. M. Matill, Chicago.—p. 126.

Studies on Cerebrospinal Fluid.—Becht reports his results of a critical study of the methods employed in the observations on the cerebrospinal fluid, detailing the status of the formation and movements of cerebrospinal fluid: the mechanical factors influencing the cerebrospinal fluid; the normal rate of the formation of the cerebrospinal fluid and its absorption, and the effect of drugs on arterial, venous and fluid pressures.

Becht and Matill report the results of experiments undertaken to determine what effect the injection of tissue extracts has on the cerebrospinal fluid and, particularly, whether or not they possess a specific stimulating action, producing an actual increase in the amount of fluid produced. They found that nearly all tissue extracts have a depressor effect on the vascular system; extracts of suprarenal and of the posterior lobe of the hypophysis have a pressor effect.

Archives of Neurology and Psychiatry, Chicago

March, 1920, **3**, No. 3

*Morbi Neurales: An Attempt to Apply a Key Principle to Differentiation of Major Groups. E. E. Southard and H. C. Solomon, Boston.—p. 219.
Functions of Cerebrospinal Fluid; Spinal Drainage and Intraspinal Injections of Arsphenamized Serum. F. X. Dercum, Philadelphia.—p. 230.
*Case of Myxedematous Psychosis. S. Uyematsu, Hathorne, Mass.—p. 252.
Sensory Changes in Injuries of Musculospiral Nerve. A. S. Hamilton, Minneapolis.—p. 277.

Morbi Neurales: Key Principle to Differentiation of Major Groups.—A scheme of classification of nervous diseases is offered by Southard and Solomon. Five main groups are subdivided, and each subdivision is further divided. The main groups are: (1) infections; (2) historrhexes, focal destruction (noninfectious); (3) neuronatrophies, scleroses ("classical degenerations"); (4) imbalance exogenous (neurogenous); (5) miscellaneous, the algias, migraine, vertigo, tics, spasms, hydrocephalus, etc.

Case of Myxedematous Psychosis.—Uyematsu presents a case of typical myxedematous psychosis which showed, together with known symptoms, marked disturbance of coordination, vertigo and somnolence. The thyroid gland was found extremely atrophic with the gland tissue replaced by connective tissue fibers and with no isthmus. The remaining gland tissue was infiltrated by lympathic cells. The author suspects some etiologic relationship between the congential factor and this disease. The pituitary body was smaller than

normal, though microscopically there was no evidence of atrophy. The right ovary was removed ten years ago, the left remained atrophic, showing an evidence of chronic inflammatory process. Uyematsu suspects, having seen a similar condition of ovaries in a former case of the Danvers (Mass.) State Hospital series, some etiologic factors in certain diseased conditions of the ovaries. The pathologic changes in the brain and the cerebellum consist of arteriosclerotic alterations, general senile changes and cell changes associated with the edematous condition. The author attributes the arteriosclerotic alterations and the general senile changes to the effect of the myxedematous disease. The cell change associated with the edematous condition is considered as pathognomonic. Uyematsu believes also that there is a possible correlation between the marked atrophy of the cerebellum and the clinical symptoms of disturbed coordination and of vertigo.

Florida Medical Association Journal, Jacksonville

February, 1920, **6**, No. 8

Influenza and Its Relation to Pregnancy. R. R. Kime, Lakeland.—p. 150.
Extraction of Ureteral Stones by Non-Cutting Methods. E. P. Merritt, Atlanta.—p. 153.
Physician and the Harrison Law. E. B. Bowen.

Journal of Experimental Medicine, Baltimore

Feb. 1, 1920, **31**, No. 2

Mycosis of Bovine Fetal Membranes Due to Mold of Genus Mucor. T. Smith, Princeton, N. J.—p. 115.
*Experiments on Nasal Route of Infection in Poliomyelitis. S. Flexner and H. L. Amoss, New York.—p. 123.
*Etiology of Yellow Fever. X. Comparative Immunologic Studies on Leptospira Icteroides and Leptospira Icterohaemorrhagiae. H. Noguchi, New York.—p. 135.
*Id. XI. Serum Treatment of Animals Infected with Leptospira Icteroides. H. Noguchi, New York.
*Sterilization of Lipovaccines. P. A. Lews and F. W. Dodge, Philadelphia.—p. 169.
*Coagulation in Embryonic Blood. V. E. Emmel, S. A. Levinson and M. E. Fisch, Chicago.—p. 177.
Crescentic Bodies in Aestivo-Autumnal Malaria; Their Migration and Attachment to Surface of Red Corpuscle. M. R. Lawson, New London, Conn.—p. 201.
The Hemic Basophil. G. S. Graham, Albany.—p. 209.

Nasal Route of Infection in Poliomyelitis.—The experiments described by Flexner and Amoss relate to the conditions underlying the states of susceptibility and refractoriness to infection with the virus of poliomyelitis applied to the nasal mucosa. The authors found that an effective nasal mucous membrane prevents the passage of the energetically applied virus to the brain and spinal cord. The protective power possessed by the nasal mucosa is not in itself adequate to prevent infection with the virus placed on it, since slight injury to such independent structures as the meningeal-choroid complex favors the passage of the virus from the nose to the central nervous organs. The normal nasal mucosa is, therefore, an invaluable defense against infection with the virus of poliomyelitis; and the number of healthy and chronic carriers of the virus is probably determined and kept down through the protective activities of this membrane. Antiseptic chemicals applied to the nasal mucosa on which the virus has been deposited exhibit no great protective action and are of doubtful value. Indeed, it is not impossible that to the extent to which they may affect unfavorably the destructive properties of the nasal mucosa, they may be even objectionable. Infection with the virus of poliomyelitis applied to the nasal mucosa under conditions favorable to the extension to the central nervous organs and multiplication there may be blocked or prevented by the injection of poliomyelitic immune serum into the blood. While the exact manner and site of attack of the immune serum on the virus is somewhat conjectural, when all the available data are considered, it seems probable to Flexner and Amoss that the meeting place of the virus and immune serum is in the subarachnoid space.

Immunologic Studies on Yellow Fever.—It is stated by Noguchi that monovalent immune serums prepared by several successive injections in an animal naturally refractory to *Leptospira icteroides* possess the power to agglutinate in vitro not only the homologous strains, but also all other strains of icteroides tested. On the other hand, a slight effect, or none at all, has been observed when these immune serums have been mixed in vitro with various strains of *Leptospira icterohaemorrhagiae*. A similar relation exists between the monovalent anti-icterohemorrhagic serums and the various strains of *Leptospira icteroides;* that is, there is a slight agglutinating effect in some instances on the icteroides strains, but it is never so strong as that occurring in tests against the icterohemorrhagic strains. The Pfeiffer reaction gave a sharper differentiation between the two groups, for in most instances the phenomenon was specific for the group. There were occasional doubtful reactions, but not enough to warrant a confusion of the two groups: Noguchi is of the opinion that there is not much doubt that an icteroides attack brings about, in some instances at least, a certain degree of resistance to the icterohemorrhagic infection. Hence, the study of the phenomena of active immunity strongly indicates that *L. icteroides* is closely related immunologically to *L. icterohaemorrhagiae.*

Serum Therapy in Yellow Fever.—The use of a polyvalent immune serum of high potency in the treatment of an experimental infection of guinea-pigs with *Leptospira icteroides* Noguchi found to be of definite advantage in checking the progress of the infection. When administered during the period of incubation, the serum was found capable of completely preventing the development of the disease, although on subsequent examination hemorrhagic lesions of greater or less number and extent were found in the lungs of the guinea-pigs which survived. Moreover, the serum modified the course of the disease, and when used in the early stages of infection prevented a fatal outcome. Employed at a later stage, however, when jaundice and nephritis had been present for several days and the animal was near collapse, the serum had no perceptible beneficial effect.

Lipovaccines.—Pneumococcus lipovaccine, according to Lewis and Dodge, confers a definite protection against pneumococcus infection in mice. The protective quality is not destroyed, and apparently is not greatly diminished, by heating to 130 C. for three hours or 120 C. for twelve hours. Typhoid lipovaccine gives rise to the formation of agglutinins in rabbits but to a lesser degree than saline suspensions. The antigenic qualities of the typhoid lipovaccine are greatly injured by heating to 130 C. for three hours.

Influence of Blood Platelets on Coagulation of Blood.—The fact that the average coagulation time of the blood (about twenty-tree minutes) of pig embryos represents a coagulation time six to eight times greater than that obtained for the adult, suggested to Emmel and his associates that the number of blood platelets might be responsible. They found that numerically the blood platelets varied from 415,000 to 800,000 per cubic millimeter, a content not differing in any significant degree from that of the adult. The addition of platelet material obtained from adult pig blood reduced the coagulation time for embryonic blood to an average of 8.4 minutes, a decrease of 75 per cent. The addition of 2 drops of 0.5 per cent. calcium chlorid solution reduced the coagulation time for embryonic blood to an average of 10.3 minutes, a reduction of more than 50 per cent. The addition of tissue extract to embryonic blood reduced the coagulation time to an average of 3.7 minutes, a time essentially equivalent to that obtained for adult blood. The clot was of a much firmer character than that obtained either in the normal coagulation or in the calcium experiments. Chemical analysis demonstrated a calcium content in embryonic blood in excess of that of the adult, in the proportion of 7 : 5. On the whole, the results of this study suggest that the normal coagulation of embryonic blood, as far as bile is concerned, involves a process comparable with that obtained after the addition of tissue extract or kephalin, but on a small scale. In the embryonic blood in vitro, through the gradual disintegration of cellular elements, a certain amount of tissue substance (kephalin [?]) is slowly set free in the plasma, neutralizing the bile and ultimately liberating a sufficient amount of calcium to bring about coagulation.

Hemic Basophil.—Graham suggests that the basophil is a degenerated or degenerating cell. It is probably derived from the eosinophilic cells and, perhaps, in rare cases from those of neutrophilic type.

Journal of Laboratory and Clinical Medicine, St. Louis

February, 1920, **5**, No. 5

*Bacteriology and Pathology in Six Cases of Lethargic Encephalitis. P. F. Morse and E. S. Crump, Detroit.—p. 275.
*Protein Fever: Effect of Egg White Injection on Dog. S. J. Cohen, Chicago, Ill.—p. 285.
*Leukocytes in Anaphylaxis of Serum Sickness. J. H. Barach, Pittsburgh.—p. 295.
*Studies in Metabolic Changes in Experimental Tetany. D. T. Togawa, Tokyo, Japan.—p. 299.
*Bacillus Bronchisepticus as Cause of Infectious Respiratory Disease of White Rat. H. P. Hoskins and A. L. Stout, Detroit.—p. 307.
Bacteriology and Control of Contagious Nasal Catarrh (Snuffles) of Rabbits. N. S. Ferry and H. P. Hoskins, Detroit.—p. 311.
Toxicity of Lung Extracts. P. Morse, Detroit.—p. 319.
*Simplified Method for Detection and Estimation of Distribution of Morphin. A. Morgulis and V. E. Levine, Omaha.—p. 321.

Bacteriology and Pathology of Lethargic Encephalitis.—Cultures made by Morse and Crump from fluid aspirated from the lateral ventricles of the brain in six cases resulted in securing uniformly pure cultures of a nonmotile coccus, small in young cultures, as large as a staphylococcus in old cultures, with a tendency to grow in diplococcus and tetrad forms and to bunch in small clusters. It divides similarly to a staphylococcus in three planes, stains readily with the aniline dyes, and is gram-positive. The pathologic findings seem to indicate that "encephalitis lethargica" is not a true encephalitis in the sense that general paresis or the cerebral form of poliomyelitis are examples of encephalitis, because ganglion and pyramidal cell destruction does not characterize lethargic cases. But it is a typical example of low grade "meningomyelitis," the chracteristic lesions being in the meninges and white matter of the basal ganglia, pons and upper cord. Marie, in 1890, described cases similar to "encephalitis lethargica" and called them "acute multiple sclerosis." From a pathologic, as well as clinical, point of view, Morse and Cramp feel that this term has much to justify its use.

Effect of Egg White Injection.—Repeated subcutaneous injections of egg white in guinea-pigs produce a constant fever, associated with most of the signs of infection, whereas the same procedure in dogs does not affect the temperature curve and does not produce fever. Cohen is unable to explain the difference of the reactions.

Leukocytes in Anaphylaxis of Serum Sickness.—In a case of serum sickness with a delayed anaphylactic reaction recorded by Barach, the blood showed at the time of the anaphylactic reaction, a primary polynuclear leukocytosis followed by the appearance of myelocytes after the organism had appropriated the available leukocytes of the circulating blood, and at the same time an increased number of blood platelets. A leukopenia followed; at which time the polymorphonuclear counts were low and the mononuclears relatively high. The eosinophilia, which has been said to accompany anaphylactic reactions in general, was absent throughout. Therefore, Barach concludes that eosinophilia is not the criterion of an anaphylactic reaction.

Metabolic Changes in Experimental Tetany.—In parathyroidectomized dogs, showing typical tetanic symptoms, an acidosis condition was always observed by Togawa, and the antitryptic power and the nonprotein nitrogen content of the blood serum were usually increased. In thyroidectomized dogs, showing no tetanic symptoms, however, an acidosis condition was never observed. On the contrary, a slight alkalosis condition was sometimes induced. The antitryptic power and the nonprotein nitrogen content of the blood serum remained almost unchanged.

Bacillus Bronchisepticus as Cause of Infectious Respiratory Disease.—Bacillus bronchisepticus was isolated by Hoskins and Stout from the nostrils, nasal sinuses, trachea, lungs and heart blood of white rats affected with a serious disease of a distemper-like character. The organism was recovered in pure culture in about one half the cases. Other organisms were found in the nostrils and nasal sinuses, and once in the trachea. Agglutination tests pointed to the identity of the rat organism and *B. bronchisepticus* from a canine source. The serum of rats affected with the disease agglutinated both homologous as well as heterologus strains of *B. bronchisepticus* in comparatively high dilutions. One rat serum showed strong agglutination at a dilution of 1:1,024.

Simplified Method for Detection and Estimation of Distribution of Morphin.—The presence of morphin in food, or in tissues and body fluids has been determined by Morgulis and Levine by heating with 2 per cent. tartaric acid (if solid, the material should first be ground or finely minced) to convert all morphin into the soluble tartrate. The mixture is rapidly cooled, preferably on ice, to solidify the fatty material. The solid residue is removed by straining through cheese cloth, and is washed until the washings are no longer acid to litmus. The liquid, after being filtered through paper, is evaporated to a pasty consistency. The tartrate is then decomposed by the addition of an excess of solid bicarbonate which sets the alkaloid free. The evaporation is then continued to complete dryness, and the mass is powdered and extracted with chloroform to remove the free morphin. The volume of the chloroform extract is noted, and the smallest quantity of the extract is found which on evaporation (in a porcelain crucible over the water bath) leaves a residue which yields a definite morphin test. In this way the relative amount of morphin in several extracts can be determined. Besides knowing the limit of sensitivity of the reaction an approximate estimate of the amount of morphin in the original sample is possible. Inasmuch as the authors found that morphin, whether given subcutaneously or by mouth, is widely distributed throughout the animal body, finding its way into almost every tissue, they state that it is not advisable to limit the toxicologic examination for morphin to the alimentary tract alone, an examination of at least the kidney and urine and liver being indispensable.

Modern Hospital, Chicago

February, 1920, **14**, No. 2

Home for Tuberculous on San Francisco Bay. H. H. Meyers, C. Bush and O. L. Tiedehohl.—p. 83.
Hospital and Community. C. G. Parnall, Ann Arbor.—p. 92.
Hospital and Home Isolation of Infectious Diseases: Their Relatives. D. L. Richardson, Providence.—p. 99.
Need of War Trained Physiotherapy Experts in Hospital. F. J. Cotton, Boston.—p. 101.
Making Toys for Children out of Newspapers and Paper Bags. M. H. Barker, Worcester.—p. 103.
Anesthetics—Their Use, Value and Methods of Administration. H. A. Britton, Minneapolis.—p. 106.
How to Meet Need of Rural Hospitals. J. J. Ross, Middlebury.—p. 108.
Air Control and Reduction of Death Rate after Operations. E. Huntington, New Haven.—p. 111.
Misericordia Hospital (Philadelphia) Distinguished by Beauty of Grounds, Structure and Interior. J. O'Grady, Washington, D. C.—p. 115.
Hospital Survey in Interchurch World Movement. F. Clare, New York.—p. 123.
Blind Men Taught New Occupations at Chicago Lighthouse. E. L. Swift, Chicago.—p. 126.
Group Practice Problem. O. V. Huffman, Brooklyn.—p. 127.
Better Eye, Ear, Nose and Throat Service in Hospitals. F. Allport, Chicago.—p. 129.
Health Problems Among Wealthy Rural Populations. E. E. Wick, Worthingotn.—p. 131.
Reconstructon of Hospitals from Nursing Standpoint. E. A. Greener, New York.—p. 134.
Detecting Hospital Food Waste. E. E. Irons, Chicago.—p. 143.
Social Service Dietetics in Relation to Jewish Problems. M. L. Schapiro, New York.—p. 147.
Statewide Cooperation in Industrial Health Education. A. M. Staebler, Boston.—p. 158.

New Orleans Medical and Surgical Journal

February, 1920, **72**, No. 8

Medical Aspect of Enteroptosis. A. E. Fossier, New Orleans.—p. 444.
Food Conditions in Europe; Etiology of Pellagra. S. Harris, Birmingham.—p. 452.
Results of Unerupted and Impacted Teeth in Adult in Reference to Neuralgia and Other Lesions. A. G. Fredrichs, New Orleans.—p. 467.
Eye Examination as Factor in Diagnosis of Transmitted Heredity Syphilis. T. J. Dimitry, New Orleans.—p. 474.
Syphilitic Fibrosis of Penis (Keloid Type) in Negro; Report of Case. H. W. E. Walther, New Orleans.—p. 481.

Prophylaxis, Pathology, Tongue Cleansing, Tongue Indications. J. J. Sarrazin.—p. 483.
Persistent Occipito-Posteroir Positions. H. E. Miller, New Orleans. —p. 494.
Considerations Suggested by Publications of Dr. Noguchi on Experimental Yellow Fever. M. E. Lebredo, Havana, Cuba.—p. 499.

New York Medical Journal

Feb. 14, 1920, **111**, No. 7

Fluctuations of Thyrosuprarenal Activity in General Diseases. C. E. de M. Sajous, Philadelphia.—p. 265.
Pineal Body: Structure, Function and Diseases. S. E. Jelliffe, New York.—p. 269.
Endocrine Tropisms; Thyrotropisms. D. M. Kaplan, New York.—p. 275.
Thyroidal Constipation. S. G. Strauss, New York.—p. 280.
Hyperthyroidism. A. B. Webster, Philadelphia.—p. 283.
Treatment of Goiter. H. L. Foss, Danville, Pa.—p. 285.
Endocrinologist and Internist. W. W. Herrick, New York.—p. 286.
Toxic Goiter. J. C. O'Day. Honolulu.—p. 287.
Treatment of Early Hyperthyroidism. F. L. Meredith, New York. —p. 289.

New York State Journal of Medicine

February, 1920, **20**, No. 2

Blood Clot Dressing in Mastoidectomy: Modified Technic Which Insures Primary Painless Healing Without Deformity. G. E. Davis, New York.—p. 38.
Aural Significance of Vertigo. I. W. Voorhees, New York City. —p. 42.
Neutrophilic Granules of Circulating Blood in Health and in Disease. G. S. Graham, Albany.—p. 46.

Northwest Medicine, Seattle

February, 1920, **19**, No. 2

Clinical Manifestations in Gallbladder Disease. F. Smithies, Chicago. —p. 31.
Special Requirements in Nutrition. G. E. Burget, Portland.—p. 39.
Relationship Between General Digestive Conditions and Mouth Conditions. M. M. Null, Seattle.—p. 43.
Vincent's Angina: Report of Eighty Cases. C. L. Shields, Salt Lake City.—p. 45.
Plea for Early Operative Intervention in Acute Suppurative Affections of Mastoid. O. M. Rott, Spokane.—p. 46.
Nerve Block Anesthesia in Superior Thyroid Pole Ligation. J. Hunt, Seattle.—p. 49.

Public Health Journal, Toronto

February, 1920, **11**, No. 2

Child Health. A. Brown, Toronto.—p. 49.
Some Problems of Child Hygiene. M. Sherwood, Baltimore.—p. 54.
Antenatal Work and Stillbirths. J. G. Gallie, Toronto.—p. 62.
Plan for More Effective Federal and State Health Administration. F. L. Hoffman, Newark, N. J.—p. 88.
Raising Standards of Living as Weapon in Anti-Tuberculosis Campaign. B. B. Burritt, New York.—p. 89.

Pennsylvania Medical Journal, Athens

February, 1920, **23**, No. 5

*Intussusception: Report of Case. S. E. Tracy, Philadelphia.—p. 247.
*Epidemic Cerebrospinal Meningitis. J. Sadler, Philadelphia.—p. 250.
*Prevention of Communicable Respiratory Diseases Based on Observations in Army Camps. O. H. Petty, Philadelphia.—p. 255.
*Cardiovascular Phenomena Associated with War Neuroses. G. M. Piersol, Philadelphia.—p. 258.
*Significance of Heart Murmurs Based on Examinations in U. S. Army. E. H. Goodman, Philadelphia.—p. 263.
*Early Recognition of Diseases of Heart. T. McCrae, Philadelphia. —p. 267.
Advantages of General Over Local Anesthesia in Tonsillectomy. H. M. Becker, Sunbury.—p. 273.

Intussusception.—In the case reported by Tracy, the intussusception took place high up in the small bowel and the mass was tucked over against the lateral wall of the abdomen on the left side and gave a distinct area of dullness and resistance over the entire length of the descending colon.

Epidemic Cerebrospinal Meningitis.—This paper was abstracted in The Journal, Nov. 15, 1919, p. 1549.

Prevention of Communicable Respiratory Diseases.—This paper was abstracted in The Journal, Nov. 22, 1919, p. 1634.

Cardiovascular Phenomena Associated with War Neuroses.—This paper was abstracted in The Journal, Nov. 22, 1919, p. 1634.

Significance of Heart Murmurs.—This paper was abstracted in The Journal, Nov. 22, 1919, p. 1634.

Early Recognition of Diseases of Heart.—McCrae says that there are no set rules which we can apply to the early recognition of cardiac disease in every case. The determination to observe carefully and investigate thoroughly will lessen mistakes. It is wiser to start with the idea that there is some disturbance present and prove the contrary than to make light of symptoms and fail to recognize changes which might be aided by early treatment.

Psychobiology, Baltimore

February, 1920, **2**, No. 1

Temporal Maze and Kinesthetic Sensory Processes in White Rat. W. S. Hunter, Lawrence, Kans.—p. 1.
Behavior of White Rats in Presence of Cats. C. R. Griffith, Champaign.—p. 19.
Biologic Basis of Association of Ideas and Development of Perception. K. Dunlap, Baltimore.—p. 29.
Studies of Cerebral Function in Learning. K. S. Lashley, Minneapolis.—p. 55.

South Carolina Medical Ass'n Journal, Greenville

February, 1920, **16**, No. 2

Roentgen-Ray Study of Esophageal Diverticula. R. Taft, Charleston. —p. 27.
Anaphylaxis and Anti-Anaphylaxis. C. V. Akin, Columbia.—p. 32.
Annual Report of the State Health Officer. J. A. Hayne, Columbia. —p. 50.

West Virginia Medical Journal, Huntington

February, 1920, **14**, No. 8

Joseph Price. A. P. Butt, Elkins.—p. 281.
To Hell with Sanitation Anyway. H. G. Steele, Bluefield.—p. 288.
Relations of Physician to Hospital. J. R. Hunter, Huntington.—p. 293.
Ocular Lesions Due to Focal Infections. H. H. McGuire, Winchester. —p. 295.
Principles Preliminary to Treatment of Functional Nervous Disorder. T. A. Williams, Washington, D. C.—p. 300.

Wisconsin Medical Journal, Milwaukee

February, 1920, **18**, No. 9

Infection of Kidney. H. Cabot, Boston.—p. 341.
Value of Military Surgery in Civilian Practice. G. W. Crile, Cleveland. —p. 349.
Tuberculosis with Pregnancy. C. H. Davis, Milwaukee.—p. 355.
Conservation of Vision. G. I. Hogue, Milwaukee.—p. 361.
Mouth Infection as Source of Systemic Diseases. M. N. Federspiel, Milwaukee.—p. 365.
Etiology of and Prophylactic Inoculation in Influenza. E. C. Rosenow, Rochester, Minn.—p. 370.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

Feb. 14, 1920, **1**, No. 3085

Modern Treatment of Functional Nervous Disorders. B. Hart.—p. 207.
*Appendicectomy by a New Route. R. H. A. Whitelocke.—p. 211.
*Results of Protective Inoculation Against Influenza in British Army at Home, 1918-1919. W. B. Leishman.—p. 214.
Roentgen-Ray Treatment of Neoplasms. G. E. Vilvandre.—p. 215.
Chronic Infection of Faucial and Postnasal Lymphoid Tissue in Children. P. W. Leathart.—p. 217.
Ruptured Gastric Ulcer in a Man Aged 78; Laparotomy: Recovery. A. Fullerton.—p. 218.
*Method of Treating Dhobie Itch. C. J. Glasson.—p. 219.

Appendectomy by a New Route.—The operation described by Whitelocke removes the appendix through the right iliac fossa in cases in which no general exploration of the abdominal cavity is called for—that is, in acute cases rather than chronic cases. The incision is made one-half inch or less internal or medial to and parallel with the anterior superior spine of the ilium, or as near to it as practicable. The cut is carried above and below this point to an equal extent and parallel with the iliac crest and spine and the attached Poupart's ligament. The length of the incision usually need not be greater than 2½ inches. The cut at once divides the skin, subcutaneous fascia, and aponeurosis of the external oblique muscle to its full length. At this stage a white line of varying distinctness may usually (roughly in about 58 per cent. of cases noted) be seen passing across the muscle almost horizontally, in a direction from the anterior superior spine of the ilium to the middle line of the body; this line which is bloodless, indicates a natural division of the muscle into an upper and lower section. With this line as a guide

the thick fibers of the muscle are incised and separated. The subjacent transversalis muscle is then similarly treated. In uncomplicated cases, and whenever there is no evidence of suppuration, as may usually be determined by palpation of the peritoneum through the transversalis fascia, this fascia and the peritoneum are divided in a direction parallel with the skin incision, medial or internal to the reflection of the parietal peritoneum on to the iliac fossa, deep to and parallel with Poupart's ligament. Where, however, an abscess is present or suspected it is safer to turn the peritoneum inward or medialward from its seat of reflection behind Poupart's ligament and to open it posteriorly from the iliac fossa. The transversalis fascia and peritoneum may be cut transversely as with the deep muscles, if the incision is likely to require enlargement. When the abdomen is opened the viscus first seen is generally (86 per cent. of cases noted) large intestine, either the first part of the ascending colon or, less frequently, the cecum. The cecum with its appendix is delivered through the wound. The appendix is removed in the usual manner and the wound is closed in layers.

Results of Protective Inoculation Against Influenza.—The results recorded by Leishman confirm and even strengthen his original anticipations, that at least a moderate degree of protection against infection might be expected, while more decidedly beneficial effects might be hoped for in a diminution of both the frequency and the gravity of the pulmonary complications.

Method of Treating Dhobie Itch.—Glasson claims to have treated many persons with Dhobie itch with success by a combination of roentgen rays and chrysophanic acid ointment (30 grains to 1 ounce of wool fat).

Dublin Journal of Medical Science

February, 1920, **3**, No. 578

Sir Patrick Dun's Library. T. P. C. Kirkpatrick.—p. 49.
Eusol and its Intravenous Uses. A. L. Gregg.—p. 68.
*Influence of Salts and Other Substances on Agglutination. V. M. Synge.—p. 76.

Influence of Salts and Other Substances on Agglutination.—The substances experimented with by Synge were glucose (0.6 per cent. solution, and 6 per cent. solution); glycocoll (0.6 per cent. solution); alanine (0.6 per cent. solution) asparagin (0.6 per cent. solution and 6 per cent. solution). The conclusions drawn from his results are: 1. The presence of any substance in solution is not sufficient to cause agglutination. 2. Asparagin has a marked influence on agglutination. 3. Other amino-acids, e. g., alanine and glycocoll have no influence on agglutination. 4. Glucose has no influence on agglutination.

Edinburgh Medical Journal

February, 1920, **24**, No. 2

Hypertonus of Sympathetic in Relation to Intestinal Toxemia. J. J. G. Brown.—p. 71.
Binet Scale for the Blind. W. B. Drummond.—p. 91.
Introduction to Psychotherapy. G. Robertson.—p. 100.
Tuberculides and Their Relation to Tuberculosis of Skin and Other Organs. R. C. Low.—p. 114.
Metal Disc in the Esophagus, Esophagotomy; Recovery. R. C. Alexander.—p. 120.

Indian Medical Gazette, Calcutta

January, 1920, **55**, No. 1

Impassable Strictures of Urethra. J. Roberts.—p. 1.
Epidemic of Fifty-Four Cases of Relapsing Fever in Birjand, East Persia. A. S. Fry.—p. 2.
Alimentary Rest Treatment of Diabetes. E. E. Waters.—p. 8
Quinin Prophylaxis and Treatment of Malaria in Coolie Population of Assam. C. E. P. Forsyth.—p. 12.
*Cinchonidin in Malaria. D. S. Ollenbach.—p. 14.
Influenza. B. Singh.—p. 15.

Cinchonidin in Malaria. — Twenty-four patients were injected deep in the deltoid with cinchonin bihydrochlorid. The first dose for adults was 7 minims and subsequent ones 10 minims or about 3 and 5 grains, respectively. From two to four injections were given on successive days where possible, or about 8 to 18 grains. All the cases were genuine malaria. No local or constitutional disturbance of any kind took place, except that a man who was given six injections had rather a painful arm, and another was cinchonized the very evening he was first injected; but both symptoms passed away quickly. Quinin and arsenic were given in two obstinate cases as after-treatment. There were two relapses, showing 91.7 per cent. recoveries out of twenty-four cases.

Journal of Laryngology, Rhinology and Otology, London

February, 1920, **35**, No. 2

*Otomycosis. A. Cheatle.—p. 33.
*Carcinoma of Postericoid Region (Pars Laryngea Pharyngis) and Upper End of Esophagus. A. L. Turner.—p. 34.
Sellar Decompression for Pituitary Tumors. W. Howarth.—p. 49.
Brain from a Patient Who Presented Nystagmoid Movements in Pharynx and Larynx. A. B. Kelly.—p. 53.
Simple Method of Recording Diagrammatically Movements of Vocal Cords, with Special Reference to Tremors. (Epidiascope Demonstration.) A. B. Kelly.—p. 54.
Epithelioma of Larynx Removed by "Window" Resection of Thyroid Cartilage. H. L. Lack.—p. 54.

Otomycosis.—Cheatle has seen seven cases of otomycosis in nine months. In all of these one ear only was affected, and the trouble involved the deep meatus. They were easily diagnosed, presenting textbook symptoms and signs, and were quickly cured by textbook treatment. The clinical diagnosis was verified by microscopic examination.

Carcinoma of Postcricoid Region and Upper End of Esophagus.—Turner reviews the history of 140 cases; in ninety-eight of these the tumor was situated in the postcricoid region. Most of these patients (86 per cent.) were females.

Lancet, London

Feb. 14, 1920, **1**, No. 5033

*Blood Vessels and Pressure. L. Hill.—p. 359.
Results of Protective Inoculation against Influenza in the Army at Home, 1918-1919. W. B. Leishman.—p. 366.
*Complement Fixation Experiments in Influenza. H. J. B. Fry and C. Lundie.—p. 368.
Periodicity of Influenza. C. O. Stallybrass.—p. 372.
*Efficient and Economical Pylon. W. M. Johnston.—p. 373.
Three Cases of Acute Pancreatitis. G. P. Mills.—p. 376.
Traumatic Rupture of Intestine Without External Injury. G. M. A. Herzfeld.—p. 377.
*Intravenous Administration of Mercuric Iodid in Treatment of Syphilis. R. L. Spittel.—p. 378.

Blood Vessels and Pressure.—Not increased capillary pressure and filtration are in Hill's opinion the cause of edema, but stagnation of flow with consequent oxygen want and increased imbibition.

Complement Fixation Experiments in Influenza.—An antigen prepared by Fry and Lundie from an organism isolated in the third wave of an epidemic showed fixation of complement with serums derived from cases of influenza, both recent and those occurring in previous waves of the epidemic. This complement fixation is absent in the case of serums from normal individuals who have never had influenza. It is absent in the case of serums from individuals who are suffering from other specific diseases and are free from any recent history of influenza. An antigen prepared from another organism showed no fixation of complement with serums from cases of influenza.

Efficient and Economical Pylon.—The important features of this pylon are: (1) a bucket molded to fit the stump, and supported by a fiber cone with a satisfactory rim at the top; (2) simplicity of design; (3) light weight and low cost of production.

Intravenous Administration of Mercuric Iodid in Treatment of Syphilis.—An experience of over 4,000 of these injections, during a period of four years, convinces Spittel that this procedure is a valuable adjunct to the treatment of syphilis with arsphenamin; the combination establishing a cure (as gaged by Wassermann tests, provocative and otherwise, at varying intervals) more quickly and permanently than by any other method. The solution has the following composition: mercuric iodid, 50 grains; sodium (or potassium) iodid, 8 drams; phenolphthalein (0.5 per cent. solution), 20 minims; sodium hydrate (25 per cent. solution), about 2 drams; distilled water, to 40 ounces. The dose for an adult is from 8 to 12 c.c. given intravenously. The injection is tolerated well. The results are not only far quicker than those obtained with mercury and iodids given by any

other methods, but often even a single injection produces an effect almost as phenomenal as arsphenamin. In nerve syphilis, especially, some of the finest results are obtained. The number of injections and the interval between them vary with the particular case. An ordinary case of secondary syphilis may be treated with five or six injections each of arsphenamin and mercuric iodid, given at intervals of from seven to ten days alternately, in varying sequence or in successive courses. Often after such a series a negative Wassermann reaction is permanently obtained; if not, further courses are given to meet particular needs.

Practitioner, London

February, 1920, **104**, No. 2

*Phantom Limbs of Amputés. E. M. Corner.—p. 81.
Painless Operations. P. L. Mummery.—p. 89.
Medicolegal Notes. J. Colli. Cont'd.—p. 98.
Heart in Acute Febrile Diseases. H. L. Cronk.—p. 102.
*Estimation of Sugar in Blood in Diagnosis and Treatment of Diabetes. P. J. Cammidge.—p. 114.
Syphilis of Throat, Nose, Ear; Diagnosis and Treatment. D. Guthrie.—p. 131.
*Pernicious Anemia at an Advanced Age. G. Ward.—p. 145.
Ionization. M. Wardle.—p. 149.
Ruptured Popliteal Aneurysm. C. P. Lankester.—p. 151.
*Cerebrospinal Fever Relapse. P. N. Randall.—p. 152.

Phantom Limbs of Amputés.—More than 500 cases were investigated by Corner. His enquiries established these facts: 1. Phantoms made their appearance immediately after operation. 2. They were very unusual in the young, but were more frequent among the older patients. They were of much greater frequency and severity in military than in civil practice. 3. As a rule, they obtruded themselves less in frequency and sensation as time went on, and within eight months or a year the patient slept well, did not dream, and was only conscious of the phantom limb when he thought of it. It was a sign of considerable clinical importance if the patient was undisturbed by his missing limb in sleep and unaffected in dreams. The presence of or variations in the phantoms are often of considerable clinical value, particularly in conjunction with other physical signs, in distinguishing whether the symptoms in a particular patient are physical or psychic, bodily or mental, peripheral or central.

Estimation of Sugar in Blood in Diagnosis and Treatment.—A study of more than 700 cases of diabetes by Cammidge has shown that there is no constant blood sugar level for the appearance of sugar in the urine in quantities recognizable by ordinary tests; also, that there is no definite relationship between the percentage of sugar in the blood and either the percentage or total amount of sugar excreted by the kidneys. Patients with a permanently high blood sugar may pass comparatively little sugar in their urine, while, in some instances, a normal, or even a subnormal, blood sugar curve may be associated with frank glycosuria. In either condition, examination of the urine alone does not give a correct picture of the case, and, if it is not checked by blood sugar estimations under controlled conditions, may readily lead to mistakes in diagnosis and treatment. As a rule, young diabetics have a lower threshold point for clinical glycosuria than those of middle age, and the threshold rises with advancing years. It is, therefore, important that the presence of even small amounts of sugar in the urine of persons of middle age should not be dismissed as of little significance, unless a series of blood tests have shown that their tolerance for carbohydrates is not seriously defective. Hyperglycemia may exist without clinical glycosuria, that is with an insufficient percentage of sugar in the urine to give the ordinary tests for sugar. The reverse condition, glycosuria with a normal or subnormal percentage of sugar in the blood, is not as uncommon as is generally supposed. Cammidge's observations suggest that many cases of latent diabetes are essentially hepatic in origin, and that so long as the patient avoids sugar and foods containing sugar as such, he may take any starchy food in moderation without harm, provided that the protein and fat content of the diet are also controlled. He warns that too hasty a diagnosis of diabetes should not be made from the presence of an excess of sugar in the blood nor even from an abnormal blood sugar curve after a test meal of sugar, for other diseases may be associated with hyperlycemia. In the later stages of nephritis, for example, the percentage of sugar in the blood is usually high, often equalling the amount met with in severe diabetes when uremia is imminent, but the blood picture is one of complete metabolic failure, and the end products of nitrogen metabolism are correspondingly increased. Some excess of sugar in the blood is usually found in patients suffering from cariovascular diseases with high blood-pressure, even when there is little or no indication of renal disturbance. Carcinoma is another condition in which it is said that there is often moderate hyperglycemia.

Pernicious Anemia at an Advanced Age.—Ward's patient was 85 years of age. Her family history was wholly negative, and she had always enjoyed good health until she reached the age of 82, when she first noticed a progressively increasing weakness, nausea and flatulence. When Ward first saw her, which was six months before her death, she presented characteristic symptoms which permitted a very confident diagnosis of pernicious anemia before the blood was examined. She also had certain gastro-intestinal symptoms with glossitis, and numbness of the extremities. The patient's chief complaints were of sore tongue and pain in the abdomen. Ward states that chronic or acute glossitis with anemia is practically always pernicious anemia.

Relapse in Cerebrospinal Fever.—Randall reports a case in a man, aged 33, in which a true relapse occurred, ten weeks after recovery from the original attack.

South African Medical Record, Cape Town

Jan. 24, 1920, **18**, No. 2

Tympanic Membrane: Its Correct Form and Reflecting Areas. J. L. Aymard.—p. 21.
*Cirrhosis of Liver; Suggestion as to Treatment. F. P. Fouche.—p. 24.

Treatment of Cirrhosis of Liver.—Fouche suggests that in his case the subcutaneous injection of ascitic fluid, withdrawn from the patient, prolonged life.

Archives des Mal. du Cœur, etc., Paris

October, 1919, **12**, No. 10

*Analysis of the Normal Venous Curve. W. Janowski.—p. 433.
*Dissociation of Pulse in Aortic Stenosis. L. Gallavardin and L. Tixier.—p. 447.
The Circulation with Acroparesthesia from Chilling. J. Cottet.—p. 457.

The Venous Pulse.—Janowski discusses the rational interpretation and nomenclature of the elements of the normal venous pulse tracing, according to the prevailing ideas as to their origin.

Dissociation of Pulse Findings.—The oscillometer and the auscultation findings did not parallel each other in the case reported by Gallavardin and Tixier in which aortic stenosis and aortic insufficiency were accompanied with pulsus tardus and anacrotism.

Archives de Médecine des Enfants, Paris

February, 1920, **23**, No. 2

*The Arterial Circulation in Infants. E. Lesné and L. Binet.—p. 69.
*Inherited Syphilis and Dystrophies. V. Hutinel and H. Stévenin.—p. 77. Cont'n.
Senile Skin in Children. Variot and Cailliau.—p. 106.
Management of Acute Appendicitis. J. Comby.—p. 112.

Arterial Circulation in Infants.—Lesné and Binet found that the differential pressure increases with the infant's age, as also the arterial pressure in general. Feeding and crying raise the maximal pressure but sleep reduces it, as also gastro-intestinal derangement. The arterial circulation did not seem to be modified with mild infections and pleurisy. After feeding, the pulse dropped from 120 to 96. The pulse varied widely, but was over 100 in infants less than 4 months old; all after this age averaged 95. Testing the excitability of the vagus by the oculocardiac reflex induced more vigorous responses than in adults. Even in infants only 2 weeks old, the heart beat dropped from 120 or 130 to 90 when the pressure was applied to both eyeballs, but it ran up again at once. Inhalation of amyl nitrite caused pronounced vasodilation in infants 3 months old but not in infants less than a month old. This test is not borne well by infants.

Inherited Syphilis and Dystrophies.—In this second instalment, Hutinel and Stévenin discuss the direct, partial, and the indirect, generalized, dystrophies for which syphilis is responsible, and also the hereditary dystrophies, with examples of each. In some of the children the head is large, the veins in the scalp and chest are prominent, and there is occasional headache or there are signs of colitis, or the hands and feet show a tendency to cyanosis—all with positive Wassermann reaction. Under specific treatment the children began to thrive at once. The writers comment on the sclerosis and sensitization, and on the arousing of lesions from inherited syphilis by some accidental infection or intoxication, especially during epidemics of scarlet fever, diphtheria or typhoid. Grave symptoms are often noted from the liver, brain, pancreas or suprarenals which would be ascribed to the acute infectious disease if the positive Wassermann reaction did not suggest that syphilis had provided a point of lesser resistance. They have seen typhoid fever induce the flaring up of an old syphilis that had long been apparently extinct, and lead to a fatal termination. On the other hand, the syphilis may imprint an especially severe character on an acute disease, enhance its severity, prolong it and entail complications. When tuberculosis develops in a syphilitic, or the tuberculous acquire syphilis, the tuberculous lesions often tend to sclerosis, and may be favorably influenced by specific treatment and hygiene. Or the tuberculosis may pass into a torpid stage, with amyloid degeneration, the tuberculous lesions affecting preferentially the organs already impaired by the inherited syphilis.

Bulletin de l'Académie de Médecine, Paris

Jan. 27, 1920, **83**, No. 4

*Lethargic Encephalitis. F. Widal.—p. 81.
*Hypernephroma in the Uterus. H. Hartmann.—p. 90.
*Electric Treatment of Tuberculous Osteitis. E. Doumer.—p. 93.
Undernutrition as Factor in Deficiency Disease Phenomena in Pigeons. A. Lumière.—p. 96.

Lethargic Encephalitis.—Widal observes that the virus causing this disease seems to affect scattered small patches of the nervous system, skipping the intervening areas. This imprints a peculiar physiognomy on the malady. In one case, typical ankle-clonus and the toe phenomenon were the only signs beyond the fever, somnolency and ptosis, with none of the other disturbances which usually accompany ankle-clonus.

Hypernephroma in the Uterus.—Hartmann does not know of any case on record like the one he reports in which a large tumor, evidently of aberrant suprarenal tissue, had developed in the uterus. The term corticosuprarenaloma seems preferable, he says, as tumors of this kind develop exclusively from aberrant suprarenal cortex cells. He knows of ten or twelve cases of such aberrant suprarenal cell tumors in the broad ligament and ovary. In the uterus case related, there were several local recurrences, but the suprarenals proper have shown no signs of disease during the three years to date.

Electric Treatment of Tuberculous Osteitis.—Doumer now announces that the cases he published eight years ago as cured by application of the high frequency current have had no recurrence since. The permanent efficacy of this treatment for tuberculous osteitis is thus established. In four of his later series of twenty cases the lesion was in the foot and of long standing. In the only two cases in which the treatment failed, the lesion was on the hand, and there was one recurrence in another case requiring repetition of the treatment. The sitting was for ten minutes daily or three times a week, the current 80,000 volts interrupted up to 800,000 or 1,000,000 times a second.

Bulletin Médical, Paris

Jan. 31, 1920, **34**, No. 6

*Acute Purulent Pleurisy. C. Villandre.—p. 87.
*Chronic Empyema. A. Cauchoixy.—p. 91.
Suppuration in Traumatic Hemothorax. P. Ameuille.—p. 94.
Roentgen Ray Findings with Purulent Pleurisy. P. Cottenot.—p. 98.

Acute Purulent Pleurisy.—Villandre opens this pleurisy number of the *Bulletin* by describing the preferable technic for pleurotomy as the proper treatment for purulent pleurisy. The condition of the lung and the general condition must be such as not to contraindicate the intervention, knowing the exact site of the abscess and draining at the lowest point. Another indispensable precaution is the determination of the micro-organisms involved: The tubercle bacillus contraindicates pleurotomy, while the streptococcus, associations of germs, and putrid pleurisy demand immediate pleurotomy. Pure pneumococcus pleurisy does not always require pleurotomy, he adds. Local anesthesia is all that is needed, except for restless young children. Rib resection must accompany the pleurotomy to allow removal of the false membranes with pneumococcus or streptococcus pleurisy. Provision for drainage should be ample, but managed so as not to promote the collapse of the lung. Antiseptic lavage or intermittent flushing of the cavity is necessary with the streptococcus or associated microbes or the germs of putrid or gangrenous pleurisy. As soon as the temperature is normal, breathing exercises should be begun and kept up and the spirometer used to combat the tendency of the lung to retract.

Chronic Empyema.—Cauchoix discusses the reasons why empyema has so often resisted all treatment. Defective drainage or a persisting foreign body is usually to blame, a scrap of drain or of gauze or a chip from an instrument or piece of suture material—all of these have been found in empyemas. Osteitis of a rib close to the fistula may be a factor, and raying may reveal a second pus pocket. An instructive case is related by Picquet in which an empyema that had lasted for six years healed up at once when a secondary pus pocket in the lumbar region was incised and a long drain passed through this incision and up through the diaphragm into the pleura. The various methods for repair when suppuration has been arrested are compared. The prognosis is much better since Carrel-Dakin irrigation or insufflation of oxygen has been applied to these old cases.

Bulletins de la Société Médicale des Hôpitaux, Paris

Dec. 5, 1919, **43**, No. 35

*Pathologic Arterial Tension. M. Villaret and L. Dufour.—p. 1018.
Epidemic of Paratyphoid from Laundering without Boiling. A. Louste and H. Godlewski.—p. 1021.
*Dysentery Spread by Baker. A. Louste. and H. Godlewski.—p. 1022.
*Meningitis in Gonorrhea. Boivin.—p. 1024.
Tardy Sequelae of Chest Wounds. E. Sergent and P. Pruvost. —p. 1029.
Remote Results of Chest Wounds. Tuffier.—p. 1047.

The Arterial Tension in Disease.—Villaret and Dufour report the application in various pathologic conditions of their method of studying the pulse by simultaneous oscillometry, palpation and auscultation. This provides a constant, the variations in which are characteristic and instructive.

Bacillary Dysentery Spread by Baker.—In the village of 600 souls there had been thirty-one cases of bacillary dysentery with six deaths in less than a month. The district health officer had visited the village and given the usual advice to disinfect the water, etc., and then left, but the military inspector investigated conditions more closely and found that all in the family of the village baker had had the disease among the very first. After the baker had been instructed and elementary hygienic measures enforced in his business, the epidemic was at once arrested.

Meningitis in Gonorrhea.—In the case reported by Boivin, violent headache and fever developed three or four weeks after the onset of gonorrhea. The urethral symptoms had been mild, but signs of inflammatory processes in the testicles, meninges and joints had followed, shifting about, like metastases. During the meningeal reaction, the lumbar puncture fluid was turbid but aseptic, and the polynuclears were intact. The meningeal symptoms were severe, suggesting epidemic meningitis, but the storm blew over in six or seven days, without leaving a trace. The young man had had epidemic meningitis four years before.

Paris Médical

Jan. 17, 1920, **10**, No 3

*Roentgenotherapy of Cancer. C. Regaud.—p. 53.
Pulmonary Sequelae in the Gassed. Leclercq and Boëz.—p. 59.
*Jaundice in Scarlet Fever. P. Meurisse.—p. 63.

Roentgen-Ray Treatment of Cancer.—Regaud expatiates on the necessity for even irradiation throughout the whole of the cancer, and gives an illustrated description of how to realize this. Only by this means is the maximal effect induced with the minimum of chances for harm.

Jaundice in Scarlet Fever.—In the case reported by Meurisse the jaundice developed suddenly in the course of severe scarlet fever, the symptoms and retrospective diagnosis indicating a primary angiocholitis or angiocholecystitis coming on with the eruption. The jaundice and other symptoms subsided in a week without any special polyuria or azoturia.

Presse Médicale, Paris

Jan. 24, 1920, **28**, No. 7

*Inaugural Lecture of Obstetrics and Gynecology Course. G. Schickelé. —p. 61.
*Furunculosis. A. Mauté.—p. 64.
*Asthma and Anaphylaxis. P. Pagniez.—p. 65.

Obstetrics at Strasbourg.—Schickelé relates that the first manual on childbirth was published at Strasbourg (1513); the first school of midwifery was organized by Fried in 1728. It was maintained by the city as Fried had no connection with the medical school. Pasteur's first work was done at Strasbourg, and W. A. Freund there was one of the pioneers in the treatment of uterine cancer. Schickelé discusses the physiologic factors involved in producing delivery, saying that distant changes specific to pregnancy are evident in the pituitary, suprarenals and ovaries, but that we must not try to explain all the phenomena by the internal secretions alone.

Furunculosis.—Mauté has been studying vaccine treatment of furunculosis since 1900. He begins at once with a stock vaccine and follows it with an autovaccine, as the latter is always more effectual in warding off recurrence. In the usual adjuvant tonic treatment he warns against arsenic, as this drug seems to rather favor the staphylococcus.

Asthma and Anaphylaxis.—Pagniez reviews the literature on this subject, and on the treatment of asthma with an autoserum, or by desensitization with peptone or by digestive antianaphylaxis. Auld's method of intravenous or subcutaneous injections of peptone, Pagniez' method with peptone by the mouth, and Cordier's with peptone in enemas, are all effectual, but the benefit is short-lived. Hence they are inferior, he says, to the American method of gradual desensitization by vaccination. But the peptone methods are so simple and easy that they encourage further research and experiments in this line. He adds that in the most authentic asthma there may be a psychic element. The asthma with heart and kidney disease and emphysema is merely a form of dyspnea resembling asthma. In true asthma, the attack is a manifestation of anaphylaxis induced by the introduction into the system of some substance which acts as an antigen in the sensitized organism in contact with the substance inducing the anaphylaxis. This condition of anaphylaxis can be made to disappear, at least temporarily by appropriate treatment, even although the nature of anaphylaxis is still a mystery. The Americans cited are Meltzer (1910), Ramirez (1919), and C. Walker (1917 and 1918).

Jan. 28, 1920, **28**, No. 8

*Internal Treatment of Skin Disease. P. Ravaut.—p. 73.
*Functioning of Gastro-Enterostomy. G. Metivet.—p. 75.

Internal Treatment in Dermatology.—Ravaut declares that it is irrational to attack skin disease only from without. "Imagine any one treating the skin lesions of syphilis by local applications alone! And yet the dermatologist is too apt to focus his attention exclusively on the local process. He must be a biologist, not a mere botanist." By modifying the secretions it may be possible to break up the vicious circle, and he has often accomplished this with sodium cacodylate or sodium thiosulphate (hyposulphite) after failure of all local measures. He gives the cacodylate by the vein in a 10 per cent. aqueous solution, giving thus up to 15 or 20 gm. of the cacodylate in the course of three weeks. Some patients were given up to 40 or 50 gm. in two or three months. After improvement of the skin disease, small doses of the drug are kept up for some time to ward off recurrence.

In his experimental research on causes liable to augment the toxicity of arsphenamin, he confirmed the findings of others in regard to the importance of oxidations in this respect, and he found that sodium thiosulphate prevented or neutralized these oxidations. His further assumption that oxidations are an important factor in certain skin diseases was confirmed by the effect of this drug, sodium thiosulphate, on certain long intractable pathologic conditions in the skin. The skin cleared up promptly when the sodium thiosulphate was given by the vein in a 20 per cent. solution, in doses ranging from 4 to 15 gm. a day. He has also given it by the mouth in the same doses but with sugar: 25 gm. of sodium thiosulphate to 125 gm. each of syrup and distilled water. Fine results, he says, were obtained in urticaria, furunculosis, eczema and in arresting the arsenical abnormal redness and puffiness of the skin after arsphenamin treatment. In a case of pityriasis the skin slowly cleared up without any external treatment whatever.

Gastro-Enterostomy.—Metivet suggests that the condition of the stomach ought to be heeded more in making the gastro-enterostomy opening large or small. When there is atony of the stomach, the contents will pour out too quickly unless the opening is small, but it should be at the lowest point. With hypertony and necessity for resting the stomach, the opening should be large and in the antrum, near the lesser curvature. If conditions require it later, the pylorus can then be shut off.

Progrès Médical, Paris

Jan. 11, 1920, **35**, No. 2

*Convulsions in Adults with Pleuropulmonary Lesions. A. Barbé and R. Glénard.—p. 13.
*Tropical Ophthalmology. Terrien.—p. 14.
General Treatment of Syphilis. Bory.—p. 16.
Vaccine Therapy of Influenza. Lochelongue.—p. 18.
Sodium Vanadate and Persulphate in Psychoses with Anorexia. H. Damaye.—p. 19.

Convulsions of Pleuropulmonary Origin.—Barbé and Glénard report five cases of convulsions in male adults, the attacks commencing after unilateral pleuropneumonia. The attacks resembled in some respects epileptic seizures but differed from them in others. They are probably explainable by reflex action from irritation from the preceding pleural and pulmonary disease.

Tropical Ophthalmology.—In this lecture of the colonial medicine course, Terrien discusses filaria, hemeralopia and toxic amblyopia.

Revue de Chirurgie, Paris

September-October, 1919, **38**, No. 9-10

*Streptococcus Septicemia with Jaundice. E. Quénu, G. Küss and M. Brulé.—p. 785.
Chilling Main Factor in Trench Foot. E. Chauvin.—p. 793.
*Mastoiditis and Pott's Disease. G. Portmann.—p. 808. To be cont'd.
*Wounds of Blood Vessels. N. A. Dobrovolskaia.—p. 848

Septicemia Simulating Bile-Duct Disease.—Quénu and his co-workers call attention to the difficulty of the differential diagnosis in cases such as the one described in which recurring attacks of fever with jaundice suggested angiocholitis except for the absence of gallstone colic pains. The woman of 67 had been having these attacks for over a month; the stools were not clay-colored, and tests for spirochetes were negative, but the general condition was growing grave and an operation was being considered when finally the streptococcus was found in the blood, clearing up the diagnosis. An abscess developing served for revulsion; after evacuation of the thick, fetid pus, recovery soon followed.

Mastoiditis and Pott's Disease.—Portmann declares that the connection between mastoiditis and tuberculous caries of the upper spine has not been sufficiently emphasized to date. He analyzes the anatomic and clinical relations, giving instances of suboccipital Pott's disease mistaken for mastoiditis, and vice versa, and the involvement of one region from the other. His long illustrated article is to be continued.

Traumatic Aneurysms, and Wounds of Vessels in General.—Dobrovolskaia tabulates the details of sixty-two cases at a

Petrograd hospital, and describes how it is possible to estimate the collateral circulation with an aneurysm by means of the sphygmomanometer records of the pulse below the aneurysm. The local, general and collateral blood pressure reveal the conditions in the circulation of the limb. Oppel argues that the vein must be ligated along with the artery, even when the vein is normal. This reduced circulation favors development of collaterals, he claims, but the experiences here related did not show any advantage from this in the eighteen cases in which it was applied. In one case there was aseptic gangrene of the leg muscles after ligation of the popliteal vein. The foot kept its normal aspect throughout, as the subcutaneous venous system had maintained the circulation.

Revue de Médecine, Paris

November-December, 1919, **36**, No. 6

*Mild Tuberculous Pleurisy. A. Dufourt and M. Ségard.—p. 545.
*Antitoxic Treatment of Typhus. W. Vignal.—p. 562.
*Apical Pleuritis. C. Roubier.—p. 576.
Recovery from Homicidal Delirium of Jealousy. R. Benon and P. Gouriou.—p. 587.

Mild Recurring Tuberculous Pleurisy.—Dufourt and Ségard ascribe to the exceptional energy of the defensive forces the atypical course of certain tuberculous processes in the lungs and pleura. In this article they refer in particular to what they call benign tuberculous corticopleuritis, with recurring foci, and to chronic congestions of the lungs of the so-called arthritic type. The foci and the physical signs change about in the former, and periods of latency intervene. A special feature of this form is the occasional intense pain, not paralleling the physical signs. Another feature is that the lesions gradually subside, never passing into the ulcerative-cheesy stage. They have encountered cases of this kind at all ages. The most constant symptom is the dyspnea. Patients complain of this even before the appearance of the pain. They get out of breath at every prolonged exertion, and this dyspnea persists to some extent even in repose, reflecting with some precision the intensity of the congestion in the cortex of the lung and in the pleura. After a climbing exercise, there may be paroxysmal dyspnea with a sensation of constriction of the chest, anguish and extreme tachycardia. Then for an hour or two the patient expectorates profusely, an actual alveolar serous effusion. In an hour or two the whole paroxysm is over. The pains that come and go throughout the whole course are of the dull, permanent neuralgia type, or like a set of needle pricks, brought on by laughing or coughing or abrupt movement of the chest. The asthenia, tenacious pains, hampered breathing, palpitations and tachycardia often entail neurasthenia in time in the rare cases presenting the complete clinical picture.

Dufourt and Ségard never found tubercle bacilli, but they explain the spurts of congestion as the result of local anaphylactic shocks to tuberculin manufactured in the lesions. Anything such as extra physical exertion, climbing, or injection of tuberculin, mobilizing the bacillary toxins in the focus, brings on this wave of congestive phenomena. The anaphylaxis gradually merges into immunity, and the symptoms finally subside completely. Sanatorium treatment and repose, revulsion to relieve the pain, and other physical measures to soothe the heart and reduce the tendency to congestions are indicated. High altitudes and exposure to wind are formally contraindicated. A weakly arsenical-sulphur water has sometimes hastened the cure when the acute phase is past. One patient improved with sea bathing on the Mediterranean coast in calm summer weather. Drugs, they say, are useless or harmful, except possibly calcium; some patients inclined to hyperacidity improved under alkalines.

Antitoxic Treatment of Typhus.—Vignal treated nineteen patients at Bucharest, with an exceptionally toxic form of typhus, with infusion by the vein in the twenty-four hours of 500 c.c. of a solution of 6.5 gm. sodium chlorid and 0.4 or 0.5 gm. chlorin to the liter. This was prepared according to Danielopol's directions by passing a current of chlorin through distilled water and adding the sodium chlorid. The chlorid content is determined with sodium hyposulphite, Vignal found that the symptoms of profound toxic action became rapidly attenuated under these infusions. He analyzes his experience in detail, saying that the few deaths in the series occurred from pleurisy or streptococcus sepsis after the typhus had subsided, but the leukocytes still numbered 40,000. In one case the condition was not regarded as grave enough for the infusion as the leukocytes numbered only 20,000, but the fourteenth day they ran up to 23,400, and the infusion then came too late, the man dying the next day. The drop in the leukocyte count and the improvement of the other symptoms from toxic action followed promptly on the infusions.

Apical Pleuritis.—Roubier describes the sounds characteristic of pleuritis at the apex and their interpretation. In thirty of the fifty-three cases in this category, the auscultation findings were exclusively or predominantly restricted to the left apex. The condition has a favorable prognosis, whether of tuberculous origin or not.

Schweizerische medizinische Wochenschrift, Basel

Jan. 15, 1920, **50**, No. 3

*Varicella and Herpes Zoster. E. Feer.—p. 41.
*Legal Status of Abortion in Switzerland. P. Jung.—p. 42.
*Therapeutic Abortion. A. Gautier.—p. 46.
*Vernes Serologic Test for Syphilis. R. Preiswerk.—p. 51.

Chickenpox and Herpes Zoster.—Feer relates from the children's hospital at Zurich that a boy of 9 developed herpes zoster fourteen days after an infant in a connecting room had shown signs of chickenpox, and had been removed to another part of the building. The boy with herpes was not removed, and seventeen and twenty days after the onset of the herpes the two other children in the same room (three beds) developed chickenpox. The intervals thus from the first case of varicella were thirty-one and thirty-four days, and Feer thinks there can be no doubt that the herpes represented the second generation of the varicella, bridging the gap between the first and the two late cases. No other cases were known in the environment. In Bokay's compilation of thirteen cases, most of them from his own experience, the herpes was the first to appear, and the varicella developed secondarily, while in Feer's epidemic the varicella opened the sequence.

Legal Status of Abortion in Switzerland.—Jung suggests a rewording of the bill pending in the legislature to legalize therapeutic abortion and prevent abuses. He urges that therapeutic abortion should be ranked the same and be governed by the same laws as any operation. In the following article, Gautier, professor of penal law, discusses therapeutic abortion from the legal standpoint, and emphasizes that the presence of the third interested party, the *nasciturus*, imprints a unique stamp on abortion proceedings. But, he remarks in conclusion, whatever laws may be passed, conditions will continue the same: Good physicians will do what they think is right under the circumstances, and the unscrupulous will do as they please. *Les mœurs peuvent ici plus que la loi.*

The Vernes Colorimeter Serologic Test for Syphilis.—Preiswerk applied the Vernes technic in 1,200 cases and obtained parallel results to the Wassermann test in 76.7 per cent.; totally contradictory results in 1.1 per cent., and slighter divergence in the others. The technic is comparatively simple and easy, but the ingredients are not so constant as Vernes claims. Fresh pig serum is used instead of the rabbit amboceptor, and guinea-pig hemolysis is determined with a color scale. The organ extract is made with ethylene tetra chlorid acting on desiccated myocardium tissue from the horse.

Annali d'Igiene, Rome

September, 1919, **29**, No. 9

*Lice and Typhus. G. Alessandrini.—p. 557.
Cultivation of Micrococcus Gonorrhoeae. M. Carpano.—p. 599.
Pathogenic Blastomycetes. A. Ori and M. Ciaccia.—p. 604. Conc'n.
Typhus During the War. G. Sampietro.—p. 620. Cont'n.

Lice and Typhus.—Eight plates of the microscopic findings in lice confirm Alessandrini's statements as to prophylaxis of lice-borne diseases. The only rapid, practical and certain

means for extermination of lice, he reiterates, are with dry heat and with sulphurous anhydrid. It is immaterial whether the latter is generated by burning sulphur or by the method he has found most convenient from the action of sulphuric acid on sodium thiosulphate (hyposulphite). He places the clothing to be deloused in a jar containing a 4 per cent. solution of commercial sulphuric acid. When the clothing is saturated throughout, he pours in double the amount of a 20 per cent. solution of sodium thiosulphate, and the contents of the jar are turned and shaken up together. An air-tight cover is desirable, but not indispensable. The chemical reaction between the two fluids generates sulphurous acid gas, while the sulphur is precipitated on the insects, and is found deep in their respiratory organs, and the nits are killed at the same time. He adds that the cotton, wool, silk and linen articles, in seven different colors, used in his tests, kept in the fluids from ten to twenty minutes and then rinsed thoroughly in water, were not altered in their substance, and only a very few, after drying, were found to be slightly uniformly faded, especially the pink and yellow tints. His tests were made with both head and body lice, and with several types of similar parasites of the pig, etc.

Pediatria, Naples

February, 1920, **28**, No. 3

*Whooping Cough. O. Cozzolino.—p. 113.
*Progressive Muscular Dystrophy. Giulio Milio.—p. 118.
*Influenza and Lactation. M. Rollandini.—p. 135.

Whooping Cough. — Cozzolino denounces the theory preached by A. Czerny that whooping cough is merely the form imprinted by a neuropathic predisposition on an ordinary catarrhal infectious process in the air passages. Czerny's pupil, A. Niemann, has recently presented what he thinks is further evidence to sustain this theory, namely, that when influenza swept through the infant asylum in his charge, nine of the sixty-two infants developed whooping cough as the acute stage of the influenza subsided. Cozzolino refuses to accept this evidence, as no search was made for the Bordet-Gengou bacillus in the throats. Although no visitors were admitted to the asylum, there might have been a carrier among the nurses. The scattered appearance of the whooping cough among the inmates merely confirms that all infants are not susceptible to whooping cough. On the other hand, the vanishing of the Bordet-Gengou bacilli from the throat after the fourth week of whooping cough; the recent success with prophylactic vaccination with this bacillus, and the development of antibodies in the vaccinated; the immunity conferred by one attack, and the possible transmission of the disease from the mother to the fetus, form a solid basis for assumption of a specific causal micro-organism.

Progressive Muscular Dystrophy.—Milio reports nine cases in children from 6 to 11 years old encountered in the last ten years. They represent the five types of this pathologic condition. No hereditary tendency was apparent, but the condition developed after an acute infectious disease in some of the children; after measles at 11 months in one, but in others no factors were known that could throw light on the origin.

Influenza and Lactation.—Rollandini concludes from the experiences at the children's clinic at Turin that there is no need to interrupt lactation if the mother has influenza. She should be encouraged to continue nursing the child, unless there are grave complications. But precautions should be taken against infecting the child. It should not be kept in the room with the mother, and should be brought in only for feedings. The nipples should be washed each time before giving to the child, and the mother should be warned not to speak or cough. She should hold a handkerchief over her mouth as long as the child is near. No resort should be made to artificial feeding unless absolutely necessary, and then only partially, if possible.

Policlinico, Rome

Jan. 12, 1920, **27**, No. 2

Present Tendencies in Study of Pathology. A. Zeri.—p. 31.
Poisoning from Castor Oil Seeds; Two Children. M. Gioseffi.—p. 39.

Jan. 19, 1920, **27**, No. 3

*Cultivated Digitalis. G. Gaglio.—p. 63.
*Heredity in Cardiovascular Disease. G. Galli.—p. 65.
Calcium Treatment in Surgical Tuberculosis. L. Durante.—p. 68.

December, 1919, **26**, Surgical Section No. 12

Painless Childbirth. G. Cuzzi.—p. 385.
Local Use of Ether in Surgery. G. Fantozzi.—p. 390. To be cont'd.
Ultraconservative Operations on Limbs. Laurenti.—p. 406.

Cultivated Digitalis.—Gaglio reports the results of pharmacologic study of some cultivated *Digitalis purpurea* which demonstrated that it was as potent as the best from other sources. It requires an acid soil and protection against excessive heat.

Heredity in Cardiovascular Disease.—Galli remarks that few physicians seem to appreciate the frequency of the inherited tendency to cardiovascular disease in certain families. A number of instances from his own practice are compared with some on record. Rapid pulsation of the heart is often observed in several members of a family; he noted paroxysmal tachycardia in one man and in two of his children. What he calls hereditary myocardism is even more common, the subjects not able to stand as much physical exercise as others, panting after moderate exertion; the heart and the aorta are smaller than the average and the blood pressure lower. The young sometimes outgrow this under careful hygiene and progressive exercising, but exertion beyond what the subject can bear may do irreparable harm, as in a case described in which a mountain climbing excursion was too much a strain, and the young man died within two years. His father died a few years later of heart disease, and a sister at 13 from acute asystoly. One brother of 16 is weak and tires readily and his heart is unusually small. Another younger brother has a more robust constitution but he too tires easily. The family tree of another patient shows the great grandfather dying of apoplexy at 70 and one of his sons at 64, while two other sons died of heart disease at 51 and 70, and the fourth of tuberculosis in childhood. In the six children of the third generation one died at 41 of heart disease, three of cerebral hemorrhage at 51, 46 and 45, and the others of tuberculosis or Adams-Stokes disease. One of the thirteen great grandchildren has a cylindrical thorax. Galli has been preaching for years the importance of compiling data on heart disease, following the cases decade after decade and investigating the family tree. The military systems of the world have it in their power now, he continues, to inaugurate and carry out this systematic and organic study of pathologic conditions in the circulatory system, amplifying and continuing the work done during the war in this line. By this means positive data will be accumulated to offer to hygienists and legislators for prophylactic action.

Riforma Medica, Naples

Nov. 29, 1919, **35**, No. 48

*The Intermediate Metabolism in Nephritis. A. Barlocco.—p. 1041.
Paratyphoid A in Macedonian Campaign. C. Vallardi.—p. 1046.
Neurosyphilis and Predisposing Factors. G. Pighini.—p. 1050.
*Prophylaxis of Renal Tuberculosis. D. Taddei.—p. 1056.

The Metabolism with Uremia.—Barlocco reports ten cases of nephritis studied by Bang's micromethod, including one of so-called pseudo-uremia and one of uremia with convulsions. In both of these latter cases the blood and urine findings were normal for a time after the symptoms had developed. Only later came the period with evidences of profound derangement of the nitrogen metabolism. In the eight other cases the uremia seems to be merely from retention of nitrogenous waste, but in two of these latter cases there seems to be a primary exaggerated production of nitrogenous waste in the tissues, and the excess passes only tardily into the blood and urine. These cases confirm Maragliano's theory that primary or secondary lesions in the tissues may be an important element in the clinical picture of nephritis. They also sustain the analogy between uremia and the toxicosis from splitting of albumin. Even in some of the other cases there were certain features suggesting increased production of waste, in addition to the decreased elimination. In still another class of cases, he adds in conclusion, the uremia may be traced to changes in

the vessels alone, and the metabolism is not a direct factor, or has merely a slight, secondary influence.

Prophylaxis of Renal Tuberculosis.—Taddei asserts that renal tuberculosis is widely prevalent and that it almost always escapes detection, at least during the period when a nephrectomy offers the greatest chance of success. It is an essentially chronic disease, and it may develop insidiously with periods of remission. One of his cases was inoperable from bilateral pyonephrosis when first seen, but the patient is still under observation ten years later. The first, the albuminuric phase, is followed by the pyuric phase, with or without slight symptoms from the bladder. The involvement of the bladder forms the third phase. Usually it is only after the practitioner has wasted some time trying to cure the "cystitis," that he thinks of the kidney and calls in a surgeon, just before the fatal progression into the fourth, the terminal stage. Renal tuberculosis is of blood-borne origin, Taddei reiterates, and every young person with albumin and pus or blood in the urine (not explainable by gonorrhea or other infectious disease or adnexitis), should be suspected of renal tuberculosis even although the general condition is good. Note the transparency of the urine, the tender points for the kidney, palpating for them with the hands superposed, working from above downward and from within outward along the line from the umbilicus to the thigh, following the pulsation of the iliac artery down to the passage of the ureter into the superior strait of the pelvis. An absolute diagnosis is possible only with discovery of the tubercle bacillus, and with this, the surgeon should be called in at once. Krönlein found a tuberculous process in the kidney in 29.8 per cent. of the cadavers examined, and all authors agree that renal tuberculosis is unilateral in the first stages in 88 per cent. of the cases at least. By the time severe cystitis has developed, both kidneys are usually involved.

Archivos Españoles de Enf. del Ap. Digestivo, Madrid

November, 1919, **2**, No. 11

Diagnosis of Gastric Cancer. T. Hernando.—p. 641; Idem. J. González Campo.—p. 645.
*Gastric Ulcer. L. Urrutia.—p. 676. Idem. F. Gallart and F. Ribas. —p. 702. Idem. C. G. Peláez.—p. 705.
*Remote Results of Gastro-Enterostomy. J. MacDonald and W. A. Mackay.—p. 726.

Gastric Ulcer.—This entire issue of the *Archivos* is devoted to the transactions of the subsection on disease of the digestive apparatus at the First National Medical Congress in Spain last spring. Urrutia insists that international statistics show that ample resection of the stomach does not have a much higher death rate than simple gastro-enterostomy while the results are incomparably better. In a recent series of 82 cases of resection the mortality was 4.8 per cent., these patients succumbing to acute dilatation of the stomach, pneumonia, paralytic ileus or chloroform jaundice. In a previous series of 117 cases the mortality was 6.6 per cent., while it was 6 per cent. in 115 gastro-enterostomy cases. He mentions C. Alvarez' proposal to treat gastric ulcer by stretching the fifth, sixth and seventh intercostal nerves on both sides and resecting the fifth. This may be useful with rebellious hyperchlorhydria, but seems irrational for an already established hard ulcer.

Gallart and Ribas say that the cicatricial changes found in the pylorus and elsewhere in the stomach testify that gastric ulcers can and sometimes do heal spontaneously. They applied Alvarez' nerve stretching technic in 2 cases, but are unable to pass a decisive judgment on it. In only 8 per cent. of their gastric ulcer cases were conditions favorable for an operation; in all the others there were adhesions, multiple ulcers in 12 per cent., and extensive and intense gastritis was the rule. They state that the mortality from resection is from 20 to 30 per cent. in general, while gastro-enterostomy has a death rate of only 3 or 4 per cent. and definite results are realized in 65 per cent. of the cases. In 2 of their cases cancer developed later. When there were disurbances they were almost always from growing up of the new opening, or from peritoneal bands, or adhesion to the pancreas, or irreparable lesions of the gastric glands. Peláez' mortality in 128 gastro-enterostomy cases was direct in 2.14 per cent.; total, 11.42 per cent. In 37 of his 140 peptic ulcer cases, the lesion was in the duodenum.

Gastro-Enterostomy.—MacDonald and Mackay report 1.27 per cent. mortality in 314 gastro-enterostomy cases. In 6 of 19 cases of ulcer on the lesser curvature the operation brought little if any relief.

Medicina Ibera, Madrid

Dec. 13, 1919, **9**, No. 110

Reinfection with Syphilis? J. Sánz de Grado.—p. 185.
Presbyopic or Adynamic Astigmatism. J. González.—p. 186.

Dec. 20, 1919, **9**, No. 111

Exercise and Repose in Tuberculosis. García Triviño.—p. **193.**

Dec. 27, 1919, **9**, No. 112

Surgical Complications of Influenza in Children. Blanc y Fortacín. —p. 201.
Cheesy Tonsillitis. Sicilia.—p. 202.

Progresos de la Clínica, Madrid

November, 1919, **7**, No. 83

Drug Treatment of Uricacidemia. R. Mollá.—p. 191.
*Renal Tuberculosis. M. Barragán Bonet.—p. 199. Conc'n.
*Thyroid Insufficiency After Influenza. W. López Albo.—p. 217.
Temporizing with Extra-Uterine Pregnancy. Vital Aza.—p. 220.
Malaria in Morocco. J. A. Romera y Domingo.—p. 228.

Renal Tuberculosis.—Barragán affirms that medical treatment of renal tuberculosis should be considered only when operative measures are out of the question, but heliotherapy and other general measures are useful adjuvants at all stages. He declares that one is safe in removing the kidney for unilateral renal tuberculosis when the Ambard constant is good, even when it is impossible to explore the bladder. But as a rule, catheterization of both ureters is the only means for a positive diagnosis of whether one or both kidneys are affected. When both are involved, nephrotomy of one and nephrectomy for the other may give unexpectedly favorable results.

Thyroid Insufficiency After Influenza.—López Albo has reported two cases of extreme somnolency and headache after influenza, cured or materially improved by thyroid treatment. He here describes a third case in which the postinfluenzal hypothyroidism took the form mainly of neuralgias, which disappeared likewise under thyroid treatment. This patient was a man of 35.

Revista Cubana de Obstetricia y Ginecología, Havana

May-July, 1919, **1**, Nos. 5-7

*Dermatoses of Pregnancy. V. Pardo y Castelló.—p. 235.
Cancer in Stump of Uterus. M. Costales Latatú.—p. 249.
Criminal Abortion. A. Barreras y Fernández.—p. 336.
*Metrorrhagia in Virgins. M. Costales Latatú.—p. 350.

Certain Dermatoses of Pregnancy.—Pardo reviews the types of herpes, molluscum and impetigo peculiar to pregnancy, and comments on the grave prognosis with the latter as it is a sign of septicemia. With other dermatoses frequent in pregnant women, he warns against the use of starch in powders, especially for eczema of the vulva as the vegetable granules ferment readily. An 8 per cent. solution of aluminum acetate or diluted Burow's solution helps to dry up oozing eczema in this region. Pruritus requires treatment of the causal autointoxication, restriction to a milk diet, and sedatives. Local measures give only transient relief, but a chloral lotion or cocain salve, or touching with silver nitrate may be indicated. The roentgen rays, ¼ H. twice a week may reduce the pruritus and cure it completely in two or three applications. Pardo warns against the factitious dermatoses of hysteria: "Note the regularity and symmetry of the lesions, the fact that they occur only on regions readily reached by the hands, and the track of a drop of caustic running down."

Metrorrhagia in Virgins.—Costales relates an extreme case in which the robust girl of 18 had been almost exsanguinated by two months of persisting uterine hemorrhages. She had been given iron, cod liver oil, etc., without avail, but under ovarian treatment the hemorrhages ceased and she soon recuperated. Polyglandular treatment proved effectual in

some other cases of the kind, but this young woman had two relapses under polyglandular treatment. The improvement became constantly progressive only after the ovarian treatment alone was pushed.

Revista Médica Cubana, Havana

August, 1919, **30**, No. 8

Clinical Value of Electrocardiography. J. M. Martinez Cañas.—p. 463. Conc'n in No. 9, p. 532.
*The Medical Literature of Cuba. J. Le-Roy y Cassa.—p. 481.

The Medical Literature of Cuba.—The Journal has already mentioned Trelles' compilation. Le-Roy remarks that Cuba is the only country of the American continent that has its scientific bibliography complete.

October, 1919, **30**, No. 10

*Bronchopulmonary Spirochetosis in Cuba. A. A. Méndez.—p. 593.
Cesarean Section for Placenta Praevia and for Eclampsia. J. A. Ortiz. —p. 595.
*The Arterial Tension in Tuberculosis. Amador Guerra.—p. 604.

Bronchopulmonary Spirochetosis.—Méndez has encountered one acute and three chronic cases of Castellani's spirochetosis in eastern Cuba. The diagnosis in all had been pulmonary tuberculosis until corrected by discovery of the spirochetes in the sputum and the absence of tubercle bacilli. Under arsenic treatment, the spirochetes disappeared in the acute case and the chronic were much improved, and some recovered completely under this treatment.

Arterial Tension in Tuberculosis.—Guerra comments on the favorable prognosis when the arterial tension in tuberculosis is found normal or above. A sudden rise in the blood pressure is liable to induce hemoptysis. A sudden drop is a sign of acute exacerbation or generalization of the process. The habitual low pressure in the tuberculous may be explained by bacterial toxins or by suprarenal insufficiency.

Revista de Medicina y Cirugía Prácticas, Madrid

December, 1919, **125**, Nos. 1581-1584

Unusual Form of Mastoiditis. E. Botella.—p. 299.
Parenteral Injection of Milk in Eye Diseases. S. Garcia Mansilla. —p. 329.
Case of Excessive Somnolency. R. del Valle y Aldabalde.—p. 361.
Value of Tonics in Treatment of Psychoses. Idem.—p. 364.
*The Internal Secretions in Their Relations with the Skin and Its Appendages. Eusebio de Oyarzabal.—p. 393.

The Internal Secretions in Relation to the Skin.—De Oyarzabal reviews this large field, telling of the various data accumulated by different clinicians in this line. In his own practice, as scleroderma developed in one girl of 18, menstruation stopped. Others have reported similar experiences, and have noted the relative frequency of scleroderma with symptoms of the menopause. He cites Sabouraud's theory that alopecia is traceable to the excessive internal secretion of the sexual glands. In seborrheic alopecia, the secretion of sebum is excessive, and this does not occur until the sexual glands are developing. "Children never have seborrhea." The question of the relations between the endocrine and the sebacceous glands may repay study and may throw light on baldness. Organ extract treatment is justified in all cases of disease of the skin or appendages in which endocrine deficit is suspected. But we are disarmed with disease traceable to excessive functioning of endocrine glands, unless we can learn to stimulate the antagonist glands. Some have reported favorable experiences with mesenteric gland extract in treatment of scleroderma, and others with epinephrin in erythromelalgia. In one case the vasomotor disturbances in hands and feet for twelve years subsided under suprarenal treatment.

Revista Sud-Americana de Endocrinología, Buenos Aires

September, 1919, **2**, No. 9

*Vaccine Treatment of Typhoid. G. Grapiolo.—p. 329. **Conc'n.**

Vaccine Treatment of Typhoid.—Grapiolo gives a very favorable verdict on vaccine treatment as applied in 234 cases of typhoid fever. No untoward effects were noted in any instance. The death rate was from 7.62 to 7.96 per cent.

Deutsche medizinische Wochenschrift, Berlin

Nov. 20, 1919, **45**, No. 47

Acute Injuries of Female Genital Organs. R. T. von Jaschke.—p. 1289.
Salvarsan in Recurrent Fever. B. Glaserfeld.—p. 1296.
*Diagnostic Value of Glycemic Reactions. Hahn and Offenbacher.—p. 1298.
*Botulism. L. Bitter.—p. 1300.
The Rôle of Heredity in Disease. H. W. Siemens.—p. 1302.
Pupil Changes in Barbital Poisoning. C. Römer.—p. 1305.
*Tendon Transplantation for Radial Paralysis. Gaugele.—p. 1306.
*Radical Operation for Inguinal Hernia in Infant. G. Schmidt.—p. 1308.

The Diagnostic Value of the Glycemic Reaction.—Hahn and Offenbacher remark on the great value for practical diagnosis of the behavior or "reaction" of the blood sugar in response to a definite, uniform test meal: The blood sugar value was determined fasting. Then 50 gm. of glucose were given in 300 c.c. of tea. Every hour the urine and the blood sugar values were determined, with care to prevent the patient from eating or drinking anything, or moving about too much, during the experiment. This moderate dose (50 gm.) was used because it would be readily absorbed and furnish distinct differential values. It was also feared that diabetics might be harmed by larger doses. Double determinations were made which agreed very closely, as a rule. Bang's iodin micromethod was used for the determinations. The experiment was applied to healthy subjects as well as to patients with various diseases. The results are shown in glycemic-reaction curves. The writers give up to 0.11 per cent. blood sugar as the normal figure, fasting; values from 0.12-0.16 per cent. they designate as slightly above normal or suspicious, and a sugar content of more than 0.16 they characterize as pathologically hyperglycemic.

Botulism.—Three different outbreaks of botulinus poisoning in Kiel within a year, which resulted in three deaths, induced Bitter to study into the question. The eating of salted herring caused the first of the three fatal cases. The herring had a typical rancid odor, and *Bacillus botulinus* was cultivated from two herring. Others fed to mice exerted a toxic effect. Too little vinegar had been used in preserving them, the pickle containing only 0.6 per cent. acetic acid. Experimentation showed that botulinus strains of various origin grew almost unchecked in nutrient agar containing up to 0.1 per cent. acetic acid. It was found, however, that a pickle containing 2 per cent. or more of acetic acid would prevent the development of poison from *B. botulinus*. It has also been shown that a 10 per cent. brine, such as is usually employed, will protect food preserved in it against the botulinus. The second outbreak in Kiel, comprising four cases, resulted from the eating of rancid-smelling raw ham. There were no fatalities, although the cases were typical and severe. In the third outbreak three persons were affected by eating salted herring, and two of these died. Bitter recommends that in the case of meat, fish and sausage poisoning all manifestations resembling botulism should be made reportable by law. He places the case mortality from botulinus poisoning in Germany at 16 per cent. Greater publicity should be given to the fact that if preserved vegetables and meats have a peculiar disagreeable odor, taste or appearance there is great danger in their consumption, and that if they are used, though they look suspicious, they should be thoroughly cooked, though it is true that cooking sometimes fails to protect. As a rule, *B. botulinus* is found only in food carelessly preserved or stored in too warm a place. Bitter knows of only one instance in which *B. botulinus* has been isolated from other than damaged foods. Kempner and Pollack succeeded in isolating *B. botulinus* from the feces of pigs.

Tendon Transplantation in Radial Paralysis.—Operations on the nerves in radial paralysis having failed to accomplish the expected results, Gaugele thinks that Perthes and others have done a good service in reintroducing the method of tendon transplantation. Tenodesis, as recommended by Perthes, may be indicated if the paralyzed muscles look pale or yellow, but ordinarily he thinks it can be dispensed with, since the operation is thus made more complicated. He does not approve of separating the paralyzed muscles from the tendons, as he finds that such muscles often recuperate when put to work. In place of Perthes' method of uniting

the flexor and extensor muscles, he prefers Vulpius' buttonhole method. The distribution of the flexor muscles is best made, he thinks, in the direction that the extensor muscles run, that is to say, the flexor carpi ulnaris is attached to the extensor communis and extensor pollicis longus, and the flexor carpi radialis to the other muscles of the thumb. The extensor carpi ulnaris and the extensor carpi radialis longus may, likewise, be attached to the flexor muscles.

Radical Operation for Inguinal Hernia in Infant.—Schmidt reports an operation for inguinal hernia on a 10-month-old infant. Some of the noteworthy features of the case were the presence of the appendix in the hernial sac (especially strange in an infant); repeated inflammation of the appendix in the hernial sac, and the favorable course, which supports the view that inguinal hernia should be operated on in earliest childhood. If the operation had been postponed, the child would have been continually exposed to incarceration of the hernia and to appendicitis. A truss might have aggravated the danger from appendicitis. The operation was performed without anesthesia and was borne well in spite of the fact that the infant was not sturdy.

Deutsche Zeitschrift für Chirurgie, Leipzig

June, 1919, **150**, No. 1-2

*Keloids. L. Freund.—p. 1.
*Operation for Inguinal Hernia. Drüner.—p. 7.
*Trophic Changes After Injury of Nerve. F. Breslauer.—p. 50.
*Traumatic Aneurysm in the Liver. K. Käding.—p. 82.
*Exuberant Callus. P. Sudeck.—p. 105.

Keloids Without Known Cause.—Freund describes a case which not only throws light on the origin of keloids, but points the way to effectual treatment. The keloids developed spontaneously on the man of 31, different ones presenting the features of all known varieties of primary and secondary keloids. There was always some local defect of the skin that invited the keloid, but the keloid growth did not develop at every defect. He seemed to display both a general and a local predisposition for the development of keloids. Freund accomplished the cure by excision into sound tissue and then exposing the field, without suturing, to the roentgen rays, up to the erythem dose, allowing only two or three days to elapse before beginning the raying. No effect was apparent from radium treatment of some of the keloids. He has applied this operative plus postpefative irradiation in nine cases to date, and all seem to be permanently cured.

Inguinal Hernia.—Drüner compares the various technics in vogue for correction of inguinal hernia, and gives an illustrated description of the modified Hackenbruch operation. He has applied it with superior results in 509 cases of inguinal hernia, all in hard-working men in a coal mine district. The hernia returned after the Bassini operation in 21.4 per cent. but after his modified technic in only 4 per cent. It aims to give the spermatic cord more room while insuring the greatest solidity in the region.

Trophic Changes After Injury of Nerve.—Breslauer has been studying on himself, on men with war wounds of nerves, on other patients, and on dogs, the local effect of heat or of mustard oil applied to the area innervated by a damaged nerve. The region loses in a few weeks the capacity to react with active hyperemia to irritation from heat, mustard oil or other stimulus. This suggests that the lack of this normal hyperemia defensive reaction allows irritating factors to injure the skin, and thus to set up processes which we call trophic changes. They are thus essentially the result of defective conditions in the circulation, and the nerve injury is responsible for this. Breslauer's experiments showed further that although the capacity was lost for active hyperemia reaction to the irritation from the mustard oil, etc., yet the capacity for vasoconstriction under the application of cold or epinephrin persisted unimpaired and indefinitely. He theorizes to explain this opposite behavior of the vasodilating and constricting apparatus. The skin does not redden under mustard oil when all sensation has been abolished by nerve blocking. As sensation returns, and the area begins to smart, it begins to turn red too. But the vasoconstricting action of epinephrin proceeds the same whether there is sensation in the region or not.

Aneurysm in the Liver.—Käding summarizes forty-two cases of aneurysm in the hepatic artery, all fatal but one, and four cases in which the aneurysm was inside the liver, all fatal. In a personal case the aneurysm had developed after a gunshot wound, and it had opened into the gastrointestinal tract, but the man recovered after ligation of the hepatic artery. The circulation of the liver is still adequate as the complete recovery in this case testifies, confirming the results of ligation of this artery in dogs.

Exuberant Callus.—A scrap of periosteum torn off may explain the tendency to excessive production of callus in certain cases, Sudeck explains, with roentgenograms of some typical cases demonstrating this etiology. They disprove the theory of traumatic ossifying myositis as responsible for redundant callus around the bone.

Zentralblatt für Chirurgie, Leipzig

Jan. 10, 1920, **47**, No. 2

*Mammary Cancer and Postoperative Raying. G. Perthes.—p. 25.
*Differential Pressure Mask for Empyema. O. Goetze.—p. 29.
*Reconstruction of Urethra. W. Budde.—p. 32.

Mammary Cancer.—Perthes compares the ultimate outcome in 88 cases of mammary cancer rayed after mammectomy, with 130 cases not given the postoperative irradiation, and 70 cases in which only inadequate exposures were made. There was recurrence within a year in 41 per cent., 28 per cent. and 38.5 per cent. in these groups respectively, but among the recurring cases there was no local recurrence in 18, 11 and 11 per cent., respectively. These figures speak decidedly against any improvement of the statistics from the postoperative raying. The recurrences within a year were almost twice as numerous as in the unrayed cases, and the deaths from internal metastasis without local recurrence were four times as numerous.

Mask for Differential Pressure in Treatment of Pleural Empyema.—Goetze refers to after-treatment when the aim is to realize expansion of the long compressed lung. The mask he has constructed for the purpose is just the reverse of Kuhn's aspiration mask, as inspiration is free and only expiration is checked with an adjustable valve. The mask has been worn day and night by various patients, and complete expansion of the lung resulted even under the most unfavorable conditions. The mask is also useful during resection of ribs and other operations on the thorax.

Subcutaneous Pedunculated Skin Flaps.—Budde describes his technic as applied in reconstruction of the urethra, although he says it can be applied to any passage or area. He also asserts that it is based on a new principle, namely the use of a square of skin, the sides sutured together to form a tube, while enough subcutaneous tissue is taken up with the skin to permit of suturing without the needle passing through the epidermis. The subcutaneous tissue below the lengthwise center of the flap is not severed so the skin tube is pedunculated its entire length. The flap for the urethra is taken from the lower aspect of the scrotum; it is about 3 cm. wide and the peduncle is thus formed by the septum tissue. The tube thus formed over a large catheter is then worked through a tunnel dug for it under the skin to the gap in the urethra, exposed through the perineum. As the tube is drawn through the tunnel, its "mesentery" is dragged along with it. The tube is turned over endwise to be drawn through, to bring the suture on top. Depilation of the skin of the scrotum is usually a necessary preliminary from fear of incrustation of hairs. The reconstruction of the urethra by this technic can be accomplished at one sitting, thus providing an epithelium-lined, strong and almost normally nourished tube. Flaps with this subcutaneous pedunculization might be utilized to repair defects on the cheek, etc.

Zentralblatt für Gynäkologie, Leipzig

Jan. 10, 1920, **44**, No. 2

*Brain Lesions from Birth Trauma. R. Beneke and F. Zausch.—p. 34.
*Ovarian Tumors with Fetal Teratoma. L. Fraenkel.—p. 41.
Latent Microbism of the Vagina in Relation to Leukorrhea. A. Loeser.—p. 46.
Local Injection of Turpentine in Treatment of Adnexitis. A. Fuchs.—p. 52.

Obstetric Injury of the Brain.—In the first two of the three infant cadavers described there was extensive hemorrhage in the ventricle. The hemorrhage evidently proceeded from the deep cerebral vein. Undue stretching of the corpus callosum would explain this, and also the laceration of the tentorium sometimes observed. In the other cadaver the findings were those of patches of softening of the brain, probably the result of ischemia from vascular spasm. Kruska has compiled twenty such cases. The child seemed to be normal at first. Then left hemiplegia developed, and finally hemorrhage in the affected region of the brain, with death the twelfth day.

Ovarian Tumors with Pathologic Pregnancy.—In Fraenkel's case a tumor had developed in each ovary along with the teratomatous fetus in the uterus, with hydramnion. After expulsion of the macerated fetus at the sixth month the ovarian tumors gradually retrogressed. Conditions thus were like those in fifty cases on record in which ovarian tumors developed with vesicular moles, and retrogressed after their expulsion. In the roentgen study of this case the advantages of preliminary injections of oxygen into the abdominal cavity were striking.

Zentralblatt für innere Medizin, Leipzig

Jan. 10, 1020, **41**, No. 2

*Micro-Analysis of the Blood. J. Feigl.—p. 17.

Micro-Analysis of the Blood.—Feigl suggests other lines in which Bang's micromethod can be instructively applied, with slight modifications, as in Ljungdahl's research on volatile substances in the blood. The latter uses capillary tubes for the weighing procedure, instead of Bang's paper, for determination of the acetone in the blood. This capillary technic has a certain number of advantages for research of different kinds in this line, especially for analysis of lipoids. Instead of Bang's paper, Feigl uses asbestos fibers. They take up the blood as well as the paper, and allow estimation of the ash and even of its separate elements. Extremely small quartz beakers with platinum loops, and platinum iridium beakers—eventually filled with loose quartz—also answer the same purpose. Another field for research is with microcolorimetry. Feigl has succeeded in this way with extracts from as little as 200 mg. of blood. Determination of cholesterol is possible also with this technic. Picric acid reduction of sugar is another progress. In short, he concludes, "the reactive instrumental and theoretical possibilities of colorimetry and the wonderful nephelometric findings open prospects of applying Bang's fundamental principle in untried fields which promise great progress." (Nephelometry is the method of analysis by measuring the brightness of light reflected by particles in suspension in a tube.)

Jan. 17, 1920, **41**, No. 3

*The Freezing-Point of the Blood in Diabetes. A. Lippmann.—p. 41.

Low Freezing Point of the Blood in Diabetes.—Lippmann calls attention to the lowered freezing point of the blood in eleven diabetics examined. In six of the eleven cases the freezing point was between —0.59 and —0.62 C., instead of the normal —0.56 to —0.58. The intensity of the glycosuria or glycemia did not parallel the drop in the freezing point. This permanently abnormal freezing point indicates, he declares, some disturbance in the mechanism regulating the osmotic tension of the blood, and that other reducing substances, besides the glucose, are retained in the blood.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Dec. 13, 1919, **2**, No. 24

*Reform in Medical Teaching. G. van Rijnherk.—p. 1933. Conc'n.
*Cancer of the Esophagus. Praag and C. E. Benjamins.—p. 1939.
*Cataract and Syphilis. J. A. Roorda Smit.—p. 1945.
Duties of Medical School Inspector. A. van Voorthuijsen.—p. 1953.
Recurrence of Scarlet Fever. M. W. Marsman.—p. 1955.

Reform in Medical Teaching.—Van Rijnberk's article was summarized in these columns, March 20, p. 838.

Cancer in the Esophagus.—The age (25), the long duration, and the survival for fifteen months after a fistula had been made into the stomach, the metastases in the skin, and the absence of metastases in organs nearby were special features of the case reported by Praag and Benjamins, as also the shortening of the esophagus. It measured only 16.5 to 19 cm. from the cricoid to the cardia, while the normal figure is said to be from 23 to 30 cm.

Cataract and Syphilis.—Smit recalls that potassium iodid and other drugs have been given empirically in treatment of cataract, but all except potassium iodid have been abandoned, and the absolute inefficacy of internal treatment has been proclaimed by Fuchs and others. Undaunted by others' experiences, Smit gave potassium iodid systematically to 6 patients with cataract. No benefit was apparent in 4 cases but in the 2 others marked improvement followed. The improvement in 11 other patients treated with mercury was pronounced in all and was most striking in some cases. All these patients have been under observation for several years; as also other cases not included in these statistics. The mercury was given intramuscularly every day; 0.01 c.c. in the form of the peptonate, in 3 c.c., plus 0.05 c.c. sodium cacodylate in 1 c.c. subcutaneously.

Norsk Magazin for Lægevidenskaben, Christiania

February, 1920, **81**, No. 2

*Deformity of Clavicles. J. Yttri.—p. 129.
Was Influenza Pneumonia Contagious? K. Motzfeldt.—p. 165.
*The Leukocyte Count in Influenza. R. Bache.—p. 176.
Endemic Oxyuriasis. M. Solberg.—p. 184.
*Carcinoids in Appendix. K. Nicolaysen.—p. 186.

Malformation of Clavicles and Skull.—Yttri has compiled considerable literature on congenital deformity of the clavicles, and describes an extreme case of cleidocranial dysostosis in a man of 66, and two similar cranial cases. The tendency to this malformation has been noted through two and three generations. Gegenbaur has reported a case in which a woman with this deformity transmitted it to her children by two different husbands; some of her children were normal. This type of dysostosis may affect the clavicles alone or the skull alone, but the two are generally combined, and there were often other bone deformities. The cleidocranial anomalies form a special type, although certain features suggest rachitis, inherited syphilis, etc. Puberty is late but not impaired. The anomalies seem to be of the mutation type, as de Vries uses this term for plants. That is, the changes appear apparently spontaneously and are transmitted to the offspring, but disappear by cross breeding. Among the 70 cases on record, 20 were reported from Germany and Austria, 15 from France, 9 from Sweden and 6 from North America.

The Leukocyte Count in Influenza.—Bache found leukopenia the rule in his influenza cases, but the leukocyte count ran up when empyema developed. In influenzal pneumonia, the death rate was lowest in the group with high leukocytosis.

Carcinoid in Appendix.—Nicolaysen reports three cases in women and two in men, and remarks that these carcinoid tumors certainly do not belong in the carcinoma group. In two of his cases the symptoms had been those of acute appendicitis; in one, of chronic appendicitis, and two had never caused any symptoms.

Svenska Läkaresällskapets Handlingar, Stockholm

Dec. 31, 1919, **45**, No. 4

*Physiology of Physical Exercise. T. Resmark.—p. 383.
Psychic Constitution and Psychoses. H. Sjöbring.—p. 462.
Height of Swedish Recruits. G. Backman.—p. 494.

The Physiology of Physical Exercise.—Resmark has previously published eight reports on research on the physiology, balance, automatic action, statics and other elements of physical exercise. He here discusses the practical application of what is now known in respect to the physiology of exercise, applying it to school gymnastics, and urges the complete discarding of the traditional systems of exercising based on incorrect conceptions of the physiology of movement. Then we can build up a new pedagogic system when the ground is swept clear. The fundamentals for this are already provided.

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BASAL METABOLISM DETERMINATIONS IN GENERAL INTERNAL DIAGNOSIS

CLINICAL APPLICATION, WITH ILLUSTRATIVE CASES

G. W. McCASKEY, M.D.

Professor of Medicine, Indiana University School of Medicine

FORT WAYNE, IND.

Basal metabolism determinations have been placed on a practical clinical basis by the Benedict [1] method. The general physiologic and clinical significance of fluctuations in the metabolic rate is now also well understood. The next step is for clinicians to work out the range and value of their clinical application in suitably selected cases in routine diagnostic work. This is really the "touchstone" of any diagnostic method. Unless its clinical value can be shown to be commensurate with the time, labor and equipment required, and in this instance these items are rather large, it cannot and should not endure. This paper is offered as an additional contribution to this end.

It may fairly be said that the basal metabolism test rests on an established scientific basis. The main facts were quite fully understood for a quarter of a century before they became clinically applicable outside of institutional work. There is little that is new except the introduction of clinically practical methods.

This method of investigation involves more than simply the thyroid problem. The entire endocrine system, as yet so little understood and so difficult of interrogation, is involved, and stands in pressing need of both clinical and scientific investigation. It is not, indeed, limited to the endocrine system, as a careful consideration of all the facts will make perfectly obvious. For instance, if the thyroid gland is completely removed, the basal metabolism drops only 40 per cent. below the average normal, where it remains substantially constant. The question as to what keeps the basal metabolism up to this level instead of dropping to zero, considerably short of which would be death, is discussed by Kendall.[2] While it is not fully understood, he believes that amino-acids, proteins, creatin, creatinin, and probably other substances, play an important rôle in the stimulation and regulation of the basal metabolic rate. There seems to be no doubt that other members of the endocrine system play with thyroxin a synergistic rôle, while, of course, other bodies known and unknown, with entirely different physiologic effects, may have to be considered. This is undoubtedly true of the suprarenals. Tompkins, Sturgis and Wearn,[3] for instance, have shown that there is a marked increase in the basal metabolic rate, after the hypodermic administration of 0.5 c.c. of 1:1,000 solution (about 0.5 mg.) of epinephrin, amounting to 15 or 20 per cent. The modus operandi of epinephrin in the production of increased basal metabolism is probably quite different from that of thyroxin, and the effect is strikingly less in degree. These investigators attribute to the effect of epinephrin on the sympathetic autonomic nervous system the tremor and increased general muscular tonicity, the disturbed carbohydrate metabolism, and in some cases —but not all—the increased cardiac activity.

There is also the possibility that other endocrine hormones aside from the thyroid produce their effect on metabolism indirectly through the thyroid by neurocirculatory influences on the thyroid gland. Thyroxin, on the other hand, according to Plummer,[4] acts directly on all body cells. What has been said of the effect of epinephrin on the metabolic rate is probably true, though to a much smaller extent, of the pituitary, parathyroid, and pancreatic internal secretions.

A careful review of all the facts will, I think, convince any one that the one important controlling factor in the regulation of basal metabolism is thyroxin, on which the functional activity of the thyroid gland is largely, if not altogether, dependent. We are entirely ignorant at present of the identity of any other toxic substance, though some think there may be modification of the thyroxin molecule in some cases of exophthalmic goiter, or possibly even other endocrine hormones synergistic with or quite dissimilar to thyroxin.

The important question bearing on this clinical study is the dependability of fluctuations of the basal metabolic rate as an indication of thyroid activity; and this would obviously depend on whether the modified thyroxin molecule, if such exists, or possibly other unknown hormones, would retain the specific autocoid effect of the thyroxin molecule on cellular metabolism, or might possibly produce other toxic phenomena. Perhaps we cannot be too dogmatic on this point at present; but while recognizing the paramount position of the general clinical judgment in every case, variations in the metabolic rate as indirectly determined by the oxygen consumption must be regarded as the most scientific and practical index of thyroid toxicity.

In what group or groups of cases are the routine determinations of basal metabolism worth while? In general, this question may be thus answered:

1. In all cases of definite goiter, and especially if associated with health disturbances, to ascertain the degree, if any, of its toxicity.

1. Benedict, F. G.: A Portable Respiration Apparatus for Clinical Use, Boston M. & S. J. **178**: 667 (May 16) 1918.
2. Kendall, E. C.: The Thyroid Hormone and Its Relation to the Other Ductless Glands, Endocrinology **2**: 81 (April-June) 1918.
3. Tompkins, Edna H.; Sturgis, C. C., and Wearn, J. T.: Studies on Epinephrin, II, Arch. Int. Med. **24**: 269 (Sept.) 1919.
4. Plummer, H. S.: The Function of the Thyroid, Normal and Abnormal, Tr. Assn. Am. Phys. **31**: 128, 1916.

2. In a large group of cases either with or without goiter, with symptoms resembling, either closely or remotely, those of thyrotoxicosis.

In regard to the first group, whenever a patient has a goiter, large or small, and there is impairment of general health, whether the symptoms are typical of thyrotoxicosis or not, the toxicity of the goiter should be ascertained by the determination of the basal metabolism. This is especially true when considering the necessity for and character of therapeutic measures, surgical or medical. In any case with a goiter requiring a general diagnostic study, this accurate index of goiter toxicity should not be neglected. In judging of the operative risk in thyroidectomy, it is of the first importance. It appears to be true that this risk increases to an appalling degree when the metabolic rate attains an increase of around 100 per cent. Nonsurgical measures should be exhausted in such cases in an effort to reduce the metabolic rate before operation, if the latter is decided on. The success of therapeutic measures can now for the first time be accurately gaged by basal metabolism determinations, instead of depending on the notoriously unreliable clinical data, such as pulse rate or nervousness.

Equally important, and presenting great diagnostic difficulties, is the second group indicated. It does not matter much in the final judgment whether the patients have or have not a palpable thyroid. I have seen several cases in which the thyroid was very doubtfully palpable, with the metabolic rate increased more than 50 per cent. Much more important than the goiter is the history of the case and the character of the symptoms. Among the symptoms suggesting investigation along these lines may be mentioned:

1. Psychoneurotic disturbances.
2. Circulatory disturbances:
   (*a*) Tachycardia or bradycardia.
   (*b*) Cardiac myasthenias.
   (*c*) Certain arrhythmias.
3. Fine tremors.
4. Hyperhidrosis and hypohidrosis.
5. General debility.
6. Loss of weight.
7. Slight temperature disturbances.

Not one of the foregoing symptoms can be regarded as strongly diagnostic, much less pathognomonic, of hypothyroidism or hyperthyroidism. In fact, it is perhaps not too much to say that if the majority or perhaps even all of these symptoms were present in an individual case, it would still be possible that the syndrome could be due to something entirely aside from thyroid disease.

As a matter of course, if with these symptoms there are found a goiter and exophthalmos, the diagnosis of thyroid disease should be considered established. With the goiter alone this would not be so obvious, because if these symptoms, singly or collectively, can be due to causes other than thyroid disease, the presence or absence of a goiter would really prove nothing, although creating a strong presumption in favor of hypothyroidism or hyperthyroidism to be verified by subsequent investigations.

It is probably unnecessary to comment at length on the individual symptoms enumerated above. Taking, for instance, such of the symptoms as psychoneurotic instability and tachycardia, which may be regarded as the most characteristic symptoms of the thyroid syndrome, it is perfectly obvious that they may be due to causes of the most diverse character. Nervous or mental overstrain, various chronic infections, but especially syphilis and tuberculosis, and a great variety of pathologic conditions occurring in the various glandular organs of the body, malnutrition, from whatever cause, gastro-intestinal disturbances, and many other conditions must be kept in mind as possible explanations of such a symptom group. Their differentiation from thyrotoxicosis can usually be made with a certain degree of probability by the general clinical picture and the usual diagnostic methods for the recognition of these pathologic conditions. The final court of appeal, so far as the thyroid problem is concerned, however, is the determination of the basal metabolism, which furnishes the most reliable proof either for or against the existence of thyroid disease.

The following cases are selected because in them the metabolic rate furnished a more or less decisive factor in the diagnosis, which could not have been ascertained in any other way. In most, or perhaps all of these cases, unlike the outspoken cases of exophthalmic goiter or myxedema, the disturbances of metabolism that are always largely determined by thyroid activity were masked by or associated with other conditions which obscured the clinical picture. This, in fact, is the very reason why these cases are selected, in order to illustrate the practical clinical value of these methods.

REPORT OF CASES

Case 1.—*Hypothyroidism and tonsillar infection.—History.*—Mrs. L., aged 28, complained of nervousness, general pains and enlargement of the neck. An older sister had goiter, but was now symptomless. In April, 1918, the patient had tonsillitis, followed in two weeks by "rheumatism." She had enlargement of the neck for many years, since she was 14; "misery" in the neck began about one year before I saw her; soon followed by general pains. She was in bed with "rheumatism" for three or four days, and had occasional "rheumatic" pain for several weeks afterward. She had "nervous" headaches, and became dyspneic when excited or on exertion. The goiter was symptomless until one year before when she had some pain up and down the spine and the back of the neck, and since then the goiter had annoyed her considerably. There had been no increase in size for a number of years.

Physical Examination.—The pulse was 72; the blood pressure, 135 systolic and 100 diastolic. There was a very slight tremor of both hands. The tonsils were moderately enlarged and cryptic. The urine was negative. Blood examination revealed: hemoglobin, 85 per cent.; red blood cells, 3,731,000; white blood cells, 7,200; polymorphonuclear neutrophils, 60 per cent.; small lymphocytes, 27 per cent.; large lymphocytes, 10 per cent.; transitional cells, 1 per cent., and eosinophils, 2 per cent. The Wassermann reaction was negative. The alimentary hyperglycemia test revealed: fasting, 120 mg. per hundred c.c. of blood; one hour after 100 gm. of glucose, 241 mg. per hundred c.c. of blood. 2 hours, 124 mg. per hundred c.c. of blood.

August 15, the basal metabolism was — 29 per cent. The patient was put on 1 grain of thyroid extract, three times a day, at the beginning of the treatment. The basal metabolism eight days later, August 23, was still — 30 per cent.; August 27, it was — 11.3 per cent.; September 3, normal, and September 10, — 11 per cent. September 16 the tonsils were enucleated, and found markedly infected. September 25 the basal metabolism was + 11.9 per cent.

This patient was referred for an opinion as to the advisability of a thyroidectomy which had been advised. She was told that the removal of the thyroid would probably have no influence on her general health, and she was placed on thyroid extract, as indicated above. The tonsillar infection was thought to have been an important factor in the case, so the tonsils

were removed. It illustrates the prompt effect of thyroid extract on basal metabolism which, together with the removal of the tonsillar infection, produced a marked improvement in the clinical condition of the patient. It will be noted that the basal metabolism dropped to — 11 per cent. after having reached the normal level, because the thyroid extract had been discontinued at that time. The alimentary hyperglycemia in this case is very interesting. The fasting blood sugar was somewhat high, and following the 100 gm. of glucose there was a very marked hyperglycemia, which illustrates the unreliability of alimentary hyperglycemia as a test for thyrotoxicosis. As stated elsewhere,[5] alimentary hyperglycemia is due to a variety of other causes aside from thyrotoxicosis, although present in practically every case of the last named condition, but occasionally present, as in this case, in hypothyroidism.

CASE 2.—*Hypothyroidism, with latent syphilis and old healed tuberculosis.—History.*—Mrs. X., aged 36, had had boils, headaches, general weakness, and abdominal distress, particularly after riding or walking, for a period of six years. The trouble began with an indefinite ache in the neck. The patient noticed also pustules on the head. She felt weak and sick at that time. Soon boils appeared all over the body, continuing for about six months, after which they were limited to the scalp and the right side of the face and neck. The treatment given was unsuccessful. On forced feeding the patient gained 45 pounds, and was free from boils for one and one-half months. Then they recurred and have persisted. Dull, sore, "gnawing" feeling across the epigastrium, having no relation to meals, came on with boils. Usually there was but one boil at a time, associated with small sores on the scalp. The patient had nausea most of the time and felt numb and weak. Abdominal distress had been aggravated since the marked increase in weight. She had frequent headaches. She also had nightmares, and was very nervous. There were no menstrual disturbances.

Physical Examination.—The blood pressure was 120 systolic and 80 diastolic; the pulse was from 85 to 100 and regular. There was diffuse tenderness over the left half of the abdomen, and more or less discomfort in the region of the appendix on deep pressure. A roentgenogram disclosed a stationary tuberculous process in the lungs, without pleural involvement. There was cecal stasis with a typical picture of spastic colitis in the transverse colon, and ulcerative colitis from the splenic flexure downward. The urine was negative. Blood count revealed: hemoglobin, 85 per cent.; red blood cells, 5,810,000; white blood cells, 8600; polymorphonuclear neutrophils, 51 per cent.; small lymphocytes, 43 per cent.; large lymphocytes, 2 per cent.; transitional cells, 1 per cent., and eosinophils, 3 per cent. The Wassermann reaction was + + +.

Blood sugar, fasting, was 81 mg. per hundred c.c. of blood; urine sugar was 0; one hour after 100 gm. of glucose, 142 mg. per hundred c.c. of blood; urine sugar, + +; two hours after 100 gm. of glucose, 88 mg. per hundred c.c. of blood; urine sugar, +.

A test meal revealed: one hour, free hydrochloric acid, 8; total, 22; one and one-half hours, free hydrochloric acid, 10; total, 25.

The stool was negative.

Because of the tachycardia and nervousness, a basal metabolism determination was made, showing an increase of 53.4 per cent. We have, therefore, to deal in this case with an old tuberculous infection, together with a latent syphilitic infection, probably hereditary, and a moderately severe grade of thyrotoxicosis. The rational treatment of the case is thus clearly indicated, the basal metabolism determination furnishing the necessary proof of overaction of the thyroid gland.

5. McCaskey, G. W.: The Differential Diagnosis of Hyperthyroidism by Basal Metabolism and Alimentary Hyperglycemia, New York M. J. **110**: 607 (Oct. 11) 1919.

CASE 3.—*Hypothyroidism.—History.*—Mr. A., aged 41, who complained of "liver trouble," had had erysipelas at the age of 3, and used to have attacks of headache associated with "torpid liver." About ten years before he began to notice constipation. He had attacks of nausea and vomiting every few weeks, gradually becoming worse. He was unable to do any work. He had constipation, with vague gastro-intestinal symptoms.

Physical Examination.—The pulse was 68; the blood pressure, 125 systolic and 95 diastolic. The urine was negative. Blood examination revealed: hemoglobin, 80 per cent.; red blood cells, 5,690,000; white blood cells, 8,200; polymorphonuclear neutrophils, 40 per cent.; small lymphocytes, 40 per cent.; large lymphocytes, 16 per cent; transitional cells, 1 per cent., and eosinophils, 3 per cent. The Wassermann test was negative.

The alimentary hyperglycemia test revealed: fasting 61 mg. per hundred c.c. of blood; urine sugar, negative; one hour after 100 gm. of glucose, 123 mg. per hundred c.c. of blood; urine sugar, + + +; two hours after 100 gm. of glucose, 115 mg. per hundred c.c. of blood; urine sugar, + +.

Roentgen-ray examination of the gastro-intestinal tract was negative.

A test meal revealed: one hour, hydrochloric acid, 72; total, 88; one and one-half hours, hydrochloric acid, 41; total, 61.

The stool showed many fatty acid needles and crystals, but was otherwise negative.

Aug. 6, 1919, the basal metabolism was — 11.3 per cent. The patient was given thyroid extract, one-fourth grain, three times a day.

August 26, the basal metabolism was + 20.1 per cent. Thyroid extract was stopped.

October 4, the basal metabolism was + 81.3 per cent. On his own initiative he had taken 3-grain doses of thyroid extract three times a day for some time. He was told to stop all thyroid.

October 10, the basal metabolism was + 32.5 per cent.

The clinical improvement occurring in this case was very marked. The patient had been unable to work for a year, and while neither the basal metabolism nor the pulse rate indicated any serious deficiency in thyroid secretion, I decided to make a clinical test. Aside from the clinical improvement that occurred, the most interesting feature of the case was the fluctuation of the basal metabolism in response to thyroid extract, reaching a point as high as +81.3 per cent. at one time. This occurred without any of the usual symptoms of "exophthalmic goiter," though the basal metabolism test placed it within the group of severe cases. This is explained by the very transient duration of the increased metabolism, which produces the characteristic symptoms only after a considerable period of time. The patient had some slight headache at the time when the basal metabolism reached its highest point, and was perhaps rather nervous. It should be remembered that the patient on his own initiative had taken 3 grain doses of thyroid extract for some time, which accounted for the rather extraordinary rise in basal metabolism. It will be noted that it dropped to +32.5 per cent. within twenty-four days after the medicament had been stopped. The marked clinical improvement in this case following thyroid medication, with very slight manifestations of hypothyroidism, seems to me to be a suggestive and interesting therapeutic observation. This patient has resumed his usual vocation with apparently normal health and nutrition.

CASE 4.—*Tuberculosis clinically simulating hyperthyroidism. —History.*—Miss R., aged 24, had headache, severe and constant, during waking hours, with general weakness. She had an acute attack of "influenza" Feb. 3, 1919, and was in bed ten days with nausea and vomiting, but with no fever. She had headache, which had continued since. The blood was examined in April, and the Wassermann reaction reported

positive. She had headache "all over the head," worse in the morning. There was throbbing all over the body at times.

Physical Examination.—The pulse was 100 to 115, the systolic blood pressure, 145, and the diastolic, 90. The temperature was 98.8. There was a definite enlargement of the thyroid, more of the left and middle lobes. There was tremor, both fine and coarse. The heart was rapid; there were no bruits; rhythm was normal; the left border of the heart was 1 cm. to the left of the nipple. Examination of the lungs disclosed impaired resonance and diminished breath sounds over the right apex. The basal metabolism was +10 per cent. A roentgenogram disclosed evidence of early pulmonary tuberculosis. The urine was negative.

Blood examination revealed: hemoglobin, 70 per cent.; white blood cells, 9,800; polymorphonuclear neutrophils, 51 per cent.; small lymphocytes, 20 per cent.; large lymphocytes, 25 per cent.; transitional cells, 2 per cent., and eosinophils, 2 per cent. Blood sugar, fasting, was 97 mg. per hundred c.c. of blood; one hour after 100 gm. of glucose, 152 mg. per hundred c.c. of blood; two hours after 100 gm. of glucose, 134 mg. per hundred c.c. of blood. The Wassermann test was negative, on several examinations. The tuberculosis fixation test was +++.

The stool was negative. The sputum was scant and mucopurulent; streptococci, ++; staphylococci, +; diplococci, +; influenza, +; pus cells, but no tubercle bacilli.

August 1, the patient was given 2 mg. of old tuberculin hypodermically, with no reaction; August 3, 5 mg. with no reaction; August 6, 8 mg. with a temperature of 101 +. The patient felt quite sick during the night; there was a definite general and local reaction.

The weight was 93 pounds, 10 pounds below normal.

In this case there were several of the most important symptoms of thyrotoxicosis, namely, a well marked tachycardia of 100 to 115, and definite fine tremor, together with moderate enlargement of the thyroid gland. There were also general debility, loss of weight, and moderate elevation of blood pressure, with the throbbing indicative of vasomotor disturbance, all of which fit in very well with the theory of thyroid intoxication. The temperature recorded for more than a week showed no elevation. Stereoscopic plates of the lungs revealed lesions which were evidently tuberculous. The physical signs, while not very definite, indicated a lesion, either recent or old, at the right apex. There was some expectoration, showing a mixed infection, as stated above, but no tubercle bacilli were found by the antiformin method. While the case was one in which there was fairly strong suspicion of a chronic infection, yet it was one also in which thyroid intoxication might very easily have played at least a coordinate rôle. This was ruled out by the basal metabolism determination, which was strictly within the normal range, although at the high limit. In such a case one must keep in mind the clinical fact of considerable fluctuation in the metabolic rate in cases of hyperthyroidism of any grade of severity. A single observation of this sort, therefore, must be interpreted with caution, and has the same value as any other single laboratory observation in regard to a fluctuating pathologic condition. In this respect it is probably on a par with a mild positive Wassermann reaction, which is frequently inconstant, or the occurrence of albuminuria or glycosuria. On the other hand, a definite tuberculin reaction, both local and general, together with corroborative roentgen-ray findings, a positive tuberculosis complement fixation test, and suggestive physical findings, seemed to justify the working diagnosis of a tuberculous infection as the principal factor in the case.

CASE 5.—*Hyperthyroidism; psoriasis; perverted carbohydrate metabolism.—History.*—Mrs. S., aged 46, was operated on two years before for disease of the appendix and ovaries. She developed blood poison, for which she was given serum. This caused a breaking out on the left foot and left side of the body. Rash came on over the whole body, lasted twenty-four hours and then disappeared. For months afterward she was troubled with small pus collections under the nails of both hands. Lesions of the left arm appeared fifteen months before I saw her and had persisted. Similar spots on the left foot dried up but never healed. They burned, but did not itch. The initial lesions were elevated, indurated patches, that soon turned to "blood blisters," and finally the patient picked them off. She stated that her temperature had not been under 100 for many months. She had occasional headache, some vertigo and dyspnea.

Physical Examination.—Sept. 10, 1919, the pulse was 96; blood pressure, systolic, 140; diastolic, 90; temperature, 100.2. There was a definite fine tremor of the hands. There was a symmetrical enlargement of the thyroid; the right lobe was quite palpable and hard. The cervical glands on the right side were palpable and tender. There was an enlarged epitrochlear on the left. There were no bruits or arrhythmia. There was definite edema of the ankles and legs, and general tenderness of the lower abdomen. Skin lesions, typical patches of psoriasis, were found on the left arm and left leg. Roentgen-ray examination of the heart and lungs was negative. The urine was negative. The teeth and tonsils were negative. Phenolsulphonephthalein: 41 + 14 = 55. The blood count Wassermann test and tuberculosis complement fixation were negative.

Blood sugar, fasting, was 168 mg. per hundred c.c. of blood; one hour after 100 gm. of glucose, 192 mg. per hundred c.c. of blood. The nonprotein nitrogen was 27.12 mg. per hundred c.c. of blood. After one week on a carbohydrate free diet, during which the blood sugar slowly dropped, the fasting blood sugar was 148 mg. per hundred c.c. of blood. The same diet was continued twelve days longer. The fasting blood sugar dropped to 86 mg. per hundred c.c. of blood, and continued so for a month, during which time the patient was under rather strict starch restriction (about 50 gm. a day). The basal metabolism was: September 12, +41.5 per cent.; September 16, +52 per cent.; September 20, +49 per cent.

This case presents several interesting features aside from the moderately severe thyrotoxicosis demonstrated by several basal metabolism determinations. The hyperthyroidism itself may easily have been the result of the sepsis, residual evidence of which was found in a suppurating process in the left foot. The fasting blood sugar values are among the highest I have seen aside from cases of diabetes. It is of special interest to note that the hyperglycemia following 100 gm. of glucose amounted to an increase of only 24 mg., or about 14 per cent. of the fasting blood sugar value. The fasting hyperglycemia is not, in my opinion, even suggestive of thyrotoxicosis. It is reasonable to assume that the disturbances of carbohydrate metabolism indicated by a high fasting blood sugar content played an important rôle in the general pathology of the case, including the psoriasis, which, it may be added, improved remarkably on the regimen of starch restriction.

The thyrotoxicosis, whatever may have been its origin, probably played a considerable part in the general syndrome, and could have been recognized only by the basal metabolism determinations. Diabetes mellitus, which might have been suggested by the high fasting blood sugar content, was improbable because of the low blood lipoid content.

CASE 6.—*Hypothyroidism of puberty.—History.*—Miss P., aged 16, had choking sensations in the throat. About eight or nine months before the family noticed that she began to gain rapidly in weight. Symptoms began about six months before, and had been getting worse. For the past three or four weeks she had become nauseated at from 10 to 10:30 a. m., being relieved by eating lunch. The menses were normal.

Physical Examination.—The pulse was from 60 to 80. Roentgen-ray examination was negative. The urine was negative. The blood count was normal. The Wassermann test was + +. A test meal revealed: one hour, free hydrochloric acid, 32 degrees; total, 56; two hours, free hydrochloric acid, 20; total, 34.

December 24, the basal metabolism was —15 per cent.

The patient was given thyroid extract, one-eighth grain twice daily, which was followed by rapid improvement.

This case apparently belongs in the group described by Nobecourt [6] as "hypothyroidea of puberty," which he defines as a minor degree of thyroid insufficiency, a condition which he says is frequently encountered.

The positive Wassermann reaction must not, of course, be overlooked, and as a matter of fact this patient is one of an entire family suffering from various grades of hereditary syphilis. Of course, proper treatment is being given for this trouble.

CASE 7.—*Hyperthyroidism, with chronic hypertension.—History.*—Mr. K., aged 43, complained of nocturnal asthmatic attacks. He had had an acute illness, diagnosed as pneumonia, one month before. One year before, his health began to fail. He began to have some headache, and to lose weight. He had lost 30 pounds during the last year. For the last two years, and probably for the last four years, he had had high blood pressure, ranging from 170 to 200, but he had been getting along fairly well until his acute illness one month before. The trouble began suddenly while he felt in good health. One evening he had a sensation of difficult breathing, with wheezing in the chest, which got so bad that medical aid had to be called. His physician found him with distressing asthmatic dyspnea, and this had recurred every night, becoming very severe at times.

Physical Examination.—The pulse was 135, and regular. The systolic blood pressure ranged from 185 to 200, the diastolic from 130 to 145, indicating rather low pulse pressure. A systolic murmur was heard at the apex. There was an area of dulness over the manubrium. The urine showed some hyaline and granular casts, but the excretion of fluid and solids was within normal range. The blood was normal; the Wassermann test, negative.

June 23, 1919, the blood sugar, fasting, was 0.104; August 7, 0.121; one hour after 100 gm. of glucose, 0.233; two hours after 100 gm. of glucose, 0.140.

Roentgen-ray examination revealed definite dilatation of aortic arch, and enormous enlargement of the heart.

June 3, six days after the first examination, the basal metabolism was + 50 per cent.; July 3, + 70 per cent.; August 5, + 97 per cent. There was a distinct gallop rhythm.

The patient died, October 13.

This case is one of extraordinary scientific and clinical interest. Under rest and varied drug treatment the dyspneic attacks disappeared and the patient improved clinically in every respect. It will be noted that the basal metabolism at the outset indicated a moderate grade of thyrotoxicosis, which it was thought would yield under treatment. No goiter could be detected by us or by the clinicians at the Mayo Clinic, where the patient went later for an examination. He had, however, a very short, thick neck, and a goiter of considerable size might have escaped detection. The subsequent marked increase in basal metabolism is thus best explained by increasing thyroid toxicity. The case was such a typical one of chronic hypertensive cardiovascular disease that the thyroid factor would be pushed entirely into the background unless forced to the front by basal metabolism determinations. The etiologic relationship of the thyrotoxicosis to the cardiovascular disease could not under the circumstances have been determined, but a careful study of the case suggests, on the one hand, the possibility just indicated and, on the other hand, the desirability of carefully studying the basal metabolism in chronic hypertensive cases to determine the possible evolution of thyrotoxicosis.

6. Nobecourt, P.: Le monde méd., November, 1919, p. 257.

CASE 8.—*Hyperthyroidism, syphilophobia.—History.*—Mr. S., aged 31, complained of being nervous and restless, and was always tired in the morning on arising. He had been "doctoring" for the past seven or eight years. He had had some palpitation and dyspnea, and was fully convinced that he had syphilis.

Physical Examination.—This was negative, except for fine tremor. Repeated Wassermann tests (four) were negative. The blood sugar, fasting, was 0.079; it was 0.152 one hour after 100 gm. of glucose, and 0.162 two hours after 100 gm. of glucose. The basal metabolism was + 41 per cent.

In this case the determination of the basal metabolism converted a syphilophobic patient into a thyrotoxic one, from the standpoint of diagnosis.

COMMENT

I had hoped to present a larger number of cases, with more abbreviated outline. It seemed advisable, however, to make the case records so complete that the diagnostic bearings of the basal metabolism "settings" would be reasonably clear, even though this made it necessary to omit other interesting cases. There are many aspects of the cases presented which could, I think, be further discussed with profit, but this is also precluded by the length of the paper. So far as I am concerned, this procedure has passed the experimental stage and has been assigned its place in my diagnostic armamentarium by the side of the roentgen ray, the electrocardiograph, serology, colorimetry, clinical chemistry, etc., to be used as occasion requires. While its precise limitations and scope will, of course, be more clearly defined with larger experience, and especially with a fuller knowledge of the endocrinopathies, the attainment of which will be greatly stimulated by its use, the information which it gives in certain cases appears to me indispensable, and cannot be otherwise accurately obtained.

409 West Main Street.

THE TREATMENT OF BRONCHIAL ASTHMA

MARK J. GOTTLIEB, M.D.
Director, Hay-Fever and Asthma Clinic, University and Bellevue Medical College
NEW YORK

The treatment of bronchial asthma is so much dependent on its etiology and a differentiation from other conditions which have similar symptoms, that it is mandatory that a short sketch of these necessary facts be presented before I enter on the main subject of this paper.

Bronchial asthma may be due to anaphylactic or reflex phenomena. It must be distinguished from asthmatic bronchitis, dyspnea due to cardiac decompensation, uremia, and obstructive dyspnea from inflammatory tissue, tumors or enlarged glands or organs in the lumen of the tracheobronchial tree or pressing on the outside of it. A proper physical examination, roentgenoscopy, urine and blood investigation and endoscopy will definitely exclude all the conditions mentioned except asthmatic bronchitis. The last can be excluded by the fact that it is not dependent on

anaphylaxis for its symptoms but on definite pathologic changes in the bronchial and peribronchial tissues, which may or may not be readily demonstrated by a roentgenogram.

These items must be determined before one can treat a case of asthma with hope of success:

1. Examination of the nose, throat and teeth, and roentgen-ray examination of the head to determine the presence or absence of pituitary enlargement, and disease in the alveolar processes of the jaws.

2. Search in other parts of the body for infected areas that may be possible sources of reflex irritation or absorption of toxic material, such as may occur from a diseased appendix, gallbladder, prostate, ovary, etc.

3. Bacteriology of the nasal discharges, pus from the tonsils and tooth sockets, bronchial secretions and stool. The suggestion for examining the stool bacteriologically may be open to criticism. I have had one case of colon bacillus anaphylaxis, and several other physicians within my acquaintance have seen similar cases. Furthermore, very often stools are encountered wherein colon bacilli have been partially or even completely replaced by other organisms, such as diphtheroids, unidentified gram-positive cocci, or pneumococci. Stools displaying these bacterial flora are an expression of an intestinal disturbance of bacterial origin which may or may not have a bearing on the bronchial asthma, and it would be unwise to overlook them. Suspensions of the individual bacteria isolated from the various secretions and discharges should be prepared for the purpose of making skin tests.

4. Skin tests with the autogenous bacteria as well as with stock bacterial proteins, epidermal and food proteins, and pollen. A patient has recently come to my notice who was found sensitive to the bacteria isolated from the nasopharynx, but not to the proteins of similar stock organisms. This has been found in other instances, but less strikingly, and is suggestive of a difference in the protein character in different strains of the same organism. Unless a patient is an infant and partaking of only a few foods, we deem it almost indispensable that the patient be tested with all available food proteins irrespective of the age of onset of the disease; for it has been found by us that a patient may be anaphylactic to certain proteins without exhibiting symptoms, and through some unknown reason develop asthma concomitant with or after some infectious disease, such as chronic ethmoiditis.

TREATMENT

Preventive.—In certain very definite instances, infants have been found to be anaphylactic to human milk from birth. Such a condition surely could not have been prevented, and is very unfortunate; however, the simple change from human milk to that of some other species, as cow's milk, will be followed by a complete restoration to the normal. Through some peculiar freak of nature, a child may show evidences of sensitiveness to cow's milk when it is fed such on the first occasion. In this instance the substitution of condensed or dried milks will, in the majority of instances, overcome what at first seems to be an unsurmountable difficulty. When a child is fed an article of diet for the first time, especially when there is a family history of asthma, urticaria, eczema, hay-fever, etc., it should be continued repeatedly and at frequent intervals and not sporadically; for in this way any anaphylaxis which a child might develop by occasionally feeding this particular food will be mitigated or obviated. Bacterial anaphylaxis is a demonstrable fact. It occurs as the result of intermittent absorption of the proteins of dead bacteria from infected areas. For this reason, and because the presence of an infection is a constant source of danger to the patient's health and life, all infected foci should be eradicated as soon as they are discovered. This particularly applies to infected nasal accessory sinuses, and infected tonsils and tooth sockets, for these areas are most commonly infected and form the basis for innumerable ills besides bacterial sensitiveness.

Climatic.—Only in cases of asthma due to pollen is climatic change of any value, and then it is important to select that locality in which the particular offending plant does not grow. In the vicinity of New York, Fisher's Island, Block Island, Fire Island and Beach Haven are particularly good, except when there is a breeze blowing from the land. More distant localities are of decided benefit, such as the higher levels of the Rocky Mountains, White Mountains and Adirondacks. It is utter folly for one suffering with asthma due to food or epidermal proteins to expect relief by changing climate, because the same conditions will prevail in the new locality as in the old. After a proper diagnosis has been made and suitable treatment instituted, a change of scene and air would be of inestimable value.

Specific.—Generally speaking, it must be said that if a patient is anaphylactic to any one food, that article of diet may be eliminated and the patient recover if there is not a complicating bronchitis, in which instance suitable bacterial vaccine therapy must be given. However, most of the cases cannot be included in this class for the simple reason that patients usually suffer from sensitiveness to more than one food, and in addition may have epidermal, pollen or bacterial anaphylaxis or a combination of all of them. Most foods, however, may easily be eliminated from the diet except milk, eggs and meat. In our experience, patients are not usually sensitive to casein but are sensitive to lactalbumin. By boiling the milk, the lactalbumin becomes coagulated and rises to the surface as a scum and then can be removed. Milk treated in this way can be taken with impunity. In the case of eggs and meats, one of two methods may be employed to desensitize the individual. One of these is the gradual feeding of increasing amounts of egg or meat, beginning with a very small dose. The threshold of reaction must be determined before the treatment is instituted. This may be accomplished by either determining the largest amount of these foods that can be taken by mouth without causing symptoms or by means of skin reactions, following the same technic as described in the treatment of pollen anaphylaxis. The other method is the gradual increase of doses of egg or meat given subcutaneously. Patients sensitive to potatoes may eat them baked, but not boiled or fried. Well toasted wheat bread and puffed wheat, but wheat in no other form, may be partaken. It has been my experience and also that of others working in this field that occasionally a patient may not be sensitive to whole wheat but be anaphylactic to one or more of the individual proteins in wheat. For this reason it is essential that patients be tested with all of the five proteins isolated from wheat. I have observed that when a patient abstains from an article of food for some time, the skin reaction shows less sensitiveness, or no reaction is obtained. Under these circumstances it might be well to have the patient again partake of this food, as he or she may no longer have symptoms from it.

The treatment of bronchial asthmatics who are sensitive to epidermal proteins is very satisfactory, and it is in this class of cases that we procure our most striking results. Patients suffering from anaphylaxis due to cat hair, dog hair, mouse hair, chicken feathers, goose feathers and the feathers of pet birds, such as canaries and parrots, have no symptoms when they are removed from contact with these. When occupation

demands that a person be constantly in contact with the particular epidermal protein that is causing his asthma, such as in the case of furriers and cattle dealers, one of two things may be done; either the patient must change his occupation or be immunized against the particular offending substance; but, in my opinion, it would be necessary for him to discontinue working in that particular field while undergoing treatment. Patients suffering with horse dandruff anaphylaxis, if not very sensitive to horse dandruff, may be comparatively free from symptoms by avoiding contact with horses, or, if they reside near a stable, by changing their residence. For those patients who are sensitive to horse dandruff, in dilutions of the protein weaker than 1:500, desensitization treatment gives wonderful results, the patient usually showing improvement after a few treatments. It has been my experience that the effects of desensitization in horse dandruff cases is not permanent and has to be repeated from time to time. However, fewer treatments are necessary than in the first instance. The same rules as regards the determination of dosage are to be applied here as in the case of pollen anaphylaxis.

Patients may be sensitive to bacterial proteins alone or to other substances besides. Some patients having uncomplicated bronchial asthma show a very decided sensitiveness to certain bacteria. If the bronchial asthma is complicated by chronic bronchitis, the patient may or may not be sensitive to the predominant organism found in the sputum. When the bronchial asthma is complicated by chronic bronchitis, and there is no evidence that the bacteria found in the sputum are producing the asthmatic symptoms by virtue of sensitization, vaccines made from the organisms found should be of inestimable value when combined with the other measures for treating this disease. In some instances, it may be necessary to give three courses of hypodermic treatment at the same time; for instance, when a patient is suffering from chronic bronchitis and an important food and epidermal protein anaphylaxis. If the patient is sensitive to any of the bacteria found in the various discharges or secretions, it is very important not to overdose the patient with the vaccines made from these organisms. It has been my experience that patients suffering with bacterial anaphylaxis, and who are receiving vaccines made from the offending bacteria, do not as a rule exhibit local swelling, redness and pain where the injection is given, but suffer certain general symptoms which are akin to the milder or severer forms of anaphylaxis. For instance, a patient who is under my care at present has had an attack of nausea one-half hour after each injection, and in one instance vomited, six or seven hours later had a chill followed by fever, and a typical severe attack of asthma supervened without there being the slightest evidence of local reaction. It is extremely important, therefore, that the initial dose of bacteria should not be more than twenty million, and not increased more than twenty millon each time and at not a shorter interval than four days.

In case that no alleviation from symptoms occurs from subcutaneous vaccine therapy, intravenous injections of vaccine may be tried. When bacterial vaccines are being used and the patient is not sensitive to these organisms, an initial dose of not more than twenty million bacteria may be given intravenously. If, however, the patient is sensitive to the bacteria contained in the vaccine, the initial dose intravenously should not be more than one quarter of that amount. Intravenous vaccine therapy is usually followed by a chill and rise of temperature, which may come on at any time between three quarters of an hour and eight hours after the exhibition of the vaccine. Such treatment as this should not be repeated more often than once weekly, and should be preceded in each instance by a urine examination with the idea in mind of demonstrating the presence or absence of red blood cells and other evidence of kidney irritation. Should this be present, the treatment must be postponed until such time as the urine is found to be normal again. A subcutaneous treatment may be sandwiched in between two intravenous treatments. If the patient receives no relief from the vaccine treatment given, it may be that the proper organism is not incorporated in the vaccine, and in that instance it is necessary to take another culture of the patient's secretions and discharges. Some patients require more than one series of vaccine treatments, and they usually do much better with the second and third series than they did with the first.

A large percentage of patients suffering from hay-fever become asthmatic during the hay-fever season. As a rule, asthma occurs only during the latter part of the hay-fever season, the reason for this being that the nose is obstructed because of the hay-fever, and the patient is compelled to breathe with his mouth open. Under these circumstances, pollen-laden air is inspired directly into the bronchial tubes without having the protective action of first passing through the nose. As a result, the pollen causes the same swelling to occur in the bronchial tubes as is present in the nose, thus producing an attack of true bronchial asthma. Because of mechanical nasal obstruction or extreme sensitiveness of the bronchial mucous membrane, some patients become asthmatic at the outset of the hay-fever season, and their bronchial symptoms in this instance overshadow the nasal and eye symptoms with which hay-fever patients ordinarily suffer. Having seen a patient affected with asthma of the aforementioned type, one can readily appreciate the suffering which these patients undergo. The symptoms usually last six weeks or more, and the patient is constantly bedridden. Nothing in the way of relief can be expected from specific treatment under these conditions. It is without reason to add to the pabulum of pollen protein by injecting pollen extracts into a person who is saturated with these and constantly absorbing more through his respiratory mucous membranes. The only logical and reasonable thing to do under these circumstances is to make every effort to prevent the patient from further contact with pollen. This can be accomplished by screening the windows with wet cheesecloth and hanging a moistened sheet over the door. If possible, it is wise to remove the patient to a room on the top floor of some very high building, such as a hotel. The room should have an eastern exposure, and the windows and doors should be protected according to the foregoing suggestion.

In about 50 per cent. of the cases of hay-fever asthma, the attack may be prevented or made so mild that the patient will be comfortable throughout the hay-fever season by prophylactic specific treatment. In New York, most of the spring cases of hay-fever are due to sweet vernal grass, timothy, Kentucky June grass, redtop, and orchard grass. In the fall, as far as my experience has gone, the vast majority are due to ragweed. The other pollens, such as tag alder, sheep sorrel, daisy and goldenrod, play an unimportant rôle. It is absolutely essential that the amount of sensitive-

ness be established by skin tests before treatment is undertaken. This is accomplished by applying the various dilutions of the pollen or pollens to which the patient is sensitive to small scratch marks made on any of the flexor or internal surfaces of the extremities. The dilution next higher to the one that gives a reaction is the dilution with which treatment may be begun. For instance, the patient is tested with dilutions of ragweed extract of 1 : 100, 1 : 500, 1 : 1,000, 1 : 5,000, 1 : 10,000, 1 : 50,000 and 1 : 100,000. If the patient reacts to all the dilutions up to and including 1 : 10,000, the dilution of 1 : 50,000 is that which should be used with which to begin treatment. The initial injection should be 0.2 c.c. of this dilution, and the dosage should be increased by 0.2 c.c. each succeeding time until 1 c.c. of this dilution is given. Then 0.2 c.c. of the 1 : 10,000 dilution should be injected, and so on as before.

If redness, swelling and itching occur at the site of the injection, it is wise either to repeat that dose at the next treatment or even to diminish it if the action is very severe. When the treatment is begun, as is usually the case, about six weeks before the known onset of the attack, the interval of treatment should not be less than four days. When it is possible, we are now giving weekly injections throughout the year, and our results have been far better than when the prophylactic treatment has been of short duration, just preceding the hay-fever season. This plan is being carried out in the hay-fever and asthma clinic at New York University and Bellevue Medical College. When the stronger dilutions of pollen extract are used, such as 1 : 500 and 1 : 100, a great deal of caution must be exercised in increasing the dose, because even a slight increase may precipitate an attack of anaphylaxis; and I would warn those who arrive at these dilutions that the increase in dosage should not at any time be greater than 0.02 c.c.

Drug.—During an attack of bronchial asthma, certain drugs may be used to alleviate the patient's suffering. The solution of epinephrin (adrenalin) chlorid, 1 : 1,000, when given hypodermically, has the effect of overcoming the spasmodic constriction of the bronchial tubes, and thus stops the paroxysm or ameliorates the symptoms. The effects of this drug begin to make themselves manifest within fifteen minutes, and last anywhere from one half to two hours. For this reason it is necessary to administer repeated doses while the attack, which may last for weeks, is in progress. The patient gradually becomes accustomed to repeated doses of epinephrin, so that the amount given has to be increased from time to time, and finally, the patient develops a complete tolerance to the drug and no more relief is obtained from its administration. The constant exhibition of this drug is not unattended by baneful after-effects; its immediate action of precipitately raising the blood pressure must necessarily have a damaging influence on a heart even in the healthiest condition. Besides this, its constant use is known to produce a sclerosis of the larger arteries. Epinephrin should never be given intravenously, or while the patient is in the physician's office, as I have seen very harmful effects from such practice. Recently Dr. Hugo R. Miller has been using the active epinephrin extract in oil and, when given prepared in this way, he finds that the effect of the drug comes on more gradually and lasts much longer. The adrenalin inhalant, from our experience, is inactive and does not produce the results which Dr. Miller claims for his preparation.

Atropin given subcutaneously or intramuscularly in gradually increasing doses, up to the point of tolerance, and especially when combined with small doses of morphin, will give the patient a great deal of comfort. Potassium iodid, 1 gm. every four hours, helps to render the bronchial secretions less tenacious and more liquid, and thus makes the coughing milder and of shorter duration. Preparations containing the salts of ammonia, especially liquor ammoniae anisatis, disturb the stomach less than potassium iodid, and are just as efficacious. A mixture containing tincture of belladonna, chloral hydrate and syrup of hydriodic acid has been found to make the patient comfortable in the majority of instances. It is surprising how much relief is obtained by inhaling the fumes from a smouldering powder made from nine parts of stramonium leaves and one part of potassium nitrate. This is the basis of most asthma powders on the market. In very severe cases, nothing short of large doses of morphin hypodermically will give the patient the necessary respite and mental rest from the distressing paroxysms. When the bronchitis persists between attacks, nothing is more efficacious to alleviate the cough and sustain and soothe the patient than Thompson's mixture of linseed oil [1] with codein or compound tincture of opium. Applications of cocain and epinephrin directly to the mucous membrane of the bronchial tubes through a bronchoscope during an attack certainly give respite from symptoms; but the duration of the relief is too short to warrant this trying procedure.

NUTRITIONAL EDEMA AND "WAR DROPSY" *

MARIA B. MAVER, M.D.
CHICAGO

Before the recent war, medical literature contained frequent references to the type of edema now recognized as "war edema." With the clinical picture in mind presented by meager reports that have appeared in the American [1] and British scientific journals of recent publication, a somewhat extended study of wars, famines and epidemics of the past has proved fruitful in bringing to light evidence of the prevalence of edema of this type under varying conditions of insufficient and inadequate food. This edema resembles that of renal disease. In mild cases it may be confined to the lower limbs, but in the severe type the edema may extend to all parts of the body. There is no albuminuria. Accompanying this edema there are emaciation, muscular weakness, depression, anemia, and very frequently gastro-intestinal disturbances.

While the term war edema is not found in early medical literature, there is much evidence that the condition known by this term has been of frequent occurrence in the past. In giving a name to this disease, the authors usually express the chief etiologic factor with the most pronounced clinical symptom, so that war edema, prison dropsy, hunger swelling, epidemic dropsy, edema from inadequate food, deficiency edema, edema without albuminuria, and many similar

1. Mixture of linseed oil (Thompson) consists of: dilute hydrocyanic acid, 10 c.c.; oil of wintergreen and oil of cinnamon, of each, 8 c.c.; glycerin, 20 c.c.; simple syrup, 300 c.c.; Irish moss, 15 gm.; linseed oil, 450 c.c., and water, 780 c.c.

* From the Otho S. A. Sprague Memorial Institute.

1. War Edema, Current Comment, J. A. M. A. 70: 627 (March 2) 1918. Warthin, A. S.: War Edema, Int. A. M. Museums Bull. 7: 196 (May) 1918.

terms have been used. In civil practice previous to the war, essential idiopathic or primary edema, salt edema in children, alimentary dropsy, anemic dropsy and edema following gastro-enteritis were some of the more common terms employed.

Prinzing [2] makes no mention of war edema from the time of the Peloponnesian Wars, from 430 to 425 B.C., to the siege of Port Arthur in 1904. In a large number of these etiologically related conditions, edema appears as a symptom rather than as a specific disease. In the destruction of the French army before Naples in 1528,[3] "those soldiers who were not confined to bed in their tents were seen with pallid visages, swollen legs, and bloated bellies, scarcely able to crawl."

Vacher,[4] writing of the conditions of childhood during the siege of Paris in 1870-1871, finds that the effect of insufficient nourishment showed itself in progressive emaciation, edema of the integument, anemia, and uncontrolled diarrhea, which were characteristic symptoms of the hunger fever which decimated the infant population. Between 1877 and 1880, there broke out in Calcutta a peculiar disease to which the term "epidemic dropsy" was applied.[5] This disease followed an extensive famine in southern India.[6] It persisted in epidemic form until 1880. The number of cases increases in each cold season and falls off in each hot season. It has continued to appear in Calcutta sporadically. Neighborhood and family groups continued to be reported until 1915.

Edema of war occurred during the Napoleonic campaigns, the siege of Paris, and in the concentration camps during the Boer War, when it was known as epidemic edema.[7] Falta [8] of Vienna mentions that the disease was known in Russia during famines before the war, and that the expression "swollen from hunger" was current in the affected districts. Landa [9] related that in August, 1915, when the City of Mexico had been the seat of military operations for two or three months, the appearance of numerous cases of edema began to be noted. Starvation edema was reported by Dr. Patterson [10] in 1899 after a season of famine in China. Holst,[11] in connection with his researches in ship beriberi and scurvy, furnishes this interesting group of historical data:

> Many dropsical cases were observed during the Crimean War when scurvy was prevalent. Dropsy without sore gums occurs every year on board the French fishing vessels off the coast of Newfoundland. During the first part of the nineteenth century dropsy was common in European and American prisons. This prison dropsy is stated in 1847 to have been, besides typhoid fever and consumption, the most prevalent cause of death in forty-one prisons in England, France and North America. In 1857, it caused one-half the deaths in a prison in Breslau.

RECENT REPORTS OF EDEMA IN EUROPE

The first record of war edema in the recent war was made in 1915 by Strauss, who described the "hunger disease" in Russian Poland and Galicia, where the poor had an insufficient and monotonous dietary, and were exposed to war epidemics. About the same time, in July, 1915, Budzynski and Chelchowski [12] described a series of 110 cases of a peculiar affection occurring among the inhabitants of certain towns in Poland as a result of insufficient and inadequate food caused by the German occupation. The name "hunger swelling" was applied to this disease because its most characteristic feature was the presence of marked edema, recalling that encountered in dropsical beriberi. All the patients suffering from the disease were in a state of semistarvation.

In Germany, war edema first made its appearance in prison camps in July, 1915. Rumper at first considered relapsing fever responsible, but in 1916, when many cases with dysenteric symptoms occurred in prison camps free from relapsing fever Rumper and Knack [13] regarded dysentery as a predisposing cause. At this time, cases were reported among Russian soldiers at the front. Early in 1917, there were many cases in the civil population and labor battalions in Germany, and in the spring, cases appeared in Austria among civilians, especially workmen, but rarely among the troops. The disease appeared in Vienna with great suddenness. In 1917, marked attention was given in German medical journals to this peculiar disease, which seemed to have become widespread throughout Germany. The first cases noted in Berlin were in January, 1917.

Guillermin and Guyot [14] made personal observations and reported in March, 1919, that insufficient food in Russia, Germany and Austria had caused a specific disease of hunger which was known as hunger edema. These authors described the disease as it occurred among French prisoners of war.

In Poland, the patients were in a state of semistarvation, none having eaten meat for several months and some not since the beginning of the war. The cases occurred almost exclusively among the poorest of the people and the unemployed factory hands, who were without money to buy food at the famine prices. The staple diet of the people consisted of potatoes supplemented by small quantities of soup and bad bread on certain days. The amount of potatoes eaten averaged 5 pounds for each person daily, a dietary which caused diarrhea and eventually led to most of the food's being passed through the gastro-intestinal tract undigested. The causes of the disease, according to the Polish authors Budzynski and Chelchowski, were lack of proper food, especially the absence of fats, and the large amount of bad potatoes consumed. Maase and Zondek,[15] in agreement with other authors, consider the cause of the disease to be underfeeding, resulting especially from the diminished quantity of fats. Another factor suggested was the amount of fluid ingested. Owing to the changed conditions, most of the sufferers had been taking a more watery diet than normally, in the form of soups, turnips, etc., and the occurrence of diarrhea was fairly common. Schiff [16] suggests that this purely war disease has obvious similarities to beriberi and other diseases resulting from a lack of vitamins. Falta says that all of the patients

2. Prinzing, F.: Epidemics Resulting from Wars, New York, Oxford University Press, 1916.
3. Hecker, J. F. C.: Epidemics of the Middle Ages, London, 1846, p. 231.
4. Vacher: La mortalité à Paris en 1870, Gaz. méd. de Paris, 1871, p. 9, cited by Prinzing (Footnote 2).
5. Green: Epidemic Dropsy in Encyclopedia of Medicine and Surgery, Edinburgh and London **2**: 422.
6. Leys, J. F.: Epidemic Dropsy, Reference Handbook of Medical Sciences, Ed. 3, New York, William Wood & Co., **3**: 696, 1914.
7. Maliwa, E.: Wien. klin. Wchnschr. **30**: 1477, 1917.
8. Falta, W.: Wien. klin. Wchnschr. **30**: 1736, 1917.
9. Landa, E.: Deficiency Edema, Gaceta méd., Mexico **11**: 67 (Jan.-June) 1917; abstr. J. A. M. A. **78**: 424 (Feb. 9) 1918.
10. Patterson, A. H.: Starvation Edema, Med. Rec., November, 1899, p. 715.
11. Holst, A.: Experimental Studies Relating to Ship Beriberi and Scurvy, J. Hyg. **7**: 621, 1907. Holst, A., and Frölich, T.: J. Hyg. **7**: 670, 1907.
12. Budzynski, B., and Chelchowski, J. M. H.: Hunger Swelling in Poland, J. Trop. M. **19**: 141 (June 15) 1916.
13. Rumper and Knack: Brit. M. J. **2**: 560 (Oct. 27) 1917.
14. Guillermin, R., and Guyot, F.: Undernourishment and Famine Edema. Rev. méd. de la Suisse Rom. **39**: 115 (March) 1919.
15. Maase, C., and Zondek, H.: Berl. klin. Wchnschr. No. 36, Sept. 3, 1917; abstr. Brit. M. J. **2**: 560 (Oct 27) 1917.
16. Schiff: München. med. Wchnschr. No. 22, 1917.

had been improperly fed for a long time, especially as regards proteins, and the liability to edema, always present in malnutrition, was aggravated by the large quantity of sodium chlorid in the food. He states that persons showing war dropsy had usually been getting from 1,200 to 1,400 calories a day, including only 30 to 50 gm. of protein. But as such degrees of edema do not ordinarily occur in simple starvation, he believes that another factor must be present in these cases, namely, the ingestion of large amounts of fluid and salt in the attempt to sustain life on the thin vegetable soups common in prison camps and in famine districts. Cold, hard work and infectious diseases increase the tendency to edema simply because they increase the deficiency in food calories.

The Swiss authors found that in some regions the conditions of underfeeding were extreme, resembling the great famines of history. The disease was also very frequently found in men who were subject to hard work on a diet of from 800 to 1,200 calories, consisting of 15 per cent. and more of indigestible cellulose, bread containing 97 per cent. potatoes, very little fat, and a ration of 50 gm. of albumin, daily, at the highest. Exposure to cold and hard physical labor were contributing factors in the development of this disease.

Maase and Zondek [15] suggest that the toxic products of protein metabolism may cause damage to the endothelial lining of the blood vessels and so lead to edema. The high residual nitrogen and ammonia values found by them in the urine, blood and edema fluids were considered to be evidence of this hypothesis. Franke and Gottesmann,[17] in their study of the functional efficiency of the kidney in seventeen cases of war edema, found delay in excretion of urea and sodium chlorid in ten patients, and of potassium iodid and lactose in seven. They therefore call war edema a nephritis without albuminuria.

Maliwa,[7] from investigations of four cases, correlates the stage of polyuria with an excess of sodium chlorid in the blood, and finds that after the polyuria has passed off the blood is deficient in the sodium chlorid content. The change in the osmotic relations of the tissue is the essential factor in the disease, the polyuria and edema, though prominent clinical features, being secondary in importance. To determine the cause of the edema, Knack and Neumann [18] sought to secure its return in convalescents by restricting the diet principally to turnips, and by giving large quantities of water internally. Neither measure separately ever produced the result, but with the restriction of the diet, plus water drinking, the edema rapidly returned in convalescent patients. Lange [19] discusses the causation of a group of cases observed by him in West Prussia, and concludes that an altered permeability of the blood vessels was present, owing to a qualitative alteration in the food, perhaps to the extreme deficiency of calcium. Hulse [20] reaches similar conclusions, except that the edema was more frequently found as a sequel to relapsing fever, and in men who had been previously exposed to extreme cold. Recent writers discuss the subject of vitamins and the rôle they play in deficiency diseases, especially those belonging to the beriberic type, but generally recognize that it is not a well-defined deficiency disease, and in the majority of cases is the result of an inadequacy of diet to supply the nutritional requirements of the body.

The characteristic symptoms found among the inhabitants of certain towns in Poland were edema, debility, muscular weakness, intestinal disorders, mental depression, dimness of vision, disappearance of sexual impulses, and alterations in the blood and urine. With the disappearance of the edema the wasting was evident, the patients sometimes being reduced to mere skin and bones. Maase and Zondek [15] state that there were no noteworthy premonitory symptoms, but suddenly marked edema developed, especially in the lower limbs, with anemia and frequent diarrhea. Among French prisoners, there was great emaciation, the loss of weight being frequently 40 per cent. of the initial weight, anemia, general edema, muscular weakness and nervous exhaustion: and apathy and depression were associated with a "facies pestica." Falta states that prostration, apathy and weakness were almost constant; a feeling of heaviness in the legs, and diminished reflexes were found, but no typical polyneuritic symptoms occurred. The nutritional value of the food was still further diminished by diarrhea and dysentery, which were frequently associated early in the development of the disease.

In cases among the civil population, the edema was generally located in the feet and legs, occasionally in the thighs and trunk. In more than one-half the cases there was some degree of facial swelling; in one-sixth, the hands were swollen, and in one-ninth ascites was present. The face and scrotum were often affected, and in a small number of cases, ascites and hydrothorax occurred. Its features were remarkably uniform: the edema resembled that of renal disease and in mild cases was confined to the lower limbs; but in severe cases it was universal and caused considerable limitation of movement, sometimes interfering with the opening of the eyes. The edematous tissue was soft and elastic; the skin and puncture fluids were pale. In some cases the edema came on gradually, but after severe physical exertion, more rapidly. Following the disappearance of the dropsy, relapses were prone to occur, especially if there was any return to hard work or unsuitable food. The edema sometimes led to bursting of the skin with serous exudation, or so stretched the skin that pink scars like striae gravidarum resulted from it. The swollen extremities felt cold, and were painful when touched. Beyermann [21] states that twelve cases among the insane suggested scurvy or purpura except for the remarkably slow pulse and the absence of changes in the gums. On the addition of fresh vegetables to the ordinary diet, conditions returned to normal.

The urine was usually pale like water, alkaline, and contained neither sugar nor albumin. The amount of urine passed varied greatly in different cases, but on the whole was increased, sometimes reaching 60 ounces and over when the swelling was disappearing. As soon as the patient was put to bed, a marked diuresis began, and during the stage of recovery the amount of urine passed daily was from 3 to 4 liters. High residual nitrogen and ammonium values were found in the urine, blood and body fluids. Falta found polyuria and frequency of micturition; the urine being clear, of low

17. Franke, M., and Gottesmann, A.: Wien. klin. Wchnschr. **30**: 1004, 1917.
18. Knack, A. V., and Neumann, J.: Outbreaks of Edema in Germany, Deutsch. med. Wchnschr., July 19, 1917, p. 901; abstr. Lancet **2**: 248 (Aug. 18) 1917.
19. Lange, F.: Deutsch. med. Wchnschr., July 12, 1917, p. 876; abstr. Lancet **2**: 248 (Aug. 18) 1917.
20. Hulse W.: München. med. Wchnschr., July 10, 1917, p. 921; abstr. Lancet **2**: 248 (Aug. 18) 1917.
21. Beyermann, W.: Edema Disease in the Netherlands, Nederlandsch Tijdschr. v. Geneesk. **1**: 2265 (June 28) 1919; abstr. J. A. M. A. **73**: 1172 (Oct. 11) 1919.

specific gravity, and free from albumin and formed elements, except a few hyaline casts. Tonin [22] comments on the odd fact that polyuria constantly accompanied the hunger edema in ex-prisoners of war seen at the hospital. As noted by others, this polyuria usually began when the patients were at rest in bed.

Jensen's [23] study of the blood showed from 1.5 to 4 million red corpuscles with a color index greater than one, usually with a leukopenia, in 60 per cent. of the cases there being less than 5,000, with a relative lymphocytosis (from 30 to 55 per cent.). The coagulation time was usually shortened, and the blood proteins were nearly always decreased, generally being from 4 to 6.4 per cent. (normal is from 6.5 to 8.5 per cent.), that is, there was a hydremia with hypo-albuminosis. The freezing point was normal, the residual nitrogen normal or low, uric acid normal, and sugar and calcium usually low, chlorin usually approaching the upper normal figures, although it was occasionally low. Chemical examination of the blood and urine (Knack and Neumann) revealed a diminution in lipoids and in the organic phosphorus content of the blood. The depletion of the tissues in nutritive reserve in war dropsy is shown by Falta's statement that when absolute fasting is studied in these cases there are only from 2 to 3 gm. of nitrogen eliminated per day, as against 10 to 12 gm. of nitrogen excretion during the fasting of normal persons.

There were no cardiac symptoms reported by Maase and Zondek, but other observers found a condition suggestive of a cardiac lesion with failing compensation. Falta states that the slow pulse, from 35 to 40 a minute, characteristic of war edema, is best marked in males. Schiff reports a somewhat higher pulse rate of from 42 to 56. The edema was frequently observed with cardiac symptoms and infections in children, but in adults without these complications.

Hemeralopia frequently preceded the development of the edema. In severe cases, corneal ulcer and xerosis of the conjunctivae were troublesome. Ophthalmologists describe these eye changes as the result of debility and poor nourishment. Nyctalopia, or night blindness, is common in the spring and fall as a symptom of debility. Night blindness seldom occurs as a functional disorder except in cases of general debility, starvation or scurvy. The development of xerophthalmia is now recognized as due to a specific deficiency in fat-soluble vitamins. Maynard [24] discussed twenty cases of increased intra-ocular tension found in the course of epidemic dropsy. There was dimness of vision, the cornea was a little steamy, and the pupils were small or moderately dilated. The tension of the eyeball was distinctly increased. Halos, generally rainbow-like, were complained of at one time or another during the attack of dropsy.

Vandervelde and Cantineau [25] made observations on 200 patients treated by them in the St. Pierre Hospital at Brussels. Most of these cases were among deported Flemish civilians. There was marked edema of the lower limbs, frequently associated with "grave phlegmons." The general condition was brought about by lack of food and by deplorable hygiene. There were weakness and profound anemia; and dyspnea resulted from the slightest effort. Those deported were recruited without any medical examination and were forced to do hard physical work. Minor symptoms and complications were common. Among these were: ringing in the ears and dry, painful skin with frequent secondary pyogenic infections; and in one or two instances dark pigmented patches were observed on the face, similar to the pigmentation in Addison's disease. (Noted by the Polish authors.)

In mild cases under the influence of a more generous dietary, recovery took place. The regulation treatment for the condition consisted in a better diet as far as possible and rest in bed until all swelling had disappeared. Knack and Neumann found that recovery always followed rest in bed on ordinary hospital diet and that the restriction of fluids was rarely necessary. Maase and Zondek, by giving three patients 100 gm. of fat daily for a week, were able to cure the disease completely without rest in bed or other remedial measures. The diet should be ample, especially in regard to protein. The lack of resistance to cold is striking, death following relatively slight chilling, so that warmth is an important part of the treatment. The prognosis is good if the patients are kept in bed on a proper diet, but severe cases frequently prove fatal. Postmortem findings are seldom reported. Chronic marasmus with atrophy of the viscera, especially the heart and spleen, fatty degeneration of the liver and kidneys, and in some instances, dysenteric ulcers were found. In three cases Budzynski and Chelchowski found a diminution in the amount of blood, and a reduction in the size of the liver.

REPORTS FROM INDIA, CHINA AND MEXICO

Leaving the recent reports of edema in Europe and turning to the literature of other countries, we find that in many lands similar epidemics of dropsy have resulted from famine. Until the appearance of "epidemic dropsy" in India following the famine in 1876-1877, "swellings" were regarded as a minor symptom, when arising in the course of famine diseases. During this famine the mortality was high, and in eight famine districts nine tenths of the total recorded deaths were caused by famine diseases—dysentery, dropsy, diarrhea and debility.[26] Government works and a system of rationing were established for men, women and children unable to earn the daily ration. To test the value of this ration, a system of weighing the people was undertaken. In these tests great caution was found necessary for, it was reported, many of the people who came into the camps appeared to be filling out and fattening, when in reality they were getting dropsical and in a fair way to die. In the nursery of the famine relief camp near Madras, many children were found to be in a dropsical condition, and most of the old people were in the same state. Old men and old women were bloated with dropsy, and others again, many of them in the prime of life, were mere skeletons, the bodies of full grown men weighing only from 58 to 85 pounds at necropsy.

To supply the vast population of southern India with the necessary amount of food for health was the "Hoover problem" of the famine relief agencies. Practically all the grain had to be imported, and transportation facilities were inadequate. It seemed necessary to keep the grain ration, principally rice, as low as possible. Animal foods were scarce. Dr. Cornish, adviser of the government of India on public health

22. Tonin, R.: Gazz. d. osp. **40**: 636, 1919.
23. Jensen: München. med. Wchnschr. **65**: 925, 1918.
24. Maynard, F. P.: Preliminary Note on Increased Intra-Ocular Tension Met with in Cases of Epidemic Dropsy, Indian. M. Gaz. **44**: 373, 1909.
25. Vandervelde, M., and Cantineau, M.: Edema Among the Deported, abstr. J. A. M. A. **73**: 1229 (Oct. 18) 1919.
26. Digby, W.: The Famine Campaign in Southern India, 1876-1877.

questions, pointed out that effects of insufficient nourishment might not be immediately apparent, and throughout the famine constantly emphasized the importance of the nitrogenous value of the ration, and advocated a ration consistent with age and work, sufficient to replace tissue waste. After this famine, reports began to appear in the *Indian Medical Gazette* of acute dropsy and acute anemic dropsy. In 1881, McLeod [27] termed the disease "epidemic dropsy." The "new disease" continued to be the subject of many reports and extensive bacteriologic investigations until 1909-1910. According to bacteriologic phraseology, it appeared endemically and epidemically, and much study was given to a specific organism, with no constant results.

Dr. Greig,[28] in his report on epidemic dropsy, states that there is evidence to show that epidemic dropsy is a nutritional disease which is brought about by a one-sided dietary, and that the two severe outbreaks of epidemic dropsy in Calcutta and Bengal, namely, from 1877 to 1879, and from 1907 to 1909, have been correlated with a sustained high price of food grains during this period, and the cessation of these epidemics has synchronized with the fall in prices of food grains. The study of the parasitic origin of disease has somewhat overshadowed the question of the relation of defects of dietary to the causation of disease in the tropics. In one locality, Greig found in 321 houses, with 4,637 inhabitants, 1,581 persons who were dropsical. The persons attacked consumed polished rice, and this was their staple diet. The amount of rice consumed daily varied from 2 to 16 ounces (from 1 to 8 chittaks). When the price of grains rose, the capacity for purchasing additional suitable articles of diet diminished and the diet became dangerously onesided.

The peculiar qualities of rice as a diet were pointed out by McCay [29] in his investigations of jail dietaries. Rice is the poorest of all cereals in protein, and when cooked it swells up and absorbs three and one-half times its weight in water. The percentage of starch in rice is high—up to 80 per cent. Rice is deficient in fat. Rice is a bulky diet, 26 ounces of dry rice when cooked measuring about 2,800 c.c. A large carbohydrate diet, by its mere presence in the intestinal canal, hinders the absorption of protein. On account of the fermentation processes that are quickly set up, there is increased peristalsis, and the food is hurried through the small intestine past the area most favorable for absorption. The amount of rice present in the diet influenced in a marked degree the quantity of urine excreted. The rice may have a diuretic action on the kidneys, or water may be formed in the tissues from the constituents of the rice, in addition to the large water intake with the boiled rice itself.

Dr. Patterson [10] of Chinkiang, China, described a group of cases of dropsy occurring in dispensary patients after a famine season. The food of these people consisted largely of weeds and wild plant greens. As no literature could be found on the subject, the disease was called "greens dropsy." The only symptom complained of was the swelling. With some medical treatment and money to buy grain, the patients recovered rapidly.

When the City of Mexico had been the seat of military operations for two or three months, Landa [9] related that many cases of edema in men, women and children began to be noted. Hundreds of cases were found with no albuminuria. As in other famine epidemics, many persons died of actual starvation, while others developed edema cachexia from defective nourishment. The mortality was high, the patients dying in marasmus with heart failure. There was hydremic anemia, hypothermia, slow pulse, reduction of the reflexes, and pain in the muscles. The only food obtainable had been vegetables of the families Chenopodiaceae and Amaranthaceae, such as beets and spinach.

RELATION OF WAR EDEMA TO DEFICIENCY DISEASES

Frequent reference is made to the similarity between the clinical symptoms found in war edema and those associated with diseases of the beriberi type. Falta states that the wet form of beriberi is the only other deficiency disease in any way resembling war edema. In this group of edematous diseases, as discussed by various authors, are tropical beriberi, ship beriberi and epidemic edema. The polyneuritic symptoms in tropical beriberi have been so constantly emphasized that they have obscured the equally important edematous conditions which form the chief feature in the wet type of the disease. In epidemic edema and ship beriberi, nervous phenomena are rarely present, but edemas of various degrees constitute the major symptom. Infants nursed by beriberic mothers suffer from edema, dyspnea and cyanosis. Authorities agree that this is an infantile beriberi due to some deficiency in the mother's milk. Almost all cases of infantile beriberi are edematous. The pathologic findings observed at necropsy in 219 infants under 1 year of age showed a percentage of 56.6 of infantile beriberi. Vedder and Williams [30] regard this edema in infantile beriberi as due to a specific avitaminosis. Vedder [31] furnished a list of food deficiencies found by the various investigators in beriberi: (1) deficiency in fat (Bremaud and Laurent); (2) nitrogen starvation (Takaki); (3) deficient vegetables combined with an infection (Fales); (4) deficiency in organic phosphorus (Schauman) and (5) deficiency of some unknown substance, not phosphorus (Fraser and Stanton, Chamberlain and Vedder, Shiga and Funk).

It is interesting to contrast with this group the findings by the various authors in war edema. The lack of calcium, fat, phosphorus in the blood, fresh vegetables, proteins and vitamins have each been emphasized in war edema. In addition there was general underfeeding; the diet as a whole was low in caloric value. The food was quantitatively as well as qualitatively deficient. There was semistarvation.

Lind,[32] in his early account of scurvies, found dropsy a constantly recurring symptom. Scorbutic persons were found to have edematous swellings at first about the ankles, later extending to the legs and other parts. The face, especially, became pale, swelled and bloated. Long want, improper diet, melancholy and cold are given among the causes. Dr. Cook, in a letter to Lind at this time, finds the term "nervous disorders" universally applied to most chronic and cachetic ailments. The lower people "who live continually on

27. McLeod, K.: Epidemic Dropsy in Calcutta, Indian M. Gaz. **16**: 148, 1881.
28. Greig, E. D. W.: The Scientific Memoirs of the Government of India, No. 49, 1911-1912.
29. McCay, D.: The Scientific Memoirs of the Government of India, 1909-1911.
30. Vedder, E. B., and Williams, B.: Concerning the Beriberi-Preventing Substances or Vitamines Contained in Rice Polishings, Philippine J. Sc., Sec. B, **8**: 175, 1913.
31. Vedder, E. B.: Beriberi, New York, William Wood & Co., 1913.
32. Lind, J.: A Treatise of the Scurvy, Edinburgh, 1753, p. 319.

farines and a gross diet,"and among whom these complaints are found, had a universal lassitude, pains which they termed rheumatic, and a breathlessness on exercise. The legs were sometimes swollen and the abdomen almost always tender and tumefied. Professor d'Espine observed these edemas during the siege of Paris as a first stage of scurvy; and Guillermin and Guyot, commenting on similar scorbutic complications, ask if scurvy may not be simply a state more advanced in the evolution of this disease, of which edema is an initial symptom. But the number of deaths occurring without scorbutic symptoms seems to plead for war edema as "une entité morbide." Dropsical patients without sore gums were frequently observed in epidemics of scurvy in Russia during the Crimean War when scurvy was very prevalent.

In pernicious anemia associated with pregnancy, Williams [33] finds anemia, weakness, shortness of breath, and edema of the extremities. A general puffiness affecting the hands and face as well as the legs, without urinary findings, is common in hydremic patients. More than half of all pregnant women, according to DeLee,[34] show some edema of the feet, the hands or the face. Often this is an elastic puffiness that does not pit. The cause of this is not known. In reproductive processes throughout nature, growth occurs at the expense of the maternal tissue. The protein materials are chiefly concerned in the growth of the new cells. Miescher [35] showed that salmon, after entering the Rhine from the sea, virtually starve. Yet the genital organs of both male and female develop greatly at the expense of the liquefying muscles, which may lose 55 per cent. of their weight (protein) without destruction of the muscle cell.

In war edema and in the etiologically related edemas in deficiency diseases, hydremic anemia is a somewhat frequent symptom. Osler and McCrae,[36] in their study of the circulatory disturbances in a group of cases of chlorosis, find dyspnea in 318, palpitation in 254, and edema in 231. "Doubtless it is the occurrence of slight degrees of edema which gives chlorotic patients so plump a look." All the symptoms come on in the course of from three to twelve months. The disease is most common in ill fed and overworked girls.[37] A long continued unbalanced diet may play a large part in the process.

Sir Joseph Fayrer [38] finds that pernicious anemia in Europe resembles beriberi in the Orient. Bramwell,[39] in a table showing the most important symptoms in forty-five cases of pernicious anemia, records twenty-three cases of dropsy, associated with great prostration, weakness and loss of weight. The urine was normal in the majority of cases. This edema was considered as partly due to the watery condition of the blood, and partly to the enfeebled state of the heart. Functional derangements of the stomach and intestine are almost invariably present. A symptom [40] which is practically never wanting is edema, especially of the legs and under eyelids, though it is also seen in other places on the body. The swelling is practically never marked, but is very persistent, and is noticeable as one of the earliest symptoms of the disease. Moreover, it readily recurs in patients who show a complete remission. As in other anemias, the edema is possibly due to alterations in the blood vessel walls. A gain in body weight in pernicious anemia when unattended with increase of hemoglobin indicates dilution of the blood and escape of serum into the tissues.

Edema occurring in the course of gastro-intestinal disorders and marasmic conditions in infancy is somewhat infrequent but well recognized by pediatricians. Chapin [41] reports twenty-one cases of general and local edema in which neither the condition of the blood nor that of the urine explains satisfactorily the development of the edema. The clinical conditions in which these edemas are most frequently found are: (1) difficult digestion and malassimilation with gastro-intestinal disturbances and diarrhea; (2) exhaustive conditions, such as prematurity, marasmus, extreme secondary anemias, edema neonatorum, and in long debilitating diseases; (3) occasionally in various constitutional diseases, such as syphilis, tuberculosis, erysipelas, and pertussis, and (4) in angioneurosis of vasomotor origin.

Under the term essential, primary or idiopathic edema, Wagner,[42] in 1887, records the earliest account of this disease. An epidemic of edema in which thirteen cases occurred in thirty-five babies in which gastro-enteritis was prevalent was thought by De Wolf [43] to be of infectious origin. The cases all occurred within a short time in a children's hospital in which the food supply was modified milk alone, or modified milk with the addition of a cereal or a proprietary food.

Potter,[44] in a group of cases of diarrhea with edema following a diet of barley water with a low percentage of fat and protein, increased the fats and proteins with the disappearance of the edema in a short time. The same author later reports a large group of cases in which he considers the edema a symptom of malnutrition and marasmus. In typical cases these babies had been treated for some time with boiled water, barley water or whey. A slight gain in weight occurred as the edema developed. Potter says that it is not what the babies are being fed that causes the dropsy, but what they are not being fed; also that it is entirely owing to the fact that they are not getting enough proteins in the diet, and this notwithstanding the intestinal disturbances that practically always accompany or precede the edema. It may be that in many of the cases the continuance of the diarrhea itself is due to the deprivations of solids in the food.

Czerny and Keller [45] use the term "Mehlnährschäden" to describe a condition found in infants fed on a high carbohydrate diet, but lacking in other important foodstuffs. The tendency of the tissues to hold water is increased in carbohydrate feeding. Holt [46] finds general edema as a symptom in marasmic infants. There is often increase in weight, and the whole body may become waterlogged. The symptoms shown by some

33. Williams, J. W.: Obstetrics, New York, D. Appleton & Co., 1912, p. 509.
34. DeLee, J. B.: The Principles and Practice of Obstetrics, Ed. 2, Philadelphia, W. B Saunders Company, 1915, p. 386.
35. Miescher, quoted by Lusk, Graham: The Science of Nutrition. Ed. 2, Philadelphia, W. B. Saunders Company, 1909.
36. Osler, William, and McCrae, Thomas: Modern Medicine, Ed. 2, Philadelphia, Lea & Febiger, 1915.
37. Osler, Willam: Principles and Practice of Medicine, Ed. 8, New York, D. Appleton & Co., 1916, p. 730.
38. Fayrer, Joseph: Beriberi, in Quain's Dictionary of Medicine, London, 1888, p. 104.
39. Bramwell, Byron: Anaemia, Philadelphia, William Wood & Co., 1899.
40. Stengel, Alfred: Diseases of the Blood, Philadelphia, W. B. Saunders, 1905, p. 263.
41. Chapin, H. D.: Cases of Edema in Infants, Arch. Pediat. **31**: 5, 1914.
42. Wagner, E.: Deutsch. Arch. f. klin. Med. **41**: 509, 1887
43. DeWolf, H.: A Report of Thirteen Cases of Edema Apparently Epidemic in Character, Arch. Pediat. **19**: 895, 1902.
44. Potter, P. A.: The Relation of Protein to Edema in Marantic Children, Med. News, New York, Jan. 9, 1904; Edema in Infants, Arch. Pediat. **29**: 206, 1912.
45. Czerny and Keller: Des Kindes Ernährung, 1906.
46. Holt, L. E.: Diseases of Infancy and Childhood, New York, 1916.

infants that have been fed for a long time on an almost exclusive carbohydrate diet indicate that they suffer from "Mehlnährschäden." The carbohydrate diet is frequently given in the form of proprietary foods and cereal decoctions to overcome diarrhea. Bloch [47] applies the term carbohydrate dystrophy to a group of cases in which he found xerophthalmia associated with edema resulting from fat deficiency and a carbohydrate diet. Hume [48] observed thirteen cases in which edema appeared following gastro-enteritis and vomiting. There was no marked error in the diet to throw light on the etiology of the condition. His observations on salt retention in these infants failed to be conclusive, and as there was no evidence of kidney or heart disease, the pathologic condition was sought for in the tissues themselves. The action of toxins, developed in the gastro-intestinal tract, on the suprarenals or capillary cells is suggested as a possible cause of the condition.

Ashby [49] finds these edemas following gastro-intestinal catarrh which has persisted for weeks. The gastro-intestinal tract is so deranged that poisons absorbed from it reach the systemic circulation and in this way lower the vitality of the endothelium of the blood vessels, causing an increased permeability. Recurrences were common, and these children seemed to do better on food containing a high percentage of proteins with a low percentage of carbohydrates.

In a review of the literature on osmosis and edema in infancy and childhood, Waterman,[50] as late as 1914, finds uncertainty as to the methods of the production of this edema. In the light of present knowledge, the weight of evidence seems to be in favor of the chlorid retention theory of infantile or essential edema, although the vascular lesions theory has many points in its favor. The etiologic factors considered by this author are: (1) latent or hidden nephritis; (2) chlorid retention which leads to a hydremia and so to an edema, and (3) increased permeability of the capillary walls.

In reviewing these various etiologic factors, there is evidence that the same type of dietetic and pathologic conditions is found in these edemas in infants as those concerned with war edema and the edemas found in the deficiency diseases of the beriberi type.

A general dropsy is a common symptom in hydremic animals. Friedberger and Fröhner,[51] and Hutyra and Marek [52] describe this condition as it occurs in draft oxen and horses that work in sugar factories and in other cattle from exclusive feeding on distiller's wash. The disease is chiefly caused by feeding on beet root residue, which contains only about 5 per cent. of solid matter with 95 per cent. of water. As the proportion of proteins in the solid matter is only 1 to 10, the residue contains 0.5 per cent. proteins. Consumption of such food combined with hard work results in hydremia. All tissues are infiltrated and the body cavities filled with transudate.

A similar condition of dropsy or "cachexia aquosa" is found in sheep from insufficient pasturage and unfavorable climatic conditions, such as wet or cold weather, badly situated grazing lands, and penning the sheep on wet, cold soil.[53] Weakness, emaciation, anemia, depression and exhaustive diarrheas accompany this condition.

EXPERIMENTAL EDEMA

Denton and Kohman [54] find that dropsy occurs in a large percentage of rats fed on a carrot diet, when the proportion of nitrogen is reduced by the addition of some non-nitrogenous foodstuff, such as fat or starch. Kohman,[55] in further experimental work, produced edema in a large percentage of rats fed on a diet composed largely of carrots. The addition of fats or fat-soluble vitamin, or water-soluble vitamin, or increase in salt content of the diet had no noticeable effect on the occurrence of edemas, but there was much more marked edema when there was much water in the diet than when the animals were on a dry diet. On the addition of a sufficient amount of an adequate protein to the carrot diet without change in caloric value, no edemas occurred and the animals grew normally. Control experiments showed that the edema was not due to toxic products in the carrots, or to starvation from low carloric intake.

Harden and Zilva [56] observed edema in one of three monkeys fed on a diet complete in every respect, except that it lacked the fat-soluble "A" factor and was low in fat. Each of these animals received a daily diet of from 250 to 300 gm. of boiled, polished rice, marmite, 10 gm., and salt mixture, 2 gm. (The large amount of rice in this diet may have hindered the absorption of the protein.) [29]

Extensive experimental work was conducted by Holst and Frölich [11] in an endeavor to produce ship beriberi in animals. Abortive cases of scurvy resembling ship beriberi were repeatedly seen in guinea-pigs, but although these authors were unable to produce typical ship beriberi they frequently observed edema.

I have carried out a number of dietetic experiments with dogs, rats and guinea-pigs. These animals have been variously fed on specially prepared breads containing much cornstarch in order to reduce the protein content; also, in the case of the rats and guinea-pigs, diets of beets, turnips, cabbage and potatoes with or without the addition of starch bread or plain bread. It has not been possible to carry out this work to the extent desired to make a complete study of the subject; furthermore, the work of Miss Kohman seems to cover the ground sufficiently well. Therefore no details of this work will be published. To summarize the results it may be said that in a number of animals edema was obtained, and that these cases occurred under such conditions as to agree fully with Miss Kohman's conclusions. That is to say, edema was not observed in animals that received a dry diet even when they were allowed to take such water as wanted. Most of the instances of distinct edema were observed in animals that lived on a diet poor in protein and fats and containing much fluid. For example, no edema was observed in guinea-pigs living on potato and rye bread, or on meal bread or rye bread alone; whereas a few of the guinea-pigs living solely on beets or cabbage showed more or less edema. A few rats fed

47. Bloch, C. E.: Xerophthalmia and Dystrophy in Infants, Ugesk. f. Læger **80**: 815 (May 23) 1918; abstr. J. A. M. A. **71**: 322 (July 27) 1918.
48. Hume, W. E.: General Edema Following Gastro-Enteritis in Children, Brit. M. J. **2**: 478 (Sept. 2) 1911.
49. Ashby, H. T.: Practitioner, London, May, 1914, p. 686.
50. Waterman, L.: Arch. Pediat. **31**: 135, 1914.
51. Friedberger, Franz, and Fröhner, Eugen: Veterinary Pathology, Ed. 6, Chicago, W. T. Keener Company **2**, 1908.
52. Hutyra, Francis, and Marek, Josef: Pathology and Therapeutics of the Diseases of Domestic Animals, Chicago, Alex. Eger **1**, 1916.
53. Hoare, E. W.: A System of Veterinary Medicine, Chicago, Alex. Eger, **2**: 1290, 1915.
54. Denton, M. C., and Kohman, Emma: Feeding Experiments with Raw and Boiled Carrots, J Biol. Chem. **36**: 249 (Nov.) 1918.
55. Kohman, Emma: The Experimental Producton of Edema as Related to Protein Deficiency, Am. J. Physiol., to be published.
56. Harden, A., and Zilva, S. S.: Edema Observed in a Monkey Fed on a Diet Free from Fat-Soluble "A," Accessory Food Factor and Low in Fat, Lancet **2**: 780 (Nov. 1), 1919.

solely on a carrot diet also showed edema. In one of these the visible edema disappeared when casein was added to the diet and returned when the animal was again restricted to carrots. This work adds nothing to Miss Kohman's observations, but furnishes merely a certain amount of additional corroboration.

GENERAL CONCLUSIONS

It will be seen that the final conclusions reached by those who have studied war dropsy are in extremely close accord. This condition seems not to be a typical "deficiency disease" in the sense of being the result of a deficiency in one or more specific unknown constituents (vitamins) in the diet. In a broader sense it is, however, a deficiency disease, and is the result of a protracted existence on a diet deficient in total calories, especially in protein. Undoubtedly, a high fluid intake, and possibly a high salt intake, are important accessory features. Hard work and exposure to cold are factors simply in that they increase the caloric deficiency of the food supplied.

It is gratifying to find that the experimental work agrees perfectly with the clinical evidence in establishing that a combination of low calories, low protein and excessive fluid intake will lead to a marked dropsy corresponding to war dropsy in all respects. The importance of specific vitamins seems to be excluded by these experiments.

Undoubtedly, dropsy occurring in many conditions associated with either defective food supply or absorption (as in some types of infantile dropsy) or in conditions of protracted anemia or cachexia is essentially the same as war dropsy. Hence the general term "nutritional edema" is to be recommended for this class of cases.

THE CAUSE OF ABSCESS OF THE LUNG AFTER TONSILLECTOMY

LOGAN CLENDENING, M.D.
Instructor in Medicine, University of Kansas School of Medicine
KANSAS CITY, MO.

Reports of abscess of the lung following tonsillectomy have been appearing regularly in the literature during the last six years. Such cases are occurring fairly frequently in the practice of every man who pays any special attention to chest disease, and it is within the last few years that their presence has been so particularly noticeable.

What is the cause of this complication? Why has it made its appearance only lately with such frequency?

The first report of a case that I find is by Bassim.[1] I have not, however, been able to verify the reference. Shortly afterward Scudder [2] referred to it. The most comprehensive paper is that by Manges,[3] published in 1916. Manges reports nine cases, in one of which the patient died. He discusses causation under the heads of (1) anesthesia; (2) aspiration of infected blood or of pieces of tonsillar tissue; (3) embolism, or infarction of the lung; (4) some special infective agent, and (5) some antecedent cause.

Perhaps only the last two heads need any explanation. Under the subject of some special infective agent he refers to three of his patients who were operated on in the same hospital, not far apart, and he thought that possibly the fact that they acquired their disease at the same place and the same time bespoke the exposure to an infection with special pulmonary affinity.

For an antecedent cause he warns against operating when the patient has a cough, etc.

Manges made some statements in 1916, based on his own experience, which he probably would not repeat now. He states, for instance, that "abscess of the lung should never occur if the patient has been properly treated." He goes on to say that abscess of the lung never occurs after tonsillectomy in private practice. This is, of course, not true. Richardson,[4] who published an article shortly after Manges, says that tonsillectomy is never a minor operation in an adult. He thinks these patients need more after-treatment than they get, and that every patient who is to have a tonsillectomy should have a thorough physical examination.

Coakley [5] discussed the matter with particular reference to Manges' paper. His remarks are somewhat critical of Manges. He says that all his patients are carefully examined before a tonsil operation, and asks Dr. Manges to state just what he would consider a complete examination, and specifically just how it would prevent any lung abscesses.

Manges thinks, or thought in 1916, that all these cases were due to careless treatment on the part of the operating surgeon. He is, however, very hazy as to what was done that was careless. He thinks the head should be lowered during the stage of anesthesia and that the patient should be carefully examined before the operation to see that he has no pulmonary infection.

No idea of etiology has been advanced which bears the test of close scrutiny. It is admittedly true that poor physical risks, that patients with fresh tonsillar infection, and patients with acute respiratory disease are not good subjects for tonsillectomy. But carefully examined patients, persons of all ages in the best of health other than their tonsillar disease, patients with no respiratory infection, and patients surrounded with every care, attention and operative safeguard all get abscesses occasionally when their tonsils are removed by a skilled operator. The subjoined case is cited as an example of one occurring when every care was exercised:

An unmarried woman, aged 36, had her tonsils removed, July 1, 1918, on account of frequent attacks of tonsillitis. Her general nutrition was poor, and it was thought that the removal of the tonsils would improve that condition. The operation was performed in a hospital under general anesthesia. The anesthetic was administered by Dr. H. C. Anderson, who has devoted special attention to anesthetics for twenty years, and has had his widest experience perhaps in nose and throat operations. Furthermore, he took particular pains with this patient as she was a valued friend and co-worker. The operator was Dr. J. M. Patterson, a skilful and careful nose and throat surgeon. The anesthetic was gas-ether with a suction tube, and the flow of ether was maintained by a small pump engine. Every precaution was taken against aspiration of blood or infective material. The suction tube was never out of the patient's mouth. The operation was not troublesome and there was no excessive bleeding, either during the operation or later.

The after-course was instructive. The history of lung abscess began while the patient was on the table. She began to cough immediately after the operation was completed, and continued after she was put to bed. Only after the administration of one-half grain of morphin in divided doses was it

1. Bassim: Thèse de Paris, 1913, No. 181.
2. Scudder, C. L.: Boston M. & S. J. **171**: 523 (Oct. 1) 1914.
3. Manges, M.: Am. J. Surg. **30**: 78 (March) 1916.
4. Richardson, C. W.: Laryngoscope **26**: 1001 (July) 1916.
5. Coakley: Laryngoscope **26**: 1003 (July) 1916.

at all controlled. After the patient got up and around she continued to cough. In the course of a few weeks she lost several pounds, and with her coughing brought up a thick mucopurulent expectoration. The sputum was examined repeatedly for tubercle bacilli, always with negative results. A vaccine was prepared and administered without benefit. About two months after the operation she went to Colorado and stayed some time, but was not improved.

About eight months after the operation, examination of the chest revealed these physical signs:

Heart: No hypertrophy; sounds muffled but clear; pulse regular and strong, rate of 70 to 80.

Lungs: Percussion of right side in front, hyperresonant. Impaired percussion note in back at base. Whispered voice over this area heard faintly. Vocal resonance increased. On auscultation from angle of scapula down, fine crepitation on inspiration and beginning of expiration sometimes distinct, sometimes faint. Lungs otherwise unimportant. Apexes quite clear.

Roentgenoscopy revealed an indefinite shadow on the right side.

A puncture was made on the right side in March, 1919. The needle did not produce any pus for some time, and then at the third puncture entered apparently an air space, and a few flakes of pus and tissue were drawn up.

The patient refused thoracotomy.

In September, 1919, she submitted to a pneumothorax artificially produced on the right side, which has given some relief.

COMMENT

Here is a case carefully cared for by a careful man. The symptoms of lung abscess began immediately.

Motor driven anesthesia apparatus used in tonsil operations may be responsible for the inspiration of septic material and the resulting lung abscess.

I do not here refer to the suction feature of these machines, but to the motor which forces the ether vapor into the pharnyx. These ingenious little mechanisms force ether into the posterior pharnyx, under what is really a very high pressure. The pressure balloons out the posterior space, and is sufficient to create an air current that would force pus, infected blood clots, or infected pieces of tissue past the glottis into the lung. Its pressure is continuous. It impedes coughing. Even with the head in a low position the material accumulates there, and is forced downward.

These motors furnish a very good field for the operator. But most of our lung abscesses have resulted since their introduction. Neither Manges nor Richardson publishes facts which let us know whether motors were used in their cases. I have records of two other cases in which they were used. In both these cases a lung abscess developed after a tonsillectomy in which a motor-driven apparatus was used for anesthesia. In two other cases, bronchopneumonia developed under the same circumstances. Certainly the use of these motors should be discontinued until we are able to determine whether they operate as a cause of the distressing, crippling and hideous sequelae of tonsil removal.

In those cases in which no motor-driven apparatus was used I have turned as an explanation of the etiology to other facts.

There is a relation between the tonsil and the lung which has not sufficiently been dwelt on. I will cite briefly one case as an illustration:

A man, aged 44, complained of continued cough. It had followed an attack of influenza, and had continued several months. He had been told he had tuberculosis. Physical examination, sputum examination and roentgenograms all made this doubtful. The signs in the lungs were, in fact, completely negative. Yet he spit up about half a pint of material a day. The tonsils were found badly infected. After their removal, the cough and expectoration promptly cleared up.

In other words, I believe that there is a path of infection directly from the tonsil to the lung, probably through the lymph glands. Definite information on the subject, however, is curiously lacking. The description of the lymphatic drainage of the tonsils in the standard textbooks on anatomy are very vague on the lymphatic chain after it reaches the deep cervical. However, Grober's [6] experiments with India ink seem to indicate that there is a direct pathway between the tonsil and the apex of the lung. The tonsils have long been regarded as a possible primary focus of infection in pulmonary tuberculosis.

The relation of infection of the tonsils to the lungs is so close that operators should think seriously of it. When the tonsils are removed, there has been opened up a large area of raw surface, ready for any septic infection and possibly draining directly into the lungs.

Let that area alone. I do not know exactly how much dabbling around tonsil operators do on this surface, but it is my impression that they do a great deal. I see no good reason for trying to get out every particle of tonsillar tissue; it is nearly impossible anyway unless done at the first step of the operation. Stop swabbing it, fingering it, poking around in it. There is another aspect to the matter: Tonsil operators, to retain the confidence of the rest of the profession, must find some way to control hemorrhage, so that we do not have this dangerous packing and handling of a raw surface in the face of a septic cavity ten or twelve or twenty-four hours after it has been opened up. One of Richardson's cases of lung abscess occurred after a postoperative hemorrhage.

CONCLUSIONS

1. Lung abscess is at present a frequent sequel to tonsillectomy.
2. It occurs in all classes of cases—in private as well as in free services.
3. It is sometimes fatal, always serious and often very crippling.
4. It is due in some cases to inspiration of infected material.
5. Motor-driven anesthesia apparatus, by creating a positive pressure in the pharynx, may operate as a cause. At any rate, the danger is sufficiently great to justify the discontinuance of their employment until comparative data can be secured.
6. It is due in some instances to metastatic infection through the lymphatics.
7. Swabbing or tampering with the throat after enucleation has been accomplished is the cause of one group of cases.

6. Grober, quoted by Ballenger: Diseases of the Nose, Throat and Ear, Philadelphia, Lea & Febiger, 1911.

Insecticides.—Such substances as coal oil, gasoline, and benzine are very good insecticides for such more or less stationary parasites as the louse and the bedbug. They act by covering the breathing pores of these insects, and so smother them. These oily substances are also very useful in campaigns against mosquitoes in which they are used to form a coating over ponds and other bodies of water harboring mosquito larvae, thus smothering them with the film on the surface of the water which the larvae and pupae are unable to pierce with their breathing tubes.—*U. S. Nav. M. Bull.*, January, 1920.

HAND AND FOOT PRINTS AS RECORDS IN LESIONS OF THE PERIPHERAL NERVES

LEWIS J. POLLOCK, M.D.
Assistant Professor of Neurology, Northwestern University Medical School
CHICAGO

Graphic methods of recording signs and symptoms in many instances have a greater value than descriptive methods. Frequently it is impossible to have photographic records of the hands and feet in cases of peripheral nerve lesions; under this condition I have found it serviceable to record the contour of the palm and sole, by making impressions of the hand and foot.



Fig. 1.—Imprints in a case of ulnar nerve lesions: *A*, affected; *B*, affected; *C*, affected; *D*, normal; *E*, affected; *F*, affected; *a*, notch indicating atrophy of hypothenar muscles; *b*, notch between mounts of ring and middle fingers indicating atrophy; *c*, break in line along the radial border of the base of the index finger, indicating atrophy of the abductor pollicis.

Attention has been called to some of the changes seen in the conformation of the whorls of the skin in the various peripheral nerve lesions.[1] Imprints of the hands and feet are of greater value, however, than to demonstrate such changes alone. Not only is the position of the hand determined, but the atrophy of muscles and contractures are shown as well. Only five of the peripheral nerves show distinctive changes in a sufficiently large percentage to make it profitable to study the lesions by this method. These nerves are the ulnar, median, radial, internal popliteal and sciatic. The picture produced by a combined lesion of the ulnar and median is likewise distinctive. When the external popliteal nerve lesions show a characteristic picture, it is the same as that produced by lesions of the internal popliteal nerve.

Imprints of the hand in a case of a lesion of the ulnar nerve show the following characteristics: The clawing of the inner two fingers is well demonstrated by the absence from the imprint of any part of these fingers except the tips. The hypothenar muscles are seen to be atrophied by the presence of a notch on what normally consists of a rounded contour made by these muscles (Fig. 1 *a*). Between the mounts of the ring and middle fingers is seen another notch, and when the atrophy is very severe a notch appears between the ring and little fingers as well (Fig. 1 *b*). The fingers cannot be spread apart, and the first phalanx of the thumb is in a position of extension. The atrophy of the adductor pollicis is seen by a break in the line along the radial border of the base of the index finger (Fig. 1 *c*).

Median nerve lesions show very clearly the disturbance of the whorl formation on the tips of the index and middle fingers (Fig. 2 *a*). When severe clawing is present in these two fingers it is marked by the imprint of the very tips, frequently including the nail. The atrophy of the thenar eminence is usually well marked, and is shown by the prominence of the base of the thumb and a considerable notch in the normally rounded contour of the radial border of the thenar eminence (Fig. 2 *b*). The distal phalanx of the thumb is in extension. When severe clawing is present it is made evident by the absence of any imprint of the central portion of the palm. Not only is the atrophy of the thenar eminence noted by the notching proximal to the base of the thumb, but in many instances the loss of tissue is demonstrated along the radial border of the first phalanx of the thumb (Fig. 2 *c*). The failure of desquamation and the presence of many new lines is demonstrated over the thenar eminence (Fig. 2 *d*).

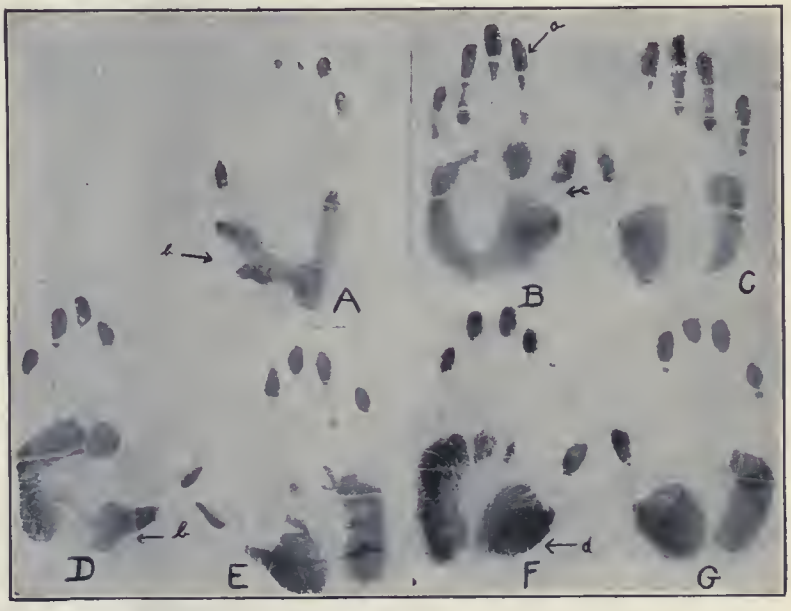


Fig. 2.—Imprints in case of median nerve lesions: *A*, affected; *B*, affected; *C*, normal; *D*, affected; *E*, normal; *F*, affected; *G*, normal; *a*, disturbance of whorl formation at tips of index and middle fingers; *b*, prominence of base of thumb and notch in contour of radial border of thenar eminence indicating atrophy of thenar eminence; *c*, loss of tissue along radial border of first phalanx of thumb; *d*, failure of desquamation and presence of many new lines over thenar eminence.

Radial nerve lesions are characterized by the cramped appearance of the fingers which results from the inability to place the palm on the paper in a flattened

1. Cestan, R.; Descomps, P., and Enzière, J.: Bull. et mém. Soc. méd. d. hôp. de Paris **40**: 652 (May 5) 1916.

position. The most characteristic feature of this imprint is the position of the thumb, which is adducted, the distal phalanx falling within or on the border of the outline of the index finger. The thumb is rotated about its own axis inwardly so that the imprint of the radial border of the distal phalanx is straight and not rounded, because of the thumb nail. The distal phalanx of the thumb is usually flexed. Absence of the



Fig. 3.—Imprints in case of radial nerve lesions: *A*, affected; *B*, affected, musculospiral, operated on, April 22, 1919; *C*, normal; *D*, normal; *E*, affected, paralyzed abductor pollicis; *F*, normal; *G*, affected, musculospiral, operated on, April 4, 1919.

signs of atrophy of the thenar and hypothenar eminences is an additional feature of this form of lesion.

In combined lesions of the ulnar and median nerves, signs of atrophy of both the thenar and the hypothenar eminences are demonstrable by means of the notches found along their borders (Fig. 4 *a*). Clawing is present in all four fingers. The mounts are often separated (Fig. 4 *b*). The center of the palm shows a larger area in which no imprint is seen. When, in addition to the ulnar and median, the radial nerve is involved, the thumb shows at times the same rotation as was observed in radial lesions.

In lesions of the external popliteal nerve there is frequently seen a flattening of the toes, so that the plantar surface of the entire length of a toe will produce an imprint.

Lesions of the sciatic nerve show in addition to a slight pes cavus in some cases, a clawing of the toes indicated by the absence of their imprint on the paper.

It may be stated that, although by no means diagnostic, such records are of considerable value in determining the progress of the condition of atrophy and deformity in peripheral nerve lesions.

The imprints are very easy to take, and require a minimum of time for the amount of record produced.

25 East Washington Street.

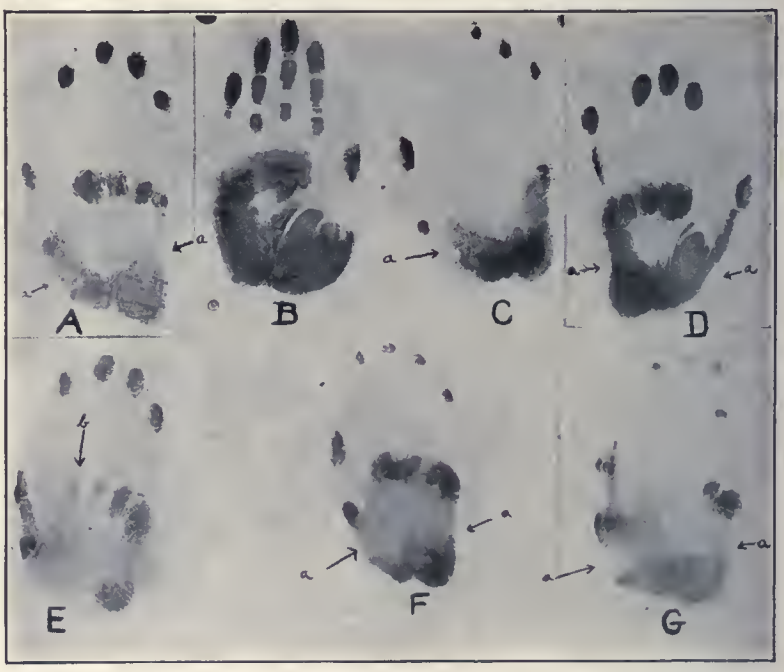


Fig. 4.—Imprints in case of ulnar and median, and ulnar median and radial lesions: *A*, ulnar and median; *B*, normal; *C*, ulnar and median; *D*, ulnar and median; *E*, ulnar and median; *F*, ulnar median and radial; *G*, brachial plexus; *a*, notches indicating atrophy of thenar and hypothenar eminences; *b*, separated mounts.

THE THÉZAC-PORSMEUR METHOD OF SUN TREATMENT

ROBERT W. LOVETT, M.D.
BOSTON

In the spring of 1919, a new method of applying heliotherapy by means of a lens was called to my attention by Mrs. Edward C. Post of Newport, in whose sanatorium at Porsmeur, Morlaix, Brittany, it had been used. The lens had been called to her attention by M. de Thézac, and was put into practical use at the sanatorium by Miss Helen Whidden, the trained nurse in charge of the day camps, who was familiar with the Rollier and Malgat methods of sun treatment. Another treatment by a lens has been described by Artault.

In this paper I shall describe a series of carefully observed cases of chronic suppuration in the orthopedic service at the Children's Hospital, in which the treatment was by the Thézac-Porsmeur method. Miss Helen Whidden, who had charge of the treatment in France, was so good as to devote three months to the demonstration of it at the Children's Hospital.

The essential of the treatment is the concentration of the sun's rays by means of a double convex lens with a diameter of 12 inches and a focal length of 72 inches. At the focal point, of course, the heat is very great, as it would be in any lens used as a burning glass, and in general the patient should be placed at a point where the sun's rays form a circle of from 3 to 5 inches in diameter.

As the patient is moved farther away from the lens, the heat increases, and as the patient is moved nearer

the lens, the heat diminishes. The degree of activity to which it is desirable to submit the wound can be regulated by carrying the lens nearer the patient or farther away.

The lens is mounted in a canvas cylinder, 1 foot in diameter and 3 feet in length, which is kept rigid by two circular wires with thin strips of wood running from one hoop to the other, over which the canvas is stretched. The lens is placed a few inches from one end of the cylinder. The advantage of this cylinder is that it enables the lens to be pointed directly at the patient and makes the application of the treatment more definite. The cylinder carrying the lens is mounted on a tripod and can be swung in any direction by means of a handle.

The duration of the sun treatment should lengthen progressively. The first treatment should last for five minutes and increase at the rate of about five minutes a day up to thirty minutes. In a certain case a longer period up to an hour and a half was used without apparent ill results. The skin around the wound was as a rule protected by towels, and the person giving the treatment wore colored glasses, as the light is extremely bright, and the eyes of the patient were protected if exposed to the glare of the circle of light. The patients were given one treatment a day.

The effect of the treatment on suppurating wounds was perfectly definite: (1) The discharge immediately increased and then diminished; (2) pale granulations took on a healthier color, and (3) sensitiveness diminished. In order to test the efficacy of this treatment, a series of suppurating wounds of the severest type was selected, and cases that were obviously difficult. In the wards in a hospital for acute cases it was necessary to select a more acute type than would have been the case in an institution for chronic diseases, as patients that were doing well were discharged to the convalescent home on account of the need of beds, and chiefly the chronic suppurations that were resistent remained long enough to be observed under this treatment.

The cases here reported were observed by members of the staff, and records were dictated by them as to the progress of the cases.

REPORT OF CASES

CASE 1.—*Tuberculosis of the Hip.*—M. M., a boy, aged 7 years, had had tuberculosis of the left hip of one year's duration, during which time in spite of treatment he had made bad progress and showed very little resistance. The von Pirquet reaction was positive, and he had had some abscesses. He seemed to have no power of repair, and had large areas of pale, flabby granulations which were melting down into larger ones, with much glandular involvement. Operation seemed out of the question on account of the extent of the infection, which extended half way to the knee. In April his parents were advised to take him home, as the case seemed hopeless. This they were unwilling to do. In May he was very much emaciated and septic. There were two sinuses around the hip, and a granulating area 4 inches long in his leg. He was extremely sensitive to motion and very lethargic. From May 1 to August 27 he received fifty-five sun treatments.

June 19, the wound was smaller and looked more healthy. Sensitiveness was much diminished, but the temperature remained high. Discharge had increased, the bacterial count had fallen from 25 to 4 streptococci, and from 15 to 2 staphylococci, and the pyocyaneus had disappeared after five days.

July 7, the wound on the leg had nearly healed, and the general condition had greatly improved.

July 31, the lymph nodes had diminished greatly in size.

August 6, the temperature became normal in the morning, but rose in the afternoon to 100 or 101.

August 27, when the treatment was discontinued, the large wound had nearly healed, the boy was well nourished and had a good color, and he was happy and full of interest.

Here was a serious tuberculosis of the hip regarded as hopeless, whose repair was definitely stimulated, and whose local and general condition was greatly improved after treatment was begun. As for months previous to this the patient had been going down hill, and as no other change in his treatment had been made, in the opinion of all who observed him the gain was to be attributed to the treatment by the lens. The bacterial count did not remain permanently low, but the streptococci rose slightly, August 20.



Fig. 1.—Method of applying lens treatment.

CASE 2.—*Congenital Syphilis.*—M. S., a girl, aged 12 years, had had congenital syphilis with destruction of bony tissue of the right ulna, and extensive skin ulcerations of three years' duration. There was an affection of the right wrist of one year's duration, the diagnosis apparently not having been made. Numerous small sequestrums were present in the wound, which were detached as they became loose. There was an ulcer at the elbow joint 3 inches in diameter with regular sharp edges and exuberant granulations which were greenish looking and soft; there was an ulcer at the lower third of the forearm, ulnar side, sloughing and discharging freely, and a roentgenogram revealed destruction of bone beneath both of the ulcers mentioned.

The patient was given thirty-three sun treatments aggregating twenty-one hours, covering a period from May 8 to August 5. The elbow was treated by heliotherapy. The patient had been receiving antisyphilitic treatment and the wound on the elbow had nearly healed, but the wound on

the wrist showed no disposition to heal and remained open. The Wassermann reaction was positive, and since April 3 the patient had been given 5 grains of potassium iodid three times a day with 2 grains of mercury with chalk. Later, no improvement occurring, the wound was dressed with mercury ointment and the patient was given arsphenamin intravenously, April 26, and three subsequent doses in the early part of May. The mother's Wassermann test was reported positive. In two months the elbow had entirely healed except for a small place where a bone spicule was protruding; and at discharge, both wounds were healed. The bacterial count fell from an average of 25 streptococci in the first four exposures to an average of 8 in the last four before the wound closed, and the staphylococci fell from 6 to 3.

This was a case of long-continued bone suppuration from syphilis which had been under antisyphilitic treatment without healing of the wound. The case was very extensive, and although the patient was having the antisyphilitic treatment, the improvement seemed to begin only when the sun treatment was started. The effect was most striking in the very rapid healing of the wound which began after the heliotherapy was commenced.

Case 3.—*Acute osteomyelitis of left femur.*—A boy, aged 8 years, had acute osteomyelitis of the left femur, The involved area was incised, April 20, 1919. May 16, when the sun treatment was begun, there was profuse drainage and a temperature running at night often to 104. June 2 the sun treatment was discontinued. It was tried, June 27, but was again discontinued. July 3 it was begun again. August 27, when treatment was discontinued at the hospital, the wound was beginning to close and the discharge was small. The patient had to be operated on in October, 1919, and received Carrel - Dakin treatment, and on November 26 the wound was practically healed. The temperature was normal for two months, since September.



Fig. 2 (Case 2).—Appearance of arm in May, 1919.

Only twenty-six treatments, aggregating nine hours in all and covering 100 days, were given, the treatment having been interrupted by extensions of the process in the bone. The bacterial count did not fall, but the wound made good progress and grew smaller, the color of the granulations improved, and the sensitiveness diminished during the periods of insolation. The case showed that the treatment was not as well adapted to acute osteomyelitis as to the more chronic conditions, although it seemed to have a stimulating effect on the discharging wounds; but the process in the bone was still progressing, and nothing but operation could give final relief.

Case 4.—*Cellulitis of right tibia.*—A girl, aged 8 years, had cellulitis of the right tibia. The involved area was incised, June 12. When sun treatment was begun there was a wound 3 inches in length, and at the back of the leg a wound 7 inches in length with considerable discharge. When the sun treatment was discontinued there remained only two small areas, one at each end of the anterior wound, which were quite dry, the posterior wound leaving a strip 3 inches long and one-fourth inch wide which persisted, which it was deemed more rapid to close by suture.

There were twelve sun treatments, covering a period of thirty-six days between June 24 and July 31. During the sun treatment the wounds became less sensitive and much healthier in character. The streptococci were reduced to about one third of what there were at the height of the infection, but the staphylococci, which were about 5 to a field at the beginning, remained about the same. The patient was discharged in good condition, August 20.

This was a case of suppuration of the soft parts, with no bone involvement, in which the sun treatment had a very stimulating effect on the closure of the wound.

Case 5.—*Acute osteomyelitis.*—A girl, aged 11 years, with acute osteomyelitis, underwent operation, March 19, with incision and drainage. A second operation was necessary, July 1, and on July 12, when the sun treatment was begun, there was a very sensitive wound, draining profusely with a foul smelling greenish discharge. Twelve treatments in all were given, covering a period of forty-three days.

July 31, it was noticed that the wound was in decidedly better condition.

August 27, there remained only a small granulating surface about one-fourth inch in diameter, which was the opening of a small sinus. At the outside of the leg there was a small granulating surface communicating with the bone. The general condition was much improved and, August 28, the wounds were discharging very little, and the patient was sent to the convalescent home. The bacterial count of streptococci remained about the same. The case was regarded as having made better progress than it would have done without the sun treatment. This was an exceedingly deep-seated and resistant suppuration which immediately improved on the beginning of the sun treatment.

Case 6.—*Osteomyelitis of right tibia and left foot.*—A boy, aged 9 years, who had osteomyelitis of the right tibia and left foot since April, 1919, was operated on for bone drainage, June 4. When the sun treatment was begun, the wound of the tibia was 17 inches long and 2 inches wide, discharging profusely. Twenty-two treatments were given between June 28 and August 27, a period of sixty-one days. July 24 a loose piece of bone found in the wound was removed. August 28, the wound was almost entirely closed, and the wound on the foot healed quickly, leaving three small sinuses. Later a small ulceration developed in the scar. The patient was discharged September 19. It was evident that from the beginning of the sun treatment the case healed with unusual rapidity.

Case 7.—*Osteomyelitis.*—A boy, aged 10 years, having osteomyelitis, received twenty-six sun treatments covering a period of sixty-eight days between May 24 and July 21. He had been in the hospital eight times since 1916, and had had several operations. When the sun treatment was begun there was a wound at the right area above the elbow 3½ inches long, penetrating to the bone. July 15 the wound had healed except for a small area ⅜ inch long and ⅛ inch wide, at the center of which was a sinus communicating with bone. Streptococci fell from 25 to 4, and staphylococci from 10 to 2. This was a chronic low grade osteomyelitis apparently aided in the healing process by sun treatment.

Case 8.—*Tuberculosis of the spine.*—A girl, aged 5 years, who had had very bad home surroundings, had a high dorsal tuberculous spine with pressure paralysis and involvement of sensation. A large ulceration developed on the back because of this lack of sensation, and wherever pressure was exerted a new ulceration developed. The sun treatment with the lens was inaugurated, May 8, and continued to May 31, to determine whether it would improve the sloughing on the back. The ulcerated area became smaller, but as the disturbance was evidently trophic in character the sun treatment was abandoned, as it was a case in which it was not likely to be of use.

Case 9.—*Osteomyelitis.*—A girl, aged 10 years, with multiple osteomyelitis dating from October, 1916, had undergone several operations. Sun treatment was instituted in an abscess on the forearm 2 inches long and one-fourth inch wide. Eighteen treatments were given between May 8 and July 1, with the lens, and twelve sun baths. The wounds became cleaner and smaller, and on account of the child's having developed new foci, sun baths were instituted. At the end of the combined treatment with the lens and sun

baths, the wounds on the arm had nearly healed. The general condition was much improved. Pain had diminished.

The case was a very difficult one, under observation and treatment for many years, and very resistant to everything that had been attempted. The combination of lens treatment and sun baths seemed to have the effect of improving the healing process.

CASE 10.—*Nontuberculous arthritis.*—A girl, aged 7 years, who was poorly developed and nourished, had nontuberculous arthritis, which was most marked in the left knee, though there was some involvement of other joints. Blood culture was negative. The patient received six sun treatments between June 21 and July 3. No change in the condition of the joint was noted. Treatment was too short for any definite conclusion to be drawn, and the case was not suitable on account of its multiple character.

CASE 11.—*Cervical Pott's disease with abscess.*—A girl, aged 2 years, had a discharging tuberculous abscess. Sun treatment was started but abandoned because of the lighting up of the disease. Only seven treatments were given between June 21 and July 1, as the disease was increasing in the spine. The case was inconclusive.

CASE 12.—*Dactylitis of the left hand and ankle.*—A girl, aged 6½ years, had had dactylitis of the left hand and ankle of two months' duration. The case was clearly tuberculosis, and the bone was extensively involved. The von Pirquet reaction was positive. The pus from the finger was proved tuberculous by an inoculation in a guinea-pig. Eight sun treatments were given, and the parents took the patient home. No conclusion from the sun treatment can be drawn.

COMMENT

In my opinion and that of my associates, there was greater progress in the cases treated by the lens than there had been before, or than there had been in similar cases. Improvement in Case 1 was striking. The boy had been a long time under observation, he had made no headway whatever, and from the time the lens treatment was begun his improvement was rapid and steady. In two acute osteomyelitis cases in which the treatment was used within a week after operation, it seemed to be too stimulating, the temperature rose, and the sun treatment had to be deferred.



Fig. 3 (Case 2).—Appearance of arm in July, 1919.

For six years I have had experience in sun treatment in which the whole body has been exposed, and I am a strong advocate of its value. I am equally convinced that the treatment with the lens is a distinct addition to our therapeutic measures, as it possesses decided advantages. It can be delicately regulated and controlled; it is applicable when the sun is sufficiently clouded to be useless for general exposure; and it can be used in a sunny room by opening the window and pointing the cylinder at the sun. It seems free from risk when used according to directions, and it seems to embody real possibilities.

A bacterial count was made in all cases at short intervals, and a study of the cases shows that the effect of the sun treatment was to lower immediately the bacterial count in the discharge in the wound; but in several of these cases there was underlying suppuration, and the bacterial count was naturally not affected.

The value of the treatment would seem to have been demonstrated in cases of chronic suppuration from tuberculosis, syphilis and chronic osteomyelitis.

234 Marlborough Street.

THE TREATMENT OF INJURIES TO ATHLETES

HARRY EATON STEWART, M.D.
Consultant in Physiotherapy, U. S. Public Health Service
NEW HAVEN, CONN.

We are now seeing a greatly increased participation in the various forms of athletics, especially of those types which are classed as the "vigorous fighting games of youth"—football, basketball, soccer, boxing, etc. The war has had a marked effect in stimulating participation in these sports. By contrast, also, the injuries that so often accompany indulgence in them now seem so trivial that many restrictions, especially against football, have been removed. The physician may therefore expect to see a great deal more of the special types of injury that occur in athletics than he has heretofore been called on to treat.

There are many comparatively new forms of physical treatment being thoroughly tested out in the physiotherapy departments of our army and Public Health Service hospitals which are especially applicable to the treatment of athletic injuries. Much of the good accomplished has been the direct result of the skill and untiring effort of the reconstruction aides—young women well trained in the various branches, such as massage, electrotherapy, exercise and thermotherapy. They constitute a group having exceptional preliminary training and wide experience, and have not been deeply grounded in any one so-called "system" of treatment. These young women are becoming available in increasing numbers, and are capable of rendering the physician invaluable help in treating many types of cases.

That physician who will spend the brief time necessary for a person with his background to inform himself regarding the technic, indications and contraindications of the simpler forms of physiotherapy will be richly repaid for his labor. He is often too busy to give these treatments personally, but he needs rather detailed knowledge in order to prescribe them properly. For instance, to order "massage" in a given case without seeing to it that the type used, duration and method of application are correct is almost as vague as to order medicine without stating the kind or the dosage. For example, hacking or deep kneading might be absolutely contraindicated in a given case, when gentle and long continued stroking would be of great value.

The treatment of athletic injuries is often a complicated problem. The patients are usually young and in exceptionally good general health. Focal infections do not, as a rule, play a part in delaying recovery, but they must be kept in mind. On the other hand, we have two difficulties to contend with: the necessity of using the injured member slightly at the earliest possible moment, as would be necessary in signal practice, kicking or goal shooting, in order to keep in touch with the game. In addition, pressure on the part of the coach and their own eagerness to resume play sub-

jects these patients at the earliest possible moment to the very severe strain of the full contest. Time is always the most important factor.

The application of the various types of physiotherapeutic treatment to injured men of a university football team last fall brought very satisfactory results, and it is with the hope that interest will be stimulated in the conservative use of these treatments by the profession that this paper was written. The patients treated were referred through the courtesy of Drs. Townshend, Greenway and Cook.

CLASSIFICATION OF INJURIES

Most of the injuries due to athletics fall into one of these classes: (1) muscle bruise; (2) torn ligaments; (3) torn muscle insertions; (4) subperiosteal hematoma, or (5) tenosynovitis.

Muscle Bruise.—This injury is perhaps the most common we meet in football players. It is usually caused by the shoulder of the tackler hitting the runner with great force on the front of the thigh. There follows at once pain, weakness, swelling and stiffness of the extensors of the leg.

The pathologic condition varies with the force of the blow and the hardness (condition) of the player. There may be only a slight bruising, which massage at once and continued light use will entirely eradicate. Generally, however, the muscle fibers will be found torn and matted together with considerable extravasation of blood and lymph.

The muscle should be relaxed, bandaged firmly, and rested twenty-four hours. After that period, treatment by the application of heat is begun. Baking is good, but does not penetrate deeply as the high frequency does. This current is usually given in the form of direct diathermy. A still more efficacious and better controlled method is by indirect diathermy. With the patient on the autocondensation pad or cushion attached to one pole of the d'Arsonval current, the other pole is applied directly over the injured muscle by the vacuum or, better still, a nonvacuum electrode. It is important to keep this electrode moving rapidly over the surface. A little powder applied to the skin will aid in the ease with which the electrode can be moved. Care must be taken that the cords are well insulated; a piece of rubber tubing will serve the purpose. If a steel table is used, one should avoid any possibility of the patient's touching the table during the treatment.



Direct diathermy in treatment of shoulder injury

Massage is begun the second or third day, very gently at first, only effleurage (stroking) and light pétrissage (kneading) being used. During succeeding days the massage should be given with greater vigor. Tapôtement (hacking) or even the high powered motor vibrator may be necessary to free the muscle fibers. These measures should be resorted to at once when the case is not seen until several days after the injury.

In a few of the cases the injury was at first deemed slight and received vigorous treatment at the hands of the team "rubber." Here capillary bleeding was again set up, with increased disability the following day. In very slight bruises this treatment would do no harm.

Torn Ligaments.—Sir Robert Jones has given us the key to the proper treatment of these injuries: relaxation, partial protection, and guarded but constant use. Let us take, for example, a tear of the external lateral ligament of the ankle. Raising the outer side of the heel and a reversed flat-foot strapping would secure the relaxation and protection necessary. Gradually increased walking on the level with a graded schedule of carefully applied passive, active and resistive movements will bring quicker results than complete immobility, which is often followed by a long period of distressing stiffness. In addition, the use of heat, diathermy, and massage will greatly hasten the repair process.

Torn Muscle Insertions.—These injuries are encountered in football and basketball, but are most common in track athletics, frequently following sprints and sprint starts before the runner has thoroughly warmed up. The general course of the treatment is the same as that already outlined, except that the relaxation must be complete, secured by splints or sand bag, if necessary, and held for at least two weeks before active treatment is instituted; and care must be taken not to tear the newly formed attachment.

Subperiosteal Hematoma.—This is the true "Charlie horse" for which the muscle bruise is so commonly mistaken. It should be treated by rest and firm bandaging until the hemorrhage has stopped, and then by heat and massage to promote absorption of the clot. The massage should be confined to frictions and deep stroking.

Tenosynovitis.—We find this condition early in the season in most sports, and generally confined to the Achilles tendon. It may follow the distance runner all through the track season. Acute conditions demand absolute rest, heat and gentle stroking. I have seen a number of chronic cases in college and preparatory school runners lately which cleared up with remarkable rapidity when treated with indirect diathermy and massage. In some of these cases the tendosynovial fluid will be found inspissated, and at times solidified and broken up. More prolonged and intense heat and massage with friction are indicated.

1173 Chapel Street.

Health and Education.—A very significant trend in education during the past few years is shown in the recognition that health is fundamental to sound intellectual development and that the rigid regulation of all things pertaining to the hygiene of students is indispensable. Generally speaking, there is serious economic and academic loss year after year in our schools, colleges, and universities, due to lassitude, indisposition, illness, and epidemics among students, all more or less preventable.—John Sundwall, *Pub. Health Rep.*, Nov. 7, 1919

Clinical Notes, Suggestions, and New Instruments

A NEW BRACE FOR TUBERCULOUS SPINES

GORDON N. MORRILL, M.D., CLEVELAND

In the treatment of ambulatory cases of Pott's disease, an adequate means of holding the spine in hyperextension is of vital importance. This is obviously more difficult of attainment than when the patient is recumbent on a frame, because of the strain put on the brace by the bending forward of that portion of the trunk which is above the deformity. A device which I have found satisfactory for this purpose is of the type illustrated here—one which I have used exclusively and with uniform success for the last eight years in all convalescent cases of middorsal and lumbar tuberculous spines. It owes its value as a curative element, not to rigidity or to a great amount of fixation, but to the three-point pressure secured with correct adjustment: first, pulling back on the shoulders; second, pressing forward on the kyphos, and third, pulling back on the pelvis.

From the accompanying illustrations, the appliance may be recognized as practically a reconstituted spring-back brace, differing in the main only in the greater rigidity of the material used, and in the diminished distance between the uprights. Its simplicity of construction and adjustment is apparent. Two upright pieces of steel, placed only a sufficient distance apart to prevent impinging on the spinous processes, are joined above by a steel cross-piece at a point slightly higher than the posterior level of the armpits when the arms are hanging, and below by a wider steel band attached to the uprights approximately at a level with the center of the sacro-iliac articulations, sloping slightly downward, and curved to fit the patient. As a rule, the brace is held in position by means of three strappings—those about the shoulders, the abdomen and the pelvis. The shoulder straps, attached as illustrated, pull the shoulders backward, forcing the forward-sagging portion of the trunk above the kyphos to straighten when, with the kyphos as the fulcrum and the brace as the lever, the device is forced into position and the pelvic band made secure. The angle at the top of each upright bar makes possible a very accurate adjustment of the shoulder straps—a factor of vital importance, since the shoulder weight alone is responsible for preventing the brace from sliding upward; but occasionally perineal straps must be resorted to when the brace will not maintain a correct position by the usual means. The abdominal band is specially constructed in accordance with the peculiarities of individual cases. For the patient seen in Figure 2, a lumber case, I have used a leather belt with side lacings and anterior straps of webbing to insure very accurate adjustment. When this seems unnecessary, the lighter weight webbing belt is sufficient if designed as in Figure 4, so that the double lateral strappings are merged into a single abdominal band reinforced by vertical stays, usually three in number and placed at intervals. The pelvic band is buckled to the ends of the lower cross-bar (Figs. 1 and 2), and from them it passes directly below the anterior superior spines.



Fig. 1.—The brace applied in a case of dorsal Pott's disease in which there is a large kyphos; extra padding at the seat of the disease.

All steel parts of the brace are well padded, particularly at the points of greatest pressure, with the exception of the upper cross-bar, which does not come in contact with the patient. In the case of the boy in Figure 1, in whom the kyphos was of considerable size, I used the customary padding of felt and leather, with additional thickness on each side of the kyphos, where, in order to secure the desired amount of correction, the pressure was extreme.

To any one familiar with the type of brace commonly used in these cases, the absence here of the customary canvas or leather apron for securing the proper degree of fixation will be noticeable. In my opinion, it is one of the most commendable features of the appliance. This apron, which extends from the clavicles nearly to the symphysis pubis, is fastened to the brace by several nonelastic straps on each side, and is supposed to be strapped as tightly as possible. The unavoidable result is a flattening and compression of chest and abdomen to such an extent that normal development is rendered improbable. My patients' chests are unconfined, their expansion is increased rather than diminished as is the case when the apron is used, and their normal development is therefore encouraged instead of retarded.

The value of the brace as a curative factor, however, depends, as I have previously stated, on its correct adjustment—a fundamental point, and one which cannot be overemphasized. It should be made to fit the individual patient, the curve of the uprights so arranged as to assure the requisite amount of spinal hyperextension. If there is a



Fig. 2.—Three views of the brace fitted in a case of lumbar tuberculosis; the freedom allowed the chest is a most commendable feature of the device.



Fig 3.—The patient seen in Figure 2, wearing clothing over the brace; the excellent posture may be noted.

slightly reddened area on each side of the kyphos when the brace is removed, the physician may be certain that the desired three-point pressure has been secured. Even so, unremitting watchfulness is necessary, making essential the procuring of monthly tracings, and, consequently, as frequent careful readjustment of the support to coordinate with any change of the kyphos, and to take advantage of a resulting possible improvement in posture. While the brace is being altered, and when it is removed daily for the alcohol rub and the powdering which the back must receive—as well as whenever it is applied—the patient should lie face downward with the spine as nearly immobile as he can hold it. He should in no contingency sit or stand erect when without the support; nor should he be permitted to bathe himself or be given baths in a tub by the attendant, until at least a periodic removal of the brace has been ordered by the physician.



Fig. 4. — Arrangement of pelvic and abdominal strapping frequently resorted to, especially with young children.

When the condition of the patient seems to justify removal of the brace, he should go without it for only short periods at first, increasing them gradually as the physician may direct. And these periods of freedom should always be during the waking hours until such time as an exacerbation of the disease seems very unlikely. The reasons for this should be obvious: When conscious, the patient will instinctively avoid motions and postures which would be painful and therefore irritating to the weakened area; but while sleeping, a sudden turn or twist might easily impair restoration which had been the result of years of patient endeavor.

The cases illustrated here will serve to make clear my points as to the construction and adjustment of this brace. But only experience and a fair trial can convey any adequate notion of its efficacy in cases affecting the dorsal and lumbar regions.

422 Osborn Building.

NEW FRACTURE BAND

Asa W. Collins, M.D., San Francisco

Many years ago a case of comminuted fracture of the lower end of the femur, which seemed impossible of reduction, suggested to me the necessity of devising some method whereby the fragments could be accurately apposed and held in normal position. After considerable thought, together with a number of experiments, I devised the band with an instrument for its application, which, after many modifications, I am offering to the medical profession as one more addition to the many appliances used in operative work on fractures of the long bones.

Wire, when sufficiently tight to possess the proper tensile strength, breaks or loosens. Screws crack and destroy the bone, as well as loosen. Pegs are uncertain for the same reason. Plates are held by screws and are defective in some cases on account of the breaking or loosening of the screws. A single band around a bone does not possess a sufficient amount of strength to immobilize the fragments, and the slightest lateral motion is enough to cause an erosion and necrosis of bone beneath the band. Ligatures are difficult to apply, and often cut or break. Grafts are accompanied by great destruction of tissue and too often become sequestered, and so one is baffled many times in trying to decide on the use of any one or two methods which will meet every requirement. The prime factor in treatment of fractures of bones is a restoration of function, and this is dependent on securing proper apposition and maintaining it. Happily, the treatment is not often difficult, and the results are excellent in the great majority of uncomplicated fractures in the long bones; but it is in the consideration of the exceptional cases that we are now concerned, for it is here that the resources of the surgeon are not infrequently taxed to the uttermost.

In this band we have a method which does not necessitate further destruction of tissue, such as screw holes, boring and sawing. The fragments are brought together by simple, even pressure, and are held until regeneration is complete.

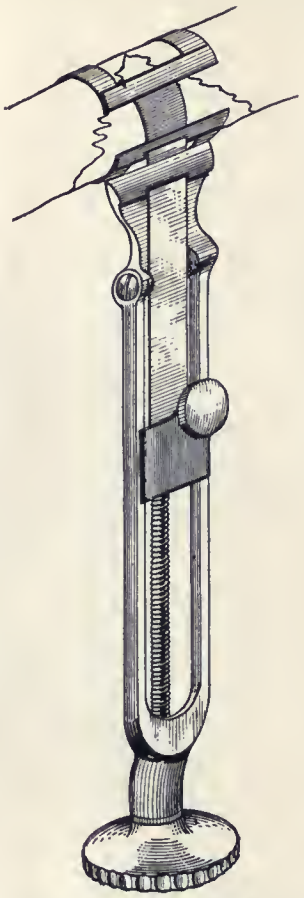


Fig. 1.—Band surrounding fractured bone, with instrument for tightening and locking the band. The width of the metal of the bands used at the present time is slightly narrower than those shown in the illustrations.

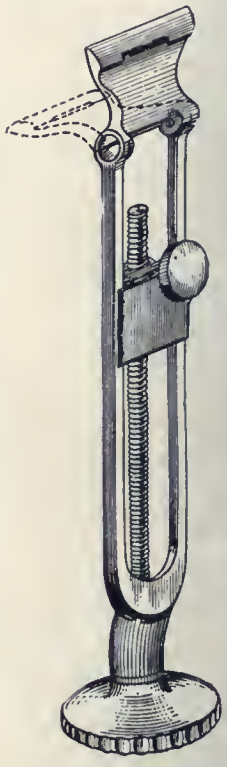


Fig. 2.—When the instrument draws the band sufficiently tight, the band is locked by being bent on itself. This is accomplished by pushing on the instrument, which causes it to bend, as shown.



Fig. 3.—Before and after applying a band in a typical case in which the band is best indicated. A large callus developed, and the patient has perfect functional result after a period of nearly two years.

In the thirty-four cases in which operation was performed, it was not found necessary to remove the band in a single instance, as all the operations were successful, the band becoming firmly embedded in the callus. The bands are made of an alloy of silver and nickel and heavily plated with pure silver, which gives them all the necessary requisites, namely, tensile strength, ductility, malleability and noncorrosibility. They are thin, and occupy very little space. The instrument for applying the band, as illustrated, will readily exemplify to the surgeon the simplicity with which it can be used. Up to the present time only two sizes of bands have been used, each with one window. The cases in which the use of the band is indicated are oblique and comminuted fractures of the femur and humerus. The band has also been applied on other long bones successfully.

To apply the band it is first bent so as to pass around the bone, and then into the instrument, where it is firmly held by a screw passing through a small hole in the band. It is well to remember to begin by passing the small end or tongue of the band around the bone first, beginning underneath the bone, and then passing it completely around the bone before pushing it through the window or loop. The band is tightened by turning the handle of the instrument until the proper tension is secured, when it is immediately locked by simply pushing on the instrument, which automatically locks the band by bending it on itself. The next step is to unscrew the instrument so as to cut off the end of the band with a pair of scissors about half an inch from the point at which the bending took place, and then bend over completely with almost any kind of a blunt instrument; a pair of heavy Mayo scissors will answer the purpose of cutting the band.

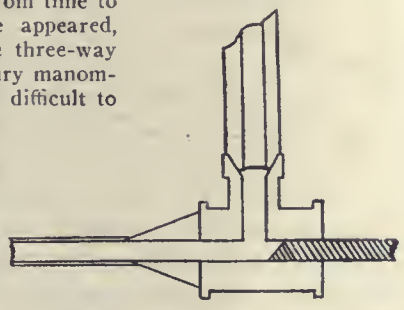
This device is not offered with any intention of supplanting any other operative method instituted in the past; but it is a valuable addition to the armamentarium used in operative fractures of long bones.

126 Post Street.

A SIMPLE METHOD OF MEASURING INTRACRANIAL PRESSURE

JOHN A. CALDWELL, M.D., AND CHARLES E. KIELY, M.D., CINCINNATI

Methods of measuring intracranial tension have in the past been extremely unscientific. The majority of observers have been content with observing the rate of flow, or, in cases of high tension, the length of the spurt of spinal fluid on withdrawing the stylet. From time to time, appliances have appeared, usually with elaborate three-way valves and with mercury manometers. The former are difficult to sterilize and the manometers are constantly aggravating because of the possibility of spilling the mercury. Further, the devices usually recommended are connected to the manometers by an adapter fitted into the butt of the spinal needle. This necessitates complete withdrawal of the stylet, and consequently involves, in cases of high pressure, a spurt of spinal fluid, which is lost entirely, before the adapter and needle are connected. This results in a lowered reading.



Design of needle for measuring intracranial pressure.

We have devised a needle in which a by-pass is added to the butt of a common puncture needle, with an adapter for a glass millimeter tube.

The needle free of the glass tubing is inserted in the usual way until the operator feels certain that he has entered the spinal canal. The measuring tube is then adapted, and the stylet of the needle withdrawn to the length of the attached chain. Unlike the standard needle, this one is of a constant bore through its entire length, so that when the stylet point has passed far enough out to permit egress of fluid into the perpendicular tube there is still no avenue of escape through the end of the needle, as shown in the accompanying illustration. The pressure will, of course, be read directly in millimeters of spinal fluid in the graduated glass tube. When the specimen of spinal fluid is to be withdrawn it will be necessary only to remove the stylet entirely. If serum is to be administered, an adapter can be fitted to the by-pass.

We feel that this device offers several advantages: simplicity with consequent sterilizability; freedom from the annoyance of spilling mercury; greater accuracy of reading, as the column of fluid will be thirteen and six tenths times as long as that of mercury. Finally, it is to be noted that even in the highest pressures that will be encountered, the amount of fluid set free in the device will not reach 2 c.c., which will never be a dangerous withdrawal even in tumor cases.

628 Elm Street.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

BARBITAL (See New and Nonofficial Remedies, 1920, p. 82).

Barbital-Chiris.—A brand of barbital complying with the N. N. R. standards.

Manufactured by the Antoine Chiris Company, New York City. U. S. patent No. 782,739 (Feb. 14, 1905; expires 1922) by license of the U. S. Federal Trade Commission.

BARBITAL SODIUM (See New and Nonofficial Remedies, 1920, p. 83).

Barbital Sodium-Chiris.—A brand of barbital sodium complying with the N. N. R. standards.

Manufactured by the Antoine Chiris Company, New York City, U. S. patent No. 782,739 (Feb. 14, 1905; expires 1922), by license of the U. S. Federal Trade Commission.

CONDENSED VITALAIT.—A pure culture in vials of *Bacillus bulgaricus.*

Actions and Uses.—Condensed Vitalait is designed for internal administration. See general article, Lactic Acid-Producing Organisms and Preparations, New and Nonofficial Remedies, 1920, p. 156.

Dosage.—The contents of one vial in water or milk, just before retiring, is the usual daily dose. The cultures are distributed by the manufacturer only and are sent by mail. Each vial bears an expiration date.

Manufactured by the Vitalait Laboratory of California, Pasadena, Calif. No U. S. patent or trademark.

The culture is grown in sterile skimmed milk, its incubation period being twenty-two hours. The average bacterial count of the finished culture is stated to be 200,000 per Cc.

Practical Obstetric Teaching.—The provision of large maternity centers in various parts of London, fully equipped for the reception of lying-in cases and perhaps also for gynecologic cases, and certainly associated with maternity and child welfare centers, must be a feature of hospital evolution in the near future. The need for such centers is pressing, and once the public learns that the present death rate and the present dangers of child bed are almost entirely preventable they will not be content with the existing inadequate provision for the hospital treatment of such cases, they will demand, and rightly demand, ampler and better provision. And the public authorities will have to yield to their cry. The maternity centers will furnish opportunities of teaching undergraduates, postgraduates and midwives on a larger and better scale than exists at the present time; and it is the business of the teachers of midwifery to take advantage of opportunities that may offer for the institution and management of the centers.—*Lancet,* Dec. 13, 1919.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, APRIL 3, 1920

PROTECTION AGAINST POLIOMYELITIS

Whenever a disease breaks out in epidemic proportions nowadays, widespread advertising of protective measures is almost certain to follow. Owing to the known involvement of micro-organisms or similar infective agents in the genesis and spread of such diseases, the use of antiseptics is usually promptly lauded, particularly by those who are interested in the sale of alleged germ-destroying products. It is now generally believed that the inciting micro-organism or virus of poliomyelitis enters the nervous system by way of the nasal passages. This, therefore, has raised the question whether, during an epidemic of poliomyelitis, the application of antiseptics to the nasal mucosa is to be recommended.

The extent of present-day information regarding the fate of the virus in the human body is still too limited to make new possibilities of prophylaxis appear inconsequential. In considering the possibility of local antiseptic treatment, Flexner and Amoss [1] of the Rockefeller Institute for Medical Research have pointed out that in the case of chronic meningococcus carriers, the suppression of that micro-organism by the introduction of antiseptics directly into the nasopharynx has not been notably successful; and they state that the meningococcus is apparently a much more fragile organism than the microbe of poliomyelitis.

It has been demonstrated that certain chemical disinfectants are effective against the virus in vitro; but in an investigation of the possible prophylactic value of chloramin-T, and dichloramin-T dissolved in chlorcosane, after application of the virus into the nasal mucous membranes, Flexner and Amoss found that these chlorinated products exhibited no great protective action and are of doubtful value. In fact, the question has lately arisen as to whether antiseptic chemicals applied to the mucosa are not actually objectionable; for it appears that this membrane may sometimes function to prevent infection. According to the observations of Flexner and Amoss, certain animals are highly refractory to inoculation by way of the nares with the virus of poliomyelitis, apparently in virtue of a power possessed by the membrane to destroy or otherwise render ineffective the virus that reaches it. Thus the latter will survive for an undetermined period on an ineffective, but for a relatively brief period of time on an effective, membrane.

It should be borne in mind, however, that this occasional property of the nasal mucosa appears to be distinct from any specific protective virtues that may appear in the blood. The poliomyelitic immune serum injected into the circulation is thought by Flexner and Amoss to meet the virus in the subarachnoid space. The low morbidity of poliomyelitis even during severe epidemics makes it seem probable that the insusceptibility of many persons is attained by some peculiar protection. If the normal nasal mucosa is part of the defense against the infection and serves to keep down the number of healthy and chronic carriers of the virus, it should be conserved in a healthy state. Local antiseptics are all too frequently merely chemical irritants; hence they should never be used indiscriminately—and evidently not in connection with poliomyelitis under the conditions just described.

1. Flexner, Simon, and Amoss, H. L.: Experiments on the Nasal Route of Infection in Poliomyelitis, J. Exper. Med. **31**: 123 (Feb.) 1920.

VEGETABLE CARBOHYDRATES IN THE DIABETIC DIETARY

It has been pointed out by a number of writers [1] on the diabetic dietary that with the necessary exclusion of virtually all fruits and many vegetables because of their content of prohibited carbohydrate, the ration of the patients becomes much restricted, monotonous, and undesirably reduced in bulk. The diabetic craves the variety that is furnished by vegetable foods, so that the effort made to supplement his dietary with permissible additions will be fully justified. It is because of this that physicians much concerned with diabetics have begun to employ the so-called thrice-cooked or thrice-washed vegetables—products representing the residues, after repeated extraction, of such foods as carrots, cauliflower and cabbage, with water to remove the soluble carbohydrates.[2]

It has been debated whether vegetables thus freed from sugars and possibly other soluble carbohydrates still contain compounds that might yield sugar in the metabolism. Cellulose and, in some cases, starch are undoubtedly present. Published analyses by no means afford an accurate index, as the figures are commonly obtained by "difference," that is, by calculation of the residue of constituents not otherwise accounted for. When compounds potentially sugar-forming in the organism are fed to dogs rendered severely diabetic with phlorizin—so-called "total phlorizin diabetes"—the study of the urine makes it possible to ascertain how much, if any, of the intake can be converted to

1. Wardall, Ruth A.: Vegetable Foods for the Diabetic, J. A. M. A. **69**: 1859 (Dec. 1) 1917.

2. Cammidge, P. J.: Thrice-Boiled Vegetables for Diabetics, Lancet **2**: 1192 (Dec. 27) 1919. Wardall (Footnote 1).

sugar in the organism. From experiments of this type conducted at the Washington University School of Medicine at St. Louis, Olmsted [3] has demonstrated that the usually employed green vegetables actually yield no more sugar in the body than the estimation of the starch and sugar preformed in them will account for. Thus, in the case of cabbage and cauliflower it does not exceed 5 and 3.4 per cent., respectively, while the same vegetables thrice cooked furnish no more than 0.5 and 0.8 per cent., respectively, of sugar. The dietitian may therefore continue the use and advocacy of this type of food when it is indicated, with the satisfaction of knowing that no unsuspected latent sources of sugar are being offered to the patient.

Only those who are obliged to deal practically with the needs of patients severely ill with diabetes can adequately appreciate the advantage of every innovation that may afford some culinary addition to their inevitably monotonous regimen. It is most unfortunate, therefore, that one should find a distinguished physiologist, in reviewing a study of thrice-cooked vegetables for diabetics, venturing to comment thus: "If all that is wanted is a pretense of food—a mere filling for the stomach—might one suggest some boiled filter-paper? This would mean a saving of the cook's time and of coals." [4] Such uncalled for gibes bear the stamp of inexperience in the domain of dietotherapy.

THE PRECISE LOCATION OF PERICARDIAL EFFUSIONS

Clinicians are well aware that, unfortunately, the existence of pericarditis is often overlooked. Even when it is accompanied by pericardial effusion, the diagnosis is by no means always easy to make. The differentiation of the latter condition from cardiac dilatation occasionally presents great difficulties and is sometimes actually impossible. Paracentesis may fail to determine the presence or absence of fluid in the pericardial cavity. The reason for these uncertainties and the explanation for the errors in diagnosis sometimes made by even the most expert observers are found in part in the character of the evidence on which the clinician is forced to depend for his judgments. Although almost a hundred years have elapsed since Collin, Laënnec's assistant, demonstrated in 1824 the pericardial friction sound and interpreted its significance, this physical sign is not yet always so well defined as to be decisive. The determinations of the boundaries of dulness indicative of effusion involve possibilities of error, partly because of the personal equation of the observer and in part because of the shifting character of some exudates.

Even more fundamental than the difficulties just enumerated has been the lack of dependable information regarding the anatomic relations of the heart to the pericardium when an effusion exists. Williamson,[1] who has lately called attention to these gaps in our knowledge, points out that some writers regard the heart as a heavy solid which sinks in an effusion to the lowest position in the pericardial sac. He correctly reminds us, however, that the fixation of the heart through its connections with the great vessels at its base and its attachment to the diaphragm by way of the inferior vena cava may prevent any "sinking" of the heart such as has been postulated. Nor is the heart to be regarded as capable of "floating" in an abundance of pericardial fluid. Where, then, does the latter distribute itself? Does it spread out laterally or vertically in its peculiarly limited confines? On the correct answer to such questions the interpretation of many physical signs elicited through the intact chest wall must depend. Furthermore, without accurate information of this sort, paracentesis of the pericardium may sometimes truly become, as Billroth characterized it in 1870, "a prostitution of surgical skill." [2]

Correspondingly welcome, therefore, are the elaborate investigations which Williamson [1] has conducted at the College of Medicine of the University of Illinois on the actual anatomic interrelations between the heart and pericardial effusions of varying magnitudes. He has arrived at the definite conclusion that the fluid accumulates first along the lower margin of the heart and about the apex, particularly on the diaphragmatic surface of the heart. With small effusions, this is the only place in which fluid accumulates with regularity. The result of the accumulation of the fluid in this position is to push down the left lobe of the liver. This feature is said to be sufficiently conspicuous to serve as an early diagnostic sign of effusion. The second place in which fluid accumulates, Williamson continues, is over the great vessels at the base. With small effusions it is occasionally present in sufficient amount to be detected by percussion. With medium sized effusions this layer is generally thick enough to be demonstrable by percussion, and this retrosternal dulness is an important diagnostic sign.

With respect to the debated anatomic relations, it is further of note that in a considerable number of Williamson's experiments on the cadaver the anterior surface of the heart, in spite of the exudate, remained in part uncovered by the fluid, so that a pericardial friction rub could readily exist. This persistence of the pericardial rub is to be anticipated in cases in which the heart is relatively large, so that it fills out the space between the vertebral column and the sternum.

When the volume of pericardial effusion is large, the chances of successful tapping are obviously good. Williamson introduced fluids in widely varying quan-

3. Olmsted, W. H.: Availability of Carbohydrate in Certain Vegetables, J. Biol. Chem. **41**: 45 (Jan.) 1920.
4. W. D. H. in Abstract 3019, Physiological Abstracts, **4**: 488 (Feb.) 1920.

1. Williamson, C. S.: Pericarditis with Effusion, an Experimental Study, Arch. Int. Med. **25**: 260 (Feb.) 1920.
2. McPhedran, Alexander: Diseases of the Pericardium, in Osler's Modern Medicine **4**: 64, 1908.

tities up to 655 c.c. From a survey of the observations made it appears that small amounts of fluid are most likely to be reached by puncture from a site either just outside the apex or in the chondroxyphoid angle. This study should be decidedly helpful in the future management of pericardial disease.

PROTECTION AGAINST CARBON MONOXID

It has become almost commonplace to observe that under the stress of war emergencies the scientific resources and investigative intelligence of our country were effectively requisitioned in many instances with a degree of success rarely approached under the less strenuous demands of peace time. Nowhere was this exemplified more strikingly than in the domain of chemistry. Chemical warfare assumed a new and unexpected significance from both the offensive and the defensive standpoint. The enormous development of American chemical industries incidentally created new possibilities in the production of medicinal chemicals as well as in the maintenance of such supplies, for which this country was formerly dependent on European continental sources. Furthermore, the menace of the poisonous war gases necessitated the discovery and invention of means of protection, some of which have found a valuable application in the dangers of every-day life.

Danger from various gases has long been recognized as a hygienic problem in several industries. This is true, for example, of carbon monoxid. Experts of the Chemical Warfare Service have asserted that the intentional use of this compound as a poisonous war gas is practically out of the question, primarily because of its relatively slight toxicity. They have pointed out that several minutes' inhalation of a mixture of one part in 100 parts of air is required to produce unconsciousness, while with a number of other toxic gases actually employed, such as phosgen, for instance, a similar length of exposure to one part in 100,000 parts of air, that is, to a mixture a thousand times more dilute, will prove fatal. Since it is difficult to set up the required concentrations of even the most toxic gases over significant areas in the open, it is evident that no possible degree of cheapness, accessibility, etc., could overcome so serious a handicap.[1]

Nevertheless, defense against the danger of poisoning from carbon monoxid has been found necessary in both marine and land warfare. Defective ventilation in boiler rooms where products of incomplete combustion may escape, and in the neighborhood of explosions evolving large quantities of carbon monoxid, as well as in the relatively confined spaces of mining and sapping operations, calls for protection from the gas. Carbon monoxid is so inert chemically under ordinary conditions that few substances react on it with the speed required in gas masks, through which human respiration must proceed rapidly. Most of the other poisonous gases encountered during the war were absorbed or neutralized by suitable compounds introduced into gas mask containers. In the case of carbon monoxid the problem proved to be singularly baffling until, thanks to the combined ingenuity of a number of American chemists, it was ascertained that in the presence of suitable catalysts carbon monoxid can be oxidized continuously by the oxygen of the air. The perfection of a suitable catalyst—"hopcalite," a mixture of oxids of manganese, copper, cobalt and silver—has lately been disclosed by permission of the Bureau of Mines and of the Chemical Warfare Service.

As a constituent of gas masks, this new product of the war-time chemistry promises to function effectively against any concentration of carbon monoxid. Its field of usefulness in peace time is likely to be found in plants for the manufacture of power and illuminating gas, and in the metallurgical industries, in which carbon monoxid is largely employed, with frequent casualties and even fatalities. The government experts indicate that in coal mining, in certain classes of copper mining, and wherever explosives are used in confined spaces, carbon monoxid is a serious menace responsible for the loss of many lives each year. Leaky flues, exhaust gases from explosion engines, improper ventilation where coal fires are employed, and the air to which firemen are exposed in burning buildings, all constantly take a not inconsiderable toll of lives. The therapeutics of poisoning from carbon monoxid has lately been put on a more rational basis, and now prophylactic hygiene has added further possibilities of averting danger from it.

1. Lamb, A. B.; Bray, W. C., and Frazer, J. C. W.: The Removal of Carbon Monoxide from Air, J. Indust. & Engin. Chem. **12**: 213 (March) 1920.

Current Comment

THE MEDICAL AND SURGICAL HISTORY OF THE WAR

The Surgeon-General, with the approval of the Secretary of War, is asking for an appropriation, in the Sundry Civil Bill, for the publication of the medical and surgical history of the World War. In its projected form, this medical history will be more than an account of the rapid expansion and administrative achievements of the medical department; it will be a collective study of the many problems of hygiene, medicine and surgery which were involved in the efficient medical care of the nation's armies—in fact, a system of medicine and surgery based on the experience and observations of the physicians who guarded the health of our soldiers. The knowledge which was gained in hospitals and on the battlefield, and the vast amount of medical research carried on during the war, can be made of immediate value to the medical profession and the public only by prompt publication of the medical history. There can be no question of the

merit of such a work; as a scientific record alone, the data will be of permanent value, irrespective of considerations regarding their utility as a source of information in future emergencies. The first volume of an unofficial history of the Canadian army medical corps appeared last year, steady progress has been made on the official British medical history, and the history of German participation in the war will be issued in nine volumes late in 1920; much of the material for the American history is already collected, and publication waits on the action of Congress. Nothing can be gained from procrastination and delay —the appropriation requested by the Surgeon-General should be allowed promptly. The medical and surgical history of the War of the Rebellion was delayed through twenty years. It is to be hoped that a similar fate does not await the publication of the Medical History of the World War. If Congress does not, within a short time, make the appropriation necessary for the printing of this available material, the failure will be tantamount to an order for its destruction. In a few years this material would be of archaic, but not of scientific, interest.

DETERIORATION OF STROPHANTHIN EMPHASIZES THE IMPORTANCE OF DETAILS

Factors that appear insignificant or of minor importance to the layman may play a surprisingly conspicuous part in the workings of science. Seemingly slight variations from the normal or the expected often alter the course of a reaction; that which is an infinitesimal quantity to the eyes of the untutored may become a highly potent portion in the hands of a trained worker. The latter may alter the functions of the human body by the use of less than a milligram or a hundredth of a grain of an active drug. Bacteria may be readily affected in their growth by variations in reaction that require special indicators for their easy detection. Physicians have learned that even a product as "pure" as is distilled water may need redistillation under special precautions to render it fit for therapeutic use. The foregoing instances are cited to illustrate the respect and attention which details deserve in paving the way to success in practice as well as in scientific medicine. A significant added example has just been furnished by Levy and Cullen [1] of the Hospital of the Rockefeller Institute for Medical Research in New York. Having observed wide variations of potency in the biologic assays of several lots of a commercial preparation of ouabain (g-strophanthin) furnished in ampules, they found that the sterilized solutions were decidedly alkaline in reaction, whereas freshly prepared aqueous solutions of the drug were neutral or slightly acid. This drug is readily rendered biologically inert by heating with alkalis. It was discovered that ordinary soft glass commonly used in making ampules employed in marketing sterile solutions for hypodermic or intravenous medication yields sufficient alkali on heating to change the reaction of distilled water—hence it is liable to decompose susceptible chemical substances. Thus, some ampules may contain a drug in a concentration as low as 0.01 per cent., i. e., 0.5 mg. of drug in 5 c.c. The difficulty can readily be averted by the use of containers of hard glass. In the special case of crystalline strophanthin for clinical use, Levy and Cullen advise that it be dissolved in 0.02 molecular-gram of standard phosphate solution at p_H 7.0 and sterilized in hard glass ampules, under which conditions it has been kept undeteriorated for months. We reiterate the value of attention to details.

1. Levy, R. L., and Cullen, G. E.: Deterioration of Crystalline Strophanthin in Aqueous Solution, J. Exper. Med. **31**: 267 (March) 1920.

Association News

THE NEW ORLEANS SESSION

Special Party from St. Paul and Minneapolis

Dr. Harry F. Thompson, Forest City, Iowa, advises that he is organizing a party to go to New Orleans from St. Paul and Minneapolis, and will be pleased to correspond with any who desire to join the party.

Steamship Parties Called Off

Dr. Ira J. Haynes, Richmond, Va., writes that he has failed to secure a ship to carry a party from Baltimore to New Orleans to attend the annual session of the American Medical Association. Notwithstanding earnest efforts to charter such a boat, he was unable to obtain one. It has also been found impracticable to arrange for boats to carry parties to New Orleans down the Mississippi River.

Large Attendance Expected

Dr. A. E. Fossier, chairman of the Local Committee on Arrangements, reports that, judging from the large number of hotel reservations already made, the coming annual session of the Association is going to be a large one. Notwithstanding this, the Committee on Hotels is doing all in its power to avoid inconvenience or confusion for the Fellows who will be in New Orleans, and feels confident that comfortable accommodations will be available for all. It is urged, however, that hotel reservations be made promptly and in advance of going to New Orleans, by addressing the chairman of the Local Committee on Hotels, Dr. J. J. Wymer, 921 Canal Street.

Clinics Preceding and Following the Scientific Assembly of the American Medical Association

It is purposed to make available for these clinics all the hospitals affording sufficient facilities. The cooperation of the Charity Hospital of Louisiana, the Eye, Ear, Nose and Throat Hospital, Touro Infirmary, the Hotel Dieu, and the Presbyterian Hospital has been secured. These institutions are interested in placing their clinical material at the disposal of visiting physicians, and have entered into the spirit of the undertaking in the most cordial manner.

The clinics will be arranged for Thursday, Friday and Saturday of the week before the session, April 22, 23, 24; for Monday and Tuesday of the session week, April 26 and 27, and for the Saturday following, May 1.

In accordance with hospital customs in New Orleans, the operative clinics will be held in the forenoon, the nonoperative, in the afternoon. Daily a notice of the morrow's program will be multigraphed and posted in the registration booth, the hotels and the hospitals themselves. The program will give the number of visitors that can be accommodated in each clinic. All the institutions will offer instructive work each day, the programs running concurrently, so as to offer opportunities to as large a number of visitors as possible.

CHARITY HOSPITAL, Tulane Avenue between Howard and Magnolia, reached by Tulane Belt car on Canal Street, going from river. Operative clinics every forenoon, in Miles and Delgado buildings, accommo-

dating, respectively, 525 and seventy-five spectators. Dispensary clinics every forenoon. Nonoperative (medical, dermatologic, obstetric) clinics in the afternoon, chiefly in the Miles Amphitheater (capacity, 500). *Surgery:* Drs. J. M. Batchelor, J. A. Dana, H. B. Gessner, F. A. Larue, E. D. Martin, R. Matas, F. W. Parham, John Smyth, M. J. Gelpi, C. Grenes Cole, J. E. Landry, Henry Leidenheimer, C. W. Allen, U. Maes, W. M. Perkins, A. C. King, M. Bradburn, W. P. Bradburn, A. Duncan, J. F. Points, John Lindner, A. A. Keller and E. J. Richard. *Medicine:* Drs. John B. Elliott, Jr., J. A. Bel, Benjamin Ledbetter, J. T. Halsey, G. Farrar Patton, Edward Moss, J. B. Guthrie, I. I. Lemann, J. A. Storck, Otto Lerch, Hamilton P. Jones, L. L. Cazenavette, Wallace Durel, Harry Daspit, A. E. Fossier, O. W. Bethea, J. L. Lewis, R. Lyons, Chaille Jamison and J. C. Cole. *Gynecology and Obstetrics:* Drs. S. M. D. Clark, William Kohlmann, Paul Michinard, C. Jeff Miller, H. S. Cocram, W. W. Leake, H. W. Kostmayer, J. W. Newman, E. H. Walet, P. B. Salatich, C. P. Holderith, E. D. Friedrichs, J. F. Dicks E. L. King C. A. M. Dorrestein and C. P. Brown. *Orthopedics:* Drs. E. D. Fenner, John F. Oechsner, Paul A. McIlhenny, Solon Wilson, James T. Nix, Jr., and Joseph Levy. *Urology:* Drs. S. P. Delaup, Joseph Hume, A. Nelken, Paul Gelpi, Henry Walther, P. J. Kahle and H. Lindner. *Ophthalmology:* Drs. M. Feingold, T. J. Dimitry, A. L. Whitmire, V. Smith, Henry Blum and A. R. Crebbin. *Diseases of the Ear, Nose and Throat:* Drs. Homer Dupuy, S. M. Blackshear, W. T. Patton, J. A. Estopinol, L. de Poorter and William Scheppegrell (hay-fever clinic). *Pediatrics:* Drs. C. A. Borey, L. R. De Buys, C. J. Bloom, John Signorelli, R. A. Strong, R. Crawford and G. J. de Reyna. *Dermatology:* Drs. Isadore Dyer, H. E. Ménage and J. N. Roussel. *Radiology:* Dr. G. B. Harney. *Pathology:* Dr. C. W. Duval.

EYE, EAR, NOSE AND THROAT HOSPITAL, Tulane Avenue, corner of Elk Place, five squares from Charity Hospital, reached by Tulane Belt car on Canal St., going from the river. Dispensary and operative clinics, each, nose and throat, in the morning; eye, in the afternoon. Amphitheater seats fifty. *Eye:* Drs. Henry Dickson Bruns, E. A. Robin, C. A. Bahn, W. R. Buffington and E. McCarthy. *Ear, Nose and Throat:* Drs. R. C. Lynch, John T. Crebbin, George Taquine and J. D. Martin.

TOURO INFIRMARY, Prytania, between Aline and Foucher, reached by Prytania car at Canal and Camp, or St. Charles Belt. Dispensary in the forenoon. Operative clinics every forenoon; six rooms accommodate sixty. Medical clinics in the afternoon; accommodations for 200. *Surgery:* Drs. R. Matas, F. W. Parham, E. D. Martin, C. Jeff Miller, S. M. D. Clark, C. W. Allen, A. Nelken, H. B Gessner, U. Maes, L. H. Landry, R. E. Stone and Isidore Cohn. *Obstetrics and Gynecology:* Drs. William Kohlmann, J. W. Newman, J. Barnett, J. G. Hirsch, Joseph Conn and C. A. M. Dorrestein. *Orthopedics:* Drs. E. S. Hatch, J. T. O'Farrall and L. C. Spencer. *Eye:* Drs. M. Feingold, Henry Blum and A. R. Crebbin. *Ear, Nose and Throat:* Drs. C. J. Landfried, R. C. Lynch, J. P. Leake, A. I. Weil, S. M. Blackshear and H L. Kearney. *Medicine:* Drs. I. I. Lemann, L. D. DeBuys, S. K. Simon, R. M. Van Wart, C. L. Eshleman, R. Lyons, J. M. Bamber, J. C. Cole, O. F. Ernst, A. L. Levine, C. J. Bloom, C. S. Holbrook and B. R. Heninger. *Radiology:* Drs. E. C. Samuel and E. R. Bowie. *Dermatology:* Drs. J. N. Roussel and R. A. Oriol. *Pathology:* Dr. J. A. Lanford.

HOTEL DIEU, Tulane Avenue, corner of Johnson, reached by Tulane Belt car on Canal Street, going from the river. Operative clinics every forenoon; five rooms accommodate a total of twenty-five. Drs. M. Souchon, J. A. Danna, J. T. Nix, Jr., Louis Levy, Homer Dupuy, J. J. Ryan, H. W. Kostmayer and Maurice Gelpi. *Radiology:* Dr. L. A. Fortier. *Pathology:* Dr. M. Couret.

PRESBYTERIAN HOSPITAL, Carondolet Street, between Julia and Girod, reached by Peters Avenue and Laurel Street cars at Carondolet and Canal. Operative clinics in the forenoon; four rooms accommodate a total of forty. Demonstration of pathologic specimens and roentgenograms in the forenoon. *Surgery, including Special Senses:* Drs. J. P. O'Kelley, W. D. Phillips, C. Grenes Cole, Roy Harrison, A. O. Hoefeld, Joseph Hume, J. R. Hume, John Smyth, D. L. Watson, M. P. Boebinger, F. A. Overbay and H. S. Cocram. *Internal Medicine.* Drs. J. L. Lewis, Chaille Jamison and F. Lamothe. *Pathology:* Dr. William H. Harris. *Radiology:* Dr. Adolph Henriques.

Welfare of the Blind.—The British Department Committee on the Welfare of the Blind, which reported in July, 1917, recommended the establishment in the Local Government Board of a special department whose functions should be the general care and supervision of the blind and the appointment of an advisory committee of persons associated with the care of the blind. Its first report (for the period ended March 31, 1919) has been published by the ministry of health. A register formed on the replies thereto shows a total of 25,840 blind persons in England and Wales. Inquiry was made into the work of the blind, and it was found that the employable group (11,895) is the largest, being 46 per cent. of the total unenumerated. Of blind persons in occupations most are engaged in basket and cane work; there are relatively few in outdoor occupations. A large number of blind children are not attending school, and of these 40.6 per cent. were returned as mentally defective. A table of the age of onset of blindness shows that 21.4 per cent. were blinded within the first year of life, the majority of them within the first month. After the first year the incidence is, roughly, 10 per cent. for each decade up to 70 years.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Personal.—Dr. Charles A. Mohr, Mobile, health officer of Mobile County, has resigned on account of his duties as health officer of Mobile.——Dr. Paul P. Salter, Montgomery, director of the state laboratories for several years, has resigned and will practice in Eufaula.——Dr. Frederick K. Reynolds, Montgomery, assistant state health officer, has resigned and will practice in Montgomery.

ILLINOIS

Smallpox in Evanston.—Two cases of smallpox, the first to be reported in Evanston for five years, were discovered March 23. Both patients were taken to the Chicago Isolation Hospital.

Asks New Trial.—Motion for a new trial in the case of Dr. George W. Alverson, Sciota, convicted of the murder of Lawrence Clugston, were filed with the circuit court of McDonough County, February 28.

Branch Association Organized.—The Belleville Branch of the St. Clair County Medical Association was organized at Belleville, March 2. The membership in the branch will include not only physicians of Belleville but also those from the central and eastern parts of St. Clair County. Dr. Buenaventura H. Portuondo was elected president; Dr. William L. Hanson, secretary, and Dr. Delmar R. Duey, treasurer, all of Belleville.

The Venereal Disease Plague.—Certain communities in Illinois and on the Indiana border, notorious as breeding places of venereal diseases, will be cleaned out by the attorney general, county commissioners and municipal health departments. This decision was arrived at, March 25, after a lengthy conference called by Pres. Peter Reinberg of the Cook County board, and suggested by Dr. George G. Taylor, Springfield, chief of the division of social hygiene of the Illinois department of public health. Every person known to be infected will be taken to a clinic or hospital and treated until cured or safe.

State Dentists Meet.—The fifty-sixth annual meeting of the Illinois State Dental Society was held in Chicago, March 22 to 25, with about 4,000 in attendance. The chief topics of discussion were the importance of dental work in public schools, the antisugar campaign, the gospel of the clean mouth and the relation of systemic diseases to infected teeth. March 23 was devoted to a clinic by the Chicago Dental Society, and in the evening a testimonial banquet was given to Dr. Thomas Lewis Gilmer, dean of the profession in Chicago. Dr. J. T. Luthringer, Peoria, was elected president; Dr. Frederick B. Noyes, Chicago, president elect, and Dr. C. W. Coltran, Chicago, vice president.

Chicago

Research Club Meeting.—At a meeting of the Medical Research Club of the University of Illinois, held Thursday, March 25, in the college of medicine, Prof. A. H. Clarke, school of pharmacy, discussed "The Work of the Council of Pharmacy and Chemistry of the American Medical Association," and Paul N. Leech of the Laboratory of the American Medical Association, spoke on "Some of the Council's Problems with Therapeutic Agents." The faculty of the college of medicine passed a resolution commending the aims and work of the Council.

Public School Athletic League Formed.—To make Chicago's 400,000 schoolchildren the healthiest schoolchildren in America is the purpose of the Chicago Public School Athletic League, an organization recently authorized at the instigation of the mayor and approved and supported by city and park officials, the board of education, members of civic organizations and principals of the high and elementary schools of Chicago. It is proposed to initiate efficient coaching and training, together with expert direction along the special lines of activity for which the individual boy is best fitted. This cannot fail to raise the standard of health, character and physical fitness.

Honored for War Service.—Dr. Gustavus M. Blech, who as lieutenant-colonel, M. C., U. S Army, commanded Base Hospital No. 208, near Bordeaux, the largest base hospital in France, having a capacity of more than 7,000 patients, has received through the Adjutant-General of the Army, a citation certificate of the Order of University Palms with the grade of Officier de l'Instruction Publique—gold palms, awarded to him by the French government for services rendered to French officers and the government at the University of Bordeaux.——Dr. Maurice L. Goodkind has received, through the Adjutant-General of the army, a citation certificate of the Order of the University Palms of the grade officer of the Academy—silver palm, awarded by the French government Nov. 18, 1919, for services as chief of the medical service of Base Hospital No. 53, Langres sur Marne, France.

Society Meetings.—At the meeting of the Chicago Medical Society, March 31, Dr. Edward A. Foley, assistant superintendent of the Chicago State Hospital, discussed the "Difficulties Encountered in Dealing with Mental and Delinquent Cases," with special reference to interference by newspapers, lawyers, physicians and the general public in endeavoring to secure releases from institutions of such cases; Dr. William O. Krohn, spoke on "The Malingerer as a Medical and Medicolegal Problem," and Dr. Daniel N. Eisendrath gave a report on "Recent Progress in Kidney and Ureteral Surgery."——At the meeting of the Society of Medical History of Chicago, held at the City Club, March 30, Dr. Morris Fishbein presented a paper on "Physicians' Fees;" Dr. Clarence A. Earle, Desplaines, one on "Pioneer Physicians of the Desplaines Valley," and Dr. Benjamin F. Uran, Kankakee, one on "The Names and Early History of Physicians of Kankakee County."

KANSAS

Personal.—Dr. Alva E. Billings, Topeka, has been appointed medical director of the Security Benefit Association, succeeding Dr. Oscar L. Peak, deceased.——Dr. A. L. Shelton, Hutchinson, the first American medical missionary to enter Thibet, who was captured by Chinese bandits, January 4, near Laoyakwan, has been released.

School for Health Officers.—Dr. Eugene R. Kelley, Boston, health commissioner of Boston, and Mazyck P. Ravenel, Columbia, professor of preventive medicine in the University of Missouri, have been secured as instructors for the school for public health officers which is to be held in Rosedale, May 10 to 15, inclusive. An officer of the U. S. Public Health Service will also be detailed for this work. The mornings will be devoted to clinics at the Bell Memorial Hospital, Rosedale, and the afternoons will be taken up in general public health work.

KENTUCKY

Personal.—Dr. L. A. Megler, Louisville, has been appointed school medical inspector, succeeding Dr. Lester A. Crutcher, resigned to become registrar of vital statistics for Jefferson County in place of Dr. William E. Grant, deceased.——Dr. John Hamilton, Owensboro, has been selected health officer of Daviess County.

Recent Legislation.—The legislature of Kentucky has enacted the following bills affecting the medical profession and public health: senate bill No. 220 provides for the establishment of a state board of health of nine members all legally qualified practitioners, except one, a registered pharmacist, eight of whom shall be appointed by the governor and the ninth who shall be secretary and state health officer, elected by the board: one member a homeopath, one eclectic and one osteopath, one a registered pharmacist, and all the other members physicians, all to be appointed by the governor from a list of three names for each vacancy furnished respectively by the state society or association of such physicians, or cities and boards as are entitled to a member, and the pharmacist from a similar list of three names submitted by the Kentucky Pharmaceutical Association. The president, secretary and members of the board and other officers and employees are to receive annual salaries to be fixed by the state board of health, to be paid as salaries and expenses as now paid. The other members of the board shall receive no per diem compensation for their services, except when sent by the board on special duties and when preparing and conducting examinations. A fund is created for the purpose of extending state aid to counties or districts establishing and maintaining county or district departments of health and authorizing the auditor to draw his warrant in favor of the state board of health, for the use of each county which has established such a county or district health department for the sum of $2,500 annually. Senate bill No. 408 gives immediate possession of Hazelwood Sanatorium for a state tuberculosis sanatorium. Senate bill No. 29 is an advanced housing bill. The budget commission has increased the appropriation of the state board from $75,000 to $165,000 per annum.——A joint resolution was passed and signed by the governor thanking the U. S. Public Health Service for the effective work done by Surg. John McMullen in trachoma eradication, and an appropriation of $13,700 was made for a traveling clinic to work in conjunction with Dr. McMullen.

MARYLAND

To Guard Against Smallpox.—To prevent persons from New Orleans race tracks bringing smallpox into Baltimore city or the state, deputies from the state department of health are meeting every race horse train coming here for the spring racing meets. Dr. John S. Fulton, Baltimore, secretary of the board, has been notified by New Orleans health officials that a recent epidemic of the disease in that city claimed many victims among stable boys and other track employees. In spite of the vigilance of Louisiana officials, it is feared that some one suffering from the disease will slip out of the state.

For Care of Soldiers, Sailors and Marines.—The U. S. Public Health Service has entered into an agreement with the state lunacy commission and the board of managers of the Spring Grove State Hospital at Catonsville to care for soldiers, sailors and marines of Maryland suffering from mental disorders in the Arthur D. Foster Psychopathic Clinic, a separate building recently completed. The clinic will be equipped and ready for the reception of patients about May 1, and will afford accommodation for about 100 cases. The U. S. Public Health Service has agreed to furnish a clinical director, a graduate nurse to take charge of the nursing, and an occupational aide.

MICHIGAN

Health Bulletin.—The department of health of Ishpeming began in January the issuing of a monthly bulletin known as the *Ishpeming Health News*, edited by the health officer, Dr. David Littlejohn. The periodical is distributed without charge to the people of the community and contains much valuable information regarding public health.

MINNESOTA

Personal.—Dr. Harry M. E. Lewell of the Mayo Clinic, Rochester, has been appointed superintendent of the Mercy Hospital, Hamilton, Ohio.——Dr. John S. Abbott has succeeded Dr. Robert I. Hubert, resigned, as deputy health officer of St. Paul.——Dr. Herbert G. Lampson, Duluth, has been appointed physician of St. Louis County, succeeding Dr. Daniel F. V. Pennie.——Miss Linda James, St. Paul, has been appointed field secretary of the Minnesota Public Health Association.

Society Organized.—Hennepin County Tuberculosis Association has been organized to succeed the antituberculosis committee of the associated charities. Dr. Henry L. Ulrich, Minneapolis, was elected president; Drs. John W. Bell, Minneapolis, G. D. Health and John G. Gross, Minneapolis, honorary members, and Dr. Hugh C. Arey, Excelsior; Albert J. Chesley, Minneapolis; Henry W. Cook, Minneapolis; Charles E. Dutton, Minneapolis; Charles D. Harrington, Minneapolis; Frank H. Hacking, Minneapolis; Walter J. Marcley, Minneapolis; Ernest S. Mariette, Glen Lake; Harold E. Robertson, Minneapolis; J. Sundwall, Henry L. Ulrich, Minneapolis, and Frederick W. Wittich, Minneapolis, directors.

NEW JERSEY

Personal.—Dr. Walter R. Elliott, West Collingswood, has been elected president of the new Memorial National Bank, Collingswood.——Dr. Benjamin Van Doren Hedges, Plainfield, has been elected secretary of the city board of education.——Dr. Arthur L. Smith, New Brunswick, has been reelected president of the board of education.——Dr Louis Schneider, Newark, has been appointed a member of the board of managers of the Contagious Disease Hospital, Soho.——Dr. John Miller, Netcong, was caught under his overturned sleigh recently and his right leg was fractured.

NEW YORK

Merritt H. Cash Prize.—The Merritt H. Cash prize of $100 provided for by a fund administered by the Medical Society of the State of New York was awarded this year to Dr.

Herman B. Sheffield for an essay on "The Present Status of Poliomyelitis."

State Society Raises Dues.—The Medical Society of the State of New York at its recent meeting amended its by-laws to provide for an increase in the annual per capita dues from $3 to $5. Resolutions were passed instructing the delegates to the meeting of the American Medical Association to submit resolutions opposing compulsory health insurance to the House of Delegates, and to support such resolutions in every possible way.

State Society Elects.—At the annual meeting of the Medical Society of the State of New York, held in New York City, March 22 to 25, 1920, the following officers were elected: president, Dr. John Richard Kevin, Brooklyn; vice presidents, Dr. William Meddaugh Dunning, New York City, Dr. Wesley T. Mulligan, Rochester, and Dr. William H. Purdy, White Plains; secretary, Dr. Edward Livingston Hunt, New York City; assistant secretary, Dr. Charles Gordon Heyd, New York City; treasurer, Dr. Harlow Brooks, New York City; assistant treasurer, Dr. Seth M. Milliken, New York City; speaker of the house of delegates, Dr. Edward Eliot Harris of New York City, and vice speaker, Dr. Dwight H. Murray, Syracuse.

New York City

Physicians' Home.—A number of well known physicians of New York have been granted a charter to establish a Physicians' Home in which medical men who have become incapacitated for work through illness or old age might find an asylum. The president of the movement is Dr. Robert T. Morris; the secretary is Dr. Silas F. Hallock.

New York University Doctors Organize.—Graduates of the New York University and Bellevue Hospital Medical College met March 23 and organized an alumni association, electing the following officers: president, Dr. Robert J. Carlisle; vice president, Dr. Robert J. Wilson; secretary, Dr. Cornelius J. Tyson, and treasurer, Dr. Godfrey R. Pisek.

The Post-Graduate Medical School Fund.—Though the campaign to raise a $2,000,000 endowment fund for the Post-Graduate Medical School and Hospital does not begin until March 30, a number of substantial preliminary gifts have been received. One of these is $50,000 from James C. Brady. Dr. James F. McKernon is chairman of the committee directing the campaign.

New York Physicians Aid Vienna Physicians.—Physicians and surgeons of this city have contributed $10,000 to supply food to the members of the medical profession in Vienna. The money has been turned over to the American Relief Administration for conversion into food drafts. Dr. Linsly R. Williams in Paris will go to Vienna to arrange for the food distribution.

OHIO

Building for Public Health Bodies.—The Toledo Academy of Medicine is planning to purchase the Hurd Democratic Club House which has been offered to it for $42,500. Physicians have already subscribed $20,000 toward the purchase of the property. It is believed that the building will be able to house all the public health organizations of the city, including the visiting nurse association and a medical library.

Must Serve Sentence.—Dr. Raphael W. Miller, convicted in the Cincinnati Municipal Court several years ago on the charge of violation of the narcotic law, has, it is said, lost his appeal in the court of appeals, and will have to serve three months in jail and pay a fine of $500. The conviction, it is said, was the result of a charge that he and a druggist had supplied a woman with narcotics. The druggist was acquitted in the municipal court.

Personal.—Dr. Milo Wilson, Gallipolis, has been transferred from the Ohio Hospital for Epileptics, Gallipolis, to Holzer Hospital, Gallipolis.——Dr. Edwin J. Rose, Gallipolis, has been appointed a member of the staff of the Ohio Hospital for Epileptics, Gallipolis.——Dr. William A. McIntosh, Oberlin, has been appointed health commissioner of Lorain County.——Dr. Philip H. Dorger, city bacteriologist of Cincinnati, has resigned.——Dr. Foy C. Payne, Dayton, has been appointed pathologist; Dr. Robert C. Austin, Dayton, orthopedic surgeon, and R. M. Cope, oral surgeon, to the Stillwater Sanitarium, Dayton.——Dr. Rush R. Richison, Springfield, has been appointed health commissioner of Clark County.——Dr. Carl W. Hoopes, Marysville, has been selected as health commissioner of Union County.——Dr. Daniel E. Rausch, Stone Creek, has been elected president of the Tuscarawas County Board of Health.

PENNSYLVANIA

License Revoked.—The Board of Medical Education and Licensure is said to have revoked the license to practice medicine in Pennsylvania of Dr. Ellsworth J. Trader, Pittsburgh, who is now serving a sentence in the federal prison, Atlanta, Ga., for illegal writing of prescriptions for narcotics.

Medical Legislative Conference of Pennsylvania.—March 13, 1920, representatives of the Eclectic Medical Society, the Homeopathic Medical Society and the Medical Society of the State of Pennsylvania met in Philadelphia and organized the Medical Legislative Conference of Pennsylvania. Dr. George A. Knowles was elected chairman, and Dr. Edward A. Krusen, Norristown, secretary-treasurer.

Adams County Hospital.—The Annie M. Warner County Hospital, Gettysburg, a new hospital building accommodating forty patients, and 6 cases of land have been presented by John M. Warner to a board of managers drawn from every part of the county. The managers have announced the purchase of 14 additional acres of land. A campaign for $100,000 endowment launched last fall will be pressed for early completion.

Health Commission Appointed.—The new state health insurance commission recently appointed by the governor has elected William T. Ramsey, mayor of Chester, chairman; Representative Theodore Campbell, treasurer, and Dr. Francis D. Patterson, Harrisburg, secretary. The commission seeks the cooperation of all physicians, employees, employers, and all other persons interested, in order that it may secure the necessary facts for making a report to submit to the governor which can be made the basis of legislation.

Philadelphia

For Control of City Dumps.—Rigid control of the dumps in the south Philadelphia "neck" district is being planned by Director Furbush of the department of public works as a part of a campaign for the correction of insanitary conditions in the southern part of the city.

Housing Association Annual Meeting.—The annual meeting of the Philadelphia Housing Association was held at the City Club, March 26. According to the annual report of conditions, only 18 per cent. of the 7,662 houses complained about have been corrected and the insanitary area of Philadelphia is increasing.

Personal.—Dr. Robert N. Kelly has been appointed surgeon of the Nautical School, Annapolis.——Dr. Dorothy Child has resigned as director of the bureau of child health in the state department of health to take effect April 1.——Dr. Karl Schaffle has resigned as head of the tuberculosis division of the state department of health.—Dr. Isaac A. Abt, Chicago, delivered an address before the Pediatric Society of Western Pennsylvania at Pittsburgh, March 29.

City Bath Houses Insanitary.—Dr. Hunter Blair Spencer, chief physician of the bureau of corrections and charities, has been making an inspection of the twenty-three public bath houses situated in different sections of the city and has found that some are in an insanitary and dangerous condition and unfit for use. The arrangements of the dressing rooms and shower baths in many of the buildings are dangerous to health, the shower baths draining into the pools.

SOUTH CAROLINA

Personal.—Dr. George McF. Mood has been reelected city bacteriologist of Charleston.——Dr. John G. McMaster, Florence, suffered serious burns of the face and hands, March 3, when he attempted to throw a burning oil stove from his office window.

New Medical Bill.—Governor Cooper on March 10 signed the new medical bill which was drawn by the state medical society and recently passed by the legislature. This bill requires all chiropractors, osteopaths, homeopaths and other healers to submit to examination before the state board of medical examiners.

Medical School Gets Larger Income.—The Medical College of the State of South Carolina secured an appropriation of $71,000 from the state for maintenance, as compared with $49,500 last year. An additional appropriation of $60,000 was made for a physiology building and equipment. The sum of $10,000 was received from the sale of the old medical building.

TENNESSEE

Roentgen-Ray Machine Given Hospital.—A citizen of Memphis who desires to remain anonymous has given a roentgen-ray machine, valued at $1,000, to the Crippled Children's Hospital.

State Association Meeting.—The eighty-seventh annual meeting of the Tennessee Medical Association will be held in Chattanooga, April 6 to 8, under the presidency of Dr. Andrew F. Richards, Sparta. The association will be the guest of the Chattanooga Academy of Medicine.

Personal.—Dr. Cummings Harris has been appointed secretary of the Memphis Health Department, succeeding Dr. Newman Taylor.——Dr. Evander M. Sanders, Nashville, has been appointed surgeon-general on the staff of the governor of Tennessee, succeeding Dr. Mathew C. McGannon, deceased.

TEXAS

New Officers.—At the annual meeting of the Brazos County Medical Association held in Bryan, the following officers were elected: president, Dr. William B. Cline; vice president, Dr. Claude A. Searcy, and secretary-treasurer, Dr. Lonnie O. Wilkerson, all of Bryan.

New Home for Medical Society.—The Bexar County Medical Association has completed a negotiation for the purchase of the Julius Appler property, San Antonio, for $20,000. An auditorium will be arranged on the second floor and the library and pathologic museum will be maintained on the first floor of the building.

Chiropractor Jailed—Byron S. Black, a chiropractor of El Paso, is said to be confined in the county jail serving a sentence of twenty days on two charges of practicing medicine without a license. On the first charge, he is said to have been fined $250 and sentenced to ten days' imprisonment and in the second case fined $50 and sentenced to a similar period in prison.

Medical Board Election.—At the annual meeting of the Texas State Board of Medical Examiners held at Dallas, March 16, the board was reorganized with the election of the following officers: president, D. S. Harris, D.O., Dallas; vice president, Dr. Robert Y. Lacy, Pittsburg, and secretary, Dr. Thomas J. Crowe, Dallas. The next meeting of the board will be held in Galveston, June 21 to 23.

VIRGINIA

Health Almanac Reappears.—The *Virginia Health Almanac*, after an absence of several years, due to the pressure of war conditions, has made its reappearance.

Appropriation for Orthopedic Hospital.—Among the measures passed by the Virginia legislature, March 13, was one appropriating $30,000 to the state board of health for the purpose of building an orthopedic hospital for the treatment of crippled and deformed children.

Reduction of Motherhood Casualties.—Educational work conducted by the bureau of vital statistics of the state board of health saved the lives of 164 mothers in the state in 1919, as compared with the casualty list of motherhood in 1917. In 1913, 408 Virginia mothers died at childbirth; in 1914, 487; in 1915, 469; in 1916, 467, and in 1917, 497.

WISCONSIN

Sanatorium Grounds Enlarged.—The site of the Tri-County Tuberculosis Sanitarium, Washburn, has been enlarged by the donation by F. V. Holston of Bayfield, of a tract of land to be used for park purposes, and to be known as the Lelia A. Holston Memorial Park.

Fox River Physicians Elect Officers.—At the annual meeting of the Fox River Medical Society held in Green Bay, March 4, the following officers were elected: president, Dr. William H. Bartran, Green Bay; vice presidents, Dr. Emile G. Nadeau, Green Bay, and Frank J. Wochos, Kewaunee, and secretary-treasurer, Dr. Robert L. Cowles, Green Bay.

Personal.—Dr. Harry Cohn, Wauwatosa, head of the Milwaukee County Free Medical Dispensary, has resigned and has been succeeded by Dr. Harry W. Sargeant, Wauwatosa. ——Dr. Charles A. Lothrop, Ripon, has been elected surgeon to the Wisconsin Veteran's Home, succeeding the late Major Albert E. McCallin.——Dr. Henry Hannum, Bayfield, who has been under treatment at a hospital in Ashland for several months on account of a broken hip, has left for the home of his son in Muskegon.

CANADA

Dominion Physicians to Meet.—The fifty-first annual meeting of the Canadian Medical Association will be held in Vancouver, B. C., June 22 to 25, under the presidency of Dr. Simeon E. Grondin, Quebec. At the same time the Canadian Public Health Association, Canadian Association for the Prevention of Tuberculosis, Canadian Committee on Mental Hygiene, National Committee for Combating Venereal Diseases, and British Columbia Hospital Association will hold their annual meetings.

Personal.—Dr. W. M. Douglas Cruickshank, Hamilton, Ont., formerly Captain, C. A. M. C., and house surgeon in the New York Lying-In Hospital, and resident gynecologist to the Woman's Hospital, New York City, is now professor of obstetrics and gynecology in the Syrian Protestant College, Beirut, Syria.——Dr. John Stewart, Halifax, has been appointed dean of the faculty of medicine of Dalhousie University.——Dr. Edward C. Arthur, Nelson, has been appointed traveling medical officer for the province of British Columbia.——Dr. Frederick W. Marlow, Toronto, has been elected chairman of the special committee in Toronto on venereal diseases.

GENERAL

General Blue Goes Abroad.—Dr. Rupert Blue, formerly Surgeon-General, U. S. Public Health Service, left New York, March 27, for Southampton on official business.

Western Electrotherapists to Meet.—The annual meeting of the Western Electro-Therapeutic Association will be held in Kansas City, Mo., May 27 and 28, under the presidency of Dr. Burton B. Grover, Colorado Springs, Colo.

Grant for Research Work.—The American Pharmaceutical Association announces that it has available a sum amounting to about $450 which will be expended after Oct. 1, 1920, for the encouragement of research either in full or in such fractions as in the judgment of the research committee of the association will produce the greatest good to American pharmaceutical research. Investigators desiring financial aid in the work should communicate with H. V. Arny, chairman of the American Pharmaceutical Association, Research Committee, 115 West Sixty-Eighth Street, New York City, before May 1, giving their record and outlining the particular line of work for which the grant is required. The awards will be made at the meeting of the American Pharmaceutical Association in Washington, May 3 to 8.

Honest Merchandise Act Introduced.—Congressman Rogers of Massachusetts has introduced in the House a bill to protect the public against fraud by prohibiting the manufacture, sale or transportation of misbranded, misrepresented or falsely described articles in interstate commerce. The measure is known as the Honest Merchandise Act. It applies to drugs and any articles of general manufacture. The bill places a penalty on misbranding any article offered for sale and transmitted in interstate commerce. It requires the contents of each article in package form to show on its outside the terms of weight, measure and quality; it requires that the examination of specimens shall be made in the Bureau of Standards at Washington, D. C., for the purpose of ascertaining whether such articles are described within the meaning of the bill and places a penalty of $1,000 or imprisonment for one year on offenders.

Society for Visual Education Incorporated.—Recently, a group of educators, most of them prominent in university circles, have organized a society for visual education, to promote the cause of visual education in general, and the use of motion pictures in particular. It is stated that the society does not propose to displace textbooks, models, maps or any other educational means, but to supplement them and to make them more available. The society also proposes to publish a monthly periodical called *Visual Education*, the first number of which has been issued. The personnel of the organization, in addition to the officers, Rollin D. Salisbury, University of Chicago, president; F. R. Moulton, University of Chicago, secretary, and H. L. Clark, Utilities Development Corporation, vice president and general manager, includes a board of directors, representing most of the universities, a large general advisory board and special committees in all the various sciences and educational departments. The address of the organization is 327 South LaSalle Street, Chicago.

Influenza Epidemic Over.—The sharp decline in the morbidity and mortality rates from influenza and pneumonia for the week ending March 13 indicates that the epidemic is

practically over. The epidemic reached its height in the week ending February 14, when 267,643 cases were reported from forty-one states and the excess annual death rate as compared with the average for the period from 1910 to 1916 was 1,319. The weekly ratios of excess annual death rate for the seven weeks ending Jan. 17 to March 13, 1920, respectively, as compared to corresponding weeks ending Sept. 28 to Nov. 23, 1918, respectively, were 0.086, 0.232, 0.311, 0.282, 0.293, 0.277, 0.260, 0.243 and 0.184.——The Bureau of the Census has just issued a special report on the mortality in Indiana, Kansas and Philadelphia for the period, Sept. 1 to Dec. 31, 1918. It is estimated that 445,000 deaths from the epidemic of influenza occurred in the United States in that period. According to age periods, the highest rates occurred in the age period from 30 to 34 years, with the period 25 to 29 years second. Of all of the deaths tabulated, more than half occurred between the period of 20 to 40, although this age group represents only 33 per cent. of the total population concerned. Particularly important are the data relative to stillbirths. The large number of stillbirths occurring clearly points to the epidemic as the cause, and shows definitely the serious effect of the epidemic on pregnant women.

Bequests and Donations.—The following bequests and donations have recently been announced:

Bryn Mawr, Pa., Hospital, Maternity Ward Building Fund, $5,307.50, the proceeds of the Bryn Mawr horse show.

Elizabeth, N. J., General Hospital, $2,000, by the will of William T. Day, Newark.

Memorial Hospital, Morristown, N. J., two plots of land valued at $20,000 and $25,000, donated by Mrs. Marcellus Hartley Dodge.

Somerset, N. J., Hospital, one-half interest in the home and property of J. C. Kenyon, Raritan.

Lewistown, Pa., Hospital, $1,500, by the will of Harriet Thomas Kurtz.

University of Pennsylvania, Philadelphia, $50,000 for the establishment of a chair of gynecology, by the estate of Dr. William C. Goodell.

Methodist Episcopal Hospital, Philadelphia, $25,000, the income to be used for maintenance of five free beds, by the will of Thomas Bradley.

Ohio-Miami Medical College, University of Cincinnati, a donation of $100,000 to establish a department of preventive medicine in memory of the late Dr. Christian R. Holmes, by Mrs. Charles Fleischmann.

Ohio-Miami Medical College, University of Cincinnati, a donation of $3,000 toward the equipment of a laboratory in the department of preventive medicine by Mrs. Christian R. Holmes, in memory of her husband.

St. Luke's Hospital, New York City, and American Red Cross, equal shares of the residuary estate of $2,423,784, by the will of James C. Scrymser.

Henry Street Settlement, New York City, a donation of $50,000, by Misses Alice D. and Irene Lewisohn.

FOREIGN

Personal.—Dr. Francisco Oliver, professor in the University of Zaragoza, Spain, has arrived in this country where he has been sent by the government of Spain to make special studies on methods to combat tuberculosis. Dr. Oliver was recently in England on a similar mission. He expects to stay in the United States until July.

Plague in Netherlands India.—Our Netherlands exchanges cite figures which show a flaring up of the plague in the Dutch East Indies. Since the serious epidemic of several years ago there have been only a few cases of plague here and there in the islands every week but in January there was a total of 1,746 cases in eight different places, all fatal.

Deaths in the Profession Abroad.—Dr. **B. Giesker**, dean of the physicians of Zurich, Switzerland, aged 79.——Dr. **A. Zoppi** of Venice, a prominent surgeon and orthopedist.——Dr. **G. Huguenin**, formerly professor of psychiatry and chief of the medical clinic at Zurich, aged 80.——Dr. **C. Grube**, instructor in physiology at the University of Bonn, aged 53.——Dr. **H. Marx**, author of several works on medicolegal questions, aged 45.——Dr. **H. Schwiening**, chief of the medical statistics service at Berlin, aged 50.——Dr. **M. Stolz**, professor of gynecology at Graz.——Dr. **Gurrucharri**, dean of the watering place physicians of Spain.——Dr. **H. Triboulet**, physician in chief of the Trousseau Hospital at Paris, aged 56.

The Five Hundredth Anniversary of the Rostock University.—The University of Rostock celebrated recently with much formality the quincentennial of its foundation. The other German universities were represented officially by Professor Pels-Leusden, from the daughter university at Greifswald, the Danish university was represented by Professor Johannsen of Copenhagen, and the Swedish academies of science by the explorer, Sven Hedin. Professor Lundström of Göteborg presented in the name of the Swedish Reichsverein an endowment of 300,000 marks for fellowships for northland students at the Rostock University. Honorary degrees were conferred on the German surgeons Madelung and Trendelenburg; and the Berlin physicists Einstein and Planck were elected honorary members of the medical faculty. Prof. R. Kobert of the University of Rostock, whose name is well known for his research on pharmacology and physiologic chemistry, did not live to see the celebration, his death occurring earlier in the year. Rostock is nearly south of Copenhagen, on the Baltic coast.

LATIN AMERICA

Quarantine Against Havana.—The Superior Board of Health of Mexico has decided to place in quarantine all ships from Havana because of the epidemic of meningitis in that city.

Smallpox Epidemic in Mexico.—It is officially announced that there have been outbreaks of smallpox in the states of Sonora, Chiapas, Oaxaca, Morelos, Chihuahua and Guerrero. The disease continues to spread.

Gorgas in Charge of Sanitation in Peru.—Major-Gen. W. C. Gorgas has been placed in charge by the government of Peru of all sanitary works, to be conducted on the seacoast of that country for the purpose of eradicating and preventing yellow fever, plague and other diseases. Dr. Gorgas' official title will be director general of sanitation, and his salary 30,000 *soles* (about $15,000).

Deaths in the Profession.—Dr. **Lihorio Zerda**, professor of medicine and the natural sciences at Bogota for three generations of students, regent for many years of the medical faculty, and later ministro del despacho ejecutivo in the department of public instruction, member of various scientific societies at home and abroad and author of several works, including "Hipiátrica" and "Visión y Luz," aged 85.——Dr. **Luis Alonso y Patiño** of Durango, Mexico, former governor of the state of Durango.

Government Services

Public Health Service Takes Over Army Hospitals

The War Department has turned over to the Public Health Service the Whipple Barracks in Arizona and the Fort William Henry Harrison Post in Montana. These posts are of such a character that, in the opinion of the Public Health Service officials, they can be readily converted for the use of Army service patients at a minimum of expense. Thus, the construction of new buildings at high cost for hospital purposes will be avoided.

Disease Conditions in the Army for the Week Ending March 24

There has been a slight recrudescence of influenza at Camps Gordon, Dodge and Jackson, with a slight addition in pneumonia admissions as well. Measles continue about the same, eighteen new cases being reported from Camp Knox. The admission and noneffective rates continue to show slight decline. A comparison of admission rates for influenza and pneumonia and the admission rates for disease during the epidemic period of 1918 as compared with 1920 indicates that the recent epidemic was much less severe. The highest death rate for disease during each epidemic occurred during the fourth week.

Appropriation Requested for Public Health Service

The Surgeon-General of the Public Health Service has made request of the Committee on Appropriations of the House for an appropriation of $500,000. This is intended to be used, in addition to $700,000, heretofore granted by Congress for hospital and sanatorium facilities in army service cases. The funds now requested are to be particularly employed in completing alterations on properties already secured from other government departments. Included in these is the Philadelphia Naval Hospital, which will be used by the Public Health Service as a hospital for neuropsychiatric patients. This work will cost, it is estimated, $75,000. The hospital will have a capacity of 375 beds. By the expenditures of this $75,000 on the Philadelphia Hospital, the Public Health Service will secure a property the duplication of which, it is claimed, would cost more than a million dollars.

Foreign Letters

MADRID

Feb. 10, 1920.

Scientific Courses Organized by the Board of Graduate Studies

The Board of Graduate Studies is a state agency headed by Cajal. The secretary, Don José Castillejo, is always on the lookout for professors who may contribute to the spread of experimental science in Spain. Its courses are practical. The board, in previous years, has brought to Spain A. Fourneau of the Pasteur Institute, who gave a course on drug synthesis; Urbain of the Sorbonne, who lectured on physical chemistry; Hadamaid, also of the Sorbonne, who lectured on mathematics, and Leclerc du Sablon of Tolosa University, who gave a course on vegetal physiology. The board has broadened its efforts, and is now announcing courses by Prof. Lewis Knudson of Cornell University on vegetal physiology; Miss Louise Cheever of Smith College on nineteenth century English literature; Professor Mazé of the Pasteur Institute, on the dairy industry; Professor Pettit of the Pasteur Institute, on bacteriology, and Professor Frouin, on the physiology of digestion. Meanwhile, courses have already been begun by Professor Gutierrez of the Buenos Aires University on the anatomic foundation of surgery, and Professor Fuchs of Vienna on ocular pathology. Professor Avelino Gutierrez is a Spaniard, who has made a name for himself in Argentina. His first lecture was attended by all the professors, many physicians, and all the students. His first lecture illustrated the method followed throughout his course. He showed on the cadaver the parotid region, emphasizing the value of anatomy in order to operate without danger and locate without trouble the most delicate organs.

FUCHS' COURSE

Professor Fuchs' course has greatly impressed the Spanish ophthalmologists, even if all of them are familiar with the great work accomplished by the professor of ophthalmology of the University of Vienna. With the aid of a projection apparatus, Fuchs lectures in Cajal's laboratory, and discusses his collection of 700 different preparations, which he brought from Vienna and which represent his life's work. Some have been obtained under such circumstances that it would be practically impossible to duplicate them, and many were the starting point for new doctrines, which have now become ophthalmologic tenets. Fuchs, who had made a fortune of several million kroner, is one of the victims of the war, and after retiring from his chair was compelled to accept the proposition of the Board of Graduate Studies. This gave him the opportunity to spend a few months away from the city of hunger, the once gay Vienna, which used to be so popular among young American physicians. The case of Fuchs, who has always kept apart from all hatred, being a soldier only in the army which fights pain and disease, is tragic. An old man, after retiring from his profession, and no longer able to replace what he has lost, he has been compelled to abandon his country, bid good-bye to his family, and accept the offer of a few lectures; and still, this scientist, this worshipper of science, puts into his course an enthusiasm, and we may say love, which is full of life, and he demonstrates his anatomic specimens with so much pleasure and fervor that he seems to forget himself and rises to the serene heights of science.

Attack on the School of Medicine

The Senate is still discussing the law for the self-government of universities, and we already begin to see signs in the newspapers and the academies that the universities do not deserve this privilege. Dr. Lafora, a prominent neurologist, educated in the United States, delivered a lecture in the Atheneum of Madrid attacking the School of Medicine of Madrid, as regards its buildings, its organization and its professors. His criticism was very bitter, and it attracted much attention, because of Dr. Lafora's prominence. It received, however, even more publicity through the defense made by the dean and professor of gynecology of the same school, Dr. Don Sebastián Recasens, who, if anything, made things worse. He agreed that there was need for new buildings, and did not answer Dr. Lafora's charges regarding the organization and professors of the school. In general, it seemed as if Dr. Recasens was trying to defend himself, and forgot all about the others.

LONDON

March 6, 1920.

Proposed Chair of Radiology

It is proposed to establish a chair of radiology at a university as a memorial to Mackenzie Davidson. This pioneer began as an ophthalmologist, and it was only in order to obtain help in his eye work that he turned to the roentgen rays. Soon he was enthralled by their possibilities, and he set himself to master the new craft. Of his important researches the best known is his "cross thread" method of localizing foreign bodies, which was used extensively in the war. An appeal for funds to establish the chair is published over the signatures of public men, scientists and leaders of the medical profession. It is pointed out that, remarkable as has been the development of radiology during the war, watchfulness is necessary lest full advantage be not taken of this stimulus and a period of reaction set in. There is pressing need of unremitting research. For this the best equipment possible is required and also a more thorough and systematic scheme of teaching. The University of Cambridge is alive to these requirements and has established a diploma in radiology and electrology. It is felt that the success of this step will be greatly assured if similar facilities are provided in London. The death of Mackenzie Davidson in the prime of life deprived radiology of its foremost exponent. He was unsparing in his efforts to raise the status of radiology among the sciences and was insistent on the fundamental value of physics, particularly in regard to methods of measurement and the designing of equipment. Many in his own branch of the profession, and a number of his friends and former patients, wishing to keep his memory green, have suggested that an appeal for funds should be made to found a Mackenzie Davidson chair of Radiology at some university. Until quite recently, radiology has been regarded as a purely medical subject; but experimental researches have shown that it is of commercial use. A new subject, radiometallography, has come into being and offers great possibilities for examining the internal structure of metals and other material—a further reason for the proposal.

Awards for Scientific Discoveries

The proposal that state awards should be made for scientific discoveries has been recommended by a joint committee of the British Medical Association and the British Science Guild (THE JOURNAL, Jan. 31, 1920, p. 337). A deputation from the Medical Committee of the House of Commons has waited on Mr. Balfour and asked that the government initiate a system of awards for medical and scientific discoveries. The deputation suggested the setting aside of $100,000 a year on the lines of the Nobel prizes. Mr. Balfour received the deputation sympathetically, but pointed out the difficulty of settling priority in scientific discovery. He urged that a better method would be to put investigators in a more com-

fortable position for carrying on research work. As an aftermath of the representations of the deputation, the medical members of Parliament are considering the advisability of forming themselves into a committee to further the scheme of pensions for scientific men who have enriched the world by their discoveries. The view that it would be difficult to determine who are the proper recipients of pensions is not considered valid. Nor does the proposal to expend the money in further endowments of the Medical Research Committee find favor. The committee has done good work, but it cannot be maintained that original genius will not show itself outside the ranks of its staff.

The International Organization of Medical Societies

At the house of the Royal Society of Medicine, an informal meeting has been held to hear Dr. F. F. Simpson, who is on a mission from the United States of America to explain to the allied profession of Europe a scheme for the simultaneous meetings of international associations in the various departments of medicine. The idea is that in each country there should be a national association for each department of medical science, such as anatomy, physiology, surgery and gynecology, and that the national associations should be linked together to form international associations. There would be an international council to keep the various international associations in relation to one another to arrange for simultaneous meetings in selected countries. Dr. Simpson proposed the immediate constitution of a provisional committee, consisting of two representatives each of Belgium, France, Great Britain, Italy and the United States, which might meet in March to draw up suggestions to submit to certain congresses which are to be held in Paris this year. Sir Wilmot Herringham, who was the general secretary of the last international congress, held in London in 1913, criticized the proposal and has given his views in a letter to the *British Medical Journal*. International congresses, he says, have been open to all comers, and have in consequence become immense pleasure parties rather than centers of serious work. The proposed organization rests on permanent international associations, such as now exist in surgery, gynecology, etc., and are composed of those specially interested in the subjects, who are already in the habit of holding international conferences and meet for work rather than play. It was expressly stated that the new organization was not intended to supersede international medical congresses. Sir Wilmot hopes that these will die a natural death. The staff of the new organization will be more permanent than that of the old. In the new scheme Sir Wilmot Herringham finds nothing to criticize except that there is not enough business to keep alive either the proposed national executive council or the international executive council. Men will not take trouble for business that is formal. A serious disadvantage is that only allied countries will be admitted to the organization. It is not yet possible to meet enemy nations in a friendly spirit, and it will be long before that time comes about. Yet at some time or other international animosities will be softened. But an organization confined to the Allies, and yet calling itself international, is a way to perpetuate the feud which it is the interest of the world to compose. The meeting finally decided to ask the council of each of the sections of the Royal Society of Medicine and of any other suitable body whether it desires international organization for its specialty.

Osler's Successor

Sir A. E. Garrod, physician to St. Bartholomew's Hospital, who was recently appointed director of the clinical unit, has been appointed regius professor of medicine in the University of Oxford in succession to Sir William Osler. He is also consulting physician to the Hospital for Sick Children, Great Ormond Street. He is 62 years of age and is the son of the Dr. Garrod who discovered uric acid in the blood in gout. His work has been mainly on diseases of metabolism, in which he is a distinguished authority. His publications, which are all of the first importance, include: "Treatise on Rheumatism and Rheumatoid Arthritis"; "Inborn Errors of Metabolism"; "Enterogenous Cyanosis"; "Urine" and "Uremia" (in Osler and McCrae's System of Medicine); "Urinary Pigments in Their Pathological Aspects," and "Glycosuria."

PARIS

Feb. 19, 1920.

Present State of Medical Journalism in France

The war and the economic crisis that followed it have brought about a serious state of affairs in medical journalism. Most of the journals that ceased publication during the war have resumed publication, but some have disappeared. The *Semaine médicale*, established in 1881, has ceased publication. During the thirty odd years of its existence it had acquired a unique position and a universal reputation.

The *Presse médicale* for some time past has been devoting more space to foreign medical current literature. It publishes not only numerous abstracts from medical journals, but also articles of a general nature designed to keep its readers informed in regard to events happening in the medical world (Dr. Pagniez). There is a department of surgery, in the hands of Dr. Lenormant, and a therapeutic department, at the head of which is Dr. Cheinisse.

The *Bulletin médical* has commenced the publication of a special monthly edition for foreign countries. It does not give the reports of societies. The entire first special number was devoted to purulent pleurisy.

The *Gazette des hôpitaux*, since the beginning of the year, has been publishing special numbers devoted to the bibliography of various pathologic subjects.

La Médecine, a monthly review, confines its attention in each number to the progress that has been made in some one branch of medical science; for example, the January issue is devoted to ophthalmology and otolaryngology. At the end of each article it gives a short abstract in both English and Spanish. The *Journal de médecine de Bordeaux* has likewise adopted this plan of short abstracts at the end of articles.

The *Journal de médecine de Paris* has put at the top of its first cover the following request in English: "Please read this paper, you will know the work of the French medicine."

On account of the increased cost of publication the medical journals have been obliged to raise the price of subscriptions. It is doubtless owing to the stress of present economic conditions that the *Journal de médecine de Paris* makes an announcement that one does not expect to find in a medical journal: "Persons sending in ten subscriptions at one time will be entitled to one subscription free."

In order to make it easier to cope with the present unfavorable economic conditions, the *Journal des Praticiens*, which recently published an editorial on the significant subject, "Scientific Journals in a Life and Death Struggle," has demanded that government subsidies, instead of going to political journals as at present, should be given to aid in the publication of scientific journals.

The Belgian medical review, *Le Scalpel*, points out another way of securing relief, which may be applicable to the Belgian medical press at least. Generous America having recently given to the Belgian universities a considerable sum of money to be used in subsidizing scientific research, *Le Scalpel* offers the suggestion that the scientific press of Belgium might experience a happy secondary reaction from this example of American generosity, if the scholars to whom the benefits primarily inure would be disinterested enough to furnish the

scientific press with gratuitous reports of their investigations and discoveries.

A new provincial journal, the *Journal de médecine de Lyon*, has appeared. It is a bimonthly and is published under the scientific direction of Profs. Joseph Teissier, Edmond Weill, Jean Lépine (son of the late Raphael Lépine), and others. It is devoted especially to the publication of news and of medical articles contributed by the physicians of the region about Lyons.

Among the special journals I may mention the *Revue de gynécologie et de chirurgie abdominale*, of which the late Prof. Samuel Pozzi was the managing editor, but which has now ceased publication. The *Annales de gynécologie et d'obstétrique*, at the head of which were Professors Pinard, Hartmann and Pollosson, and the *Archives mensuelles d'obstétrique et de gynécologie*, of which Profs. Paul Bar and J.-L. Faure were managing editors, combined the first of the year and now constitute a single review known as *Gynécologie et Obstétrique*.

Lethargic Encephalitis

New cases of lethargic encephalitis are reported from almost every section of the country. However, it would now appear that the situation is by no means as serious as was at first supposed. The Conseil d'hygiène of the department of the Seine has deemed it wise to call the attention of the Corps médical to the appearance of the disease in question and to the desirability of receiving from physicians reports of all cases that they may have an opportunity to observe. The Académie de médecine, at the suggestion of Dr. Netter, has likewise requested that physicians report to the academy all cases of undoubted and doubtful lethargic encephalitis that they may observe.

Serums Furnished by the Paris Pasteur Institute

Since 1894 the Pasteur Institute had been furnishing gratuitously to all prefectures all the diphtheria antitoxin needed in hospitals and in free dispensaries for the poor. Since the discovery of new serums the prefects had demanded not only diphtheria antitoxin, but also all the new serums, and especially the serums used against tetanus, the meningococcus, the streptococcus and the pneumococcus. While pharmacists were in the habit of keeping on hand a supply of diphtheria antitoxin, they did not, as a rule, have the other serums in stock, and, as the physicians could procure them only in the prefectures, the result has been that serums intended for the poor have been used for the treatment of patients who are able to pay.

In view of this condition of affairs, it has been decided that the Pasteur Institute will continue to provide serums directly and gratuitously to the hospitals, but that for serums furnished to physicians, private individuals, and public prophylactic services a charge will be made through the pharmacists from whom they may be secured. The pharmacists will procure their stocks through their associations and the latter will be provided for by the Pasteur Institute. Furthermore, no speculation will be tolerated on the part of the pharmacists, the highest price that can be charged for any serum furnished by the Pasteur Institute being 4 francs per dose.

Marriages

THOMAS ALBERT WILLIAMS, Middletown, Va., to Miss Marie Pittman of Charles Town, W. Va., in Washington, D. C., February 11.

ROBERT WALDORF FISHER to Mrs. Emily White Mills, both of Morgantown, W. Va., February 13.

MILLARD WILSON HALL, Wichita, Kan., to Miss Sadie Hall of Ottawa, Ill., March 10.

Deaths

Frederick Thomas Reyling ⊕ Kansas City, Mo.; University of the City of New York, 1884; aged 59; a member of the American Academy of Ophthalmology and Oto-Laryngology; a specialist on diseases of the eye and ear; instructor in histology in his alma mater from 1884 to 1892; professor of materia medica and therapeutics in the New York College of Comparative Histology and Veterinary Surgery, and instructor in diseases of the eye in the New York Post-Graduate School and Hospital from 1889 to 1896; professor of histology and pathology in the University Medical College, Kansas City, from 1899 to 1901, and professor of histology, pathology and bacteriology in the College of Physicians and Surgeons, Kansas City, Kan., from 1901 to 1905; died, February 24, from pneumonia.

Shobal Vail Clevenger, Chicago; Chicago Medical College, 1879; aged 77; a veteran of the Civil War; chief engineer of the Southern Dakota Railway; special pathologist to Cook County Institutions, Dunning; superintendent of the Illinois Eastern Hospital for the Insane, Kankakee, in 1893; for several years neurologist to the Alexian Brothers and Michael Reese hospitals; lecturer on art anatomy at the Chicago Art Institute, on physics at the Chicago College of Pharmacy and on medical jurisprudence in the Chicago College of Law; a prolific contributor to medical literature; one of the founders and first secretary of the Chicago Academy of Medicine; author of a two volume work on "Medical Jurisprudence of Insanity"; died, March 24, from cerebral hemorrhage.

Kimbell W. Leland, Utica, Ill.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1879; Rush Medical College, 1892; aged 62; a member of the Illinois State Medical Society; president of the LaSalle County Medical Society in 1899; formerly mayor and health officer of Utica, and president of the Utica school board; chairman of the board of directors of the new LaSalle County Tuberculosis Sanatorium, South Ottawa; died in St. Mary's Hospital, LaSalle, Ill., March 12, from pneumonia.

Charles Edward Whiteside, Moline, Ill.; College of Physicians and Surgeons, Chicago, 1894; aged 50; a member of the Illinois State Medical Society; once alderman of Moline; lieutenant and assistant surgeon, Illinois National Guard, and assigned to the Sixth Infantry during the war with Spain; died in the North Chicago Hospital, Chicago, March 20, from carcinoma of the lower jaw.

Frederick Jacob Leviseur ⊕ New York City; University of Goettingen, Germany, 1884; aged 59; a specialist in dermatology; a member of the American Dermatological Society and New York Academy of Medicine; consulting dermatologist to the Montefiore Home and Hebrew Orphan Asylum, and chief of the dermatological clinic of Mt. Sinai Hospital; died, March 9.

William Charles Chilson ⊕ Tulare, Calif.; University of California, San Francisco, 1902; aged 43; Captain, M. R. C., U. S. Army, with service overseas, and discharged September 4, 1919; was found dead in a hotel in Fresno, Calif., March 10, from the effects of a gunshot wound of the heart, believed to have been self-inflicted, with suicidal intent.

William Teel Montgomery ⊕ Chicago and Evanston, Ill.; Rush Medical College, 1871; aged 76; a veteran of the Civil War; a specialist on diseases of the eye and ear; oculist to Presbyterian Hospital, and a trustee of the Illinois State Charitable Eye and Ear Infirmary; died in Evanston, March 25.

John Loren McAllister, Martinsville, Ohio; Ohio Medical University, Columbus, 1905; aged 39; a member of the Ohio State Medical Association; captain, M. R. C., U. S. Army, and on duty with the Eighty-Fourth Division, A. E. F., in France, and discharged Aug. 22, 1919; died, March 12, from influenza.

Allen R. Holshouser, Rockwell, N. C.; Chattanooga (Tenn.) Medical College, 1904; aged 66; while driving in an automobile over a grade crossing near Sallsbury, N. C., February 24, was struck by a locomotive, fracturing both legs and causing other injuries, from which he died, February 26.

Louis B. Carson, Maquoketa, Iowa; Hahnemann Medical College, Chicago, 1892; aged 47; a member of the Iowa State

⊕ Indicates "Fellow" of the American Medical Association.

Medical Society; captain, M. R. C., U. S. Army, and discharged March 19, 1918; supreme medical director of the Home Guards of the World; died, March 10, from heart disease.

James Lenox Rea ⊕ Scranton, Pa.; Jefferson Medical College, 1876; aged 65; once president of the Lackawanna County Medical Society; consulting physician to the State Hospital for Northwestern Pennsylvania, Scranton; surgeon of the Delaware and Hudson Railroad; physician to the Oral School for the Deaf, Scranton; died, February 22.

George Read Skinner, Marion, Iowa; Bellevue Hospital Medical College, 1866; aged 83; a member and once treasurer of the Iowa State Medical Society; consulting surgeon to St. Luke's Hospital, Marion; a veteran of the Civil War; died at the home of his son in St. Louis, March 10.

Willoughby C. Kline, Myerstown, Pa.; University of Pennsylvania, Philadelphia, 1872; aged 69; for many years a druggist and practitioner of Myerstown; a member of the state pharmaceutical association, and a director of the Myerstown Trust Company; died, March 15.

Vincent Joseph Campisi, Brooklyn; Long Island College Hospital, Brooklyn, 1914; aged 32; was summoned to a tenement house in Brooklyn, March 25; and was found there stabbed to death. The body of the supposed patient was found in the same room strangled to death.

Julian Bezel Beck, Chicago; College of Physicians and Surgeons, Chicago, 1904; aged 43; a member of the Illinois State Medical Society; assistant professor of dermatology in Loyola University; died in Mount Sinai Hospital, Chicago, March 25, from cerebral hemorrhage.

James P. Saffold, Washington, D. C.; Columbian University, Washington, D. C., 1885; aged 65; since 1888 an employee of the Treasury Department and assistant chief of division in the office of the Auditor for the Navy; died, February 29, from heart disease.

Pierre S. Starr, Hartford, Conn.; University of the City of New York, 1862; aged 89; assistant surgeon of the Thirty-Ninth Ohio Volunteer Infantry during the Civil War; who fell and fractured his hip, February 27; died in the Hartford Hospital, March 11.

William A. Batchelor ⊕ Milwaukee; University of Pennsylvania, Philadelphia, 1884; aged 63; surgeon to the Milwaukee Hospital, Illinois Steel Company, and Chicago, Lake Shore and Eastern Railroad; died in Cleveland, March 18, from heart disease.

William Ralph Buchanan, Major, M. C., U. S. Army, Washington, D. C.; Hahnemann Medical College, Philadelphia, 1902; aged 49; who was undergoing physical reconstruction; died in the Walter Reed General Hospital, Takoma Park, D. C., March 5.

Samuel Hollis, Hartford City, Ind; Kentucky School of Medicine, Louisville, 1879; aged 68; a member of the Indiana State Medical Association; while making a professional call near Hartford City, March 13, died suddenly from heart disease.

Walter McTaggart, Harrisburg, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1884; aged 57; a member of the Illinois State Medical Society; died at the home of his daughter in Mt. Vernon, Ill., March 11, from septicemia.

Daniel Russell Phillips, Leavenworth, Kan.; College of Physicians and Surgeons in the City of New York, 1887; aged 56; a member of the Kansas Medical Society; died in Topeka, Kan., March 5, from myocarditis.

Walter Thomas Hall, Toulon, Ill.; Medical Department University of Iowa, Keokuk, 1869; aged 79; once president of the Stark County Medical Society and president of the board of health of Toulon; died, March 8.

William W. Ray, Eastover, S. C.; Kentucky School of Medicine, Louisville, 1886; aged 61; a member of the South Carolina Legislature in 1884; died in the Columbia (S. C.) Hospital, March 1, from angina pectoris.

Barton Pitts, St. Joseph, Mo.; University of Maryland, Baltimore, 1881; aged 60; a member of the Missouri State Medical Association; a specialist on diseases of the eye and ear; died, March 10, from heart disease.

Robert Charles Dickinson, Brundidge, Ala.; Memphis (Tenn.) Hospital Medical College, 1901; aged 50; a member of the Medical Association of the State of Alabama; died, about March 4, from heart disease.

Jonathan Franklin Richardson, Waukegan, Ill.; Medical Department, University of Iowa, Keokuk, 1864; aged 83; for many years a practitioner of Keota, Iowa; died, March 18.

Lee Roy Burdeshaw ⊕ Headland, Ala.; Chattanooga (Tenn.) Medical College, 1899; aged 44; once president of the Henry County Medical Society; died, March 6, from cardiorenal disease.

James B. Campbell, London, Ont.; Western University, London, Ont., 1898; associate professor of physiology and later associate professor of medicine in his alma mater; died, February 9.

Martin Toner Balsley ⊕ Joplin, Mo.; Medical College of Indiana, Indianapolis, 1881; aged 66; formerly of Indianapolis and Danville, Ill.; died, about March 13, from valvular heart disease.

Logan D. Berry, Danville, Ga.; Atlanta School of Medicine, Atlanta, Ga., 1909; aged 38; a member of the Medical Association of Georgia; died, about February 29, from influenza.

Ernest Major Jordan ⊕ Boston; Boston University, 1899; aged 48; for seven years professor of nervous diseases in his alma mater; died, March 13, from pernicious anemia.

Bruce Raynor Leighton ⊕ Kalamazoo, Mich.; Western Reserve University, Cleveland, 1912; aged 36; died in the Boggess Hospital, Kalamazoo, January 24, from pneumonia.

George S. Carter, Beckville, Texas (license, Sixth Judicial Board, Texas, 1889); aged 58; died at the home of his daughter in Marshall, Texas, March 4, from tuberculosis.

Richard McSherry, Littlestown, Pa.; University of Maryland, Baltimore, 1880; aged 64; for many years a practitioner of Baltimore; died, March 12, from cerebral hemorrhage.

Archie B. Atchison, Winnebago, Ill.; Hahnemann Medical College, Chicago, 1899; aged 49; died in Irvington, Ala., March 9, from heart disease following influenza.

Samuel Vincent Romig, Chicago; University of Michigan, Ann Arbor, 1872; aged 78; for many years a practitioner of Rockford and Winnebago, Ill., died, March 8.

Nicholas C. Trout ⊕ Fairfield, Pa.; Jefferson Medical College, 1896; aged 53; a director of the Gettysburg National Bank; died, March 23, from diabetes.

J. Carl Smith, Ellerslie, Md.; Baltimore University, 1888; aged 59; died in Franklin Square Hospital, Baltimore, February 28, from cerebral hemorrhage.

Layton W. Cooke, Fruitdale, S. D.; College of Physicians and Surgeons, Keokuk, Iowa, 1884; aged 68; died, about March 12, from pneumonia.

Charles E. Schmitz, Cambridge, Ida.; Barnes Medical College, St. Louis, 1903; aged 40; died, February 23, from pneumonia following influenza.

Richard H. Disse, St. Louis; St. Louis College of Physicians and Surgeons, 1887; aged 51; died, March 8, from cardiorenal disease.

Julius Goldsmith, New York City; Eclectic Medical College of the City of New York, 1905; aged 46; died, March 10, from pneumonia.

Edwin R. Baker, Philipsburg, Ohio; Medical College of Ohio, Cincinnati, 1876; aged 68; died, March 5, from bronchopneumonia.

Charles Lee Holloway, St. Joseph, Mo.; Kansas City (Mo.) Medical College, 1885; aged 53; died, February 22, from diabetes.

Boston N. Speer, Monclova, Coahuila, Mex.; Chattanooga (Tenn.) Medical College, 1897; died, March 14, from heart disease.

Ethan Allen DeCamp ⊕ Flint, Mich.; Detroit College of Medicine, 1900; aged 55; died, March 7, from malignant disease.

George Sumner Provine ⊕ Blandinsville, Ill.; University of Illinois, Chicago, 1906; aged 37; died recently from appendicitis.

Rufus H. Starks, Benton, Ky.; Louisville, Ky., Medical College, 1888; aged 67; died, February 26, from dysentery.

Helen E. Hill, Brooklyn, N. Y.; Eclectic Medical College of the City of New York, 1881; aged 80; died, March 20.

Alexander O'Neil, Lansing, Mich.; University of Michigan, Ann Arbor, 1868; aged 72; died, March 4.

William Stairs Morrow, Montreal; McGill University, Montreal, 1881; aged 50; died, recently.

Correction.—A telegram from Dr. William C. Hassler, health officer of San Francisco, whose death was erroneously noted in THE JOURNAL of March 27, states that he has been ill with influenza, but has recovered.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

ANTI-TUBERCULOUS LYMPH COMPOUND (SWEENY) AND ANTI-SYPHILITIC COMPOUND (SWEENY)

Reports of the Council on Pharmacy and Chemistry

The Council has authorized publication of the reports which appear below, declaring Anti-Tuberculous Lymph Compound (Sweeny) and Anti-Syphilitic Compound (Sweeny) ineligible for New and Nonofficial Remedies.

W. A. PUCKNER, Secretary.

Anti-Tuberculous Lymph Compound (Sweeny)

"Anti-Tuberculous Lymph Compound (Sweeny)" is put out by the National Laboratories of Pittsburgh, Dr. Gilliford B. Sweeny, "Medical Director." Sweeny has claimed at different times that he became interested in the subject of von Behring's efforts to immunize cattle to tuberculosis at a time when he was an assistant in von Behring's laboratory. He claims to have conceived the idea while there of transferring bovine immunity to tuberculosis to the human subject and later to have evolved his "treatment" at the Pasteur Institute in Paris.

Just how Anti-Tuberculous Lymph Compound is made today is not stated—at least so far as one is able to learn from recent advertising. Some years ago Sweeny declared that his "Anti-Tubercular Lymph" (as it was then called) was derived from a bullock which had been immunized to tuberculosis. Then:

"The immunized animal having been slaughtered, the contents of the lymph reservoirs are carefully collected and an aqueous extract is made from the grey cerebral substance, spinal cord and the lymph glands. It is then filtered under high pressure and de-albuminized by succussion. To this, the lymph, together with a definite proportion (50 per cent.), of the naturally phosphorized brain rats is added, with a small amount of chloride of gold (about 1-60 gr. to the dose), the latter as a preservative."

It is a fair assumption that however the preparation may have been made originally, it is not now made in such a manner as to bring it under the federal laws governing the preparation of serums and similar preparations. The claims made for Anti-Tuberculous Lymph Compound are of the usual uncritical and unscientific type. Mainly, of course, they are of the testimonial class. The physician is told that the preparation has been carefully tested by men whose judgment is worthy of consideration; that the verdict has been altogether favorable to the "Compound." Thus:

". . . the remedy was submitted to a selected body of skilled physicians, recognized for their skill and care in making therapeutic observations. These men represented widely varying conditions, climatic and otherwise. Those who said ten years ago that Anti-Tuberculous Lymph Compound has a specific immunizing influence upon the tuberculosis patient, find the same to be true today."

Careful reading of the matter just quoted will reveal its ambiguity and inherent lack of frankness. The inference conveyed is that the "selected body of skilled physicians" have unqualifiedly endorsed Anti-Tuberculous Lymph Compound (Sweeny)—but it does not say so!

It is the history of all such preparations, introduced to the medical profession with the usual blare of trumpets, that a certain number of favorable testimonials can be obtained. It is also the history of such products that one has but to wait a few years and the physicians who had written most enthusiastically regarding the preparation—in the first flush of their optimism following its use and the perusal of the manufacturers' literature—will acknowledge that they were mistaken in their original estimate and are no longer using the agent. In this connection an investigation of some of the old testimonials for Anti-Tuberculous Lymph Compound by the Propaganda department of THE JOURNAL is instructive.

In a somewhat elaborate booklet published in 1907 by Sweeny, an Indiana physician was said to have reported favorable results following the administration of the "lymph." A letter written to this physician in October, 1919, asking for his present opinion on the product brought this reply, in part:

". . . it being twelve years since using the serum and no reference or repeated orders since should surely suffice as evidence of my lack of faith in the serum. . . ."

An Illinois physician was reported in the same booklet to have described a case of a young man with an active tuberculosis, who was given injections of the "lymph" in February, 1907. The patient, it was claimed, showed immediate improvement and the Sweeny booklet (published in August, 1907) stated that "improvement in this case continued and terminated in complete recovery." A letter written to the physician in October, 1919, brought out the fact that the young man in question, after receiving "Anti-Tuberculous Lymph Compound" and *other treatment* was removed "on a stretcher" "to New Mexico, where he remained for three or four years" and recovered. The doctor adds:

"I do not think that the Anti-Tuberculous Lymph had anything to do with the man's recovery, although I realize the difficulty of definitely analyzing just what did effect the cure. I did since that time use that preparation in several other cases without beneficial results so that I gave it up a good many years ago adding it to that large heap of pharmaceutical material 'weighed and found wanting.'"

A physician in Texas also reported in the 1907 booklet as having had very satisfactory results with the Anti-Tuberculous Lymph Compound in one case of pulmonary tuberculosis was written to in October, 1919. He replied:

"I will state that subsequent use of this compound did not bear out the apparent good results from its use in the first case or two."

In a "Bulletin" issued by the Sweeny concern in 1912, a Pennsylvania physician was quoted as having treated three cases with Anti-Tuberculous Lymph Compound with resultant cures. This physician was written to in October, 1919, and he replied:

"I have no knowledge of the use of my name by any Pittsburgh concern and know nothing of a lymph of the name of Sweeny; neither do I recollect ever curing three cases of tuberculosis with any lymph."

The same "Bulletin" quoted the alleged statement by a Delaware physician to the effect that he believed Anti-Tuberculous Lymph Compound to be the most successful treatment of tuberculosis extant. This in 1912. To an inquiry sent in October, 1919, this physician briefly replied:

"Am not using it now."

The result of the Propaganda department's questionnaire was what might have been expected. Every physician who answered the inquiry regarding his previous and present opinions of Anti-Tuberculous Lymph Compound (Sweeny) declared, in effect, that he had long since ceased to have faith in its value or efficacy.

According to claims made in the Sweeny literature, "Anti-Tuberculous Lymph Compound exercises its immunizing power through a specific action upon the blood cells." The statement that "it destroys the tuberculosis germ when this is present in the system of the patient" is untrue. The facts are, no serum or lymph has thus far been proved to have any value in the treatment of tuberculosis even when fortified by "a small proportion of chloride of gold and soda" as one circular tells us the "lymph" is. In spite of years of research by competent investigators, we are still without any aid in the form of a serum in the treatment of tuberculosis.

Anti-Tuberculous Lymph Compound (Sweeny) is one of those preparations that need no elaborate laboratory tests, nor even exact therapeutic research, to convince any clear-thinking person that it is patently and obviously worthless. One would hesitate before asking any reputable clinician to test a preparation of this sort. It is a constant source of surprise that some physicians allow themselves to be persuaded by advertising literature that is obviously uncritical and unscientific, to use preparations which have no more reasonable foundation than this one.

The Council declares Anti-Tuberculous Lymph Compound (Swceny) not acceptable for New and Nonofficial Remedies.

Anti-Syphilitic Compound (Sweeny)

This preparation also is made by or under the direction of the same Dr. Gilliford B. Sweeny whose researches (?) led to the production and evolution of the Anti-Tuberculous Lymph Compound (Sweeny). According to the data at hand, this preparation is made by suspending benzoate of mercury in lymph from the bullock. Case reports are given of alleged cures of syphilis after two months of treatment; indeed, the circular exploiting the agent makes the statement that it is seldom necessary to continue the treatment beyond two months, which, if one chose to be credulous, would indicate extraordinary power for the mercury.

Mercury of course has a proper place in the treatment of syphilis, but that any physician could be induced to place his trust in this preparation is almost unthinkable though testimonials—which the "National Laboratories" claim to have received from physicians—are published. They all stamp the writers as not only gullible but also incompetent. The tenor of the claims is on a par with those made for the Anti-Tuberculous Lymph Compound; they do not justify the time required for detailed consideration.

The Council declares Anti-Syphilitic Lymph Compound (Sweeny) not acceptable for N. N. R.

Correspondence

FACTS LEADING TO PUBLICATION OF "ARMY FROWNS AND SMILES"

To the Editor:—There has come to my attention the following advertisement of a book published by Dr. D. E. Compere, formerly a first lieutenant in the Medical Corps:

"A 'RED HOT' BOOK JUST OFF THE PRESS

ARMY FROWNS and SMILES

By Dr. D. E. Compere
(First Lieut. M. C. U. S. Army)

Pulling the Cover OFF OFFICIAL ROTTENNESS

Flavored by the Soldier's Courage
Shield, A SMILE

DEDICATED

To the memory of an ORPHAN, Private Russell A. Wood, No. 673d Aero Supply Squadron, A. C. S. D. & C. C., who died October 11, 1918, at Camp Morrison, Va., 'WITHOUT PROPER MEDICAL ATTENTION.'

"Also to the memory of each noble HERO who made the supreme sacrifice and gave his life for our country, but especially to all those who died the result of hard boiled, cold blooded, callous neglect.

"'I served in the Medical Corps nearly twelve months and learned of ROTTENNESS which is a disgrace to any civilized nation, and America will not approve and WHITE-WASH. Therefore, it is now my DUTY to tell the PUBLIC these FACTS, and if they desire conditions to continue as bad or even worse, such is their privilege, BUT I HAVE DONE MY BIT.'"

"'I had rather be branded as a belly-acher than as a shut-mouth. To know that such rottenness exists and keep quiet is a thousand times worse than to be misunderstood.'"

"'THIS WORLD WAR WAS WON BY FREE MEN FOR THE FREEDOM OF MANKIND; YET, JUSTICE CANNOT BE SECURED THROUGH THE CHIEF OFFICIALS OF THE UNITED STATES OF AMERICA.'"

"'Convenient RULES, protecting a wonderful system of 'SUPPOSED TO BE' Justice in FREE America, when the TAXPAYERS, THE VOTERS, 'THE BOSS' is not supposed to know or be given copies of, what is being done by some of OUR GOVERNMENT OFFICIALS in the City of Washington, and even though MILITARY LAW is VIOLATED by DEPARTMENT CHIEFS, *'THE BOSS'* dare not criticise. 'GREAT STUFF'."

PRICE $2.00

In view of the fact that many persons who have lost relatives and friends in the service will be deeply troubled by the statements made by Dr. Compere, and, further, because of the serious reflections on the War Department and on the fidelity and integrity of physicians formerly in the service, it is believed that the true facts in regard to the matters referred to by Dr. Compere should be given wide publicity, and I therefore request that this letter be published in The Journal of the American Medical Association.

The matters to which Dr. Compere refers in his book had their origin in the following letter addressed by him to the Surgeon General:

"Camp Hospital, Camp Alfred Vail,
"Signal Branch, N. J., October 23, 1918.

"From: 1st Lt. Dolphus E. Compere, M. C.
To: The Surgeon General, U. S. Army (thru Official Channels).
Subject: Major Butler, Camp Surgeon, Camp Morrison, Va.

"1. At 8:00 P. M. October 8th I received the following telegram from my wife, 'Gano (my brother) seriously ill, pneumonia, mother says, if possible go to him.' At 8:30 P. M. Oct. 8th I wired the Camp Surgeon, Camp Morrison, Va. 'Please wire exact condition of my brother, Cpl. Gano Compere,' signed it Lt. D. E. Compere, Camp Surgeon, Camp Alfred Vail, N. J. After waiting fifteen hours with no reply and upon the suggestion of Colonel Helms, Commanding Officer, Camp Alfred Vail, N. J., at twelve o'clock Oct. 9th I wired the same message again except added 'report delivery.' After no reply at 8:00 P. M. Oct. 9th I wired mother 'Where and how is Gano. Have wired twice, no reply.' At 9:50 P. M. Oct. 9th my mother answers, 'catch first train, Camp Morrison, Va. Gano seriously ill. Heard nothing.' At 7:00 A. M. Oct. 10th the Western Union reports 'Your message to Camp Surgeon, delivered 2:00 P. M. Oct. 9th and at the same time delivered this message 'Condition better today,' signed Major Butler, Camp Surgeon, Camp Morrison, Va. dated 9:42 P. M. Oct. 9th. I find Major Butler did receive both of my messages. He completely ignored the first and waited from 2 o'clock until 9:42 P. M. to answer the second, so after waiting over 36 hours and requesting his exact condition, then to receive such a vague indefinite reply, upon the consent of Colonel Helms I hurried to Camp Morrison. Upon arriving I first met Capt. Steffen who accompanied me to Ward 13 where I found my brother. Capt. Steffen looked at his clinical record then placed it back with the others without showing it to me, then I asked if I might see it. He said 'Yes, of course,' also that my brother was transferred to the Camp Hospital from one of the auxiliary Company Hospitals.' The clinical record shows that he was admitted Oct. 6th at 5 P. M. and his first temperature 100.8 was recorded at 7 A. M. Oct. 7th and has not been 100 since that date. My brother said he came direct from his barracks to this Hospital October 6th at 1 P. M. and Lt. J. D. Nelson took his temperature soon after his arrival. He asked how much fever he had and Lt. Nelson replied 104. I could not prevent hearing and seeing dangerously ill soldiers around my brother, but one especially attracting my attention was unconscious and breathing so fast and hard that as I sat on my brothers cot, I held my watch and found his respiration to be 50 per minute. About 12 o'clock the ward orderly came around giving 1/30 gr. strychnine tablets and Dovers powders and finding he could not prize this poor fellows mouth open with a spoon he remarked 'Oh well, when you can't get their mouths open, there's nothing else to do.' I saw the nurse sitting in the ward record room writing and filling in papers, also I talked with Lt. Nelson, the ward surgeon and hereby testify that absolutely nothing was done for this dying soldier from 8:30 A. M. until after 3 P. M. also my brother said 'All others are treated the same and this soldier Pvt. Woods had been expected to die for three days.' I went to the office and talked with Major Butler about my telegrams and found him to be very insulting and disrespectful. He said, 'Well whats your grouch.' I said promptly 'simply if you had wired me the exact condition of my brother I would not have left my work.' He said 'Oh is that all.' Then I said, 'No and I would like to know if all your cases are allowed to die without attention as I know one man to be doing.' He asked me who sent me down to spy into his business. I replied I was there upon official permission of Colonel Helms my Commanding Officer to visit a sick brother. He said 'if you have any kicks to make about me send them to Washington through official channels.' I assured him this would be done.

(Sgd.) "Dolphus E. Compere,
1st Lt, M. C. Surgeon."

This letter was referred to the commanding officer at Camp Morrison, who, under date of Oct. 18, 1918, stated that in view of the sudden appearance of the influenza epidemic and the widespread fatalities resulting from it, he believed that the Surgeon, Major Benjamin J. Butler, Medical Corps, was entitled to commendation rather than condemnation for the creditable manner in which he handled the emergency. Approximately 50 per cent. of the camp personnel became inmates of the hospital within the period of a few days, and investigation demonstrated that the percentage of fatalities (approximately 3 per cent. of the total number of cases) was lower than in the majority of other camps in the country. He further stated that the accommodations at this camp were inadequate to accommodate such a number of sick demanding treatment within a few days, and that it was necessary to improvise hospital space. To his personal

knowledge, the physicians, nurses and medical attendants left their posts while the epidemic was at its height only long enough to secure essential rest and it was necessary to detail nearly 200 men from the Air Service to assist the regular hospital personnel.

In view of the seriousness of the charges made by Lieutenant Compere, the matter was investigated by the representative of the Inspector General's Department of the Army located at the Port of Embarkation, Newport News, Va. The inspector was Col. J. T. Nance, a retired officer of long experience and high attainments. The investigation covered the period from Oct. 28, 1918, to Nov. 12, 1918, and was thorough. Colonel Nance's conclusions and recommendations are as follows:

"(*a*) That Lieutenant Compere's allegation that his first telegram was ignored is not sustained by the evidence.

"(*b*) That his allegation that reply to the telegram was delayed is sustained by the evidence, but that a large part of this delay was incident to poor telegraphic service available and that the remainder of the delay was incident to conditions existing during the epidemic of influenza and pneumonia.

"(*c*) That his allegation that the reply was vague and indefinite when he had requested information as to the exact condition of his brother is sustained by the evidence.

"(*d*) That his complaint that Private Wood was being allowed to die without attention, 'that absolutely nothing was done for this dying soldier from 8:30 A. M. until after 3:00 P. M.' is not sustained by the evidence.

"(*e*) That the complaint that Major Butler was very insulting and disrespectful toward First Lieutenant D. E. Compere is sustained, in a measure, by the evidence. It is remarked in this connection that there were extenuating circumstances; that Major Butler had many cares and responsibilities, and that Lieutenant Compere's presumption and manner were irritating.

RECOMMENDATIONS:

"(*a*) That Major Benjamin J. Butler, M. C., be instructed to comply in future with Army Regulations No. 824.[1]

"(*b*) That no other action be taken in his case as far as Major Butler is concerned.

"(*c*) That disciplinary action be taken in the case of First Lieutenant Dolphus E. Compere, M. C., for making the false statement contained in his complaint that 'absolutely nothing was done for this dying soldier from 8:30 A. M. until after 3:00 P. M.'"

The recommendations of Colonel Nance were concurred in by the Commanding General of the Port of Embarkation, Brig. Gen. H. B. Ferguson, by the Surgeon General, and by the Inspector General, but in view of the fact that Lieutenant Compere had been honorably discharged from the service on Dec. 14, 1918, prior to the receipt of Colonel Nance's report in the office of the Inspector General, it was not practicable to take any disciplinary action in this case, and the Inspector General recommended that notation of the facts disclosed by the investigation be made on the efficiency record of Lieutenant Compere and that no further action be taken. This notation on the efficiency record was made.

About December 15, after his discharge from the service, Dr. Compere appeared in my office and behaved in a very objectionable and discourteous manner. Since that date several communications from him have been received by various officials of the War Department, in which he has made many allegations, more or less exaggerated and incorrect, particularly his frequent assertion that the investigation at Camp Morrison was in the nature of a "white-wash" and was made by an inspector of the Medical Department of the Army, whereas this inspection was made by an officer of the Inspector General's Department, which is the final authority in the military service designated by law to investigate facts in regard to complaints and misconduct.

The foregoing statements are made from no desire to enter into further controversy in regard to the matters in question, but merely to place before the Fellows and members of the American Medical Association a clear and unbiased statement of the facts leading up to the publication of "Frowns and Smiles."

M. W. IRELAND, M.D., Washington, D. C.
Surgeon General, U. S. Army.

1. Paragraph 824, Army Regulations, has to do with the rules which govern the furnishing of information, based on military records, which might be used in establishing a claim against the government. This paragraph further provides that information concerning sick and wounded officers and enlisted men will be freely conveyed to allay the anxiety of friends.

CONDITIONS IN VIENNA

To the Editor:—You may be interested in the enclosed excerpt from a letter written me by Lieutenant-Colonel Leach, who has been long connected with Belgian relief, the American army, and the American relief administration.

ROY LYMAN WILBUR, Stanford University, Calif.
President, Leland Stanford Junior University.

I have just been making a survey of conditions among the medical profession here in Vienna with Dr. von Pirquet. There are about 4,500 medical men, and at least 90 per cent. of them are working on half rations, and many are actually on the point of starvation. I had a talk with Prof. Eiselsberg yesterday, who is the leading surgeon of Vienna. In the last year he has lost 20 pounds in weight through insufficient nourishment. He has plenty of Austrian money, but cannot buy from the farmers as they will accept nothing but foreign money of recognized value or will barter for wearing apparel. I was told today in a Vienna shoe store of a peasant who came in and was advised not to spend his money for expensive shoes when he could wear sandals. These same shoes cost 5 kronen before the war. He replied that it really didn't make much difference, as his father and grandfather had always figured a pair of ducks equivalent to a pair of shoes. That simply raised the market value of the ducks. To get eggs, butter or milk in the country, which is the only place they are obtainable at the present, it is necessary to go armed with shoes, silk stockings, underwear, etc. When the surplus of clothes is exhausted there is nothing in sight but starvation.

I have suggested to Professor Eiselsberg that, as president of the Vienna Medical Association, he could make a general appeal to the medical profession in the United States on behalf of our colleagues here, this appeal to be made to our New York office and through their propaganda department, a proper appeal sent to each state medical association with Professor Eiselsberg's description of conditions as they existed here among the profession. Contributions could be made in the form of the Hoover food drafts, deliveries to be made to a committee headed by Professor Eiselsberg in Vienna, who could supervise the distribution of the packages to the most urgent cases.

At present the class which seems to be suffering most from undernourishment is the aged, the death rate among this class having risen tremendously. The children, of course, are being cared for to a certain extent through our European children's fund operations; but there is no like organization in operation for the benefit of the aged.

"BLOOD TRANSFUSION APPARATUS"

To the Editor:—In regard to the blood transfusion apparatus as described by Dr. L. L. Stanley in THE JOURNAL, March 6, 1920, p. 671, this modification may be made: namely, the stopcock may be substituted for the ball valve arrangement as described.

A glass stopcock with a good sized bore may be substituted for each one of the ball valves, thus shutting off each of the two needles, at will, from the syringe. When the donor's blood is to be drawn, the stopcock leading to his needle is opened, while the one leading to the recipient's needle is closed. The syringe is filled by drawing out the plunger. The donor's stopcock is now closed and the recipient's stopcock opened, and the blood is immediately forced into the recipient's vein by pushing in the piston of the syringe. The advantages of this modification are:

1. It is a relatively simple instrument to make at home.

2. The instrument need not be held in any particular position, since gravity plays no part here.

3. It diminishes the clotting of the blood by eliminating the ball arrangement, which acts as a freely movable foreign body in the incoming and outgoing stream of blood.

4. In the ball valve plan if, because of clotting, the recipient's valve should fail to close properly, the blood filling the syringe will come from his vein as well as from his donor's, a situation which can readily be prevented by the use of the stopcock, and so assure the operator that the blood his patient is receiving is not partly his own.

BARNETT GREENHOUSE, New Haven, Conn.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

Arizona: Phoenix, April 6-7. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.

Arkansas: Little Rock, May 11-12. Sec. Regular Bd., Dr. I. J. Stout, Brinkley. Sec. Eclectic Bd., Dr. C. E. Laws, Fort Smith.

Colorado: Denver, April 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

District of Columbia: Washington, April 13-15. Sec., Dr. Edgar P. Copeland, the Rockingham, Washington.

Hawaii: Honolulu, May 10-14. Sec., Dr. R. W. Benz, 1141 Alakea St., Honolulu.

Idaho: Boise, April 6, Commissioner, Hon. Robert A. Jones, Boise.

Louisiana: New Orleans, May 4. Sec., Homeo. Bd., Dr. F. H. Hardenstein, 702 Machesa Bldg., New Orleans.

Minnesota: Minneapolis, April 6-8. Sec., Dr. Thos. McDavitt, Lowry Bldg., St. Paul.

Montana: Helena, April 6. Sec., Dr. S. A. Cooney, Power Bldg., Helena.

Nevada: Carson City, May 3. Sec., Dr. Simeon L. Lee, Carson City.

New Mexico: Santa Fe, April 12-13. Sec., Dr. R. E. McBride, Las Cruces.

New York: New York, Albany, Syracuse, Buffalo, May 18-21. Assistant, professional examinations, Mr. Herbert J. Hamilton, Education Bldg., Albany.

Oklahoma: Oklahoma City, April 13-14. Sec., Dr. J. M. Byrum, Shawnee.

West Virginia: Charleston, April 13. Sec., Dr. S. L. Jepson, Masonic Bldg., Charleston.

INDIVIDUALISM IN MEDICAL EDUCATION

ALBERT C. EYCLESHYMER, PH.D., M.D.
Professor of Anatomy, Head of Department and Dean, University of Illinois College of Medicine
Chicago

Herbert Spencer well says: "There cannot fail to be a relationship between the successive systems of education and the successive social states with which they have coexisted." During the past half century our natural resources and varied industries were attracting the master minds of our country. The commercial spirit had extended into practically all lines of endeavor. It is therefore not surprising that the medical schools became strongly tinctured with commercialism. In describing the medical schools of a half century ago, Flexner says that they were essentially private ventures, money making in spirit and object. They arose in small towns almost in the heart of the wilderness. Wherever or whenever the roster of untitled practitioners rose above half a dozen, a medical school was likely at any moment to be precipitated. Income was simply divided among the lecturers, who reaped a rich harvest besides the consultations which the loyalty of their former students threw into their hands. "Chairs" were variable in value, their prices varying with what was termed their "reflex" value. It might be added that the chair of principles and practice of medicine would bring two or three thousand cash; that of natural history, not a cent. Appointments rested on financial rather than educational qualifications. The professor was a busy practitioner who worked day and night. Although often exhausted, he must be ready to take his hour at the medical college. His personal experiences furnished the storehouse from which he extracted his lecture; and these experiences were beyond controversy. The students were not well enough trained to be thrown to any degree on their own resources. The country demanded for the most part but one type of physician and that type was the all round practitioner. He was obliged to know something of medicine, surgery and obstetrics, together with the specialties, including dentistry and pharmacy, and in addition to these he was expected to show proficiency as a veterinarian. In short, the medical school consisted of a group of teachers with no time to think, and a group of students who could not think, trying to satisfy a public demand for the all round physician.

The conditions today are quite different. The students are better trained, and as a group they no longer desire to be all round practitioners. They realize that the field of medicine, like other fields of endeavor, has expanded so enormously that specialization alone leads to eminence and signal success. The public does not demand the all round practitioner as it did a half century ago. The demand has decreased almost in direct proportion to the improved means of intercommunication and transportation. At present the country practitioner restricts his work largely to the more common diseases and first aids. The more obscure cases he refers to specialists who have hospital facilities at their command. Hospitals are being built over the country, and with them comes the organization of the hospital staff which, in turn, forms the basis of the group clinic. Instead of the general practitioner making a complete diagnosis, there is now a group of collaborating clinicians, each of whom is an expert in his particular field. The rapid development of the group clinic is creating a demand that must be met by the medical schools.

The conditions of half a century ago were met by the fixed curriculum, but this principle has been projected into the medical schools of today. Our national organizations dealing with medical education have recognized and emphasized the need of individualism, but have not adopted measures that materially assist the medical schools in developing the individual. The fixed curriculum is so deeply rooted, so widely spread and so thoroughly fostered by educational institutions that standardizing agencies like state examining boards are rapidly adopting or creating such curriculums as the basis for medical licensure. The day is not far distant when the schools must either incorporate in their curriculums the particular requirements of each state examining board or find that their graduates are not qualified to practice in these states. To incorporate these requirements means not only the further specification of subjects and allotted time, but also a material expansion of the curriculum. The schools are thus approaching an impasse of their own creation.

In building a medical curriculum, we should ever be mindful of the fact that no two students are alike. In the high school the student feels his way through a large range of group electives, and often before entering college he has decided that he will major in agriculture, engineering, law, theology or medicine. In his college work, electives have enabled him to accentuate his choice or perchance to find that his predilection was wrong. In both high school and college the student may have inclined toward subjects involving manual training and thereby have acquired keenness of touch and dexterity, or toward music, cultivating the sense of hearing. He may have elected biologic sciences, accentuating observation. He may have turned toward mathematics, physics and chemistry, emphasizing precision in deduction and experimentation. He may have laid special stress on languages or history, thus acquiring an excellent memory, or perchance on philosophy, thus developing the power of abstract thought.

Those of us who come in contact with beginners in the study of medicine are impressed by their differences in energy, training and ability. One student is always on time, another is always behind time; one works quickly, another slowly; one is deft, another clumsy; one student retains best what he sees—his memory is visual; another retains best what he hears—his memory is auditory; still another remembers best what he reads—his memory depends on word associations. One mind stores up isolated impressions and facts—it is analytic; another arranges impressions and facts in groups—it is synthetic. Will the student who is slow and clumsy ever make as efficient a surgeon as the one who is quick and deft? Will the one whose memory is auditory, or depends on word association, ever succeed in surgery as well as

another who is able to visualize the positions and relations of organs in the body? Will the student who has an untrained ear ever make as efficient an internist as the one whose keenness in sound perception and discrimination enables him to differentiate between normal and abnormal sounds in the lung or heart? Is the one with an analytic mind as capable of interpreting a syndrome as another whose mind is synthetic? It is beyond question that the men who enter the medical school at the age of 22 or 23 years are quite unlike in their mental equipment; but in entering the medical school with a fixed curriculum they are beginning a four-year program that requires all students to do the same kind and the same amount of work at the same time and in the same way. It follows that the more uniform the special senses and intellectual processes, the more efficient becomes such a curriculum. To reach its maximal efficiency we must revamp and equalize the special senses and intellectual processes—but is this education?

What we should do is to determine the special assets of each student at the time he enters the medical school, and ever keep in mind his adaptability for certain kinds of work. As soon as possible we should help him to place his assets where they will yield the greatest returns. Experience teaches that most students, at the end of the second or third year of the medical course, have decided whether they wish to lay equal emphasis on medicine, surgery or obstetrics, fitting themselves for general practice, or to give special emphasis to one, fitting themselves for a special field. If, in the judgment of the faculty, the student's selection is wise, he should be permitted to follow his choice. In the fourth year the student should be allowed a further latitude which will permit him to accentuate the all round training in medicine, surgery, or obstetrics, or to lay further emphasis on one of these. In the intern year, he may further accentuate his choice by rounding himself out for general practice or by adding to his special training.

While the curriculum of each school is extremely rigid, a comparative study of curriculums shows wide variations in the different schools. One covers a total of 4,500 hours, another 3,500; anatomy is given 750 hours in one school, in another, 450; physiology 300 in one school, in another, 150; pathology 500 in one, in another, 200; medicine 600 in one, in another, 300; surgery 600 in one, in another, 400. The amount of time given to the various subjects varies with the point of view and enthusiasm of the teacher, and with the equipment and material available for study. One school is favorably situated for the study of tropical diseases; another is able to utilize a great tuberculosis sanatorium; another, a great psychopathic institute. It thus comes about that the curriculums are extremely variable, not only in the total number of hours but also in the number of hours given to the various subjects. The recognition of variability in different institutions concedes the principle of variability within each institution.

In each department of the medical school an active fermentation is going on, with the splitting off of new segments. Just as physiology and pathology split off from anatomy, so biochemistry is outgrowing physiology; bacteriology is asserting its independence of pathology; pediatrics and neurology, otolaryngology and ophthalmology are attaining independence from general medicine and surgery. Again, there is going on a continual importation of subjects from the outlying fields of investigation. Immunity, roentgenology and parasitology have been brought into the curriculum from these outlying fields. The school that is the most actively engaged in the exploration and the investigation of borderland subjects finds the greatest difficulty in holding to a fixed curriculum.

Some twenty years ago, in a remarkable and prophetic article on "Liberty in Medical Education," the late Professor Mall[1] wrote:

> The great complaint of the good student is coercion. Reared in a free atmosphere, accustomed to great liberty during his college years, he enters the medical school with intellectual slavery staring him in the face. The faculty trust is so powerful that if the student asserts his citizenship and remains away from a stupid course or one useless to himself he may be deprived of his degree. Long after he graduates he awakens to see that it is all a sham, and this fact adds another disgrace to our medical schools. We all know that students are very unequal in ability, as well as capacity for work, and why should they all pursue the same course of study? We cast out the weak and disgrace them, the mediocre continue along the trodden path, but the strong are retarded. We do wrong when we disgrace the weak, and it is our duty to develop the strong. It is poor logic and begging the question to assert that the German student develops better under the banner of liberty than the American would. It is not difficult to obtain overwhelming authority in favor of liberty in higher education; it is only degrading to our profession in America to assert that our students are not worthy of it. As long as this continues, medical education in America, in spite of the advance it has made during the last twenty-five years, will remain at its present low level in the eyes of the educators of the world.

The curriculum in the accompanying tabulation, as given and advocated by Professor Mall, might well serve as a basis on which the medical schools of today could build elastic curriculums.

MEDICAL CURRICULUM *

	Obligatory	Elective
PRECLINICAL SUBJECTS		
Anatomy	6 units	15
Physiology	2 units	4
Physiologic chemistry and pharmacology	3 units	6
Pathology and bacteriology	4 units	10
Hygiene and bacteriology		10
Elective	9 or more	
	24 = two years' work	
CLINICAL SUBJECTS		
Medicine	6 units	15
Surgery	5 units	15
Obstetrics	3 units	5
Gynecology		5
Dermatology		4
Pediatrics		4
Nervous diseases		5
Genito-urinary diseases		4
Laryngology		4
Ophthalmology		5
Medical jurisprudence		2
Psychiatry		4
Elective	10 or more	
	24 = two years' work	

* The curriculum extends over a period of four years and comprises about 3,000 hours. The unit is the equivalent of from 60 to 65 clock hours.

Professor Mall said:

> In the above table I have arranged the units in two columns, reducing the obligatory courses to their minimum without excluding any of the seven branches. Further cutting-down might be an improvement, but I will not raise that question at present. As it stands in the table, 60 per cent. of the entire four years is obligatory, and the remaining 40 per cent. of the work is to be selected from a large group of elective courses. As they stand in the second column it would require an average student eight or ten years to take them all, and the two columns together represent work which our best schools can easily give at the present time. Much of our whole trouble in teaching is that we are trying to put ten years' work into four. . . . Each student might try a different combination while working out his own salvation and developing his individuality. The weak student would either drop out or go slower, the average would follow the trodden path, the good one would develop himself.

I have quoted Professor Mall in particular because he has demonstrated through his students the soundness of his views on academic freedom. There is only one way to develop strong men, and that is by helping them to become independent thinkers. Electives are the stepping stones to independent thought, and independent thought is the threshold of knowledge. We cannot keep the medical students marching in the trodden paths of their predecessors until weary and heart-sick they complete the march, only to find that they have also acquired mental debility on the way. We must tear down the restraining walls, and encourage them to forsake the trodden paths and to explore the unknown fields. We must help them to realize that the laws governing health constitute a limitless expanse for exploration, and that on our knowledge of these laws rests the physical efficiency of mankind.

1. Mall, F. P.: Philadelphia M. J. 3, 1899.

Book Notices

Manual of Tropical Medicine. By Aldo Castellani, C.M.G., M.D., M.R.C.P., Lecturer at the London School of Tropical Medicine, and Albert J. Chalmers, M.D., F.R.C.S., D.P.H. Third edition. Cloth. Price, $12. Pp. 2436, with illustrations. New York: William Wood and Company, 1920.

The first edition of this book, published in 1910, contained 1,242 pages. This edition contains 2,436. This may well be regarded as an index of the growth of our knowledge of tropical diseases in the last decade. In contents, the book is exhaustive; in fact, well nigh encyclopedic. Its three main divisions are the introduction, Part II on causation of tropical diseases and Part III on specific diseases of the tropics. The introduction includes chapters on the history of tropical medicine, tropical races, tropical climatology, tropical foods, tropical diseases and fitness for tropical life. The section on causation discusses, under physical causes, temperature and humidity, pressure and radiation, and traumatism. Under chemical causes are considered animal and vegetable poisons, including those used in hunting, fishing and warfare, as well as poisonous foods. This section also contains three exhaustive and interesting chapters on venomous animals, including spiders, scorpions, venomous fish, and the numerous snakes of the tropics. The section devoted to tropical parasites and their rôle in the production and transmission of disease is necessarily large, consisting of nearly 800 pages.

Parasites and carriers are discussed in zoological order, as protozoa, worms, leeches, ticks, and mites, insects, animal carriers and vegetable parasites. The third part, comprising over half of the book, treats of specific diseases of the tropics, dividing them into fevers, general diseases and systemic diseases. Under fevers are discussed those carried by mosquitoes, namely, the malarias, the tropical hemoglobinurias, yellow fever, dengue and allied fevers. Diseases carried by the tsetse fly and similar insects are the trypanosomiases and the kala-azars. Those carried by lice and ticks are the relapsing fever, typhus fever, spotted fever and tsutsugamushi fever. It is difficult to understand why Rocky Mountain fever is discussed in this connection, since the authors state that it is found only in the mountainous regions of the United States. The other fevers are unclassified or are listed as probably due to bacterial infection. One of the most interesting chapters is that on the differential diagnosis of a tropical fever in which the diagnostic symptoms are tabulated for easy reference. General diseases are divided into those with an animal causation, including frambesia, verruca, the filariases, etc.; those with a vegetable causation, as leprosy and histoplasmosis; diseases due to chemical causes, including beriberi and epidemic dropsy; and general diseases the cause of which is unknown, under which the authors classify pellagra. The last section takes up in detail the various systemic diseases peculiar to the tropics.

It is interesting to note that in spite of the attitude regarding alcohol adopted by the English, the authors take every occasion to emphasize the danger of the use of alcohol and the inadvisability of any one addicted to its use, even in moderate quantities, undertaking work in tropical countries. Even the therapeutic value of alcohol is minimized, and in the chapter on venomous reptiles a severe blow is dealt at the time honored superstition of the value of alcohol in the treatment of snake bites. "Brandy and whisky have been repeatedly vaunted but they are useless." Apparently the authors have not had access to contemporary American literature. In the references to articles on food and nutrition, the latest reference to an American article is 1911, and none is made to the work of McCollum, Osborn and Mendel in the last five years. The book is copiously illustrated, and one of its most valuable features is the list of references following each chapter. Under the section on the state and tropical diseases is a list of eighty-seven special journals on this subject and an extended list of special works on tropical medicine, its history and development. In addition to its completeness, the fact that the third edition has been revised since the war and that the authors have had twenty years' experience in the tropics will justify its acceptance as one of the leading English authorities on tropical diseases.

Social Medicine and Medical Economics

THE VIRGIN ISLANDS OF THE UNITED STATES

B. V. MC CLANAHAN, M.D.
Galesburg, Ill.

Exactly one week prior to our declaration of war on Germany, the United States took over certain islands of unquestioned value in the neighborhood of Porto Rico. From a naval standpoint these islands possess marked strategic features, the most important of which probably is the land-locked harbor of Charlotte Amalie, St. Thomas. From a public health and medical point of view these most recently acquired possessions also present some very interesting phases.

The Virgin Islands of the United States (formerly the Danish West Indies) consist of a group of some fifty small islands, near the juncture between the Atlantic Ocean and the Carribean Sea, lying from 30 to 80 miles east and south of Porto Rico. They were acquired from Denmark, March 31, 1917. From a period of a few years prior to this date the former government had been allowing the islands to decline gradually, the United States having tried twice before to gain control. Since their acquisition they have been under the control of the Navy Department, and it appears proper that they should so continue, as their small size necessitates their dependence on naval life and the sea for their welfare.

Commander (now Captain) C. S. Butler, Medical Corps, U. S. Navy, and I were the first American medical officers to reach the islands following their transfer. Arriving at Charlotte Amalie, the principal harbor of the island of St. Thomas, April 21, 1917, Dr. Butler remained for duty on St. Thomas, and I was detailed for both military and civilian duty to Christiansted, St. Croix.

The gradual decline under the former government was decidedly accelerated by a destructive hurricane in October, 1916, in which Christiansted suffered severely. Its hospital buildings, which were situated on a hill, were almost completely demolished and rendered wholly uninhabitable. Instruments, beds, linen and much of the original equipment were strewn over a wide area and rain-soaked beyond hope of further use.

The building occupied by the hospital on my arrival was an old chapel, of which the rostrum and mahogany railings still remained. A table near the pulpit served as office for both physician and nurse, and the medicine locker consisted of an old clothes press formerly used by the minister. In the center of the chapel a partition, reaching half way to the ceiling, had been erected, thus dividing off a space into a men's ward and a women's ward. This building, together with another about half a block away, were all that were ceded to us when I received control of the medical situation at Christiansted.

MEDICAL STATISTICS

The islands—and I speak principally of St. Croix, the largest and with the possible exception of harbors the most important one of the group—as we found them were in dire need of active medical, surgical and sanitary aid. Their welfare centered naturally around their health, and this was greatly impaired. Approximately 95 per cent. of the population were black. Statistics collected by former Danish physicians indicated that the majority of the negro population had venereal disease; about 50 per cent. had syphilis in either congenital or acquired form. Filariae were present in the blood of from 15 to 25 per cent. of individuals examined, and over 5 per cent. of the adults had elephantiasis in some form. Leprosy, considering the population of the islands, was preva-

lent, there being from sixty to ninety inmates in the asylum during the first two years of our occupancy, while the total population of the islands was less than 28,000.

Typhoid fever was never troublesome, appearing only sporadically over the islands. The last severe epidemic occurred over two generations ago; but to prevent any further trouble from this source the entire population of the islands was given antityphoid vaccine during the latter part of 1918. Malaria was rare, although the anopheles mosquito was found often in collections gathered. Yellow fever and bubonic plague had been unknown for the last hundred years, while pellagra was present in a goodly percentage of the hospital cases treated.

Probably one of the greatest scourges of this small country was the high infant mortality. Fifty-one per cent. of the children died before reaching the age of 3 years and about one half of these before they were 1 year old. This high infant mortality rate may be explained by two factors: illegitimacy and the tropics. According to the United States census taken in 1918, nearly 65 per cent. of the parents living together were not legally married, and in relationships of this kind, combined with the inherent lassitude of the tropics, it naturally rested with the mother to support the children. The second contributing factor may be said to be the tropics themselves; milk, of course, soured readily, and like all foodstuffs was hard to obtain in anything like a clean state. This, combined with a lack of feeding knowledge and neglect, caused infant gastro-intestinal infections to reach a high mark.

It is safe to say that at the time of American occupation 35 per cent. of the population of the islands needed medical or surgical care of some sort. Syphilitic conditions were present, some of which disappeared like magic under the proper treatment. Venereal sores, bathed continually in pus and filth and often aggravated by edematous foreskins, were prevalent. We encountered many hydroceles containing a quart or more of fluid, hernias of enormous size and, last but by no means least, elephantiasic extremities and scrotums of such size and weight that they not only impaired the general health but served as an extremely cumbersome barrier to locomotion.

PHYSICIANS' FEES

The question of fees charged prior to American occupancy is one of especial interest. The physicians to the islands were sent by the Danish government and received ample salaries from their home government. On the other hand, the ordinary negro inhabitant of the islands had limited financial means so that charges of from one to ten dollars for major operations, while appearing exceedingly small, were really reasonable and just. The price for a herniotomy was five dollars, and the highest price charged for any operation was twenty-five dollars. These prices, of course, were for the negro population which could not well afford to pay more. Well-to-do planters, sugar factory operators and plantation owners were charged more than the stipulated rates at the discretion of the physician. Contract work was practiced generally with the larger estates and sugar factories, these contracts calling for one or two visits of the physician at the factory and laborers' villages weekly, with visits more often during the sugar crop time.

HOSPITALS

As I have mentioned, the hurricane of 1916 wrought havoc especially to the hospital at Christiansted. The other hospitals of the islands situated at Charlotte Amalie, St. Thomas and at Frederiksted, St. Croix, suffered less and were able to continue in the same buildings. The buildings occupied temporarily by the Christiansted hospital would hardly accommodate sixty-five patients, were in no sense suited for the care of the sick, and had been barely made fit by the installation of crude plumbing, tin flooring in the operating room, kerosene lamps, and other absolute necessities. The hospital boasted two private rooms, which were private, however, only in the sense that they contained one bed each. In no other respect were they private, for they had windows that opened on a hallway, partitions that reached only half way to the ceiling, and both directly adjoined the children's ward.

Rigid iron beds which could not be taken apart and with a series of crossed iron bands for springs were what comprised the resting place for the patients in the hospital. Mattresses were made of horsehair or seaweed, pressed hard and thick. Bed linens, towels and other napery were of a heavy linen of good grade, all sent from Denmark; and with the exception of being heavy, cumbersome and unpliable, they were very fine.

FACILITIES FOR SURGERY

The operating room consisted of an east room on the second story, with a tin floor, an antique operating table, and locally constructed sinks, stands and instrument cabinets. It was lighted for night work with two large round-burner kerosene lamps. One naturally feels a trifle uncomfortable at the thought of operating under an open flame; but by using extreme caution we were able to care for the small amount of night emergency surgery that was necessary.

The instruments in the operating room were mostly of Danish origin, some of them peculiar and clumsy; but they served their purpose very well. These instruments, in addition to the ones furnished with the Navy supplies for Marines, gave us all we really needed for most of the surgery encountered. Suture material was scarce, the supply of catgut being particularly low; and as this article was hard to obtain, we were continually handicapped by the lack of it.

Surgical dressings, sponges, cotton, binders, pads, and the like were all sent out from Denmark where, it was said, they were made under the direction and supervision of the queen herself. However true or untrue this rumor may have been, it was a fact that, prior to our occupancy, yearly and oftener, if necessary, the queen would send out large quantities of surgical supplies all wrapped, sealed, labeled and sterilized ready for immediate use. A fair amount of this surgical material was on hand when we arrived.

The needles in the operating room were not of the type we had been used to; and because all metal rusts so easily in the tropics, these needles were of little value. The Christiansted hospital was indeed grateful for the gift of assorted operating needles sent to them by a Chicago hospital on realizing actual conditions.

The majority of the surgery had to be done without the use of rubber gloves, not as a matter of choice, but because the hospital had only six pairs of its own. We literally wore gloves to keep our hands clean instead of for the protection of the patient from infection, and considering our handicaps, we had comparatively few infections.

We were unable to do all the surgery that was continually at hand. We did all the surgery we could, considering the size of the hospital and the limited amount of supplies available. At best, it was a slow process, as all sterile water, instruments, etc., had to be prepared over small charcoal pots in the corridor adjoining the operating room.

PROSPECTS IN THE FUTURE

I left the islands in March, 1919, and many improvements were well under way and progressing even before this time. The American Red Cross made some liberal and beneficial donations to the hospitals of the Virgin Islands during 1918. The Christiansted hospital also received at this time a complete roentgen-ray outfit and a motor ambulance. Repairs

were effected, among them the installation of electric lights, which greatly increased the efficiency of the institution. Dispensaries for outpatients had been established at all hospitals in the islands, and a great deal of good was being done in the treatment of ambulatory cases. An earnest attempt had been made, combined with the efforts of the department of health, to ascertain and treat all venereal cases, trying if possible to get at the source of infection in every case.

The future health of these islands, and in this way the real future of the islands, depends largely on the work and the cooperation of the medical men stationed there. With the wealth of material to work on, especially surgical, duty was a pleasure to me, and I am sure that all the medical officers felt grateful for the opportunity to serve in so new, rich and fertile a field.

249 East Main Street.

Medicolegal

Time of Liability of Physicians and Surgeons

(Bowers v. Santee (Ohio), 124 N. E. R. 238)

The Supreme Court of Ohio, reversing a judgment affirmed by the court of appeals that sustained the defendant's demurrer to the plaintiff's petition, says that the petition stated that, Dec. 29, 1913, the plaintiff sustained a fracture of both bones of her left leg above the ankle joint and employed the defendant to treat the case, that he was unsuccessful in his first attempt to reduce the fracture, and in about a week attempted again to set or reset the fractured limb, and again negligently failed to place the fractured ends of the bones together, etc. This action for damages was begun in April, 1915. The defendant's demurrer was on the ground that the plaintiff's right of action was barred by the state statute of limitations, and the question was, When did the latter begin to run as against the plaintiff? Did more than one year intervene between the date on which her cause of action "accrued" and the date on which such action was commenced? The supreme court holds that, in an action for a breach of contract in such a case, the statute of limitations does not begin to run until the contract relation is terminated, and that, under the allegations of the plaintiff's petition that the contract of employment between the surgeon and his patient continued from Dec. 29, 1913, to May, 1914, the plaintiff's right of action did not accrue until May, 1914, and was not barred by the statute of limitations when the action was brought.

The first two paragraphs of the syllabus in the case of *Gillette* v. *Tucker*, 67 Ohio St. 106, 65 N. E. 865, are as follows:

1. A surgeon and physician, employed to treat a case professionally, is under an obligation, which the law implies from the employment, to exercise the average degree of skill, care, and diligence exercised by members of the same profession, practicing in the same or a similar locality, in the light of the present state of medical and surgical science; and that he will indemnify the patient against any injurious consequences which may result from his want of ordinary skill, care, and attention in the exercise of his employment.

2. It is the duty of the physician and surgeon to exercise due and ordinary skill, care, and attention, not only in and about an operation which he decides to be necessary, but also, in the absence of a mutual understanding, or notice to the contrary, to render such continued further care and treatment as the necessity of the case requires; and he is liable for injuries and damages which proximately result from the want of ordinary skill, care, and attention.

The doctrine announced in these two paragraphs is very plain and practical, so that both surgeon and patient will have their respective interests abundantly safeguarded. The doctrine is promotive of the exercise of reasonable skill, care, and treatment by the surgeon, not only at the specific time of the operation, but also during the subsequent period of treatment necessary to a reasonable and substantial recovery. The patient relies almost wholly on the judgment of the surgeon, and under the usual circumstances of each case is bound so to do; and if the injury is not reduced, and a normal condition restored, as fully or as speedily as expected, the patient is still at liberty to rely on the professional skill, care and treatment to complete such recovery so long as the surgeon continues his employment with reference to the injury. The decision in *Gillette* v. *Tucker* was by a divided court that stood 3 to 3, with a rather vigorous dissenting opinion which was followed a few years later in *McArthur* v. *Bowers*, 72 Ohio St. 656, 76 N. E. 1128; but this court now disapproves the McArthur case, and approves and reaffirms the doctrine announced in the Gillette case. Physicians and surgeons exercising reasonable care and skill need have no fear of it. Reckless and careless physicians and surgeons should be kept in fear of it.

The law should not impose on the patient a duty that he can know only through expert knowledge which he does not possess, but as to which he is compelled to accept the judgment of his physician or surgeon. Moreover, it is clearly just to the surgeon that he be not harassed by any premature litigation instituted in order to save the right of the patient in the event that there be substantial malpractice. The surgeon should have all reasonable time and opportunity to correct the evils which made the operation or treatment necessary, and even reasonable time and opportunity to correct the ordinary and usual mistakes incident to even skilled surgery. The doctrine announced here is conducive to that mutual confidence that is highly essential in the relation between surgeon and patient.

Examination Required to Determine Injury to Eye

(Holton v. Janes (N. M.), 183 Pac. R. 395)

The Supreme Court of New Mexico holds that, in a personal injury case in which the plaintiff had voluntarily exhibited an injury to his head to the jury for inspection, and the defendant moved that the court compel the plaintiff to submit to a physical examination of his head by physicians named by the defendant, it was error to deny the defendant's request. The supreme court says that an examination of the cases will show that the courts have uniformly held that, when a plaintiff in a personal injury suit voluntarily exhibits the injured part of his body to the jury for inspection, the portion of his body so exhibited becomes an exhibit in the case, like any other object or thing introduced in evidence, and the opposite party has the right to make such inspection of it as will enable him to explain, criticize or impeach its value as evidence, and to that end have it examined by experts. As to the wounds in his head, the plaintiff in this case alleged that they greatly injured and weakened his eyesight, making it difficult for him to discern objects at any considerable distance. It is a matter of common knowledge, of which courts will take notice, that the question of the impairment of vision is capable of exact demonstration by expert examination, and in this case, when the plaintiff put his head in evidence and permitted the jury to examine it, unless the eye which he complained of as being injured was put out, the jury could in no manner determine the extent of the injury to it, if any, but with the aid of experts the matter was capable of exact determination. For these reasons this cause, wherein the plaintiff recovered a judgment, is reversed and remanded with instructions to award the defendant a new trial.

Privilege Not Affected by Services Being Gratuitous

(In re Hallenberg's Guardianship (Minn.), 174 N. W. R. 443)

The Supreme Court of Minnesota holds, in a proceeding to determine the competency of a man 82 years old to care for and manage his property, that the rule as to privileged communications applied and that there was no error in excluding the testimony of a physician as to consultations with the man in regard to certain ailments, when the only ground on which it was sought to sustain the admissibility of such testimony, in the face of the express provisions of the statute to the contrary, was that the physician was the patient's son-in-law and did not expect pay for his services. The application of the rule does not depend on the services being gratuitous or paid for.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, New Orleans, April 26-30.

Air Service Medical Assn. of the U. S., New Orleans, April 26.
Alabama State Medical Association, Anniston, April 20-22.
Alpha Omega Alpha Honorary Fraternity, New Orleans, April 26.
American Association of Anesthetists, New Orleans, April 26-27.
American Association of Physicians, Atlantic City, May 4-5.
American Association for Thoracic Surgery, New Orleans, May 1.
American Dermatological Association, Asheville, April 22-24.
American Gastro-Enterological Assn., Atlantic City, May 3-4.
American Gynecological Society, Chicago, May 24-26.
American Laryngological Association, Boston, May 27-29.
American Proctologic Society, Memphis, Tenn., April 22-23.
American Radium Society, New Orleans, April 26.
American Surgical Association, St. Louis, May 3-5.
American Therapeutic Society, Philadelphia, May 7-8.
Arizona Medical Association, Nogales, April 16-17.
Assn. for Study of Internal Secretions, New Orleans, April 26.
Assn. of Amer. Teachers, Diseases of Children, New Orleans, April 27.
Assn. of Military Surgeons of the U. S., New Orleans, April 24.
California State Medical Society, Santa Barbara, May 11-13.
Connecticut State Medical Society, New Haven, May 19-20.
Georgia Medical Association, Macon, May 6-8.
Illinois State Medical Society, Rockford, May 18-20.
Iowa State Medical Society, Des Moines, May 12-14.
Kansas Medical Society, Hutchinson, May 5-6.
Louisiana State Medical Society, New Orleans, April 24-26.
Maryland, Med. and Chir. Faculty of, Baltimore, April 27-29.
Medical Veterans of the World War, New Orleans, April 26.
Michigan State Medical Society, Kalamazoo, May 25-27.
Mississippi State Medical Association, Jackson, May 11-12.
Missouri State Medical Association, Jefferson City, April 6-8.
National Tuberculosis Association, St. Louis, Mo., April 22-24.
Nebraska State Medical Association, Omaha, May 24-26.
New Hampshire Medical Society, Concord, May 12-13.
North Carolina State Medical Society, Charlotte, April 20.
Oklahoma State Medical Association, Oklahoma City, May 18-20.
South Carolina Medical Association, Greenville, April 20-21.
So. Section Am. Laryn., Rhin. & Otol. Society, New Orleans, Apr. 27.
Tennessee State Medical Association, Chattanooga, April 6-8.
Texas State Medical Association, Houston, April 22-24.
The Radiological Society, New Orleans, April 23-24.
Western Electro-Therapeutic Association, Kansas City, Mo., May 27-28.
West Virginia State Medical Association, Parkersburg, May 18-20.

ANNUAL CONFERENCE ON PUBLIC HEALTH AND LEGISLATION

Held under the auspices of the Council on Health and Public Instruction of the American Medical Association, March 4, 1920

DR. VICTOR C. VAUGHAN, Ann Arbor, Mich., in the Chair.

Chairman's Address

DR. VICTOR C. VAUGHAN, Ann Arbor, Mich.: There has never been a time when so many people were interested in public health as at present. National health associations specially interested may be divided into official and voluntary. The federal Public Health Service arrested bubonic plague and held it in abeyance at a total cost of between 200 and 300 lives on the Pacific Coast, when it might have spread all over this country. Splendid work has been done on pellagra. Its etiology has not been settled, but the work of Goldberger and his associates on the influence of diet on pellagra is a wonderful demonstration. The laboratory work of the Public Health Service, the testing of animal products, the research work on typhus fever, and anaphylaxis are among the most valuable activities of the United States Public Health Service. But the federal government cannot go into a state and do health work, unless requested by the state to do so. The exercise of medical functions, whether the regulation of medical practice or preventive medicine, is under state control, and I think it is rather fortunate that this is the case, because, divided as we are into forty-eight political groups, we do not have to make the same experiments at the same time. Other organizations of officials I might mention are the Conference of State Health Officers and the American Public Health Association. No better work is being done anywhere than by the International Health Board. We all know the splendid work the Red Cross did during the war and the admirable support received from the people. The Red Cross found itself at the end of the war with a great organization. With thousands of nurses, hundreds of medical officers, with millions of dollars, and plenty of work to do in Europe, the Red Cross is continuing to do that work in a most splendid way. The National Tuberculosis Association, founded in 1904, has continued to expand, and receives its revenue from the Christmas sale of stamps, which last December amounted to $4,200,000. The Association for Social Hygiene is a national organization interested in venereal or so-called social diseases, and just now there is a great deal of enthusiasm being displayed in reference to this work. The child welfare movement is more or less mixed up with the health crusade under the management of the National Tuberculosis Association; but as long as the children are getting the benefit, it does not make any difference where the aid is coming from.

Report of the Secretary

DR. FREDERICK R. GREEN, Chicago: This is the first Conference on Public Health and Legislation called by the Council on Health and Public Instruction since Feb. 6, 1917. The absorption of the public and the profession in the war rendered it inexpedient to hold a conference in 1918 or 1919. Owing to the activities and lessons of the war, the attitude of the public toward health matters is today entirely different from that of five years ago. The public health movement is rapidly passing out of the propaganda stage and is entering the constructive period. What the public wants to know today is how diseases can best be prevented and efficiency maintained at the highest point. The duty of physicians, both as individuals and as organizations, is to furnish plans for the development of governmental health agencies for each of our political units from which can be constructed the best type of organization for health conservation.

One of the greatest possibilities for usefulness in the annual midwinter conference is the opportunity which it offers for concentrating at one time and place many of our meetings and independent bodies which are now scattered throughout the year. One of the most important functions of the Council has been to act as a hub around which other movements and organizations could center. If this annual conference can be made the rallying point for as many other conferences, meetings and organizations in the health field as possible, we shall be able to secure greater effectiveness at a diminished cost, which is the essential problem of all administration.

Standardization of Public Health Activities

DR. GEORGE E. VINCENT, New York: This paper will appear in full in an early issue of THE JOURNAL.

The Standardization of State Public Health Organizations

DR. CHARLES C. CHAPIN, Providence, R. I.: When we talk about standardizing public health work we mean about what the manufacturer means by standardizing his workshop. We mean that health officers should be encouraged to adopt the very best and latest methods, and that the retention of obsolete and useless methods should be discouraged. Accepting this definition of standardization, we ask: What are the means best calculated to promote the desired improvement in the public health work of the states? Every health officer would like to improve his service. There are two main reasons why he does not do more: he does not know what to do and he has not the funds wherewith to do it. There are a lot of people who will disagree with me because I am inclined to place the greater importance on the former. The first step is to show him what others are doing and what he can and should do. One important means of standardizing state health work is to show what is being done in every state, and analyze and arrange the data so that the facts may be easily found. This is no small task, and is impossible without the assistance of the state health officers themselves. A questionnaire is a terrible thing, yet it seems to be necessary. To find what a health department is really doing, numberless questions must be asked; and to answer them correctly often requires a great deal of time and trouble on the part of a great many persons. Another important point in the organization of health work is the consideration of

relative values. It is not enough to demonstrate that the state supervision of water supplies reduces typhoid fever, that the giving of antirabic treatment prevents rabies, that the inspection of milk raises the bacterial standard, and that the operation of a sanatorium restores sick people to health. We should know, if possible, how much sickness is saved and how many deaths are prevented. Accurate accounts should be kept by every health officer of each definite line of work which he is following. One of the rarest things to find in a health office is accurate cost accounting. Uniformity in all parts of the reports of state health departments would make for economy and efficiency. Every report should contain certain standard and uniform tables of mortality and morbidity statistics. The work of every division of the department should be set forth clearly and simply, and numerical statements should be inserted whenever practicable. Much can be done to standardize and improve the work of state health organizations by a survey of their activities with a comparison of costs and results. The results of the survey should be widely distributed, and the report should include a numerical rating of the states. The collection of the data would be greatly facilitated by uniform accounting and reporting. State health officers could provide for this through a committee to consider the relative importance of health activities and the standards on which a rating should be based. A survey, however, cannot well be made by state officials. It had much better be made by some agency entirely independent of them. A survey should be made periodically, perhaps every five years. Sanitary science is growing rapidly, and sanitary practice should keep pace with it. Such surveys are expensive, but before the war the states were spending annually more than $3,250,000 for public health. The amount is far greater now. A small fraction of 1 per cent. of this would be a small sum to pay for taking account of stock.

Standardization of Municipal Health Organization

DR. ALLAN J. MCLAUGHLIN, Washington, D. C.: Standardization is both feasible and desirable to standardize "objectives" in municipal health work; but standardization in detail of methods of procedure is extremely difficult, and in many instances may be undesirable. Fundamentals in public health work are the same for all cities, and these may be standardized. These are the factors in the public health problem which are common to all cities. Standardization by an authoritative agency will be of inestimable value to the health officer in having charged to other departments the cost of the indirect health activities which are often paid for out of health appropriations. In initiating new work, standardization will be of great assistance, but its greatest aid will often be the demonstrations made by voluntary unofficial agencies. Thus, in standardizing health departments, which really means reorganization of health departments, the voluntary and unofficial agencies engaged in health work must be considered and their activities utilized to cover gaps in the official campaign. What are the aims of an ideal health department and the objectives which it seeks to attain, and what are the fundamentals of organization? The aims of health departments are the eradication of preventable disease, the elimination of corrigible physical and mental defects, and the maintenance of all individuals in the best possible physical and mental condition. In carrying out these aims we have as objectives the prevention of infant mortality, the prevention and correction of physical and mental defects in the child, and the prevention of preventable diseases. To accomplish these aims and to obtain these objectives we must consider these fundamentals in our health machine: administration, vital statistics, child hygiene, industrial hygiene, communicable diseases, public health education, sanitary engineering, food inspection, hospitals and sick relief. Standardization of the fundamentals of organization can be effected on a nation-wide basis, and a committee on standardization could formulate the general classes of work which should be undertaken in every municipal health department. An example of the value of such standardization is the possibility of securing epidemiologic data in usable form, by a proper employment of the vital statistics division, and the regular field force of the department. The committee on standardization can make very useful recommendations for the transfer of much of the work of abating nuisances, and the collection and disposal of garbage and refuse to other departments; but here again local conditions will determine how best to adjust the work in each city. The greatest single defect in municipal health organization today is the lack of machinery for coordinating and utilizing voluntary and unofficial agencies in an official plan to insure teamwork.

DISCUSSION

DR. C. ST. CLAIR DRAKE, Springfield, Ill.: My own conception of standardization is the development throughout the nation of health department machinery to the highest point of efficiency consistent with the law; along uniform lines which will permit the best coordinative functioning with all governmental and extragovernmental health agencies; with an internal arrangement of bureaus or divisions which will make possible the highest degree of cooperation with the minimum of duplication of effort. I naturally view this question from the standpoint of the state health officer. Any acceptable form of standardization must take into consideration these fundamental points: (1) a definition of what constitutes public health work; (2) definite knowledge of what all other states are doing and of the type of machinery employed by them; (3) the adoption of a definite policy of relationship to other states' health departments, to the federal government, to local health authorities, to extragovernmental health agencies and to the public at large; (4) the determination of the functions which shall be carried out by the state health department and of those which are to be imposed on other state departments; (5) the determination of the type of organization most desirable for state health departments, and the essential divisions and bureaus and their relationship to each other; (6) the determination of a reasonable and acceptable policy in dealing with extragovernmental health agencies, and (7) the determination of the extent to which federal aid in state public health work is properly to be encouraged. Any form of standardization requires a thorough knowledge of what other state health departments are doing and how they are doing it, so that there may be uniformity of procedure. Without this knowledge, it is practically impossible to compare the different departments, to interpret their reports and financial statements, or to determine the comparative efficiency of any individual department.

There should also be developed a well defined departmental policy based on a reasonable interpretation of the law; a policy in which the law is not employed as the means of evading obligations or of passing on responsibility, and a policy which does not assume more power than the statutes actually give or more than the courts would reasonably sustain.

There is also a serious need for some definite policy as to what functions the state department of health should perform, and what functions should be relegated to other state departments.

DR. ENNION WILLIAMS, Richmond, Va.: The value of any particular public health method should be ultimately measured by the morbidity or mortality statistics, and no one would undertake to interpret the results of statistics until several years shall have elapsed. For instance, for the last three years, we have been carrying on a rather active campaign in the public schools by circularizing teachers and education work to inculcate those personal habits that would prevent the transference of mouth secretions. The statistics for two years following the introduction of this measure would indicate more than 50 per cent. reduction in deaths and in cases of scarlet fever and diphtheria. Yet I would not be willing to say from the experience of two years that this measure was or was not responsible for the reduction, and consequently its value cannot yet be demonstrated. We, therefore, cannot even compare its value with the customary methods of quarantine and disinfection, which are more costly and require greater health organizations. Thus, no numerical valuation can yet be placed on such measures; also, there is likely to be a great difference of opinion as to the value of measures until they are demonstrated by statistics.

DR. W. S. RANKIN, Raleigh, N. C.: I believe in numerical scoring, not only in interstate work but also in the work of states. We do it in dairies, and in the medical inspection of schools. I am working out a system of numerical scoring for county health departments, taking the various units, or county health problems, and all the items of work embraced in those units and giving each item and each unit a financial equipment.

DR. SAMUEL J. CRUMBINE, Topeka, Kan.: I think it is appropriate for this conference, composed of health officers and members of the medical profession, to make a request of the Rockefeller Foundation to make a survey of extragovernmental agencies. If this were done I believe it would receive serious consideration. I know of no agency better fitted to undertake that work. It would be an authoritative utterance on that question.

DR. ALLEN W. FREEMAN, Columbus, Ohio: It is essential to get all the people who are interested in this health movement to recognize the necessity of laying a sound foundation. We should strive to develop a sound sentiment for health among the people, and then build a sound structure, with competent people to run it, a decent scale of salaries, and work by an administrative system covering the whole state.

DR. HAVEN EMERSON, New York: There are three absolutely indispensable functions which should be standardized: costs, results, and the control of communicable diseases. It is the function of the Public Health Service of the United States to call the attention of state health officers and local health officers to the possibility of standardizing cost accounting for public health functions. We ought to be able to show how much it costs to carry on a certain definite function. It ought to be possible to get comparative data on specific functions in communities that have organized health departments.

DR. H. N. OLIN, Lansing, Mich.: We shall find it difficult to standardize methods of accounting. I am in favor of the standardization of public health activities. Let us know what our neighbors are doing. As commissioner of health of Michigan, I should like to know the details of the health work in Massachusetts, Ohio and some of the other states, so as to give the people of Michigan better health service.

DR. FRANK BILLINGS, Chicago: I want to speak on two points. First, the need of publicity to educate the people, which is one of the reasons the American Medical Association organized its Council on Health and Public Instruction. There are approximately 80,000 members of the American Medical Association, representing the best elements of the medical profession of the country. They are interested in health and in the prevention of disease. The central office has a card index, not only of every member of the association, but of every physician in the country. Probably there is no other body of men in the country with the facilities of communication not only with organized county and state societies but also with individuals who are interested in health matters. Second, in taking up the matter, the American Medical Association had no thought of dominating the field of health, but at the time the Council on Health and Public Instruction was organized there was very little cooperative work with all the health agencies of the country, and its policy was to try to get together all of these health agencies for the purpose of concentration of effort and teamwork. I believe it has done a vast amount of good in that respect.

DR. RACHELLE S. YARROS, Chicago: The state and local boards of health have tried to enforce measures that the people do not understand. If we expect support from the people we must educate them as to what we really want. State and local boards of health should also educate physicians because many of them do not understand what we are aiming at. If we educate the people, we shall get their support.

DR. S. W. WELCH, Montgomery, Ala.: All public health work must be done by governmental agencies. We must have something around which voluntary agencies can be coordinated; and until we have a county health organization, which takes in the county as a unit, and around which can be collected and directed the activities of the general public, we are not going to get anywhere in that community. County organizations should function with the state organization.

DR. HENRY VAUGHAN, Detroit: We ought to have some centralized place where the vast amount of information collected from the different health departments throughout the country can be made available to local and state health departments. I should like to know something of the details of venereal disease control and the measures that are carried out in different parts of the country. To do that a questionnaire can be sent to every local or state health officer in the Union.

DR. GEORGE E. VINCENT, New York: If the Rockefeller Foundation were asked to cooperate in such an undertaking as that mentioned by Dr. Vaughan of collecting information, I am sure its board of trustees would be willing to cooperate with some representative agency that stood before the public authoritatively for whatever it did; and if a constructive cooperative program, based on the requirement of information and cooperation with individual state departments in building up their work, were carried out, it would be very carefully and sympathetically considered by the board of trustees of the Rockefeller Foundation.

DR. CHARLES V. CHAPIN, Providence, R. I.: It would be a good plan for somebody to make such a survey as we have been discussing. Many state health officers desire to have such a survey made. As to uniform reports of accounts, I believe that of very great importance; but I am afraid many health officers do not realize the tremendous importance of it.

(To be continued)

ANNUAL CONGRESS ON MEDICAL EDUCATION AND LICENSURE

Joint Annual Conference of the Council on Medical Education of the American Medical Association with the Association of American Medical Colleges and the Federation of State Medical Boards of the United States, held in Chicago, March 1-3, 1920

(Continued from page 913)

Report of Committee on Public Health and Preventive Medicine

DR. VICTOR C. VAUGHAN, Ann Arbor, Mich.: The trend and spirit of medical schools is toward curative medicine. The graduates of our best medical schools today are not fitted to do public health work. The committee recommends that an improvement be made in this direction. During the last two or three years the National Board of Medical Examiners, examining graduates from Class A schools only, and the very best graduates of those schools, has scarcely found men who could get a passing mark in preventive medicine, although there have been excellent marks in surgery, medicine and the specialties. It is a matter for consideration whether the medical profession should fit men for preventive medicine or turn the job over to somebody else. The sanitary engineer as an all around man is better fitted as an epidemiologist than the average physician. A number of medical schools are now offering courses in public health. They have had a very precarious existence. The best public health courses are given at Harvard and at the Johns Hopkins schools, and in neither of these places is the attendance large enough to justify the existence of the school. The regulations of most of the states and many municipalities have been changed so that a medical degree is not required for health officers. Some of the best municipal health commissioners today are not physicians. In our opinion the tendency in all medical schools is to teach curative medicine, not prevention. The committee recommends that we insist that medical men who are fitting themselves for health officers should take an additional course of not less than two years. Even to make proper medical men we need more hygiene and preventive medicine in the medical course than we have. We recommend that five hours a week for one year be devoted to preventive medicine—double the amount of time we are now giving to this branch—and we do not expect to make expert

epidemiologists in this way, but possibly we can give what the ordinary practitioner needs.

DISCUSSION

DR. ALEXANDER C. ABBOTT, Philadelphia: The University of Pennsylvania in 1906 offered the first course leading to the degree of Doctor of Public Hygiene. For four years we did not have a single applicant, but in 1910 we had one applicant. Since that time we have graduated thirty-three with the degree of Doctor of Public Hygiene, and we have given a number of certificates to persons taking special departments of the work who were not qualified for the degree. I still regard the work as being to some extent experimental. The qualifications for the degree have been that a candidate shall become a Doctor of Medicine, and that the Doctor of Medicine degree should stand for the same preliminary requirements for the degree that we now require for persons entering the University of Pennsylvania Medical School. As a result, we have had satisfactory material to work on. I should say the supply and demand will control this, and the future is safe, because I take it for granted that others, who are making an honest effort to push this thing, and not rush it, are in the same position that I am. I have on my desk, more or less all the time, applications for persons to fill desirable positions. The future possibility of supplying the demands is daily growing larger.

DR. EUGENE F. MCCAMPBELL, Columbus, Ohio: At the Ohio State University we started several years ago to give a course in preventive medicine. For four years, we had a cooperative course with the state department of health. The work in preventive medicine covers the situation well. In the Ohio State University we give a course in personal hygiene in the first year in medicine. The course in clinical medicine, in which epidemiology and communicable diseases come into play, is given in the junior year. The senior year is covered by a course in preventive medicine of only two hours. I think the five-hour course referred to by Dr. Vaughan is probably adequate for the medical student, except for those who desire to enter the field of industrial medicine. Opportunities for election should be given in the junior and senior year, particularly in the senior year, for intensive study of public health work. The demand far exceeds the supply. In the state of Ohio, large commercial concerns are asking for young medical men trained in public health work, particularly in preventive medicine, industrial medicine and surgery, etc., and it is impossible to supply properly trained men.

DR. JOHN SUNDWALL, Minneapolis: Public health workers in the future should be in largest measure recruited from members of the medical profession. There is no question at all that sanitarians or other members from other professions are making good health officers. The same thing is true of a great many of the sciences that make up the medical profession. Many of our best anatomists have been recruited from the departments of zoology and biology. Public health in the future is going to be concerned with a great many bigger problems than those concerned with epidemiology, such as human welfare and mental hygiene. Industrial hygiene will be expanded to include all adult hygiene.

DR. GEORGE M. KOBER, Washington, D. C.: I have been teaching hygiene since 1889, and I want to make a plea in favor of the report of the committee for a greater number of hours in the curriculums of our medical schools for this branch. In our own school we give sixty hours to general hygiene, thirty hours to the etiology and prevention of communicable diseases, and fifteen hours to military and naval hygiene. I believe that number of hours devoted to these subjects is no more than sufficient to be of substantial aid to the average practitioner in the treatment of disease. The object of hygiene is not only the prevention of disease but also the improvement of health, which is a most important factor in the treatment of disease.

DR. G. CANBY ROBINSON, St. Louis: At Washington University we have a course of thirty-three hours in preventive medicine, and eleven hours of social medicine. We have considered ways and means of improving matters, and have discussed a plan of departmental cooperation in these matters, putting one person in charge of the course, but having all the departments participate in the working out of the completed course.

DR. A. P. MATTHEWS, Cincinnati: Dr. Vaughan's recommendation was mainly along the line of epidemiology, but there is an important field in industrial hygiene and medicine, particularly the character of people engaged in these industries. The University of Cincinnati gets support in its departments of industrial medicine and preventive medicine for public health, from the business men of Cincinnati. At the suggestion of the late Dr. Holmes, a committee of business men secured money to support the department of industrial hygiene. There is undoubtedly a great possibility of the medical profession's getting in closer touch with business industries through this means.

DR. E. P. LYON, Minneapolis: I have a feeling that as more and more subjects are pressed on the medical curriculum for entrance, we shall have to do exactly what the colleges did and make a curriculum which will be more particularly elective than any school so far has done. That will mean we shall have to specialize in degrees, and certain men who are not qualified for licensure should be content to continue their fundamental preparations until they are. We might call them all doctors when they are trained on the proper basis and fitted for the work that has to be done. Or we should view the matter from the standpoint of general good.

DR. OSKAR KLOTZ, Pittsburgh: We all realize that each school has a duty to perform which differs with the situation of the school, and it is hard to apply one standard to every school. Our own situation is much like that in Cincinnati. We have certain problems in our vicinity of outlining education in which the public is interested. If we should follow the standards of the U. S. Public Health Service in hygiene we should fail in the result. We have an industrial situation that is peculiar. The ordinary individual who has had training in hygiene is hardly able to realize the extent to which the public demands attention. The standardization of departments of hygiene is very difficult.

DR. WORTH HALE, Boston: We are developing an elective system at Harvard in the study of these problems, and are permitting fourth year men to elect a course dealing wholly with problems related to public health, hygiene and industrial medicine. We do not anticipate that they will become finished products in these subjects, but we hope that a certain group of men will become interested so that they will continue further in the work which appeals to them and thus supply some of the demand that appears to be urgent.

DR. VICTOR C. VAUGHAN, Ann Arbor, Mich.: The prime and particular object of a medical school is to teach preventive medicine and curative medicine. A school for hygiene should not be under the medical department. I hope that schools of hygiene will be open not only to medical graduates but also to the sanitary engineer, the sociologist, or to any one who is interested.

Report of Committee on Teaching of Pharmacology

DRS. A. N. RICHARDS, TORALD SOLLMANN and C. W. EDMUNDS: Pharmacology has profited greatly by the advances in medical education which have taken place in the past ten or fifteen years. New departments have been established in schools where none existed before, and where the teaching of this subject was under the control of some other medical branch, it has been split off and established as a separate and distinct department. The teaching of the subject has been simplified also through the aid of the state licensing boards, which are confining their attention in examinations to the more important drugs, to the exclusion of those of lesser importance. It is hoped and expected that these tendencies, if continued, will still further advance the teaching of pharmacology in the future. In regard to the contents of the course in pharmacology, the student should learn what the really useful drugs are, and also the limitations of their usefulness. He should learn their fundamental action and their side actions. These studies lead naturally

to a study of their toxicology and to the treatment of poisoning. He must learn sufficient materia medica to know something of the physical and chemical characters of the drugs and of their principal preparations, so as to be able to prescribe them correctly, and he must become fairly proficient in prescription writing. He should also be required to practice the writing of prescriptions in his later clinical courses in medicine and in therapeutics whenever an occasion for the use of drugs arises. Some instruction in therapeutics may be given, but the practical work in this branch must necessarily be left for the hospital ward.

The time to be devoted to the subject should be from 175 to 200 hours, not taking into consideration the teaching of practical therapeutics. This may be divided roughly into two parts: from seventy-six to 100 hours to be devoted to laboratory instruction, and the remainder to a systematic lecture or quiz course. The laboratory time, in turn, may be divided into two parts if desired: one part devoted to materia medica and pharmacy being given in the first year, and the other portion devoted to pharmacodynamics proper being given in the second year. Or, if preferred, the entire time to be spent in laboratory instruction may be utilized in one course to be given preferably in the second or third year. In this course a few hours may be devoted to pharmacy and to the chemistry of drugs, but the greatest emphasis should be laid on experimental pharmacodynamics. As far as possible, the experiments should be carried out by the students, working in groups under adequate supervision; but when the experiments are not suitable for students to carry out the work themselves, demonstrations may be substituted. Carefully kept notes of all the experiments should be required of all the students. The laboratory course should be rounded out by frequent informal conferences, quizzes and lectures, so as to give the student an intelligent knowledge of the subject under discussion. Some introductory work in the prescribing of the commoner remedies may also be given in the laboratory course. The remaining seventy-five or 100 hours to be devoted to the subject may be utilized according to the wishes of the instructor in charge, either as a lecture course with frequent quizzes or as a quiz course proper following one of the standard textbooks and supplemented by lectures on different phases of the subject. This course should follow on the completion of physiology and would, therefore, naturally come in the second year or early in the third. It should cover such materia medica as may seem essential; prescription writing, which should be practiced at every opportunity, but, above all, a thorough study of the pharmacology of the more important drugs, with briefer reference to those of lesser importance and the ignoring of those which should be discarded entirely. Such mention of therapeutics may be made as will serve to assist the student in the memorizing of his pharmacology and lend greater interest to the subject, and, in addition, give him a foundation for the courses in practical therapeutics which will be given him later.

DISCUSSION

DR. A. N. RICHARDS, Philadelphia: The spirit is the thing on which we should concentrate, and the letter consequently will take care of itself. Laboratory work and laboratory methods represent the nucleus about which the course in pharmacology must center. By laboratory work I mean not only that which the student does himself, that is, the beginning, but that which he is shown by an expert instructor of experiments which he is unable to do, which experimental work is the body of knowledge which represents science. The student must be brought to know what people have been thinking about whenever they advise experiments; and to interpret the results of the experiments, he must learn something of the value of evidence and the capacity to interpret evidence. Then he will be in a position to protect himself against embarrassment and against the half digested views of others with whom he may be confronted later on. If we can impart spirit to the student, make him see that the subject is alive, that it is a fallible thing, that it is full of holes and lots of opportunities for differences of opinion, and that the subject is intrinsically difficult, we shall have accomplished half of our task.

DR. JOHN W. SCANE, Montreal: If a student in pharmacology is given a synopsis of the things in his hands, with clear directions that he is to perform certain experiments, and is left alone to work them out in his own way, giving him no spoon feeding, no actual assistance in the performance of these experiments, and then checking the work up at the end of the laboratory period on that subject, he will do much better work. We have pursued that method at McGill in the last few years with more satisfactory results than formerly.

DR. WORTH HALE, Boston: One has to adapt the course to meet local conditions. We teach very little materia medica and pharmacy. We attempt to give the student a great many chemical relations of drugs in the laboratory, and devote about an equal amount of time to pharmacodynamics. The more I teach, the more I am impressed that a student can frequently get facts and historical knowledge more easily from reference textbooks and original papers than he can from laboratory experiments themselves.

DR. HUGH MCGUIGAN, Chicago: One of the greatest handicaps I find in the students that come to us is that eight out of ten know very little or nothing about chemistry. If pharmacology is indicated, it is applied organic chemistry, and the men do not know it.

DR. ALEXANDER MACALISTER, Trenton, N. J.: As a member of the state board of examiners, in conducting examinations in materia medica and therapeutics I find that applicants for licensure are very deficient in their knowledge of dosages and in prescription writing. At our last examination, out of twenty-six applicants, there were only two who could write prescriptions properly. I think this is largely due to the fact that these branches are taught imperfectly in the majority of medical colleges.

Pathology, Bacteriology and Parasitology

Papers were read by Dr. James Ewing, New York, on "Pathology," and by Dr. A. I. Kendall, Chicago, on "Bacteriology and Parasitology."

DISCUSSION

DR. LOUIS B. WILSON, Rochester, Minn.: I cannot wholly agree with Dr. Ewing regarding the impossibility of teaching men necropsy technic in the undergraduate course, but I do agree as to the undesirability of teaching men how to perform operations for the removal of brain tumors. It is not impossible to teach a man quickly and reasonably a good necropsy technic, and unless we teach them they will never do it.

DR. J. P. JOBLING, New York: Pathology is probably the first subject the medical student takes up, in which he applies to a large degree the work he has already gone over. To a certain extent that includes anatomy, bacteriology, physiology, biologic chemistry, etc. Pathology should be taught to as large a degree as possible by actual observation, by experimental work, and by actual necropsy work.

DR. OSKAR KLOTZ, Pittsburgh: We are realizing more and more that pathology is only a special department dealing with morbid anatomy, but more and more we must realize the human side of the subject. It has been stated several times at this meeting that pathology forms more or less of a link between the fundamental departments and clinics. It has all the attributes of the fundamental departments in their ideals. It has also another attribute of its own, and that is of making it eminently human in its application to disease. That is much more difficult than to bring in some of the other fundamental departments, such as anatomy and chemistry, but pathology is one of the subjects concerning which the student realizes, for the first time, that he is approaching his ideals in medicine.

DR. ALEXANDER C. ABBOTT, Philadelphia: The burden of the song throughout this conference has been that there is a distinct and conspicuous line of demarcation between the fundamental sciences and the practical branches of medical teaching. Let us teach our sciences in the first two years, but let us develop in some way, either at the end of the second year or in the third year, a first class, gilt edge clinical laboratory, in which we shall have coordinated all of these more or less abstract sciences, a laboratory so equipped

that these sciences can be brought to bear directly on the cases seen in the dispensary and hospital.

Dr. H. Gideon Wells, Chicago: I wish to emphasize what Dr. Wilson said about the desirability of teaching pathologic technic with laboratory animals. We can do that easily enough, but how few laboratories do it? You can give a man a good fundamental grounding in technic by using selected material.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Review of Tuberculosis, Baltimore

February, 1920, **3**, No. 12

*Artificial Tuberculous Infection of Guinea-Pigs Through Respiratory Route. J. B. Rogers, Cincinnati.—p. 750.
*Pulmonary Syphilis. E. H. Funk, Philadelphia.—p. 754.
Three Cases of Spontaneous Pneumothorax. E. Morris, New Haven. —p. 763.
*Spontaneous Pneumothorax Following Artificial Pneumothorax; Operation; Recovery. C. H. Cocke, Asheville.—p. 781.
*Case of Pulmonary Tuberculosis Terminating in Spontaneous Hemopneumothorax Following Artificial Pneumothorax. F. H. Heise and A. K. Krause.—p. 788.

Tuberculosis Infection of Guinea-Pigs by Inhalation.—Rogers reports further experiments on the production of pulmonary tuberculosis in guinea-pigs by the inhalation of tuberculosis material. In all the experiments the guinea-pigs were wrapped so that only their nostrils were exposed to the spraying. All animals giving a single spraying of five minutes with a suspension of tuberculosis sputum developed pulmonary tuberculosis. Particles of tuberculosis sputum containing tubercle bacilli placed on the normal nasal mucous membrane brought about tuberculosis changes in the cervical lymphatic glands with involvement of the lungs, liver and spleen later.

Pulmonary Syphilis.—Funk believes that late syphilis of the lung occurs clinically more often than is generally taught. Diagnosis is difficult and judgment may have to be suspended until syphilis has been controlled by treatment, when "apical râles" will clear with the associated bronchitis if signs are due to syphilis. The author reports in detail three cases of what he believes was pulmonary syphilis that have come under his own observation.

Operation and Recovery in Spontaneous Pneumothorax Following Artificial Pneumothorax.—A patient with acute tuberculous bronchopneumonia was treated by artificial pneumothorax. Thirty-four days after the first introduction of nitrogen gas, and following a coughing fit, spontaneous pneumothorax developed. At first partial, within twelve days the spontaneous pneumothorax had become complete, and purulent fluid developed in the chest. The patient became very septic and gravely ill and on the eighteenth day of the spontaneous pneumothorax a rib resection was done under local anesthesia. Cocke says that after surgical operation, the patient's relief was spectacular and that his fever disappeared within a day or two and has remained normal since.

Spontaneous Hemopneumothorax Following Artificial Pneumothorax.—Heise and Krause report the case of a man, aged 21, who had hemoptysis and pain in his chest. These symptoms were so indefinite that diagnosis at first was only tentative. He did well for several months but then his condition became less favorable. After six months he was continually febrile and was having more hemoptyses. Meanwhile, his signs indicated a slight stationary process, while the roentgen-ray showed markedly progressing involvement. The fifty-sixth examination was positive for the first time. By this time the patient was gravely ill. Artificial pneumothorax was performed. The next day, after raising himself in bed, the patient suddenly experienced a sharp stabbing pain in his left side. The patient went into collapse and died fourteen hours after the rupture of his lung. At necropsy, it was found that the pneumothorax needle had not injured the patient's lung. On the anterior surface near the caudal tip was a tear of the pleura over a small cavity and close to a short and very thick adhesion. The entire left lung was involved with a caseating process that was cavitating at numerous places. The left thoracic cavity contained about 2 liters of clotted blood.

Arkansas Medical Society Journal, Little Rock

February, 1920, **16**, No. 9

Review of Diagnostic Methods. W. M. McRae, Little Rock.—p. 171.
When, Where and How to Operate in Fresh War Wounds. L. J. Kosminsky, Texarkana.—p. 176.
Ileocolitis. J. W. Melton, Benton.—p. 178.

Canadian Medical Association Journal, Toronto

March, 1920, **10**, No. 3

*Plasmoma of Nasopharynx. J. T. Rogers.—p. 223.
Tuberculosis of Urinary System. J. E. Palmer.—p. 225
Pyloric Stenosis of Infancy. F. W. Stockton.—p. 230.
Case of Chronic Middle Ear Suppuration, Cholesteatoma, and Mastoiditis, Complicated by Labyrinthitis, Sinus Thrombosis and Meningitis. J. K. Milne Dickie.—p. 238.
*Treatment of Obstructive Dysmenorrhea. E. V. Frederick.—p. 243.
Causes of Tick Paralysis of British Columbia, Rocky Mountain Fever, Infective Jaundice and Yellow Fever. J. L. Todd.—p. 245.
Renal Calculus. W. Hutchinson.—p. 250.
Some of Severer Forms of Chonic Headaches. W. J. Chambers. —p. 256.
Cases of Ectopic Pregnancy. F. W. Gershaw.—p. 261.
Chronic Intussusception with Polypus. L. G. Pinault.—p. 265.
Case of Endothelioma of Pleura with Multiple Metastasis. A. Vallee. —p 268.
Aphasia in a Left-Handed Individual Consequent on a Right Cerebral Lesion. F. B. Gurb.—p. 270.
*Retroperitoneal Congenital Cyst Probably Arising from Wolffian Body. J. M. Elder.—p. 272.
Buried Chromic Catgut Sutures Acting As Foreign Bodies and Causing Recurrent Abscesses Thirty Years After Their Insertion. J. M. Elder.—p. 273.
Scurvy. F. G. Finley.—p. 274.
Tabes Dorsalis with Gastric Manifestations. A. H. Gordon.—p. 275.

Plasmoma of Nasopharynx.—Rogers reports a case in which posterior rhinoscopy revealed an uneven granular looking hemorrhagic mass, completely filling the nasopharynx and seeming to spring from its vault. The surface of the tumor showed areas of fresh and old bleeding. Digital palpation through the mouth suggested a movable and rather firm growth, any manipulation of which resulted in a persistent but not alarming hemorrhage. At this time Rogers considered the case one of nasopharyngeal fibroma. A general examination showed various systems normal. The growth was removed whole. Sections showed that it consisted essentially of plasma-like cells. A diagnosis of plasmoma was made. The tumor took origin from the inferior border of the cushion of the eustachian tube and the neighboring surface of the soft palate. A search through the literature and textbooks has failed to discover a similar case. The pathologic files of the Royal Victoria Hospital during the past five years record only two cases of plasmoma, one the subject of this paper and another which arose from the medulla of the bone.

Treatment of Obstructive Dysmenorrhea.—To overcome the objections and retain the beneficial effects of a glass cervical stem, Frederick constructed a thick hollow glass tube, 2 inches long, one-half inch in diameter, with the upper end smoothly rounded in the flame to the lower end of which a round flat vulcanite boss is firmly fastened. In the side of this vulcanite two small holes are drilled large enough to pass a needle and silk suture. The advantages of this instrument are said to be: (1) full dilatation; (2) free exit for discharges; (3) a means for suturing it firmly with silk so that it may be retained firmly as long as desired; (4) protection against rectovaginal wall perforation. The stem has been found satisfactory in the treatment of obstructive dysmenorrhea in selected cases.

Retroperitoneal Congenital Cyst Probably Arising from Wolffian Body.—A baby girl, aged 2 years, sustained an injury to the right kidney as evidenced by blood in the urine and reactionary temperature. The injury caused a congenital retroperitoneal cyst on the same side to undergo rapid increase in size. The anatomic situation and the general characters of this cyst were such as in Elder's opinion to warrant a diagnosis of cyst of the wolffian body.

Canadian Journal of Mental Hygiene, Toronto

January, 1920, **1**, No 4

Responsibility of the Medical Profession in Program for Mental Hygiene. A. T. Mathers.—p. 295.
Mentality of Convalescence. C. E. A. Bott.—p. 302.
One Thousand Psychiatric Cases from Canadian Army. C. K. Clarke.—p. 313.
Mental Excitement in a Psychopathic Hospital: Its Prevention and Care. E. Mills.—p. 318.
Social Service Problems of Jewish Immigrant. D. A. Fauman.—p. 323.
Applications of Psychiatry to Industrial Hygiene. S. Cobb.—p. 329.
Mental Tests in Practice. A. G. Morphy.—p. 336.

Indiana State Medical Ass'n Journal, Fort Wayne

Feb. 15, 1920, **13**, No. 2

Lipovaccines. A. P. Hitchens, Indianapolis.—p. 41.
Surgical Treatment of Empyema by Closed Method. A. E. Mozingo, Indianapolis.—p. 46.
Mastoiditis at Camp Taylor. J. W. Carmack, Indianapolis.—p. 52.

Journal of Industrial Hygiene, Boston

March, 1920, **1**, No. 11

Control of Infectious Diseases in Industrial Communities. H. Zinsser, New York.—p. 525.
*Chronic Benzol Poisoning. T. M. Legge, London.—p. 539.
Anthrax in Kashmir. R. P. White.—p 541.
Unnecessary Fatigue, A Multibillion Enemy to America. F. B. and L. M. Gilbreth.—p. 542.
Teeth and the Worker. J. Burnet, Edinburgh.—p. 546.
Spirit of Work Under Craft Guilds of Middle Ages. T. M. Legge, London.—p. 550.
Physical Examinations. F. L. Meredith, Boston.—p. 556.

Chronic Benzol Poisoning.—Two cases of purpura hemorrhagica in rubber spreaders are reported by Legge, and he claims that they are the first cases of chronic benzol poisoning known to have occurred in England. The history of these cases was practically identical, commencing with malaise and anemia, which was followed by subcutaneous and submucous hemorrhages, and both men were eventually admitted to hospital suffering from bleeding from the nose, gums and bowels. The blood count in the first case was as follows: red blood cells, 2,800,000 per cubic millimeter; leukocytes, 2,000 per cubic millimeter; hemoglobin, 35 per cent.; color index, 0.6. The chief characteristic of the postmortem examination in both cases was numerous submucous hemorrhages throughout the intestinal tract and under the endothelium of the heart. In the second case, where a more detailed examination was available, characteristic changes were observed in the bone marrow of the long bones. The conditions observed in life and after death were those seen in cases of aplastic anemia and are identical with those which have been noted in twelve cases (all fatal) arising from poisoning by T. N. T.

Journal of Nervous and Mental Diseases, New York and Lancaster, Pa.

February, 1920, **51**, No. 2

Significance of Phylogenetic and Ontogenetic Studies for Neuropathology. B. Brouwer, Amsterdam.—p. 113.
*Australian Epidemic of Acute Encephalomyelitis. J. B. Cleland and A. W. Campbell, Sydney.—p. 137.
*Possible Significance of Babinski and Other Pathologic Reflexes. E. D. Friedman, New York.—p. 146.

Acute Encephalomyelitis.—The authors believe that the paucity of cases in the Australian epidemic is chiefly due to the fact that many individuals in the community react to the presence of the virus and its toxins in the nervous system to such a slight degree that no interference with physiologic function results, hence there are no manifestations of illness. In other individuals the reaction is a degree heavier, and these are the abortive cases; in a few individuals the reaction is great and interference with function is pronounced.

Significance of Babinski Phenomenon.—It is suggested by Friedman that it is possible that all pathologic reflexes are an expression of an atavism. A lesion of the corticospinal system causes man to revert to the stage of the tree climbing monkey in whom there seems to be a dissociation between the great toe and the little toes. The presence of a positive Babinski in epilepsy would be explained by the injury to the corticospinal system and that the reflexogenic zone for elucidating these pathologic reflexes could most readily be explained on the assumption of adaptation to function.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

February, 1920, **14**, No. 6

Effects of Various Colloids and Other Agents Which Produce Anaphylactoid Phenomena on Bronchi of Perfused Lungs. P. J. Hanzlik and H. T. Karsner, Cleveland.—p. 449.
*Effects of Various Colloids and Other Agents Which Produce Anaphylactoid Phenomena on Surviving Intestine and Uterus. P. J. Hanzlik, Cleveland.—p. 463.
Hemagglutination in Vitro by Agents Which Produce Anaphylactoid Symptoms. H. T. Karsner and P. J. Hanzlik, Cleveland.—p. 479.

Effects of Agents Which Produce Anaphylactoid Phenomena on Surviving Intestine and Uterus.—The results of Hanzlik's study sustain the contention elaborated in previous papers as to bronchial musculature, that the disturbances produced by the intravenous injection of agar and various nonprotein colloids, and also arsphenamin, bear no relationship whatsoever to anaphylaxis or anaphylactic shock.

Journal of Urology, Baltimore

December, 1919, **3**, No 6

*Massive Degeneration in Tuberculosis of Kidney and its Rôle in Clinical Cure. A. Randall, Philadelphia.—p. 427.
*Migrating Bladder Stone. B. S. Barringer, New York.—p. 445.
*Method for Control of Hemorrhage After Suprapubic Prostatectomy. B. S. Barringer, New York.—p. 447.
*Case of Blastomycosis Involving Prostate and Seminal Vesicles; Recovery. F. J. Parmenter and B. T. Simpson, Buffalo.—p. 449.
Nephritis in Fifty-Six Soldiers. H. Gray, Boston.—p. 459.

Massive Degeneration in Tuberculosis of Kidney and Its Rôle in Clinical Cure.—Randall pleads for the putting forth of greater effort to establish the possibility of cure by anatomic healing. He reports a case in which renal tuberculosis was not only primary, but was unilateral, and it was likewise completely destructive of the organ. Spontaneous "autonephrectomy" succeeded; the infectious character was ultimately conquered, and the patient succumbed to a disease in no way related to his renal disease—pernicious anemia. The diagnosis was made at the time of the necropsy.

Migrating Bladder Stone.—On making a rectal examination of a man, aged 50, Barringer found just within the anal sphincter a stone nearly as large as a hen's egg. The stone was black, rough and shining like coal. Twelve years before the patient had a perineal section and perineal drainage. Ten years ago he entered a hospital because of partial retention of urine, dribbling and abscess formation in the perineum. He was told that he had a growth in the rectum because of marked constipation and straining at stool. Another perineal section was performed. Ever since this last operation he noted, at intervals, the escape of urine from his rectum and fecal matter from his urethra. For the past six months this has been constant, with great urinary tenesmus and very often fecal and urinary incontinence. He has had the sensation of some obstruction and dull pain in his rectum, and has noted that his stools were ribbon-like. A year ago he again went to a hospital because of an abscess in the perineum. This was opened. The patient has never had a rectal injury, and never had introduced any foreign body into his urethra. He had an attack of gonorrhea at the age of 21. The stone had as a nucleus a piece of the shaft of a long bone. This center nucleus was surrounded by lamellae of phosphatic crystals in which no fecal matter was found except in the way of slight staining. This, in the author's opinion, clearly indicates that the stone arose in the bladder.

Control of Hemorrhage After Suprapubic Prostatectomy.—After enucleation of the prostate, Barringer inserts a strip of 2-inch gauze, several yards in length, through the open bladder into the bed from which the prostate has been removed. The gauze is packed into the prostate bed with the index finger of the right hand, or with a plain thumb forceps, against the counter pressure of two fingers of the left hand which have been previously inserted into the rectum to aid in enucleating the prostate. Enough gauze is used to overfill the prostate cavity. With the hemorrhage controlled, a simple sponge stick is passed into the bladder and the gauze ball grasped by this. The bladder is sutured to the rectus fascia and the hole in the bladder sewed up,

simply allowing space for the gauze and sponge stick. No tubes are put into the bladder but the urine finds exit alongside the sponge stick and gauze. The dressings are changed as often as they are saturated. If the bleeding begins again, pressure on the sponge stick controls it.

Blastomycosis Involving Prostate and Seminal Vesicles.—The patient whose case is recorded by Parmenter and Simpson is said to be one of the few to recover from extensive systemic blastomycosis. Only in the epididymis is there any evidence of the disease after four years, during which time the lungs, skin, muscles of the leg, prostate and seminal vesicles have been involved.

Medical Record, New York

March 6, 1920, **97**, No. 10

Instincts, Emotions and Endocrines in Sterility. S. W. Bandler, New York.—p. 383.
Pandemic of Influenza as it Affected Canton, China. W. W. Cadbury, Canton.—p. 391.
Dreams of Feeble Minded. W. S. Walsh, Providence, R. I.—p. 395.
Intestinal Toxemia; Its Medical and Surgical Treatment. W. F. Burrows and E. C. Burrows, New York.—p. 398.
*Chronic Anilin Poisoning. W. G. Thompson, New York.—p. 401.

Chronic Anilin Poisoning.—A case of chronic anilin poisoning, manifesting all of the typical symptoms, namely, vertigo, gastritis, diplopia, asthenia and an exfoliative dermatitis, is reported by Thompson. The cause of the poisoning was a French hair dye called "goute à goute." The type of anilin was paraphenophendiamin, 2 per cent., hydrogen peroxid, 75 per cent., and alcohol, 23 per cent. Thompson points out that the menace of anilin hair dyes has not yet sufficiently been emphasized to be appreciated generally by the medical profession. The fact that personal susceptibility varies as much as in the case of poisoning, for example, by Rhus toxicodendron, only makes it more difficult always to recognize such cases. It is well to be suspicious of artificial Titian red hair and all the darker shades up to jet black.

March, 13, 1920, **97**, No. 11

*Etiology of Thrombo-Angiitis Obliterans. W. Meyer, New York.—p. 425.
*Chemical Blood Findings in Thrombo-Angiitis Obliterans. A. Bernhard, New York.—p. 430.
*Pathology of Thrombo-Angiitis Obliterans. L. Buerger, New York.—p. 431.
Ureteral Kinks and Their Significance. F. A. Roberts, Newark.—p. 437.
*New Method of Phagocytosis Test, with Blood Plasma. Specific Immunologic Reaction. M. Otani, Tokyo.—p. 439.
Cancer Problem. E. H. King, Portland, Me.—p. 444.

Etiology of Thrombo-Angiitis Obliterans.—Meyer asserts that the characteristics of the patients who are particularly prone to develop thrombo-angiitis obliterans seem to indicate a hereditarily weak sympathetic nervous system. Hence, the functioning of the eliminating glands (kidneys, etc.) innervated by that nervous system, is probably subnormal. When the system of such a patient is kept incessantly flooded with tobacco smoke poisons over long periods of time, the elimination of the poisons by these glands is liable to fall behind, and the system will gradually become saturated with the poisons. This is the starting point of the trouble. Vicious circles of various types, a general upset of physiologic balances in the blood, tissue asphyxia, etc., are induced, and cause, secondarily, blood vessel lesions which in time lead to the onset of the symptom complex known as "intermittent limping" and, under certain conditions, to the culminating development of the disease, "gangrene." The only real cure for the disease is prophylaxis. People so constituted as these Hebrews are should not smoke. They should be warned in good season—at home, in school, from the pulpit—of the deleterious effects and serious consequences to them of the excessive use of cigarets.

Chemical Blood Findings in Thrombo-Angiitis Obliterans.—The results of investigation of the sugar tolerance test in thirty-six verified cases of thrombo-angiitis obliterans revealed the following: 1. The blood sugar concentration at the zero hour varies between 96 and 210 mg., with an average of 115 mg. per hundred cubic centimeters, the urine showing no sugar at the zero hour. 2. The blood sugar at the end of the forty-five minute period varied between 106 and 344 mg., with an average of 179 mg., and 36 per cent. of the patients showed sugar in the urine at the forty-five minute period, of which 23 per cent. had a lower blood concentration than 150 mg. Six patients had a blood sugar concentration of 180 mg. or higher without showing sugar in the urine, and 69 per cent. showed a concentration of 150 mg. or more. 3. The blood sugar at the end of the two-hour period varied between 96 and 288 mg. with an average of 146 mg.; 33 per cent. showed sugar. 4. In three cases, or 8 per cent. of all the cases, Type I reaction was obtained; 92 per cent. of the cases gave Type II reaction. In none of the cases did Type III reaction result. In contrast, the series of 300 other cases gave 36 per cent. Type I, 55 per cent. Type II, and 9 per cent. Type III.

Pathology of Thrombo-Angiitis Obliterans.—The lesions in thrombo-angiitis obliterans as noted by Buerger are, in chronologic order: (1) an acute inflammatory lesion with occlusive thrombosis, the formation of miliary giant cell foci; (2) the stage of organization or healing, with the disappearance of the miliary giant cell foci, the organization and canalization of the clot, the disappearance of the inflammatory products; (3) the development of fibrotic tissue in the adventitia that binds together the artery, vein and nerves.

New Method of Phagocytosis Test with Blood Plasma.—This method is described in such detail that the original article should be consulted. The basis of the method is the observation that the citrated or oxalated blood plasma of persons infected by a certain species of pathogenic microorganism has been found to have a remarkably augmented phagocytal power against that particular species of microorganism. The acceleration of phagocytosis is considered to be one of the immunologic reactions, by means of which an early diagnosis of tuberculosis, typhoid fever and dysentery may be established. The method is far more simple than Wright's opsonin test. It can easily be applied for clinical purposes as well as for immunologic investigation.

Michigan State Med. Society Journal, Grand Rapids

March, 1920, **19**, No. 3

Industrial Surgery and Its Similarity to War Surgery. H. N. Torrey, Detroit.—p. 105.
Wound Shock. F. S. Baird, Bay City, Mich.—p. 107.
The Cancer Question. J. G. R. Manwaring, Flint, Mich.—p. 110.
Tuberculosis. G. Waters, Memphis, Mich.—p. 113.
Diagnosis and Treatment of Peripheral Nerve Injuries. F. C. Kidner, Detroit.—p. 116.
*Case of Aortic Aneurysm. A. M. Crance, Bay City, Mich.—p. 120.
Congenital Harelip and Cleft Palate. C. L. Straith, Detroit.—p. 122.

Blood Pressure in Aortic Aneurysm.—The only symptom complained of by Crance's patient was "slight pain in the chest with an occasional shortness of breath," but the pathologic findings were quite numerous. There was a decided difference in the pressure in both arms, an important sign which points toward aneurysm. Hence, Crance believes, the blood pressure should be taken bilaterally in all cases presenting cardiovascular symptoms. He also is of the opinion that chancres occur within the urethra, associated with gonorrhea, more often than has been realized.

Military Surgeon, Washington, D. C.

March, 1920, **46**, No. 3

William Paul Crillon Barton (1786-1856), Surgeon, Navy—A Pioneer in American Naval Medicine. F. L. Pleadwell, Washington, D. C.—p. 241.
American Physician in Draft and in Service of World War. V. C. Pedersen, New York.—p. 282.

Nebraska State Medical Journal, Norfolk

February, 1920, **5**, No. 2

Knee Joints. H. Winnett Orr, Lincoln.—p. 33.
Enlargement of Cervical Lymph Glands. F. W. Heagey, Omaha.—p. 37.
Abscessed Teeth and Systemic Disturbances. J. W. Shuman, Sioux City.—p. 40.
Blood Sugar; Report of Cases. Miles J. Breuer, Lincoln.—p. 44.
Blood Chemistry and Its Clinical Significance. M. G. Wohl, Omaha.—p. 48.
Necropsies. A. A. Conrad, Crete.—p. 51.
Roentgen Diagnosis of Malignant Bone Tumors. S. A. Levey, Omaha.—p. 54.
General Anesthesia. G. W. Reneker, Falls City.—p. 55.

New Jersey Medical Society Journal, Orange

March, 1920, **17**, No. 3

Some Medical Tendencies and Responsibilities. A. Lambert, New York.—p. 73.
Mental Hygiene and Public Health. C. C. Beling, Newark.—p. 79.
Public Health Service in Middlesex County. C. W. Naulty, Jr., Perth Amboy.—p. 83.
After-Care of Sanatorium Patients. M. J. Fine, Newark.—p. 85.
*Colon Bacillus in Vagina as a Cause of Leukorrhea and Sterility. S. Barbash, Atlantic City.—p. 87.
Wassermania. C. L. DeMeritt, Hoboken.—p. 89.

Colon Bacillus in Vagina as a Cause of Leukorrhea and Sterility.—Barbash uses autogenous vaccines in all cases of leukorrhea with very gratifying results. He also uses local treatments consisting of tampons impregnated with a preparation containing ichthyol, iodin and phenol. The vaccines invariably contained the colon bacillus together with one of the staphylococci. These cause at times a profuse leukorrhea with highly acid reaction, which in turn may cause ulceration in the vagina. The colon bacillus by reason of its acid producing ability renders the patient sterile.

New York Medical Journal

Feb. 21, 1920, **111**, No. 8

Occupational Diseases. J. F. X. Jones, Philadelphia.—p. 309.
Education of Physician. F. T. Woodbury, Edgewood Arsenal, Md. —p. 317.
Compulsory Health Insurance. E. MacD. Stanton, Schenectady, N. Y.—p. 320.
Bill of Rights of Child. I. W. Brewer, Watertown, N. Y.—p. 323.
Clinical Interpretation of Scarlatinoid Rashes. M. Scholtz, Los Angeles. —p. 325.
Metatarsalgia and Allied Conditions. A. D. Kurtz, Philadelphia. —p. 329.
Treatment of Syphilis by New Mercurial Preparation. J. Lewengood, New York.—p. 331.
My Friend, The Consultant. L. M. Kahn, New York.—p. 332.

Feb. 28, 1920, **111**, No. 9

*Roentgen-Ray Studies of Functional Alterations of Diaphragm. H. K. Pancoast, Philadelphia.—p. 353.
Errors in Abdominal Diagnosis as Seen by Pathologist. S. P. Reimann, Philadelphia.—p. 355.
Relationship of Ophthalmology to Group Diagnosis. H. E. Smith, New York.—p. 357.
Sources of Error in Estimation of Blood Pressure. A. E. Oliensis, Philadelphia.—p. 358.
Modern Treatment of Sterility. H. M. Armitage, Chester, Pa.—p. 360.
Treatment of Tuberculosis in Experimental Animals. B. S. Paschall, New York.—p. 363.
High Heels and Body Health. H. Scheimberg, Brooklyn.—p. 369.
Bone Tumors of Thyroid Origin. J. C. O'Day, Honolulu, Hawaii. —p. 374.
Heredity. L. D. McEvoy, New York.—p. 375.

Roentgen-Ray Studies of Functional Alterations of Diaphragm.—Greater study of the diaphragm movements is urged by Pancoast. Interference with the action of the diaphragm is readily detected by the roentgenoscope and this may be an important means of determining the structure effected and the pathologic conditions responsible for the functional disturbances of the muscle. The study of the diaphragm is, therefore, an important means of diagnosis, and in a few instances, the sole source of knowledge whereby the condition present can be determined. These conditions are detailed by Pancoast.

March 6, 1920, **111**, No 10

Psychology of Flying. H. G. Sutherland, London.—p. 397.
*Somatic Symptoms in Nervous and Mental Diseases. F. X. Dercum, Philadelphia.—p. 402.
Varieties of Tremor at Front. T. A. Williams, Washington, D. C. —p. 404.
Problems of Eugenics in Connection with Manic Depressive Temperament. B. Onuf, Rutherford.—p. 407.
Lethargic Encephalitis. S. E. Jelliffe, New York.—p. 412.
Neurogenic Study in Production of Dyspnea. F. P. Miller, Los Angeles.—p. 416.
Gastric Ulcer Treated by Nerve Blocking. E. A. Parker, Brooklyn. —p. 418.
Use of Relaxation in Hypertensive States. E. Jacobson, Chicago. —p. 419.
Treatment of Tuberculosis in Experimental Animals. B. S. Paschall, New York.—p. 423.

Somatic Symptoms in Nervous and Mental Diseases.—A condition met with infrequently to which Dercum calls attention is one in which primary nervous disease and primary visceral disease coexist in the same patient; for example, brain tumor and hysteria, pelvic disease and hysteria. A case in point is cited. The early history suggested an actual lesion of the esophagus due to some trauma in the act of swallowing, perhaps from a bolus of hard or mechanically irritating mass of food, and the first esophagoscopy seemed to confirm this. Later, it seemed as though the symptoms had their origin in a spasm of the esophagus; later still the symptoms suggested hysteria, particularly as they disappeared for a time under suggestion. However, convulsive seizures which were neither reconcilable with those of hysteria or of a true epilepsy, remained unexplained. It was only the later appearing mental features which led to a correct appreciation of the case. Evidently the case was one of dementia praecox in an early stage, the symptoms of which at the time the patient first presented himself were just beginning to reveal themselves. His early conduct and general demeanor in the wards became increasingly explicable as he continued under observation. It would appear further that the convulsions which the patient described and which were difficult to classify, are to be regarded as among the epileptiform attacks—the motor crises—every now and then met with in cases of dementia praecox, especially in the developmental period. Finally, the case teaches a valuable lesson as to the interpretation of local or visceral symptoms, when the latter have no or little physical foundation, and when, still further hysteria offers an inadequate and unsatisfactory explanation.

Oklahoma State Medical Ass'n Journal, Muskogee

December, 1919, **12**, No. 12

Tuberculosis Dispensary. H. T. Price, Tulsa.—p. 341.
Review of Tuberculosis. J. W. Nieweg, Duncan.—p. 344.
Acute Miliary Tuberculosis Following Puerperal Infection. M. H. Newman, Oklahoma City.—p. 347.
Newer Methods of Differentiating Effort Syndrome, Tuberculosis, and Hyperthyroidism. R. M. Balyeat, Oklahoma City.—p. 350.

Southwest Journal of Med. and Surg., El Reno, Okla.

February, 1920, **28**, No. 2

Laboratory as Aid in Practice of Medicine. S. F. Hoge.—p. 25.
Fistula-in-Ano. S. B. Hibbard, Kansas City, Mo.—p. 31.
Ileocecal Insufficiency. J. M. Postell, B. H. Lovelady, F. H. Clark, M. S. Gregory, Oklahoma City.—p. 40.
The Conscious Conflict as a Factor in the Etiology of Hysteria. M. S. Gregory, Oklahoma City.—p. 48.

Southwestern Medicine, El Paso, Texas

February, 1920, **4**, No 2

Prostate. N. D. Brayton, Miami, Ariz.—p. 1.
Etiology and Nonsurgical Treatment of Chronic Otitis Media. H. L. Brehmn, Albnquerque, N. M.—p. 6.
Treatment of Hay Fever. R. R. Brownfield, Phoenix, Ariz.—p. 10.

Surgery, Gynecology and Obstetrics, Chicago

March, 1920, **30**, No. 3

*Malignant Myoma and Related Tumors of Uterus. N. Evans, Rochester, Minn.—p. 225.
*Treatment of Tuberculous Osteoarthritis by Bone Grafts. C. R. LaValle, Buenos Aires, Argentine.—p. 239.
Pertrochauteric Fracture of Femur. A. O. Wilensky, New York.—p. 244.
*Origin of Tumors of Ovary. J. R. Goodall, Montreal.—p. 249.
Puerperal Infection; A Plea for Early Operation in Pelvic Septic Phlebitis. A. J. Nyulasy, Perth, Australia.—p. 265.
Urologic and Radiographic Study of the Samar Twins. H. W. Plaggemeyer, Detroit, and J. H. Selby, Washington, D. C.—p. 269.
*Acute Osteomyelitis and Periosteitis Complicating Epidemic Influenza. M. Behrend, Philadelphia.—p. 273.
*Frequency and Significance of Omphalitis. A. N. Creadick, New Haven, Conn.—p. 278.
Rupture of Rectum During Labor. L. Dorsett, St. Louis.—p. 283.
Infections of Kidney in Gynecologic Practice. W. S. Danforth, Evanston, Ill.—p. 284.
Maternal Mortality; a Crime of To-Day. C. H. Davis, Milwaukee. —p. 288.
Intracranial Pressure. C. C. Rogers, Chicago.—p 291.
*Clinical Application of Carrel-Dakin Method to Cases of Acute Appendicitis Requiring Drainage. E. T. Rulison, Jr., Sacramento.—p. 294.
Protection of Skin from Pus, Urine, Feces, Chemicals or any Other Irritating Material by the Use of Sheet Rubber Adherent to the Skin. A. L. Soresi, New York.—p. 306.
Amputation of Hip-Joint with Removal of Whole Bone, and Flaps Amputated Just Above. G. Torrance, Birmingham, Ala.—p. 308.
External Surgery of Nasal Accessory Sinuses. A. G. Coakley, New York, and W. W. Pearson, Des Moines, Iowa.—p. 309.
Brain Abscess Complicating a Local Cranial Infection. W. Sharpe, New York.—p. 312.

Tumors of Uterus.—Evans makes a very detailed analytical report of the study of seventy-two cases in a series of 4,000 operations for uterine fibromyoma.

Treatment of Tuberculous Ostearthritis by Bone Grafts.—LaValle uses grafts which extend from the diaphysis to the epiphysis without touching the articular cavity or coming in contact with the tuberculous tissue.

Origin of Tumors of Ovary.—Goodall's work is based on sections, both serial and nonserial, from ovaries of 127 females of all ages, from a few hours to 80 years, as well as on serial sections of five human embryos. The comparative study covers, roughly, 15,000 sections, mostly serial, from the cow, pig, sheep, cat, mouse, rabbit, guinea-pig and the dog, and from the embryos of the cow, dog, pig and cat. He takes up the histology of the ovary, the significance and origin of its various structures, its analogy to the testis and the origin of various tumors of the ovary.

Osteomyelitis and Periosteitis Complicating Epidemic Influenza.—Behrend reports five cases in one of which the radius was removed. He also reviews the literature of excision of the radius.

Frequency and Significance of Omphalitis.—On microscopic examination of the cord in 2,200 consecutive cases in which the infant weighed more than 1,800 gm., forty-three specimens showed leukocytic infiltration of the vessel walls and the adjacent connective tissue. The lesion is not pathognomonic of syphilis, for (*a*) it was present in forty cases where there was no evidence of syphilis, and (*b*) it was absent in twenty-nine cases of undoubted syphilis. The lesions arises by the extention of bacterial infection from the placenta. Bacteria are frequently demonstrable in sections of the cord. The lesion is commonly associated with prolonged labor after premature rupture of the membranes. The frequency of these infections and the resulting infant mortality, Creadick says, may be reduced by the use of rectal in place of vaginal examinations.

Carrel-Dakin Method in Acute Appendicitis.—The antiseptic treatment of cases of acute appendicitis requiring drainage was undertaken by Rulison in February, 1918, as a routine. Eighteen patients have been treated by him. During the procedure of appendicectomy and drainage of a peritoneal abscess an extensive contamination of the operative wound necessarily occurs. In the cases reveiwed by Rulison, the average period of suppuration was 15.4 days, during which time the majority of the wounds discharged foul pus and sloughs. The average duration of hospital stay was twenty-eight days. Among the frequent complications, fecal fistula developed in 7.5 per cent. of the cases. There was a 9.1 per cent. mortality. Whether the course of these cases may be improved in any of these essential particulars by the use of antiseptics is dependent on their safe application and a determination of their efficiency in this type of infection. Severe pain reactions and shock attend the introduction of surgical solution of chlorinated soda into the free peritoneal cavity. The use of this antiseptic must, therefore, be restricted to the treatment of the drainage tracts after the period of walling-off has occurred. The injections are, therefore, not intraperitoneal but intra-abdominal. The satisfactory establishment of a water-tight drainage tract seems to depend as to its rapidity of formation on the type of infection. Great caution as to time and manner of introducing the fluid is necessitated. Accidents involving the integrity of intra-abdominal drainage tracts, with escape of the fluid into the free peritoneal cavity, are attended by grave danger, especially if infection be present. Less slough and less foul discharge were noted in the cases treated by this method. The average time when all treatment was stopped and dry dressings applied was 13.8 days. There was no gross suppuration in seven cases, and profuse suppuration in five cases. The discharge was odorless throughout in two cases. The average duration of odoriferous discharge in fifteen cases was only six days, and in a number of cases the odor was slight. There were no cases of disruption of the wound, and only one case in which real wound infection occurred. The details of the procedure are given and the results obtained are analyzed.

Tennessee State Medical Ass'n Journal, Nashville

January, 1920, **12**, No 9

Treatment of Dysmenorrhea. C. N. Cowden Nashville.—p. 317.
Blastomycosis. J. M. King, Nashville.—p. 319.
Paranoia. W. S. Farmer, Nashville.—p. 321.
Uses of Thomas Knee Splint. R. W. Billington, Nasbville.—p. 325.
Gleet. I. Simons, Nashville—p. 329
Parturient Woman, The New-Born Babe. I. A. McWain, Paris. —p. 335.
Surgical Treatment of Pelvic Infections. W. C. Dixon, Nashville. —p 340.
The Dollar Doctor. W. S. Nash, Knoxville.—p. 343.

February, 1920, **12**, No. 10

Clinical Pathologist: A Medico-Sociological Study. W. Krause, Memphis.—p. 355.
Two Years' Experience with Radium. E. T. Newell, Chattanooga. —p. 358.
Interpretation of Reports on Wassermann Reaction. J. H. Litterer, Nashvillle.—p. 364.
Empyema. G. R. McSwain. Paris—p. 367
Indications for Version and Other Considerations. W. T. Pride, Memphis.—p. 378.
Practical Phase of Blood Pressure. C. D. Robbins, Gallatin.—p. 380.
Headaches from Eye Strain. E. C. Ellett, Memphis.—p. 382.
Headache Due to Intracranial Patbology. B. F. Turner, Memphis. —p. 384.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

Feb. 21, 1920, **1**, No. 3086

*Atony and Prolapse of Large Intestine. J. W. Smith.—p. 243.
Tumors Complicating Pregnancy, Labor and the Puerperium. Ovarian Tumors. H. R. Spencer.—p. 246
*Effects of Deficient Dietaries on Monkeys. R. McCarrison.—p. 249.
Protective Inoculation Against Influenza. W. H. Wynn.—p. 254.
*Some Unusual Forms of Dysentery. G. C. Low.—p. 255.
*Ankylosis of Mandible and Its Operative Treatment. G. Chubb.—p. 257.

Atony and Prolapse of Large Intestine.—The symptomatology of this condition, Smith says, is quite definite. In the majority of cases there is a history of a distinct starting point. Quite often it has been a continued and severe attack of abdominal pain, usually right iliac or lumbar, with confinement to bed for from two to three weeks. After subsidence the pain continues, more marked at intervals, which tend to become shorter. When the pain is right iliac, the symptoms strongly suggest a subacute appendicular attack, without pyrexia, and doubtless this has actually been present in many cases. Sometimes the pain is right lumbar, in the subhepatic area. In such cases one suspects kinking at the hepatic flexure. Much rarer is left iliac pain. In the cesspool cecum a succussion splash is usual in the right semilunar line, above and outside McBurney's point, but below the level of the umbilicus. This may also be found on the left side in the pelvic colon cases. Constipation, though frequent, is not constant. Dull, aching abdominal pain and feeling of weight is very constant, either in the lower abdomen, more marked to the right, or in the epigastrium. Its occurrence may or may not be associated with the taking of food, but it is often associated with the erect posture, and is then relieved by lying down, and often by manual support of the abdominal wall. Gastric or duodenal trouble, sometimes with frequent vomiting, sometimes with epigastric pain after food is noted. Abdominal crises, such as accompany floating kidney, are associated with enteroptosis. Very marked pulsation of the epigastric aorta, sometimes visible pulsation, is frequent. After some experience, paying attention to these points, Smith states a diagnosis can generally be made. In the great majority of these cases, especially in their early stages, medical treatment alone is needed, and very frequently, if carried out carefully and continuously, it effects either a cure or such amelioration as to render life comfortable and useful.

Effects of Deficient Dietaries.—Dietaries which are deficient in vitamins and in protein, and at the same time excessively rich in starch or in fat, or in both, are, in McCarrison's opinion, potent sources of disease, and especially of gastro-intestinal disease. An excess of fat, in association with deficiency of "B-vitamin" and protein and super-

abundance of starch, is peculiarly harmful to the organism. Certain dietetic deficiencies greatly favor the invasion of the blood and tissues by bacteria; especially is this the case when deficiency of vitamins and protein is associated with an excessive intake of starch. Since life cannot be sustained in the monkey for much longer than 100 days on a dietary almost wholly devoid of "B-vitamin," it would appear that complete absence of this vitamin from the food is of less practical importance from the point of view of the production of disease in human beings than its subminimal supply. Complete deprivation of "B-vitamin," especially if there be also imperfect balance in other essential requisites of the food, will lead to rapid dissolution and death; subminimal supply of this vitamin will lead, in like circumstances, to slow dissolution and disease. McCarrison suggests that his findings may afford some explanation of the genesis of that great mass of ill defined gastro-intestinal disorders and vague ill health which forms so high a proportion of human ailments at the present day.

Some Unusual Forms of Dysentery.—As proof that other conditions, many of them very common, may produce an almost similar clinical picture to real dysentery, Low cites the following cases: syphilitic ulceration of the rectum; large fungating malignant growth in the rectum; advanced tuberculosis of the lungs, with extensive tuberculous ulceration in the small and large bowel; schistosomiasis infection only; *paragonimus* dysentery; *heterophyses* dysentery; ankylostomiasis; balantidial dysentery, pseudodysenteries, such as foreign bodies impacted in the rectum above the anus.

Ankylosis of Mandible and Its Operative Treatment.—Chubb reports five cases in which removal of the coronoid process overcame the ankylosis. No tissue flap transplantation was done.

Journal of Mental Science, London

January, 1920, **66**, No. 272

Need for Schools of Psychiatry. C. H. Bond.—p. 10.
*Mental Cases of Endocrine Considerations. G. P. U. Prior.—p. 23.
Treatment of General Paralysis. G. H. M. Krohn.—p. 46.

Mental Cases of Endocrine Considerations.—In a series of forty-six postmortem examinations, in which the glands had been taken for examination, twenty-five persons had a definite thymus gland. Among these forty-six cases were thirty-two epileptics; twenty-two of these latter had the thymus present. The largest glands were found among the epileptics. Eight epileptics died a sudden deah. All had enlarged thymuses. The suprarenals showed degenerative changes in fifteen cases. In four patients there was a deficiency in the interstitial cells of the testes. The pituitary showed no constant change in twenty cases; it was either normal or of slightly increased activity. The thyroids were mostly of two types, seven being taken as being quiescent and twelve as of overactivity. The pineal gland of two examined showed degenerative changes. The liver from nineteen patients was examined. Thirteen showed signs of fatty degeneration or fatty infiltration. The pancreas was reported on from fourteen patients. In nine, the islets of Langerhans were few in number and showed degenerative changes. The spleen from eleven patients was examined. From one case it was reported normal, in one there were small hemorrhages, in two waxy degeneration; six showed fibrotic changes. In twelve female cases an enlarged thymus was found in seven. Of the ovaries in eight cases, the fibrous tissue was much increased and the organs were shrunken and atrophic. In three instances, small Graafian follicles were seen. Most worthy of note in these results is the large percentage of cases in which the thymus is found to persist, and the great number of times in which there is found degenerative changes in the suprarenal cortex. That the liver, spleen and pancreas are seldom reported to be normal is suggestive, but the number of times these organs have been examined is not sufficient to say that changes are constant. The fibrotic and atrophied ovary appear to be present almost invariably, and the fact that the menstrual function is most irregular in epileptics may depend on this. A corresponding change is not found to the same persistency in the male sex gland.

Lancet, London

Feb 21, 1920, **1**, No. 5034.

*Tumors Complicating Pregnancy, Labor and the Puerperium. H. R. Spencer.—p. 411.
Surgery During War. V. W. Low.—p. 419.
Gas Poisoning. W. P. Herringham.—p. 423.
Some Aspects of Tuberculosis Problem. T. D. Lister.—p. 425.
*Abscess of Liver Among British Eastern Troops. A. L. Candler. —p. 429.
*Influenzal Pneumonia: Intravenous Injection of Hydrogen Peroxid. T. H. Oliver and D. V. Murphy.—p. 432.
Anesthesia in Throat and Nose Operations. F. Rood.—p. 433.
Case of Hirschsprung's Disease (Megacolon) Causing Acute Obstruction. I. Tewfik.—p. 435.

Tumors Complicating Pregnancy, Labor and Puerperium.—Of the cases recorded by Spencer, three were terminated by death. The first death resulted from intestinal obstruction, due to nipping of the ileum between two subperitoneal fibroids—a very rare accident, of which Spencer has not been able to find another example. The other two deaths suggest the necessity of bacteriologic examination of the tumor before resorting to conservative abdominal operations. In one case there was present a foul discharge, after a miscarriage which had occurred six days previously at the second month. Spencer enucleated a sessile submucous myoma and removed a mass of putrid decidua in 1898. Subsequently the woman gave birth to two children. She remained in good health till 1917, when she began to lose considerably, and the abdomen increased in size. She became cachectic. She had a large, fixed, irregular, uterine tumor, nearly filling the abdomen. She had also pleural effusion and hemoptysis and other signs of growth in the lungs. From the cachectic condition, the hemorrhages and foul discharge, it appeared probable that the growth was a uterine sarcoma. The woman died nearly twenty years after the enucleation of the fibroid.

Abscess of Liver Among British Eastern Troops.—The points of importance to which Candler directs attention are that often there is no history of diarrhea or dysentery in these cases; often no amebas are found in the feces, and even in fatal cases little or no ulceration of the bowel is found postmortem. Fairly low temperature, pulse rate, and leukocytosis are not always contraindicative of the presence and quantity of pus. The liver may not be enlarged downward, or only slightly so, because of necrosis around the abscess occurring rather than the liver enlarging or being pushed downward. If the puncture fails to find pus in a case diagnosed clinically, an epigastric incision should be made in an attempt to get a scientific early diagnosis and treatment. Drainage should be free, followed by daily sterile dressing and a course of emetin hypodermically. The drainage tubes should be removed as early as possible to prevent secondary infection and sinus formation. Inflamed lung is liable to disguise inflamed liver below and beneath it.

Intravenous Injection of Hydrogen Peroxid in Influenzal Pneumonia.—There occurred in Bushra in June and July, 1919, a severe epidemic of influenza, most marked among Indian troops, and accompanied in many cases by an exceedingly toxemic and fatal bronchopneumonia. In one large Indian hospital in which the influenza cases were segregated in special huts, the death rate was over 80 per cent. in the pneumonia cases with toxic symptoms. So useless were the usual remedies tried in this latter class of case, that Oliver and Murphy felt justified in giving a trial to the intravenous injection of hydrogen peroxid. The first case was one of bronchopneumonia of influenzal origin and intensely toxemic. The patient had been delirious for two days previously, and was selected as being the worst case in the ward and to all appearances moribund. Two ounces of a ten volume solution of hydrogen peroxid were diluted with 8 ounces of physiologic sodium chlorid solution, and the solution made slightly alkaline with 5 minims of liquor ammoniae. This produced a faintly effervescing solution. The median cephalic vein was exposed by open dissection, and the solution infused through a glass cannula attached to a Rogers apparatus.

The solution was infused very slowly, a complete stop being made for half a minute in every four. Small bubbles were allowed to enter the vein unchecked, but if a large accumulation of oxygen appeared in the cannula, the transfusion was checked for about one minute until it had gradually entered the vein. The whole transfusion lasted for fifteen minutes. The patient showed no signs of discomfort until toward the end of the operation when he became slightly restless. This, however, passed off in a few minutes, and there were no other untoward symptoms, except a moderate rigor which occurred two hours later. After the rigor, the temperature which had been 101.8 F. fell to normal and remained so for thirty-six hours, when it again rose to 101 F. The latter rise was not accompanied by toxic symptoms and the temperature gradually fell to normal in the course of the next ten days. The change in the mental condition was remarkable. The patient, who previously had had to be tied in bed owing to delirium, was sitting up within six hours of the injection and asking for food; he slept well the next night and from that time improved in every way, eventually being invalided to India as a walking case three weeks later. Encouraged by the apparent success in this case, the authors tried the method in twenty-four other cases of influenzal pneumonia, selecting always those patients whose condition was apparently hopeless. Of the total of twenty-five cases, thirteen patients recovered and twelve died, a mortality of 48 per cent. Of the twelve who died, nine showed no visable effect for either good or ill. In three there was a temperary improvement. One patient died within five hours of the infusion, during a rigor. One patient had four injections at intervals of from three to five days without any sign of gas embolism, nor were there any signs of such embolism postmortem.

Medical Journal of Australia, Sydney

Jan. 17, 1920, **1**, No. 3

Application of Military Surgery to Civil Practice. C. G. Shaw.—p. 49.
Significance of the Complement Deviation (Wassermann) Test for Syphilis. F. Tidswell.—p. 56.

Jan 24, 1920, **1**, No. 4

*Hydatid Infestation of Bone: Multilocular Hydatid Disease and Ordinary Hydatid Cysts. C. W. Corlette.—p. 73.
Case of Xanthoma Diabeticorum. R. E. Harrold.—p. 84.

Multilocular Hydatid Disease of Bone.—Following several traumatic injuries of the right thigh sustained many years ago, Corlette's patient noticed the appearance of a small swelling in the groin, and a larger swelling below the inguinal ligament. The roentgen-ray appearance suggested a new growth. At operation this mass was found to be mixed with smaller and apparently granular material. The main cavity intercommunicated with other larger and smaller loculi around the upper part of the femur, and these again with other cavities passing up behind the iliac bone and through erosion holes and also via the obturator foramen into the pelvis and thence upward. There was a very large cavity extending up over the dorsum ilii. There was also an enormous ramifying cavity reaching from within the pelvis up along the general course of the psoas as high as the liver, but not invading the liver and not invading the kidney. The cavity was medial in relation to the kidney, and partially covered it. As for the bone, the right side of the pelvis was eroded everywhere, and its skeletal structure was reduced to a fretwork, or network, of thin bone. The acetabular cup had vanished, and with it had vanished the head of the femur. Through the perforation extended a large branch connecting the upper cavity with a cavity in the femur. The neck of the femur was tunneled by this, so that only the cortical part survived. In addition to the system of intercommunicating cavities on the right side, other separately encapsulated accumulations of the same material were discovered at the postmortem examination. One was a very large sac lying in the soft parts of the thigh, mainly posterior. It reached from the level of the upper end of the bone above nearly to the popliteal space below. Another was a sac between the spleen and the diaphragm, the top of the spleen forming its floor and the under surface of the diaphragm forming its roof. A multilocular hydatid of the right lung was also present.

Medical Journal of South Africa, Johannesburg

December, 1919, **15**, No. 5

Parasitized Kabeljaauw and Cape Salmon. W. W. Pitchford.—p. 101.
Venereal or Sexual Disease. C. Porter.—p. 104.
Tuberculous Meningitis and Lethargic Encephalitis. J. H. H. Pirie.—p. 109.

Journal of Tropical Medicine and Hygiene, London

Feb. 16, 1920, **23**, No. 4

Toxoplasma Pyrogenes Castellani, 1913. A. J. Chalmers and A. Kamer. p. 45.
Occurrence of Lateral Spined Bilharzia Eggs (Schistosoma Mansoni) in Urine. J. W. S. Macfie.—p. 45.
*Etiology of Pellagra. A. Viswalingam.—p. 46.

Etiology of Pellagra.—From careful observation, Viswalingam is lead to conclude that faulty diet, in itself, cannot cause "pellagra" and that there is a superadded infection. If diet should be the sole factor, then the effected individual should improve and there should be no recurrence when he is removed to a hospital and placed on liberal diet. But this is not so; therefore, apart from diet, sunlight, etc., there must be some other factor, probably a toxin. The habits of the people, the poor dietary, the extremely insanitary surroundings in which they live, the initial gastro-intestinal troubles, the condition of chronic fibrosis seen in the organs drained by the portal circulation, and many other minor factors, Viswalingam says, favor the view that the infection must be through the alimentary canal. Whether the infecting agent is an organism which enters the gastro-intestinal system and produces a toxin which is absorbed into the system and produces the varied symptomalogy, or whether owing to a deficiency in the vitamins, some deleterious products are created in the intestines and give rise to an intoxication of the system, it is difficult to say at present. The seasonal recurrences of symptoms in patients removed from their surroundings and placed in a hospital with adequate diet for considerable periods of time, would point to the presence of an endotoxin resulting from the evolution of some organism or more probably the establishment of a vicious circle brought about by profound metabolic changes. Among predisposing causes are mentioned dysentery, ankylostomiasis, malaria and scurvy. Evidences of one or the other of those were present in at least 60 per cent. of the cases seen by the author.

Bulletin de l'Académie de Médecine, Paris

Feb. 3, 1920, **83**, No. 5

*Lethargic Encephalitis. P. Marie and Mestrezat.—p. 103; Idem. C. Achard.—p. 106; Idem; P. Remlinger.—p. 112.
*Influenza and Pneumonic Plague. C. Broquet.—p. 116.
The Fight Against Tuberculosis. Coubard.—p. 119.
*Operative Treatment of Empyema. P. Peugniez.—p. 122.

Lethargic Encephalitis.—Marie and Mestrezat report that in their six cases the cerebrospinal fluid was almost completely normal. The lymphocytes numbered only from 8 to 26. Netter, on the other hand, noted considerable lymphocytosis on repeated examination. In one of his three cases, the number was 14, 16, 84 and 30 in nineteen days; in another 56, 118, 16 and 9, and in a third, pronounced lymphocytosis at first was followed by 60 and 24 in five days. Achard comments on the wide differences in the clinical pictures now encountered. One man had been having fever for ten days, with headache, a little delirium at night, but no paralysis, somnolency or other symptom. The twelfth day the characteristic somnolency of lethargic encephalitis developed. He says, "La maladie est polymorphe et acyclique." The mental, motor and general phenomena, however, in their various forms and combinations cannot be fitted into any of the frames of classic pathology. Others spoke of the appearance of the disease in Africa and Japan. A resolution was adopted appealing to physicians to report to the Académie the cases of the disease as they encounter them, specifying the address of the patients and the probable date of the onset, in order to centralize the data.

Influenza and Pneumonic Plague.—Broquet was sent to Manchuria in 1911 to study the epidemic of plague, and he urges the necessity for applying in prophylaxis of influenza the whole series of measures found effectual in arresting the spread of plague. They should include protection of the face, disinfection, aeration, forbidding of public gatherings, quarantine in the ports, vaccination of arrivals, and serotherapy against the known germs (Pfeiffer, pneumococcus and streptococcus).

Operative Treatment of Empyema.—In Peugniez' case the chronic empyema had followed influenza, and it was treated by Delorme's decortication, removing the thick fibrous shell over the lung which had shrunk back against the spine. The lung expanded at once, and the empyema was cured, but radicular paralysis of the left brachial plexus followed. It gradually subsided, and not a trace was left by the second month.

Bulletins de la Société Médicale des Hôpitaux, Paris

Jan. 16, 1920, **44**, No. 2

*Ocular Manifestations of Botulism. De Saint-Martin.—p. 52.
*Diphtheric Paralysis with Meningeal Reaction. Du Camp and Carrieu.—p. 55.
*Blood Urea in Epileptics. H. Dufour and G. Semelaigne.—p. 58.
*Sugar by the Vein in Nephritis. F. Rathery and H. Boucheron.—p. 61.
Intratracheal Medication in Acute Bronchopneumonia. Rathery and Bonnard.—p. 63.
Pigmentation and Lichen Planus in Mouth as Signs of Suprarenal Insufficiency. Crouzon and Bouttier.—p. 67.
*Syphilitic Diabetes. Carnot and P. Harvier.—p. 71.
*Primary Typhoid Cholecystitis. A. Panayotatou.—p. 76.
Paralysis of Abdominogenital Nerves After Influenza. L. Moreau.—p. 81.

Ocular Manifestations of Botulinus Poisoning.—Four men developed the classic symptoms of botulism after eating from a can of smoked trout, and in addition they presented extreme and persisting congestion of the papilla and retina, with amblyopia. The optic nerve and retina lesions were still evident six months after, as also considerable contraction of the visual field for white and even more for other colors, but there was no scotoma or imperfect discrimination of colors. The asthenia also persisted exceptionally long. This and the torpor were so marked at first that the men could not leave their beds for almost three weeks. De Saint-Martin suggests that these comparatively severe and long persisting ophthalmoscope findings may aid in the differential diagnosis of botulism at the time and even months later.

Meningeal Reaction with Diphtheric Paralysis.—Ducamp and Carrieu found only 5 leukocytes per cubic millimeter in the cerebrospinal fluid in the case described, although there was up to 2.4 gm. of albumin, and also 6.9 gm. sodium chlorid.

Varying Urea Content of Blood in an Epileptic.—The epileptic seizures developed for the first time after several injections of neo-arsphenamin, but they returned after suspension of the drug. They came on at night. The urea content of the blood had been between 0.25 and 0.40 per liter at other times, but a few hours before the seizure it ran up to 0.84, dropping nearly to the former figure next day. The intervals between the seizures were long, so the phenomenon could be studied well in the young woman.

Sugar Infusion in Nephritis.—Rathery and Boucheron cite literature which confirms the value of injection by the vein of a 30 per cent. solution of glucose as an excellent means for stimulating diuresis in appropriate cases. In grave toxi-infectious conditions it has often proved extremely useful, but some recent experiences warn that this measure is distinctly contraindicated in chronic nephritis with azotemia. In three cases studied in detail no diuresis followed; the output of urine decreased, and the azotemia increased, all the symptoms becoming aggravated.

Syphilitic Diabetes.—Carnot and Harvier report a case of diabetes in a woman of 53 with neurosyphilis in which necropsy showed the entire pancreas transformed into sclero-gummatous tissue. The urine had been abundant and contained from 66 to 72 gm. of sugar per liter after two years of the diabetic symptoms, a few days before death from pneumonia.

Primary Typhoid Cholecystitis.—Panayotatou relates that typhoid bacilli were cultivated from the pus in the gallbladder. There had been no symptoms from other organs or regions, and the fever had been of the cholecystitis type, not suggesting typhoid in any way, but the rapid and complete recovery after removal of the gallbladder confirms the causal connection. The case sustains the view that infection with the typhoid bacillus may induce other clinical pictures instead of the classic typhoid fever, analogous to the extrapulmonary manifestations of the pneumococcus.

Paris Médical

Jan. 24, 1920, **10**, No. 4

*Influenza Pandemics. J. Teissier.—p. 69.
*Mishaps with Arsphenamin. Emery and A. Morin.—p. 80.

Jan. 31, 1920, **10**, No. 5

Opening Lecture of Clinical Medicine Course. C. Achard.—p. 85.
Clinical Parasitology of Malaria. C. Paisseau and J. Hutinel.—p. 91.

Influenza Pandemics.—Teissier was sent to Russia in 1890 to study the pandemic of influenza, and his report in 1891 sums up equally well his conclusions from the recent visitation, namely, that some particular cosmic conditions suddenly enhanced the virulence of a pathogenic germ—probably some ordinary micro-organism—and this opened the portals to secondary infections. Only individual prophylaxis is effectual, with strict isolation of *les grippés*. He adds that although the cosmic conditions may enhance the virulence to a point beyond all means of defense, yet as a rule the malignancy is in ourselves. The exceptional mortality of the pregnant confirms this.

Mishaps with Arsphenamin.—Emery and Morin report a case in which the first injection of arsphenamin caused no disturbance, but forty-eight hours after a second injection, urticaria, joint pains and fever developed, as in serum sickness. The case stands midway, they say, between the major arsphenamin anaphylaxis (nitroid crises, serous apoplexy) and the minor manifestations (fleeting eruption and benign jaundice). These experiences suggest application of the principles of anti-anaphylaxis by preliminary injection of very small amounts before the main dose. They have been applying this method in a large number of cases, and say that although it conflicts with certain theories in vogue, yet the practical results are gratifying. Their method is to begin with 0.02 gm.; 0.03; 0.04; 0.05; 0.08; and 0.10 on successive days before beginning the course proper. Sicard has recently reported injection of daily doses of 0.3 gm. of neo-arsphenamin kept up for months, and none of the patients ever exhibited the slightest tendency to serious mishaps.

Presse Médicale, Paris

Jan. 31, 1920, **28**, No. 9

*Serotherapy in Typhoid. A. Rodet and S. Bonnamour.—p. 81.
*Estimation of Chlorids in the Serum. Rodillon.—p. 85.
The Schick Test for Susceptibility to Diphtheria. M. Nathan.—p. 86.

Serotherapy of Typhoid.—Rodet and Bonnamour applied serotherapy to 246 typhoid patients, with complicating influenza in some cases, and they state that benefit was apparent in every stage of the disease, but was most pronounced when started early. The fever and the other signs of toxic action were distinctly abated; complications were warded off, and the mortality reduced. They were unable to give baths in their service, and the serotherapy effectually took the place of hydrotherapy. They add that the antiserum is harmless and there are no contraindications. It should be given at the first suspicion of typhoid, without waiting for bacteriologic confirmation. They injected it subcutaneously; exceptionally, by the vein, and would not hesitate to inject it intraspinally in typhoid meningitis. They wait forty-eight hours after the first injection, and still longer if the fever is going down. If it keeps high, or runs up again, they give a second injection at once and repeat after forty-eight hours. The dose of 15 c.c. seems the optimum; no better results were obtained with larger doses, and less than this is ineffectual. The mortality was 4.7 per cent. in the civilian service and 5 per cent. in the military until influenza appeared. After that the figures were 12.4 and 7.6, respectively.

Chlorids in the Blood.—Rodillon expatiates on the importance of determination of the chlorids in the blood as an

index of conditions in the kidneys. He commends as far superior to all other methods the Moog technic followed by the Charpentier-Volhard technics as very reliable and rapid. Exactly 11.7 c c. of the filtrate after treating the serum with an equal volume of a 20 per cent. aqueous solution of trichloracetic acid, is mixed with 10 c.c. of tenth-normal solution of silver nitrate and 50 or 60 c.c. of distilled water, and 10 c.c. of a saturated solution of ammonioferric alum. Then a tenth-normal solution of ammonium sulphocyanid is added from a graduated buret, agitating constantly, until a persisting red tint appears. The chlorid content in grams per liter serum equals the number of cubic centimeters of the sulphocyanid used.

Progrès Médical, Paris

Jan. 17, 1920, **35**, No. 3

*Traumatic Suprapubic Hematoma. F. Cathelin.—p. 23.
Signs of Ulcer of Lesser Curvature of the Stomach. Loeper.—p. 25.
Tentative Chemotherapy in Tuberculosis. G. Salles.—p. 28.

Hematoma from Horseback Riding.—Cathelin remarks that unless one thinks of the possibility of a lesion of this kind, the differential diagnosis is difficult. The strain on the muscle occurs when vaulting on the horse. The pain gradually increases, and a large tumor develops behind the rectus abdominis. The hematoma subsides in a week or two under strict bed rest, with a compressing bandage and application of moist heat. In the eight cases described, the patients were all new recruits being trained for the cavalry.

Jan. 25, 1920, **35**, No. 4

Operative Treatment of Pott's Disease. P. Barbarin.—p. 35.
*The Leukocyte Reactions. M. Loeper.—p. 37.
Concussion of Cervical Spinal Cord. A. Barbé.—p. 40.

The Leukocyte Reactions.—Loeper presents the prevailing assumptions on the nature and functions of the leukocytes, and mentions a number of personal experiments. In normal rabbits, for example, after injection of epinephrin, the polynuclears show a slight increase while the mononuclears decline. In a previously vaccinated rabbit, however, a similar injection causes the polynuclears to drop while the mononuclears run up to over 15,000. This type of cell seems to share essentially in the production of antibodies, and increasing numbers presage recovery and immunity. The leukocytosis induced by the fixation abscess (from subcutaneous injection of 1 c.c. of oil of turpentine) proved very useful during the influenza epidemic. He adds that some quite remarkable instances of its efficacy here have been published.

Schweizerische medizinische Wochenschrift, Basel

Jan. 22, 1920, **50**, No. 4

*Influenza and Pregnancy. O. Beuttner and Vulliéty.—p. 61.
*The Gastric Mucosa with Ulcer. E. Fricker.—p. 63.
Improvised Devices for Mechanical and Hot Air Treatment. Von Neergaard.—p. 68.

Influence of Influenza on Pregnancy and Childbirth.—Beuttner and Vulliéty state that 23.3 per cent. died of forty-seven pregnant or parturient women with influenza in their service. The mortality was highest in the cases in which the influenza arrested the pregnancy, abortion or premature delivery following the onset of the influenza. The younger age, and the first pregnancy, seemed to offer the greater dangers. When influenza developed postpartum, it ran a mild and uncomplicated course, probably owing to the hyperleukocytosis which is the rule in parturients. If this assumption proves to be correct, it suggests that the serum of parturients might possibly be used in treatment of influenza. The death rate among the prematurely born was 60 per cent. and 13 per cent. of those delivered at term, showing the noxious influence of the bacterial toxins on the fetus. The practical conclusions from these experiences are to ward off interruption of the pregnancy and, in treatment of the influenza, to refrain from quinin and other drugs liable to stimulate the uterus to contract. The gynecologist should warn pregnant women to keep away from sources of contagion, and perhaps it might be wise to advise women not to become pregnant during a period of epidemic influenza, "although," the writers add, "this advice may elicit yelps of indignation from many persons."

The Gastric Mucosa with Ulcer.—Fricker reproduces four photomicrographs of the true pathologic anatomic findings which are the rule with ulcer. The mucosa shows a chronic inflammatory atrophy much more regularly than hitherto assumed. This imposes the necessity for careful and prolonged supervision of the diet after operative measures. In one case of chronically recurring peptic ulcer in a robust man of 43, the mucosa showed extreme hyperemia, and stasis hemorrhages were common, but there was no thrombosis or embolism and no signs of bacterial invasion. His micrographs were all obtained from the living mucosa, while previous research in this line has been on the cadaver or on animals. One conclusion is evident, namely, that more than one cause may induce peptic gastric ulcer.

Gazzetta degli Ospedali e delle Cliniche, Milan

Nov. 30, 1919, **40**, No. 96

Necessity for Propaganda Against Tuberculosis. C. Molon.—p. 1041.
*Atypical Epidemic Meningitis; Two Cases. G. Salvetti.—p. 1043.

Atypical Epidemic Meningitis.—In Salvetti's two cases the onset was insidious, suggesting ordinary influenza at first. There was no vomiting, and the mind was clear throughout except just before death in one case. The temperature was always relatively low, and the lumbar puncture fluid seemed to be normal except for slight turbidity only at the first or second puncture, but the meningococcus was cultivated from the fluid in both cases. The fatal outcome in one case was a surprise after the extremely mild course in both.

Policlinico, Rome

Jan. 5, 1920, **27**, No. 1

*The Facial Nerve in Epileptics. L. Roncoroni.—p. 3.
*Malarial Orchitis. E. Vecchia.—p. 6.
*Tuberculosis in Relation to Life Insurance. I. Romanelli.—p. 9.

The Facial Nerve in Epileptics.—Roncoroni calls attention to the hyposthenia of the innervation of the face in certain persons, saying that he has found it most pronounced in epileptics. Hyposthenia in other nerves may explain certain phenomena observed in other conditions, he suggests.

Malarial Orchitis.—Vecchia's patient was a youth of 16 with a history of old malaria, but no attacks for a year. Then suddenly intense fever and chills developed, with pain in the scrotum. Gonorrhea or mumps were suspected until the malaria parasite was cultivated from the blood, and under quinin the orchitis and the febrile attacks subsided.

Tuberculosis in Relation to Life Insurance.—Romanelli analyzes May's recent report on this subject, and compares the conclusions with his own experience, which suggests the advantage of postponing acceptance of a candidate who has recently had a tuberculous process in a bone or joint, in the urinary apparatus or peritoneum. In 75 per cent. of his cases, when pulmonary tuberculosis developed later the interval was not over three years. With a clinically cured pulmonary lesion, he warns that there may be still fire under the ashes, and a trauma or infectious disease may fan it into a flame. This occurred in many cases during the influenza epidemic. A ten year interval, however, is a good guarantee, other things being equal, with a progressively decreasing extra risk premium.

Riforma Medica, Naples

Nov. 15, 1919, **35**, No. 46

Chaulmoogra Oil. A. Valenti.—p. 994.
*Ataxia of the Aorta. O. Cantelli.—p. 995.
*The Metabolism in Nephritis. A. Barlocco.—p. 1003.

Remittent Ataxia of the Ascending Aorta.—Cantelli applies this term to a set of symptoms observed identical in three cases. The symptoms were directly connected with transient disturbances in the innervation of the ascending aorta, the clinical picture being that of an aneurysmatic dilation of the ascending aorta: systolic fremitus, and harsh systolic murmur, heard in the second right interspace and spreading along the vessels, and a protodiastolic murmur of endoventricular origin, spreading to the apex, loudest at the focus for auscultation of the aorta. The assumption that the whole syndrome was of nervous, functional origin was con-

firmed by the abrupt subsidence of all the symptoms after a longer or shorter interval, and independently of any medicinal treatment. This behavior of the ascending aorta, especially when accompanied by symptoms resembling those of angina pectoris, bears the imprint of a sympathetic neurosis of that part of the vessel, in the same way as the attack of pain in the celiac plexus and pulsation and ectasia of the abdominal aorta represent the principal manifestations of the sympathetic neurosis of this part of the body. His patients were a woman of 42 and two men of 60 and 34. In the woman the attacks had always occurred just before the menses, and there were other signs of vasomotor instability, tremor and tachycardia. The older man was a bon vivant, with some sclerosis of the myocardium, and only the complete subsidence of all the symptoms in two months and the return later of the whole syndrome, excluded actual aneurysm. The man of 34 had long had a mild syphilitic aortitis when suddenly the symptoms of ectasia of the aorta developed, with the other signs described above, but all disappeared in twenty days without leaving a trace, after absolute repose was enforced, with a suitable diet. Cantelli devotes nearly nine pages to discussion of the mechanism, emphasizing anew in conclusion that the ataxia subsided in all his cases without any drugs.

Metabolism in Nephritis.—Barlocco reviews what others have been doing in study of the intermediate and external metabolism by Bang's micromethods applied to the blood. He compares with their results his own findings in a number of healthy controls, and in ten patients with nephritis studied daily till death. With sound kidneys the total nitrogen in the blood ranged from 0.027 to 0.046 per cent. and the urea nitrogen from 0.013 to 0.027 per cent. The ratio between the two, dividing the urea nitrogen by the total nitrogen, was between 35 and 60 per cent. The ureosecretory constant ranged from 0.062 to 0.106. In health, 15 gm. of urea, added to an ordinary diet, is eliminated in twenty-four hours. The chlorids in the blood amount to 3.20 or 3.80 per cent. and the glucose to 0.075 or 0.120 per cent. The differences between these figures and those obtained in his numerous cases of various forms of nephritis are discussed, as they serve to distinguish the different types. They emphasize the folly of attempting to study a case of nephritis from the whole blood or the urine alone.

Rivista Critica di Clinica Medica, Florence

Sept. 27, 1919, **20**, No. 39

*Conjugated Deviation of Head and Eyes in Brain Disease. L. Siciliano.—p. 457.
General Principles of Diet in Nephritis. Fornaseri.—p. 460.
Erythema Nodosum in Relation to Tuberculosis. Pisani.—p. 463.
Enlargement of Glands as Aid in Diagnosis. Fornaseri.—p. 465.

Deviation of Head and Eyes in Brain Disease.—Siciliano's arguments favor Flourens' explanation of the mechanism for this in the semicircular canals.

Gaceta Médica de Caracas

Nov. 30, 1920, **26**, No. 22

*Phlegmasia Alba Dolens in Typhoid. Villegas Ruiz.—p. 235.

Phlebitis in Typhoid.—Villegas described two cases of phlegmasia alba dolens which developed during convalescence from typhoid, the only instances of the kind he has encountered in his thirty-two years of practice and his hundreds of typhoid cases. The left thigh was affected, and in Murchison's fifteen cases the phlegmasia was on the left side in fourteen. In the discussion that followed, four other physicians referred to a total of seven cases in their practice. Villegas mentioned also phlegmasia of other origin; he has encountered a comparatively large number of puerperal cases. In certain other cases the phlegmasia was the warning sign of visceral cancer. In one case he accepted the phlegmasia alba dolens as pathognomonic of a cancer of the liver while other consultants insisted that the trouble was hypertrophic cirrhosis of the liver, but time confirmed his diagnosis. Trousseau diagnosed in himself the gastric cancer, to which he succumbed later, by the appearance of an insidious phlebitis in the dorsum of one hand. In treatment Villegas has found electric light baths useful, but absolute immobility of the limb is the main thing. Tachycardia often occurs with the phlegmasia, and in Razetti's case the tachycardia persisted long afterward and the young woman finally died suddenly, possibly from embolism.

Prensa Médica Argentina, Buenos Aires

Jan. 10, 1920, **6**, No. 22

*Rupture of Bladder. A. F. Celesia and A. Buzzi.—p. 225.
*Vicious Circle after Gastro-Enterostomy. N. Tagliavacche.—p. 226.
*Dissociated Elimination of Bile Elements. C. P. Waldorp.—p. 227.
Improved Slanting Curet. E. Finochietto.—p. 230.
*Arrhythmias. P. M. Barlaro.—p. 231. Conc'n.

Rupture of the Bladder.—The two cases reported by Celesia and Buzzi were admitted to the hospital within twenty-four hours. The posterior wall of the bladder had ruptured in each case, in one from a fall, in the other probably in consequence of overdistention from fluid, self-injected, in treatment of acute gonorrhea. In this latter case no urine could be extracted with the catheter in the bladder, but in the other case the catheter had evidently found its way through the breach in the wall into the peritoneum, and quantities of blood-stained urine were evacuated. The shock and tenesmus were extreme in both, but a prompt laparotomy was followed by recovery.

Vicious Circle After Gastro-Enterostomy.—The man of 42 had had periods of gastric disturbance since the age of 20, and he finally had gastro-enterostomy done. This was followed by a period of tranquillity for seventeen months, when the disturbances began anew. An anastomosis between the afferent and efferent loops arrested the vicious circle, but a peptic ulcer with involvement of glands was deemed inoperable. The afferent loop was 30 cm. long, and the opening was not at the lowest point of the stomach and was too far to the left. Another defective feature of the technic was that the anastomosis ran from left to right.

Dissociated Elimination of Elements of the Bile.—Waldorp classifies the different forms of jaundice from complete or partial retention of all the elements of the bile and the jaundice with isolated retention of bile pigments or of bile salts. Hemolytic jaundice is the perfect type of the latter group, but it includes also catarrhal jaundice in the active stage, and some cases of jaundice from cirrhosis, or from infectious or toxic disease of the liver; it may possibly include likewise the early phases of the other group. With alcoholic cirrhosis there may be no sign of toxic retention as manifested by pruritus and bradycardia but the blood dust is scanty, and the Hay and Pettenkofer reactions are usually positive. Intercurrent infection or abuse of alcohol or other toxic action is liable to induce a phase of exaggerated retention and hence augment the jaundice temporarily. Brault and Garban investigated for retention of bile in long series of patients, and found it in some persons who gave no evidence of jaundice but had tuberculous, malarial or other form of liver disease. In typhoid also there may be retention of bile salts, with urobilinuria, as also in pneumonia in male adults, and in all persons with chronic poisoning from any cause. Brulé warns that retention of bile elements with appendicitis suggests that the liver is vulnerable, and hence should not be subjected to the strain of chloroform. The bile salts are also liable to be retained during pregnancy, the retention increasing as the pregnancy progresses, and ceasing after delivery.

The Arrhythmias.—Barlaro entitles his article a "brief" study of the arrhythmias, but it has been continued through a long number of issues. He recalls that treatment must be based on the special form of the arrhythmia and on the occasional cause. To illustrate the imperative necessity for seeking the cause he tells of a case in which an attack of fainting, palpitations, arrhythmia and bradycardia resisted the entire battery of heart tonics and stimulants but subsided promptly under a purge and restriction to water, a dish of green peas being responsible for the whole disturbance. In one woman the diagnosis of myocarditis as responsible for the arrhythmia was changed later to arrhythmia from impacted gallstones, and extraction of the stones put an end

at once to the arrhythmia. Besides removing the cause and treating stomach, bowel and gynecologic disease which may be a contributing factor, it may be wise to soothe the over-excitable nervous system and give tonics. Valerian and belladonna are often useful, the latter reducing reflex action from the stomach, the most frequent cause of extrasystolic arrhythmias, while it moderates the excitability of the heart. Heart tonics are liable to exaggerate the arrhythmia, but in paroxysmal tachycardia, digitalis well managed may give fine results, as also strophanthin with pulsus alternans and perpetual arrhythmia. Organ extracts may prove surprisingly effectual in appropriate cases, and antithyroid serum with hyperthyroidism. If the dropping of tea, coffee or tobacco is not soon followed by improvement, the cause must be sought elsewhere. Brilliant cures may be realized with mercury and iodid when syphilis is responsible, and the latter drug may render good service with sclerosis in vessels or elsewhere. In some cases tuberculin may prove extremely useful. With paroxysmal arrhythmia, drinking or eating something may help in arresting an attack, by the reflex from swallowing; or compression of the pneumogastric nerve may stimulate it to inhibit the excessive action of the heart. Tickling the pharynx or other means to induce nausea and vomiting may arrest the attack in some persons; in others this may aggravate it. The condition of the heart muscle must be supervised, and venesection, revulsion, purges, and diuretics applied as indicated.

Reforma Médica, Lima

October, 1919, **5**, No. 62

*Treatment of Eclampsia. P. Villanueva.—p. 116.

Eclampsia.—Villanueva as a last resort in a case of convulsions from uremia in a man of twenty-eight with advanced chronic nephritis, injected sodium bicarbonate by the vein. The result was surprisingly good, the convulsions subsiding, and the acute phase was soon past. He applied this same treatment in a case of puerperal eclampsia in which the convulsions and anuria had kept up after venesection and evacuation of the uterus. Four hours later the convulsions abated, the catheter drew 150 gm. of urine, and the general condition seemed more hopeful, showing that at least the 50 gm. of the saturated solution of sodium bicarbonate by the vein had done no harm. He repeated the infusion, giving 100 gm., and applied lumbar puncture. By the next morning the patient was out of danger. This experience has been confirmed in eleven other cases in the last five years, prompt improvement following the combination of venesection, lumbar puncture and the alkaline infusion, with copious intake of fluids. He urges others with laboratory equipment to confirm his merely clinical assumption that acidosis is responsible for eclampsia, at least in certain cases.

Revista Española de Obstet. y Ginecología, Madrid

December, 1919, **4**, No. 48

*The Placenta as Blood-Producing Organ. P. Domingo.—p. 545.

The Placenta as a Blood-Producing Organ.—Domingo reports extensive research on the early stages of the evolution of the embryo, the origin of the first blood cells, etc. His conclusions differ in certain respects from those hitherto accepted.

Siglo Médico, Madrid

Dec. 27, 1919, **66**, No. 3446

Repeated Laparotomy. A. Morales.—p. 1114.
*Essential Incontinence of Urine. F. González Aguilar.—p. 1116.
Concluded in No. 3449, p. 37.

Incontinence of Urine.—González reiterates that thorough study of the child will almost invariably reveal some explanation for the enuresis in some hitherto overlooked disease or some anomaly that may possibly be corrected. Only when all such can be positively excluded are we justified in labeling the case as essential incontinence. Treatment should aim to reduce the irritability of the bladder or stimulate the atony of the sphincter, according to the case. The diet should be extremely nourishing and digestible, and of the smallest bulk possible. Overstarched or overtight clothing, powdering, and dirt may maintain the tendency to incontinence. In two of his cases it was cured by constant vigilance rendering masturbation impossible. He lauds epidural injection of physiologic artificial serum as one of the most valuable measures in treatment of enuresis, and never hesitates to apply it when belladonna, strychnin and electricity fail. Any practitioner, he says, can give the epidural injections, using from 5 to 10 c.c.; for children under 12 not more than 3 c.c. Inunction in the pubic region twice a day of a drug to soothe the peripheral nervous system has sometimes aided. Courtade has reported 55 per cent. cured and 85 per cent. much improved by the induced electric current, but González advises reducing the intermittences to one a second. This stimulates instead of fatiguing the muscles, and he always is guided by the patient's tolerance. He applies the electricity for five or six minutes every day at first, and later every second or third week. In concluding his long study of incontinence, he mentions Bounier's success in otherwise intractable cases by modifying the excitability of the bulb by cauterizing certain portions of the nasal mucosa.

Berliner klinische Wochenschrift, Berlin

Nov. 17, 1919, **56**, No. 46

What the Influenza Epidemic Has Taught Us. B. Möllers.—p. 1081.
*The Capillary Pulse in Infectious Diseases. L. Lichtwitz.—p. 1083.
*Use of Orthoform in Psychiatric Cases. W. Böttcher.—p. 1084.
Friedmann's Treatment of Tuberculosis. E. Blos.—p. 1084.
Relations of the Autonomic Nervous System to Striated Muscles. E. Frank.—p. 1090. Conc'n.

The Capillary Pulse in Infectious Diseases.—From a series of observations Lichtwitz reaches the conclusion that the capillary pulse in fever is not the result of increased heart activity, elevated temperature, or rubedo, but is due to a disturbance of peripheral circulation in the region of its appearance brought about by a toxic injury of the arterioles and capillaries. He was not able to discover that the phenomenon has any prognostic significance.

The Use of Orthoform in Psychiatric Cases.—Böttcher has found orthoform of great value to allay itching in pruritus vulvae et vaginae in psychiatric cases. He uses ordinarily a 10 per cent. ointment. The anesthetic effect of the orthoform continues for from ten to thirty hours, which is a valuable feature in dealing with psychiatric patients, who become impatient and work harm to themselves if the itching is not promptly allayed.

Deutsche medizinische Wochenschrift, Berlin

Nov. 27, 1919, **45**, No. 48

*Problems in Paralysis and Tabes Therapy. F. Plaut.—p. 1324.
*The Pathogenesis and Treatment of Bed-Sores. Wieting.—p. 1324.
Side-Effects of Silver Salvarsan. G. L. Dreyfus.—p. 1326. Conc'n.
*Influenza and Pregnancy. E. J. Schmitz.—p. 1328.
*Scleroderma in Relation to the Endocrine Glands. W. Roesch.—p. 1329.
Experimental Tuberculosis of the Eye and Active Immunization by the Friedmann Method. F. F. Krusius.—p. 1330.
"Nirvanol" Poisoning. Charlotte Jacob.—p. 1331.
Mites in the Feces of Man. H. Westphalen.—p. 1333.
*Emphysema Therapy. Heermann.—p. 1333.

Recent Problems in Paralysis and Tabes Therapy.—Plaut says that the fact that familial paralysis and tabes are comparatively rare is opposed to the assumption of a peculiar type of spirochete the mere presence of which in a subject would cause syphilitic paralysis or tabes. The changes that regularly occur in the spinal fluid during the secondary stage of syphilis are usually followed by normal conditions, whether specific treatment is given or not, so that it hardly seems likely that these changes are to be regarded as the foundation for the later development of paralysis or tabes. In the case of a few syphilitics, however, the spinal fluid continues to show pathologic changes even after many years. Whether the paralytics develop from this class can only be shown by a long series of investigations. He avoids mercury entirely in the treatment of paralysis, and for the treatment of tabes he prefers salvarsan to mercury. Salvarsan is ordinarily not indicated in syphilitic paralysis, as it does not stay the progress of the disease, but, he thinks, it may be well to use it in the initial stages owing to the danger of a false diagnosis of paralysis being made when in reality

it is a genuine case of syphilis of the brain. He denies that salvarsan used in syphilitic paralysis causes paralytic attacks, untoward mental and physical reactions, and even symptoms resulting in death. One symptom of paralysis usually yields to salvarsan, that is, the increase in the number of cells in the spinal fluid. Intraspinal injections in syphilitic paralysis have not proved effectual, he continues. In tabes, however, intraspinal injections exert a favorable influence on the pain, the crises, paresthesia, bladder trouble and ataxia, and should be used unless intravenous therapy, which should always be tried first, has already brought about reasonable symptomatic improvement. Whether intraspinal mercurial treatment will prove efficacious in paralysis and tabes remains to be seen. The fact that paralytics often receive at least temporary benefit from induced febrile processes has long been known, and of late Vienna physicians have scored considerable success in this mode of treatment. Plaut has seen no noteworthy improvement following the use of vaccines in syphilitic paralysis and, in general, the results of the various forms of treatment in paralysis and tabes are far from satisfactory, but with earnest collaboration of clinicians, experimental pathologists, anatomists, serologists and chemists, he hopes for progress in the future.

The Pathogenesis and Treatment of Bed Sores.—The matter of bed sores has been left too much to nurses, Wieting thinks, and many physicians are inclined to assume an indifferent attitude, from which great harm results. His investigations as to the fundamental origin of bed sores have led him to the conclusion that the pressure causing the necrosis or gangrene is exerted from within and not from without, as is commonly supposed. Aside from cases in which the epidermis or cutis has been injured directly by thermic, chemical or mechanical causes, only disturbances of the blood supply can bring about necrosis of the skin, and these disturbances are caused by the more or less complete occlusion of blood vessels by pressure continued too long in one spot, whereby an anemic condition of the more sensitive subcutaneous and deeper-lying tissues is effected. It is evident, therefore, that the subcutaneous tissues suffer more and earlier than the skin; their necrosis precedes that of the skin. While admitting that there are cases in which decubitus cannot be avoided even with the best of care, he believes that many cases that occur are avoidable. Besides the ordinary measures—such as change of position, absolute cleanliness, rubbing with alcohol, the use of rubber rings, water cushions, underlay of cotton—he thinks more recognition should be given to the continuous water bath in the more serious cases. The patient may be suspended for hours at a time in a warm bath, in which he is supported by a bed sheet or a hammock. Frequently suspension apparatus may be indicated, as in the case of wounds of the heel or the lower leg. In the matter of bed sores hypurgia plays a big part, that is, the sum of the minor factors that make for prophylaxis and recovery. Even the placing of a rubber ring cushion so that the pressure will be taken off a certain spot is not such a simple matter as it may seem to some.

The Effect of Influenza on Pregnancy.—Schmitz reports that in Germany it was often noted with surprise that the strongest persons seemed to have no more, but perhaps even less, resistance than the weaker. He takes this as only an indication how primitive our ideas are concerning the meaning of the term "constitution." We are too much inclined to assume that a sturdy frame and a well developed musculature must necessarily presuppose extra resistance of the organism to infection. Our knowledge of individual differences in matters of morphology, the ability of cells to react, and the ever changing content of protective substances in the body fluids is still too indefinite for us to do more than speculate in regard to comparative immunity. An illustration of this is Fischer's assumption that sturdy persons have too many antibodies, and that their lack of resistance is due to the fact that they kill off the invading germs too rapidly, and thereby overload the body with liberated toxins, or Grabisch's hypothesis that healthy persons have less capacity to produce antibodies because they are, in the nature of the case, less exposed to infections. On the other hand, the effect of pregnancy on the course of influenza is not a matter of speculation. It is entirely too evident. Of thirty-seven pregnant women in his service, nearly 46 per cent., died. The mortality among the nonpregnant was only 12.5 per cent. Aside from the changes in the respiratory mechanism and the impeding of the circulation, Schmitz thinks that one possible explanation of the unfavorable effect of pregnancy on influenza lies in the physiologic swelling in pregnancy of the mucous membrane of the respiratory organs.

Scleroderma in Relation to Disease of Endocrine Glands.—Roesch reports a case of generalized scleroderma, in the indurated stage, in a young woman with symptoms of abnormal thyroid and suprarenal functioning. He concludes therefrom that scleroderma may possibly be caused by disturbances of function in one or more of the glands of internal secretion.

Treatment of Emphysema.—Heermann recommends, as an effective therapeutic device in emphysema, an elastic rubber bandage, from 4 to 5 cm. wide, buckled about the chest at the level of the short ribs. He finds it aids expiratory movements and produces a feeling of comfort and relief. It is worn during the day—continuously, if possible. The good effect is soon shown by the increase in lung expansion and the remission of symptoms in the lungs and throat.

Münchener medizinische Wochenschrift, Munich

Nov. 14, 1919, **66**, No. 46

*Chronic Lethargic Encephalitis. C. von Economo.—p. 1311.
*Effect of Roentgenotherapy on Retarded Growth. E. Stettner.—p. 1314.
Deep Thermometry. 1. B. Zondek.—p. 1315.
Conditions Governing the Course of Tuberculosis. H. von Hayek. —p. 1316. Cont'n.
*Influenza in Relation to Pulmonary Tuberculosis. W. Amelung. —p. 1321.
Chronic Appendicitis and Pathologic Condition of Adnexa. M. Graefe. —p. 1322.
*Utilization of Surplus Human Milk. Marie Kayser.—p. 1323.
Concentration of Rays in Heliotherapy. C. Widmer.—p. 1323.
*Composition of the Blood in Arid Climates. A. Bickel et al.—p. 1324.

Chronic Lethargic Encephalitis.—Economo reports a case of lethargic encephalitis in a man of 45, which ran a long course, from April 5, 1917, to Jan. 7, 1919, when death ensued. The onset was acute. Periods of remission occurred, only to be followed by ever more violent attacks. The clinical diagnosis was pseudobulbar paralysis, with athetosis, following lethargic encephalitis. The necropsy findings were: hypostatic pneumonia in the right inferior lobe, atrophy of organs, parenchymatous degeneration of the myocardium, cachexia, no macroscopic changes in the central nervous system. The microscopic examination revealed extensive evidence of a poliencephalitis. In addition to the older lesions, there were several recent lesions of an acute type. Economo assumes that the virus of lethargic encephalitis after the first acute attack was not completely eliminated but continued to act on the central nervous system, setting up a chronic condition, with occasional exacerbations, carrying on its gradual work of destruction resulting in death. He compares the case to the rare cases of chronic anterior poliomyelitis following the acute form. It also seems to throw a sidelight on multiple sclerosis. Economo refers also to a mild epidemic of lethargic encephalitis that occurred in Vienna nearly two years before the first wave of the influenza epidemic, which, he thinks, supports the idea that it is a distinct disease, and refutes the claim that it only follows influenza. It would be a serious mistake to term the disease influenzal encephalitis as its causal connection with influenza is still uncertain.

Favorable Effect of Roentgenotherapy on Retarded Growth.—Stettner states that in cases of retarded growth due to disease such as chronic parotitis, or to constitutional anomalies such as status lymphaticus, he has been able, within a few months, to make up for a deficiency equal to several years of normal growth. In the two reported cases the retarded growth manifested itself in the lack of ossification centers; in one the bones had developed normally in length. In both cases the incited growth was accomplished by means of roentgenotherapy applied to the head, and doubtless particularly affecting the hypophysis in one case. The condition

of the bones of a child as shown by roentgenograms is a factor to be weighed in judging of the child's general condition. Stettner considers his results important as indicating the possible effect of roentgen rays on the organs of internal secretion. Three and five sittings were given in the course of four months and seven months, respectively.

Influenza in Relation to Pulmonary Tuberculosis.—Amelung's observations and investigations lead him to conclude that the influenza morbidity among patients with pulmonary tuberculosis is slight; that influenza takes a milder course in such patients than in the nontuberculous, unless the tuberculosis is far advanced; that tuberculosis of the lung may and sometimes does follow influenza in patients whose lungs were previously sound, and that in the last mentioned cases the prognosis is relatively bad. A theoretical explanation of the reciprocal relationship that exists between influenza and tuberculosis may be that the organism of tuberculous patients is from the start in a state of defense, whereas the healthy subject is taken unawares in a state of unpreparedness, and is swept away before he can mobilize his antibodies.

Utilization of Surplus Human Milk.—Marie Kayser describes in detail a system introduced in Magdeburg during the war by which surplus human milk was collected in the homes and utilized in hospitals and elsewhere for feeding to weakly and needy infants. The milk of healthy mothers, only, was used. In the nature of the case, Wassermann tests could not be made, but as the milk was always carefully boiled before it was used, it was assumed that infection was no longer to be feared. Boiling lessened the value of the milk so collected, but it was in any event better than boiled cow's milk for the infants for whom it was utilized.

The Composition of the Blood in Arid Climates.—Bickel, Loewy and Wohlgemuth refer to Grober's article on this subject, an abstract of which appeared in The Journal, Jan. 31, 1920, p. 365. From his examination of the blood of natives of Tunis, Grober had reached the conclusion that such a thing as urinary substances being given off from the blood in secretions, for instance, through the sweat glands, was an impossibility. Bickel and his co-workers state that Grober's conclusion was not justified. The fact that the blood of natives of Tunis is essentially the same in its composition as that of Europeans living in Europe is no proof, they think, as to whether or not the arid climate has any effect on the blood, much less that it may not exert a definite effect on metabolism which is concealed by compensatory processes in the blood. For example, it might well be true that marked changes occur in the sodium chlorid output and in the nitrogenous waste eliminated from the blood, while the blood still retained its usual percentage of these substances. Furthermore, there might be marked shifting in the proportionate amount of urinary substances eliminated by the kidneys and the skin, without evidence of this fact being necessarily present in the blood. In order to decide such questions as these, concurrent investigations on metabolism should be made; quantitative determinations of the elements of the urine, and also determinations of the amount and composition of the skin exudations, with due consideration of the nature of the food consumed. They also think that Grober should have examined the blood of Europeans living in Tunis, in order to draw just conclusions as to the indications of arid climates for Europeans suffering from kidney disease.

Therapie der Gegenwart, Berlin

November, 1919, **60**, No. 11

*One-Sided Dietaries. M. Jacoby.—p. 401.
*Nonspecific Serotherapy of Diphtheria. M. Alhrecht.—p. 404.
Quinin Alkaloids as Antiseptics. S. Ostrowski.—p. 407.
Testing the Eyes for Glasses. Fehr.—p. 416. Conc'n.
General Principles for Treatment of Digestive Diseases. G. Klemperer and L. Dünner.—p. 420.
*The Alcohol Question. J. Waldschmidt.—p. 425.
Syringe for Intravenous Injections. R. Offenbacher.—p. 437.
Treatment of Sprained Ankle. K. Gerson.—p. 438.

One-Sided Dietaries.—Jacoby remarks in concluding his study of this subject, that the terms vitamins, nutramins and accessory nutrients are about synonymous with each other, and with oryzanin. Eutonin seems to be the organic base which is the mother substance of the others.

Treatment of Diphtheria.—Albrecht suggests that Bingel's plea to use normal horse serum, instead of antitoxin, has served to focus attention anew on the great changes induced in the organism by serum alone. But it has served most of all to emphasize anew the immense value of antitoxin, and that nothing can approach it.

The Alcohol Question.—Waldschmidt agrees with those who think that some inherited predisposition turns the scale so that one person becomes an addict and another not. The drunkard is "born, not made." The sound brain repudiates the abuse of alcohol. From prehistoric times and in all races there have been stimulants of different kinds, and it seems as if the human race cannot get along without them, but the more dangerous ones, he insists, should be prohibited.

Therapeutische Monatshefte, Berlin

September, 1919, **33**, No. 9

*Pharmacology of the Treatment of Wounds. III. S. Loewe and G. Magnus.—p. 321. Conc'n.
By-Effects of Some New Narcotics. R. Meiszner.—p. 332.
*Treatment of Fractures in the Aged. C. Heinemann.—p. 335.
Whooping Cough. A. Kötz.—p. 341.
*Acute Addison's Disease Following Influenza. Brünecke.—p. 354.

Treatment of Wounds.—Loewe and Magnus present a long series of arguments striving to restore a more pharmacologic view of the treatment of wounds, instead of the excessive bacteriologic view that has prevailed of late.

Fractures in the Aged.—Heinemann tabulates the details of twenty-two cases of fracture, mostly of the femur, in men and women from 61 to 78 years old. He affirms that the physician's task is more to keep the aged patient alive, than to cure the fracture. The patient must not be chained to the bed for more than a few days at most, consequently, a light plaster cast is preferable for immobilization. It should leave as much of the limb free as possible. When the fractured stumps have been driven into each other, a cast may sometimes be dispensed with; the patient can be got up with crutches or a walking frame. The getting the patient out of bed is the main thing, after the first shock is past. Lying in bed mechanically impedes the functioning of the autonomic system, and depresses the vital energies. In other pathologic conditions, the elderly can keep fairly well, even lying in bed, by exercising the legs and arms while reclining, but this is impossible with a fractured limb. Systematic breathing exercises, after the patient is up, help to maintain the circulation and ward off atrophy, and they benefit in other ways. Tepid baths under medical oversight are also useful. In his 22 cases a complete functional cure was realized in 11, and improvement in all the others, except in one fatal case of fat embolism. This patient, a woman of 62, had been long kept in bed after the lengthwise fracture of the femur. Only 7 have to use a cane, and 2 others, one or two crutches.

Acute Addison's Disease After Influenza.—Brünecke reports this case to call attention to the prompt benefit from treatment with partial antigens. Tuberculous lesions in the glands in the neck had suggested the advisability of this treatment for the girl of 12.

Wiener klinische Wochenschrift, Vienna

Nov. 27, 1919, **32**, No. 48

*Roentgen Treatment of Hypertrichosis. G. Holzknecht.—p. 1149.
*Treatment of Gunshot Wounds of Joints. H. Salzer.—p. 1151.
*Arthritis Due to Foreign Body. M. Hirsch.—p. 1154.
Multiple Laceration of the Sigmoid Sinus. O. Beck.—p. 1155.
Treatment of Old and Ulcerating Wounds. H. Deutsch.—p. 1157.
*Observations on Ophthalmomyiasis. W. Goldschmidt.—p. 1159.

Roentgen Treatment of Hypertrichosis.—Holzknecht discusses the psychologic reasons why hypertrichosis in women should be treated, and describes in detail his method of roentgenotherapy with which he has been very successful. In some of the cases he describes, the women had tried to commit suicide on account of the disfigurement from the growth of hair on the face.

Treatment of Gunshot Wounds of Joints.—Salzer states that since there is no uniform method of treating joint

injuries, it is desirable that surgeons should give the results of their experiences in this field of surgery in order that out of the common experience of all a uniform method may be gradually worked out. In gunshot injuries of joints in which the bones were not seriously involved and in which the wounds had closed without reaction, he proceeded as follows: The joint was punctured and the fluid was drained off; from 3 to 5 c.c. of tincture of iodin was then injected and a light protective bandage was applied. This procedure was repeated, if necessary, two or three times. In 14 cases of gunshot wounds of the knee joint treated in this manner the patients were dismissed in about twelve days, the joint showing a good degree of motility. In one case, however, suppuration developed, rendering an operation necessary. On the other hand, if the wounds were lacerated and oozing, thorough débridement was done, the joint was cleansed with sodium chlorid solution, then completely sutured and tincture of iodin injected. After about sixteen days 7 such cases were dismissed in good condition. In another case, however, sepsis and periarticular abscesses occurred, which necessitated amputation at the thigh. In this case, owing to the pressure of work at the front, through an oversight, débridement and suturing of the wound of entrance had not been done. A total of 40 joint wounds (38 knee joints, one elbow and one shoulder joint) came up for treatment. In 3 cases primary amputation was required; in the other 37 cases the simple method described above was employed. In 7 cases secondary amputation became necessary. The remaining 30 were dismissed with fairly movable joints. There were no deaths. The last fatal case resulting from a joint injury dated back to the time when, though tincture of iodin was employed, primary suturing of the wound was not undertaken. While admitting that the results were not ideal, Salzer maintains that they were at least much better than had been secured under the conservative treatment. An important advantage of this method was that the patients suffered much less pain.

Foreign Body Arthritis.—Hirsch reports a case of arthritis of twenty years' standing due to the presence of a fragment of a needle in the knee joint. In spite of the fact that the joint had been frequently swollen and painful, after the needle was removed complete recovery followed in four months. Hirsch concludes, therefore, that in any disease affecting the knee joint the presence of a foreign body should be given diagnostic consideration. In his case the arthritis had been first of the intermittent hydrops type and later of the spongy, granulation type. This latter aspect should suggest the possibility of a foreign body.

Ophthalmomyiasis.—Goldschmidt describes his experience with 100 cases of ophthalmomyiasis in a river region in Russian Turkestan, central Asia. In the summer of 1915 a prisoner of war presented himself complaining of a foreign body in the left eye. The eyelids were swollen and inflamed. Examination revealed living organisms in rapid motion spread over the surface of the conjunctiva. There were from eighteen to twenty of such yellowish white organisms of varying length (from 0.25 to 1.5 mm.). Most of the larvae were removed by rinsing out the eye. Some of them, however, had burrowed into the cornea, and had to be removed with a swab, which was only possible after cocain had caused them to loosen their hold. The patient developed, as a result, a keratitis with hypopyon, which healed leaving maculae and synechiae. The larvae were preserved in alcohol and were pronounced by Dr. Kuznetzoff, a Russian physician who had been practicing in the vicinity for a number of years, to be *Sarcophila magnifica Schineri* (*Wohlfarti*). Goldschmidt had occasion to remove similar larvae from the eye in 100 other cases and learned that this ophthalmomyiasis was not uncommon. He says that a fly in its flight will often scrape off from sixty to seventy larvae onto the eyelid. The larvae display a tendency to burrow into the eyeball, and have been known to destroy it completely within forty-eight hours. Or after weeks of suppuration the end-result is atrophy of the eyeball, which is permeated with scars. Kuznetzoff had not known of any fatal cases such as have been reported by others, resulting from pyemia and sepsis.

Zentralblatt für Chirurgie, Leipzig

Jan. 17, 1920, **47**, No. 3

*Headache After Intraspinal Medication. G. Hosemann.—p. **49.**
*Blocking the Splanchnic Nerves. A. Hoffmann.—p. 53.
*Sound for Stenosis of Esophagus. E. Borchers.—p. 54.

By-Effects with Spinal Anesthesia.—Hosemann explains that the persisting headache after spinal anesthesia should always be analyzed as it may be due to one of several causes. In 17 per cent. of his 100 cases it was explained by irritation, meningism; the fluid was always under high pressure, with high albumin and cell content. Treatment here is with repeated lumbar puncture, diuretics and purges. In the other 83 per cent. the fluid was under very low or negative pressure, and there was very little albumin or cell content. The above mentioned measures would only aggravate conditions here. Copious intake of fluid is required here, better by the vein than subcutaneously or by the rectum. This will cure the headache within a few hours while under other measures it is liable to persist for weeks.

Blocking the Splanchnic Nerves.—Hoffmann joins in the chorus of praise for Kappis' method of blocking the splanchnic nerves from the rear for abdominal surgery. (The technic was described in these columns, Feb. 21, 1920, p. 568.) He has been using it for nearly a year for all kinds of operations on the stomach, duodenum, bile ducts, etc. A weaker solution of procain answers the purpose, he says, and he advocates adding a little potassium sulphate: 0.5 parts procain; 20 parts of a 2 per cent. solution of potassium sulphate and enough of the 0.9 per cent. solution of sodium chlorid to make 100 parts, adding 12 drops of 1:1,000 epinephrin.

Dilation of Cicatricial Stenosis.—Borchers expatiates on the advantages of the special sound he uses for this purpose. It is 1.5 meters long and tapers smoothly from 1.5 mm. at the tip to 1 cm. at the base. It is used in connection with the endless silk thread drawn out through an opening into the stomach, in correction of stenosis of the esophagus.

Jan. 24, 1920, **47**, No. 4

*Treatment of Postoperative Tetany with Parathyroid Grafts. F. Landois.—p. 74.
*Removal of Half of Horse-Shoe Kidney. G. Magnus.—p. 76.
Technic for Correction of Equinus Contracture after Amputation in Tarsus. A. Wachter.—p. 78.

Transplantation of Parathyroids in Treatment of Tetany.—Landois' experiments with parathyroid grafts in thirty-five dogs showed that only the autoplastic operations were successful, and not all of these. Even at the best, the transplanted parathyroids have only a transient functional action, as they are soon absorbed. At the Breslau clinic there was only one case of tetany after thyroidectomy in ten years, but then came five cases in the last five years, fatal in one instance. As the spasms were continuous and the man was unconscious, three parathyroids were implanted, and essential improvement followed at once. It lasted, however, only nine days; the spasms then returned and soon proved fatal. Landois reiterates in conclusion that the parathyroids are not secreting organs, but glands which serve to neutralize the toxicity of certain injurious substances in the body. Hence treatment with parathyroid has little chance of sucess. Any treatment with established tetany is uncertain.

Heminephrectomy of Horseshoe Kidney.—Magnus found that the tuberculous process was limited to the right half of the horseshoe kidney, and he resected this alone. There was surprisingly little hemorrhage, and clinical recovery soon followed. The abnormal shape of the kidney was not suspected until it had been exposed.

Zentralblatt für Gynäkologie, Leipzig

Jan. 17, 1920, **44**, No. 3

*To Arrest Hemorrhage with Placenta Praevia. P. Mathes.—p. **57.**
Sweat Gland-Tissue Cancroid in Vulva. J. Schiffmann.—p. 59.
Nature of Sacral Pain. J. Novak.—p. 64.
Pituitary Treatment of Amenorrhea. R. Hofstätter.—p. 68.
Twilight Sleep in Obstetrics. P. Feldmann.—p. 74.
Transverse Septum in Vagina Impeding Delivery. T. Micholitsch.—p. 84.
History of Experimental Hermaphroditism. A. Foges.—p. 87.

Central Placenta Praevia.—Mathes knows of only twenty-two cases of placenta praevia centralis on record and adds another to the list. The fatal hemorrhage in such cases usually comes on separation of the placenta, so that the third stage of labor is the dangerous one here. He pleads for more energetic management of the case, pointing to his success with tying a thread around the tissues, just above each bleeding point, after the cervix had been opened up wide with speculums, after removal of the placenta. The placenta had been easily removed from above the cervical ring; below this it had to be pried loose, a scrap at a time. The hemorrhage at first had been so severe that the idea of cesarean section had to be abandoned as there was no time to prepare for it, and drawing down the foot arrested the bleeding. Waiting for the placenta to separate spontaneously, he says, has cost many lives, but with this method no fatal hemorrhage should occur from this cause, in a maternity at least. Pituitary and ergot should be given to insure good contraction of the uterus, the placenta then separated by hand under direct visual inspection, and each bleeding point tied off with a thread run around centrad.

Jan. 24, 1920, **44**, No. 4

*Carcinoma Dose of Roentgen and Radium Rays. L. Seitz and H. Wintz.—p. 97.
Exudates in Pouch of Douglas with Appendicitis and Adnexa Disease. A. Mueller.—p. 109.
*Laminaria. K. Hoffmann.—p. 111.

The Unit of Cancer-Cell Destroying Action in Irradiation.—Seitz and Wintz have been studying the amount of roentgen and of radium rays required to destroy the cancer cell. They call this the carcinoma dose. It is equivalent to 100 to 110 per cent. of the skin unit dose (H. E. D.) which they accept as the amount of rays with 0.5 mm. zinc filter which, applied at a distance of 23 cm. from the skin, induces slight redness after eight days and a brown tint by the third to sixth week. Calling this 100 per cent., the carcinoma dose is 100 to 110 per cent.; the lowest limit is 90 per cent. It thus corresponds to the older conception of the erythem dose, but it does not vary, like the latter, with the susceptibility of the skin. Radium causes rapid necrosis of the cancer cell, while the destructive action of the roentgen rays is slower and more gradual, but the final result is the same with both, although the radium action is a close-up and the roentgen action a distant one. To destroy a cancer of the cervix over an area 3 cm. in circumference requires about 100 mg. radium element for thirty-two hours. When the amount of radium element was increased to 140 mg. and the exposure lengthened to thirty-four hours, with a 3 cm. cancer, the rectum suffered and a burn resulted. On account of the close contact and the biologic effect, the dose cannot be estimated by mathematical calculation as it might be if the distance were the same as with the roentgen rays. They advise that the dose of 100 mg. radium elements should not be surpassed unless the tumor is larger than 3 cm. and the bladder and rectum are thus pushed farther away, to a distance which weakens the effect of the rays, so that the sound tissues are left still capable of regenerating. To increase the distance, they keep the gamma ray filtered preparation in a wooden capsule, 4 to 7 mm. thick, with a thin coating of aluminum, and a glass cover. This holds the radium about 10 mm. apart from the tissues, and sometimes the cervix has to be dilated to introduce this bulky capsule.

Removal of Laminaria.—Hoffmann passes a loop of stout cord horizontally around the end of the tent as this projects from the cervix. Tweezers or some other small instrument is tied to the ends of the cord projecting from the vulva. By this firm hold and cross-bar handle, the laminaria can be easily pulled out.

Zentralblatt für innere Medizin, Leipzig

Jan. 31, 1920, **41**, No. 5

*Experimental Pulmonary Edema. E. Laqueur and D. de Vries Reilingh.—p. 81.

Experimental Pulmonary Edema for Teaching Purposes.—Laqueur and Reilingh expatiate on the advantages of inducing osmotic edema in rabbits, and then practicing percussion and auscultation on them and comparing the findings with the pathologic anatomy. They induce the edema by intratracheal injection of 5 or 20 c.c. of physiologic sodium chlorid solution.

Hygiea, Stockholm

Feb. 16, 1920, **82**, No. 3

*Otitis Media and the General Practitioner. R. Bárány.—p. 81.

Otitis Media.—Bárány insists that the symptoms from acute otitis media which call for immediate operation during the third week do not have this significance during the first week. Only when they keep up after paracentesis, and grow worse, is the operation demanded. The bone is still hard, and to get into sound bone merely spreads infection. It is better to wait till the third or fourth week unless chills or meningitis force earlier intervention. The practitioner must realize further that there may be a destructive process in the mastoid process from an otitis media that has never required paracentesis. The ear may have healed while the mastoiditis is progressing. If the mastoid is tender from the start, the probabilities are that an operation will be necessary, but this is not inevitably the case. In one woman of 50 with 8 per cent. sugar, a large abscess in the mastoid process accompanied otitis media, and the auditory canal was filled with pus and granulations. The ear was treated with Burow's solution and thorough rinsing, while the sugar was being reduced with antidiabetic diet, to prepare for the operation. But in two weeks the abscess had disappeared and the hearing and the drum seemed to be normal. The physician should therefore be guarded in his prognosis, but the possibility of the bacteria dying off and the abscess healing spontaneously is too remote to deter from operating. Even with paracentesis he advises to temporize for a few hours, as spontaneous improvement may be observed. High fever in children in itself does not demand an immediate operation. In treatment of otitis media, he advises thorough but gentle rinsing out of the ear, saying that he does not think it possible for water to be forced into the internal ear, by this means, so that the dread of inducing labyrinthitis or meningitis is unfounded. He warns, however, that no water must be left in the ear as this provides a culture medium for germs. After rinsing, the ear must be thoroughly dried with cotton.

After the operation, he sutures the wound except for one small opening which he plugs with a rubber finger stuffed with gauze. This cigarette tampon is removed the next day, and a drain is inserted in its place made of rubber tissue rolled into a 2 or 3 mm. thick drain, which answers the purpose ideally. With chronic otitis media, the main contingents for operation are cholesteatomas in the middle ear, and for this he applied what he calls the "conservative radical" operation in 70 per cent. of his fifty-five cases and the hearing was considerably improved in all but two instances. This technic is being applied now extensively in other clinics.

Ugeskrift for Læger, Copenhagen

Jan. 22, 1920, **82**, No. 4

Value of Dietaries in Different Countries. P. Heiberg.—p. 97.
Habitual Displacement of Head of Fibula. F. Teilmann.—p. 110.
*Treatment of Sterility in Women. C. Baastrup.—p. 111.

Treatment of Sterility in Women.—Baastrup is convinced that excessive acidity of the vaginal secretions may be responsible in some cases for sterility, by injury of the spermatozoa from the overacid environment. This assumption was confirmed in one case by conception following the use of a vaginal douche of a weakly alkaline fluid: a tablespoonful of a 2:1,000 solution of sodium hydroxid in a pint of tepid water.

Correction.—In the abstract on page 1860 of The Journal for Dec. 13, 1919, from Tecon's article on "Trauma and Tuberculosis," part of a sentence was left out by mistake. The sentence should read: "Sergent and Mantoux found only 9 and 5 per cent. with pulmonary tuberculosis after contusions *and penetrating wounds* of the chest while Tecon's proportion was 42 per cent." The italics are the missing words. The proportions after contusions alone were 55.5, 38.9 and 60 per cent., respectively.

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THE INCIDENCE OF ACUTE RHEUMATIC FEVER AT BELLEVUE HOSPITAL*

ALEXANDER LAMBERT, M.D.
Visiting Physician, Bellevue Hospital
NEW YORK

On returning in the spring of 1919 to service in the wards of Bellevue Hospital, after a two years' absence, I was struck by the fact that there were no cases of acute rheumatism in the service. My memory was that spring and summer were the months when formerly there had been the largest number of cases. The house staff, on being questioned, seemed to accept it as not unusual; and though their memory dated back but two years at most, still it was evident that they were accustomed to the occurrence of fewer cases of the disease than had been my own hospital experience.

There were admitted into Bellevue Hospital 6,535 cases of acute rheumatic fever from January, 1906, to Sept. 1, 1919. Unfortunately, the records of the last four months of 1919 are still incomplete for the moment. In dealing with any hospital history records, with a varying house staff taught in three different schools of medicine in New York City and in the open division, coming from several widely separated schools over the United States and Canada, one would expect to find a certain variation of opinion as to what clinical picture would be recorded under such a general heading as acute rheumatism. But in reading the histories one finds it generally accepted, with few exceptions, that classified under rheumatism is the inflammatory

TABLE 1.—CASES OF ARTHRITIS, 1912-1918

Year	No. of Cases
1912	106
1913	95
1914	147
1915	205
1916	200
1917	242
1918	226

arthritis with fever affecting two or more large joints and frequently showing cardiac manifestation. The arthritis affecting the smaller joints of the hands and feet or affecting only one large joint are classified under arthritis, or knees and ankles affected with but little if any fever. Conversely, in studying the histories of arthritis one is struck by the unanimity with which acute arthritis refers to traumatic injuries to single joints or the inflammation of single joints, nontraumatic, or the acute multiple arthritis of the smaller joints and without cardiac valvular involvement. Only a very small percentage will strike one as more fittingly to be classified from arthritis to acute rheumatism or vice versa. The number of cases of arthritis five and six years ago were about one quarter those of rheumatism, but during the past four years the number of rheumatism cases has diminished and the number of arthritis cases increased until in 1918 there were slightly more cases of arthritis than of rheumatism, there being 218 cases of rheumatism and 226 of arthritis. Table 1 shows the number of arthritis cases since 1912.

TABLE 2.—RELATION OF RHEUMATIC FEVER CASES TO TOTAL ADMISSIONS

Years	Total Rheumatic Fever Cases Admitted to Bellevue Hospital	Total Admissions to Bellevue Hospital All Causes	Percentage of Rheumatic Fever Cases to Total Admissons
1906	444	23,660	1.87
1907	706	28,789	2.45
1908	630	29,411	2.4
1909	512	31,652	1.61
1910	599	36,820	1.62
1911	526	33,214	1.58
1912	432	36,113	1.19
1913	489	36,802	1.36
1914	581	37,162	1.56
1915	475	46,241	1.02
1916	394	43,951	0.896
1917	457	44,315	1.03
1918	218	40,980	0.531
1919	190*	37,632	0.521

* Calculated from average admissions for last four months of five previous years, i. e., adding 11 per cent. to admissions for first nine months, 172 + 18 = 190.

In studying the rheumatism cases tabulated by year for age and total number (Tables 2 and 3), it is seen that in 1907 the percentage of acute rheumatism cases to the total admissions was 706 cases in 28,789 admissions, that is, 2.45 per cent. From that year the percentage has fluctuated slightly, but it steadily diminished to 1918, when it was 0.531. The total number of rheumatism cases had fallen from 706 to 218, and the total admissions had increased from 28,789 to 40,980. From 1909 through 1914, the number of rheumatism cases ran from 599 to 432, and the total admissions from 31,652 to 37,162, with practically a stationary ratio to total admissions, that of 1.6 per cent. But from 1915 for the next four years, the total admissions to the hospital increased greatly, and the number of cases of rheumatism diminished, so that the ratio to admissions becomes 1.02, 0.896, 1.03, 0.531 and 0.521 per cent. In 1919 we have the actual number of admissions for acute rheumatism for the first nine months of the year; but in calculating the total for

This classification also rules out the number of arthritis deformans, the chronic arthritis and the gonorrheal joint infections.

* Read before the Association of Cardiac Clinics, New York, Feb. 20, 1920.

1919, the actual admissions for the last four months of each year for the preceding five years were taken as a standard. From these figures it is evident that 11 per cent. of the total admissions for each year for rheumatism have been admitted during the last four months of the year. During the previous three years averaged about the same. For all ages under 20 years, the percentage of these ages to the total has distinctly increased, as the total number of cases of rheumatism has diminished. Young persons from 20 to 24 and from 25 to 29 show a greatly diminished actual number of cases admitted, and in the last two years, 1918

TABLE 3.—ADMISSION OF PATIENTS WITH ACUTE RHEUMATISM ACCORDING TO AGE AND RATIO OF EACH FIVE-YEAR PERIOD TO TOTAL ADMISSIONS FOR EACH YEAR

	1911		1912		1913		1914		1915		1916		1917		1918		1919	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Under 5 years of age	..	....	4	....	1	....	..	....	2	....	1	....	3	....	..	....	1	....
From 5 to 9 years	4	0.7	2	0.4	6	1.2	14	2.4	11	2.3	10	2.5	9	1.9	13	5.9	15	8.7
10 to 14 years	14	2.6	7	1.6	22	4.5	12	2.1	19	4.0	10	2.5	19	4.1	15	6.9	15	8.7
15 to 19 years	46	8.7	31	7.1	47	9.6	48	8.2	33	6.9	20	5.0	31	6.7	23	10.5	12	6.9
20 to 24 years	93	17.7	84	19.4	106	21.7	113	19.4	90	18 9	66	16.7	84	18 3	31	14.2	24	13.9
25 to 29 years	89	16.8	49	11.0	80	18.4	107	18.4	80	19.0	48	12.0	88	19.0	30	13.0	13	7.5
30 to 34 years	84	16.0	63	14.5	75	15.3	82	14 0	67	14.0	61	15.4	62	13.5	27	12.3	20	17.4
35 to 39 years	53	10.1	67	15.5	58	11.8	59	10.1	59	12.4	49	12.0	48	10.5	26	11.9	21	12.2
40 to 44 years	50	9.4	51	11.8	48	9.8	44	7.5	38	8.0	42	10.6	39	8.5	12	5.5	16	9.3
45 to 49 years	52	9.8	28	6.0	23	4.9	38	6.5	29	6.0	27	6.8	36	7.9	20	9.0	12	6.9
50 to 54 years	21	4.0	25	5.7	12	2.4	33	5.6	20	4.0	31	7.1	18	3.9	8	3 6	6	3.4
55 to 59 years	9	1.6	10	2.3	6	1.2	22	3.7	12	2.5	14	3.4	11	2.4	9	4.0	3	1.7
60 to 64 years	9	1.6	8	1.8	9	1.8	6	1.0	9	1.9	9	2.3	6	1.3	3	1.3	3	1.7
Over 65 years	1	....	3	....	1	....	3	....	6	....	10	....	3	....	1	....	1	....
Totals	526		432		489		581		475		394		457		215		172*	

* First nine months of year.

the percentage has been 9 instead of 11. We therefore added 11 to the admissions for 1919 as the probable total, the real figures to be obtained later.

Table 4 shows the number of patients with rheumatism admitted by months from 1914 to 1918, inclusive, and for the first nine months of 1919. This

TABLE 4.—NUMBER OF ADMISSIONS FOR RHEUMATIC FEVER

	1914	1915	1916	1917	1918	1919
January	45	36	23	23	24	15
February	46	28	36	33	28	7
March	51	54	50	60	32	23
April	96	50	69	69	30	30
May	78	84	65	75	33	26
June	74	57	35	76	26	31
July	38	55	50	48	20	27
August	37	26	29	22	9	14
September	23	25	8	19	7	..
October	22	18	8	4	2	..
November	16	18	7	7	2	..
December	23	19	11	19	6	..
	579	470	391	455	219	172

table further shows that rheumatism is noticeably more prevalent from March 1 to August 1 than in the other months of the year, showing the disease to be one of spring and summer predominance. This tends to disprove the "chill" theory of causation as brought forward by Cullen in 1778 and held until recent years. Hirsch shows that in Denmark and Germany the winter months of December, January and February show usually a higher incidence than spring and summer. Similarly separated into seasons, the Bellevue figures of 1915 through 1918 have a spring and summer excess except in the winter months of 1918 (Table 5).

Considering the relation of age to the occurrence of rheumatism, we have definite figures from 1911 to 1919. Divided in quinquennial periods from 5 to 9 and 10 to 14 years of age, the actual number of admissions of the 5 to 9 group has increased, but the 10 to 14 group has remained about the same, so that the percentage of the ratio of these years to the total admissions for the year has risen as the total number of admissions has decreased. From 15 to 19 years the actual number has diminished, but the percentage has and 1919, a percentage fall also. From 30 to 39 years of age, the total number of admissions has fallen with but slight change in percentage to total cases. The same can be said for the years 40 to 59. There has been, therefore, a great diminution of the total number of patients with rheumatism admitted from 15 years of age on. Under 15 years of age the total number admitted has remained stationary. From 15 to 29 years of age, both the actual number of patients admitted and the percentage of these age groups to the total number each year has noticeably diminished, particularly in the years 20 to 29. From 30 years onward, the greatest change has been in a diminution of actual numbers.

EFFECT OF PREVENTIVE MEASURES

These changes are marked after the year 1914. Has any new factor appeared in the preventive measures against rheumatism since 1914? None, except the spread among the medical profession of realization of the relation of focal infections to general diseases; and it was about six years ago that the dental clinics were established in the various hospitals in this city and the tonsillectomy clinics became vigorously active. The foregoing figures would seem to indicate that in the years of childhood, from 5 to 14, the impression of these preventive measures has not been very notice-

TABLE 5.—PERCENTAGE OF ADMISSIONS FOR RHEUMATIC FEVER

	Winter Dec., Jan., Feb.	Spring Mar., Apr., May	Summer June, July, Aug.	Autumn Sept., Oct., Nov.
1915 (+ Dec., 1914)	18.3	39.6	29.1	12.8
1916	19.5	46.1	28.7	5.6
1917	14.9	45.6	32.4	6.6
1918	30.6	40.9	23.7	4.7

able. In young adults from 15 to 29 there has been a strong impression made. Has this been due to disinfecting the teeth or removing tonsils or both, or neither? From 30 years to 50 there has also been evident results of dental work. To confirm these impressions, 1,000 consecutive histories of rheumatism were examined in Bellevue in the 1915-1918 period. In the

forty-three children of this group, 58 per cent. are recorded as having bad tonsils and 53.4 per cent. as having bad teeth. The records show that 25.3 per cent. of these 1,000 patients had tonsils noted as bad and 68.3 per cent. had teeth noted as bad. Thirteen per cent. are noted as having both tonsils and teeth bad. Tonsils alone seemed to be the focus of infection in 11.3 per cent., teeth alone in 55 per cent., and both bad in 13 per cent. The teeth are mentioned as good in only 6.7 per cent. of these 1,000 patients, and thirty-one of these sixty-seven patients are noted as having severe tonsillar infections.

As a possible checking comparison, the records of 250 consecutive cases of pneumonia were studied to see in what proportion the teeth and tonsils showed infection but with no rheumatism or other arthritis. The percentage of bad teeth in this group is 57, as against 68 of the rheumatic group, and the total percentage of tonsils noted as bad, 17 as against 25.3. More striking, however, is the percentage of patients in whom the teeth are noted as good, being 19, as against 6.7 in the rheumatic cases.

It is impossible to state what percentage of these cases showed cardiac involvement. In 1908, in studying the histories of 500 cases of rheumatism in Bellevue, 253, or 56.6 per cent., showed recent or old endocarditis. If the cardiac involvement dominated the clinical picture, the patient would probably be recorded under acute or chronic cardiovalvular disease and not under acute rheumatism. The liability, moreover, to cardiac involvement varies with age, the figures of Church showing 75 per cent. for children under 10 years of age and liability to their involvement diminishing, until over 40 years of age the percentage was 12.5 per cent.

TABLE 6.—CONDITION OF TEETH AND TONSILS IN ONE THOUSAND CONSECUTIVE HISTORIES OF ACUTE RHEUMATIC FEVER (1915-1918)

	Cases		Controls	
	No.	%	No.	%
Cases excluded*	34	....	0	0
Tonsils bad	113	11.3	27	11
Teeth bad	551	55.0	126	51
Both bad	131	13.0	15	6
Neither mentioned	119	11.9	33	13
Throat inflamed	224	22.4	0	0
Teeth good†	67	6.7	48	19
Total bad tonsils	253	25.3	42	17
Total bad teeth	683	68.3	141	57

Total cases, 1,000; total controls, 250.
* Cases excluded history showed patient suffering from some other disease.
† Of these sixty-seven cases, thirty-one are especially noted as instances of marked tonsillar trouble.

CONCLUSION

These figures were obtained in gathering material for a report on health insurance to see whether or not there had been an actual diminution in the number of cases of acute rheumatic fever admitted to Bellevue Hospital, and to see whether any deductions could be drawn from them regarding the wisdom of including dental hygiene in the preventive measures of social insurance. They are too limited for any sweeping generalizations. But it would seem that the actual and striking diminution of total admissions for rheumatic fever of the past two years was more than accidental, and that for this the dental hygiene more than any other one factor was responsible. That tonsillectomy has also made its impression is most probable, as the diminution of both total number of admissions in the 20 to 29 year group and the percentage ratio to total number of this group is really most striking, especially since during this period of life the liability to rheumatic infection is especially noticeable. The average number admitted of 20 to 29 years of age during the four year period 1911 to 1914 was 180, while during the five year period 1915 to 1919 it was 110. The ratio to total admissions has also fallen from 17.8 per cent. for 1911 to 1914 to 15.3 per cent. for 1915 to 1919. The two periods from 20 to 29 are the periods in which the figures show most definitely an average reduction of percentage to total, combined with a definite reduction of total admissions. Have tonsillectomies begun to tell, or has it been oral and dental hygiene? Undoubtedly both, as ten years have not elapsed since tonsillectomy before 15 years of age has become widespread, so that it could not previously have affected the older years of this and other age groups in the community.

ADEQUATE PREPARATION FOR THE PRACTICE OF OTOLARYNGOLOGY

DISCUSSION OF AN OLD PROBLEM *

GEORGE E. SHAMBAUGH, M.D.
CHICAGO

As an introduction to my discussion I wish to relate a few experiences which have come to me recently.

REPORT OF CASES

CASE 1.—Last December a man, aged 23, consulted me about his ear trouble. He stated that for perhaps six or eight years he had noticed an insidious development of deafness, associated with a persistent tinnitus aurium. At first only one ear was involved, but for two years both had been affected.

Both drum membranes were unusually transparent, but in other respects they were quite normal. The functional tests revealed a marked elevation of the lower tone limit, a strongly negative Rinné test for both ears, and an actual prolongation of bone conduction, with an extensive defect at the upper tone limit. The diagnosis was clearly one of otosclerosis, producing fixation of the stapes and a degeneration in the labyrinth. The lower and middle turbinated bodies had been removed from both sides, the septum had been resected, the faucial tonsils had been enucleated, and the nasopharynx had been curetted. In the operation on the faucial tonsils, both posterior pillars had been removed. The result of these operations was a marked pharyngitis sicca, with crusting in the nasopharynx, thickening of the lateral bands of the pharynx, caused by the removal of the posterior pillars, and an annoying rhinitis.

The patient stated positively that he had never experienced any nose or throat symptoms prior to his operations, and that the series of operations had been performed to arrest his increasing deafness. It is at once apparent to any one who understands the diagnosis of ear diseases that this patient was suffering from a form of ear trouble which has no especial relation to nose and throat conditions, and that operations on the nose and throat could not be expected to better his ear condition.

CASE 2.—Last month a man, aged 20, was referred to me from a neighboring state because of tinnitus aurium, which had annoyed him for more than a year. A letter from his family physician stated that the patient was coming to me to have carried out a series of operations on the nose and throat, which had been recommended by a local specialist, in order to save the patient from losing his hearing. The

* Read before the Chicago Laryngological and Otological Society, March 1, 1920.

operations that were recommended included resection of the nasal septum, turbinectomies and removal of the tonsils. The patient was experiencing no nose or throat trouble. Both drum membranes were quite normal, and the functional examination disclosed no defect in the hearing. It was possible that the tinnitus was being caused by an incipient otosclerosis, which had not as yet produced any defect in the hearing. One thing was certain: the patient did not suffer from any middle ear disease which could have been influenced by nose or throat conditions.

Case 3.—During the same week a young woman residing some distance from Chicago consulted me about having a mastoid operation, which she had been urged to have done. The hearing in the right ear was very much reduced, as the result of an exhausted suppurative otitis media. The hearing in the left ear was only slightly impaired. In this ear there was found a slight mucous discharge which came from a large perforation in the anterior segment of the membrana tympani. This discharge, the patient stated, had recurred from time to time in this ear since childhood. There was no odor. It was because of this discharge that the radical mastoid operation had been urged as a prophylactic measure to prevent a possible serious intracranial complication. The palpable facts in this case were, first, that the patient was not suffering from a form of ear trouble which leads to a serious complication and, second, that an operation had been proposed which might very easily result in a serious impairment of the hearing in the one ear on which the patient had to rely. In other words, an operation was proposed for an ear condition which did not require an operation and, furthermore, if a condition had really existed in this ear which would ordinarily justify an operation, such a procedure would be warranted in this case only in the presence of symptoms indicating an impending serious complication, because it was the one ear on which the patient had to rely for hearing.

Case 4.—A few weeks ago a patient came to the Presbyterian Hospital suffering from a discharging ear, the result of an acute otitis media. He stated that his ear discharge had begun last December and that practically from the onset he had suffered from pain, more or less severe, in the mastoid, and that the region over the process had been swollen and tender for a couple of weeks. Only two days before I saw this patient he had been urged to have his tonsils removed, a submucous resection of the septum performed, and turbinectomies, in order to cure his discharging ear.

COMMENT

Here is a series of cases presenting the most elementary clinical problems that confront the otolaryngologist and in each instance entirely wrong advice has been given. The questions arise: What is the cause of this state of affairs, and is there a remedy? The cause for this condition is the fact that the country is literally flooded with general practitioners who have found a lucrative field of work in doing operations on the nose and throat, but who have had no fundamental training in otolaryngology which has prepared them to make the proper examination or to diagnose the conditions requiring these operations. For years general practitioners have been coming to our city clinics, especially to the so-called postgraduate schools, with the sole object of learning the technic of a few operations on the nose and throat. It has been proverbial that these men have not been interested in learning the principles of otolaryngology. Diagnosis has not especially interested them. They came to get a smattering of technic for a few operations. This they could get in a few weeks, whereupon they returned to their practice to begin doing these operations on their patients. It is not surprising that the wrong advice is so frequently given, or that so many unnecessary operations are being performed.

The remedy for this state of affairs is equally clear. The representative otolaryngologists throughout the country should insist that the practitioners who come to them for instruction should first acquire a knowledge of otolaryngology before they are taught to do operations in this specialty. Otolaryngology is not such a difficult subject that it requires a genius to master its principles. On the other hand, it is just as clear that these principles cannot be acquired by a few weeks or a few months' attendance at postgraduate clinics. We should insist that a physician who is preparing to practice otolaryngology should spend as a minimum one year of full time work in the study of this subject. His work during this year should be as much in the study of the fundamental sciences of anatomy, embryology, physiology and pathology as in the study of the clinical aspects of the subject. It does not suffice that he assist in a clinic during this year, where the chief work is the removal of tonsils and the correction of septum irregularities. His reading should be directed, and assistance should be given him in learning to make diagnoses and to understand the proper indications for operative treatment. The technic of operations should be taught only as the final part of such preparation. It is a relatively simple matter to teach a student the technic of operations. It is a difficult problem to teach the methods of examination and the making of diagnoses. The situation throughout the country does not call so much for a large number of men to do the work in otolaryngology as it does for the adequate training of only a relatively small fraction of the men who are at present attempting to take care of this work. I am told that in many communities the number of men who are limiting their practice to otolaryngology often exceeds that of the men doing all the other medical work, and that these men are succeeding financially more than their fellows largely because of the unnecessary surgical work which they are undertaking to do.

We owe it to the public and the specialty which we are attempting to represent that we take a definite stand on this proposition of adequate preparation for practice in this field. We cannot directly control the unscrupulous practitioner who takes a case in which we refuse to operate and which he himself knows does not require an operation, and who subjects the patient to, say, a tonsil enucleation, simply because the patient has got it into his head that his tonsils are causing an imaginary trouble; but we can and should control the preparation of men who are attempting the operations in our specialty without knowing the indications for these operations. The need of controlling the preparation for special practice is much greater now than it was a few years ago, when the general practitioner was attempting to treat these cases simply by using sprays and topical applications. No special harm to patients was done by such treatment. But give these practitioners enough knowledge of the technic of an operation or two on the nose or throat, so that they can undertake to do these operations, and the field for harm by doing unnecessary surgery is opened.

This is not a new problem. In 1907 I insisted [1] that the preparation for special practice should be as much in the fundamental sciences as in the clinical study. I emphasized the point that this work should be done in the laboratories of the university, and was the first,

1. Shambaugh, G. E.: The Preparation of the Specialist, J. A. M. A. 49: 540-543 (Aug. 17) 1907.

I believe, to express the view that it be put on the basis of genuine graduate work leading to the granting by the university of a higher degree, the degree of Doctor of Philosophy, for example, in Otology. We now for the first time see this proposition being taken up by some of our universities.

Again in 1909 I pointed out [2] the inability of the existing postgraduate schools to provide more than a smattering of clinical instruction, which, after all, is of minor importance in the proper training of the real specialist as compared with the benefit derived from adequate instruction in the fundamental sciences, which can be acquired only in the laboratories of a university.

Finally, in 1912, I emphasized [3] the fact that the real specialist in medicine, just as in any field, is the man who by perseverence and concentration of effort succeeds in placing himself in touch with the advanced line of work, where he is able to see and to attack the various unsolved problems in his particular field: that the specialties are no place for the dilettant in medicine or for the unsuccessful general practitioner. I pointed out the analogy between the work of the postgraduate schools in training specialists and that of the existing proprietary medical schools in training general practitioners, and insisted that the proper place for both of these fields of instruction was in a properly equipped department of medicine of a university.

Since these articles were written, we have seen the passing of the proprietary medical school and the taking over of undergraduate medical instruction by the university, where it rightfully belonged. I believe that we are now about to see the passing of the postgraduate school as an institution for training men practicing the medical specialties. Already the universities are reaching out into this field, and it should not be long before we shall see the preparation for the medical specialties put on the basis of real graduate instruction in the university department of medicine. When this is accomplished there will be less effort made to ladle out to these students medical facts in courses devised for this purpose. The aim will be rather to lead the student to acquire knowledge of facts by his own observation and by reading. Courses of instruction aiming to drill the student in the established facts in medicine are always superficial. It is not so much the number of facts that the physician is able to acquire in his preparation as a specialist that matters. It is rather the training to investigate these facts that is of greatest value. It is right here that postgraduate instruction in this country and abroad has failed signally in the preparation for special practice. Physicians who have relied on the taking of such courses for their preparation have too often completed this instruction with the belief that they have acquired a knowledge of the important things in otolaryngology, whereas they have missed entirely the most important element in the proper training of the specialist, namely, the training, and the desire inspired by the training, for investigating these facts. Few of all the men who in the past have filled our postgraduate medical schools and have crowded the courses offered for specialists abroad have ever become contributors to the advancement of our specialty.

122 South Michigan Avenue.

2. Shambaugh, G. E.: Post-Graduate Instruction in Oto-Laryngology, Laryngoscope, June, 1909.
3. Shambaugh, G. E.: The Specialist in Medicine, J. A. M. A. 58: 1827-1829 (June 15) 1912.

A COMPARISON OF METHODS FOR DETERMINING THYROTOXICOSIS *

MALCOLM S. WOODBURY, M.D.
CLIFTON SPRINGS, N. Y.

The observations which form the basis of this paper were made during the last eight months, beginning July 1, 1919, and were prompted by a desire to compare, particularly, the epinephrin chlorid test, as described by Goetsch, with basal metabolism determinations, as advocated by Benedict, Du Bois and others, in relation to certain clinical and pathologic observations.

The questions which presented themselves were: (1) the clinical condition of the patient, as determined by a standard, carefully planned method of history taking and examination; (2) the response to the epinephrin chlorid test; (3) the basal metabolic rate as determined by oxygen consumption; (4) the pathology of the thyroid after operative removal, and (5) the clinical result of operation.

For purposes of accumulating clinical data, a special thyroid sheet was utilized. The epinephrin chlorid test as described by Goetsch was applied as we have been accustomed to apply it for the last three years. The basal metabolism was determined by utilizing the Benedict portable apparatus, the precautions advocated by Benedict and Carpenter being strictly observed. Only oxygen determinations were made in most instances. Dr. C. W. Webb operated on those patients that required operation. The pathologic examinations were made by Dr. W. S. Thomas.

The probable hyperthyroid cases coming under observation between July 1, 1919, and Jan. 1, 1920, numbered fifty. Among these were twenty-nine patients for whom operative treatment was thought to be indicated. The other twenty-one composed a group made up of patients for whom measures other than operative were employed. There were no very active cases in this group, and they will receive no further consideration at this time. From the clinical point of view the operative group comprised two main types: first, the severely toxic cases; all, on whom it was thought safe to try the test, showing markedly positive epinephrin chlorid reactions, and increased metabolic rate, varying from 20 per cent. to 85 per cent., and clinical evidences too obvious to be by any possibility mistaken; and second, a type showing symptoms milder in degree and without exophthalmos. The second type responded positively to the epinephrin chlorid test in varying degrees, but showed a metabolic rate which was low, or not increased above the limits now accepted as normal.

The last statement will bear reiteration, for on it the reason for the presentation of this report rests. We encountered patients with varying degrees of thyroid enlargement, who were incapacitated for ordinary activities over periods of very considerable duration, whose symptoms suggested thyrotoxicosis, who gave a positive response to the epinephrin chlorid test, but who had normal metabolic rates. The problem was this: Would operation in such cases be justifiable? Basing our decision on a rather large number of past observations on patients who seemed to be similar in type, but who had been examined before we were able to determine the metabolic rate, and who had shown

* Read before the Buffalo Academy of Medicine, Jan. 14, 1920.

very satisfactory postoperative results, we advised operation in certain of these cases.

Considering, on the one hand, the excellent work of Du Bois and others on metabolism in hyperthyroidism, and, on the other hand, the now popular acceptance of an increase in metabolic rate as determinable by the ordinary methods as the sine qua non of toxic thyroid states, and especially considering its apparent acceptance by the U. S. Army as a criterion, it seems a matter of importance to attempt to discover whether or not so general a conclusion is in fact fully justified. Leaving aside the question of specificity of functional tests, there is a rather general agreement that toxic thyroid states when marked in degree produce quite definite clinical pictures and give definite and constant responses to estimations of metabolic rate, and, in most instances also to the epinephrin chlorid test. But it is not at all generally conceded that there is a rather large group of patients who are in a definitely impaired physical and nervous condition, who, because of a toxic state, of probable thyroid origin, are in need of positive medical or surgical aid, and yet whose metabolic rate is not increased.

Among the thyroid patients that were observed in the period stated and that came to operation, there were five active exophthalmic cases—one carcinoma of the thyroid; one chronic thyroiditis; and three markedly toxic adenomas; the remaining nineteen patients, not exophthalmic, on whom operation was performed, were thought to be showing varying degrees of toxicity, but did not show increase in metabolic rate. From this point our discussion is limited to these nineteen.

CLASSIFICATION OF CASES

Prior to discussing with Dr. Thomas the pathologic picture in these cases, I arranged them clinically in two subgroups: the first containing the patients who were thought likely to show fairly positive pathologic evidence of overactivity; the second, those that seemed less toxic. After pathologic examination, one case thought clinically to be moderately active, failed to show on section much corroborative evidence, and two of the less active cases showed evidence on section which quite paralleled the evidence in some of the cases that were clinically more active. Possible ground for errors in classifying these three cases may be found in the fact that the patient who was thought to show clinically moderately active thyroid disturbance, associated with tremor and cardiovascular irritability with intermittent palpitation and tachycardia, was a young, rather frail woman, weighing only 80 pounds, and having a moderate sized goiter which showed on section simple, diffuse hypertrophy. In this case overabundance of not especially overactive thyroid tissue may, in so frail a subject, have produced symptoms out of proportion to the apparent pathologic condition. Of the other two patients whose glands appeared on section rather more active than the clinical picture would indicate; one was a farmer's wife, weighing 209 pounds, whose history indicated rather short duration of the thyrotoxicosis; the other was a young woman who had been leading a life of quiet invalidism for three years, a state which, in the absence of thyroid crises, may have tended to a reduction of her symptoms. These three patients showed definite postoperative improvement. Of the other five patients belonging to the second subgroup, that is, the clinically least active cases in which operation was performed, four, on section, presented the appearance of simple diffuse hypertrophy, and one that of colloid goiter.

The eleven remaining cases of the nineteen under discussion constitute a subgroup of special interest, in that they appeared to be definitely thyrotoxic, gave positive response to the epinephrin chlorid test, showed basal metabolism rates within normal limits, were with one exception very definitely benefited by operation, and showed on section glands that were thought to be compatible with the theory of thyrotoxicosis. The histopathology of the thyroid has not reached a state of much certainty, but the glands represented in these eleven cases probably all belong under one or another of the types of adenomas as described by Goetsch, Simpson and others.

We are not now concerned with the selection of types of therapy, but have chosen to refer only to patients that came to operation because this is the only class of patients available for combined observations of the type under consideration.

FACTORS OF ETIOLOGIC SIGNIFICANCE

To refer in a little more detail to the eleven cases which constitute the subgroup on which our conclusions actually rest, factors which may have had some direct or indirect etiologic significance were: family history, 8; nervous strain, 4; nervous shock, 0; infection, 9; adolescence, 3; pregnancy, 4. Most of these patients were from western New York, Ohio and Pennsylvania.

The symptoms were thus distributed: nervousness, 11 (nervous hypertension, 6; depression with nervous hypertension, 5); tremor, 6; dyspnea, or dyspnea on slight exertion, 5; palpitation, 10; tachycardia, 9; loss of strength, 9; vomiting, 0; diarrhea, 0; insomnia, 5; free perspiration, 6; edema (feet and ankles), 3; headache, 8; vertigo, 5; generally increased pigmentation of the skin, especially of the forearms, 1; weight loss (moderate), 5; exophthalmos, 0; eye grounds negative, 11; vocal cords negative, 11; tonsils infected, 9; peridental infection, 3; goiter, 10; definite nodules felt in 4. The known onset varied from a few months to twenty years. The goiter had recently increased in size in 8; there was no dysphagia; slight pressure symptoms were noted in 3; no organic heart lesion was discovered in any case.

The epinephrin chlorid test was clear, positive and of moderate degree in 6 cases; clear, positive and of more marked degree in 5. Basal metabolism results in the eleven cases were: 11 per cent., high; 6 per cent., low; 5 per cent., high; 8 per cent., high; 8 per cent. high; 20 per cent., low; 4½ per cent., low; 14 per cent., low; 2 per cent., high; 7 per cent., high and one, flat normal. Readings not varying more than 15 per cent. from the normal are regarded as normal.

On section, the eleven thyroids all showed definite abnormalities of a type suggesting functional overactivity.

I realize that I am treading on somewhat treacherous ground in making this statement in view of the present uncertain state of knowledge of thyroid histopathology. The pathologist cannot be expected to draw clinical deductions. It seems fair, however, to assume, in case one finds in a glandular organ, such as the thyroid, increase in the height and size of active cells and in cellular elements, with infolding of the walls of the acini and a decrease in colloid, provided these changes are sufficiently clear to any intelligent observer and sufficiently abundant, that the tissue in question is probably more active than is the case in normal tissue

A further index, according to Cowdry, Goetsch and others, is furnished by the abundance of mitochondria in the cytoplasm of the functioning cells, mitochondria being small granular and rodlike bodies of characteristic staining reaction which are far more abundant in cells that give evidence of a high degree of activity of growth or function than in cells of low activity.

In the pathologic study of the group of eleven cases under discussion, the histologic picture of the type just mentioned was clearly present in all, though varying somewhat in degree.

As to clinical results following operation, I have reports from all eleven cases, and despite the fact that these patients were recently operated on, the longest interval since operation being eight months, and the shortest about six weeks, the reports, with one exception, are excellent. In this one instance, a recent case, there seems to be no marked improvement. This patient was sent to Dr. Webb for thyroid operation after six months' rest at Saranac. Her symptoms were marked nervous tension, sleeplessness and fatigue, with pronounced palpitation. The epinephrin chlorid test was made by Heise at Saranac and reported moderately positive; the gland, on section, showed definite hyperplasia with cells generally of high columnar type. This patient is of a definite psychasthenic type, and the present conditions of her life do not conduce at all to a good outcome. The other ten report progress of very positive character; the generally enthusiastic tone of the reports is noticeable. The symptoms specifically reported as relieved are: nervousness in 10; tremor in 4; palpitation in 10; strength loss in 4; headache in 5; insomnia in 5; excessive perspiration in 4; vertigo in 1, and weight loss in 4. Our letters of inquiry were general rather than in the form of a questionnaire, which would doubtless have brought more detailed information.

There can be no doubt, since the thorough work of Benedict and Carpenter, that the Benedict portable apparatus, when used with due regard for the various possibilities of error, furnishes an entirely satisfactory means for the measurement of oxygen consumption. Nothing occurred in the observations under discussion to raise a reasonable doubt as to the accuracy of the observations.

THE EPINEPHRIN CHLORID TEST

The epinephrin chlorid test is rather generally conceded to be an indicator of hypersensitiveness of the sympathetic system, rather than to furnish specifically a measure of thyroid activity per se. On the other hand, it appears to be a fact that positive responses to this test are far more common in cases in which there is thyrotoxicosis than in other instances.

The injection of epinephrin chlorid solution in sufficent dose has been definitely shown to speed up metabolism, increase blood sugar, and produce slight evidence of acidosis, as is indicated in slight increase in acetone bodies in the blood and slight decrease of carbon dioxid combining power in the blood. Without quoting the detailed figures and remarks which appear in each test, it is a little difficult to classify the results of the Goetsch test clearly. No test is regarded as even mildly positive in which a rise of at least 10 points in pulse and in systolic pressure does not occur after the injection of 0.5 c.c. of 1 to 1,000 epinephrin chlorid solution, nor is a test regarded as positive unless there are clear cut subjective symptoms and tremor. With those requirements as the minimum, one may interpret approximately the terms moderately or markedly positive. The test is beyond question very striking in many instances and should be applied in all doubtful cases, not because it furnishes a criterion, but because it tends to stimulate closer study, and to offer aid in formulating a diagnosis.

In excitable persons we are accustomed to check up the test with injections of sterile water. Unfortunately, the personality of the examiner also needs consideration. Furthermore, observation of the rate of basal metabolism alone, as now estimated, should not be regarded as a sufficient criterion in determining the presence or absence of toxic states associated with the thyroid. The evidence thus obtained is of much value in estimating varying degrees of toxicity, but should receive only its proper emphasis, the complete study of the patient furnishing the only safe guide.

The epinephrin chlorid test is more sensitive and requires even greater safeguards than the estimation of oxygen consumption in many instances, and while one must not be misled to believe that no degree of thyrotoxicosis can be present unless there is increased metabolic rate, one must beware of accepting the belief that every patient responding positively to the epinephrin chlorid test requires radical thyroid treatment. No functional test yet described is pathognomonic.

Important as is the function of the thyroid in the regulation of metabolism, other factors must be taken into consideration before the picture can be regarded as complete.

SUMMARY

Observation of a selected group of eleven patients appears to present sufficient evidence to warrant the diagnosis of thyrotoxicosis, as determined by clinical observation, pathologic study of the portions of the thyroids removed at operation, and postoperative progress. These patients before operation but after rest responded positively to the epinephrin chlorid test and negatively to estimations of basal metabolic rate. They were all of the nonexophthalmic (adenomatous) type; more toxic cases of the exophthalmic and adenomatous types observed during the same period showed increased metabolic rates ranging from 20 per cent. to 85 per cent. above the normal base line.

CONCLUSION

Complete methods of examination with special attention to the possibility of errors in case of psychoneurotic patients should furnish the basis for diagnosis, rather than reliance on any functional test, though the functional tests are of great value in the compilation of evidence, especially in relation to the degree of toxicity.

The Needs of the Children of Porto Rico and the Virgin Islands.—In his seventh annual report, the chief of the children's bureau, U. S. Department of Labor, urges that the needs of the children of our island possessions, be made a subject for official investigation. In Porto Rico, there are "about 10,000 homeless children under 12 years of age, who live by whatever means they are able, many of them begging or stealing, and most of them having no permanent lodging place, sleeping at night in boxes or on doorsteps, or wherever they happen to find a lodging place secure from the rain. These children are, for the most part, deserted and abandoned children of illegitimate parentage, or orphan children whose parents have left no provision for their care and education, and they constitute a fertile soil for the implanting of criminal tendencies and are ready material for older people of criminal habits."

POISONING BY ALCOHOL "DENATURED" WITH NITROBENZENE*

R. W. SCOTT, M.D.
AND
P. J. HANZLIK, M.D.
CLEVELAND

During the last Christmas holiday season a large number of dark, ghastly looking patients who had been drinking "denatured alcohol" were brought into the City Hospital within a few days. As a rule they were unconscious. The dark, almost black, discoloration was limited mainly to the extremities, face and neck, including a fringe of the upper portion of the chest. In other words, the richly vascular, pigmented and dependent portions of the body were principally involved. The color was not the typical blue of ordinary cyanosis, but rather a livid, brown-black or nearly black, suggesting the presence of methemoglobin in the blood. Except for the deep narcosis and a moderately rapid pulse, the patients were otherwise practically normal. No other circulatory and no respiratory disturbances were detectable. After a deep sleep of about twenty-four hours, the patients left the hospital fully recovered. They did not seem to suffer, and there were no fatalities.

OBSERVATIONS

Blood.—This appeared rather chocolate colored. Spectroscopic examination revealed the presence of two typical bands of oxyhemoglobin, and a single band in the red. On reduction by ammonium sulphid, these were replaced by the broad band of reduced hemoglobin, the band in the red portion of the spectrum disappeared, indicating the presence of methemoglobin.

Analysis of the "Alcohol."—A pint of the beverage ingested by the patients was analyzed. Qualitatively, the presence of ethyl alcohol was established by the dichromate-sulphuric acid test and the refractometer. Methyl alcohol was absent, as indicated by the refractometer. Quantitative estimation of formaldehyd was made by the phloroglucin reagent[1] after oxidation with a copper spiral. Free formaldehyd was present in the alcohol to the extent of about 1:500,000, according to the phloroglucin test. Strong positive tests for nitrobenzene were obtained by means of the zinc dust-acetic acid hypochlorite test, and also the indophenol reaction. The odor of nitrobenzene was distinct, resembling the odor of common shoe dyes. Quantitatively, ethyl alcohol was present to the extent of 61 per cent. (by refractometer). For these refractometer estimations we are indebted to Mr. Percy Tarver of the City Health Laboratory.

COMMENT

The results of our examination indicate that the peculiar dark (black) discoloration in these patients was due to methemoglobinemia arising from the ingestion of nitrobenzene in the "denatured" alcohol. The narcosis was, of course, due to alcohol. The relatively low concentration of formaldehyd found is negligible so far as toxicity is concerned.

The symptoms observed are practically the same as those described by Stifel[2] in soldiers who were poisoned by the use of a shoe dye containing nitrobenzene. As reported by Stifel, recovery from nitrobenzene poisoning is prompt and spontaneous. In other words, this "denaturizing" agent is relatively harmless. The beverage so denatured is not rendered althogether unpleasant, either. However, denaturization by nitrobenzene is illegitimate, the law requiring either of the following with certain concentration limits; mercuric chlorid, hydrochloric acid, formaldehyd, phenol and tannic acid, alum, formaldehyd and camphor, and liquor cresolis compositus.

Chronic poisoning from the prolonged use of alcohol containing nitrobenzene might be different from the acute poisoning here reported. Tolerance even to small doses of nitrobenzene is not known to exist, and if it is possible, the cyanosis and methemoglobinemia might still exist, though probably of low grade. Digestive disturbances, visceral degenerations, etc., arising therefrom are conceivable. These might confuse the diagnosis of minor maladies. Physicians, therefore, should bear in mind the rôle of uncommon and relatively harmless, though active poisons, which may be added to or used in alcoholic beverages for deceptive purposes.

SUMMARY AND CONCLUSION

Acute poisoning by alcohol "denatured" with nitrobenzene, and containing a low concentration of formaldehyd, occurred in a number of cases. Although apparently low grade and nonfatal, there is considerable potential harm from such beverages when used over long periods, confusing at the same time the diagnosis of minor maladies.

* From the Medical Clinic, City Hospital and the Pharmacological Laboratory, Western Reserve University School of Medicine.

1. Hanzlik, P. J., and Collins, R. J.: J. Biol. Chem. **25**: 231 (June) 1916.
2. Stifel, R. E.: Methemoglobinemia Due to Poisoning by Shoe Dye, J. A. M. A. **72**: 395 (Feb. 8) 1919.

FITS AND FALLACIES

RUSSELL G. MACROBERT, M.B. (TOR.)
Associate Physician, Neurological Institute
NEW YORK

In the recent mobilization of the American Army, the number of rejections solely for nervous and mental disease rose early in places to 5 per cent. of the total number. Of the first 13,481 of such rejections, 12.8 per cent. were for epilepsy. A simple calculation based on these figures puts the incidence of epilepsy among the young men examined at one in 150. Such incidence seems an exaggeration of the frequency of epilepsy in our population, but most similar rough indications point to a frequency sufficient to establish a more pressing claim on general medical attention.

Certainly great numbers of epileptics come to the Neurological Institute from far and near. Three hundred and eighty-eight new patients were added to our lists last year. There is a great variety of conceptions among them regarding their ailment, many of which are quite ridiculous. These conceptions correspond in some measure to past treatment, which varies all the way from the merely futile and ineffective, to the positively harmful and dangerous. Epileptics are dieted, purged, disinfected, analyzed, circumcised and sterilized; women are deprived of their pelvic apparatus; bowels are taken away, heads broken into—every conceivable sort of activity is being indulged in and advocated for the cure of epilepsy.

This does not so much impute discredit to the physician in charge, whose attitude toward these patients is practically always one of sympathy and

sincere well meaning, as it does reflect the confusion of ideas on the subject with which the medical press of the day abounds. Every one writes about epilepsy, and each explains it according to his light; and as it is possible for a man to be wrong in his main argument and yet deliver fifty truths in arriving at a false conclusion, unsound reasoning and invalid argumentation accordingly spread apace. So today there is a veritable chaos of conflicting views regarding the cause and treatment of epilepsy, but it can be easily shown that a fallacy forms the basis for most of the unique current cures.

This paper is an attempt, by a brief consideration of some of the more popular misconceptions, to clear up somewhat the confusion concerning the very interesting but much abused problem of convulsions which must surround the general practitioner under whose care most epileptics are, excepting those in the big cities.

HEAD SURGERY

Whether from a real belief in the efficacy of the procedure, or whether merely from a feeling of helplessness combined with a desire to try something, there has been in the past much ill-advised and indiscriminate surgery performed on the heads of epileptics. Such operations are performed chiefly in an effort to remove a source of irritation. This implies a likelihood of finding in epileptics some gross lesion, and a possibility of eradicating it when found. A consideration of the character and frequency of gross brain lesions found in the brains of epileptics is pertinent.

GROSS CHANGES AT NECROPSY IN SEVENTY-SIX CASES OF EPILEPSY *

	No.
Hemiatrophy	16
Cerebral softening	10
Hemorrhages (various)	10
Pachymeningitis	9
Hydrops of the subarachnoid space	8
General congestion	8
Cornu ammonis sclerosis	7
Dilated ventricles	7
Cloudy arachnoid	5
Calvarium thick	4
Calvarium thin	3
Tumor	4
Hydrocephalus	4
Flattening of the convolutions	4
Pituitary large	2
Pituitary small	3
Tuberculous meningitis	2
Leptomeningitis	2
Arteriosclerosis	2
Cystic choroids	2
Fractured skull	2
Trephined	1
Osteoma	1

* From the twenty-fifth annual report of Craig Colony for Epileptics, 1919.

In 845 necropsies at Craig Colony on the brains of epileptics, gross lesions are reported present in 60 per cent. In the 205 necropsies at the Monson State Hospital for epileptics, the percentage is almost the same—61.5 per cent.

To indicate the character of the lesions encountered, and included in these percentages, a list of the 1919 series of necropsies at Craig Colony is shown in the accompanying tabulation. It is a fact worth remarking that forty out of every 100 epileptics show no gross deviation from the normal even when gone over in the comprehensive manner that the table indicates. However, to accept even these figures as an indication of the prevalence of gross brain lesions among the great mass of sane and unconfined epileptics is for several reasons a great error.

In institutions of this kind, the disorder is seen in its severest form and in the worst type of individual. For instance, 128,725 convulsions were reported to have occurred at Craig Colony among the 1,700 epileptics treated there in the year ending June 30, 1917. This indicates for each patient an average of seventy-five. The records of the Monson State Hospital for Epileptics show that 90 per cent. of the necropsies were on the victims of mental disorder. In fact, all but one of the brains in their series of 116 reported abnormal were from patients that were feebleminded or demented.

Of course, these institutions do not assert that these gross lesions are the cause of the disorder. As to their significance, the statement is made, in a study of this point from the Monson State Hospital, that, "like the manifestations of the disease itself, the lesions are often of a spectacular character, yet it is most difficult to state whether these lesions are the cause or the effect of the convulsions, or whether they are in any way correlatable with epilepsy."

In this connection it might also be added, regarding the significance of gross brain lesions to the cause of epilepsy, that, in the recent review of a large series of brain tumor cases at the Neurological Institute, fifty-two out of fifty-three never exhibited generalized epileptiform convulsions at any time during the course of the disease.

However, without further discussion as to whether the lesions tabulated bear any causative significance so far as the occurrence of convulsions is concerned, let us view the list of lesions included here, merely from the standpoint of a surgeon hoping to cure epilepsy by operating on the head. It is apparent immediately why observers at Craig Colony, despite the great number of gross lesions that they have enumerated, have been impressed by the fact that it is rare to find at necropsy a lesion which might have been benefited by operation during life. Not only this, but necropsies there on patients operated on during life showed almost constantly postoperative adhesions of the meninges to bone or cortex. Surgeons who propose operating on the heads of epileptics might do well to read Munson's [1] paper on this point.

The fallacy of operating on the heads of epileptics, therefore, in an effort to find and remove some suspected focus of irritation, is demonstrated by these few points concerning gross brain lesions, which may be thus summarized: 1. It is an error to assume that gross brain lesions exist in or about the brain in the average unconfined epileptic in any percentage of cases approximating that given out by institutions for the epileptic, such as Craig Colony and the Monson State Hospital. 2. It is not proved or even intimated that the gross brain lesions enumerated in the statistics of these institutions are primary causes of the disorder. 3. The character of the gross brain lesions described precludes practically always the possibility of successful operative interference. 4. Necropsies on patients operated on showed almost constantly postoperative adhesions. 5. The results of operation, to say the least, are unsatisfactory.

BRAIN TUMOR

Some operations are undertaken, too, on epileptics in the belief that a series of abortive or localized

1. Munson, J. F.: End-Results of Head Surgery in Epilepsy, New York State J. M. **12**: 638, 1912.

attacks must surely be caused by a tumor or other gross disease of the motor cortex. Apropos of this point there are two facts concerning epilepsy which, if more generally appreciated, would save many epileptics from a useless operation on the head: 1. The incomplete or abortive seizures which occur irregularly in the intervals between the major attacks of epilepsy are the complete seizures reduced to their initial symptoms. 2. However diversified these attacks may be, they are always or nearly always similar in the same subject.

Repeated incomplete convulsions, therefore, since they always affect the same limb, appear almost compellingly suggestive of circumscribed disease of the motor cortex in the area which represents this limb. This is especially true when paralysis supervenes from temporary exhaustion of the cortical elements by frequent attacks.

A patient presenting these conditions came to the Neurological Institute, Oct. 1, 1919. The localized attacks were so frequent and severe that a motor paralysis of the right hand and forearm occurred, accompanied by a complete loss of joint sensation at the wrist and at all joints below. Although he did not have general signs of brain tumor, he had been in imminent danger of operation on account of the persuasive evidence of the paralysis. Simple sedative treatment was commenced on the day the number of attacks had mounted to fifty-four (his worst day); and it decreased the number of convulsions at once. A week later they were arrested completely. The paralyzed hand then recovered slowly but entirely, so that two weeks after the convulsions had ceased, even the dexterity of the fingers in the formerly paralyzed hand equaled that of the unaffected hand.

This phenomenon occurred in a case of ordinary epilepsy which had got rather out of hand just before coming to the institute. Ten grains of sodium bromid, three times a day, with attention to some other details has completely controlled all attacks to this date.

Localized attacks are not infrequent in the course of ordinary epilepsy. In the absence of the well known signs of brain tumor, a history of having had generalized epileptiform convulsions determines the case to be in all probability one of ordinary epilepsy; for, whereas a generalized epileptiform attack may occur as an early sign of brain tumor, it has been shown recently by the study of a large series of cases at the Neurological Institute that this happens only rarely, once in every fifty-three cases.

It must be remembered that a loss of consciousness may occasionally precede, accompany or follow some one of the strictly one-sided attacks, being caused by a brain tumor in the region of the motor cortex. If the limbs on the other side of the body do not also become convulsed, mere loss of consciousness does not make the attack a *general* convulsion, and it is very important that it be differentiated from one because a localized attack with loss of consciousness has the same significance and localizing value as one in which consciousness is preserved.

HEAD INJURY

There is a more or less prevalent opinion that epilepsy is one of the likely outcomes of injury to the head. Statistics prove that this has no basis in fact. In the Franco-Prussian War, as a result of 8,985 nonfatal head injuries, only forty-six cases of epilepsy developed, that is, about one in 200, or perhaps a little more frequently than it occurs in the civil population.

This might be considered a suggestion that generalized epileptiform convulsions will be instituted by head injury only in that individual whose unstable nervous system predisposes him to convulsions. Perhaps such a report would read more significantly if put thus: Of 8,985 persons receiving nonfatal head injuries, forty-six proved to be persons possessing a more or less generalized cortical instability, as a tendency to recurrent convulsions became manifest in them.

THE GASTRO-INTESTINAL TRACT

So much emphasis has been placed on abnormalities of the gastro-intestinal tract, and the relation of the superimposed condition of chronic intestinal stasis to convulsive seizures, that as one writer humorously says, it has almost appeared necessary to assume that every constipated person is a potential epileptic. The fact remains, however, that most constipated persons are not, and the absurdity of such an idea should become manifest on its mere statement.

However, not long ago a theory, with gastro-intestinal abnormalities as its basis, was evolved to explain epilepsy. Elaborate and unique details of the mechanism of a convulsion were described in the light of this theory. The cure advocated was a drastic surgical operation—a removal of the large bowel. As might be expected, very ungratifying results, to say the least, followed in the wake of an all too widespread trial of this treatment. The facts on which the cure was advocated were found later to be incorrect, and the whole explanation tumbled and was withdrawn by its exponent.

However, the end of it is not yet. For some reason the operation continues in sporadic popularity. This is not because anybody now believes in the existence of the particular organism described, pictured and purported to be the germ of epilepsy. It can not be because any one still believes that bands, adhesions, etc., in the bowel, cause absorption of bacteria into the blood stream. The persistence of the treatment probably has no better nor other excuse than that all too common fallacy, the belief that any accompanying physiologic irregularity in an epileptic must surely be the cause of the convulsions. And as there were published, with the series of articles advocating this operation for epileptics, numerous and impressive roentgenograms of the intestine in various states of stasis and abnormality, I think that perhaps a lingering memory of these must be exercising an unconscious influence on the therapeutics of the disorder.

Because it is a highly dangerous procedure and its results so futile, it seems worth while to give a moment's further consideration to the basic premise on which the support of such treatment must necessarily depend.

Are gastro-intestinal abnormalities present in epilepsy? In order to study this question, the Monson State Hospital for Epileptics reviewed the protocols of its 280 necropsies on epileptics. Intestinal adhesions and peritoneal bands were present in 17.8 per cent of the cases. By the same process with 775 necropsies at the Boston City Hospital, 18.3 per cent., a slightly larger percentage, was arrived at for nonepileptics! When each portion of the gastro-intestinal tract was compared separately, this relative sameness was found to apply throughout.

The treatment is a product of fallacious reasoning from erroneous premises, and it becomes obvious that convulsions are no indication for surgical exploits on the bowel. Such cures for epilepsy deserve nothing but the severest condemnation.

THE PSYCHOGENIC THEORY

The psychogenic theory for epilepsy came into being about five years ago when the bubble, as it seems to me, of freudian analysis, on which it was based, was blown to its fullest.

Some diffidence in making a postmortem statement regarding a theory might be expected from one who for a time gave it some credence. But any details concerning it seem unnecessary when it is considered that there must now be few who believe that a convulsion is a direct and purposeful attempt of the mind to supplant the pain of an unpleasant reality, with what pleasure might be anticipated, from a temporary and imaginary resumption of prenatal existence.

There may be, however, many who believe that in a more general way psychic influences, such as fright, grief and worry, are potent causes of epilepsy. Here we must differentiate between a primary direct cause and a mere inciting factor of the first attack in predisposed persons. Gowers, who wrote years ago that "as a direct excitant of the first attack intense sudden alarm takes the first place," also made it clear that he considered such excitant but the spark that lights up the fit phenomenon in a person in whom there already exists a more or less generalized cortical instability. That apart from the view intimated by this statement, mind or emotion even in a more general way as expressed by fright, grief or worry can be ever considered a primary causative factor of epilepsy is put in question by the overwhelming contrary evidence supplied by the late war, which proved a great laboratory for the testing of such ideas as this, for in the war all disturbing psychic influences were present in tremendous force. Epilepsy, however, did not often occur. In fact, it was actually rare at the front in the American Army from which recruiting officers had previously excluded with fair diligence all men having a history of convulsions.

When the great frequency of the war neuroses is thought of, in comparison to the relative infrequency of war-evoked epilepsy, psychic shock and strain pale into insignificance as a cause for convulsions in a normal person.

Psychotherapeutic treatment, no matter of what kind, proves by itself absolutely ineffectual as a cure for epilepsy. Any such plan of treatment, if it at the same time denies the unstable epileptic cortex the benefit that certain remedies have been proved to bestow, is wrong, and in my opinion negligent.

THE PITUITARY GLAND

The pituitary gland possesses a strange proclivity to evoke suspicion toward itself as being the source of uncomprehended ailments. Although already much maligned, this is probably the only reason for its first becoming accused of having to do with epilepsy. Pituitary extract as a remedy for epilepsy seems thus to have originated on a basis of pure empiricism, although a few feeble facts have been marshaled in its support.

Chief of these is that an abnormality in the sella turcica is found by the roentgen ray in an occasional epileptic. It is hardly necessary to say that misinterpretations and fallacies are responsible for many of the reports of deformed, closed and small sella turcicas.

Then it must be remembered that abnormality in size of the sella turcica by no means implies abnormality in the size of the pituitary gland or abnormality in its functioning.

Could the pituitary gland be proved enlarged or undersized in epileptics there would be more excuse for the effort to link up pituitary dysfunction with the cause of epilepsy. However, statistics show that abnormality in size of the pituitary gland occurs but rarely in an epileptic. In the last two years, 203 brains of epileptics were examined at Craig Colony, and in only five could the pituitary gland be considered either larger or smaller than normal. Then, too, there are certain well marked clinical syndromes which occur in dysfunction and disease of the pituitary gland. Convulsions have never been mentioned as a part of these syndromes. In a recent review of 160 brain tumor cases at the Neurological Institute there were eighteen in which the tumor definitely involved the pituitary gland. In not one of these cases did convulsive phenomena of any kind occur.

Nevertheless, pituitary extract for epilepsy has ardent advocates. Not long ago one of these advocates [2] presented good evidence of its comparative futility, even in epileptics considered to be showing definite indications of pituitary disorder, although unintentionally, as the paper was written in a laudatory endeavor. The study is based on 200 cases of epilepsy, all but twenty-eight of which are at once excluded as not being suitable for the treatment. Its uselessness is thereby at once exclaimed for 86 per cent. of all epileptics! Pituitary gland was fed to the remainder, and as most of these had been taking bromid previously, "this was allowed to be continued." The cures at the author's own rating are four. For the series this would mean one in fifty; for the selected twenty-eight considered to have pituitary disorder, one in seven. The latter result is about half as good with both bromid and pituitary extract as one would expect to obtain with small doses of bromid alone according to such well known statistical tables as that published by Aldren Turner, whose patients completely cured with small doses of bromid alone were 23.5 per cent., or almost one in four.

And yet such reports as the one considered here, to the mere glance of the hurried reader, often seem impressive, and it is not unlikely that this one alone greatly increased the consumption of pituitary extract.

ALCOHOL

Recently it has been authoritatively stated that alcohol as an etiologic factor in the production of insanity has been overrated. There is no duobt of this being true as regards epilepsy. Of course, pathologic alcoholism in the ancestors of epileptics is common. But, like a history of insanity, it is chiefly important merely as evidence that in these ancestors a neuropathic defect existed. That is, alcoholism is a sign of something, but by no means necessarily a cause for anything. When an estimation of the proper relation of alcohol to epilepsy is involved, this difference must be appreciated.

2. Tucker, B. R.: Rôle of Pituitary Gland in Epilepsy, Arch. Neurol. & Psychiat. 2: 192 (Aug.) 1919.

For instance, Dejerine asserts that in France one half of the cases of epilepsy among children are due to alcoholic parents. Now, whereas the defect in the nervous system of the parents is perhaps unquestionably responsible for the defect in the nervous system of the child, an assumption that to the alcohol imbibed by the parents is due the epilepsy in the child is far from justified. Alcohol cannot be considered to father epilepsy merely because a man addicted to alcohol fathers a child addicted to convulsions. Such is very obviously a fallacious deduction. However, it is possible that excessive alcoholism in a pregnant woman may interfere with the proper development of the nervous system of the embryo, and so in some instances epilepsy may seem quite properly attributable to alcohol. But otherwise, alcoholism as a direct primary cause of epilepsy has not been proved. There are many who consider that as such it has been misapprehended. They believe the so-called rum-fits to be indicative merely of a dormant epilepsy. Indeed, when we compare the frequency of acute alcoholism with the infrequency of rum-fits, this view does seem plausible.

A study of the relation of alcohol to convulsions was undertaken at the Monson State Hospital for Epileptics. As a result of this study, the statement was made that "in a perfectly stable and well adjusted nervous system, alcohol per se is not sufficient to produce convulsions."

It is not my intention to underestimate the importance of alcoholism in the parents as an evidence of neuropathic stock, or to underestimate the importance of alcoholic intoxication as an irritant to sensitively balanced nervous systems, or to disregard the effect of alcoholic poisoning on the nervous system of the developing embryo. It is my object merely to call attention to the fallacy of assuming that because an epileptic drinks, or his parents drank, such facts make sufficient evidence for generalizations concerning the cause of epilepsy.

EYESTRAIN

Eyestrain may hardly seem worth mentioning, but it is believed by some to be the cause of epilepsy. Indeed, the epileptic eye has been spoken of.

At the Monson State Hospital for Epileptics, "Eyes are marked by no distinguishing feature." Hodskins and Moore [3] obtain no positive findings. In fact, evidence was produced to prove that eyestrain was not of any importance as a primary etiologic factor in epilepsy.

CONCLUSION

Perhaps the best and most practical view for the general practitioner to adopt is that epilepsy means a tendency to recurrent convulsions, that such a tendency implies a more or less generalized cortical instability, and that epilepsy is therefore not properly due to any cause outside the brain.

Then, too, it is not an incurable disorder. In fact, treatment in accord with the view just mentioned has for years proved more or less effectual when well carried out. For instance, William Aldren Turner of the National Hospital for the Paralyzed and Epileptic in London, an indisputably eminent authority on this subject, gave some figures in 1910 which might be considered accurate proof of this. He published statistics of a large series of cases, many observed for as long as twenty-two years, in which small doses of bromid alone had cured entirely 23.5 per cent., or about one epileptic in every four, and greatly benefited another 50 per cent.

At the Neurological Institute we find that practically all epileptics of the class who live at home and are able to visit the hospital derive great benefit from treatment. A cerebral sedative is used almost always, and this is combined with what other remedies or treatment a study of their physiologic processes and particular difficulties suggests.

20 West Fiftieth Street.

3. Hodskins and Moore: The Relation of Eyestrain to Epilepsy, J. Ophth. & Oto-Laryngol. 2: 169-175, 1908.

EPIDEMIC INFLUENZA AT THE COOK COUNTY HOSPITAL *

JAMES C. SMALL, M.D.
AND
FRED H. STANGL, M.D.
CHICAGO

True to the history of pandemics of influenza of the nineteenth century prepared by Leichtenstern,[1] the great outbreak of last year has been followed by epidemic outbreaks chiefly in the larger cities. So far as conditions at Cook County Hospital obtain, Chicago was invaded early in January, 1920, and during the five weeks ending February 15, 1,128 patients were admitted to this institution. There were 264 deaths among this number, a mortality of 23.4 per cent., as compared to the rate of 31 per cent. at this hospital in the recent pandemic.

The crest of the epidemic (Chart 1) as indicated by admission to this hospital was reached on January 20, after a duration of about ten days. The secondary rise both in admissions and deaths occurred about January 30. This corresponds to the marked increase in the number of patients admitted with pneumonia.

Because of the rather limited hospital facilities, instructions were issued to the examining physicians to accept for hospital care only those patients that were really ill. With such a rule in effect, the distribution of the first 839 patients as shown by the diagnosis on admission to the ward was: influenza, 503, or 60.7 per cent., of which forty-six, or 9.1 per cent., developed pneumonia during their stay in the hospital; influenzal pneumonia on admission to the hospital, 326, or 39.3 per cent. Of the 326 patients admitted with pneumonia, 205 died, a mortality rate of 62.9 per cent. The patients who developed pneumonia in the hospital include, among others, children, patients in obstetric wards, and patients suffering from chronic diseases. In this group of forty-six cases there were twenty-six deaths, a mortality rate of 47.8 per cent.

The unfavorable effect of pregnancy on the prognosis as noted by observers in previous epidemics is again brought out. Of the forty-eight women admitted to the obstetric ward with influenza, twenty-four died, a mortality rate of 50 per cent.

There were two age periods of greatest number of admissions (Chart 2): one from birth to 10 years, and one between the twentieth and fortieth years.

Of the adult admissions, 59.8 per cent. were males and 40.2 per cent. were females, a relationship prac-

* From the Laboratory of the Cook County Hospital.

1. Leichtenstern, Otto: Influenza, Ed. 2, by George Sticker.

tically identical to the percentages of last year, 59.2 of males and 40.8 of females,[2] respectively.

CLINICAL PICTURE

The clinical picture was in all essentials like that described during the previous outbreaks of the disease. The onset was abrupt, with the features of acute

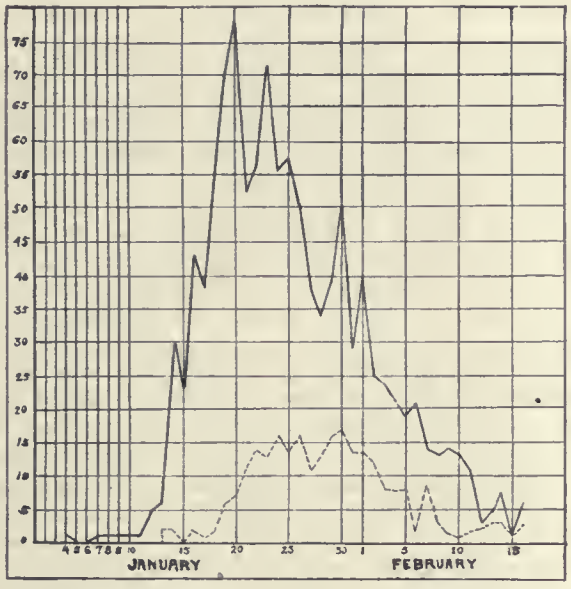


Chart 1.—Duration of the epidemic as shown by daily admissions (solid line) and deaths (broken line).

catarrhal fever. The prostration and debility were all out of proportion to the demonstrable pathologic changes. Among the common complaints were coryza, headache, retrobulbar pain, backache, chilly sensations, muscle pains and later cough which characteristically was productive of thick, greenish-yellow sputum. Gastro-intestinal symptoms were not infrequent and included nausea, vomiting, diarrhea and sometimes abdominal pain. Of the nervous symptoms noted, there were delirium, meningismus and rarely melancholia or dementia.

Physical examination revealed flushed face, injected conjunctivae, and erythematous rash of the face, neck and shoulders. The mucous membrane of the soft palate and pharynx was injected and sometimes presented petechial hemorrhages. The pulse rate was increased; the respirations ranged between 20 and 30 per minute, and the temperature from 101 to 104 F. Leukopenia was the rule, and the average leukocyte count of twenty-five influenza patients was 6,500. In uncomplicated cases the average stay in the hospital was seven days.

Pneumonia was the most serious complication. It is to be suspected in patients whose temperature remains high after the sixth or seventh day. The early chest findings were obscure. Later, patchy consolidation usually could be demonstrated. In the grave cases marked cyanosis of the patient was common. A moderate leukocytosis of from 12,000 to 16,000 was usually observed. Other common complications were empyema, otitis media, sinusitis, meningismus and jaundice.

MORBID ANATOMY

The external appearance of the bodies of those who had died from influenzal pneumonia was characteristic. The postmortem lividity was extensive, involving the head, trunk and extremities. Not infrequently a bloody, frothy fluid exuded from the nostrils and mouth.

The tracheobronchial mucosa was generally reddened, and the small blood vessels were engorged. In their lumens, mucous, mucopurulent or hemorrhagic secretion was present. The tracheobronchial lymph glands were usually engorged with blood and were edematous.

Early in the disease, the lung involvement was chiefly lobular, with hemorrhagic, catarrhal or purulent exudate containing scarcely no fibrin. The surfaces made by cutting were mottled, firm and granular, with dark red congested areas of aerated lung tissue intervening. Large quantities of bloody fluid bathed the cut surfaces. Thick purulent material commonly oozed from the small bronchi. Serous or serosanguineous fluid was frequently found in the pleural cavities. Later in the course of the disease, the amount of fibrin increased and the exudate became gray and often purulent. Plastic pleuritis was not infrequent. It was noteworthy that at two necropsies, empyema was present with the pus between the mediastinal pleura and the hilum of the lung, while the lateral surface of the lung was adherent to the chest wall by fibrinous adhesions, causing obliteration of the pleural cavity. This finding accounted for the inability to aspirate pus on thoracentesis after empyema had been diagnosed in the ward.

The liver and kidneys were usually heavier than normal and were the seat of parenchymatous and fatty changes.

TECHNIC OF BACTERIOLOGIC STUDIES

Beef infusion agar and broth were the two basic mediums used. The reaction was adjusted to neutrality to phenolphthalein before autoclaving. For cultivating *B. influenzae*,

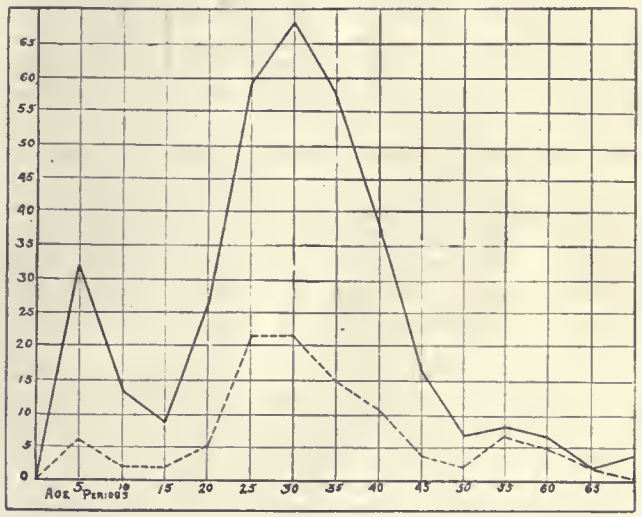


Chart 2.—The relationship of age to the number of admissions (solid line) and deaths (broken line) during the epidemic period.

the agar at 90 C. was enriched by the addition of 5 per cent. defibrinated horse blood. Plates were poured after this added blood had become a chocolate brown. These agar surfaces were inoculated from throat swabs and with the sputum of the patients studied. In the early studies, sputum was injected intraperitoneally into white mice, and plate cultures were made from the peritoneal exudate and from the heart blood of the mouse at necropsy. This was later discontinued when it became apparent that in practically all cases *B. influenzae* was demonstrable in direct cultures of the throat or sputum.

2. Keeton, R. W., and Cushman, A. B.: The Influenza Epidemic in Chicago, J. A. M. A. 71: 1962-1967 (Dec. 14) 1918.

Well separated giant colonies of *B. influenzae* were usually to be found on these plates, and pure cultures could easily be recovered. The identification of *B. influenzae* rested on its cultural characteristics on the brown blood agar, and its failure to grow on hemoglobin-free agar, as well as its morphologic and staining characteristics.

For pneumococcus identification and typing, the mouse method was used, freshly collected sputum being employed. Red blood plate cultures were made from the peritoneal exudate and from the heart blood of the mouse at necropsy; and single colonies of pneumococcus, picked from these plates, were grown on red blood agar slants. After about eighteen hours' incubation, a tube (5 c.c.) of infusion broth was poured over the slant and incubation continued for a period sufficient to yield adequate growth in the broth for agglutination and bile solubility tests.

In the ward surveys for hemolytic streptococci, this technic was employed:

Beef infusion agar (0.3 per cent. acid to phenolphthalein) was prepared and stored in from 300 to 500 c.c. amounts. On melting and cooling the agar below 45 C., sterile defibrinated horse blood was added in amounts sufficient to make up 5 per cent. of the volume of the agar. Thorough mixing and pouring into petri dishes (10 cm. in diameter) followed.

Throat cultures of all patients in the ward were made on the day of study. In taking the culture, a small cotton swab was touched first to the posterior pharyngeal wall in order to produce gagging. This caused the tonsils to protrude toward the midline and placed a slight tension on the capsule, which tended to press material from the crypts. The surfaces of both tonsils thus protruding were quickly brushed and the swab withdrawn without touching other parts. These swabs were carried to the laboratory in sterile test tubes and were used at once to inoculate the blood agar plate surfaces.

The swab was touched lightly to the agar surface at two points, one near each extremity of a given diameter of the plate. The swab stick was turned between the fingers through one revolution so as to bring all points of the swab in contact with the agar. The inoculum was spread by means of an inoculating wire slightly curved at the end. After passing the wire several times over the points of inoculation, multiple streaks and cross streaks were made, avoiding further contact with the points of primary inoculation. With a little experience this method furnished well seeded plates, presenting colonies widely enough separated to render plate reading easy.

Careful preparation of mediums, and a rigid technic for throat swabbing and for seeding the plates are prime requisites which cannot be emphasized too strongly in any method of direct throat culture. Lack of care in any one of these particulars does much to vitiate the results obtained. In properly prepared cultures, the recognition of hemolytic streptococci is very simple.

In these ward surveys, plate readings, supplemented by a Gram stain of typical hemolytic colonies, were employed as the means of identification of hemolytic streptococcus carriers. Colonies producing typical hemolytic zones of the Beta type of streptococcus (Smith and Brown) were picked from all cultures in which they appeared after twenty-four hours' incubation, and were stained. Cultures presenting hemolytic colonies, which on staining showed gram-positive cocci in chains, were regarded as positive for hemolytic streptococci. Further confirmatory studies were not made.

These surveys at ten day intervals were instituted to determine the prevalence of hemolytic streptococci in the wards rather than to follow the bacteriology of any particular patient. They were employed as a clinical aid in a system of ward management aimed at minimizing dangerous contact dissemination of hemolytic streptococci. The methods used enabled the prompt reporting of hemolytic streptococcus carriers and their early isolation, both of which are matters of extreme importance in the management of wards caring for influenza and pneumonia patients.

STUDIES OF ACUTE INFLUENZA

A group of twenty-two patients was studied by means of throat and sputum cultures on brown blood agar, together with the inoculation of sputum into the peritoneal cavities of white mice, and subsequent cultures of the peritoneal exudate and the heart blood were made both on red and brown blood agar plates. This triple means of study enabled a determination of the occurrence of *B. influenzae*, pneumococcus and hemolytic streptococcus, which was: *B. influenzae*, twenty-two times, or 100 per cent.; pneumococcus, Type I, none; Type II, one; Type II, atypical, five; Type III, one, and Type IV, nine; total, sixteen, or 72.7 per cent.; hemolytic streptococcus, twice, or 9.1 per cent.

A second group comprises forty-five cases of acute influenza, which were studied only by throat and sputum cultures. These cultures were made on the brown blood agar, and no attempt was made to identify organisms other than *B. influenzae*. *B. influenzae* was isolated and identified in forty-three of these cases, or in 95.5 per cent. Of this group, cultures were made of eighteen patients in the receiving ward of the hospital, of which number, only throat cultures were made in six cases. The two patients that were negative for *B. influenzae* were in this group of six.

In the first series in which a study was made by all three methods, *B. influenzae* was found in 100 per cent. of the cases. These results are in accord with those obtained last year at Camp Pike by Opie [3] and his co-workers.

The second group demonstrates that *B. influenzae* can be found in practically every case by the less elaborate methods, when cultures are made on brown blood medium. It should be emphasized that this medium appears to be more or less selective for growing the Pfeiffer bacillus.

BACILLUS INFLUENZAE IN NONINFLUENZAL PATIENTS

Cultures for *B. influenzae* were made of a group of patients, with conditions other than influenza or other respiratory diseases, examined in the receiving wards of the hospital during the height of the epidemic. Of the thirty patients of whose throats and sputums cultures were made, *B. influenzae* was isolated in twenty-one, or 70 per cent.

In a second series, twenty-six patients hospitalized before the epidemic in the tuberculosis ward, *B. influenzae* was identified in sputum and throat cultures in nine instances, or 34.6 per cent.

These studies furnish two control series. The first represents patients arriving at the hospital during the height of the epidemic, and can be regarded as a group showing the prevalence of the Pfeiffer bacillus in persons outside the hospital during the period of the epidemic. The relatively high incidence of this organism in the foregoing series is comparable to the reported findings [4] in normal persons during the pan-

3. Opie E. L.; Freeman, A. W.; Blake, F. G.; Small, J. C., and Rivers, T. M.: Pneumonia Following Influenza, J. A. M. A. **72**: 556-565 (Feb. 22) 1919.

4. Stillman, E. G., and Pritchett, I. W.: J. Exper. Med. **29**: 295 (March) 1919.

demic of 1918, and may be regarded as illustrating the wide dissemination of the bacillus during epidemic periods.

The second group represents patients hospitalized before the epidemic, and may be regarded as illustrating the prevalence of Pfeiffer's bacillus during the interepidemic periods.

PNEUMONIA STUDIES

A group of thirty-two cases studied bacteriologically presents the bacteriology of the pneumonia of influenza as it occurred in cases chosen at intervals in the hospital wards throughout the course of the epidemic.

The occurrence of the various organisms was: pneumococcus, Type I, two times; Type II, one; Type II, atypical, six; Type III, five; Type IV, thirteen; total, twenty-seven, or 84.4 per cent.; hemolytic streptococci with pneumococci, one; with no pneumococci, five; total, six, or 18.7 per cent.; *B. influenzae*, twenty-four, or 75 per cent.

The types of pneumococci occurring in the mouths of normal persons were found in practically 90 per cent. of the pneumococcus pneumonia cases of this group. The parasitic types, I and II, occurred infrequently, Type I only twice, and Type II once. These findings are in accord with those reported for the pneumonia of the 1918 pandemic of influenza by various observers.

Hemolytic streptococci occurred in approximately one fifth of the cases. In those studied early, hemolytic streptococci were not found. All instances in this group in which hemolytic streptococci appeared were among patients studied within the latter half of the epidemic. *B. influenzae* was present in three fourths of these cases.

WARD SURVEYS FOR IDENTIFICATION OF HEMOLYTIC STREPTOCOCCI

The dissemination of hemolytic streptococci throughout wards in which acute respiratory diseases were treated, and the dangers attending such dissemination, have been emphasized recently.[5] In two of the wards, throat cultures of all patients under treatment were made at intervals of about ten days. The cultural methods have been described. Since many cases of pneumonia terminated fatally in less than ten days and many patients with influenza were discharged within a shorter period than this, the study furnishes few repeated cultures on individual patients during the course of their illness. The repeated ward surveys indicate the incidence of hemolytic streptococci in the wards during the period of their use for the care of influenza and pneumonia patients. The results of this study have been:

TABLE 1.—RESULTS OF CULTURES TAKEN FOR HEMOLYTIC STREPTOCOCCI IN WARD A

Cultures		Cultures Positive for Hemolytic Streptococci	
Date	Number	No.	Per Cent.
Jan. 24	24	4	16.7
Feb. 3	33	1	3.3
Feb. 12	4	2	50.0

1. In Ward A, from January 18 to February 13, the total number of patients treated was 125; the total number of pneumonia patients treated in the ward was fifty-seven, and the total number of deaths in the ward was forty-one.

Of the four patients positive for hemolytic streptococci on the first survey, three developed no complications of influenza and left the hospital before recultures were made of the patients in the ward. They had been in the hospital four, six and seven days, respectively, before cultures were taken. The fourth patient was admitted with influenzal pneumonia nine days before the cutlure was made, and died of pneumonia, January 28. Cultures had been taken previously of each of the three patients identified as hemolytic streptococcus carriers on the second and third ward surveys and had been found to be negative. They were patients that had acquired hemolytic streptococci in the hospital. Two of these patients had pneumonia on admission. Both died: the first, three days after the identification; the second, eight days after the identification. In neither patient was a diagnosis of empyema made.

TABLE 2.—RESULTS OF CULTURES TAKEN FOR HEMOLYTIC STREPTOCOCCI IN WARD B

Cultures		Cultures Positive for Hemolytic Streptococci	
Date	Number	No.	Per Cent.
Jan. 24	64	15	23.4
Feb. 3	70	14	20.0
Feb. 12	22	12	54.2

The results show that the incidence of hemolytic streptococci in this ward was never high. The complications (other than pneumonia) developing among the fifty-two patients studied are in accord with this finding. They are two cases of empyema, one due to pneumococcus Type II, atypical, and the other showed *Streptococcus viridans* and staphylococci on culture. One case of otitis media occurred, the bacteriology of which was not determined.

2. In Ward B, from January 19 to February 13, the total number of patients treated was 184; the total number of pneumonia patients treated in the ward was 101, and the total number of deaths in the ward was fifty-six.

The figures in Table 2 indicate that there was a wider dissemination of hemolytic streptococci in Ward B than in Ward A. Four cases of empyema occurred in Ward B, all due to hemolytic streptococci.

Of the fifteen patients whose throats gave cultures positive for hemolytic streptococci, January 24, five had pneumonia. Three recovered without further complication. The fourth died of pneumonia, and the fifth developed a hemolytic streptococcus empyema, diagnosed, January 4, and is at present under treatment in a surgical ward. The remaining ten were patients with influenza, of which number, all recovered without complication.

Of the fourteen patients whose throats gave cultures positive for hemolytic streptococci, February 3, twelve had pneumonia, of which number, two had been positive and one negative for hemolytic streptococci on previous culture. Of the remaining nine, two developed hemolytic streptococcus empyema. One of these died, February 7; the other is convalescent. Of the remaining seven patients, one died of pneumonia. Two patients with influenza recovered without complication.

Previous cultures had been made in the twelve cases, positive, February 12. One patient had had two posi-

5. Opie, et al. (Footnote 3). Cole, Rufus, and MacCallum, W. G.: Pneumonia at a Base Hospital, J. A. M. A. **70**: 1146 (April 20) 1918. Levy, R. L., and Alexander, H. L.: The Predisposition of Streptococcus Carriers to the Complications of Measles, J. A. M. A., **70**: 1827 (June 15) 1918.

tive and another one positive culture. Both recovered from the pneumonia without complication. Of the remaining ten patients negative on previous cultures, one recovered from uncomplicated influenza, and nine had pneumonia. One died of uncomplicated pneumonia, February 15. Two were discharged as recovered. Six are under treatment for pneumonia, and two of these have developed otitis media.

In addition to the complications mentioned, a few cases of otitis media developed among patients whose throat cultures were negative for hemolytic streptococci. The bacteriology of the cases of otitis media was not determined.

The red blood agar plates used in the ward surveys for hemolytic streptococci were also studied for *B. influenzae*. These results are of interest in showing the relative incidence of *B. influenzae* among the ward patients studied at various intervals throughout the course of the epidemic. They are not presented to give actual incidence of *B. influenzae* because the methods employed are less reliable for the isolation of this bacillus than those employed for determining actual incidence.

A summary of the studies of the cases in the two wards is given in Table 3.

It has been mentioned that early in the course of the epidemic the wards had under treatment more patients with influenza than with pneumonia, but that later the number of patients with pneumonia predominated. In the summary given in Table 3, all ward patients were

TABLE 3.—RESULTS OF STUDY OF CULTURES TAKEN FOR B. INFLUENZAE

Cultures		Cultures Positive for B. Influenzae	
Date	Number	No.	Per Cent.
Jan. 24	76	67	88.2
Feb. 3	102	60	58.4
Feb. 12	26	3	12.0

included, i. e., both influenza and pneumonia patients. The results indicate a decrease in the relative incidence of *B. influenzae* in the later periods of the epidemic when the larger part of the patients in the wards had pneumonia.

SUMMARY

About one third as many patients suffering from influenza or its complicating pneumonia were treated in this hospital during the present epidemic as were treated during the pandemic of 1918.

Of the 829 patients whose cases were analyzed, 503, or 60.7 per cent., were admitted with a diagnosis of influenza, and 326, or 39.3 per cent., with a diagnosis of pneumonia. Many of the latter were moribund on admission to the hospital. Of these 326 pneumonia patients, 205 died, a mortality rate of 62.9 per cent.

Forty-six, or 9.1 per cent., of the patients admitted with influenza developed pneumonia, and twenty-six, or 47.8 per cent., of these died.

B. influenzae was isolated by the multiple culture methods from 100 per cent. of the patients studied, and by the direct sputum and throat culture method from 95.5 per cent.

Pneumococci were found in 84.4 per cent. of the cases of pneumonia studied, and for the most part are represented by the types of pneumococci found in the mouths of normal persons. Hemolytic streptococci were found in 18.7 per cent., and *B. influenzae* in 75 per cent. of these cases of pneumonia.

One of the wards showing active dissemination of hemolytic streptococci furnished four cases of empyema, all due to hemolytic streptococci. Two cases of empyema, both due to organisms other than hemolytic streptococci, occurred in a second ward where these organisms were less prevalent.

CONCLUSION

B. influenzae has been isolated and identified in 100 per cent. of the cases of acute influenza.

In the cases of pneumonia complicating influenza, pneumococci predominate. They are chiefly of the types found in the mouths of normal persons.

Hemolytic streptococci occupy a prominent place in the complications of influenza and pneumonia.

ADDENDUM

We believe that a brief statement as to the hospital management during the epidemic will be valuable to illustrate the conditions under which these studies were conducted.

By condensing medical and surgical services, five wards were rendered available for the treatment of influenza and pneumonia patients admitted to the hospital during the period of the epidemic. These wards were opened one after another as needed. The wards were filled to capacity in the order in which they were opened. After the fifth ward had been filled, sufficient beds were becoming available in other wards to care for patients admitted subsequently.

Influenza and influenzal pneumonia patients were not treated in separate wards. Early in the epidemic period there were fewer pneumonia and more influenza patients than later when the pneumonia patients predominated among the admissions. In the latter part of the period the treatment wards became literally pneumonia treatment wards, the segregated uncomplicated influenza patients occupying much the smaller sections of the wards. The wards were supplied with sheet cubicles and otherwise equipped before receiving any patients.

These rules for the management within the wards were issued on the opening of the wards and served as a basis of the plan of ward management throughout the epidemic:

The cubicle system is to be used in all wards.

Paper bags will be provided and must be used for soiled napkins and gauze.

Hand disinfectant solutions will be provided for use by the physicians, nurses and attendants in passing from one patient to another.

Ward floors should not be dry swept, but must be scrubbed at intervals with compound solution of cresol in the water.

All physicians, nurses and attendants are required to wear gowns, caps and masks while in the ward.

Bed patients are not required to wear masks, but the mask will be strictly enforced on all patients leaving the cubicle.

Paper napkins are to be provided for bed patients, who will be instructed to cover the mouth and nose on coughing, sneezing, etc. These must be changed when soiled.

Attempt will be made to keep acute cases of influenza in the same section of the ward.

Attempt will be made to prevent the congregating of convalescents in toilets, bath rooms, etc.

The borrowing and lending of materials between the patients is to be strictly prohibited.

Pneumonia developing in the influenza wards will be treated in separate sections of the wards, and medical asepsis strictly enforced in such section.

Cases of streptococcus pneumonia must be treated apart from those of pneumococcus pneumonia.

THE DELIRIOUS AND THE MENINGORADICULAR TYPES OF EPIDEMIC ENCEPHALITIS

PETER BASSOE, M.D.
Associate Professor of Nervous and Mental Diseases, Rush Medical College
CHICAGO

Since my last report [1] of a number of cases of epidemic encephalitis, I have become convinced that the same unknown virus produces clinical forms in which lethargy and other common symptoms of the characteristic "lethargic" form may be lacking. That we are dealing with the same disease is shown by the similarity in pathologic anatomy, the existence of transitional forms, and the occurrence of all these forms in the same community at the same time. Among the cases observed during the past winter, several have presented severe symptoms of a general infection suggestive of typhoid fever, acute miliary tuberculosis or other acute infectious disease. In other cases, verified by necropsy, the resemblance to severe, acute chorea was marked. Among new symptoms I, too, have observed the twitching of the abdominal muscles to which Thomas F. Reilly [2] has recently called attention.

One patient, now improving, had complete right hemiplegia with aphasia, and another patient, who died, had at different periods right and left hemiplegia. Pain in the extremities was a marked feature in a few otherwise typical cases, and serves to connect them with the type which I propose to designate "meningoradicular." This bears some resemblance to the so-called "infective neuronitis," [3] and will be discussed at the end of this paper.



Fig. 1 (Case 3).—Motor cortex: congestion, hemorrhages, and edema of the pia; hematoxylin and eosin, × 25.

REPORT OF CASES

CASE 1.—*History.*—A man, aged 36, seen at the Evanston Hospital with Drs. W. G. Alexander and W. G. Stearns, Nov. 12, 1919, two weeks previously when in an exhausted state from overwork and worry, had commenced to complain of headache, and pain in the right side of the neck and left arm. He became irrational, November 6, and on November 7 developed diaphragmatic spasms which lasted for five days. The highest temperature observed prior to his admittance to the hospital, November 9, was 100.2 F. From November 9 to 16 it ranged from 100 to 102, pulse, 90 to 110, respirations, 20 to 25; November 18, the temperature was 102.2, then from 100 to 101 until November 26, after which time it was usually between 99 and 100. November 11, Dr. Stearns recorded "involuntary, irregular contractions of the diaphragm, extending over the upper trunk muscles, and accompanied by more or less coarse tremor."

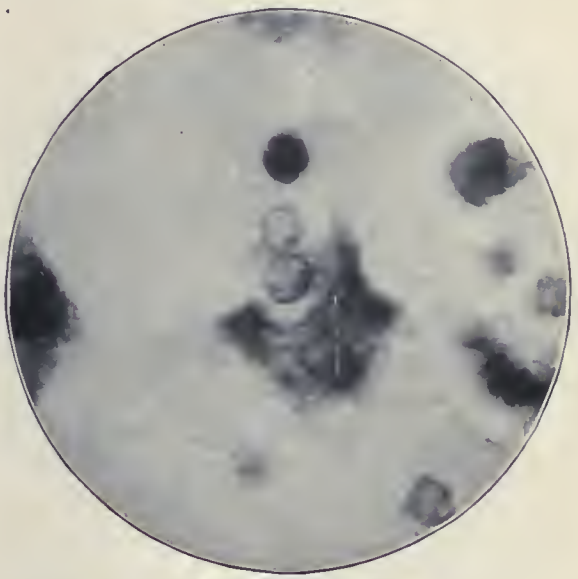


Fig. 2 (Case 3).—Motor cortex, deep layer: degenerated ganglion cell and satellites; × 1,200.

Examination and Course.—The leukocyte count, November 11, was 17,600; November 12, 26,200; November 13, 19,000; November 19, 12,800; November 28, 9,200; December 8, 12,800; December 19, 12,600. November 12, Dr. C. J. Swan noted "spontaneous nystagmus which does not seem to be labyrinthine but is synchronous with contractions of the body muscles. Fundi normal." On that day I failed to find any paralysis or any abnormality in the reflexes. The patient was very restless and delirious, and the diaphragmatic spasm was continuous. On the following day, partial left ptosis appeared and remained a few days, and on November 29 transient right ptosis appeared. Lumbar punctures, November 14 and 25, yielded a fluid admixed with blood, so that cell count and globulin tests were of little value; but cultures with both blood and spinal fluid were negative. A clear fluid, obtained November 22, gave negative globulin and Wassermann tests and a cell count of 18. The Wassermann test with the blood was negative. While comparatively clear mentally part of the time, he was described, December 21, as stuporous and at times delirious, and at that time had to be catheterized for two days. During January he steadily improved, and by the middle of the month began to sit up. The mental condition became normal. In March he was said to be well.

CASE 2.—*History.*—A man, aged 38, seen at the Highland Park Hospital with Dr. L. M. Bergen, Nov. 13, 1919, had

1. Bassoe, Peter: Epidemic Encephalitis (Nona), J. A. M. A. **72**: 971 (April 5), 1919.
2. Reilly, T. F.: Hitherto Undescribed Sign in Diagnosis of Letbargic Encephalitis, J. A. M. A. **74**: 735 (March 13) 1920.
3. Kennedy, Foster: Infective Neuronitis, Arch. Neurol. & Psychiat. **2**: 621 (Dec.) 1919.

complained of pain in the face and body, November 6, and took to his bed. The pain lasted only one day. After three days he became delirious and was admitted to the hospital in a state of restless delirium, November 11, with a temperature of 99.8, pulse, 116; respirations, 20. Insomnia was a marked feature.

Examination and Course.—November 12, the leukocyte count was 9,000; urine, normal. When seen in the evening of

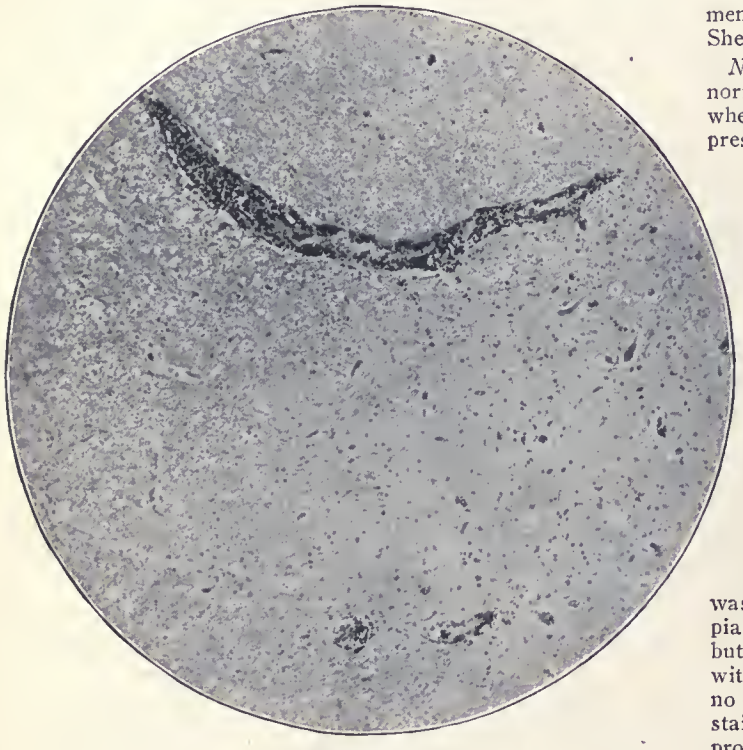


Fig. 3 (Case 3).—Lower bulb: perivascular infiltration; × 85.

November 12, he was extremely restless and constantly fumbled with the bedclothes, but he was oriented and answered questions. The temperature on that day reached 102; pulse, 126; respiration, 28. General examination of the abdominal and thoracic viscera was negative. There was no paralysis, nor were there other positive neurologic findings. The Widal and Wassermann tests were negative. The patient became cyanotic and died the same evening. No necropsy was held.

CASE 3.—*History.*—A girl, aged 16, with negative previous history, seen at the Grant Hospital with Dr. Bertram R. Beers, Dec. 31, 1919, began, a week before, to complain of slight pain in the left leg and the left side of the body, and general malaise. Later, jerky movements set in; but little attention was paid to her trouble until December 29, when she had an attack in which she became rigid, frothed at the mouth and screamed. Afterward she was unable to talk for a time. Late in the evening of that day she was admitted to the hospital with a temperature of 100.8; pulse, 84; respirations, 20. During her stay in the hospital she was actively delirious and constantly threw herself about. She used the right side of the face and the right arm more than the left. She frequently struck at the physicians with her right arm. There were involuntary discharges of urine and feces. The temperature, December 30, ranged from 101 to 102; pulse, from 80 to 112.

Examination.—Blood examination revealed: hemoglobin, 85 per cent.; red cells, 4,680,000; white cells, 27,600 (polymorphonuclears, 82 per cent.; small mononuclears, 16 per cent.; large mononuclears, 2 per cent.). When examined, December 31, the patient could only whisper unintelligibly and was in a state of active delirium. She had a heavily coated tongue, sordes on the teeth, cracked lips, and acetone odor of the breath. The right pupil was larger than the left and reacted poorly to light, while the left one reacted normally. The tendon reflexes and the abdominal reflexes were not obtained, while the plantar reflexes were normal. The heart and lungs were negative. The urine contained albumin, and one granular cast was seen. Lumbar puncture yielded a clear fluid under normal pressure with a cell count of 150 lymphocytes, negative Nonne-Apelt globulin test, and a practically negative Lange test (0011100000). The temperature, January 31, ranged from 102 to 103.6.; the pulse rate from 110 to 132. January 1, the delirium and continuous movements persisted and the temperature rose from 102.4 to 106.4. She died at noon on that day.

Necropsy.—Dr. Beers informed me that the viscera were normal except for cloudy swelling of the liver. The brain, when received by me in 10 per cent. liquor formaldehydi, presented no gross changes externally or on section except considerable congestion. No hemorrhages were visible to the naked eye.

Histologic Examination: Lower medulla: very slight mononuclear infiltration of pia; well marked perivascular infiltration throughout; cells mononuclear. Upper medulla: similar changes but less marked; very little change in the ganglion cells. Cerebellum: very slight cell infiltration of meninges; no distinct perivascular infiltrations; some of the Purkinje cells showed degenerative changes with their nuclei obscured and presence of satellites. Pons: meningeal cell infiltration slightly more marked than in medulla; one small subpial hemorrhage was seen, also a very few and small recent hemorrhages in the interior; several fairly dense perivascular infiltrations were present. Crus and midbrain: perivascular infiltrations similar to those in lower medulla; a few small hemorrhages were seen; ganglion cells were, on the whole, well preserved, and satellitosis was slight; there was no distinct perivascular infiltration. Right motor cortex: pia congested with extensive hemorrhage in one of the sulci, but only slight cellular infiltration; cortical vessels engorged with a slight increase in lymphocytes in the adventitia, but no distinct perivascular collars; the ganglion cells took the stain well and had distinct nuclei; satellitosis was rather pronounced, especially about the smaller cells; a few ganglion cells were decidedly degenerated, with loss of nucleus and pulverization of the Nissl bodies; other cells appeared narrow, with total loss of cell structure (cell sclerosis); some

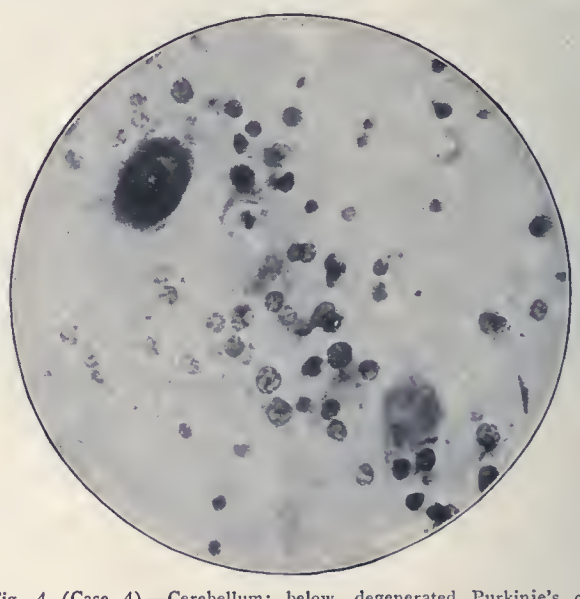


Fig. 4 (Case 4).—Cerebellum: below, degenerated Purkinje's cell, surrounded by phagocytic cells; above, well preserved Purkinje's cell; toluidin blue, × 540.

of the smaller ganglion cells were invaded by two or three neuronophages. Right occipital lobe: no pial hemorrhage, and congestion less marked; cell changes less marked than in motor cortex. Right frontal: pial congestion quite marked, with slight hemorrhage; few small extravasations seen in the cortex; many small ganglion cells much degenerated:

the same was true of a few of the larger ones; satellitosis was quite common; neuronophagia was extremely rare.

CASE 4.—*History.*—A high-school girl, aged 17, seen on Jan. 15, 1920, with Dr. Kate Graves, had been quite tired from working in a store during her Christmas vacation. January 2, a very cold day, she had been skating, and felt ill in the evening. The next morning she had occipital headache, and chills in the afternoon, followed by severe toothache for which a dentist could find no cause. January 4, she had pain about the left eye and in front of the left ear, but no fever.

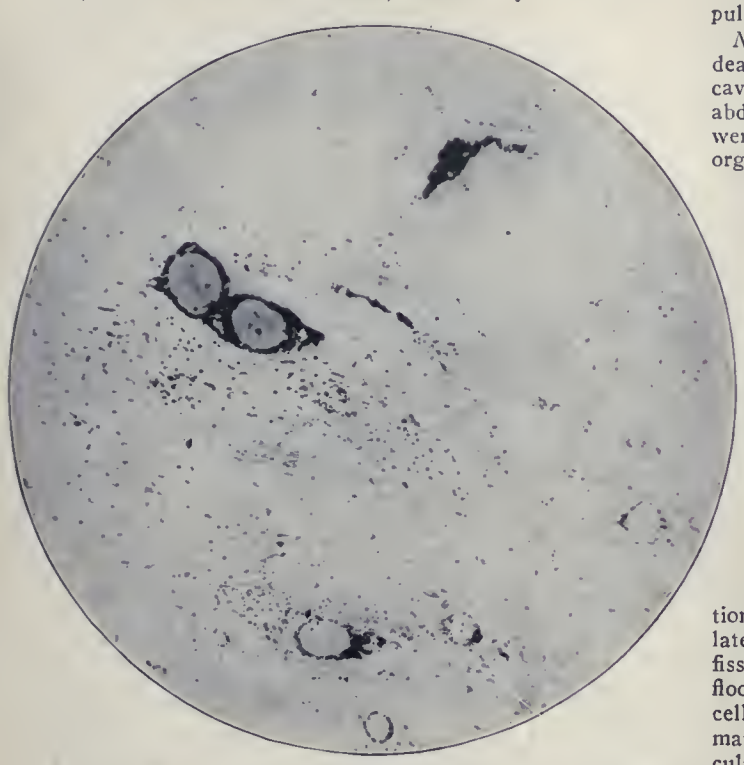


Fig. 5 (Case 4).—Upper cervical cord, posterior horn and surrounding white matter: perivascular and diffuse inflammation; toluidin blue, × 90.

The patient went to bed that day, felt better on the 5th, and on the 6th she had pain in the left shoulder. From the 6th to the 11th she had very rapid breathing without any chest findings, with no acceleration of pulse, and the temperature did not exceed 99.4. On the 10th she was troubled with mucus in the nose, was nauseated and quite hysterical and delirious, seemed to have hallucinations of sight and hearing, and wanted water every few minutes; she said she could not breathe without it. From the 12th a nurse was in attendance, so that a temperature record was kept. On that day the highest temperature (axilla) was 100; pulse, 120; respirations, 40. She was restless and perspired freely. She had some disturbed sleep after taking paraldehyd. On the 13th the temperature ranged from 100.6 to 101.2; pulse, 98 to 108; respirations, 26 to 42. On the 14th, temperature, 99.5 to 100.6; pulse, 96 to 102. She was restless and was quieted by paraldehyd and luminal. On the 15th the temperature and pulse were about the same. Since the 10th she had been having jerky and twitching movements of the face and extremities; double vision was complained of on the 11th, 12th and 13th.

Examination and Course.—January 15, the patient was very drowsy; she did not cooperate in the examination. No choreic or other movements were observed. The pupils were small and equal, and reacted to light. The plantar reflexes were normal; the abdominal and ankle reflexes were not obtained. The right knee reflex was present, the left, absent. There was a weak systolic murmur at the apex. Herpes appeared on the right lip and erythematous patches on the right cheek and right side of the chest. Lumbar puncture yielded a clear fluid under normal pressure. The Wassermann test was negative. The Nonne-Apelt globulin test was positive; cell count, 72; Lange gold test, negative.

On the evening of the 15th she slept for three hours without a hypnotic. In the morning she was quite rational and quiet, but had much difficulty in clearing her throat. She became unable to swallow, and mucus rapidly accumulated in the throat. She grew cyanotic and died at 1 p. m., January 16. The maximum temperature on that day was 100.6; pulse, 100; respirations, 34.

Necropsy.—A limited necropsy was made six hours after death. There was no fluid in the pleural or peritoneal cavities. The lungs contained no consolidated areas, and the abdominal viscera were normal externally. Small pieces were removed for histologic examination; otherwise the organs were not incised. The cerebral meninges were normal and there was no evidence of inflammation in the sphenoid or ethmoid sinuses. The brain showed no changes externally or on the cut surfaces when sectioned after formaldehyd hardening. The brain weighed 1,200 gm. Blood-agar cultures of the cerebrospinal fluid obtained at the base of the brain remained sterile.

Histologic Examination: Cerebellum: considerable pial infiltration with mononuclear cells; marked congestion and occasional slight extravasation in pial septums; many Purkinje cells were degenerated and surrounded by satellites. Cervical cord: considerable cell infiltration and marked distention of vessels at the ventral median fissure; large perivascular infiltrations in gray and in white matter, and in all parts of the transverse section; gray and white matter about equally involved. Lower medulla: very large and numerous perivascular infiltrations throughout the cut surface; also, much diffuse round cell infiltration. Upper medulla: pial infiltration marked, especially laterally; much less marked in ventral fissure than in same fissue of cord; vascular infiltrations especially marked near floor of fourth ventricle, but present throughout; ganglion cells preserved, but surrounded and invaded by inflammatory cells. Midbrain with aqueduct: numerous perivascular infiltrations and considerable hemorrhage. Optic thalamus: very little inflammation; no large infiltrations. Cerebral cortex: slight pial infiltration; considerable satellitosis about the small ganglion cells in the deeper layers of the cortex.

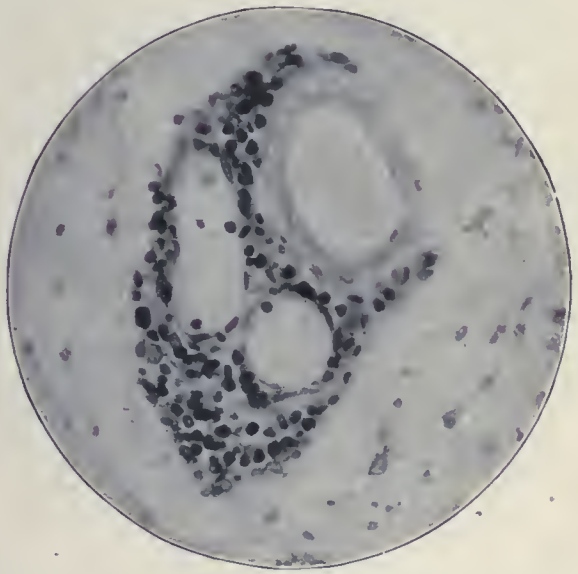


Fig. 6 (Case 4).—Lower hulb, near central canal: perivascular infiltration of mononuclear cells, denser about veins (to left), than about artery.

Comment on Histologic Findings.—It will be noted that essentially the changes are the same as in the ordinary lethargic form. The mononuclear cell infiltrations are most marked in the bulb, pons and cord, while the basal ganglions show surprisingly little involvement. On the other hand, the pial infiltration over the cerebral cortex is relatively marked.

"MENINGORADICULAR" TYPE

With some hesitation I suggest that this virus also may produce a syndrome characterized by meningeal irritation, and by irritation or paralysis referable to the spinal or cranial nerve roots.

CASE 5.—*History.*—A man, aged 34, seen, April 8, 1919, with Dr. H. F. Langhorst of Elmhurst, Ill., had been taken with vomiting and diarrhea four days before. The next day his temperature was 100, and he had severe pain in the left side of the neck and the left shoulder. The following day he felt better and walked about, but on April 7 he became unable to extend the right hand and to hold the head up. There was pain at the back of the neck.

Examination and Course.—April 8, the neck muscles were weak and active movements painful. There was paralysis of the extensors of the fingers of both hands. The abdominal muscles and flexors of the hips were weak. There was no other paralysis. Sensation was normal. All tendon reflexes were present, but those in the arms were weak. There was no mental disturbance at any time. The pulse was slow (56). Lumbar puncture yielded a clear fluid under increased pressure with a cell count of 20, and weakly positive globulin test and Lange gold test (0122111000). The patient rapidly improved. April 12, he was able to walk about, and complained only of slight numbness in the fingers and toes. He recovered completely.

CASE 6.—*History.*—A business man, aged 39, with negative previous history aside from right-sided facial paralysis of a few days' duration three years before, admitted to the Presbyterian Hospital, Jan. 27, 1920, six weeks previously had been taken with pain and stiffness of the neck, and later, with pain in both shoulders and arms. January 2, he had fever and delirium which lasted two days. January 4, he became unable to close his right eye or close the mouth tightly on

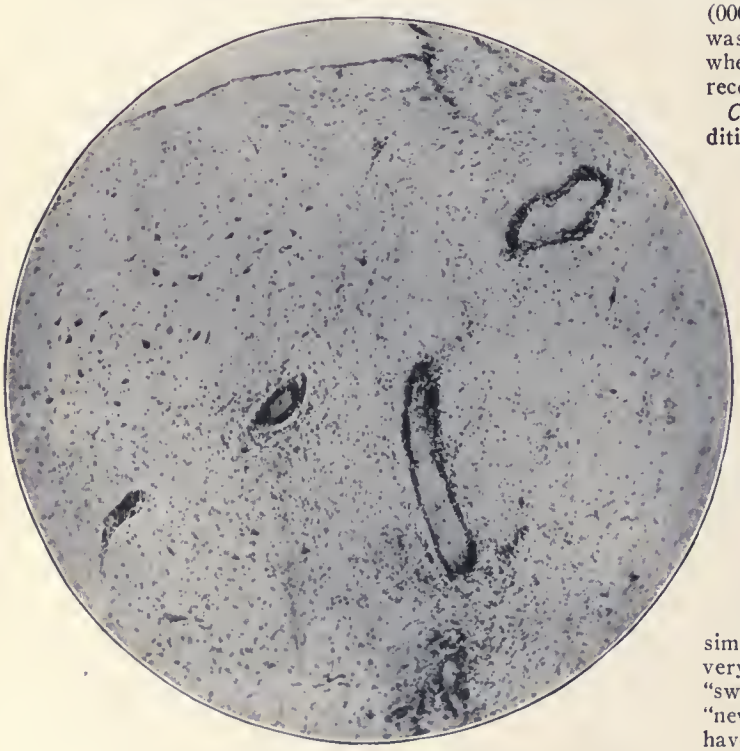


Fig. 7 (Case 4).—Upper bulb, dorsal surface: perivascular infiltration; toluidin blue, × 70.

the right side. When admitted to the hospital his chief complaint was pain in both forearms and hands.

Examination and Course.—The chief findings were: slight right-sided facial paralysis of peripheral type, increased knee reflexes, more so on the left side; left Babinski sign, left lower abdominal reflex absent; other abdominal reflexes normal. Muscular tenderness of forearms and hands. Mentally clear. Lumbar puncture, January 27, yielded a clear fluid under greatly increased pressure; cell count, 16; Nonne-Apelt globulin test, positive; Lange gold test, positive (0123221000); Wassermann test negative with blood and spinal fluid. Blood count: hemoglobin, 100 per cent.; erythrocytes, 4,150,000; leukocytes, 9,800. The patient slept poorly on account of pain in the arms. A second lumbar

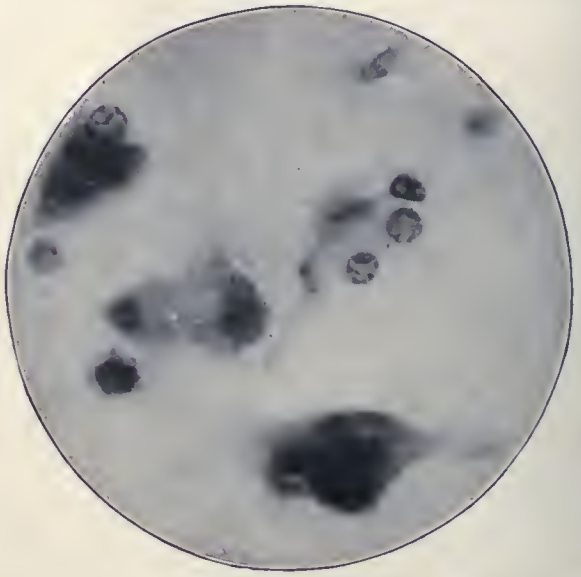


Fig. 8 (Case 4).—Motor cortex, deep layer: degenerated ganglion cells with satellites; toluidin blue, × 900.

puncture, January 31, yielded clear fluid under normal pressure, 9 cells; globulin test, positive; Lange gold test weaker (0001221100). The maximum temperature at the hospital was 99.2. The patient still complained of pain in the arms when he went home, February 2, but was reported as having recovered by the end of the month.

Comment.—The right-sided facial paralysis and the condition of the reflexes on the left side of the body suggest a mild pons lesion. The facial nerve may have been involved at its exit from the pons or in its nucleus. The high pressure of the spinal fluid indicates serous meningitis, while the pain in the arms and neck was probably caused by root irritation, as there was no paralysis or sensory disturbance, nor atrophy or change in the reflexes in the arms. The involvement in this case was sufficiently extensive to merit the term "meningoencephalomyeloneuritis," used by Barker, Cross and Irwin[4]

30 North Michigan Avenue.

4. Barker, Cross and Irwin: Am. J. M. Sc. **159**: 157 (Feb.) 1920.

Influenza an Ancient Disease.—In his special report on influenza to the London county council, Dr. H. W. Hamer gives an account of the prevalence of the disease in London with reference to contemporary outbreaks in other parts of the world and reviews the occurrence of similar epidemics in bygone years. Dr. Hamer draws some very instructive parallels between this last epidemic and the "sweats," "hot agues," "spotted fevers," and certain so-called "new diseases," all more or less of an influenzal type, which have been described by writers in the fifteenth, sixteenth and early part of the seventeenth centuries. These also were apparently associated with other diseases of an allied type, in which cerebral symptoms predominated, and he points out that the history of the "new fever" of 1685 bears a close resemblance to the 1915 outbreak of influenza in London, plus cerebrospinal fever. Dr. Hamer extracts from the old writers a mass of strikingly suggestive evidence, in which the quaint terse terms used by them to describe the outstanding features of the epidemics are almost as conclusive as the more elaborate nomenclature of modern physicians.

TUBING AS A CAUSE OF REACTION TO INTRAVENOUS INJECTION, ESPECIALLY OF ARSPHENAMIN

PRELIMINARY REPORT *

JOHN H. STOKES, M.D.
Associate Professor in Medicine, the Mayo Foundation
G. J. BUSMAN, M.D.
Fellow in Dermatology and Syphilology, the Mayo Foundation
ROCHESTER, MINN.

During the last two years we have been investigating the cause of an arsphenamin reaction observed on the service of the Section on Dermatology and Syphilology. This reaction, characterized by a chill with a sharp rise in temperature coming on from thirty minutes to an hour after intravenous injection, accompanied by nausea, vomiting, diarrhea, pain in the head and back and varying degrees of prostration, would appear in crops, so to speak, and then disappear for a considerable period, only to recur in the very midst of what seemed a period of flawless technical accuracy. Repeated efforts to identify a cause in the water or the chemicals employed in the preparation of arsphenamin for injection yielded nothing definite. The first clue to the actual cause was afforded by the appearance of a series of reactions, Jan. 6, 1919, following the transfer of the hospital and operating room service of the section from the Colonial Hospital to the Worrell Hospital. On this day every element in the technic except one remained the same as on the last day at the Colonial, when no reactions had occurred. The old piece of supposedly pure gum rubber tubing used on the glass container on the final reactionless day at the Colonial was replaced by the new piece of pure gum rubber tubing used on the opening day of many reactions at the Worrell. One of us (Busman), who was administering the arsphenamin at this time, suggested that the new tube was responsible for the reactions, although its cleaning and sterilization had been carried out with the same care used in the case of the old tube. Starting with this suggestion, we have carried the investigation of the "tubing reaction" to the point at which a preliminary report of the work seems desirable in order that physicians generally may be placed on their guard. One of us (Stokes), viewing the matter in retrospect, can recall two "epidemics" of similar reactions in his own experience on another service, which were attributed at the time to contamination of the distilled water. Study of the literature of crops of reactions, notably in army camps, also offers some points of suggestive comparison with our own experience. The possibility that a reaction of this type forms a complication of intravenous injections of alkaline solutions given through a brand of tubing known to produce this reaction, and the possible relation of the tubing to certain reactions occurring in blood transfusion by the citrate method as employed in the Mayo Clinic, are also under investigation.



Fig. 1.—Two samples of "pure gum rubber" tubing: The lighter colored tubing *(A)* will give rise to reactions when new, if used for intravenous injection of arsphenamin and certain alkaline solutions; the darker tubing *(B)*, even when new, apparently does not give rise to reaction.

At the time of the operating room transfer, all fourteen patients who received arsphenamin through the new tube reacted. On the following day, fifteen of eighteen patients reacted to another new tube. Four and one-half months later, when another change of tubing became necessary, an old and a new tube were checked against each other, identical lots of arsphenamin prepared in identically the same manner being employed. On the first day, in twelve of thirteen cases reaction followed the giving of the arsphenamin through the new tube, and no reaction occurred in nine cases in which arsphenamin was given through the old one. On the second day, arsphenamin given through the new tube of the previous day produced chills in three cases, nausea in four, and headaches in six, of ten cases. Absolutely no reaction had followed fourteen injections of the same arsphenamin solution through the old tube. On the third day there were no reactions from either tube.

Dec. 8, 1919, seven months after this experience, it again became necessary to replace worn out tubing, and on this occasion also all the patients who received arsphenamin through new tubing the first day reacted markedly. On the second day, the reactions to the arsphenamin through the new tubing were slight. None of the patients who received the solution through old tubing had the slightest reaction. On the third day, all tendency to reaction disappeared.

These seemingly convincing demonstrations incriminating the tubing led us to make efforts to ascertain the cause of the toxicity and to devise methods for its removal or the abatement of its effects. A variety of hypothetic possibilities presented themselves:

1. Imperfect sterilization of a new tube might lead to bacterial contamination of the solution in passage through it. This was rendered unlikely by the continuance of the reactions into the second day, after two half-hour sterilizations by boiling. Careful washing, rinsing and irrigation of the tube, filling with water before sterilization, and the fact that all glassware and other equipment in the experimental material and controls was subjected to the same treatment, made the possibility of bacterial accident even more remote.

2. Talc dust or some insoluble powder introduced into the circulation by the current passing through the

* From the Section on Dermatology and Syphilology, Mayo Clinic.

tube might be the cause of the reaction. This was rendered unlikely because of the careful washing and rinsing to which tubes are always subjected, and further by the fact that a new tube produced reactions in every instance (six cases) even after a powerful stream of tap water had been forced through it for twelve hours.

3. A reduction in the alkalinity of the arsphenamin solution passing through the new tube, giving the effect of an injection of slightly acid arsphenamin, might be responsible for the reaction. To oppose this possibility it was found that normal sodium hydroxid solution titrated 98 per cent. normal after tubing had been soaked in it over night. The reduction in alkalinity in a rapid passage through the tube must therefore be within negligible limits, and would not be manifest after the first or second injection.

4. The toxic substance, a constituent of the rubber, might decompose arsphenamin, rendering the drug itself toxic.

5. The toxic substance might induce colloidal changes in the arsphenamin solution.

6. The toxic substance per se might be dissolved from the rubber and introduced into the circulation by the solution passing through the tube.

In interpreting our investigations, the fact should be emphasized that the same brand of arsphenamin was used from the begining of our observations in 1918, and that we were thoroughly familiar with its behavior from experience in approximately 20,000 injections. Quantitative neutralizations, not visual end-point reactions, have been employed during the last eight months in the preparation of the solution. The sodium hydroxid was prepared for us by Kendall, and is standardized by titration and not by weight. The glass used was Pyrex or Jena, the water redistilled from glass, and the dilutions, rates, and conditions of administration closely approximated Public Health Service standards. Whenever comparisons between tubes were made, the conditions for both old and new tubes were kept identical. The tubing used by this service is sold as pure gum rubber tubing, and is manufactured by one of the largest and oldest rubber concerns in this country, so that the product probably is widely distributed over the United States. That a pure gum rubber tubing can be made which does not produce reactions, even when new, we ascertained in the course of our experiments (Fig. 1). About 80 cm. of tubing of an internal diameter of 4 mm. was employed in our work.

On further study of the reaction, these facts appeared:

1. Neo-arsphenamin, diluted 20 c.c. per decigram, as is our practice with arsphenamin, produced reactions when given through a new tube exactly as in the case of arsphenamin and of the same intensity, in spite of the lower intrinsic toxicity of the drug (six cases).

2. Soaking washed and sterilized new tubing fifteen minutes in neutralized or slightly alkaline arsphenamin solution just before administration caused the arsphenamin solution to produce reaction even when given through an old, nonreacting tube (six cases).

3. Using sodium hydroxid in which new sterile tubing had been soaked twelve hours, to make up the fresh arsphenamin solution for administration, did not make the arsphenamin solution, thus prepared, toxic.

4. Soaking new sterile tubing in acid arsphenamin solution and then neutralizing with fresh normal sodium hydroxid did not give rise to reactions.

5. The scrapings and dust mechanically removable from the inside of new sterilized tubing, even when present in sufficient amounts to produce visible turbidity in the arsphenamin injected through an old tube, did not induce reaction.

6. New tubing can be rendered harmless and incapable of producing reaction by soaking for six hours in normal sodium hydroxid solution.

From these observations it is suggested that:

1. The toxic substance is present in new tubes in sufficient amount to produce reactions in the patients receiving the first ten to twenty-five injections of arsphenamin given through a new tube 80 cm. in length within a period of two days. The reactions become less severe the longer the tube is used.

2. The toxic principle is not destroyed by boiling for one hour, is not soluble in water, and is not contained in the washings and mechanically removable débris from the inside of new tubes.

3. The toxic substance dissolves in or acts on neo-arsphenamin and arsphenamin when these drugs are employed in a dilution of 1 dg. to 20 c.c. of redistilled water.

4. The solution of the toxic substance or its chemical action is so rapid that merely passing 50 c.c. of the injection fluid through a new tube in four minutes will produce enough effect to give rise to marked reaction.

5. The toxic principle is removable from new tubing by soaking it in normal sodium hydroxid solution for six hours.

In order to ascertain whether the toxic agent is soluble in sodium hydroxid solution in the concentration in which it enters into the neutralization of arsphenamin (45 c.c. of normal sodium hydroxid per 5 gm. of arsphenamin per liter of water), we prepared a solution of 45 c.c. of normal sodium hydroxid per liter of water and ourselves received each 50 c.c. intravenously through a new sterile tube, with ensuing vio-



Fig. 2.—Series of photographs illustrating "tubing reaction" in the dog: Top, both animals alert and in good condition before injection. Center, both animals one hour after intravenous injection of 50 c.c. of approximately 0.18 per cent. solution of sodium hydroxid; the black dog received his injection through a used piece of rubber tubing, the white dog through a new one; the white dog has had a chill and vomited, the black dog is unaffected. Bottom, tubing reaction at its height; high fever, severe diarrhea and cramps, vomiting and depression; the black dog (old tubing) had no reaction whatever; in ten hours the white dog had completely recovered.

lent reaction. The toxic principle is, therefore, present in the dilute sodium hydroxid solution passed through the tube, and can presumably be obtained thus for chemical study, although its stability in such solutions is not yet ascertained.

Striking success in our efforts to transfer the problem to animals has thus far been obtained in the case of dogs (Figs. 2 and 3). In them it has been shown that if the same dilute sodium hydroxid solution is given intravenously through an old tube to one dog, and through a new tube to another, the dog which receives it through the new tube reacts characteristically; the other shows no effect. If, a week later, the procedure is reversed, the reaction occurs in the dog who receives the solution through the new tube, although by the use of an old tube this dog escaped reaction the week before. There is, therefore, no mere idiosyncrasy at the bottom of the reaction, and it is not due to the alkali alone. Efforts are now being made to transfer the problem to rabbits for greater facility in physiologic testing. The dog will apparently respond with somewhat less intensity than man to a dose of toxic solution about seven times as great per kilogram.

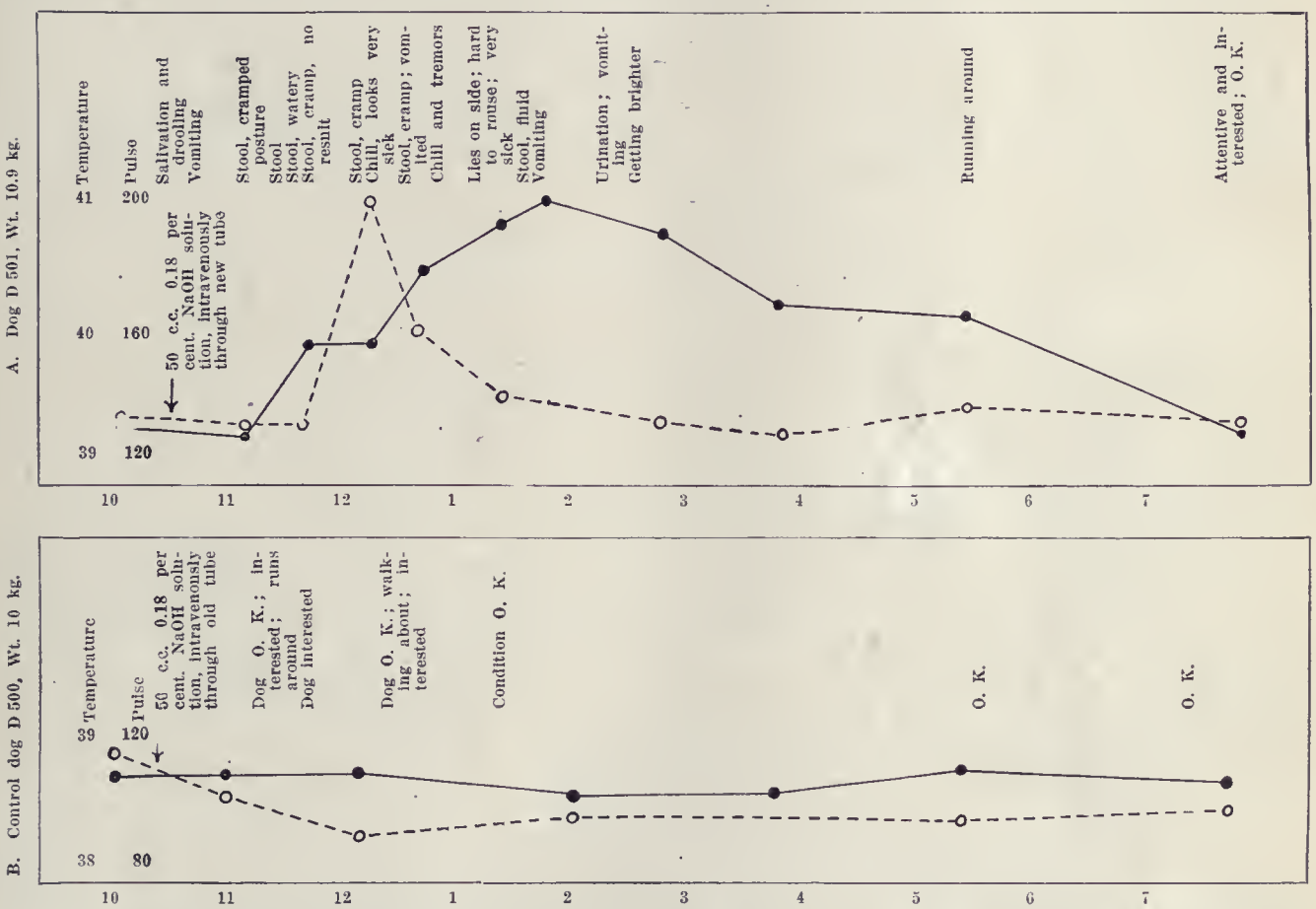


Fig. 3.—*A*, chart of tubing reaction in the dog following an intravenous injection of 50 c.c. of 0.18 per cent. sodium hydroxid solution given through a sterilized new "pure gum rubber" tube; note the chills, fever, vomiting, diarrhea, cramps and prostration characteristic of the reaction in man. *B*, chart of control dog, which received an equal dose of the same sodium hydroxid solution, but through a "pure gum rubber" tube that had been in use for some time; absolutely no reaction; solid line, temperature; broken line, pulse.

DESCRIPTION OF THE REACTION

The "tubing reaction," as we shall temporarily designate it for lack of a better name, presents a highly characteristic clinical picture when of maximum intensity, but graduations into atypical and mild forms appear as the toxicity of a given piece of tubing decreases. In from thirty minutes to an hour after injection, an increasing weakness, with aching of the legs and back, is noticed, followed by a chill, often of great severity (Fig. 4). The chill may be the first symptom. Nausea and vomiting occur with violent cramplike pains in the lumbar region, and diarrhea with tenesmus. Headache is intense, and with repetition of the rigor there is a sharp rise in temperature, the fever reaching from 102 to 103.5 F., accompanied by varying degrees of emotional disturbance, and prostration. The temperature (Fig. 5) then usually declines to normal within eight hours, but the fever may persist for two or three days, and the headache, backache, gastro-intestinal disturbance and prostration may persist for several days to a week. Both of us developed a profuse crop of herpes following the reaction. We have seen one case of jaundice, but no renal complications. Considering the extremely pronounced and unpleasant character of the symptoms, the recovery in robust persons is rapid and complete. It is conceivable that the reaction in the debilitated, or when coupled with a Jarisch-Herxheimer reaction or an intolerance of arsphenamin, might have serious consequences. One of us (Busman) developed a leukocytosis of 14,600, with 94 per cent. polymorphonuclears at the height of the fever. The other (Stokes) had a white count of 5,600, with 92 per cent. polymorphonuclears. Both urines were normal. The pulse is likely to remain rapid for several days. Important symptoms may fail to appear or may assume unusual severity. The gen-

eral features of the reaction, however, run so true to form both in man and in the dog that they suggest the toxicologic action of a definite poison.

COMMENT

While the use of pure gum rubber in all tubing employed in arsphenamin apparatus has been traditional in our technic, a careful search of the literature from 1910 to the present time has thus far failed to disclose specific reference to or authority for our practice. While the familiar references to "Wasser Fehler," "Salz Fieber," and to the possibility of minute quantities of lead and silicates being responsible for the erratic behavior of arsphenamin are common enough, we have been unable to find any evidence that the ingredients of rubber have been considered a potential cause of reaction in intravenous injection. From our study it is apparent, we believe, that even tubing marketed as of pure gum rubber may in the process of manufacture have acquired dangerously toxic properties, especially when used in the injection of alkaline solutions. That it is possible to make a gum tubing that has apparently no such toxic properties, and that soaking even toxic tubing in normal sodium hydroxid solution for six hours, followed by rinsing, removes the poisonous principle, points the way to a remedy. A review of the literature of arsphenamin reaction certainly suggests that this factor has been silently at work,[1] although to attribute the reactions described in any special reports to it, in the absence of data as to the tubing used, is only to indulge in speculation. Publication of our results may, however, stimulate further observation and serve, too, as a caution to those of us who are disposed to put the blame for every accident on either the operator's technic or the drug. The identity and toxicologic action of the cause of the reactions described will be made the subject of further communications, including a consideration of possible relations to transfusion reactions when tubing is employed for the conduction of blood and other reagents.

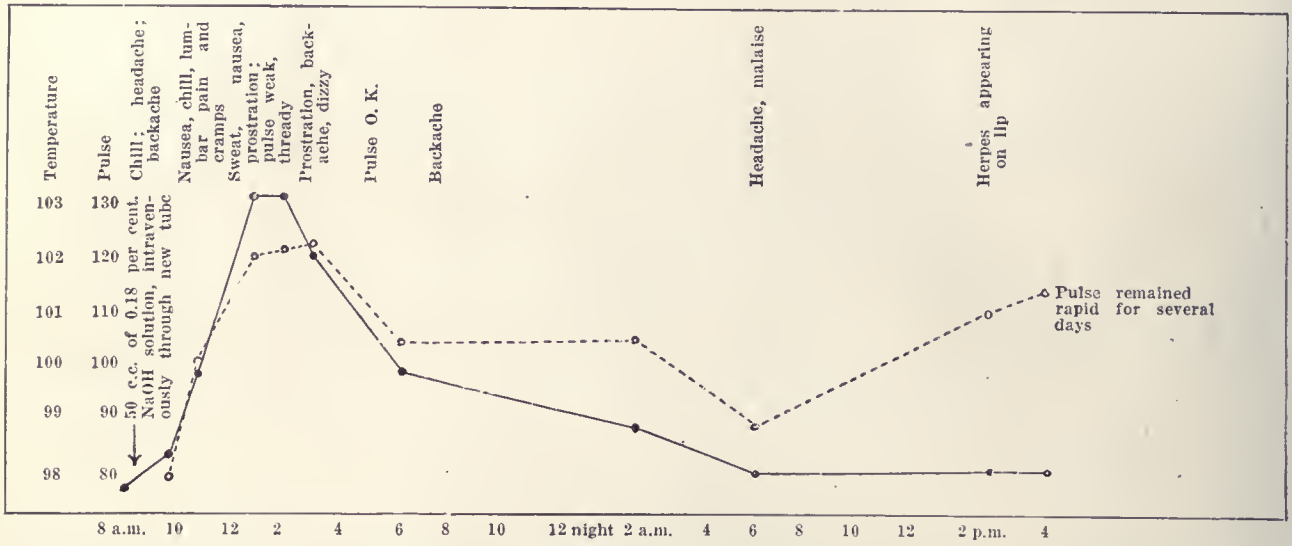


Fig. 4.—Chart of the reaction of one of the authors to an intravenous injection of 50 c.c. of 0.18 per cent. of sodium hydroxid solution given through a sterilized new "pure gum rubber" tube; the other author likewise received the toxic solution and had an even more severe and typical reaction, with vomiting, diarrhea and tenesmus; solid line, temperature; broken line, pulse.

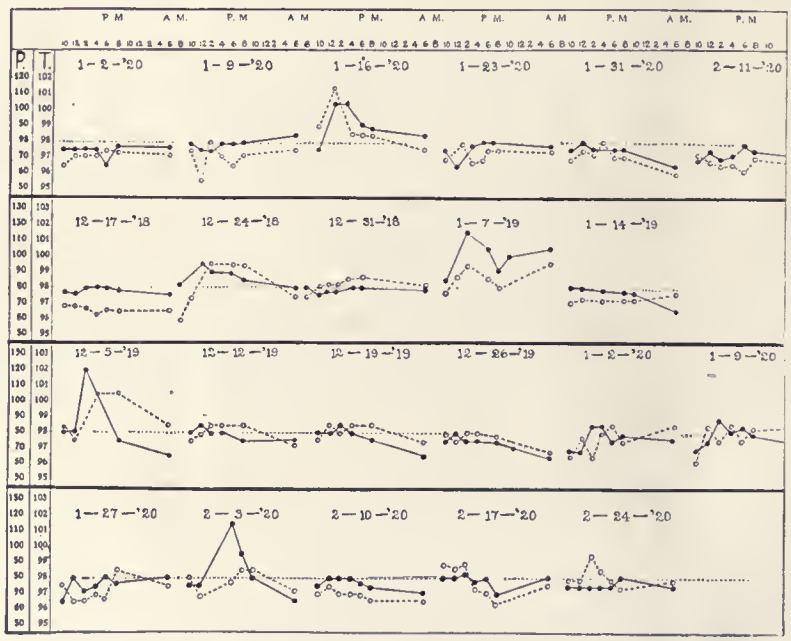


Fig. 5.—Charts of four patients who developed tubing reaction during their courses of treatment: Solid line, temperature; broken line, pulse.

CONCLUSIONS

1. A certain widely distributed brand of so-called pure gum rubber tubing seems to contain, when new, a toxic agent responsible for a definite type of reaction following the intravenous administration of arsphenamin, and possibly also of alkaline solutions and transfusion mediums.

2. The toxic substance gradually disappears from the tubing on use.

3. The toxic substance is apparently removable in the first instance by soaking the tubing for six hours in normal sodium hydroxid solution and rinsing.

1. See, for example, the group of reactions reported by Guy at Camp Travis (J. A. M. A. **73**: 901-904 [Sept. 20] 1919) in which the description of the reactions experienced by thirty-five patients in a single forenoon tallies in almost minute detail with the tubing reaction as we have observed it.

4. The toxic property is not destroyed in the ordinary process of sterilization by boiling (from one-half to one hour), is not soluble in water or removable by irrigation, appears in toxic amounts in arsphenamin, neo-arsphenamin and dilute sodium hydroxid solution merely on passing them through a new tube en route from container to vein, and is not apparently associated with the mechanically removable débris from the inner surface of the tube.

5. The reaction induced by this agent, as obtained by the use of new tubing for intravenous injection of the substances mentioned, consists of chills coming on from thirty to sixty minutes after injection, with nausea, vomiting, diarrhea, a sharp rise of temperature, sweating, severe headache and lumbar cramps, emotional disturbance amounting at times almost to hysteria, and subsequent profound prostration.

6. The reaction can be induced in typical form in dogs.

7. The identity and toxicology of the poisonous principle are under investigation.

NONOPERATIVE DETERMINATION OF PATENCY OF FALLOPIAN TUBES IN STERILITY

INTRA-UTERINE INFLATION WITH OXYGEN, AND PRODUCTION OF AN ARTIFICIAL PNEUMOPERITONEUM

PRELIMINARY REPORT *

I. C. RUBIN, M.D.
NEW YORK

The value of oxygen in conjunction with the roentgen ray as an aid in the diagnosis of obscure abdominal conditions has been demonstrated in a number of recent publications. No ill effects have accompanied or followed the pneumoperitoneum produced by inflation of the abdominal cavity with oxygen gas. The tolerance of the peritoneum for oxygen even in large volume, and the fact that its presence can be detected by fluoroscopy and roentgenography have led to its use as a diagnostic procedure in determining patency of the fallopian tubes. If the gas injected into the uterus under certain measurable pressure would pass into the fallopian tubes, it ought to reach the general peritoneal cavity. In patients with patent fallopian tubes the gas would establish an artificial pneumoperitoneum identical with that produced when injected by direct abdominal puncture. In patients with occluded tubes no such result could be obtained.

Accordingly, experiments were carried out on extirpated uteri with the adnexa intact. In the first experiment it was readily seen that oxygen passed into the uterine opening of the tubes and then escaped through the fimbriated end. When the tubes were ligated or were occluded by pathologic processes, this did not follow. After determining the amount of gas required for our purposes, the first clinical application of the intra-uterine oxygen inflation was made, Nov. 3, 1919, at Mount Sinai Hospital. It was successful in proving the patency of the fallopian tubes in this first patient. The abdomen became visibly distended and the pneumoperitoneum was confirmed by the roentgenographic examination. The symptoms associating the gas inflation by way of the uterus were the same as those described for the method by direct abdominal puncture.

Encouraged by the result of the first trial, I tested it out in a series of thirty-five cases of sterility in which there were different clinical histories and physical findings. In this first series it was our endeavor to find out the limits of application, the quantity of gas to be employed, the time and rate of flow, and the reliability of the oxygen injected as a diagnostic procedure. In the second series of twenty cases, estimations were made on pressure. This has proved a valuable adjunct. Altogether, fifty-five patients were examined by means of oxygen inflation of the uterus. There were absolutely no untoward symptoms or sequelae. The patients with two exceptions were ambulatory, and were allowed to go home from within a few minutes to a half hour after examination. Two cases were from the hospital wards. The patients were all followed up and carefully examined for complications, none of which have to the present writing appeared.

In some cases the result confirmed our clinical diagnosis of probably closed or patent tubes. In a number of cases the tubes were proved to be open when we had reason to suspect they were closed by disease, while in others the tubes were demonstrated to be occluded when we had believed them to be normal. The method had practically the value of an exploratory laparotomy for purposes of determining the continuity of the lumen of the fallopian tubes. The two possible dangers, namely, embolism and infection, are more theoretical than actual.

Embolism from oxygen introduced into the uterus in a stream of discrete bubbles never occurs, and infection need never occur if the cases are not acute and are properly selected. In fifty-five cases which form the basis of this preliminary report, there were no symptoms even suggestive of a possible peritoneal irritation, although some of them had presented gross pathologic conditions before the examination was made. These questions, with the case histories, will be more fully discussed in a future communication.

261 Central Park West.

* From the Second Gynecological Service and X-Ray Department of Mount Sinai Hospital.

Children's Year: Looking Backward and Forward.—In thirty-eight states the Children's Year child welfare committees have planned to "carry on" with the cooperation of the Children's Bureau; in thirty states child hygiene divisions have been established, and in sixteen states child welfare commissions have been appointed. The end of Children's Year was marked by an international child welfare conference in Washington, at which minimum standards were drawn up, discussed in eight regional conferences throughout the country, and put into final form by an advisory committee formed for that purpose. These standards cover the fundamental needs of maternity and infant care; of the preschool and school child; of the child in need of special care; of the child at work; and of the economic and social bases for these standards. The standards for the protection of maternity and infancy are already crystallized in the Sheppard-Towner maternity bill now in Congress. This bill would make available to all mothers public health nurses, accessible hospital care and medical attention; consultation centers; teaching and practical demonstration in hygiene of maternity and infancy, and the household arts essential to the well-being of mother and child. One hundred and thirty-four children's health centers were established in fifteen states; in nine other states they were reported but the actual number not given.

GENERALIZED NEUROFIBROMATOSIS

WITH REPORT OF A CASE

LELAND H. ANDERSON, M.D.
WICHITA, KAN.

Generalized neurofibromatosis, as a special class of multiple neuromas, was first described by von Recklinghausen in 1882. It has since been called "von Recklinghausen's disease." Pathologically, it is a type of fibroma, apparently taking origin from the connective tissue of the nerve strands. Nerve trunks, roots or individual peripheral nerve fibers may be involved; and different fibers of the same nerve, as well as derivatives of many different trunks in a given area, may exhibit lesions. The swellings may be near the skin surface, in the case of the peripheral nerves, or deeply buried in the tissues, and at any distance from the point of origin of the trunks. In shape they are often short and bulbous, or long, tapering and pyriform. Projecting above the plane of the skin surface, they appear as small, flattened, sessile tumors; long flattened pendulous taperings, or knobby, warty, gnarled formations. "Neuroma racemosum plexiforme," or "elephantiasis congenita" (Barker) are among the names applied to the condition. Often "rolling palpation" will detect numbers of the smaller swellings, too small to be seen on ordinary inspection, just below the skin surface. According to von Recklinghausen,[1] the tumors originate in the endoneurium of the nerve trunks in the subcutaneous tissue.



Fig. 1.—Involvement of the right eye, with drawing of the mouth to the left, lagophthalmos, and collapse of the ala nasae.

Etiologically, nothing is definitely known except the presence of a congenital predisposition. According to Osler, the tumors are believed to originate in the neurilemma (sheath of Schwann), because of the fact that the "olfactory and optic nerves, which are devoid of this sheath, have never been found affected with neurofibromatosis."[2] This is somewhat at variance with a statement by Barker[3] to the effect that "it is this tumor that affects the nervus acusticus at the cerebellopontile angle; the nervus trigeminus is also frequently involved." Osler mentions the report of a case by Prudden, with nearly 1,200 tumors distributed on the nerves of the body, and says that "fibroma molluscum multiplex" is a term that has been applied to the peripheral cutaneous form of the disorder.

Ganglioneuromas, the true type of nerve cell tumor, contain and are largely made up of ganglion cells. They are largely confined to the sympathetic system and the chromaffin system, often in the region of the suprarenals. The tumors presented in this report, however, are largely those of connective tissue framework origin.

They have certain interesting and fairly characteristic findings. Persons affected have a peculiar tendency toward pigmentation of the skin, irregularly distributed, and much accentuated over those areas normally containing pigment cells. Nevus formations, both of the capillary and of the cavernous type, are common, and Harbitz[4] considers them a feature of the disease. Neither pigment nor nevi seem to elect the mucosa of the oral cavity. Typical tumor groups are soft, velvety, semifluid masses, pinhead to pigeon egg in size, and feel to the palpating finger much like a soft, overripe, small grape. Below the skin surface, they are more often smooth, elongated swellings along the nerve trunks, easily detected by soft, uniform, gliding palpation with the palm. When evenly distributed, in considerable numbers, they give the affected part a swollen, edematous appearance, wherefore, probably, the name "elephantiasis neuromatosa." Any portion of the nerve, from the ganglion cells of origin to the periphery, may be involved. The symptoms produced, therefore, depend more or less on the anatomic locations. These patients are prone to mental

1. Von Recklinghausen: Ueber die multiplen Fibrome der Haut, und ihre Beziehung zu den multiplen Neuromen, Berlin, A. Hirschwald, 1882.
2. Osler, Sir William: Principles and Practice of Medicine, Ed. 8, 1914, p. 1027.
3. Barker, L. F.: Monographic Medicine **4**: 564, 1916.
4. Harbitz, Francis: Multiple neurofibromatosis (von Recklinghausen's Disease), Arch. Int. Med. **3**: 32 (Feb.) 1909.

change, with loss of or weakened memory, both for recent and past events. Sometimes there is pronounced speech difficulty, caused, in all probability, by interference with innervation.

REPORT OF CASE

The patient whose pictures accompany this report is a woman about 38 years of age. She is mentally alert, but has an exceedingly poor recollection of events one or two days past. She is exceedingly irritable and hypersensitive, refusing any sort of examination except in a closed room. Trifles serve to throw her emotional nature into wild play, and at times she is much like a child of 4 or 5 years. She has some speech difficulty, though there is no demonstrable involvement of the recurrent laryngeal or superior laryngeal nerves.

According to her statement she was a normal child until about 6 years of age. At that time a small nodule appeared in the skin under the left mandible, grew rapidly for a time, and then stopped. It has now been far outdistanced by those appearing subsequently, but still remains the same size. There are now more than 3,000 various sized tumors on and below the skin surface, though the photographic details are insufficient to show the smallest ones, or those that lie just below the corium. The patient is one of five children, one brother having the same condition in much less degree. One paternal uncle is said to have had a similar affection. Otherwise the history is negative.

A number of representative tumors were subjected to microscopy, but no tissue that could be construed as of nervous or ganglion-cell origin was found. No frank evidence of malignancy or excessive proliferation was found, though some cell elements were suggestive of sarcomatous (as opposed to carcinomatous) change, being large and spindle shaped, with karyokinetic and double nuclear changes. The type cells were rather large, puffy, succulent fibroblasts, unstratified, but thin and elongated in the region of the pedicle. Unna's [5] large mast cells were not found. Blood vessels were very few in number. The larger and presumably younger fibroblasts were grouped and bunched by numerous fibrous connective tissue septums, the whole surrounded by a sort of capsule quite separate and distinct from the overlying basement membrane of the epithelial surface. The intervening space was comfortably filled with an accumulation of fat cells, increasing at the base until only a very dense, thin fibrous connective tissue stalk penetrated the plane of the normal skin surface. These fibrous cords, in six instances, were followed below in the attempt to find their origin, but no definite conclusions could be reached, since they immediately spread out umbrella-wise, mingling with the fibers of the superficial white connective tissue fascia. The entire body surface was studded with these tumor masses: scalp, back, chest, abdomen, extremities and genitalia. Pictures of the latter were not obtainable though involvement was largely confined to the labia minora, which were excessively large and pigmented. The attempt to reproduce the chief involvement of the extremities, that of the right foot, was, for a time, futile. Strangely, she did not object to being photographed, front and back, thus illustrating what is meant by "mental eccentricity."

As is shown in the illustrations, there is a decided tendency toward grouping about the pigmented areolar areas of the breasts, where the protecting skin is disproportionately thickened, and a uniform trend toward pedunculation exists. A glance at the shoulder girdle, front and back, shows a number of the small warty excreseences which are quite often found in persons, above the age of 40, of the dark skin, fatty, pigmented type. In those persons there are seldom more than three or four tumors; but the question may be raised as to whether or not many more of these than are diagnosed are really mild fibromatoses. The diagnosis is readily made in the presence of many tumor nodules, but is this a prerequisite to the diagnosis? It must be admitted that the "feel" of the occasional and scattered nodules is quite different from that of the well developed cases, but it is probable that the incidence of early fibromatoses is higher than commonly it is supposed to be, since there is a factor of self limitation in their growth.

Along the margin of the right scapula is a mass the size of a hickory-nut, heavily pigmented and consisting almost entirely of a cavernous angioma. The profusions of vessels here, contrasted with their scarcity in most of the other masses, raises the question as to whether they are of the same type in different stages, or entirely different and coincidentally developing types.



Fig. 2.—Involvement of the skin of the back.

Usually this patient is not inconvenienced in any way except by the mental anxiety. Sudden temperature changes, however, produce tingling, and a feeling of tenseness and swelling in the nodules. Sudden mental stress, anxiety or anger produces the same result.

There is no evidence of intracranial pressure. The right olfactory, optic, oculomotor, trigeminus, facial, and the cochlear branch of the eighth cranial nerves, however, appear to be involved.

A wide variety of distinctive odors was readily recognized without hesitation, but thorough cocainization of the mucosa

5. Unna: Histopathology, p. 847, quoted by Ormsby, O. S.: Diseases of the Skin, Philadelphia, Lea and Febiger, 1915, p. 601.

of the left nostril high up produced much confusion, on several occasions, leading to complete errors in identifying substances formerly very familiar.

Perception of light remains only on the right side, dating from the age of 6, or thereabouts, and coincident with the development of the first tumor masses remembered. At that time the right visual field began to diminish steadily, until in a short time only the present amount of vision remained. The left fundus and visual field are normal. The right fundus shows merely a small, pale, atrophic disk. There is no edema or change in the retinal vessels. No change in the intensity of a point of artificial illumination is perceived by either the right or the left half of the right retina, suggesting a lesion anterior to the optic decussation. Coordination of the ocular bulbs is markedly disturbed, and while the right external rectus and superior oblique retain practically their full power (the fourth and sixth nerves), the remaining extrinsic eye muscles (the third nerve) are quite unbalanced; the eye rolls aimlessly, and on attempt at forcible closure of the lid, deviates out and upward (Bell's phenomenon). The bulb is considerably proptosed. The upper lid hangs loose and flaccid over it, and cannot voluntarily be raised. The lower lid is in mild ectropion. The drooping of the upper lid was first noted a year after the initial disturbance of vision on the same side, and has gradually increased. The right pupil is widely dilated, very slow both to light and accommodation, and does not exhibit the consensual reaction. Therefore a paresis of the third nerve is suggested.

The patient is unable to elevate the frontalis muscle, which speaks for a peripheral lesion of the seventh nerve (Bell's paralysis), since in central lesions of this nerve the power of the frontalis muscle is largely retained. The nostril of the same side is patently collapsed. Taste, however, is undisturbed over the entire tongue, and the right submaxillary and sublingual glands secrete normally, and respond to atropin, suggesting that the chorda tympani is undisturbed by the lesion affecting the seventh nerve.



Fig. 3.—Enormous tumor mass on the right foot.

About two years after the initial disturbance of vision, the right side of the face became softened and "looser"; the buccal wall was occasionally bitten, and food collected in the cheek pouch, suggesting involvement of the buccinator nerve (a branch of the third division of the trigeminus) as well as the facial nerve. The mouth is drawn somewhat more to the left than appears in the illustrations, and the right eye could not be forcibly closed, thus indicating a seventh nerve lesion. The area served by the sensory portions of the maxillary and mandibular divisions of the trigeminus is now relatively insensible, except to extreme degrees of stimulation. The area of the ophthalmic division of the trigeminus appears normal, since the lacrimal glands of the right side secrete normally and respond to atropin, and the areas of distribution of the frontal and supra-orbital nerves (branches of the ophthalmic nerve) are sensitive to ordinary stimuli.

More than a year after the trouble with the face came the first intimation that the patient was becoming deaf in the right ear. According to her statement, no increase of deafness has been noted since that time, although such belief is not based on any accurate tests. The type of the present deafness is that for high tones. Sounds in the moderate wave lengths are detected with little difficulty, provided attention is concentrated on them. There is reason to believe that even in the moderate amplitudes, tone "islands" are present; but extended detailed examination was refused. The accompanying table gives the results of the sound-conducting and sound-perceiving apparatus. The minus quantities, in parentheses, signify that time below the normal ear. All timing and distance measurement is accurate. A combined deafness of the right side is of course suggested, but the great preponderance is on the side of the nerve.

SOUND CONDUCTING AND PERCEIVING

Test	Right	Left
Rinné	+ (Bone < normal)	+ (Bone = normal)
Weber	.....	+
Dench	+ (—5 seconds)	+ (—3 seconds)
C_4	+ (—18 seconds)	+ (—3 seconds)
Voice (moderate low)	32 feet	44 feet
Acoumeter	2 feet	41 feet, 4 inches

So far as can be determined, the vestibular portions of the eighth nerve and its connecting tracts are normal. Normal falling, vertigo and past-pointing result from both the stimulation of turning, and douching. The right nystagmus is very confusing because of lack of control of the extrinsic muscles, the rolling of the bulb making decisions regarding nystagmus unsatisfactory and contradictory.

Figures 3 and 4 are views of the right foot, which is the most extensively involved of any of the extremities. The fourth toe is lost in the maze of redundant tissues, although the phalanges are readily palpable, and appear normal on the roentgenogram. The thick pad on the sole is devoid of the sensation of pain, except that deep pressure produces a dull ache. Other sensations are normal. The skin is soft, thin and but little calloused, while the mass feels much like a large varicocele. The patient states that the malformed portion of the foot seldom sweats. Except for the mechanical inconvenience in walking, no discomfort is experienced. All reflexes and sensory tests on both feet are normal.

There is nothing in the general physical examination to suggest involvement of the cord tracts or the peripheral spinal nerves. Proctoscopic examination in search of the rectal tumors described by Cooke[6] reveals nothing of importance. The blood and spinal fluid Wassermann tests, after provocative treatment, are negative. The gold chlorid curve shows nothing suggestive at either end of the scale. The general deep and superficial reflexes are neither sluggish nor exaggerated. No atrophy, fibrillary twitching, paresis, trophic changes or reaction of degeneration could be demonstrated.

6. Cooke: Am. Med., Nov. 21, 1903, p. 818.

COMMENT

Allowing proper latitude for a history, in its bearing on a relatively remote period, it would seem that the involvement of the cranial nerves began early, and first with those lying anteriorly. The fourth, motor fifth (portio minor), sixth, vestibular eighth, tenth, eleventh and twelfth cranial nerves appear untouched. According to Bassoe and Nuzum,[7] "the fifth and eighth cranial nerves are those most frequently involved within the skull, but when we include all the peripheral nerves the order of frequency seems to be: vagus, abdominal sympathetic, sciatic." In this case none of this triad could be proved abnormal. The involvement of the right side has been apparently regular, successive, and to a degree, at least, self limited. Repeated efforts to implicate the hypophysis in connection with the eye disturbance, by means of functional tests and gland feeding, proved unsuccessful. There are, moreover, no skeletal or soft tissue stigmas or other signs of any endocrine dyscrasia.

In the absence of necropsy, not many deductions are justified. However, "it may be recalled that, unlike all the other cranial and spinal nerves, the optic and olfactory are devoid of the sheaths of Schwann, and of the cells giving origin to the same."[8] If the involvement of the first and second cranial nerves in this patient is due to the same type of tissue change seen on the external surface, it would seem that the sheath of Schwann plays a part of immensely minor importance in the etiology of the disease. This brings up the question of tuberous sclerosis, which is beyond the scope of the report.

201 North Main Street.

7. Bassoe, Peter, and Nuzum, Frank: J. Nerv. & Ment. Dis. **42**: 785 (Dec.) 1915.

8. Adami, J. G.: Principles of Pathology—General Pathology, 1910, p. 715.



Fig. 4.—Enormous tumor mass on the right foot.

Mothers' Pensions—According to a bulletin entitled "Laws Relating to Mothers' Pensions," just issued by the Children's Bureau of the U. S. Department of Labor, thirty-nine states, Alaska and Hawaii now have some public provision for mothers left with young children to support, and in at least five of the remaining states, mothers' pension laws have been under consideration. Canada, Denmark and New Zealand also have passed legislation providing aid for mothers. Generally speaking, all mothers' pension laws provide for the payment of a stated weekly or monthly sum for each child under a certain age to mothers who are dependent on their own efforts to support their children, and are morally and physically fit persons to bring up their children. There is considerable variation in the laws in force in the different states. Some states provide pensions only for widowed mothers; others include women who are divorced or who may have been deserted by their husbands, or those whose husbands are in prison, in state asylums, or who are otherwise incapacitated.

OXYGEN INFLATION OF THE PERITONEAL CAVITY

A PERSONAL EXPERIENCE

ARMITAGE WHITMAN, M.D.
NEW YORK

In an article by Stein and Stewart [1] on the roentgen examination of the abdominal organs following oxygen inflation of the peritoneal cavity, the roentgenograms were sufficiently beautiful to justify the moderate claims for the method as an aid to diagnosis in obscure abdominal conditions. The article referred to its employment in some eighty cases, and the bibliography embraced a number more. The authors' series of cases furnishes apparently the only instances of the deliberate employment of the method for diagnosis only, the other articles referring to its more or less casual use after laparotomies, paracenteses, and as a therapeutic agent in tuberculous peritonitis. However, the results of its use were in all cases at least innocuous.

It at once occurred to me that the method described offered a brilliant opportunity for a demonstration of the effect of posture on the internal organs. It is known in some circles, and halfheartedly admitted in others, that posture has a definite effect on the position of the liver, kidneys, colon, etc. Almost any one will grant that a person standing in a slouchy attitude, with the chest flat, back hollow, and abdomen prominent, is more likely to suffer from floating kidney or intestinal stasis, for example, than one who stands erect, aerates his lungs, and gives his viscera at least a modicum of outside support. In reality, however, such a patient stands small chance of this theory being put into practice until the appendix has been removed, the floating kidney anchored, and possibly the mesentery plicated. If the patient is a woman, the operative possibilities are still more fascinating.

Abdominal palpation is unsatisfactory and almost impossible in the erect position, besides being a means far too susceptible to individual prejudice and variation. If we might show, however, a roentgenogram of the liver forced well up against the diaphragm, and the spleen and the kidneys back in their respective beds, all brought about by a change in the erect attitude, the demonstration would be as nearly final as one could ask. I therefore determined to make the first experiment of a series on myself, as I was confident of my ability to assume the desired attitude. I inquired from Dr. Stewart as to the possible disagreeable effects

1. Stein, Arthur, and Stewart, W. H.: Ann. Surg. **70**: 95 (July) 1919.

of the injection on the patient, and was told that it naturally produced a sensation of distention and occasionally some pain between the shoulders, but that these symptoms never lasted more than twelve hours, or over night, and indeed were usually confined to the aged and very nervous. It was his routine to give one eighth grain of morphin about an hour previous to the injection. The quantity of oxygen was no longer measured by the rubber bag, but was injected directly from the tank. The pictures might be taken within a few minutes, allowing time only for the sufficient dispersion of the gas about the abdomen. The bowels were evacuated in the morning, the usual breakfast and practically no lunch being taken.

Dr. W. F. Cunningham kindly consented to make the injection for me. The point selected was at the outer margin of the left rectus muscle, about one inch below the level of the umbilicus. No preliminary morphin was given. The skin and fascia were infiltrated with 1 per cent. cocain hydrochlorid. A No. 16 trocar and cannula was then introduced through a minute skin incision. No pain whatever was felt from the passage of the trocar. The trocar was withdrawn and the cannula connected with a rubber tube leading from a bottle of hot sterile water, which was in turn connected with the oxygen tank. The tank was then turned on and the oxygen allowed to flow slowly through the warm water into the peritoneal cavity. There was no sensation at first. After two or three minutes, bubbles could be felt gurgling about. After ten minutes, liver and splenic dulness was obliterated, and a fairly marked sense of distention became apparent. Turning slightly from side to side seemed to facilitate the dispersion of the gas. In about fifteen minutes a dull, aching pain began between the shoulders, and the injection was discontinued. At this time the abdomen, from having been almost scaphoid, was no more than flat. There was no appearance of distention. It was tympanitic all over, the lumbar gutters being the last regions to become so. Splashings and gurglings were apparent on auscultation. There was no alteration in respiration or pulse rate, which remained at 72. The blood pressure was not recorded. The first roentgenogram was taken in the supine position on the operating table, and seemed to show a fairly uniform dispersion of the gas, not however, as clearly as had been expected.



Fig. 1.—The slouchy attitude.

I then stood up. Rising was performed slowly and with assistance and was no more than uncomfortable. Anteroposterior roentgenograms were taken in the slouchy and the erect attitudes, and immediately afterward photographs were taken in the same attitudes, to accompany the roentgenograms and to contrast with the same poses taken before the injection. Taking the pictures did not require more than ten minutes, during which time I was conscious of increasing epigastric distention and discomfort, which made me anxious to lie down while the roentgenograms were developed. They were not as satisfactory as had been hoped, so that I stood up again to have a second series taken. The act of rising this time was much more uncomfortable, and I was conscious that the discomfort was increasing. While getting my clothes on and walking to the door, I found myself walking and holding myself with extreme care to avoid any jar.

As home was near by, it seemed as well to go there and lie down as to stay indefinitely in the hospital. When I came outdoors, the discomfort at once became much greater. The chest was held in midexpansion, and the breath was held as long as possible and expelled with a grunt. Inspiration was shallow, and the thoracic walls were held as rigid as could be, apparently in the effort to restrict the movements of the diaphragm. After I had walked one block very slowly the discomfort had become a pain, and the apprehension of being jarred or bumped had become extreme. It was literally fear lest a collision or decided jar would cause something to burst. The pain between the shoulders was increasingly severe. When home was reached, lying down at once gave great relief. The respiratory embarrassment disappeared. The sense of abdominal distention and oppression in the epigastrium remained. Four hours after the time of injection it was possible to sit up and eat a light supper. Any movement, however, was made with extreme care, and a resumption of the erect attitude for any time caused a recurrence of the pressure on the diaphragm. Except for discomfort on turning, sleep was not interfered with.

The following morning I woke comfortable; but when I moved, the abdominal cramp at once returned. Dressing was attended with much discomfort, bending over to lace the shoes in particular being almost impossible. In going out to walk three blocks to the office, I at once felt very acute discomfort. It was impossible to walk at even a reasonable rate. The apprehension of a jar returned, and a new symptom appeared, extreme pain referred, as nearly as I can describe it, to the heads of both humeri, worse as a rule on the right side. I was never able to decide whether or not that particular pain was caused by the cold air or the added exertion of walking on the street. It was not caused by the usual degree of activity about the house. Standing and sitting in the ordinary position were excessively uncomfortable. Reclining in a Morris chair gave considerable relief, and while I remained quiet in that position, there was simply a constant sense of epigastric oppression. I could not appreciate any diminution in the volume of gas.

For ninety-six hours after the injection, these symptoms remained practically constant. Becoming as time wore on more familiar with the gas, and therefore more contemptuous of accidents, I finally discovered what could give relief. The most effective remedy for the continuous epigastric oppression was standing on the head. After a few seconds in that position the gas could be felt escaping from the subdiaphragmatic space and gurgling up into the true pelvis. Respiration then became at once easy, and the cramped sensation and abdominal distress disappeared. If I could then be lowered to the horizontal, and pillows placed under the sacrum to hold the lower quadrants higher than the upper, the relief might persist for some fifteen minutes. Any change of position, however, released the gas, and the pressure on the diaphragm recurred. Urination was not affected. Defecation became more frequent, three movements a day being the average, loose in character, accompanied by considerable gas. Movements were followed by slight and temporary relief. It may be of interest to note

that it was impossible to distinguish by sensation between gas within and gas without the intestine. Appetite was increased, but probably because its satisfaction produced so much discomfort as to make a full meal inadvisable. There were, however, two or three sudden attacks of hunger, very much like the hunger pain of chronic dyspepsia, which were relieved by a few crackers and a glass of milk. The pulse rate was never appreciably altered. Respiration was increased by exposure to cold and exertion. There was no evident change in color from oxygen absorption.

The gas was absorbed—or at least the symptoms of its pressure disappeared—quite suddenly on the fourth day after the injection. Gas bubbles could still be felt on the fifth and sixth days, but their presence was not sufficient to cause noticeable symptoms. During the first four days I should have been grateful for the opportunity to spend my entire time in bed. Short of being totally incapacitated, I have never undergone such an uncomfortable, painful and thoroughly disagreeable experience.

I am putting this experience on record not because I wish to discourage the employment of the method, the importance of which has been already demonstrated, but because I can find nothing in the literature that might lead one to take into account the sensations of the patient.



Fig. 2.—The erect attitude.

I ascribe the wide variance between my own and the average experience to the fact that I was not, either before or after, a bed patient. I assume that the average subject is in a hospital for diagnosis, and that the oxygen injection is only one of a number of procedures, between and during which the patients are in bed or at least on their backs. Also a number of the previous experiments cited had been of a different nature—the oxygen having been injected after operation, after removal of a tumor or of fluid from the abdomen—when it was employed purposely to avoid too sudden a change in intra-abdominal pressure. Manifestly this would modify the severity of the subsequent symptoms. I cannot see that immediately getting up and walking about could have been responsible for their increased severity and prolongation, as they were relieved at once by lying flat or standing on the head. The effect was evidently, then, purely mechanical, and one would suppose that activity and constant shifting of position would promote rather than delay the absorption of the gas. The accompanying illustrations will show that the amount of gas employed was not excessive, and certainly produced no undue amount of distention.

CONCLUSIONS

The experiment was a failure in regard to the purpose for which it was undertaken. In the erect position, the gas once having risen to the subdiaphragmatic spaces, it was impossible to exert sufficient pressure from below to force the liver up and squeeze the gas out. Contraction of the abdominal muscles from below upward also primarily reduced the space into which the gas could escape.

2. The actual injection of the gas was practically painless, and its presence in the peritoneal cavity was attended by none but mechanical disturbances incident to its physical volume.

3. These mechanical disturbances were of such an unpleasant and disabling nature that the method should not be employed without their due consideration. The patients should be warned of what they might reasonably have to expect, and be prepared to spend from three to four days in bed following the injection. In nervous individuals the consequences might be considerably more disturbing.

283 Lexington Avenue.

"ANTIPLASMA" *

C. C. BASS, M.D.
NEW ORLEANS

A so-called specific cure for malaria called "Antiplasma," made by the Malarial Specific Company of New York, was recently investigated by the Propaganda for Reform department of The Journal.[1] The ridiculousness of the claims were noted and the composition of the nostrum as determined by the A. M. A. Chemical Laboratory was exposed.

Under ordinary circumstances such a "remedy" would not warrant further notice: perhaps not even that already given. Since the stuff is being extensively sampled and in some instances, at least, sold under the most extravagant claims to physicians, druggists and others in some of the Southern states, further information about it may be useful.

Feb. 19, 1920, the "southern representative" of the Malarial Specific Company brought a boy to see me who had just finished taking the third course of treatment with this "specific cure." His blood had been examined before and during the treatment and found to contain malaria plasmodia by Dr. F. M. Johns. I took a specimen of his blood, examined it, and found many malaria plasmodia, some of which were shown to the representative of the company. The explanation then offered for this failure to cure was that in the first two courses of treatment a preparation made by the wrong formula was used, and the last time he took the medicine only six days instead of seven, as the directions on the bottle advise.

Feb. 13, 1920, Dr. R. D. Dedwylder, Ruleville, Miss., put two men, in whose blood malaria plasmodia were found, on the "Antiplasma" treatment. The treatment was completed according to the "direction on the bottle," and on February 21, blood specimens were again collected. In the meantime, one of the patients had a clinical attack of chills and fever on the fifth day of treatment. I have examined the blood of both of these patients, taken February 21, after completing the treatment. Each contains many malaria plasmodia.

It so happens that the patient seen in New Orleans had estivo-autumnal plasmodia; one of those in Ruleville had tertian and the other quartan. We have in these three cases a fair trial of the "cure" in one case each of estivo-autumnal, tertian and quartan malaria, with 100 per cent. of failures. The use of this product to the neglect of the absolute specific for malaria, quinin, will contribute to the continuation of the disease in those who have it, and to spread of the disease to others.

* From the Department of Experimental Medicine, Tulane University of Louisiana School of Medicine.

1. Antiplasma, J. A. M. A. 74: 618 (Feb. 28) 1920.

Clinical Notes, Suggestions, and New Instruments

REPAIR OF CRANIAL DEFECT BY NEW METHOD

REPORT OF APPARENTLY SUCCESSFUL CASE *

GEORGE NOBLE KREIDER, A.M., M.D., SPRINGFIELD, ILL.

History.—J. W. W., boy, aged 4 years and 5 months, residing near Bates, Ill., accompanied his grandfather, about 2 p. m., Nov. 18, 1919, to the barn lot where there were several horses. When the grandfather opened a gate, one of the horses ran out, and in passing kicked the child forcibly over the left eye. He was immediately taken to the house, where the head was washed off.

Dr. J. C. McMillan of New Berlin, Ill., was called. Recognizing the serious character of the injury, he applied a sterile gauze dressing and took the child at once to the Springfield Hospital, where he arrived about 4:30 p. m. There was immediate consultation.

Examination.—There was a lozenge shaped compound fracture; the fissure in the bone was about 3 inches long, and 1 inch broad, running down at each end to a point. It began near the outer border of the superciliary ridge and passed upward and backward over the frontal prominence nearly to the median line. Two large pieces of bone were indriven, causing loss of considerable brain substance.

Treatment and Results.—Under ether anesthesia, about six pieces of bone were removed. The two large fragments were inserted in a pocket, which was prepared in the left hypochondriac region, and was made by a slightly curved incision, nearly 3 inches long. The tissues were separated by artery forceps and scissors. The two pieces of skull bone were completely buried, and the incision was closed.

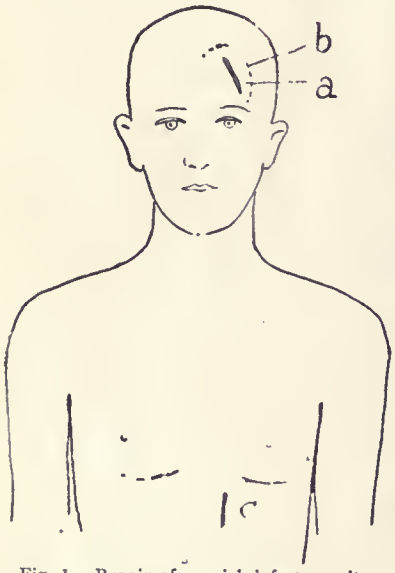


Fig. 1.—Repair of cranial defect: *a*, site of injury; *b*, line of incision for repair of defect; *c*, site of implantation.

The wound in the frontal region was thoroughly cleansed, a pledget of iodoform gauze was inserted in the cavity, and the edges of the wound were brought together, except at the ends.

Because of the circumstances under which the wound was received, a good sized dose of tetanus antitoxin was administered subcutaneously.

There was considerable oozing from the head wound, and slight fever; also, for a few days, edema of the left eye; otherwise the progress of the case was satisfactory.

November 29, under ether, the iodoform gauze was removed, and the edges of the wound were trimmed and brought closely together. The head was again thoroughly cleansed and permanent dressing was applied.

December 31, pulsation was visible and palpable where the bone was lacking. The scalp wound was solid except at one end where the mother had humped it in putting the child on a chair at the dinner table. Final operation was deferred one week until this had healed.

Jan. 7, 1920, at 2 p. m., assisted by Drs. C. W. East and J. C. McMillan, I made a horseshoe shaped incision beginning one-half inch from the outer edge and to the left of the original wound, and extending to one-half inch beyond the inner edge of the wound, or about the median line. The scalp was laid back toward the eyebrow, beyond the defect in the cranium. The dura was found firm and solid, closing off the brain. The edges of the dura were lightly dissected. The two fragments of bone were taken from the pocket and placed exactly in their former positions. A considerable layer of fat had become fastened to the outer side of these bones during their sojourn in the abdominal wall, and this was utilized in sewing them in place with fine catgut. The large scalp flap was then brought over, completely closed with silkworm gut, and a firm dressing applied.

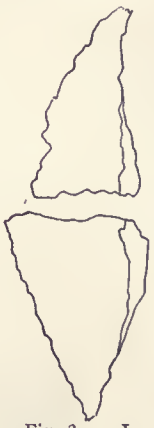


Fig. 2. — Implanted fragments of skull, approximate size.

January 14, the dressing was removed from the head for the first time. The new incision, which had been closed by silkworm sutures, was found to be perfectly dry. The line of first injury showed a pin hole opening at two points. There was a slight serous exudate, no pus was apparent, no pulsation was apparent and the bones seemed to be in good position and adherent. The abdominal wound was perfectly healed.

January 26, the wound was dressed and the bone appeared firmly fixed.

COMMENT

Three points should be particularly emphasized:

1. The implants should be placed in the hypochondrium with the outer surface of the bones in contact with the fatty tissues in this region. When they are removed, as much of this fatty tissue as possibly should be brought out with the bones. When they are replaced, this tissue should be sewed with fine catgut to the epicranial aponeurosis and the implants secured in place.

2. Some writers seem to think it quite necessary to dissect the dura away from the edges of the defect so as to bring its exposed outer surface on a level with the inner table of the skull. This was not done in my case. Unless there is good reason for this extensive, and possibly useless, dissection it should not be attempted. Even though a slight protuberance may exist, it is better than a defect. The cranial cavity is firmly and hermetically sealed, which is the important point.

3. A new flap was made to expose the defect. When the implants were put in place and enclosed, as I have indicated, this new flap exerted a certain amount of pressure, and finally will depress the dura to its normal position.

CONCLUSION

Usually, by implantation, it is possible to preserve the fragments of cranial bones for reimplantation when the original wound is in proper condition. The result in this case has been perfect recovery.

522 Capitol Avenue.

* Patient presented to the Sangamon County Medical Society, Feb. 9, 1920.

A SIMPLE METHOD OF DISTINGUISHING WHITE FROM RED CELLS IN SPINAL FLUID CELL COUNTS

S. R. GIFFORD, M.D., OMAHA

While laboratory men who are looking at spinal fluids every day have no difficulty in quickly distinguishing between these cells without staining, clinicians of less experience will often find a differentiation troublesome, even with the high power. The use of acetic acid or Turk's solution has the obvious disadvantage of further diluting what may be a fluid of low cell count.

I have found no convenient method in the textbooks on clinical diagnosis, and the following procedure which, from its simplicity, is probably being used independently by many men, I have not seen described:

The fluid is taken in two test tubes. To one of these, containing about 2 c.c., is at once added one drop of Loeffler's methylene blue, and the tube shaken gently. The second tube is saved for other tests. Examination after two minutes

reveals the nuclei of the white cells staining distinctly, so that they may be easily distinguished from red cells by low power, and lymphocytes from polymorphonuclears by high power. If the stain is not acting quickly, two or three more minutes may be required, but never long enough for coagulation to affect results appreciably, except in a very heavy, turbid fluid.

567 Brandeis Building.

COMBINED SCLEROSIS DUE TO ANEMIA OF THE PERNICIOUS TYPE: REPORT OF CASE

FRANK H. REDWOOD, M.D., NORFOLK, VA.

History.—Miss M. A., aged 48, a suit saleswoman, whose family history was unimportant except that a maternal aunt had died of tuberculosis, and whose habits were good, noticed, in April, 1919, that her feet burned constantly during the day and that she felt tired. Two weeks later she had a sense of numbness in both feet, and in the legs as far as the waist, and had some difficulty in walking. When I first saw the patient, September 12, she was confined to bed because she said she could not walk alone. She complained of numbness in the lower limbs, slight nausea for the preceding two days, constipation, and a severe pain in the lumbar region and legs whenever she moved. She said she had a sensation of something's turning over in the abdomen.

Physical Examination.—The patient was a well nourished, somewhat obese woman. She lay quietly in bed; when I attempted to examine her she cried out with pain; but when her attention was attracted she could be examined without difficulty. The muscles were flabby. The heart was normal, the pulse was 75 in the recumbent posture and 80 when the patient sat up. The systolic blood pressure was 120 and the diastolic, 70. The teeth were in poor dental repair, and several were suspected of being abscessed. The thyroid was not enlarged, the skin was rather dry, the tongue was slightly red, and the throat was normal. The chest and abdomen were negative.

Neurologic Examination.—The gait was paraplegic and spastic, the station was unsteady but there was not a true Romberg sign. All deep reflexes were quite lively, but equal on the two sides. The superficial reflexes were not elicited, but this was thought at the time to be due to a fat, loose abdominal wall. There were no ankle or patella clonus, no Babinski, Oppenheim, Chaddock, Gordon or Hoffman sign, and no Kernig sign. There was no astereognosis or adiadokocinesia. There was slight ataxia in the finger-nose test. All four extremities showed marked weakness. The pupils were normal in every way, as were the fundi. The cranial nerves were normal. The lower limbs showed small areas of analgesia or, rather, a delayed pain sense. Sphincter control was normal. Roentgenograms of the teeth disclosed four that were badly abscessed. The urine was normal, the blood Wassermann was negative, the spinal fluid was clear; there were 100 cells, but the globulin and Wassermann tests were negative. With the exception of 78 per cent. hemoglobin, the blood count was normal. Examination of the stools and the stomach contents was not made.

Clinical Course.—During October and November, the patient improved somewhat, and on repeated examinations the physical signs remained the same. During a period of twelve days in the latter part of November, I did not see her. December 2, I was called to the house and was amazed to find the patient in a serious condition. She was acutely ill, the skin was sallow or lemon colored, the mouth dry and parched and the tongue, sore. All deep and superficial reflexes were absent, and there was a Babinski reflex on the right side. Deep muscle sense was lost. There was an easily exhaustible ankle clonus. The patient had absolutely no control over the rectal or vesical sphincter. The blood count revealed hemoglobin, 72 per cent.; red cells, 3,280,000; white cells, 7,600. The differential blood count revealed polymorphonuclears, 71.5; small lymphocytes, 18; large lymphocytes, 4.5; transitionals, 5, and eosinophils, 1. The red cells showed a few nuclear bodies, anisocytosis and poikilocytosis. Two days later, red cells were 2,300,000, white cells 14,000, and hemoglobin 68 per cent. The patient grew rapidly worse and died, December 5. Necropsy was refused.

COMMENT

Degenerative changes of the cord in pernicious anemia are quite common, but cases in which symptoms are referable to the cord are comparatively rare. This case is reported chiefly on account of the difficulty of a diagnosis before the rather sudden change in the physical findings. At the first examination, the blood picture was practically normal, the deep reflexes were increased, and there were no pathologic reflexes and no sphincter disturbances. Eight days before death, the blood picture was that of atypical pernicious anemia, the deep and superficial reflexes were absent, there was a Babinski reflex on the right side, and the patient had no control of the sphincters.

310 Taylor Building.

A CASE OF HUMAN ANTHRAX*

GERALD R. ALLABEN, S.B., M.D., BUHL, MINN.

Anthrax in man is still uncommon enough to warrant the report of a case.

History.—W. I. L., man, aged 18, Finn, clerk in a mining office, noticed a small nodule on the left side of the neck just below the ear. Swelling of the neck began immediately. The following day, he consulted the physician at the mine, and hot compresses were applied. Twenty-four hours later, when next seen by the physician, the symptoms had progressed rapidly, and the patient was brought to the hospital. He had a temperature of 104 F.; pulse, 130, and respiration, 28. There was extreme swelling of the neck and face extending around to the right side and down to the left breast, and marked edema of the throat involving the uvula. Breathing was embarrassed and noisy, and there was great difficulty in swallowing. The patient complained of no pain except the discomfort from the edema. Blood count revealed 26,000 leukocytes. The urine was negative. The lesion was about the size of a nickel, and distinctly firm and indurated; the edges were raised and dotted with small vesicles containing a clear yellow serum. The center of the nodule was depressed, dark and necrotic. Smears showed anthrax bacilli, some specimens showing the characteristic spore formation.

Operation and Results.—Under local anesthesia the nodule was thoroughly excised, the base was cauterized with 95 per cent. phenol (carbolic acid), and the surrounding subcutaneous tissues were injected with 5 per cent. phenol. A dressing of 95 per cent. alcohol was then applied. Cauterization was repeated twenty-four hours later, and alcohol dressings were continued. The patient's condition did not improve, however. The edema remained unchanged. The patient became restless and noisy; the temperature remained high, reaching 105 at the last; the pulse grew weak and more rapid; leukocytes increased to 42,000; and death took place just forty-eight hours after admission to the hospital, and four days from the onset of the infection.

Comment.—A specimen of blood, sent to the laboratories of the state board of health at St. Paul for culture was reported free from anthrax organisms. It would rather be expected that a positive culture would be obtained in such a malignant case, and with the degree of leukocytosis that was present. The treatment in this case, aside from the management of the local condition, was largely supportive. An attempt was made to secure antianthrax serum for administration, but it did not arrive in time. It is more than probable, however, that the serum would have had no effect on the course of the disease. It seems likely that a new shaving brush was the cause of the infection, as has been demonstrated in many of the cases occurring in the army cantonments. This patient had bought a new brush one week before, and had used it only twice, the last time being the night before the appearance of the nodule on his neck. The brush was secured, and sent away for culture, but was apparently destroyed without examination.

* From the Shaw Hospital.

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SATURDAY, APRIL 10, 1920

ACETYLSALICYLIC ACID (ASPIRIN) AND HEAT REGULATION

How largely the use of drugs is still based on empiric experience is now and then emphasized anew when scientific investigation directs its attention to the real mechanism of their action. This paucity of accurate information regarding the precise mode of action of many commonly used therapeutic agents is illustrated in the case of acetylsalicylic acid (aspirin). The drug is employed daily in medical practice, and has already attained the undesirable popularity of becoming a "household remedy" exploited daily in the public press and on the billboards. If a conscientious student of medicine were to have inquired only a few months ago regarding the details of the antipyretic manifestations of acetylsalicylic acid, his commendable inquisitiveness could not readily have been rewarded with accurate information. This is not due to the novelty in the use of acetylsalicylic acid, for the compound was introduced into therapeutics more than twenty years ago.[1]

Thanks to investigations conducted by Barbour [2] in the Department of Pharmacology of the Yale School of Medicine, its action on heat regulation has been somewhat elucidated. Unexpected is the unlike behavior exhibited by normal, in contrast with febrile persons toward the drug. In the former, a dose of 1 gm. or more of acetylsalicylic acid produced no significant difference whatever in the output of heat. This absence of augmented heat dissipation was observed despite the fact that the drug was evidently pharmacologically active, as shown by an obvious mild stimulation of the total metabolism by therapeutic doses in the majority of normal persons. Barbour believes that there is probably no change in the nature of the materials burned, for the results as a whole indicate that the drug, in this dosage, does not alter the respiratory quotient. Any tendency for the body temperature to fall is probably compensated for by the slight increase in heat production in the normal organism.

The observations on febrile persons, on the other hand, tell a different story. Acetylsalicylic acid, in 1 gm. doses, which have no such action in normal persons, exhibits a marked antipyretic effect in febrile, temporarily afebrile and convalescent subjects. Like other antipyretic drugs, it exerts its temperature-reducing action essentially by increasing the process of heat elimination. Barbour notes that although stimulation of the metabolism is not seen, as in health, there is at least no depression at all comparable in extent to the increase in heat dissipation.

Along with the altered heat regulation there is a tendency toward a decrease in the pulse rate. Temporary cardiac disturbances have incidentally been noted—a fact in itself warning against indiscriminate medication by the untrained. It is a striking fact that the sensitivity to the drug noted in fever may continue in the temporarily afebrile and convalescent persons, with resulting subnormal temperatures. "It is not allowable, therefore," Barbour writes, "to state that antipyretics reduce an elevated but not a normal temperature; a more correct formulation of the facts is that antipyretics reduce the body temperature in fever cases (including temporarily afebrile and convalescent phases) but not in normal persons."

Why a drug should provoke increased heat elimination in fever, but not in health, is not easy to understand. That the phenomenon is not due to a lack of combustible material in the sick, for instance, to a decrease in the glycogen store of the body, has been determined; for Barbour [3] has already demonstrated that feeding a carbohydrate, such as glucose, may actually enhance the fall in temperature when acetylsalicylic acid is given, rather than counteract it by increased metabolism. The precise nature of the peculiar sensitivity to such antipyretics therefore remains to be further elucidated.

1. Dreser, H.: Arch. f. d. ges. Physiol. **76**: 306, 1899.
2. Barbour, H. G., and Devenis, M. M.: Antipyretics, II, Acetylsalicylic Acid and Heat Regulation in Normal Individuals, Arch. Int. Med. **24**: 617 (Dec.) 1919. Barbour, H. G.: Antipyretics, III, Acetylsalicylic Acid and Heat Regulation in Fever Cases, ibid., p. 624.

THE INFLUENCE OF NUTRITIONAL CONDITIONS ON TUMOR GROWTH

One of the striking differences between cancer and infectious processes is exhibited in their opposite modification by conditions of nutrition, either local or general. Ligation of the lingual artery is a classical procedure for reducing the rate of growth of an inoperable carcinoma of the tongue, but no one would recommend such a procedure in the treatment of any sort of infectious process in this location. Old age, deficient nutrition, loss of blood, chronic diseases, and intercurrent infections are all recognized as commonly reducing the rate of growth of tumors, and it is axiomatic that carcinoma in the young and well nourished is commonly characterized by rapid development to a fatal termination. Equally certain it is that the

3. Barbour, H. G.: Proc. Soc. Exper. Biol. & Med. **16**: 136, 1919.

effects of these conditions on most if not all known infections is exactly the opposite of what it is in cancer. While with human cancer occasional exceptions to the foregoing general rules are observed, it is probable that, could all conditions be controlled or evaluated accurately, the exceptions would be rare indeed. Cancer in experimental animals can be controlled and studied under more satisfactory conditions, and such observations as have been thus made support the generalizations that are commonly accepted concerning the influence of nutrition on growth.

Experiments in which the diet of animals has been restricted have commonly shown that deficient food intake reduces the rate of tumor growth. A dietary deficient in an essential amino-acid may reduce the growth rate of inoculated tumors, just as it decreases the rate of growth in young animals.[1] Diets deficient in vitamins reduce the rate of growth of tumors,[2] while vitamin-rich diets have been said to favor tumor growth.[3] As most of these experiments have been performed with inoculated tumors, which undoubtedly behave differently from spontaneous tumors, particular significance attaches to the observations of Maud Slye [4] on the influence of pregnancy and lactation on the behavior of spontaneous tumors in the mammary gland of mice. Thirty each of nonreproducing and of reproducing females with spontaneous tumors of the same type, alveolar tubular carcinoma of the mammary gland, were carefully studied and compared. Without exception the amount of tumor grown by a female while reproductive was strikingly less than during her nonreproductive period, despite the fact that the tumors were in tissues that are stimulated to great activity during reproduction. These exact observations corroborated what had been observed as a general principle in handling great numbers of other mice not accurately measured and watched as in this special study. As between reproducing and nonreproducing females, the difference in growth was remarkable. While the nonreproducing females lived rarely more than six weeks after the tumor was first observed, the average duration of life having been thirty-six days, the reproducing females frequently lived nearly a year, the average being 178 days, and many bore from six to eight litters. Especially remarkable are the figures for the rate of growth of the tumor as determined by frequent measurements, for in the nonreproducing mice the average daily growth was 999.4 c.mm., whereas in the reproducing females during the period of active reproduction, growth almost ceases, averaging in this series only 7.75 c.mm. After a reproducing mouse ceases reproduction, the rate of growth augments rapidly, so that the tumor may increase in size more in a few days than in as many months during reproduction. In the same mice that averaged only 7.75 c.mm. daily growth during reproduction, the rate after reproduction had ceased was 686 c.mm.

From these and other observations it would seem that while a tumor can withdraw for its own growth nourishment needed for its host, and evidently takes precedence over the somatic tissues in its affinity for nutritive supplies, the fetus in its turn takes precedence over the tumor, even as it does over the somatic tissues of its mother which it draws on for its nourishment, whatever the cost to the maternal organism. As Miss Slye says, the prolonged hiatus between pregnancies greatly complicates the study of the relation between pregnancy and tumor growth in the human species. During this prolonged hiatus the tumor may draw off the energy which would have continued to be used in reproduction if the pregnancies were not widely separated, just as is the case in mice kept constantly impregnated. This would account for any apparently conflicting testimony in human experience as compared with these studies. Finally, it is to be noted that in mice, as in women, infections in the pregnant are usually exceptionally virulent and usually quickly fatal, wherein we have another example of opposite biologic behavior of tumors and infections.

1. Sweet, Corson-White and Saxon: J. Biol. Chem. **15**: 181, 1913; ibid. **21**: 311, 1915. Rous: J. Exper. Med. **20**: 433, 1914.
2. Benedict, S. R., and Rahe, A. H.: J. Cancer Res. **2**: 159 (April) 1917.
3. Corson-White, E. P.: Pennsylvania M. J. **22**: 348 (March) 1919.
4. Slye, Maud: J. Cancer Res. **5**: 25 (Jan.) 1920.

RECENT OBSERVATIONS ON THE CEREBROSPINAL FLUID

The cerebrospinal fluid has come to occupy an important place in modern clinical procedure. It is now frequently removed for diagnostic examination or therapeutic purposes; furthermore, the subarachnoid spaces which it occupies are sometimes utilized for the introduction of drugs intended to act on the nervous system. The determination of the mode of origin of the cerebrospinal fluid and its precise functions and physiologic relations to the various contiguous structures is obviously important. Unfortunately, the difficulties of experimentation in connection with this, as with many other parts of the central nervous system, have retarded progress. It need not be surprising, therefore, if some of the current views must be subjected to revision in the light of newer information or a more critical examination of beliefs already adopted.

One of the conclusions reached in recent years by a number of investigators, and already widely quoted, asserts that the cerebrospinal fluid is actively secreted by the choroid plexuses. Some writers believe that it is generated only within the ventricles, particularly the lateral ones, by a truly secretory process. It is pointed out that when the pathways by which the ventricles communicate with other parts of the brain are obstructed, the fluid collects so as to produce an internal hydrocephalus. Becht,[1] to whom we owe an unusually elaborate investigation of the subject coupled with a

1. Becht, F. C.: Studies on the Cerebrospinal Fluid, Am. J. Physiol. **51**: 1 (Feb.) 1920.

trenchant critique of existing views and evidence, has pointed out that the well-known facts of internal hydrocephalus do not prove the specific point of formation; for in the region under discussion, increased production of cerebrospinal fluid might result from activity of the choroid plexus, from stimulation of the ependyma cells lining the ventricles, from increased transudation from the capillaries, or from the formation of intracranial lymph: any one or all of these factors may be involved. Further, the rate of formation may be perfectly normal, the departure from the normal consisting merely in decreased absorption.

Another sort of evidence in support of the specific secretory origin of the cerebrospinal fluid has been sought in the observations that drugs and tissue extracts known to promote the activity of well recognized secretory structures, like the pancreatic glands, seem likewise to facilitate the output of cerebrospinal fluid. Why should not it, too, be placed in the category of the typical secretions? In answer to this, Becht has pointed out the close dependence of the pressure and flow of the fluid on the arterial and venous pressures that exist at any corresponding period in the skull; and according to him, all the changes in the fluid pressure and fluid outflow that have been offered as proof of the secretory mechanism of formation of the cerebrospinal fluid can be traced to alterations in these circulatory factors. If this is true, then the proof that the fluid is undoubtedly formed by secretion must be abandoned until more cogent evidence is produced for the participation of active cellular processes. While admitting that the choroid plexuses may represent one source of the cerebrospinal fluid, Dercum [2] ventures to believe that it has a further source in the general serous surfaces of its containing cavities.

Another upset of current traditions concerns the possibility of absorption from the subarachnoid spaces. If substances can be rapidly transferred to the nervous system by absorption from the cerebrospinal fluid, the possible importance of intradural injections in medication of the brain and cord is at once suggested. Meltzer [3] has come to the conclusion that such injections do not produce the typical effects of an intravenous injection; and Becht has been unable to demonstrate the absorption of potent drugs from the dural canal when they have been introduced with suitable care to avoid undue pressure or direct traumatic entrance into blood vessels. Coincidently, Dercum has asserted that "attempts at medication of the brain and cord through the subarachnoid space, as in the Swift-Ellis method, are unscientific, as substances introduced into the cerebrospinal fluid rapidly disappear by passing out through the arachnoidal villi and the lymph spaces without in the slightest degree penetrating the nervous parenchyma; the beneficial effects hitherto ascribed to the Swift-Ellis and kindred methods are due entirely to the incidental spinal drainage." He adds that medication of the nervous parenchyma must be attempted through the alimentary tract, through the skin, through the areolar tissue, or directly through the blood.

If we are to abandon some of the current beliefs regarding the production and escape of the cerebrospinal fluid, what shall be said about its rôle? Dercum regards it as "preeminently a fluid for the hydraulic suspension of the brain and cord; its function is essentially hydrostatic." Having a chemical composition essentially like that of an isotonic saline solution, it has no action on the tissues with which it comes into contact, and, if we may follow Dercum, it has no special function in the nutrition of the brain and cord, which takes place as does that of other tissues.

2. Dercum, F. X.: The Functions of the Cerebrospinal Fluid, Arch. Neurol. & Psychiat. **3**: 230 (March) 1920.
3. Meltzer, S. J.: Am. J. Physiol. **47**: 286 (Dec.), 1918.

Current Comment

PHYSICAL AGENTS AS PROVOCATIVES OF IMMUNITY REACTIONS

The well marked resistance of certain species to infection with germs usually harmful or fatal to others is commonly designated as natural immunity, because it seems to be "a natural biologic attribute of the species, as much a characteristic property as are its anatomic or physiologic properties." Immunity can also be acquired, notably after an attack of certain diseases. This "acquired immunity" is assumed to be a manifestation of some biologic stimulus or factor which at once differentiates it in some unexplained way from the usual responses of the organism to chemical and physical agencies. The hope of successfully inducing those reactions which are the basis of immunity of any type whatever rests on the possibility of analyzing the factors concerned and of imitating their functions. Several years ago, Murphy showed that there is likely to be an actual increase in the circulating lymphocytes, accompanied by hyperplasia of the lymphoid elements following cancer inoculation into immune animals. If this crisis was prevented by the destruction of the lymphocytes, the immunity of the animal was destroyed. By repeated small doses of roentgen rays, an animal could be practically depleted of lymphoid tissue without apparent injury to other important structures, and without detectable influence on the animal's general health. In such an individual, immunity was replaced by susceptibility to cancer inoculation. The beneficial response of the lymphoid tissue can be induced in animals by means of injection of living tissue. Murphy [1] has lately ascertained, however, that purely physical methods of heightening the activity of the lymphoid centers in the spleen and lymph nodes also are available. If single small exposures to roentgen rays of suitable quality are employed, a good response is secured. Furthermore, dry heat ranging from 55 to 65 C. applied to the whole animal for five minutes was found to produce a stimulation of the lymphocytes and of lymphoid tissue

1. Murphy J. B.: The Effect of Physical Agents on the Resistance of Mice to Cancer, Proc. Nat. Acad. Sc. **6**: 35 (Jan.) 1920.

of marked intensity, the increase in the number of lymphocytes persisting for a number of days. Murphy states, as the results of recent experiments at the Rockefeller Institute for Medical Research, that the lymphocytosis and lymphoid hyperplasia induced by these two physical agents are associated with an immunity to transplanted cancer equally as great as that arising from tissue injections. There is something more readily measurable and better definable in heat or in roentgen rays than in such vague somethings as are tissue extracts at present. To secure a wholesome reaction of possible far reaching importance in the body by means of such physical agents is a step in the direction of progress, however far it may still be from even speculation as to any application to human conditions. Murphy cannot state at present whether the tissue injection, the small dose of roentgen rays, or the dry heat induce changes in the organism other than those associated with increase in the lymphoid tissue which would account for the immunity; but the evidence now at hand points at least to the lymphoid tissue as an important agent in the immunity reaction to transplanted cancer of mice.

BONDS NOT NECESSARY FOR PHYSICIANS

Apparently some of the by-products of prohibition are going to be as interesting as the main issue. Without intending to cast any slurs on our great and noble sister profession, it is indeed an ill wind that some lawyer cannot manipulate to his advantage. Judging from the letters received, physicians are being circularized by a member of the legal fraternity who has devised a method of helping them to comply with the prohibition law with the greatest amount of ease and convenience to themselves and with profit to him. The circulars have this interesting legend printed in large red type on the face of the envelop: "What the U. S. Government Allows You to Do. I Know the Law. I Will Do Everything but Sign Your Name." The circular offers to assist physicians in securing government permits to purchase or prescribe liquor. While it does not expressly say so, the impression conveyed to the uninformed physician is that every practicing physician must file a bond in order to purchase or prescribe any amount of liquor. This is not the case. As stated in the abstract[1] of Internal Revenue Regulation No. 60, physicians desiring to purchase and prescribe liquors in their practice are required to procure a permit to prescribe. This can be obtained by filling out an application on Form 1404 in triplicate and filing it with the federal prohibition director of the state in which the physician is licensed to practice. This permit, when issued, allows him to prescribe liquor for medicinal purposes only, and when such liquor is necessary to afford relief from some known ailment. It also allows him to purchase not more than six quarts of liquor during any calendar year for professional use only. Bonds need not be filed by physicians, dentists or veterinarians, or by hospitals or sanatoriums unless required by the commissioner. It is not necessary for physicians to pay five dollars or any other amount to any lawyer or bonding company. No fee is required for registering and securing a permit under the prohibition law, and the government officers can and will do all that is necessary to assist a physician to procure a permit without any cost to him. THE JOURNAL has endeavored to keep its readers informed regarding the provisions of the prohibition law. It will continue to do so in the future. The requirements for registration under the law are not difficult; however, if any of our readers are in doubt as to what to do in order to comply with the law, we shall be glad to advise them.

1. The Physician and the Prohibition Law, J. A. M. A. **74**: 342 (Jan. 31) 1920.

AN ADVANCE IN ROENTGENOGRAPHIC TECHNIC

Even in this day of receptive minds eager for new truths, it may be years before discoveries of great importance to science are brought into general use. In 1912, Lorey[1] happened to roentgenograph the abdomen of a patient who several days before had had air injected into his peritoneal cavity to replace ascitic fluid removed. It was discovered that some of the nitrogen was still present, and this had allowed the intestine to drop out of the way, so that beautiful pictures were secured showing the outlines of the liver, spleen, kidneys and other organs. During the next year, Weber[2] did considerable work to show the possibilities of this method. It was not until 1918, however, that much interest was taken in the subject. Since then a number of papers have appeared in the German, French and Italian journals. Probably the first plates of this type to be shown in America were presented last year at the annual session of the American Medical Association, by Stein and Stewart of New York. Many who saw these roentgenograms felt that they were looking on a great advance in roentgenologic technic, perhaps the most important as regards intra-abdominal diagnosis since Cannon introduced the bismuth meal. It is remarkable that injection of gas into the peritoneal cavity through a needle reveals so clearly the liver, the kidneys, the spleen, the walls of the stomach and intestine, the uterus and its adnexa, the diaphragm and the lower ribs. Undoubtedly the method may be used to show also the point of origin of obscure abdominal tumors. Most of the work has been done with oxygen, but this takes a day or more to be absorbed, during which time the patient is often compelled to remain in bed. It has now been shown that carbon dioxid can be used instead.[3] As this is absorbed in half an hour, the procedure may be carried out in the office, and the patient can return to his home or to his work. So far no accidents have been reported, and there seems to be little reason for fearing any so long as the cases are properly chosen. Naturally, it would be unwise to inject a liter or two of gas into the abdomen of a man with a subphrenic abscess or with adhesions around an area of localized peritonitis. As the distention of the

1. Lorey: Verhandl. d. deutsch. Roentgen Gesellsch. **8**: 52, 1912.
2. Weber: Fortschr. a. d. Geb. d. Röntgenstrahlen **20**: 453, 1913.
3. Alvarez, W. C.: California State J. M. **18**: 42 (Feb.) 1920; abstr. J. A. M. A. **74**: 699 (March 6) 1920.

abdomen always causes considerable discomfort and sometimes acute pain, particularly in the shoulders, the procedure will probably always be limited to the study of special cases. In this issue of THE JOURNAL, Whitman [4] describes from a personal experience the point of view of the patient submitted to this method.

Association News

THE NEW ORLEANS SESSION

Special Social Events for Women Physicians

A luncheon for visiting women physicians will be tendered by the women physicians of the Southern Medical Association on Tuesday, April 27, at the St. Charles Hotel, and the annual banquet for women physicians will take place at the Louisiana, Wednesday, April 28, at 6 p. m. Reservations should be made through Dr. Margaret Bowden, 1217 Calhoun Street, New Orleans. The cost per cover is $4.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Urologic Section Formed.—A urologic section of the Los Angeles County Medical Society has recently been organized with sixteen charter members and the following officers: president, Dr. Granville MacGowan; president-elect, Dr. Ralph R. Campbell; vice president, Dr. Robert V. Day, and secretary, Dr. Herbert A. Rosenkranz.

Personal.—Dr. Irving R. Bancroft, Los Angeles, has been appointed secretary and executive officer of the state board of health succeeding Dr. Wilfred H. Kellogg, Sacramento. ——Dr. Daniel Crosby has resigned as city health officer of Oakland.——Dr. Walter Lindley, Los Angeles, has been appointed a member of the state board of health succeeding Dr. Lemoyne Mills, term expired.——Dr. William B. Kern, superintendent of the Norwalk State Hospital, has resigned to resume private practice after sixteen years of institutional work.

COLORADO

New Officers.—Lake County Medical Society at Leadville, January 15: president, Dr. Franklin J. McDonald; vice president, Dr. Allan J. McDonald, and secretary-treasurer, Dr. Elwood B. Lynch, all of Leadville.

CONNECTICUT

Resigns After Long Service.—Dr. Max Mailhouse, professor of neurology in Yale University, has resigned after twenty years' service with the institution.

Health Center Organized in New Haven.—A health center has been organized in New Haven under the combined leadership and financial support of the municipal department of health, visiting nurse association, the New Haven chapter of the American Red Cross, and the New Haven Medical Society. The health center will aim to build up the health as well as to detect the physical defects of the 20,000 inhabitants in the selected district, which is largely of Italian stock, and it is expected that the center will be in full operation by July 1. Its temporary quarters are 184 York Street.

ILLINOIS

Dr. Bartlett Speaks Before County Society.—Dr. Willard Bartlett, St. Louis, gave an address on "Goiter Surgery," before the Madison County Medical Society at its meeting in Edwardsville, April 2.

4. Whitman, Armitage: Oxygen Inflation of the Peritoneal Cavity: A Personal Experience, THE JOURNAL, this issue, p. 1021.

Free Exercise of Healing Art Asked.—A petition from the "central health committee" asking that the new constitution of the state permit the free exercise of the healing art was presented at the constitutional convention by Delegate Cruden, and referred to the bill of rights committee.

Personal.—The offices of Drs. A. B. Scott, Paul B. Kionka and L. A. Lighthart, Melrose Park, were destroyed in the tornado which struck that village, March 28.——Dr. Elmer S. Allen, Arcola, who was operated on several weeks ago at the Union Hospital, Terre Haute, for the removal of gallstones, has recovered and returned home.

Addition to State Hospital.—The state of Illinois has begun work on the addition to the Alton State Hospital, to cost $500,000. The plans call for six cottages capable of housing 100 patients, in addition to a dining room and kitchen, and construction of two buildings to house tuberculosis patients, and the erection of a hospital building.

Plead Guilty to Failure to Report.—Drs. Henry S. Bennett, Joseph D. McKelvey, Chester C. Sloan and Prudens R. Sterck, Moline, and Arthur E. Williams, Rock Island, are said to have pleaded guilty, March 25, to charges of violating the city health law by failing to report births within the required five day limit, and to have been fined $10 and costs in the Moline police court. The fines were suspended, but the physicians were held for the costs in the case.

Chicago

Institute to Hear Address on the Atom.—There will be a meeting of the Institute of Medicine of Chicago, April 16, at 8 p. m., in the City Club, at which Prof. R. A. Milliken, University of Chicago, will speak on "The Twentieth Century Contributions to Our Knowledge of the Atom." All interested are invited.

Karalius Declared Insane.—Dr. Anthony J. Karalius, who charged that a federal prohibition agent obtained a prescription for liquor by giving a Masonic distress signal and later said he had paid agents $1,000 not to prosecute him, was found of unsound mind, March 31, and will be committed to an institution. Dr. Karalius was released on bond of $2,000, April 2, but has been forbidden to practice medicine or issue prescriptions for narcotics or liquors, pending trial.

INDIANA

Tuberculosis Exhibit Tour.—The state board of health tuberculosis exhibit automobile has started on a tour of the rural districts of the state.

University Centennial.—Indiana University will hold its centennial celebration May 5, 6 and 7. May 5 will be given over to the exercises of the medical department at Indianapolis, and all physicians are invited to be present at the meetings on that day.

University to Operate Dispensary.—The board of health of Indianapolis, at the meeting, March 15, approved a contract with the Indiana University School of Medicine for the operation of a city dispensary for 1920. The university agreed to operate the dispensary and provide supplies for $825 a month.

Personal.—Dr. Frank C. Wade, Howe, sustained a fracture of the arm when his sleigh overturned recently.——Dr. J. C. Fulton, Bluffton, rounded out a half century of practice in Wells County, March 11.——Dr. Frederick J. Schulz, Fort Wayne, for thirteen years physician to the General Electric Company, Fort Wayne, has resigned.——Dr. Harry M. Pell, Brazil, has been appointed local physician for the Pennsylvania system, succeeding Dr. Lewis L. Williams, deceased. ——Dr. Aldine E. Morgan, Lafayette, has returned to the Indiana State Soldiers' Home as chief surgeon.

IOWA

Venereal Disease Clinic.—It is announced that a clinic for the free treatment of venereal diseases will be established in Cedar Rapids, as the result of a survey made by Dr. Oliver C. Wenger, U. S. Public Health Service.

Personal.—Dr. Charles Magoun, Sioux City, has been appointed physician of Woodbury County, succeeding Dr. Guy E. Barr, Sioux City.——Dr. M. Charles Mackin, Knoxville, superintendent of the Iowa State Inebriate Hospital, Knoxville, has been appointed assistant alienist to the State Hospital for the Insane, Skillman, N. J.——Dr. Leon C. Havens, acting head of the department of epidemiology in the State University of Iowa, Iowa City, has been called to a chair in Johns Hopkins University, Baltimore.

MARYLAND

Emerson in Baltimore.—Dr. Charles P. Emerson, professor of medicine and dean of the University of Indiana School of Medicine, Indianapolis, delivered an address on "Environmental Medicine," at the Johns Hopkins School of Hygiene and Public Health, March 29.

Workrooms for Wounded.—Two portable buildings will be erected this week on the grounds of the United States Marine Hospital to give the patients a place in which to do handiwork. Four members of the reconstruction division of the U. S. Public Health Service, under the direction of Miss Elizabeth Winn, chief reconstruction aide, are in charge of the division of occupational therapy, to which one of the buildings will be devoted. The other will be given over to a physiotherapy department.

Personal.—Dr. William S. Halsted has received a diploma of honorary foreign membership in the Royal College of Medicine of Belgium. Dr. John M. T. Finney has been awarded honorary fellowship in the Royal College of Surgeons of England.——Dr. Warren H. Lewis of Johns Hopkins Medical School has been elected an honorary member of the Society of Medicine of Ghent, Belgium.——Dr. Ross McC. Chapman, the new superintendent of the Sheppard and Enoch Pratt Hospital, Towson, assumed his duties, April 1.

MASSACHUSETTS

Personal.—Dr. George R. Fessenden, Ashfield, has been appointed associate medical examiner (coroner), for Franklin County.——Dr. Richard J. R. Caines, Boston, has returned after eighteen months overseas.

Dean Lewis in Boston.—Dr. Dean D. Lewis, professor of surgery (elect) in Chicago University, has been acting for two weeks as surgeon-in-chief protempore, in charge of Dr. Harvey Cushing's service at the Peter Bent Brigham Hospital, Boston.

Staff Meeting.—A clinical meeting of the outpatient department medical staff of the Massachusetts General Hospital was held, April 7. Dr. Lloyd T. Brown, Boston, presented a paper on "Bodily Mechanics in Relation to Medicine," and Francis M. Rackemann, Boston, one on "Bronchial Asthma."

Resigned, Not Deceased.—The report that recently appeared in a Boston paper announcing the nomination of Dr. G. Forrest Martin as a trustee of the state infirmary in place of Dr. Leonard Huntress, deceased, should have read "in place of Dr. Leonard Huntress, resigned." Dr. Huntress is alive and well.

Complimentary Luncheon to General Wood.—The Class of 1883 of Harvard Medical School, of which Major-General Leonard Wood is a member, will give a complimentary luncheon to him at Symphony Hall, Boston, April 13, from 12 to 2:30. The speakers will be Dr. Henry Jackson, Boston, president of the class, Dr. Alfred Worcester, Waltham, president of the Massachusetts Medical Society, and General Wood.

MICHIGAN

Influenza Deaths.—During the seven weeks of the influenza epidemic in Detroit, during January and February, the mortality rate was 2 per thousand. During a similar period at the beginning of the epidemic in 1918, the mortality was slightly less, but resulted finally in the deaths of 0.28 per cent. of the population.

Personal.—Dr. Theodore S. Crosby has been appointed health officer of Wakefield.——Dr. Bruno L. Schuster, Jackson, health officer of Jackson County, has resigned.——Dr. Mabel E. Elliott, Benton Harbor, who was captured with a party of Armenian relief workers during a recent raid of the Turks, is reported to have escaped.

MISSISSIPPI

Smallpox.—Smallpox of virulent type is said to be prevalent in half of the counties of the state. The state sanitary inspector, Dr. Cyrus M. Shipp, Water Valley, announced, March 27, that twenty deaths had occurred from this cause in Jones County. During the last fourteen days of March, 785 cases were reported from forty-one counties.

Six-County Medical Society Installation.—At the meeting of the North Mississippi Six-County Medical Society, composed of Tippah, Benton, Union, Marshall, Yalobusha and Lafayette counties, March 17, Dr. Ira B. Seale, Holly Springs, was installed president; Dr. George W. Sisler, Waltervalley, vice president, and Dr. Billy S. Guyton, Oxford, secretary.

Health Campaign Planned.—To carry out the cooperative idea between the work of the state board of health and the American Red Cross, plans are being made for the initiation of a health campaign in Lafayette County. The state board of health will appropriate $5,000 toward this cause, and the secretary of the Lafayette County chapter of the American Red Cross $2,500, provided the citizens of the county, through its board of supervisors, will provide the $2,500 needed.—— At a meeting held in McComb, March 22, plans for the special health campaign to begin in McComb were outlined. Dr. W. D. Beachman, Summit, health officer of Pike County, has moved his office to McComb and has associated with him in the work Red Cross nurses and assistants. McComb has added $1,000 to the Rockefeller fund in order that special work may be done.

MISSOURI

Mayoral Candidates Outline Policies.—March 20, at Mercy Hospital, Mayor Cowgill and Walter H. Foster, candidates for mayor of Kansas City, outlined their proposed policies with regard to hospital and health boards to the members of Jackson County Medical Society.

Personal.—Dr. Robert Vinyard, St. Louis, has been appointed assistant physician to the Frisco Hospital, Springfield.——Dr. George W. Cale, Jr., after twenty-two years' service as chief surgeon of the St. Louis and San Francisco system, announces his retirement, April 1, to resume private practice.——Dr. Wenzel C. Gayler has resigned as second vice president of the St. Louis Medical Society.——Dr. Harold B. Scovern, Carrollton, has been appointed deputy state health commissioner.

NEBRASKA

Personal.—Dr. Hiram W. Orr, Lincoln, has been made editor of the *Journal of Orthopedics*.——Dr. Earl W. Fetter, North Platte, has been made physician of North Platte, succeeding Dr. John S. Simms, North Platte, resigned.——Dr. and Mrs. Charles R. Gannaway, Stuart, have disposed of their hospital to engage in the Near East relief work.

Hospital Items.—The campaign put on by the Lincoln Commercial Club, early in March, to secure $100,000, which, added to a similar amount voted by Lincoln last spring for a city hospital, will make up the amount necessary to build a hospital, has been successful and the hospital will be built this summer.——Long Pine Community Hospital was formally opened, February 17, and is in charge of Dr. Albert G. Rasck, Long Pine, formerly of Chicago.——The citizens of Sydney and tributary territory have organized a hospital association which will build a hospital this summer.

NEW YORK

Cash Prize Awarded.— The Merritt H. Cash Prize of the New York State Medical Society has been awarded to Dr. Herman B. Sheffield for his essay on infantile paralysis.

Society Condemns City Laboratory Plan.—The Albany County Medical Society, at its meeting, March 10, condemned the plan of expending $20,000 for alterations of the old pumping station on Manning Boulevard for the purpose of establishing a municipal bacteriologic laboratory, and adopted a resolution urging the mayor to register the opposition of the medical fraternity to the scheme.

New Officers for Women's Society.—The forty-sixth annual meeting of the Women's Medical Society of New York State was held March 22, in New York City, under the presidency of Dr. Elizabeth B. Thelberg, Poughkeepsie, and the following officers were elected: president, Dr. Lois L. E. Gannett, Adams; vice presidents, Dr. Florence I. Staunton, Utica, Mathilda K. Wallin, New York City, and M. Louis Hurrell, Rochester; secretary, Dr. Harriet M. Doane, Fulton, and treasurer, Dr. Elizabeth L. Shrimpton, Syracuse.

State Aid in Local Health Work.—A bill introduced in both houses of the state legislature proposes the establishment of health centers, to be supported by the state funds in addition to local appropriations. Grants are to be made for the construction and operation of hospitals, dispensaries and clinics in rural and urban communities. Facilities for bacteriologic and pathologic diagnosis and for consultation are to be provided. The health centers also will serve as headquarters for the district health service, for public health nursing, medical school inspection and public health education. The board of managers of the state charities aid association has adopted resolutions favoring passage of the measure.

New York City

Hospital for Incurables Opened.—The Beth Abraham Hospital for Incurables, with accommodation for seventy-five patients, was opened March 22. A campaign for $200,000 has been launched for the erection of new buildings.

Course in Fractures.—A course in fractures was begun at the Cornell Medical College, April 5, and will continue until April 30, on Mondays, Wednesdays and Fridays. The course consists of two consecutive hours of lectures and demonstrations, beginning at 2 o'clock. Dr. Joseph A. Blake will give seven exercises; Dr. George W. Hawley, six, and Dr. James M. Hitzrot, five. In addition to the first three, Dr. Alexis Carrel will also give one lecture. Other exercises will be held by Dr. Henry H. M. Lyle, Dr. Burton J. Lee and Dr. John C. A. Gerster. The profession is cordially invited.

Distribution of United Hospital Fund.—Officials of the United Hospital Fund announced that they have distributed $400,000 among the forty-six member institutions. This represents double the amount each hospital received last year from the organization. Among the larger amounts distributed were: St. Luke's Hospital, $27,850.90; Mount Sinai Hospital, $27,752.32; New York Hospital, $43,118.26; Presbyterian Hospital, $18,472.12; Lincoln Hospital, $16,567.90; Lenox Hill Hospital, $14,409.42; Roosevelt Hospital, $13,318.92; Post-Graduate Hospital, $11,868.72; Orthopedic Hospital, $21,518.42; Hospital for Ruptured and Crippled, $15,307.34, and Montefiore Home, $35,271.28.

OHIO

Resignations.—Dr. William Wylie Scott, city physician of Canton for three years, has resigned.——Dr. Charles G. Augustus, health director of Springfield for three years, has resigned.——Dr. Ernest Zueblin has resigned from the staff of the Cincinnati Tuberculosis Sanatorium and has been succeeded by Dr. Reuben Erickson.

Illegal Practitioners Prosecuted.—A report states that Dr. E. C. Branch was fined $50 and costs, March 24, for advertising himself in Ohio as a practitioner of medicine without having first obtained a license. Charges also were filed against D. A. Donovan, an optometrist, for advertising himself as a practitioner of medicine and surgery in Wooster, without having first secured a license. Although an optometrist, Donovan is said to have used the unqualified title of "Dr." in his advertisements. Charges have been filed, also, against a woman named Mary Lottig in Cleveland for illegal practice of medicine.

PENNSYLVANIA

Weir Mitchell Entertainment Fund.—The Weir Mitchell Entertainment Fund will give a dinner to the Fellows of the College of Physicians of Philadelphia, at the College, April 15, at 7 o'clock.

Personal.—Dr. Patrick H. Weeks, Warren, has been appointed physician to the Northern Indiana Penitentiary, Michigan City.——Dr. Karl Schaffle, Philadelphia, for eight years head of the tuberculosis dispensary work in the state department of health, and Dr. Dorothy Child, Philadelphia, director of the child health bureau of the department, have resigned.

Health Insurance Commission.—The governor has appointed a commission to investigate accidents and sickness not compensated under the workmen's compensation act of Pennsylvania. The members named by the governor are: William Flinn, Pittsburgh; William Draper Lewis, Dr. Francis D. Patterson, secretary, Dr. Gassaway Oram Ring and William H. Kingsley, Philadelphia; members named by the president pro tem of the senate: Senators S. J. Miller, Clearfield County; Morris Einstein, Allegheny County, and Charles W. Sones, Lycoming County, and members named by the speaker of the house, William T. Ramsey, Delaware County, chairman; John M. Flynn, Elk County, and Theodore Campbell, Philadelphia.

RHODE ISLAND

Associate Editors Appointed.—Drs. William F. Barry, Woonsocket; Charles S. Christie, River Point; Asa S. Briggs, Ashaway, and Norman M. Macleod, Newport, have been appointed associate editors of the *Rhode Island Medical Journal.*

Passes Ninetieth Birthday.—Dr. Horatio R. Storer, Newport, celebrated his ninetieth birthday anniversary, February 27. Dr. Storer was recently given the degree of LL.D. by Fordham University, New York City, in recognition of his activities in matters of disease prevention.

Tuberculosis Survey.—The state association for the prevention of tuberculosis has engaged Prof. C.-E. A. Winslow of the Yale School of Medicine to make a survey of tuberculosis conditions in the state and of the work which is being done by different organizations for its control.

Fight Against Mosquitoes.—The bill appropriating $20,000 to assist cities and towns in the extermination of mosquitoes has been passed. Under the provisions of this act, communities making appropriation for the mosquito extermination will receive from the state an amount equal to the sum, which they may expend in actual work, not to exceed $3,000.

League for the Suppression of Tuberculosis.—The Providence League for the Suppression of Tuberculosis was organized in 1906 as a committee of the society for organizing charities. A charter has recently been obtained and the league has been formed into an entirely new and separate organization with the above name. Dr. Jay Perkins is president and Dr. Jeannie O. Arnold, secretary. The league has been chiefly occupied with relief and educational work, and with maintaining a preventorium. It hopes to expand greatly its field of operation, and Dr. Elliott Washburn, Providence, has been selected as its general agent.

New Officers.—Newport County Medical Society at Newport, January 22, elected these officers: president, Dr. Abiram F. Squire; vice presidents, Drs. Charles W. Stewart and Norman M. Macleod; secretary, Dr. Alexander C. Sanford, and treasurer, Dr. Douglas Jacoby, all of Newport.——Providence Medical Association, January 5, elected: president, Dr. Dennett L. Richardson; vice president, Dr. Frank T. Fulton; secretary, Dr. Raymond G. Bugbee, and treasurer, Dr. Charles F. Deacon.——Washington County Medical Society at Westerly, January 8, elected: president, Dr. Patrick J. Manning, Wickford; vice presidents, Drs. Henry L. Johnson, Westerly, and William T. Veal, Stonington, and secretary-treasurer, Dr. William A. Hillard, Westerly.

TENNESSEE

Personal.—Dr. Sydney Thompson, Nashville, has so far recovered in health that he has returned to his work as assistant superintendent at the Central Hospital.

New Officers.—Jackson County Medical Society, at Kingsboro, March 1: president, Dr. John D. Quarles, Whitlyville, and secretary, Dr. Roscoe C. Gaw, Gainesboro.——Giles County Medical Society: president, Dr. George D. Butler, Pulaski; vice president, Dr. William H. Cole, Minor Hill; secretary, Dr. Charles A. Abernathy, Pulaski, and treasurer, Dr. George C. Grimes, Pulaski.——Lincoln County Medical Society: president, Dr. James M. Shelton, Kelso, and secretary, Dr. Jacob M. McWilliams, Fayetteville.——Washington County Medical Society: president, Dr. James G. Moss, and vice president, Dr. Lee K. Gibson, both of Johnson City.——Rutherford County Medical Society: president, Dr. Matthias B. Murfree, Murfreesboro; vice president, Dr. John M. Shipp, Readyville, and secretary-treasurer, Dr. James A. Scott, Murfreesboro.

TEXAS

Personal.—Dr. W. H. Minton, Houston, has been appointed assistant state health officer, succeeding Dr. Douglas Largen, resigned.

Physicians Want Quiet Zones.—The physicians of San Antonio have requested the city council to establish zones of quiet around the hospitals in that city.

Malaria Fight.—The department of public health of Dallas has spent about $6,000 in malarial control work, including cleansing of streams, confining them to narrow channels, and the stocking of streams with minnows to feed on the malaria-bearing larvae.

WEST VIRGINIA

New Officers.—Mercer County Medical Society at Bluefield, January 22: president, Dr. Charles T. St. Clair, Bluefield; vice presidents, Drs. Bernard S. Clements, Matoaka, Francis T. Ridley, Bluefield, and Walter W. Harloe, Matoaka; secretary, Dr. Edward H. Thompson, Bluefield, and treasurer, Dr. Thomas E. Peery, Bluefield.——Raleigh County Medical Society at Beckley, January 9: president, Dr. Kyle M. Jarrell, Beckley; vice presidents, Drs. Ira M. Fisher, Stotesbury, McRae C. Banks, Raleigh, and William C. Mays, Beckley; secretary-treasurer, Dr. Fred Stansbury, Beckley.

CANADA

Personal.—Dr. Frederick Montizambert, Ottawa, director-general of public health for Canada, was knocked down by a street car in Ottawa, January 19, and his clavicle was fractured.

Dental Faculty Created.—The faculty of dentistry has been created in McGill University, Montreal. Heretofore dentistry was administered under the medical faculty. There are 400 students in attendance in this department.

Licensure in Charge of University.—A bill has been introduced into the parliament of Alberta placing under control of the University of Alberta the examination and registration of applicants who desire to practice the various branches of medicine in that province. The university already has in charge the registration and examination of nurses and it is expected that registration of those practicing law, pharmacy and dentistry will be similarly provided for. This appears to be a move in the right direction. If the university is given a free hand in the educational qualifications necessary, it will be the safest body to have these matters in charge. The entire problem of medical cults rests on educational qualifications. It is hardly probable that the university will establish more than one standard of qualifications for those who are to treat the sick.

Hospital News.—Dr. Clarence M. Hincks, Toronto, secretary of the Canadian Mental Hygiene Commission, was recently in Halifax, N. S., in connection with the establishment of a psychiatric clinic in that city. It is probable that the commission will shortly take a survey of the mentally afflicted in Nova Scotia.——Brandon, Man., is to have a new hospital at a cost of $300,000.——The hospitals now receiving governmental aid in Alberta number forty-nine. It is expected that during the present year municipal hospitals will be established in ten new localities in Alberta.——At Keith, Alberta, a sanitarium is to be established for cases of tuberculosis. At first there will be 150 beds, but when the institution is finally completed its capacity will be for 300.——In Saskatchewan four union hospital districts have been established under the union hospital act. The areas selected are Battleford, Unity, Strasbourg, and Wynyard. Voting takes place on the scheme in March or April.——British Columbia will spend $150,000 on hospitals and public institutions. Of this amount, $85,000 will be for the feebleminded, for whom a farm of 300 acres has been purchased on which cottages are being erected.——A new annex is to be added to the Provincial Royal Jubilee Hospital at Victoria, B. C. It is for the accommodation of venereal disease cases.

GENERAL

Conference of Social Work.—The National Conference of Social Work will open its forty-seventh annual session by a joint meeting with the National Child Labor Committee at New Orleans, April 14.

New Officers for Posture League.—At the annual business meeting of the American Posture League, March 13, the following officers were elected: president, Jessie H. Bancroft; vice president, Dr. Frederick R. Green, Chicago; secretary, Dr. Henry Ling Taylor, New York City, and treasurer, Dr. George J. Fisher, New York City. The annual public meeting of the league was held this week concurrently with that of the American Physical Education Association in New York City.

Bequests and Donations.—The following bequests and donations have recently been announced:

St. Peter's Hospital, Charlotte, N. C., a donation of $20,000 from Mr. and Mrs. W. A. Irwine, Durham, N. C., as a memorial to their grandson, Hamilton C. Jones.

Polyclinic Hospital, Harrisburg, $150,000, the result of a drive which closed, January 27.

Lewistown, Pa., Hospital, $1,500 by the will of Harriet Thomas Kurtz.

Blackford County, Ind., Hospital, a donation of three city blocks of land and $5,000 for improvements, by Mrs. H. B. Smith, Hartford City.

Meeting of Industrial Physicians.—The American Association of Industrial Physicians and Surgeons will hold its fifth annual meeting at the Hotel Grunewald, New Orleans, April 26 and 27. Sessions will be held at 9 a. m. and 2 p. m. on each day, at which will be discussed the problem of the mentally and physically subnormal wage earner, the training of industrial physicians, the relationship of the industrial physician to the venereal disease problem, first aid and standardized surgical methods in industry, and the problem of compensation for sickness.

Carbon Monoxid in Vehicular Tunnels.—At its Pittsburgh station, the United States Bureau of Mines is making tests to determine the amount and percentage of carbon monoxid in the exhaust gases of automobiles. The problem is assuming increasing importance in connection with plans for ventilating the long tunnels designed for vehicular traffic—a tunnel 5,700 feet long is under construction through the South Hills at Pittsburgh, one of 6,000 feet is proposed for Boston, and designs are being prepared for a tunnel 8,000 feet long to pass under the Hudson River between New York City and New Jersey. Coincidentally, experiments are being carried on by Dr. Yandell Henderson at the physiologic laboratory of Yale Medical School, to determine what percentage of carbon monoxid in the air may be safely tolerated for several hours.

FOREIGN

Oliver-Sharpey Prize.—Dr. Emile Roux of the Pasteur Institute, Paris, has been awarded the Oliver-Sharpey Prize for 1920 by the Royal College of Physicians of London.

Surgeon in Danish Cabinet.—Prof. Thorkild Rovsing, prominent Danish surgeon, chief of the surgical section of the Rigshospital, Copenhagen, and editor of *Hospitalstidende*, was minister of education in the cabinet of Denmark, formed March 30, and since reported dissolved.

Australian Commonwealth Public Health Service.—The government intends to proceed with the establishment of a federal health department. It is not likely that more will be attempted than the encouragement of research and the perfecting of statistical and other information between the existing state departments.

Scarcity of Ergot and Santonin in the Netherlands.—The *Nederlandsch Tijdschrift voor Geneeskunde* publishes a communication from two experts consulted dealing with the conditions in which ergot and santonin are indispensable and those in which they can be substituted by other drugs. The scarcity of these two drugs has impelled the authorities to urge physicians to be as saving in their use as possible.

King Umberto Prize.—The Rizzoli Orthopedic Institute, Bologna, Italy, announces that competition for the prize Umberto I has been opened. The prize of 3,500 lire (normally $700) will be assigned by the provincial council of Bologna for "the best orthopedic work or invention." Both Italian and foreign physicians may take part in this competition. The regulations of the competition will be sent to any one who applies to Dr. G. Zanardi, president of the Rizzoli Institute, Bologna. The competition will close December 31.

The Boas Prize.—The second conference on diseases of the digestive glands and deranged metabolism is to be held at Hamburg in May with Prof. I. Boas presiding. The subjects appointed for discussion are duodenal ulcer; the consequences of dysentery from the standpoint of diagnosis and treatment; war experiences with diabetes; and the diagnostic importance of what we know in regard to the internal secretions as applied to diseases of digestive organs and metabolism. The Boas prize of 1,000 marks is to be awarded this year for the best article received in competition dealing with the influence of mastication on the secretion of gastric juice in health and in disease.

Red Cross League Items.—Senator Curaolo, president of the Italian Red Cross, has replaced Senator Frascara as a member of the board of governors of the league.——George C. Whipple, professor of sanitary engineering in the Medical School of Harvard University, has arrived in Geneva and taken up his duties as chief of the department of sanitation.——Dr. Octave Monod has entered on his duties as assistant chief of the department of tuberculosis.——The league has undertaken, on behalf of the British Red Cross, to care for certain British patients in tuberculosis sanatoriums in Switzerland.——The League of Red Cross Societies has been elected an honorary member of the Statistical Society of Paris, and Mr. Knud Stouman, chief of the department of vital statistics, has been chosen representative of the general medical department of the league.——Dr. S. Burt Wolbach, Boston, of Harvard University Medical School and Dr. John L. Todd of McGill University visited Geneva on their way to Poland to discuss with Dr. Richard P. Strong, the chief medical director, the program which the league is to carry out in Poland in connection with the study of the etiology of typhus fever. Dr. Wolbach is chairman of the commission of the league; Dr. Todd, assistant chief, and other members of the commission are Drs. A. Bacot of the Lister Institute, London; Francis W. Palfrey, Boston; Monroe A. McIver, New York City; James W. Denton, Rhode Island, pathologist; Mr. Henry Pinkerton of the Massachusetts Institute of Technology, and Mr. Forrest A. Hardy, medical secretary.

Government Services

Health Conditions of the Army

For the week ending March 26 there is reported a slight increase in the number of new cases of measles, but the disease is not epidemic at any station. The increase was expected in connection with the arrival of new recruits as a result of a recruit drive, now nearing completion. The admission and noneffective rates are considerably lower than for the previous week, and are believed to be as low as can reasonably be expected for this season of the year. There were twenty-one deaths from disease reported during the week: eight were caused by tuberculosis and seven by pneumonia.

Public Health Service Acquires New Hospital

The House Committee on Public Buildings and Grounds has approved the purchase by the Public Health Service of the Mount Alto property situated in the suburbs of Washington, D. C. This property will be used for the care and treatment of tuberculous patients. It now has a capacity for 125 beds but it is planned to increase its facilities immediately to 300 beds and later it can be expanded to 2,000 beds. The price fixed by the committee is $460,000. The property covers 11½ acres and includes nine modern stone buildings. It is considered an excellent unit for hospital purposes. Congressman Tague urged that provision should be made for ample expansion of this property. He said there are 50,000 service men, sufferers from tuberculosis who need immediate attention and that the Public Health Service does not have facilities at the present time to meet the situation. The committee at its next meeting expects to receive a complete summary of the prospective needs for hospital enlargement throughout the country from the Public Health Service.

Public Health Service Requests Additional Funds

Surgeon-General Cumming of the Public Health Service estimates that it will cost the government $18,316,000 to take care of sick and disabled soldiers and sailors for the fiscal year ending June 30, 1920. In a statement to the Secretary of the Treasury, Dr. Cumming says that the Public Health Service is now caring for 12,000 patients in hospitals and is examining over 3,500 new patients each week. The medical, surgical and hospital requirements of the Public Health Service are such that Congress has been requested to appropriate an additional $8,816,000 to meet the needs of the service to June 30, 1920.

Bill to Transfer Medical Care of Disabled Veterans to War Risk Insurance Bureau

A bill has been introduced by Congressman Rogers of Massachussetts to transfer to the Bureau of War Risk Insurance the care of discharged sick and disabled soldiers and sailors. This work is now being performed by the United States Public Health Service and is of course only a part of the functions of the latter organization. The care of sick and disabled service men has been an enormous task for the Public Health Service and has reached proportions far beyond all expectations. It is the belief of Congressman Rogers that this work can be more efficiently performed by the Bureau of War Risk Insurance because the duties of this bureau are directed exclusively to ex-service men.

MEDICAL OFFICERS, UNITED STATES NAVY, RELIEVED FROM ACTIVE DUTY

INDIANA
Indianapolis—Sutherlin, C. G.

MICHIGAN
Manton—Bloxsom, P. W.

NEW MEXICO
Hagerman—Losey, R. R.

NEW YORK
Syracuse—Weinheimer, L. H.

OHIO
Ralston—Spaulding, H. B.

PENNSYLVANIA
Philadelphia—Smith, C. D.

SOUTH CAROLINA
Health Springs—Stover, M. S.

TEXAS
San Juan—Fleck, W. L.

VIRGINIA
Richmond—Hatcher, M. A.

Foreign Letters

MADRID

Feb. 10, 1920.

The Increase of Mortality in Madrid in December and January

Dr. Lasbesnes, director of the bureau of statistics of Madrid, has furnished some interesting data for THE JOURNAL on sanitary conditions at Madrid during the months of December, 1919, and January, 1920. The highest mortality ever reached at Madrid during the present century is shown. The number of deaths at Madrid is always smallest during the month of September, after which it increases gradually, reaching the highest point in January. This happened last fall and winter; but this time the increase in mortality was so great that it caused much anxiety. In the middle of December, 1919, the number of deaths was very high, exceeding greatly the average for this part of the year. The total number of deaths during this month was 2,803. In the last nineteen years there have only been two months with over 2,000 deaths, namely, January, 1914, 2,074, and January, 1919, 2,124. The average for December had been 1,582, compared with 2,803 of last December and 3,059 last January. The most prevailing diseases were bronchopneumonia, bronchitis, pulmonary tuberculosis, influenza, heart diseases, meningitis and cerebral congestions. This is the third wave of influenza, the first having occurred at the beginning of June, 1918, and the second in January, 1919. In the first two, the child mortality was very low, but not so in the present wave, as one disease alone, acute bronchitis, has trebled the deaths among children. Of 345 deaths from acute bronchitis, 310 were in children less than 5 years old. Typhoid fever also has increased, fifty-eight having died in December, and sixty-two in January. The deaths from colibacillosis, not included in the typhoid reports, were five in December. Typhoid fever came on so suddenly, and became so prevalent, that the physicians felt compelled to call attention to the fact, since the sanitary authorities were silent about the matter. Smallpox, on the contrary, caused only two deaths in the last seven months of 1919. The suppression of this disease is due, as I stated in a previous letter, to the enforcement of compulsory vaccination by the governor of Madrid. Influenza caused 207 deaths in December and 311 in January, and bronchopneumonia, 385 in December and 446 in January. There have also been a few cases of encephalitis lethargica. An important fact, to which Lasbesnes invites attention, is the decrease in the number of births, which have been decreasing slowly but constantly, after reaching in 1917 the highest figure of 17,178 live births; in the last two years, in spite of the increase in population, the births have decreased to 16,958 in 1918 and 16,309 in 1919.

The Physicians of the Franciscan Order

The Third Order of St. Francis has had in Madrid for a long time a hospital, very popular among the thousands of people who belong to that order. In order to become a physician of that hospital it was necessary to take an examination, and the physicians chosen had occupied these places for many years with general approval. The election of a new board of directors caused difficulties among those participating in the work of the hospital. There was an open break, and the physicians, pharmacists and chaplains were expelled without any explanation. The board of directors then appointed two physicians to replace those thrown out so informally. These physicians, however, appealed to the Association of Physicians of Madrid. After many discussions and controversies, a meeting was held, February 6, at which

the evidence presented by Dr. Garciá de la Sarrana, one of the expelled physicians, convinced every one of the injustice committed in their case. Those who had replaced them hastened to place their resignations in the hands of the board of directors of the Association of Physicians. Pending the final decision by the department of the interior, which is now considering the matter, the board asked the new physicians to continue in their places. All considered, this is a new victory for the medical profession, which has shown its solidarity.

Conclusions Based on More than Two Thousand Laparotomies

Dr. Cospedal Tomé, the gynecologist, dean of the Hospital de la Princesa, delivered the inaugural address of the medical course before the Royal Academy of Medicine. His address was a simple presentation of his surgical experiences and technic obtained in many years of constant practice. He favors chloroform anesthesia and the figure of eight suture to close the abdominal cavity, which prevents the entrance of foreign material, and expresses surprise that this kind of suture has not become more popular.

LONDON

March 20, 1920.

Memorial to Osler

A meeting has been held at Oxford to consider what steps should be taken to perpetuate the memory of Sir William Osler. It was attended by many leading members of the university and of the medical profession. The vice chancellor, who presided, said that the meeting was held to show the respect and affection felt for the late regius professor of medicine not only by the University of Oxford but also by other universities on more than one continent and by the London hospitals. Osler's name would always be associated not merely with the history of the chair of medicine at Oxford but with its actual existence as well by reason of the generous benefaction, of which he was the first to hear from Osler's lips. Sir Clifford Allbutt, regius professor of physic in the University of Cambridge and president of the British Medical Association, in proposing a resolution that Osler's distinguished services were worthy of a permanent memorial in Oxford, said that it would be impossible to sum up what made the real charm of Osler's character. He would present only one point of view: the universality of his experience and his sympathies. A resolution was then proposed by Sir William Church, formerly president of the Royal College of Physicians: "That in view of the intimate association of Sir William Osler's life work with Oxford and the study of the origin and prevention of disease, the most appropriate form of memorial would be an Osler Institute of General Pathology and Preventive Medicine." The resolution was adopted. On the motion of the dean of Christ Church, seconded by Sir A. E. Garrod, Osler's successor in the chair of medicine, committees were appointed to issue an appeal. It was announced that a provisional committee of Osler's friends in America, consisting of Professors Welch, Harvey Cushing, Billings, President Butler and Dr. Walter James, had been appointed. Among those who have expressed sympathy with the proposal are the United States ambassador, the British ambassador to the United States, the high commissioner for Canada, and the president of the Royal College of Physicians.

Clean Milk

The supply of clean milk still remains an unsolved problem. Under ordinary farm conditions, fecal and other forms of contamination are rife and in general cannot be prevented. However, the food controller has instituted a system of licenses by which clean milk can be sold under a guarantee. There are two licenses: "Grade A milk" and "Grade A certified milk." These designations can be used only under the license. Grade A milk is produced under specially clean and hygienic conditions from a herd which contains no cow that has not passed the specified tuberculin test and certain other requirements. While the license is held, every facility must be afforded for taking samples of milk from any cow in the herd or from the mixed milk. The farm must be open to government inspection and must attain a certain standard in equipment and methods. The license is granted only after such inspection, and if later the standard is found to have deteriorated, the license may be withdrawn. The milk must be cooled on the farm and consigned in a sealed container having a label giving the address of the farm, and stating whether from morning or evening milking. Dealers who desire to sell the milk must show that their equipment and methods are satisfactory and that the milk is delivered to the consumer in the vessel in which it is received, or in bottles sterilized by steam, filled on the premises of the retailer and closed by disks or caps showing the day of production. For Grade A certified milk there are additional requirements. The milk after cooling must be bottled on the producer's premises in sterilized bottles and labeled to show the day of production and the time of the day. On examination at any time before delivery to the consumer, it must not contain in 0.1 c.c. (in each of two tubes) *B. coli* or more than 30,000 bacteria per cubic centimeter. Further, the milk must not be delivered to the customer more than two days after production.

The Range of Services of the Panel Physician

The panel physician contracts to render such services as can be "properly undertaken by a general practitioner of ordinary professional knowledge and skill." What exactly this includes would in some cases be a question. A dispute arose between the Glasgow insurance committee and the local medical committee whether the operation of suturing tendons of fingers is a service of a kind which can consistently with the best interests of the patient be properly undertaken by a general practitioner of ordinary skill. The insurance committee contended that the operation did not require special skill. The question was referred to referees, who included Mr. F. K. Smith, surgeon to the Royal Infirmary, Aberdeen. The referees held that a distinction must be made between the operations on the tendons at the back of and on the front of the band. They pointed out that there were special risks and difficulties in suturing the tendons of the palm. The sheath which encloses the palmar tendons may be the means of carrying septic material into the palm or forearm, and, moreover, the proximal end of the severed tendon, being subject to retraction into the sheath, may involve operative enlargement of the original wound. The conditions existing in the patient's dwelling, under which the general practitioner would generally have to operate, would increase the risk of sepsis, especially when the fingers have been crushed. The referees therefore decided that no general rule could be laid down that suturing tendons of a finger was a service which could properly be undertaken by the general practitioner.

The British Journal of Experimental Pathology

A new journal, for which the annual subscription is $10, has appeared under the editorship of leading pathologists: C. H. Browning, P. Fildes, W. E. Gye, E. L. Kennaway, E. H. Kettle, J. McIntosh, J. A. Murray, W. J. Tulloch and C. M. Wilson. Among the articles in the first number are: "Is Haemolysed Blood Toxic?" by Professor Bayliss. The author brings forward evidence to show that hemolysis in itself is

harmless. The matter is of great practical importance because of the view that serious results may be due to the hemolysis of corpuscles introduced in transfusion. The experiments on which this view is based have been performed on rabbits. Bayliss points out that rabbits are not suitable animals, owing to their aptitude for intravascular clotting. In the cat and dog, homologous hemolyzed blood is usually innocuous. He regards the occasional ill effects of transfusion as due to anaphylactic shock from foreign serum protein. J. McIntosh and W. A. M. Smart contribute a paper on "The Reaction of Bacteriological Culture Media"; W. Cramer, on "Sympathetic Fever and Hyperpyrexial Heat Stroke"; P. M. Fildes, on "The Serological Classification of Meningococci," and H. Maclean and O. L. V. de Wesselow on "The Testing of Renal Efficiency." It will be seen that a high standard and one representative of the British school of pathology is maintained.

Influenza

Influenza is again prevalent, but so far the cases are neither numerous nor of severe form. The number of deaths registered from the disease in the ninety-six principal towns during a week has risen from forty-three, the lowest in the last thirteen weeks, to 196. The army authorities are investigating the bacteria of all kinds present in the throats of soldiers, so that if an epidemic becomes general it will be possible to determine whether any new microbe appears among the ordinary organisms of the throat.

The Fellowship of Medicine: Osler's Successor

Sir George Makins, president of the Royal College of Surgeons, has become president of the Fellowship of Medicine and Post-Graduate Medical Association, in succession to Sir William Osler.

PARIS

Feb. 26, 1920.

Eight-Hour Day in Paris Hospitals

The eight-hour day, which has been in force in Paris hospitals since the beginning of the year, is giving deplorable results, and the *Journal des Praticiens* contains a bitter arraignment of the system. Among the inconveniences arising out of the new system the most important are: the reduction of the hospital personnel at 4:30 p. m. to one supervisor for four wards and to one nurse for each ward; the disorganized condition of the hospital service between 11 a. m. and 2 p. m. during the time a large part of the personnel are taking their meals outside of the hospital, and the necessity of enlisting the services of a new personnel that is far from satisfactory. The present system interferes especially with the intern on his second round. In order to have an opportunity to do any useful work, the intern should, under the new system, make his second round between 3 and 4 o'clock, which is much too early for him, as he does not leave the hospital after his first round until 12 or even later. Then, again, if he does come at 3 p. m. he breaks in on the taking of temperature, the bathing of patients, etc. On the other hand, after 4:30 p. m. the intern might as well give up making a second round, for the sole nurse in charge of the ward has just come on duty and is not in touch with things as yet; nor is she in a position to accompany him on his round, as she is being summoned every few minutes by this or that patient.

Aside from the disorganization referred to, the eight-hour day has had a bad moral effect on the hospital personnel. Nurses who under the old system did not hesitate to put in a half hour overtime, if it seemed necessary, now make it a point to leave on the stroke of the clock, which works hardship on the poor fellow who is so inconsiderate as to be in urgent need of assistance just at that moment.

The Needs of Paris Hospitals

In his recent report, M. Mesureur brings the needs of Paris hospitals forcibly to the attention of the Conseil de surveillance de l'assistance publique. He states that the small service of radiotherapy as organized in the Hôpital Pasteur contrasts unfavorably with the progress that has been realized in radiotherapy in foreign countries, and is inadequate to supply the needs of poor cancerous patients, who are becoming more and more numerous. M. Mesureur suggests, therefore, that an up-to-date radiotherapeutic service be organized. He also calls attention to the fact that Paris lacks a thoroughly organized service of physiotherapy, and recommends that the need be supplied. Furthermore, he requests that also services in which special attention is given to conservation work and plastic surgery be established in various Paris hospitals; for example, Charité, Salpêtrière, Bicêtre, Saint-Louis, Saint-Antoine, Laënnec, etc. M. Mesureur estimates that the total cost of the proposed improvements will amount to 150,000,000 francs, and suggests that the city of Paris place at the disposal of the Assistance publique the sum of 15,000,000 francs annually for the ten-year period 1922-1931.

Violation of the Right of Privileged Communication

The question of the right of privileged communication came up recently in a French court (Cour de Paris), and the circumstances were these: In support of his demand for a divorce, a husband produced a medical certificate setting forth the pathologic condition of his wife. The court, calling attention to the fact that the right of privileged communication is a matter of public policy, ruled that a physician has not the right, without the knowledge of his patient, to deliver a medical certificate to a third party, even though the third party should be the husband. The judges, therefore, insisted on excluding from the case the medical certificate that had been delivered in violation of the right of privileged communication. The court went still further and gave a decree in favor of the wife, by reason of the grave injury she had suffered owing to the production in court of the medical certificate in question.

International Scientific Relations

The *Presse médicale* recently published a review of a German treatise on experimental bacteriology, over which fact certain medical journals became very much aroused, especially since the work in question took no account of researches and discoveries in the bacteriology of infectious diseases made outside of Germany since 1914. For example, the book is silent on the interesting American researches relative to the classification of pneumococci, and the important French investigations concerning the varieties of meningococci and the causative agents in gas gangrene. The questions may well be asked: Was this really a systematic boycotting of French and American science, as the *Journal de médecine de Bordeaux* asserts? Can the matter not be explained simply by the fact that, during the war, it was difficult for a German bacteriologist to keep abreast of the times and be familiar with French and American researches, just as French and American bacteriologists must have found it difficult to keep up with German publications on the subject of bacteriology?

At the annual meeting of the Académie des sciences, Prof. Léon Guignard referred in his presidential address to the international scientific relations of the future. He set forth somewhat in detail the work of the Conférence académique interalliée which was held in Brussels and which resulted in the definite founding of the Conseil international des recherches scientifiques. The by-laws of the society were drawn up and neutral nations were invited to collaborate if

such was their desire. The Germans and their allies were excluded until such time as they should have furnished their conquerors rightful reparation and the necessary guarantees. The results of the meeting at Brussels had scarcely become known when a group of members of certain academies in neutral countries filed a petition with the learned societies of the allied nations asking them to resume prewar relations with German scholars and scientists. Professor Guignard holds the view that until the German mentality shall have changed "we shall say: we don't know these men; we don't want to know them." But like a true man of science he recognizes the fact that no scholar worthy of the name "should refuse to take an interest in any idea that may be promulgated throughout the world no matter who the author may be, even though it should be his bitterest enemy; but he can take interest in it without coming into personal contact with the author."

An American Library in Paris

The American nation has presented to France the library of English books that was collected in Paris by private gifts during the war. It will constitute a souvenir of the sojourn of the American soldiers in France. At the present time this library, which numbers 25,000 volumes and has a reading room in connection containing journals and periodicals, is located at rue de l'Elysée, 10, and is open daily from 10 a. m. to 10 p. m. (Sundays, from 2 to 10 p. m.). The American and English colonies in Paris have donated considerable sums in order to assure the library's continued existence. The French committee in charge of the library has issued an appeal to all persons interested and has asked for contributions for the upkeep of the library, introducing for this purpose a sliding scale in order to fit the needs and the varying financial conditions of those interested. Participating members may draw one book at a time, annual fee, 10 francs; subscribing members may draw two books at a time, annual fee, 20 francs; contributing members pay an initial sum of 100 francs and make an annual contribution of 100 francs; supporting members contribute 2,000 francs, and patrons, 5,000 francs. Contributions and subscriptions may be sent to American Library Fund, rue de l'Elysée, 10, Paris.

Death of Dr. Henri Triboulet

Dr. Henri Triboulet, physician to the hospitals of Paris, died recently at the age of 56. He was born in 1864; became hospital intern in Paris, and was appointed physician to the hospitals in 1898. His name is closely associated with the prohibition movement. In 1895 he became one of the founders of the Union française antialcoolique, in the interests of which he has delivered numerous lectures every year in Paris and throughout the provinces. From 1903 to 1905 he held the office of vice president of this society, and in this capacity he became especially interested in the establishment of temperance restaurants where no alcoholic beverages whatsoever are sold. In 1905 he published, in collaboration with Drs. F. Mathieu and R. Mignot, a treatise on alcoholism, "Traité de l'Alcoolisme."

Marriages

DANIEL EDGAR ROBERTS, Keyport, N. J., to Miss Julie Hildeborg Bisgaard, at Holmdel, N. J., March 21.

DANIEL GLEN SMITH, Schenectady, N. Y., to Miss Esther Louis Denny of New York City, April 5.

GLADYS EMELIA PATRIC, Los Angeles, to Milan Chabowitch of Ochrid, Serbia, Nov. 13, 1919.

ALVIN POWELL, Oakland, Calif., to Miss Josephine Miller, January 6.

HEDWIG STIEGLITZ to Mr. Hugo Kuhn, both of Cincinnati, March 29.

Deaths

William Martin, Medical Inspector, Commander, M. C., U. S. Navy, retired, San Francisco; Tulane University, New Orleans, 1874; aged 73; who entered the Navy as acting assistant surgeon in 1874, and was discharged, June 30, 1879; was appointed to the Medical Corps, April 14, 1882, not in line of promotion, by special act of Congress, honorable and meritorious service in yellow fever epidemic, Pensacola, Fla., 1874, and New Orleans, 1878, promoted to surgeon, not in line of promotion, Oct. 1, 1890, by special act of Congress, for extraordinary and meritorious service in yellow fever epidemic, Pensacola, 1888, and was retired, Dec. 25, 1893, with rank of next higher grade to that held on active list, after six years and two months of sea service, including service in the Volunteer Navy during the Civil War; on account of incapacity the result of an incident of service; died, April 1.

Francis A. Seymour, Los Angeles; Kentucky School of Medicine, Louisville, 1864; University of Louisville, Ky., 1867; aged 76; acting assistant surgeon, U. S. Army, during the Civil War; formerly associate professor of physiology and later lecturer on general pathology in the Kentucky School of Medicine; for forty years a practitioner of California; once president of the Los Angeles County Medical Association; associate editor of the *Southern California Practitioner;* for five years president of the Humane Society and the Society for the Protection of Children; died, March 20.

John A. Lee ⊕ Brooklyn; Yale University, New Haven, Conn., 1897; aged 47; surgeon, lieutenant-commander, U. S. Navy, and relieved from active duty, Feb. 12, 1919; president of the Kings County Medical Society; surgeon to St. Mary's Hospital, and attending surgeon to the Kingston Avenue Hospital, Brooklyn; one of the early experimenters with the roentgen ray; died, April 5, his death being reported to be due to the result of burns suffered while the effects of the roentgen ray were little understood.

Harry Waldo Kimball, Providence, R. I.; Medical School of Maine, Brunswick and Portland, 1891; aged 52; a specialist in dermatology; dermatologist to the Rhode Island Hospital, consulting dermatologist to the Sophia Little City Hospital, and State Sanatorium for Consumptives; dermatologist to the Sophia Little Home; for the last two years surgeon, U. S. P. H. S., Reserve; died, March 27, from erysipelas.

Thomas A. Harris, Parkersburg, W. Va.; University of Virginia, Charlottesville, 1854; aged 89; a member and once president of the West Virginia State Medical Association; surgeon of the Twenty-Third Georgia Infantry, C. S. Army, during the Civil War; for several years a member, secretary and president of the West Virginia State Board of Health; died, February 29.

Jean B. C. Gazzo ⊕ Raceland, La.; University of Louisiana, New Orleans, 1879; aged 63; for twelve years coroner of Lafourche Parish, and for four years parish health officer; for one term president of the Louisiana Pharmaceutical Association, and for thirty years local surgeon for the Southern Pacific Railroad; died, March 14, from heart disease.

Leonard St. John ⊕ Chicago; McGill University, Montreal, 1872; M.R.C.S. (Eng.), 1873; aged 67; at one time professor of clinical surgery in the Chicago College of Medicine and Surgery; for many years surgeon to St. Anthony's Hospital; one of the founders of the College of Physicians and Surgeons; died, April 2, from heart disease.

Joseph Anthony Mangiaracina, Brooklyn; University and Bellevue Hospital Medical College, New York City, 1917; aged 26; lieutenant, M. C., U. S. Navy, and on duty during the World War, at the Naval Aviation Station, Rome, Italy; a member of the Medical Society of the State of New York; died, February 14, from appendicitis.

Phoebe Thorne Williamson, Brooklyn; Woman's Medical College of the New York Infirmary for Women and Children, 1878; aged 70; founder of the Woman's Hospital, Poughkeepsie, and for many years a member of the staff of the Eastern Dispensary, Brooklyn; died in the Hahnemann Hospital, New York City, March 21.

William Gaertner, Buffalo; University of Marburg, Germany, 1886; University of Buffalo, 1894; aged 59; a member of the Medical Society of the State of New York; since 1914 president of the board of trustees of Grosvenor Library, and

⊕ Indicates "Fellow" of the American Medical Association.

a member of the state board of health from 1900 to 1918; died, March 12, from pneumonia.

Edgar Lee Lindsey, Fort Smith, Ark.; University of Arkansas, Little Rock, 1910; aged 33; a member of the Arkansas Medical Society; lieutenant, M. C., U. S. Army, and discharged on account of physical disability, Feb. 27, 1918; a specialist on diseases of the eye, ear, nose and throat; died, March 8, from pneumonia.

Willard Young Croxall ⊕ Hoquiam, Wash.; Jefferson Medical College, 1896; aged 50; a member of the Pacific Coast Oto-Ophthalmological Society, and a specialist on diseases of the eye, ear, nose and throat; died in the Portland Surgical Hospital, March 12, two weeks after a surgical operation.

William Henry Hurlbut, Fond du Lac, Wis.; Eclectic Medical Institute, Cincinnati, 1868; aged 83; for two terms state assemblyman from Walworth County, and for thirty years attending physician to the Walworth County Insane Hospital; died at the home of his daughter in Fond du Lac, March 23.

Harry Neafie Taylor ⊕ Maricopa, Calif.; Bellevue Hospital Medical College, 1898; aged 46; president of the West Side Medical Association; city health officer of Maricopa; president of the board of school trustees, and a director of the Maricopa Bank; died, March 3, after a surgical operation.

Aurelius Pallones, Beltzhoover, Pittsburgh; University of Brussells, Belgium, 1886; University of Paris, France, 1887; Jefferson Medical College, 1889; aged 73; commissioned major and surgeon during the war with Spain; for five years on duty with the Ninth U. S. Infantry; died, March 16.

George Williamson Cabaniss, Washington, D. C.; Howard University, Washington, D. C., 1890; aged 62; a colored practitioner; once president of the Medico-Chirurgical Society and visiting physician to the Freedmen's Hospital; died, March 7, from acute gastritis.

George Henry Ensing, Vashon, Wash; Detroit College of Medicine, 1904; aged 37; who served as captain in the Royal Army Medical Corps during the World War, and was gassed in Flanders; is reported to have committed suicide by drowning in London, about March 21.

George H. Grimmell, Colorado Springs, Colo.; College of Physicians and Surgeons, Keokuk, Iowa, 1877; aged 84; a veteran of the Civil War in which he served as surgeon of U. S. Volunteers; for many years a practitioner of Des Moines, Iowa; died, March 14.

Jacob R. Shellenberger, Philadelphia; University of Pennsylvania, Philadelphia, 1867; aged 78; a member of the Medical Society of the State of Pennsylvania; once president of the Philadelphia Aid Society for Physicians; died, March 20, from heart disease.

Richard Aloysius Phelan, St. Louis; St. Louis College of Physicians and Surgeons, 1909; aged 47; a member of the Missouri State Medical Association; lieutenant, M. C., U. S. Army, and discharged, Dec. 7, 1918; died, March 14, from malignant disease.

Benjamin Ely Braselton, Miami, Okla.; University of Texas, Galveston, 1899; aged 43; a member of the Oklahoma State Medical Association; captain, M. R. C., U. S. Army, and discharged, March 4, 1919; died, February 9, from pneumonia.

John T. Blank, Elk City, Kan.; Eclectic Medical Institute, Cincinnati, 1890; aged 60; a member of the Kansas Medical Society; while driving his automobile over a grade crossing at Independence, Kan., March 29, was struck by a train and killed.

Henry B. Brown, Lincoln, Ill.; St. Louis Medical College, 1876; aged 68; local surgeon for the Chicago and Alton and Illinois Central systems; and surgeon to St. Clara's Deaconess hospitals, Lincoln; died, March 18, from heart disease.

James H. Bronaugh, Calhoun, Mo.; Missouri Medical College, St. Louis, 1871; aged 81; a member of the Missouri State Medical Association, and a charter member of the Henry County Medical Society; died, January 14.

John Alexander Dickson, Rock Creek, Ohio; University of Wooster, Cleveland, 1876; aged 69; local surgeon of the New York, Chicago and St. Louis Railroad; once president of the state medical board; died about March 22.

Leroy Joe Gillespie, Hope, Ark.; Missouri Medical College, St. Louis, 1886; aged 68; president of the Hempstead County (Ark.) Medical Society in 1893; died, February 15, from pneumonia following influenza.

H. Murray Loewenthal, Brooklyn; College of Physicians and Surgeons, Baltimore, 1892; aged 47; formerly superintendent of the Rubber Plantation Hospital, Elopura, British North Borneo; died, March 13.

Richard B. Graves, Hot Springs, Ark. (license, nongraduate, State Medical Board of Arkansas, 1903); aged 77; for more than half a century a practitioner of Hot Springs; died, March 18, from pneumonia.

George P. Minvielle, Jeanerette, La.; University of Louisiana, New Orleans, 1877; aged 64; a member of the Louisiana State Medical Association; died in St. Mary's Hospital, Patterson, La., March 14.

James R. Champion, Hilldale, Mo. (license, Missouri, 1903); aged 51; a member of the Missouri State Medical Association, and president of the Howard County Medical Society; died, March 8.

Charles Lowndes, Easton, Md.; University of Maryland, Baltimore 1855; aged 87; for six years a medical officer in the United States Navy; died February 24, from arteriosclerosis.

Ralph Gardner Curtis, Hollister, Calif.; Jefferson Medical College, 1901; aged 49; died in the University of California Hospital, San Francisco, March 22, from carcinoma of the lung.

Warren LeRoy Ayer, Owego, N. Y.; Long Island College Hospital, Brooklyn, 1868; aged 76; a member of the Medical Society of the State of New York; died, March 25.

James Edward Greene, Brooklyn; College of Physicians and Surgeons, Baltimore, 1884; aged 58; died in the Macon, Ga., Hospital, March 2, from nephritis.

Wylie Brown, Tucson, Ariz.; Physio-Medical Institute, Cincinnati, 1862; aged 86; for many years a practitioner of Reno County, Kan.; died, March 12.

Hal J. Palmer, Navasota, Texas (license, years of practice, Texas State Board of Medical Examiners, 1907); aged 83; died in Morrilton, Ark., recently.

James William Elliott, Boston; Bellevue Hospital Medical College, 1898; aged 45; died in the Boston City Hospital, about March 4, from nephritis.

Jesse Clark Trueblood ⊕ Loogootee, Ind.; Miami Medical College, Cincinnati, 1879; aged 69; died, March 13, from valvular heart disease.

Edward Oliver Brannon, Conway, Ark.; University of Tennessee, Nashville, 1879; aged 70; died, March 11, from Bright's disease.

Lorenzo Erasmus Norton, Fremont, Mich.; Bellevue Hospital Medical College, 1873; aged 71; also a druggist; died, March 21.

Charles C. Curtis, San Pedro, Calif.; Hahnemann Medical College, Chicago, 1874; aged 76; died, March 14, from nephritis.

Fred Carter Newcomb, Akron, Ohio; Cleveland Homeopathic Medical College, 1898; aged 52; died, March 17, from uremia.

Ora Haskell Lamb, Demorest, Ga.; University of Vermont, Burlington, 1874; aged 73; died, January 15, from pneumonia.

Michael J. Lawler, Carthage, N. Y.; Albany, N. Y., Medical College, 1890; aged 52; died, March 7, from pneumonia.

Edward J. Freeman, Freemansburg, Pa.; University of Pennsylvania, Philadelphia, 1873; aged 68; died, March 14.

Herbert Carleton Sawyer, La Jolla, Calif.; University of California, San Francisco, 1881; aged 62; died, March 7.

Eben Bell Kirk, Montgomery, Ala.; University of Alabama, Mobile, 1885; died in a hospital in Montgomery, March 10.

Sumrow Sampson Greene, Vernon, Texas; Vanderbilt University, Nashville, Tenn., 1916; aged 25; died, February 11.

Granville L. Gorslene, Chillicothe, Ohio; Starling Medical College, Columbus, Ohio, 1865; aged 82; died, January 9.

Edward F. Walsh, Philadelphia, University of Pennsylvania, Philadelphia, 1883; aged 58; died, March 17.

Charles Sienknecht, Harriman, Tenn.; University of Nashville, Tenn., 1866; aged 78; died early in January.

Michael Vandervoort, Guthrie, Okla.; Hahnemann Medical College, Chicago, 1868; aged 77; died, March 10.

Benjamin L. Wills, Plant City, Fla.; University of Pennsylvania, Philadelphia, 1864; died about March 9.

Alexander Easley Boyd, Yoakum, Texas; Louisville (Ky.) Medical College, 1888; aged 54; died, March 7.

John Watson Carter, Bessemer, Ala.; University of Nashville, Tenn., 1874; aged 70; died, February 21.

Correspondence

DIFFICULTIES OF SECURING VITAL STATISTICS AND OF REGULATING MIDWIVES

To the Editor:—As an illustration of the difficulties of securing birth and death registration, I am enclosing copy of a certificate of death received at our office, which we afterward found to be due to hydrocephalus, the physician being, as stated, in the war. The spelling is exactly as given:

this deth wos from magnesium of the bran the Dr wated on this child is in wor surves.

We also enclose a letter which we have just received from one of our midwives showing the task which we have before us in our effort to teach these women to be safe obstetricians:

Dear Sirs: i an sending for more eye drops i am only got two in the box please send me a bottle of that medecine to give the paceions after the babies is born and send me some blue mas pills to wash my hands in please I wrote to you sometimes ago to send me the papers i havent got but two planks what is the reason you havent sent them it is time i was getting them in for this year please try to get the medecine and pills here some time in april for i will want them now very soon send me two packages of blanks about what last a year i have only two more pacions every one i have had the doctor with me and he fills every blank i sended in i have had good luck with all my pacions i am asking of you kindly of you please send me a gum coat ands boots i go night and day and i have nothing to preteck me from the rain i am not able to get one myself so far send me seven boxes of eye drops nomore at present answer as soon as you get my letter for i an needing them

from the midwife

oh please send me 1 bottle of worme medecine."

H—— W——, Hume, Va.

To this we answered:

Dear Madam:—We have your letter and are sending you four ampules of eye drops. We do not send them in bottles. You stick a needle in the end of the wax and squeeze the drops out into the baby's eyes.

We do not send the blue antiseptic tablets. We want to warn you, however, against calling them blue mass pills. Blue mass is a medicine which is taken in the mouth to act on the bowels. These blue flat tablets are rank poison and would kill any one taking them, thinking that they were blue mass. They are to be used, one tablet to a quart or pint of water to bathe the hands and not for internal use. Do not forget that, and do not call them blue mass. It might fool some one into taking them. They are corrosive sublimate tablets. Never, never call them blue mass again.

We do not think these tablets are safe for any one who has no more sense than that. It is much safer for you to get a cake of germicidal soap and use that. You can get it from Miss Quisenberry, who will send you an advertisement for it, or you can get it from a drug store there perhaps.

We are sending you also some blanks. You asked also for worm medicine. We do not furnish that. Are you crazy, or what is the matter with you? Do you think we can send you a gum coat and boots? We are afraid you have not sense enough to do that kind of work and are afraid we will have to take your permit away from you.

Remember that you must never put your finger inside of a patient for any purpose at all. That is absolutely against the law. Do not forget that. Read all the rules on the back of your permit and practice according to them.

In spite of the material that we have to work with, the puerperal death rate was reduced from 497 in 1917 to 333 in 1919. The latter figures, however, will be somewhat increased by delayed reports. This, we take it, means the saving of perhaps 150 lives of mothers, with perhaps as many more infants. This has been done by circular letters, bulletins, booklets and personal correspondence.

W. A. PLECKER, M.D., Richmond, Va.
State Registrar.

NO PHYSICIAN OR SURGEON AS YET IN THE HALL OF FAME

To the Editor:—Soon there will be the fifth quinquennial election to the Hall of Fame. The first took place in 1900 immediately after the funds had been given anonymously for the building of a permanent monument to the men and women who had contributed most to the nation's well-being and culture. According to the constitution it was agreed that at the first election fifty national figures in art, science and history should be chosen, and that thereafter five were to be added every five years.

The method of procedure is such as to allow no question as to the person's eligibility. The senate of the New York University, made up of the dean and senior professor of each of the university schools with the presidents or other representatives of each of the great theological schools in or near New York City, chooses the electors. There are a hundred of these. Every state is represented by at least one man. These hundred men are chosen by virtue of their eminence in some branch of national culture. They fall into seven main divisions: authors, presidents of universities or colleges, scientists, professors of history, jurists, high public officials or men or women of affairs, and editors. Dr. Charles H. Mayo, Rochester, Minn., is one of the electors. When the names are sent in to the senate of the university they are considered on the basis of constitutional qualifications. Not the least important of these qualifications is the one requiring that the nominee must have been deceased at least ten years.

William T. G. Morton, the discoverer of ether anesthesia, was once proposed under Group VII—Physicians and Surgeons—but failed in the election. I hope there will be no barrier to renominating the "inventor and revealer of anesthetic inhalation, before whom in all time surgery was agony."

The next two greatest figures in American medicine and surgery are perhaps Ephraim McDowell and J. Marion Sims. McDowell performed the first rational and deliberate ovariotomy, which he did in 1809, and of course without an anesthetic; his patient living for thirty-two years after the operation. As is well known, J. Marion Sims (1813-1883) gained for himself a national and international reputation by his invention of the speculum as an instrument for the treatment of pelvic diseases in women, and by his perfecting the plastic operation in the vagina for the relief of vesical fistulas.

The nominations must be sent in before May 1. Besides erecting the tablet in the Hall of Fame, the senate of the New York University is now considering collecting the works, where it is possible, of all the men and women who have thus been honored by the nation. They hope in this manner to create a valuable "Americana," open for study and inspection.

While there may be other great physicians and surgeons in the past generations who have so distingnished themselves as to be worthy to be classed with "America's greatest," I venture to say none has surpassed the achievements of Morton, McDowell and Sims. These were real pathfinders in science and added to human happiness and well-being and the glory of the American medical profession.

S. ADOLPHUS KNOPF, M.D., New York.

REQUEST FOR REPRINTS ON RESEARCH IN PHYSIOLOGY, PHYSIOLOGIC CHEMISTRY AND PHARMACOLOGY

To the Editor:—While I was visiting the Medical School of the University of Louvain, last January, the professor of physiology in that institution asked me to help him, if possible, in procuring reprints dealing with American research along the lines of physiology, physiologic chemistry, pharmacology and related subjects. American writers desiring to aid the department at Louvain may address reprints to Dr. A. K. M. Noyons, Professor of Physiology, University of Louvain, Louvain, Belgium.

RICHARD M. PEARCE, M.D., New York.

County Health Administration.—The county government is the only normal and permanent channel through which governmental policies make the individual contact. The county government is the organ of application in health administration.—W. S. Rankin, *Tr. Assn. Life Ins. Presidents*, 1919.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

REMOVAL OF FRECKLES

To the Editor:—The following prescription, written by Hebra, the dermatologist, is recommended particularly for the removal of freckles. This prescription in my hands has not given satisfaction in the treatment of freckles, and I am wondering whether it would be wise to increase the amount of mercury or use another drug. Unna, the Hamburg dermatologist, uses mercury in the same strength.

W. J. O'DONNELL, Buffalo.

PRESCRIPTION

Bismuthi subnitratis	gr. xxx
Sodii boratis	gr. xxx
Hydrargyri ammoniati	℥ i
White wax	q. s. ad ℥ i

ANSWER.—This prescription will not remove freckles. There is not enough of ammoniated mercury in it even to be irritating to the ordinary skin. Solutions of mercuric chlorid in a strength of from 0.5 to 1 per cent. are used, under medical supervision for the removal of freckles. They cause a dermatitis and exfoliation of the epidermis, and with that most of the pigment. The effect, however, is only temporary at best, and usually not worth the irritation and effort that it costs.

PRONUNCIATION OF DUODENUM

To the Editor:—Will you be good enough to give me the correct pronunciation of "duodenum," giving by proper diacritical markings the sound of each vowel?

ALICE H. MERRITT, San Diego, Calif.
Librarian, Medical Library Association.

ANSWER.—Duodenum is pronounced dew-owe-dee'num, with the accent on the third syllable.

It rhymes with the first three words in the sentence: "You owe freedom to the Great Emancipator."

The first vowel, "u" (yoo), retains the y element to a certain degree, though the sound of the double o in moon is permissible.

The second vowel, "o," is long and is distinct from the first.

The third vowel, "e," is long, and takes the accent.

The fourth vowel, "u," is short.

Some dictionaries mark a secondary accent on the first syllable.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARKANSAS: Little Rock, May 11-12. Sec. Regular Bd., Dr. I. J. Stout, Brinkley. Sec. Eclectic Bd., Dr. C. E. Laws, Fort Smith.

DISTRICT OF COLUMBIA: Washington, April 13-15. Sec., Dr. Edgar P. Copeland, the Rockingham, Washington.

HAWAII: Honolulu, May 10-14. Sec., Dr. R. W. Benz, 1141 Alakea St., Honolulu.

LOUISIANA: New Orleans, May 4. Sec., Homeo. Bd., Dr. F. H. Hardenstein, 702 Machesa Bldg., New Orleans.

NEVADA: Carson City, May 3. Sec., Dr. Simeon L. Lee, Carson City.

NEW MEXICO: Santa Fe, April 12-13. Sec., Dr. R. E. McBride, Las Cruces.

NEW YORK: New York, Albany, Syracuse, Buffalo, May 18-21. Assistant, professional examinations, Mr. Herbert J. Hamilton, Education Bldg., Albany.

OKLAHOMA: Oklaboma City, April 13-14. Sec., Dr. J. M. Byrum, Shawnee.

WEST VIRGINIA: Charleston, April 13. Sec., Dr. S. L. Jepson, Masonic Bldg., Charleston.

AMERICAN CONFERENCE ON HOSPITAL SERVICE

The third meeting of the American Conference on Hospital Service was held in the Congress Hotel, Chicago, March 3, 1920, following the annual meeting of the Council on Medical Education. The plans for this meeting were slightly disarranged owing to the illness of the first vice president, Dr. A. R. Warner. The meeting was called to order by Dr. John M. Dodson. Dr. Alexander Lambert, president of the American Medical Association, was elected as temporary chairman. About fifty delegates were present, representing the following organizations: American Association of Industrial Physicians and Surgeons; American Association of Hospital Social Workers; American College of Surgeons; American Hospital Association; American Medical Association; American Nurses' Association; Association of American Medical Colleges; Catholic Hospital Association of the United States and Canada; Federation of State Medical Boards; Medical Department, U. S. Army; Medical Department, U. S. Navy; National League of Nursing Education, and National Organization of Public Health Nurses.

The first topic for discussion was the need for women trained in the fundamentals of nursing. After considerable discussion, it was voted to refer the whole subject to the Committee on Nursing, the members of which were later decided on.

At the second meeting, held in Cincinnati in September, 1919, it had been planned to establish several committees. The personnel of four of these was named as follows:

Committee on Interns: Dr. John M. Dodson, chairman, A. M. A.; Dr. John M. Baldy, Philadelphia, F. S. M. B.; Dr. Guy M. Cushing, Chicago, F. S. M. B; Lieut.-Col. L. J. Owen, M. C., U. S. Army, Washington, D. C.; Miss Bena M. Henderson, Chicago, Children's Memorial Hospital, N. L. N. E.; Rev. P. H. Mahan, Loyola Medical School, C. H. A.; Dr. E. S. Gilmore, Wesley Hospital, Chicago, A. H. A.; Miss Edna G. Henry, A. A. H. S. W.

Committee on Hospital Service, Record and Standardization: John G. Bowman, Chicago, A. C. S., chairman; Col. William N. Bispham, M. C., U. S. Army, Washington, D. C.; Miss Mary Wheeler, A. N. A.; Dr. B. F. McGrath, Milwaukee, C. H. A.; Dr. Clarence D. Selby, Toledo, A. A. I. P. S.; Asa A. Bacon, Presbyterian Hospital, Chicago, A. H. A.; Miss Edna G. Henry, A. A. H. S. W.

Committee on Social Insurance: Dr. Otto Geier, Cincinnati, A. A. I. P. S.; Miss Minnie Ahrens, Chicago, A. N. A.; Miss Elnora Thompson, N. O. P. H. N.; Rev. Maurice F. Griffin, C. H. A.; Miss Edna Foley; Miss M. Antoinette Cannon, A. A. H. S. W.

Committee on Nursing: Miss Mary Wheeler, Illinois Training School for Nurses, Chicago, A. N. A., chairman; Lieut.-Col. Floyd Kramer, M. C., U. S. Army, Washington, D. C.; Miss Louise M. Powell, University Hospital, Minneapolis, N. L. N. E.; Rev. M. P. Bourke, Ann Arbor, C. H. A.; Dr. Louis H. Burlingham, Barnes Hospital, St. Louis, A. H. A.; Miss Elnora Thompson, Illinois Mental Hygiene Society, N. O. P. H. N.; Miss M. Antoinette Cannon, A. A. H. S. W.

It was planned to have the next meeting of the conference in connection with the annual session of the American Hospital Association, which meets in Montreal, Oct. 4-8, 1920.

A meeting of the trustees of the conference was held on Thursday, March 4, which was attended by Rev. Charles B. Moulinier, Miss Edna G. Henry, Col. James Glennan, Mr. John G. Bowman and Dr. Harry E. Mock. Father Moulinier acted as chairman.

It was planned to have each organization in membership in the hospital conference present a report at the next meeting outlining its ideas in regard to improving hospital service. These reports will be summarized by a special committee composed of Dr. John M. Dodson, Miss Mary Wheeler, Miss Edna G. Henry, Col. James Glennan and Father James B. Moulinier. It was decided that the fifth meeting would be held jointly with the annual conference of the Council on Medical Education, early in 1921.

Arkansas November Eclectic Examination

Dr. Claude E. Laws, secretary of the Eclectic Board of Medical Examiners, reports the oral and written examination held at Little Rock, Nov. 11-12, 1919. The examination covered 12 subjects and included 120 questions. An average of 75 per cent. was required to pass. Of the 3 candidates examined, 2 passed and 1 failed. The following colleges were represented.

College	Year Grad.	Per Cent.
PASSED		
American Medical College	(1876)	86.3
Kansas City College of Medicine and Surgery	(1918)	81.5
FAILED		
Kansas City College of Medicine and Surgery	(1919)	62

Social Medicine and Medical Economics

EFFECTS OF COMPULSORY HEALTH INSURANCE ON THE PRACTICE OF MEDICINE

M. L. HARRIS, M.D.
CHICAGO

At the close of the previous article (March 27, 1920, p. 908), it was stated that the effects of compulsory health insurance on the medical profession would next be considered. This phase of the subject is in a sense a secondary matter. By this is meant that if compulsory health insurance were a good thing, of unmistakable benefit to the people in general, and a distinct step forward in sociological evolution, then the medical profession would have no just cause for complaint, notwithstanding the fact that it might prove harmful to the best interests of the profession itself. The interests of a small class can never be paramount to that of the whole. Any measure which would be beneficial to all classes must necessarily be beneficial to the medical profession, and, on the other hand, a measure that would be harmful to all classes must be harmful to the profession. If a measure, however, is of negative or even doubtful advantage to the general community, then it becomes not only the privilege but the duty of physicians to point out wherein the measure may prove to be harmful to their own interests. In the present instance, the duty is a double one, for the reason that the harm which may be done the profession is reflected, or passed on to the people.

FUNDAMENTAL DEFECT OF COMPULSORY HEALTH INSURANCE

Speaking entirely from the point of view of the physician, the harmful effects of compulsory health insurance do not lie in the fact that a large percentage of the people are compelled to take out health insurance; if that were the only factor in the case, it would be an advantage to the profession, as it would result in many physicians receiving a much larger income than they now enjoy. However, one should not favor or oppose a measure pertaining to the public welfare merely on account of the possible effect which the measure might have on one's personal income. The fundamental defect of the scheme lies in the fact that the major portion of the benefits that the insured are to receive consists of medical services when ill, and the state presumes to dictate the terms of these services, thus placing them on a purely commercial or business basis. A bunch of sheep may be rounded up, sheared and dipped for the scab all alike at so much a head; but sick human beings cannot be successfully treated in that manner. The personal element is a most important factor in the treatment of the sick, and it cannot be ignored except to the disadvantage of both the patient and the physician. Inanimate objects can be dealt with in a purely impersonal manner, and the transaction may be placed on a strictly business basis. Even dumb animals may be handled in this way; but when it comes to intelligent human beings, each one must be handled as an individual. They cannot be bunched together and treated by the job lot.

Compulsory health insurance, wherever it has been introduced up to the present time, has carried with it some form of contract practice. The state agrees to furnish the insured with medical services when sick as part of the benefits to be received for the premium paid. The state then proceeds to contract for the services just as it would for so much coal or groceries or any other commodity, failing to appreciate the fact that medical services cannot be measured by the ton or bushel. There is no other service so individual and so personal as medical service. The confidence which an individual may have in his physician and which is often a material factor in the treatment of his illness is something which cannot be forced on one, and the personal interest which a conscientious physician has in the welfare of his patient, whether rich or poor, is something that cannot be bought. Anything which interferes with this mutual relationship between patient and physician is detrimental to both. When a patient is compelled to accept the services of a physician in whom he lacks confidence, however, unfounded that lack of confidence may be, there is found to be a failure of that perfect cooperation which is so essential if the best and speediest results are to be obtained. The conscientious physician who feels that he is called on to treat a patient who he knows has come to him only because he is compelled to and not because he wants to, unconsciously fails to give that patient the best that is in him. The finer sensibilities of both parties are offended, and this is frequently manifested on the part of the patient by a tendency to find fault with the physician, to imagine that he is not receiving the care and attention to which he is entitled.

It is characteristic of those who receive something for nothing, or something that they look on as their right, to find fault and to claim that they are being cheated out of their just deserts. And sometimes their complaints are not entirely without foundation, for the physician, blunted by the circumstance of the purely commercial relation between himself and the patient, fails to exhibit to the fullest extent the humane side of his calling. Contract practice tends to give poor service to the patient and to lower the standard of the profession, both of which must be detrimental to the welfare of the people. The patient who doesn't receive the best that medicine offers is defrauded of something to which he is entitled; yet it cannot be expected that the physician who is underpaid, and whose services are disposed of by the state, by wholesale, can give the best that is in him. It has long been observed that physicians who by reason of circumstances, or otherwise, have been forced into contract practice fail to develop medically and are soon found to be behind the times in their work. However altruistic an individual may be at times, there is no question but that a certain amount of self-interest dominates the actions of men. And it is well that such is the case, as otherwise it is scarcely conceivable that progress would be made.

HARMFUL EFFECTS IN GERMANY

That the foregoing statements are not simply an expression of opinion, but are facts founded on experience, is shown by the effects which compulsory health insurance laws have had on the medical profession in the countries in which they have been adopted. In Germany, the birthplace of compulsory health insurance, that large part of the medical profession that lived by the "krankenkassen" was reduced to a low state of scientific development, and for twenty years or more put up an almost continuous fight against underbidding and cheap and inefficient medical service. The physicians had to resort to strikes in order to secure for their work sufficient compensation to enable them to earn a bare living. The services rendered by the "hausarzt" were inferior in quality, yet entirely in keeping with the low compensation received. An underpaid medical profession means an underdeveloped profession. The making of a physician is not like the making of a bricklayer or a baker; when the latter have learned their trade it is only necessary for them to apply what they have learned, and their work is just as good today as it was yesterday and as it will be tomorrow. In medicine it is very different. A physician never fully perfects himself in his profession, as medical science is advancing and he must spend a certain amount

of time and money practically every day in order to keep up with the advancement. There are no union hours for the physician; all hours of the day and night are work hours for him, and if all of his time is taken up in earning a meager living he soon falls so far behind in his knowledge that he is able to render but poor and inefficient service to his patients. Under such conditions, it is evident that not only the profession but also the community must suffer.

For a time much was heard about the supposed wonderful efficiency of the German people; but at last the germanophilic glasses were struck from our eyes, when the true condition at once revealed itself. The assumption by the government of the obligations of the individual as exemplified in one of its phases by compulsory health insurance, in order that the individual might be able to devote more of his time and energy to the building up of the government, brought forth a people devoid of every sense of obligation, moral or otherwise, and this was one of the factors which led to the government's eventual downfall.

UNSATISFACTORY WORKING OF THE SCHEME IN ENGLAND

What was true concerning the harmful effects of compulsory health insurance on the profession and the people in Germany is fast becoming so in England, the last country to adopt a compulsory health insurance act. That the act is not a success in England is evident from the reports that come from that country.

Concerning the subject of compensation for medical services under the insurance act, Sir Bertrand Dawson in the Cavendish Lectures delivered before the West London Medico Chirurgical Society, in 1918, said:

> As regards remuneration, justice demands reform. When we consider the exacting nature of the doctor's life, the long hours, disturbed nights, high tension of his work, it is only just he should be so paid as to live a reasonable life without anxiety. That is not so now. Take a doctor who may get £30 a year net for a panel of 350 patients, or innumerable instances of doctors being paid salaries which workmen would reject with contumely. These things must be changed. If only the truth is presented, this cannot be continued. Pecuniary reward goes too much to the man with physical endurance and plausible tongue, and too little to the man possessed of brain and conscience.

In The Journal, Feb. 14, 1920, p. 474, the London correspondent wrote that the panel physicians had demanded from the government an increase of the capitation fee, claiming that the cost of living had gone up so high that they were unable to get along on the present small capitation fee. A small advance was offered by the government, which the deputation felt bound to its constituents not to accept, and asked for arbitration. The government yielded to the demand for arbitration, but said that it reserved the freedom to institute an inquiry into the question of whether services as good or better could be secured with the same or less expenditure of money under some other system. This is a fair illustration of what contract practice means under government control. The government by the minister of health felt constrained to yield to the demand of the panel (contract) physicians for arbitration of the question of the capitation fee, yet at the same time it reserved the right to see if it could not secure the same services for less money under some other system. Any system that could be devised must include the physician, and if the physician is unable to earn a decent living under existing fees, how could the government expect to get the work done for less money without still further reducing the income of the physician or the amount and character of the medical services rendered? Under the former plan the physician would have to suffer, and under the latter, the patient.

Again, in The Journal, Feb. 28, 1920, p. 615, the London correspondent stated that the minister of health "received a deputation from the British Federation of Medical and Allied Societies with regard to the national insurance act. The deputation came to emphasize the fact that national health insurance did not permit the insured persons to receive all that the science of medicine had to give, and under the regulations the physician was not able to do the effective work he was willing and anxious to do. . . . The insured public asked for bread and were given a stone. They asked for health and were given regulations which seemed to be chiefly designed to catch the erring physician in some fault. The tendency of the regulations was to impair the efficiency of the health services. . . . The deputation suggested a public inquiry into the working of the act." Does this sound good for compulsory health insurance, when the insured ask for bread and are given a stone, when they ask for health and are given rules and regulations? Do the American people want to introduce into our free form of government a compulsory measure of that kind? Does the medical profession want to place itself in a position in which it must beg the government to permit it to earn enough to live on, or in a position in which the ability to earn a decent living depends on the question of physical endurance rather than brains and conscience? What hope is there for the advancement of medicine when stifled by such laws?

IMPROBABILITY THAT THE SYSTEM WOULD WORK BETTER IN THIS COUNTRY

Any person practicing as a vocation a profession, such as medicine, which requires one to spend so much time and work trying to keep abreast with the progress constantly being made, must possess individualism and freedom of thought and action if he would satisfy his own conscience and bring to his patients the kind of service to which they are entitled.

Contract practice, which has been a part of every compulsory health insurance act up to date, operates in opposition to the physician's success, both from his own point of view and from that of the patient. It is claimed, however, by some of those who favor compulsory insurance that we in America will profit by the mistakes made by those countries that have already adopted such laws. That some of the bad features contained in the acts already in operation in some of the foreign countries might be eliminated seems probable; but it is highly improbable that any system of compulsory health insurance can be devised in which the conditions of medical service and the compensation therefor are under state supervision and control which would not be detrimental to individual and collective medical progress. That the income of a few might be augmented by an insurance act is quite likely; but, as often stated, it is not the advantage of a few but the good of the whole that must be considered. One frequently hears the remark that compulsory health insurance is bound to come sooner or later, just because it has been introduced in other countries. One might as well say that bolshevism or anarchy or Mohammedanism are bound to come, just because they came to other countries. Nothing of this kind is bound to come to a free country that is not the will of the people. The psychologic effect of the frequent repetition of such foolish statements has often led people to do that which they would not have done had they been governed by reason. This is one of the occasions when action should be guided by sound reason and not stampeded by psychology.

An attempt has been made to present the subject of compulsory health insurance in an impartial manner. If it has been shown that the scheme is not a desirable one, from the point of view either of the public or of the physician, there still remains an important problem. This problem concerns the best method of providing the highest type of medical service to all persons at prices within the reach of all. It is a problem which should be solved by the medical profession itself.

Book Notices

HEART: PAST AND PRESENT. By Edgar Lea, M.D., M.R.C.P., Assistant Medical Officer, Manchester Royal Infirmary. Cloth. Price, $2.50. Pp. 300. New York: William Wood & Co., 1919.

This is a readable collection of thoughtful essays on heart disease. Nearly a third of the book is devoted to a historical review of cardiology. The development of various views concerning the heart, from the time of Harvey to the present, is briefly set forth by one who is evidently conversant with the subject and who has read and studied Corvisart, Laënnec, Stokes and others, not alone because he thus acquired an important background of knowledge but because he has the pure delight of the bibliophile in reading the authors of the past. Possibly the still fresh war memories may account for the omission of some German and Austrian names like those of Virchow and Skoda, for example; we are sure it is not lack of knowledge. The present status of cardiology is clearly set forth and there is a systematic discussion of the problems that confront us today. Emphasis is laid on the necessity of a more careful study of symptoms and signs and a not too implicit reliance on laboratory methods and instruments of precision. In this way a more accurate diagnosis or prognosis may be attained and a more rational therapy achieved. The work is not intended as a texthook. It is, as the author states, a plea for a more intensive clinical study of the heart. As such it will be found interesting and stimulating.

PRACTICAL PHYSIOLOGICAL CHEMISTRY. For Indian Medical Students and Clinical Assistants. By C. C. Caleb, M.B., M.S., Professor of Physiology, King Edward Medical College, Lahore. Cloth. Price, 6 rupees net. Pp. 252. Calcutta: Butterworth & Co., 1919.

While intended as a laboratory manual for students in physiologic chemistry, this hook has some advantage over many other laboratory manuals on the subject in that it is sufficiently complete to be of practical value to the clinician. The commonly used analytic methods are described, the relations of chemical findings to diagnosis are briefly explained, and other useful information is given in a condensed form. The physician who occasionally makes analyses of the body fluids or excretions will find the book helpful.

YOURS FOR SLEEP. By William S. Walsh, M.D. Cloth. Price, $2.50 net. Pp. 274. New York: E. P. Dutton and Company, 1920.

While not any too scientific, this is a practical book; the author has written a common-sense statement concerning insomnia. Since untroubled sleep presupposes a healthful body and a healthful life, his book resolves itself into a manual of personal hygiene. The final chapter, "Remedies for Sleeplessness," presents no new fad or fancy, but is a sensible discussion of simple time-tried and effective methods. The book can be recommended to sufferers from insomnia, who should read it during the day and not in bed, just before going to sleep. It is not a soporific.

PRINCIPLES AND PRACTICE OF PHYSICAL DIAGNOSIS. By John C. DaCosta, Jr., M.D., Fourth edition. Cloth. Price, $4.75 net. Pp. 602, with 225 illustrations. Philadelphia: W. B. Saunders Company, 1919.

In this edition, new matter concerning gas edema, gas pneumonia, influenzal pneumonia and hilum tuberculosis appears under the discussions relative to the lungs and the effort syndrome. New material on the functional capacity of the heart, aviators' heart and sino-auricular block appears under the heading of "The Heart." The clinical relation and physical signs of cecum mobile are dealt with in detail. The book is a standard text of merit.

Kingsport, Tenn., a Rival of Framingham.—Kingsport is starting out to be another "health town," and also under the general supervision of the Metropolitan Life Insurance Company. Periodic physical examinations will be made and follow-up of defects and impairments. Results in these two towns will be compared.

Medicolegal

"The Great Exorcism" and Mental Healing

(Crane v. United States (U. S.), 259 Fed. R. 480)

The United States Circuit Court of Appeals, Ninth Circuit, in affirming a judgment of conviction of defendant Crane, says that he was convicted under fifteen of twenty counts for having devised a scheme and artifice to defraud, and to obtain money and property by means of certain false pretenses, and promises, and by means of hypocritical doctrines written and advocated by him, and of using the mails of the United States in carrying out the scheme charged. It was alleged that he was the author of books and other kinds of literature and letters and advertising matter in which he attributed all human suffering, physical or mental, to certain mysterious influences, and that he represented that he possessed supernatural powers, with power to save victims from the influences. The literature was alleged to set forth that the defendant could be called on by night or by day by any one desiring treatment, and the method of treatment was that the party being treated should relax, breathe deeply, and with every outgoing breath say that he was unloading all his care on Arthur Crane; that the party receiving treatment was to take the position that he was breathing out all of his own opinions, desires, and all of his knowledge and possessions, that he knew nothing, owned nothing, wanted nothing and believed nothing; that he was not to resist any unpleasant or evil thought that came to him, but was to let the said Crane do all of the resisting for him, and that he was to know consciously that he was calling Crane and breathing in his alleged perfect vitality and harmony. Before relaxing, the party receiving the treatment was to write to Arthur Crane and tell him the time which he desired for his treatment; that when the treatment was given the party receiving it must accept it freely and with the idea of being benefited without rendering any return to the defendant, who represented that he transmitted the "Christ power," and administered for good and not for profit from the sale of his books. To one man he wrote that he had answered all of the "problems" in the new $2 edition of his book, "The Great Exorcism," which contained, "among other good things," instructions for healing and relaxing, and which was well worth $5, and continued: "So if you will send me $1 toward its price I will give you credit for the $1 you sent before, and mail you the $2 book complete. Because I have answered your particular problems in this edition, I feel it is absolutely vital to you to have a copy." Some of his letters referred to money to be sent for treatment as not the defendant's money, but money that must be sent as a gift for his aid in casting out "influences." It was also in evidence that in some of the literature the defendant said he would not charge for his treatments, but the evidence was that in several instances, when a subject or confiding person sought his advice, he would speak of the sacrifice to be made, and then would ask for such giving as the sacrifice warranted. A former employee testified that the system with which the work was carried on was that, after the party had become engrossed in the work, and it was time for a sacrifice, that is to say, if the party had stuck it out long enough and had a proper disposition, he was sure to get a "sacrifice letter." It was elaborately argued that there is "nothing inherently wrong in the theory of mental healing." In a general way that is conceded. The law, however, prohibits a scheme or artifice to defraud by means of false representations, and the use of the mails in executing the purposes of the scheme. One with corrupt purpose may devise a scheme to defraud by employing an alleged mental power to relieve suffering of mind or body, and may use the mails to carry out his corrupt scheme. From the voluminous record containing letters, circulars and oral testimony, it was very clear that the court properly submitted to the jury the question whether the representations made by the defendant were fraudulently

and intentionally false, or were honestly made, or mere errors of judgment. One witness testified that he submitted to treatment for nearly two and one-half months; that sometimes he would go to sleep after treatment and have horrible dreams, such, for instance, as that a she-devil had set a cancer in his legs, and it commenced to eat up his legs past the ankles. He said that he wrote to Crane that he thought the "queen of hell, one of his characters, had charge of the switch board," and that he didn't want any more treatments from him; that the book "The Great Exorcism" described thirteen devils; that the descriptions in the book concerning the various devils upset the witness.

Prescribing and Furnishing Narcotic Drugs Under Minnesota Law

(State v. Whipple (Minn.), 173 N. W. R. 801)

The Supreme Court of Minnesota, in affirming a judgment of conviction of the defendant, a licensed physician, of the violation of Chapter 260 of the Laws of Minnesota of 1915, prohibiting the sale of narcotic drugs, says that the particular charge was that, Jan. 21, 1918, the defendant sold 6 grains of morphin to one Chandler, who was a habitual user of the drug. The defendant admitted that, on this date, he gave to Chandler 6 grains of morphin, and received $4 from him; but he claimed that he had been treating Chandler since September, 1917, for the drug habit by the gradual reduction method, and that this transaction was a part of such treatment. The evidence on the part of the state was that the defendant sold the morphin to Chandler without any pretense of professional treatment. The trial court instructed the jury that, under the statute, physicians are not permitted by law to sell or furnish to habitual users, out of stocks kept on hand for any purpose, these habit-forming drugs; that all sales and deliveries of such substances to victims of the habit, whether for the purpose of curing the habit or any other object, must be made, if at all, by a pharmacist or druggist, and by him only on a physician's prescription, under the safeguards imposed by law in respect to such sales; that the question whether this particular drug was administered or furnished in good faith or not was not material, and that the statute makes a distinction between the disposal, prescription and furnishing of these drugs to habitual users and to ordinary patients. In the case of patients not addicted, a physician is permitted in the usual course of his practice to prescribe them and also to furnish them. As regards habitual users, the statute first prohibits anybody from either furnishing or prescribing the drug to that class of people. But that is qualified by the permission, in the case of a physician, who in good faith has an addict under treatment for the cure of the habit, to give him a prescription on which he can procure the drug. The physician is forbidden, however, by this statute to furnish the drug himself. The supreme court thinks that the trial court correctly construed the statute. There is a plain difference between "prescribe" and "furnish." To "prescribe" is to give medical direction, to indicate remedies. To "furnish" is to supply or provide. This is the ordinary meaning of these terms. Both words are used, obviously with this distinction as to meaning, in the federal narcotic law of 1915. The context makes plain the intention so to use the words in the Minnesota statute. It was the purpose to require two persons to be concerned in the supplying of narcotic drugs to addicts under the conditions as to publicity which the statute requires in the case of prescriptions. In view of the strict requirements of Section 1, as to the record to be kept by a physician administering the drug to a patient not an addict, it is quite inconceivable that the legislature should have intended that a physician might furnish the drug to an addict without any safeguard or provision for record at all. It was competent, too, for the state to introduce evidence of other sales of morphin to Chandler and of the sale of morphin to other drug addicts, in violation of the statute. Evidence of this character is admissible if it is part of one plan or scheme carried on by the defendant wilfully to violate the law, or if it tends to show an inclination or predisposition to commit the offense charged.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, New Orleans, April 26-30.

Air Service Medical Assn. of the U. S., New Orleans, April 26.
Alabama State Medical Association, Anniston, April 20-22.
Alpha Omega Alpha Honorary Fraternity, New Orleans, April 26.
American Association of Anesthetists, New Orleans, April 26-27.
American Association of Physicians, Atlantic City, May 4-5.
American Association for Thoracic Surgery, New Orleans, May 1.
American Dermatological Association, Asheville, April 22-24.
American Gastro-Enterological Assn., Atlantic City, May 3-4.
American Gynecological Society, Chicago, May 24-26.
American Laryngological Association, Boston, May 27-29.
American Medico-Psychological Assn., Cleveland, O., June 1-4.
American Otological Society, Boston, May 31-June 1.
American Pediatric Society, Highland Pk., Ill., May 31.
American Proctologic Society, Memphis, Tenn., April 22-23.
American Psychopathological Assn., Cleveland, O., June 5.
American Radium Society, New Orleans, April 26.
American Surgical Association, St. Louis, May 3-5.
American Therapeutic Society, Philadelphia, May 7-8.
Arizona Medical Association, Nogales, April 16-17.
Assn. for Study of Internal Secretions, New Orleans, April 26.
Assn. of Amer. Teachers, Diseases of Children, New Orleans, April 27.
Assn. of Military Surgeons of the U. S., New Orleans, April 24.
California State Medical Society, Santa Barbara, May 11-13.
Connecticut State Medical Society, New Haven, May 19-20.
Georgia Medical Association, Macon, May 6-8.
Illinois State Medical Society, Rockford, May 18-20.
Iowa State Medical Society, Des Moines, May 12-14.
Kansas Medical Society, Hutchinson, May 5-6.
Louisiana State Medical Society, New Orleans, April 24-26.
Maryland, Med. and Chir. Faculty of, Baltimore, April 27-29.
Medical Veterans of the World War, New Orleans, April 26.
Michigan State Medical Society, Kalamazoo, May 25-27.
Mississippi State Medical Association, Jackson, May 11-12.
National Tuberculosis Association, St. Louis, Mo., April 22-24.
Nebraska State Medical Association, Omaha, May 24-26.
New Hampshire Medical Society, Concord, May 12-13.
North Carolina State Medical Society, Charlotte, April 20.
Ohio State Medical Association, Toledo, June 1-3.
Oklahoma State Medical Association, Oklahoma City, May 18-20.
Rhode Island Medical Society, Providence, June 3.
South Carolina Medical Association, Greenville, April 20-21.
So. Section Am. Laryn., Rhin. & Otol. Society, New Orleans, Apr. 27.
Texas State Medical Association, Houston, April 22-24.
The Radiological Society, New Orleans, April 23-24.
Western Electro-Therapeutic Association, Kansas City, Mo., May 27-28.
West Virginia State Medical Association, Parkersburg, May 18-20.

ANNUAL CONFERENCE ON PUBLIC HEALTH AND LEGISLATION

Held under the auspices of the Council on Health and Public Instruction of the American Medical Association, March 4, 1920

(Concluded from page 975)

Health Education in the Public Schools—T[illegible] Years' Experience in Michigan

DR. VICTOR C. VAUGHAN, Ann Arbor, Mich.: The State Board of Health of Michigan was the second state board of health provided for in this country. The first was in Massachusetts. It is interesting to know that the creation of the Michigan State Board of Health was due to the large number of accidents from the explosion of kerosene lamps, and the discussion at that time about arsenical paper.

In 1865, Villemin, a French army surgeon, experimented with transmission of tuberculosis. On the work of Villemin published in 1868, the Michigan State Board of Health started to preach to the people of Michigan that tuberculosis was a transmissible and preventable disease. It did so by holding sanitary conventions. We started out with four conventions a year, each one in different parts of the state, teaching that tuberculosis and various other diseases were transmissible and therefore preventable.

In 1895 a bill was framed and passed by the legislature compelling teaching on the manner of transmission of disease in every grade in every school in Michigan, from the primary grades to the university. I think the passage of that law was the most effective work we ever did. This bill was modified in 1897, and is now a fairly effective law. In 1915 the legislature allowed us by a unanimous vote an appropriation of $100,000 to continue demonstration work in tuberculosis in Michigan. We have had a relatively low death rate from tuberculosis; we are going to have a higher

death rate because many of our cities are being crowded, especially the larger ones, by an ignorant foreign population. Our death rate has been about one half of what it has been in the New England states, but that is not altogether due to the educational movement. In this work it is essential to reach the children.

Health Education and Activities in Colleges and Universities

DR. JOHN SUNDWALL, Minneapolis: A university health service is concerned with physically sound students—both in the attainment of positive health and in the continuance of this health during the academic and postacademic life. Related activities of a university health service are: protection of the sound student from communicable diseases; detection, isolation, and provision for the treatment and care of all students suffering from communicable diseases; advice, treatment and, when necessary, care of all students who are ill; early detection and correction, so far as possible, of beginning bodily disorders, such as the degenerative diseases, and correction, so far as possible, of defects in subnormals by advice regarding proper exercise and right living and, when advisable, by treatment. These objects are reached through the personal division of a university health service. The division of sanitation must concern itself with sanitary conditions both on and off the campus. Campus buildings, rooming houses and boarding houses must be inspected and regulated so far as possible. Finally, the health service should accentuate the required hygiene instruction by practical application to student life, and by additional educational methods, such as bulletins, posters and placards relative to health promotion and disease prevention, "patent medicines," etc.; and by use of the student daily paper and other publications in dissemination of health information. Through properly conducted work in physical education, through a required hygiene course, through health services and through medical schools and schools of public health, our colleges and universities can educate the citizens and train the health leaders of our country, thus assuring for the future the national health and vigor fundamental to national security, growth and permanence.

Health Education: A Function of Municipal Health Departments

DR. HAVEN EMERSON, New York: In order to carry out education, one must have something to say and some one to say it to, and a susceptibility or receptivity in the audience appropriate to the matter in hand. Certain groups may always be considered as educable in health subjects: children because of their age; mothers because of their children, and the sick and their immediate associates because of their temporary need. Beyond school age, the interest in health for most adults is a negative quality and cannot be relied on to provide an audience for the written or spoken word, except under pressure of fear, selfishness in self-protection, or self-interest in the betterment of employees.

In the United States, with rare exceptions, health education cannot be applied to the population of whole states without risk of inappropriateness, because of the striking dissimilarity in geologic, geographic, racial, educational, occupational and morbidity setting of the groups to be reached. Health is personal. Health education must be personal, as nearly as conditions permit. The nearer the government is to the lives of the people, the stronger will be public interest in the quality of its public servants. Without health education a community is ill served by its civil government. The municipal government is entitled to the strength which public interest will give to its health administration. The public is entitled to the kind of information which is as nearly personal and appropriate to the local unit, the household, the family, as can be attained. Health education is and must always be a function of municipal health departments.

Health Education: A Function of State Departments of Health

DR. W. S. RANKIN, Raleigh, N. C.: From the point of view of a state department, health education has to do largely with the adult population. The state health department, if it would be successful, must constantly strive to disseminate knowledge of health, and in such a manner that the public which it seeks to serve is sufficiently interested to make use of the knowledge imparted. The success of a health department may be definitely measured. Is the death rate reduced? Is there less sickness from preventable diseases? The answer to these two questions shows the value of the public health work done. If the answer is to be affirmative, the people must be reached with the message of health and disease prevention. Present efforts toward health education by state departments of health are heavily handicapped by the expense involved. Appropriations for health departments vary greatly. Some receive barely sufficient to maintain an office and carry on merely the minor duties of such a department. There is much lost motion and duplication of effort. Each state department is attempting to do what the others are going. The result is an unnecessary increase in personnel, a waste in time and money, and less effective methods. The solution is standardization and centralization of a large part of this work. Methods of health education may be divided into those applicable to all states and which therefore should be standardized and centralized, and those which deal with individual state problems.

The most important are the methods by which personal hygiene may be taught to the individual. There are two methods of educational work that must continue largely a product of each state and which must possess individuality, as each would lose in proportion as it became stereotyped in form or lacking local color. These are the monthly health bulletin and the press service, both of which are utilized by nearly every health department of the country. A health department must recognize health education as a primary function. The means of performing this function are many and varied. To get the best possible results, no single department can hope to utilize effectively all the means which are at hand. There must be cooperation, which will standardize materials and eliminate much of the present expense and lost motion.

Health Education a Function of the Federal Government

DR. CHARLES F. BOLDUAN, Washington, D. C.: There is a limitation to the activities of the federal authorities. We should devote a great deal of attention to health education among schoolchildren and adults, but should not concentrate on children alone. Childhood impressions are very lasting. A large part of our program should deal with the education of schoolchildren so far as the work of the federal departments is concerned, and this field will come largely under the United States Bureau of Education, a department of the interior. The Public Health Service should be a national clearing house for all matters relating to public health education, and should maintain a supply depot in which can be collected pamphlets, exhibits, etc. We might establish and operate a bureau of information on health administration which would have on hand information concerning administrative methods in all the various states and communities, so that the health officer would not have to send out questionnaires, but would have this material at hand. The Public Health Service in the past has done some work along that line. We published some years ago a digest of health laws enacted by state and local health authorities, and in that way we tried to meet a part of the need, but that has only been going on in a small way. Another activity we can undertake is the preparation of material for a standard monthly health bulletin. At present there is an enormous duplication of effort there. Another activity is the preparation and publication of a health column in our newspapers. For the last six months we have been doing this, and it has proved of great value. In connection with this health column we conduct a question and answer feature. The number of questions that come in is surprising. Still another activity would be the preparation of press bulletins of family interest. If you can send newspaper material in the form of stereomats they will use them. These stereomats are inexpensive. The Public Health Service should maintain a photographic department so that we can supply to state and local health officers pictures with which to illustrate various phases of

health work. We should also maintain a motion picture department, which is one of the great needs at the present time.

DISCUSSION

DR. JOHN M. DODSON, Chicago: As to the question of rejections in our selective service experience, referred to by Dr. Sundwall, I do not think the percentage of rejections when analyzed at all demonstrates that we are a degenerate nation physically. On the whole, it was a respectable showing. While it is true that many of the causes of rejection were due to lack of proper hygiene and sanitation, if we had only had universal military training, or universal physical culture which goes with military training, we should have escaped most of these fallacies.

As chairman of the Subcommittee on Health Problems in Education, cooperating with the National Education Association, I feel that our hope for the future largely lies in the education of the young. Personal hygiene is a matter of habit. Habits are formed early, and once formed they are not easily broken or changed. Therefore, our hope for the future and for permanent good lies in the education of the children and the inculcation in them of proper habits. For this reason I think one of the most worthy things that this Council on Health and Public Instruction has ever done was when, at the Los Angeles session in 1911, it approached the great body of public school teachers in this country (the National Education Association) and enlisted their keenest interest in health problems in the public schools.

PROF. W. B. OWEN, Chicago: We have reached a most opportune time for the introduction of health education in schools. The war has made us consider very carefully the content and material of our education. If the war had gone on longer, there would have been left in our educational progress some of the things that were coming in very rapidly, and each one different because of lack of cooperation and support, or the withdrawal of leadership of the national government. One of these is food. The food administration put into the schools a course on foods, and it is a great pity that it was stopped. They had the material in such form that it could be used, and the teachers were learning how to teach it, and the children were interested in it, and it went from the schools to the homes and from the homes back to the schools. The evidence is undisputable. Every one is coming to recognize that one of the fundamental new objectives laid down in our public education is health. Every one is trying to put thrift into the public schools at the present time. Buying economically and intelligently is a vital question, and if you combine the matter of selecting foods for health purposes, one can readily see how the whole thing would work together in a common program. In order to do this we must have the assistance of competent people to lay out a course and teach this course to teachers who are going to go into the schools.

DR. W. E. FORSYTHE, Ann Arbor, Mich.: The development of health service in colleges and universities is like other phases of public health work of recent origin. Some of the older universities, like the University of Virginia, have been taking care of their students' health for many years. The University of Virginia is probably the oldest in the development of a well-rounded service for the health of its students. The University of Michigan started this movement in 1913. We first began to care for sick students, and I regret to say that has been the main work in most places. Now attention in health matters is given to the well. There is difficulty sometimes in convincing the deans of various departments that this is important, so that we have to educate our educators in this work in our institutions. It is encouraging to have this program adopted for secondary schools, as it will stimulate our higher educational institutions to prepare teachers properly to meet this need. The great help we have had has been cooperation of the governor in the work of the Interdepartmental Social Hygiene Board.

DR. BURTON D. MEYERS, Bloomington, Ind.: We organized a department of hygiene in the Indiana University last year under the auspices or support of the United States government. We have had a required course for freshmen for about ten years, and it has been of tremendous value in developing better health conditions. We require those training for the teaching profession to take lectures in hygiene and work in physical training.

DR. JOHN DILL ROBERTSON, Chicago: We have in the public schools of Chicago little mothers clubs in which pupils of the sixth, seventh and eighth grades attend lectures on the rudiments of home nursing and public health work. A large part of the publicity of printed material is wasted. It never goes over, and a great deal of the lecture work never goes over. We have what we call the Chicago Public Health Association. Students of the sixth, seventh and eighth grades are required to attend seventeen meetings each month. In order to be sure that the students grasp the lectures, a digest of each lecture is handed to the pupils as they pass out the door, and they write an essay on it and present it to all the pupils in their rooms. We have established a Chicago Training School for Home and Public Health Nursing, and since August, 4,000 Chicago housewives have attended this course. It was done primarily for the purpose of preparing women to take care of sick people in times of an epidemic, such as influenza or pneumonia. About the time the epidemic of influenza started we had 2,160 who had attended the course of forty-eight lectures. We also established a public health education course, and 3,046 women have now some conception of what we are trying to do in health education work.

DR. HAVEN EMERSON, New York: I have been responsible since October for one of the things developed in the Interdepartmental Social Hygiene Board, a compulsory course in hygiene attended by 2,500 students of Cornell University. The students attend these lectures once a week. They have two medical examinations. This is required of all students in the university throughout the year or short term. The education that comes from medical examination and conferences or consultations is of more value than didactic teaching.

COL. JAMES C. GREGORY, Chicago: In reference to what was said about the draft examination, of approximately 4,000,000 men examined, about 60 per cent. had physical defects. Had these examinations been made by thoroughly trained men, more defects would have been found. Twenty-nine per cent. were rejected, and of that 29 per cent., 39 per cent. were rejected for mechanical defects, such as flatfoot, hammer toe, hallus valgus, deformed fingers and stiff joints. A large percentage of these difficulties could have been remedied had the men been examined and properly treated during their younger days. Ten per cent. of the rejections were due to undeveloped and metabolic conditions, narrow chests, under height, etc. Ten per cent. were due to sensory disturbances, such as defective hearing, defective vision and conditions of the throat. Three per cent. were rejected as a result of deficient or defective teeth. Ten per cent. of rejections were due to cardiac disturbances. A large number of these cases of cardiac disturbance were the result of defective teeth and enlarged tonsils. I do not see any better way than to start with the schools and with lectures from the teachers to the children, teaching them the elementary principles of hygiene, how to keep themselves healthy, and to grow up as physically fit as possible.

DR. VICTOR C. VAUGHAN, Ann Arbor, Mich.: One of the most instructive things that came out as the result of the examinations of men during the war is the distribution of the unfit. Pennsylvania, with its large foreign population, had a much larger percentage of unfit than Alabama or Georgia, with a large negro population; in other words, the negro is more fit physically than the average man in Pennsylvania.

DR. W. F. DRAPER, Washington, D. C.: The Public Health Service, in cooperation with the State Board of Health of Virginia, made an arrangement with counties in which no previous health work has been done, whereby the county pays $1,000 and receives $1,000 from the state for a full-time sanitary administrator, who takes up the problems relating to rural sanitation, proper disposal of waste, proper protection of water supply, etc. We are trying to secure three results, namely, to have the towns sanitated; to get sanitary toilets, and a pure water supply in every county, and to reach as many homes as possible. The results of this work have been very gratifying.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Annals of Medical History, New York

1919, 2, No. 2

House Surgeon's Memories of Joseph Lister. St. C. Thomson, London. —p. 93.
Oxford Physic Garden. D. Power, London.—p. 109.
Modern Commentaries on Hippocrates. J. Wright, Pleasantville, N. Y. —p. 126.
Rise and Early History of Clinical Teaching. D. Riesman, Philadelphia.—p. 136.
Napoleon's Camp at Boulogne. Reginald Fitz, Boston.—p. 148.
William Osler; The Man. H. Cushing; Boston.—p. 157.
Sir William Osler, the Tributc. H. A. Kelly, Baltimore.—p. 168.
Osler's Influence on Medical Libraries in the United States. John Ruhräh, Baltimore.—p. 170.
Sir William Osler's Contribution to Medical Literature. F. H. Garrison, Washington.—p. 184.
Presentation to Sir William Osler.—p. 188.

Archives of Dermatology and Syphilology, Chicago

March, 1920, 38, No. 3

*Causes of Reactions Following Intravenous Injections of Arsphenamin and Neoarsphenamin. J. F. Schamberg, J. A. Kolmer, G. W. Raiziss and C. Weiss, Philadelphia.—p. 235.
*Neurotic Excoriations. G. M. MacKee, New York.—p. 256.
*Neurotic Excoriations; Report of Cases. W. A. Pusey and F. E. Senear, Chicago.—p 270.
*Veneroid Ulcer. G. M. Olson, Minneapolis.—p. 279.
*Two Cases of Idiopathic Hemorrhagic Sarcoma (Kaposi); The First Complicated with Lymphatic Leukemia. H. N. Cole and E. S. Crump, Cleveland.—p. 283.
Osseous Formation in Lupus Erythematosus. W. B. Trimble, New York.—p. 296.
*Camphor Oil Tumors. W. H. Mook and W. G. Wander, St. Louis. —p. 304.

Causes of Reactions Following Intravenous Injections of Arsphenamin and Neo-Arsphenamin.—The ingenious theory advanced by Danysz that intravascular precipitation of the organic arsenicals is the cause of the reactions (particulary the nitroid reactions) after intravenous injection, the authors claim, is true in part only. It explains the well known precipitation of solutions of acid arsphenamin and probably also concentrated solutions of monosodium arsphenamin (i. e., arsphenamin neutralized to the point of clearing). There is no adequate evidence, however, that precipitation occurs after the use of disodium arsphenamin (hyperalkaline solutions), and there is no evidence at all that neo-arsphenamin is ever precipitated in the blood. Experiments carried out by Schamberg et al. indicate that the phosphates of calcium, magnesium, sodium and potassium in the concentrations in which they normally occur in the blood, do not precipitate alkaline solutions of arsphenamin and neo-arsphenamin in vitro, either when tested alone or in the presence of the other organic or inorganic constituents of the blood. They believe that if arsphenamin is properly neutralized, that is, if the disodium and not the monosodium arsphenamin is injected, precipitation in vitro can scarcely take place. The fact that arsphenamin is hemolytic in practically all of the concentrations in which it is employed, and that neo-arsphenamin is not hemolytic, except in very dilute solutions (0.9 gm. in 180 c.c. of water) or in extremely concentrated solutions (0.9 gm. from 2 to 3 c.c.) sheds a degree of illumination on the relative manner in which these drugs are clinically tolerated. Another fact of importance is the hydrogen-ion concentration of these two compounds. The hydrogen-ion concentration of neo-arsphenamin is 7.0 to 7.4, which is approximately that of the blood. That of acid arsphenamin is 4.7, while the alkaline solutions are beyond 9. The injections of acid solutions of arsphenamin are prone to produce death, or if less concentrated, may lead to the development of a bronchopneumonia as a result of intravascular precipitation of the drug. Concentrated monosodium arsphenamin solutions may, under certain conditions, likewise cause death, or in the event of recovery cause an embolic bronchopneumonia. The authors have no knowledge that pneumonic symptoms have ever developed after the use of disodium arsphenamin, nor after the use of neo-arsphenamin. Nitritoid reactions may, at times, follow the injection of a clear solution of neo-arsphenamin. The authors belive the cause to be traces of an unidentified impurity which for purposes of convenience and easy reference they designate substance X.

Neurotic Excoriations.—The term neurotic excorations is limited to traumatic lesions produced by a person without intent to deceive. At times, the excoriation may be produced by the habit of picking at every slight elevation of the skin. This picking or digging may be quite unintentional and, in mild cases, it is limited to an unconscious habit of passing the hand over the face (and the scalp, if bald) while deeply absorbed in study, locating a little follicular plug and digging with the finger nail until an excoriation is effected. In the same way, the reparative crust is repeatedly removed, healing is retarded and the lesion may persist for weeks or months, becoming, perhaps, indurated or infected, and finally, when left alone, disappearing spontaneously, often with scar formation. The question of diagnosis—differential diagnosis—is important. The illustrative cases reported by MacKee show that neurotic excoriations may markedly simulate syphilis, tuberculosis, radiodermatitis, dermatitis herpetiformis, acne varioliformis, and other dermatoses. Care also must be taken to differentiate clearly between neurotic excoriations and malingering, and to exclude excoriations produced in attempts to relieve severe itching by individuals who are not neurotic.

The cases reported by Pusey and Senear, are essentially of the same character as the cases of neurotic excoriations reported by Fox and Wilson.

Veneroid Ulcer.—Veneroid ulcer or the ulcer of Welander is a disease characterized by the appearance of ulcers about the vulvae of girls or women who have not been exposed to venereal disease. The general appearance of veneroid ulcer is strikingly similar to that of chancroid and chancre. The disease is self-limited, healing under indifferent treatment in about one month. The scars left after healing are typical. They are superficial, round or oval, with slightly raised edges. Olson reports one case.

Idiopathic Hemorrhagic Sarcoma.—Two cases of the idiopathic hemorrhagic sarcoma of Kaposi are reported by Cole and Crump, occurring in a Russian Hebrew, aged 66, and in an Italian, aged 56. In the first case, the disease was of five or six years' duration; in the other case, of twenty years' duration. In Case 1, the patient developed a lymphatic leukemia in the course of his disease, but throughout the disease his cutaneous lesions showed the histologic characteristics of hemorrhagic sarcoma of Kaposi; i. e., the formation of new blood vessels in the corium, perivascular infiltration with small, round cells, plasma cells and spindle cells, and with a marked infiltration of the tissue with blood pigment, consisting of hemosiderin. Experimentally, the authors were unable to transmit the disease to cats, white rats, to guinea-pigs and to rabbits.

Camphor Oil Tumors.—The six cases reported by Mock and Wander seem to indicate that it is dangerous to use mineral oil as a vehicle for any remedy to be injected into subcutaneous tissue. This fact has been well established in regard to paraffin injections, and the tumors resulting from the injection of camphor oil incorported in a mineral oil strengthens the conclusion.

Annals of Surgery, Philadelphia

February, 1920, 71, No 2

*Oxycephaly: Report of Two Cases. S. H. Watts, Charlottesville. —p. 113.
*Surgical Treatment of Cysts of Thyroglossal Tract. W. E. Sistrunk, Rochester, Minn.—p. 121.
*Stone in Kidney. C. H. Mayo, Rochester, Minn—p. 123.
*Results of Operations for Removal of Stones from Ureter. E. S. Judd, Rochester, Minn.—p. 128.
*Tuberculosis of Appendix. M. Warwick, Minneapolis, Minn.—p. 139.
*No Surgical Appendicitis without Organic Stricture. M. Pitzman. St. Louis.—p. 149.
Advantages of Mikulicz Two-Stage Operation of Partial Colectomy. C. N. Dowd, New York.—p. 155.
Anatomic Considerations in Rectal Prolapse of Infants. T. W. Todd, Cleveland.—p. 163.
*Sarcoma of Prostate. F. C. Herrick, Cleveland.—p. 168.
*Abscess of Prostate. A. Randall, Philadelphia.—p. 172.
Cervical Erosions. P. J. Reel, Columbus.—p. 178.
Treatment of Nonunion in Compound Fractures. DeF. P. Willard, Philadelphia.—p. 182.

Dislocation of Tarsal Scaphoid: Double Fracture of Ischiatic Tuberosities. W. D. Haines, Cincinnati.—p. 187.
Suture of War Wounds. D. Hinton, Philadelphia.—p. 191.

Oxycephaly.—This paper was abstracted in The Journal, Jan. 17, 1920, p. 201.

Surgical Treatment of Cysts of Thyroglossal Tract.—In 86,000 consecutive patients examined in the Mayo Clinic, only thirty-one cases of thyroglossal cysts were found. Eighteen of these were in males and thirteen in females. The cysts appeared at all ages from birth to 53 years, the majority being noted in patients between the ages of 20 and 25 years. In twenty-five of these patients the cyst was found in the midline of the neck, near the hyoid bone.

Stone in Kidney.—This paper was abstracted in The Journal, Jan. 17, 1920, p. 200.

Results of Operations for Removal of Stones from Ureter.—This paper was abstracted in The Journal, Jan. 17, 1920, p. 200.

Tuberculosis of Appendix.—Of 210 appendixes, only two, or approximately 1 per cent., were found tuberculous. Warwick cites a case in which the tuberculous appendix was the first definite evidence of the probable existence of other tuberculous lesions. The necropsy showed clearly that the primary lesion had resided for some time in the apexes of the lungs. An acute exacerbation of these lesions followed ulceration of the intestines and invasion of the appendix.

No Surgical Appendicitis Without Organic Stricture.—Pitzman claims that attacks of acute suppurative appendicitis are brought on by complete closure of a preformed stricture. The inflammation, eventually gangrene, is due to the action of the bacteria normally present in the locked-up feces. The true chronic appendix also has a stricture, which, however, is patent during intervals between attacks.

Sarcoma of Prostate.—Herrick analyzes sixty-two cases recorded in the literature.

Abscess of Prostate.—Sixteen cases of abscess of the prostate are cited by Randall in support of his belief that any infection of a pus forming character is, ipso facto, of gonorrheal origin. Eight cases were clinically diagnosed as prostatic abscess, secondary to an active gonorrhea arthritis. In the second group of eight cases, gonorrhea played no antecedent rôle. In two cases *B. coli* was the infecting organism, and in a similar number *Staphylococcus pyogenes-aureus.*

Boston Medical and Surgical Journal

March 18, 1920, **182**, No. 12

Ether Day Address. Traditions, Standards and Prospects of the Massachusetts General Hospital. R. C. Cabot, Boston.—p. 287.
Specific Treatment of Hay-Fever. F. M. Rackemann, Boston.—p. 295.
*Case of Tumor of Sacrum. J. E. Goldthwait, Boston.—p. 301.

March 25, 1920, **182**, No. 13

Development of Modern Infant Feeding: Influence on Present Teachings. L. W. Hill, Boston.—p. 311.
Anesthesia in Obstetrics. P. Appleton, Providence, R. I.—p. 321.

Tumor of Sacrum.—In the case cited by Goldthwait, a hard mass covered the whole anterior part of the sacrum and projected from an inch to an inch and one half into the pelvis. The swelling over the posterior part of the sacrum was not hard and did not obscure the general bony landmarks. The roentgen ray showed up the destruction of a large part of the central portion of the sacrum. In the light of the history of an evidently long continued condition with extremely good general function, it being possible for the patient to walk about with apparent ease, it was considered inadvisable to operate, and a support for the pelvis was planned to relieve the joints of the pelvis from the strain, and planned also to correct the unnatural forward inclination of the pelvis. This support was applied. The patient has been able all of the time to carry on a drug store business. She tired more easily than would be normal, but with two or three short periods of rest in the course of a day, together with a belt to give reasonable support about the pelvis and low back, it has been possible for her to keep about with apparently no increase of the difficulty and, on the whole, increasing general strength.

Bulletin of Johns Hopkins University, Baltimore

February, 1920, **31**, No. 348

*Experimental Pneumectomy. G. J. Heuer and G. R. Dunn, Baltimore.—p. 31.
*Effect of Arteriovenous Fistula on Heart and Blood-Vessels. An Experimental and Clinical Study. M. R. Reid, Baltimore.—p. 43.
Biological Classification of Influenza Bacilli. T. M. Rivers, Baltimore.—p. 50.

Experimental Pneumectomy.—In twenty-three dogs on which total pneumectomy was practiced by Heuer and Dunn, there were thirteen recoveries and ten deaths. The fatalities occurred in from four days to two months after operation. Six of the deaths were due to an epidemic of distemper which swept through the kennels. The necropsy examinations in this group did not show a single instance of infection of the parietal wound or pleura or leakage from the bronchial stump. One animal died of a simple pneumonia unassociated with other evidences of distemper. At the necropsy there was no infection of the parietal wound or pleura or leakage from the bronchial stump. One animal died apparently from starvation, two months after operation. At the necropsy there was a remarkable degree of emaciation, but no other assignable cause for death. There was no infection of the parietal wound or pleura or any leakage from the bronchial stump. In one of these the failure to secure an adequate closure of the bronchial stump was intentional. In the other a necrosis of the bronchial wall followed the application of an intentionally flattened (not rolled) metal band.

Effect of Arteriovenous Fistula on Heart and Blood Vessels.—A report of experimental work on dogs is made by Reid, and fourteen clinical cases of arteriovenous fistula are reported in abstract. A study of the clinical cases reveals that the artery was observed to be dilated proximal to the fistula in five instances. In seven of the cases the histories do not comment on the size of the artery. In one case in which the fistula had been present for only three months, the artery was not dilated. In patients in whose history no mention is made of the size of the artery, the arteriovenous fistula was intracranial in three, in the hand in two, between the occipital vessels in one, and in femoral region in one. All the femoral arteriovenous fistulas, except two of three and four months' duration resulted in a proximal dilatation of the artery. This dilatation may extend as far as the heart. Marked cardiac disturbances may result from an acquired arteriovenous fistula of long standing. They are hypertrophy and dilatation with eventual cardiac decompensation. The wall of the vein involved in an arteriovenous fistula becomes hypertrophied. Although the vein on the proximal side of the fistula does not increase markedly in size, its wall shows a greater increase of elastic tissue than the wall of the vein distal to the fistula. The venous blood pressure is increased in the part of the body distal to an arteriovenous fistula. When the fistula is cured the pressure returns to normal.

Colorado Medicine, Denver

March, 1920, **17**, No. 3

Control of Cancer. P. Hillkowitz, Denver.—p. 56.
Case of Reconstructive Surgery of Face. T. G. Maghee, Lander, Wyo.—p. 60.
Vaccine Therapy in Pertussis. G. M. Blickensderfer, Denver.—p. 62.
Tuberculosis in Army. G. H. Chattermole, Boulder.—p. 66.

Illinois Medical Journal, Oak Park, Ill.

March, 1920, **37**, No. 3

Etiology of and Prophylactic Inoculation in Influenza. E. C. Rosenow, Rochester, Minn.—p. 153.
Early Symptoms of Cancer. J. C. Bloodgood, Baltimore.—p. 155.
Lessons from One Hundred Gallbladder Operations. W. F. Grinstead, Cairo, Ill.—p. 156.
Submucous Operations. O. Tydings, Chicago.—p. 159.
Acute Mastoiditis. R. T. Tivnen, Chicago.—p. 162.
Résumé of Year's Work with Radium. C. W. Hanford, Chicago.—p. 168.
Treatment of Infected Wounds with Reference to Carrel-Dakin Method. W. Fuller, Chicago.—p. 173.
Certificates of Birth and Death. H. B. Hemenway, Springfield.—p. 181.
Need of More Laboratories. M. Dupray, Springfield.—p. 185.
*Trichomonas Vaginalis Vaginitis. J. B. DeLee, Chicago.—p. 186.
Eye Involvements Following Focal Infection. E. R. Crossley, Chicago.—p. 187.

Recent Developments in Peripheral Nerve Surgery. H. A. Beam, Moline.—p. 189.
Artificial Bilateral Pneumothorax. W. R. Abbott, Springfield.—p. 192.
Static Back Trouble. E. L. Cooley, St. Louis.—p. 195.
Suggestions About Community Mental Health Departments Under State Management. S. D. Wilgus, Rockford.—p. 199.
Clinical Problems Relating to Chronic Suppurative Diseases of Middle Ear. G. E. Shambaugh, Chicago.—p. 203.

Trichomonas Vaginalis Vaginitis.—De Lee states that in cases of this type the patient complains of obstinate vaginal discharge, pruritus, sleeplessness, burning, general weakness and of being "run down." The vulva is reddened, the vagina also, and often rough like a nutmeg grater; sometimes there are minute hemorrhages in the vaginal epithelium. The cervix is sometimes affected. The discharge is profuse, excessive, mucopurulent, thin, bubbly, acrid and with a disagreeable odor. Its irritating character is shown by the erosion of the skin, and especially in fat women there is an obstinate foul smelling intertrigo. Sometimes there are pointed condylomas. Diagnosis is easy. The clinical appearance of the vagina will suffice, but examination of the fresh discharge under the microscope will confirm it. As for the treatment: On the morning of the first day the vagina and vulva are scrubbed vigorously with tincture of green soap and water, using a rough cloth and going most thoroughly into every fold and crevice. The soap is then rinsed out with sterile distilled water. The process is repeated three times, then a 1:1,500 mercuric chlorid douche is given also with friction, every fold and crevice being washed. This again is washed out with sterile distilled water. The patient rests in bed. Next morning the vagina is again washed out with green soap and sterile water. Then it is packed with cotton soaked with glycerin (4 ounces) and sodium bicarbonate (1 ounce). The folds and crevices of the vagina are filled with the cotton and the vulva is smeared with the mixture. Next morning the tampon is removed and a sterile water douche is given. The following morning the secretion is examined under the microscope for trichomonades. Usually they are gone.

Journal of Biological Chemistry, Baltimore

March, 1920, **41**, No. 3

*Nutritive Value of Proteins of Barley, Oat, Rye and Wheat Kernels. T. B. Osborne and L. B. Mendel, New Haven.—p. 275.
Effect of Chlorin Substitution Products of Methane Acetaldehyde, and of Sodium Acetate on Catalase Production. W. E. Burge and E. L. Burge, Urbana.—p. 307.
Improved Volumetric Pump for Continuous Intravenous Injections. R. T. Woodyatt, Chicago.—p. 315.
Biochemistry of Acetone and Butyl Alcohol Fermentation of Starch by Bacillus Granulobacter Pectinovorum. H. B. Speakman, Toronto. —p. 319.
*Determination of Chlorids in Whole Blood. J. H. Austin and D. D. Van Slyke, New York.—p. 345.
*Experiments on Utilization of Calcium of Carrots by Man. M. S. Rose et al, New York.—p. 349.
*Effects of Feeding with Calcium Salts on Calcium Content of Blood. W. Denis and A. S. Minot, Boston.—p. 363.
*Simplified and Improved Method for Determination of Sugar in Blood. O. Folin and H. Wu, Boston.—p. 367.
Distribution of Basic Nitrogen in Phaseolin. A. J. Finks and C. O. Johns, Washington, D. C.—p. 375.
Studies in Nutrition. II. Rôle of Cystine in Nutrition as Exemplified by Nutrition Experiments with Proteins of Navy Bean, Phaseolus Vulgaris. C. O. Johns and A. J. Finks, Washington, D. C.—p. 379.
*Studies in Nutrition. III. Nutritive Value of Commercial Corn Gluten Meal. C. O. Johns, A. J. Finks and M. S. Paul, Washington, D. C.—p. 391.
*Equilibrium Between Oxygen and Carbonic Acid in Blood. L. J. Henderson, Cambridge, Mass.—p. 401.
Fermentation of Fructose by Lactobacillus Pentoaceticus, n. sp. W. H. Peterson, and E. B. Fred, Madison, Wis.—p. 431.
Nutritive Factors in Plant Tissues. III. Distribution of Water-Soluble Vitamin. T. B. Osborne and L. B. Mendel, New Haven, Conn. —p. 451.

Nutritive Value of Proteins of Barley, Oat, Rye and Wheat Kernels.—The growth of rats on diets essentially comparable, except in respect to content and source of the cereal proteins contained therein, show the possibilities of nutrition when any one of the four commonly used cereal grains furnished the protein.

Determination of Chlorids in Whole Blood.—A modified technic for whole or laked blood is described by Austin and Van Slyke in which the precipitation and removal of the protein precede the addition of the silver.

Utilization of Calcium of Carrots by Man.—Two series of experiments to determine the utilization of the calcium of carrots by the human body were carried out by Rose on four healthy young women. The calcium intake was in every case close to the estimated minimum for equilibrium. In all cases but one there was a positive calcium balance on the carrot diet, and in this case the loss was small. When approximately 55 per cent. of the calcium was derived from carrots, one subject had practically the same retention as on a diet in which 70 per cent. of the calcium was derived from milk. It seems possible, therefore, to meet the requirement of the adult human organism for calcium largely, if not wholly, from carrots.

Effects of Feeding Calcium Salts.—The result of a study of the effect of the administration of calcium salts by mouth to men, cats and rabbits, made by Denis and Minot, indicates that in most cases it is impossible to increase the concentration of calcium in the plasma by ingestion of calcium salts, but that in cats and rabbits, in which the initial concentration is low, it is sometimes possible to greatly increase the amount of calcium in plasma by feeding salts of this element.

Determination of Magnesium in Blood.—The procedure described by Denis consists of the removal of organic material contained in the filtrate from the calcium determination, the precipitation of magnesium as magnesium ammonium phosphate, and the nephelometric determination of the phosphate in this compound by the reagent of Pouget and Chouchak.

Simplified and Improved Method for Determination of Sugar in Blood.—Folin and Denis have replaced their regular phenol reagent by a reagent which reacts with cuprous copper, in acid solution, yet gives no color with phenols.

Nutritive Value of Commercial Corn Gluten Meal.—The authors found that commercial corn gluten meal, supplemented by dried brewers' yeast, whole ground yellow corn, or coconut press cake, furnishes the necessary protein for normal growth. Eighteen per cent. of whole, ground, yellow corn meal furnishes sufficient water-soluble vitamin for normal growth.

Equilibrium Between Oxygen and Carbonic Acid in Blood.—Henderson endeavors to explain the interaction between oxygen and carbonic acid in blood by means of the theory of acid base equilibrium.

Journal of Experimental Medicine, Baltimore

March 1, 1920, **31**, No. 3

*Pneumococcus Cultures in Whole Fresh Blood. Retardative Effect of Blood of Immune Animals and Mechanism of Phenomenon. C. G. Bull and L. Bartual, Baltimore.—p. 233.
*Production of Specific Antiserums for Infections of Unknown Cause. P. Rous, G. W. Wilson and J. Oliver, Baltimore.—p. 253.
*Deterioration of Crystalline Strophanthin in Aqueous Solution. R. L. Levy and G. E. Cullen, Baltimore.—p. 267.
Giant Centrospheres in Degenerating Mesenchyme Cells of Tissue Cultures. W. H. Lewis, Baltimore.—p. 275.
Formation of Vacuoles Due to Bacillus Typhosus in Cells of Tissue Cultures of Intestine of Chick Embryo. M. R. Lewis, Baltimore. —p. 293.
*Appearance of Isoagglutinins in Infants and Children. W. M. Happ, Baltimore.—p. 313.
*Effect of Feeding Pineal Body on Development of Albino Rat. W. R. Sisson and J. M. T. Finney, Jr., Baltimore.—p. 335.

Pneumococcidal Value of Whole Fresh Blood.—It is maintained by Bull and Bartual that the whole uncoagulated blood of immune animals is not as highly pneumococcidal in vitro, as has been claimed. Cultures of pneumococci in the fresh whole blood of immune animals, as compared with cultures in the blood of susceptible animals, show a greatly prolonged latent period, and, in a general way, the relative lengths of the latent periods of the cultures correspond to the relative resistances of the animals to infection by these organisms. The blood of animals artificially immunized, both actively and passively, retards the growth of pneumococci in the same manner as the blood of naturally immune animals. The retardation of multiplication depends on two factors, opsonization of the pneumococci by the immune serum, and phagocytosis of the organisms by the polynuclear cells; growth readily occurs when either agent is absent.

Pneumococci multiply in defibrinated immune blood because few phagocytes are present after defibrination. Pneumococci grow in the most potent immune blood after mechanical destruction of the white cells. It was not determined that immune blood does not kill a certain number of the pneumocci with which it is inoculated, but the tentative conclusion has been arrived at that no killing occurs since none of the bloods tested became sterile during the course of the experiments.

Production of Specific Antiserums for Infections of Unknown Cause.—Rous and his associates state that there is present in serum of high precipitin titer, produced by the repeated injection of rabbits with a blood-free serum of guinea-pigs or dogs, a principle, highly toxic for animals of the species furnishing the antigen. Intravenously, the serum causes severe shock, and even sudden death, while locally, it gives rise to acute inflammatory changes and profuse capillary hemorrhages. The complete removal of hemolysins and hemagglutinins from the serum by exposing it repeatedly to washed red cells lessens its toxicity to only a slight degree and one obviously dependent on these elements; while the further removal of precipitin by specific precipitation in vitro has no detoxifying effect whatever. Whether the toxic principle is a hitherto unrecognized antibody or perhaps a toxic product of the interaction of precipitin and precipitinogen—one formed as readily in the test tube as in the animal body—remains to be determined. The symptoms of guinea-pigs and dogs given an intravenous injection of treated or untreated serum markedly resemble those of anaphylaxis, but attempts at desensitization were unsuccessful. The local lesion in guinea-pigs is more severe than that of the Arthus phenomenon.

Deterioration of Crystalline Strophanthin in Aqueous Solution.—Experiments were undertaken by Levy and Cullen to ascertain the cause of the deterioration of aqueous solutions of strophanthin in relation to the altered hydrogen ion concentration, and to devise a method for preparing a stable solution for therapeutic purposes. Many of the glass containers commonly used in the laboratory, and most of the glass ampoules employed in marketing sterile solutions for hypodermic or intravenous medication, were found to yield sufficient alkali on autoclaving, to change the reaction of distilled water from p_H 6.0 to p_H 9.0. This increase in alkalinity is sufficient to render biologically inert and partially to decompose aqueous solutions of crystalline strophanthin in the concentration ordinarily employed in the clinic. It is suggested that for clinical use, crystalline strophanthin be dissolved in 0.02 M standard phosphate solution at p_H 7.0, and marketed in hard glass ampoules, thereby insuring stability of reaction with preservation of biologic activity.

Iso-Agglutinins in Infants and Children.—The iso-agglutination of 131 infants and children from birth to 10½ years was examined by Happ by testing their serum and washed corpuscles microscopically against the serum and washed corpuscles of each of four adult groups. The grouping as present in adults is rarely present in blood from the umbilical cord. At birth and during the first month of life, isoagglutination is rarely present, but the percentage of infants in whom the iso-agglutinin group is established increases with age, so that after 1 year the group is usually established, and after 2 years it is always present as in adults. The grouping is established in the corpuscles before it is established in the serum; i. e., the corpuscles acquire agglutinophilic receptors before the serum acquires agglutinin. Therefore, Group I is the first group to be formed and Group IV is the last. The early grouping in the corpuscles before the group is established in the serum is liable to change by the acquisition of new receptors. When the grouping has been established in both serum and corpuscles it does not change. Iso-agglutinins are present in mother's milk and the grouping is identical with that in the mother's blood. These agglutinins are probably not transmitted to the nursing infant through the milk. On account of the difference between the agglutination reactions in the blood of mother and child, it is not safe to transfuse an infant from its mother without making the preliminary tests.

Effect of Feeding Pineal Body on Development.—Feeding the desiccated pineal body of young calves to young albino rats failed to produce any effect on the early development of these animals.

Journal of Orthopedic Surgery, Lincoln, Neb.

March, 1920, **2**, No. 3

Operative Correction of Paralytic Valgus. S. Kleinberg, New York.—p. 127.
Application of Curvature Therapy in the Ward. H. C. Marble, Boston.—p. 136.

Kansas Medical Society Journal, Topeka

March, 1920, **20**, No. 3

Rôle of Laboratory in Diagnosis of Venereal Disease. W. A. Baker, Rosedale.—p. 57.
Treatment of Purulent Appendicitis. T. A. Jones, Hutchinson.—p. 61.
Need of Type of Graduate Study in Schools of Medicine. C. F. Nelson, Kansas.—p. 64.

Laryngoscope, St. Louis

February, 1920, **30**, No. 2

Cellulitis of and Abscess in Parapharyngeal Tissues Causing Laryngeal Edema. C. G. Coakley, New York.—p. 65.
*Experimental Observations on Treatment of Brain Abscess Following Middle Ear and Mastoid Infections. J. McCoy, New York.—p. 75.
*Case of Temporosphenoidal Abscess. J. Leshure, New York.—p. 80.
Chances of Cure of Mastoiditis by Tentative Tonsillo-Adenectomy. O. Glogau, New York.—p. 83.
Perforating Gunshot Wound of Face with Extensive Destruction of Superior Maxillae. J. N. Roy, Montreal.—p. 100.
A Clamp Tonsillectome. E. Hyslin, Tacoma.—p. 109.

Treatment of Brain Abscess Following Middle Ear and Mastoid Infections.—A number of different procedures for the purpose of forming a safety zone through which to operate have been tried out by McKay but he has not yet reached definite conclusions.

Case of Temporosphenoidal Abscess.—The case cited by Leshure is of interest chiefly from the standpoint of diagnosis. None of the classical symptoms of brain abscess were present, although a rather persistent headache should have aroused suspicion of deep-seated trouble. Incision of the right temporosphenoidal lobe evacuated about 30 c.c. of very foul thick greenish pus mixed with cerebrospinal fluid. As the patient's heart had not ceased to beat, the incision was enlarged and digital exploration revealed the fact that the abscess was encapsulated but evidently was not of very recent origin. No stalk or direct communication with the middle-ear cavity could be made out.

Medical Record, New York

March 20, 1920, **97**, No. 12

Measures of Intelligence Diagnostically Remeasured. J. V. Haberman, New York.—p. 467.
Relation of Arterial Hypertension to Nephropathies. M. A. Mortensen, Battle Creek, Mich.—p. 475.
*Clinical Study of Ectopic Pregnancy. H. E. Stein, New York—p. 478.
Cause, Prevention and Cure of Influenza and Allied Diseases. A. Kahn, New York.—p. 481.
The Prostitute in Jail: Opportunity for Public Health Work That Gives Results. H. Goodman, New York.—p. 483.
Cancer Death Rate in New York City During 1919. L. D. Bulkley and L. B. Cady, New York.—p. 486.
Serum Sickness Treated with Proteal. F. Tweddell, Great Neck, N. Y.—p. 487.

Clinical Study of Ectopic Pregnancy.—Among 580 cases of gynecologic operations analyzed by Stein, there were forty-three cases of ectopic pregnancy, or 7 per cent. Only six of the forty-three women had never been pregnant. Thirteen were primiparas. Only six patients gave a history of previous miscarriage. Three patients had been operated on for a former extra-uterine pregnancy. A long period of sterility is usually regarded as an antecedent to an ectopic pregnancy. This fact is not borne out by Stein's study. One patient had been sterile thirteen years, and one eleven years, but the great majority had become impregnated within the last three years. In these forty-three cases, a double salpingectomy was deemed necessary only nine times. Thus the other tube showed evidence of inflammatory involvement in about one fourth of the cases. Of those tubes that were sectioned throughout, only about one third showed the presence of round cell infiltration and connective tissue replacement, due to chronic inflammatory

changes. It is Stein's opinion that the normal meeting place of the ovum and spermatozoon is in the uterus. Various factors may account for the meeting taking place in the tube: (1) late ovulation; (2) hypermotility of the spermatozoon; (3) lodgment of the ovum in a recess or congenital ampulla of the tube; (4) mild salpingitis.

Minnesota Medicine, Minneapolis

March, 1920, **3**, No. 3

Early Diagnosis of Malignant Thyroid; Especially Carcinoma. H. A. H. Bouman, Minneapolis.—p. 105.
Recent Advance in Diagnosis of Surgical Lesions of Kidney. W. F. Braasch, Rochester, Minn.—p. 112.
Lethargic Encephalitis; Report of Twelve Cases. E. M. Hammes, St. Paul.—p. 118.
Treatment of Empyema by Closed Method. F. M. Manson, Worthington.—p. 124.
Trephine Operation for Pyothorax: A. C. Strachauer, Minneapolis.—p. 127.
Correlation of Laboratory with Clinical Methods in Study of Tuberculosis. F. W. Wittich, Minneapolis.—p. 133.
Epidemic Influenza: At University Hospital, Minneapoils. E. T. Herrmann, St. Paul..

Missouri State Medical Ass'n Journal, St. Louis

March, 1920, **17**, No. 3

Adenomyomata with Special Reference to Those Occurring in the Broad Ligament. O. H. Schwarz, St. Louis.—p. 91.
*Treatment of Syphilis. W. K. Trimble, Kansas City, Mo.—p. 94.
Critical Analysis of Present Day Attitude of Medical School Curriculums Toward Science of Therapeutics. W. H. Thaler, St. Louis.—p. 97.
Fractures of Patella and How Shall We Treat Them. W. R. Hewitt, St. Louis.—p. 100.
Conservative Surgery of Pelvic Organs. B. A. Poorman, Kansas City, Mo.—p. 103.
*Is Psoriasis Incorrigible? W. H. Hammond, St. Louis.—p. 105.
Relation of Anaphylaxis to Asthma and Eczema. H. C. Berger, Kansas City.—p. 109.
Modified Agnew's Operation for Relief of Webfinger Produced by Rope Burns. E. D. Twyman, Kansas City.—p. 112.

Treatment of Syphilis.—After reviewing about 4,000 Wassermann tests, Trimble finds himself forced to the conclusion that primary syphilis is never cured. This belief is based on the observation of patients having had their infection a few years ago and having had modern intensive treatment. What may be the proper treatment for early syphilis Trimble finds it difficult to say. He is inclined to the view that one primary fault lies in the too universal acceptance of the specificity of certain drugs. Long periods of latency may, he thinks, be rightfully attributed to an acquired immunity and not wholly to the treatment received. The most unfortunate state in which a patient could be found is where he harbors treponemata and at the same time has nothing but arsphenamin or mercury to protect him. Trimble concludes his paper with the statement that syphilis cannot be cured, and that the best treatment is that which will give the patient the longest lease on life and usefulness to himself and society.

Is Psoriasis Incorrigible?—Among the internal medicaments those of first importance in Hammond's opinion seem to be: arsenic, iron, nux vomica, the potassium salts, vegetable tonics, iodids, mercury, suprarenal, thyroid and pituitary extracts and vaccines. As to diet, he aims to balance the diet by increasing the amount ingested of those foods which are the least harmful to the patient. Of external measures, Hammond favors the rays of the Alpine sun lamp, judiciously applied, and mild application of the roentgen ray can be used on the nonhairy surfaces, but, he says, as a rule, resorcin, in a lotion to the scalp, and a mild ointment of ammoniated mercury elsewhere, are all that will be required.

New Orleans Medical and Surgical Journal

March, 1920, **72**, No. 9

*Case of Mixed Hypothyroidism and Hypopituitarism. A. Eustis and L. R. DeBuys, New Orleans.—p. 526.
Case of Cirrhosis of Liver; Talma Operation; Entire Relief of Symptoms. E. L. King, New Orleans.—p. 529.
Sewing Machine Motor in Use as a Motor Saw. J. T. Nix, Jr., New Orleans.—p. 531.
Lethargic Encephalitis. J. M. Perret, New Orleans.—p. 534.
*Sponge-Forceps Methods of Treating Incomplete Abortion. E. L. King, New Orleans.—p. 540.
Dermoid Cyst of Ovary, in Patient 14 Years of Age. W. D. Phillips, New Orleans.—p. 544.
Collection and Preparation of Specimens for Laboratory Examinations. E. Bass, New Orleans.—p. 545.
Epithelioma, its Various Types and Treatment by Radiotherapeusis. H. F. Wilkins, Birmingham.—p. 549.

Case of Mixed Hypothyroidism and Hypopituitarism.—Eustis and DeBuys report the case of a girl, 15 years of age, who, two years ago, presented symptoms of hypothyroidism, while during the past two years she has developed well defined symptoms of hypopituitarism. She has the mental and physical development of a child of 5. Her most marked symptoms are: weakness, unsteady gait, obesity, dryness of the skin, lack of physical and mental development and wetting of the bed. Her coordination of muscular movements is so poor that she is unable to feed herself. Constipation has been a prominent symptom for six years. For one month she has had a capsule, three times daily, consisting of 2 grains of extract of the whole pituitary gland, 1 grain of extract of thyroid, and 1 grain of ovarian extract. The authors believe that the condition is one primarily of the disturbance of the anterior lobe of the pituitary gland in which there is a diminished secretion, with secondarily a diminished secretion of the thyroid.

Sponge-Forceps Method of Treating Incomplete Abortion.—No originality is claimed by King for the method he uses. The patient is always anesthetized, is carefully prepared with green soap and water, followed by alcohol, a self-retaining speculum is introduced, the cervix is grasped by a volsellum and dilated gently (if necessary). In the majority of cases, the cervix is open enough to admit the sponge forceps or the finger, and no dilation is necessary. Ordinary sponge forceps are introduced, and with them the retained secundines are seized and withdrawn. The forceps are introduced and withdrawn two or three times, until no more remnants are found, and then are introduced with a sponge in their grasp, which is twisted around inside the uterus to remove any small particles that may be left. Finally, if the cervix is sufficiently dilated, the finger is introduced and the cavity carefully palpated in order to make sure that all particles have been removed. This step is not regarded as essential, and is often omitted, as the cessation of bleeding is a very reliable indication that the cavity is empty. The uterus is not irrigated, no chemicals are used in its interior, and no pack is used, except in the rare case in which rather free bleeding persists in spite of complete evacuation. The after-treatment is simply rest, local and general, for from three to six days. The patient is allowed up as soon as the uterus has involuted well, and she is discharged two or three days later. King has found that this method is as effective as the use of the curet in the removal of the retained material, is not followed by fever, and is not attended by any risks.

New York Medical Journal

March 20, 1920, **111**, No 12

Treatment of Flail and Stiff Joints. R. Jones, Liverpool.—p. 485.
Appendicitis in the Argonne. E. Eliot, Jr., New York.—p. 487.
Gonorrheal Infection in Childhood. P. Brooke Bland, Philadelphia.—p. 489.
Blood Transfusion in Modern Therapeutics. G. I. Miller, Brooklyn.—p. 492.
Cholesteatoma, Report of Five Postoperative Cases. J. M. Smith, New York.—p. 495.
Influenzal Pneumonia. J. Harkavy, New York, and J. H. Selby, Washington, D. C.—p. 497.
Goiter. J. C. O'Day, Honolulu.—p. 503.
Electrotherapeutics and the Medical Profession. H. Finkelpearl, Pittsburgh.—p. 506.

New York State Journal of Medicine

March, 1920, **20**, No. 3

*Chronic Appendicitis; A Study of Postoperative End Results. E. M. Stanton, Schenectady.—p. 66.
What Can Be Gained in Thorough Study of Treatment of Serious Wounds In Late War in Its Application to Railroad Surgery? E. A. Vander Veer, Albany.—p. 70.
Present Conception of Significance of Cardiac Phenomena. A. A. Jones, Buffalo.—p. 73.
Clinical Course and Treatment of Vincent's Angina. C. F. Theisen, Albany.—p. 77.
Influence of Diseased Sinuses on Body in General. G. F. Gott, Buffalo.—p. 79.
Case of Recurrent Tonsillar Growth. J. J. Rainey, Troy.—p. 80.
Treatment of Borderline and Obscure Cases. F. B. Turek, New York.—p. 82.

Chronic Appendicitis.—In Stanton's experience chronic appendicitis has proved to be a rather sharply defined disease in which the symptoms may be recognized by the fact that they produce in miniature the first symptoms of the acute attack. The disease differs from the acute appendicitis by the fact that the obstruction is incomplete or because it is habitually relieved before the acute inflammatory stage develops. The pathologist's report, based on the microscopic examination of so-called chronic appendixes is unreliable. Most symptom producing chronic appendixes may be recognized at the operating table by the presence of gross anatomic factors predisposing the appendix to attacks of partial or complete obstruction of the lumen.

Ohio State Medical Journal, Columbus

March 1, 1920, **16**, No. 3

*Heart in Focal Infections. J. E. Greiwe, Cincinnati.—p. 151.
Septic Foci in Relation to Bones and Joints. R. B. Cofield, Cincinnati.—p. 155.
Pathologic Conditions of Teeth as Shown by Roentgen ray. H. J. Means, Columbus.—p. 157.
*Streptococcus Viridans Infections of Mouth and Throat with Reference to Neuritis and Arthritis. C. H. Hay, Cleveland.—p. 162.
Murphy Treatment of Acute Arthritis. C. DaC. Hoy, Columbus.—p. 167.
Indications for Removal of Tonsils in Childhood. H. C. King, Cleveland.—p. 170.

Heart in Focal Infections.—Greiwe suggests that chronic septicemia, due to pyorrhea alveolaris, must be given serious attention in considering the etiology of inflammations and degenerations, as well as dilations of the ascending aorta, the arch and the descending aorta.

Streptococcus Viridans Infections of Mouth and Throat with Reference to Neuritis and Arthritis.—In Hay's experience, *Streptococcus viridans* plays a very important rôle in the etiology of cases of neuritis and arthritis which are not accompanied with swelling and fever, a feature of differential diagnostic importance. Granted the elimination of the source of toxemia, an autogenous vaccine of the cultured *Streptococcus viridans* has given markedly beneficial results in Hay's cases.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

Feb. 28, 1920, **1**, No. 3087

Diagnosis of Glaucoma. R. H. Elliot.—p. 279.
Epilepsy; Recurrent Herpes; Lethargic Encephalitis. J. Taylor.—p. 282.
*Intravenous Protein Therapy. A. E. Gow.—p. 284.
*Poison of Spiny Dog-Fish. H. Muir Evans.—p. 287.
*Metastatic Staphylococcal Infection of Kidney. H. R. Souper.—p. 288.
*Volvulus of Cecum: Double Obstruction. R. E. Smith.—p. 289.
Use of Immunized Blood Donors in Treatment of Pyogenic Infections by Whole Blood Transfusion. H. J. B. Fry.—p. 290.
Functional Connection Between Reproductive Organs and Other Glands of Internal Secretion. E. E. Hewer.—p. 293.

Intravenous Protein Therapy.—Gow has given peptone intravenously in conjunction with sensitized vaccine subcutaneously in streptococcal septicemia, and is convinced of its value in such cases. In certain forms of arthritis great benefit has been derived from intravenous protein therapy. Here the vaccine is given entirely for a shock effect. The type of joint disease which responds best, in Gow's experience, is the multiple infective arthritis for which no active source of primary infection or septic absorption is demonstrable. While Gow regards intravenous protein therapy as of great value in certain carefully selected cases—more particularly of arthritis, the septicemias and coliform infections—he states most emphatically that it is not a panacea for all ills; and even in those diseases in which it is of use it is to be regarded solely as an accessory weapon in conjunction with, not to the displacement of, other remedies.

Poison of Spiny Dogfish.—A case of acute edema, the result of a prick by a dogfish, is reported by Evans. A fisherman sustained a punctured wound at the base of the thumb infected by a dogfish. The injury was followed by acute stabbing pain in the part which lasted four or five hours; the hand then began to swell, and when the patient arrived at the hospital there was great swelling and edema of the back of the hand, and the front of the wrist and forearm were painful, tender, red and edematous. This acute inflammatory edema lasted for four days and for a time it seemed that suppuration would occur. On the fifth day the edema at the back of the hand had subsided, but it was not until seven days had elapsed that the tenderness and swelling over the wrist had disappeared and the patient was convalescent. The treatment adopted was to paint the hand and the front of the wrist and forearm with liniment and solution of iodin in equal parts and apply hot fomentations.

Metastatic Staphylococcal Infection of Kidney.—The infection of the kidney observed by Souper followed on operative interference with an infected wound of the forearm. The condition cleared up on treatment with an autogenous vaccine.

Volvulus of Cecum: Double Obstruction.—The original lesion in the case cited by Smith was a tuberculous affection of the mesenteric glands leading to a strong adhesion between the hepatic flexure and the last 2 inches of the ileum. The early stages of this were noted in the atypical gastric symptoms due to an ileac "kink" and obstruction to the ileac efflux, so often mentioned in the literature. Some indiscretion of diet, followed by decomposition of the contents of the cecum produced a "balloon" of this viscus, which, being mobile, rose up, turned on a hinge and become a volvulus, producing further obstruction at the already kinked hepatic flexure. Relief of this obstruction and the replacing of the cecum away from the ileum brought into force a second kink in the ileum from which ensued the intestinal obstruction.

China Medical Journal, Shanghai

January, 1920, **34**, No. 1

1918 Pandemic of Influenza in Canton. W. W. Cadbury.—p. 1.
Four Cases of Thromboangiitis Obliterans. A. I. Ludlow.—p. 18.
Case of Acute Symmetrical Gangrene. E. M. Ewers.—p. 23.
Transverse Presentation: Case of Spontaneous Evolution. W. Phillips.—p. 24.
Cases of Abdominal Surgery. C. Wilkinson.—p. 26.
Case of Perithelioma of Carotid Glands. J. O. Thomson.—p. 32.
Viability of Epidermophyton. H. Dold.—p. 34.
Acute Lymphatic Leukemia; Report of Case. E. S. Tyau.—p. 37.
Vaccine Service at "Institut Bacteriologique" of Chengtu. H. Jouveau-Dubreuil.—p. 41.

Japan Medical World, Tokyo

Feb. 1, 1920, **10**, No. 5

*Prophylactic Inoculation with Influenza Vaccine. S. Yabe.—p. 105.

Prophylactic Inoculation with Influenza Vaccine.—The results obtained by Yabe in two series of experiments seem not to favor the possible protection of the animal by the administration of the vaccine. If the results of the experimental active immunization of the animals against influenza and of the passive immunization of the animals (with the convalescent serum) are considered antithetically, they both do not appear to produce a complete protection. It is, however, an interesting fact to note that the convalescent serum contains a certain amount of immune bodies, although in a very small quantity. This may be taken as the standard for the possibility of the production of protective properties in the vaccinated.

Journal of State Medicine, London

February, 1920, **28**, No. 2

Early Diagnosis of Pulmonary Tuberculosis. H. G. Sutherland.—p. 33.
Diagnosis and Treatment of Tuberculosis in Relation to Public Health. H. H. Thomson.—p. 46.
Selection of Patients for Sanatorium Treatment. C. Wall.—p. 55.

Lancet, London

Feb. 28, 1920, **1**, No. 9

Ovarian Tumors Complicating Pregnancy, Labor and Puerperium. H. R. Spencer.—p. 475.
*Influenza as an Etiologic Factor in Nephritis. W. W. D. Thompson and H. F. MacCauley.—p. 481.
*Factors Concerned in Asthma and Their Treatment. D. W. C. Jones.—p. 484.

One Hundred and Three Cases of Compound (Gunshot) Fractures of Femur. P. Turner.—p. 488.
Hypnotic Treatment of Narcolepsy. C. S. Meyers.—p. 491.
*Pancreatic Insufficiency. J. O. Symes.—p. 494.
Acute Total Inversion of Parturient Uterus. H. T. Whitling and N. Glover.—p. 495.

Influenza as Etiologic Factor in Nephritis.—The points emphasized by Thompson and McCauley are: Nephritis is a more frequent complication of influenza than is commonly thought. The virus of influenza may affect the kidneys in various ways: (*a*) By producing a temporary albuminuria as seen in many other acute infectious fevers. (*b*) By causing an acute nephritis during the course of the disease, especially if respiratory symptoms are present. (*c*) Nephritis may arise during convalescence, as in scarlatina. The damage of the kidney may not become manifest until the patient is believed to have recovered from the original disease. (*d*) A dormant or latent nephritis may be lighted up. Nephritis may follow even mild cases of influenza. Nephritis occurring during the course of influenza may be masked by the respiratory symptoms and only careful routine examination of the urine may demonstrate its presence, while some of the cases arising after the symptoms of influenza have abated may show such slight symptoms—transient edema, slight oliguria, or capricious albuminuria—that they may easily be missed. The authors report four cases occurring in one family. In all these cases a careful inquiry was made as to the possibility of renal trouble existing previous to the influenzal attack, but the suspicion was absolutely discountenanced in every case.

Factors Concerned in Asthma and Their Treatment.—In the treatment of asthma, Jones maintains one has to consider an irritable center, hysterical influence of that center, infections of the bronchi and parts of the lungs below them, more especially with specific bacteria whose toxins induce the paroxysms, abnormalities of the respiratory tract superior to the bronchi, and irritation of viscera outside the respiratory tract altogether. For the center the use of sedatives, and the usual psychical methods applicable to hysteria must be employed as required. For the nose and throat, surgical methods are generally needed, and appropriate treatment must be given to other visceral disturbances. As to the respiratory tract proper, bronchitis must be treated in some way or other. It is a bacterial infection, and in all recovery from such infections the natural capacity of the body to elaborate antibodies is required for which the only therapeutic measure is treatment by appropriate vaccines; finally, if the hypothesis as to the specific character of certain bacterial toxins in the causation of asthma is correct, that cause also can frequently be combated by the employment of vaccines. It is submitted that this constitutes a scheme for the treatment of the asthmatic state on rational lines.

Pancreatic Insufficiency.—The case reported by Symes is said to lend support to the view that oxaluria may arise from the fermentation of carborydrates in the digestive tract. In this instance the faulty digestion of starch was due to the insufficiency of the pancreatic secretion. The first attack of oxaluria occurred thirty years before the patient's death, and the author believes that probably at this time there was commencing fibrosis of the pancreas. Seventeen years later oxaluria recurred, and with it glycosuria and albuminuria. The glycosuria was never severe, and six years later, when the patient was carefully dieted, it disappeared, to return only on one or two occasions, when he had broken his dietary régime. It was an alimentary glycosuria, and to the end of his life the patient preserved sufficient pancreatic substance to prevent the appearance of the signs and symptoms of diabetes. A stone in the pancreatic duct gave rise to an acute attack during the autumn of 1911. Apparently it ulcerated its way out of the duct into the bowel. The characteristic stools of pancreatic insufficiency were noted some months before there were symptoms of a stone in the duct. The fact that the symptoms and signs became more pronounced after the stone had disappeared, Symes says, was owing, no doubt, to cicatrization and gradual narrowing of the lumen of the duct and the ever-increasing fibrosis of the pancreas. Other points of interest in the case are: (1) The rapid and ultimately fatal rise of blood pressure due to autointoxication from the bowel or to imperfectly antagonized suprarenal secretion. (2) The long continued good nutrition and physical and mental energy shown by the patient, which indicates to how great an extent pancreatic digestion may be assisted by other organs. (3) The relief afforded to the patient by withdrawing fat from the diet and giving acid preparations by the mouth (acidol pepsin, betain chlorid) after meals, the increased acidity stimulating the flow of secretion, and thus increasing both the internal and external secretions of the pancreas.

Medical Journal of Australia, Sydney

Jan. 31, 1920, **1**, No. 5

Commoner Tropical Diseases in (Late) German New Guinea. L. H. Hughes.—p. 97.
*Resection of Impassable Stricture of Urethra. Report of Three Cases. S. H. Harris.—p. 99.
*Value of von Pirquet's Test for Tuberculosis in Children. W. F. Litchfield.—p. 101.
Conditions That Simulate Tubercular Disease of Hip. R. B. Wade. —p. 102.
Volvulus of Colon with Internal Hernia of Cecum. L. L. Snow. —p. 103.
Recovery from Influenzal Meningitis. W. F. Litchfield.—p. 104.

Feb. 7, 1920, **1**, No. 6

Acute Rheumatic Heart Disease. J. M. Gill.—p. 119.
Tuberculin Therapy. J. F. Spring.—p. 121.
Treatment of Irreducible Intussusception in Children. A. Successful Resection by Maunsell's Method. H. Rischbieth.—p. 123.

Resection of Impassable Stricture of Urethra.—The method of treatment described by Harris is founded on the following basic principles: (1) that the perineal portion of the male urethra may be slit up on its floor to any desired extent and thus converted into a "ribbon"; (2) that any damaged portion may then be resected and the ends of the "ribbon" sutured together; (3) that, finally, provided no urinary contamination of the wound be permitted, the urethra will resume its tubular form naturally and in due course.

Value of von Pirquet's Test for Tuberculosis in Children.—Observation has confirmed Litchfield's belief that the von Pirquet test for tuberculosis in children, when used and interpreted with discretion, is of considerable clinical value.

National Medical Journal of China, Shanghai

December, 1919, **5**, No. 4

Recent Cholera Epidemic in China. Wu Lien-teh and J. W. H. Chun. —p. 182.
Economic Aspects of Public Health. A. J. Smith.—p. 199.

Archives des Maladies de l'App. Digestif, París

December, 1919, **10**, No. 6

*Signs of Insufficiency of the Stomach. M. Labbé.—p. 321.
*Symptoms of Dysentery with Uterus Disease. M. Devic and M. L. Bouchut.—p. 346.
*The Stomach Disturbances After Vaccination Against Typhoid. L. Timbal.—p. 351.

Signs of Insufficiency of the Stomach.—Labbé comments on the close physiologic and pathologic connection between the stomach, intestine, pancreas and liver, so that it may be impossible to tell which organ was the primary one involved, but study of the gastric secretion may give the clue to the whole clinical picture. He prefers Töpfer's dimethylamidoazobenzol colorimetric method, as modified by Linossier, as the simplest and most rapid technic. Repeated examination revealing constantly abnormal findings indicates ulcer or persisting dyspepsia. The main point, he reiterates, is to regard the digestive apparatus as a whole and not center our investigations on any one organ alone. Even with hyperchlorhydria, this may not be responsible for all the symptoms, and there may be violent pains in the stomach with hypochlorhydria, showing that spasm of the pylorus is the cause of the pains, even with hyperchlorhydria. In his group of cases of hyperchlorhydria there were four of typical and six of probable gastric ulcer, and others with chronic enteritis, gastro-intestinal atony and dyspepsia of indefinite types. The hypochlorhydria group included cases of enterocolitis, gastric atony, gallstones, insufficiency of the liver, neuropathies, and in one case a gastric ulcer. In the group with

anachlorhydria, more than half of the patients had enteritis, and others insufficiency of the liver, neuropathies, gastralgia and anemia, alcoholic gastritis or ulcerative perigastritis.

Dysentery with Uterus Disease.—Devic and Bouchut report two cases in which symptoms suggested dysentery but resisted all treatment on this basis. They subsided at once in one case after discovery of a small fibroma on the rear wall of the uterus, pushing in the rectum wall at this point, and the uterus was removed. In the second case simple retroversion of the uterus, pressing on the rectum, caused the symptoms supposed to indicate dysentery. In the first case the symptoms were of long standing, and the condition was so grave that the woman did not long survive. In the retroversion case the supposed dysentery was of only two months' duration. The patients were 50 and 43 years old. The entire pelvis should be examined with intestinal disturbance.

Stomach Disturbance After Vaccination Against Typhoid.—Timbal reports a personal case and cites three others from the records in which hematemesis followed the vaccination. They teach the importance of investigating the history, and refraining from vaccination on suspicion of ulcer or cancer. Simple dyspepsia is not a contraindication.

Archives Mens. d'Obstétrique et de Gynécologie, Paris

December, 1919, **8**, No. 12

*Radium Treatment of Cancer of Cervix. Recasens (Madrid).—p. 676.
*Bactericidal Action of Radium. P. Lequeux and E. Chomé.—p. 698.

Radium Treatment of Cancer of Uterine Cervix.—Recasens has been treating malignant disease of the cervix with radium since 1913, and many cases of supposedly inoperable cancer have been cured for three, four and five years to date. He is seeking with so many others to learn why it failed in 30 or 40 per cent. of his over 400 cases, even when conditions, structure, etc., seemed identical. Another astonishing feature of radium treatment is that sometimes when it seemed to have failed completely and the treatment was abandoned as hopeless, the woman returned months later immeasurably improved or even clinically cured. There had evidently been a cumulative action from the radium, and the organism had rallied some mysterious forces to its suport. These mysterious forces must be discovered and harnessed in our service. The cancer and the radium both depress the numbers of leukocytes, and we must seek to induce leukocytosis as an aid in the fight against the malignant disease. His experience confirms further that the toxic cachexia is aggravated by radium treatment which pours more toxins into the circulation. Before the radium is applied, the number of leukocytes must be increased and the best means for this, he says, is by application of diathermy to the spleen. Almost at once the blood usually shows increased numbers of leukocytes. It has long been known, he says, that the spleen has a cancrolytic action, but no means has been devised as yet that will enhance this.

No drugs were found effectual except that colloidal copper by the vein seemed sometimes to augment the susceptibility of the cancer cells to the radium, the cure being realized earlier in these than in other cases. This encourages further search for chemicals which may alone cure cancer, but for the present we can use it as an adjuvant. Numbers of chemicals were tested locally, and also diathermy but none displayed any efficacy. To avoid secondary infections, he treats the cancer with a 10 per cent. solution of copper sulphate before applying the radium and douches the vagina with a 1 per cent. solution. The amount of radium used is 70 mg., at eight day intervals, and the glands in the region are given supplementary roentgen treatment. The papillary form of cancer is most amenable to radium when the tube can be placed so it is completely surrounded by the excrescences of the tumor.

Action of Radium on Bacteria.—Lequeux and Chomé were unable to detect any destructive influence from the radium rays on the typhoid and colon group. The rays arrest the progress of the culture, check production of pigment, and cause agglutination, but no bactericidal action was evident except for the gonococcus, and perhaps also for the streptococcus. The action of radium on bacteria in the blood stream was not demonstrated, but certain facts observed are certainly significant, namely, that one mouse thus treated survived experimental pneumococcemia; rabbits developed milder sepsis after inoculation with staphylococci, and a few other similar experiences.

Bulletin Médical, Paris

Feb. 11, 1920, **34**, No. 8

Blood Pressure in Last Phase of Arteriosclerosis. Amblard.—p. 127.
Treatment of Constipation. J. Génévrier.—p. 130.

Feb. 14, 1920, **34**, No. 9

Medical Service in the Paris Hospitals. L. Brocq.—p. 141.

Feb. 18, 1920, **34**, No. 10

*Therapeutic Anti-Anaphylaxis. J. Danysz.—p. 155.
Treatment of Vomiting in Children. Stévenin.—p. 157.

Therapeutic Antianaphylaxis.—Danysz' method of treating disease by combating the factor of anaphylaxis has already been described in these columns, June 7, 1919, p. 1707. He here describes anew the technic and his experience in 352 cases since 1913. In seeking for an efficient antianaphylactic, he started from the theory that the focus for production of the substances generating the anaphylaxis in the majority, if not in all, of the chronic, noncontagious diseases, is in the bowel: The albuminoid matters or microbian contents of the intestinal canal passing into the blood through the congested intestinal mucosa act as antigens and induce the anaphylactic state of the organism. Consequently, he reasoned, the microbes isolated from the intestinal contents ought to act as antigens when inoculated or ingested. The microbes are isolated from a scrap of stool by sowing on ordinary culture bouillon and then making pure cultures on gelose, and then mixing the cultures in the same proportions as found originally. This is diluted with physiologic serum, sterilized with heat and the dose determined by weight. For ingestion, the dose is 1/10 to 5/10 mg. of the microbian bodies; for injection 1/1,000 or 1/1,200 mg. At first he made an autogenous antigen for each patient, but finding that the species and proportions of bacteria were so uniform, he used a polyvalent heterogenous preparation in some cases. The results were less pronounced when a single species was used. In treating the tuberculous, he added a little tuberculin to the polyvalent entero-antigen, as he calls the preparation. The treatment is based on the same principle as the protein therapy, peptone injections, parenteral milk injections, etc. "It is almost absolutely harmless," he says, "and its action seems to be not directly on the lesions of the disease but on the central nervous system, and especially on the medulla oblongata. This in turn reacts with a stimulating or regulating effect on the glandular functions, just as we find an attack of fatal anaphylaxis can be aborted by a strong dose of alcohol or ether taken before the dose that induces the anaphylactic attack. We know also that a more or less generalized anaphylactic attack can be brought on by intense fear or grief. All this shows that the central nervous system can be deadened or whipped up enough to prevent or induce these cellular metabolisms which are revealed by the symptoms. . . . We know also that the cell reactions which have as their immediate definite results a diarrhea, attack of asthma or urticaria, are always of the same nature, whatever the primary cause of the crisis; whether it is an emotion, an odor, a sensation of cold or an antigen. We thus have reason to assume that in the nonspecific reactions it is always some reaction in the central nervous system which starts the crisis or aborts it or cures it. . . . The evidence to date indicates that the antigens derived from the stools are the most potent yet known for influencing the nerve centers in this way."

The dose of the entero-antigen must be very small to begin with (0.05 or 0.1 c.c. of a dilution containing 0.01 mg. of microbian bodies per 1 c.c.). It is best to avoid a febrile or other reaction (except in psoriasis). The 352 cases treated include many of urticaria and eczema cured for over four years without recurrence; of psoriasis and epilepsy cured for over a year; of asthma and emphysema for more than three years, and of glandular, renal and testicular tuberculosis cured for over two years. But in some of the cases of psoriasis,

dysmenorrhea or gastro-intestinal disease there was recurrence in three or six months, but these yielded promptly to resumption of the entero-antigen. In nervous disturbances the effect is usually apparent at once, but in constipation it may not become apparent until several weeks after a series of eight or ten injections. Cures have been realized in 90 per cent. of all the cases treated, with the exception of psoriasis, in which only 60 per cent. were cured, and in epilepsy. Complete and durable remissions were realized in epilepsy only in children, although the seizures in adults were mitigated and rendered less frequent. In addition to the pathologic conditions already mentioned, his list includes arthritis, rheumatism, slight chronic albuminuria, and the disturbances of the menopause.

Bulletins de la Société Médicale des Hôpitaux, Paris

Jan. 23, 1920, **44**, No. 3

*Intramuscular Injection of Antitoxin. B. Weill-Hallé.—p. 83.
*Fibrous Chronic Rheumatism. P. Lereboullet and J. Mouzon.—p. 86.
Relapsing Lethargic Mesencephalitis. Sicard and Kudelski.—p. 93.
*Myoclonic Acute Encephalitis. Idem.—p. 94.
Discovery at Necropsy of Latent Pneumothorax of the Base. E. Rist and P. Ameuille.—p. 99.
The Terminal Jaundice of the Tuberculous. P. Ameuille.—p. 102.
*Meningeal States with Narcolepsy. H. Claude.—p. 104.
*Friedländer Bacillus Pleuropneumonia. C. Flandin and M. Debray. —p. 108.
Case of Lethargic Encephalitis. A. David.—p. 111.
Mesenteric Thrombophlebitis with Latent Cirrhosis. A. Cade and P. Brette.—p. 114.
Facial Paralysis in Influenza. A. Porot and N. Sengès.—p. 118.

Treatment of Diphtheria.—Weill-Hallé obtained superior results, he says, when he gave the antitoxin in a single large intramuscular dose. As a rule he makes the injection in the buttocks, injecting 250 units in moderate cases per kilogram of weight, and from 500 or 600 units in the graver cases. It is seldom necessary to supplement this with subcutaneous injections.

Fibrous Rheumatism.—Lereboullet and Mouzon illustrate the extreme dislocation of the fingers in the case described, evidently merely from relaxation of the ligaments and capsules of the joints involved.

Myoclonic Acute Encephalitis.—Sicard and Kudelski report four cases of a disease commencing with severe neuralgias, lancinating pains, general depression, and moderate fever; then comes a period of brief rapid rhythmic myoclonus, explosive twitching of the muscles in various segments of the body. The neuralgias persist and the third week there is delirium, while the myoclonic play of the muscles becomes attenuated; the diaphragm may keep up the myoclonus to the last. All but one of these cases passed into fatal coma. Netter stated in the discussion that followed that he had encountered some cases of this myoclonic type associated with lethargic encephalitis, and some cases of the latter which began with severe neuralgias. He said further that in 1918 the appearance of lethargic encephalitis preceded that of influenza. He thinks that probably the factors responsible for influenza are the same ones which entail the other disease, although the two diseases are separate entities.

Meningeal States with Narcolepsy.—Claude reports three cases recently observed which seemed to represent a condition midway between actual meningitis and lethargic encephalitis. They ran a rapid course, with recovery. They differed from epidemic and tuberculous meningitis by the prolonged torpor and somnolency, diplopia and ptosis.

Friedländer Bacillus Pleuropneumonia.—The woman of 40 developed septicemia, the work of the Friedländer bacillus, starting in a fetid rhinitis and localizing in a lobe of one lung and also in the biliary apparatus, inducing jaundice, with final recovery in a month although an old heart disease had rendered the outlook dubious at first.

Journal d'Urologie, Paris

January, 1920, **8**, No. 6

*Treatment of Hypospadias. Nové Josserand.—p. 449.
*Absence of Ejaculatory Duct. P. Ancel,—p. 457.
*Calculi in Both Kidneys of Girl of Five. Moran.—p. 463.
Technic for Bacteriologic Control of Cure of Urethritis. E. Roucayrol and Renaud-Badet.—p. 469.

Hypospadias.—Nové-Josserand has reconstructed the urethra in thirty-five cases of hypospadias and five of epispadias with full success in thirty-seven instances. The tube drawn into the tunnel was made of skin, the epidermis inside, and it was drawn over the segment of the normal urethra, through an incision 6 or 8 cm. long, exposing the urethra from below The first step is to divert the urine by a hypogastric cystostomy. He advises to operate as soon as possible after birth to allow the corpus cavernosum to develop properly. The long incision, including the hypospadias meatus at about the center, is sutured with No. 00 aluminum bronze wire over Galli tubes placed on each side of the incision to bring the lips largely into contact and ward off all danger of a fistula. The wires are passed through the base of the skin flaps, about 1 cm. apart, leaving a minute opening at the proximal end of the incision for drainage. The details of the operation are shown in seven illustrations and the technic commended as an improvement over others in vogue.

Absence of Ejaculatory Duct.—Ancel found that this duct was missing in four specimens recently examined. The anatomic conditions responsible for this differed widely.

Calculi in Both Kidneys in Girl of Five.—Moran had to operate on both kidneys at the same sitting to remove the multiple calculi responsible for the anuria. The child has developed normally but the urine is still turbid four years later and contains formed elements and bacteria.

Paris Médical

Feb, 14, 1920, **10**, No. 7

*Heart Complications with Influenza. Minet and Legraud.—p. 133.
*"Parchment" Dermatitis. Gougerot.—p. 140.
*Solar Plexus Sign with Abdominal Neuropathies. Fraikin.—p. 143.
Organic Hemiplegia in the Gassed; Two Cases. E. Terrien.—p. 145.

Cardiac Influenza.—Minet and Legrand comment on the scarcity of communications dealing with the heart complications of influenza. They have encountered six cases. They discuss in connection with these cases the various sets of symptoms that may be presented according as different parts of the heart, the innervation or the endocrine glands are affected. The prognosis is always grave for the organic forms, and should be reserved for all types, especially with an already fatigued or damaged heart. Absolute repose is indispensable, with revulsion or ice to the region, and stimulants for the heart, as needed, and suprarenal treatment, which may have an actually causal action.

Parchment Dermatitis.—Gougerot describes a streptococcus-staphylococcus dermo-epidermitis in which the skin peels off in large thick scales, like the bark of a tree. It proved in his six cases to be the most tenacious of these microbian dermo-epidermitis types.

The Solar Plexus Sign in Abdominal Neuropathies.—Fraikin says that when the nervous apparatus of the abdomen is out of order, there may be spontaneous pain or tenderness in the solar plexus. It is a sign that the circulation is hampered in or outside of the viscera, or the nerves are suffering from toxic action or from traction from sagging organs. This solar sign may serve to differentiate a purely nervous affection from an organic visceral lesion and it may guide to proper treatment of the neuromotor dyspepsia, general neuropathies, etc. Physical agents are generally the ones indicated.

Presse Médicale, Paris

Feb. 4, 1920, **28**, No. 10

*Anaphylaxis to Acetylsalicylic Acid. F. Widal and P. Vallery-Radot. —p. 93.
*Malaria with Subnormal Temperatures. R. A. Gutmann and R. Porak.—p. 95.

Anaphylaxis to Acetylsalicylic Acid.—Widal and Vallery-Radot report a case of actual anaphylaxis to acetylsalicylic acid, persisting for nine years. Then a systematic effort was made to overcome this anaphylaxis by giving the drug twice at an hour interval, first 0.005 gm. and then 0.25 or 0.5 gm. This was repeated thirteen times in six weeks—the preliminary doses increased from 0.005 to 0.03 gm.—and this sufficed to cure completely all tendency to the anaphylaxis.

It was of the typical alimentary type, and the desensitization was realized with the technic effectual in this type. They remark in conclusion that clinical observation rarely allows us to watch the modifications insidiously going on in the organism. But once in a while we encounter conditions which, as in this case, enable us to trace the series of these transformations with the precision of experimental research. When such an occasion arises, we should seize and record it with scrupulous care as it may by comparison reveal the significance of certain pathologic phenomena hitherto inexplicable. By compiling data, as in the case here reported, we may discover the origin of a whole series of pathologic conditions the cause of which can be traced to some preceding sensitization, which might be cured by desensitization.

Hypothermic Malaria.—Gutmann and Porak give some charts from cases of malaria in which the disease progressed by regularly intermittent phases in which the temperature dropped below normal instead of soaring above it. This hypothermic form entails cachexia or grave complications the same as the ordinary form, unless arrested by treatment in time, but on account of the absence of fever the malaria may be misinterpreted.

Revue Franç. de Gynécologie et d'Obstét., Paris

November, 1919, **14**, No. 11

*Experimental Sensitization of Guinea-Pig Mucosa to the Gonococcus. P. M. Besse and D. Christidès.—p. 415.
Allowing Parturients to Get Up Early. J. Audebert.—p. 421.
*Bilateral Ovariectomy During Pregnancy. A. Grosse.—p. 424.

Guinea-Pigs and the Gonococcus.—A predisposition has to be induced before guinea-pigs can be used for experimental research with the gonococcus. Besse and Christidès think that this could be accomplished by modifying the diet, but the three animals tested did not yield conclusive results.

Bilateral Ovariectomy in the Pregnant.—Grosse adds another case to the fifty-two cases he has found on record in which both ovaries were removed during the first four months of pregnancy. The operation is no more dangerous on the pregnant than on other women. The pregnancy continued unmolested in all except in 13.7 per cent. This testifies that the corpus luteum is not indispensable for the development of the fetus. With unilateral ovariectomy, the abortion followed only in 11.5 per cent. in the first three months, and in 3 per cent. in the fourth month, in a recent compilation, while with bilateral ovariectomy the proportions were 25 per cent. the first two months, 11 the third, and 12 the fourth. In Grosse's own compilation, the figures were 16, 11.75 and 10 per cent. in these months. These figures suggest a possible influence exerted by the corpus luteum on the pregnancy, and warn that it is better not to remove the ovaries early during a pregnancy except for urgent indications. Three pages of bibliography on the subject are critically reviewed.

Revue Médicale de la Suisse Romande, Geneva

January, 1920, **40**, No. 1

*Evolution in Medical Organization. L. Exchaquet.—p. 3.
*Diagnosis of Mastoiditis. P. Terrier.—p. 11.
Tests of Stomach Functioning. E. Cottin and M. C. Saloz.—p. 22. Cont'd.
Lymphosarcoma of the Spleen. G. G. Moppert.—p. 40.

Evolution of Medical Organization.—Exchaquet concludes his study of this subject by urging that medical students should be taught the ethics of the profession, and that the leaders of the profession should take special pains to counsel and guide young physicians in the right path. The medical faculty at Lausanne have announced a lecture on deontology in each semester, and the professors are instructed to draw the attention of the students to such matters, and inculcate the principles of medical ethics.

Diagnosis of Mastoiditis.—Local pain and high fever, in children, and deafness usually warn that the otitis has spread to the mastoid when they persist longer than two or three days after ample drainage of the ear and other proper measures. If the fever is of the pyemic type, an operation should be done at once, even if the mastoid is not tender. If signs of meningism do not subside by twenty-four hours after perforation of the tympanic membrane, the operation should follow at once, as also in case of vertigo and spontaneous nystagmus. Even without other signs, if the suppuration keeps up profuse for a month, the mastoid is probably involved. Terrier adds that cholesteatoma is a great purveyor of intracranial complications. Even in syphilis an operation is required, supplemented by specific treatment. Mastoiditis of mechanical nasal origin is not rare, secretions being forced into the eustachian tube by sneezing or blowing the nose; he has had seven such cases in the last few months, in which the infection spread directly to the mastoid. The severe complications in these cases confirm the necessity for operating immediately in mastoiditis of nasal origin, even if the temperature is normal. In any event, operate when there is suspicion of mastoiditis without waiting for absolute certainty. Diabetes entails a special predisposition to necrotic processes in bones; and mastoiditis is liable to be exceptionally grave in influenza, scarlet fever, diphtheria, measles and typhoid. The destruction in the first two proceeds unusually rapidly, but the recent epidemic of influenza usually spared the ear.

Schweizer Archiv. f. Neurol. und Psychiatrie, Zurich

1919, **5**, No. 2

Disturbance in Internal Speech. F. Lotmar.—p. 206. To be cont'd.
Inhibitions in Chorea. R. Mourgue.—p. 240. Conc'n.
Structure of Nerve Cells. J. Caramanis.—p. 264.
The Arm Region in the Cortex. H. Meier-Müller.—p. 270.
The Plantar Reflex. H. Bersot.—p. 305. Cont'n.
Fibers Between Thalamus and Frontal Brain. T. Fukuda.—p. 325.
Development of Choroid Plexus. C. v. Monakow.—p. 378.

Schweizerische medizinische Wochenschrift, Basel

Jan. 29, 1920, **50**, No. 5

*Abnormal Bending In of Ankle. H. Iselin.—p. 81.
*Measurement of Goiter. H. Hunziker.—p. 86.
Direct Local Treatment of Gonorrheal Spermatocystitis. H. Koller.—p. 87.
Rupture of Mesentery from Contusion. Stocker-Dreyer.—p. 90.
Technic for Raying after Removal of Cancers. H. Hopf and I. Iten.—p. 91.

Treatment of Bending in of the Ankle.—A wedge-shaped insole straightens the foot and cures the deformity in time, but it has to be carefully graded to the exact degree of deformity. To measure this, Iselin has the man stand the foot on two superposed blocks of wood, the inner edges of which can be jacked up to the height required to bring the median axis of the foot and leg into a vertical line, determined by line and plummet. The wedge insole is then made to correspond to the slope of the upper block on the lower, as shown in the illustrations. In this connection Iselin discusses the Swiss army shoe and points out certain remediable defects in this and in civilian shoes.

Measurement of Goiters.—Hunziker measures the width of the thyroid and the height of the side lobes, in centimeters. Multiplying the two figures gives the area of a square in which the thyroid can be imagined to fit as an ellipsoid figure. The area of this square allows an estimate of the size of the thyroid in different persons and at different times in the same person. We thus have a reliable and easily ascertained measure for the thyroid so that goiters in different lands and at different periods can be compared. When the gland cannot be palpated, the record is 0; with 1:1, the record would be 1; with measurements of 6:5 cm. the record would be 30; with measurements of 17:12 cm. the record would be 204, and so on. He urges that this standard scale be adopted and large series of records obtained in different countries so that the actual prevalence of goiter and its size in a given region, its maximum at a certain age and certain year or season, and other questions can be determined on an international scale.

Annali d'Igiene, Rome

October, 1919, **29**, No. 10

Biologic Variations of Shiga Bacillus in Epidemic of Dysentery. B Maymone.—p. 653.
Technic for Preparing Bacterial Vaccines. M. L. Della Vida.—p. 673.

Epidemic of Bacillary Dysentery from Colon Bacilli Agglutinating with Flexner Serum. M. Almagià.—p. 685.
Prevalence and Clinical Pictures of Typhus During the European War. G. Sampietro.—p. 690. Conc'n.

Policlinico, Rome

Jan. 26, 1920, **27**, No. 4

*Lethargic Encephalitis: Symptoms and Course. G. Sabatini.—p. 97.
*Idem: Bacteriology. G. Gabri.—p. 106.
Idem: Four Cases. C. F. Oggero.—p. 109.
Idem: On East Shore of Adriatic. L. Pergher.—p. 111.
Idem: History. L. and P. Fornara.—p. 113.

Lethargic Encephalitis.—Besides the five comprehensive articles listed above, the society transactions report a large number of cases of lethargic encephalitis at Bologna, Parma, Modena and Ancona. Sabatini mentions a case in which a man left Verona, where the disease was epidemic, and went to Calabria where the disease had not appeared at the time. Twenty days after his arrival he developed a typical case, which suggests that the incubation is about three weeks at least. The disease appeared in Italy last winter, but did not assume an epidemic character until this winter. He has had twenty-nine cases in his service at Rome. The lack of symptoms common to other diseases liable to be confused with it, is the most reliable diagnostic sign. One of the earliest symptoms was a rhythmic twitching of muscles, especially of the rectus and transverse abdominal muscles, and in the arms, neck and face, similar to the jerking induced by an electric stimulus. The rhythm of this twitching of the abdominal muscles was about 40 per minute in one case. Roentgenoscopy showed that the diaphragm did not participate in the movement, and that it was independent of the respiration rate. Chilling accentuated it and it kept up during sleep, and morphin did not suspend it. This sign sometimes gave the clue to the clinical picture. In one case the twitching was restricted to the cremasters, the testicles being kept in continual movement. The next day the abdominal muscles shared in the movements, and necropsy confirmed the encephalitis. The jerking sometimes simulated actual chorea. These "chorea" cases proved fatal. Neuralgic pains formed the main symptoms in some cases, pains in the spine, back of the neck and on pressure of the eyeballs. In some of the fatal cases there was no somnolency at any time. In one case the whole syndrome was reduced to moderate fever, persisting mental confusion and profound slumber for six weeks. There is always fever at the outset, but it may subside promptly. The patients sleeping calmly may even increase in weight during the disease. Necropsy shows that any part of the cerebrospinal axis may be affected, and not merely the brain. The lesions are extremely minute and may be merely microscopic hemorrhages, but they explain the polymorphism of the symptoms and their variability. The cases all fall into one of the four types, the lethargic, the motor excitement to actual chorea, or tetany, the paralytic, and the mental confusion type. Gabri cultivated what he thinks is *Micrococcus tetragenus* from his three cases. Fonara relates that hexamethylenamin in two of his cases caused spasm of the bladder with tenesmus and retention of urine, compelling its suspension. In one case parenteral injection of milk was followed by great improvement; the fever dropped by crisis and the patient roused from heavy sleep. Others reported cultivation of a gram-positive diplococcus, and confirmed the punctiform hemorrhages in sections of the brain. Fua described a case in a babe of 4 weeks, with ptosis, strabismus and coma, which, he says, sustain the assumption that lethargic encephalitis is a form of epidemic poliomyelitis.

Riforma Medica, Naples

Dec. 6, 1919, **35**, No. 49

*Treatment of Purulent Pleurisy. S. Dalmazzoni.—p. 1065.
Technic for Micromethod Research. A. Barlocco.—p. 1067.
Clinical Pictures in Influenza. A. Bertolini.—p. 1069.
*Lymphogranulomatosis. C. Cantieri.—p. 1072.
Pituitary Surgery. E. Aievoli.—p. 1080.

Purulent Pleurisy.—Dalmazzoni rejects local anesthesia for these operative cases on account of the danger from reflex action. He anesthetizes with the patient lying flat on his back to insure the fullest possible expansion of the lungs, and then very cautiously turns him on his side with a cushion under the thorax to render convex the field of operation. His incision is 12 or 14 cm. long and follows the tenth rib, the center on a line with the middle of the scapula. He warns that to drain the pleura effectually we must not consider the cadaver but the position usually taken by the patient. He usually lies on the posterior hemithorax on the diseased side. About 3 cm. of the tenth rib are resected and more if necessary, but Dalmazzoni never rinses out the cavity nor introduces gauze into it, his reliance being on the efficient drainage and on keeping open the opening made. It is packed with gauze to insure this, and the opening is frequently cleansed with water and alcohol. He drains with a large tube 5 or 6 cm. long, traversed by another rubber tube, the transverse bar preventing the tube's slipping in too far. The drain could soon be removed and the drainage continued with a flat dressing, and the cure was complete in ten or twenty days. In twenty-two of his thirty cases thus treated the empyema was of influenzal origin. Lesions elsewhere were responsible for the deaths in the 9 per cent. fatal cases.

Lymphogranulomatosis.—Cantieri devotes nearly eight pages to the clinical and pathologic anatomic findings in a case, fatal in three months, in a man of 25.

Rivista di Clinica Pediatrica, Florence

November, 1919, **17**, No. 11

*Hypothyroidism and Atrophy of Muscles. M. Pincherle.—p. 561.
*Agglutination of Proteus X in Various Children's Diseases. G. Fiore.—p. 598.
Special Pathology of Twins. C. Francioni.—p. 605; Reply. A. Borrino.—p. 606.

Hypothyroidism and Atrophy of Muscles.—Pincherle presents evidence to show the importance of the endocrine factor in the pathogenesis of defective nutrition and development of muscles. He describes with minute detail the case of a boy of 11, with unmistakable signs of thyroid deficiency from early childhood, actual congenital myxedema, on which became superposed progressive muscular atrophy. He has found only two analogous cases on record, and in one of them the coincidence was considered casual. In Pincherle's case the causal connection between the hypothyroidism and the muscular atrophy was brilliantly confirmed by the improvement under thyroid treatment. The atrophy was of the pseudohypertrophic type. The literature is reviewed, and the prospects of warding off or curing such muscular dystrophies by suitable organotherapy are extolled.

Agglutination of Proteus in Various Children's Diseases.—Fiore applied the agglutination test specific for typhus in from two to six cases of seven different diseases peculiar to childhood, and in eighteen other children with nephritis, acute rheumatism or gastro-intestinal disease. The response was constantly negative in all the forty-eight children tested with dilutions of from 1:200 to 1:10.

Rivista Critica di Clinica Medica, Florence

Oct. 25, 1919, **20**, No. 43

*Tardy Osteoperiostitis with Inherited Syphilis. A. Varisco.—p. 505.

Tardy Osteoperiostitis with Inherited Syphilis.—The young woman had been apparently healthy, except for a few convulsions in infancy, until measles at 18. At 20 she complained of pains in the legs and large joints, and the latter began to enlarge in a few weeks, with a low continuous fever and drowsiness. The spinal fluid seemed to be normal. Not until the end of six months did the symptoms subside so she could leave the bed. After a few months of slight ups and downs, painful tumors developed in the crest of the tibia and other long bones and the clavicles, and numerous glands enlarged. After nearly a year from the first symptoms, a tentative course of mercurial treatment not only cleared up the diagnosis—the previously negative Wassermann reaction veering to positive—but resulted in practically a cure. There was nothing in the family history to suggest syphilis except the shape of the patient's teeth and a certain pigmentation of the face.

Nov. 8, 1919, **20**, No. 45

*True Infantilism. E. Bufalini.—p. 529. Begun in No. 44, p. 517.
Present Status of Cervical Ribs. Fornaseri.—p. 534.

True Infantilism.—Bufalini gives a detailed account of a case of true infantilism, the man of 20 presenting the complete physical and mental characteristics of a normal boy of 12. There was nothing to suggest endocrine disturbance or inherited taint. He theorizes to explain this type, ascribing it to an insufficiency of the primordial vital substance.

Nov. 15, 1919, **20**, No. 46

*Artificial Pneumothorax in Treatment of Pleurisy with Effusion. E. Riccioli.—p. 541. To be cont'd.
Epidemic Lethargic Encephalitis. Alesandri.—p. 545.

Artificial Pneumothorax in Pleurisy.—Riccioli comments on the prompt improvement in the six cases reported in which air was allowed to enter the thorax after evacuation of the effusion. The patients' ages ranged from 9 to 72.

Brazil-Medico, Rio de Janeiro

Dec. 13, 1919, **33**, No. 50

*Physiologic Section of Pneumogastrics in the Dog. M. Ozorio de Almeida.—p. 393.
*Postinfluenzal Intestinal Hemorrhage. A. Prado.—p. 394.

Experimental Blocking of the Pneumogastrics.—Ozorio has been studying the effects on the respiration from physiologic section of the pneumogastric nerves in the dog, by laving them with procain.

Postinfluenzal Intestinal Hemorrhage.—Prado has encountered cases of tardy hemorrhage from the bowel in persons who had been having the gastro-intestinal form of influenza. They resembled those of typhoid, but he does not know of any death from this cause.

Semana Médica, Buenos Aires

Nov. 20, 1919, **26**, No. 47

*Motor Plastic Amputations: Cinematization. G. Bosch Arana.—p. 621.
*Brain Tumors in Children. R. A. Rivarola.—p. 636.
*Influenza and Typhus. G. Sanguineti.—p. 642.
*Endocrine Rheumatism. E. A. Lombardi.—p. 646
Fluorene as Reagent for Aldehyds. L. Guglialmelli and A. Delmon.—p. 653.

Motor Plastic Amputations.—Among Bosch's thirty-three illustrations are some which show the peculiar looking stump of the upper third of the thigh as remodeled for cinematization; then the details of the artificial leg provided to utilize the muscular force in the loops of the stump, and, finally, the movements of the foot as the patient flexes and extends the knee by control from the muscle loops. The foot can be swung through an arc of 30 degrees. The man thus walks by the natural bending of the knee, and in two months has already learned to manage his artificial leg quite well. Bosch urges others to continue work in this line, dwelling on the benefit to society and to the state, as well as to the individual, from this utilization of muscular energy hitherto lost by the old systems of mutilating surgery. The prosthetic appliances for leg and arm which he uses were constructed under his directions.

Brain Tumors in Children.—Rivarola's article is based on nineteen personal cases and 120 from the literature. He was impressed with the length of the interval in others' cases between the first examination and the diagnosis of the location of the tumor, and the further delay after this before the operation. Except syphilomas, all brain tumors, he declares, should be removed no matter what their nature may be. Lumbar puncture is of no use, and exposes to serious mishaps. Radiography is also no help in the diagnosis, except with tumors of the sella turcica. The tuberculin and Wassermann tests are also useless for determining the nature of the tumor. He suggests that there may be a field here for radium treatment. Tuberculomas form about 50 per cent. of the cases of brain tumor in children, while syphilomas form barely 0.3 per cent. The cerebellum is the preferential site of the tumor in children. Brain tumors in children are easily enucleated as a rule. The physiology of the child's brain differs from the adult; certain centers are not yet anatomically formed, and hence the manifestations of their functioning are lacking from the clinical picture of brain tumors as we see it in adults; owing to this, diagnosticians are often misled. The first objective symptoms noticed by the family are very important for the diagnosis, besides the cardinal symptoms, headache, vomiting, constipation and edematous optic disk or optic neuritis. These symptoms combined point to a brain tumor, and the fundus findings are always pathologic. Mercurial treatment may be pushed but no more than two or three weeks should be wasted on it, while the child is being watched for other symptoms. The question then is whether the tumor is in the cerebellum or in one of the seven main areas of the brain. Greater precision is not necessary as the whole of one of these areas is exposed, and it is easy to detect symptoms traceable to such a large zone. The cerebellar, frontal, rolandic, parietal and pedunculocerebellar zones are responsible for fully 80 per cent. of all brain tumors in children, and these areas yield the most instructive symptoms. Perhaps this is because these zones are the better irrigated and most active functionally. Hemianopsia along with disturbances in gait, noticed by the parents before occipital symptoms developed, point to the cerebellum, disregarding the occipital manifestations as these are probably due to compression from a distance. If before the general convulsions developed, there were convulsive spasms of the muscles of the neck and shoulders, the frontal lobe should be suspected. If the child complained of its ear along with the intense headache, examine the temporal lobe. More than in surgery elsewhere, an early diagnosis and immediate operation should be the rule. He found only one case of syphiloma on record. This was in a girl of 9, and necropsy after a year of absolutely ineffectual specific treatment revealed the gumma which could easily have been removed during the eighteen months after the first symptoms.

Influenza and Typhus.—Sanguinetti presents arguments to show that dengue, influenza and typhus are linked together like measles and scarlet fever, or typhoid and colon bacillosis.

Hypothyroidism and Rheumatism.—Lombardi describes an extreme case of endocrine rheumatism in a woman of 53, with prompt recovery under thyroid treatment.

Siglo Médico, Madrid

Jan. 3, 1920, **67**, No. 3447

The Mechanism of Normal Digestion in Infants. E. Suñer.—p. 1.

Jan. 10, 1920, **67**, No. 3448

*Viscosity of the Blood. H. Rodriguez Pinilla.—p. 17.
*The Urine and the Wassermann Reaction. J. Arijón Gende.—p. 18.

Viscosity of the Blood.—Rodriguez discusses the viscosity of the blood and its bearing on a number of biologic problems.

The Urine and Hemolytic Tests.—Arijón tabulates the findings in a number of comparative tests made with the blood serum and the urine for deviation of complement. Nothing was found to indicate the presence of an antigen in urine even in cases with pronounced Wassermann reaction in the blood serum. It is theoretically possible, however, he admits, for certain urines to behave like an antigen in the Wassermann test; some of the colloids in the urine, when sufficiently concentrated, might act in this way.

Berliner klinische Wochenschrift, Berlin

Nov. 10, 1919, **56**, No. 45

Relations of Autonomic Nervous System to the Striated Muscles. E. Frank.—p. 1057. To be cont'd.
*A Third Form of Paratyphoid. F. H. Lewy and F. Schiff.—p. 1059.
Fistulas of the Urinary Organs. M. Zondek.—p. 1060
*Autogenous Vaccine Treatment in Diplococcus Infection of the Urinary Organs. E. Pfister and W. Böhme.—p. 1063.
Apparatus for Exercising Cinematized Muscle Loops after Amputations. M. Blumenthal.—p. 1064.
Postbellum Campaign Against Tuberculosis in France. J. W. Samson.—p. 1065.

A Third Form of Paratyphoid.—Lewy and Schiff describe a third form of paratyphoid that they encountered in Asiatic Turkey. Neukirch, and, at about the same time, Weil, furnished the first information in regard to the causative agent (the Ersindjan bacillus) in 1915. Schiff first isolated this

bacillus in 1916 in Aleppo, Syria. Up to September, 1918, Lewy and Schiff had seen approximately eighty cases definitely established by bacteriologic examination. Very light infections were common among the native population. However, cases were observed, especially among the German soldiers in Palestine, that developed a protracted fever of a very irregular type and often ended fatally. The Ersindjan bacillus produces typically a septic infection that is characterized by remittent fever, bacteremia, a septic blood picture, embolic abscesses; hemorrhagic inflammation of the kidney, the intestine and the liver; minute abscesses and necrosis of the liver and kidneys, hemorrhages of the serous membranes, and a septic spleen. Accumulations of bacteria in certain parts may produce septic meningitis, septic pneumonia or pyelitis. While a septic course is not typical for paratyphoid A and B, it is the rule in the paratyphoid of which *B. Ersindjan* is the causative agent. Although this infection is very commonly associated with dysentery, influenza or malaria, it nevertheless seems to be a distinct morbid entity. The mode of transmission is probably by direct contact with infected persons, though it may possibly occur through eating certain foods. So far there have been no authentic cases of the infection in Germany. The Ersindjan bacillus received its name from the place where it was first isolated. Its resemblance to *Bacillus suipestifer* is marked.

Autogenous Vaccine Treatment in Diplococcus Infection of the Urinary Organs.—Pfister and Böhme give their experience with a micro-organism, a diplococcus, found in the urine of a patient who complained of headache and pain in the sacral region. The urine had a whitish tinge and albumin was present. The patient improved but the urine did not clear up. Following a "cold," the headache and back pains came on anew. In the urine sediment many red and white blood corpuscles were found; also an unusual number of gram-positive diplococci. A prostatitis was present, with many pus cells, but no bacteria. Functional tests of the kidneys revealed a diminished power of secretion and concentration. The Wassermann test was negative; also roentgenologic examination of the kidneys. Blood pressure was 111-121; albumin content, 0.1-1.0 per cent.; quantity of urine normal. The residual nitrogen in the blood was markedly increased. The diagnosis was chronic pyelonephritis (without casts), with aseptic prostatitis. An autogenous vaccine was prepared. The diplococcus was cultivated and a pure culture secured. In the blood of the patient agglutinins in the titer ratio of 1:500 were found. Immediately after the vaccine treatment was begun, the urine cleared up, the diplococci disappeared from the urine. The writers regard the case as interesting as showing that autogenous vaccine treatment may be successful in infections of the urinary organs other than those produced by *B. coli*. The identity of the diplococcus could not be fully established. It seemed to be a new invader.

Münchener medizinische Wochenschrift, Munich

Nov. 21, 1919, **66**, No. 47

*Graduated Exercises in the After-Treatment of Disease. H. Quincke.—p. 1339.
Statistical Showings in Consanguineous Marriages. F. Lenz.—p. 1340.
*Direct Method of Testing Faradic Excitability. P. Erlacher.—p. 1342.
*Rhythmic Pressure Massage (Cederschiöld). G. B. Schmidt.—p. 1343.
Contact Infection in Relation to Paratyphoid B. W. Schmid.—p. 1345.
Observations on the Sachs-Georgi Reaction. Felke and C. Wetzell.—p. 1347.
Generalized Emphysema in Influenza. A. Schwenkenbecher.—p. 1348.
Tardy Rachitis in Relation to Schlatter's Disease. Schlee.—p. 1349.
Ankylostomiasis in War Prisoners. H. Bruns.—p. 1350.
Plaut's Angina Treated by Rosenbach Tuberculin. C. Stuhl.—p. 1351.
Subcutaneous Rupture of the Biceps Brachii by Direct Force. M. Schülein.—p. 1352.
Water from the City Mains Used in Neo-Arsphenamin Injections. J. Katzenstein.—p. 1352.
Conditions Governing the Course of Tuberculosis. H. Hayek.—p. 1352. Conc'n.

Value of Physical Exercises in the After-Treatment of Internal Diseases.—Quincke emphasizes the great value of graduated physical exercises in the after-treatment not only of diseases affecting the joints and muscles but also in pleuritis, enteroptosis, chronic constipation, and in practically all internal diseases. Only a few patients need special exercises adapted to their peculiar condition, but all convalescents will make more rapid and surer progress toward health if they are required regularly to go through such setting-up drills as are in use in the army and in the gymnasiums. Of course, the amount and the character of the exercise will depend on the condition of the convalescent. The first exercises after recovery and after rising from a sick bed should be taken alone, but after convalescents have partially recovered their strength there is added value in exercises carried out in groups or classes. Such exercises not only restore a normal blood circulation, but they are needed to give control of bodily movements, for long confinement to the bed will often have impaired the motor apparatus.

A More Direct Method for Testing the Faradic Excitability.—Erlacher gives a preliminary report of his investigations on the possibility of testing in a more direct manner the faradic excitability of paralyzed muscles. Instead of testing through the skin, as heretofore, he inserts about 2 cm. apart, two fine needles, previously immersed in alcohol, into the skin which has been disinfected with iodin or alcohol, and pushes them from 8 to 15 mm. deep into the muscle to be tested. The two needles are then connected with the respective poles of the faradic current by an uninsulated, soft copper wire, which is wound spirally around each needle and soldered to it. A simple form of interrupter is inserted. Weak currents such as are scarcely felt when applied to the tongue produce a distinct twitching of the muscle fibers lying between the two needles. Somewhat stronger currents cause a puckering of the area contiguous to the excited muscle. Still stronger currents—but not nearly so strong as are required in the percutaneous testing—produce a distinct contraction. As a rule, it is not necessary, when this method is used, to increase the current until a motor effect is produced, as the twitching of the muscle fibers will usually be sufficient. Muscles that by the percutaneous method were declared to be completely paralyzed were found to react when stimuli were applied by this direct method. It is evident that death of muscular tissue—from a faradic standpoint—does not take place so quickly nor so early as has been heretofore assumed. Erlacher claims, therefore, greater diagnostic value for his more delicate method of muscle testing.

Rhythmic Pressure and Release in the Cederschiöld Method of Massage.—Schmidt announces, after over ten years' experience, that the Cederschiöld method of manual massage is the most conservative and at the same time the most effective. He considers it the most conservative method because the soft parts that may have been injured are not exposed to further injury as is the case when they are kneaded, stroked and rubbed. It is effective because by the systematic application and removal of pressure as brought to bear on the periphery of a limb, a suction and pumping action is brought into play in the most excellent manner; congestion in the lymph glands and in the blood vessels is counteracted, and extravasated matter is more readily absorbed. By this method, in large cicatricial areas vascularization is stimulated and function is restored, whereas by frictional massage delicate tissues may be torn, and new, though slight, lacerations be produced. In applying rhythmic pressure to an upper extremity, the arm is encircled by the hand of the operator and the pressure is gradually increased until the arm is tightly grasped; the pressure is then slowly removed, and the operator advances a hand's breadth centrad, and proceeds as before until the whole arm has been thus massaged. In massage of the lower extremities and the trunk, both hands are used. The extensors and the flexors may be treated separately, and it is often convenient to use the bones as a base. Cederschiöld, following the example of Rosthorn, has found that rhythmic pressure massage may exert a favorable influence even in mental diseases and in depressive states.

Zentralblatt für Chirurgie, Leipzig

Jan. 31, 1920, **47**, No. 5

*Blocking the Splanchnic Nerves. M. Kappis.—p. 98.
*Prevention of Caustic Strictures. F. Bonhoff.—p. 99.
*Wire Suture. A. Knoke.—p. 99.
*Access to Deep Phlegmon of the Axilla. W. Levy.—p. 101.

Blocking the Splanchnic Nerves.—Kappis remarks that Braun's method of injecting the anesthetic from the front confirms the ideal anesthesia of the viscera when the splanchnic nerves are blocked. Braun introduces the needle, through the laparotomy incision, along the lower margin of the liver, injecting 100 c.c. of a 0.5 per cent. procain-epinephrin solution, distributed on both sides of the aorta near the first lumbar vertebra. Kappis makes the injection from the rear, just below the twelfth rib, distributing the anesthetic by moving the tip of the needle 3 cm. upward and then 3 cm. downward, about 0.25 to 0.5 cm. from the spine, thus spreading the 50 c.c. on each side over a larger area than by his previous technic (mentioned in these columns, Feb. 21, 1920, p. 568).

Prevention of Strictures from Caustic Action.—Bonhoff relates that no stricture has developed during the two years since in a case of caustic injury of the esophagus in which he introduced at once a retention sound. It was worn until healing was complete, and it warded off cicatricial retraction of the walls. The caustic was ammonium chlorid (salmiak) in this case. Roux of Lausanne has recently reported similar success with this preventive catheterization.

Wire Suture.—Knoke has been using wire recently as other suture material is so scarce and poor. A method that has proved very satisfactory is to draw the wire through the two lips and cut it off, each end held with forceps. As many wires as are needed are introduced, the row of forceps on each side keeping them from slipping out. Then the ends of each wire are twisted together over a long roll of gauze by turning the corresponding forceps around each other.

Deep Phlegmon in the Axilla.—Levy expatiates on the difficulty of diagnosing these deep phlegmons which often prove fatal, as in two cases reported. There may be no local symptoms except a slight tenderness on the front of the shoulder, or a sensation of heaviness in the arm, or there may be nothing to call attention to the process except a history of some insignificant wound on a finger a week or two before, followed by high fever and general depression. If one operates on these findings alone, the results may be disappointing, but this should not deter from intervention when the general condition is grave. The chief danger is the possibility of the spread of the process. Some surgeons incise along the lower margin of the pectoralis major, but Levy found that the process, in one case described, could be fully exposed only by incising from the clavicle to and beyond the insertion of the pectoralis major on the upper arm, and cutting this muscle close to its insertion, and also cutting the pectoralis minor. These muscles heal readily without appreciable functional disturbance, he has found. This opens up the phlegmon, and its spread can be traced in three directions.

Zentralblatt für Gynäkologie, Leipzig

Jan. 31, 1920, **44**, No. 5

The Maternities and Illegitimate Children. E. Martin.—p. 121.
*Ileus in the Pregnant. A. Hofmann.—p. 124.
*Maceration of Living Child. H. Lorenzen.—p. 127.

Ileus in the Pregnant.—In the first of Hofmann's two cases, the woman developed ileus twice at the fifth month of a pregnancy, and prompt laparotomy corrected the obstruction from fibrous bands, each time, and also in the other case.

Maceration of Living Child.—The primipara of 26 in the case reported by Lorenzen seemed to be normal, and the child was spontaneously delivered. It weighed 3,210 gm. and the aspect was that of complete maceration, but by the end of a week the loose scraps of epidermis had been cast off, and the child thrived thereafter.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Dec. 20, 1919, **2**, No. 25

*The Language of Medical Writings. G. van Rijnberk.—p. 2009.
*Sarcoma of Thyroid and Pancreas. E. C. Van Rijssel.—p. 2014.
Will and Movement. A. A. Grünbaum.—p. 2025.
Medical Inspectors of Schools and the Public Health. H. Aldershoff.—p. 2035.
*Case of Quincke's Edema. H. Bolten.—p. 2037.
Embolism of Pulmonary Arteries. J. F. O. Huese.—p. 2040.

The Language of Medical Writings.—See editorial comment, page 893, on van Rijnberk's communication.

Sarcoma of Thyroid and Pancreas.—Van Rijssel found a tumor in the thyroid in 4 out of 650 cadavers; in another cadaver there was metastasis in the thyroid; in another the thyroid contained an adenoma and weighed nearly 73 gm. A seventh cadaver presented a rapidly growing primary giant-cell sarcoma in the thyroid with metastasis in the lungs. He has encountered another case of sarcoma in the thyroid in a woman of 61, inoperable within three weeks of the first signs of trouble, and death in less than six weeks, from multiple metastases. Both these cases confirmed the saying that a malignant tumor in the thyroid does not move with the trachea during swallowing, as simple goiter does. The cancer grows to adjacent organs. Among the total 6,400 cadavers examined there were 733 with carcinomas and 105 with sarcomas. The pancreas was the seat of the malignant disease in 25 cases, including only one of sarcoma. This was in a man of 25 and the sarcoma was of the giant cell type.

Quincke's Edema.—Bolten reports a case in which attacks of migraine were accompanied with a set of symptoms which can be explained only as intra-abdominal angioneurotic edema appearing and subsiding with the migraine in a woman of 40.

Hygiea, Stockholm

Dec. 31, 1919, **81**, No. 24

*Spinal Cord Tumors. L. Ehrenberg.—p. 970.

Spinal Puncture Findings with Spinal Cord Tumors.—In Ehrenberg's eight cases the tumor was in the dorsal region in five and the cauda equina in the three others. He found in two cases moderate lymphocytosis accompanying the Nonne reaction; in another case both were absent. The findings indicated that the slight lymphocytosis, xanthochromia and large globulin content are a sign of grave obstruction of the fluid by the tumor. The pure Nonne reaction was observed only when the stasis was not very pronounced. It was found in the fluid the same above as below the tumor.

Ugeskrift for Læger, Copenhagen

Feb. 5, 1920, **82**, No. 6

*Prognosis with Influenzal Pneumonia. V. Bie.—p. 175.
*Silver Salvarsan. H. Boas and A. Kissmeyer.—p. 191; Idem. A. Korshjerg.—p. 196.

The Prognosis with Influenzal Pneumonia.—Bie states that 94 per cent. recovered of his 269 patients with unilateral pneumonia with a respiration rate of 34 or below, while only 54 per cent. recovered of those with a rate of 40 or above. With bilateral "flumonia," 74 per cent. recovered of the 287 with respiration of 39 or below and only 33 per cent. of the forty with a rate 40 or above. The total mortality in this group was 35 per cent. The respiration rate is thus an important element in the prognosis. The mortality was 35 per cent. in the pneumonia cases with albuminuria, but only 12 per cent. in those without albuminuria. The highest temperature noted was in a man who recovered; the lowest in one who died. These and other data mentioned show that the temperature has little value for the prognosis; the pulse is more instructive. All who died had a comparatively high pulse rate, 109 or 110. All the above records refer to the day the patient was brought to the hospital, or the next day. Bie's article is based on 1,653 patients, and he calls attention to the fact that not less than 15 per cent. of those received in the hospital during the later months of the pandemic had had the disease during the early months, and this was the third attack within a year in some.

Silver Salvarsan.—Boas and Kissmeyer relate that Kolle presented them with 400 tubes of silver salvarsan, and they applied it in treatment of sixty-two syphilitics, with results that show it is at least the equal of old salvarsan, while it is much more soluble. Korsbjerg reviews what others have published on the subject. His own experience with it in thirty-two cases left a very favorable impression. He says that the drug contains 14 per cent. silver and 22.5 per cent. arsenic, and has a catalytic action.

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OPERATION AND REOPERATION FOR GALLSTONE DISEASE *

JOHN B. DEAVER, M.D.

WITH A REPORT ON PATHOLOGIC RESEARCH BY

STANLEY P. REIMANN, M.D.

Director of Pathologic Laboratory, Lankenau Hospital

PHILADELPHIA

The question of recurrence of symptoms after surgical treatment of affections of the gallbladder and the biliary passages is one that has been much discussed during the past decade, and one which I believe will bear further consideration.

In 1916, reporting on more than a thousand operations on the gallbladder and the biliary passages in my service at the Lankenau (formerly the German) Hospital of Philadelphia, I found that 4.07 per cent. were reoperative cases (some of the patients having had three operations). Among 800 cases coming under my care in the same hospital since January, 1916, it appears that 8.5 per cent. (seventy cases) were secondary (there were also a few tertiary) operations. Confronted with this increase in recurrence, we naturally turn to seek the cause.

Of the recent series, fifty-one patients were originally operated on elsewhere by other surgeons, the remaining nineteen having been operated on by me at the Lankenau Hospital.

In thirty-six of the fifty-one, recurrence took place after a cholecystostomy and fifteen after a cholecystectomy. The longest interval between operations was fifteen years. This patient (reported in a previous communication), in fact, had been operated on twice before coming under my care. The first operation—cholecystostomy—for the relief of gallstones had been done seventeen years previously, followed two years later by a choledochoduodenostomy and repair of an incisional hernia. At the third operation numerous adhesions were found about the anastomosis, the dilated common duct contained numerous stones as well as foul smelling grumous material, and the ampulla of Vater was constricted.

The information regarding the condition found at the primary operation is not complete for all the cases of this group. Among those for which data are at hand, the shortest interval between operations was seven months. The symptoms in this case recurred three months after the cholecystostomy. At the second operation, in addition to a mass of adhesions, stones had again formed in the gallbladder, and stones were also found in the common duct. The gallbladder was then removed, and the common duct emptied and drained. In another case—empyema—in which the colon bacillus was cultivated from the pus, the symptoms returned about seven months after the draining of the gallbladder. At the secondary operation—cholecystectomy—the pancreas was found chronically and markedly diseased.

The average interval between operations in this group was about five years and nine months, the average period of freedom from symptoms being about two years and three months.

In the fifteen "ectomized" cases, in addition to adhesions which were present in all but one, reoperation was necessitated by the presence of fistula in four instances, common duct obstruction, stone or stricture, nine, and pyloric obstruction three. Three of the patients in the group failed to derive any benefit from the primary operation; of the others, the longest interval of freedom from symptoms was four years, the average being about four months, and the average interval between operations about eight and a half months.

In considering my personal cases (those in which the primary and secondary operations were done by me), I find that in eight the symptoms recurred after primary cholecystostomy, one after choledochostomy, and ten after cholecystectomy, or 1.3 per cent. after removal and 10 per cent. after drainage operation.

Excluding the fifty-one cases of the first group (in which the patients were primarily operated on elsewhere), a primary cholecystectomy was performed in 611 and cholecystostomy in seventy-eight cases; other primary operations consisted of cholecystoduodenostomy, 27; choledochostomy, 11; choledochoduodenostomy, 1; exploratory, 16; pancreatostomy, 4, and duodenotomy, 1. The last represents a case of carcinoma of an aberrant pancreas found in the duodenum and excised.

The longest interval between operations in the drained cases was fourteen years, the shortest one month, with an average of six years and four months, while freedom from symptoms averaged three years, the longest period being thirteen years and the shortest one month.

Of the fourteen patients whose gallbladders were removed, five remained well for a period varying from two months to two years, two were not benefited by operation, and seven required secondary operation during convalescence.

Taking this recurrent series collectively, we find the pathologic condition most frequently noted after operation to be adhesions (noted thirty-nine times), while the most potent cause for return of symptoms after operation proved to be stone in the gallbladder and ducts (twenty-six), which coincides with our pre-

* Read before the Brooklyn Surgical Society, Feb. 5, 1920.

vious experience. Next in frequency, in the order named, were: persistence of infection, cholecystitis, seventeen; fistula, eleven—biliary, nine, duodenal, two; common duct obstruction, ten; chronic pancreatitis, eight; pancreatic lymphangitis, six; cholangeitis, six; pyloric obstruction, five; dilatation of ducts, five—common duct, four, cystic duct, one; carcinoma, four—pancreas, two, gallbladder, two; stricture of the ampulla of Vater, two. Some of the cases presented one or more of the conditions mentioned.

ADHESIONS

It thus appears that adhesions were noted in 52 per cent. of the recurrent cases. The damaging and symptom-producing adhesions are principally those that form after cholecystectomy, and bind the duodenum, in some instances with the pylorus, the great omentum, and not infrequently, the hepatic flexure of the colon to the under surface of the liver. The symptoms caused by this deformity do not as a rule make their appearance for some time after the operation, or until they are in the process of organization and have reached the stage of contraction. There are exceptions to the rule, however, as for example persistent vomiting coming on from one to two weeks after operation, making it impossible to nourish the patient by mouth and where lavage demonstrates considerable gastric retention. I have seen this complication several times and for its relief have been obliged to do a posterior gastro-enterostomy, after which convalescence was rapid and uninterrupted.

It is generally admitted that gastro-enterostomy has its greatest usefulness in pyloric obstruction, and ulcer of the duodenum and stomach, but the operation also has a distinct place in a certain class of complicated gallstone cases. The very fact that gallstone disease, without operation, or after operation, can cause a condition requiring gastro-enterostomy should of itself be enough to do away forever with the expression "simple gallstones."

Ulcerative communication between the biliary passages, the stomach and the duodenum, not infrequently seen by those of us operating on patients previously operated on for gallstone disease, is a well-known phenomenon. That this can and does result in obstruction to the onflow of the stomach contents which, I am sorry to say, is not always recognized by the diagnostician, I know to be true.

Deferred action in these cases is inadvisable, and medication ineffectual. Rectal alimentation is a makeshift. Filling the rectum with sodium bicarbonate and glucose is not a very pleasant procedure, nor does it do any good except for the sorry consolation it may give of having done something for the patient, who usually dies.

In late cases of duodenal and pyloric obstruction I find it safer to do a posterior gastro-enterostomy than merely to separate adhesions, safer in that it is more permanent and less likely to require further operation. We all know that adhesions tend to recur and that nothing will prevent their formation if the raw surfaces cannot be covered with peritoneum. I have mentioned duodenal obstruction before pyloric, as in my experience the duodenum is more often obstructed than is the pylorus. In an old case of extensive adhesions in which the viscera normally in relation with the gallbladder are matted into an almost unrecognizable mass, the operation of separating and covering the denuded surfaces is likely to be a very difficult procedure attended with great risk of tearing the duodenum and in some instances the colon. I have had this happen, and have had to resect the torn duodenum with the pylorus and make a posterior gastro-enterostomy.

The comparative ease with which the duodenum can be repaired so as not to expose the patient to the risk of a duodenal fistula, a most dangerous and difficult proposition with which to deal, reads well and sounds well, but the seriousness of it must ever be borne in mind. Occasionally after separating the adhesions and disentangling the viscera I interpose a portion of the great omentum between the liver, the duodenum and the pylorus, and have had no cause to regret the maneuver.

When the removal of the gallbladder is carefully and anatomically done, few adhesions should follow the operation. The gallbladder being fully exposed, the neighboring viscera well protected and kept out of the way by properly placed moist gauze pads, not gauze towels (held in place by retractors), with the gallbladder held taut, as it were, the first step in the operation is the opening of the right free border of the gastrohepatic omentum and the identification of the common, cystic and hepatic ducts and the cystic artery, which, with the hepatic artery, may be found anomalous. Anomalies of the ducts or arteries make little difference to the operator who knows his anatomy and does the operation in this manner. Lack of care in grasping the cystic duct with hemostatic forceps or the cystic artery, if perchance it has been severed, is a frequent cause of injury to the common or hepatic duct with stricture or obstruction of the duct as a result. I refer to this later. For the occasional operator, therefore, I would suggest a drainage operation and not removal of the gallbladder. It is better for the patient to run the risk of recurrence of gallstones than be left with either a damaged common or hepatic duct, a condition I have had to deal with a number of times, and which warrants me in being very emphatic on this subject. In doing many hundreds of operations for gallstone disease, one becomes more or less familiar with the danger signals. I have never taken any stock in the theory of biliary duct angulation due to adhesions or the traction of a movable kidney as the cause of symptoms of gallstone disease, particularly jaundice, because I have not encountered any instances of the kind in my numerous operations.

That adhesions form after a drainage operation is true; but they are neither so dangerous nor so productive of serious trouble as are the adhesions that follow removal if the operation is not very gently and carefully done.

NEW STONE FORMATION

The second most common cause of recurrence of symptoms is the presence of stone or stones. With few exceptions the stones found at the second operation were probably present at the primary operation but were not detected. The time elapsing between the two operations, or perhaps a third one, has a bearing on the subject. Even though, at the first intervention, all of the stones that were palpable to the finger or that could be removed with the scoop were taken out, subsequent stone formation occasionally takes place. It may happen that small granules of stone adhering to the mucosa of the gallbladder are present in the neck of the latter, or in the common or the hepatic duct, or

its ramifications, and subsequently develop into one or more good-sized stones. Often after opening a gallbladder that has been removed I have seen such tiny stones adhering to or embedded in the mucosa. How long a time is required for these stones to develop cannot be definitely stated. Some of the patients returned in a few months, others remained well for thirteen years.

When a number of years have elapsed between the original operation and the reoperation there is every reason to believe new stone formation has taken place. And in nearly all cases, as before the first operation, a history of infection will in all likelihood be obtained for the interval between operations. The sequence of events in gallstone formation I believe to be: infection, inflammation, obstruction to drainage, retention—bile stasis—proliferation of epithelium, formation of cholesterin, etc. In recurrence after drainage operations we know that it is not uncommon to find stones. For the recurrences after removal of the gallbladder, with the subsequent presence of stone or stones in the common duct or the hepatic duct, the most plausible explanation is that a small stone located high up has descended and has lodged either in the hepatic or in the common duct and there increased in size until it is too large to be passed and has thus caused obstruction. I have observed this in a number of instances; in fact, I have seen it occur three times in the same patient before obtaining complete freedom from recurrence. In some of these cases I have been able to predict the probability of a return of symptoms, especially when I had been able to feel a stone high up in the duct, but could not remove it; or when, having brought the stone into the hepatic duct, it has slipped away and has been lost; or when I have found the ducts filled with sandy material, and when, after removing as much of the latter as possible, with the ducts laid open as far as possible, I have instituted prolonged drainage. Even in these cases it is no surprise to learn of subsequent common duct obtruction by stone.

CHRONIC CHOLECYSTITIS

The third most common cause of recurrence—persistence of infection—in the shape of chronic cholecystitis, I believe to be inexcusable. First of all, the frequency of recurrence from this cause lends support to the theory that noncalculous cholecystitis is a clinical entity distinct from the calculous gallbladder inflammation, and justifies removal of the gallbladder in such cases. Furthermore, it is inexcusable, in view of the fact that dyspepsia or chronic indigestion is not a clinical entity of itself, but the accompaniment or the result of a greater or less degree of a pathologic condition in one or the other of the abdominal viscera, and that next to appendicitis, the most common type of indigestion is gallbladder dyspepsia. The differentiation between the two is not always possible except by operation, and even then one cannot always tell whether or how far the appendix is also responsible for the symptoms, in those cases in which the gallbladder has undergone pathologic changes. Owing to this uncertainty, it becomes necessary in the majority of cases to remove both the appendix and the gallbladder. This brings up the question of priority of responsibility for the symptomatology. You are all, no doubt, aware of my conviction that the guilt for most of the upper abdominal ailments lies primarily within the appendix, although I may say in passing that I am not unmindful of other possible sources of focal infection. How rarely do we find an appendix, removed as a routine procedure in our abdominal operations, that is not diseased, and markedly so, in most instances?

Chronic cholecystitis is not always difficult to diagnose; it can generally be recognized by a proper correlation of the history and the results of physical examination, especially local tenderness and more or less local rigidity. In cases of doubt we can call on the roentgen ray and various laboratory methods of examining the condition of the stomach, duodenum, pancreas, intestinal tract, etc. Having once arrived at the diagnosis, prompt action is essential. Dilly-dallying with medicines, in my experience, not only profits the patient nothing, but rather favors further visceral involvement and the possible extension of the process by way of the lymphatics or the blood stream to other important organs. This possibility is well illustrated by the researches carried on in the pathologic department of the Lankenau Hospital under the able direction of Dr. Stanley Reimann, whose investigations I have incorporated in this paper. This interesting work of Reimann, I believe, should settle the question of medical versus surgical treatment of persistence of infection in chronic cholecystitis and its responsibility for so large a percentage of recurrences after cholecystostomy.

OTHER CAUSES OF RECURRENCE

The recurrent series includes ten cases of noncalculous common duct obstruction. Six were due to stricture, three to scar tissue, and one to ulceration.

The principles involved in the treatment of obstruction of the common duct by stricture, scar tissue and ulceration are practically the same. In stricture of the common duct, whether annular or linear, the duct is laid open to the extent of involvement in the line of the duct, and drainage established by the T-tube; for annular stricture involving a wide portion of the duct resection and end-to-end anastomosis is best; or if the stricture is too near the duodenum to make this feasible, anastomosis of the proximal end into the duodenum and closure of the distal end can be done, this layer of suture being reinforced by the great omentum. These operations I have done a number of times with good result.

In ulceration of the duct, the treatment is practically the same as for stricture. Obstruction of the duct by scar tissue occurs where the duct has been cut away, and the scar tissue forms in the shape of a cord connecting the two ends. Under these circumstances the most difficult portion of the operation is to identify the lower end of the duct. The proximal end, unless well within the transverse fissure of the liver is, as a rule, not so difficult to identify if we aspirate with the hypodermic syringe. When the greater portion of the duct is destroyed, it is best to mobilize the duodenum and anastomose the proximal end to the duodenum. Sometimes the T-tube or a small piece of rubber tubing introduced into the end of the duct and the duodenum can be used to advantage in the anastomosis. I always reinforce the anastomosis with the greater and the lesser omentum. This, however, is difficult and trying surgery, calling for the greatest gentleness of manipulation, patience and utmost skill, ingenuity and judgment.

Biliary fistulas, of which there are nine in the series, are practically all the result of stone in the common duct, and can be obliterated only by relieving the

obstruction. This type of fistula rarely is due to malignancy, but when attributable to such cause is nearly always irreparable. Quite as serious is duodenal fistula, reported twice in the series. Resection, pylorectomy and gastro-enterostomy are the procedures indicated, but they are not always possible and not always successful, owing to the depleted condition of the patient.

It will be noted that chronic pancreatitis and chronic pancreatic lymphangitis were the cause of twelve recurrences. While pancreatic lymphangitis is frequently corrected by removal of the gallbladder, this does not apply to chronic pancreatitis, particularly in the long-standing cases. Although I have so often called attention to the importance of pancreatic lymphangitis as a forerunner of chronic pancreatitis, I cannot refrain from mentioning it once more as a factor to be seriously reckoned with in gallstone disease surgery. Drainage, of course, is the sine qua non in the presence of chronic pancreatitis, and, if, owing to diseased condition of the gallbladder and the cystic duct, cholecystotomy is not possible, drainage must be established through the common duct.

Duct drainage is also indicated in cholangeitis, the result of gallstone disease, and must be continued for a number of weeks. I have known patients who have carried a drainage tube in the common duct for as long as four years; it is only in very obstinate cases, however, that such prolonged drainage is required. The simplest means of accomplishing this is by way of the gallbladder; but when this is not feasible, drainage through a cholecystoduodenostomy or by way of the common duct will be necessary. Incidentally, I may remark that biliary cirrhosis may result from chronic cholangeitis if not given the benefit of radical surgery.

Dilatation of the common duct in the presence of an irremovable cause is best treated by a choledochoduodenostomy—not by any means a very difficult thing to do with the duct enlarged.

Benign stricture of the papilla of Vater, which is not infrequent, I have always been able to correct by dilatation through an incision of the common duct.

Carcinoma of the head of the pancreas, as well as carcinoma of the ampulla of Vater, or the common or hepatic duct cannot always be differentiated except by opening the abdomen; nor can the differentiation of obstruction of the common duct by a silent stone always be differentiated from malignancy. I have seen a number of confusing cases which were cleared up only by operation. Carcinoma of the gallbladder is another one of the uncertain diagnoses, except in the presence of a palpable swelling which can be identified, or perhaps by roentgen-ray demonstration. It is worth mentioning that the majority of cases of carcinoma in which I have operated have been associated with stone; furthermore, I have no hesitancy in saying that I believe persistent cholecystic infection is primarily the responsible agent in the causation of this most unfortunate condition. It may not be out of place for me to mention a case of carcinoma of the fundus of the gallbladder that had not metastasized, but was adherent to the hepatic flexure of the colon, indenting the colon to such an extent that the roentgen ray seemed to indicate carcinoma of the bowel. This patient has remained well for more than two years since the operation (cholecystectomy).

The great variance between recurrences after radical surgery of the gallbladder and those that take place after conservative surgery leads to the manifest conclusion that radical treatment gives the greater prospect of a permanent cure. Perhaps if the work recently reported by Vincent Lyon[1] of Philadelphia on the physiologic drainage of the gallbladder based on Meltzer's theory of contrary innervation can be developed into a more practical one—practical in the sense that any but the highly trained specialist can make use of it—we may obtain a valuable aid in early diagnosis and the possible prevention of the serious consequences of biliary stasis. For the present, however, radical surgery, although it falls short of being ideal surgery, is the best means we have of removing a pathologic condition and its pernicious effects. "If thy right hand offend, cut it off."

PATHOLOGIC REPORT BY DR. REIMANN ON RELATION OF STREPTOCOCCUS TO GALLBLADDER DISEASE

In classifying the pathologic histology of gallbladders, we have recognized an interstitial involvement of both acute and chronic nature in by far the large majority. Simple involvement of the mucosa was seldom encountered. The interstitial involvement, that is, infiltration of either acute or chronic inflammatory products into submucosa, muscularis and peritoneum, means only one thing—that organisms or their toxins or both are present in the walls of this organ. This picture makes plain the reasons for the frequent peritoneal adhesions, pancreatic lymphangitis and lymphadenitis, and chronic pancreatitis. Infection, of course, in the largest proportion of cases comes from within the lumen of the gallbladder.

A direct way of approaching this subject is afforded by the method developed by Rosenow and his associates. It consists of removing surface infection by either washing the organ, taken directly from the hands of the surgeon, in large volumes of saline solution, or dipping it momentarily in boiling water, then grinding it up in a meat grinder, and triturating with sand and saline solution. This procedure is carried out in a specially constructed box which allows of sterilization. The ground-up tissue is then planted in special mediums. Rosenow's results have indicated the presence of streptococci in the walls of the gallbladder as well as in other organs.

Forty-five gallbladders were treated by us in this way, and streptococci, all of the *S. viridans* variety, were found in nine instances, or 20 per cent. The pathologic examination of these gallbladders disclosed that all had a marked interstitial involvement. In more than half, there were acute changes engrafted on obvious preexisting chronic ones. Seven of the nine contained calculi. Other organisms were detected in many; but, since the discovery of streptococci was the main object, these were not definitely identified. In the other thirty-six specimens, practically half showed lesions that were confined entirely to the mucosa. The others showed more or less interstitial infiltrations of a chronic nature. Four showed acute involvement as well.

Surgical and pathologic experience demonstrates over and over again that in most instances the gallbladder in an operative patient has been the subject of at least several acute inflammatory processes. In a number, however, there has possibly been present a chronic, slowly progressing inflammation from the start.

1. Lyon, B. B. V.: Diagnosis and Treatment of Diseases of the Gallbladder and Biliary Ducts, J. A. M. A. **73**: 980 (Sept. 27) 1919.

The clinical experience is that a gallbladder which has once given trouble and recovered without operative interference will, in a large majority of instances, make its presence known again, usually in a more unfavorable way. This is quite reasonable when streptococci can be so easily demonstrated in the walls of at least 20 per cent. (in Brown's series in 50 per cent.). The ability of streptococci to remain latent for long periods of time is too well known to require emphasis. A scheme of treatment based on the laws of contrary nervous innervation must take this infection of the walls into very serious consideration. The instillation of magnesium sulphate and other such materials by tube into the duodenum may cause the gallbladder to empty itself, and thus be of advantage in draining infection from within the lumen of the organ. It seems unlikely, however, that infection within its walls can be removed by this means.

The question of elective affinity of these streptococci was investigated, and careful examinations were made of the gallbladders of rabbits in which recovered human streptococci were intravenously administered. It was recognized that rabbits are, on the whole, somewhat resistant to streptococci. The organisms were isolated from the human gallbladders, were suspended in saline solution, and injected intravenously into a number of differently controlled animals. Two special sets were used: one was presumably normal, and in the other a point of lowered resistance was induced by pinching the gallbladder with a hemostat. None of the animals died from the injection of streptococci. They were killed at various intervals, and the organs and fluids examined and cultures taken. No streptococci were recovered from any specimen in any case after the second day after injection. They were recovered, however, as a routine, in all the organs and fluids in animals killed on or previous to the second day. These included the gallbladder, bile, liver, kidney, heart's blood and spleen. Cholecystitis was not present grossly or microscopically in any of the previously uninjured gallbladders. The time allowed to elapse between operation and injury of the gallbladder, and the injection of the streptococci, varied from immediately to two weeks. After several days, recovery from the operation, as evidenced by the behavior of the rabbit, was perfect. Microscopically, these injured gallbladders showed the usual processes of necrosis to fairly complete organization at the site of injury, but no especial lesion beyond this zone of reaction.

From the whole series of experiments, the conclusion must be reached that the particular streptococci recovered from human gallbladders and injected intravenously into rabbits showed no elective affinity for the gallbladders of the animals; at least not with one injection of what seemed an adequate number of organisms.

This conclusion in itself, however, does not negative the importance of the streptococci in the human gallbladder. It is only a fact in the biology of the organisms. Their importance in the particular human being from whom they were recovered cannot, of course, be positively evaluated; but the following points may well be remembered:

With streptococci in the gallbladder, a chronic toxemia may be present for long periods of time; a constant stimulus for lymphangitis and connective tissue proliferation is present, and an opportunity for a general bacteremia is always at hand.

IDEALS AND THEIR FUNCTION IN MEDICAL EDUCATION *

GEORGE E. VINCENT, PH.D., LL.D.
President, Rockefeller Foundation
NEW YORK

The influence of the war on medical research, public health and medical education has been notable. Medical army officers of different nations have been in close association; research councils have exchanged suggestions and ideas; investigation has been stimulated; new possibilities of immunology have been discovered; important advances in surgical technic have been made.

Public health policies have been profoundly affected; camp sanitation has been carried to higher levels of achievement; the American army in Europe made a new record in the control of venereal diseases. The League of Red Cross Societies represents a movement in the interests of preventive medicine on an international scale. The work of the International Health Board in many countries has played an appreciable rôle. In all this, standards and methods of medical education have been necessarily involved.

Evidences of an almost universal interest in the training of physicians and public health officers accumulate. The British "unit" plan, which, with the opening of this year and under the auspices of the board of education, is being given a trial in four medical schools of London, is a significant experiment. In Belgium there is agitation for a reorganization of medical training under the auspices of the University of Brussels. Pathology and public health departments have been introduced in two medical schools in Brazil, and are influencing the other divisions of these institutions. A strike of medical students in Lima, Peru, against the alleged inefficiency of professors in the medical school is a symptom of the times. In China a modern medical school is being opened in Peking under American auspices. At Tsinanfu and Changsha, progress is being made. The University of Hongkong has a program for the modernizing and development of its medical department. The Chinese government medical schools are giving evidences of awakened interest and of improved methods. The Siamese government is seeking cooperation in the creation of a medical school in Bangkok. In the Near East there are several projects for new centers of medical teaching. Medical students are coming to the United States in increasing numbers from Japan, China, Czechoslovakia, Poland and Brazil.

IDEALS OF MODERN MEDICAL TEACHING

In order to measure achievement and to guide progress there is need of ideals or standards by which to appraise existing institutions and methods. Without tests of this kind there is danger that opportunism, provincialism, even a narrow nationalism, will prevent the development of medical education on a broad, international basis. To be of value, ideals must not be merely *a priori* and abstract aims: They must be rational projections of tested experience; they must combine, in one organic whole, elements each of which has somewhere proved its value. For example, the American type of medical education has incorporated features from the German laboratory institute, from the English clinical clerkship, and from other sources.

* Read before the Annual Congress on Medical Education and Licensure, Chicago, March 1, 1920.

The service which ideals and standards can render has been conspicuously illustrated by the Carnegie reports on medical education in the United States and in Europe, and by the activities of the Council on Medical Education of the American Medical Association. Thanks to these agencies, the main outlines of an efficient system of medical education have been worked out and generally accepted.

It is well to recognize the relativity of ideals. In human institutions there are no absolute standards. The highest ideal may be approximated in a few medical schools in which methods may be tested and leaders trained; but it would be a serious mistake not to recognize various degrees of achievement. The influence of local conditions, the possibilities of economic support, relations with other university units, must be taken into account. All that can be confidently affirmed is that some institutions fall below any standard that can be recognized as guaranteeing results which will safeguard the public and protect the profession. The number of such schools in the United States grows steadily smaller.

There is danger that the existence of a standard may force a formal rather than a real compliance with ideals. A premature effort to conform to an accepted standard may do positive harm. For exmaple, there is reason to believe that in the case of medical schools in the South, where high school systems have had to be developed within a brief period, there has been an overstimulation of secondary and college education; that three-year high schools have changed to a four-year curriculum with little or no additional resources or increases in numbers and efficiency of teaching staff, and that colleges have offered courses which they are not prepared to give efficiently. Moreover, the "Class A" of the American Medical Association, having been accepted by state boards of medical examiners and thus become a part of the official machinery, has been extended in such a way as to produce serious anomalies. These will doubtless be largely removed as a result of the new survey which has recently been completed.

One of the ideals of modern medical teaching which needs constant emphasis is the provision of the best type of medical care for the sick. Laboratory and clinical methods must be thought of as a protection to the patient. Careful diagnosis, resourceful treatment, constant watchfulness are sources of safety and hope to those who come under the care of a modern university hospital. The prestige of the clinical teachers who are in charge is always at stake. The mutual scrutiny of members of the teaching staff, the alertness of students, together with unremitting search for new truth and its application to disease, make the teaching hospital the best place for the sick.

ESSENTIALS TO THE MAINTENANCE OF IDEALS

The widening conception of the physician as a social functionary, the enlarging theory of medicine as something which deals with the whole patient in his social environment, the demand for knowledge, insight and intelligent sympathy, the increasingly scientific nature of modern medicine call for a sound and broad training as a prerequisite for medical education. The demands made on the secondary schools and colleges are insistent and unrelenting. Attention has often been called to the serious situation which is created by this need of thorough preparation. Efforts must be made to improve and abbreviate the elementary and secondary curriculum. Experts in the field of education are confident that time can be saved. By the frequent promotion of abler pupils, by the elimination of useless repetition, by concentration on fundamental things, by more intelligent methods of instruction it is reasonable to believe that two years could be saved and better results secured.

Medical education is so dependent on the general educational system that progress will necessarily be slow. This is especially true in the South. The Canadian plan for a six-year medical course so far as the better schools are concerned reflects a dissatisfaction with the preparation of students. It is to be hoped, however, that this policy will be temporary; for, as Dr. Colwell has clearly shown, there is great value in a nonmedical school preparation if this can be of the right sort.

Limitation of numbers is essential to the maintenance of ideals. There is a ratio between students and laboratory and clinical teaching facilities which cannot be safely ignored. The days of mass lectures are numbered. The constant use of microscope and culture tube by the individual student, the system of clinical clerkships, the reduction of bedside groups to a small number, the need of continual contact between teachers and students preclude the didactic, wholesale devices of earlier days. To admit a larger number of students than can be properly trained in accordance with scientific methods is vitally to impair the character of a school's work. It is a sacrifice of ideals. If it is desired to provide for larger classes, duplicate units of staff may be added and existing laboratory facilities more completely utilized. The corresponding duplication of hospitals, however, involves large additional costs.

In medical education the relation of the laboratory and the clinical years is organic. The antithesis which is often set up between these two aspects of medical education is most unfortunate. In the first and second years, the chief emphasis is laid on work in the laboratories; but this training ought to be extended right into the clinical phases of the curriculum. While it will usually happen that laboratory teachers will be graduates in medicine, many able laboratory men without the M.D. degree have demonstrated their capacity to develop cooperative and sympathetic team-work with clinical departments. The students in the laboratories should be frequently reminded of the bearing of their present work on their future responsibilities. The realization that the ideals of the laboratory are inseparable from rationalized clinical experience is equally essential. A few institutions are making systematic efforts to bring first and second year students in contact with dispensary and hospital problems, and into association with clinical teachers through occasional clinical lectures. The geographic separation of the laboratory work from that of the hospital and dispensary is a serious handicap to effective education.

In the clinical years it is essential to develop observation and reasoning power, to train students in the recognition of the early signs of disease. There is a certain value in the extravagant statements of a man like McKenzie who, in the stress he lays on the importance of contact with patients and of observational methods, seems to discredit the diagnostic resources of the laboratory. The dispensary as a means of educating students in the recognition of disease in its early stages needs greater emphasis. It is time to reconsider the whole problem of dispensary organization. Frag-

mentary periods of service by busy practitioners, hasty diagnosis, sometimes by clerks, are not consistent with the best interests of the clientele and do not provide satisfactory conditions of medical instruction. One of the pressing problems of medical education is found just here. Instructors must be paid and be asked to give a better type of service under more favorable conditions. The student needs to assume responsibility under supervision. It is important for him, in connection with social service, to make domiciliary visits, and to recognize the environment of the patient as an essential part of the problem of disease.

As to the hospital, it is recognized that effective teaching can be secured only in an institution which is under the complete control of the medical school. The devices of clinical clerkships, the individual responsibility of students, close relations between bedside and laboratory, the proper organization of the teaching staff, permanence of tenure, team-work, necropsy conferences, case conferences with physicians and social service workers, are all factors in the development of clinical training of the right type.

The ideals of clinical teaching involve one of the moot questions of contemporary medical education. The analogy of the development of laboratory leadership from the practitioner to the professional teacher is being applied to the problem of clinical instruction. Perhaps in the discussion of the "full-time" plan too much stress has been laid on the word "time." It might be better to use other terms as, for example, vocational and avocational teaching. That leadership in clinical teaching should be in the hands of men whose chief concern is the care of hospital and dispensary patients, the teaching of students, and the prosecution of research is struggling successfully for recognition. In other words, it is increasingly obvious that the vocational rather than avocational principle is to prevail in this field.

Illuminating experiments are being tried with reference to this ideal. Johns Hopkins, Yale, Washington University and the University of Chicago are committed to a trial of the idea of full-time in the sense that heads of the chief department and their immediate staff concentrate on their university duties. Other proposals call for chief concentration on hospital teaching, with some opportunity for incidental consultation practice. In still other cases, young resident physicians and surgeons will give their whole time to the organization and administration of hospital services and instruction, while the practitioner or avocational teachers carry responsibility for a large part of the teaching. This situation is in harmony with experimental, scientific methods. Under varying conditions the different plans will be given a test. The results will be watched with interest.

THE UNDERGRADUATE CURRICULUM

The question of differentiation in the undergraduate medical course is raised in one or two important ways. The curriculum is now so overcrowded that the proposal to introduce new subjects is naturally and justifiably resisted. There is now no room for specialties except in a superficial way. Specialization in the ordinary sense is quite impossible. Differentiation, however, for various forms of preventive medicine, e. g., public health administration, industrial hygiene and mental hygiene, seems feasible to some degree. Elective courses, especially in the fourth year, are being offered. It seems well to secure sufficient flexibility so that men who have definitely chosen careers in some form of institutional or public health work may combine with their technical preparation a fundamental and sound course in medicine.

In spite of the overcrowding to which reference has been made, there is an increasing demand for the introduction in undergraduate teaching of such subjects as preventive medicine, psychiatry, institutional administration and some knowledge of social amelioration through clinics, popular education, improved housing, better food, recreation and the development of community responsibility. The introduction of medical sociology in the premedical course would be of distinct value. Something may be accomplished through lectures, conferences and visits included in the regular curriculum. Washington University Medical School is inaugurating a plan of this kind. The case conferences with social service workers in the Massachusetts General Hospital have already been mentioned. Dispensary experience has an important bearing on this subject. It is desirable that more and more emphasis should be laid on the medical practitioner's social responsibilities and on the changing standards and ideas of the times with respect to medicine and public health. Such a spirit or attitude, however, will be a relatively slow growth. Chief reliance must be placed on the daily influence of the teaching staff. Unless instructors are in sympathy with these newer developments, the mechanism of extra lectures and other devices will accomplish little.

The advancement of medical science will be a conscious purpose of the ideal medical school. Research in such an institution is not an incidental by-product or merely a means of stimulating teachers. It is a definite and persistent aim. It involves constant conference and planning and cooperation by all the departments concerned. Independent institutions for research cannot be expected to assume the entire responsibility in this field. Most of the workers for such institutions must be trained in the medical schools themselves. This responsibility for research calls for large expenditure for buildings, equipment, supplies and, above all, for a staff capable of making significant contributions to medical science. Only a few centers, in the nature of the case, will be in a position to perform this function of investigation in a systematic way. It is a mistake for institutions without adequate resources in men and materials to deflect to research time and energy which should be devoted to the undergraduate teaching. This is not to imply that many individuals even in such schools cannot or will not find some opportunity for investigative tasks.

GRADUATE MEDICAL STUDY

The crowding of the undergraduate curriculum, which has already been mentioned, means that specialist preparation must become the subject of graduate study. Postgraduate short courses have their value, but genuine graduate study can be carried on only where the best opportunities for laboratory training and clinical experience under the right sort of leadership are available. The University of Minnesota-Mayo Foundation experiment is showing promise. More than 130 graduate students are pursuing courses which lead to higher degrees on a university basis. In other institutions, similar movements are under way. As in the case of research, only a few institutions can be equipped and manned for offering genuine graduate instruction.

The proposed one-year courses for the specialties under the auspices of the New York Association for Medical Education suggest interesting possibilities. The clinical resources of a great city, and the presence of a large number of men recognized as specialists, offer an opportunity for the organization of teaching facilities. Success would seem to depend on the degree to which qualified teachers can give sufficient time to the work under satisfactory conditions of laboratory service and of access to controlled clinical material.

Continuation courses for practitioners represent a need in medical education which deserves careful consideration. Modern medicine insists that access to laboratory and hospital is essential to the maintenance and growth of professional power. Yet a great majority of physicians have no contact with these agencies. These practitioners are dependent on journals and on short courses for keeping abreast of professional progress. A relatively few take full advantage of these opportunities. There is pressing need of a widespread movement to enable physicians to continue their medical education. Before the war the American Medical Association offered a postgraduate course, a combination of correspondence instruction with group conferences. The Wisconsin University Extension Division is now maintaining a system of clinical instruction throughout the state. The possibilities of continuation courses in connection with diagnostic laboratories, rural hospitals and public health centers are obvious. There seems to be an opportunity for the development of a country-wide system of medical education for practitioners.

TWO GROUPS OF MEDICAL SCHOOLS

Judged by the criteria which are suggested in this paper, existing medical schools fitting the present need fall into two general groups:

1. *University Centers for Teaching and Investigation.*—The chief characteristics of these institutions are: broad and thorough preparation; limitation of numbers in proportion to facilities and staff; well-rounded laboratory equipment with professional teaching corps; complete control of adequate hospital and dispensary facilities with vocational leadership in the clinical departments, which include the chief specialties; practitioner or avocational clinical teachers organized systemically into a unified staff; geographic concentration of all phases of plant and instruction; laboratories and clinics in close relations of cooperation and interdependence; research a conscious purpose; facilities for graduate study.

2. *Training Centers, Parts of Academic Institutions.*—Two-year college requirement; limitation of numbers; fundamental laboratory facilities with professional teachers; control of appointments to hospital and dispensary staff; practitioner clinical teachers well organized in long service periods, assisted by full-time resident and other assistants; concentration of buildings and work; cooperation between laboratories and clinics; some opportunity for research by staff members.

ASSISTANCE TO MEDICAL EDUCATION

As to the policy of the General Education Board and the Rockefeller Foundation with regard to assistance to medical education, it may be said that there is no one, inflexible type of organization which it is proposed to suggest to all institutions. Aid has been given and will continue to be given to a few centers of the higher type, but assistance is also being considered with respect to a number of institutions less highly developed. The General Education Board cooperates with medical schools in the United States, while to the Rockefeller Foundation falls the opportunity to work with medical centers in Canada and in other countries.

61 Broadway.

THE LARGER FUNCTION OF STATE UNIVERSITY MEDICAL SCHOOLS *

WALTER A. JESSUP, PH.D.
President, State University of Iowa
IOWA CITY

Within recent years there has come about a changed conception in regard to the responsibility of the general public for welfare policies such as public education, public improvements, standards of living, and health. Within the last century we have seen America develop a great public educational system in which the state has undertaken to make provision for the education of persons of types of ability ranging from the subnormal to the keenest student in the land. As the years have gone by, each decade has shown a markedly increased willingness on the part of the state to provide for new variations in the educational needs of the public, until at the present moment it is hard to find a state that has not only assumed large responsibility for the training provided in elementary schools, high schools and ordinary collegiate institutions, but also made provision for the training in technical fields—agriculture, engineering, commerce, law, medicine. In fact, an analysis of the development of state education confirms the prophecy that as the years go by the public, operating through the state, will ultimately respond to any well thought out demand on the part of educational leaders.

Paralleling this development in education has come an ever increasing conception of public responsibility for the care of certain cases of defectives, the insane, tuberculous and others. States have vied with each other in the organization and development of elaborate systems for the care of these unfortunates.

In recent years there has come a growing consciousness of the importance of the period of youth in a scheme of life such as ours: witness legislation for compulsory education, continuation schools, and regulation of the hours of child labor.

It is but a step farther for the state to interest itself in the health of children. It is obvious that neglect in the care of children means not only an enormous economic loss in the matter of self help and production, but also untold suffering in succeeding generations.

This interest in the health of children has been expressed locally by provision for medical inspection and school nursing. Perhaps Michigan is entitled to the distinction of being the first state to provide a statewide hospital service for children needing attention. Iowa quickly followed, and later Oregon made similar provision.

LEGISLATION IN IOWA

Five years ago the general assembly of the state of Iowa enacted the Perkins law, which made provision for the surgical, medical and hospital care of all children in the state under 16 years of age whose parents

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were unable to meet the expense involved. Four years later, further legislation was enacted extending this type of service to indigent adults, so that at present the state of Iowa makes provision for the surgical, medical and hospital care in all cases which are considered remediable. This service is provided through the State University of Iowa College of Medicine, and includes service given in a dozen different departments. Thousands of patients have taken advantage of this provision. There has been a steady stream of deformed and suffering humanity pouring into Iowa City week in and week out since the first enactment of the law. Practically all of the infantile paralysis patients of the state have come to this hospital as either indigent or pay cases. The demand for orthopedic service has been so large that the state has undertaken the task of manufacturing her own braces and casts. The speech defect cases have been so numerous as to necessitate a special school for training in speech after remedial operations have been performed. Special diet laboratory facilities have been provided in connection with the infant feeding cases.

No service undertaken so far by the state in connection with any of its institutions has received greater approval on the part of the public. After two years of experience with this service to the children, the state was asked to provide a children's hospital to care for the cases. Despite the fact that this appropriation was sought during the war, there was not an opposing vote registered in either branch of the legislature. Two years later, when the proposal was made to extend these provisions to adults, there was not a single vote in opposition. In other words, since inaugurating the service five years ago, the two general assemblies have expressed direct approval of the service rendered without an opposing vote—a remarkabe record.

For many years the College of Medicine has been rendering special service to the wards of the state in the institutions for defectives. Hundreds of patients come each year from the state orphanage, and schools for the blind and deaf. The regular clinical service for which a charge is made has likewise attracted thousands from every part of the state.

Thus, with the addition of the indigent cases it can be seen that the hospital has really become a state hospital in every sense of the word. People in the most remote sections of the state think of this service constantly in connection with the problem of caring for children and adults who need remedial care.

The commitment laws have been drawn so as to provide for the cost not only of the remedial care but also for transportation of the patient, including the expense of a caretaker of the patient, when needed. The university makes its financial adjustment with the state authorities, thus simplifying the problem of collection on the part of the hospital. The conditions of commitment are made so simple and direct that there is the minimum of difficulty in getting patients into the service, as will be seen from a study of the first two sections of the law:

SECTION 1.—*General Provisions for Free Hospital Service.*—Whenever it shall appear to any physician, county supervisor, township trustee, public health nurse, overseer of the poor, policeman, priest or minister that there is any legal resident of his or her county over 16 years of age afflicted with any malady or deformitory which can probably be remedied by proper care and medical or surgical treatment, if said person, or the parent, parents or guardian or other person having legal custody of said person, as the case may be, is unable financially to provide proper care and medical or surgical treatment, it shall be the duty of such physician, county supervisor, township trustee, public health nurse, overseer of the poor, policeman, priest or minister to report the same to the judge of the district or superior court having jurisdiction in the county in which said person resides.

On the filing of such report with the judge of the district court or superior court as aforesaid he shall appoint some physician who shall personally examine said person with respect to the malady or deformity. Such physician shall make a written report to said judge, giving such history of the case as will be likely to aid the medical or surgical treatment of such deformity or malady, and describing the same, all in detail, and state whether or not, in his opinion, the same can probably be remedied. Such report shall be made within such time as may be fixed by the court and on blanks furnished as hereinafter provided. It shall also be the duty of said judge to have a thorough investigation made by the county attorney of his county regarding the financial condition of the said person, or of the parent or parents, guardian or other person having legal custody of said person, as the case may be.

SECTION 2.—*Procedure for Admission to Hospital.*—On the filing of such report or reports, said judge of the district or superior court, as aforesaid, shall fix a date for the hearing on the complaint and shall cause the person, or the parent or parents, guardian or other person having legal custody of said person, as the case may be, to be served with a notice of the hearing and he shall also notify the county attorney who shall appear and conduct the proceedings; and on such complaint, evidence may be introduced. If the judge finds that the said person is suffering from a deformity or malady which can probably be remedied by medical or surgical treatment or hospital care, and that the person, or the parent or parents, guardian or other persons having legal custody of said person, as the case may be, is unable to pay the expenses thereof, said judge may, with the consent of the said person, or parent or parents, guardian or other person having legal custody of said person, as the case may be, enter an order directing that the said person shall be taken to the hospital of the college of medicine of the state university of Iowa at Iowa City for proper hospital care and medical or surgical treatment; the expense of such hospital care and treatment to he met in the manner hereinafter provided.

Provided, that no such person shall be received into said hospital of the college of medicine of the state university of Iowa for care and treatment, unless, in the judgment of the admitting physician, there shall be a reasonable probability of such person's being benefited by such hospital care and medical or surgical treatment.

Emergency service is provided without waiting for the carrying out of this procedure.

Complete service is provided, including roentgen ray or radium, laboratory examinations, braces and even schooling for those of school age, and the best diagnostic and remedial care. The cost of everything exclusive of the salary of the staff is paid by the state on thirty-day settlements based on the number of patient-days.

The demands on the hospital have been growing steadily for many years. With the influx of more state patients it has been necessary to increase hospital facilities from 450 to 600 beds. The number of annual admissions is now around 15,000.

A few years ago the state board of health centered its laboratory work in the laboratories of the College of Medicine. The state epidemiologist is also a member of the staff of the College of Medicine. A public health nursing course has been authorized. The extension service in the field of follow-up work in the case of Perkins law children who have been treated in the university is proving to be one of the best forms of social welfare work. A part of the university's education program includes the distribution of thousands of bulletins on the feeding of schoolchildren, the care of infants, and the like.

In line with the general policy of coordinating the state wide service, the state has just authorized the creation of a psychopathic department at the university with a special hospital and adequate support for research work in this field.

This enlarged consciousness on the part of the public as to its responsibility in regard to health is by no means confined to a few states. Indeed, steps are being taken to secure the leadership of the federal government in assuming this responsibility. There is little doubt that within the next decade health service under some such general plan as outlined above will be provided almost everywhere. The states will have to determine whether or not they wish to establish this service in isolated hospitals as has been done in the past in the case of sanatoriums for the tuberculous, hospitals for the insane and the like, or whether they wish to coordinate this work with that of the training of physicians in the college of medicine.

While it is true that in some schools the supply of clinical material is so large that these patients would be of little value in connection with the training of physicians, yet in many states it would be disastrous from the standpoint of the teaching clinic for the state to establish such a hospital apart from the college of medicine, necessitating, as it would, constant duplication of the staffs of the two institutions. The waste would be calamitous. The experience in Iowa is such as to suggest that this type of work can most successfully be done in connection with the college of medicine.

CONCLUSIONS

Our experience leads to these conclusions:

1. In view of the great rapidity with which the demands on our staff and hospital have grown, it seems to us important to note that any state in attempting to provide this type of service should make very comprehensive plans on the material side, which should include liberal provision in space and staff not only for adequate service to the indigents but also for adequate provision for the ever growing number of pay patients.

2. It is very important that future plans include ample provision for the vigorous prosecution of medical research. Otherwise the teaching staff may easily be overwhelmed with routine, with a consequent slump in growth. Furthermore, the unusual clinical demands serve as a constant challenge to the student of medicine.

3. Since the success of the work is absolutely dependent on skill and devotion of the staff, it is essential that many adjustments in the conditions of teaching must be made. The problem of full-time teaching becomes more acute.

Satisfactory adjustments of these problems must be worked out if medical teaching is to be kept at the highest standard.

Other departments in the field of technical education have had to meet the same situation. Indeed, in the field of agricultural education a very large part of the function has been the providing of service for the public. So much is this true that it would be hard to conceive at the present moment of a college of agriculture without its elaborate organization in the direction of special agricultural service to the state. Within the next few years we may expect in many state universities just such close coordination in the problems of the training of physicians, furthering research that will contribute to the knowledge of the field and extending health service to the public.

To the degree that the colleges of medicine of the state universities are alert to these new demands and effective in their responses will these colleges become real leaders in this present movement looking toward the highest type of physical and mental efficiency.

CHANGES IN THE BLOOD IN INFLUENZA*

RALPH A. KINSELLA, M.D.

AND

GORONWY O. BROUN, M.D.

ST. LOUIS

The tendency to nosebleed, the bloody sputum and the hemorrhagic character of the lesion in the lung, in an uncomplicated case of epidemic influenza, give rise to the inference that there are changes in the blood in this disease which predispose to hemorrhage.

TABLE 1.—EFFECT OF SODIUM CITRATE ON CLOTTING TIME OF THE BLOOD

Name or Hospital Number	Date	Clotting Time, Minutes	Patient's Temperature, F.	Remarks
D.	2/ 6/20	15	100.6	Before receiving citrate
D.	2/ 6/20	7	.....	45 minutes after receiving 1 gm. sodium citrate intravenously
D.	2/ 7/20	7	.....	18 hours after foregoing dose of citrate
D.	2/ 7/20	3½	.....	1 hour after a second dose of 1 gm. sodium citrate intravenously
11278	2/ 6/20	10	105.0	Before receiving citrate
11278	2/ 6/20	5	.....	¾ hour after receiving 1 gm. sodium citrate intravenously
11278	2/ 7/20	7	.....	18 hours after the foregoing dose of citrate
11278	2/ 7/20	3½	.....	1 hour after a second dose of 1 gm. sodium citrate intravenously
11350	2/20/20	12	99.0	Before receiving citrate
11350	2/20/20	3½	.....	½ hour after receiving 1 gm. sodium citrate intravenously
11795	2/19/20	16	101.6	Before receiving citrate
11795	2/10/20	9	.....	½ hour after receiving 1 gm. sodium citrate intravenously
11795	2/20/20	9	.....	24 hours later
11795	2/20/20	9	.....	½ hour after receiving a second dose of 1 gm. sodium citrate intravenously
11844	2/20/20	14½	99.4	Before receiving citrate
11844	2/20/20	6¾	.....	½ hour after receiving 1 gm. of sodium citrate intravenously

It was for the purpose of inquiring into this point that the present study was undertaken, and this report is a preliminary summary of the results that were obtained.

The special features studied were the clotting time, the platelet count, the fragility of the red cells, and the number of leukocytes.

METHODS

For studying the clotting time, blood was drawn from the median vein into a syringe wet with physiologic sodium chlorid solution, and 1 c.c. was immediately inserted in tubes 1 cm. in diameter also wet with physiologic sodium chlorid solution. It was found that if the syringe was one of small capacity and the quantity of blood drawn only a little more than that necessary for the test, the clotting time was much shorter than if a large syringe was used and the quantity of blood drawn was several cubic centimeters more than necessary for the test. The cases in Table 3 were studied by the latter method. Care was taken to use exactly the same technic for test cases and the normal controls.

* From the Medical Clinic, City Hospital, St. Louis University School of Medicine.

For counting the platelets, the technic described by Wright and Kinnicutt [1] was used. Counts of normal individuals were made as controls.

For estimating the fragility of red cells, the method described by Hill [2] was employed.

TABLE 2.—EFFECT ON CLOTTING TIME OF ADDITION OF VARIOUS AMOUNTS OF SODIUM CITRATE TO BLOOD IN THE TEST TUBE

Amount of Citrate Added to 1 C.c. Blood	Clotting Time in Minutes					
	Patient 11350	Patient 11795	Patient 11795*	Patient 11844	Normal 1	Normal 2
Before Intravenous Administration of Sodium Citrate						
Plain blood; no citrate	12	16	9	14½	9	10
0.005 mg.	12	..	9	16	..	8
0.0075 mg.	11½	..	11	14½		
0.01 mg.	11	11	7	11½	..	11
0.025 mg.	11	..	10	11	..	9
0.05 mg.	12	..	15	14½	..	11
0.1 mg.	12	15	8	13½	9	11
0.5 mg.	17	19	10½	30	18	
1.0 mg. (partial)	45	Did not clot	Did not clot	Did not clot	Did not clot	20
2.0 mg.	Did not clot	Did not clot	Did not clot	Did not clot	Did not clot	Did not clot
2.5 mg.	Did not clot	Did not clot	Did not clot	Did not clot		
Thirty Minutes after Administration of Sodium Citrate (1 gm.)						
Plain blood; no citrate	3½	9	9	6¾		
0.005 mg.	3	..	7	7		
0.0075 mg.	3½	..	9	5		
0.01 mg.	3½	16	13	7		
0.025 mg.	3½	..	13	10		
0.05 mg.	3½	..	6	11		
0.1 mg.	3½	17	10	10		
0.5 mg.	3½	17	16	45		
1.0 mg.	30	Did not clot	Did not clot	Did not clot		
2.0 mg.	Did not clot	Did not clot	Did not clot	Did not clot		
2.5 mg.	Did not clot	Did not clot	Did not clot	Did not clot		

* The two readings of Patient 11795 were taken twenty-four hours apart, and after the first test, 1 gm. of sodium citrate was given as was done in each of the other cases.

RESULTS

Clotting Time.—Forty patients were studied. In all, the diagnosis of influenza was clear from the clinical manifestations. All occurred during the height of the epidemic. Some were in the second or third day of convalescence. The majority were studied between the third and sixth day of disease. The normal clotting time with the method used was definitely shorter than that of the patients. There seemed no relationship between degree of delay and severity of disease. Moreover, the delay was present even when secondary infections with pneumococci or hemolytic streptococci had occurred. It was as though the delay in clotting time represented an influence essentially associated with the intoxication of influenza, which persisted throughout the secondary pneumonia, and into convalescence.

Platelets.—The results are shown in Table 3. Counts were made in twenty-one cases. The reduction in the majority of the cases is very definite. As in the case of clotting time, the reduction of platelets was independent of the stage of the disease or of the presence of secondary infections. The reduction of platelets and the delay in clotting time occurred hand in hand. Both were apparently independent of the number of leukocytes present, as shown by Table 3.

Leukocytes.—In general, it may be said that influenza is attended by an absence of leukocytosis, often extending to a degree of leukopenia. The presence of leukocytosis is good evidence of the presence of secondary infection.

COMMENT

As pointed out by Weil,[3] intravenous injection of sodium citrate hastens clotting, although in the test tube the same salt in sufficient concentration will prevent clotting. Similar action is ascribed by Addis [4] to sodium phosphate. To determine whether the same response to sodium citrate could be obtained in patients with influenza, possibly affecting the condition thereby, five patients were studied as shown in Table 1. The effect of intravenous injection was prompt. In one case (11278), the character of the sputum markedly changed from one of bloody appearance to one almost free from blood. It was thought, in the beginning, that patients improved after such treatment; but further tests made such a conclusion doubtful. In patients with streptococcus empyema, a peculiar reaction usually followed the injection of citrate, which consisted in a sudden, though transitory, gasping for breath. In the test tube, the addition of sodium citrate seems to inhibit the hemolytic action of serum of such patients on a suspension of sheep red blood corpuscles. Accordingly, the explanation of this clinical reaction was not found.

In seeking an explanation for the peculiar effect of sodium citrate on clotting time in vivo, it was thought that the salt might rapidly diffuse after entering the blood stream and be diluted so that only a minute amount remained after a few minutes, and that such a minute quantity might enhance the condition of "thrombin" and "prothrombin." Accordingly, tests were made of four patients and two normal controls, in which minute amounts of citrate in vitro seemed to have the effect of shortening clotting time, while the usual concentration of 0.2 per cent. prevented clotting. Further investigation must be made to substantiate this finding, shown in Table 2.

TABLE 3.—COMPARISON OF LEUKOCYTE COUNT, PLATELET COUNT, CLOTTING TIME AND FRAGILITY OF RED BLOOD CORPUSCLES, IN INFLUENZA PATIENTS

Hospital Number	Leukocyte Count	Platelet Count	Fragility Test: Complete Hemolysis, % NaCl	Fragility Test: No Hemolysis, % NaCl	Clotting Time, Minutes
10953	14,000	70,000	0.300	0.550	7½
11133	.....	.....	0.250	0.500	7
11149	3,000	38,000	0.250	0.500	6
11174	9,500	45,000	0.250	0.475	7
11250	11,000	66,000	0.300	0.425	11
11278	8,000	85,000	0.200	0.350	5
11405	9,000	78,000	0.300	0.425	12
11406	6,000	114,000	0.250	0.425	6
11420	7,000	89,000	0.325	0.425	11
11424	2,000	28,000	0.250	0.550	4
11428	3,000	47,000	0.300	0.475	7
11458	6,000	64,000	0.250	0.425	10
11469	10,000	67,000	0.250	0.400	10
11487	3,200	76,000	0.250	0.475	6
11367	4,200	34,000	0.300	0.475	4
11538	20,000	220,000	0.300	0.425	5
11546	4,500	20,000	0.300	0.425	9
11153	40,000	60,000			
11566	2,000	52,000	0.350	0.475	8
11595	15,000	133,000	0.300	0.425	12
11596	18,000	66,000	0.300	0.425	14
D.	18,000	285,000	0.250	0.450	7
Normals					
H.	.....	.....	0.250	0.475	
B.	8,000	258,000	0.250	0.450	4½
G.	.....	.....	0.250	0.475	
K.	8,000	235,000	.....	.....	4½
A.	12,000	224,000	.....	.....	5
Miss A.	.....	.....	0.300	0.425	

1. Wright, J. H., and Kinnicutt, Roger: A New Method of Counting the Blood Platelets for Clinical Purposes, J. A. M. A. **56**: 1457 (May 20) 1911.

2. Hill, L. W.: The Resistance of the Red Blood Cells to Hypotonic Salt Solution in the Various Anemias, Arch. Int. Med. **16**: 809 (Nov.) 1915.

3. Weil, Richard: Sodium Citrate in the Transfusion of Blood, J. A. M. A. **64**: 425 (Jan. 30) 1915.

4. Addis Thomas: Proc. Soc. Exper. Biol. & Med. **14**: 1192, 1916.

SUMMARY

The clotting time of the blood of patients with influenza is delayed.

The number of platelets is reduced in such patients.

Neither of the foregoing conditions changes with the onset of secondary infection, although the number of leukocytes is usually greatly increased in secondary infection.

The fragility of the red cells is probably increased in influenza.

CAN THE TUBERCULOSIS TRANSMISSION RATE BE REDUCED?

JAMES G. CUMMING, M.D. (Ann Arbor, Mich.)
Lieutenant-Colonel, M. C., U. S. Army
A. E. F., VLADIVOSTOK, SIBERIA

What are the possible avenues of tuberculosis transmission among individuals? Is it direct contact by the air route, though spray that is expelled by an act of coughing, or through dried sputum in public places? In answer to this question it may be said, that if the results of investigations of the influenza-pneumonia epidemic can be taken as a key to sputum-borne disease transmission, the transmission rate resultant from the distribution of tuberculosis by the air route among adults is of minor importance.[1] In the infant, however, another link may be added to this avenue of transmission: that of soiling the hands on a contaminated floor.

In contrast to direct contact, transmission may take place through several common routes by indirect contact: (*a*) through hand-to-mouth infection, the hands being soiled by contaminated inanimate objects, and (*b*) through inanimate object-to-mouth infection, the objects entering the mouth of the tuberculous as well as that of the nontuberculous. There are other ramifications in the routes of travel, but for the purpose of this paper the foregoing are the most important.

Here it might be said that our efforts to control the disease by the restriction of spitting and coughing have not given results that inspire a high degree of confidence. Should it be assumed that public spitting is a large factor in transmission, it is to be pointed out that this restrictive measure is of limited value because it is an attempt to deal with the individual. In this disease, as in all communicable diseases, a successful attack cannot be made through the individual—the animate—but must be made through the inanimate; or, as in insect-borne diseases, through insect destruction. It might be laid down as fundamental, from an epidemiologic standpoint, that the final solution in the eradication of any disease depends not on the control of the animate, but on the control of the inanimate through universal mass action.

On this basis there would be some encouragement in a plan of attack which could be universally applied to the most common *saliva*-contaminated inanimate objects. If this could be accomplished, the major avenue of transmission would be closed, the transmission rate would be immediately diminished, and on the basis of "the theory of case and source elimination" the majority of the tuberculous cases of the next human cycle of this organism would be eliminated as sources of infection. Likewise, by continuing this blocking in subsequent cycles of the organism, the majority of cases and sources would be eliminated. Thus, it is only by application of this principle through its cumulative action that the disease will be ultimately eradicated.

What is the most common inanimate object which becomes sputum contaminated by one person and then, without being rendered aseptic, enters the mouth of another where the saliva and its organisms are deposited? The donor of the saliva may be tuberculous and the recipient nontuberculous. This exchange of inanimate objects with their attached organisms takes place three times a day between tuberculous and nontuberculous persons. These objects are eating utensils. Objection might be made to the possibility of any such transfer of tubercle bacilli, on the assumption that only the sputum contains large numbers of organisms, while the saliva of the oral cavity is comparatively free from contamination by this organism; also that eating utensils are washed, and furthermore that such utensils when used by the tuberculous, who have had hospital training, are boiled.

The saliva in the open case contains many tubercle bacilli; dishes when washed only in warm water are not rendered aseptic—the average removal of organisms is about 70 per cent.;[2] and the tuberculous who have had the advantages of training in a sanatorium are in the minority.

TRANSMISSION EXPERIMENTS

The field and laboratory investigations on the transmission of measles-pneumonia at San Antonio, as well as those on influenza-pneumonia at the port of embarkation, Newport News, Va., and in public institutions presented a lead as to the most likely major avenue of tuberculosis transmission.[3] From these investigations it was deduced that direct contact through the air route played at best only a minor rôle in sputum-borne transmission, while indirect contact through hands and eating utensils was the major avenue of distribution.

The plan of the work was: (1) to determine the presence or absence of tubercle bacilli on eating utensils after they were used by tuberculous patients; (2) to determine the presence or absence of these organisms on eating utensils after these utensils were washed by the usual hand method in hot water; (3) to determine their presence on the hands of patients, and (4) to determine their presence in the air of tuberculosis wards.

In carrying out these researches it was recognized, from the standpoint of tuberculosis transmission, that of all eating utensils, the spoon would be the most likely transmitting object. This is because the spoon actually enters the mouth; the fork does, too, but of the two the spoon has the larger surface area to which mouth organisms may adhere. The spoon was, therefore, chosen as the transmitting agent in these experiments.

Spoon Wash Water.—In the first group of experiments, which were undertaken, May 1, 1919, the spoons used in two open cases of tuberculosis were washed after each meal with a cloth in 150 c.c. of hot water. About 50 c.c. of this wash water were centrifugated, and the centrifugate of eleven of these specimens was

1. Cumming, J. G., and Spruit, C. B.: Transmission of the Pneumonia Group of Organisms, to be published.

2. Observations as yet unpublished.

3. Lynch, Charles, and Cumming, J. G.: The Distribution of Influenza by Indirect Contact—Hands and Eating Utensils, Am. J. Pub. Health 9: 25 (Jan.) 1919.

injected subcutaneously into guinea-pigs. Of these eleven guinea-pigs, three died from generalized tuberculosis.

In the next group of experiments the procedure was the same except that a single spoon was used instead of two as in the previous experiments. Among twenty guinea-pigs so inoculated, eight died from tuberculosis. Of the thirty-one injected animals in this group, eleven, or 35 per cent., died from tuberculous infection.

Spoon Rinse Water.—In these experiments, spoons were first washed by hand in hot water. They were then placed in a large mouth bottle containing 50 c.c. of hot water and shaken for five minutes. This rinse water was then centrifugated and the centrifugate injected. Twelve guinea-pigs were injected with the pooled rinse water centrifugate from the spoons used in two cases of open tuberculosis. The same two patients were rarely used in successive experiments. Of the twelve animals so injected, three died from tuberculosis. Of twenty-four guinea-pigs injected with the rinse waters from single spoons, six died from tuberculosis.

Of the thirty-six injected animals in this group of experiments, nine, or 25 per cent., died from tuberculous infection.

Hand Scrapings.—The hand scrapings from tuberculous patients were obtained by first soaking the hands in warm water for a few minutes and then scraping off the epithelium with a scalpel. Of seven animals injected with the scrapings so collected, three, or 43 per cent., died from tuberculosis.

RESULTS OF INJECTIONS IN GUINEA-PIGS

Injections	Number Injected	Number Dead	Dead from Tuberculosis	
			Number	Per Cent.
Wash water	31	21	11	35
Rinse water	36	22	9	25
Hand scraping	7	4	3	43
Air washing	11	1	0	0

Air Washings.—The specimens of air dust were obtained by drawing air through water by means of a suction pump. The inlet was 3 feet from the floor, the washing process was in each test continued throughout a twenty-four hour period, and there was a total of 17,280 liters of air washed. About 50 c.c. of the 150 c.c. of water used for each twenty-four hour run were centrifugated, and the deposits of eleven of these specimens were injected into guinea-pigs. During an observation period of nine weeks, only one of the injected animals had died; its death, however, was not due to tuberculosis.

COMMENT

Since tuberculous sputum passes through the oral cavity on its way from the lungs of the tuberculous to the exterior, this cavity becomes contaminated. Objects that enter the mouths of these patients become contaminated with the specific organism. As eating utensils are the most frequent inanimate objects which come in contact with the mouth, it is to be expected that guinea-pigs injected with the wash water from eating utensils of the tuberculous patient would die from tuberculosis. It will be noted that 35 per cent. of animals so injected died from the infection.

But the outstanding feature of this series of experiments is that the percentage of deaths, 25, from the rinse water injections was almost as great as that from the wash water injections. It is believed that the hand washing of the spoons in this series of experiments can be taken as representative of the usual method of washing eating utensils. If this is so, the difference in the percentage of deaths between the animals injected with washings and rinsings indicates that only about 30 per cent. of the spoons used by tuberculous patients are rendered free from the organism by the usual hand method of washing.

This group of rinse water injections, with its 25 per cent. mortality, demonstrates the facility of tuberculosis transmission and indicates that in families the eating utensil is the *major* avenue of distribution.

Imagine a family of six in which there is one open case of tuberculosis. What are the chances of introducing tubercle bacilli from the patient in this open case through the spoon route into the mouths of the remaining five members of the family? I do not wish to convey the idea that only the spoon is responsible for transmission; but among all eating utensils, it is the chief conveyer. Since there are six persons in the family, the chances are five to one that at each meal the contaminated spoon is used by one of the well members of the family. But there are three meals a day, and of all eating utensils there are three which actually come in contact with the mouth or lips: the spoon, fork, and cup. As there are three contaminated conveyers, three meals a day, and six persons in the family, the chances are that each well person during the day uses approximately two conveyers contaminated by the tuberculous person. These chances of exchange increase with a decrease and decrease with an increase in the number composing the family.

In view of this exchange of eating utensils in a family group, and in view of the fact that the majority of eating utensils are hand washed, by which method they are neither freed from all organisms nor rendered aseptic, and in addition, that the eating utensil is the most common inanimate object which enters the mouth of the tuberculous as well as that of the nontuberculous, is it not obvious that the eating utensil is the major avenue of tuberculosis transmission?

The primary infection, then, is not the result of airborne transmission, nor is it in the lung as is generally maintained; but it is saliva-borne and in lymphoid tissue. The primary focus might be either in the tonsil or in a mesenteric lymph node. From these primary foci, tubercle bacilli are subsequently passed into the lymph channels and thence to the blood stream. Since the first network of small vessels through which the blood passes is in the lung, the organisms are filtered out, just as in hookworm infection, and here their multiplication produces a secondary focus. In the lung, the evidence indicates that extension again takes place through lymph channels, resulting in multiple foci. From an epidemiologic standpoint the breaking down of these multiple foci, the liberation of tubercle bacilli, the contamination of saliva, the soiling of eating utensils by saliva, and the use of these without being rendered aseptic by boiling water, results in the introduction of repeated small doses, one or more of which are finally carried through the barrier and involve lymphoid tissue of the newly infected person; thus there is completed the cycle of transmission. It is not the large dose of tubercle bacilli that is usually responsible for infection, but it is the repeated small doses.

Although the hand scraping injections gave the highest mortality among the several groups of injected

animals, it is not to be concluded from this result that the hand-to-mouth route of travel is the most frequent mode of tuberculosis transmission. The hands of the tuberculous are contaminated with tubercle bacilli, but our hands only handle objects in common with those of others, and do not enter the mouths of other persons as do eating utensils. The hands are dry, which makes transfer to objects difficult. In addition there is a five-link chain in hand-to-mouth transmission, while through eating utensils there is only a three-link chain, and the two end links are moistened by the saliva which makes for facility of transmission. From a general consideration of tuberculosis transmission it appears that hand-to-mouth spread is second in importance to eating utensil distribution.

None of the animals injected from air washings died from tuberculosis, and although these animals were under observation for only nine weeks there were no indications of infection—no nodules at the point of injection. This result, in conjunction with our reports of former research [1] on the air dust of streptococcus wards, where it was found that hemolytic streptococci were practically never found, might well lead one to conclude that the air route of travel of the tubercle bacillus, as well as that of the hemolytic streptococcus, is a remote possibility. It might be well to consider that there is an exception to this in the creeping infant. In this case, the first link in the chain is from the adult through the air, directly to the floor, and thence to the infant by the hand-to-mouth route. But this is indirect contact and not direct contact transmission, nor is it the major avenue of distribution among persons.

It might be well to add here that there is no disease which man will not be able to control; and so long as he regards any disease or group of diseases as transmitted by the air route, successful control is impossible. In general, we have little or no control over the air that we breathe; consequently we have little or no control over this as a transmitting avenue. This is not so in the case of inanimate objects, through which the major avenue of transmission can be readily closed.

The findings here presented in no way influence the teaching that promiscuous spitting and careless coughing should be heartily discouraged, not only from the standpoint of common decency, but also from that of disease prevention.

CONCLUSIONS

1. The attack against tuberculosis has not resulted in a marked reduction in the transmission rate, because this attack has been made chiefly against the minor avenues of distribution.

2. A communicable disease can be successfully controlled and eventually eradicated only by an attack against the major avenue of spread.

3. The group of rinse water transmission experiments here presented gives a high mortality from tuberculosis and affords striking evidence of the importance of indirect contact transmission in this disease.

4. The results of the rinse water experiments, in conjunction with epidemiologic information, indicate that the major avenue of tuberculosis transmission is through eating utensils.

5. Eating utensil transmission is a three-link chain; the two end links are moist, and this makes for facility of transmision.

6. On the basis of "the theory of case and source elimination," by making the attack through the major avenue of transmission, tuberculosis is as controllable as is typhoid fever.

7. It should not be assumed that we should learn to live with tuberculosis, but rather that we should learn how to reduce the transmission rate.

8. Just as a 99 per cent. removal of organisms from a polluted water supply controlled the intestine-borne infections, so, likewise, will a similar reduction of organisms on eating utensils control the saliva-borne infections.

9. The universal application of the principle of eating utensil asepsis will accomplish more in the control of tuberculosis than will any other single measure of practical application.

10. In the control of tuberculosis, the adoption of the principle of using boiling water as a cleansing and a pasteurizing agent of eating utensils applies especially to the small messing group—the family—and also, but to a less extent, to the public eating place.

TYPHOID FEVER IN THE AMERICAN EXPEDITIONARY FORCES

A CLINICAL STUDY OF THREE HUNDRED AND SEVENTY-THREE CASES *

VICTOR CLARENCE VAUGHAN, JR., M.D.†
Major, M. C., U. S. Army
DETROIT

This clinical study of typhoid fever as it occurred in France among the troops of the American Expeditionary Forces has been made under the direction of Col. J. F. Siler, chief of the Division of Laboratories and Infectious Diseases, Office of the Chief Surgeon, A. E. F. It is based on a personal investigation of the cases of typhoid fever, of paratyphoid, and of clinical typhoid as they occurred in the various army hospitals, supplemented by a statistical study of detailed reports on 373 cases.

As a result of the system employed at the ports of embarkation in the United States, nearly all soldiers leaving for France received preventive typhoid inoculations prior to leaving this country. A study of this disease as it occurred in France becomes, then, a study of typhoid fever in the "immunized" individual. The aim of this investigation has therefore been to determine the clinical difference, if any, between typhoid fever in the vaccinated and in the nonvaccinated, and the effect of vaccination on the course of the disease as well as on the severity and the mortality. Investigations from the point of view of laboratory work and epidemiology have been touched on only as they affect the clinical aspects of the disease.

INCIDENCE

Chart 1, prepared from weekly reports of the sick and wounded to the Surgeon General's Office, shows that the typhoid group of diseases had been present in isolated cases since the autumn of 1917. The rise in the curve for November, 1917, while nearly as high as for that of December, 1918, must not be understood to indicate as great a number of cases. Showing, as it does, the annual death rate per thousand for each week, the curve for November, 1917, is based on a very much smaller total number of men in the American

* Because of its length, this article is published in two parts. The second part will appear next week.

† Dr. Vaughan died, June 4, 1919, at St. Aignan-sur-Cher, France.

Expeditionary Forces than for the fall of 1918. The pronounced rise in the curve for August, 1918, was due in great part to disease at the front. With the men in action and forced at times to drink from polluted streams and rivers, to drink even from the water lying stagnant in the shell holes, it is but natural that the incidence of enteric diseases should take an upward jump. The effect of this is shown in the curve for dysentery in the same chart.

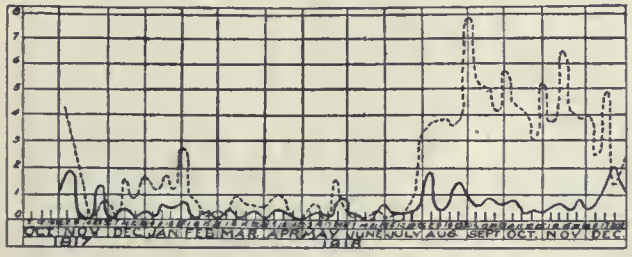


Chart 1.—Morbidity among troops in expeditionary forces during 1917-1918; annual rate per thousand: solid line, typhoid and paratyphoid; broken line, dysentery.

Since the armistice there have been two or three small epidemics of typhoid fever. In December, 1918, there was a rise in the incidence of the disease in the Seventy-Seventh and Seventy-Ninth Divisions which continued for more than three months. Investigation showed that in the Seventy-Ninth Division typhoid infection had occurred while the troops were in action in the Argonne, since which time it had been endemic, the source of infection being apparently healthy or convalescent carriers.[1] We had no opportunity in connection with our studies of investigating the infection in the Seventy-Seventh Division, but presumably the etiology was the same.

In March, 1919, a small outbreak occurred among the troops stationed in the vicinity of Marseilles. Here the disease originated from two sources: (1) polluted water at times improperly chlorinated, and (2) carriers and typhoid cases passing through the camp, especially from combat troops and other organizations previously stationed in infected areas in the former zone of the advance.

Cases providing material for this paper date from Jan. 1, 1919.

TYPHOID FEVER

This paper will be divided into a consideration of straight typhoid fever and of the two paratyphoids, A and B, and of so-called clinical typhoid fever, a condition in which the clinical findings were quite characteristic of the disease but in which the causative organism was not isolated. No case has been accepted for our statistical study as being undoubted typhoid or paratyphoid fever unless the causative organism has been isolated either from the urine or feces or preferably from the blood. I recognize that the finding of the typhoid or a paratyphoid bacillus in the feces alone does not establish a diagnosis, but have assumed that this finding, together with the presence of characteristic clinical symptoms of the disease, and with negative blood cultures, form sufficient evidence on which to base a diagnosis.

The clinical and laboratory findings in 270 cases infected with *Bacillus typhosus* form the basis for this portion of our report.

1. Vaughan, V. C., Jr.: Report on Typhoid Fever in the Seventy-Ninth Division.

Blood Cultures.—In summarizing the results of the blood examinations, I here include for convenience the results in the paratyphoid cases. Of 331 cases studied with a view to isolating the causative organism, blood cultures were made in 274. In the remaining fifty-seven, no blood cultures were made, but diagnosis rested on the isolation of *B. typhosus* or *paratyphosus* from the stool or urine. Of these 274 cases, 180 were positive and ninety-four negative for the organisms in question. These results, representing cultures taken at all stages of the disease, show that the organism was isolated from the blood in 65.7 per cent. of cases of true typhoid and paratyphoid fevers (Chart 2).

Table 1 gives the actual number of cultures taken in each case. The fact that in one case of proved typhoid six blood cultures were negative illustrates the value at times of taking cultures of the excreta.

In Chart 3, which gives the actual number of positive and negative blood cultures on successive days of the disease, the greatest number of positive cultures is recorded between the tenth and the fourteenth days of the disease. This is because the greatest number of cultures were also taken during that period. At the end of the first week of the disease and at the time when rose spots were appearing and the spleen was becoming palpable, typhoid was suspected and blood cultures were first made. The average date of diagnosis was the eleventh day of the disease. Chart 4 gives the same information as that given in Chart 3, on a percentage basis. It shows that during the first week of typhoid fever the organism was isolated from the blood in 65.7 per cent. of trials, and during the second week in 54.7 per cent. During the third and fourth weeks, blood cultures were positive, but in diminished frequency. (Relapses shown in Chart 3 are not included in Chart 4. It is possible that some of the other positive blood cultures obtained late (Chart 4) were also in relapse, although not reported as such.)

TABLE 1.—BLOOD CULTURES IN CASES OF PROVED TYPHOID AND PARATYPHOID FEVERS

No. of Cultures per Case	Total	Positive	Negative
Cultures taken once	203	143	60
Cultures taken twice	48	25	23
Cultures taken three times	10	3	7
Cultures taken four times	12	9	3
Cultures taken six times	1	0	1
Total	274	180	94

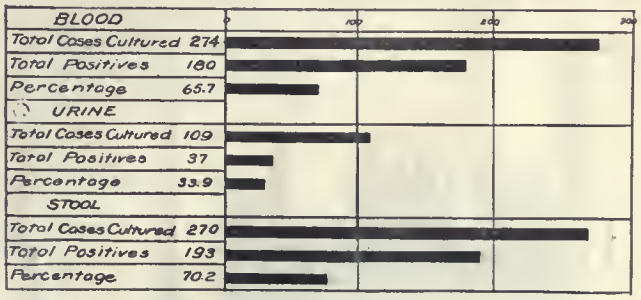


Chart 2.—Percentage of cases showing positive blood, urine and stool cultures in proved typhoid and paratyphoid.

Urine and Feces.—Of 109 cases in which urine cultures were made, thirty-seven, or 33.9 per cent., gave positive results. Of 270 in which cultures of the stools were taken, 193, or 70.2 per cent., were positive for *B. typhosus* or one of the paratyphoid organisms (see

Chart 2). In Chart 5 it is seen that urine cultures were most frequently positive during the second and third weeks of the disease, and that stool cultures were positive in as high as 57 per cent. of cases in the first week, from which high point the percentage gradually

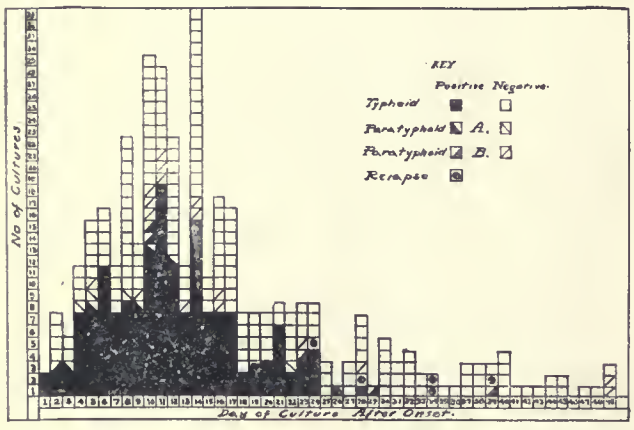


Chart 3.—Actual number of positive and negative blood cultures in proved cases of typhoid and paratyphoid by days after onset of disease.

decreased so that by the sixth week they were positive in only 9 per cent. Figures for later weeks both in the urine and the feces curves, are based on smaller numbers of cultures and are therefore less reliable.

Simultaneous blood and feces cultures made in 150 instances in successive weeks of the disease (Chart 6) showed that during the first week the likelihood of making positive diagnosis by stool culture was two thirds as great as by blood culture, whereas in the second week the chances were about even, the advantage still resting slightly with the blood method. During the third week the opportunities for obtaining the organism were somewhat better by the stool examination. After the third week the possibility of obtaining the organism decreased by both methods, the stool method remaining the better. In fifty out of the 150 cases, urine cultures were also made. Perhaps the most important fact to be brought out in this analysis is the persistence of positive blood cultures into the third week in a certain proportion of cases.

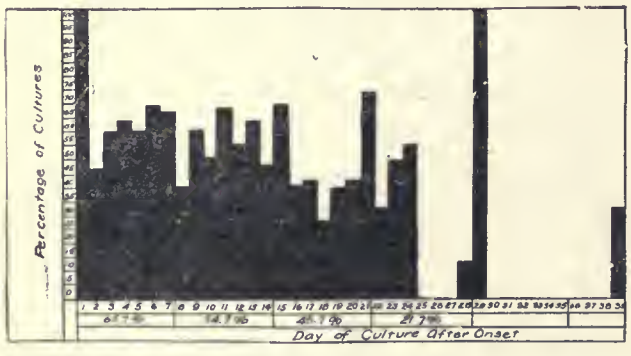


Chart 4.—Percentage of positive blood cultures in cases of proved typhoid and paratyphoid by days after onset of disease.

Serodiagnosis.—Serodiagnosis, particularly by the use of the Widal reaction, has not been relied on in the diagnosis of these infections. In individuals inoculated with the triple vaccine the Widal as usually performed is valueless.[2] The well known tendency of the paratyphoid B bacillus to be agglutinated in much higher dilutions than *B. typhosus* and particularly than the paratyphoid A bacillus, together with the presence of group agglutinins or coagglutinins, further tends to vitiate the results. Antibody titration by the Dreyer method promises better results in the vaccinated, but time and equipment did not permit its use in this clinical study.

2. Rist, E.: J. Lab. & Clin. Med. 3: 1 (Oct.) 1917.

SYMPTOMATOLOGY

Antityphoid inoculation as an auxiliary to sanitary measures has diminished the occurrence of typhoid fever but has not freed us entirely from the disease. In the United States Army in 1914, two years after vaccination had been made compulsory, there occurred 7.5 cases per hundred thousand. Vaccination confers only a relative immunity, and in France, where the sanitary conditions could not always be ideal, we had expected a moderate increase in the number of cases.

We had been led, however, to expect that the clinical condition encountered in the inoculated would be quite different from that in the nonvaccinated. Gay,[3] in quoting foreign workers, remarks that the mortality among the vaccinated, as compared with the nonvaccinated, decreases even more rapidly than does the morbidity. He says: "Not only is the mortality rate decreased, but the disease itself is found to undergo a very distinct modification when it does occur in the vaccinated. It has frequently been found to be so mild as to offer great difficulty in its classification."

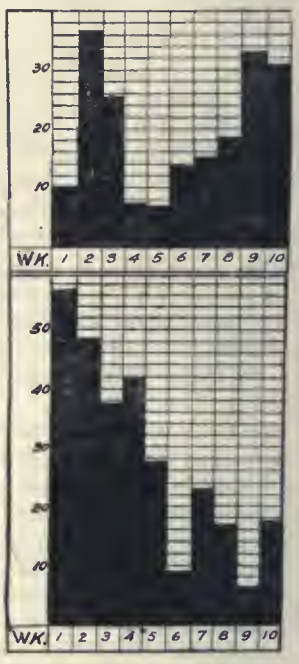


Chart 5.—Above, percentage of positive urine, cultures in successive weeks of the disease in 109 cases of proved typhoid; below, percentage of positive feces cultures in successive weeks of the disease in 270 cases of proved typhoid.

We have analyzed the clinical symptomatology in 270 cases of proved typhoid fever, in all of which the patients had been vaccinated previously. The result of our analyses are given in Chart 7, on which are shown the incidence and average day of appearance of the symptoms and the more frequent complications. The ordinates represent the total percentage of cases in which any one symptom was observed, while the abscissas indicate the average day of the disease on which each symptom was noted. Thus, one may read that diarrhea occurred in 45 per cent. of the cases and that the average day of appearance was the fourth day; or that rose spots were noted in 62 per cent. of the cases, usually first recognized on the twelfth day. From this chart, then, the entire clinical symptomatology may be reconstructed.

The most striking feature of the disease in the inoculated, as here graphically shown, is its almost classical resemblance to the old typhoid as we knew it in the unvaccinated. The chill in nearly one fourth, the early bronchitis in well up toward one half, the initial constipation in about one fifth of the cases, followed in a few days by diarrhea in one half, meteorism, rose

3. Gay, F. P.: Typhoid Fever Considered as a Problem of Scientific Medicine, New York, the Macmillan Company, 1918.

spots and enlarged spleen in the second week, complications in the third week, and cessation of the fever averaging around the end of the fourth, form a clinical picture in no wise differing from that of typhoid in prevaccination days.

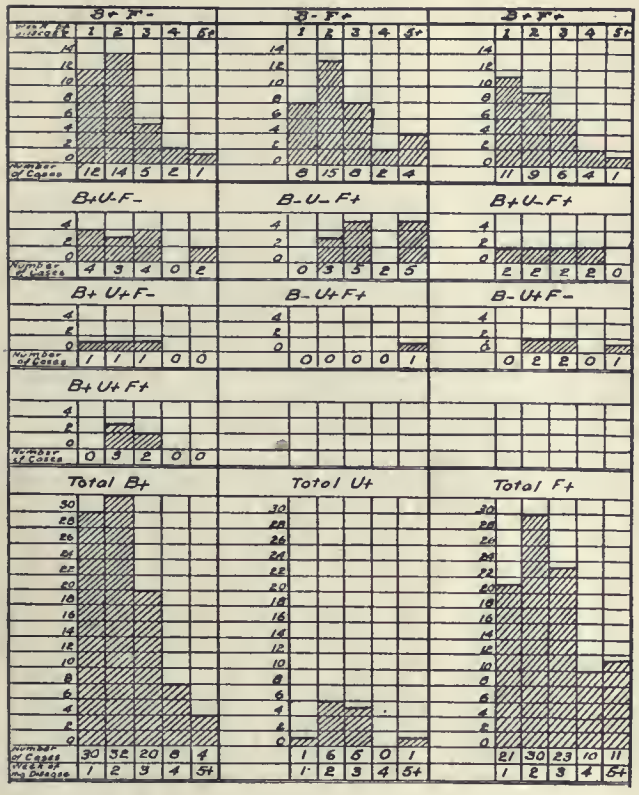


Chart 6.—Comparison of simultaneous blood, urine and feces cultural results, by weeks of disease, in 150 cases of proved typhoid.

Not only was this resemblance true on paper, but it was likewise true at the bedside. In the majority of the cases in which the typhoid bacillus was isolated there was no difficulty in the clinical diagnosis. Typhoid facies, coated tongue, rose spots, palpable spleen, rigid, slightly tender abdomen and dicrotic pulse were the rule rather than the exception. Just as in the uninoculated, all gradations of the disease were found. We have long been acquainted with the mild and ambulatory cases, difficult of diagnosis because of the mildness and frequent absence of many of the symptoms. Many such have probably occurred among our troops and remained undiagnosed. It is further possible that the number of cases that would fall into this class has been greatly increased by preventive inoculation. But of those numerous patients whom we have seen sick in hospital, there could be no doubt as to the clinical diagnosis.

Leukopenia.—White blood counts failed to detect a leukocytosis. On the other hand, the leukopenia was not so marked as it is described in the classical typhoid (Charts 8 and 9). The average white counts on successive days of the disease stood around 7,000. Some were higher and some were lower, but not a few are reported of from 2,000 to 4,000 per cubic millimeter. Realizing that our reports were being received from seventeen different laboratories and that the high counts might be due to variations in technic, we grouped all the reports from a single hospital in which cases of typhoid fever were unusually frequent. Here the average white counts on different days of the disease, as compared with the average for all hospitals, was lower, but not remarkably so (Chart 10).

In uncomplicated typhoid the white count averaged around 7,000. This figure agrees with that reported by Hawn, Hopkins and Meader.[4] Whether this is due to a change resultant on vaccination or to other causes, it is hard to state. The presence of several real instances of leukopenia prove the possibility of such occurring in the antityphoid inoculated. The average white count during hemorrhage was 4,500; in perforaton, 6,000; in lobar pneumonia complicating the disease, 12,000, and in bronchopneumonia, 9,000. These, again, are figures that agree with those for typhoid in the unvaccinated.

Fever.—Chart 11 shows the case of a man in hospital with an acute febrile disturbance who in the second week had the onset of a typical typhoid fever with steplike rise in the fever curve and a slow pulse; the fastigium starting in the second week of the disease, becoming definite in the third and fourth with increased rapidity of the pulse, and followed in the fifth week by lysis. In Chart 12 *B* is seen again the steplike rise and the tendency to a continued high fever during the

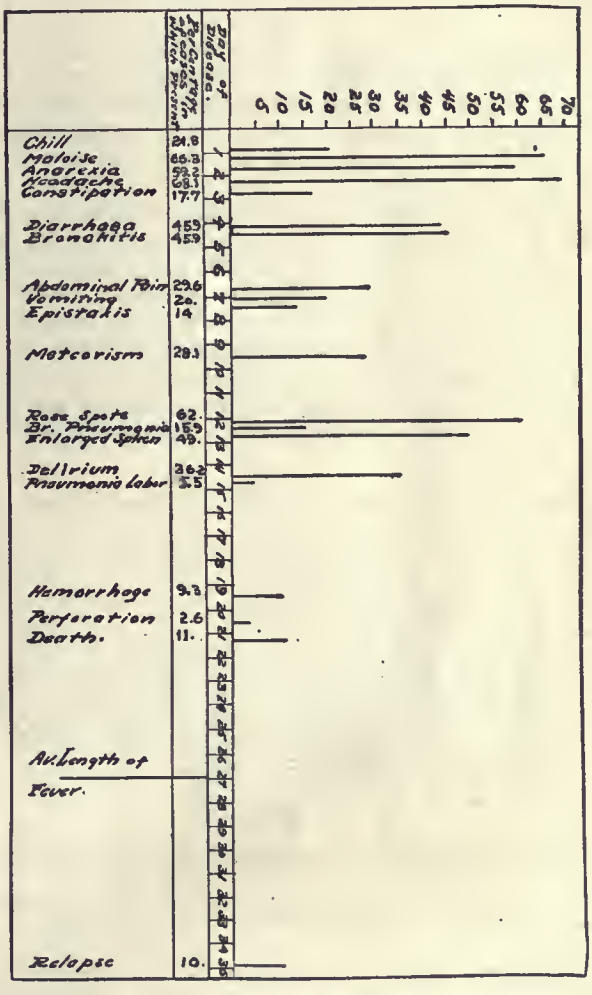


Chart 7.—Incidence and average day of appearance of symptoms and frequent complications in 270 cases of proved typhoid.

succeeding ten days. *C*, on the same chart, begun during the fastigium, shows that period and the following decline by lysis. Chart 13 *G* and *I* show relapses following rather mild initial courses.

4. Hawn, C. B.; Hopkins, J. D., and Meader, F. M.: Outbreak of Typhoid Fever Among American Troops in England, J. A. M. A. 72: 402 (Feb. 8) 1919.

The type of fever in vaccinated typhoid patients did not differ remarkably from that in the unvaccinated. The average day of cessation of fever was 26.9. Relapses occurred in 10 per cent. of the cases, and the average date of onset was the thirty-fifth.

Atropin Test.—This was performed in a small number of cases, and was usually found to be positive (no pulse increase over 20 beats a minute after 2 mg. of atropin subcutaneously). This was particularly the

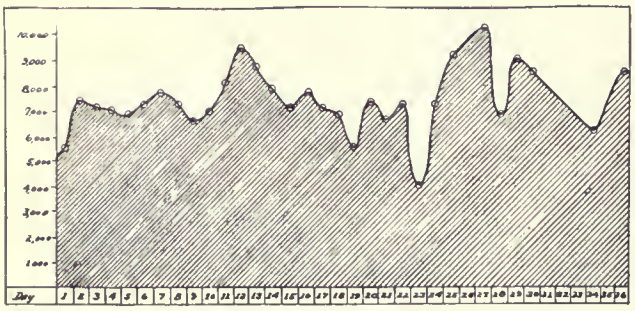


Chart 8.—Average white blood counts in "uncomplicated" cases of proved typhoid arranged according to day of disease.

case during the first week, when the pulse was slow. It was often negative after the pulse rate had increased. We regard this test as of confirmatory value similar to such findings as a palpable spleen, which may be absent, and which again does occur in other diseases than typhoid.

Preliminary Diagnoses.—A word should here be given to the admission diagnoses of these cases of proved typhoid (Chart 14). Of 206 cases in which the entrance or provisional diagnosis was noted, 120 bore a diagnosis of respiratory disease, while only forty-nine were diagnosed as gastro-intestinal. This, again, is in accordance with our previous knowledge of the disease, the initial symptoms being not local but the general symptoms of acute infection with frequently a concomitant bronchitis.

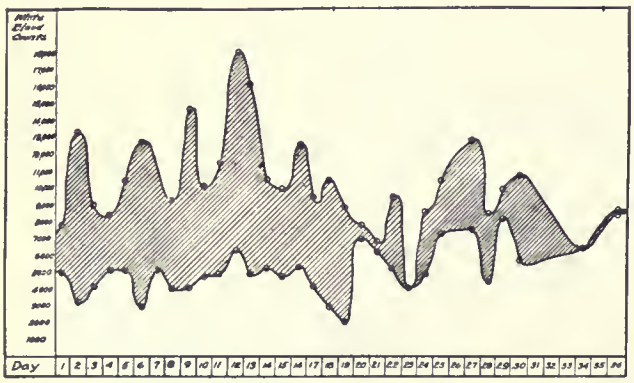


Chart 9.—Maximum and minimum blood counts in "uncomplicated" cases of proved typhoid arranged according to day of disease.

Mortality.—Death occurred in 11 per cent. of the 270 cases studied, and the average day of death was the twenty-first.

LITERATURE

The foregoing clinical findings in typhoid fever are in accord with the observations of others. Labbé [5] remarks:

> The symptomatology has nothing characteristic. The same elements are present as among the unvaccinated, and they appear in the same order. The onset is not marked by special symptoms. . . . During the fastigium the diarrhea is neither more nor less frequent. . . . At most, one could say that the abundant diarrheas are a little less frequent among the vaccinated.

5. Labbé, Marcel: Ann. de méd. **3**: 13, 1916.

TABLE 2.—OCCURRENCE OF ROSE SPOTS

Nature of Eruption	Vaccinated, per Cent.	Nonvaccinated, per Cent.
Absent	6	10
Discrete	18	15
Average	40	53
Heavy	28	13
Very profuse	8	9

He suggests that the exanthem may be more profuse. His figures for the occurrence of rose spots are reproduced in Table 2. In summarizing these figures he states that the eruption was unusually intense in 36 per cent. of the vaccinated and in but 22 per cent. of the nonvaccinated, and concludes that although unusually intense eruptions also occur in the unvaccinated and although it is not an exclusive phenomenon of the vaccinated, the unusually heavy and confluent eruptions are more frequent among the latter. This may be true, as we have not made examinations with this particular point in view; but I would call attention to the fact that in Labbé's figures the percentages of absent and discrete rose spots are about the same in the

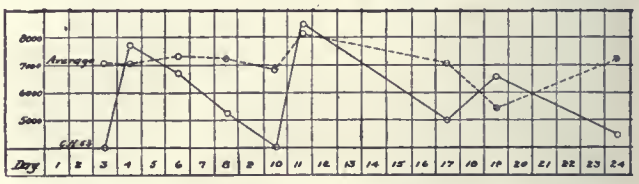


Chart 10.—Comparison of average white blood counts for entire series with average blood counts reported from Camp Hospital 53.

two columns, as are also the percentages for the very profuse. The difference occurs in the two intermediate stages. It is frequently difficult to distinguish between two gradations so close together. Were the variations farther separated in the columns, the evidence would be more convincing.

Labbé, in discussing the rose spots, also states that they are frequently quite persistent, lasting as long as fifteen or twenty days. They may occur as early as the fourth day. Blood cultures in his experience are negative after the fourteenth day, although in the nonvaccinated they may be positive as late as the twenty-eighth. He further asserts that the febrile period is notably shortened in the vaccinated. Patients during the pyrexia are fully as sick and as toxic as are the unvaccinated; but instead of three or four weeks of fever, there are usually only two or three. After the defervescence there is no subsequent rise, but the gastro-intestinal symptoms persist. Relapse is decreased in frequency from 10 per cent. in the nonvaccinated to 3.5 in the inoculated. In the mortality he reports the greatest results. A death rate of 21.4 per cent. among the nonvaccinated is decreased to 2.4 per cent. among those who have received two or more injections.

How are we to reconcile these reports with our findings of a febrile period averaging twenty-seven days, positive blood cultures into the fourth week, 10 per cent. of relapses, and a mortality of 11 per cent.? It is true that we have many cases with short febrile period, but the figures clearly show that for these short cases

we had a similar number with long duration, and that the average was as in the nonvaccinated. A positive blood culture is an absolute finding, whereas a negative culture proves nothing. I can only state that we had positive cultures after the second week. Our true mortality may well be under 11 per cent. I assume that to be too high rather than too low. Practically all severe cases of typhoid, especially in those who died, must have been recognized as such, whereas in hospi-

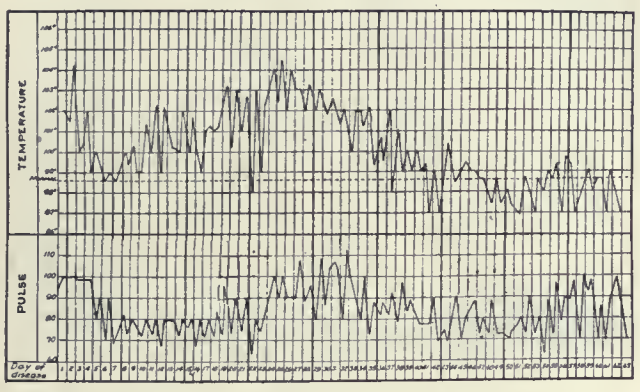


Chart 11.—Pulse and temperature in acute febrile disturbance; onset of typical typhoid in second week.

tals where there was no epidemic many lighter cases probably remained undiagnosed. Our true mortality was presumably below 11 per cent., but there is a wide interval between that figure and the 2.4 per cent. of Labbé, which requires further interpretation.

The reason for this discrepancy between figures is recognized as a possibility by Labbé. His report comprises a study of 154 individuals who had received from one to four inoculations of antityphoid vaccine. Practically none had received triple vaccine. Immunized against *Bacillus typhosus,* these men had become infected with one of the two paratyphoid organisms. Among these only fifteen were infected with the organism against which they were inoculated, and among them the mortality was 26.6 per cent., more than twice as high as our own mortality. These fifteen were diagnosed by positive blood cultures. The well known lower mortality in the paratyphoid infections has lowered Labbé's total mortality figures.

The clinical symptomatology among French troops, as described by Bernard and Paraf,[6] unlike that of Labbé, is definitely divided into that of straight typhoid infection and of paratyphoid. Concerning the former, they remark:

> Typhoid fever (among the vaccinated) has no peculiar characteristics which might indicate a modification of the disease resultant on a modification of the soil. The different classical forms are found with their usual characteristics. The mild forms present the usual appearance and evolution; few symptoms; no typhoid mental state; duration ten to fifteen days without complication, and simple convalescence. The moderately severe forms, common here as always, are the most frequent. They show nothing special, either in appearance of the symptoms, in the temperature curve, or in the progress or length of the disease. We remark that in four cases we found an unusually abundant eruption of rose spots and in one a total absence thereof. . . . The more serious cases showed meteorism, a thick, dry tongue, and lessening of the heart sounds, as they are among the nonvaccinated. It is worth while, however, to mention the extreme rarity of the serious complications.

6. Bernard and Paraf: Ann. de méd. **2**: 443, 1914.

The mortality in the twenty-six cases studied by these authors was 0 per cent., and the average severity (severe and fatal cases) was 26.9 per cent., as contrasted with 37.5 per cent. severity among the nonvaccinated. There is in their series a diminution in the gravity of the disease.

Campani and Gallotti,[7] working on the Italian front, found in a study of 144 nonvaccinated civilians and 341 vaccinated typhoid and paratyphoid soldiers that the mortality in the vaccinated straight typhoid patients was 8.6 per cent. and in the paratyphoid A and B, 4.6 and 7.8 per cent., respectively, as compared with 20 per cent., 0 and 0 per cent. in the unvaccinated. They found that in both groups about 42 per cent. of the patients had febrile periods lasting into the fourth week, and that the average duration of fever was, in the soldiers, 24.5 days, and among the civilians, 28 days. They state that the febrile curve, instead of being irregular and low in the vaccinated, was high and decidedly more regular than among the nonvaccinated, and that relapse occurred more frequently among the former. Splenomegaly and nervous phenomena were more frequent among the vaccinated. They conclude that vaccination has lessened both the mortality and the severity of the disease.

Bourges [8] reports in detail the case histories of five vaccinated men infected with *B. typhosus,* all of whom recovered. The descriptions are those of cases of classical typhoid.

Freund,[9] reporting typhoid infection in the German army, concludes that among the vaccinated there are more remissions and intermissions, and a greater proportion of mild cases. The fever is milder, but the total duration of the disease is not shortened. There is no change in the frequency of complications or relapses resultant on vaccination. The mortality among the vaccinated is given by him as 8.3 per cent.

Hawn, Hopkins and Meader,[4] describing thirty-eight cases studied in an outbreak among American troops

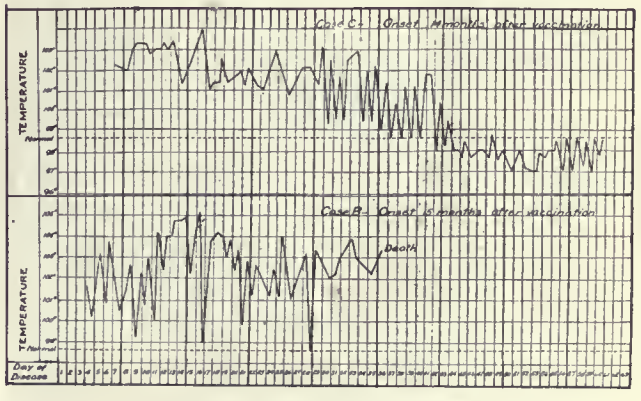


Chart 12.—Temperature in two cases.

in England, found clinical signs similar to our own. They described initial chills in 16 per cent., diarrhea in 58 per cent., constipation in 21 per cent., abdominal pain in 6 per cent., and epistaxis in 2.6 per cent. Among their thirty-eight cases rose spots were described in nineteen, palpable spleen in fifteen, and abdominal distention in nine. The average white counts ranged around 7,000 or less, and blood cultures were positive in twelve cases. The average duration

7. Campani, A., and Gallotti, A.: Gior. di med. mil. **66**: 614, 1918.
8. Bourges, H.: Arch. de méd. et pharm. nav. **105**: 224, 1918.
9. Freund, Ernst: Wien. klin. Wchnschr. **29**: 1232, 1916.

of the fever was thirty-five days, and the mortality in their series was 13.15 per cent. These findings among American troops in England corroborate ours for those in France.

Finally, the mortality for all troops in the American Expeditionary Forces from straight typhoid, between July 1, 1918, and May 31, 1919, was, for 1,242 cases, 13 per cent.

MORTALITY

Numerous observers have reported mortality results in the vaccinated. In Table 3 are given records of true typhoid in individuals immunized against *B. typhosus*.

It follows from a perusal of these varied results that

TABLE 3.—TYPHOID MORTALITIES IN THE VACCINATED

	Cases	Inocula-tions	Mortality, per Cent.
Bernard and Paraf	26	.....	0.0
Hunermann*	....	4	2.6
Hunermann	....	2	6.0
Crossoninit	28	3	7.1
Crossoninit	50	1-2	8.0
Campani and Gallotti	....	.....	8.6
Hawn, Hopkins and Meader	38	.....	13.1
Bonnel‡	15	3-4	13.3
Vaughan	270	.....	11.0
Total A. E. F., 11 months (as above)	1,242	.....	13.0
H. Bourges	5	.....	0.0
Freund	....	.....	8.3

* Hunermann: Verhandl. d. deutsch. Kong. f. innere Med., 1910, p. 192.
† Crossonini, E.: Sperimentale **71**: 191, 1917.
‡ Bonnel, F.: Arch. de med. et pharm. mil. **65**: 687, 1916.

the final determination of the mortality in inoculated typhoid patients is yet to be made. Many of the figures quoted above are much lower than our own, and yet the average is not lower than the mortality of 7.6 per

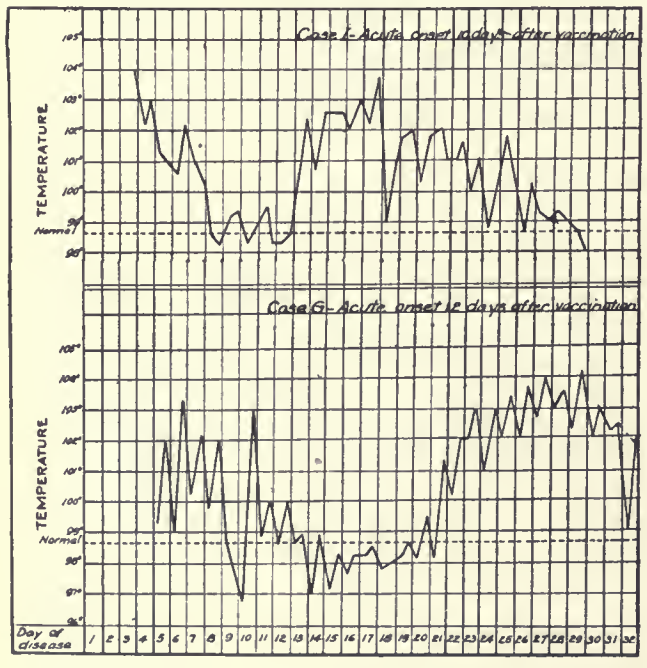


Chart 13.—Temperature in two cases with relapses following rather mild initial courses.

cent. among 20,000 men as reported by Reed, Vaughan and Shakespeare [10] in the Spanish American War, or of that of 9.1 per cent. in 1,500 unvaccinated patients treated under Osler.[11]

10. Reed, W.; Vaughan, V. C., and Shakespeare, E. O.: Report on Origin and Spread of Typhoid Fever in U. S. Military Camps During the Spanish War of 1898.
11. Osler, Sir William: The Principles and Practice of Medicine, New York, D. Appleton & Co., 1918.

The various and varying factors that influence the death rate in disease, and particularly in a disease like typhoid fever, can never be mathematically eliminated, and can be rendered negligible only when the mortality figures from all sources have become so great that they include numerous cases touched by every one of these factors and by all of their variations.

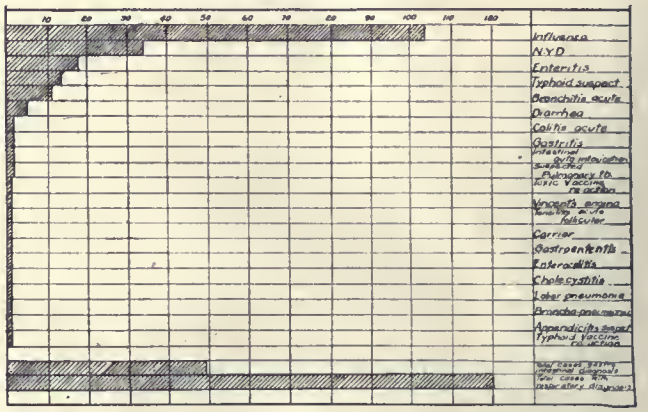


Chart 14.—Preliminary diagnosis in 206 cases of proved typhoid.

TIME RELATIONSHIP TO VACCINATION

Having ascertained that vaccination did not change the essential characteristics of the disease as it was found in the hospital and that it produced no such marked alteration in the incidence of complications or in the mortality as to be termed decisive, let us examine the other phase of the situation, the effect, if any, produced by varying intervals of time after the inoculations.

TABLE 4.—RELATIONSHIP BETWEEN TIME INTERVAL SINCE VACCINATION AND SEVERITY OF THE DISEASE IN TWO HUNDRED AND SEVEN CASES OF PROVED TYPHOID

Months Since Inoculation	Mild Course, per Cent.	Moderately Severe, per Cent.	Severe (Recovered) per Cent.	Died, per Cent.	Total Cases
1	57.6	24.2	3.0	15.2	33
2	12.5	62.5	12.5	12.5	8
3	57.2	28.5	0.0	14.3	7
4	11.1	44.4	22.2	22.3	9
5	32.0	52.0	8.0	8.0	25
6	31.5	47.4	10.5	10.6	19
7	40.0	40.0	20.0	0.0	20
8	66.6	26.7	0.0	6.7	15
9	31.2	31.2	18.8	18.8	16
10	0.0	33.3	66.7	0.0	3
11	12.5	62.5	25.0	0.0	8
12	40.0	40.0	20.0	0.0	5
13	16.6	66.7	16.7	0.0	6
14	20.0	60.0	20.0	0.0	5
15	18.2	36.3	18.2	27.3	11
16	0.0	66.7	33.3	0.0	6
17	0.0	50.0	25.0	25.0	4
18	25.0	50.0	25.0	0.0	4
19	0.0	0.0	0.0	100.0	1
20	50.0	50.0	0.0	0.0	2
Total					207

First, as regards the severity of the disease: In 207 cases of *B. typhosus* infection in which the date of inoculation was obtainable and the severity of the disease could be determined, we were able to tabulate the data presented in Table 4.

More instructive information is obtained on computing the average severity of the disease (severe percentage combined with fatal percentage) for six month periods following inoculation (Table 5).

There is seen a small but progressive increase in severity with lapse of time after inoculation. If we accept only those months that show ten or more cases

as being sufficiently large numbers to give reliable information, we find for one month periods the following:

It appears that the average severity of the disease remained fairly constant throughout the first eight months following inoculation, after which it increased gradually.

The incidence of relapses during this period is not notably changed. During the first month relapses ocurred in 10 per cent. and during the first eight months in 11.9 per cent., as compared with 10 per cent. for the total series. Likewise, complications occurred in 21.5 per cent. during the first month, in 23.2 per cent. during the first eight months, and in 33.5 per cent. during the entire period. The last figure becomes higher because in the nineteenth month two complications occurred in one case, giving a resultant percentage of 200.

The type of onset of the disease appears to be influenced by the lapse of time after vaccination. Acute onset predominated in the first month, when it occurred in eighteen out of twenty-nine cases. During all other months the onset usually was gradual. Sixteen out of the twenty-nine cases showed onset between the

TABLE 5.—AVERAGE SEVERITY OF THE DISEASE

Months after Inoculation	Severity Percentage
From 1 to 6	11.6
7 to 12	14.7
13 to 18	15.9

TABLE 6.—AVERAGE SEVERITY BY MONTHS FOLLOWING INOCULATION

Month	No. of Cases	Severity Percentage
1	33	9.1
5	25	8.0
6	19	10.5
7	20	10.0
8	15	3.3
9	16	18.8
15	11	22.7

seventh and the twelfth days after inoculation—the recognized usual incubation period for typhoid fever. Imperfect vaccine with unkilled organisms as a cause of these cases is a possibility, but in our opinion a very remote one. Results of laboratory accidents, both reported and some unreported but with which I am personally acquainted, incline us to the belief that if living typhoid organisms were inoculated through the skin into a healthy adult, the chances are that he would not develop typhoid fever. We are particularly convinced of this as regards attentuated cultures. Most cases of laboratory infection appear to be due to hand to mouth contagion.

We know that about ten days are required after the introduction of antigen, be it living organism or killed vaccine, before antibodies appear in abundance and, in the case of the former, before disease symptoms become manifest. We also know that until the reactive period the organisms multiply freely in the body. If a man is inoculated on the first day with reliable vaccine and on the fourth or fifth becomes infected through contaminated drinking water, the organisms will grow abundantly within the body for a time. But this time will not be as long as it would were he not vaccinated. In the latter case it would be from seven to fourteen, usually ten days, after *infection*. In the former it would be that interval after *inoculation*, when the antibodies called out by the artificial antigen would be present in numbers and would act on the living, growing virus. This we postulate to be the explanation for the larger number of cases occurring in post-vaccinated at the end of the incubation period. Patients in this group with onset preceding the seventh day were probably infected before inoculation. All patients who fell ill with the disease during the first month after inoculation were in a camp where there was a small epidemic of typhoid at the time, and all were vaccinated with the lipovaccine.

(To be continued)

Clinical Notes, Suggestions, and New Instruments

BLOODLESS THORACOSTOMY

R. J. BEHAN, M.D., PITTSBURGH

There are so many methods of trocar drainage of empyema cavities that I have hesitated to suggest another. However, since most of these methods have certain defects and are cumbersome and difficult of application, I thought it would be wise to describe a method minus such difficulties that I have used for the last four years.

At present there does not exist much antagonism to puncture drainage of an empyemic cavity; but four years ago such a procedure was radical, and was regarded with a good deal of skepticism. It was contended that a wide hole in the chest wall was necessary for empyema drainage, and it was held that drainage could not be thoroughly established through a small opening. It was also held that if a small opening should be made into the chest wall and a drainage tube inserted through this opening, the impinging of the ribs against the tube would block the tube and cut off the drainage.

So many of the patients having either acute or chronic empyema are in such bad condition and are so feebly resistant that any operative interference is very dangerous, especially operative interference that entails shock. The removal of a rib, with the cutting, etc., that is associated, causes some shock and has an operative risk; but the pushing through the chest wall in an intercostal space of a trocar and a cannula, after the area has been thoroughly anesthetized, causes little shock and is associated with hardly any risk.

It was with the idea of developing an instrument which could be easily used, which would not collapse with rib pressure, and which could be obtained at a reasonable cost, that I devised an apparatus, and had Harvey Pierce & Co. of Philadelphia make it for me in 1915.

The apparatus consists of three essential elements.

First, a very long aspirating needle (*a*) with a detachable nipple (*b*) which will fit a record syringe (*c*). This needle is calibrated from the tip to the hilt in centimeters and has a large lumen.

Second, a trocar (*d*) and a cannula (*e*). The trocar is of the shape shown in the illustration. It consists of a blade portion with a handle bent almost at right angles. At the upper part of the trocar blade is a groove, made so that it will accommodate the long aspirating needle. Over the trocar can be sheathed a cannula, which is calibrated in centimeters from the tip to the hilt. Over this cannula is drawn a shoulder-piece or sleeve (*f*), which can be tightened and firmly fixed at any point on the cannula. This shoulder has on it, on each side, a slit through which a tape can be threaded. This tape is passed around the body of the patient and tied so that the cannula is held firmly in place. At the end of that part of the cannula which is external to the patient is a small hole through which a suture, which has been passed through a rubber retention catheter, (*g*), introduced through the cannula (after the trocar has been removed), may be threaded and tied.

This self-retaining catheter (*g*), with its obturator (*h*), is the third essential constituent of this apparatus.

The trocars and cannulas are in various sizes and lengths to allow for different widths of the intercostal spaces and the varying depths at which pus is found. The depth to which a cannula may be inserted may be so regulated by the adjustable sleeve or shoulder-piece on the cannula that an abscess of the lung, even some distance from the surface, may be drained without danger.

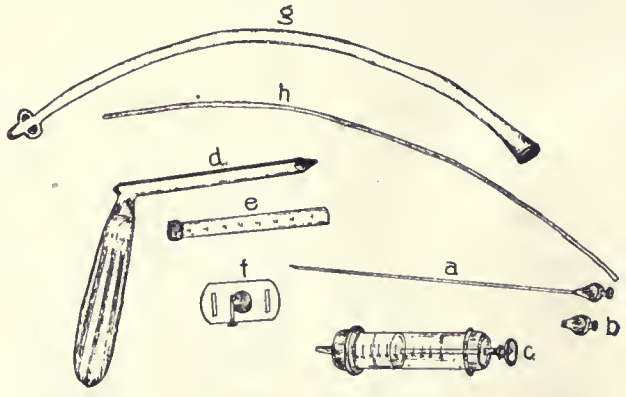
OPERATIVE TECHNIC

The empyema or abscess cavity is localized by physical examination and the roentgen-ray. Then the skin over the lung abscess or empyema is sterilized by tincture of iodin, and is anesthetized by procain 1 per cent., so that the tissues down to and including the pleura are desensitized.

The large needle attached to a record syringe is now inserted. As soon as the tip of the needle has passed through the skin, the piston is drawn up in the barrel so that there is a constant negative pressure in the needle. The needle is now inserted directly toward the supposed location of the empyema or abscess.

As soon as the needle enters the pus cavity, pus is aspirated into the syringe by negative pressure. The syringe is detached and the needle is left in place. The depth at which pus is found is noted on the needle. The nipple of the needle is now removed.

Then the trocar with its cannula, the shoulder of which has been set at a little more than the depth indicated on the needle, is threaded on the obturator (shown in the illustration) and is pushed down over the needle into the cavity. The needle and trocar are now removed, the cannula being held in place by the fingers of the left hand of the operator. A rubber self-retaining catheter of a slightly larger size than the lumen of the cannula is now threaded on the obturator and is put on the stretch so that the portion which is to enter the cannula is of considerably less diameter than when in its normal state of tension. It is then pushed through the cannula into the pus cavity.



Apparatus for performing bloodless thoracostomy: *a*, puncture, needle; *b*, nipple (detachable); *c*, record syringe; *d*, trocar; *e*, cannula; *f*, sleeve; *g*, catheter; *h*, obturator.

During these procedures a slight amount of air may enter the pleural cavity. Such entrance may be unavoidable, but is of no consequence. I have never found any ill resulting from it. However, aspiration of air generally does not occur, as the pus is at a greatly increased pressure and immediately drips out of the needle, or will run out of the catheter after it has been inserted. Immediately on the insertion of the catheter, after the obturator is withdrawn, I block off the catheter by placing on it a hemostat.

The tape, attached to the shoulder of the cannula, is tied around the chest of the patient. A piece of very thin gauze, well coated with petrolatum, is wound around the cannula beneath its shoulder. A suture is then passed through the catheter, which is held fixed in place at the proper depth. This suture is generally of linen or silk. As a further protection, the shoulder of the cannula may be sutured with silkworm gut or with linen to the skin.

On the catheter itself a two-way cock may be inserted. Most frequently we insert a rubber tube connection and drain into a bottle alongside the patient's bed, as is done for empyema of the gallbladder. It is also common with us to use the so-called Woulfe bottle drainage, and at the same time we have the patient blow the water from one of the bottles to another. If a rubber or glass Y has been placed on the tube, surgical solution of chlorinated soda (Dakin's solution) may be instilled through one of the arms of the Y, if it is necessary, or the solution may be run directly into the cavity through the catheter.

As a final dressing, gauze is applied around the tube and cannula, and the tapes passing around the chest are covered with adhesive plaster which has been moistened with ether, in order to make it stick.

RESULTS

I have used the foregoing method in numerous cases, and have invariably found it satisfactory. It has been adopted by my colleagues in the hospital, one of whom used it extensively during the influenza epidemic of 1918, and he states that in no case did he have any difficulty.

The entire method is very simple and causes absolutely no shock to the patient. Little patients who have been brought to our institution almost moribund have improved wonderfully from day to day with the trocar-cannula drainage inserted under a local anesthetic. I have used this method also in cases of lung abscess. In one case, that of a child, the abscess had communicated with a bronchus, so that for some time he had been coughing up pus. The abscess cavity was definitely located by the roentgen-ray. It was about 2 inches from the surface of the lung, in the third interspace in the anterior axillary line on the right side. The needle was inserted and pus was found. The drainage was then introduced, according to the technic described above. Considerable foul pus was evacuated. Immediately after drainage had been instituted, the disagreeable, foul sputum ceased. The temperature dropped, and the child made a quick recovery, except for a persisting sinus, which was finally healed by the injection of Beck's paste.

In another case of lung abscess the patient inside of a week, after drainage had been instituted, began to take on flesh. The cough had ceased and there was no more foul sputum.

The apparatus is such that it enables us to reach deep-seated abscesses of the lung which, otherwise, would be inaccessible.

So far, I have had no hemorrhage, although I always, of course, follow the needle which has localized the pus and has been left in place. I have allowed the cannula to remain in the chest wall for long periods. It does not seem to produce any necrosis of the surrounding tissues or of the adjacent ribs. The opening remains absolutely air-tight for at least eight or ten days; then if it leaks air somewhat, the leakage may be controlled for another week or ten days by smearing over and around the cannula large quantities of petrolatum.

As I have said, in no case have I encountered disagreeable or unsatisfactory after results.

Suite 6079, Jenkins Arcade Building.

Tobacco Smoking in Pulmonary Tuberculosis.—There is some conflict of opinion about the harmfulness of tobacco smoking in pulmonary tuberculosis, and at least one writer has tried to prove that it is actually beneficial. Most sanatoriums limit the time for smoking to half an hour after meals. Certainly, smoking before meals is definitely harmful in that it satisfies by numbing the appetite at the time when this ought to be keenest. Quite apart from the action of tobacco on the circulation, it is generally acknowledged that it is an irritant to the upper air passages. Many a patient will admit that he has more real sputum (not merely saliva) when he is smoking heavily than when he gives it up. Nevertheless, the psychologic factor is again so strong as to decide policy in this respect; and where men become miserable or restless when they are deprived of their tobacco, it is better to allow it in moderation after meals. Patients with laryngeal tuberculosis should be forbidden the use of tobacco altogether.—James Watt, *J. State Med.*, March, 1920.

STATE BOARD STATISTICS FOR 1919

ANNUAL PRESENTATION BY THE COUNCIL ON MEDICAL EDUCATION OF RESULTS OF STATE BOARD EXAMINATIONS

On pages 1084 to 1091 are three tables, A, B and C, giving in detail the results of the various state medical license examinations held during 1919. All state licensing boards sent in reports and the figures have been carefully verified.

Tables A and B, when read from left to right, show for each medical college named (*a*) the number of graduates appearing for examination in each state, (*b*) whether they passed or failed, (*c*) the total number examined during the year, (*d*) the number who passed, (*e*) the number who failed, (*f*) the percentage of failures, and (*g*) the number of states in which graduates of that school appeared for examination. Read from above downward, they give the results by states, showing (*h*) the number registered and rejected from each college, (*i*) the total numbers examined, registered and rejected, and (*j*) the percentage of rejections. The majority of graduates take the license examination in the state in which the college is located, as shown by the dark diagonal zone of figures passing from the upper left to the lower right corner of each table. These tables are worthy of careful study, since important deductions are possible. The marginal numbers will enable one to follow readily the line for any college.

Graduates of All Years Examined in 1919

Table A shows the results for all candidates who took examinations in 1919, regardless of the years in which they graduated. This shows that altogether 4,736 candidates were examined last year, as compared with 3,637 in 1918, 4,730 in 1917, 4,850 in 1916 and 5,313 in 1915. This year shows an increase of 1,099. Previously, there had been a steady decrease since 1906 owing chiefly to (*a*) the larger registration through reciprocity, and (*b*) the general diminution in the number of medical colleges, students and graduates. The marked decrease last year was due to the enlistment of many physicians for military medical service. Of those examined this year, 14.3 per cent. failed, as compared with 13.3 in 1918, 14.1 per cent. in 1917, 15 per cent. in 1916 and 15.6 per cent. in 1915.

There were 79 medical colleges in the United States granting degrees in 1919 which had graduates examined, as compared with 80 in 1918, 89 in 1917 and 1916 and 93 in 1915. There has been a decrease of 74 since 1905, when graduates from 153 medical colleges were examined. The statistics covering schools which have ceased to exist are included in the line for "miscellaneous colleges."

Graduates of Canadian schools were examined in 22 states. The largest number, 23, were examined in New York, the next largest number being 8 examined in Massachusetts. The figures are given separately in order to show the number of candidates coming from each, and to show the successes of their graduates at the examinations. Altogether, 71 candidates from Canadian colleges were examined, of whom 22, or 31 per cent., failed.

Foreign graduates were examined in 17 states, the total examined being 67, and of this number 30, or 44.8 per cent., failed. In 1918, 45 foreign graduates were examined. The largest number of foreigners examined in any state in 1919 was 21 in California, where 9, or 42.9 per cent., failed.

Caution in Forming Conclusions

In making comparisons on the basis of these statistics, the reader must keep in mind (*a*) the number examined, since the larger the number of graduates examined, the more accurate is the finding; (*b*) the number of states in which a school's graduates have been examined, since the larger this number, the more accurate will be the conclusions; (*c*) the character of the board making the examination and the methods employed, since some boards refuse to examine graduates of inferior medical colleges, while others (see Table H) not only examine graduates of all medical colleges but also admit osteopaths to the physicians' and surgeons' examination. Some boards also hold careful examinations which include practical laboratory and clinical tests, or they mark the papers more severely, while others, especially partisan boards, are very lenient. Although conditions are undergoing a gradual improvement, it is still true that the license examinations, as usually conducted, are much more lenient than those required in other countries. It is particularly important, in forming conclusions based on these statistics, to note for each college the states in which its graduates are not admitted to examination—information set forth with these statistics in Table D. A state board which admits to its examinations graduates of low-grade medical schools would be expected to have a higher percentage of failures.

Undergraduates and Osteopaths Examined During 1919

For the last three years the few undergraduates examined have been accidental instances due evidentaly to imperfect credentials. In 1906, there were 703 undergraduates examined, and 342 were licensed. Colorado is now the only state which will knowingly admit nongraduates to its examinations, but only six have been licensed in that state in fourteen years, two having been so licensed this year. The door has been closed, therefore, against the admission to practice of those whose medical training is known to be incomplete. At present, however, some boards are registering as physicians and surgeons, by examination or by reciprocity, graduates of osteopathic colleges—no one of which compares favorably with the lowest grade Class C medical college—even though in two of these states—Colorado and Texas—the boards refuse to admit graduates of Class C medical schools to their examinations. (See Table D on pages 1092 and 1093.)

During 1919, in California, 28 graduates of osteopathic colleges were admitted to the regular examination for licenses as physicians and surgeons, and of this number 13, or 46.4 per cent., were granted licenses. In Colorado, of 25 osteopaths examined, 14, or 56 per cent., were granted licenses as physicians and surgeons (see Tables G and I). Two osteopaths were so licensed in Washington and one each in New Hampshire and Texas. Altogether 57 osteopaths were examined as physicians and of this number 31, or 54.4 per cent., passed.

Recent Graduates Examined During 1919

Table B gives the results for graduates of 1915 to 1919, inclusive, examined during 1919. This table is important, since it deals with recent graduates, and is, therefore, the fairest basis for comparison between colleges. Of all candidates examined in 1919, 3,904, or 82.4 per cent., were recent graduates, and of this number, 10.5 per cent. failed, as compared with 14.3 per cent. for all candidates.

Old Practitioners Examined During 1919

Table C is so arranged as to show in comparison the results for graduates of all years (first column), for recent graduates (second column), for graduates of 1914 and previous years (third column), and for graduates of 1919 (fourth column). Of the graduates of 1914 and previous years—"old practitioners"—767 were examined, and of this number 236, or 30.8 per cent., failed, as compared with 10.5 per cent. of failures for recent graduates. This high percentage of failures is due largely to the long time these candidates have been out of college and to the fact that they are commonly required to take the same examination as recent graduates. Justice to these older physicians, who have been licensed, but who, for good reasons, desire to change their locations, is a strong argument for the use of

(CONTINUED ON PAGE 1091)

Marginal Number	NAME OF COLLEGE	1 Alabama P	1 Alabama F	2 Arizona P	2 Arizona F	3 Arkansas P	3 Arkansas F	4 California P	4 California F	5 Colorado P	5 Colorado F	6 Connecticut P	6 Connecticut F	7 Delaware P	7 Delaware F	8 Dist. Columbia P	8 Dist. Columbia F	9 Florida P	9 Florida F	10 Georgia P	10 Georgia F	11 Idaho P	11 Idaho F	12 Illinois P	12 Illinois F	13 Indiana P	13 Indiana F	14 Iowa P	14 Iowa F	15 Kansas P	15 Kansas F	16 Kentucky P	16 Kentucky F	17 Louisiana P	17 Louisiana F	18 Maine P	18 Maine F	19 Maryland P	19 Maryland F	20 Massachusetts P	20 Massachusetts F	21 Michigan P	21 Michigan F	22 Minnesota P	22 Minnesota F	Marginal Number
	ALABAMA																																													
1	University of Alabama School of Medicine	3	0															2	1															1	0											1
	ARKANSAS																																													
2	University of Arkansas Medical Department	0	1			11	1	1	0																									2	0											2
	CALIFORNIA																																													
3	College of Medical Evangelists							6	0																															1	0					3
4	College of Physicians and Surgeons, Los Angeles			1	0			23	5																															1	0					4
5	College of Physicians and Surg., San Francisco							3	6																																					5
6	Leland Stanford Junior Univ. School of Medicine							16	0																																					6
7	Oakland College of Medicine and Surgery							2	0																																					7
8	University of California Medical School																	1	0																					1	0					8
	COLORADO																																													
9	University of Colorado School of Medicine									18	0							1	1					1	0																					9
	CONNECTICUT																																													
10	Yale University School of Medicine											11	0																							1	0			1	0			1	0	10
	DISTRICT OF COLUMBIA																																												
11	Georgetown University School of Medicine			2	0							3	1			7	0	1	0																					1	0			1	0	11
12	George Washington University Medical School															19	0					1	0	1	0													1	0	1	0			1	0	12
13	Howard University School of Medicine															7	2							1	1													1	0	1	0					13
	GEORGIA																																													
14	Emory University School of Medicine	2	1					1	0	1	1							3	1	27	0													1	0									14
15	University of Georgia Medical Department																	1	0	7	0																							15
	ILLINOIS																																												
16	Chicago Medical School									1	0					0	1					1	0	27	18															3	8					16
17	Hahnemann Medical College and Hospital			1	0					1	0											1	0	18	0			2	0											1	0					17
18	Loyola University School of Medicine	1	1			1	0	0	1			1	1					1	0	3	0	1	0	82	12			2	2			0	1							1	0			1	0	18
19	Northwestern University Medical School			3	0			1	1													2	0	87	1					1	0							1	0					19
20	Rush Medical College (University of Chicago)			1	0			3	0	1	0									1	0	5	0	127	1			5	0											2	0	1	0	3	0	20
21	University of Illinois College of Medicine			3	0	1	0	1	0	1	0							2	0			1	0	72	2			5	0	1	0									2	0			4	0	21
	INDIANA																																												
22	Indiana University School of Medicine			1	0																			2	0	28	0					1	0											22
	IOWA																																													
23	State University of Iowa College of Medicine																					1	0	2	0			43	0															23
24	State Univ. of Iowa Coll. of Homeo. Med.—H.																											1	0															24
	KANSAS																																												
25	University of Kansas School of Medicine							1	0													1	0					1	0	20	0													25
	KENTUCKY																																												
26	University of Louisville Medical Department	0	1									1	1					4	2											1	0	18	1											26
	LOUISIANA																																												
27	Tulane University of Louisiana School of Med.	4	0	1	0	3	0					1	0					3	0	1	0													59	0									27
	MAINE																																												
28	Bowdoin Medical School															1	0	1	0			1	0							1	0					17	0			4	0					28
	MARYLAND																																												
29	Johns Hopkins University Medical Department	2	0	1	0			2	1			5	0			4	0	1	0	1	0			3	0	2	0									1	0	72	3	5	0	1	0	1	0	29
30	Univ. of Md. School of Med. & Coll. of P. & S.	1	0	1	0	1	0	1	0			0	1	1	0	2	0	2	0	2	0	2	0													2	0	57	3	6	0					30
	MASSACHUSETTS																																												
31	Boston University School of Medicine																	1	0			1	0													1	0			9	1					31
32	College of Physicians and Surgeons, Boston											0	1					1	0																					6	7					32
33	Medical School of Harvard University			1	0			2	0	2	0	6	1			2	0	1	1					3	0	1	0			1	0			1	0	7	0	2	0	95	0			5	0	33
34	Middlesex College of Medicine and Surgery.—N.															1	0																							6	12					34
35	Tufts College Medical School							0	1			10	3							1	0							1	0							7	1			84	5			1	0	35
	MICHIGAN																																												
36	Detroit College of Medicine and Surgery			1	0			0	1									2	0					1	0																	27	0			36
37	University of Michigan Medical School			1	0													1	0																					3	0	6	0			37
38	University of Michigan Homeo. Med. School.—H.							1	0																															1	0	9	0			38
	MINNESOTA																																												
39	University of Minnesota Medical School			1	0			1	0															1	0																	67	0			39
	MISSOURI																																												
40	Kansas City College of Medicine and Surgery.—N.					32	1																																						40
41	Kansas City Univ. of Phys. and Surgs.—N.									1	0																									1	0									41
42	St. Louis College of Physicians and Surgeons			1	0			0	1	0	2																											1	0							42
43	St. Louis University School of Medicine			1	0	1	0	1	0													1	0	7	0			3	0	1	0					1	0									43
44	Washington University Medical School									1	0													2	1			1	0							1	0			1	0	2	0			44
	NEBRASKA																																												
45	John A. Creighton Medical College			0	1					1	0	1	0									1	0					1	0	1	0			1	0					1	0					45
46	University of Nebraska College of Medicine													2	0									1	0			4	0													1	0	46
	NEW YORK																																												
47	Albany Medical College			0	1							1	0					0	1																					2	0			2	0	47
48	Columbia University College of Phys. and Surgs.							1	0			13	0			1	0	1	0	4	0															1	0			6	0	1	0	2	0	48
49	Cornell University Medical School					1	0					5	0			1	0																							1	0			1	0	49
50	Fordham University School of Medicine											4	1																																	50
51	Long Island College Hospital							0	1			3	0																											1	0	1	0			51
52	N. Y. Homeo. Med. Coll. and Flower Hosp.—H.			1	0			1	0			3	0	3	0																					1	0	2	0					52
53	Syracuse University College of Medicine																																							1	0			1	0	53
54	University and Bellevue Hospital Med. Coll.											4	0					1	0					1	0			1	0							1	0			1	0					54
55	University of Buffalo Medical Department																	1	0					3	0																					55
	OHIO																																													
56	Eclectic Medical College.—E.			2	0			0	1																																					56
57	Ohio State University College of Medicine			1	0																																								57
58	Ohio State University Coll. of Homeo. Med.—H.																							1	0															1	0					58
59	University of Cincinnati College of Medicine									1	0											1	0									1	0									1	0			59
60	Western Reserve University School of Medicine							1	0									1	0																											60
	OKLAHOMA																																													
61	University of Oklahoma School of Medicine																	1	0											1	0									1	0					61
	OREGON																																													
62	University of Oregon Medical School																																			1	0									62
	PENNSYLVANIA																																													
63	Hahnemann Medical College and Hospital.—H.													1	0	1	0					1	0																	3	0					63
64	Jefferson Medical College	1	0			1	0	3	0	2	0	6	0	3	0			6	0					2	0									1	0	1	0	2	0	4	0			2	0	64
65	Temple University Department of Medicine													3	1																							0	1	1	0					65
66	University of Pennsylvania School of Medicine	1	0					4	0			1	1	3	0	1	0			1	0	2	0	2	0			4	0									1	0	2	0	1	0	1	0	66
67	University of Pittsburgh School of Medicine											1	0											1	0																					67
68	Woman's Medical College of Pennsylvania	1	0																																					3	0					68
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		22		

H. = Homeopathic; E = Eclectic; N = Nondescript; P = Passed; F = Failed.

Marginal Number	23		24		25		26		27		28		29		30		31		32		33		34		35		36		37		38		39		40		41		42		43		44		45		46		47		48		49		50		Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Exam. in	Marginal Number
	Mississippi		Missouri		Montana		Nebraska		Nevada		New Hampshire		New Jersey		New Mexico		New York		North Carolina		North Dakota		Ohio		Oklahoma		Oregon		Pennsylvania		Rhode Island		South Carolina		South Dakota		Tennessee		Texas		Utah		Vermont		Virginia		Washington		West Virginia		Wisconsin		Wyoming		U. S. Territories and Possessions								
	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F						
1	2	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	10	9	1	10 0	5	1
2	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	17	15	2	11.8	5	2
3	..	..	..	..	..	..	..	..	2	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	10	10	0	0.0	4	3
4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	31	26	5	16.1	4	4
5	..	..	..	..	..	..	..	..	2	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	11	5	6	54.5	2	5
6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	18	18	0	0.0	2	6
7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	2	0	0.0	1	7
8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	3	3	0	0.0	3	8
9	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	21	20	1	4.8	3	9
10	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	0	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	20	20	0	0.0	7	10
11	..	..	..	..	..	..	..	..	..	..	..	..	2	0	..	..	0	2	..	..	..	..	2	0	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	23	20	3	13.0	10	11
12	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	1	0	..	..	..	..	..	..	..	..	1	0	1	0	..	..	1	0	2	0	33	33	0	0.0	14	12
13	..	..	3	0	..	..	..	..	..	..	..	..	1	0	..	..	1	4	..	..	..	..	..	..	..	..	..	..	4	0	..	..	1	0	..	..	1	0	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	29	22	7	24.1	11	13
14	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0	2	1	2	..	..	1	0	..	..	..	..	..	..	5	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	42	8	16.0	10	14
15	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0	1	..	..	..	..	..	..	..	..	..	..	..	..	3	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	13	11	2	15.4	4	15
16	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	0	..	..	..	..	0	1	..	..	62	34	28	45.2	7	16
17	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	1	0	..	..	..	..	..	..	..	..	26	26	0	0.0	8	17
18	1	0	4	0	0	3	0	2	..	..	..	..	..	..	..	..	1	0	..	..	0	1	1	1	1	0	1	0	..	..	..	..	..	..	1	0	2	0	..	..	1	0	1	0	1	0	4	1	2	0	..	..	7	1	2	2	153	124	29	19.0	30	18
19	..	..	1	0	1	0	..	..	..	..	..	..	..	..	..	..	0	1	..	..	1	0	1	0	..	..	1	0	..	..	..	..	..	..	2	1	..	..	..	..	..	..	..	..	..	..	..	..	4	0	1	0	..	..	111	107	4	3.6	15	19
20	..	..	1	0	6	0	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	1	0	..	..	1	0	..	..	..	..	1	0	5	0	..	..	..	..	6	0	..	..	..	..	3	1	..	..	6	0	..	..	..	..	183	180	3	1.6	20	20
21	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	1	0	1	0	..	..	..	..	..	..	2	0	..	..	..	..	..	..	..	..	..	..	2	1	1	0	..	..	1	0	1	0	108	104	4	3.7	20	21
22	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	32	32	0	0.0	4	22
23	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	47	47	0	0.0	4	23
24	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	0	0.0	1	24
25	..	..	9	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	32	32	0	0.0	5	25
26	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0	3	..	..	0	1	..	..	..	..	..	..	2	2	..	..	1	0	..	..	1	0	..	..	1	0	..	..	0	2	0	1	..	..	..	..	1	2	46	30	16	34.8	14	26
27	6	0	1	0	..	..	..	..	..	..	..	..	..	..	..	..	1	0	3	0	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	6	0	..	..	1	0	..	..	..	..	..	..	..	..	2	1	95	94	1	1.1	16	27
28	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	25	25	0	0.0	6	28
29	..	..	3	0	..	..	..	..	..	..	..	..	2	0	..	..	6	1	2	0	..	..	7	0	..	..	..	..	1	0	..	..	1	0	..	..	1	0	2	0	..	..	..	..	8	0	2	0	1	0	..	..	..	..	142	137	5	3.5	26	29
30	..	..	..	..	..	..	..	..	..	..	..	..	2	0	..	..	5	4	6	0	..	..	..	..	..	..	..	..	4	0	2	1	5	0	..	..	..	..	..	..	..	..	..	..	3	0	..	..	4	0	..	..	..	..	3	1	122	112	10	8.2	22	30
31	..	..	..	..	..	..	..	..	1	0	1	0	..	..	..	..	2	1	..	..	..	..	..	..	1	0	..	..	1	0	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	21	19	2	8.2	10	31
32	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	0	1	..	..	..	..	..	..	..	..	18	8	10	55.6	5	32
33	..	..	2	0	..	..	..	..	..	..	1	0	..	..	..	..	12	3	..	..	..	..	1	0	..	..	1	0	..	..	3	0	1	0	..	..	..	..	3	0	1	0	..	..	2	0	3	0	..	..	..	..	..	..	164	159	5	3.0	25	33
34	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	19	7	12	63.2	2	34
35	..	..	..	..	..	..	..	..	..	..	1	0	1	0	..	..	8	8	..	..	..	..	..	..	1	0	..	..	1	0	4	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	139	120	19	13.7	13	35
36	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0	1	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	35	33	2	5.7	7	36
37	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	7	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	3	0	..	..	..	..	25	24	1	4.0	9	37
38	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	13	12	1	7.7	5	38
39	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	73	73	0	0.0	7	39
40	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0	1	..	..	..	..	..	..	..	..	..	..	1	0	..	..	35	33	2	5.7	3	40
41	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	2	0	..	..	..	..	1	1	..	..	9	8	1	11.1	7	41
42	..	..	5	1	0	1	2	0	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	19	1	..	..	..	..	..	..	..	..	..	..	..	..	1	2	..	..	38	30	8	21.1	10	42
43	..	..	44	0	0	1	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	1	1	..	..	65	63	2	3.1	13	43
44	..	..	42	0	1	0	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	1	0	2	0	..	..	0	1	..	..	..	..	1	0	..	..	1	0	3	0	..	..	1	0	..	..	3	0	..	..	..	..	66	64	2	3.0	17	44
45	..	..	..	..	2	1	19	0	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	1	0	34	32	2	5.9	14	45
46	..	..	1	0	..	..	73	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	2	0	..	..	87	85	2	2.3	8	46
47	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	17	2	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	27	23	4	14.8	7	47
48	..	..	1	0	..	..	1	0	1	0	..	..	3	0	..	..	134	16	..	..	..	..	1	0	1	0	..	..	..	..	..	..	2	0	..	..	..	..	1	0	3	0	..	..	1	0	1	0	1	0	1	0	..	..	198	182	16	8.1	23	48
49	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	28	3	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	41	38	3	7.3	7	49
50	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	69	14	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	90	75	15	16.7	4	50
51	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	54	7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	68	60	8	11.8	6	51
52	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	54	35	..	..	..	..	..	..	..	..	..	..	2	0	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	104	69	35	33.7	10	52
53	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	23	0	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	26	26	0	0.0	4	53
54	..	..	1	0	..	..	..	..	..	..	..	..	5	0	..	..	88	16	3	0	..	..	..	..	..	..	..	..	2	0	1	0	..	..	..	..	..	..	1	0	1	0	..	..	..	..	..	..	..	..	..	..	..	..	127	111	16	12.6	14	54
55	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	46	0	..	..	..	..	1	0	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	53	53	0	0.0	6	55
56	..	..	1	0	..	..	4	0	..	..	..	..	..	..	..	..	0	1	..	..	..	..	25	2	1	0	..	..	..	..	..	..	..	..	1	0	1	0	..	..	..	..	..	..	..	..	0	2	..	..	..	..	..	..	41	35	6	14.6	10	56
57	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	17	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	19	19	0	0.0	3	57
58	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	9	0	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	13	12	1	7.7	4	58
59	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	23	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	1	0	29	29	0	0.0	7	59
60	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	42	0	..	..	..	..	0	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	1	0	..	..	..	..	..	..	47	46	1	2.1	6	60
61	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	1	1	..	..	..	..	1	0	14	0	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	23	21	2	8.7	8	61
62	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	16	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	0	..	..	..	..	..	..	..	..	23	22	1	4.4	4	62
63	..	..	..	..	..	..	..	..	..	..	..	..	2	0	..	..	0	1	..	..	..	..	1	0	..	..	..	..	13	1	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	25	23	2	8.0	9	63
64	2	0	2	0	2	0	2	0	1	0	..	..	21	0	..	..	10	7	25	0	..	..	9	0	1	0	3	0	59	3	2	0	3	1	..	..	1	0	1	0	5	0	..	..	3	0	5	0	5	0	2	0	..	..	4	0	213	202	11	5.2	35	64
65	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	16	2	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	27	23	4	14.8	6	65
66	..	..	..	..	..	..	..	..	..	..	1	0	11	0	..	..	7	4	11	0	..	..	1	0	..	..	1	0	63	7	..	..	..	..	1	0	1	0	..	..	3	0	..	..	1	0	5	0	..	..	..	..	..	..	142	130	12	8.5	25	66
67	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	2	0	..	..	..	..	23	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	30	28	2	6.7	5	67
68	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	0	..	..	..	..	..	..	..	..	..	..	5	1	..	..	..	..	..	..	..	..	..	..	..	..	1	0	1	0	..	..	..	..	..	..	..	..	15	14	1	6.7	6	68
	23		24		25		26		27		28		29		30		31		32		33		34		35		36		37		38		39		40		41		42		43		44		45		46		47		48		49		50							

Marginal Number	NAME OF COLLEGE	1 Alabama P	F	2 Arizona P	F	3 Arkansas P	F	4 California P	F	5 Colorado P	F	6 Connecticut P	F	7 Delaware P	F	8 Dist. Columbia P	F	9 Florida P	F	10 Georgia P	F	11 Idaho P	F	12 Illinois P	F	13 Indiana P	F	14 Iowa P	F	15 Kansas P	F	16 Kentucky P	F	17 Louisiana P	F	18 Maine P	F	19 Maryland P	F	20 Massachusetts P	F	21 Michigan P	F	22 Minnesota P	F	Marginal Number
	SOUTH CAROLINA																																													
69	Medical College of the State of South Carolina											1	0			1	0	2	0	2	0																									69
	TENNESSEE																																													
70	Mcharry Medical College	2	2			3	4					0	1					0	1	4	1			7	29	1	0			2	0	5	4	1	5			4	2							70
71	University of Tennessee College of Medicine			1	0	6	0	0	1	1	0					1	0	1	2			1	0											2	0											71
72	Univ. of West Tennessee Medical Department																																													72
73	Vanderbilt University School of Medicine	2	0			1	0			2	0							2	0	1	0											1	0							1	0					73
	TEXAS																																													
74	Baylor University College of Medicine							1	0																																					74
75	University of Texas Department of Medicine																																													75
	VERMONT																																													
76	University of Vermont College of Medicine							0	1			6	2																							1	0			12	0					76
	VIRGINIA																																													
77	Medical College of Virginia							1	0			0	3	1	0			1	1	1	0																									77
78	University of Virginia Department of Medicine													1	0					2	0															1	0									78
	WISCONSIN																																													
79	Marquette University School of Medicine																																													79
	CANADA																																													
80	Dalhousie University Faculty of Medicine															1	0																					1	0	1	0					80
81	Laval University Faculty of Medicine																																			1	0			1	3					81
82	McGill University Faculty of Medicine							1	0			3	1			1	0					1	0	2	0											1	0			2	0					82
83	Montreal School of Medicine and Surgery																																			0	1			0	1					83
84	Queen's University Faculty of Medicine							1	0									1	1					1	0																					84
85	University of Manitoba, Manitoba Medical College																																													85
86	University of Toronto Faculty of Medicine			1	0			1	0	2	0																													1	0					86
87	Western University Faculty of Medicine																							0	1											0	1			4	0					87
88	Foreign Colleges			2	0			12	9	0	1							1	0					1	1	1	0			0	1							2	0					88
89	Miscellaneous Medical Colleges	3	6	18	3	8	1	3	11	5	1	4	6	1	0	0	3	16	5	2	4	5	0	16	29	1	0	4	2	2	2	3	1	7	1			1	2	18	4			2	0	89
90	Undergraduates and Osteopaths			1	0			13	15	16	11																																			90
91	Totals by States	35		53		77		165		73		118		20		57		81		65		31		571		34		82		35		38		86		46		156		346		52		98		91
92	Totals — Examined—Passed	23		48		70		109		57		94		19		51		64		60		31		475		34		78		32		31		80		43		145		305		52		98		92
93	Totals — Examined—Failed	12		5		7		56		16		24		1		6		17		5		0		96		0		4		3		7		6		3		11		41		0		0		93
94	Percentage of Failures	34.3		9.4		9.1		33.9		21.9		20.3		5.0		10.5		21.0		7.7		0.0		16.8		0.0		4.9		8.6		18.4		7.0		6.5		7.1		11.8		0.0		0.0		94
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		22		

H. = Homeopathic; E = Eclectic; N = Nondescript; P = Passed; F = Failed.

TABLE B—GRADUATES OF 1915 TO 1919, INCLUSIVE,

	NAME OF COLLEGE	1 Alabama P	F	2 Arizona P	F	3 Arkansas P	F	4 California P	F	5 Colorado P	F	6 Connecticut P	F	7 Delaware P	F	8 Dist. Columbia P	F	9 Florida P	F	10 Georgia P	F	11 Idaho P	F	12 Illinois P	F	13 Indiana P	F	14 Iowa P	F	15 Kansas P	F	16 Kentucky P	F	17 Louisiana P	F	18 Maine P	F	19 Maryland P	F	20 Massachusetts P	F	21 Michigan P	F	22 Minnesota P	F	
	ALABAMA																																													
1	University of Alabama School of Medicine	3	0															1	0																											1
	ARKANSAS																																														
2	University of Arkansas Medical Department	0	1			7	1	1	0																											2	0									2
	CALIFORNIA																																													
3	College of Medical Evangelists							6	0																																	1	0					3
4	College of Physicians and Surgeons, Los Angeles			1	0			23	5																																	1	0					4
5	College of Physicians and Surg., San Francisco							3	6																																							5
6	Leland Stanford Junior Univ. School of Medicine							16	0																																							6
7	Oakland College of Medicine and Surgery							2	0																																							7
8	University of California Medical School																																									1	0					8
	COLORADO																																														
9	University of Colorado School of Medicine									18	0																																					9
	CONNECTICUT																																														
10	Yale University School of Medicine											10	0																									1	0			1	0			1	0	10
	DISTRICT OF COLUMBIA																																														
11	Georgetown University School of Medicine											3	1			7	0																							1	0					11
12	George Washington University Medical School															18	0					1	0	1	0															0	1	0		1	0	12
13	Howard University School of Medicine															7	2							1	1													1	0							13
	GEORGIA																																														
14	Emory University School of Medicine	2	0					1	0									1	0	26	0																									14
15	University of Georgia Medical Department																	1	0	7	0																									15
	ILLINOIS																																														
16	Chicago Medical School									1	0					0	1					1	0	27	18																	3	8					16
17	Hahnemann Medical College and Hospital									1	0													18	0			1	0											1	0					17
18	Loyola University School of Medicine	1	1									1	0					1	0	3	0	1	0	80	7			2	2			0	1							1	0			1	0	18
19	Northwestern University Medical School			2	0			1	0															85	1					1	0							1	0							19
20	Rush Medical College (University of Chicago)							3	0	1	0									1	0	8	0	124	0			5	0													1	0	3	0	20
21	University of Illinois College of Medicine							1	0													1	0	71	1			5	0	1	0									2	0			4	0	21
	INDIANA																																														
22	Indiana University School of Medicine			1	0																			2	0	28	0					1	0													22
	IOWA																																														
23	State University of Iowa College of Medicine																							2	0			43	0																	23
24	State Univ. of Iowa Coll. of Homeo. Med.—H.																											1	0																	24
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		22		

H. = Homeopathic; E = Eclectic; N = Nondescript; P = Passed; F = Failed.

Marginal Number	23 Mississippi P F	24 Missouri P F	25 Montana P F	26 Nebraska P F	27 Nevada P F	28 New Hampshire P F	29 New Jersey P F	30 New Mexico P F	31 New York P F	32 North Carolina P F	33 North Dakota P F	34 Ohio P F	35 Oklahoma P F	36 Oregon P F	37 Pennsylvania P F	38 Rhode Island P F	39 South Carolina P F	40 South Dakota P F	41 Tennessee P F	42 Texas P F	43 Utah P F	44 Vermont P F	45 Virginia P F	46 Washington P F	47 West Virginia P F	48 Wisconsin P F	49 Wyoming P F	50 U. S. Territories and Possessions P F	Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Exam. in	Marginal Number
69									2 0	0 1					0 1		11 2								1 0				24	20	4	16.7	29	69
70	0 2	3 0								1 3		0 2	1 0				2 2		19 3	2 0				1 0	7 5				131	65	66	50.4	21	70
71	3 0								1 0		1 0						1 0		18 0				1 0						41	38	3	7.3	14	71
72										0 1			1 0						2 3										7	3	4	57.1	3	72
73							1 0		1 4			1 0					3 0		25 0					1 0					46	42	4	8.7	13	73
74									0 1										1 0	18 1									22	20	2	9.1	4	74
75																				[illegible] 0				1 0					53	53	0	0.0	2	75
76									9 9			1 0				1 0						19 0			1 0				62	50	12	19.4	9	76
77									1 5	6 1		0 2	1 0		1 0		1 0				1 0		20 10		3 0				60	38	22	36.7	14	77
78	4 0						1 0		5 0										1 0		1 0		16 0						32	32	0	0.0	9	78
79											1 0			1 0												14 0			16	16	0	0.0	3	79
80																													3	3	0	0.0	3	80
81																0 1													6	2	4	66.7	3	81
82									3 5			1 0		1 0						1 0				2 0				1 0	26	20	6	23.1	13	82
83																													2	0	2	100.0	2	83
84							1 0		6 4														1 0						16	11	5	31.3	6	84
85																													0	0	0	0.0	0	85
86									2 3						1 0														11	8	3	27.3	6	86
87												1 0																	7	5	2	28.6	4	87
88		3 0			2 0				1 9					1 0	3 1	1 0							1 0	4 0				2 8	67	37	30	44.8	17	88
89	0 1	7 0	8 5	1 1			6 1	1 0	6 6	1 1	2 2	4 1	6 0	6 3	8 6	3 1	1 6	6 0		0 1	1 0		4 2	10 4	1 2	1 0	3 2	5 4	340	210	130	38.2	44	89
90						1 0													1 0	1 0				2 0	0 5				66	35	31	47.0	8	90
91	21	137	38	107	13	5	62	2	816	68	10	164	34	42	241	25	59	21	103	92	29	22	77	73	50	34	27	45	4736	....	....	.....	...	91
92	18	136	26	102	13	5	61	2	627	59	6	156	34	39	213	20	45	20	96	89	29	22	65	63	35	34	19	27	....	4060	....	.....	...	92
93	3	1	12	5	0	0	1	0	189	9	4	8	0	3	28	5	14	1	7	3	0	0	12	10	15	0	8	18	....	....	676	.....	...	93
94	14.3	0.7	31.6	4.7	0.0	31.6	1.6	0.0	23.2	13.2	40.0	4.9	0.0	7.1	11.6	20.0	28.6	4.8	6.8	3.3	0.0	0.0	15.6	13.7	30.0	0.0	66.7	40.0	....	....	....	14.3	...	94
	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50						

EXAMINED BY STATE BOARDS DURING 1919

Marginal Number	23 Mississippi P F	24 Missouri P F	25 Montana P F	26 Nebraska P F	27 Nevada P F	28 New Hampshire P F	29 New Jersey P F	30 New Mexico P F	31 New York P F	32 North Carolina P F	33 North Dakota P F	34 Ohio P F	35 Oklahoma P F	36 Oregon P F	37 Pennsylvania P F	38 Rhode Island P F	39 South Carolina P F	40 South Dakota P F	41 Tennessee P F	42 Texas P F	43 Utah P F	44 Vermont P F	45 Virginia P F	46 Washington P F	47 West Virginia P F	48 Wisconsin P F	49 Wyoming P F	50 U. S. Territories and Possessions P F	Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Exam. in	Marginal Number
1	1 0												1 0																6	6	0	0.0	4	1
2																													12	10	2	16.7	4	2
3					2 0																			1 0					10	10	0	0.0	4	3
4																												1 0	31	26	5	16.1	4	4
5					2 0																								11	5	6	54.5	2	5
6									2 0																				18	18	0	0.0	2	6
7																													2	2	0	0.0	1	7
8																													1	1	0	0.0	1	8
9																													18	18	0	0.0	1	9
10									4 0							1 0							1 0						19	19	0	0.0	7	10
11							2 0		0 2			2 0																	18	15	3	16.7	6	11
12									1 0																1 0			2 0	27	27	0	0.0	9	12
13		3 0					1 0		1 4						4 0		1 0		1 0				1 0						28	21	7	25.0	10	13
14										1 2							4 1												38	35	3	7.7	6	14
15									0 1								3 0												12	11	1	8.3	4	15
16																								2 0			0 1		62	34	28	45.2	7	16
17																				1 0									22	22	0	0.0	6	17
18	1 0	4 0	0 3	0 2								1 1						1 0	2 0		1 0	1 0		1 1	2 0		7 1	2 0	133	114	19	14.4	23	18
19									0 1		1 0							1 0								4 0			98	96	2	2.0	9	10
20		1 0	6 0						1 0			1 0		1 0			1 0	3 0			6 0			1 0		6 0			168	168	0	0.0	13	20
21									1 0				1 0												1 0				89	88	1	1.1	10	21
22																													32	32	0	0.0	4	22
23																													45	45	0	0.0	2	23
24																													1	1	0	0.0	1	24
	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50						

Marginal Number	NAME OF COLLEGE	1 Alabama P	1 Alabama F	2 Arizona P	2 Arizona F	3 Arkansas P	3 Arkansas F	4 California P	4 California F	5 Colorado P	5 Colorado F	6 Connecticut P	6 Connecticut F	7 Delaware P	7 Delaware F	8 Dist. Columbia P	8 Dist. Columbia F	9 Florida P	9 Florida F	10 Georgia P	10 Georgia F	11 Idaho P	11 Idaho F	12 Illinois P	12 Illinois F	13 Indiana P	13 Indiana F	14 Iowa P	14 Iowa F	15 Kansas P	15 Kansas F	16 Kentucky P	16 Kentucky F	17 Louisiana P	17 Louisiana F	18 Maine P	18 Maine F	19 Maryland P	19 Maryland F	20 Minnesota P	20 Minnesota F	21 Massachusetts P	21 Massachusetts F	22 Michigan P	22 Michigan F	Marginal Number
	KANSAS																																													
25	University of Kansas School of Medicine	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	1	0	20	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	25
	KENTUCKY																																													
26	University of Louisville Medical Department	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	17	1	..	..	..	..	..	..	..	..	..	..	..	..	26
	LOUISIANA																																													
27	Tulane University of Louisiana School of Med.	4	0	..	..	2	0	..	..	..	..	1	0	..	..	..	..	3	0	1	0	..	..	..	..	..	..	..	..	..	..	..	..	57	0	..	..	..	..	..	..	..	..	..	..	27
	MAINE																																													
28	Bowdoin Medical School	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	16	0	..	..	2	0	..	..	..	..	28
	MARYLAND																																													
29	Johns Hopkins University Medical Department	1	0	..	..	..	..	2	1	..	..	1	0	..	..	2	0	1	0	1	0	..	..	3	0	2	0	..	..	..	..	..	..	..	..	..	..	70	3	5	0	..	..	1	0	29
30	Univ. of Md. School of Med. & Coll. of P. & S.	1	0	1	0	1	0	1	0	..	..	0	1	1	0	2	0	1	0	1	0	2	0	..	..	..	..	..	..	..	..	..	..	..	..	2	0	56	3	6	0	..	..	..	..	30
	MASSACHUSETTS																																													
31	Boston University School of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	7	1	..	..	..	..	31
32	College of Physicians and Surgeons, Boston	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6	6	..	..	..	..	32
33	Medical School of Harvard University	..	..	1	0	..	..	2	0	2	0	5	1	..	..	2	0	1	0	..	..	..	..	3	0	1	0	..	..	1	0	..	..	1	0	7	0	2	0	90	0	..	..	4	0	33
34	Middlesex College of Medicine and Surgery.—N.	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6	12	..	..	..	..	34
35	Tufts College Medical School	..	..	..	..	..	..	0	1	..	..	10	3	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5	1	..	..	82	5	..	..	..	..	35
	MICHIGAN																																													
36	Detroit College of Medicine and Surgery	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	27	0	..	..	36
37	University of Michigan Medical School	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	1	0	6	0	..	..	37
38	University of Michigan Homeo. Med. School.—H.	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	8	0	..	..	38
	MINNESOTA																																													
39	University of Minnesota Medical School	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	67	0	39
	MISSOURI																																													
40	Kansas City College of Medicine and Surgery.—N.	..	..	..	..	32	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	40
41	Kansas City Univ. of Phys. and Surgs.—N.	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	41
42	St. Louis College of Physicians and Surgeons	..	..	..	..	..	..	..	..	0	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	42
43	St. Louis University School of Medicine	..	..	..	..	1	0	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	7	0	..	..	2	0	1	0	..	..	..	..	1	0	..	..	..	..	..	..	..	..	43
44	Washington University Medical School	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	1	0	..	..	..	..	1	0	..	..	1	0	2	0	..	..	..	..	44
	NEBRASKA																																													
45	John A. Creighton Medical College	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	1	0	..	..	..	..	..	..	..	..	1	0	..	..	..	..	45
46	University of Nebraska College of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	2	0	..	..	..	..	..	..	..	..	1	0	..	..	4	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	46
	NEW YORK																																													
47	Albany Medical College	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	47
48	Columbia University College of Phys. and Surgs.	..	..	..	..	..	..	1	0	..	..	12	0	..	..	..	..	..	..	4	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	0	1	0	2	0	48
49	Cornell University Medical School	..	..	..	..	..	..	..	..	..	..	4	0	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	49
50	Fordham University School of Medicine	..	..	..	..	..	..	..	..	..	..	4	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50
51	Long Island College Hospital	..	..	..	..	..	..	..	..	..	..	3	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	51
52	N. Y. Homeo. Med. Coll. and Flower Hosp.—H.	..	..	..	..	..	..	1	0	..	..	2	0	3	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	52
53	Syracuse University College of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	53
54	University and Bellevue Hospital Med. Coll.	..	..	..	..	..	..	..	..	..	..	3	0	..	..	..	..	1	0	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	54
55	University of Buffalo Medical Department	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	55
	OHIO																																													
56	Eclectic Medical College.—E.	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	56
57	Ohio State University College of Medicine	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	57
58	Ohio State University Coll. of Homeo. Med.—H.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	58
59	University of Cincinnati College of Medicine	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	1	0	59
60	Western Reserve University School of Medicine	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	60
	OKLAHOMA																																													
61	University of Oklahoma School of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	1	0	..	..	..	..	61
	OREGON																																													
62	University of Oregon Medical School	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	62
	PENNSYLVANIA																																													
63	Hahnemann Medical College and Hospital.—H.	..	..	..	..	..	..	..	..	..	..	..	..	1	0	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	0	..	..	..	..	63
64	Jefferson Medical College	1	0	..	..	1	0	3	0	2	0	6	0	3	0	..	..	2	0	..	..	..	..	2	0	..	..	..	..	..	..	..	..	..	..	..	..	2	0	2	0	..	..	2	0	64
65	Temple University Department of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	3	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0	1	1	0	..	..	..	..	65
66	University of Pennsylvania School of Medicine	..	..	..	..	..	..	4	0	..	..	1	1	3	0	1	0	..	..	1	0	2	0	2	0	..	..	4	0	..	..	..	..	..	..	..	..	..	..	2	0	1	0	1	0	66
67	University of Pittsburgh School of Medicine	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	67
68	Woman's Medical College of Pennsylvania	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	68
	SOUTH CAROLINA																																												
69	Medical College of the State of South Carolina	..	..	..	..	..	..	..	..	..	..	1	0	..	..	1	0	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	69
	TENNESSEE																																													
70	Meharry Medical College	2	2	..	..	3	3	..	..	..	..	..	..	..	..	..	..	0	1	4	1	..	..	6	24	..	..	..	..	2	0	5	4	1	5	..	..	4	2	..	..	..	..	..	..	70
71	University of Tennessee College of Medicine	..	..	1	0	6	0	..	..	..	..	..	..	..	..	1	0	1	0	..	..	1	0	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	71
72	Univ. of West Tennessee Medical Department	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	72
73	Vanderbilt University School of Medicine	2	0	..	..	1	0	..	..	2	0	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	73
	TEXAS																																													
74	Baylor University College of Medicine	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	74
75	University of Texas Department of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	75
	VERMONT																																												
76	University of Vermont College of Medicine	..	..	..	..	..	..	..	..	..	..	5	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	5	0	..	..	..	..	76
	VIRGINIA																																												
77	Medical College of Virginia	..	..	..	..	..	..	1	0	..	..	0	3	1	0	..	..	1	0	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	77
78	University of Virginia Department of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	2	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	78
	WISCONSIN																																													
79	Marquette University School of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	79
	CANADA																																													
80	Dalhousie University Faculty of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	80
81	Laval University Faculty of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	1	2	..	..	..	..	81
82	McGill University Faculty of Medicine	..	..	..	..	..	..	..	..	..	..	3	1	..	..	..	..	..	..	..	..	1	0	2	0	..	..	..	..	..	..	..	..	..	..	1	0	..	..	1	0	..	..	..	..	82
83	Montreal School of Medicine and Surgery	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0	1	..	..	..	..	..	..	..	..	83
84	Queen's University Faculty of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	84
85	University of Manitoba, Manitoba Medical College	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	85
86	University of Toronto Faculty of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	86
87	Western University Faculty of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	87
88	Foreign Colleges	..	..	..	..	..	..	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	88
89	Miscellaneous Medical Colleges	2	0	2	0	..	..	3	0	2	1	3	0	1	0	..	..	1	0	2	1	1	0	10	15	..	..	1	0	..	..	1	0	..	..	..	..	..	..	5	0	..	..	..	..	89
90	Undergraduates and Osteopaths	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	90
91	Totals by States	24		11		59		97		35		03		20		49		21		58		16		521		31		73		28		33		69		37		149		282		44		89		91
92	Totals — Examined—Passed	20		11		54		83		32		80		19		46		19		56		16		453		31		71		28		27		64		35		140		248		44		89		92
93	Totals — Examined—Failed	4		0		5		14		3		13		1		3		2		2		0		68		0		2		0		6		5		2		9		34		0		0		93
94	Percentage of Failures	16.7		0.0		8.5		14.4		8.6		14.0		5.0		6.1		9.5		3.4		0.0		1.3		0.0		2.7		0.0		18.2		7.2		5.4		6.0		12.0		0.0		0.0		94
		1		2		3		4		5		0		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		22		

H. = Homeopathic E = Eclectic; N = Nondescript; P = Passed; F = Failed.

Marginal Number	23 Mississippi P F	24 Missouri P F	25 Montana P F	26 Nebraska P F	27 Nevada P F	28 New Hampshire P F	29 New Jersey P F	30 New Mexico P F	31 New York P F	32 North Carolina P F	33 North Dakota P F	34 Ohio P F	35 Oklahoma P F	36 Oregon P F	37 Pennsylvania P F	38 Rhode Island P F	39 South Carolina P F	40 South Dakota P F	41 Tennessee P F	42 Texas P F	43 Utah P F	44 Vermont P F	45 Virginia P F	46 Washington P F	47 West Virginia P F	48 Wisconsin P F	49 Wyoming P F	50 U. S. Territories and Possessions P F	Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Exam. in	Marginal Number
25		9 0																											32	32	0	0.0	5	25
26															1 2		1 0		1 0		1 0								26	22	4	15.4	5	26
27	6 0									3 0			1 0								6 0			1 0					2 1	88	87	1	1.1	12	27
28																													19	19	0	0.0	3	28
29		2 0					2 0		5 1	2 0		6 0			1 0		1 0		1 0	1 0			8 0		1 0				124	119	5	4.0	21	29
30							2 0		5 4	6 0					3 0	1 1	4 0						3 0		4 0			3 1	116	106	10	8.6	21	30
31					1 0	1 0			2 0				1 0				1 0												15	14	1	7.2	5	31
32																													12	6	6	46.2	2	32
33		1 0				1 0			7 2			1 0		1 0		3 0	1 0				3 0			2 0	3 0				148	145	3	2.1	23	33
34																													19	7	12	63.2	2	34
35						1 0	1 0		7 7				1 0			4 1													130	112	18	13.6	10	35
36									0 1		1 0																	1 0	30	29	1	3.3	4	36
37									6 1																	1 0			16	15	1	6.3	5	37
38									0 1																				10	9	1	10.0	3	38
39																								1 0					70	70	0	0.0	4	39
40																				0 1							1 0		35	33	2	5.7	3	40
41					1 0									1 0					1 0					2 0			1 1		9	8	1	11.1	7	41
42		5 1		2 0	1 0														19 1								1 2		34	28	6	17.6	6	42
43		43 0							1 0											1 0									58	58	0	0.0	9	43
44		40 0										1 0	2 0							1 0	3 0					3 0			57	57	0	0.0	12	44
45			1 1	19 0					1 0															1 0				1 0	27	26	1	3.7	7	45
46		1 0		73 2																	1 0						2 0		87	85	2	2.3	8	46
47									15 0																				16	16	0	0.0	2	47
48				1 0			3 0		133 16			1 0	1 0							1 0	3 0		1 0		1 0	1 0			184	168	16	8.7	16	48
49									28 3						1 0														38	35	3	7.9	5	49
50							1 0		66 12					1 0															85	72	13	15.3	4	50
51									54 7																				64	57	7	10.9	2	51
52							1 0		52 35						1 0							1 0							97	62	35	36.1	8	52
53									23 0			1 0																	25	25	0	0.0	3	53
54		1 0					5 0		88 15	3 0					2 0	1 0			1 0	1 0									123	108	15	12.2	12	54
55					1 0				45 0						1 0														48	48	0	0.0	4	55
56				4 0					0 1			25 2	1 0						1 0						0 2				37	32	5	13.5	7	56
57												17 0											1 0						19	19	0	0.0	3	57
58												9 0			1 1														13	12	1	7.7	4	58
59												23 0													1 0			1 0	29	29	0	0.0	7	59
60												41 0												1 0	1 0				44	44	0	0.0	4	60
61								1 0	1 1			1 0	14 0				1 1												23	21	2	8.7	8	61
62			1 1											15 0										3 0					20	19	1	5.0	3	62
63							2 0		0 1			1 0			13 1														22	20	2	9.1	7	63
64	2 0	1 0		2 0	1 0		20 0		9 3	25 0		8 0		2 0	58 3	1 0	3 1		1 0	1 0	5 0		3 0	4 0	4 0	2 0		4 0	189	182	7	3.7	31	64
65		1 0													16 2		1 0								1 0				27	23	4	14.8	7	65
66						1 0	10 0		5 3	11 0		1 0			60 7				1 0		3 0		1 0	4 0					130	119	11	8.5	21	66
67												2 0			23 1														27	26	1	3.7	3	67
68									2 0						5 1														9	8	1	11.1	3	68
69									1 0								10 0								1 0				15	15	0	0.0	6	69
70	0 2	3 0								1 3		0 2							19 2	2 0				1 0	7 5				116	60	56	48.3	17	70
71	3 0								1 0		1 0						1 0		18 0				1 0						36	36	0	0.0	12	71
72													1 0						2 2										5	3	2	25.0	3	72
73									0 2			1 0					3 0		25 0										37	35	2	5.9	7	73
74									0 1										1 0	18 1									22	20	2	9.1	4	74
75																				52 0				1 0					53	53	0	0.0	2	75
76									8 7			1 0										19 0			1 0				48	40	8	16.7	7	76
77									1 4	6 1		0 2	1 0				1 0				1 0		20 8		2 0				54	36	18	33.3	12	77
78	3 0						1 0		5 0										1 0		1 0		15 0						29	29	0	0.0	8	78
79											1 0			1 0												14 0			16	16	0	0.0	3	79
80																													2	2	0	0.0	2	80
81																													4	2	2	50.0	2	81
82									3 5			1 0																1 0	19	13	6	31.6	8	82
83																													1	0	1	100.0	1	83
84							1 0		4 3																				9	6	3	33.3	3	84
85																													0	0	0	0.0	0	85
86									2 1																				4	3	1	25.0	2	86
87																													0	0	0	0.0	0	87
88		1 0																						2 0				0 4	12	6	6	50.0	6	88
89		1 0	2 0	1 1			3 0	1 0	2 2	1 1	1 0	3 1	3 0	2 0	5 0		0 1			0 1			3 0				1 0	1 2	90	64	26	28.9	29	89
90																													0	0	0	0.0	0	90
91	18	118	15	107	9	4	55	2	739	66	5	156	28	24	213	13	41	5	100	88	28	21	67	28	38	31	18	27	3904	....	....	.....	...	91
92	16	117	10	102	9	4	55	2	592	59	5	148	28	24	195	11	37	5	95	85	28	21	59	27	31	31	13	19	....	3495	....	.....	...	92
93	2	1	5	5	0	0	0	0	147	7	0	8	0	0	18	2	4	0	5	3	0	0	8	1	7	0	5	8	....	....	409	.....	...	93
94	11.1	0.8	33.3	4.7	0.0	0.0	0.0	0.0	19.9	10.6	0.0	5.4	0.0	0.0	8.5	15.4	10.0	0.0	5.0	3.6	0.0	0.0	11.9	3.6	18.4	0.0	27.8	29.6	....	....	....	10.5	...	94
	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50						

Marginal Number	NAME OF COLLEGE	Graduates of All Years					Graduates of 1915-1919					Graduates of 1914 and Previous					Graduates of 1919					Marginal Number
		Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	
	ALABAMA																					
1	University of Alabama School of Medicine	10	9	1	10.0	5	6	6	0	0.0	4	4	3	1	25.0	3	3	3	0	0.0	2	1
	ARKANSAS																					
2	University of Arkansas Medical Department	17	15	2	11.8	5	12	10	2	16.7	4	5	5	0	0.0	2	6	6	0	0.0	1	2
	CALIFORNIA																					
3	College of Medical Evangelists	10	10	0	0.0	4	10	10	0	0.0	4	0	0	0	0.0	0	5	5	0	0.0	1	3
4	College of Physicians and Surgeons, Los Angeles	31	26	5	16.1	4	31	26	5	16.1	4	0	0	0	0.0	0	24	23	1	4.2	1	4
5	College of Physicians and Surg., San Francisco	11	5	6	54.5	2	11	5	6	54.5	2	0	0	0	0.0	0	3	2	1	33.3	1	5
6	Leland Stanford Junior Univ. School of Medicine	18	18	0	0.0	2	18	18	0	0.0	2	0	0	0	0.0	0	15	15	0	0.0	1	6
7	Oakland College of Medicine and Surgery	2	2	0	0.0	1	2	2	0	0.0	1	0	0	0	0.0	0	2	2	0	0.0	1	7
8	University of California Medical School	3	3	0	0.0	3	1	1	0	0.0	1	2	2	0	0.0	2	0	0	0	0.0	0	8
	COLORADO																					
9	University of Colorado School of Medicine	21	20	1	4.8	3	18	18	0	0.0	1	3	2	1	33.3	0	18	18	0	0.0	1	9
	CONNECTICUT																					
10	Yale University School of Medicine	20	20	0	0.0	7	19	19	0	0.0	7	1	1	0	0.0	1	13	13	0	0.0	4	10
	DISTRICT OF COLUMBIA																					
11	Georgetown University School of Medicine	23	20	3	13.0	10	18	15	3	16.7	6	5	5	0	0.0	4	7	7	0	0.0	2	11
12	George Washington University Medical School	33	33	0	0.0	14	27	27	0	0.0	9	6	6	0	0.0	6	9	9	0	0.0	1	12
13	Howard University School of Medicine	29	22	7	24.1	11	28	21	7	25.0	10	1	1	0	0.0	1	9	7	2	22.2	5	13
	GEORGIA																					
14	Emory University School of Medicine	50	42	8	16.0	10	38	35	3	7.7	6	12	7	5	41.7	8	27	27	0	0.0	3	14
15	University of Georgia Medical Department	13	11	2	15.4	4	12	11	1	8.3	4	1	0	1	100.0	1	8	8	0	0.0	2	15
	ILLINOIS																					
16	Chicago Medical School	62	34	28	45.2	7	62	34	28	45.2	7	0	0	0	0.0	0	10	3	7	70.0	2	16
17	Hahnemann Medical College and Hospital	26	26	0	0.0	8	22	22	0	0.0	5	4	4	0	0.0	4	20	20	0	0.0	4	17
18	Loyola University School of Medicine	153	124	29	19.0	30	133	114	19	14.4	23	20	10	10	50.0	11	72	69	3	4.2	9	18
19	Northwestern University Medical School	111	107	4	3.6	15	98	96	2	2.0	9	13	11	2	15.4	10	86	85	1	1.2	3	19
20	Rush Medical College (University of Chicago)	183	180	3	1.6	20	168	168	0	0.0	13	15	12	3	20.0	7	145	145	0	0.0	13	20
21	University of Illinois College of Medicine	108	104	4	3.7	20	89	88	1	1.1	10	19	16	3	15.8	12	80	79	1	1.2	7	21
	INDIANA																					
22	Indiana University School of Medicine	32	32	0	0.0	4	32	32	0	0.0	4	0	0	0	0.0	0	31	31	0	0.0	3	22
	IOWA																					
23	State University of Iowa College of Medicine	47	47	0	0.0	4	45	45	0	0.0	2	2	2	0	0.0	2	43	43	0	0.0	1	23
24	State Univ. of Iowa Coll. of Homeo. Med.—H.	1	1	0	0.0	1	1	1	0	0.0	1	0	0	0	0.0	0	1	1	0	0.0	1	24
	KANSAS																					
25	University of Kansas School of Medicine	32	32	0	0.0	5	32	32	0	0.0	5	0	0	0	0.0	0	29	29	0	0.0	3	25
	KENTUCKY																					
26	University of Louisville Medical Department	46	30	16	34.8	14	26	22	4	15.4	5	20	8	12	60.0	11	17	15	2	11.8	4	26
	LOUISIANA																					
27	Tulane University of Louisiana School of Med.	95	94	1	1.1	16	88	87	1	1.1	12	7	7	0	0.0	6	74	74	0	0.0	9	27
	MAINE																					
28	Bowdoin Medical School	25	25	0	0.0	6	19	19	0	0.0	3	6	6	0	0.0	5	16	16	0	0.0	1	28
	MARYLAND																					
29	Johns Hopkins University Medical Department	142	137	5	3.5	26	124	119	5	4.0	21	18	18	0	0.0	12	64	64	0	0.0	13	29
30	Univ. of Md. School of Med. & Coll. of P. & S.	122	112	10	8.2	22	116	106	10	8.6	21	6	6	0	0.0	6	39	39	0	0.0	9	30
	MASSACHUSETTS																					
31	Boston University School of Medicine	21	19	2	8.2	10	15	14	1	7.2	5	6	5	1	16.7	5	11	10	1	9.1	4	31
32	College of Physicians and Surgeons, Boston	18	8	10	55.6	5	12	6	6	46.2	2	6	2	4	66.7	5	3	3	0	0.0	1	32
33	Medical School of Harvard University	164	159	5	3.0	25	148	145	3	2.1	23	16	14	2	12.5	7	88	88	0	0.0	11	33
34	Middlesex College of Medicine and Surgery.—N.	19	7	12	63.2	2	19	7	12	63.2	2	0	0	0	0.0	0	11	4	7	63.6	1	34
35	Tufts College Medical School	139	120	19	13.7	13	130	112	18	13.6	10	9	8	1	11.1	6	95	87	8	8.4	8	35
	MICHIGAN																					
36	Detroit College of Medicine and Surgery	35	33	2	5.7	7	30	29	1	3.3	4	5	4	1	20.0	4	28	27	1	3.6	2	36
37	University of Michigan Medical School	25	24	1	4.2	9	16	15	1	6.3	5	9	9	0	0.0	7	7	7	0	0.0	2	37
38	University of Michigan Homeo. Med. School.—H.	13	12	1	7.7	5	10	9	1	10.0	3	3	3	0	0.0	3	9	9	0	0.0	2	38
	MINNESOTA																					
39	University of Minnesota Medical School	73	73	0	0.0	7	70	70	0	0.0	4	3	3	0	0.0	3	64	64	0	0.0	3	39
	MISSOURI																					
40	Kansas City College of Medicine and Surgery.—N.	35	33	2	5.7	3	35	33	2	5.7	3	0	0	0	0.0	0	32	30	2	6.2	2	40
41	Kansas City Univ. of Phys. and Surgs.—N.	9	8	1	11.1	7	9	8	1	11.1	7	0	0	0	0.0	0	9	8	1	11.1	7	41
42	St. Louis College of Physicians and Surgeons	38	30	8	21.1	10	34	28	6	17.6	6	4	2	2	50.0	4	20	16	4	20.0	4	42
43	St. Louis University School of Medicine	65	63	2	3.1	13	58	58	0	0.0	9	7	6	2	28.6	6	46	46	0	0.0	5	43
44	Washington University Medical School	66	64	2	3.0	17	57	57	0	0.0	12	9	7	2	22.2	7	51	51	0	0.0	8	44
	NEBRASKA																					
45	John A. Creighton Medical College	34	32	2	5.9	14	27	26	1	3.7	7	7	6	1	14.3	7	21	21	0	0.0	4	45
46	University of Nebraska College of Medicine	87	85	2	2.3	8	87	85	2	2.3	8	0	0	0	0.0	0	82	80	2	2.4	6	46
	NEW YORK																					
47	Albany Medical College	27	23	4	14.8	7	16	16	0	0.0	2	11	7	4	36.3	6	12	12	0	0.0	1	47
48	Columbia University College of Phys. and Surgs.	198	182	16	8.1	23	184	168	16	8.7	16	14	14	0	0.0	10	121	111	10	8.3	6	48
49	Cornell University Medical School	41	38	3	7.3	7	38	35	3	7.9	5	3	3	0	0.0	3	22	20	2	9.1	2	49
50	Fordham University School of Medicine	90	75	15	16.7	4	85	72	13	15.3	4	5	3	2	40.0	1	63	59	4	6.3	2	50
51	Long Island College Hospital	68	60	8	11.8	6	64	57	7	10.9	2	4	3	1	25.0	4	48	43	6	10.4	2	51
52	N. Y. Homeo. Med. Coll. and Flower Hosp.—H.	104	69	35	33.7	10	97	62	35	36.1	8	7	7	0	0.0	5	27	23	4	14.8	4	52
53	Syracuse University College of Medicine	26	26	0	0.0	4	25	25	0	0.0	3	1	1	0	0.0	1	23	23	0	0.0	2	53
54	University and Bellevue Hospital Med. Coll.	127	111	16	12.6	14	123	108	15	12.2	12	4	3	1	25.0	4	81	72	9	11.1	4	54
55	University of Buffalo Medical Department	53	53	0	0.0	6	48	48	0	0.0	4	6	5	0	0.0	4	38	38	0	0.0	2	55
	OHIO																					
56	Eclectic Medical College.—E.	41	35	6	14.6	10	37	32	5	13.5	7	4	3	1	25.0	4	31	31	0	0.0	4	56
57	Ohio State University College of Medicine	19	19	0	0.0	3	19	19	0	0.0	3	0	0	0	0.0	0	16	16	0	0.0	1	57
58	Ohio State University Coll. of Homeo. Med.—H.	13	12	1	7.7	4	13	12	1	7.7	4	0	0	0	0.0	0	10	10	0	0.0	2	58
59	University of Cincinnati College of Medicine	29	29	0	0.0	7	29	29	0	0.0	7	0	0	0	0.0	0	27	27	0	0.0	5	59
60	Western Reserve University School of Medicine	47	46	1	2.1	6	44	44	0	0.0	4	3	2	1	33.3	3	42	42	0	0.0	2	60
	OKLAHOMA																					
61	University of Oklahoma School of Medicine	23	21	2	8.7	8	23	21	2	8.7	8	0	0	0	0.0	0	13	13	0	0.0	2	61
	OREGON																					
62	University of Oregon Medical School	23	22	1	4.4	4	20	19	1	5.0	3	3	3	0	0.0	3	8	7	1	12.5	3	62
	PENNSYLVANIA																					
63	Hahnemann Medical College and Hospital.—H.	25	23	2	8.0	9	22	20	2	9.1	7	3	3	0	0.0	3	4	4	0	0.0	3	63
64	Jefferson Medical College	213	202	11	5.2	35	189	182	7	3.7	31	24	20	4	16.7	15	53	53	0	0.0	18	64
65	Temple University Department of Medicine	27	23	4	14.8	6	27	23	4	14.8	7	0	0	0	0.0	0	2	2	0	0.0	1	65
66	University of Pennsylvania School of Medicine	142	130	12	8.5	25	130	119	11	8.5	21	12	11	1	8.3	8	19	19	0	0.0	10	66
67	University of Pittsburgh School of Medicine	30	28	2	6.7	5	27	26	1	3.7	3	3	2	1	33.3	2	21	21	0	0.0	2	67
68	Woman's Medical College of Pennsylvania	15	14	1	6.7	6	9	8	1	11.1	3	6	6	0	0.0	4	2	2	0	0.0	2	68
	SOUTH CAROLINA																					
69	Medical College of the State of South Carolina	24	20	4	16.7	29	15	15	0	0.0	6	9	5	4	44.4	6	13	13	0	0.0	4	69

H. = Homeopathic; E. = Eclectic; N. = Nondescript.

Marginal Number	NAME OF COLLEGE	Graduates of All Years					Graduates of 1915–1919					Graduates of 1914 and Previous					Graduates of 1919					Marginal Number
		Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	
	TENNESSEE																					
70	Meharry Medical College	131	65	66	50.4	21	116	60	56	48.3	17	15	5	10	66.7	7	55	40	15	27.3	10	70
71	University of Tennessee College of Medicine	41	38	3	7.3	14	36	36	0	0.0	12	5	2	3	50.0	5	26	26	0	0.0	4	71
72	Univ. of West Tennessee Medical Department	7	3	4	57.1	3	5	3	2	25.0	3	2	0	2	100.0	2	4	3	1	25.0	2	72
73	Vanderbilt University School of Medicine	46	42	4	8.7	13	37	35	2	5.9	7	9	7	2	22.2	7	28	27	1	3.6	4	73
	TEXAS																					
74	Baylor University College of Medicine	22	20	2	9.1	4	22	20	2	9.1	4	0	0	0	0.0	0	21	20	1	4.8	3	74
75	University of Texas Department of Medicine	53	53	0	0.0	2	53	53	0	0.0	2	0	0	0	0.0	0	49	49	0	0.0	1	75
	VERMONT																					
76	University of Vermont College of Medicine	62	50	12	19.4	9	48	40	8	16.7	7	14	10	4	28.6	5	24	23	1	4.2	5	76
	VIRGINIA																					
77	Medical College of Virginia	60	38	22	35.6	14	54	36	18	33.3	12	6	2	4	66.7	5	21	20	1	4.8	4	77
78	University of Virginia Department of Medicine	32	32	0	0.0	9	29	29	0	0.0	8	3	3	0	0.0	3	18	18	0	0.0	6	78
	WISCONSIN																					
79	Marquette University School of Medicine	16	16	0	0.0	3	16	16	0	0.0	3	0	0	0	0.0	0	16	16	0	0.0	3	79
	CANADA																					
80	Dalhousie University Faculty of Medicine	3	3	0	0.0	3	2	2	0	0.0	2	1	1	0	0.0	1	0	0	0	0.0	0	80
81	Laval University Faculty of Medicine	6	2	4	66.7	3	4	2	2	50.0	2	2	0	2	100.0	2	1	1	0	0.0	1	81
82	McGill University Faculty of Medicine	26	20	6	23.1	13	19	13	6	31.6	8	7	7	0	0.0	6	4	4	0	0.0	4	82
83	Montreal School of Medicine and Surgery	2	0	2	100.0	2	1	0	1	100.0	1	1	0	1	100.0	1	1	0	1	100.0	1	83
84	Queen's University Faculty of Medicine	16	11	5	31.3	6	9	6	3	33.3	3	7	5	2	28.6	4	3	2	1	33.3	2	84
85	University of Manitoba, Manitoba Medical College	0	0	0	0.0	0	0	0	0	0.0	0	0	0	0	0.0	0	0	0	0	0.0	0	85
86	University of Toronto Faculty of Medicine	11	8	3	27.3	6	4	3	1	25.0	2	7	5	2	28.6	5	0	0	0	0.0	0	86
87	Western University Faculty of Medicine	7	5	2	28.6	4	0	0	0	0.0	0	7	5	2	28.6	4	0	0	0	0.0	0	87
88	Foreign Colleges	67	37	30	44.8	17	12	6	6	46.2	6	55	31	24	44.4	17	0	0	0	0.0	0	88
89	Miscellaneous Medical Colleges	340	210	130	38.2	44	90	64	26	28.9	29	250	146	104	41.4	39	2	2	0	0.0	2	89
90	Undergraduates and Osteopaths	66	35	31	47.0	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	90
91	Totals by States	4736	4060	676	14.3	....	3904	3495	409	10.5	....	766	530	236	30.8	....	2422	2321	101	4.2	....	91

(CONTINUED FROM PAGE 1083)

practical examinations by which they may show their skill in diagnosis and treatment, for a wider provision for reciprocity and for special percentage allowances for years of active practice. The total number of these candidates is diminishing each year as state licensing boards extend the provision for reciprocity, or for the endorsement, without further examination of licenses granted by other states where a physician's qualifications are otherwise satisfactory. As a rule, the states which do not have reciprocal relations with other states (Florida, Massachusetts, Montana and Oregon, see Table G) examined the largest numbers of old practitioners.

Graduates of 1919 Examined During 1919

Table C also gives the results for the graduates of 1919 who were examined during the year by the state boards, and shows that 2,422, or 51.1 per cent., of all candidates examined during the year, graduated in 1919, including nine who graduated from Canadian medical colleges. Educational statistics show that the medical colleges of the United States graduated 2,656 students last year (including 252 for whom diplomas were withheld until a year's internship in a hospital has been completed); therefore, 90.8 per cent. of all graduates in 1919 took examinations for license during that year. In some of the states, graduates in medicine are allowed to serve as hospital interns without first becoming licensed practitioners, which accounts for some of the remaining 9.2 per cent. Of the 1919 graduates examined, 101, or 4.2 per cent., failed, as compared with 5.5 per cent. in 1918, 5.7 per cent. in 1917; 7.4 per cent. in 1916 and 7.5 per cent. in 1915. A steady improvement in recent years in the qualifications of medical graduates is apparent from these figures.

Nonrecognition of Medical Colleges

Table D shows for each college, from official reports, the states in which its diplomas are not given unqualified recognition. Nonrecognition is expressed by different terms in different states. Some boards list colleges as "not in good standing;" some give them as "not reputable;" in New York full recognition is given only to colleges which are "registered," and in Michigan colleges are divided into groups, only those of Group 1 having full recognition. This table also shows the latest rating given to each college by the Council on Medical Education.

From the point of view of the prospective student who may be selecting a medical college, the facts in Table D are of extreme importance. There are 59 medical colleges now having complete recognition in all states. There are others for which the few instances of nonrecognition are due to certain technicalities in state board requirements. If the student gets his medical training in one of the remaining 18 colleges, he will find on graduation that his diploma is not recognized in from 7 to 42 states!

Without the information published in Table D, these state board statistics would be not merely incomplete—they would be actually misleading. For example, 35 graduates of the Kansas City (Mo.) College of Medicine and Surgery were examined in 1919. Of these, 33 (94 per cent.) were examined by the Arkansas Board of Eclectic Medical Examiners and all but one passed. The statistics show only 5.7 per cent of failures, which would make this college appear to belong among the better grade medical schools of the country. Quite different the picture, however, when the facts are known, as set forth in Table D, that this college is reported as not recognized in its home state and in 36 other states, and that for its very existence it depends on the acceptance of its graduates by the Eclectic Board of Arkansas! The figures obtained for the last several years indicate that neither the Kansas City College of Medicine and Surgery nor the Arkansas Eclectic Board could exist without the other.

During the seven years this table has been published, the percentages of fully recognized colleges were, respectively, 29.0, 32.3, 43.7, 65.6, 57.3, 61.3 and 67.8. This shows a decided improvement in the medical colleges, Forty-two state licensing boards, to some extent at least, are now utilizing their legal power to refuse recognition to medical colleges which do not meet the requirements in the respective states. In the other eight states, however (including Alaska and the District of Columbia), this table indicates either that the practice acts do not give the boards authority to enforce a requirement of reasonable standards, or else that the boards are not exercising that authority. It is evident that if the graduates of low standard medical colleges are not eligible for license in the majority of states, they will flock to the other eight which still grant them recognition. These eight states—Alaska, Arizona, Massachusetts, Nebraska, Nevada, Oregon, Utah and the District of Columbia, therefore, will

(CONTINUED ON PAGE 1094)

TABLE D.—NONRECOGNITION OF MEDICAL COLLEGES

This table, based on official reports, shows in what states diplomas granted by certain medical colleges are not recognized as an acceptable qualification for the license to practice medicine.

Colleges marked (x) have been reported as not recognized by the states in the columns of which the letter appears

Marginal Number	COLLEGE	Classification by Council on Medical Education †	1 Alabama	2 Alaska	3 Arizona	4 Arkansas	6 California	6 Colorado	7 Connecticut	8 Delaware	9 Dist. of Columbia	10 Florida	11 Georgia	12 Idaho	13 Illinois	14 Indiana	15 Iowa	16 Kansas	17 Kentucky	18 Louisiana	19 Maine	20 Maryland	21 Massachusetts	22 Michigan	23 Minnesota	24 Mississippi	25 Missouri	26 Montana	27 Nebraska	28 Nevada	29 New Hampshire	30 New Jersey	31 New Mexico	32 New York	33 North Carolina	34 North Dakota	35 Ohio	36 Oklahoma	37 Oregon	38 Pennsylvania	39 Rhode Island	40 South Carolina	41 South Dakota	42 Tennessee	43 Texas	44 Utah	45 Vermont	46 Virginia	47 Washington	48 West Virginia	19* Wisconsin	50 Wyoming	Reported Non-Recognition by State Licensing Boards: No. of State Boards reporting full recognition	No. of State Boards reporting college not recognized	Percentage of State Boards reporting full recognition	Marginal Number
1	Albany Medical College	A																																									x													49	1	98	1
2	Baylor University School of Medicine	A																																																				50	....	100	2
3	Boston University School of Medicine	A																																																				50	....	100	3
4	Bowdoin Medical School	A																																																				50	....	100	4
5	Chicago Medical School[1]	C	x			x		x	x	x		x	x	x		x	x	x	x	x	x	x		x	x	x	x	x			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x		x	x		11	39	22	5
6	College of Medical Evangelists	B	x							x		x			x				x								x			x	x		x	x		x			x	x	x		x				x	x				33	17	66	6
7	College of Physicians and Surgeons, Boston	C	x			x		x	x	x		x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x		x	x		10	40	20	7
8	College of Physicians and Surgeons, Los Angeles	B	x							x		x							x						x				x			x			x		x			x	x						x					38	12	76	8
9	College of Physicians and Surgeons, San Francisco[2]	C	x			x		x	x	x		x	x	x	x		x	x	x	x	x	x		x	x	x	x	x			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x		x	x		11	39	22	9
10	Columbia University College of Physicians and Surg.	A																																																				50	....	100	10
11	Cornell University Medical College	A																																																				50	....	100	11
12	Dartmouth Medical School[3]	A																																																				50	....	100	12
13	Detroit College of Medicine and Surgery	A																																																				50	....	100	13
14	Eclectic Medical College	B	x							x																			x			x					x								x	x		x				x					41	9	82	14
15	Emory University Medical College	A																																																				50	....	100	15
16	Fordham University School of Medicine	A																																																				50	....	100	16
17	Georgetown University School of Medicine	A																																																				50	....	100	17
18	George Washington University Medical School	A																																																				50	....	100	18
19	Hahnemann Medical College and Hospital, Chicago	B	x							x																			x			x					x								x	x						x					42	8	84	19
20	Hahnemann Med. College and Hospital, Philadelphia	A																																																				50	....	100	20
21	Harvard University Medical School	A																																																				50	....	100	21
22	Howard University School of Medicine	A																																																				50	....	100	22
23	Indiana University School of Medicine	A																																																				50	....	100	23
24	Jefferson Medical College	A																																																				50	....	100	24
25	John A. Creighton Medical College	A																																									x													49	1	98	25
26	Johns Hopkins University Medical Department	A																																																				50	....	100	26
27	Kansas City College of Medicine and Surg. (Eclectic)	a	x				x	x		x			x	x	x		x	x	x	x	x	x		x	x	x	x	x			x	x	x	x	x	x	x	x		x	x	x	x	x	x		x	x		x	x	x	13	37	26	27
28	Kansas City University of Physicians and Surgeons[4]	C	x			x		x	x	x		x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	8	42	16	28
29	Leland Stanford Junior Univ. School of Medicine	A																																																				50	....	100	29
30	Long Island College Hospital	A																																																				50	....	100	30
31	Loyola University Medical Department	A						x											x					x								x		x						x												x		43	7	86	31
32	Marquette University School of Medicine	A																																									x													49	1	98	32
33	Medical College of the State of South Carolina	A																																																				50	....	100	33
34	Medical College of Virginia	A																																																				50	....	100	34
35	Meharry Medical College	B	x							x		x													x				x			x	x		x	x					x	x	x						x					37	13	74	35
36	Middlesex College of Medicine and Surgery	C	x			x		x	x	x		x	x	x	x		x	x	x	x	x	x		x	x	x	x	x			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x		x	x		11	39	22	36
37	New York Homeo. Med. College and Flower Hospital	B	x																								x			x			x					x	x		x			x					42	8	84	37
38	Northwestern University Medical School	A																																																				50	....	100	38

39	Oakland College of Medicine and Surgery[3]	C	x			x		x	x	x		x	x	x	x		x	x	x	x	x	x		x	x	x	x	x			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x		x	x		11	39	22	39
40	Ohio State Univ. College of Homeopathic Medicine	B	x							x		x																x			x				x						x	x		x				x					40	10	80	40
41	Ohio State University College of Medicine	A																																																			50	....	100	41
42	Rush Medical College (University of Chicago)	A																																																			50	....	100	42
43	St. Louis College of Physicians and Surgeons	C	x			x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x		x	x		9	41	18	43
44	St. Louis University School of Medicine	A																																																			50	....	100	44
45	State University of Iowa College of Medicine	A																																																			50	....	100	45
46	Syracuse University College of Medicine	A																																																			50	....	100	46
47	Temple University Medical Department	B	x									x			x													x			x	x		x	x						x	x		x				x					38	12	76	47
48	Tufts College Medical School	A																																										x												49	1	98	48
49	Tulane University School of Medicine	A																																																			50	....	100	49
50	University and Bellevue Hospital Medical College	A																																																			50	....	100	50
51	University of Alabama School of Medicine	A																																																			50	....	100	51
52	University of Arkansas Medical Department*	A																																										x												49	1	98	52
53	University of California Medical School	A																																																			50	....	100	53
54	University of Cincinnati Medical College	A																																																			50	....	100	54
55	University of Colorado School of Medicine	A																																																			50	....	100	55
56	University of Georgia Medical Department	A																																																			50	....	100	56
57	University of Kansas School of Medicine	A																																										x												49	1	98	57
58	University of Louisville Medical Department	A																																																			50	....	100	58
59	Univ. of Md. School of Med. and Coll. of P. and S.	A																																																			50	....	100	59
60	University of Michigan Medical School	A																																																			50	....	100	60
61	University of Michigan Homeopathic Med. School	A																																																			50	....	100	61
62	University of Minnesota Medical School	A																																																			50	....	100	62
63	University of Mississippi Department of Medicine*	A																																																			50	....	100	63
64	University of Missouri School of Medicine*	A																																										x												49	1	98	64
65	University of Nebraska College of Medicine	A																																																			50	....	100	65
66	University of Buffalo Medical Department	A																																																			50	....	100	66
67	Univeristy of North Carolina School of Medicine	A																																																			50	....	100	67
68	University of North Dakota School of Medicine	A																																										x												49	1	98	68
69	University of Oklahoma School of Medicine	A																																																			50	....	100	69
70	University of Oregon Medical Department	A																																																			50	....	100	70
71	University of Pennsylvania School of Medicine	A																																																			50	....	100	71
72	University of Pittsburgh School of Medicine	A																																																			50	....	100	72
73	University of South Dakota College of Medicine*	A																																										x												49	1	98	73
74	University of Tennessee College of Medicine	A																													x		x																				48	2	96	74
75	University of West Tennessee Medical Department	C	x			x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x		x	x	x	8	42	16	75
76	University of Texas Department of Medicine	A																																																			50	....	100	76
77	University of Utah School of Medicine*	A																																										x												49	1	98	77
78	University of Vermont College of Medicine	A																																																			50	....	100	78
79	University of Virginia Department of Medicine	A																																																			50	....	100	79
80	University of Wisconsin Medical School*	A																																																			50	....	100	80
81	Vanderbilt University Medical Department	A																																																			50	....	100	81
82	Wake Forest College School of Medicine	A																																																			50	....	100	82
83	Washington University Medical School	A																																																			50	....	100	83
84	Western Reserve University School of Medicine	A																																																			50	....	100	84
85	West Virginia University School of Medicine	A																																										x												49	1	98	85
86	Woman's Medical College of Pennsylvania	A																																																			50	....	100	86
87	Yale University School of Medicine	A																																																			50	....	100	87
	Number of Medical Colleges reported not recognized	......	17	..	..	8	3	10	8	15	..	13	9	9	10	5	9	9	12	9	9	9	..	12	9	9	9	17	..	..	17	14	9	14	17	9	11	9	8	23	17	17	9	14	9	..	9	17	2	9	10	3				
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50				

* Eleven medical colleges give only the first two years of the medical course.

† Classification revised to March 15, 1920.

1. Formerly the Chicago Hospital College of Medicine. Has advertised also under the name of "Fort Dearborn Hospital School."

2. Suspended medical teaching in 1913, but retains a nominal existence until 1921 in order to grant degrees to the three remaining classes which are completing their medical instruction elsewhere.

3. This college claims to be an eclectic college, but is reported as not recognized by the National Eclectic Medical Association. It is an offshoot of the Eclectic Medical University, an institution which during its existence was rated in Class C. The new college has refused inspections. It is reported as not recognized by the Missouri State Board of Health.

4. Formerly the Central College of Osteopathy; in 1917 became the Central College Medical Department; present title in 1918. Reported not recognized as a medical school by the Missouri State-Board of Health.

(x) According to official reports the licensing boards of the states thus indicated do not grant full recognition to, or have taken action refusing to admit to their examinations graduates of, the college marked by this letter—x

(CONTINUED FROM PAGE 1091)

remain the dumping ground for the output of low grade medical colleges, until the licensing boards obtain the needed legal authority, and until they take action in the matter. Arkansas, Florida and Connecticut are also registering through their separate sectarian licensing boards graduates of medical colleges not recognized in the majority of other states. It is reported that no examinations were held during the year by the Arkansas Homeopathic Board, and from the Florida Eclectic Board no report was received.

TABLE 1.—RECOGNITION OF MEDICAL COLLEGES (BASED ON TABLE D)

	Number of Colleges
Recognized by all state boards	59
Not recognized by 1 or 2 state boards	10
Not recognized by 7 to 17 state boards	9
Not recognized by 37 to 42 state boards	9
Total	87

STUDY OF TOTALS AND PERCENTAGES

A study of totals and percentages as compared with previous years is of interest. The number examined in 1919 was 1,099 more than in 1918; six more than in 1917; 114 less than in 1916, and 1,577 less than in 1915. Statistics regarding physicians licensed in the various states by reciprocity and by other methods are given in Tables G, H, I, J and K. By all methods—examination, reciprocity, under exemption, etc.—6,584 physicians were licensed during 1919, or 2,399 more than in 1918, 1,161 more than in 1917, 1,712 more than in 1916, but 1,281 less than in 1906, when 7,865 physicians were licensed.

Other deductions from the larger tables, presented in Tables E and F, are worthy of special study.

TABLE 2.—RESULTS FOR THIS AND PREVIOUS YEARS

Year	All Candidates Examined				Recent Graduates		Older Graduates		Nondescript		Registered without Written Examination	Total Registered
	Examined	Passed	Failed	Percentage Failed	Examined	Percentage Failed	Examined	Percentage Failed	Examined	Percentage Failed		
1904	7035	5672	1363	19.3	4773	14.1	579	29.7	515	52.6	999	6671
1905	7170	5680	1490	20.8	6054	16.2	690	37.7	472	61.9	394	6074
1906	8035	6368	1667	20.7	6250	16.4	793	27.1	703	51.3	1497	7865
1907	7271	5723	1548	21.3	5922	15.1	675	27.7	674	69.6	1426	7149
1908	7770	6084	1686	21.7	6477	17.8	796	31.5	494	56.8	1276	7360
1909	7287	5857	1430	19.6	5891	15.4	958	30.0	438	54.1	1373	7230
1910	7004	5712	1292	18.4	5678	14.9	973	29.1	353	45.6	1640	7352
1911	6960	5578	1383	19.9	5685	17.2	945	29.4	330	38.5	1246	6824
1912	6879	5466	1413	20.5	5770	18.6	856	29.2	253	34.8	1257	6723
1913	6435	5236	1199	18.6	5390	16.5	225	32.1	251	37.8	1265	6501
1914	5570	4370	1200	21.6	4549	17.6	728	30.0	293	61.4	1427	5797
1915	5313	4486	827	15.6	4627	13.2	621	29.3	65	49.2	1386	5872
1916	4850	4123	727	15.0	4283	12.7	567	32.1	.....	.....	1338	5461
1917	4730	4061	669	14.1	4015	10.1	564	32.6	.....	.....	1362	5423
1918	3637	3154	483	13.3	2984	9.3	479	30.5	.....	.....	1031	4185
1919	4736	4060	676	14.3	3904	10.5	766	30.8	66	47.0	2521	6584

TABLE E.—COLLEGES HAVING FORTY OR MORE EXAMINED

COLLEGE	Graduates of All Years					Graduates of 1915–1919					Graduates of 1914 and Previous					Graduates of 1919					Marginal No., Table A
	No. Examined	No. Passed	No. Failed	Per Cent. Failed	No. of States	No. Examined	No. Passed	No. Failed	Per Cent. Failed	No. of States	No. Examined	No. Passed	No. Failed	Per Cent. Failed	No. of States	No. Examined	No. Passed	No. Failed	Per Cent. Failed	No. of States	
Jefferson Medical College	213	202	11	5.2	35	189	182	7	3.7	31	24	20	4	16.7	15	53	53	0	0.0	18	64
Columbia University College of Phys. and Surgs.	198	182	16	8.1	23	184	168	16	8.7	16	14	14	0	0.0	10	121	111	10	8.3	6	48
Rush Medical College (University of Chicago)	183	180	3	1.6	20	168	168	0	0.0	13	15	12	3	20.0	7	145	145	0	0.0	13	20
Medical School of Harvard University	164	159	5	3.0	25	148	145	3	2.1	23	16	14	2	12.5	7	88	88	0	0.0	11	33
Loyola University School of Medicine	153	124	29	19.0	30	133	114	19	14.4	23	20	10	10	50.0	11	72	69	3	4.2	9	18
Johns Hopkins University Medical Department	142	137	5	3.5	26	124	119	5	4.0	21	18	18	0	0.0	12	64	64	0	0.0	13	29
University of Pennsylvania School of Medicine	142	130	12	8.5	25	130	119	11	8.5	21	12	11	1	8.3	8	19	19	0	0.0	10	66
Tufts College Medical School	139	120	19	13.7	13	130	112	18	13.6	10	9	8	1	11.1	6	95	87	8	8.4	8	35
Meharry Medical College	131	65	66	50.4	21	116	60	56	48.3	17	15	5	10	66.7	7	55	40	15	27.3	10	70
University and Bellevue Hospital Med. College	127	111	16	12.6	14	123	108	15	12.2	12	4	3	1	25.0	4	81	72	9	11.1	4	54
Univ. of Md. Sch. of Med. and Coll. of P. & S.	122	112	10	8.2	22	116	106	10	8.6	21	6	6	0	0.0	6	39	39	0	0.0	9	30
Northwestern University Medical School	111	107	4	3.6	15	98	96	2	2.0	0	13	11	2	15.4	10	86	85	1	1.2	3	19
University of Illinois College of Medicine	108	104	4	3.7	20	89	88	1	1.1	10	19	16	3	15.8	12	80	79	1	1.2	7	21
New York Homeo. Med. Coll. and Flower Hosp.	104	69	35	33.7	10	97	62	35	36.1	8	7	7	0	0.0	5	27	23	4	14.8	4	52
Tulane Univ. of Louisiana School of Medicine	95	94	1	1.1	16	88	87	1	1.1	12	7	7	0	0.0	6	74	74	0	0.0	9	27
Fordham University School of Medicine	90	75	15	16.7	4	85	72	13	15.3	4	5	3	2	40.0	1	63	59	4	6.3	2	50
University of Nebraska College of Medicine	87	85	2	2.3	8	87	85	2	2.3	8	0	0	0	0.0	0	82	80	2	2.4	6	46
University of Minnesota Medical School	73	73	0	0.0	7	70	70	0	0.0	4	3	3	0	0.0	3	64	64	0	0.0	3	39
Long Island College Hospital	68	60	8	11.8	6	64	57	7	10.9	2	4	3	1	25.0	4	48	43	5	10.4	2	51
Washington University Medical School	66	64	2	3.0	17	57	57	0	0.0	12	9	7	2	22.2	7	51	51	0	0.0	8	44
St. Louis University School of Medicine	65	63	2	3.1	13	58	58	0	0.0	9	7	5	2	28.6	6	46	46	0	0.0	5	43
Chicago Medical School	62	34	28	45.2	7	62	34	28	45.2	7	0	0	0	0.0	0	10	3	7	70.0	2	16
University of Vermont College of Medicine	62	50	12	19.4	9	48	40	8	16.7	7	14	10	4	28.6	5	24	23	1	4.2	5	76
Medical College of Virginia	59	38	21	35.6	14	53	35	18	34.0	12	6	2	4	66.7	5	21	20	1	4.8	4	77
University of Texas Department of Medicine	53	53	0	0.0	2	53	53	0	0.0	2	0	0	0	0.0	0	49	49	0	0.0	1	75
University of Buffalo Medical Department	53	53	0	0.0	6	48	48	0	0.0	4	5	5	0	0.0	4	38	38	0	0.0	2	55
Emory University School of Medicine	50	42	8	16.0	10	38	35	3	7.7	6	12	7	5	41.7	8	27	27	0	0.0	3	14
State University of Iowa College of Medicine	47	47	0	0.0	4	45	45	0	0.0	2	2	2	0	0.0	2	43	43	0	0.0	1	23
Western Reserve University School of Medicine	47	46	1	2.1	6	44	44	0	0.0	4	3	2	1	33.3	3	42	42	0	0.0	2	60
University of Louisville Medical Department	46	30	16	34.8	14	26	22	4	15.4	5	20	8	12	60.0	11	17	15	2	11.8	4	26
Vanderbilt University School of Medicine	46	42	4	8.7	13	37	35	2	5.9	7	9	7	2	22.2	7	28	27	1	3.6	4	73
Cornell University Medical College	41	38	3	7.3	7	38	35	3	7.9	5	3	3	0	0.0	3	22	20	2	9.1	2	49
Eclectic Medical College	41	35	6	14.6	10	37	32	5	13.5	7	4	3	1	25.0	4	31	31	0	0.0	4	56
University of Tennessee College of Medicine	41	38	3	7.3	13	36	36	0	0.0	12	5	2	3	50.0	5	26	26	0	0.0	4	71
Totals	3229	2862	367	11.4	....	2919	2627	292	10.0	....	310	234	76	24.5	....	831	755	76	9.1		

This table is interesting, since it gives data relating to the 34 larger medical colleges arranged according to the number of graduates examined. This allows of comparison between colleges having classes of nearly equal size. Jefferson Medical College had the largest number of graduates examined in 1919. The position was held by the Chicago College of Medicine and Surgery in 1913 to 1918, inclusive, by the University of Illinois College of Medicine in 1906, 1907 and 1912; in 1908 by Jefferson Medical College, and in 1909, 1910 and 1911 by the University of Louisville Medical Department. The first place from the standpoint of the number examined, however, does not always mean first place from the standpoint of scholarship. Note the percentages of failures. The five highest failure percentages are for Meharry Medical College, 50.4; Chicago Medical School (formerly Chicago Hospital College of Medicine), 45.2; Medical College of Virginia, 35.6; University of Louisville Medical Department, 34.8, and the New York Homeopathic Medical College and Flower Hospital, 33.7.

Of the 14 colleges having 100 or more examined, eight have failure percentages of less than 10, while six stand out prominently with large failure percentages. Of the 20 colleges having between 40 and 100 graduates examined, 12 had failure percentages of less than 10, 15 had failure percentages between 10 and 20, and 3 had failure percentages of over 20 per cent.

The average percentage of failures for these larger colleges for graduates of 1914 and previous years was 24.5; for graduates of 1915 to 1919, inclusive (recent graduates), 10.0; for graduates of 1919, 9.1 and for graduates of all years, 11.4. Of the 4,258 graduates of the 82 colleges in the United States which had graduates examined by state boards in 1919, these larger (41.5 per cent. of all) schools furnished 3,229, or 75.6 per cent., of the graduates examined.

STUDY OF LARGER COLLEGES

Table E is also based on the three large tables, and gives the results of state board examinations as they affect the thirty-four largest medical colleges. Although these colleges represent 41.5 per cent. of the eighty-two medical colleges in the United States having graduates examined, in 1919 they furnished 75.6 per cent. of all candidates for license coming from medical schools of the United States. This table shows, also, that the graduating of large classes by a medical college does not prove excellence of teaching, since five of these have high failure percentages. The larger the college from the standpoint of students and graduates, the more serious is inferior teaching ability, as indicated by a high failure percentage. In fairness both to medical students and to the public, such schools should strengthen their teaching facilities or reduce the size of their classes.

TABLE F.—PHYSICIANS EXAMINED BY STATE BOARDS, 1915 TO 1919, INCLUSIVE

	1915		1916		1917		1918		1919		Totals			
	Registered	Rejected	Registered	Rejected	Registered	Rejected	Registered	Rejected	Registered	Rejected	Examined	Registered	Rejected	Percentage Rejected
Alabama	79	45	55	36	45	21	20	9	23	12	345	222	123	35.7
Arizona	10	7	33	9	32	5	33	8	48	5	190	156	34	17.9
Arkansas	75	7	67	11	80	12	68	4	70	7	401	360	41	10.2
California	137	39	146	8	235	94	203	71	109	56	1098	830	268	24.4
Colorado	19	5	25	8	38	2	44	10	57	16	224	183	41	18.3
Connecticut	46	17	41	20	72	22	39	14	94	24	389	292	97	24.9
Delaware	13	0	13	2	14	0	10	1	19	1	73	69	4	6.5
Dist. of Columbia	51	13	33	14	26	7	37	4	51	6	242	198	44	18.2
Florida	83	25	68	18	44	12	21	8	64	17	360	280	80	22.2
Georgia	176	17	133	7	100	2	48	2	60	5	550	517	33	6.0
Idaho	23	1	29	0	20	2	16	0	31	0	122	119	3	2.5
Illinois	439	64	517	91	487	101	367	57	475	96	2694	2285	409	15.2
Indiana	49	3	49	4	39	2	43	6	34	0	229	214	15	6.6
Iowa	85	4	82	2	45	1	50	1	78	4	352	340	12	3.4
Kansas	29	4	32	1	24	3	20	0	32	3	148	137	11	7.4
Kentucky	83	7	66	10	68	16	40	2	31	7	330	288	42	12.7
Louisiana	69	21	68	16	44	13	50	6	80	6	367	311	56	15.2
Maine	63	6	25	2	33	1	27	3	43	3	206	191	15	7.3
Maryland	111	29	96	30	82	11	54	5	145	11	574	488	86	15.0
Massachusetts	238	65	166	40	219	42	228	18	305	41	1362	1156	206	15.1
Michigan	120	6	135	5	125	3	97	4	52	0	547	529	18	3.3
Minnesota	59	6	56	1	60	0	68	0	98	0	348	341	7	2.0
Mississippi	84	15	48	29	23	5	12	0	18	3	237	185	52	21.9
Missouri	200	22	161	13	166	12	143	21	136	1	875	806	69	7.9
Montana	48	16	38	14	43	24	20	7	26	12	248	175	73	29.4
Nebraska	70	6	52	0	63	0	44	1	102	5	343	331	12	3.5
Nevada	12	1	10	1	8	0	5	1	13	0	51	48	3	5.9
New Hampshire	6	1	10	0	6	0	4	2	5	0	34	31	3	8.8
New Jersey	71	8	72	10	26	6	16	1	61	1	272	246	26	9.6
New Mexico	5	0	5	1	....	....	2	0	2	0	15	14	1	6.7
New York	618	165	523	159	600	146	456	117	627	189	3600	2824	776	21.6
North Carolina	106	30	96	18	65	10	49	3	59	9	445	375	70	15.7
North Dakota	10	5	15	5	6	1	6	3	6	4	61	43	18	29.5
Ohio	149	3	182	5	185	4	142	6	156	8	840	814	26	3.1
Oklahoma	50	13	52	8	52	2	24	0	34	0	235	212	23	9 8
Oregon	56	30	38	17	37	7	35	7	39	3	269	205	64	23.8
Pennsylvania	208	24	233	33	241	12	168	22	213	28	1182	1063	119	10.1
Rhode Island	26	6	27	7	22	1	13	4	20	5	131	108	23	17.6
South Carolina	53	36	53	24	37	29	17	12	45	14	320	205	115	35.9
South Dakota	25	0	18	2	18	1	14	0	20	1	99	95	4	4.0
Tennessee	101	4	128	20	167	10	103	19	96	7	655	595	60	9.2
Texas	136	11	90	13	119	5	82	2	89	3	550	516	34	6.2
Utah	21	1	15	0	11	0	10	1	29	0	88	86	2	2.3
Vermont	36	0	17	0	13	1	24	0	22	0	113	112	1	0.9
Virginia	100	8	99	8	64	4	50	6	65	12	416	378	38	9.1
Washington	75	14	48	4	57	7	59	7	63	10	344	302	42	12.2
West Virginia	70	7	58	2	45	7	16	4	35	15	259	224	35	13.5
Wisconsin	74	10	72	4	40	3	34	2	34	0	273	254	19	7.0
Wyoming	13	0	17	0	13	0	22	2	19	8	94	84	10	10.6
U. S. Territories and Possessions	6	0	11	1	2	0	1	0	27	18	66	47	19	28.8
Totals	5,313		4,850		4,730		3,637		4,736		23,266			
Registered	4,486		4,123		4,061		3,154		4,060		19 884			
Rejected	827		727		669		483		676		3,382			
Per Cent. Rejected	15.6		15.0		14.1		13.2		14.3		14.5			

This table gives the number of candidates registered and rejected *on examination* by each state during each of the last five years. The last four columns give the totals for the five years and the percentage rejected by each state. Compare this table with Table H.

Four states registered over 1,000 candidates by examination in the five years, these being New York, Illinois, Massachusetts and Pennsylvania. Over 2,000 were registered in only two states, New York with 2,824 and Illinois with 2,285. Altogether 19,884 physicians were registered by examination in five years, an average of 3,977 each year.

The five highest percentages of rejections for the five years were in South Carolina, 35.9; Alabama, 35.7; North Dakota, 29.5; Montana, 29.4; Connecticut, 24.9, and California, 24.4. Until 1916 Massachusetts, Oregon and Tennessee included nongraduates among those examined, and for that reason would be expected to have higher percentages rejected. On the other hand, in several states the boards refused to recognize certain colleges and eliminated many candidates prior to the examination by a careful scrutiny of credentials, and as a result the percentages of failures at the examinations are lower than otherwise would be the case. For example, Ohio rejected only 3.1 per cent. of those who took their examinations, but graduates of eleven medical colleges are not eligible for admission to the examinations. This table therefore should be studied in connection with Table D.

The lowest failure percentages were in Vermont, 0.9; Minnesota, 2.0; Washington, 2.3; Idaho, 2.5; Ohio, 3.1, and Michigan, 3.3.

TABLE G.—REGISTRATION BY STATE BOARDS DURING THE YEAR 1919

STATES	By Examination			By Reciprocity	Without Examination Written or Under Exemption	Total Registered
	Graduates, 1915-1919	Graduates, 1914 and Previous	Nongraduates and graduates of Nondescript Colleges			
Alabama	20	3	....	32	....	55
Arizona	11	36	1	....	....	48
Arkansas	54	16	....	60	....	130
California	83	13	13	336	....	445
Colorado	32	9	16	84	....	141
Connecticut	80	14	....	11	2	107
Delaware	19	0	....	9	....	28
District of Columbia	46	5	....	15	....	66
Florida	19	45	....	....	....	64
Georgia	56	4	....	51	....	111
Idaho	16	15	....	18	....	49
Illinois	453	22	....	93	....	568
Indiana	31	3	....	31	....	65
Iowa	71	7	....	71	....	149
Kansas	28	4	....	57	....	89
Kentucky	27	4	....	36	1	68
Louisiana	64	16	....	18	....	98
Maine	35	8	....	8	....	51
Maryland	140	5	....	33	1	179
Massachusetts	248	57	....	....	....	305
Michigan	45	7	....	130	....	182
Minnesota	89	9	....	81	....	179
Mississippi	16	2	....	28	....	46
Missouri	117	19	....	96	....	232
Montana	10	16	....	....	....	26
Nebraska	102	0	....	65	....	167
Nevada	9	4	....	10	....	23
New Hampshire	4	0	1	13	....	18
New Jersey	55	6	....	202	....	263
New Mexico	2	0	....	3	45	50
New York	592	35	....	69	15	711
North Carolina	59	0	....	23	....	82
North Dakota	5	1	....	11	1	18
Ohio	148	8	....	128	....	284
Oklahoma	28	6	....	82	....	116
Oregon	24	15	....	....	....	39
Pennsylvania	195	18	....	56	....	269
Rhode Island	11	9	....	....	....	20
South Carolina	37	8	....	....	....	45
South Dakota	5	15	....	.....	....	20
Tennessee	95	0	1	27	....	123
Texas	35	3	1	186	....	275
Utah	28	1	....	25	....	54
Vermont	21	1	....	2	....	24
Virginia	59	6	....	62	....	127
Washington	27	34	2	42	....	105
West Virginia	31	4	....	41	....	76
Wisconsin	31	3	....	98	....	132
Wyoming	13	6	....	16	....	35
U. S. Territories and Possessions	19	8	....	....	....	27
Totals	3,495	530	35	2,459	65	6,584

This table shows the total number registered during 1919 in each state by the various methods. The first three columns show those registered by examination; the first column showing the recent graduates registered, the second column the old practitioners (graduates of 1914 and previous years) and the third column shows a few nongraduates, graduates of nondescript colleges and some osteopaths who were given licenses as physicians and surgeons. The fourth column shows the number licensed through reciprocity, by endorsement of other state licenses and by certificates of the National Board of Medical Examiners. The fifth column shows those licensed under various exemption clauses in the practice acts, such as because of national fame or by recognition of diplomas (New Mexico). California licensed as physicians 13 out of 28 graduates of osteopathic colleges, and Colorado so licensed 14 out of 25 osteopaths.

It is interesting to note that states like Arizona, Florida, Massachusetts and New York, which have no reciprocal relations or which reciprocate with only a few other states, have registered by examination the largest numbers of old practitioners. The large registration through reciprocity in California is due to the liberal provision in the recent medical practice act providing for the recognition of licenses granted in other states. No reciprocal registrations were reported for eight states.

The last column shows the total number of physicians registered by all methods in each state during the year. Four states registered over 300 each, these being New York, 711; Illinois, 568; California, 445, and Massachusetts, 305. Thirteen states registered less than 50 each. The largest registration was in New York, and the smallest number was 18 each in New Hampshire and North Dakota. The total registered by all methods was 6,584, an increase of 2,399 above the total registered in 1918. Of this increase, 1,487, or 59.5 per cent., were through reciprocal registration.

TOTALS EXAMINED IN FIVE YEARS

Table F shows the number registered and the number rejected in each state for each of the past five years. A comparison of this table with the statistics in the last educational number of THE JOURNAL (Aug. 16, 1919, p. 513, Table 12) shows—what would be expected—that the states having the several largest numbers of medical graduates, examined the largest numbers of physicians. New York leads, having examined 3,600 candidates in five years, followed by Illinois with 2,694. The five states having the next highest numbers are Massachusetts with 1,362, Pennsylvania with 1,182, California with 1,098, Missouri with 875 and Ohio with 840.

TABLE H.—REGISTRATIONS BY STATE BOARDS FOR FIVE YEARS

STATE	1915	1916	1917	1918	1919	Totals
Alabama	79	55	48	26	55	263
Arizona	13	33	32	33	48	159
Arkansas	98	95	111	81	130	515
California	312	302	440	342	445	1,841
Colorado	82	86	100	97	141	506
Connecticut	55	58	84	46	107	350
Delaware	21	19	17	24	28	109
Dist. of Columbia	53	44	33	41	66	237
Florida	83	68	44	21	64	280
Georgia	199	152	122	72	111	656
Idaho	26	33	25	31	49	164
Illinois	485	556	520	392	568	2,521
Indiana	91	77	79	58	65	370
Iowa	150	103	91	79	149	572
Kansas	83	95	67	56	89	390
Kentucky	103	75	76	54	68	376
Louisiana	77	77	51	57	98	360
Maine	69	31	42	32	51	225
Maryland	142	120	100	73	179	614
Massachusetts	238	166	219	228	305	1,156
Michigan	186	224	198	145	182	935
Minnesota	104	101	103	97	179	584
Mississippi	87	58	37	15	46	243
Missouri	263	212	206	186	232	1,099
Montana	48	39	43	20	26	176
Nebraska	111	70	99	77	167	524
Nevada	23	29	24	16	22	114
New Hampshire	26	25	18	7	18	94
New Jersey	157	163	122	101	263	806
New Mexico	53	63	67	33	50	266
New York	657	545	635	496	711	3,044
North Carolina	140	113	86	67	82	488
North Dakota	27	35	24	11	18	115
Ohio	221	251	245	175	285	1,177
Oklahoma	114	107	142	73	116	552
Oregon	56	38	37	35	39	205
Pennsylvania	219	252	258	172	269	1,170
Rhode Island	26	27	22	13	20	108
South Carolina	53	53	37	17	45	205
South Dakota	32	18	24	14	20	108
Tennessee	114	142	167	114	123	660
Texas	169	166	176	149	275	935
Utah	29	23	20	23	54	149
Vermont	37	23	13	25	24	122
Virginia	143	131	82	78	127	561
Washington	75	48	57	59	105	344
West Virginia	98	90	84	41	76	389
Wisconsin	126	127	67	54	148	522
Wyoming	13	32	27	28	19	119
U. S. Possessions	6	11	2	1	27	47
Totals	5,872	5,461	5,423	4,185	6,584	27,525

This table shows the totals registered in each state during each of the last five years. In some states it will be noted that there has been a gradual decrease during the first four years and a large increase in 1919. In others this increase has not been so large. The totals also are given for the entire five years. It will be noted that seven states registered over 1,000 physicians, the largest number being in New York with 3,044 followed by Illinois with 2,521, California with 1,841, Ohio with 1,177, Pennsylvania with 1,170, Massachusetts with 1,156 and Missouri with 1,099. Omitting the outlying territories the lowest registration during the five years was in New Hampshire, where only 94 physicians were registered, followed by Rhode Island and South Dakota each having 108, Delaware with 109, Nevada with 114, North Dakota with 115 and Wyoming with 119.

In the five years there were altogether 27,525 registrations, an average of 5,505 each year.

TOTAL REGISTRATION IN 1919

The tables thus far described have referred only to the results of *examinations* and to those registered on that basis. Table G, however, shows the total number who received licenses in each state, including those registered by examination, by reciprocity and under various exemption clauses. Altogether 6,584 physicians were registered by all methods during 1919, as compared with 4,185 in 1918, 5,423 in 1917, 5,461 in 1916, 5,872 in 1915 and 5,797 in 1914. The total registered in 1918—4,185—was the lowest number registered in any year since the publication of these statistics was begun. This was undoubtedly due to the war. This year the total is increased by 2,399 and is the largest number since 1912. Of the increase, 1,487, or 59.5 per cent., were reciprocal registrations.

By reciprocity or under exemption clauses, 2,524 were licensed in 1919 as compared with 1,031 in 1918, 1,362 in 1917, 1,338 in 1916 and 1,386 in 1915.

Over 100 were registered by all methods in twenty-three states; over 200 in nine, and over 300 in four, the largest numbers registered being 711 in New York, 568 in Illinois, 445 in California and 305 in Massachusetts. Of those licensed in California 336, or 75.5 per cent., were registered by the endorsement of licenses granted by the boards of other states. California also registered as physicians and surgeons 13 graduates of osteopathic colleges. Fourteen osteopaths were so licensed in Colorado, 2 in Washington and one each in New Hampshire and Texas. Texas also registered 36 osteopaths by reciprocity.

TOTAL REGISTRATION IN FIVE YEARS

Table H permits the reader to compare the registrations in each state for the last 5 years. There was a decrease from 1915 until 1918. The decrease of 1,238 in 1918 was due undoubtedly to war conditions. A rebound is seen, however, in 1919, when there was an increase of 2,399. It is interesting to compare the registrations in different states. For example, in 1918 Massachusetts had an increase in the number of registrations regardless of the general decrease in the majority of states. Massachusetts was one of the states which also in 1919 showed an increase beyond what would be expected by the general increase. Since Massachusetts does not have reciprocal relations with other states, this increase is apparently due to the faulty medical practice act in that state, where the board is not given authority to refuse recognition to low grade medical colleges and cannot insist on reasonable standards of preliminary education. Attention is called also to the figures in 1919 for Arkansas, California, Connecticut, Minnesota, Nebraska, Texas, Wisconsin and Washington, in which states the registrations are larger than would be expected with the general increase in registrations. In California and Texas this seems to be due to the unusually generous provision for or the administration of reciprocity. In Arkansas and Connecticut, although the regular medical boards exact fairly high qualifications, there are generous sectarian boards which are not so particular. In Nebraska, only a high school education is required as the minimum standard of preliminary education. In Minnesota and Wisconsin, during 1919 generous provision was made for registering, without further examination, physicians who had been in the government medical services.

On the other hand, it will be noted that in several states, registrations in 1919 are less than in 1918 or are much smaller than would be expected with the general increase in registrations. In Vermont, there was a lower registration than in 1918, while in Indiana, Kentucky, Montana, New Hampshire, North Dakota and Oregon, the registrations are smaller than would be expected. It will be noted meanwhile that New Hampshire had the lowest number registered in the five years, while the largest number registered was in New York. This table would be interesting in connection with a study of the distribution of physicians in the United States.

MEDICAL TRAINING OF APPLICANTS LICENSED IN 1918

Table I is of special interest, since it shows for each state the numbers of candidates coming from medical schools rated in classes A, B and C, thereby indicating the character of the medical training of the candidates licensed during 1918. Of the 6,584 candidates registered, 4,060 were licensed by examination and 2,524 by reciprocity or on presentation of acceptable credentials. Those who graduated prior to 1907, when the first classification of medical colleges was completed by the Council on Medical Education, are included among those graduating from "Miscellaneous Col-

leges." Among the graduates of Class C schools are included 31 graduates of osteopathic colleges who were licensed as physicians in California, Colorado, Washington, New Hampshire and Texas. The Texas totals of Class C candidates would be increased if the 36 osteopaths who were licensed by reciprocity received licenses as physicians. Altogether, of the 6,584 candidates registered in 1919, 4,368, or 66.4 per cent., were graduates of Class A medical schools; 872, or 13.2 per cent., were from Class B schools; 278, or 4.2 per cent., were from Class C schools, and for 1,066, or 16.2 per cent., the colleges are unclassified.

As will be noted, the largest numbers of Class C graduates were licensed in Illinois with 38; Arkansas, with 33; Colorado, with 30, and California and Tennessee each with 23. All of the Class C graduates registered in Arkansas were licensed by the Eclectic Board.

Illinois registered 129 Class B graduates, the largest number, followed by California, with 69; New York, with 66; Ohio with 51 and Oklahoma with 45. Oklahoma and Tennessee licensed more graduates of Class B and Class C colleges than of Class A graduates.

Only Class A graduates were registered either by examination or by reciprocity in Mississippi, South Carolina and Vermont.

It is evident that in several states, particularly, more care should be taken in the recognition of medical colleges, or better methods of examination should be adopted which will provide better safeguards against those not having adequate education.

Source of Candidates Registered in Three Years

Of the 6,584 physicians registered by all methods in 1919, 4,368, or 66.4 per cent., graduated from Class A medical colleges; 872, or 13.2 per cent., were from Class B medical colleges; and 278, or 4.2 per cent., were from Class C medical colleges. Of all candidates examined, 1,066, or 16.2 per

TABLE I.—CHARACTER OF PHYSICIANS LICENSED IN 1919

Marginal Number	STATES	By Examination					On Reciprocity or Credentials					Totals Registered from Medical Colleges in Class				Grand Totals	Marginal Number
		Medical Colleges in Class				Totals	Medical Colleges in Class				Totals						
		A	B	C	Misc.		A	B	C	Misc.		A	B	C	Misc.		
1	Alabama	16	6	0	1	23	21	7	0	4	32	37	13	0	5	55	1
2	Arizona	13	10	2	23	48	0	0	0	0	0	13	10	2	23	48	2
3	Arkansas	12	13	33[1]	12	70	19	21	0	20	60	31	34	33[1]	32	130	3
4	California	43	33	19[2]	14	109	111	36	11	178	336	154	69	30[2]	192	445	4
5	Colorado	30	2	22[3]	3	57	26	11	1	46	84	56	13	23[3]	49	141	5
6	Connecticut	86	5	0	3	94	3	2	2	6	13	89	7	2	9	107	6
7	Delaware	13	6	0	0	19	8	0	0	1	9	21	6	0	1	28	7
8	District of Columbia	49	1	1	0	51	6	1	1	7	15	55	2	2	7	66	8
9	Florida	31	5	3	25	64	0	0	0	0	0	31	5	3	25	64	9
10	Georgia	49	9	0	2	60	31	9	1	10	51	80	18	1	12	111	10
11	Idaho	17	3	2	9	31	8	2	0	8	18	25	5	2	17	49	11
12	Illinois	317	117	31	10	475	59	12	7	15	93	376	129	38	25	568	12
13	Indiana	31	1	0	2	34	10	9	2	10	31	41	10	2	12	65	13
14	Iowa	68	5	0	5	78	36	14	4	17	71	104	19	4	22	149	14
15	Kansas	25	4	0	3	32	28	13	6	10	57	53	17	6	13	89	15
16	Kentucky	22	6	1	2	31	18	5	3	11	37	40	11	4	13	68	16
17	Louisiana	67	9	1	3	80	14	0	0	4	18	81	9	1	7	98	17
18	Maine	37	1	0	5	43	2	0	0	6	8	39	1	0	11	51	18
19	Maryland	137	7	0	1	145	17	4	4	9	34	154	11	4	10	179	19
20	Massachusetts	243	14	19	29	305	0	0	0	0	0	243	14	19	29	305	20
21	Michigan	46	4	0	2	52	76	15	0	39	130	122	19	0	41	182	21
22	Minnesota	94	1	0	3	98	46	15	1	19	81	140	16	1	22	179	22
23	Mississippi	17	1	0	0	18	15	5	1	7	28	32	6	1	7	46	23
24	Missouri	106	8	6	16	136	53	17	5	21	96	159	25	11	37	232	24
25	Montana	15	5	1	5	26	0	0	0	0	0	15	5	1	5	26	25
26	Nebraska	94	4	3	1	102	25	18	4	18	65	119	22	7	19	167	26
27	Nevada	3	2	4	4	13	4	0	1	5	10	7	2	5	9	23	27
28	New Hampshire	4	0	1	0	5	10	0	0	3	13	14	0	1	3	18	28
29	New Jersey	57	2	0	2	61	130	20	0	52	202	187	22	0	54	263	29
30	New Mexico	0	2	0	0	2	17	9	1	21	48	17	11	1	21	50	30
31	New York	558	61	2	6	627	42	5	1	36	84	600	66	3	42	711	31
32	North Carolina	57	2	0	0	59	10	3	1	9	23	67	5	1	9	82	32
33	North Dakota	4	2	0	0	6	7	2	0	3	12	11	4	0	3	18	33
34	Ohio	111	39	0	6	156	83	12	1	32	128	194	51	1	38	284	34
35	Oklahoma	11	19	1	3	34	17	26	4	35	82	28	45	5	38	116	35
36	Oregon	27	0	2	10	39	0	0	0	0	0	27	0	2	10	39	36
37	Pennsylvania	187	18	0	8	213	52	0	1	3	56	239	18	1	11	269	37
38	Rhode Island	14	2	1	3	20	0	0	0	0	0	14	2	1	3	20	38
39	South Carolina	42	3	0	0	45	0	0	0	0	0	42	3	0	0	45	39
40	South Dakota	8	2	1	9	20	0	0	0	0	0	8	2	1	9	20	40
41	Tennessee	51	22	23	0	96	18	3	0	6	27	69	25	23	6	123	41
42	Texas	84	3	1[4]	1	89	72	35	15	64	186	156	38	16[4]	65	275	42
43	Utah	27	2	0	0	29	8	4	3	10	25	35	6	3	10	54	43
44	Vermont	20	2	0	0	22	0	0	0	2	2	20	2	0	2	24	44
45	Virginia	57	5	0	3	65	45	3	0	14	62	102	8	0	17	127	45
46	Washington	28	6	8	21	63	21	7	1	13	42	49	13	9	34	105	46
47	West Virginia	23	10	0	2	35	24	5	1	11	41	47	15	1	13	76	47
48	Wisconsin	32	1	0	1	34	65	20	2	11	98	97	21	2	12	132	48
49	Wyoming	3	8	4	4	19	9	3	1	3	16	12	11	5	7	35	49
50	U. S. Territories and Possessions	16	6	0	5	27	0	0	0	0	0	16	6	0	5	27	50
	Totals	3,102	499	192	267	4,060	1,266	373	86	799	2,524	4,363	872	278	1,066	6,584	

1. Of the 130 physicians licensed in Arkansas, the Regular Board licensed by examination 12 Class A, 12 Class B and 10 miscellaneous graduates and by reciprocity 19 Class A, 21 Class B and 20 miscellaneous graduates, a total of 94. The Eclectic Board licensed by examination all of the 33 Class C graduates and 2 of the miscellaneous graduates. The Homeopathic Board reported no candidates licensed either by examination or by reciprocity.

2. Of the 30 graduates of Class C colleges licensed in California, 13 were graduates of osteopathic colleges which are not generally recognized as medical colleges by state licensing boards. Altogether 28 osteopaths were admitted to the examination for licensure as physicians and 13 were licensed.

3. Of the 23 graduates of Class C colleges licensed in Colorado, 14 were graduates of osteopathic colleges, institutions inferior in most respects to Class C medical schools which are reported as not recognized in Colorado.

4. Texas licensed 1 Class C graduate by examination (although Class C colleges are reported as not recognized) and 15 Class C graduates (excluding 36 osteopaths) were licensed by reciprocity, a total of 16.

This table shows the classification of the colleges from which most of the physicians graduated who were licensed in 1919. Graduates of colleges which became extinct prior to 1907 who were examined, and all reciprocity licentiates who graduated prior to 1907, are unclassified and included under "miscellaneous" since it was in 1907 that the Council on Medical Education completed its first classification of all medical colleges.

It will be seen that sixteen states accepted altogether 46 Class C graduates through reciprocity where they did not license any by examination. On the whole, however, 192 were licensed by examination where only 86 were registered through reciprocity.

By both examination and reciprocity, the largest numbers of Class C graduates were licensed in Illinois, 38; Arkansas, 33; California, 30; Colorado and Tennessee, each 23; Massachusetts, 19 and Texas, 16; The Texas figures would be increased by 36 if the osteopaths registered by reciprocity were granted licenses as physicians. The largest numbers of Class B graduates were licensed in Illinois, 129; California, 69; New York, 66; Ohio, 51; Oklahoma, 45; Texas, 38 and Arkansas, 34.

Of all physicians licensed, 4,368, or 66.4 per cent., were graduates of Class A medical schools; 872, or 13.2 per cent., from Class B schools; 278, or 4.2 per cent., from Class C schools, and 1,066, or 16.2 per cent., from foreign and miscellaneous colleges.

TABLE J.—PHYSICIANS REGISTERED THROUGH RECIPROCITY BY STATE EXAMINING BOARDS DURING 1919

STATE BOARDS OF	Total Reg. by Recip. Ex. State	Alabama	Arizona	Arkansas	California	Colorado	Connecticut	Delaware	Dist. Columbia	Florida	Georgia	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine	Maryland	Massachusetts	Michigan	Minnesota	Mississippi	Missouri	Montana	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	U. S. Govt.*	Nat. Bd. Med. Ex.	U. S. Territories	Foreign
Alabama	32	..	..	..	..	..	..	..	..	..	4	..	1	..	..	..	1	4	..	1	..	..	..	3	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	10	..	..	..	..	..	..	..	..	6	..	..	..
Arkansas	60	..	..	..	..	..	..	..	..	..	2	..	1	..	..	..	2	4	..	..	..	1	..	8	7	..	..	..	..	..	..	..	..	..	..	4	..	1	..	..	..	20	9	..	..	1	..	..	..	..	..	..	..	..
California	336	1	3	4	..	10	1	1	4	2	2	3	50	13	20	13	4	1	1	4	8	17	10	..	11	6	11	5	1	1	1	29	..	3	15	2	12	14	1	..	1	9	3	6	1	..	17	..	6	..	7	..	2	..
Colorado	84	..	1	1	1	..	..	..	1	..	1	1	13	..	6	5	..	3	..	1	2	2	..	..	11	..	4	..	..	..	1	3	1	..	4	4	..	..	..	..	1	2	4	..	..	1	3	2	1	1	2	..	..	1
Connecticut	11	..	..	2	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..	4	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Delaware	9	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	3	..	..	..	..	..	3	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..
Dist. of Col.	15	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1	2	..	..	..	..	1	..	2	..	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	5	..	1	..	..	..	..	..	..	..
Georgia	51	6	..	1	..	..	..	..	..	..	..	..	..	2	..	1	4	4	..	10	..	1	1	1	2	..	..	..	..	..	2	..	..	1	..	..	1	..	3	..	..	7	1	2	..	..	..	..	..	1	..	..
Idaho	18	..	1	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	6	..	4	..	..	..	..	2	..	..	..
Illinois	93	..	..	1	..	..	..	1	..	..	..	..	..	6	5	..	8	1	..	6	1	5	3	..	28	..	5	..	..	..	..	3	..	1	3	..	..	2	..	..	..	..	1	2	..	..	1	9	..	1	..	..	..
Indiana	31	..	..	..	..	..	..	..	1	..	..	..	12	..	..	1	4	..	..	..	..	1	..	1	..	..	..	..	..	..	..	1	..	..	3	1	..	1	..	..	..	2	1	..	..	1	..	..	1	..	..	..	..
Iowa	71	1	..	..	..	..	..	..	..	..	..	..	25	..	..	4	..	..	4	..	..	3	1	..	8	..	17	..	1	..	..	..	..	1	2	1	..	1	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..
Kansas	57	..	..	..	..	..	..	1	..	..	..	..	13	1	1	..	3	2	1	..	..	..	15	..	..	..	1	..	..	..	1	..	..	..	..	8	..	1	..	..	4	2	1	..	..	1	1	..	..	..	..	..	..
Kentucky	36	..	..	3	..	..	..	1	..	2	..	..	5	..	..	..	..	..	2	..	2	..	..	..	1	..	..	..	..	..	..	..	..	..	5	..	..	1	..	..	..	6	..	1	..	4	..	2	1	..	..	..	..
Louisiana	18	2	..	2	..	1	..	..	..	1	..	..	1	..	1	1	1	..	..	..	..	..	3	..	1	..	1	..	..	..	..	1	..	..	..	..	..	2	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Maine	8	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	3	..	..	..	..	2	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
Maryland	33	1	..	..	..	..	..	5	..	1	..	..	3	..	..	..	..	1	2	..	..	..	..	..	1	..	..	..	..	..	..	..	2	..	..	..	..	4	..	..	..	..	..	3	..	10	..	..	..	..	..	..	..
Michigan	130	..	..	..	1	3	1	..	1	..	..	..	39	4	4	1	1	1	1	2	3	..	1	..	8	1	4	..	1	..	..	6	1	3	15	1	..	6	..	..	..	8	..	..	1	1	..	1	9	1	..	..	..
Minnesota	81	..	..	..	1	..	..	..	..	..	..	..	30	1	7	..	1	1	..	4	..	4	..	..	2	..	1	..	..	..	..	..	..	4	3	..	..	3	..	..	1	1	..	..	1	..	1	14	..	..	1	..	..
Mississippi	28	2	..	4	..	..	..	..	..	2	..	..	..	..	..	..	3	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	7	2	..	..	1	..	..	..	..	..	..	..	..	..
Missouri	96	..	..	6	1	2	..	..	..	..	..	..	15	3	4	25	3	1	1	4	..	4	..	2	..	..	2	..	1	..	..	..	..	1	2	5	..	3	..	..	7	1	..	1	1	1	..	..	..	..	..	..	..
Nebraska	65	1	1	..	2	1	..	..	..	..	..	..	21	..	3	3	1	..	..	1	2	..	1	..	7	..	..	..	1	..	..	4	..	..	3	1	..	..	..	..	..	2	2	..	..	2	..	..	..	..	5	1	..	..
Nevada	10	..	..	1	2	..	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	1	..	..	..	1	..	..	..	..	..	..	..
New Hamp.	13	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	7	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..
New Jersey	202	1	1	..	..	..	7	1	4	..	1	..	5	..	..	..	5	..	3	3	2	..	..	..	..	..	..	..	3	..	..	112	1	1	1	..	1	33	1	..	..	3	1	..	6	1	..	2	..	..	..	2	1	..
New Mexico	3	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
New York	69	1	..	..	..	..	2	2	2	..	..	..	..	3	1	..	2	1	..	..	1	2	1	..	1	..	..	..	10	18	..	..	..	..	1	..	1	..	..	..	..	..	3	12	..	..	3	..	..	..	1	1
No. Carolina	23	..	..	..	..	1	..	..	..	..	..	..	2	1	1	..	..	1	..	1	3	1	..	..	..	..	..	..	..	..	..	2	..	..	..	1	..	..	1	..	..	4	..	..	..	3	..	1	..	..	..	..	..
No. Dakota	11	..	..	..	..	..	..	..	..	..	..	..	3	..	1	1	..	..	..	..	..	1	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..
Ohio	128	3	..	..	..	..	1	3	..	..	..	..	17	7	2	..	11	1	2	9	..	10	..	..	10	..	1	..	..	..	..	15	..	..	1	..	19	..	..	..	..	..	1	6	..	7	2	..	..	..	..	..
Oklahoma	82	..	..	12	..	..	..	..	..	..	3	..	4	6	3	5	4	..	..	..	..	2	..	1	17	..	1	..	..	..	..	3	..	..	1	..	..	..	..	..	..	6	10	..	1	2	..	..	1	..	..	..	..
Penns'vania	56	..	..	..	..	..	2	..	..	..	1	..	..	4	1	..	..	..	..	3	..	2	..	..	..	..	..	..	..	3	..	..	6	..	3	..	..	..	..	..	..	..	..	1	..	..	..	19	11	..	..	..
Tennessee	27	4	..	6	..	..	..	1	..	..	3	..	..	..	..	..	..	1	..	..	..	..	5	..	2	..	..	..	2	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Texas	186	2	..	26	2	2	..	..	1	..	7	..	22	2	4	10	7	3	2	2	4	4	..	6	17	..	4	1	1	1	2	..	..	1	..	20	..	1	..	..	..	24	..	1	1	1	..	3	1	..	..	..
Utah	25	1	..	..	2	1	..	..	..	..	..	2	5	1	2	..	..	..	..	..	..	..	..	..	2	..	1	..	..	..	..	3	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..
Vermont	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..
Virginia	62	1	..	1	..	..	..	..	2	..	4	..	..	..	..	..	2	..	4	2	..	..	2	..	..	..	..	..	..	2	..	8	11	..	3	..	..	2	..	..	..	1	1	..	..	..	5	..	..	11	..	..	..
Washington	42	..	..	..	..	..	..	..	..	..	..	1	16	3	3	1	..	..	..	..	..	4	3	..	2	..	2	2	..	..	..	..	..	2	..	..	..	2	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..
West Va.	41	..	..	..	..	1	..	..	2	..	2	..	2	..	1	..	5	..	..	1	..	1	..	1	2	..	1	..	..	..	..	..	1	..	5	..	..	..	2	..	..	..	1	13	..	..	..	..	..	..	..	..	..
Wisconsin	98	..	..	1	..	..	..	..	..	..	..	..	11	..	..	2	1	..	..	..	..	1	..	..	1	..	..	..	..	..	..	2	..	..	1	..	..	2	..	..	..	..	..	..	..	..	..	..	..	76	..	..	..
Wyoming	16	..	..	..	1	..	..	..	..	..	..	..	5	..	..	1	..	..	..	..	..	2	1	..	..	..	2	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1	..	2	..	..	..	..	..	..	..	..	..
Totals	2459	27	7	72	14	22	12	8	30	2	38	7	325	57	71	75	71	36	18	61	36	69	27	48	144	8	60	8	24	30	9	197	24	17	73	53	15	113	4	5	3	124	38	17	25	61	21	41	51	6	130	19	4	2

* U. S. Army, Navy and Public Health Service.

This table shows the number of physicians registered by each state through reciprocity during 1919. Read from left to right, it shows the total number of physicians registered through reciprocity in the state named and the number of such candidates coming from each of the states named at the top of the various columns. Read from above downward, the figures show the number of physicians who left the state named at the head of the column and went to each of the states named in the corresponding lines, and at the bottom the total number of candidates leaving the state to go elsewhere. For example, read from left to right the table shows that Delaware registered nine candidates through reciprocity in 1919 and that, of these candidates one each came from the District of Columbia, New Jersey and Vermont and three each from New York and Pennsylvania. Read from above downward the table shows that from Delaware one candidate each went to California, Illinois, New Jersey and Ohio, and two each went to New York and Pennsylvania, the total leaving the state to go elsewhere being eight. The line at the bottom shows in what states physicians who registered through reciprocity obtained their original licenses. From Illinois 325 candidates, the largest number, obtained their original licenses. New York follows with 197, Missouri with 144, Tennessee with 124 and Pennsylvania with 113. The total number licensed by indorsement of licenses or certificates obtained in other states was 2,459. This total does not include 36 osteopaths who evidently were granted licenses as physicians and surgeons in Texas through reciprocity with osteopathic boards of other states.

TABLE K.—RECIPROCAL REGISTRATION IN FIVE YEARS (SHOWING WHAT STATES ISSUED ORIGINAL LICENSES)

STATE	Physicians Going from States Named During					Totals
	1915	1916	1917	1918	1919	
Alabama	1	4	8	12	27	52
Arizona	6	5	6	4	7	28
Arkansas	37	56	41	24	72	230
California	3	2	2	5	14	26
Colorado	15	8	14	10	22	69
Connecticut	3	1	0	2	12	18
Delaware	6	8	4	11	8	37
District of Columbia	18	20	16	14	30	98
Florida	4	2	1	2	2	11
Georgia	22	30	28	10	38	128
Idaho	1	5	4	0	7	17
Illinois	198	178	176	125	325	1002
Indiana	43	27	22	30	57	179
Iowa	46	32	44	40	71	233
Kansas	39	33	32	28	75	207
Kentucky	48	40	44	81	71	234
Louisiana	16	16	13	5	36	86
Maine	12	13	8	8	18	59
Maryland	38	45	34	25	61	203
Massachusetts	19	22	20	10	36	107
Michigan	42	34	42	24	69	211
Minnesota	34	19	28	20	27	128
Mississippi	10	18	59	11	48	146
Missouri	104	93	84	65	144	490
Montana	1	1	1	1	8	12
Nebraska	50	28	49	36	60	223
Nevada	9	7	5	7	8	36
New Hampshire	4	11	7	4	24	50
New Jersey	22	17	10	15	30	100

STATE	Physicians Going from States Named During					Totals
	1915	1916	1917	1918	1919	
New Mexico	5	2	2	6	9	24
New York	73	84	83	74	197	511
North Carolina	13	17	9	16	24	79
North Dakota	6	4	13	4	17	44
Ohio	47	51	43	27	73	241
Oklahoma	28	26	17	28	53	152
Oregon	2	2	3	7	15	29
Pennsylvania	79	74	62	57	113	385
Rhode Island	2	1	3	1	4	11
South Carolina	12	7	7	4	5	35
South Dakota	7	3	3	6	3	22
Tennessee	34	65	67	34	124	324
Texas	12	15	20	23	38	108
Utah	6	16	13	6	17	58
Vermont	25	15	13	7	25	85
Virginia	30	36	42	36	61	205
Washington	10	12	10	12	21	65
West Virginia	30	25	24	16	41	142
Wisconsin	29	32	28	13	51	153
Wyoming	5	1	4	4	6	20
U. S. Territories and Possessions	....	1	1	1	4	7
Army, Navy, P. H. Service	1	1	1	10	130	143
Nati. Bd. of Med. Exam.	....	....	2	1	19	22
Foreign and Misc.	1	6	1	....	2	10
Totals	1314	1271	1279	972	2459	7295

This table shows that 7,295 candidates were registered through reciprocity during the last five years. Registration by reciprocity gradually increased from 1905 to 1914, since which time there has been a gradual decrease as the total of physicians licensed by other methods has decreased. In 1918 there was a marked decrease in the total registered due largely to the war. This year there was an increase of 1,487 due to a large migration following the return from military service. It will be noted that 130 were registered in 1919 on this basis. A study of the totals for the different states shows that of the 7,295 registered during the five years 1,002, or 13.7 per cent., obtained their original licenses in Illinois. New York could easily lead Illinois but reciprocal relations have been established with only six other states.

cent., came from medical colleges which have ceased to exist and from foreign medical colleges. By comparing these figures with the results for 1917 and 1918 as shown in Table 3, it is noteworthy that the percentages from Class B and Class C colleges are steadily decreasing in spite of the fact that, in a few states, osteopaths are being licensed as physicians and surgeons.

TABLE 3.—SOURCE OF PHYSICIANS LICENSED IN THREE YEARS

Year	Medical Colleges in						Miscellaneous and Foreign Colleges		Total
	Class A		Class B		Class C				
	Number	Per Cent.	Number	Per Cent.	Number	Per Cent.	Number	Per Cent.	
1917	3,369	62.1	988	18.2	297	5.3	769	14.4	5,423
1918	2,456	58.7	682	16.3	342	8.2	705	16.8	4,185
1919	4,368	66.4	872	13.2	278	4.2	1,066	16.2	6,584
Totals	10,193	63.0	2,542	15.7	917	5.6	2,540	15.7	16,192

TABLE L.—STATE REQUIREMENTS OF PRELIMINARY EDUCATION

There are now forty states which have adopted requirements of preliminary education in addition to a standard four-year high school education. Of this number 32 now require the two year standard. These states, the number of college years required and the time the higher requirements became or become effective are as follows:

State Examining Board of	One Year of College Work		Two Years of College Work	
	Affects Students Matriculating	Affects All Graduates	Affects Students Matriculating	Affects All Graduates
Alabama	.....	....	1915-16	1919
Alaska	1914-15	1918	1918-19	1922
Arizona	1914-15	1918	1918-19	1922
Arkansas[1]	1915-16	1919	1918-19	1922
California	1915-16	1919	.....	....
Colorado	1908-09	1912	1910-11	1914
Connecticut	1911-12	1915	.....	....
Delaware*	.....	....	.....	....
District of Columbia†	.....	....	.....	....
Florida[1]	1914-15	1918	1918-19	1922
Georgia*	.....	.....	1918-19	1922
Idaho*	.....	....	.....	....
Illinois	1915-16	1919	1918-19	1922
Indiana	1910-11	1914	1911-12	1915
Iowa	.....	....	1911-12	1915
Kansas	1910-11	1914	1918-19	1922
Kentucky	1914-15	1918	.....	....
Louisiana	1915-16	1919	1918-19	1922
Maine	1915-16	1919	.....	....
Maryland	1914-15	1918	1918-19	1922
Massachusetts†	.....	....	.....	....
Michigan	1914-15	1918	1918-19	1922
Minnesota	.....	....	1908-09	1912
Mississippi	1915-16	1919	1919-20	1923
Missouri*	.....	....	.....	....
Montana	1914-15	1918	1918-19	1922
Nebraska*	.....	....	.....	....
Nevada*	.....	.....	.....	....
New Hampshire	1914-15	1918	1915-16	1919
New Jersey	1915-16	1919	1917-18	1921
New Mexico	1914-15	1918	1918-19	1922
New York	1917-18	1921	1918-19	1922
North Carolina	1914-15	1918	1918-19	1922
North Dakota	.....	....	1908-09	1912
Ohio*	.....	....	.....	....
Oklahoma	1914-15	1918	1917-18	1921
Oregon†	.....	....	.....	....
Pennsylvania	1914-15	1918	.....	....
Rhode Island	1914-15	1918	1918-19	1922
South Carolina	.....	....	1918-19	1922
South Dakota	1908-09	1912	1911-12	1915
Tennessee	1916-17	1920	1918-19	1922
Texas	1914-15	1918	.....	....
Utah	1913-14	1917	.....	....
Vermont	1913-14	1917	1918-19	1922
Virginia	1914-15	1918	1917-18	1921
Washington	1914-15	1918	1918-19	1922
West Virginia	1917-18	1921	.....	....
Wisconsin	.....	....	1915-16	1919
Wyoming†	.....	....	.....	....

* Require a four-year high school education or its equivalent.
† No fixed standard.
1. The higher standards in Arkansas and Florida are evidently not enforced by the sectarian licensing boards of those states.

Registration by Reciprocity

Table J gives those registered without examination on presentation of satisfactory credentials, which included a license issued by some other state. This is commonly referred to as "reciprocity," which conveys the idea that the state which accepts a license of another must be granted the same courtesy by the state issuing the original license. The term does not always apply, however, since some state boards—Arizona, California, Colorado, Delaware, Maryland, New Hampshire, New Jersey and North Carolina, as examples—accept the physician's credentials, if satisfactory, whether or not the state board issuing the original license returns the favor. Had not reciprocal relations been established by the forty states shown in Table J, 2,458 physicians—many of whom had been in practice for ten or more years—would have been compelled to undergo the ordeal of a second trying examination. This year 130 physicians were registered without examination, largely in Minnesota and Wisconsin, on the basis of their having been commissioned in the government medical services.

Table K shows in what states were granted the original licenses of those who were registered elsewhere under the reciprocity provision during the last five years. Of the 7,294 physicians licensed through reciprocity during the last five years, the largest number coming from any one state was 1,002, who obtained their original licenses in Illinois. Although New York has a larger number of medical college graduates each year than Illinois,[2] only 511 physicians obtained original licenses in New York and registered elsewhere through reciprocity in the last five years. This is accounted for by the fact that Illinois has reciprocal relations with twenty-five other states, while New York has established such relations with only six.

TABLE M.—ADVANCES IN STATE LICENSE REQUIREMENTS IN SIXTEEN YEARS

Requirement or Provision	States Having Provision for			States Still Having No Provision for
	1904	1920	Increase	
Preliminary Education—				
Any requirement	20	47	27	3[1]
A standard four-year high school education or higher	10	45	35	5[2]
One year or more of college work	0	40[3]	40	10[3]
Two years of college work as a minimum	0	32[3]	32	18[3]
That all applicants be graduates of a medical college	36	49	13	1[4]
That all applicants undergo an examination for license	45	49	4	1[5]
Requirement of practical tests in the license examinations	1	16	15	34
Hospital intern year required	0	10[6]	10	39
Full authority by board to refuse recognition to low-grade colleges	14	45	31	5[7]
Boards refusing to recognize low-grade colleges[8]	5	42	37	8[9]
Reciprocal relations with other states	27	44	17	6[10]
Single boards of medical examiners	36	44	8	6[11]

1. District of Columbia, Massachusetts and Wyoming.
2. Idaho, Oregon and the states named in Footnote 1.
3. See Table L.
4. Colorado.
5. New Mexico.
6. Pennsylvania, 1914; New Jersey, 1916; Alaska, 1917; Rhode Island, 1917; North Dakota, 1918; Washington, 1919; Illinois and Michigan, 1922; Iowa, 1923, and Texas, 1924.
7. District of Columbia, Massachusetts, Utah, Washington and Wyoming.
8. In three states, Arkansas, Connecticut and Florida, each of which has three separate boards, only the regular (nonsectarian) boards have refused recognition to low standard medical colleges and have enforced higher standards of preliminary education.
9. Alaska, Arizona, Nebraska, Nevada and the states named in Footnote 7.
10. Alaska, Arizona, Connecticut, Florida, Massachusetts, Rhode Island. To this list should be added the outlying territories of Canal Zone, Philippine Islands and Porto Rico, which have no provision for reciprocity.
11. Multiple boards still remain in Arkansas, Connecticut, District of Columbia, Florida, Louisiana and Maryland.

Improved Standards of Licensure

Table L shows the states which have adopted one or two years of college work as a minimum standard of preliminary education for those who seek the license to practice medicine in those states. The first and third columns show, respectively, when the one year and the two years of premedical

2. The Journal, Aug. 16, 1919, p. 513, Table 12.

college work affects students matriculating in medical colleges, and the second and fourth columns give the years in and after which all applicants for licenses in the various states are affected by the increased requirements. This table shows the rapidity with which state board requirements of preliminary education have been advanced since 1908, prior to which no state was requiring more than a four-year high school education. As will be noted, there are now forty states which have adopted the higher standard, and thirty-two of these require as a minimum *two years* of premedical college work. It is understood that in every instance the one or two years of collegiate work must have included courses in physics, chemistry and biology.

In Table M the advance in standards of licensure is shown for all states since 1904. The most marked increase is in regard to the requirement of collegiate work in forty states as referred to in Table L. The next greatest increase (thirty-seven) is in the number of states—now forty-two—which are refusing to recognize low-grade medical colleges. Although, as shown in the third column, marked improvements have been made in state requirements for licensure, nevertheless, as indicated by the last column, there is still room for further improvement. The greatest needs are for a wider adoption of the requirement of the hospital intern year, the standard of two years of premedical college work, and—a matter of more vital importance—a more general and larger use of practical tests in the examinations. The states in which the boards are making really effective use of such examinations are Illinois, Massachusetts, Minnesota, North Dakota, Ohio and South Dakota. They are being followed to a greater or less extent in a few other states.

HOSPITAL INTERN YEAR

The hospital intern year has been adopted as an essential qualification for the license to practice in ten states, becoming effective in different years, as follows:

State Board of	Affects Student Matriculants	Affects All Applicants
Pennsylvania	1909-10	1914
New Jersey	1911-12	1916
Alaska	1912-13	1917
Rhode Island	1913-14	1917
North Dakota	1913-14	1918
Washington	1914-15	1919
Illinois	1917-18	1922
Michigan	1917-18	1922
Iowa	1918-19	1923
Texas	1919-20	1924

RECOGNITION OF GOVERNMENT EXAMINATION

The examination given under federal authority, which should be generally recognized by all state licensing boards as a qualification for license to practice medicine, is that given to medical officers of the United States Army, Navy, and Public Health Service. In fact, retired officers from the services mentioned are now eligible to receive licenses without further examination in

Alabama	Illinois	Virginia
California	North Dakota	Wisconsin
Colorado	Porto Rico	

This has been interpreted in most of the above states to apply only to those who were admitted to the government services under the strict examination which prevailed prior to the entrance of the United States in the World War and not to those who were commissioned after the admission requirements were relaxed. In Wisconsin, however, 76 physicians were licensed following their discharge from the government services. In Minnesota in April, 1919, a special law was enacted empowering the licensing board to register without examination physicians who had been in the government medical service overseas. Pennsylvania and Virginia licensed, respectively, 19 and 11 government medical officers following their discharge.

NATIONAL BOARD OF MEDICAL EXAMINERS

The National Board of Medical Examiners, which was organized in 1915, consists of fifteen members, including the Surgeon-Generals of the Army, Navy and Public Health Service, and one other representative of each of those services, three representatives of the state medical licensing boards and six members appointed at large. Up to Dec. 31, 1919, seven examinations had been held as shown in the following tabulation:

Date of Examination	Where Held	Total Examined	Passed	Failed	Percentage Failed
Oct., 1916	Washington	10	5	5	50.0
June, 1917	Washington	12	9	3	33.3
Oct., 1917	Chicago	28	22	6	21.5
Jan., 1918	New York	20	18	2	10.0
Apr.,, 1918	Ft. Riley, Ft. Oglethorpe	23	18	5	26.1
Dec., 1918	Chicago, New York	16	15	1	6.3
June, 1919	Philadelphia	52	51	1	1.9
Totals		161	138	23	14.3

Thirty medical schools were represented and the results were as follows:

College	Total Examined	Passed	Failed	Percentage Failed
Boston University S. of M.	1	1	0	0.0
Columbia Univ. Coll. of P. & S.	11	11	0	0.0
Cornell Univ. Med. College	4	4	0	0.0
Emory University School of Med.	1	1	0	0.0
Georgetown University	1	1	0	0.0
Harvard University M. S.	9	9	0	0.0
Howard Univ. School of Med.	1	0	1	100.0
Indiana Univ. School of Med.	2	1	1	50.0
Jefferson Medical College	3	1	2	66.7
Johns Hopkins University M. D.	14	12	2	14.3
McGill University Faculty of M.	1	0	1	100.0
Northwestern Univ. Med. School	17	13	4	23.5
Rush Medical College	34	28	6	23.5
State Univ. of Iowa C. of M.	3	2	1	33.3
Univ. and Bellevue Hosp. M. C.	1	0	1	100.0
University of Buffalo M. D.	1	1	0	0.0
University of California M. S.	1	1	0	0.0
University of Colorado S of M.	1	1	0	0.0
University of Maryland S. of M.	1	1	0	0.0
University of Michigan M. S.	3	1	2	66.7
University of Minnesota M. S.	2	1	1	50.0
University of Nebraska C. of M.	1	1	0	0.0
University of Penna. S. of M.	39	38	1	2.6
University of Pittsburgh S. of M.	1	1	0	0.0
University of Texas Dept. of M.	3	3	0	0.0
University of Utrecht	1	1	0	0.0
University of Va. Dept. of M.	1	1	0	0.0
Western Reserve Univ. S. of M.	1	1	0	0.0
Woman's Medical College	1	1	0	0.0
Yale University School of Med.	1	1	0	0.0
Totals	161	138	23	14.3

Holders of certificates from the National Board of Medical Examiners will be registered without further examination in the following twenty states:

Alabama	Kentucky	North Dakota
Colorado	Maryland	Pennsylvania
Delaware	Minnesota	Rhode Island
Florida	Nebraska	South Carolina
Georgia	New Hampshire	Vermont
Idaho	New Jersey	Virginia
Iowa	North Carolina	

When the permanence of the National Board of Medical Examiners is established and the high character of its examinations is more generally recognized, it is quite probable that its certificate will be recognized by the licensing boards of a larger number, if not of all states.

IN CONCLUSION

In the gathering and publication of these statistics, the endeavor has been to give a fair presentation of facts, a knowledge of which is always beneficial. This annual presentation of the results of state license examinations has had a powerful influence on medical education and medical licensure in this country. We reiterate our acknowledgments to the state licensing boards for their ready cooperation and the complete reports which have been furnished. For the verification of all figures, the reports and data furnished by medical colleges have been of much value. We have no doubt that the information here published will be of service not only to the medical colleges and to the state boards, but also to the public, since the end-result is better qualified physicians.

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SATURDAY, APRIL 17, 1920

STATISTICS OF THE STATE BOARD EXAMINATIONS

We publish this week, for the seventeenth consecutive year, statistics based on official reports of examinations conducted by state medical boards, and of registrations by reciprocity and other methods. During these seventeen years the work has had the hearty support and cooperation of the executive officers of the various state licensing boards, who have furnished reports of their examinations. Every report has been carefully checked with alumni lists furnished by the deans of the medical colleges, and by this cross-checking, errors have been corrected and the state boards concerned have been notified. Thus, not only have these statistics been made accurate and reliable, but also state board records have been corrected. We express our acknowledgments for the splendid cooperation of the officers of both the state licensing boards and the medical colleges by which the publication of these statistics has been made possible.

NO PROTECTION AGAINST INCOMPETENTS IN ARKANSAS

These statistics are of great importance as they relate to medical education and to medical licensure. For each state they show the number and character of physicians admitted to examinations; the character of the colleges from which they graduated; the numbers registered or rejected, and the proportion rejected. The material is so arranged that the facts regarding any one college or any one state can be compared with those, respectively, of all other colleges and states. Figures show that in some states people are well protected against illiterate and incompetent physicians, while in others, in varying degrees, the opposite situation prevails. A glaring instance relates to Arkansas, where, in spite of what the regular board of medical examiners is doing to enforce reasonably high educational standards and methods of licensure, thirty-six physicians were licensed who could not meet its requirements. This was because of the existence of a separate board of eclectic examiners. Among other applicants, this board examined thirty-three graduates of a nominally eclectic medical school, the Kansas City College of Medicine and Surgery, and licensed all but one of them, even though it was well known that this college is not recognized by the licensing board of Missouri—its home state—and by the boards of thirty-six other states. And this has been going on for several years. Indeed, the reports seem to indicate that neither the Arkansas Board of Eclectic Examiners nor the Kansas City College of Medicine and Surgery could exist without the other. Arkansas, Florida and Connecticut, meanwhile, are three states which still have separate sectarian boards.

LICENSING OSTEOPATHS

During the last three years a few boards have examined osteopaths and licensed them as physicians. The objection to this is not that these candidates were osteopaths, but that their educational qualifications were seriously inferior to those which physicians are required to possess. Osteopathic colleges have been repeatedly inspected and, when measured by the same standards as are applied in the grading of medical schools, no one of them could rank higher than the lowest Class C medical college. Nevertheless, fourteen osteopaths were licensed as physicians in Colorado by examination, thirteen in California, two in Washington, and one each in New Hampshire and Texas.

THE STATISTICS

Special attention is called to Table I (page 1097), which shows the states—Illinois leading—which are registering the largest numbers of graduates of Class C and Class B colleges. Other states in this group are Arkansas, California, Colorado, Tennessee, Nebraska and Texas. The figures in Table H (page 1096) indicate that applicants are flocking to states—Massachusetts, for example—in which adequate educational safeguards have not been provided.

The effect of these statistics on both medical education and medical licensure has been profound. The first step toward the securing of improvements in any reform is to find out where improvements are needed. That has been the function of these statistics in medical education and licensure.

When the collection of data from the various boards was begun by THE JOURNAL in 1903, reports from many states could not be obtained for the very reason that records were not complete or were too imperfect to enable the boards to supply the information needed. That this condition has been corrected is evidenced by the fact that for the last several years full and complete reports have been received from all state boards.

Since 1905, the collection of these statistics has been an important part of the work of the Council on Medical Education in its campaign for the improvement of medical education and licensure. The effectiveness of publicity in medical licensure may be noted in Table M, on page 1099. Higher standards of preliminary education have been adopted; all states now require

that applicants must have graduated from a medical school; all but one state, New Mexico, now require an examination of all applicants; a larger number of states have improved their examination by the use of practical laboratory and clinical tests; a larger number of states have obtained authority to refuse recognition to low-grade medical colleges and are making use of that authority; reciprocal relations between states have been widely extended; ten states require a hospital internship as an essential for the license, and all but a few states now have single boards of medical examiners.

EFFECTS ON MEDICAL EDUCATION

On medical education the effect of these statistics has been even more pronounced. Publicity regarding the percentages of failures of graduates at state licensing examinations has led to the adoption of better methods of teaching. Publicity of the fact that in certain states diplomas granted by various colleges were not recognized as an acceptable qualification for the license induced a number of medical schools to make improvements in order to retain students. That such improvements have been made is shown by the increased number of colleges each year which are recognized in all states.

Briefly, these statistics show each medical school what improvements are essential if its graduates are to succeed in examinations of state boards; what state boards are requiring as a minimum of preliminary education, and in what states the boards are refusing to examine its graduates. To each state board these statistics show, by comparison with other states, the lines along which further improvements are needed in its educational standards and methods of examination. Constant publicity has led to a general improvement and a greater uniformity in the methods of examination by all state boards. The result has been a lessened confusion in the licensing of physicians throughout the country, and correspondingly better safeguards for the public against the licensing of incompetent practitioners.

ACCURACY OF THE WASSERMANN TEST

Under the auspices of the Medical Research Committee, established under the British National Health Insurance Act, numerous investigations have been made of scientific problems affecting the health and the life of the people. Already more than fifty special reports have been issued. The committee considered that the national and racial importance, no less than the scientific interest of the problems relating to syphilis, were a matter for early investigation, and several reports have been issued in this connection. In a previous report [1] of the Special Committee on Pathologic Methods, the diagnostic value of the Wassermann test was considered. The clinical opinion of a well-known syphilologist was compared in a given set of cases with the results obtained by the Wassermann reaction as performed by four expert serologists working independently. The results were found to be in the closest accordance with the clinical opinion.

In a recent report [2] the investigation has been carried further: the Wassermann test during life was correlated with the etiologic or anatomic diagnosis made during life and after death. The first part, by Dr. Hubert M. Turnbull of the Pathologic Institute of the London Hospital, concerns the accuracy of Wassermann tests applied before death as related to the findings on postmortem examinations. It is stated in the introduction that whereas this test has been applied in millions of instances, "it is difficult, if not impossible, to find in medical literature a large series of cases in which the etiologic and anatomic diagnosis has been registered in addition to the clinical diagnosis." Dr. Turnbull's report deals with 121 cases in which Wassermann tests had been performed during life by Drs. Fildes and McIntosh. Following the deaths of the patients, minute examination of necropsy material was made. In many instances such minute examination is not made, with the result that lesions are overlooked. It is possible, for instance, that a Wasserman reaction may be positive and no syphilitic lesion may be found postmortem. This is possible because the lesion may exist and not be found, or because a lesion which was present has disappeared under treatment. On the other hand, a Wassermann reaction may be negative, and yet lesions believed to be syphilitic may be demonstrable.

As a result of his investigations, which included the making of thousands of microscopic sections, with their examination, interpretation and classification, Dr. Turnbull concludes that the Wassermann test performed antemortem, as was done in the 121 cases which he examined, is a diagnostic measure of astonishing precision. No proof of inaccuracy of the Wassermann test was found in the whole 121 cases, provided that the test is expected only (1) to give a positive reaction when syphilitic infection is active, and (2) to give a positive reaction either in the serum or in the cerebrospinal fluid when active syphilitic infection is confined to the central nervous system. The report is detailed, extensive, and apparently minutely accurate. It constitutes, therefore, an important document in the study of syphilis.

In the references to literature cited by the author, there is no reference to other than British, German and French periodicals. It would interest him, therefore, to refer to a paper on the value of the Wassermann reaction as indicated by postmortem investiga-

1. The Diagnostic Value of the Wassermann Test, Reports of the Special Committee on Pathologic Methods, Special Report Series 21, Medical Research Committee, National Health Insurance, H. M. Stationery Office, London.

2. Turnbull, H. M.: The Accuracy of Wassermann Tests, Applied Before and After Death, Estimated by Necropsies, Special Report Series 47, Medical Research Committee, National Health Insurance, H. M. Stationery Office, London.

tion in 331 cases at Bellevue Hospital, as reported by Symmers and others in THE JOURNAL.[3] This paper, published in 1918, antedated even the beginning of Turnbull's work. Symmers, too, points out that certain anatomic changes in persons suspected of syphilis are sometimes exceedingly difficult to interpret, not only in the gross organs as they come under orderly examination at necropsy, but also in the subsequent microscopic investigation of individual tissues. He feels, however, that the errors in diagnosis for or against syphilis will balance. As a result of his investigation, he reports that the Wassermann reaction in the living patient gives a negative result in from 31 to 56 per cent. of cases in which the characteristic anatomic signs of syphilis are demonstrable at necropsy, and that it is positive in at least 30 per cent. of cases in which it is not possible to demonstrate at all the anatomic lesions of syphilis at necropsy.

Here, then, is a wide divergence of opinion, based in each instance on an apparently accurate scientific investigation. The subject obviously is susceptible to further study.

CALCIUM IN THE BODY

Calcium, which makes up about one fiftieth of the weight, constitutes a larger proportion of the body than is represented by any other of the inorganic elements. This fact is by itself sufficient to lend importance to all considerations of the supply of calcium to the body. It happens that this element is distributed with considerable irregularity among the staple articles of food, so that its intake depends in no small degree on the qualitative character of the diet. Among animal foods, milk stands almost alone in exhibiting a conspicuous content of calcium, while among plant products few show even moderate richness in this element. Such facts are probably responsible for the significant statement that "the ordinary mixed diet of Americans and Europeans, at least among dwellers in cities and towns, is probably more often deficient in calcium than in any other chemical element." [4]

In view of the widespread shortage of milk—"the calcium food"—in certain parts of the world, with a reduction in the use of milk following the higher price of this food in many places, the calcium problem in nutrition has become accentuated to an unusual degree. The practice of adding green vegetables, comparatively rich in calcium, to the dietary of infants has increased in recent years. Students of the subject have expressed the belief that the value of such feeding lies in the effect on the mineral metabolism of the organism.[5] They have reported that in children showing a delayed development, improvement has been brought about by such additions, and they conclude, on the basis of the mineral content of a number of vegetables, that spinach is the best one to provide a salt addition.

From experiments on animals, McClugage and Mendel [6] of Yale University gained the impression, through a study of carrots and spinach, respectively, as substitutes for milk in furnishing calcium in the dietary, that their use does not always yield a pronounced advantage to the calcium metabolism. Presumably, therefore, it would be an unsafe procedure to use vegetables extensively as a dietary substitute for milk in the nutrition of children. That broad generalizations applicable to all species and ages are not yet justified, however, is indicated by more recent observations in the Department of Nutrition at Teachers College, Columbia University. Rose [7] has ascertained the utilization of the calcium of carrots in the human body on persons for whom the calcium intake was in every case close to the estimated minimum for equilibrium. In almost every case there was a positive calcium balance on the carrot diet. When approximately 55 per cent. of the calcium was derived from carrots, one subject had practically the same retention as on a diet in which 70 per cent. of the calcium was derived from milk. Hence Rose properly argues that it seems possible to meet the requirement of the adult human organism for calcium largely, if not wholly, from carrots.

Another question, involving somewhat differently the content of calcium in the daily intake, relates to the possibility of increasing the content of this element in the blood by increasing the ingestion of calcium. This end is sought frequently in current therapeutic efforts, and calcium salts (chlorid, lactate, glycerophosphate) are often prescribed. The latest studies by Denis and Minot [8] at the Massachusetts General Hospital indicate that it is difficult, if not actually impossible, to enrich human blood in this way. Even 6 gm. (90 grains) of calcium lactate administered orally each day for five days failed to alter the plasma content appreciably. It is possible, judging by the outcome of a few animal tests, that when the initial concentration is very low the amount in the circulating fluid may be more decidedly increased. This needs eventually to be determined in suitable human cases.

3. Symmers, Douglas; Darlington, C. G., and Bittman, Helen: The Value of the Wassermann Reaction, J. A. M. A. **70**: 279 (Feb. 2) 1918.
4. Sherman H. C.: Chemistry of Food and Nutrition, New York, 1918, p. 262.
5. Courtney, A. M.; Fales, H. L., and Bartlett, F. H.: Some Analyses of Vegetables Showing the Effect of the Method of Cooking, Am. J. Dis. Child. **14**: 34 (July) 1917.
6. McClugage, H. B., and Mendel, L. B.: Experiments on the Utilization of Nitrogen, Calcium and Magnesium in Diets Containing Carrots and Spinach, J. Biol. Chem. **35**: 353 (Aug.) 1918.
7. Rose, Mary S.: Experiments on the Utilization of the Calcium of Carrots by Man, J. Biol. Chem. **41**: 349 (March) 1920.
8. Denis, W., and Minot, A. S.: Effects of Feeding with Calcium Salts on the Calcium Content of the Blood, J. Biol. Chem. **41**: 357 (March) 1920.

A Surgeon's Career.—There are three stages in the career of a surgeon: In the first he loses the fear of hemorrhage; in the second he ceases to multiply operations; in the third he acquires the moral courage to stop in the middle of an operation when he finds the condition inoperable. There is a final stage which he never attains with the present span of life—the ability to gage correctly the vital resistance of the patient; yet on this depends the success of every operation.—Sir D'Arcy Power, Surgical Aphorisms, *Clin. J.* **49**:28 (Feb.) 1920.

Current Comment

NATIONAL BOARD OF MEDICAL EXAMINERS

The National Board of Medical Examiners up to December, 1919, had been in existence for four years,[1] and in that time had held seven examinations and examined 161 candidates, of whom 138 passed and received the board's certificate. A sufficient number of examinations have been held, and the board has been in existence long enough to permit its policies and methods to become fairly well established. It is now generally well known that the board has held to reasonably high educational standards, and that its examinations have been comprehensive, practical and thorough. The examinations have been such as to bring out the character of the applicant's medical training and to test not only his ability to memorize, but also his power to observe and his ability in reaching accurate diagnoses to apply the knowledge he has obtained. That the methods and the character of the examinations of this board are being appreciated is evidenced by the fact that twenty state boards[2] are now recognizing its certificates. The expenses of the board have been approximately $15,000 each year, the funds having been provided by the Carnegie Foundation for the Advancement of Teaching. This is a large expense, in view of the small number of candidates examined. That the board has not made more rapid advancement and performed a larger function is due mainly to its failure to conduct its examinations in a larger number of cities. It would appear that arrangements could be made so that the written portion of the examination might be held simultaneously in all parts of the country, as is that of the College Entrance Examination Board. It might at least be held in the various cities where medical schools are located. The manner by which the applicants could be given their practical, laboratory and clinical tests could doubtless also be worked out. It would appear that the work and influence of this board could be many times greater than it is at present, and its service to humanity correspondingly increased. The possibilities of this board for good are tremendous; but it is not making the most of its opportunity.

MULTIPLE BOARDS AND CONFUSION IN LICENSURE

The chief difficulty in medical licensure at present is the confusion caused in several states by the multiplicity of the medical and sectarian boards which have to do with the licensing of those who are to treat the sick. This condition should be corrected. Whether or not the practitioner is to make use of medicinal substances, whether he is to apply massage, electricity, cold compresses or to perform a surgical operation is not so material. The matter of first importance is whether he who holds himself out to treat the sick has had training sufficient to familiarize himself not only with the normal conditions and functions of the human body, but also with the various forms of disease so that he may tell whether or not a patient is sick, and if so, what the trouble is. The practitioner should also be familiar with the many procedures and materials used in the treatment of human disorders so that he can select and apply the right treatment to each particular patient. These statements apply to all practitioners of the healing art regardless of the particular system or method of treatment they advocate. To claim that one form of treatment is applicable to all human disorders is as illogical as to state that the slide-trombone constitutes an entire orchestra. Before one specializes in the playing of any particular musical instrument in an orchestra he must first have secured a training in the fundamentals of music, so that he may know not only when to play but—fully as important—when he should not play. In fact, a note from an instrument in the wrong place may produce more disastrous results than if the player fails to respond at the time his part is indicated. So in the practice of the healing art. Every one who treats human disorders by any special method or system of treatment should first have a thorough training in the fundamental medical sciences, so that he will understand not only when his particular method should be used, but, even more important, when it should not be used. Here again, the use of the wrong method of treatment may produce results fully as disastrous, if not more so, than if such treatment is not used in cases in which it is indicated. In fairness to all who practice the healing art, therefore, there should be in every state: (*a*) one board of registration; (*b*) one standard of educational qualifications, and (*c*) one examination, including written, practical, laboratory and clinical tests. In other words, let all practitioners alike be required to possess reasonably high educational qualifications, and then let them practice as their educated common sense may dictate. Such a provision would not only end the confusion which exists in many states, but also insure better care for the public when sick or injured.

DOES PROHIBITION PAY FROM A HEALTH STANDPOINT?

With the beginning of prohibition, alarmists—there are always such—predicted dire calamities: increase in crime, resort to habit-forming drugs and other vicious practices. The time has been brief for the compilation of accurate statistics on the subject, but some actual evidence has accumulated: In New York City, the Board of Ambulance Service has reported a large decrease in cases of alcoholism and intoxication. In 1919, during January and February, there were 412 and 364 alcoholic calls, respectively. This year, during the same months, these calls numbered 307 and 133. Bellevue Hospital's figures show 228 calls for intoxication during the first two months of 1919 and thirty-one calls for January and February of 1920. As a result, it is estimated that there will be room for seven thousand new patients a year in Bellevue Hospital, owing to the reduction in the number of alcoholic patients. These figures are for New York. What of other cities?

1. See statistics on page 1100, this issue.
2. The list is given on page 1100, this issue.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

Personal.—Dr. John C. Davis, Harrisburg, has been appointed health officer of Poinsett County succeeding Dr. Robert E. Yarbraugh, deceased.——Dr. Oliver H. Tatum has been appointed city health officer of Arkadelphia, succeeding Dr. William T. Rowland, resigned.

New Officers for State Board of Health.—At the annual meeting of the Arkansas State Board of Health, March 25, Dr. Cyrus F. Crosby, Heber Springs, was elected president, and Dr. Fergus O. Mahony, Eldorado, vice president, each for a term of one year, and Dr. Charles W. Garrison, Little Rock, was reelected secretary and state health officer for a term of four years.

New Society Organization.—At a meeting of the physicians of Little Rock, March 9, the North Little Rock Medical Society was organized. Dr. Shelby Atkinson, Argenta, was elected president; Dr. Martin J. Barlow, Argenta, secretary-treasurer, and a committee was appointed to confer with the finance committee of the city council on the erection of a hospital for North Little Rock.

Conference of Health Officers.—The seventh annual conference of health officers of Arkansas was held in Little Rock, March 25, under the chairmanship of Dr. Charles W. Garrison, Little Rock, secretary of the state board of health. The chief papers presented were by Dr. Charles W. Goodard, Austin, state health officer of Texas, on "The Way We Do Things in Texas"; by Miss Lillie Beauchamp, state supervisor of the American Red Cross, on "The Necessity of State Supervision of Public Health Nurses," and by Miss Earl Chambers, executive secretary of the Arkansas Public Health Association, on "How the Arkansas Public Health Association Can Assist Health Authorities."

DISTRICT OF COLUMBIA

Construction of Gallinger Municipal Hospital Postponed.—The committee on the District of Columbia of the House of Representatives recently recommended the appropriation of $1,500,000 for building the Gallinger Municipal Hospital in Washington. This appropriation was stricken from the District bill on the floor of the House following a debate showing that this appropriation was three times as large as that provided for exactly the same character of building in 1917. The District commissioners have been unable to negotiate a contract for the construction of the building since 1917 and members of Congress determined to postpone construction of this hospital indefinitely because of the excessive cost of construction at the present time.

GEORGIA

Personal.—A department of sanitary engineering has been established by the state board of health with Mr. H. C. Woodfall as state sanitary engineer. Mr. Woodfall was formerly assistant sanitary engineer with the U. S. Public Health Service, and will devote his time to problems of water supplies, sewage disposal and drainage for the state.——Dr. Frank W. McCorkle, former assistant health officer of Madison County, Ala., has been elected commissioner of health of Decatur County.

Venereal Disease Control.—The venereal disease control work has been keeping pace with its program in the state very well. The interest in the county unit plan has been intensified, and the representatives of the state board of health in their respective counties are doing good work. The department of venereal disease control has mailed to the physicians a supply of report blanks in the past few weeks. It is hoped that physicians will be prompt in making reports. The law is given on the cover of the book of forms, and it is believed that reports on venereal diseases will soon reach a satisfactory basis.

ILLINOIS

Physicians' Licenses Revoked.—At its meeting, April 1, 1920, the Illinois Department of Registration and Education revoked the licenses of Dr. George W. Alverson, formerly of Area, and Dr. Henri E. R. Altenloh of Chicago. The former is now serving a life sentence in the Joliet penitentiary and his license was revoked for gross unprofessional and dishonorable conduct. The license of Dr. Altenloh was revoked because of the use of alleged false and fraudulent statements in advertising matter by which he attempted to obtain money and practice.

Chicago

Personal.—Dr. Myron E. Lane, at present a member of the staff of the Chicago Municipal Tuberculosis Hospital, has been appointed medical director and superintendent of the Jasper County Tuberculosis Sanatorium, Webb City, Mo.

Industrial Surgeons' Association.—The organization of an Industrial Surgeons' Association to be affiliated with the Chicago Medical Society is contemplated. Dr. George D. J. Griffin is temporary chairman, and Dr. Horace C. Lyman, temporary secretary of the new organization.

Tuberculosis Society Meeting.—The thirty-ninth meeting of the Robert Koch Society for the Study of Tuberculosis will be held at the City Club, April 19, at 8 o'clock, when Dr. Lawrason Brown of the Trudeau Sanatorium, Saranac Lake, N. Y., will read a paper on "The Diagnosis of Intestinal Tuberculosis." A dinner will be given Dr. Brown at 6:30, at the City Club.

Institute of Medicine.—At the meeting of the Institute of Medicine of Chicago, April 16, at the City Club, Prof. R. A. Millikan, professor of physics at the University of Chicago, one of the most active experimentalists in the field of electron research and vice chairman of the National Research Council during the World War, presented a paper on "Twentieth Century Contributions to Our Knowledge of the Atom."——From a source that for the present must remain unknown, the sum of $250 annually has been offered to the Institute of Medicine of Chicago for an annual lecture to be known as the Pasteur Lecture.

Joint Meetings.—The Chicago Medical and the Chicago Urological societies, met in joint session April 14, when papers were presented by Dr. Irvin S. Koll on "Urinary Calculi"; by Dr. Robert H. Herbst and Alvin Thompson on "Vasotomy," a lantern slide demonstration of technic; by Dr. Louis E. Schmidt, on "Streptococcus Infection in Urology"; and by Drs. Gustav Kolischer and Joseph Eisenstaedt on "Unilateral Nephritis."——A joint meeting of the Chicago Neurological and Chicago Pathological societies was held April 12 at which Dr. Fred T. Rogers of the University of Chicago presented a paper on "The Relations Between Arterial Blood Pressure, Heat Regulation and the Cerebral Hemisphere"; Dr. G. W. Bartelmez of the University of Chicago, one on "The Morphology of the Synapse in Vertebrates," and Dr. S. Walter Ranson of Northwestern University Medical School, one on "Studies on the Sympathetic Nervous System."

INDIANA

Personal.—At the annual banquet of the Military Order of Foreign Wars held in Indianapolis, April 6, Col. Carleton B. McCulloch was elected surgeon, and Lieut. Morris G. Fuller, secretary; the latter succeeds Major Frank W. Foxworthy, resigned after fifteen years' service.

New Building for Sanatorium.—Sunnyside, the Marion County institution for the treatment of tuberculosis, located near Indianapolis, has been given $350,000 by the county council to be used in the construction of new buildings. An infirmary with a capacity of seventy-five patients, a children's cottage of a forty-five bed capacity, and a superintendent's residence will be built. Work is to begin at once. Several months ago $100,000 was appropriated for a service building and a power house, and these buildings are now nearing completion.

Epileptics in Indiana.—The board of state charities reports that there are at present 1,020 epileptics in the various public institutions of the state: in the five state hospitals for the insane, 266; schools for feebleminded youth, 212; village for epileptics, 371, and in county poor asylums, 171. Of the total number, 366 are insane, 548 feebleminded and 106 without marked mental deficiency. Men and boys number 602, and women and girls, 418. The epileptics are thus classified by ages: under 16 years old, 72; from 16 to 45, 617, and over 45 years, 331. Eighty-five of the ninety-two counties are represented at the village for epileptics. According to estimates there are 4,123 epileptics in Indiana, and of this number about 25 per cent. are receiving proper care from the state.

MAINE

Health Union Organized.—The first health union to be formed in the state has just been organized by the towns of Milford, Old Town, Bradley, Orono and Veazie under the name of the Motbov Health Union. A committee of six, two from Old Town and one from each of the other towns, conducts the affairs of the union, and a full-time health officer has been appointed. The organization of this health union is unique in Maine health history, for though such cities as Portland, Lewiston, Auburn and Bath employ full-time health officers, and the little town of York, unassisted except by the state appropriation of $800 also supports a full-time officer, no attempt has previously been made to create a union of towns.

MASSACHUSETTS

Course in Early Diagnosis of Tuberculosis.—A course in the early diagnosis of pulmonary tuberculosis and methods of treatment will be given under the auspices of the Wachusett Medical Improvement Society at the Rutland State Sanatorium. Lectures will begin Thursday, May 20, and continue Thursday of each week until June 24. Those giving lectures include Drs. George N. Lapham, Rutland; Bayard T. Crane, Rutland, and these members of the sanatorium staff: Drs. Ernest B. Emerson, Rutland, superintendent; Leon A. Alley, Rutland, assistant superintendent; David E. Mann, Rutland; Halbert C. Hubbard, Auburn; William B. Davidson, Pawtucket, R. I., and Mary E. Gaffney, Providence, R. I. The object is to promote early diagnosis and control of pulmonary cases. The course will be open to all physicians. The facilities at Rutland are ample for illustrating any phase of the subject. There will be no charge for tuition. For further information address Dr. Ransom A. Race, secretary, Paxton, Mass.

MICHIGAN

Personal.—Dr. Don M. Griswold, Detroit, director of the medical service for the Detroit City Board of Health and professor of hygiene and preventive medicine at the Detroit College of Medicine and Surgery, has been appointed professor of hygiene and preventive medicine in the State University of Iowa, Iowa City, and state epidemiologist, succeeding Dr. Edward G. Birge, deceased.——At the last meeting of the Institute of Medicine of Chicago, Dr. Victor C. Vaughan, Ann Arbor, was elected an honorary fellow.

MISSISSIPPI

Murderer of Physician Sentenced.—A verdict of guilty as charged and carrying the death penalty was brought in by a jury, March 27, against Jesse S. Watts, charged with the murder of Dr. D. S. Alverson, Vicksburg.

State Gets Vicksburg Hospital.—The mayor of Vicksburg has been authorized to sign a resolution by which the Vicksburg Hospital may be conveyed to the state with the provision that when the state abandons the use of the property as a hospital the property shall revert to the city.

Women in Social Hygiene Campaign.—The United States Public Health Service cooperating with the state board of health has procured the services of Drs. Lenna L. Meanes, Des Moines, Iowa; Bessie Florence L. Meredith, Watertown, Mass.; Hannah Morris, West Chester, Pa., and Jeanette H. Sherman, Ridley Park, Pa., who have been employed by the Y. W. C. A., and have had experience in social hygiene work in the eastern and central states. They will come to Mississippi for a series of lectures and conferences with the object of awakening the women and girls of the state to a realization of their responsibility and power for improving social conditions, and raising standards of health in their own communities, to put the facts before them and to help them to organize for definite action in fighting disease by advancing health through health education, and supervised recreation.

MISSOURI

New Officers.—Howard County Medical Society at its annual meeting held in Glasgow, March 19, elected the following officers: Dr. Elbert King, New Franklin, president; Dr. W. E. Williams, Fayette, and Walter M. Dickerson, Armstrong, vice presidents, and Dr. Charles W. Watts, Fayette, secretary-treasurer.

Personal.—Dr. Ross A. Woolsey, St. Louis, has been appointed chief surgeon for the St. Louis and San Francisco system, succeeding Dr. George W. Cale, Jr., resigned. Dr. Woolsey has been first house surgeon for the Frisco system for the last eight years.——Dr. Karl E. Baker, Carthage, has been appointed state commissioner of health for Jasper County.

NEW JERSEY

Personal.—Dr. Marcus W. Newcomb, Brown's Mills, has been elected superintendent of the Burlington County Sanatorium for tuberculosis.

Newark Physicians Attack Volstead Act.—At a conference between the mayor and physicians of Newark, it was decided to oppose the Volstead act which limits the prescription of liquor in the treatment of illness.

Illegal Practitioners Prosecuted.—James Baker, Atlantic City, and Thomas G. DiSanti have been convicted under the New Jersey Medical Practice Act of practicing medicine without licenses. Each paid the penalty of $200 and costs. ——Minnie Usserow, Passaic, a licensed midwife, was found guilty of practicing medicine without a license and fined $200 and costs.

Smallpox in Belleville.—On account of the prevalence of smallpox in Belleville, all churches, motion picture theaters, and places of public assembly were ordered closed. Up to the present time, there have been thirty-four cases of smallpox reported. Fifteen of the patients are in the County Isolation Hospital, Soho, and the remainder are under quarantine in their own homes.

Oppose Medical Bills.—Representatives of the Medical Society of the State of New Jersey met with the senate public health committee, March 22, to voice their protests against the new chiropractic law and the Hyland bill, which allows osteopaths to practice medicine and surgery without educational qualifications equivalent to those required of physicians, against the senate bill which provides for drugless therapeutists, and the bill which requires physicians to register annually. The physicians favor the senate bill to put all practitioners under the control of the State Board of Medical Examiners, and the certified milk bill, which will give the state control over certified milk for the use of children.

NEW YORK

After-Care Sanatorium for Poliomyelitis.—Public spirited people in Ithaca, Hornell, Corning, Cortland and Bath have taken action to secure quarters in Ithaca for a permanent sanatorium for the after-care of those who have had poliomyelitis.

Lake Keuka Physicians Meet.—The twenty-first annual meeting of the Lake Keuka Medical and Surgical Association will be held at Keuka College, Keuka Park, July 29 and 30, under the presidency of Dr. Alfred W. Armstrong, Canandaigua.

County Laboratory in Amsterdam City Hospital.—The Montgomery County Laboratory is to be established in the Amsterdam City Hospital. Alterations are being made in the hospital building for the purpose of providing suitable housing accommodations for this new laboratory.

Personal.—Dr. Fred M. Meader, director of the division of communicable diseases of the New York State Department of Health, has been granted an indefinite leave of absence in order to accept an appointment as surgeon in the U. S. Public Health Service. Before entering the service he will be associate in epidemiology in the School of Hygiene and Public Health, Johns Hopkins University, for the remainder of the collegiate year.——Dr. Ralph E. Robinson, Nunda, has been appointed to the state laboratory staff.

Protects Public Against Fake Remedies.—The village of Athens has incorporated into its sanitary code a regulation providing that no corporation, association, firm or individual other than licensed pharmacists and physicians shall sell or offer for sale in the village of Athens any medicine or so-called remedies, or any so-called medical appliances, unless before offering their commodities for sale they shall receive a permit from the local health officer. Any wilful violation of this regulation is punishable by a fine of $50 for each offense.

Child Welfare Laws.—On the recommendation of the conference on child welfare held in Albany last October, a bill has been introduced in the state legislature proposing a commission for the codification and unification of the laws relat-

ing to the protection of children. The commission will investigate the operation and effect of all laws affecting children, ascertain any overlapping and duplication, and will recommend to the legislature such remedial legislation as may appear necessary for unification of the laws and concentration of agencies dealing with child welfare.

The Cotillo Bill.—Senator S. A. Cotillo has introduced a bill into the New York legislature regulating the prescription and sale of narcotic drugs. This bill is modeled on the federal law and does away with the necessity of becoming familiar with two sets of regulations. All the druggist has to do is to be familiar with the Harrison law and the Treasury regulations. The only exception is that the bill does provide for triplicate state order forms to be used in the purchase of narcotic drugs and regulations as to the use of these forms. These regulations will be printed on the back of these forms. The bill does away with special state requirements as to records and reports and with the special state registration of druggists, state certificates and state registration fees. The house of delegates of the Medical Society of the State of New York has approved the measure.

New York City

Personal.—Dr. Harry Plotz, Brooklyn, has been sent to Poland by the joint distribution committee of the American Jewish Relief Funds to combat the typhus plague there.—— Dr. T. Mitchell Prudden has been reappointed a member of the public health council of the New York State Department of Health.

Convalescent Camps for Soldiers.—The New York Community Service announces that arrangements have been made for the establishment of summer camps at Bear Mountain and Fire Island for the benefit of convalescent service men and other former soldiers and sailors who are taking vocational training in New York City.

Many Vacancies in Health Department.—The work of the health department is said to be seriously crippled by the many resignations that have been handed in during the past six months. From July 1 to Dec. 1, 1919, there were 233 resignations, an average of one person a day. Most of these employees have resigned because they could command higher salaries elsewhere.

Organizations Unite to Fight Tuberculosis. — Various organizations in this city interested in fighting tuberculosis met at the New York Academy of Medicine, April 7, and decided to pool their intelligence, experience and equipment in order to carry on an intensive educational campaign against tuberculosis. They propose to make a survey of the city and establish auxiliaries in every existing clinic. Dr. T. L. Lloyd, vice chairman of the auxiliaries in the Brooklyn district, presided at the meeting. When the work of these various organizations is coordinated, duplication of effort will disappear and there will be a standardization of methods both in the handling of cases and in the after-care.

Formation of Caduceus Post of the American Legion.—On April 6 an amalgamation of the Medical Department Post of New York and of the Harry D. Gill Post of the American Legion took place in New York City. The great majority of the members are physicians. It has been decided to solicit other physicians to join this Post, either as regular or associate members (the latter applies to those who are active members of other posts). The following officers have been elected: president, Howard Fox; vice presidents, Harlow Brooks, George E. Maurer and Graeme M. Hammond; secretary, Samuel Bradbury; treasurer, William F. Cunningham, and county delegates, Harlow Brooks and Charles J. Imperatori.

NORTH CAROLINA

Failed to File Birth Certificate.—For failure to comply with provisions of the state vital statistics law by refusing to file birth certificates, Dr. Henderson Irwin, Eureka, is said to have been convicted in the local court of Fremont, March 15, on two counts and fined $15 in addition to the costs of $7.50.

Health Officers to Meet.—The tenth annual meeting of the North Carolina Health Officers Association will be held at Charlotte, April 19, jointly with the meetings of the state medical society and the state hospital association, under the presidency of Dr. Everett F. Long, Lexington, the subject of whose address will be "Coordination of Health Work—Intra-Governmental and Extra-Governmental."

State Medical Society Meeting.—The sixty-seventh annual meeting of the Medical Society of the State of North Carolina will be held in Charlotte, April 19 and 20, under the presidency of Dr. Carl V. Reynolds, Asheville. Dr. Watson S. Rankin, Raleigh, will deliver an address on "State Medicine"; Dr. Benjamin S. Warren, Washington, D. C., will speak on "Social Insurance," and Dr. William L. Clark, Philadelphia, will give an illustrated lecture on the "Treatment of Malignant Disease."

OHIO

Lima Entertains Physicians.—Physicians within a radius of 50 miles of Lima attended the medical and surgical clinics held at St. Rita's Hospital, Lima, April 6. Dr. Dean D. Lewis, Chicago, spoke at the evening session.

Filtration Plants to Be Constructed.—It has been decided to build water filtration plants at Delaware, Greenfield, Eaton and Fremont. Plants at Shelby, Wadsworth and Ashland are nearing completion. Contracts will soon be completed at Delaware and Wauseon.

Collaborating Epidemiologists Appointed.—The U. S. Public Health Service has appointed 140 health commissioners of Ohio as assistant collaborating epidemiologists. This appointment gives them the privilege of using frank mail for their morbidity reports.

Personal.—Dr. Orrillus M. Corson, state Americanization director, Columbus, has resigned on account of ill health.—— Dr. Albert H. Haworth, West Milton, has been appointed full-time health officer of Miami County, excepting the cities of Piqua and Troy.——Dr. Charles G. Augustus, health commissioner of Springfield for three years, has resigned.——Dr. Henry J. S. Dickson, Mechanicsburg, has been appointed full-time health commissioner of Champaign County.

Public Health Nurses.—There are at present 405 public health nurses that work in the state, not including nurses employed in industrial plants. This gives one public health nurse to every 14,320 population. Of the eighty-six counties of the state, thirty-three have, as yet, no nursing service. Twelve city and ten county boards of health now employ a total of seventeen nurses; city boards of education employ twelve, and one county board has a nurse. Altogether school boards are employing fifty-nine nurses.

SOUTH CAROLINA

New Medical Practice Act.—A new medical practice act was passed by the South Carolina legislature and was approved by the governor on March 10. The principal changes brought about by this act are: (*a*) The board is empowered to recognize certificates issued by the National Board of Medical Examiners. (*b*) The time fixed for the annual meeting of the board was changed from the second to the fourth Tuesday of June. (*c*) The registration fee was raised from $10 to $25. (*d*) It is clearly specified that practitioners of various forms of healing shall be required to take the same examination as regular physicians except in materia medica, major surgery, therapeutics and practice and must exhibit a diploma from a college approved by the board.

TEXAS

South Texas Physicians Meet.—The forty-seventh annual meeting of the South Texas District Medical Association was held in Beaumont, March 25 and 26, under the presidency of Dr. Claude C. Cody, Jr., Houston. Victoria was selected as the place for the fall meeting.

WISCONSIN

Personal.—Dr. Herbert G. Lampson, Washburn, superintendent of the Nopeming Sanatorium, Duluth, has been appointed county physician of St. Louis County.

Fire in Hospital.—Fire of unknown origin destroyed the hospital and home of Dr. Ernest G. Ovitz, at Laona, March 1. The patients were removed without casualty, and the loss is estimated at $20,000, partially covered by insurance.

CANADA

Aesculapian Club Officers.—Dr. David J. Gibbs Wishart has been elected president of the Aesculapian Club, Toronto; Dr. Alexander Primrose, C.B., vice president; Dr. Edmund E. King, treasurer (reelected), and Dr. Frederick C. Harrison, secretary.

Liquor Prescriptions.—The chairman of the Board of License Commissioners of Ontario has informed a committee

of the legislature that 80 per cent. of Ontario physicians write less than ten prescriptions for liquor in a month, and that it is the balance of from 10 to 20 per cent. who are the "official bar-tenders" of the province. That would mean that the bulk of the liquor prescriptions is issued by from 350 to 700 men.

Druggists Protest.—Prohibitions in the bill to amend the Canadian opium and drug act now before the House of Commons brought to Ottawa a large delegation of druggists last week. They object to the provisions of the bill which prevent their selling certain mixtures containing small but necessary quantities of opium, morphin and other narcotics unless under a medical prescription. They seek an amendment so that they may sell cough mixtures, etc., as they have always done without doctors' prescriptions.

Hospital News.—At a meeting called by the Canadian National Committee on Mental Hygiene in Toronto a few days ago, resolutions were passed favoring the establishment of the proposed new Reception Hospital for Toronto, contiguous to the University of Toronto and the Toronto General Hospital. Last year fifty-four mental cases were sent to the hospital for the insane after passing through the hands of the police.——The establishment of a general hospital for the border towns near the Detroit River is being agitated. It is likely that it will be established at Windsor, Ont.

Personal.—Sir Thomas G. Roddick, Montreal, and wife have returned after spending the winter in Florida.——Dr. Newtown A. Powell, Toronto, is president, and Dr. John N. E. Brown, Toronto, is secretary of the Chengtu Medico-Dental College Project in Canada.——Dr. David Fuller McKinley, C. A. M. C., formerly of West China, has commenced practice in Toronto.——Dr. John L. Todd of McGill University, with Dr. Simeon B. Wolbach of Harvard Medical School, has gone to Poland to study typhus fever. They are working under the Red Cross.——A banquet was recently tendered to Dr. George A. J. Glionna, Italian consul in Toronto, for his patriotic work among Italians there during the war.——Dr. Charles J. Copp, Toronto, was recently presented with a gold watch and chain for his work in connection with the St. John Ambulance Brigade of which he is assistant commissioner in Toronto.——Dr. James Beatty, Toronto, has been appointed pathologist of the General Hospital, Regina, Saskatchewan.——Dr. Russell L. Parr, Toronto, formerly captain in the department of soldiers' civil reestablishment, accused of defrauding the Canadian government of $2,500, has been acquitted.——Dr. Edgar C. Barnes, for fifteen years assistant medical superintendent at the Homewood Sanitarium, Guelph, Ont., has been appointed medical superintendent of the hospital for mental diseases at Selkirk, Man.

GENERAL

Medical Book Plates Wanted.—The Journal will be glad to receive copies of the book plates of physicians, for use in a review of the subject. Copies of the book plates of noted physicians, now dead, will be especially appreciated. Mark envelop "Book Plate."

Gift to College of Surgeons.—The Carnegie Corporation has given to the American College of Surgeons $75,000 to be used for hospital standardization. Four years ago, it made a gift of $30,000 for the same purpose, making a total of $105,000, this amount being supplemented by funds of the college.

Conference Regarding Service Men.—The committee representing welfare agencies for disabled former service men of Indiana, Kentucky and Ohio held a meeting in Indianapolis, April 10, at which Dr. Thomas B. Victor Keene, Indianapolis, chairman of the hospitalization committee, and Dr. Henry Kennon Dunham, Cincinnati, chairman of the education committee, made their reports.

Legislature to Permit Transmission Through Mails of Poisons.—The House of Representatives has passed the bill permitting the transmission of poisons, medical or chemical compositions, through the mails, under regulations prescribed by the Post Office Department. The bill permits manufacturers or dealers in such products to transmit them to licensed physicians, surgeons, pharmacists and druggists.

Gift to Post Graduate Hospital Endowment Fund.—The New York Post Graduate Medical School and Hospital reports a gift of $100,000 from Mrs. Henry R. Rea of Pittsburgh toward the endowment fund of $2,000,000 which the institution is striving to raise. It is reported, also, that Mr. James C. Brady of New York has given $50,000 toward the first million and has pledged $125,000 toward the second million. Mr. Vincent Astor has given $50,000 toward the first million and an additional $75,000 toward the second million.

Examination for Canal Service Physician.—The United States Civil Service Commission announces an open competitive examination for physician, Panama Canal service, May 5 and July 7, at various places throughout the United States. The entrance salary is $200 a month with promotion to $300 or higher for special positions. Both men and women are eligible. They must be unmarried, must be graduates of a recognized medical school, and must have had at least one year's graduate hospital experience. Application should be made to the Civil Service Commissioner, Washington, D. C., or the secretary of the local United States Civil Service Board.

Centenary of Medical Missions.—The centenary of medical missions was celebrated generally throughout the United States from March 28 to 31, and at the same time observance was made of the fiftieth anniversary of the work of the first woman missionary. The pioneer medical missionary was Dr. John Scudder, who went to Ceylon in March, 1820, and the pioneer woman medical missionary was Dr. Clara Swain, who went to India in 1870. It was pointed out that forty-eight members of Dr. Scudder's family followed him into the mission field and that three of the fourth Scudder generation had just gone to begin their life work in India. At present there are about 1,100 medical missionaries working in 702 hospitals and 1,156 dispensaries.

Bequests and Donations.—The following bequests and donations have recently been announced:

Hospital for Sick Children, Toronto, Ont., $1,000 to endow the McRoberts' cot, by the will of Mrs. Ruth McRoberts.

Philadelphia Orthopedic Hospital a bequest of $5,000 from the residuary principal of the estate of Mrs. John M. Walton to establish a free bed in memory of her husband.

American Red Cross and St. Luke's Hospital, New York City, chief eventual legatees of the estate of James A. Scrymser, appraised at $2,923,040 to become operative on the death of his widow.

Chengtu Medico-Dental College Project in Canada, $7,500 by the will of Dr. Richard A. Reeve, Toronto.

St. Vincent's Hospital, New York City, $100,000; Cancer Hospital, New York City; Industrial Home for the Blind, Brooklyn, and Brooklyn Hospital, each $25,000; Brooklyn Home for Consumptives, $20,000, by the will of Daniel G. Carroll.

FOREIGN

Medical Journal's Personally Conducted Tour to Paris.—A Spanish medical journal, the *España Médica* of Madrid, has organized a tourist party for its subscribers, with the collaboration of a tourist agency for the trip, and of the dean of the Paris Faculté de médecine for the scientific side of the trip. The expense for the twelve days is 750 pesetas. Three days are to be spent inspecting the devastated regions from Verdun to Reims. The journal states that if it were not for the prevailing rates of exchange the price of such a trip would be prohibitive at present.

Fourteenth French Medical Congress.—The Association of French-Speaking Physicians invites physicians to attend the Fourteenth Congrès français de médecine to open at Brussels, May 19, 1920. The first of the three topics to be discussed—syphilis of the cardiovascular apparatus—is to be presented by Bayet of Brussels, Etienne and Spillmann of Nancy, and Vaquez and Laubry of Paris. The second—lipoids in pathology—will be presented by Chauffard, Laroche and Grigaut of Paris, Linossier of Vichy, and Zunz of Brussels. The therapeutic value of artificial pneumothorax will be discussed by Burnand of Leysin, Küss of Agincourt, and others with much experience. The fee is 40 francs for nonmembers of the association.

Pan-Hellenic Congress of Hygiene.—The *Grèce médicale* announces that the long planned Congress for Hygiene and Demography is now organized to convene at Athens, April 25 to 30, 1921, the week of the celebration of the centennial of the independence of Greece. There are to be six sections, and membership is open to all interested in public and private hygiene, welfare work, and similar great social questions. The fee is 15 francs for regular members and 10 francs for associates. In connection with the congress there will be an international exhibition to remain open for two months. Prof. G. Phocas is chairman of the committee of organization of the congress, and the secretary is Prof. P. J. Rondopoulo, 14 rue Nikifouro, Athens, Greece.

Government Commissions in the Netherlands for Investigation of the Treatment of the Sick by the Unqualified.—THE JOURNAL described about a year ago the report of the medical commission appointed by the state in the Netherlands in 1915 to study the methods and practices of various cults. After exhaustive investigation the report presented concrete evidence that no essential benefit resulted from any of the methods and in some instances actual harm was done. A commission of eminent jurists was appointed at the same time. They have taken three years to prepare their report, and it has just been presented. The editor of the *Nederlandsch Tijdschrift voor Geneeskunde*, Prof. G. van Rijnberk, publishes their report with comment. The lawyers in their preamble state that their advice was asked only in the matter of suggesting modifications in the law, and not whether it is desirable to make such modifications. Consequently, they say, the report does not express any personal opinion of the jurists in this matter, but is restricted to the legal wording of the modifications to admit the unqualified to practice.

Friedmann in the Limelight Again.—The German medical journals for the last few months have been much exercised over the way in which the Kultusminister K. Haenisch (minister of public instruction), and the Prussian general assembly have been promoting Friedmann's "Preventive and Cure for Tuberculosis." Friedmann has been appointed professor extraordinary (without any consultation with the medical faculty), and part of a military hospital has been placed at his disposal for treatment of the tuberculous and to train students in the method. Nearly every German journal contains some report of experiences with the "Cure." Some of the writers complain that Friedmann insists on selecting the patients to be allowed the treatment, and refuses to let any other measures be applied with it. The *Nederlandsch Tijdschrift voor Geneeskunde* of Amsterdam quotes this same Minister Haenisch, speaking in the lower house two years ago, when he cited the Friedmann remedy as an example of "an arrant humbug which has the advantage that the inventor in the meanwhile has become a rich man." Our Netherlands exchange adds, "The psychanalysis of this change of view on the part of the minister of public instruction might be worth studying out." The *Deutsche medizinische Wochenschrift* for Dec. 18, 1919, referred to the matter as showing the lamentable way in which internal politics is encroaching on the domain of science, saying, "Even the sharpest critic of things as they used to be will have to admit, if he is truthful, that a minister of public instruction in former times would not have retained his position for one hour after delivering such a speech as Haenisch's recent speech, followed by the 'interview' in the evening paper (Haenisch and Friedmann's *Moniteur*)." It quotes further the *Medizinische Klinik* that it is "hard indeed that at a time when Germany is so impoverished in worldly goods, such action should threaten to lower the prestige of German science." The Prussian general assembly has recently voted to appoint a representative commission to test the remedy. It was said at first that no one who had previously tried the remedy should be on this commission but this principle was not adhered to. Twenty members were first appointed, mostly leading members of the profession, but others have been added later, including Friedmann himself, Prof. Kruse, who has charge of the bacteriologic control of the preparation of the remedy, Dührssen, an ardent advocate, and others. The *Deutsche medizinische Wochenschrift* comments that the handing over of the hospital to Friedmann and empowering him to train medical students in the method of treatment—before the commission has made any report on the value of the "cure,"—"must be regarded as another one of the many inconsistencies from which the people is now suffering so much. . . . However, it was a favorable turn of fate that Friedmann did not succeed in his desire to have the Kaiser-Wilhelms-Akademie placed at his disposal, notwithstanding the efforts of Haenisch, Scheidemann and his other backers (gönner)." Another instance of what the *Deutsche medizinische Wochenschrift* calls the "hitherto unknown by-effects of a method of treatment," is a suit for damages brought by the editor of the *Münchener medizinische Wochenschrift* against another editor, Dr. Bachmann, of the *Biologische Medizin*, who had accused the former of "suppressing the free expression of opinion" by rejecting certain articles sent in for publication. The *Deutsche medizinische Wochenschrift* remarks that this lawsuit is a grateful opportunity to show the courts the absurdity of this complaint. The entire chorus of the "suppressed" will be presented to the judge.

LATIN AMERICA

Personal.—Dr. Rafael Otamendi of Caracas, Venezuela, has arrived in New York accompanied by his wife.——Dr. Rafael Medina y P., Quito, Ecuador, has arrived in New York on his way to France.

Experimental Hygiene at Montevideo.—The *Brazil Medico* states that the congress of Uruguay appropriated funds recently for the organization of an institute for experimental hygiene at Montevideo.

Plague at Curityba.—Some dead rats having been found in a certain quarter of Curityba, they were examined for plague bacilli with positive results, and the governor of the state telegraphed at once to the chief of the national public health service asking that a sanitary brigade be sent there at once before any clinical cases of plague develop.

Monument to Dr. Núñez.—The building of the monument to Dr. Enrique Núñez, former secretary of sanitation of Cuba, for which a fund of $12,000 has been collected, will begin soon. The monument will be built at the entrance of the hospital, Calixto García, and it is expected that it will be unveiled on September 15, which is the fifth anniversary of Dr. Núñez' death.

American Physician Needed in Chihuahua.—Mr. Emmet W. White of the insular and foreign division of the American Red Cross has received a letter from the American consul at Chihuahua stating that the only foreign physicians in Chihuahua, one American and one Englishman, have died this year, and that there is an opportunity for an American physician, especially one who speaks Spanish. The American consul will be glad to correspond with any one who might consider locating there.

Riots Among Medical Students in Argentina.—The conflict between the professors and the students of the University of La Plata, reached its climax recently, when the medical students provided themselves with revolvers and opened fire on the school, killing one of the students, who was taking his examination at the time. A number of the students were arrested by the police. The University of La Plata is one of the three national universities, in addition to the two state colleges, and was the last organized of those existing in the country.

"Prophylaxia Rural."—This is the official name of the service that has been undertaken on a large scale in Brazil to carry the campaign against malaria, helminthiasis, etc., into the rural districts. The *Brazil Medico* is publishing the reports from different stations as they have been established. In one week recently, at one of these stations 1,284 persons were examined and 65.9 per cent. were found to have malaria or other chronic disease. At another station 94.11 per cent. were found infested with helminths and 1,186 persons were given treatment during January.

Deaths in the Profession.—Dr. **L. R. Cassinelli**, founder of the Cassinelli Sanatorium at Buenos Aires, and physician to the Hospital San Roque.——Dr. **R. Leal de Sá Pareira** of S. Paulo.——Dr. **O. Vieira de Britto** of Bello-Horizonte, president of the city council.——Dr. **Rivadavia Correa**, senator from his state, Rio Grande del Sul, and long leader in the movement for raising the standards and equipment of the medical schools of Brazil.——Dr. **J. Maceo Chamorro**, at Puerto Padre, where he was chief of the local public health service, one of the oldest physicians of Cuba.

Mexican Commission in the United States.—Drs. Edmundo Aragón, secretary of the Department of Health of Mexico, and Nicolás Amerena, director of the diagnostic laboratory of the same department, are being sent to the United States in order to secure cultures of plague, yellow fever, typhoid fever, cholera, pneumonia and all other infectious diseases, the etiologic agents of which are known. It seems that cultures of micro-organisms lose their virulence very soon in Mexico, and it is necessary to replace the supply quite often. While in the United States, Drs. Aragón and Amerena also intend to purchase a collection of wax models, showing different aspects of the most common diseases. They expect to visit New York, Washington, Chicago and New Orleans, inspecting at the latter city the methods of ship disinfection in force.

CORRECTION

Wrong Price Published in Advertisement of Oxford University Press.—In the advertisement of the Oxford University Press, published in THE JOURNAL for April 10, through an error, the Oxford Loose-Leaf Medicine was quoted at $52.50. It should have read $62.50.

Government Services

MEDICAL OFFICERS, UNITED STATES NAVY, RELIEVED FROM ACTIVE DUTY

ILLINOIS

Bloomington—Howell, H. L.
Metropolis—Thane, B.

KANSAS

Atchison—Connor, S. W.

MASSACHUSETTS

Boston—Gaetani, A. L.

NEW YORK

Brooklyn—Ruger, G. W.
Fair Haven—Griggs, L. H.

Health Conditions of the Army

For the week ending April 2, progressive improvement in the health conditions among the troops is shown by the continued decrease in the admission and noneffective rates. There is a slight increase in the number of new cases of measles, scarlet fever, malaria, diphtheria and pneumonia, although none of these diseases are epidemic at any camp or station. As a whole, the report for the week shows the number of new cases of epidemic diseases to be about as low as could be expected. There were eighteen deaths from disease reported during the week: tuberculosis was reported to have caused seven and pneumonia four. Among the American forces in Germany the health conditions continue satisfactory.

Public Health Service Presents Building Requirements

The Public Health Service has presented to the Committee on Public Buildings and Grounds of the House of Representatives an analysis of prospective hospital building requirements for ex-service men. Twenty-five million dollars is asked for construction or purchase of necessary hospital buildings, $15,000,000 of which shall be expended during the present year. These building requirements of the Public Health Service are based on the report of the chief medical adviser of the War Risk Insurance Bureau. This report indicates that the Public Health Service will be required to take care of 30,000 patients during the ensuing year. These patients are classified as: general, medical and surgical, 7,200; tuberculosis, 12,400, and neuropsychiatric, 11,000, a total of 30,600. The hospital building needs of the Public Health Servic are most urgent, and the Committee on Public Buildings will at once determine the amount of money which will be appropriated for this work.

Army Hospital Internship

The Surgeon-General of the Army announces that internships of one year in some of the large general hospitals of the Army are opened to medical students and graduates of Class A medical schools who obtain a high standing and are indorsed by the medical school authorities. Satisfactory completion of the year in the Army General Hospital will be accepted as qualifying for commission in this regular Army Medical Corps without further professional examination.

The status of the intern is that of a civilian, and the pay is $60 a month with quarters and rations.

The general hospitals of the Army are organized into three services: medical, including psychiatric and contagious diseases; surgical, including eye, ear, nose and throat, venereal, gynecologic, obstetric and the roentgen-ray service; laboratory, including clinical microscopy, pathology, serology, bacteriology and chemistry. Some of the medical schools requiring the fifth or hospital year for a diploma have already agreed to accept the hospital year in the Army general hospitals as the equivalent of their hospital year, and it is expected that state boards requiring hospital experience as a requisite for license will likewise accept that obtained in the Army. Applications for this internship should be made by letter direct to the Surgeon-General and give the following information: full name; present address; home address; birth place (if foreign, state whether a citizen of the United States); date of birth; education before entering medical school; medical school attended; date of graduation or prospective graduation, and statement of any physical defect that might disqualify applicant in physical examination.

A circular of information will be sent on application to the Surgeon-General's Office. A similar circular is in the possession of each state medical examining board.

Foreign Letters

BELGIUM

March 25, 1920.

The Medical Press

The great difficulties with which all Belgian industries are struggling seriously impede national reconstruction. The mining and metallurgic industries have been able to overcome obstacles which seemed insurmountable, despite repeated strikes, which were on the whole of short duration, and these industries are now again beginning to assume their customary place in the business world. The shortage of manual labor and the repeated strikes have not assumed such proportions that they would have proved fatal to the prosperity of Belgium. Strictly speaking, there is no prosperity in Belgium, but after the cataclysm which burst over the whole nation, one can be deemed fortunate to witness the present renaissance under conditions which can be considered favorable. This hopeful outlook does not altogether apply in regard to the medical press. In those countries in which scientific publications are not published directly through liberal subsidies from an official department, or where they are not equally as firmly established as in a great country like the United States, the shortage of necessities and the mounting cost of labor exert a very acute influence on the fortunes of scientific periodicals.

PRINTERS' STRIKE

A recent strike of the printers of Liége, which has just barely been settled, interrupted the publication of many periodicals for from three to four months. In the same way, the book industry has been seriously affected. If one adds to this the difficulty of procuring paper, one will readily understand that it is not always easy to guarantee uninterrupted appearance of many periodicals. Furthermore, new difficulties have lately surrounded the manufacture of paper. The decline of exchange does not permit Belgian printers to obtain the necessary supplies abroad, especially in Holland. In Germany, the exportation of wood and paper has been prohibited. France has smaller reserves than our own. Under these circumstances, we are obliged to be content with what little paper we manufacture. The supply does not equal the demand—far from it—and the costs of manufacture have increased almost tenfold as compared with prewar figures.

BIOLOGIC PUBLICATIONS

It is not surprising, therefore, that the purely scientific reviews appear at long intervals. The *Archives de biologie,* which publishes the more important works of the laboratories under the editorial supervision of Professor Brachet of the faculty of medicine of Brussels, is among those suspended for more than four months The same is true of the *Archives de physiologie,* edited by Professor Fredericq of the faculty of medicine of Liége, which was affected by the same strike. The *Archives de pharmacodynamie,* under the editorship of Professor Heyman of the faculty of medicine of Ghent, has issued only two or three numbers since the armistice. The *Archives internationales de médecine légale,* founded by Professor Lorin of Liége—who died in March, 1919, leaving unfinished a whole series of excellent works—has not resumed publication.

The *Académie royale de médecine* alone continues, sometimes with considerable delay, publication of the reports which are deposited with its bureau and are accepted after examination. These must always be original contributions, as they deal almost exclusively with such phases of general biology as are not of direct interest to the medical practitioner. The latter has at his disposal the local weekly jour-

nals, publication of which has now become more regular. It should not be forgotten, moreover, that almost every physician subscribes for one of the large French weeklies, such as *Presse médicale, Paris médical,* and *Journal des praticiens.* Besides these reviews, which circulate through almost the whole of Belgium, as well as the Flemish section, there are many local journals

BELGIAN MEDICAL PUBLICATIONS

Le Scalpel is issued at Brussels. Before the war, *Le Scalpel et Liége médical,* combined, was published at Liége as a purely local review At the beginning of 1919, the editorial staff was divided: some tried to give the journal a national character, and by shunning excessive provincialism they hoped to make *Le Scalpel* the official organ of the Belgian medical federation. This attempt was only partially successful, and *Le Scalpel* has become more especially a sectional organ for the central part of Belgium. Besides this, *Liége médical* has reappeared. Its debut was inauspicious, for the first number had hardly been issued when the strike interrupted publication for a considerable time. Despite the setback, however, its success seems assured, and several numbers which have since appeared are not lacking in interest. Both of these are weekly periodicals, devoted primarily to papers of immediate practical value, not long contributions, but mainly clinical notes and articles on general medicine. In addition, they frequently publish notes of interest to the medical profession, some society proceedings and medical news items.

Besides these two journals, the *Revue médicale de Louvain* remains the organ of the Catholic school. It has a purely didactic aim and continues to impart to the former pupils of the faculty the teachings which they received at their alma mater. It publishes, finally, the lectures of the professors of the faculty.

Ghent also has its medical bulletin, the *mémoires de la Société de médecine,* which records the papers and discussions of this society.

The *Archives médicales belges* is one of the most important medical journals of Belgium. Before the war, it was issued in a smaller format. The war, which had interrupted its publication, was instrumental in its revival at the battle front itself, where, after Jan. 1, 1917, there were brought together the most diverse collaborations of the Belgian medical world. Those who had gone with the army and those who rejoined it on the Yser continued to demonstrate, even through the hard years of exile, the vitality of Belgian medical science. Thanks to this continued effort throughout the war, the *Archives médicales belges,* at the time of the homecoming, was able to expand its editorial committee to include all the authorities of the four medical faculties, officers of the army medical corps, and the principal medical practitioners of Belgium. Appearing in monthly issues, it publishes original articles in all branches of medicine; each month there is a review of some general question, carefully summarizing current knowledge with bibliographic references. Under the heading "Analyses" are found many abstracts of the foreign literature. These are not arranged according to the journal in which the articles appear; each branch of medicine and each specialty are represented, and for every one of these the principal publications of the month are abstracted by a specialist. Under another heading are items of current interest and proceedings of scientific societies.

Among special journals, the *Journal de chirurgie* should be mentioned; in it are published the discussions of the Société de chirurgie de Belgique.

In a small country such as Belgium, it should be of great advantage, especially under the difficult circumstances at the present moment, to correlate all these endeavors now somewhat dispersed. There can be no question of the advisability of such a movement. But it seems that the smaller the country, the more is sectionalism carried to excess. In such a large country as the United States, where, despite diverse origins and customs, federated states have combined, this centralization has been successful—truly an interesting paradox.

BUENOS AIRES

Feb. 21, 1920.

Feeding of the Argentine Field Army

It is well known that the traditional diet of the country regions of Argentina is chiefly meat, although this custom has been considerably modified in the most populated districts. In the case of Argentine troops in the field, the medical officer, Dr. J. A. Lópes, has made recent observations in Chaco, which indicate that the soldiers receive daily 435 grams of protein, 182 grams of fat, and 201 grams of carbohydrates, making a total of 4,125 calories.

Plague Considered an Industrial Accident

Two recent decisions by different courts have established the principle that plague contracted in a plant in which rat mortality from plague should create suspicions as to its sanitary conditions, makes the employer liable to pay a compensation just as if the patient had died from an accident while at work.

Campaign Against Malaria

The National Department of Public Health is oiling on a large scale mosquito breeding places in the departments of Famaillá and Trancas of the province of Tucumán. In the same zones and also in San Pedro and Río Chico in the province of Jujuy the department is carrying out drainage measures.

Maritime Quarantine

The insanitary conditions of almost all the ships arriving from Europe cause their detention in the port of Rio de Janeiro in order to isolate the sick and disinfect the ships. Some steamship companies have complained of this practice, as they consider as too long the periods of seven to fifteen days during which some boats have been delayed.

PARIS

March 11, 1920.

A Special Day in Aid of Large Families

On the initiative of the societies and leagues that are working to increase the birth rate in France, a special day, March 9, has been set apart on which to solicit contributions. The proceeds of the day will be distributed throughout France among such large-sized families as the most in need of assistance.

Death of Prof. G. Rauzier

Dr. G. Rauzier, professor of clinical medicine on the Montpellier Faculty of Medicine, died recently at the age of 56. He became agrégé professor in 1892, and in 1907 he was appointed professor of general pathology and therapeutics. Two years later he exchanged positions with his former teacher, Professor Grasset, becoming thus professor of clinical medicine. The last edition of the Grasset treatise on the diseases of the nervous system was put out by Grasset and Rauzier working in collaboration. In 1909, a treatise on the diseases of the aged, of which Rauzier was the independent author, was published.

The Influence of Sex on Pathology of Children

Dr. Apert, physician to the hospitals of Paris, recently published, in collaboration with M. Cumbessédès and M.

Flipo, an interesting communication on the subject of the influence of sex on the pathology of children. Aside from congenital luxation of the hip and chorea the influence of sex on the pathology of children is not marked. However, the greater frequency and the greater severity of influenza that had already been noted in young women and in women of mature age applies to young girls as well. For example, for the age group 2-9 the mortality from influenza in Paris was one and a half times as great for girls as for boys. In girls the fever is more prolonged and the complications more serious and more frequent, with the exception of epistaxis. The same is true for pertussis. Nearly all other diseases, however, show a slight excess of mortality for boys. From these facts Apert concludes that not only in matters of home training and general education but also as regards hygiene and therapeutics it is a serious error to fail to differentiate the two sexes.

The Physician as a Public Official

A medical inspector of infants and children who were the recipients of state charity, having been recalled by the prefects of three departments in which he exercised his functions, appealed to the Conseil d'état, which supported him in his contention. The Conseil d'état ruled that a physician in charge of the inspection of infants and children who were the recipients of state charity could not be considered a private physician; he represents the power of the state, and in that capacity it was his duty to see that the nurse fulfilled all the conditions required. In his official visits he represents the prefect, and, as a man of skill, it is for him to say how an infant shall be nourished. He is consequently a mandatory of the state and therefore a state official. As such he cannot be relieved of his official duties without first being informed of the act that is being contemplated, and thus be given the opportunity to demand a written copy of the charges preferred against him and to prepare and present his means of defense.

As for the physician in charge of the services in which free medical assistance is given, the situation is quite different. He is there giving medical care and is bound to his patient by the right of privileged communication. Under such circumstances the practicing physician would not be considered a state official. He is simply giving medical attention to a class of patients, in accordance with certain regulations and a special price schedule. The state in this case merely provides the medical care, and is in the same capacity as a mutual aid society or an accident insurance company.

LONDON

March 20, 1920.

Graduate Medical Education for Panel Physicians

The London Panel Committee has pointed out the necessity for the graduate education of panel physicians and the boundless opportunities afforded by the general and special hospitals of the metropolis. They suggest organization of special courses in such subjects as clinical diagnosis and treatment, radiography, tuberculosis, venereal diseases, disorders of digestion, ophthalmology, war neuroses and vaccine and serum therapy. In the months from May to September, when physicians have most time to spare, classes might be held in the evening after office hours. Classes of from twenty to twenty-five would be large enough for each member to receive some individual attention in any discussion that might and should take place after each lecture or demonstration. A course should number from eight to twelve lectures, including demonstrations. A fee of $15 would be a reasonable one for each member to pay. The value of the system is obvious if only from the point of view of individual efficiency, but there is another point—the collective efficiency of the insurance service. Changes involving the inclusion of the dependents of the present insured population are imminent. These will necessitate the physician's assuming greater responsibilities. It is hoped that in every district there may be physicians who by taking the necessary steps will become qualified to undertake some of the duties involved in one specialty or another. Classes have already been held at the Military Hospital, Rochester Row, in the diagnosis and treatment of venereal disease, and certificates signed by Lieutenant-Colonel Harrison have been issued to those considered expert in the administration of arsphenamin and similar drugs. To the holders of these, the public authorities are empowered to supply the drugs in question. It is proposed that attendance at the proposed courses shall entitle physicians to similar recognition.

The Nation's Physique

One of the results of the war is to furnish the only survey of the physical fitness of the male population of military age in this country ever made. It has now been presented to Parliament in an elaborate report by the National Service Medical Boards. The number of medical examinations during the period under review was 2,425,184, but this figure does not represent the number of men examined, as it includes reexaminations. Those examined were classed into four grades: Grade 1. Those who had attained the full normal standard of health and strength and were adjudged capable of enduring physical exertion suitable to their age. They amounted to 36 per cent. of the total. Grade 2. Those capable of only such exertion as does not involve severe strain. They amounted to 22 per cent. Grade 3. Those presenting marked disabilities or such evidence of past disease that they were not considered fit to undergo the physical exertion required for the higher grades. They amounted to 31 per cent. Grade 4. Those totally and permanently unfit for any form of military service. They amounted to 10 per cent. There are no figures to show how far this grading proved correct in the actual conditions of military service. But it can be stated that more recruits were degraded than upgraded. The figures, therefore, err on the side of overrating rather than underrating. An analysis of examinations of different groups of men between 18 and 25 years of age in one large and important district (Yorkshire) made with a view to revealing the influence of occupation on health gave the following remarkable results:

Occupations	Percentages			
	Grade 1	Grade 2	Grade 3	Grade 4
Agriculturists	71.9	15.5	8.8	3.8
Miners	68.9	15.1	10.5	5.5
Engineers	60.9	23.9	13.4	1.8
Iron and steel workers	60.2	25.6	11.2	3.0
Lace workers	45.0	26.9	22.7	5.4
Woolen trade	54.6	10.9	24.0	10.5
Tailors	33.9	21.4	33.5	11.2

It will be noticed that the miners and agriculturists show the best results. The general fall in physical fitness shown in the table is a criterion of the effects of the various occupations on the physical welfare of the workers. In the London area it was found that respiratory diseases, particularly pulmonary tuberculosis, showed an enormously high percentage in the densely populated districts of the East End. Some curious figures were given by the occupations. Thus, barbers showed the highest percentage with regard to almost every disease. On the other hand, clerks showed comparatively good results, proving that sedentary work, with due outdoor exercise, is not unhealthful. In the London area, 9.9 per cent. of the men were placed in Grades 3 or 4 on account of heart affections, and 3.1 per cent. on account of tuberculosis.

Deaths

Samuel Doty Risley ⊕ Philadelphia; University of Pennsylvania, Philadelphia, 1870; aged 75; a veteran of the Civil War; chairman of the Section on Ophthalmology of the American Medical Association in 1893; and a member of the House of Delegates in 1907; president of the American Academy of Medicine, in 1891, of the American Ophthalmological Society in 1907, and of the ophthalmological section of the College of Physicians of Philadelphia, in 1904; lecturer and assistant surgeon in ophthalmology in his alma mater from 1872 to 1879; professor of diseases of the eye, in the Philadelphia Polyclinic from 1886 to 1900 and emeritus professor thereafter; attending surgeon to Will's Eye Hospital, Philadelphia, since 1889; a member of the board of managers of the Pennsylvania Training School for Feeble-Minded; alumni manager of the University of Pennsylvania Hospital since 1896; died, April 1, following a nervous collapse.

William James Morton ⊕ New York City; Harvard University Medical School, 1872; aged 74; a pioneer in electrotherapeutics; the son of Dr. William T. G. Morton of ether fame; for nearly thirty years professor of nervous and mental diseases and of electrotherapeutics in the New York Post-Graduate Medical School and Hospital; for five years professor of diseases of the mind and nervous system in the University of Vermont, Burlington; president of the American Electro-Therapeutic Association in 1893; physician to the Department of Nervous Diseases of the Metropolitan Throat Hospital, New York City; neurologist to the Randall's Island Hospitals and the New York Infant Asylum; editor and proprietor of the *Journal of Nervous and Mental Diseases*, from 1879 to 1885; died, March 26, in Miami, Fla., from heart disease.

John D. Blake ⊕ Baltimore; College of Physicians and Surgeons, Baltimore, 1875; aged 66; vice-president of the Medical and Chirurgical Faculty of Maryland, in 1893-1894; professor of clinical and operative surgery in Baltimore Medical College; surgeon to the Maryland General and St. Agnes hospitals, Baltimore; formerly health commissioner of Baltimore; died, March 30, from heart disease.

Edgar C. Loehr, Noblesville, Ind.; Medical College of Ohio, Cincinnati, 1871; aged 69; a member of the Indiana State Medical Association; local surgeon for the Pennsylvania and Big Four systems and Union Traction Company; for two terms mayor of Noblesville; died in the Noblesville Hospital, March 29, from cerebral hemorrhage.

John Dillon Thompson, Captain, M. C., U. S. Army; St. Louis College of Physicians and Surgeons, 1897; aged 44; a member of the Washington State Medical Association; on duty at Marfa, Tex.; while on leave of absence was found dead in a hotel in Phoenix, Ariz., April 4, supposedly from an overdose of chloroform.

John Alexander Black, Cleveland; Western Reserve University, Cleveland, 1913; aged 39; a member of the Ohio State Medical Association; Lieutenant, M. R. C., U. S. Army, and discharged December 26, 1918; formerly instructor in chemistry in the University of Chicago, and in his alma mater; died March 10.

Charles H. Wagner, Minneapolis; Homeopathic Hospital College, Cleveland, 1873; aged 67; vice-president and director of the Northwestern States Portland Cement Company, Mason City, Iowa; the Trinity Portland Cement Company, Dallas, and the Northwestern Metal Ware Company, Minneapolis; died March 1.

Alexander Peter Reid, L'Ardoise, N. S.; McGill University, Montreal, 1858; L. R. C. S., Edinburgh, 1858; University of the City of New York, 1865; aged 83; formerly emeritus professor of medicine and examiner in medical jurisprudence and hygiene in Dalhousie University, Halifax, N. S.; died February 27.

Lane Mullally ⊕ Charleston, S. C.; Medical College of the State of South Carolina, Charleston, 1889; aged 53; vice dean and professor of obstetrics in his alma mater; a member of the Southern Surgical and Gynecological Association; local surgeon of the Southern Railway; died, March 25.

Elmer Melville Whitney, New Bedford, Mass.; Jefferson Medical College, 1879; aged 64; a member of the Massachusetts Medical Society and New England Ophthalmological Society; ophthalmic surgeon to St. Luke's and St. Mary's hospitals, New Bedford; died, February 27.

⊕ Indicates "Fellow" of the American Medical Association.

Thomas Stanley Crowe, Chicago; Illinois Medical College, Chicago, 1896; aged 51; a member of the Illinois State Medical Society; once physician of Cook County; Captain, M. R. C., U. S. Army, and discharged March 29, 1919; also a pharmacist; died, April 5, from cholelithiasis.

Edward Young Napier, Waverly, Tenn.; Vanderbilt University, Nashville, Tenn., 1880; University of Nashville, Tenn., 1882; aged 76; county health officer of Humphreys County and division surgeon for the Nashville-Chattanooga and St. Louis Railroad; died March 10.

Carl Augustus Meyer ⊕ Newman Grove, Neb.; University of Nebraska, Omaha, 1915; aged 30; secretary-treasurer of the Madison County Medical Society; Captain, M. R. C., U. S. Army, and discharged Sept. 12, 1919; died, February 13, from pneumonia following influenza.

Fred W. Upson ⊕ Conneaut, Ohio; Western Reserve University, Cleveland, 1882; aged 61; medical supervisor of the New York, Chicago and St. Louis, New York Central, and Bessemer and Lake Erie railroads; died, March 18, from intestinal obstruction.

Crispin Wright, Fruitland, Ida.; Denver and Gross College of Medicine, Denver, 1910; aged 37; Lieut., M. C., National Army; who served with the American Expeditionary Forces in France; died in U. S. General Hospital No. 19, Oteen, N. C., February 22.

John R. Hereford, Jr. ⊕ Major, M. C., U. S. Army, retired; Ferguson, Mo.; St. Louis Medical College, 1883; aged 58; Major and Surgeon, Thirty-Second Infantry, U. S. V., with service in the Philippine Islands; died, March 27, from cerebral hemorrhage.

Jerome Gill Atkinson, New York City; University of the City of New York, 1876; aged 76; acting assistant surgeon, U. S. Army; medical director of the Banker's Life Insurance Company of New York City; died, March 22, from influenza.

Robert Elbert Yarbraugh, Harrisburg, Ark.; University of Louisville, Ky., 1910; aged 36; health officer of Poinsett County; died in the Paragould, Ark., Sanitarium, March 20, from septicemia following an infected wound of the finger.

Frederick Charles Thompson, East Tawas, Mich.; University of Michigan, Ann Arbor, 1887; aged 53; a member of the Michigan State Medical Society; died at the home of his nephew in Mt. Clemens, Mich., March 15, from uremia.

Augustus Homer Brown ⊕ Bayside, N. Y.; College of Physicians and Surgeons in the City of New York, 1894; aged 56; for twenty years one of the police surgeons of New York City; died, April 2, from heart disease.

Helene Siverine Lassen, Brooklyn; New York Medical College and Hospital for women, Homeopathic, New York City, 1871; one of the organizers of the Memorial Dispensary for Women and Children; died, March 25.

Francis Elmer Bingham, New York City; University and Bellevue Hospital Medical College, New York City, 1913; aged 31; first lieutenant, M. C., U. S. Army, and honorably discharged, Dec. 21, 1918; died, March 25.

George W. Thompson, New York City; Eclectic Medical College of the City of New York, 1885; aged 65; professor of theory and practice of medicine and clinical medicine in his alma mater; died April 3.

Stephen Joseph Johnson, Lowell, Mass.; University of the City of New York, 1877; for two years a member of the board of aldermen, and for six years a member of the Lowell school committee; died, March 21.

John Lindahl ⊕ La Jolla, Calif.; Drake University, Des Moines, Iowa, 1888; aged 55; formerly medical director of the Swedish National Sanatorium for Tuberculosis, Denver; died, March 19.

Henry Eastwood Bickford ⊕ Memphis, Tenn.; (license, Tennessee, 1915); aged 35; in charge of the Red Cross Emergency Hospital in Memphis during the influenza epidemic; died March 21.

Alexander D. Farnsworth, Arkansas City, Kan.; University Medical College of Kansas City, Mo., 1898; aged 46; was instantly killed, January 31, by the overturning of his automobile.

Wellington R. Harring, Philadelphia; Temple University, Philadelphia, 1909; aged 42; a member of the Medical Society of the State of Pennsylvania; died, April 1, from a general breakdown.

James Miller McCready ⊕ Sewickley, Pa.; Bellevue Hospital Medical College, 1887; aged 59; died at the home of his cousin in Baltimore, March 18, from cerebral hemorrhage.

Frank Fletcher, Jenkins Bridge, Va.; Jefferson Medical College, 1869; aged 74; a member of the Medical Society of Virginia; died, February 25, from cerebral hemorrhage.

Thomas H. Wilson, Dennison, Ohio; Starling Medical College, Columbus, Ohio, 1869; aged 75; a member of the city council of Pittsburgh in 1896-1897; died, March 22.

Talbot Reed, Atlantic City, N. J.; University of Pennsylvania, Philadelphia, 1894; for two terms health officer of Atlantic City; died, March 19, from nephritis.

William Benjamin Harrison, Columbia, Tenn.; University of Louisville, Ky., 1856; aged 89; a member of the Tennessee State Medical Association; died February 5.

John R. Reeve, DeLand, Fla.; formerly of Superior, Wis.; University of Toronto, Ont., 1857; a member of the Florida Medical Association; died about March 22.

Brooks DeForest Norwood, Westport, Conn.; New York Homeopathic Medical College and Flower Hospital, New York City, 1912; aged 42; died, March 20.

John H. Young, New Cumberland, Pa.; Homeopathic Hospital College, Cleveland, 1874; aged 83; a veteran of the Civil War; also a clergyman; died March 23.

Abraham H. Faith ⊕ Denver; Medical College of Indiana, Indianapolis, 1886; St. Louis College of Physicians and Surgeons, 1892; aged 61; died February 21.

Louis Francis Keever ⊕ Parkersburg, W. Va.; St. Louis College of Physicians and Surgeons, 1913; aged 61; died, February 16, from pernicious anemia.

Parke Custis Sickler ⊕ Wilkes-Barre, Pa.; Baltimore Medical College, 1900; aged 47; died in the Philadelphia Hospital, March 6, from angina pectoris.

W. E. Swinney, McRae, Ga.; Medical College of Georgia, Augusta, 1869; aged 73; for several years city clerk of McRae; died, March 10, from nephritis.

James H. Giles, Big Sandy, Tenn.; University of Tennessee, Nashville, 1892; aged 55; died, March 18, from double pneumonia following influenza.

Alexander R. McDonald, Boyd, Wis.; McGill University, Montreal, 1882; aged 68; died in Minneapolis, March 13, from arteriosclerosis.

Alvin Marion Lakin ⊕ Yale, Ia.; Rush Medical College, 1884; aged 62; died in the Methodist Hospital, Des Moines, Ia., January 19.

William L. Bullis, Allerton, Ia.; Philadelphia University of Medicine and Surgery, 1870; aged 74; died, recently, from heart disease.

Charles E. Blacker, Indianapolis; Medical College of Ohio, Cincinnati, 1880; aged 78; died, March 23, from heart disease.

Charles S. Briggs, Nashville, Tenn.; University of Nashville, 1875; died in the Briggs Infirmary, Nashville, March 23.

William Vernon Van Norman, Los Angeles; Cleveland Homeopathic Medical College, 1898; aged 44; died March 28.

George Washington Wilson, Vaiden, Miss.; Medical College of Alabama, Mobile, 1894; aged 60; died March 23.

Samuel F. Nash ⊕ Bessemer, Ala.; Birmingham, Ala., Medical College, 1908; aged 42; died in February.

Andrew Lincoln Belt ⊕ Fort Dodge, Ia.; State University of Iowa, Iowa City, 1890; aged 58; died March 7.

Frank Fletcher Carr, Holden, Mass.; Harvard University Medical School, 1893; aged 50; died March 6.

Clarence Fletcher Swift, Harlan, Ind.; University of Michigan, Ann Arbor, 1877; died about March 10.

Edgar Leonard Walker, Moriah, N. Y.; University of Vermont, Burlington, 1883; died March 23.

D. W. Faulkner, Foxboro, Ont.; McGill University, Montreal, 1878; aged 67; died March 4.

Marriages

Howard Davis Lewis, Baltimore, to Mrs. Flora M. Gottschall of Sunbury, Pa., March 25.

Alice Mitchell De Forest to Mr. John Wilfred Drummond, both of Detroit, April 2.

Samuel J. McNeill, Chicago, to Miss Edna E. Hamilton of Toronto, Ont., March 31.

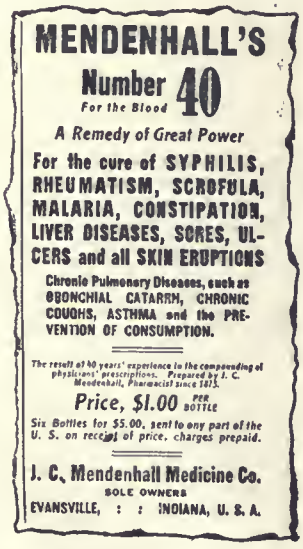
Roy Lee Smith to Miss Hazel Elizabeth Miles, both of Indianapolis, April 6.

The Propaganda for Reform

In This Department Appear Reports of The Journal's Bureau of Investigation, of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Fraud on the Public and on the Profession

SOME MISBRANDED NOSTRUMS

Mendenhall's No. 40 for the Blood.—The J. C. Mendenhall Medicine Co. of Evansville, Ind., shipped in March, 1917, some of its nostrum "Mendenhall's No. 40 for the Blood" which was misbranded. Analyzed by the Bureau of Chemistry, the stuff was reported to consist essentially of potassium iodid, cathartic resins, ammonium acetate, licorice, glycerin, sugar, alcohol and water. It was falsely and fraudulently sold as a cure for syphilis, aneurysm of the aorta, gonorrhea, eczema, rheumatism, catarrh, malaria, and diseases of the liver, kidneys and spleen. In November, 1918, the company pleaded guilty and was fined $100 and costs.—[*Notice of Judgment No. 6637; issued March 22, 1920.*]



Zaegel's Essence and Lung Balsam.—Max R. Zaegel, Sheboygan, Wis., who traded as M. R. Zaegel & Co., shipped in April, 1917, quantities of "Zaegel's Essence" and "Zaegel's Lung Balsam." The government chemists analyzed the "Essence" and reported that it consisted essentially of alcohol, water, sugar and plant extractives, including a laxative substance and a saponin. The "Lung Balsam" was also analyzed and reported to consist essentially of alcohol, water, sugar and laxative plant material flavored with oil of peppermint. The "Essence" was falsely and fraudulently represented as a cure for rheumatism, stomach, liver, bowel and kidney complaints, headaches, diseases of women and nervousness, as well as a remedy for heart trouble and a preventive of appendicitis. The "Lung Balsam" was falsely and fraudulently represented as a cure for coughs, lung and throat troubles and whooping cough and effective, when used in connection with "Z. M. O.," as a cure for pneumonia and when used with the "Essence" as a cure for consumption. In September, 1918, Zaegel pleaded guilty and was fined $110. —[*Notice of Judgment No. 6628; issued March 22, 1920.*]





McGraw's Liquid Herbs of Youth.—George W. McGraw, who traded as the McGraw Remedy Co., Little Rock, Ark., shipped in December, 1916, a quantity of "McGraw's Liquid Herbs of Youth." The Bureau of Chemistry reported that this marvel was, essentially, Epsom salt, senna, red pepper, quassia, alcohol and water with wintergreen flavor.

McGraw's Liquid Herbs of Youth was represented as a cure for rheumatism, scald head, pimples, syphilis, ringworm, headache, pains in the back, catarrh, female weakness and some other conditions and it was claimed to invigorate the nervous system and impart new life and energy to all functions of the body at the same time that it was eradicating disease. These claims were declared false and fraudulent. McGraw pleaded guilty in September, 1918, and was fined $10.—[*Notice of Judgment No. 6673; issued March 29, 1920.*]

Jarabe de Ambrozoin.—The American Apothecaries Co., Astoria, N. Y., shipped during March, 1917, a quantity of "Jarabe de Ambrozoin." The Bureau of Chemistry reported that analysis showed this product to be composed essentially of terpin hydrate, menthol, benzoic acid, ammonium chlorid, sodium bromid, glycerin, alcohol, sugar and water. It was falsely and fraudulently represented as a treatment for laryngitis, asthma, whooping cough and tuberculosis. In February, 1919, the company pleaded guilty and was fined $100.—[*Notice of Judgment No. 6642; issued March 22, 1920.*]

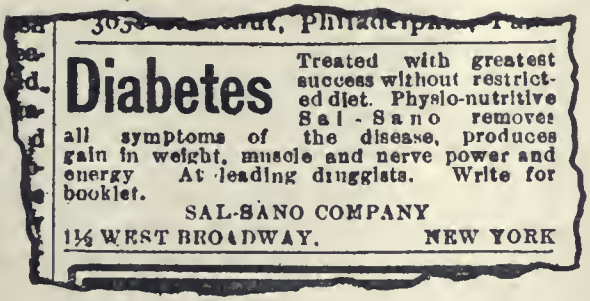


Kampfmueller's Rheumatic Remedy.—The Kampfmueller Rheumatic Remedy Co., Louisville, Ky., shipped in December, 1916, a quantity of "Kampfmueller's Rheumatic Remedy." The Bureau of Chemistry reported that this consisted essentially of potassium iodid, plant extractives, alcohol and water. It was falsely and fraudulently represented as a cure for arthritic rheumatism, articular rheumatism, inflammatory rheumatism, muscular rheumatism and rheumatic fever. In October, 1918, the company pleaded guilty and was fined $25.—[*Noticed of Judgment No. 6684; issued March 29, 1920.*]

Sal-Sano.—Ernst Bischoff, New York City, who traded as the Sal-Sano Co., shipped in July, 1917, a quantity of Sal-Sano, which was misbranded. The Bureau of Chemistry reported that analysis showed this stuff to contain essentially:

Sodium chlorid (common salt)	19.9 per cent.
Sodium phosphate	13.6 per cent.
Sodium bicarbonate (baking soda)	42.2 per cent.
Sodium sulphate (Glauber's salt)	20 per cent.

This mixture was falsely and fraudulently represented as a cure for diabetes "when in truth and in fact it was not."



In December, 1918, Bischoff pleaded guilty and was fined $100.—[*Notice of Judgment No. 6658; issued March 29, 1920.*]

Indian Wyanoke.—Albert M. Follett, who did business as Park & Russell Co., Concord, N. H., shipped a quantity of Indian Wyanoke in May, 1917, which was misbranded. Analysis by the Bureau of Chemistry showed the product to consist essentially of chloroform, ammonia, menthol, glycerin, turpentine-like oils, alcohol and water. The stuff was falsely and fraudulently represented as a remedy for diphtheria, consumption, pleurisy, pneumonia, deafness, sore eyes, rheumatism, "creeping paralysis," felons, peritonitis, appendicitis, baldness, dandruff and many other things. In April, 1919, Follett pleaded guilty and was fined $25 and costs.—[*Notice of Judgment No. 6664; issued March 29, 1920.*]

Gregory's Antiseptic Oil.—"Gregory's Antiseptic Oil" was a nostrum shipped by the C. J. Lincoln Co., Little Rock, Ark., in August, 1917. The Bureau of Chemistry reported that analysis showed the preparation to consist approximately of 89 per cent. kerosene oil with small amounts of oil of cloves, cassia and sassafras with a trace of camphor and pepper resins. The preparation was falsely and fraudulently represented as a cure for rheumatism, hog cholera, pneumonia, big-jaw, lung troubles, sweeny, asthma, bighead, coughs, blind staggers, pleurisy, blackleg, backache, sore throat, kidney troubles, consumption and one or two other things. The C. J. Lincoln Co. pleaded guilty in April, 1919, and was fined $50.—[*Notice of Judgment No. 6670; issued March 29, 1920.*]

Correspondence

A STATEMENT CONCERNING THE RADIUM SITUATION

To the Editor:—Late in the year 1912 the Bureau of Mines undertook an investigation of the radium-bearing ores situated in Colorado and Utah. This investigation resulted in the publication in 1913 of a bulletin of the Bureau of Mines entitled "A Preliminary Report on Uranium, Radium and Vanadium," by Richard B. Moore and Karl L. Kithil. Up to the time this bulletin was published, the larger proportion of the ore mined had been shipped abroad, mainly to England, France and Germany, where the uranium, vanadium and radium were extracted. One company, however, in this country was greatly interested in the extraction of radium from carnotite, and at the time of publication of this bulletin had made a good start toward the desired end.

Very few people, however, in the United States knew anything concerning these deposits, and a still fewer number had any definite idea that they might be used as a commercial source of radium. Even a large proportion of the miners had only a hazy idea concerning the fact that the ore contained radium, as the European buyers emphasized that they were purchasing the ore for the vanadium which it contained.

In 1912 no one had a real conception of the value of these deposits to the United States and to the world in general. Whereas a limited number of people knew that they contained radium and a certain number in this country were interested in the possible extraction of radium from these ores, the fact that they constituted the largest deposit of radium-bearing ore in the world was not known until the publication of Bulletin 70 of the Bureau of Mines, referred to above. On page 42 of this bulletin there appears:

> The United States possesses unique deposits in these carnotite ores. They constitute at present the largest known supply of radium-bearing minerals in the world. With the exception of the ore mined and utilized by two firms, practically every pound is shipped abroad. Up to the present very little interest has been shown by Americans in these deposits, which may not be duplicated, so far as quantity goes, in any part of the world.
>
> The only other large deposits of uranium-bearing ores are those in Austria. They are considered of such importance that the Austrian government has taken entire charge of them. The output from the carnotite fields of this country is much larger than that from the Austrian mines and is likely to continue larger for some time to come, but the ore should be mined with minimum waste and the industry should yield a maximum profit to this country.

Since 1913 the situation as regards the extraction and recovery of radium has changed, and at the present time this country produces much more radium than all the rest of the world put together.

On account of the fact that these are the largest radium deposits in the world, there has been a tendency to overestimate the amount of ore available and the probable length of time the deposits will be the source of commercial radium. There is naturally, under such circumstances, a difference of opinion as to the probable amount of ore that can be produced. No one can tell exactly just how much radium ore can be derived from these fields. To some extent the future production will depend on the price, as a much higher price would allow lower grade ore to be mined and treated. As the ore always exists in pockets of varied sizes and grades, the mining has been largely confined to outcrops, which has made the question of an estimation of the probable amount of ore available easier than if mining conditions were such as are encountered in connection with other metals. The larger proportion of these outcrops have now been worked out, and the more important companies have been and are drilling and mining small bodies of ore which have been located below the surface. It follows that as mining becomes more expensive and the grade of ore treated becomes lower, the price of radium must necessarily increase, unless very much more efficient methods of treatment are discovered than are used at the prseent time, and this is not likely.

Based on the present production and anything like the present price of radium, it is probable that the carnotite deposits of Colorado and Utah will not last as a commercial source of ore for longer than six to ten years. It is difficult to estimate the total amount of radium that has been produced in the world, but it is probably somewhere between 100 and 110 gm. of radium element. Of this amount about 70 gm. of radium have been produced in this country, and an appreciable quantity of the other 30 to 40 gm. extracted abroad have come from exported American ores. It can be readily seen, therefore, that nearly three quarters of the total world's production of radium has come from American carnotite ores.

Whereas more than 100 gm. of radium have actually been produced, there is not by any means 100 gm. available today. A considerable amount of both American and European radium has gone into the production of luminous paint for watches, clocks, electric light push buttons, etc. The amount of radium used for these purposes, however, is small in proportion to the war uses both here and abroad. The dials on the instruments used on practically all aeroplanes were marked with radium luminous paint. Radium was also used in the war for gunsights and various other purposes, and nearly the whole production of 1919 as well as a large proportion of the production of 1918 was used for war purposes in which the radium was permanently lost. Not only is this true, but as Germany, France and England were rather short on radium, especially the first nation, a considerable amount of radium abroad which previously had been used for cancer treatment was drawn on for war purposes. Even in this country a number of physicians sold their supplies. Owing to the varied uses for war purposes it is impossible to state just how much radium is left at present; but the amount is very considerably less than the 100 to 110 gm. actually produced.

Owing to these facts, to the limited life of the radium ore deposits, and to the successful use of radium in cancer work and for other therapeutic purposes, it is important that the physicians of this country should consider the matter very carefully and take such steps as are necessary to provide radium for the needs of cancer patients before the material is gone or has been used for other purposes.

In order that the radium plants may run and the extraction of radium may be possible, it is necessary to have a market for the product; and if there is not a sufficient demand for medical purposes, no one can blame the manufacturers for finding other uses. It therefore becomes necessary to find ways and means for purchasing the radium from the manufacturers while it is possible to do so.

This is partly being taken care of by private purchases for hospitals. It is difficult to estimate exactly how much radium is in use in this country at present for such purposes; but it is probably between 20 and 25 gm. Not only can the present and future situation be ameliorated by encouraging further purchases by individuals and hospitals, but great good might be accomplished by obtaining either from the government or from private sources funds to purchase a large amount of radium during the next five years which could be placed in the hands of some proper organization to be administered for the benefit of the people of the United States.

Richard B. Moore, Washington, D. C.
Chief Chemist, U. S. Bureau of Mines.

"THE CAUSE OF ABSCESS OF THE LUNG AFTER TONSILLECTOMY"

To the Editor:—In The Journal, April 3, 1920, p. 941, Dr. Clendening states his suspicion that motor-driven ether apparatus may be a frequent cause of lung abscess after tonsillectomy. He goes farther and states that the use of these machines should be discontinued until their innocence is proved.

My work is that of an expert anesthetist, and in the course of a month I probably work with a dozen different operators for tonsillectomy, thus becoming familiar with many and varied types of technic. From my own experience it would seem to me altogether too radical to condemn the use of an apparatus found so valuable by so many men on the sole argument of "post hoc ergo propter hoc."

Dr. Clendening does not mention whether the position used during operation in his cases was the dorsal one or not, nor does he say whether those patients having lung abscess following tonsillectomy were returned to bed in the dorsal position and kept so during recovery of their reflexes; but I would presume that the dorsal position was used.

Now, if ether blower and suction apparatus is responsible for the complication of lung abscess after these operations, is it not more reasonable to say that the suction portion of the apparatus is responsible in that it has made thorough tonsillectomy possible in the dorsal position and has so delayed men in changing to some position in which the throat draining is by gravity forward into the mouth, such as the lateral position of the patient's body with mouth turned down or capable of being turned down when necessary? Is there any excuse for carrying a patient back to bed, flat on his back after a tonsillectomy, to "gargle" and inhale septic throat contents and blood, when he could just as easily be transported in the prone position with the head turned to one side and so let gravity keep the airways free?

I believe that these motor-driven machines are found too valuable by a large number of operators to condemn them until we have completely eliminated the old hazardous dorsal position during operation, and especially every second of the time after operation until the patient is conscious and the reflexes are intact.

Ralph M. Waters, M.D.,
Sioux City, Iowa.

Use of "Patent Medicines" in Tuberculosis.—The extreme danger of depending in the least on "patent medicines" for the cure of tuberculosis is emphasized by the thousands of persons every year who have trusted to their false promises until so much time has been lost that their cases have become hopeless.—*Bull. Maine State Dept. of Health,* October, 1919.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARKANSAS: Little Rock, May 11-12. Sec. Regular Bd., Dr. I. J. Stout, Brinkley. Sec. Eclectic Bd., Dr. C. E. Laws, Fort Smith.

HAWAII: Honolulu, May 10-14. Sec., Dr. R. W. Benz, 1141 Alakea St., Honolulu.

ILLINOIS: Chicago, June 14-17. Director, Mr. Francis W. Shepardson, Springfield.

LOUISIANA: New Orleans, May 4. Sec., Homeo. Bd., Dr. F. H. Hardenstein, 702 Machesa Bldg., New Orleans.

NATIONAL BOARD OF MEDICAL EXAMINERS: Philadelphia, May 19-26. Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia.

NEVADA: Carson City, May 3. Sec., Dr. Simeon L. Lee, Carson City.

NEW YORK: New York, Albany, Syracuse, Buffalo, May 18-21. Assistant, professional examinations, Mr. Herbert J. Hamilton, Education Bldg., Albany.

AN INVESTIGATION OF CONDITIONS IN THE DEPARTMENTS OF THE PRECLINICAL SCIENCES

Report of a Committee of the Division of Medical Sciences of the National Research Council

JOSEPH ERLANGER, M.D., ST. LOUIS; C. M. JACKSON, M.D., MINNEAPOLIS; GRAHAM LUSK, NEW YORK; W. S. THAYER, M.D., BALTIMORE, AND V. C. VAUGHAN, M.D., ANN ARBOR, MICH.

RESOLUTIONS ADOPTED UNANIMOUSLY BY THE DIVISION OF MEDICAL SCIENCES

WHEREAS, A committee composed of Drs. Joseph Erlanger, C. M. Jackson, Graham Lusk, W. S. Thayer and V. C. Vaughan appointed by the Division of Medical Sciences of the National Research Council to study the situation in regard to the supply of assistants in preclinical departments has made a thorough study of this in the medical schools of the country and submitted a report setting forth existing conditions and analyzing suggestions as to improvement; and

WHEREAS, This study shows that there is a serious scarcity of men of proper caliber for assistants in preclinical sciences seeking such positions; be it

Resolved, By the Division of Medical Sciences of the National Research Council:

1. That this deficiency in assistants constitutes a very serious menace to medical education because not alone are there insufficient assistants for the present needs of instruction in the preclinical sciences, but the deficiency of the present inevitably must result in an inadequate number of men qualified for higher positions in the preclinical sciences, and a consequent deterioration in these departments in a very few years.

2. That since the clinical departments are in many ways dependent for their efficiency on the instruction afforded and the investigation conducted in the preclinical sciences, deterioration in the preclinical sciences will result in deterioration in the clinical departments.

3. That since these conditions enumerated under 1 and 2 exist, it is very essential that steps be taken to provide for a more satisfactory supply of assistants in the preclinical sciences.

4. That since directly or indirectly the remedy for these conditions depends to a large degree on increased budgets for salaries for assistants, instructors, assistant professors and professors, and for technicians and supplies, it is highly important that funds be secured for these purposes to prevent deterioration in the entire structure of medical education.

5. That, since this need for funds for the preclinical sciences seems so pressing, the larger proportion of funds available for developing medical education should be applied to the preclinical rather than to the clinical departments of the medical schools for the present and until such time as a more satisfactory situation is obtained in the preclinical sciences.

REPORT OF THE COMMITTEE

To the Division of Medical Sciences of the National Research Council:

Gentlemen:—Your committee appointed to consider the present paucity of satisfactory assistants in the departments of the preclinical sciences (anatomy, bacteriology, pathology, biochemistry, pharmacology, physiology, etc.) and its probable effect on investigation in the medical sciences and to advise the National Research Council through the Division of Medical Sciences of any plan that should be undertaken to correct this deficiency, beg leave to report as follows:

The data on which this report is based were gathered by means of a questionary addressed to the heads of the departments of the preclinical sciences in all Class A medical schools. When the information available was insufficient to permit of addressing it to the head of the department by name, the questionary was addressed to the department. Some of the letters must, therefore, have been addressed to nonexistent departments. And, inasmuch as two or even three subjects often are combined into one department, it must frequently have happened that one and the same individual received two or more copies of the questionary. It therefore is impossible to determine accurately the number of departments that have failed to reply. Two hundred and ninety-eight copies were distributed. We can be sure only that we have failed to hear from something over fourteen departments. The replies received up to the time this report was prepared (February 20) numbered 139. Copies of all, including thirty-one received since, accompany the report. An adequate conception of the problem can be obtained alone by reading the whole set.

Owing to the number and, in many instances, the length of the replies, it is impossible to publish all of them. This is to be regretted not alone because of their value as an exposition of the situation in medical education, but also because alone by publication in full is it possible to avoid running the risk of inadequately presenting the problem. An alternative, and the one we have been forced to adopt, is to publish a limited number of the replies. In order to avoid as far as possible the danger of making a selection on the basis of personal inclination, the arbitrary decision was made to select one reply from each of the twenty-six schools that had returned three or more answered questionaries up to the time of preparing this report. The medical schools that fall into this category are: Leland Stanford Junior University; University of California; Yale University; Emory University; Northwestern University; Rush; University of Illinois; University of Iowa; Johns Hopkins University; Harvard University; University of Michigan; University of Minnesota; St. Louis University; University of Missouri; Washington University; University of Nebraska; Columbia University; Cornell University; University and Bellevue Hospital; University of Cincinnati; Western Reserve University; University of Pennsylvania; University of Pittsburgh; University of Texas; University of Virginia, and University of Wisconsin.

The considerations determining the selection of the reply from a given school have been, first, brevity, and second, representativeness. Occasionally a longer reply has been selected because of its more thoughtful treatment of the subject. In the case of two of the schools, a second reply (Nos. 27 and 28) has been transcribed because of their unusual point of view. The replies have been edited only to the extent of obscuring the identity of the writers and of eliminating irrelevant matter. The distribution of the selected replies among the several preclinical subjects happens to be as follows: anatomy, 6; biologic chemistry, 3; biologic chemistry and physiology, 1; pathology, 6; pathologic chemistry, 1; pharmacology, 2; physiology, 5; physiology and pharmacology, 1, and experimental medicine, 1.

QUESTIONS SUBMITTED

The questions the heads of the departments were requested to answer were as follows:

1. Is your department experiencing any difficulty in filling vacancies and in holding men? If so, to what cause or causes do you attribute the difficulty?

2. Do you succeed in obtaining as assistants the best qualified men from among those eligible? If not, what becomes of such men?

3. Can you suggest a plan or plans that might lead the best qualified men to take up your subject as a career?

4. Can you suggest a plan or plans for increasing the number of men from whom might be selected assistants for the preclinical departments?

In the replies published herewith, the marginal numbers indicate the number of the question that is being answered.

REPLIES [1]

1

1. Yes. I am in receipt of innumerable requests for men to fill both academic positions and hospital laboratory positions and have no one in sight for 90 per cent. of the requests. So far I have been unable to hold any of the men that I have trained. I am able to keep them until they are well trained and then they receive offers that they should not refuse. The cause is entirely financial. It is, perhaps, especially marked in pathology as compared to other fundamental branches, because a pathologist must have a clinical training and therefore is able to accept the much more attractive opportunities offered in clinical medicine than in pathology; also hospital laboratories are increasing in importance and many of them are offering much larger salaries than men of similar experience can possibly secure in universities. Furthermore, these hospital laboratory positions in many instances offer good facilities for research work.

2. Yes. We obtain usually some of the best, eligible men as assistants because medical students recognize that advanced training in pathology is the best stepping stone to further advance in clinical medicine, just as in former years anatomy was the high road for the ambitious surgeon.

3. In my judgment there is just one solution of the problem and that is that the rewards at the top of the ladder be adequate to compensate the beginner for his period of sacrifice to attain that goal. Young men are perfectly willing to sacrifice financial advantage for some time in medicine and law as well as other professions, because at the end is a goal that is worth the sacrifice. Formerly the advantages of academic life were sufficient to induce some of the best men, and especially those with the higher ideals of work and service, to forsake the road of financial success in clinical medicine to secure the advantages that the universities had to offer. Now that the professors in clinical branches are being given all the academic privileges with much higher possibilities of remuneration, this same type of men, from whom the faculty of pathology must be recruited, naturally forsakes pathology for the clinical branches. . . . Unless a radical change is made very quickly, in a very few years there will be no competent men in pathology. There will merely be a few men who have been in pathology too long to change and young men who are taking pathology with the expectation of shifting at the earliest possible moment to one of the clinical branches. The clinical branches in the past have recruited their teachers and research men almost entirely from the laboratories in the fundamental sciences. The recent exaltation of clinical branches is merely another case of slaughtering the goose that lays the golden egg. It will be perhaps easier to put the departments of pathology on the same footing as the clinical branches than the other fundamental branches, since the pathological laboratories play such an increasingly important part in the conduct of the clinical work. To recruit the pathological faculties it is necessary to place the department of pathology on the same footing in every respect as the department of internal medicine. When the opportunities in pathology and internal medicine are equal then equally good men will be available in each subject.

4. I believe that the answer to 3 covers Question 4. When physiology and pathology offer careers corresponding to those of the clinical branches, they will have plenty of assistants, but until then, their assistants will be not only deficient in number but especially inferior in quality.

1. On account of lack of space, only seven of the twenty-eight replies selected for publication appear in this article, one from each of seven of the better supported schools. Each represents a different preclinical subject. The complete paper containing the twenty-eight representative replies will be reprinted as a pamphlet and will be sent on receipt of stamped, directed envelop.

8

1. In the past this department has had difficulties in filling vacancies. The assistants in the department have almost invariably been candidates for the Ph.D. degree, i. e., they have been men of little experience in research, in teaching, and in general knowledge of physiology. Until this year we have had few men as assistants who have had the medical degree. The department here has also had difficulty in holding men. . . . The difficulty in filling vacancies and in holding men is in my opinion twofold. One is a financial difficulty, the other is more complex and will be considered in Section 3. First, with reference to the financial condition; the highest pay which we have been able to offer to assistants has been $500 a year. . . . Furthermore, the higher places, such as instructorships, assistant professorships and the professorship, are inadequately compensated. In my opinion an instructor should not receive less than $2,400 annually, and an assistant professor should receive $3,600 or $4,000.

Top salaries for professors in the preclinical subjects throughout the country are commonly regarded as appropriately lower than that given to full-time clinical men by half or at least by several thousand dollars. I have not seen any good reason for this arrangement except that which is based on the capability of the clinician to go outside, and by devoting his time to practice, to gain larger returns. This is a possibility which the laboratory man likewise had at one time. He should not be penalized because he has surrendered it in devotion to the advancement of medical knowledge. It seems to me that the object of having full-time clinical men, as it is in having full-time laboratory men, lies in the provision for research. If both types of investigators are conducting medical research, there is no reason either in the character of the research or in its results, which justifies the distinction that has been drawn. This distinction is likely to breed a feeling of injustice in medical faculties and possibly a restlessness due to unfair discrimination. If such an attitude does arise, it seems to me that there will be a tendency for the best men to seek clinical rather than laboratory chairs.

If there is anxiety lest the laboratory departments will not be manned by the best men, the danger of such a result should be provided against now.

2. With reference to securing the best qualified men, it may be stated at once that it is rare for such men to enter service here in the laboratory departments. They go into clinical work. This tendency has been especially marked since clinical research has become prominent. It is possible now for a person having an interest in physiology, for example, to obtain work in a first class hospital in which he can satisfy his physiological interest, use physiological methods, conduct physiological research, keep in touch with patients, have room, board and laundry supplied, and frequently a satisfactory salary in addition. The meager opportunities offered in the laboratories of the medical school as compared with those in the laboratories of a very good hospital are distinctly unfavorable to men pursuing careers in laboratory subjects.

3. With regard to plans for leading the best qualified men to take up preclinical subjects as a career I wish to suggest several considerations:

(*a*) Adequate financial return for beginners, as well as for persons who have gained experience, must be provided as indicated above.

(*b*) We are in a vicious circle by not being properly manned. If a department has a professor, an assistant professor and several instructors who are all well-trained, active investigators, they by contact with the students, are able to interest them in investigation and thus increase their chances of becoming permanently attached to investigation as a pursuit. Just because we have an inadequate or ill-qualified personnel we continue to have such a personnel.

(*c*) The most important means of interesting alert, keen-minded students in medical research is by contact with investigation. I believe that inquiry among our leading investigators would show that it was some chance oppor-

tunity of learning what research really is that led them to undertake it permanently. The rigidity of the medical curriculum and its complete filling of all available time result in a definite crowding out to the possibility of men undertaking special work in any of the preclinical subjects, unless they have had some previous experience and can therefore be released from the ordinary routine. . . .

4. I believe that the plan suggested under 3 will serve to increase the number of men from whom assistants might be selected for work in preclinical departments. . . .

Besides considerations which are directed in the main towards inducing *medical* students to go permanently into preclinical branches, there should be considered the probability that we shall have to depend to a considerable extent on possessors of the Ph.D. degree for adequately trained candidates for research positions. . . . I believe that any preclinical department would do well to get into relation with the academic department of the university and count upon receiving a certain number of candidates for the Ph.D. degree as assistants. I believe that it would be a mistake in the development of medicine to have the whole department thus manned.

12

1. No more than should be expected. The chief factor is "clinical opportunities": at least what the prospective assistant believes to be clinical opportunities.

2. Yes.

3. Clinical subjects, of course, are more attractive to the vast number of men. But that this is true in the case of the very best men, I am not so sure. I would suggest that clinical subjects are in need of men of high ideals and that it is better that they be allowed to go in that direction.

4. This has always been an economic question. The salaries paid to clinical assistants are so great by comparison as to exclude all competition.

16

1. Yes. Lack of either immediate or future remuneration, commensurate with remuneration in other lines.

2. No. They go into the clinical branches.

3. Much larger salaries for present and future.

4. Much larger salaries.

19

1. None . . . since we have a fairly large department. One professor, three assistant professors, three instructors, and three assistants. The small, two and three men anatomical departments have great trouble in getting and holding their men; only the professor can survive the burden of routine work. Young men also seem more inclined to work in departments where there are several more advanced men working. We need more fully developed laboratory departments in the medical schools before we can hope to attract capable men, as they must see work being done.

2. We have trouble getting the best medical students to come in the laboratory as assistants. They go into medical practice which was their initial aim on entering the medical college. To pull a medical student into the laboratory he must be diverted from his first idea which, in 98 per cent. of the cases, was practice. Naturally the best qualified men are the most difficult to divert.

3. Increase the size of anatomy departments up to a university basis with not one but four or five professors in the department with a number of assistants and instructors and sufficient janitor service. This is the one thing that makes university departments of chemistry, etc., full of students, college graduates, willing to work four or five years to become a professional chemist with a small salary in the future. A better rate of pay will help the situation but not cure it. Fellowships and low paid assistantships are of little avail.

4. By preventing the proposed fifth clinical intern year of the medical course from becoming in all cases simply a clinical intern year, instead of largely a laboratory course in the case of many. The full-time clinical instructorship will appeal to even the few that might have come into laboratories, since they have all the advantages, etc., and in case of failure one can step right into practice. Whereas if a man fails after four or five years in the preclinical department he is almost unfitted for practice. It looks as if the medical schools must still for a long time recruit their laboratory teachers from the university science departments, and this is too bad, as American medical schools should be self-supporting in their teaching supply. . . .

21

1. Yes. Mainly lack of funds.

2. Not always. They go into clinical work, not infrequently into clinical laboratory work for a period of some years. They are aware that the time spent in this form of laboratory work is likely to bring material rewards in the future.

3 and 4. Behind any plan which promises success must stand a very large increase in funds available for increasing salaries and facilities for work. A small increase is of little avail. While no doubt other factors are important, nearly all can be traced back to the economic factor. An increase of 100 per cent. in salaries, so that $10,000 or $12,000 posts would be as common as $5,000 or $6,000 just now, would in time have a great effect. The common idea that the so-called full-time clinical man should receive twice as much as the full-time laboratory man is quite erroneous. Both should be well paid. If there is any discrimination it ought to be in favor of the laboratory man, as in the past at any rate he has had on the average the higher quality of brains. This has a definite bearing on the question why it is becoming so hard to get or to hold the best type of man in the laboratory branches. . . .

22

1. Insufficient means to provide living expenses for a group of untrained men. Insufficient means to maintain a line of promotion offering increasing income as men grow older and acquire increasing responsibilities. A widespread conviction that the highest places attainable do not provide a comfortable living.

2. No. A considerable proportion of the men in this department who have been desirable to hold have been attracted to clinical departments in universities or have taken up practice of medicine.

3. There should be a number of junior appointments (six to ten) paying the equivalent of $1,000 to $1,200 (in some instances with residence in the hospital). Several positions, at least four, ranging from $2,000 to $5,000. Salaries to heads of departments in fundamental sciences having closer approximation than exists at present to those attainable with reasonable success in other walks of life and particularly in clinical medicine. With existing conditions this requirement must be fulfilled in order to elevate the status of teaching in the community.

4. Recognition by the clinical departments that the training of men to fill the highest places in medicine or surgery requires a more intimate knowledge of pathology. A large proportion of those who are pursuing academic careers in clinical medicine should have one or two years as assistants in pathology. Provision for much more numerous junior places to train men both for clinical work and for a career in pathology.

ANALYSIS OF REPLIES

The replies often are couched in indefinite terms so that we cannot be certain that in every case we have correctly grasped the author's meaning. It would seem that at least three of the departments replying do not have assistants of any kind; that two, possibly more, have only student assistants; and that eight, namely, Hooper Institute at California; physiology at Stanford; anatomy at St. Louis University; pathology at Nebraska; physiology at Albany; physiology at Columbia University; physiology at Syracuse, and pharmacology at Western Reserve recently have not had vacancies in the full-time staff. It may be added that it is not always correct to infer that because a department has not been in

the market for assistants the conditions within the department therefore are satisfactory.

However this may be, there remain 125 departments which have recently been in quest of full-time assistants. Of these, fourteen, namely, anatomy and biochemistry at California; biochemistry and pathology at Stanford; pathology at Yale; anatomy, biochemistry, physiology and the School of Hygiene at Hopkins;[2] anatomy at Cornell; biochemistry and physiology at Jefferson; anatomy at Colorado, and physiology at Bowdoin, state more or less definitely that they have had no difficulty or no more than the usual difficulty in filling their vacancies. In many of these instances unusual circumstances are referred to, such as climate, funds or university relations, which, in the opinion of those interrogated, tend to compensate for recognized difficulties. One hundred and nine state definitely that they are unable to fill, or are having difficulty in filling vacancies, or are unable to hold men.

The second question, namely, "Do you succeed in obtaining as assistants the best qualified men from among those eligible?" was framed for the purpose of ascertaining whether students from preclinical departments, who seemed best able to develop the preclinical sciences, were entering and remaining in the departments of the preclinical sciences. The replies to this question show that of the departments that are manned by full-time assistants and within recent years have been in the field for men (126 in number) all believe either that they do not, or do not in general get as assistants the best qualified men, or that when they do get such men they cannot as a rule hold them longer than from one to three years, or they give a noncommittal answer, excepting one department in each of the following eight schools: Colorado, California (Hooper Institute), Stanford, Bowdoin, Hopkins (?), Michigan, Jefferson and Hopkins School of Hygiene.

According to the answers, the better men on graduation mainly go into practice; some go into commercial and hospital laboratories, while the pick of them go into the full-time clinical departments or research institutes. This also seems to be the fate of the promising men who enter the preclinical departments, usually to leave after one to three years of experience.

In our opinion these statistics leave no reasonable room for doubting that there is a paucity of satisfactory assistants in the departments of the preclinical sciences. The better graduates as a rule do not seek positions in these departments; or, having for one reason or another become members of such a department, they do not as a rule remain very long in it. The effect this deficiency in satisfactory assistants must have both on the quantity and on the quality of research accomplished in the fundamental sciences, not alone by the assistants themselves but also by the older and better trained men who are making or hope to make the preclinical sciences their life work, is so obvious as not to require comment.

The difficulty in filling vacancies and in holding men (Question 1), and the inability to interest the better men in careers in the preclinical sciences (Question 2), both are attributable to the same causes and, to refer now to Question 3, any plan calculated to lead into the preclinical sciences their fair share of the best qualified men must of course take these causes into consideration. The replies show, both by the causes assigned and by the plans proposed, that the situation is quite complex; many, indeed most, refer to more than one factor. The opinion, however, is nearly unanimous that insufficient salaries is one of the causes—that improvement in the salary situation alone is all that is necessary to relieve the immediate situation. It is referred to as a cause of the difficulty, or is mentioned as one of the ways of overcoming the difficulty in all of the replies save two or three. Two of those interrogated (Nos. 27 and 28) are of the opinion that inadequate salaries are not the chief factor.[3] The fault, though, is by no means entirely with the salaries of the assistants; for, even under present conditions, it seems possible in many of the schools to obtain excellent assistants who remain for a year or two in order better to prepare themselves for practice, for commerce, or for a career in one of the clinical departments. Rather, the main deterrent is the prospect that if one actually should achieve success, the final goal would fall far short of furnishing as large a salary as preclinical heads feel they are entitled to receive. To quote an expression frequently found in the replies—the salaries are too low "all along the line."

The answers make it clear that it is no longer true, if it ever was, that a man will choose an academic career when he knows that even if he should achieve distinction he would have to forego the prerogatives and comforts that now can be gained by any one of similar attainments in other walks of life who meets with a fair degree of success. It would seem to be the general opinion that a small increase in salaries would not suffice to check the movement away from pure science.

Two of those interrogated seem to fear that any *great* increase in salaries "would defeat its own end by attracting men by reason of their unfitness." This danger could readily be avoided if, as some suggest, beginners were tried out for two or three years on annual appointments before they actually were made members of a department. All that can be said with regard to this opinion is that the men occupying the preclinical posts that pay the largest salaries certainly are not any less productive than men in other places. We are of the opinion that research would suffer less if the goal were a living in ease and comfort rather than a constant effort to maintain a respectable standard of living.

A fruitful source of discontent apparently is the present movement to pay full-time clinicians larger salaries than the men in the preclinical branches. This subject is specifically mentioned in twenty-eight of the replies, and many others refer to it indirectly. It is pointed out that "a man who studies medicine will naturally be more attracted to the clinical branches where he can now find good opportunities for research and at the same time not cut himself off from the possibility of earning a respectable living;" that "the remuneration of men in the preclinical branches must be raised to that of men doing full-time work in the clinical subjects," "or their assistants will not only be deficient in number but especially inferior in quality." One almost gains the impression that some would actually reverse the situation, so far as salaries are concerned, so as to offset the natural tendency on the part of medically trained men to remain in the clinic and deal with practical things. Further comment on this topic is unnecessary; the replies accompanying the report make the situation quite clear.

But while insufficient pay "all along the line" evidently is the most important factor accounting for the paucity of preclinical assistants, there are other factors that are not without significance. A surprisingy large number are mentioned in the replies. This perhaps is to be expected. For, owing to the state of mind the unsatisfactory conditions in the university world tends to develop, aggravations which ordinarily would not be worth mentioning assume an importance to the individual that compels emphatic assertion. Furthermore, a questionary of this kind affords an opportunity to lay bare difficulties and differences which may be more or less local in their significance. In an effort to ascertain the fundamental difficulties it is essential not to attach

2. The questionary was sent to but one of the departments of the School of Hygiene.

3. These are the two replies that are quoted in addition to the reply that has been selected as representative of opinion in its school.

undue weight to such matters. A few of the factors mentioned as partly responsible for the present situation that seem worthy of more serious consideration are listed below, together with the running comments of the committee.

1. Insufficient staff—junior and senior.
2. Lack of facilities.
3. Difficulty in finding time for research.

If the necessary assistants could be found, these causes of discontent could be remedied by increasing budgets.

4. Supply not equal to demand due to call for men in the industries and in developing schools.

This state of affairs may be temporary, but in any event points to the need of increasing the number of men preparing for a career in science. Possibly, as most believe, the supply could be increased by increasing salaries and budgets, though changes in educational methods may also be necessary.

5. Dearth of men qualified to fill positions.

If true, either training is at fault, or it may be due to failure of men to prepare themselves for a scientific career because they know nothing of it, or, knowing of the career, they regard it unattractive or without opportunities or promise.

6. The men are committed to clinical work from the beginning.

This could be unqualifiedly true only of men who are slated for definite positions in practice. All others, after learning to know something of research, might be swayed to take it up.

7. Attractiveness of clinical work.
8. Majority prefer doing their work in relation with patients.
9. Greater pay and opportunities in full-time clinical departments, together with the possibilities of stepping into practice:
   (*a*) If productive ability should cease.
   (*b*) If promotion is blocked, or
   (*c*) If larger returns are wanted.

Probably true; and if true it would be necessary to increase the attractiveness of the *fundamental* departments if the superstructure is not to topple over; this could be accomplished only apparently by supplying more funds for all purposes, and especially for the purpose of removing any discrepancy in salaries.

10. Possibility of doing as much research while practicing as while teaching.
11. Nonteaching positions offer better opportunities for research.
12. Commercial laboratories not alone offer more pay but the opportunity for research with no teaching.

This is true, at least in part, and such places will always be sought by those who are interested in research but not in teaching. Judging by the emphasis all have laid on investigation there is no doubt but that the vast majority of men who go into science do so because they are interested in research primarily. It must, therefore, be recognized that the best investigators will not go into or remain in university work unless ample time and every facility are provided for research. In addition, there should be university positions to take care of unusually productive men who do not care to teach. This should not be left solely to research and commercial institutions.

13. Falling off in attractiveness of teaching and research as a learned profession.
14. Few interested from the purely scientific side.

We doubt if teaching is any less attractive now than it ever was, present conditions merely serving to emphasize a condition which always has existed in the sciences. The indications are rather that interest in research in pure science by no means has waned; all are pleading for an opportunity to do more, and recommend that research be used as the lodestone by which to attract men into the preclinical sciences as a career.

15. Attitude of the public toward universities.
16. Commiseration.
17. Lack of academic recognition.

It is a mistake to believe, as many apparently do, that the average teacher and investigator is going to exert any influence over any but his immediate colleagues and students. Personal characteristics, but especially financial limitations, are largely the factors at the bottom of these sources of discontent.

18. Unsympathetic attitude of clinicians toward research.

Men holding this attitude toward research in general have no place in our schools.

19. Insecurity of tenure of office.
20. Autocratic university administration and university politics.
21. Treatment of men in departments as subordinates rather than as colleagues.

These are not very often referred to, though a number include in their plans for improving conditions security of tenure after ability has once been demonstrated by a probationary period.

22. Medical curriculum too rigid.
23. State board rule requiring an intern year and not permitting a laboratory year in its stead, limits choice of students.

These are frequently mentioned; they seem to discourage the preclinical heads because they reduce the opportunity for training advanced students, a type of teaching to which none object.

Without going into further detail, the main impression this list leaves is that the majority of men are attracted to the preclinical sciences because they are interested in research primarily. Therefore, to interest men in these subjects and to keep contented those who have already committed themselves to them, it would seem to be necessary not alone to increase salaries but also to give to those who are fitted for investigation the maximum of time and facilities for the conduct of such work, relieving them as far as possible of teaching and of departmental routine. This again becomes a matter of finance.

The opinion frequently is expressed that only rarely will it be possible under the present circumstances to obtain recruits, for some of the preclinical sciences, at least, from among medical students; that in the future it might be necessary or even advisable to depend on philosophical students as a source of supply. Some go so far as to maintain that we shall have to go outside of the medical sciences for men. If the preclinical departments were departments of a university, as they should be and often are, there is no reason why they should not, as they do now, choose assistants from their philosophical students and graduates as well as from their medical students and graduates. But to deprive the heads of the preclinical departments of the opportunity of training investigators, of turning out their own students, would merely have the effect of adding another source of aggravation to the many they are contending with already.

But, to judge by the replies, to substitute graduates in philosophy for graduates in medicine as assistants would merely have the effect of postponing the evil day; for it would seem that, recognizing the power of the M.D. degree, as many of the former, who are now in the preclinical sciences, as find it possible carry work toward that degree and then go into practice. Furthermore, it will be noted that

it is not alone the "medical professors" who are dissatisfied, but the "lay professors" as well.

Finally, attention might be drawn to a suggestion that is frequently found (in at least twenty-two of the replies), in connection with Questions 3 and 4, with regard to means by which men might be led to enter a preclinical science as a career, because it is one which possibly could be put into effect, though, perhaps, it should not be tried until the main difficulty has been met. This suggestion is to put at the disposal of the preclinical departments a number of attractive assistantships and research fellowships so that a man who wished to obtain additional training in one of the fundamental medical sciences, either for the purpose of better preparing himself for practice or for a post in a clinical department, would find no financial obstacle in his way. It is felt that some of the men availing themselves of such appointments might become sufficiently interested to give up their first intentions and become full-time members of a department of a preclinical science. In this way, possibly, depletion of the fundamental departments through transference of men to clinical departments could be avoided.

CONCLUSIONS

The committee is convinced that:

1. There is a great paucity of satisfactory assistants in the preclinical departments.

2. Insufficient immediate and prospective financial support of the preclinical departments as compared with financial support obtainable in other directions is the main, though perhaps not the only, deterrent.

3. This paucity is seriously hampering the development of the preclinical sciences and, through them, of medicine as a whole.

RECOMMENDATIONS

1. In the opinion of the committee, the only effective step the council could take in the matter would be immediately to inform of the actual state of affairs those who alone have it in their power to remedy the situation, namely, the trustees and executives of universities, the medical profession and public-spirited citizens.

2. In the committee's judgment, the most effective and only practicable way of accomplishing this end would be to publish the foregoing analysis of the replies to the questionary, together with a representative reply from each of some twenty to thirty schools, editing the replies only to the extent of obscuring the identity of the writer and of eliminating irrelevant matter.

Occupational Diseases.—In a monograph on the occupational factor in tuberculosis, Dr. G. M Kober states that diseases of occupation are everywhere assuming more and more importance, not only to wage earners and employers, but also to physicians, who, in order to make an early diagnosis and give the patient the full benefit of treatment, should know the conditions injurious to health under which our fellow men and women live and work. In countries and states where reports of certain occupational diseases are compulsory, it is quite possible to secure fairly reliable data as to the number of cases of specific industrial poisoning. Such special investigations are all the more important when it is remembered that even the most complete statistics fail to reveal all the factors which influence the health and longevity of operatives. Great differences are found in the conditions under which the work is performed, some of which are entirely avoidable, while others are not, and it is hardly fair to characterize certain trades as dangerous when experience has shown that no harm results when proper safeguards have been taken. In the consideration of this question, the personal element of the workmen, their habits, mode of life, and their physical fitness cannot be ignored.—*Pub. Health Rep.*, March 26, 1920.

Social Medicine and Medical Economics

PROPOSED PUBLIC HEALTH REORGANIZATION IN NEW YORK

Senate bill 1533, introduced into the New York Legislature on March 25, provides for an extensive reorganization and amplification of the state public health machinery. It might be regarded as an alternative and substitute for the Davenport Compulsory State Health Insurance Bill. It seeks to remedy alleged evils through the development of state public health rather than through compulsory health insurance. The bill provides that the board of supervisors (which corresponds in New York to the county commissioners in other states) of the county, with the approval of the state commissioner of health, may establish such a county, or any part of a county, as a health district and in such event shall appoint a board of health for each district consisting of five members, at least one of whom shall be a physician. The members of the board are to receive actual expenses but no salary. The board is authorized to appoint a district health officer possessing such qualifications as the public health council (an advisory body to the state department of health) may prescribe. His salary is to be fixed by the district board of health. The board of supervisors is authorized to establish a health center, or centers, which shall include (1) the erection of a new hospital, or arrangements with existing hospitals, with special provisions for hospital treatment of tuberculosis and other communicable diseases, maternity cases, children and mental diseases; (2) clinics for outpatients, including maternity, prenatal and child welfare clinics and clinics for tuberculosis, venereal diseases, mental and nervous diseases and defects, dental clinics, schoolchildren clinics and general surgical and diagnostic clinics; (3) for clinical, bacteriologic, roentgen-ray and clinical laboratories, auxiliary to the state laboratories and affording facilities for the diagnosis and treatment of disease; (4) for public health nursing service for all parts of the district; (5) for cooperation with the department of education in securing proper medical supervision and medical school inspection for schoolchildren; (6) for a periodic medical examination for such inhabitants of the district as desire it and are willing to pay a proper charge therefor; (7) for headquarters for all other public health, medical nursing and other public welfare agencies of the district. In addition to levying taxes for these purposes, the board is authorized to accept and hold in trust for the county any gifts or bequests that may be made for this purpose.

The board of supervisors is authorized to appoint a board of managers of the health center consisting of seven members, one of whom shall be the county judge, one, a woman and two, legally qualified physicians. The board of managers is authorized to appoint a superintendent to the health center and to fix his salary, to exercise general management of the center and to make rules and regulations for the care and treatment of patients and the fixing of fees and salaries. Compensation for physicians and surgeons rendering services in hospitals and clinics is to be fixed by the board of managers. The board is also authorized to erect buildings, to appoint medical boards and members of the various staffs, to employ public health nurses, to equip and maintain the health center, to keep all records, and to collect and disperse all money received. The city council of any city in the state is authorized to establish one or more health centers in the city and to exercise all of the powers conferred on the county boards of supervisors.

The last section of the bill provides for state aid in the creation and administration of health centers. In the con-

struction and equipment of hospitals, one half of the cost, not to exceed $750 a bed nor one bed for each 500 of the population affected, is to be defrayed by the state. A state grant is provided of 75 cents per day for each free patient and for one half of the cost of the installation of the outpatient clinic, not to exceed $5,000, for the expenses of free clinical treatment, not to exceed 50 per cent. of the cost nor an average of 20 cents per treatment. The state will also pay one half of the actual cost of laboratories, not to exceed $1,500 for the initial installation and equipment nor $3,000 for the maintenance of each laboratory. The state is to contribute at the rate of 10 cents per capita per annum toward the salaries of deputy health officers in health districts with a population of less than 1,500, and of 5 cents per capita per annum in districts with a population of from 1,500 to 3,000, this amount to be in addition to the salaries paid the district health officers by the county board of supervisors. The work of all health centers, hospitals, clinics and laboratories is to be subject to inspection and standardization by the state department of health, and state grants are to be paid only on the written approval of the state commissioner of health following such inspections. One hundred thousand dollars is appropriated for expenses to be incurred by the state department of health in putting this act into operation.

This bill adroitly combines in one measure provisions for county boards of health and whole time health officers, county hospitals, local health centers and dispensaries, public health nurses and local laboratories and opportunities for periodic medical examinations for the public. It aims to meet the need for better medical services, especially in rural districts, through the development and expansion of state public health organization and activities rather than by the creation of a system of compulsory health insurance. The creation and administration of departments or boards for the conservation of the public health have come in the last fifty years to be recognized as a legitimate function of the state. Compulsory, state supervised insurance is a new and untried plan in this country. If the proposed elaboration and extension of state public health functions and activities will be as effective in correcting the alleged evils as the proposed compulsory health insurance plan would be, then the burden of proof is on the proponents of compulsory health insurance to show why their plan should be adopted rather than that of the extension of state public health functions with which the American people are familiar.

NEW YORK CHAMBER OF COMMERCE OPPOSES COMPULSORY HEALTH INSURANCE

The New York Chamber of Commerce at a regular meeting held April 1 unanimously adopted a report presented by its committee on insurance, opposing the bill introduced by Senator Davenport providing for compulsory state health insurance. The committee recommended, a year ago, that a commission be created to make a comprehensive study of health insurance on behalf of the state. This recommendation was not followed. Further study of the subject has convinced the committee that compulsory health insurance attacks the problems involved from the wrong point of view and is economically unsound and unwise. In support of this conclusion the committee submits nineteen general statements, from which we quote:

It is opposed to sound public policy in a democracy, in fostering objectionable class distinctions and a dangerous tendency toward a stratification of industrial society.

It is opposed to public policy in favoring a further encroachment on private rights and privileges, including the most personal concerns of the individual, and the supervision, control and direction of the person in matters of health and welfare.

It is a danger to democracy, in that the promises made are impossible of fulfilment, and on this ground will ultimately create an unwholesome industrial unrest.

It is a delusion in that the poorest poor, who are most urgently in need of sympathetic medical and financial support and assistance, are largely if not wholly outside the sphere of social insurance activities of any and every kind.

Such demand for compulsory health insurance as exists has been artificially created by a skilful propaganda.

It is at best a palliative, and does not reach the seat of the difficulty.

It does not promote the health of the individual, but rather fosters a tendency toward malingering and an undue prolongation of minor ailments for the purpose of wrongful gain.

Experience in other countries shows that medical treatment under its rules results in a standardized method of mediocre practice—the doctor who gives his whole time to the service reduces his profession to a mere trade; the doctor who gives only part of his time to the practice is bound to give it indifferent attention.

Experience abroad has also shown that medical practice under this system tends strongly toward a system of public medicine, opinion being divided as to whether under such a system private practice should be allowed at all, or whether the system should be universal; in other words, whether the doctor should become a state employee, leaving private practice and the work of the specialists to the few who are unwilling to submit themselves to state control.

All the estimates in England have been more or less at variance with actual experience. The state contribution has been very much greater than had been assumed would be necessary at the outset.

Compulsory health insurance is an elaborate bureaucratic scheme which controls wage-earners' lives and wage-earners' incomes. The hope held out that the institution to be created will be thoroughly democratic and, apart from the overhead charges, self-sustaining, never has been and probably never will be realized. Control of essentials soon passes into the hands of the state authorities, with a corresponding increase in the power of bureaucracy.

Medicolegal

Mental Reservations of Illegal Practitioner Not Recognized

(Pickard v. Commonwealth (Va.), 100 S. E. R. 821)

The Supreme Court of Appeals of Virginia, in affirming a judgment of conviction of defendant Pickard, a colored man, says that he was convicted and sentenced to pay a fine of $250, and to confinement in jail for three months, for practicing medicine without having obtained a certificate from the state board of medical examiners. He had been for a number of years engaged in selling, through the agency of a drug store, certain proprietary medicines of his own manufacture. He maintained an office, where his patrons would resort to consult him, and he would advise them which of his remedies, if any, was suited to their case, and direct them to the drug store where it could be bought. Subsequently he had his business incorporated, and sold his medicines direct to the trade without the intervention of a druggist. He described his general course of business substantially as follows: When a customer would call for a particular medicine, he would sell the remedy wanted, while others would describe their symptoms, and he would prescribe which of his medicine would suit the case. In such instances he stated that he made no charge for advice and received only the price of the medicine.

A witness for the commonwealth testified that her son, aged 5 years, was ill, and she took him to the office of the accused for medical advice and treatment; that he placed the child on a table and felt his pulse and examined his tongue for a few minutes, and said: "'Well, I tell you this child has the kidney trouble, and has it right bad,' and if I didn't attend to it right away it would go into meningitis or something bad." The witness requested him to prepare the right medicine for the child; but he said it would take him a long

time, and told her to come back the next day. She returned accordingly and paid him $2 for the medicine. She had heard that he could tell what was the matter with the child as soon as he saw it, and went to his office to consult him as a physician. He did not tell her the name of the remedy, but said he would prepare a medicine that would be suitable treatment. After taking the medicine the child grew worse, and she called the accused to the telephone and told him of the child's condition. He advised her to give him one or two tablespoonfuls of "Syrup of Figs" until it acted, and then give him his medicine again. The accused in essentials corroborated the testimony of the witness. He admitted that he diagnosed the case and prescribed for the patient, and compounded and supplied the remedy for compensation. He moreover acknowledged that he had done and was then doing the same thing for numerous other patients; that he claimed and announced to the public generally his ability to diagnose diseases and compound and furnish remedies for their cure. Yet he qualified his statement by alleging that he did these things, not as a physician, but to advertise his medicine, and charged for the medicine, and not for examinations and advice. He confessed that he had never been examined by the board of medical examiners, and held no certificate from them, and had no right to practice medicine in the state. The verdict of the jury was fully sustained by the evidence.

The law does not recognize the mental reservations of the accused, by which he bunglingly attempted to escape the consequences of his flagrant and habitual violations of the law. The object of the statute is to protect the public against just such impostors. A number of exceptions were taken by the accused during the progress of the trial to rulings of the court, but they did not call for special notice, since the case plainly came within the rule that, when the appellate court can see from the entire record that no other verdict could rightly have been found under correct instructions, or that the accused could not have been prejudiced by the rulings of the trial court, it will not reverse the judgment and set aside the verdict.

Hospital Treating White Patient as a Colored One

(Collins v. Oklahoma State Hospital et al. (Okla.), 184 Pac. R. 946)

The Supreme Court of Oklahoma, in affirming a judgment sustaining a demurrer to the petition in this action for alleged libel holds that a cause of action for libel cannot be maintained against a hospital for the insane on account of the act of its officers and employees in placing a white patient in that part of the institution set apart and used for colored patients. The court says that it was alleged in the petition that the defendant state hospital was the successor to a sanatorium company; that the plaintiff took his daughter, who was a white person and insane, to the sanatorium company for treatment, she being received and placed in a ward used by the white people; that a few days thereafter those in charge of the institution placed her in a ward set apart for negro patients, and entered on its records opposite her name the word "colored," and thereby held her out to the world as having negro blood, which condition continued about six months. To write of or concerning a white person that the person is colored is libelous, in and of itself, in Oklahoma. But, under the allegations of the petition, the writing of the word "colored" opposite the name of the patient, on the records of the institution, was not a publication, as it was not alleged that it was ever seen by any one, or that the books had ever been examined by any one whatsoever, or that the word thus written had ever been seen or read by any person whomsoever. This was necessary before an action of libel could be based thereon, so far as the writing of the word was concerned. Necessarily the person who wrote the word in the books must have seen it, but that person must have been the agent of the corporation, if the act was said to be the act of the corporation, and such agent was for that purpose the corporation itself. It can hardly be said to be a publication of a libel for one to show the libelous matter to himself.

Nor can the court say that placing a white patient in that part of the institution set apart for colored patients comes within the application of the Oklahoma statute so as to make it libelous. However, if it were libelous, the court doubts exceedingly whether, under the provision of the statute, the plaintiff would have a cause of action therefor.

For a second cause of action it was alleged that the defendants did commit a wrongful libel by publishing a written statement made by them to the plaintiff, in the form of a letter which stated that, in answer to one of his, I "beg to say that Lee Collins (Col.) is in fairly good mental condition; also good physical condition," etc. But the court is of the opinion that the entire contents of this letter was privileged. It was written by the superintendent of an institution having in charge the patients of the state, helpless and unfortunate as they were, to the father of one of the patients, no doubt grievously interested in that patient's welfare. The law as well as the dictates of common humanity imposed on the superintendent of that institution the duty of answering inquiries of such character, and likewise the duty of answering fully, fairly and freely as to the condition of the patient inquired about. As the court views it, the subject-matter of the letter was Lee Collins, and it was the duty of the superintendent to write to her father, not alone as to her mental and her physical welfare, but any other fact or circumstance which he should know in order that he might be the better enabled to aid and assist in her comfort and welfare. If she was regarded at the institution as colored, it was his duty to inform the father of that fact, so that, if an injury was being done to her, it could be remedied; and if the letter, which was the publication complained of, was protected by the rule of being qualifiedly privileged in all other things save and except the use of the abbreviated word "Col.," then the entire subject matter of the letter was likewise within the rule.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, New Orleans, April 26-30.

Air Service Medical Assn. of the U. S., New Orleans, April 26.
Alabama State Medical Association, Anniston, April 20-22.
Alpha Omega Alpha Honorary Fraternity, New Orleans, April 26.
American Association of Anesthetists, New Orleans, April 26-27.
American Association of Physicians, Atlantic City, May 4-5.
American Association for Thoracic Surgery, New Orleans, May 1.
American Dermatological Association, Asheville, April 22-24.
American Gastro-Enterological Assn., Atlantic City, May 3-4.
American Gynecological Society, Chicago, May 24-26.
American Laryngological Association, Boston, May 27-29.
American Medico-Psychological Assn., Cleveland, O., June 1-4.
American Otological Society, Boston, May 31-June 1.
American Pediatric Society, Highland Pk., Ill., May 31.
American Proctologic Society, Memphis, Tenn., April 22-23.
American Psychopathological Assn., Cleveland, O., June 5.
American Radium Society, New Orleans, April 26.
American Surgical Association, St. Louis, May 3-5.
American Therapeutic Society, Philadelphia, May 7-8.
Arkansas Medical Society, Eureka Springs, June 8-9.
Assn. for Study of Internal Secretions, New Orleans, April 26.
Assn. of Amer. Teachers, Diseases of Children, New Orleans, April 27.
Assn. of Military Surgeons of the U. S., New Orleans, April 24.
California State Medical Society, Santa Barbara, May 11-13.
Connecticut State Medical Society, New Haven, May 19-20.
Georgia Medical Association, Macon, May 6-8.
Illinois State Medical Society, Rockford, May 18-20.
Iowa State Medical Society, Des Moines, May 12-14.
Kansas Medical Society, Hutchinson, May 5-6.
Louisiana State Medical Society, New Orleans, April 24-26.
Maryland, Med. and Chir. Faculty of, Baltimore, April 27-29.
Massachusetts Medical Society, Boston, June 8-9.
Medical Veterans of the World War, New Orleans, April 26.
Michigan State Medical Society, Kalamazoo, May 25-27.
Mississippi State Medical Association, Jackson, May 11-12.
National Tuberculosis Association, St. Louis, Mo., April 22-24.
Nebraska State Medical Association, Omaha, May 24-26.
New Hampshire Medical Society, Concord, May 12-13.
North Carolina State Medical Society, Charlotte, April 20.
Ohio State Medical Association, Toledo, June 1-3.
Oklahoma State Medical Association, Oklahoma City, May 18-20.
Rhode Island Medical Society, Providence, June 3.
South Carolina Medical Association, Greenville, April 20-21.
So. Section Am. Laryn., Rhin. & Otol. Society, New Orleans, Apr. 27.
Texas State Medical Association, Houston, April 22-24.
The Radiological Society, New Orleans, April 23-24.
Western Electro-Therapeutic Association, Kansas City, Mo., May 27-28.
West Virginia State Medical Association, Parkersburg, May 18-20.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

March, 1920, **19**, No. 3

*Dilation of Colon in Children. A. E. Meyers, San Francisco.—p. 167.
*Osteogenesis Imperfecta Congenita. H. M. McClanahan and W. W. Willard, Omaha.—p. 181.
*Chondrodysplasia: Multiple Cartilaginous Exostoses. H. L. Dwyer, Kansas City, Mo.—p. 189.
*Calcium Metabolism of Infants and Young Children and Relation of Calcium to Fat Excretion in Stools. L. E. Holt, A. M. Courtney and H. L. Fales, New York.—p. 201.
*Renal Function in Scarlet Fever. B. S. Veeder, St. Louis and M. R. Johnston, M. C., U. S. Army.—p. 223.
Improved Needle for Sinus Therapy. A. Goldbloom, New York.—p. 229.
Review of Literature on Respiratory Diseases. L. C. Shroeder, New York.—p. 231.

Dilation of Colon in Children.—Myers is of the opinion that spasm is a cause of dilation of the colon. He reports one case in a child, aged 4 years, which was diagnosed both clinically and with the aid of the roentgen ray. Constipation dated from infancy and had been persistent. All sorts of drugs were tried, but no attention was given to the preponderance of starch in the diet. Assuming that spasm was playing a rôle in this condition, the child was put on increasing dosages of atropin, starting from 5 drops of a 1:1,000 solution, until the child complained of dryness of the mouth. Gradually, well done toast, cooked fruit and green vegetables were added to the diet and the atropin was decreased. The constipation ceased after the spasm was relieved and normal defecation followed. Five other similar cases are cited in which the starch free diet and atropin yielded equally good results.

Osteogenesis Imperfecta Congenita.—The study of the bone in the case reported by McClanahan and Willard showed evidence that the osteoblasts rising from vascular fibrous bone marrow, because of insufficient nourishment or some toxic influence, did not develop properly, but remained polygonal and later underwent metaplasia into osteoclasts. The patient was only 3 months old. Death occurred from exhaustion. According to the authors, this patient is the youngest dying from this disease on who a necropsy was performed with subsequent histologic study of the bones. A complete report of the findings is made.

Chondrodysplasia: Multiple Cartilaginous Exostoses.—Three members of one family were victims of cartilaginous exostoses. They were aged 7 and 29 years, and 20 months, respectively. The oldest patient was the father of the other two patients. The mother and another daughter, 5 years of age, were not affected. The bones involved were the tibia, femur, humerus and scapula. The cases are reported in detail, and the literature is reviewed.

Calcium Metabolism of Infants and Young Children.—In this paper the authors discuss the calcium metabolism of older children taking a mixed diet. Both healthy and rachitic children were the subjects of this study. With children taking a mixed diet, the absorption of calcium per kilogram was lower than that of infants taking modifications of cow's milk, averaging when the intake was adequate, 0.055 gm. of calcium oxid per kilogram. An intake of at least 0.09 gm. of calcium oxid per kilogram is necessary to insure a good absorption by children taking a mixed diet. The best absorption of calcium oxid occurred when the intake of fat exceeded 3.0 gm. per kilogram, and when, at the same time, for every gram of fat there was in the diet from 0.03 to 0.05 gm. of calcium oxid. When calcium in the form of chalk mixture (calcium carbonate) were added to the diet, there was a greatly increased absorption of calcium. When calcium was added as calcium acetate or as calcium phosphate the absorption was not increased. The excretion of calcium was not so closely related to the intake of calcium as in the case of infants taking modifications of cow's milk, and was not at all related to the fat intake. The calcium absorption of children with active rickets was lower than that of normal children, even though the calcium intake was ample. The calcium excretion in the stools was somewhat higher than the average excretion in the stools of normal children. During recovery from rickets, the absorption of calcium was higher than the average for normal children. This improvement accompanied the taking of cod liver oil or additional butter with a diet containing an ample amount of calcium. The calcium extretion in the stools of children recovering from rickets was lower than in the stools of normal children. Cod liver oil increased the absorption of calcium, except in cases in which the intake of calcium or of fat was very low. The substitution of vegetable fats for milk fat did not affect the calcium metabolism of children taking a mixed diet.

Renal Function in Scarlet Fever.—The observations made by Veeder and Johnston in seventeen cases of uncomplicated scarlet fever and in two cases of scarlet fever with nephritis proved that, as a routine measure, the urinary examination for albumin, as ordinarily carried out in scarlet fever, is of more value than the functional tests in announcing the onset of an impending kidney complication.

American Journal of Public Health, Boston

March, 1920, **10**, No. 3

Defense of Public Health Appropriations. E. C. Meyer, New York.—p. 201.
Control of Degenerative Diseases. F. S. Crum, Newark, N. J.—p. 210.
*Studies on Malaria Control. X. Cure of Infected Persons a Factor. C. C. Bass, New Orleans.—p. 216.
Standard Budget; Health Officer's First Need. H. Emerson, New York.—p. 221.
Vital Statistics in Canada. R. H. Coats, Ottawa.—p. 224.
African Aboriginal Therapy. P. A. E. Sheppard, Boston.—p. 227.
Causes of Army Rejections; What Health Officers Can Do to Remedy Conditions. F. R. Keefer, Carlisle, Pa.—p. 236.
Ideal Program for Child Hygiene. A. J. McLaughlin, Washington, D. C.—p. 240.
Illinois Program in Child Hygiene for 1920. C. W. East, Springfield, Ill.—p. 241.
Need of Standardization in School Hygiene Methods. H. O. Jones, Chicago.—p. 243.
School Hygiene for Rural Communities. G. Whitford, Ozona, Fla.—p. 246.
Some Important Factors in Preparation of Culture Mediums. L. Davis, Detroit.—p. 250.
Health Hazards of Dye Industry. A. K. Smith, Wilmington, Del.—p. 255.

Studies on Malaria Control.—Abstracted in THE JOURNAL, Nov. 22, 1919, p. 163.

American Journal of Roentgenology, New York

January, 1920, **7**, No. 1

Plea for Use of Fluoroscope in Examination of Heart and Great Vessels. J. G. VanZwalnwenburg, Ann Arbor.—p. 1.
Roentgenographic Findings in Pericarditis with Effusion. G. W. Holmes, Boston.—p. 7.
Roentgen-Ray Studies of Seminal Vesicles and Vasa Deferentia After Urethroscopic Injection of Ejaculatory Ducts with Thorium. A New Diagnostic Method. H. H. Young and C. A. Waters, Baltimore.—p. 16.
Roentgen-Ray Diagnosis of Patent Ductus Arteriosus. Report of Case Complicated by Presence of Saccular Aneurysm. M. J. Hubeny, Chicago.—p. 23.
Roentgen-Ray in Canadian Expeditionary Force. R. Wilson, Toronto.—p. 26.
Radiotherapy of Forty Cases of Uterine Fibromyomas. A. Beclere, Paris.—p. 30.
Radiation in Inoperable Cases of Carcinoma in Female Genito-Urinary Organs. J. G. Clark and F. E. Keene, Philadelphia.—p. 36.
Three Years' Experience with Radium in Cancer of Uterus. E. C. Samuel, New Orleans.—p. 42.
Biological Reaction of Carcinoma Cells Produced by Radium Rays. Technic of Radium Therapy in Gynecology. H. Schmitz, Chicago.—p. 52.

Boston Medical and Surgical Journal

April 1, 1920, **182**, No. 14

Osler as a Bibliophile. E. C. Streeter, Boston.—p. 335.
Osler as His Students Knew Him. J. H. Pratt, Boston.—p. 338.
Osler in the Early Days at the Johns Hopkins Hospital. W. T. Councilman, Boston.—p. 341.
Renal Function in Vascular Hypertension. J. P. O'Hare, Boston.—p. 345.

California State Journal of Medicine, San Francisco

March, 1920, **18**, No. 3

Organization and Management of Hospitals. W. E. Musgrave, San Francisco.—p. 71.
Neuro-Otology: Its Relation to General Medicine. F. C. Lewitt, San Francisco.—p. 72.

*Comparison of Action of Roentgen Rays and Radium. A. Soiland, Los Angeles.—p. 76.
Refraction and Medicine. P. Sumner, San Francisco.—p. 78.
Goiter. A. B. Cooke, Los Angeles.—p. 82.
Cancer of Ear, Nose and Throat; Tuberculosis, Lupus and Various Minor Affections Treated by High Frequency Current. C. E. Welty, San Francisco.—p. 84.
Aviation's Debt to Medicine. C. G. Stivers, Los Angeles.—p. 87.
*Abducens Palsy; Transplantation of Vertical Recti in Three Cases. R. O'Connor, Oakland.—p. 90.
Treatment of Fresh and Ununited Fractures of Femoral Neck. E. Jones, Los Angeles.—p. 92.
War Wounds of Sinuses. H. A. Fletcher, San Francisco.—p. 94.
Examination and Classification of Aviators with Special Reference to Effects of High Altitudes. J. F. Grant.—p. 96.

Comparison of Action of Roentgen Rays and Radium.—Soiland believes that the roentgen rays offer decided advantages in the treatment of lesions covered by, or affecting, the epithelium. On mucous membranes or in cavities where soft tissues predominate radium becomes the element of choice. This is particularly true in lesions involving the mouth and upper respiratory tract, the vagina, the uterus and the rectum. The best results in general are obtained by a judicious combination of both.

Abducens Palsy: Transplantation of Vertical Recti in Three Cases.—O'Connor states very emphatically that in cases of abducens palsy relief is possible, in spite of statements to the contrary in most textbooks on ophthalmology. Therefore, these patients should not be dismissed as incurable or told to wear a patch over one eye permanently but should be referred to the ophthalmologist early in order that the progress may be watched and operation done as soon as it is certain that power is not returning. The author describes his method of procedure and reports cases.

Iowa State Medical Society Journal, Des Moines

March 15, 1920, **10**, No. 3

Gallbladder from the Surgeon's Standpoint. O. J. Fay, Des Moines.—p. 63.
Application to Civil Practice of Therapeutic Principles Established in Treating War Injuries to the Thorax. J. L. Yates, Milwaukee.—p. 67.
Value of Public Health Education. E. G. Birge.—p. 69.
Xerophthalmia. Report of Case. R. H. Parker, Des Moines.—p. 71.
Some Suggestions. G. Kessel, Cresco.—p. 74.

Indiana State Medical Ass'n Journal, Fort Wayne

March 15, 1920, **13**, No. 3

Child Hygiene and the Doctor.—A. E. Schweitzer, Indianapolis.—p. 73.
*Relation of Ophthalmology to Child Hygiene. J. R. Newcomb, Indianapolis.—p. 77.
*Relation of Otolaryngology to Child Hygiene. D. W. Layman, Indianapolis.—p. 79.
*Meningitis: Neurologic Manifestations. C. D. Humes, Indianapolis.—p. 85.

Relation of Ophthalmology to Child Hygiene.—This paper was abstracted in The Journal, Oct. 18, 1919, p. 1237.

Relation of Otolaryngology to Child Hygiene.—This paper was abstracted in The Journal, Oct. 18, 1919, p. 1237.

Meningitis: Neurologic Manifestations.—This paper was abstracted in The Journal, Oct. 25, 1919, p. 1308.

Journal of Laboratory and Clinical Medicine, St. Louis

March, 1920, **5**, No. 6

Chemical Changes in Blood in Disease. V. C. Meyers, New York.—p. 343.
*A Third Model Illustrating Some Phases of Kidney Secretions. M. H. Fisher and G. D. McLaughlin, Cincinnati.—p. 352.
Epidemiology of Influenzal Pneumonia. C. Lynch and J. G. Cumming, Newport News, Va.—p. 364.
Studies on Pathogenic Anaerobes; Bacillus Welchii. B. Jablons, Washington, D. C.—p. 374.
*Method for Collection of Urine in the Dog From Each Kidney Separately. F. S. Hopkins and W. C. Quinby, Boston.—p. 384.
Some Limitations of Flotation Method of Fecal Examinatin. J. D. McDonald, Berkeley.—p. 386.

Some Phases of Kidney Secretion.—The question is raised by Fisher of the mechanism by which water is secreted by such a secreting parenchyma as a kidney. The experimental evidence is reviewed which indicates that only "free" water can be separated from the blood and that the separation of such water costs the kidney no work. This supports the conclusion that such separation is a mere filtration process, and since the secreting parenchyma of such an organ as the kidney is a hydrated colloid which has properties closely akin to a solid hydrated soap, the filtration properties of such a soap (sodium stearate) were studied to see whether any analogy exists between its behavior and what may be observed biologically. Hydrated sodium stearate allows water to pass through it under slight hydrostatic pressure, the ease of such passage being increased as the concentration of the hydrated colloid is lowered. While "free" water passes readily through such a hydrated colloid, water tied to a hydratable colloid (liquid sodium oleate) cannot. Salt solutions lead to a greater filtration of water than plain water, and this (*a*) according to their concentration and (*b*) their kind, generally speaking. The higher the concentration of any salt, the greater the filtration of water. On the other hand, at given concentration, salts of ammonium or potassium produce less filtration than salts of sodium, and these less than those of magnesium or calcium. The theory of the action of these effects is discussed, it being pointed out that because of the existent differences in chemical composition of fatty acids and of the polymerized amino-acids known as protein it is possible in the former to produce only one series of salts as different bases are introduced into the fatty acid. In the case of the proteins a similar series may be produced, but because of the existence in the latter of NH groups, a second may be produced, through the linking of acid with these groups. Colloid chemical and physiologic behavior are, then, an expression of the solvation and solubility properties of the different compounds thus formed. The dangers of applying without due reserve indicator methods and the laws of dilute solutions of electrolytic dissociation, etc., to the normal cells and fluids of the body but not to their secretions is reemphasized.

Collection of Urine from Each Kidney Separately.—Hopkins and Quinby use the uterus as a receptacle of the products of one kidney while the normal relations between the bladder and other kidney are maintained.

Kentucky Medical Journal, Bowling Green

March, 1920, **18**, No. 3

Physical Examination of School Children. A. O. Pfingst, Louisville.—p. 63.
Fractures of Cervical Vertebrae; Diagnosis and Treatment. F. P. Strickler, Jr., Louisville.—p. 64.
War Surgery of Bones and Joints as Applied to Civil Practice. I. A. Arnold, Louisville.—p. 68.
Transylvania Medical Library. A. H. Barkley, Lexington.—p. 74.
Influenza or La Grippe. W. E. Reynolds, Hopkinsville.—p. 78.
Pneumonias and Their Treatment. A. Baker, Berea.—p. 81.
Diagnosis of Pulmonary Tuberculosis. S. R. Fairchild, Kevil.—p. 84.

Maine Medical Association Journal, Augusta

March, 1920, **10**, No. 8

Treatment in Tuberculosis. C. B. Sylvester, Portland.—p. 235.
Incomplete Mastoid Operation as a Cause of Delayed Healing. F. T. Hill, Waterville.—p. 243.
A Permanent Board of Organization for the Maine Medical Association. J. A. Spalding.—p. 250.

Medical Record, New York

March 27, 1920, **97**, No. 13

*Influence of Male on Production of Twins. C. B. Davenport, Cold Spring Harbor, N. Y.—p. 509.
Medical Aspects of Endocrinology. J. J. Hertz, New York.—p. 511.
Oral Sepsis: Rôle in Certain Orthopedic Conditions. J. Grossman, New York.—p. 514.
*Feet, and Rebuilding Broken Arches. C. Cross, San Francisco.—p. 519.
Saccharin. S. H. Blodgett, Boston.—p. 521.
Measures of Intelligence Diagnostically Remeasured. J. V. Haberman, New York.—p. 523.

Influence of Male and Lethal Factors on Production of Twins.—The presence of lethal factors in the ovum or spermatozoon is regarded by Davenport as an influence in the fertilization and development of an ovum. Lethal factors may be brought into the zygote by the egg alone, by the sperm alone, or by both. They are not found in all the germ cells; it may be, in only a small proportion of them. When they occur in the gametes of both consorts, small families with some feeble children may be expected. But when they are absent in the germ cells of both parents, then,

in a good environment, the fertilized egg will develop vigorously with good prospects of reaching maturity. It is in such families that any tendency toward double ovulation will be expressed in the production of healthy twins. Statisticians have long recognized that the proportion of twins is larger in highly fecund families than in those that produce few offsprings, and this is now seen to be because in such highly fecund families the germ cells contain few lethal factors and there is a larger chance that double ovulation will result in twins. Davenport is convinced that it is thus clear where the male factor comes in in twin production, for the father can, as much as the mother, determine whether both of a pair of simultaneously ovulated eggs shall be fertilized, and whether or not they shall receive lethal factors.

Rebuilding Broken Arches.—A plan of treatment to rebuild the broken arch, while the feet are in daily use during the process of rebuilding, is reported by Cross. The plan consists of a system of exercises on specially designed exercising appliances, massage, manipulation, mechanical force, static and dynamic force, support, and then gradual removal of the support. In rebuilding broken arches, the aim of this system of treatment is to reconstruct the arch and to strengthen the foot that it will stand ordinary usage, without the aid of an arch support. Cross emphasizes that arch supports, at best, are but splints and should be used only as such. Constantly wearing any kind of a rigid splint weakens the muscles because free action is restricted. This is especially true when metal splints, in the form of arch supports, are worn under the feet, and the general results from their use is a degree of atrophy of some muscles and weakening of others. The process of rebuilding broken arches by this system aims to follow the same lines followed by engineers to replace a bridge span, or a house foundation, that is out of alignment. A careful drawing is made of the foot and this is surveyed to determine the degree of distortion or displacement. Then begins a system whereby the broken arch is blocked up or strapped up by degrees, as rapidly as possible with comfort, until normal function is restored. Clumsy and freak shoes are not a part of this system of treatment. Any shoe the patient selects which is long enough and wide enough can be worn.

Modern Hospital, Chicago

March, 1920, **14**, No. 3

Brief Review of Hospital Standardization in 1919. J. F. Bresnahan, Chicago.—p. 163.
Hospital Construction in 1919. R. E. Schmidt, Chicago.—p. 173.
Development and Progress in Field of Hospital Administration. A. R. Warner, Cleveland.—p. 176.
Progress in Nursing Education During 1919. I. M. Stewart, New York.—p. 179.
The Present Trend of Medical Social Work. E. G. Henry, Indianapolis.—p. 185.
Salient Points of Progress in Tuberculosis Sanatorium Development in 1919. T. B. Kidner, New York.—p. 188.
The 1919 Laboratory Field Retrospect. L. B. Wilson, Rochester, Minn.—p. 191.
Health Progress in Industry in 1919. B. B. Lyons, Chicago.—p. 193.
Progress in Mental Hygiene, 1919. F. E. Williams.—p. 197.
Progress in Out-Patient Service During 1919. M. M. Davis, Boston.—p. 201.
Developments in Dietetics During the Year 1919. L. Graves, Ithaca.—p. 203.
Year's Review of Drugs and Chemicals. J. K. Thum, Philadelphia.—p. 207.
Progress in Eradication of Venereal Disease. A. N. Thomson, New York.—p. 208.
Health Center Movement in United States. J. A. Tobey, Washington, D. C.—p. 212.
Hospital Relay of World War. F. Kramer and R. H. Kettell, Washington, D. C.—p. 215.
Landscape Treatment of Hospital Grounds. C. W. Leavitt.—p. 229.
Suggestions for Health Legislation. H. W. Jordan, Syracuse, N. Y.—p. 230.
Health Insurance. A. R. Warner, Chicago.—p. 233.
Group Action Helps Raise Rates of Milwaukee Hospitals. C. W. Munger, Milwaukee.—p. 239.
Commercial Syrups. J. P. Street, Indianapolis.—p. 248.
A History Method for Gonorrheal Cases. H. A. Fisher, Brooklyn.—p. 252.

New York Medical Journal

March 27, 1920, **111**, No. 13

*Pregnancy Complicated by Large Fibroid Tumor. J. C. Applegate, Philadelphia.—p. 529.
Lethargic Encephalitis. Report of Cases. H. Climenko, New York.—p. 531.
Umbilical Hernia. N. A. Ludington, New Haven, Conn.—p. 540.
Two Cases of Displacement of Ilium. E. F. Cyriax, London.—p. 546.
*Case of Wladimiroff-Mikulicz Operation. M. H. Vegas, Buenos Aires.—p. 550.
Extensive Destruction of Sella Turcica Without Clinical Symptoms. C. Rosenheck, New York.—p. 554.
What is the Cause of Goiter? J. C. O'Day, Honolulu.—p. 556.
Buccal Leukoplasia. C. G. Cumston, Geneva.—p. 556 .

Pregnancy Complicated by Large Fibroid Tumor.—The point made by Applegate in connection with the report of this case is, that sterility from any of the well known causes, including abnormalities of position of construction of the uterus, tubes or ovaries, faulty internal secretions, and hyperacidity of the vaginal secretions, may be regarded at least as a predisposing cause of fibroids of the uterus. In other words, absence of the childbearing functions favors hyperplasia of the loosely constructed involuntary muscle fibers and connective tissue cells of the uterus.

Case of Wladimiroff-Mikulicz Operation.—This operation consists in the removal of the tarsus and of the distal end of the bones of the leg and then placing the foot in a marked equinus position in such a way as to transform the walk from plantigrade to digitigrade. The indications for this operation are tuberculosis of the tarsus and ankle, chronic ulcers of the heel, fractures accompanied by osteomyelitis of the calcaneus and neighboring bones, as in the case described by Vegas. Of late indications have been extended to include the lengthening of limbs shortened by pathologic luxations in the coxalgia or ample resections of the knee followed by shortening of the member in advanced equinoparalytic feet.

Northwest Medicine, Seattle

March, 1920, **19**, No. 3

Principles of Healing. J. D. Windell, Spokane.—p. 59.
Review of Military Urologic Service. A. H. Peacock, Seattle.—p. 64.
Urinary Frequency. A. E. MacKay, Portland.—p. 68.
Urinary Fistulae. G. S. Whiteside, Portland.—p. 69.
Phosphatic Index as Aid in Diagnosis. J. H. Dowd, Buffalo.—p. 71.
Differential Diagnosis in Epidemic Lethargic Encephalitis. K. Winslow, Seattle.—p. 73.

Oklahoma State Medical Ass'n Journal, Muskogee

March, 1920, **13**, No. 3

Hypertrophic Stenosis of Pyloris in Infancy. G. A. Wall, Tulsa.—p. 87.
Exophthalmic Goiter.. W. H. Livermore, Chickasha.—p. 94.
Acute Infections of Upper Respiratory Tract. A. L. Guthrie, Oklahoma City.—p. 96.
Primary Glaucoma; Recovery Without Operation. J. R. Phelan, Oklahoma City.—p. 99.
Surgery of Tonsil. H. C. Todd, Oklahoma City.—p. 100.
Ear in Recent Influenza Epidemic. L. C. Kuyrkendall, McAlester.—p. 102.

Rhode Island Medical Journal, Providence

March, 1920, **3**, No. 3

Anesthetic Problem in Lung Surgery. J. T. Gwathmey, New York.—p. 41.
*Theilerium Hominis. C. F. Peckham, Providence.—p. 47.

Theilerium Hominis.—Peckham reports a hematozoic parasite found in cases of mucous colitis and describes its life history. In searching the literature of human parasites, he was unable to find any report of the observation of a hematozoic organism of dumbbell form.

Southwestern Medicine, El Paso, Texas

March, 1920, **4**, No. 3

Influenza Epidemic Among Employees of Consolidated Arizona Smelting Company, Associated Companies and Their Families. C. S. Vivian and E. R. Charvoz, Globe, Ariz.—p. 1.
Smith-Indian Cataract Operation. E. N. Bywater. Tucson, Ariz.—p. 6.

Tennessee State Medical Ass'n Journal, Nashville

March, 1920, **12**, No. 11

Headache; Its Constitutional Causes. O. S. Warr, Memphis.—p. 399.
Headaches from Nasal Origin. J. J. Shea, Memphis.—p. 402.
Roentgen-Ray Diagnosis in Some Bone Pathology. J. H. King, Nashville.—p. 404.
Malformations of Anus and Rectum. D. R. Pickens, Nashville.—p. 406.
Dental Sanitation. F. W. Brownfield, Granville.—p. 409.

Virginia Medical Monthly, Richmond

February, 1920, **46**, No. 11

Relation of Etiology to Treatment of Pelvic Inflammation. C. R. Robins, Richmond.—p. 279.
*Treatment of Bronchial Asthma with Vaccines. J. M. Hutcheson and S. W. Budd, Richmond.—p. 281.
Enterostomy for Postoperative Intestinal Obstruction. A. S. Brinkley, Richmond.—p. 283.
Diabetes. W. W. Silvester, Norfolk.—p. 286.
Tetany in Adults. W. H. Higgins, Richmond.—p. 290.
Perineum, As It Concerns Obstetrics. G. B. Byrd, Norfolk.—p. 295.
Old Age. R. H. Cartbright, Vinton.—p. 297.

Treatment of Bronchial Asthma with Vaccines.—Of a series of ninety patients examined and in whom a diagnosis of bronchial asthma was made, eighty-one have been treated with autogenous vaccines by Hutcheson and Budd. So far as possible, those cases were selected in which obvious and accessible foci of infection had been removed. Most of these patients had suffered over a considerable period and were well versed in the various cures, while in many instances one or more operations on the nose, throat or sinuses had failed to give relief. Where the first series of injections was ineffective, if possible, a second vaccine was prepared and administered and this was also done in a number of cases after relapse had occurred. In fifty-three cases (74.6 per cent.) there followed the administration of the vaccine either complete freedom from asthma or a definite decrease in the frequency and severity of the attacks. The longest duration of complete relief was three years. The longest period of relative relief was four years and two months. In eighteen cases (25.4 per cent.) no definite benefit was derived from the vaccine. In none of these cases, however, was the treatment repeated after the first series of injections had failed.

West Virginia Medical Journal, Huntington

March, 1920, **14**, No. 9

Surgery of Chest. O. F. Covert, Moundsville.—p. 321.
Treatment of Ununited Fractures. A. J. Noome, Wheeling.—p. 337.
Principles Preliminary to Treatment of Functional Nervous Disorder, T. A. Williams, Washington, D. C.—p. 346.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

February, 1920, No. 235

History of Electrotherapy. W. J. Terrell.—p. 277.

Dublin Journal of Medical Science

March, 1920, Fourth Series, No. 1

Dysentery in Dublin in 1919. A. Stokes and J. W. Bigger.—p. 3.
Problem of Dublin Voluntary Hospitals. R. J. Rowlette.—p. 9.
Case of Lethargic Encephalitis. G. E. Nesbitt.—p. 24.
*Modified Kjeldahl Method for Estimation of Nitrogen. Carbazol Test for Nitrites. Color Test for Tryptophane in Urine. W. A. Fearon.—p. 28.

Tests for Nitrogen, Nitrites and Tryptophan in Urine.—The most important alterations in the original technic of the Kjeldahl method made by Fearon concerned the incineration. He found that a mixture of sulphuric and phosphoric acids gave a much better result than sulphuric acid alone. The following mixture is recommended: sulphuric acid, 100 c.c.; phosphoric acid, 200 gm.; copper sulphate, 5 gm. The mixture is best made by dissolving the phosphoric acid and the copper sulphate in the minimum amount of water, and then adding the sulphuric acid. The amount required for incineration will depend very much on the material under examination. Generally, from two to three times its volume will be sufficient. For extensive work the steam distillation method has been found the most satisfactory. Rapid estimations can be carried out very well by the Cole method of distilling with alcohol. For titrations, methyl red, 0.1 per cent., was found to be a very good indicator. The following is stated to be a simple test for nitrites in urine or similar fluids: To a few cubic centimeters of strong sulphuric acid in a test tube a very small quantity of carbazole is added and well shaken. If the sulphuric acid is pure, no color change will be observed. Then, on adding a drop of urine, if nitrites are present, a deep green color will develop. The test is extraordinarily sensitive, and will show nitrites to the extent of about one part in half a million. If urine containing tryptophan be treated with excess of the glyoxylic reagent and a drop is added to strong sulphuric acid, the tryptophan condensation body interacts with the nitrites of the urine to give a deep green color. This test is not given by indol or skatol.

Indian Medical Gazette, Calcutta

February, 1920, **55**, No. 2

Ulceration of Stomach and Duodenum and Resultant Obstruction in Outlet of Stomach Treated by Posterior Gastro-Euterostomy in a Series of One Hundred Cases. S. H. Pugh.—p. 41.
Typhus and Typhus-Like Fevers in Birjand, East Persia. A. S. Fry.—p. 47.
Medical Inspection of Schools. B. N. Ghose.—p. 50.
Kala-Azar. S. Kundu.—p. 53.
Second Series of Twenty-Five Cases of Malaria Treated by Hypodermic Injections of Cinchonin Bihydrochlorid. D. S. Ollenbach.—p. 57.
Acute Necrotic Parotitis. R. C. McWatters.—p. 57.
Case of Pneumococcal Arthritis Complicating Tonsillitis. C. Corner.—p. 58.
Congenital Abnormalities. J. C. Aich.—p. 59.
Cobra Poisoning. K. K. Alaudikar.—p. 60.

Japan Medical World, Tokyo

Feb. 7, 1920, **10**, No. 6

Nature of Virus of Typhus Fever. S. Kusama.—p. 125.
Action of Epinephrin and Hydrochloric Acid against Tetanus Toxin. R. Kobayashi.—p. 126.

Feb. 14, 1920, **10**, No. 7

Anthropometry of Civilized Man. A. Macdonald.—p. 145.

Feb. 21, 1920, **10**, No. 8

Anthropometry of Civilized Man. A. Macdonald.—p. 165.

Journal of Pathology and Bacteriology, Cambridge

*Bacteriologic Characteristics of Tubercle Bacilli from Different Kinds of Human Tuberculosis. A. S. Griffith.—p. 129.
Serologic Groupings of Vibrion Septique and Their Relation to Production of Toxin. M. Robertson.—p. 153.
*Inagglutinable Form of Shiga's Dysentery Bacillus, Experimentally Derived from an Agglutinable Culture. T. H. C. Benians.—p. 171.
Method of Determining Several Viscosities Simultaneously. J. Holker.—p. 177.
Viscometer as a Means of Determining Specific Gravity. J. Holker.—p. 185.
Method of Testing Temperature Sense. J. Holker.—p. 188.
Methods of Cultivating Anaerobic Bacteria. J. Holker.—p. 192.
*Streptococcal Ulcerative Endocarditis of Aortic Valves, Occurrinig in an Infant Aged Six Months. J. H. Dible.—p. 196.
Classification of Forty-Eight Strains of Flexner Y and Allied Bacilli Mainly by Serologic Tests. E. M. Berridge and E. Glynn.—p. 199.
Serum Reaction in Bacillary Dysentery. Observations on Agglutination, with Special Reference to the Use of Freshly Prepared Bacillary Emulsions. J. W. M'Leod and A. G. Ritchie.—p. 217.
Synthesis of Tryptophane by Certain Bacteria; Nature of Indole Formation. W. J. Logie.—p. 224.

Bacteriologic Characteristics of Tubercle Bacilli from Different Kinds of Human Tuberculosis.—The main objects of Griffith's investigations were (1) to determine by the examination of unselected cases the relative proportions of the human and bovine types of tubercle bacilli in different kinds of human tuberculosis, and (2) to ascertain the frequency of occurrence and the distribution in the human body of variant strains of tubercle bacilli. Of 1,068 persons examined, 803 showed human bacillus infection; 194 bovine bacillus infection and five a mixed infection. Of various regions involved, the examination showed that bovine infections occurred as follows: Bones and joints, 19.7 per cent.; genito-urinary organs, 17.65 per cent.; cervical glands, 46.3 per cent.; meninges, 20 per cent.; scrofulodermia, 34.65 per cent.; lupus, 48.9 per cent. As to the age periods, bovine infection occurred as follows: during first five years of life, 37.55 per cent.; from 5 to 10 years, 29.45 per cent.; from 10 to 16 years, 14.66 per cent.; after 16, 6.25 per cent.

Inagglutinable Form of Shiga's Dysentery Bacillus Derived from Agglutinable Culture.—An inagglutinable strain of Shiga's bacillus was experimentally produced by Benians from an agglutinable strain by subcutaneous inoculation into a guinea-pig of the agglutinable bacteria suspended in mucilage of tragacanth. This inagglutinable bacillus (as

isolated from a separate colony), from time to time threw off agglutinable strains, especially soon after it was first isolated. The inagglutinable colonies were of two types, clear and opaque, on agar, but not distinguishable in broth cultures. The inagglutinable strain usually sedimented both in broth and saline. The inagglutinable strain failed to absorb agglutinin from a standard serum; it also failed to produce agglutinin when injected into rabbits. The agglutinable strain, derived from the inagglutinable, absorbed agglutinins entirely from a standard serum; on injection into rabbits it produced an agglutinating serum. Both strains were highly pathogenic for rabbits, the inagglutinable strain apparently more so than the other. Rabbits immunized against either strain were protected against a lethal dose of the other strain. In the animal injected with the inagglutinable bacillus an immunity developed against both agglutinable and inagglutinable strains without the production of any agglutinins. The development of agglutinins is not, therefore, necessarily a part of the processes of immunity. The inagglutinable strain was much more rapidly destroyed by the bactericidal bodies of the serum than the agglutinable. The guinea-pig inoculated with the bacteria embedded in mucilage formed no agglutinins or demonstrable protective antibodies. It is suggested that the experiment throws light on two clinical conditions: (1) chronic typhoid abscess; (2) the "carrier" condition of enteric and dysentery bacilli in the alimentary system.

Streptococcal Ulcerative Endocarditis of Aortic Valves in Infant Aged Six Months.—The total duration of fatal illness of the infant whose case is cited by Dible was only eight days. The condition developed while the child was in the hospital, suffering from crusted impetiginous sores on the head and upper part of the chest, and emaciation; there was also a discharging ear. It was noted, on admission, that the child was small. It frequently vomited its feeds, and also suffered from diarrhea. Under treatment the general condition improved, and three weeks after admission the sores on the head and body were healed, the diarrhea had ceased, and the general condition was improving. This improvement continued until the twenty-seventh day of residence in hospital. Up till this period the temperature had been within normal limits, but on the evening of this day it commenced to rise and on the following evening reached 101 F. During the six succeeding days the temperature oscillated irregularly between normal and 102 F., usually remitting in the mornings. No cause for this acute illness was discovered, and on the seventh day of its duration the child died rather suddenly. The examination of the thoracic and abdominal viscera showed the presence of moderate bronchopneumonic consolidation of the lower lobes of both lungs. The spleen was enlarged and somewhat soft, but not diffluent. The kidneys showed numerous well marked miliary infarcts of recent date, a number of which contained minute centers of suppuration. The heart weighed 30 gm.; its external surface, and that of the pericardium, was normal. On slitting up the cavities, the posterior cusp of the aortic valve showed recent acute, ragged, friable granulations, situated somewhat below the line of contact of the cusps; a similar patch of granulation was present on the wall of the ventricular septum below the valve. The affected cusp was found to be perforated, and the interventricular septum nearly so, the process having reached as far as the endocardium of the right ventricle, but not having perforated it. The other valves and cavities of the heart were healthy. None of the other organs available for examination showed changes worthy of note. Histologic examination of a piece of the vegetation, and sections of the infarcted areas of the kidney, showed very clearly, however, that the infecting organism was a streptococcus. The interest in this case lies in the fact of the extremely early age at which the affection occurred, and of its acute course. It was clinically unconnected with the gastro-intestinal disturbance for which the child was admitted, since the acute symptoms were only developed at the end of the period of stay in hospital when the impetigo and gastro-intestinal condition had disappeared. This case does not come within the category of the so-called "rheumatic" form of malignant endocarditis which is met with in childhood, and in which the necropsy findings differ only in degree from those of "simple" endocarditis; it rather corresponds to the more virulent of the adult types of endocarditis associated with the suppuration of infarcts derived from the diseased valves.

Lancet, London

March 13, 1920, **1**, No. 5037

Surgical Aspect of Dysentery. Z. Cope.—p. 579.
*Pleural Effusion: Its Cytology and Results of Paracentesis. D. S. Page.—p. 585.
Periodicity of Influenza. B. E. Spear.—p. 589.
Use of Univalent Serum in Treatment of Cerebrospinal Fever. H. S. Banks.—p. 591.
Etiology of Effort Syndrome. R. G. Barlow.—p. 593.
Use of Autogenous Bone Grafts in Treatment of Certain Simple Fractures of Bone. B. Hughes.—p. 595.
*Torsion of Appendix. E. C. Bevers.—p. 597.
Tobacco Amblyopia in a Woman. M. L. Hine.—p. 597.
*Case of Juvenile Tabes. D. Kerr.—p. 598.

Cytology of Pleural Effusion.—Page points out that a predominance of polymorphonuclear neutrophilic cells occurs not uncommonly in chronic pleural effusion complicating pulmonary tuberculosis. When it occurs, in the absence of secondary infection of the fluid, it suggests the possibility of hydropneumothorax being present; probably it may occur without this complication as the result of a virulent tuberculous infection. A predominance of small mononuclear cells is usual in tuberculous pleural effusions. It is not uncommon in effusions associated with neoplasms. It may occur in renal cases. Effusions in which coarsely granular eosinophilic cells are found in large numbers are probably not tuberculous. Basophilic cells occur rarely, and only in small numbers. On theoretical grounds it seems better to reserve paracentesis for the relief of urgent symptoms. In the analysis of this series of cases no clear evidence is obtained either in favor of or against paracentesis.

Torsion of Appendix.—When Bevers first saw this patient, she was suffering from abdominal pain and vomiting; sixty hours before admission she was seized with severe pain in the right iliac fossa during the night and vomited almost at once. The pain increased in severity and vomiting continued at intervals. On admission her pulse was 120 and her temperature 100 F.; the abdomen was slightly distended and generally rigid, this rigidity being most marked over the lower half of the right rectus, and there was acute tenderness on pressure in the right iliac fossa. Bevers regarded the case as one of acute appendicitis with perforation, and operation was at once undertaken. The appendix was found hanging over the brim of the pelvis; both it and the mesoappendix were much swollen and dark purple in color, and in places becoming black. At the base of the appendix and close to the cecum were two complete twists, there were no adhesions, and the appendix was quite free in the peritoneal cavity. The appendix was removed and the abdomen closed without drainage, recovery being uneventful. The appendix was 3 inches long, in a condition of acute gangrene, and contained a small concretion near the tip.

Juvenile Tabes.—Kerr's patient was only 14 years of age. The three striking features of the case: (1) lightning pains, (2) primary optic atrophy, (3) absent knee jerks, established the diagnosis of juvenile tabes in spite of the absence of a history pointing to hereditary syphilis and of the negative blood and cerebrospinal fluid Wassermann.

South African Medical Record, Cape Town

Feb. 14, 1920, **18**, No. 3

Blackwater Fever in Central Africa during the War. A. P. Morse-Anderson.—p. 43.
South African Cercariae. F. G. Cawston.—p. 49.

Bulletin Médical, Paris

Feb. 7, 1920, **34**, No. 7

Reorganization of the Hospitals of Paris. A. J. L. Brocq.—p. 113.

Feb. 21, 1920, **34**, No 11

*Radium Therapy in Gynecology. Fabre.—p. 169.

Radium Treatment in Gynecology.—Mme. Fabre reviews the various indications and the technic for radium treatment

in disease of the female genital organs, saying that the gynecologist of yesterday was a physician, today he is a surgeon, and tomorrow he may be a radium therapeutist.

Journal de Médecine de Bordeaux

Feb. 25, 1920, **91**, No. 4

*Diphtheria Mortality. Dubourg and Guénard.—p. 83.
*Subconjunctival Lipoma. Cabannes and Dupérié.—p. 86.
Anatomy of Veins in Leg. G. Jeanneney.—p. 87.
*Medical Inspection in Schools. Gèzes.—p. 89.

Diphtheria Mortality.—Dubourg and Guénard review the experiences with diphtheria at the Children's Hospital at Bordeaux during the last thirty years. The mortality was 54 per cent. in 1888, but the annual average after antitoxin was introduced has been 7.28 per cent., with a minimum of 1.53 per cent. of 195 cases in 1907.

Subconjunctival Lipoma.—The fibrolipoma described was removed from the conjunctiva in the outer portion of the inferior culdesac of a healthy woman of 29. The tumor had been first noticed two months before.

Necessity for Examination of Ear and Nose in Medical Inspection of Schools.—Gèzes found in 117 children of the upper school grades at Bordeaux that over 42 per cent. had spurs on the nasal septum. Over 36 per cent. had coryza with hypertrophy; 56.4 per cent. had chronic otitis media, and 12.8 per cent. cicatricial otitis, in addition to the over 34 per cent. with enlarged tonsils and the 35.9 per cent. with adenoids.

Journal de Radiologie et d'Electrologie, Paris

January, 1920, **3**, No. 12

*Electric and Roentgen-Ray Treatment of Sciatica. A. Zimmern.—p. 533.
Electrocardiography and Roentgenoscopy of the Hearts of Eight Athletes. J. Cluzet.—p. 540.
*Precautions in Radiotherapy. M. L. Gunther.—p. 544.

Electric and Roentgen Treatment of Sciatica.—Zimmern assumes that true sciatica can be traced to irritation or compression of the roots of the nerve, not severe enough to arrest the motor impulse. It may be amenable to direct irradiation or to indirect revulsion by a faradic or high frequency current or jet of hot air. Other physical measures seem to have only a symptomatic action. His experience warns against trying to combine roentgen-ray treatment with electric revulsion; the latter seems to undo the effect of the former. He usually gives 2 H units at a sitting. Relief may be obtained at the very first, but the second or third is generally followed by the subsidence of all the pain. Sometimes there is an exacerbation of the pain the evening or the day following each sitting. This exacerbation always proved a sign of favorable omen. If three sittings do not accomplish the result, he waits eight or ten days, to save the skin, and then repeats the course with doses of 3 instead of 2 H. The Achilles tendon reflex seldom returns, or not until very late.

Precautions in Roentgen-Ray Work.—Gunther is the director of an establishment for manufacture of electric and radiologic apparatus and devices, and he gives a long list of special precautions to be observed by the radiologist, for himself and for the patient, to avert immediate and tardy injury.

Presse Médicale, Paris

Feb. 7, 1920, **28**, No. 11

*Fibrotuberculoma in the Larynx. G. Portmann.—p. 101.
*Quantitative Test for Albumin in the Urine. L. Dupuy.—p. 104.
*Gas Cysts in the Abdomen. C. Lenormant.—p. 104.

Laryngeal Fibrotuberculoma.—Portmann was able to watch through several years the evolution of a fibrous tuberculous tumor in the larynx. It had been mistaken for cancer at first, and the larynx was exposed for laryngectomy. The tissues around were found infiltrated and thickened, so the proposed operation was abandoned, and the patient has been in fairly good health during the three years since he has been wearing his tracheal tube.

Albumin Test.—Dupuy compares the turbidity of a standard solution of albumin with that of the urine being examined after each has been treated with Esbach's citric-picric acid reagent.

Gas Cysts of the Abdomen.—Lenormant analyzes twelve recent (since 1910) works on the subject of cystic pneumatosis. It was recently discussed editorially in THE JOURNAL, March 13, p. 739.

Feb. 11, 1920, **28**, No. 12

Functioning of the Diaphragm in Pleurisy with Effusion. P. E. Weil.—p. 113.
Technic for End-to-End Anastomosis of Small Intestine after Resection. H. Costantini.—p. 113.
*Radium Therapy. Baud and L. Mallet.—p. 115.

Radium Therapy.—Baud and Mallet announce that they are preparing receptacles for radium which will allow its use in many more conditions than have hitherto been possible with the comparatively bulky capsules in use. By this means radium salts can compete with the emanations in the only point in which the latter have been superior to date.

Feb. 14, 1920, **28**, No. 13

*Inaugural Lecture of Parasitology Course. E. Brumpt.—p. 121.
Efficacy of Sodium Taurocholate as Local Preventive of Gonorrhea. L. Cheinisse.—p. 127.

Parasitology.—In the course of this inaugural lecture, Brumpt remarks that although the most common species of our parasites were known to the ancient Egyptians, yet there is nothing to show that the forbidding of the eating of pork by certain religions had anything to do with the danger of disease therefrom. He cites S. Reinach to the effect that nowhere in the Bible is there any reference to disease attributed to food, and that the idea of hygiene was born in Grecian civilization. The Abyssinians to this day, Brumpt says, do not eat pork or elephant meat, but they eat beef raw. He asked an Abyssinian chief the reason for this and for circumcision, and the reply was that both were done because their ancestors had taught them to do so, and because the mutilations "distinguished them from other people who, keeping as God made them, were like animals." Brumpt thinks that this, and not hygiene, is the key to the problem. In parasitology, as well as in surgery, Paré was a pioneer, with his advice to boil meat. F. Redi, in the seventeenth century, showed the origin of maggots from flies and of itch from an acarus, but the medicine of that day paid no heed to their discoveries.

Schweizerische medizinische Wochenschrift, Basel

Feb. 5, 1920, **50**, No. 6

*Revision in Workmen's Compensation. F. de Quervain.—p. 101.
*The Leukocyte Blood Picture in the Mountains. E. Ruppanner.—p. 105.
*The South Wind and Pathology. K. Helly.—p. 108.
*Fatal Infection with Mouse Typhus. H. Staub.—p. 114.

Revision of Workmen's Compensation.—The Swiss law provides for a pension allowing revision during the first three years and again at the end of the sixth and the ninth years. De Quervain discusses the workings of the law in concrete examples. Among 94 cases of traumatic arthritis reexamined later, 38.9 per cent. of the supposedly disabled had regained their earning capacity; the figure was 55.8 per cent. among those cases dating from 1906 and 1907. On the other hand, in 4.2 per cent. of the reexamined, arthritis had developed as a tardy complication of the trauma.

The Leukocyte Picture in the Mountains.—Ruppanner's investigation of 100 healthy persons showed a special leukocyte picture in the Engadine and at still higher levels (1,750 meters and 2,250 meters). The total number of leukocytes was normal or below, keeping at the lowest range of normal, as a rule, while the number of lymphocytes was above the normal figure, and of neutrophils was below. The proportion of mononuclears was somewhat above normal. His research demonstrated further that persons coming to the mountains generally displayed a pronounced leukocytosis at first—an acclimatation leukocytosis, as it were, which yielded in about six weeks to the mountain leukocyte picture as above. He remarks on the scanty literature on the leukocyte picture at high altitudes when so much has been written on the erythrocytes and hemoglobin changes.

The South Wind and Pathology.—Helly has been impressed with the wave of pathologic conditions which often pre-

cedes and accompanies a period of strong southerly winds. The number of deaths is higher, especially among persons with damaged hearts, and in those of unstable constitution, the thymicolymphatic status, as evidenced in the increased number of deaths under anesthetics, from myasthenia or in various diseases, the weather evidently depressing the resisting forces. The number of suicides also increases, and the number of accidents. The muscular, nervous and mental systems seem to be depressed, their vitality lowered, and physicians and surgeons should bear this in mind during the periods of strong southerly winds. Helly refers to the southerly wind called the sirocco in Italy and the föhn in Switzerland, and says that for fifteen years he has been studying its influence on the morbidity and mortality of the most varied classes of people and over a broad range of latitude, from Naples to Berlin, and found the evidences of its influence both in the living and at necropsies. Many persons feel the influence two or three days before the sirocco arrives, and are depressed and irritable.

Fatal Case of Mouse Typhus.—The previously healthy man of 62 ate five pieces of potato which had been spread with mouse virus to kill mice in the barn, made with *Bacillus typhi-murium*. He developed a fulminating infection which proved fatal in five days. There was no fever at any time, but the course corresponded to the cholera-resembling form of paratyphoid B.

Feb. 12, 1920, **50**, No. 7

Supracondyloid Fracture of Humerus. H. Iselin.—p. 121.
*Acute Aortitis with Two Aneurysms. F. Merke.—p. 122.
Volvulus. A. Walker.—p. 126.
Blood in Sputum. S. Pollag.—p. 127.
Typhoid Epidemic in 1884. C. Kaufmann.—p. 127.

Aneurysms with Acute Aortitis.—There were two aneurysms, and the aorta ruptured in the case reported in a man of 57 with chronic cystitis. The bacteriemia had induced phlegmonous aortitis. In Stumpf's similar case there was a verrucous endo-aortitis. In both cases the aortitis was evidently of metastatic origin, from the focus in the bladder.

Annali di Clinica Medica, Palermo

October, 1919, **9**, No. 4

*The Thyroid and Infections. M. Barbàra.—p. 1.
*Treatment of Pulmonary Tuberculosis. A. Fagiuolo.—p. 21.
*Elimination and Retention of Urea in Nephritis. A. Venza.—p. 66.
*Experimental Conjunctivitis. F. P. Borello.—p. 85.
*Blue Disease. M. Lombardo.—p. 113.
*Mediastinal Tumors. V. Piazza-Martini.—p. 136.
Quinin Prophylaxis of Malaria. A. Pitini.—p. 173.
*Phenol-Lipoids in Therapeutics. V. C. Piazza.—p. 183.
Pleural Effusion with Heart Disease. M. Lombardo.—p. 190.

The Thyroid and Infections.—Barbàra ascribes an important rôle to the thyroid in the struggle against infection. His experiments showed that after thyroidectomy some of the factors in immunization notably declined, including the complement, bacteriolysins, opsonic power and phagocytosis, but no modification in the antitoxin content could be detected after thyroidectomy. This lowering of the defensive forces rendered the thyroidectomized animals more susceptible to infections. The changes in the thyroid with acute and chronic infection readily explain certain symptoms observed in infections. The clinic and experimental pathologic physiology thus supplement and confirm each other. This opens a field for research on the effect of thyroid treatment on the serologic and cellular defensive forces in the course of infections.

Treatment of Pulmonary Tuberculosis.—Among the other measures applied at the Ferrarotto public sanatorium, artificial pneumothorax was induced in 56 patients and all were improved except 5 in whom conditions remained stationary, and 5 others in whom the disease progressed; 5 may be considered clinically cured and 15 immeasurably improved. In a previous series of 15 cases in which the course was concluded by 1912, all are in good condition still with the exception of 3; the marked improvement in these had persisted for two years, but their symptoms returned and 2 have died.

Elimination and Retention of Urea.—Among the points brought out by Venza in this study of the present status of this subject, is that he often found patches of apparently normal tissue in kidneys which at first glance seemed to be totally pathologic. Sometimes these normal areas gave evidence of compensative hypertrophy. He tried to estimate this reserve capacity of the kidney by comparing the urea content of the urine before and after test ingestion of 20 gm. of urea. The increase ranged from 1 to 18 gm. but the findings did not correspond to the known condition of the kidneys. Those showing the largest increase were not those with the mildest kidney disease, and repetition of the test gave variable findings. He emphasizes further that little reliance can be placed on the concentration of the urine from day to day. The maximal concentration is said to be more instructive, that is, the highest concentration in which the special substance can be eliminated. This is determined from the total urine for three or four days. It is said to be peculiar to the individual and constant in him. But in Venza's cases this maximal concentration was not constant. It seemed as if the urea had acquired a threshold below which its elimination was impossible. The kidneys seemed to be unable to respond to slight stimuli; only powerful ones affected them, and not always proportionately to the stimulus. This may be the reason why the Ambard ureosecretory constant is not always a reliable guide. The authorities even differ as to the normal standard, Ambard changing his early figure of 0.040 to a range from 0.065 to 0.070, and Weill accepts a range from 0.063 to 0.080 and, in the elderly, from 0.097 to 0.1. Raimoldi states that the normal limit is 0.080. In Venza's cases the constant was always above normal but not often proportionally to the severity of the disease, and it varied from time to time. In one patient it was 0.5 on two occasions and then 0.146, and in another 0.875, 0.633 and finally, as death approached, 0.328. The azotemia kept constantly high throughout, and the urea content of the urine did not change enough to justify this change in the Ambard constant. The azotemia in all his cases was constantly above 0.5 per thousand. An increase in the azotemia as edema subsides is always a grave sign, as the kidneys are unable to eliminate the urea which the edema fluid had been holding in solution. An increase in the azotemia as edema is forming shows the hampering of kidney function by the mechanical obstacle of the edema. The urea content of the blood with edema is therefore instructive, but only when the dilution is known. A few days of a diet to get rid of chlorids insure much greater precision. Five patients with azotemia above 2 or 3 per thousand soon died, and one with 1.70 per thousand did not survive more than a few months.

Factitious Conjunctivitis.—Borrello induced conjunctivitis in rabbits' eyes with castor-oil seeds and then obtained positive responses with an antiricin serum, with a diagnostic ricin collyrium, and with the deviation of complement test. With the latter it is a simple matter to detect factitious conjunctivitis induced with the seeds in man. The findings are illustrated.

Blue Disease.—Lombardo gives four pages of bibliography and the details of two cases in a man of 31 and a youth of 15.

Mediastinal Tumors.—Piazza-Martini reports twenty cases of mediastinal tumors causing unusual clinical manifestations. In some cases a frequent paroxysmal cough was the only symptom; it was worse on reclining, which suggested a movable tumor. In one case the symptoms indicated a tumor in the anterior mediastinum and it retrogressed in thirty-five days under sodium iodid, and all traces of it had disappeared by another month. There had been no need to apply the Wassermann test or radioscopy as improvement was so promptly evident under the specific treatment. In one case the tumor causing the cough was discovered when the reclining patient was drinking. The swallowing movements brought an accessory and enlarged thyroid, close to the isthmus, into view. It retrogressed to a clinical cure under iodids and there was no further coughing in any position. Paralysis of one vocal cord was the only symptom in one case from a clump of enlarged peribronchial glands. One woman of 50 developed symptoms testifying to compression of the azygos where it entered the vena cava, with dysphagia from engorgement of glands in the right posterior medias-

tinum. Under large doses of sodium iodid the symptoms rapidly retrogressed, although there was nothing to suggest syphilis. Emphysema, acute catarrhal bronchitis, or compression of the descending vena cava were the only symptoms in some other cases. No operation seems to have been attempted in any of the cases. All proved fatal except the few mentioned above.

Phenol Lipoids.—Piazza's experiments in chemotherapy have resulted, he says, in demonstrating peculiar properties in a combination of phenol and various lipoids, differing from the properties of either alone, and differing further according as the lipoids were derived from egg yolk, brain tissue, cholesterin or lecithin, and with or without addition of camphor. Addition of 2 gm. of the phenol-cholesterin-camphor combination to 10 c.c. of tetanus toxin annulled the toxicity so that guinea-pigs bore without harm five times the lethal dose of the tetanus toxin thus treated. The bactericidal action was most pronounced with the Shiga dysentery bacillus, and least with the pneumococcus and streptococcus. No irritating nor analgesic action on the skin or mucosa could be discovered, even with prolonged contact.

Annali d'Igiene, Rome

November, 1919, **29**, No. 11

Autovaccines in Treatment of Disease from Filtrable Virus. D. De Blasi.—p. 717.
Production of Secondary Hemolysins in Rabbits Inoculated with Ricin. D. De Blasi.—p. 727.
Action of Phenol on Rabies Virus. V. Puntoni.—p. 730.
*Prophylaxis of Malaria. M. Rizzi.—p. 748.
*Infectious Abortion in Horses. M. Carpano.—p. 752.

Municipal Prophylaxis of Malaria.—Rizzi relates experiences in Italy which demonstrated the advantages of keeping the domestic animals between the dwelling places and the pools or marshes that breed the mosquitoes, when it is impossible to keep the pools thoroughly oiled to destroy the larvae. At Trinitapoli, where malaria has long been prevalent, the stables and barnyards were removed outside the city limits and on the side toward the marshes. The stables swarmed with mosquitoes, and as they were killed off day by day, new hosts arrived, but the city escaped. No mosquitoes entered the city, and no new malaria cases developed, although the endemic was severe in the country around. The barns for the animals attract and collect the mosquitoes, and they can be destroyed readily while collected here, repeated attacks on them keeping the hosts under control. Roubaud in Paris has also recently called attention to this means of segregating the mosquitoes.

Infectious Abortion in Horses.—Carpano has isolated a bacterium of the paratyphoid group from mares with this disease and from the polyarthritis of the colts born from these mothers. It was frequently associated with a streptococcus, and he has reproduced with it a fatal disease in rabbits, guinea-pigs and dogs. It responds to agglutination tests. Characteristic cultures of both are shown in two plates.

Archivio Italiano di Chirurgia, Bologna

August, 1919, **1**, No. 1

Latent and Atypical Tetanus from War Wounds. M. Donati.—p. 1.
Tardy Slow-Tetanus After Preventive Antiserum. A. Biancheri.—p. 15.
*Serotherapy of Gas Gangrene. G. M. Fasiani.—p. 35.
*Tuberculosis in Remaining Kidney. G. G. Forni.—p. 85.

Antiserum for Gas Gangrene.—Fasiani discusses the preparation and the action of immune serums against the anaerobes responsible for experimental gas gangrene.

Tuberculosis in Single Kidney.—Forni induced a tuberculous process in both kidneys and then removed one the fifteenth day in four guinea-pigs and slaughtered the animals the thirtieth day. The same procedure was applied to a series of eight rabbits. In a third series the interval before nephrectomy was two months and before killing three months. Some colored plates accompany the article. The data presented confirm the favorable effect on a tuberculous kidney of removal of its mate. The remaining kidney hypertrophies and it becomes functionally more capable. In animals, at least, the tuberculous process is retarded and modified by processes of sclerosis which tend toward healing and to recovery.

Gazzetta degli Ospedali e delle Cliniche, Milan

Nov. 13, 1919, **40**, No. 91

*Lavage of Spinal Cavity in Epidemic Meningitis. C. B. Farmachidis. p. 988.

Rinsing Out the Spinal Cavity in Meningitis.—Farmachidis emphasizes the benefit in a case in which he rinsed out the spinal cavity with a 7.5 per thousand physiologic solution, using up to 360 c.c. at each sitting, and keeping this up daily for twenty-five days. He first withdrew 30 c.c. of the spinal fluid and then injected the same amount of the physiologic solution. After a minute or two this was then gently aspirated or allowed to flow out, and 30 c.c. were injected again, repeating this ten or twelve times at a sitting, thoroughly rinsing out the cerebrospinal canal, the fluid finally coming away clear. The procedure is not painful, but injection of antimeningococcus serum causes some pain. By the second application in the case described the fever disappeared, and the young man became conscious, while the procedure seemed harmless. The cerebrospinal fluid was clear by the twenty-third day. Aubertin reported in 1915 having treated fifty men with three injections of 50 c.c. of the antiserum, preceded by rinsing with a total of 150 c.c. of physiologic solution, and a cure followed.

Policlinico, Rome

January, 1920, **27**, Surgical Section No. 1

*Solid Hard Ovarian Tumor. E. Bussa-Lay.—p. 1.
Healing of Pseudotuberculous Peritonitis After War Wounds of Chest and Abdomen. G. Egidi.—p. 8.
*Ether in Surgical Infections. G. Fantozzi.—p. 19. Contn.

Solid Ovarian Tumor.—The large tumor described by Bussa-Lay was so hard from infiltration with lime salts that knife and saw made scarcely any impression on it.

Ether in Surgical Infections.—In this instalment of Fantozzi's long report of research on this subject, he describes the results of flushing the peritoneal cavity of rabbits, guinea-pigs and dogs with ether, according to Morestin's technic, after inducing peritonitis. Other experimental work showed that ether has only very weak antiseptic properties. His experiences on the whole warn decidedly against the use of ether for rinsing out the diseased abdominal cavity. One special drawback is the intense cold which it induces. In abdominal operations it is one of the cardinal indications to keep the viscera warm. In some of the animals, even small amounts of ether induced hemorrhagic lesions in the viscera and degenerative changes in the kidneys, besides the active hemolytic property of the ether. When poured into the peritoneum and its evaporation prevented, all the animals died from shock. When the abdomen was left freely open, so the ether fumes and any excess of fluid could escape, two of the seven rabbits (15 to 50 c.c. ether) died, and two of the three guinea-pigs (20 to 30 c.c.). Only one survived of seven guinea-pigs given intraperitoneal injection of from 0.5 to 1 c.c. of ether, and four of seven rabbits. The guinea-pigs died in a few minutes, the rabbits not until the fifth and eighteenth days. The volatilized ether evidently paralyzed the respiration by reflex action from pressure on the diaphragm. Normal rabbits bore the ether with comparatively little disturbance. The report of his clinical experiences will form the next instalment of his article.

Riforma Medica, Naples

Jan. 10, 1920, **36**, No. 2

*The "War Big Belly". C. Guarini.—p. 30.
Surgery of the Brain. C. Oliva.—p. 38.
*Appendicitis and Tuberculosis. T. Silvestri.—p. 43.
Italian Science and the Histology of the Nervous System. C. Ciaccio.—p. 44.
*Telegony. V. Diamare.—p. 48.

The "War Big Belly."—Guarini states that enteroptosis, atony and dyspepsia were responsible for the meteorism and displacement of the diaphragm in his eleven impressive cases in soldiers.

Appendicitis and Tuberculosis.—Silvestri found manifestations of tuberculosis in 45.63 per cent. of 103 persons with appendicitis.

Telegony.—Diamare recalls Paladino's demonstration of spermatozoa found buried in the immature ova of a guinea-pig, as explaining telegony.

Rivista di Clinica Pediatrica, Florence

December, 1919, **17**, No. 12

*Postdiphtheric Paralysis. L. Spolverini.—p. 617.
*Foot Phenomenon in Meningitis. A. Nizzoli.—p. 637.

Postdiphtheric Paralysis.—Spolverini queries whether the postdiphtheric flaccid condition of the muscles should properly be called paralysis, as the disturbances are more in the nature of myasthenia in the majority of cases and in four he describes here and compares with similar cases on record. In three of his cases the disturbances were arrested with antitoxin, and they retrogressed completely in from twenty to forty days. The larger the amount of antitoxin injected, the prompter the cure. In the fourth case the antitoxin had not been commenced until the twenty-seventh day, and only comparatively slight improvement was realized. These cases teach further the necessity for taking smears from the nose with postdiphtheric paralysis, as this may reveal virulent diphtheria bacilli. Some even assert that nasal diphtheria is more apt than other forms to be followed with paralysis.

The Foot Phenomenon in Meningitis.—Nizzoli cites conflicting evidence from various writers on the constancy and significance of the various signs of meningitis in children, of which he enumerates a long list. The excitability of the nervous system in children causes a host of symptoms which obscure the diagnosis. The signs which depend on reflex action are the most instructive in children, as they cannot fight against them. In two cases of tuberculous meningitis he noted dorsal flexion of the big toe and a fanlike spreading of the other toes when he tried to induce the identical contralateral reflex. The other leg became spontaneously flexed, and the toes assumed the position mentioned above. The reflex is induced on the recumbent child, with legs extended, by flexing one on the thigh and on the pelvis, with moderate compression, watching the behavior of the other leg. This foot phenomenon could never be elicited in healthy children, but could be induced at will in both these meningitic children. In others with the disease more advanced the response was negative, confirming that the phenomenon is an earlier sign.

January, 1920, **18**, No. 1

*Progressive Muscular Atrophy. G. Fiore and G. Guidi.—p. 1.

Progressive Muscular Atrophy in Children.—Fiore and Guidi give nearly four pages of bibliography on progressive muscular atrophy or dystrophy of muscles, and two colored plates of the findings in one of their three cases in infants. The latter died from pneumonia at the fifth, seventh, or fourteenth month. The muscular atrophy had been noticed soon after birth, and displayed a rapidly progressive course, with lax paralysis. The children seemed otherwise normal. Two had the same parents; they were born about four years apart, and two other children in the family were said to have shown symptoms resembling these. Two other children in the family are normal and in good health. The pathologic anatomic findings in the third case demonstrate the existence of an intermediate form between the idiopathic and the spinal muscular atrophy type.

Rivista Critica di Clinica Medica, Florence

Dec. 13, 1919, **20**, No. 50

Scleroderma with Sclerodactylia; Two Cases. C. Capezzuoli.—p. 589. Conc'n.

Dec. 20, 1919, **20**, No. 51

*Echinococcus Intradermal Reaction. A. Testi and C. Zoli.—p. 601.

Echinococcus Intradermal Reaction. — Testi and Zoli announce that when this intradermal test is negative, exploratory puncture is justified. But it should never be done when this test elicits a positive response, and this is the rule in echinococcus disease. The exceptions are rare. The test is made by inoculating one arm with 0.5 c.c. of fluid from an echinococcus cyst on a guinea-pig or beef, drawn less than twenty-four hours before. A control inoculation is made with physiologic saline on the other arm. Long series of tests on other patients and on the healthy failed to elicit the slightest response, but in thirty patients with echinococcus disease the local reaction was unmistakable in both adults and children. In one child the test was negative until cyst fluid from a sheep was used. This elicited a typical reaction. The absence of the local reaction is a sign that either there is no echinococcus disease, or else that the products of the cocci have not sensitized the organism. In either event exploratory puncture is harmless. On the other hand, a positive reaction indicates a phase of sensitization in which exploratory puncture is liable to induce symptoms of serious anaphylaxis. In some cases a positive reaction could be elicited even years after operative cure of the cyst.

Anales de la Facultad de Medicina, Lima

September-October, 1919, **2**, No. 11

*Tuberculous Pneumonia. M. Gonzalez Olaechea.—p. 81.
History of Yellow Fever in Peru. J. Arce.—p. 86. Cont'n.
Sudden Death. F. Quesada L.—p. 113. To be cont'd.
*Indigo in Ancient Peru. M. A. Velasquez and A. Maldonado.—p. 134.
Normal and Pathologic Language. L. D. Espejo.—p. 144. Cont'n.
*Peruvian Pseudomeloidae. E. Escomel.—p. 160.
The Anatomists of Peru. H. Valdizan.—p. 164.

Tuberculous Pneumonia.—Gonzalez reports a typical case of what he assumed to be chronic pneumonia of the fibroid hyperplasia type, for which attenuated tuberculous infection was probably responsible. The symptoms were those of lobar pneumonia, but there was a history of moderate hemoptysis twenty-five years before, with no other symptoms of tuberculous infection. The tubercle bacilli are seldom to be found in the sputum in such cases, but tuberculin-iodid treatment, begun the thirtieth day in his case, induced specific reactions, brought down the fever, the symptoms subsided, and the man of 54 has felt perfectly well during the four months since he left the hospital apparently cured by the tuberculin stimulating the production of antibodies.

Indigo in Ancient Peru.—Velasquez and Maldonado review the history of the use of indigo in America, many textiles, etc., dyed with indigo having been found in tombs from pre-Columbian days. They give an illustration of part of a garment dating from the Inca period, decorated with indelible blue figures.

The Pseudobeetles of Peru.—Escomel adds another to the list of eight pseudomeloidae which have been described in Peru, five first by him. The blood of these insects seems to have been used from time immemorial to cure warts. The papilloma becomes blanched and looks as if it has been cauterized with a strong acid. The active principle has been identified with cantharidin.

November-December, 1919, **2**, No. 12

Early History of Lima Medical School. H. Valdizan.—p. 244.
*Study of Maize and Chicha Liquor Made Therefrom. M. A. Velasquez and A. Maldonado.—p. 268. Conc'n.

Maize and Chicha.—This latter term is the name of the common alcoholic beverage long made from corn in Peru, and Velasquez and Maldonado give an illustrated description of its production from prehistoric days to date. They also review the history of maize, giving a bibliography of 139 works.

Anales de la Facultad de Medicina, Montevideo

December, 1919, **4**, No. 12

*Influenza, Suprarenal Insufficiency and Manic-Depressive Psychoses. S. C. Rossi.—p. 801.
*Gallbladders with Partitions and Gallstones. D. Prat.—p. 813.
Classification of Motor Disturbances: Hyperkinesia. A. Ricaldoni. —p. 842.

Suprarenal Insufficiency as Factor in Psychoses.—Rossi has encountered nine cases in which a manic-depressive psychosis developed during the weakness following influenza. He ascribes it to the suprarenal insufficiency which was manifest. This assumption was confirmed by evidences of suprarenal insufficiency in six other patients with manic-depressive

psychoses who had not had influenza. It was placed on a still more solid basis by the efficacy of suprarenal treatment. The beneficial action of epinephrin in these cases seems to lift the veil of mystery from the manic-depressive psychoses, and expose their origin and means to treat them.

Partitions in Gallbladders.—In one of the cases illustrated, constriction of the walls of the gallbladder, at about the lower third, had imprisoned a large gallstone; in another case two were imprisoned by an hour-glass constriction. In others the gallstones were lodged in a diverticulum, or a fibrous septum had walled off part of the gallbladder and with it a stone. In one case the gallbladder had bent double, shutting off communication between the two halves. This partitioning off of the gallbladder may be of inflammatory origin, or from deformity from the weight of stones, or from a tumor nearby, or from some mechanical valve formation. If we bear the possibility of such anomalies in mind, we will not waste so much time waiting for spontaneous expulsion of the calculi which is absolutely impossible in these conditions.

Amazonas Medico, Manáos

July-September, 1919, **2**, No. 7

*Rhodnius Brethesi n. sp. A. Da Matta.—p. 93 and p. 104.
Influenza in Northern Brazil. G. Victor.—p. 95.
Urethroscopy in Men. F. Costa Fernandes.—p. 98.
Posthumous Testimony to Validate a Will. J. F. De Araujo Lima.—p. 107.
J. Barbosa Rodrigues, the Botanist. A. Da Matta.—p. 137.

Insect Host of South American Trypanosome.—Da Matta has been studying the life history of a beetle which he has named *Rhodnius brethesi* and which is an intermediate host for Chagas' trypanosome. It is found in the Amazon region where both the trypanosomes and the animal ancestral host for the latter, the armadillo, are encountered. The trypanosome does not seem to cause disease in the latter, and Chagas' disease has never been known in human beings in that region to date.

Boletín de Medicina y Cirugía, Guayaquil

December, 1919, **17**, No. 127

*Etiology of Yellow Fever. VI to VIII. H. Noguchi.—p. 165.

Yellow Fever.—The *Boletin* here continues its translation into Spanish of Noguchi's various publications on this subject. The fine plates and tabulations showing the results of experimental research on *Leptospira ictéroides* are reproduced.

Brazil-Medico, Rio de Janeiro

Nov. 22, 1919, **33**, No. 47

Colloidal Gold in Treatment of Varicose Ulcers. Ataliba Sampaio.—p. 369.

No. 29, 1919, **33**, No. 48

*Transmission of Disease by the Fly. L. Rocha.—p. 377.

Flies in Transmission of Disease.—Rocha appeals for a national campaign against flies, and says that Paré in 1575 attributed to flies a certain rôle in the propagation of the plague.

Dec. 20, 1919, **33**, No. 51

*The Fixation Test in Diagnosis of Mycetoma or Madura Foot. A. L. B. Barreto and C. Burle Figueiredo.—p. 403.
Foreign Body in Rectum. A. A. de Carvalho.—p. 404.
*False Angina Pectoris. Athayde Pereira.—p. 405.

Dec. 27, 1919, **33**, No. 52

Mechanism of Death After Experimental Vagotomy. M. Ozorio de Almeida.—p. 411.
Epidemic Poliomyelitis in Uruguay. V. Escardo y Anaya.—p. 412. Conc'n.

Serologic Test for Mycetoma.—The deviation of complement test was positive in the case of mycetoma or Madura foot described. The antigens used were emulsions of *Endomyces brasiliensis* and of *Discomyces bahiensis*, which happened to be on hand.

False Angina Pectoris.—Athayde describes a case of liver colic with spasm of the stomach which simulated the clinical picture of angina pectoris in the man of 43. Under measures to tide the cholelithiasis into a latent phase, the recurring false angina pectoris permanently subsided.

Crónica Médica, Lima, Peru

November, 1919, **36**, No. 677

*Case of Ainhum. O. Soto and J. L. Raffo.—p. 373.
Electrocardiographic Diagnosis of Extrasystoles. M. A. Scbreiber.—p. 378.
Rupture of Membranous Urethra. E. P. Manchego.—p. 381.
*The Tuberculin Reaction in Blastomycosis. S. Lozada Benavente.—p. 389.
Dystocia from Defective Development of Lower Segment of Uterus. E. A. Boero.—p. 390.
The Progress of Medicine in Spain. C. Maturana Vargas.—p. 395.

Ainhum.—Soto and Raffo report the first case of ainhum to be published in Peru, but the patient tells of other cases in his environment.

The Tuberculin Reaction in Blastomycosis.—Lozada found the intradermal tuberculin reaction constantly positive in his fifteen cases of blastomycosis. Two of these patients died from influenza, but necropsy failed to reveal the anticipated tuberculous lesions. It seems as if the positive reaction must have been the work of the blastomycosis.

Plus-Ultra, Madrid

September-October, 1919, **3**, No. 15-16

*Technic for Suturing the Intestine. A. Perera.—p. 125.
Recent Progress in Bacteriology.—p. 131; Therapeutics.—p. 141; Otolaryngology.—p. 148; Instruments.—p. 154; Pediatrics.—p. 160; Obstetrics and Gynecology.—p. 162; Heart Disease.—p. 174.
Operative Treatment of Traumatic Radial Paralysis. M. Bastos.—p. 135.
Treatment of Disease of Lacrimal Apparatus. Barraquer.—p. 147.
*Hyperthyroidism and Pseudohysteria. C. Juarros.—p. 152.
*Lipomatosis of the Kidney. M. Serés.—p. 168.
The Thermal Springs of Spain. H. Rodríguez Pinilla.—p. 171.
Epidemic Meningitis. C. García Luquero.—p. 177.
Recent Surgery of the Digestive Apparatus. L. Urrutia.—p. 179.
Scientific Care of the Insane. H. F. Delgado.—p. 185.
Anomaly of the Kidney. Garcia Urdiales.—p. 190.
*Glycogen in the Auriculoventricular System. P. Rojas.—p. 192.

Technic for Suturing the Intestine.—Perera presents thirty-nine illustrations of the various steps of suturing a perforation and of anastomosis, with comment based on his personal series of fifty-eight cases.

Hyperthyroidism and Pseudohysteria.—Juarros declares that every day he encounters more and more persons whose disturbances have been ascribed to hysteria with the consequent therapeutic indifference, when in reality closer study of the case reveals excessive functioning of the thyroid as a factor. This hyperthyroidism can be easily cured or at least much attenuated, he continues, when the thyroid symptoms are discovered, tremor, sweating and mononucleosis, besides the usual triad of tachycardia, palpitations and the ocular signs. The tremor is rendered evident by having the patient extend his arms and hands, spreading the fingers. A sheet of paper laid on the hand renders plainly manifest any tendency to tremor. Hysteria can be excluded by the mentality, the hysteric character being easily recognized, so that, he says, "there is no excuse for labeling as hysteria every feminine neurotic manifestation." The instability of the thyroid may induce attacks of hyperthyroidism which may simulate in every respect the phases of a neurosis with the arthritic constitution. The excessive thyroid functioning may even entail obsessions, phobias, hallucinations and delirium, still further confusing the diagnosis. He has recently seen a case with the set of symptoms described by Block in 1912, and it yielded to antithyroid treatment. The patients in this category are usually old maids, and pigmentation is a characteristic symptom, most marked in the muscles, cheeks and side of the brow. They are self-centered, melancholy and irritable, complain of fatigue and insomnia, and are doomed to suffer incurably so long as hysteria is regarded as responsible. A prompt cure in all these hyperthyroid cases may usually be realized under antithyroid plus ovarian treatment, with calcium salts and sodium cacodylate as adjuvants. The main thing is to give adequate doses and persevere long enough.

Renal Lipomatosis.—Serés' patient was a woman of 26; during convalescence from influenza constant pain developed in the left kidney and the urine was turbid, but there were no other signs suggesting a tuberculous process. The pains grew so severe that the kidney was removed, and it was

found full of fat, the soft yellow fat having taken the place of the true kidney tissue, only a narrow shell of the latter being left. In the three analogous cases on record the patients soon died, as also Serés' patient but in none was the kidney process directly responsible for the death. Serés' patient succumbed to pleurisy a month after the operation.

Glycogen in Auriculoventricular Conducting System.—Rojas reports as the results of extensive microscopic and chemical research on the impulse-conducting system of the heart, that there seems to be a larger proportion of glycogen in the tissues here than elsewhere.

Revista de Gyn., d'Obstet. e de Pediat., Rio de Janeiro

September, 1919, **13**, No. 9

*Vesicovaginal Fistulas. H. F. Werneck.—p. 263.
Gravity of Otitis in Infants. N. Gurgel.—p. 313. Conc'n in No. 10, p. 367.

October, 1919, **13**, No. 10

Uterine Cancer: Diagnosis and Treatment. A. Monjardino (Lisbon). —p. 321.
Hysterectomy from the Social Standpoint. Idem.—p. 342.
Organization of Maternities. Idem.—p. 355.

Genito-Urinary Fistulas.—Werneck had five women with these fistulas in his service during a recent two months. He describes the various operative measures applied, and compares them with others in the literature, giving thirty-one illustrations. In some of his cases labor had lasted from three to eight days; in one of these a calculus in the bladder had been a factor, and a pessary in others. In conclusion he says to emulate Sims' pertinacity, and keep on operating anew, undaunted by apparent failures, until finally the fistula is conquered.

Revista Medico-Cirurgica do Brazil, Rio de Janeiro

September, 1920, **27**, No. 9

*Fulminating Otogenous Meningitis. F. Eiras.—p. 319.

Fulminating Otogenous Meningitis.—Eiras' 14 cases confirm the frequency of meningitis from this cause, and the danger of its nonrecognition. In one case a physician had been unjustly arraigned, and the day he should have appeared in court he died suddenly. No one knew he was sick, but necropsy revealed meningitis from catarrhal otitis. The course of the meningitis had been so fulminating that the death had been ascribed to suicide. In the 3 fatal cases in Eiras' practice, 2 of the patients had changed doctors because he had insisted on an operation, and the third consented to intervention only when practically moribund. Two of the 6 successful operative cases were in infants of 4 and 11 months. In one young adult the meningitis was consecutive to gonococcemic otitis, mastoiditis and arthritis of the temporomaxillary articulation, and the operative measures were supplemented with vaccine therapy according to Wright's method. A cure was realized without operation in 5 cases, draining the suppurating otitis media and rinsing with hydrogen dioxid once or twice a day; these were all children but one. The otitis had developed during convalescence from influenza in 3 of them. Even a simple catarrhal otitis is liable to set up meningitis. There had been no pus in the discharge from the ear in one of his cases, but the operation disclosed a large collection of pus. This frequent finding sustains the theory that otitis media is not always due to invasion from the nasopharynx but may be a local explosion from a general infection. This mechanism was evident in his gonococcemia case; there was no suppuration in the middle ear, but it contained the gonococcus. The mastoid antrum should be opened up at the slightest suspicion of involvement of the brain. We must remember, he says, that the most treacherous cases may show very few symptoms, and that an exploratory operation here is the most harmless of all surgical ventures. During the 1917 epidemic of acute otitis media he often encountered 2 or 3 or even 6 cases in one home.

Revista de Medicina y Cirugía, Havana

Nov. 25, 1919, **24**, No. 22

*Treatment of Trachoma. R. Guiral.—p. 535.
*Treatment of Glaucoma. R. Guiral.—p. 537.

Dec. 25, 1919, **24**, No. 24

Twin Pregnancy with Placenta Praevia, etc. L. Huguet.—p. 569.
Paratyphoid plus Colon Bacillus Fever. M. A. de Villiers.—p. 572.

Brush Treatment of Trachoma.—Guiral has applied with good results Howley's aspirating cannula for treatment of trachoma but this does not scrape off the sago-like elevations so perfectly as a dentist's circular brush run by an electric motor. The small, narrow, rapidly revolving brush sweeps off the granulations without the slightest harm to the mucosa. The surgeon thus realizes more than he can ever obtain with the vacuum cannula or other means, he says, while the conjunctiva is left as smooth and clean as if there had been no granular disease. He applies it under ether, and compresses the lid at the operation to expel the blood somewhat. After thus sweeping the conjunctiva clean, he applies the vacuum cannula to aspirate all secretions, blood, etc. Several stereoscopic views accompany the article.

Glaucoma.—Guiral describes the technic for Elliot's method of treating glaucoma, and declares that it is superior for all forms of glaucoma. He has recently had to apply it to six young persons under 20, all belonging to two families in which the parents and grandparents had required treatment for acute glaucoma. The young people had simple glaucoma; the rapid decline of vision was arrested by the Elliot operation, and vision is now excellent.

Mitteilungen aus der Med. Fak. der Univ. zu Tokyo

March 28, 1919, **21**, No. 2, German Edition

*Colloidal Gold Reaction in Body Fluids. H. Iida and S. Tominaga. —p. 217.
*Banti's Disease. T. Mitamura.—p. 245.

Colloidal Gold Test of Body Fluids.—Iida and Tominaga have been studying the colloidal gold reaction in the cerebrospinal fluid, in effusions and exudates and in urine, milk and bile, and its relations with the Wassermann, Nonne and other reactions, in health and in pathologic conditions. Their charts and the tabulated comparative findings in fifty-one cases show parallel reactions as a rule with the first phase of the Nonne reaction and pleocytosis, but the colloidal gold reaction was sometimes negative when the Wassermann was positive, and vice versa. Scarcely any of the exudates induced the maximum precipitation below a dilution of 1:10,240, but with transudates the range was wider. The reaction indicates that there are three kinds of transudates. With one the maximum of precipitation is between 1:10 and 1:320; with the second kind, between 1:940 and 1:1,280, and with the third, at 1:2,560. No difference between the urine from sound and diseased kidneys could be detected. Precipitation occurred with human milk, blister fluid and bile. They warn that in preparing the colloidal gold, the vessel must not be covered, as retention of the gas generated interferes with the reaction later. They specify a few other minor points in the technic.

Revision of Banti's Disease.—Mitamura presents evidence that the spleen in true Banti's disease shows fibroid degeneration of spleen tissue while the liver may in time develop cirrhosis or atrophy, but it differs essentially from that with Laennec's and other forms of cirrhosis. He cites 141 articles on the subject from the literature, and gives five plates of photomicrographs of the necropsy findings in seven cases reported with minute detail. There was a history of syphilis in two, and it was suspected in a third case. He declares that the term Banti's disease should be restricted to this type of primary splenomegaly with gradually increasing simple anemia, with finally, sometimes, ascites, and in the later stages gastro-intestinal hemorrhage. Splenic anemia and Banti's disease are therefore synonymous terms, he adds. The latter is essentially much like hemolytic jaundice, especially the acquired form, although not exactly the same. Thrombosis in the portal system is mainly responsible for the late ascites in the Banti's syndrome. In Mitamura's cases the enlargement of the liver was noted under 10, under 20, or under 30 years of age in about half the cases, and this stage of splenic anemia lasted from a few years to twenty years. Then the stage of ascites without impairment of the bile

secretion lasted about a year. In the third, terminal, stage the liver was much reduced in size and bile production was diminished. This phase lasted two or three years. No operation had been attempted except in two of the cases; fatal peritonitis followed in one, and the other patient succumbed to heart weakness. The others died in time from marasmus or gastro-intestinal hemorrhage.

Berliner klinische Wochenschrift, Berlin

Nov. 24, 1919, **56**, No. 47

*Prohibition of Hypnotic Exhibitions. E. Schulte.—p. 1105.
Delivery of Milch Cows to the Entente. Rott.—p. 1108.
*The Sachs-Georgi Reaction. W. Wolffenstein.—p. 1110.
*Deep Roentgenotherapy in Leukemia. E. Rosenthal.—p. 1113.
Pectoral Fremitus in Croupous Pneumonia. Arneth.—p. 1116.
Morphology of Lymphocytes. H. Klien.—p. 1117.

Prohibition of Exhibitions of Hypnotism.—Schultze deplores that hypnotic exhibitions are becoming so frequent, as he has seen great harm result to subjects who have been hypnotized. He recites in detail the case of a young woman who after being hypnotized one evening by a traveling hypnotist presented marked mental disturbances. As she started for home, she insisted that she must go back, again and again, and at home she ran about with fixed eyes and outstretched hands, apparently insensible to her surroundings, though she recognized her friends. The hypnotist was finally sent for at a late hour, and he succeeded in quieting her. After a restless night she went to her work, but was unable to attend to her duties and had to be sent home. She felt compelled to return to the hypnotist, and complained that she could not think clearly. After a week of this, Schultze hypnotized her in presence of a colleague, and impressed on her that in future only Schultze and his assistant could hypnotize her, and that after this she would have no more trouble. She was then very slowly and cautiously brought out of the hypnotic state and in a few days had entirely recovered. He emphasizes that hypnosis cautiously applied is the best means to cure the effects of hypnotism improperly carried out. Before the war, some of the German states had laws prohibiting exhibitions of hypnotism, but they are not being enforced now. Austria and Italy have also passed laws of the kind.

The Sachs-Georgi Reaction.—Wolffenstein and his associates made comparative tests by the Sachs-Georgi and the Wassermann methods in 1,000 cases, from which, it seems, four conclusions may be drawn: 1. Even with the most careful technic, misleading results seem bound to arise on account of the seemingly unavoidable errors in preparing the solutions, and it is therefore important always to use more than one type of reaction, in order by comparing results to reduce the percentage of error to a minimum. 2. The Sachs-Georgi reaction becomes manifest in syphilis earlier and may be elicited later than the Wassermann reaction. 3. The number of unspecific Sachs-Georgi reactions is relatively high, being especially common with ulcus molle and in febrile conditions. Clinically healthy subjects may for the time being give positive Sachs-Georgi reactions. 4. The foregoing observations limit materially the usefulness of the Sachs-Georgi reaction as compared with the Wassermann reaction. A diagnosis of syphilis and conclusions as to continuing treatment can therefore not be based entirely on a positive Sachs-Georgi reaction, nor even on a series of positive reactions.

Treatment of Leukemia with Deep Roentgenotherapy.—Two years ago Rosenthal published a preliminary report of his treatment of leukemia with deep roentgenotherapy. His experience at that time had been that after only one sitting the number of leukocytes was reduced to normal in from ten to fourteen days, during which time the spleen had become much smaller. The subjective symptoms disappeared in cases in which other therapeutic methods had failed. He gives in detail the history of his oldest case: The white cell count varied from 250,000 to 300,000. Feb. 5, 1917, the patient received a deep roentgen-ray treatment. February 14 the white cell count was 30,000, and later went down still further and remained under 50,000 until the end of April, 1917. End of October the white cell count was back to 250,000 again. The patient returned and received another single treatment. The count fell by crisis to 5,000 and remained stationary for several weeks, but by June, 1918, after gradually rising, it had reached 230,000 again. A third treatment brought the count promptly down to from 5,000 to 10,000, but by January, 1919, it had again reached 230,000. After a fourth treatment the count was 20,000. The spleen decreased in size after each treatment. For five or six months after each treatment the patient felt well and was able to work, but then a slight weakness set in, with a feeling of pressure in the region of the spleen; these symptoms were promptly relieved by renewed treatment. Rosenthal's experience thus indicates that the favorable effect of a deep roentgen-ray exposure wears off in about eight months, when treatment must be renewed. He still considers this the most reliable treatment in leukemia. Severe reactions, however, do result, and he admits a mortality of 12 per cent. in 25 cases, which he considers a fair showing in view of the seriousness of the prognosis in leukemia.

Deutsche Zeitschrift für Chirurgie, Leipzig

July, 1919, **150**, No. 5-6

*Prolapse of the Rectum. E. F. Curt Heinemann.—p. 289.
Operative Treatment of Recent Fracture of Forearm. A. Szenes.—p. 333.
Intra-Abdominal Loss of Fat as Factor in Hernia and Ileus. Bode.—p. 344.
Unusual Cases of Mechanical Ileus. R. v. Wistingbausen.—p. 352.
*Arteriomesenteric Occlusion of Duodenum. F. Ranzel.—p. 361.
Hyperemia and Edema from Constricting Band. Mende.—p. 379.
Extensive Resection of Intestine for Infarct from Arterio-Embolism. H. Smidt.—p. 399.
*Etiology of Cleft Face. R. Drachter.—p. 409.
Simple Perforating Ulcer of Large Intestine. J. Dubs.—p. 415.
*Fat in Plastic Operations on Lungs. K. Stromeyer.—p. 420.

Prolapse of the Rectum.—Heinemann advocates a method of operative treatment with which he has been successful in nearly all of twenty-six exceptionally severe cases. He sutures the anus, and then through a median incision, from the anus to the coccyx, with a simicircular extension at the edge of the anus, he slits the muscles and loosens up the rectum walls. Then he passes three threads lengthwise through the rectum wall, except for the mucosa. As the threads are tied, they take up three deep transverse folds in the rectal wall. By tying the ends of the threads from each side together, a lengthwise fold is taken up also. The higher threads are fastened to the coccyx or a ligament to suspend the rectum. The levator ani muscles are then sutured, and if necessary a fold is also taken up in the sphincter.

Arteriomesenteric Duodenal Ileus.—Ranzel cites experiences which demonstrate that this form of strangulation ileus can develop without dilation of the stomach, contrary to the opinion of some. He then reports a personal case in which a much emaciated man of 28 developed the arteriomesenteric duodenal occlusion spontaneously. The symptoms came on suddenly while he was traveling, obliged to stand up, and he had been eating very little. There was no collapse, the colic-like pains being the main symptom. When he reclined, the pains were relieved. In this case and in four others on record there was bluish discoloration below the occlusion. In treatment, the knee-elbow posture should be tried, introducing the stomach tube with the head low. If these measures fail, he advises gastro-enterostomy before the debility becomes extreme, as he applied in his case, with prompt recovery.

Congenital Clefts in the Face.—The cleft in the face extended from both orbits to the mouth, the nose region forming thus a peninsula, as it were, and the umbilical cord was firmly impacted in the cleft, while an amniotic band was caught in one orbit.

Fat in Plastic Operation on Lung.—Stromeyer says that the cavity in the lung left from a war wound was large enough to hold two billiard balls, several ribs having been resected and three fistulas from the bronchi opening into it. He twisted a pedunculated flap of adipose tissue around to fill the defect, with a second flap to hold it in place. The bleeding and the coughing stopped at once, and recovery was soon complete except that the man still has to wear a corset to prevent the flapping of the lower part of the chest wall on that side.

Münchener medizinische Wochenschrift, Munich

Nov. 28, 1919, **66**, No. 48

Focal Illumination of the Eye. A. Vogt.—p. 1369.
*Separation of B. Typhosus from B. Coli. E. Friedberger.—p. 1372.
Cerebral Reactions Following Salvarsan. G. L. Dreyfus.—p. 1374.
Silver Salvarsan Sodium. J. Hoppe.—p. 1376.
Technic of Silver Salvarsan Injection. C. Stern.—p. 1377.
*Diphtheria in Wounds. Kehl.—p. 1377.
*Intrathoracic Pressure and Respiratory Mechanism. R. Drachter.—p. 1378.
*Deep Thermometry: II. B. Zondek.—p. 1379.
*Diagnosis of Tuberculous Meningitis in Children. E. Rominger.—p. 1381.

Utilization of Capillary Attraction to Differentiate Typhoid and Colon Bacilli.—Friedberger dips strips of filter paper, 1 cm. wide and 10 cm. long, for twenty seconds to the same depth in equally concentrated suspensions of typhoid and colon bacilli. After the fluid has mounted up the strips by capillary attraction, the strips are then pressed down side by side for a moment on Endo plates. As the cultures develop it is found that the typhoid bacilli have mounted higher, as a rule, than the colon bacilli. The experiment may be made with a mixture of the typhoid and colon bacilli, and the strips may be cut into pieces 1 cm. wide (as far as the fluid has climbed). If these pieces are then put in a physiologic sodium chlorid solution and cultures made on Endo plates, the colon bacillus cultures will be found almost exclusively on the lower portions of the strips. The higher on the strips, the more the cultures of *B. typhosus* predominate. He is continuing his research on this elective capillary attraction for different bacteria, and thinks that it will aid materially in differentiation of the various types.

Surgical Wound Diphtheria.—Kehl states that in order to pronounce a final diagnosis of wound diphtheria, examination of smears alone is not sufficient, as it is impossible to determine to what extent pseudodiphtheria bacilli may be mixed with the genuine bacilli. He therefore recommends that in all cases in which pole-staining bacilli are isolated, the final diagnosis should be made on the basis of animal inoculation. An accurate diagnosis is especially important in view of the fact that genuine wound diphtheria is just as infectious as pharyngeal diphtheria. Sixty wounds that looked suspicious were examined as to their *B. diphtheriae* content and found to be negative. There was one finding that seemed doubtful, but inoculation of an animal showed that the organisms were pseudodiphtheria bacilli.

Instrument for Recording Intrathoracic Pressure and the Respiratory Mechanism.—Drachter describes a syringe instrument which serves to give a clear idea of intrathoracic pressure relations under physiologic and pathologic conditions.

Deep Thermometry.—Zondek gives a series of tables illustrating the varying temperature found in different parts of the body. The temperature in the musculature of the abdominal walls and the extremities is lower than that of the rectum, but near large blood vessels the temperature of the muscles is slightly higher, although still lower than the rectal temperature. The differences are not constant, and vary in different subjects. The temperature of the tissues gradually diminishes toward the surface of the body. Each centimeter marks a difference of 0.25 C. on an average. Layers of fat are poor conductors of heat and serve as a protection in the heat economy, consequently a dry skin presents a lower subcutaneous temperature than an oily skin. If the skin is oily, there is thus a marked contrast between the epidermis and the underlying fascia. The temperature of subcutaneous tissues depends on the character of the underlying tissues, being lowest over bones. The temperature of organs, taken during operations, showed that the liver, the kidney and the uterus had temperatures between the preoperative and postoperative rectal temperatures. During the operation, the body temperature falls. The lungs have almost rectal temperature, the difference being 0.2 C. In one suppurating uterine myoma the temperature exceeded the rectal temperature, doubtless owing to acute inflammatory phenomena. In a hydrocele a surprisingly low temperature was noted.

Diagnosis of Tuberculous Meningitis in Children.—Rominger comments on the tendency to regard tuberculous meningitis as a distinct disease, whereas it is important to bear in mind that it is in reality only one aspect of general miliary tuberculosis, and that the condition of the other organs, especially the lungs, may offer valuable evidence for an early diagnosis. Although tuberculous meningitis is usually easily recognized if there are pronounced brain symptoms, yet in the beginning of the disease, as long as only dubious general nerve symptoms are present, diagnosis is often difficult. Even when meningitis is diagnosed, it is often difficult to ascertain what form of meningitis is present. Roentgenograms of the lungs should be made, and they are often valuable, especially if the lungs already show signs of miliary tubercles, but negative results do not by any means exclude tuberculous meningitis, as miliary tubercles in the lungs often develop late, sometimes only shortly before death. Lumbar puncture is instructive. The tubercle bacillus is found only in from 80 to 90 per cent. of the cases and often requires several days of patient search. Lymphocytosis can only be regarded as a possible indication. Increased pressure as shown by lumbar puncture is important, but more valuable still is evidence of an increased albumin content of the cerebrospinal fluid, for which Pándy's reaction is the most reliable and practical method. This consists in adding a drop of cerebrospinal fluid to 1 c.mm. of 7 per cent. phenol solution. Cloudiness at the zone of contact is a sign that the fluid contains easily precipitable albuminous substances in pathologic quantities. In a series of fifteen cases the Pándy reaction was positive.

Therapeutische Monatshefte, Berlin

December, 1919, **33**, No. 12

*Treatment of Gas Bacillus Infection. E. Vogt.—p. 474.

Gas Bacillus Infection.—Vogt warns that the premonitory symptoms of gas bacillus infection are intense pain and a peculiar odor of the wound, distress, and the disproportion between the findings in the wound and the general condition. Metastasis is rare, but it is favored by ischemia at any point, even remote.

Therapie der Gegenwart, Berlin

December, 1919, **60**, No. 12

*Predisposition to Accidents.. C. Widmer.—p. 441.
Potency of Extracts of Digitalis. O. A. Rösler.—p. 447.
*Treatment of Shriveling Processes in the Chest. J. Zadek.—p. 450.
Sprays in Treatment of the Eyes. E. A. Heimann.—p. 459.
Treatment of Malaria. W. Brandt.—p. 475.
*After-Treatment of Dislocation of the Hip Joint. G. Müller.—p. 479.

The Predisposition to Accidents.—Widmer argues that the inbred experience of countless ages enables us to sidestep injury unconsciously. Only when we focus our consciousness on the reaction to the occurrence is injury liable to result. By practice or by diverting the attention, the consciousness of the act becomes eliminated, and the inbred experience then carries us safely past the danger point. He refers in particular to industrial accidents.

Treatment of After-Effects of Pleurisy, etc.—Zadek gives case histories which show the remarkable benefit that can be derived from the special breathing exercises he describes in warding off and curing adhesions and many chronic pathologic conditions entailing retraction and shriveling of lungs and pleura. Inspiration is slow and deep "as if to burst one's belt"; expiration is aided with the hands applied to the chest wall below the breast, the thumb turned toward the back, the little finger on the costal arch at the nipple line, the fingers in the interspaces. There should be no active pressure from the hands. Inspiration should take about four seconds and expiration three seconds, and the exercise should be repeated from three to six times a day. Three inspirations at first are enough, but later from three to eight minutes or longer are given to the exercise. The exercise should always stop short of inducing palpitation, etc.

After Correction of Dislocation of the Hip Joint.—Müller applies a splint or other appliance after correction which relieves the hip joint of weight bearing, while at the same time it presses the head against the acetabulum. As the hip joint is used, the head bores a niche for itself. By this prophylactic treatment in all cases in which conditions seemed to invite recurrence, it has been warded off except in

two of his hundreds of cases in the last fifteen years, and in these two there had been fracture of the neck.

Zentralblatt für Chirurgie, Leipzig

Feb. 7, 1920, **47**, No. 6

*Experimental Production of Pseudarthrosis. M. Katzenstein.—p. 122.
History of Osteochondritis of the Hip Joint: Legg-Perthes-Calvé Disease. G. Perthes.—p. 123.
Retroperitoneal Access to Deep Abscess in the Abdomen. J. Keppich.—p. 125.
Plastic Operation on Under Lid for Support of Artificial Eye. H. Teske.—p. 128.

Avoidable Cause of Pseudarthrosis.—Katzenstein relates experiences which apparently demonstrate that the capacity of the bone marrow for regeneration of bone is sufficient for the healing of a fracture but that if any periosteum tissue is in contact with the bone marrow, the regenerating capacity of the latter is modified. Instead of producing bone, only a bone-like cartilage is produced. The result is a pseudarthrosis instead of normal healing. In experiments on animals, the bones could be made to heal normally or develop pseudarthrosis at will, by preventing or allowing any contact between periosteum and bone marrow.

Zentralblatt für Gynäkologie, Leipzig

Feb. 7, 1920, **44**, No. 6

Puncture of the Uterus to Facilitate Delivery with Hydramnion. E. Wormser.—p. 137.
*The Fatalities After Sacral Anesthesia. E. Zweifel.—p. 140.
*Eclampsia and Vomiting of Pregnancy. J. Hofbauer.—p. 144.

Feb. 14, 1920, **44**, No. 7

Mechanical Dilation of the Uterine Cervix with Inflatable Bag and Weight Traction. A. Mueller.—p. 161.
Genital Hemorrhages in Cholera in Women. H. Kritzler.—p. 170.
Case of Bilateral Tubal Pregnancy. H. Brossmann.—p. 174.

Fatalities After Sacral Anesthesia.—Zweifel analyzes the ten fatalities that have been published as following sacral anesthesia, among the 4,200 cases on record in which this technic has been applied. In only three of the total ten fatal cases could the sacral anesthesia be held responsible. In these cases death followed in a few seconds, in seven minutes or in ten minutes, evidently from acute procain poisoning. In all the cases, 0.6 gm. of procain was the smallest dose used, and in some it was up to 0.9 gm. No mishaps have been recorded with doses of 0.4 or 0.5 gm.

Treatment of Eclampsia and Hyperemesis.—Hofbauer presents a number of arguments that the pituitary and suprarenal glands play an important part in the pathogenesis of pregnancy disturbances. The brain, liver, kidneys, and stomach are affected by the hormones from these two glands, and in ovarian treatment we have a means to inhibit the action of the pituitary and suprarenals on the sympathetic nervous system. By this antagonistic organotherapy he thinks we now have a specific causal means of treatment. Cases of severe hyperemesis at the second month and of eclampsia at the ninth month in two primiparas treated in this way with ovarian extract showed marked benefit. This treatment seems to paralyze the pathogenic excessive functioning of the pituitary-suprarenal system. He advises to give the ovarian extract early and freely, from the first symptoms, with sedatives, but strictly avoiding morphin and pituitary extract. He warns also against chloral for more than a single dose of 2 gm., by the rectum, saying that chloral injures the heart, and its action on the respiratory centers also calls for extreme caution. It may induce cyanosis and pulmonary edema.

Zentralblatt für innere Medizin, Leipzig

Feb. 7, 1920, **41**, No. 6

Specific Treatment and Prophylaxis of Tuberculosis in Man and Animals. A. Strubell.—p. 97.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Jan. 3, 1920, **1**, No. 1

*Medicine in Europe a Hundred Years Ago. H. T. Deelman and C. C. Delprat.—p. 1.

Medicine a Hundred Years Ago.—Three young physicians started from Holland to visit the medical centers in France and Germany in 1818. One was C. B. Tilanus, and Deelman and Delprat have compiled an account of the medicine of that day from their diaries and notebooks, particularly those kept by Tilanus. Dupuytren and Larrey at Paris seem to have shone by their kidney stone, hernia and fracture operations, but abdominal surgery was practically unknown. Only one of the mammectomies for cancer proved successful among the many they witnessed. All the other patients succumbed to infection. Only one survived of ten women operated on by Dupuytren for cancer of the cervix, and he knew of only one woman still living two years after an operation of the kind.

Hygiea, Stockholm

Jan. 31, 1920, **82**, No. 2

*The Diagnosis of Exophthalmic Goiter. A. Troell.—p. 33.
*Lumbar Puncture in Treatment of Acute Wood Alcohol Poisoning. M. Zethelius.—p. 45.

Hypersensitiveness to Epinephrin in Hyperthyroidism.—Troell gives charts showing the clinical response to subcutaneous injection of 0.5 c.c. of a 1:1,000 solution of epinephrin in six patients with manifest exophthalmic goiter and in four with ordinary goiter. The findings on the whole confirm those reported by Goetsch (1918) in 195 cases of goiter, including fifty of the exophthalmic type, demonstrating the peculiar hypersusceptibility to suprarenal extract in clinical states of hyperthyroidism. This characteristic response to epinephrin and also the discovery of extreme functional activity of the thyroid cells, as indicated by the mitochondria contents, will aid in the differential diagnosis from other nervous disturbances, and also in estimation of the value of different modes of treatment. The surgeon also may be interested in the peculiar hypersensitiveness to epinephrin with hyperthyroidism, as affecting his routine use of epinephrin with the anesthetic at operations.

Lumbar Puncture in Treatment of Blindness from Wood Alcohol Poisoning.—Zethelius gives here a preliminary communication on the benefit from lumbar puncture as he witnessed it in three cases of blindness from methyl alcohol poisoning. Great improvement in vision followed the lumbar puncture at once and continued to progress, as the punctures were repeated, in one case, with vision up to 1 in about a month. There had been an interval of four days before any appreciable symptoms had developed, and then all the symptoms except the visual soon subsided. In the second case the punctures were begun the second day after ingestion of the liquor, with vision of 0.1/60 in the right eye and only perception in the left. The amaurosis persisted for twelve days but by the end of the second month vision had become 3/50 and 0.1. In the third patient, vision increased from amaurosis by the tenth day to 0.3/60 and 1.5/50 in about seven weeks. In these last two cases there was persisting atrophy of both papillas. The lumbar puncture was repeated three or four times in each case. The benefit from it, Zethelius says, surpassed that from any other known method of treatment. We know that alcohol or its derivatives pass into the cerebrospinal fluid; they have been found in it at necropsy in wood alcohol cases, and release of the toxic fluid is thus directly indicated, while reduction of intracranial pressure may lessen to some extent the chance for absorption by the nerve substance of the poison in the fluid.

Ugeskrift for Læger, Copenhagen

Feb. 26, 1920, **82**, No. 9

*Experimental Leukemia. V. Ellermann.—p. 279.
*Treatment of Uric Arthritis. L. Petersen.—p. 290.

Experimental Leukemia.—Ellermann describes further experiences with strain H of the virus of fowl leukemia cultivated through twelve generations.

Treatment of Gouty Arthritis.—Petersen gives potassium iodid and hexamethylenamin, determining the tolerance of the iodid by examining the urine for retention of iodin. This combined treatment has often given excellent results with pains in the joints, and tophi. At first the pains are increased, but by the end of the week improvement is evident, and in six or seven weeks the maximal effect is reached.

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THE SOMATIC CAUSES OF PSYCHONEUROSES *

CHARLES L. DANA, M.D.

Professor of Nervous Diseases, Cornell University Medical College

NEW YORK

Wandering through a bookshop some months ago, I saw two counters piled up with literature devoted to varieties of psychic experience and elucidation. There were books on new thought, on dreams, on personality, on the disadvantage of being inferior, on pschanalysis (adapted to any intelligence), on psychic research; also on slips of the tongue, Christian science and the life beyond. It showed to me what a tremendous grip the psyche had taken on the unthinking but reading world. I still like the soul and follow its aspirations, but I feel as if the psyche was overworking her job and becoming psychopathic. Perhaps this experience had something to do with the trend of this contribution, which is an effort to show that there is a physical, a neuropathic factor in the causation of the psychoneuroses; also that the psychoneuroses may develop directly from concussions, traumatisms and toxins, and that some constitutional neuropathic condition is necessary for the psyche to work out its mechanisms of defense, readjustment, etc.

THE EMPHASIS PLACED ON PSYCHOGENESIS

The psychoneuroses are the so-called functional troubles which are grouped more specifically under the heads of hysteria, psychasthenia (compulsions, obsessions, fears), neurasthenia and anxiety states. Among these groups, the war neuroses were made up largely of hysterias and anxiety states, while in nontraumatic civil life we find a greater prevalence of psychasthenia and anxiety states.

There has been a tremendous amount of emphasis laid on the psychology and psychogenesis of these affections. The formula that war neuroses, taking them all in all, were nothing more than defense states, namely, the expression of a subconscious desire through awkwardly planned devices to get away from the front, was almost officially promulgated.

On the other hand, among the internists, there has been a large amount of activity of thought and emotion paid to the physical side of these conditions. Autotoxemia and sepsis dominate a field once occupied by malaria, the reflexes and other vague phases of pathogenesis. There is at present a sort of rivalry between the colon and the teeth, on the one hand, and the gonads and the psyche on the other. I do not attach myself to either of these groups, but I find that there are always physical as well as psychic factors in the causation of the psychoneuroses; that pathologic reactions do not occur in anatomically and physiologically sound bodies.

DENIAL OF EXISTENCE OF FUNCTIONAL DISEASES

I do not suppose that any one denies now that there is really no such thing as a functional disease. In all the neuroses and psychoneuroses something material and neural has happened. To say, then, that a disorder is due to emotion or to some prompting of the subconscious or to a suggestion, is not giving the last word of explanation. There is some evidence that we can have no emotion without a previous physical change, and it is definitely known that emotion is always associated with and followed by notable physical changes. The neurotic disorders, such as hemiplegia or monoplegia, which follow an emotion have, one may be sure, also some underlying physical change. It seems to have been lately demonstrated that these physical changes which are usually associated with an emotion may also occur as the result of concusssion or toxemia. In other words, psychoneuroses are not ever entirely psychogenic, but are sometimes somatogenic and sometimes of mixed origin.

Carver and Dinsley [1] state that there is a large group of war neuroses in which the causative factor is not emotional, but commotional. This commotional group of neuroses is composed of three subgroups: (1) one in which there is direct concussion by the missile on the tissues, overlying the nervous system, but no damage to brain, cord or membranes; (2) a subgroup in which there is no direct concussion but the patient is subjected to violent variations of pressure from proximity to the explosion, and (3) a subgroup in which the factor is extremely rapid vibrations which are one of the less known products of the detonation of high explosives. The vibrations are capable of agitating the nervous system in such a way as to produce a condition which clinically closely resembles that produced by emotion.[2]

Carver and Dinsley performed experiments on animals. They established a detonating station, X, and arranged a series of three zones about it. Zone A included the area of direct concussion; Zone B that of indirect concussion, and Zone C, an area in which high explosives detonate only if they have the same tonal standard as the explosion at X. They also experimented with fish and then with rats and mice.

* Read before the New York Neurological Society, Jan. 6, 1920.

1. Carver, Alfred, and Dinsley, A.: Some Biological Effects Due to High Explosives, Brain **42**: 113 (June) 1919.

2. Carver and Dinsley give some interesting facts about explosives. The pressure of high explosives may exceed 300 tons per square inch, and the waves of detonation run through the exploding mass at the rate of 10,000 meters per second. As the result of an explosion, there occur massive vibrations due to compression and decompression, molecular vibrations, and probably finer ethereal vibrations, such as are utilized in wireless telegraphy.

Finally, they made observations on men working in a demolition station and subjected to the effects of detonations but protected from any direct concussion and not subject to any element of fear. They found that in zones B and C fish lost for hours their sense of equilibrium; that in these zones rats and mice showed forms of paralysis and nervous disturbances, from which they eventually recovered, and that in zones B and C some of the men showed marked nervous disturbances.

They conclude that (1) while the neuroses of war may be and are brought on by purely emotional shock, the importance of this has been overestimated; (2) they may be caused also by "purely physical shock" as demonstrated in their experiments, or (3) they may be of mixed origin.

CLINICAL EVIDENCE

Clinical evidence of some physical and physiologic defects in the genesis of many psychoneuroses is very abundant. I have many recorded cases, but I shall refer to only one.

A boy, aged 19, whose family history was good so far as nervous or mental disorders were concerned, whose father died of hemorrhagic pancreatitis, and whose mother and a sister were living and well, when young had been well and normal, good at school and social in his habits, with some musical taste and talent. At the age of 14, while going to school, a boy said to him: "What is that on your ear?" This annoyed him and he felt as if there was something in the ear, and became nervous about it. Next day while going to school, he suddenly felt as if there were a burning torturing fluid in his head and pouring through his body. The sensation lasted only a moment, but immediately afterward he became very nervous, restless and apprehensive. He was afraid especially of having another seizure, etc., and did not dare to go to school. Then he became afraid to go out alone on the street and was in constant apprehension lest something would happen to him. The range of his fears enlarged; he feared he might have tuberculosis or paralysis, or some other disease. He had finally to give up all his school work, and he was placed under a private tutor. Finally he became too nervous to pursue his studies under any conditions.

In the first year of his illness, he had two or three more of these "seizures" followed by increase of nervousness. No attack was as severe as the first, however, and in none of them was there any fainting or twitching or palpitation. His family noted no physical change during the attack, though he thinks he became pale.

When 16 years old, his father secured a farm and put him to work on it. He tried this for a couple of years, but got no better and finally gave it up and came home. He was then 18 years old. One afternoon he went out with his father to see a fire. He used to love to go to fires, but at this one he became frightened and had another seizure. After this he was worse than ever. The sound of fire-bells threw him into hysterical excitement, and he would tremble and cry. He became afraid even of the sound of trolley cars. He could not go out of the house alone, he was afraid to meet people, and was continually running to his mother, telling her his troubles and asking for relief. His father meanwhile had died (which relieves us of considering the so-called Oedipus complex).

During all this time his symptoms were combated by his family and physician, by change of occupation and environment, therapeutic talks, sedative medicines, etc.

He was brought to me a short time after the fire episode, when he was at his worst. He had then been for four years nervous, apprehensive, hysterical and entirely lacking in courage, independence and capacity to concentrate or carry on any kind of study or work.

I was told that his habits were good, and there was no history or evidence of masturbation—a matter closely inquired into. His physician thought he had deficient sexual activity. He slept badly, but he had no fear dreams except once—just after the first attack.

I found him to be an intelligent boy, affectionate, unselfish and very anxious to get well, and tremendously disturbed by his nervous condition. He showed no objective signs of nervous disease, nor any of the stigmas of dementia praecox. His story was not of the schizophrenic type.

The boy was 6 feet, 2 inches in height, but he had no marked pituitary anomaly. He had no signs of thyroidism except a slight tremor of the hands. His hair and teeth were normal. He had not the make-up of status thymolymphaticus; his hands and feet were often cold and blue; he had undue fatigability and indefinite myalgic pains, a constant subnormal temperature and a dry skin. The blood pressure was normal. He was not anemic.

He was placed on 5 grains of thyroid gland twice a day; later, 2 grains twice daily.

Within two weeks after treatment was begun, the boy was rather magically changed. He lost his fears and restlessness, and nervousness and insomnia. He was able to go out alone.

He went back to his farm, worked there daily, motored, and became practically well and continued so for nearly three years. He takes the thyroid intermittently, and if he feels nervous or panicky, he gets relief after using the gland.

Recently I had a letter from him saying he was practically well, though he occasionally got a little nervous and apprehensive.

Nov. 10, 1919, he came to my office and confirmed the foregoing story.

He described again his seizures. Suddenly, without any cause except perhaps some extra excitement, he felt as though a burning, torturing fluid were filling his head and body. He became pale; his hands sweat. The sensation left him at once, and sometimes he immediately felt normal. Then in two or three days, there came on him a condition of nervousness and apprehension, and he passed into a chronic condition of an anxiety neurosis, with restlessness and insomnia, and constant fears of a return of the seizure, or some other disaster.

This patient is not cured, and he may have some recurrence of his condition. I do not infer from this isolated case that psychasthenic conditions are always or even often due to hypothyroidism. I do not know even now that it was hypothyroidism in this case or that there was not other endocrine defects, and that thyroid feeding simply reestablished a balance.

There must have been behind his gland defect some instability of the nervous centers. There always is in these cases. But the case does demonstrate that sometimes a gland defect is present in the psychoses and that no amount of attention paid to mental conflicts, conversions, condensations, complexes, sense of inferiority or any other phases of the psychanalytic and therapeutic effort would be of much use as long as his internal secretions were working defectively.[3]

The facts I have recited I am sure sufficiently emphasize the points I have wished to make and I might end my paper here.

But I would like to say something about the particular physical changes that occur, I believe, in part or in whole in the psychoneuroses.

THE SOMATIC MACHINE

We are told that these disorders are essentially bred by emotion; but from this point on, the method of development of the psychosis is different in accordance with the school of psychology to which one belongs.

We know, but perhaps we do not always realize, how intricate and delicate is the physical machinery

3. Dr. Beverley Tucker has reported three cases similar to the foregoing. Compare also Wechsler, I. S.: Neur. Bull., 1919, No. 2.

connected with emotional states and the mental processes. We know the location in the brain of parts concerned in sensation, perception and memory; we know that the mental machine is made up functionally of many complex minor systems, and that consciousness is associated with the coordinated activity of a large portion of them. We know that the parts hang together by reason of very numerous tenuous threads and delicate contacts.

THE SYNAPSIS

An explanation of certain brain functions has been based on the hypothesis of the activity of the dendrites, and their ameboid movements. This view has been put forth by Mathias Duval and Lépine. It has been supported by Wiederham and half a dozen others. It has been contradicted by the experiments of Azoulay and others. Lugaro has another theory; that of the turgescence and subsidence of the cell body and dendrites. Renaut has a somewhat similar view, and for a time Cajal invoked the movements of neuroglia. Later Cajal argues that new paths of psychic activity may be created by the growth and exercise of the fibrillae and dendritic processes, and weakened by disease and decay of these organs. Sherrington lays especial emphasis on the functional importance of the synapsis.[4]

All these views came to the same point, namely, that the paths of conduction in the brain may be blocked or made more free by physical and mental agencies, and that in the activities of life there are continual shiftings and realinements.

I am going to venture on some speculations connected with these known anatomic facts. There is no reason why theorizing should be confined to psychologic machinists. And, besides, what I advance is not without some laboratory support.

It may be assumed that since the synapsis is a point at which the traveling nerve impulse has to pass over a break in anatomic continuity, it here meets its highest resistance. Some neural phenomena, therefore, might be expected to develop here, just as light or heat develops when an electric current meets a specially great resistance. The synapses of the cerebral cortex are thought to be the seat of consciousness (Macdougal). Whether this is so or not, I only use the term synapsis as symbolic of the fact that there are breakable points and points of variable resistance in the finer organizations of the brain.

The neural basis of disorders of association, such as occur in retardation, and of blocking of thought and of flight of ideas, may be in part explained by this mechanism.

Hysteria is a disease characterized by a dissociation of psychic systems functioning in sensation, perception or thought.

It is probable that the other psychoneuroses, neurasthenia, psychasthenia and the anxiety states, are due to dissociation of systems of neurons.[5]

Recent experiments have given some laboratory proof of this kind of reasoning.

A. R. Moore[6] has shown that strychnin, which greatly increases the reflex excitability of animals with a synaptic nervous system, has no effect on the neuromolecular system of coelenterates which have no synaptic elements. It has a slight influence on echinoderms and a much greater one on crustaceans and mollusks which have more developed nervous systems.

Such a view, namely, the blocking of a functionally similar group of neurons or a decrease in its resistance, seems also to explain therapeutic results. In certain forms of psychasthenia with an underlying fatigue state, strychnin or small doses of opium will in a short time clear the mind and entirely relieve the patient. In some cases of very marked obsessions and anxiety and fears, feeding with pituitary and thyroid extracts promptly changes the whole character of the patients. A young man with an obstinate psychoneurosis was always promptly relieved by the administration of the "panacea" of Antonius Muca, the formula for which I obtained from Galen's works.

The morbid somnolence of dyspituitarism, due perhaps to some synaptic block in the thalmic region, has been relieved by gland feeding (Niles).

We know that the seat of the mental activities is not so much in the cell as in the conducting fibrillae, and it is these that are most disturbed in functional psychoses. The functions of the cerebral nerve cell are trophic and perhaps mnemonic.

The cell rapidly deteriorates and changes its content and form, but the nerve fibers are practically unfatigable, although they have as active metabolism as that of gray matter. These fibers are so persistently active because they are supplied with nourishment as well as with protection by the medullary sheath, except at the dendritic and peripheral endings; so we ought to expect exhaustion at the synaptic points sooner than in the cell or in the nerve itself. They would be also more exposed to the influences of toxins and fatigue products.

When a person has a great emotional shock, and there follow tremors, speech defects, paralyses or anesthesias, it may well be because the synapses of certain groups of neurons functionally selected and embryologically of similar development are blocked by the torrent of impulses aroused by fright or pain combined with excess of epinephrin or other toxic material thrown into the blood. Certain parts of the nervous centers are specially sensitive to infections and poisons, as shown in the case of encephalitis lethargica. The Lange-James theory of emotion and the physiologic experiments of others indicate that some physical change takes place in the nervous system which produces or precedes the mental state. In other words, the elaborate psychologic mechanism of the psychoneuroses with its theories of conflict, repression, conversions, compromise formations, condensation-inversion, uncompensated feeling of inferiority, may exist, but all these are not always necessary, and they are always agencies which have to act through a neural mechanism. If this is sound we shall rarely if ever get any psychosis.

The cause of psychoneuroses is not altogether a repressed sexual wish, an uncompensated feeling of inferiority, the basic emotional state of fear, the unsuccessful subconscious conflict, the Oedipus complex, or

4. Very early in evolution, we find that this mode of connection ceases and the cells, now known as "neurons," although in functional continuity, are separated from each other at the "synapse" by a membrane which plays a very important part in the mechanism of the reactions which take place in nerve centers. . . . The phenomena of fatigue, summation, irreciprocal conduction, excitation and inhibition are connected with this membrane (Bayliss: Principles of General Physiology, pp. 474, 477).

5. This view was given and elaborated on in the last edition of my textbook (1915); and Dr. Boris Sidis has independently worked out the same hypothesis, that the anatomic seat of the psychoneuroses is in the synapses, or due to their disturbed functioning. Experience confirms me in the opinion that this is a good working theory.

6. Moore: Proc. Acad. Sc. 3: 598.

the image-parent, if the whole thing disappears under pluriglandular feeding, nux vomica or codein. Yet I have seen all these things occur sometimes.

It is probable that very many kinds of conscious and subconscious mental disturbances, bad mental habits, misuse and misdirection of normal instincts as well as colonic and dental toxemias may lead to the same interference with the function of synaptic groups.

In the higher processes of mental activity there is an increased number of association-activities, and a greater danger of interference at these sensitive points.

In a motor-act, the nerve impulse passes through only two or three neurons. In a simple sensation, the impulse passes through four or five neurons. But in the mental state associated with fear and shock, with its aroused associated memories, the number of neurons and synapses involved is immensely greater and more widely diffused.

We know that in persons who are subject to psychoneuroses there is a congenital or acquired special instability of the nerve centers, including those of the sympathetic and autonomic nervous system. This means, for one thing, that there is a weakness or defect in association and consequently a defect in those associations which give control and balance, the processes of deliberate thought and judgment.

When a slight emotional shock throws a person into morbid panic or tears, it is because some of the associative strands that ordinarily feed into the conscious mind do not act. Some synapses are blocked; some are spastic and overtight in their connections.

There is reason to believe that we can at times control these synaptic functions by force of will—if one chooses to use that now tabued word—or by changing the field of attention. We raise the threshold of consciousness in our intentness and we no longer hear annoying sounds. By training, we prepare the brain and mind against painful impacts. Some persons can lie down and so direct their attention that they put themselves to sleep in a few minutes. We certainly, directly or indirectly, hold much control over the dendrites, if they are healthy. So I am supposing that in psychoneuroses, a sick synapsis may be the factor on which the activities, aroused by some emotion, or by the vibration of Zone C play, and thus, by attacking it, we get all the clinical phenomena of these disorders.

THE MECHANISM OF SOMATIC ORIGIN OF PSYCHONEUROSES

When an emotional state, say of fear, exists, I suppose that vibratory waves and auditory sensations have produced neural changes associated with an intense consciousness of fear, and then perhaps there follows unconsciousness. Many physical changes, vasomotor, glandular, etc., occur at the same time. If this condition now is followed by a hemiplegia or stuttering and tremor, I contend that these latter conditions may be due to subtle changes in the nervous systems. Cellular swelling, varicosity of the dendrites, blocking of synapses, or neuroglia movements. I would add focal injury with diaschisis; for the principle of diaschisis may play a part in minor as well as major local injuries.

The other view, which also may be true, is that after the detonation or concussion and emotion a certain subconscious psychic power is exercised by which the patient determines that he shall tremble and stutter or be hemiplegic or blind in order to accomplish a certain object. This is to assume that some kind of conscious or subconscious force like that of a "censor" loosens certain inhibitions, or sends out or checks a certain intelligently directed morbid neural discharge.

This view is an interesting and plausible hypothesis. I put the matter somewhat like this:

X is the center of detonating force; Zone A, of direct concussion; Zone B, of indirect concussion; Zone C, of indirect concussion by high frequency waves.

The patient in B or C receives and feels:

1. Concussion waves on the brain and hears
2. The detonation.
3. Physical changes occur in the nervous system due to concussion with gross, or fine, or molecular waves.
4. Emotion, e. g., of fear, leading to Nos. 6 and 7.
5. Subconscious desires, defense activities, adjustment activities leading to No. 7.
6. Organic or biochemical disturbances in the nervous system (toxic or endocrinic, leading to No. 7).
7. Psychoneurotic phenomena.

What is claimed by me and shown by experiment is, that Nos. 4 and 5 may not be present and are not always causative factors; also, that in the nontraumatic psychoneuroses, such as the psychasthenias, neurasthenias and anxiety states, Nos. 4 and 6 are dominant, acting on a neuropathic nervous system. This particular form of the neurosis is determined by the special structural weaknesses in the individual's make-up.

REPLY TO OBJECTIONS

Of course, the first and obvious retort to the view I am supporting is this: If a monoplegia, for example, or other form of neurosis has an organic cause, how can it be cured by a single mental effort or by suggestion?

My reply is that the organic change is in more than a majority of cases biochemical, yet real as a sclerosis, brought on by a shifting of neural changes through attention or concentration on a certain object.

In certain emotional and exhaustion states the stomach does not secrete juice, and in the same way the neurons do not transmit their currents. In emotional states the total of neural or cerebral energies is massed in certain minor and major association groups connected with the particular form of apprehension or terror. By effort of volition or by a counteremotion, the equilibrium is restored. But some patients do not get well by any of these easy methods.

The sacred formula of dynamic psychology is that mental activity is a biologic phenomenon—to which we gasp and assent. Every action of the mind must be preceded by a previous action, every thought by some previous mental state. Hence it is said, we can trace back the cause and mechanism of all mental states by sufficient analysis. This view, however, is not proved and is, indeed, proved untrue. Certain mental states may be caused by concussion or by toxins.

CONCLUSION

My argument, then, is to the effect that the psychoneuroses are organic as well as psychic conditions. Being thus in part neurologic diseases, I think it would be a disaster if neurology were to abandon the study of this exceedingly numerous and sorely handicapped group of patients. If this should happen, they would go first perhaps to various types of psychotherapeutic specialists and perhaps later to clinical psychologists

and pedagogues. The last is already happening. The management of these cases calls for the closest observation and the most accurate study of the personality, but also of physical, metabolic and endocrine defects. It is, therefore, to trained neurologists conscious of their responsibilities and familiar with the best technical methods that the care, and I would add the prevention, of psychoneuroses belongs.

53 West Fifty-Third Street.

THE PHYSICIAN AND PROHIBITION

BERNARD FANTUS, M.S., M.D.
Associate Professor of Therapeutics, Rush Medical College
CHICAGO

The question now before us is not whether prohibition of the use of intoxicating liquors as beverages is right or wrong—though most of us are convinced that it is one of the most beneficent acts ever passed by a legislature—but, it being the law of the land, how we can aid in its enforcement not merely passively, by obeying the rules and regulations formulated by the authorities, but actively as well by devising ways and means of making easier the establishment of the new order. As the medical and pharmaceutic uses of alcohol offer, at present, some of the most perplexing problems in the administration of prohibition, it behooves us to formulate principles for guidance in our use of alcoholic liquids, most especially to determine to what extent we can dispense with the use of wine, whisky and brandy: for although alcohol prescribed under any other name is just as intoxicating—when it is less pleasant, it is less liable to cause addiction, especially when safeguarded by the regulations of the prohibition law.

USE AS SOLVENT AND VEHICLE

The employment of alcohol as a solvent, vehicle and preservative would be much reduced, and, with this, the chances of the abuse of medicines as intoxicating liquors greatly diminished, if some of the principles here outlined were incorporated in practice.

The solid form should be preferred to liquid medication, not only for this but also for other reasons. Solid medicine is smaller in bulk, and hence more portable. This is the reason traveling men often request that their medicine be prescribed in capsules. Disguising is much more readily accomplished, especially by encapsulation. In view of the fact that, for instance, the horrible taste of the iron, quinin and strychnin combination can be completely disguised by prescribing it in the form of capsules, it is poor technic, to say the least, to inflict the elixir "I. Q. and S." on a patient's palate. Danger from incompatibilities, as, for example, from formation of a poisonous sediment, is also done away with by prescribing in solid form. Furthermore, dosage is more accurate, as variations in the size of teaspoonfuls is eliminated. The chief reason for administration in liquid form is the necessity of minimizing gastric irritation by such agents as soluble iodids, bromids, salicylates or chloral.

The popularity of proprietary medicines, it has well been said, is directly proportionate to the amount of alcohol they contain and the inoffensiveness of their other ingredients. A principle which, it seems, if incorporated in legal regulations regarding proprietary medicines might save the authorities much difficulty in eliminating the use of these nostrums as intoxicating beverages is this: Proprietary medicines must be put up in solid dosage form, unless the dry residue is so highly irritant as to be injurious to the stomach when given in this manner. Thus, the generally specious claim of the necessity of alcohol as a solvent and "preservative" might be done away with, and the use of these tipples ended. It will then be found that, for many proprietary medicines, alcohol was indeed the essential preservative of popularity.

In case of extractive preparations, the coming pharmacopeial revision might do away with tinctures of harmless drugs. The fluidextract of such drugs, being much more concentrated and active, is less likely to be used as a beverage. With poisonous drugs, on the other hand, there is no danger of their tinctures being put to such use.

The entire class of spirits, with the exceptions of the aromatic spirit of ammonia, the spirit of nitrous ether and the spirit of nitroglycerin—all of which are sufficiently medicated—might be deleted from the pharmacopeia, if formulas were devised for flavoring emulsions to take the place of the flavoring spirits. In point of fact, spirit of peppermint or other volatile oil containing spirits, when employed as carminatives or as flavors, are always used in the form of an emulsion, that is, the spirit added to an aqueous medium. Then why not dispense these oils in the emulsified form, which would detract naught from their medical or flavoring value, and eliminate their spirits from the list of possible intoxicants? Spirit of ether, spirit of chloroform and spirit of camphor, being simple, easily prepared solutions, are as superfluous in the pharmacopeia as would be aqueous solutions of iodid or of bromid.

As aromatic elixir is useful for the administration of alcohol-soluble drugs, it might be retained in the pharmacopeia. Until medicated, it is properly classed as an intoxicating beverage and subject to the regulations governing the sale of these. The elixir of glycyrrhiza, being merely aromatic elixir with the addition of 12.5 per cent. of fluidextract of glycyrrhiza, ought to be deleted. The aqueous elixir of glycyrrhiza of the National Formulary, being a valuable vehicle of very low alcohol percentage (4.5 per cent.), might, with advantage, be introduced into the pharmacopeia in its stead. Many of the feebly medicated elixirs of the National Formulary might well be deleted, especially if an "equialcoholic vehicle elixir" were introduced, that is, one whose alcohol percentage would be subject to adjustment by the pharmacist so as to make it equal to the strength of the menstruum used in the preparation of the tincture or fluidextract, for which the elixir is employed as a vehicle. The physician cannot possibly be asked to carry in his mind the strength of all the various menstruums; and, if the alcohol percentage is not correct, a turbid liquid is the result liable to dangerous sedimentation. The pharmacist, on the other hand, with the aid of a tabulation, could readily adjust the vehicle to the medicament. This new "equialcoholic vehicle elixir" might even take the place of the aromatic elixir, now official.

EXTERNAL USES

When alcohol is wanted as a disinfectant, the addition of 1 per cent. or more of iodin, phenol, cresol, or formaldehyd renders it, at one and the same time, more

efficient as a germicide and unfit for use as a beverage. Especially should the addition of iodin to alcohol increase its utility, when it is used for the production of hyperemia as well as for its disinfectant value under an occlusive dressing in the treatment of felons, boils and other subcutaneous inflammations. When, on the other hand, rubefaction is not desired, as in the treatment of infectious dermatoses, then the addition of boric acid to saturation (5 per cent.) cannot but enhance the antiseptic action. The same thing is true of its use in chronic otorrhea. In both conditions, the alcohol is to be used in as great a concentration as can be tolerated—from 25 to 95 per cent. When the astringent action of alcohol is chiefly aimed at, as when it is used for a backrub in a bed patient, a saturated solution of alum in diluted alcohol is preferable to plain alcohol. For antipyretic sponging of the fever patient, the use of alcohol is entirely unnecessary. Cool water will do as well and is much cheaper.

It is only when alcohol is to be used in the mouth as an astringent and possibly as a disinfectant that palatability must not be lost sight of. Even then the lotion may be made much more efficient as well as unsuitable as a tipple by synergistic additions, as for instance in the following prescription, which yields a mouth disinfectant, if such a thing is possible.

		Gm. or C.c.
℞	Phenyl salicylate	1.0
	Menthol	1.0
	Methyl salicylate	1.0
	Alcohol	75.0
	Water to make	100.0

Mix. Label: Teaspoonful to tablespoonful as mouth wash.

This may be used without dilution or diluted with water, according to the potency of the effect desired.

INTERNAL USES

When pure reflex stimulation of the heart and the blood vessels is aimed at, the aromatic spirit of ammonia is as efficient, though not as pleasant to take, as whisky or brandy. If narcotic effect is required, in addition, as in the treatment of shock, the admixture of ether (up to 30 per cent.) makes alcohol at least as efficient as when it is given in the form of whisky or brandy and probably more efficient. It is, however, chiefly because of its value in gastric and other colics, that such solution has earned the name of "anodyne" ("Hoffman's Anodyne"). The diaphoretic and diuretic value of alcohol is enhanced by the presence of nitrous ether in the spirit of nitrous ether, which therefore ought to be superior to whisky for "breaking up a cold."

When desired for its stomachic action, whisky or brandy might find in an aromatic fluidextract of gentian a less intoxicant succedaneum. When wanted for its food value in a fever patient, alcohol in pure form, properly diluted as in milk punch—a teaspoonful to a tablespoonful per cup of milk—may be prescribed, though, of course, whisky or brandy might be employed here, if desired. Prohibition has done nothing to interfere with the use of these; it has merely surrounded it with certain formalities to safeguard the patient against the danger of becoming an addict.

PHARMACOPEIAL RECOGNITION

An attempt will be made, perhaps without any sinister motive whatever, to restore wine, whisky and brandy to the pharmacopeia. This would be a move in the wrong direction. The most that can be said for those liquors is that they are pleasant administration forms for alcohol. However, their very pleasantness has endowed them with such seductiveness and destructiveness that they have become outlaws among us. To restore them to the pharmacopeia would be heralded by the liquor interests as an indication that alcoholic beverages are wholesome and important medicaments, indispensable in medical practice and that the medical profession is now acknowledging the mistake it made regarding them. Prohibition, as now constituted, would be distorted into the appearance of a medical monopoly. "Why should the ordinary man," people would be asked, "have to pay for a medical consultation every time he wants a little whisky to cure a common cold?" "If liquor is a good tonic for the sick, why should it not be a good energizer for the well?" Such and other considerations might start a political landslide into the wet abyss.

In point of fact, as has just been shown, whisky and brandy are entirely unnecessary in medical practice. Quite a number of hospitals of Chicago, such as the Presbyterian Hospital and the Cook County Hospital, as well as, of course, the Frances Willard Hospital, do not dispense any of these liquors; and yet their patients, so far as is known, are none the worse for it. As alcohol is the main active principle of the ardent spirits and of practically equivalent therapeutic activity, why burden the pharmacopeia with them? We might as well introduce pyroligneous acid, coal tar and crude petroleum, because it is claimed by some that these native mixtures have a therapeutic value superior to any one of their pure active principles. And, if we were to introduce whisky and brandy, why stop there? Why not also introduce into the pharmacopeia a dry white and red wine, port or sherry, gin and champagne, beer and stout, each of which has, under certain circumstances, special therapeutic virtues perhaps not possessed to the same extent by alcohol. The chief plea that can be made in favor of the reintroduction of liquors into the pharmacopeia is that, now that they are recognized as medicines, a standard for them is required. This standard may, however, just as well and much better be furnished by the authorities entrusted with the enforcement of the prohibition act.

CONCLUSIONS

The medical professon has every reason to welcome the advent of prohibition. It will protect the physician from the danger of causing inebriety in a case in which the patient might be benefited by the medicinal use of alcohol.

For most purposes for which alcohol is required in treatment, it may with advantage be medicated so as to render it unfit for use as a beverage.

The therapeutic employment of liquor, especially in the form of wine, whisky or brandy, ought to be minimized, so as to eliminate the possibility or even the suspicion of abuse. The authorities entrusted with the enforcement of the prohibition law ought, therefore, to have no difficulty in distinguishing between the *bona fide* and the *mala fide* prescriber of alcoholics.

719 South Ashland Boulevard.

Good Health and Good Government.—Good health and good government are the two essentials of a great and permanent civilization. These conditions are reciprocal and complementary. Neither can exist without the other.—W. S. Rankin, *Tr. Assn. Life Ins. Presidents*, 1919.

TYPHOID FEVER IN THE AMERICAN EXPEDITIONARY FORCES

A CLINICAL STUDY OF THREE HUNDRED AND SEVENTY-THREE CASES

VICTOR CLARENCE VAUGHAN, JR., M.D.
Major, M. C., U. S. Army
DETROIT

(Concluded from page 1081)

THE PARATYPHOIDS

In the Allied armies the paratyphoid fevers have played the dominant rôle, while the typhoid bacillus itself has caused only a small proportion of cases. In contrast, the American Expeditionary Forces have had a comparatively insignificant number of the former. With our total of 270 cases of straight typhoid we have had reported to us only twenty-three cases of paratyphoid B and nine of paratyphoid A, with an additional twelve classed as paratyphoid fever, indeterminate. Reports of foreign observers are concerned chiefly with studies of paratyphoid infections in the straight typhoid vaccinated, and the consensus is that this type of vaccination exerts no protective influence against the paratyphoid organisms.

TABLE 7.—INCIDENCE AND AVERAGE DAY OF APPEARANCE OF SYMPTOMS AND FREQUENT COMPLICATIONS IN TWENTY-THREE CASES OF PROVED PARATYPHOID B.

Symptom	Cases in Which Symptom Was Present, per Cent.	Average Day of Disease on Which It Appeared
Constipation	21.7	1.0
Anorexia	73.9	1.7
Malaise	65.1	1.7
Headache	47.8	1.7
Chill	39.1	2.4
Diarrhea	65.2	3.0
Vomiting	21.7	4.0
Bronchitis	52.2	4.1
Average date of admission	....	4.5
Hemorrhage	4.3	5.0
Bronchopneumonia	4.3	5.0
Abdominal pain and tenderness	42.4	6.6
Lobar pneumonia	4.3	7.0
Meteorism	21.7	10.4
Rose spots	30.4	12.4
Palpable spleen	30.4	13.3
Epistaxis	17.4	15.0
Delirium	13.0	16.0
Average length of fever	....	25.6
Relapse	4.3	32.0
Mortality	4.3	

Close study of the symptomatology among our cases of paratyphoid (Tables 7 and 8) have led us to these conclusions:

1. On the whole, the disease follows a much milder course than does the eberthian infection. The mortality, as contrasted with 11 per cent. in the latter, is 4.3 per cent. in paratyphoid B and 0 per cent. among our nine cases of paratyphoid A.

2. An individual case cannot be distinguished by its clinical characteristics from straight typhoid. Diarrhea occurred in a slightly larger proportion, but so also did initial constipation. The date of onset of diarrhea was, on the average, a little earlier. Rose spots and palpable spleen were not found as frequently. Relapses did occur, and the fever stopped at about the same day in all three types.

3. The only means of definite differentiation in the individual case is that of bacteriologic identification.

I have not presented the symptomatology in paratyphoid A and B infections graphically as I regard the number of cases too small for reliable statistics.

White blood counts plotted according to the day of disease as for the straight typhoid cases showed in general a higher count, which averaged, for the entire period, 10,000 in the paratyphoid B and 9,000 in the paratyphoid A cases.

TABLE 8.—SYMPTOMATOLOGY IN CASES OF PARATYPHOID A INFECTION

Symptom	Present, per Cent.	Average Day on Which It Appeared
Anorexia	66.6	1.0
Malaise	88.8	1.0
Chill	11.1	1.0
Delirium	11.1	1.0
Headache	66.6	1.2
Epistaxis	11.1	2.0
Diarrhea	33.3	2.3
Meteorism	22.2	3.5
Bronchitis	44.4	6.2
Constipation	44 4	7.7
Palpable spleen	44.4	13.3
Abdominal pain and tenderness	22.2	15.0
Rose spots	55.5	19.5
Hemorrhage	11.1	22.0
Duration of fever	....	22.5
Relapse	33.3	35.0
Mortality	0.0	

CLINICAL TYPHOID FEVER

In addition to those classified as infected with one of the organisms of the typhoid-paratyphoid group, we have had fifty-nine cases presenting strong clinical evidence of typhoid fever, but in which the organism was not demonstrated either in the blood or in the stools. This number does not include all cases reported to the chief surgeon as clinical typhoid, as many did not show conclusive enough findings to warrant the diagnosis. The criteria for acceptance into this group were: (1) presence of rose spots and palpable spleen; (2) presence of either one together with a definite leukopenia and a clear history of a continued fever for two or more weeks, or (3) as in one instance, a continued fever of four weeks without rose spots or palpable spleen and without leukocytosis, but with intestinal hemorrhage occurring in the second week.

Tabulation of the symptomatology among these cases gives results quite similar to those of straight typhoid. The incidence of rose spots and palpable spleen is higher; but this is due to the fact that these signs were usually required for acceptance into the group. The logical explanation for the occurrence of these cases would be that bacteriologic examinations were not made often enough, and that had enough been made, the organisms would have been found. This probably is true, but it is also true that examinations were made no less frequently than in the cases of proved typhoid.

TABLE 9.—NUMBER OF BACTERIOLOGIC EXAMINATIONS PER CASE IN PROVED TYPHOID AND IN CLINICAL TYPHOID

Source	Proved Typhoid	Clinical Typhoid
Blood	1.33	1.40
Urine	0.87	1.08
Feces	2.08	3.20
Total	4.28	5.68

We have been unable to find convincing evidence that vaccination lessens the probability of finding the infecting organism, and submit this series merely as cases in which the invading organism is unusually hard to demonstrate. The figures given are, moreover, somewhat misleading, because not in every case were five examinations made. In some there were only one or two, while in others there were many more.

The average white counts for all days combined were 6,700 in clinical typhoid.

TYPHOID CARRIERS

In all, thirty-two carriers were reported, of which fifteen were of straight typhoid, five of paratyphoid B and six of paratyphoid A, while six more were indeterminate paratyphoid infections. Of these thirty-two patients, eighteen denied any previous history of typhoid and three admitted the disease, four years, thirteen years and fourteen years, respectively, before. The individual with a history of typhoid infection four years before also had had a typical paratyphoid B infection in November, 1916. He was found to be a carrier of the paratyphoid B organism. In the remaining eleven cases there was no note as to previous history of typhoid.

Ten of the thirty-two gave a definite history of diarrhea, either occasional or chronic, while seven gave a negative history for this condition. In the remainder it was not discussed.

In the group, twenty-eight had received saline triple vaccine and seven the lipovaccine. Four of these patients had received both. One case was not recorded as to vaccine. All seven patients vaccinated within one month before admission to the hospital had received the lipovaccine, and of these, four had been vaccinated several months previously with the saline preparation. Those thus vaccinated had been so inoculated from one to twenty months previously.

All but one of the thirty-two were of the intestinal type of carriers, while the last had a positive urine culture.

CAUSES OF TYPHOID FEVER IN THE VACCINATED

As was stated at the beginning, this study becomes a study of typhoid fever in the inoculated individual. The records of the 270 cases of straight typhoid studied showed that all had received prophylactic inoculations, and in 207 of them the dates and type of vaccine were recorded. The possible causes of failure of so-called vaccination to protect against typhoid may be thus enumerated:

1. *Absence of Vaccination, Either Total or Partial.*—By this I refer to failure not because of impotent vaccine but because of failure to react in certain individuals. It is well known that after the same doses of vaccine, different persons form differing amounts of agglutinins. But agglutinin titer is not a measure of immunity. We have no criterion that will tell us when an individual is actually immunized, nor have we any means of determining the degree of immunity present.

2. *New Strains of the Organisms Against Which the Vaccine Does Not Immunize.*—Serologic and cultural determinations made in the various laboratories have not consistently produced anything to suggest such a condition.

3. *Failure of Proper Inoculation.*—Among the cases of true typhoid studied, vaccination had been performed in fifty different camps and posts in the United States. This fact, combined with the really excellent results in most individuals vaccinated, renders such a possibility rather remote.

4. *An Overwhelming Dose of the Infecting Organism.*—Absolute immunity to human disease does not exist in man. The highest immunity that can be produced by artificial methods will protect against the antigenic virus only up to a certain limit. I am of the opinion that the greater number of cases of typhoid and paratyphoid in France ocurred as a result of massive infection with a dose great enough to overwhelm the forces of immunity. This, I presume, was most frequently associated also with the first cause enumerated, "absence of vaccination, either total or partial," in that it occurred in those possessing a lower degree of immunity than their more fortunate comrades. As Bernard has so succinctly expressed it, vaccination raises against the typhoid bacillus a great barrier—high, but not insurmountable.

5. *"Back-Handed Typhoid," "Antibody Exhaustion" or "Immunity Exhaustion."*—I include the second designation of this condition as being the most readily comprehensible in view of the existing nomenclature and conceptions of immunity, while I prefer the third as being more scientifically correct. I developed the first term as I recognized more and more of this type in the field, and it has the particular advantage that it emphasizes the assumption that the successive stages of typhoid infection are therein, in a manner, reversed.

The present day conception of typhoid is that of a primary systemic infection. The organisms entering by way of the gastro-intestinal tract are absorbed into the circulation and do not primarily grow as saprophytes in the alimentary canal. After passing through the gastro-intestinal mucosa, the organisms reach the liver through the portal circulation, where they may be excreted through the bile; or some may pass into the general circulation, where they multiply and, after the usual period of incubation, cause typhoid fever. The organisms excreted in the bile may lodge in the gallbladder and there, growing, produce the carrier condition, even though the host has not had typhoid fever.

In a vaccinated person, the organisms entering the portal circulation are either broken up and destroyed by the body ferments or excreted into the bile, or both. In the gallbladder they may find lodgment and continue to grow, in reality outside the body organism, multiplying profusely even though the host be highly immune. The numbers of organisms that are continually discharged in the bile and resorbed through the intestinal mucosa call on the immunity mechanism for constant and exhausting action. There may be superimposed on this a local enteritis caused by one of the typhoid-colon group or any other organism, or even by the typhoid member of the group itself. This subacute or chronic condition, rendering toxic absorption more facile, serves gradually to undermine the constitution. Finally, added to all this, are the hardships of war and army life—exposure, food not always well balanced, fatigue, and perhaps at last some intercurrent infection—and all the conditions required to wear out a body immunity are then present.

It is this reversed process—a local infection or carrier state followed by systemic disease instead of the usual typhoid followed by a carrier condition—that I have chosen to call "back-handed typhoid." Overwhelming doses of the infecting organism and this exhaustion reaction were in my opinion two of the chief causes of typhoid among our troops.

From the nature of the condition it has been impossible to obtain convincing experimental evidence of its presence in France; but a certain amount of indirect evidence appears to warrant our assuming its presence. Our first case occurred in a colleague who, preceding his illness, had been billeted with a French family and who had been drinking unchlorinated water while at his billet. For two weeks or more he had been complaining

of general malaise and a moderate diarrhea, but not sufficient to keep him from his work. At the end of two or three weeks the illness became acute, the usual symptoms of typhoid developed, he became progressively worse, and he died within one week from the onset of the exacerbation.

These cases present the usual clinical histories of ambulatory typhoid, with the definite addition of a local gastro-intestinal pathologic condition and symptoms preceding the disease proper. Otherwise there is nothing unusual about the symptomatology. Especially frequent was this syndrome among the men who had seen active service at the front. From nearly all, a history was obtained of having drunk whatever water they could get, even from the stagnant mud of the shell holes.

To check up on the impression I had gained, I questioned 104 patients as to previous history of chronic local gastro-intestinal disturbance. All were straight typhoid cases. Forty-four denied attacks of diarrhea antedating the diarrhea of the disease itself. Thirty-nine admitted a continuous preceding enteritis varying from one week to three months in duration, and of these, twenty-three had had it for over one month. Fifteen had had diarrhea for from one week to three months while at the front, which had subsided and from which they had been free for from two to three months. Seven additional patients admitted having had a transient diarrhea of from one to five weeks' duration in the two months preceding their disease.

Subacute diarrhea is not a necessary nor the usual antecedent of typhoid fever. The disease begins frequently even with constipation. I would compare the foregoing figures, in which more than 60 per cent. had been afflicted with enteritis, with the statements of the Typhoid Commission in the Spanish American War, that in that epidemic "more than 90 per cent. of the men who developed typhoid fever had no preceding intestinal disorder." I do not believe that the figure of 60 per cent. would hold for all men attacked by this malady in the American Expeditionary Forces, but do assert that it was the case in a representative number of those who had been at the front.

There is no proof that these men were harboring the typhoid bacillus in their intestinal tract previous to coming down with the disease. It is here that my hypothesis fails of absolute proof. Such proof would have necessitated a survey of the stools of all the members of a division, to be followed by weeks or months of watching to see whether the carriers discovered would develop the disease. Moreover, had this been done, the carriers would have been hospitalized and treated, thus defeating the object of the experiment. But corroborative evidence is not lacking. Several observers have reported the finding of typhoid bacilli in the stools of patients a few days or more previous to the onset of the disease, while Battlehner [12] has reported four cases in whose excreta the bacilli were discovered from twenty-one to 117 days before the onset of the disease. These had been considered as healthy carriers. I have a record of one patient who one and a half months previous to admission cared for a typhoid patient and shortly thereafter developed diarrhea, which persisted for six weeks until the typical acute onset of typhoid. In the discussion of typhoid carriers I have called attention to ten out of the thirty-two carriers, with history of diarrhea, none of whom had had preceding typhoid, and one carrier with no history of typhoid and no diarrhea, who, nine months previously at Camp Dodge, had had negative stools for the typhoid group.

I have shown, then, that carriers have been produced in France; that diarrhea is often associated with the carrier condition; that among 104 men, diarrhea preceded the disease in 60 per cent.; that in one instance exposure to the disease was followed by enteritis which persisted for six weeks, until the onset of typhoid. Before absolute proof of back-handed typhoid is produced, I must show that all these facts find sequence in individual cases.

6. *Unsatisfactory Vaccine, Either as Regards Antigenic Properties or Number of Doses Administered.*—Considerable experimental evidence has accumulated to show that with increasing numbers of inoculations the immunity increases. Four inoculations confer a greater degree of immunity than do three. One of the advantages of the method in use in the United States Army is that the men nearly all received the same vaccine in the same dosage and with the same number of inoculations. Observers in other armies were sometimes forced to draw their conclusions from patients who had received different kinds of vaccine and all numbers of injections, from one to four or more. The fact that our vaccine did protect in the great majority of the cases demonstrates the efficiency of our preparation and of the dosage. It may not be ideal, but it is thoroughly practical.

Reed, Vaughan and Shakespeare, in their report on typhoid in the war with Spain, draw these conclusions:

> Typhoid fever is so widely distributed in this country that one or more cases are likely to appear in any regiment within eight weeks after assembly. With typhoid fever as widely disseminated as it is in this country, the chances are that if a regiment of 1,300 men should be assembled in any section and kept in a camp *the sanitary conditions of which were perfect*, one or more cases of typhoid fever would develop.
>
> More than 90 per cent. of the volunteer regiments developed typhoid fever within eight weeks after going into camp.
>
> Even an ocean voyage does not relieve an infected command from its infection.
>
> About *one fifth* of the soldiers in the national encampments in the United States in 1898 developed typhoid fever.

We are prone to think of typhoid fever as being no longer prevalent in the United States. We must remember that more than 150,000 typhoid cases still occur each year, and that, according to Gay, these cause an annual production of 7,500 carriers. We may assume that the statements made in 1898 are equally true in 1919.

Official reports with the accurate numbers of cases of typhoidal infection in the American Expeditionary Forces will not be available for several months; but this total will be below 2,000 cases. This, with a total of more than 2,000,000 men transported overseas, represents a typhoid incidence of less than 0.1 per cent. Although antityphoid vaccination is partly responsible for this diminution in typhoid incidence compared with Spanish-American War figures, a place of great importance must be given to improved sanitary procedures.

SUMMARY

An attempt has been made in this report to study from the point of view of the clinician the disease produced by *Bacillus typhosus* when it invades the body of a person previously vaccinated against that organ-

12. Battlehner, R.: Dissertation, Strasbourg, 1910.

ism. There has heretofore been some difference of opinion as to how much antecedent vaccination will change the clinical picture of the disease. Recent work by several observers tends to corroborate the conclusions reached in this study.

A series of 270 cases in which it was proved by successful cultivation experiments that the patients were infected with *B. typhosus* forms the basis of the work. Although I have accepted in my report all cases reported since January, 1919, it must be borne in mind that in a sense we are dealing with a selected series of cases. That is, I have accepted only those in which we succeeded in isolating the organism. It is possible that many more cases of disease caused by the same germ occurred, but from which the organism could not be isolated. In this connection I have discussed the condition known as clinical typhoid fever in which the symptomatology was characteristic, but in which bacteriologic studies were without result. In the latter type I concluded that the typhoid bacillus or one of the typhoid group of organisms was the etiologic factor, but that its presence was demonstrated with much greater difficulty. On the other hand, I would call attention to the fact that in the 270 cases there was no difficulty in obtaining the germ, its presence in blood, urine and feces being noted in about the percentage usually described for typhoid in nonvaccinated persons.

Throughout the discussion we must bear in mind that a great number of mild and abortive cases of true typhoid may have occurred—cases in which the patients were never sick enough to be sent to the hospital, but which would have been typical typhoid had the patients not been vaccinated against the disease. I agree that there may have been hundreds or even thousands of such cases, how many we shall never know. Surely, many vaccinated persons drank typhoid bacilli and destroyed or excreted them, remaining totally unaffected by the exposure. Surely, also, many did react slightly to the exposure, perhaps with no further symptoms than a rise of temperature of a degree or more during a few hours or a day. It is this reaction which proves that they are immune and are destroying the organism almost as soon as it invades the body—in fact, that they are *not* going to develop typhoid fever. Such a person, though temporarily infected with *B. typhosus,* certainly cannot be said to be suffering from typhoid fever. If the clinical conception of the disease were so amplified as to include all these cases, we should have to admit that practically every vaccinated person when he ingests the germ develops typhoid fever: a reductio ad absurdum. There are probably all gradations from these simplest febrile reactions up to the typical typhoid fever as described. It becomes, then, a question at what stage the manifestation is to be given the name typhoid fever.

When the average man in the army really feels ill, he goes to the hospital. Particularly was this true during the period of this report, when there were no activities at the front—nothing more entertaining than "daily fatigue." So, using the point of view of the clinician, I will arbitrarily say that when a man is admitted to the hospital as a result of typhoid infection he has typhoid fever, and that the others are successfully combating the disease with their immunity mechanism. This is purely arbitrary, and I would emphasize the point that the division is placed here so that we may have a basis for clinical comparison of the disease with the typhoid of the nonvaccinated as they have been studied in hospital. I do not lose sight of the fact that the epidemiologic phase of the situation is far different —that every one of the mildly infected must be considered as typhoid individuals capable of spreading the organism broadcast.

There is no way of telling how many patients with typhoid infection were admitted to the hospital and never recognized as such. The number may have been great or small. A direct attempt to reduce it to a minimum was made at the inception of our work by the issuance from the chief surgeon's office of a rather lengthy circular letter which was sent to all hospitals and medical organizations, directing attention to the disease, describing both the typical symptomatology and that supposed to be found in the vaccinated, and dwelling in particular on the necessary care in differentiating the disease from influenza. All medical officers were requested to watch particularly for the disease in its atypical forms, and to request a laboratory confirmation in any case of doubt. The success of this attempt was indicated by the large number of clinical typhoids and typhoid suspects reported to the division of laboratories and infectious diseases.

In the study of our 270 cases of proved typhoid I have dwelt at some length on the routine laboratory examinations because I consider it desirable to show that in this field as well as in the syndrome of typhoid in the vaccinated, there is no essential difference from the findings in the nonvaccinated. Ten per cent. of relapses might appear a trifle high, but series in the nonvaccinated are reported with this figure. The delay in noting the appearance of rose spots and palpable spleen until the twelfth day, on an average, was probably due to the fact that these signs were not recognized on the first day of their appearance. Those cases studied personally by myself and certain co-workers showed these important signs, as a rule, earlier.

The total mortality in those who did contract the disease has not been shown to be lessened. Ten or 11 per cent. has been the generally accepted mortality for typhoid, but most of these figures have not differentiated between typhoid fever and the paratyphoids. Such, for example, is true of the figures of Osler and of Reed, Vaughan and Shakespeare cited above. It is possible that the mortality for typhoid fever among the nonvaccinated, considered apart from the paratyphoid infections, is higher than 10 per cent. Under any circumstances our figure is more likely to be too high than too low. Severe cases were not in such danger of misdiagnosis as were the mild ones.

Our records do not give us conclusive information on one point that would be of considerable interest to the epidemiologist, that is, the relative efficacy of saline vaccine and lipovaccine. By far the greater number of patients had received the saline vaccine; but those receiving the lipovaccine had the higher mortality. Furthermore, the time interval since inoculation was as a rule much shorter in the case of the lipovaccine. No just comparison can therefore be made.

CONCLUSIONS

1. A study of 270 cases in which the patients, all of whom had received triple typhoid vaccine, were infected with *B. typhosus,* leads to the conclusion that in these hospital cases the clinical picture of typhoid in the vaccinated was similar to that of the unvaccinated. Absence of leukocytosis, continued fever of the usual course and duration, rose spots, palpable spleen,

relapses and complications all remained characteristic of the disease.

2. In our series the mortality was 11 per cent.

3. Positive cultural results from blood, urine and feces were of about the same percentage as with non-vaccinated patients, and the duration of the bacteremia appeared to be the same.

4. Patients infected within eight months after vaccination had an average severity (fatal percentage combined with "severe" percentage) of less than 10 per cent. After eight months, the severity percentage gradually increased. Our figures for later months are not complete enough to allow us to draw conclusions as to the period of maximum immunity.

5. The onset of the disease was more frequently acute when occurring within the first month after inoculation.

6. In sixteen cases with onset from seven to twelve days after inoculation (the usual incubation period), the infection probably occurred during the interval after inoculation.

7. The paratyphoid infections, although much milder as a group, could not be clinically distinguished in individual cases from straight typhoid. They were of much less frequent occurrence than was the latter.

8. It is probable that a large number of vaccinated persons were infected with *B. typhosus* and allied organisms who never became sick enough to require admission to the hospital. In these the immunity mechanism was eventually successful in combating the infection, so that they did not develop clinical typhoid fever. Their epidemiologic importance is recognized. This report deals with the remaining persons—those who in spite of vaccination developed the disease.

9. There are six possible causes of failure of vaccination to protect against typhoid; a new clinical variety is for convenience called "back-handed" typhoid.

10. The incidence of the typhoid group of diseases in the American Expeditionary Forces was less than 0.1 per cent., as compared with 20 per cent. for the Spanish-American War.[13]

INDUSTRIAL BLOOD POISONS

C. R. NEWTON, M.D.
AKRON, OHIO.

Some months after the outbreak of the war, large users of anilin, finding themselves deprived of their usual source of supply, were compelled to engage in the manufacturing business for themselves. Before manufacturing methods were improved, and the process finally discontinued, a number of benzene (benzol, C_6H_6) and anilin intoxications occurred which I had the opportunity to study first hand, and the most important of which are herewith reported.

REPORT OF CASES

CASE 1.—*Benzene intoxication.*—Mr. A., chemist, aged 30, in charge of operations, who had been working intensively in benzene for about two weeks, complained, June 12, 1916, of headache, anorexia, lassitude and loss of weight. Suddenly pain in the abdomen developed, accompanied by nausea and vomiting. Physical examination detected nothing abnormal. Temperature and pulse were normal. An examination of the blood, however, revealed a marked leukopenia. The blood was normal in color, but seemed to be lacking in viscidity. There were 5,760,000 red blood cells per cubic millimeter; 1,200 white blood cells; hemoglobin, 85 per cent. (Sahli). The differential count revealed: large mononuclears, 39 per cent.; small mononuclears, 0; polymorphonuclears, 54 per cent.; cosinophils, 0; transitionals, 0.6; other cells, 0; total, 93.6 per cent.

The intoxication in this case was largely from inhalation. Aside from the blood findings, the physical picture is that of a nervous dyspepsia, which was probably true in this case, as the man was of a nervous temperament and anxious over the responsibility of his position.

After a month's leave of absence with complete rest, the leukocyte count became normal and the patient made a complete recovery. It was not our observation that a leukopenia alone, of the severity herein described, would cause symptoms. This view is supported by observation of the following cases:

CASE 2.—*Benzene intoxication.*—Mr. B., chemist, aged 26, exposed about two weeks, with no symptoms, when examined, June 15, 1916, gave a red blood cell count of 4,000,000; white blood cells, 1,250; hemoglobin, 95 per cent.

July 12, after the man had been instructed, but allowed to continue work, the red blood cell count was 4,352,000; white blood cells, 3,200; hemoglobin, 95 per cent.

CASE 3.—*Benzene intoxication.*—Mr. C., chemist, aged 35, exposed about two weeks, with no symptoms, when examined, June 15, 1916, gave a red blood cell count of 3,680,000; white blood cells, 1,700; hemoglobin, 90 per cent. The differential count was: large mononuclears, 9.6 per cent.; small mononuclears, 17.6; polymorphonuclears, 69.6 per cent.; eosinophils, 0; transitionals, 0.32; total, 97.12 per cent.

July 12, after being advised, but allowed to continue work, the patient's red blood cell count was 4,032,000; white blood cells, 3,800; hemoglobin, 90 per cent.

Both of these men completely recovered.

CASE 4.—*Benzene-anilin, mixed intoxication.*—M. S., aged 45, laboratory helper, inhaled vapors from an anilin reducer and received a mixture of anilin and free or unreduced benzene, which is occasionally present in an anilin reducer. The patient was seized with headache, chills, nausea and vomiting. I saw him, Oct. 20, 1916, within a few minutes after the onset of the symptoms. He was very cyanotic. The pulse was dicrotic, rate 110. The systolic blood pressure was 119; diastolic, 73. The blood was dark brown. The red blood cell count was 5,200,000; white blood cells, 10,200; hemoglobin, 90 per cent. (Sahli).

October 21, sixteen hours later, the cyanosis was gone, the pulse was of good quality, the systolic blood pressure, 137; diastolic, 92, and the blood normal in color. The red blood cell count was 5,600,000; white blood cells, 1,440 (check by another, 1,200); hemoglobin, 90 per cent.

October 24, seventy-two hours later, the patient felt well and was anxious to return to work. The red blood cell count was 5,491,000; white blood cells, 6,640; hemoglobin, 92 per cent.

The interesting observations in this case were the selective action of benzene on the white blood corpuscles, the depression of blood pressure, and the rapid recovery.

CASE 5.—*Anilin intoxication.*—R., aged 49, employed twelve years, climbed inside an anilin reducer, June 26, 1916, to clean out sludge with hose. He had worked only a short time when he began to feel dizzy and nauseated, and to experience a "warm sweet taste" in his mouth. With presence of mind he quickly climbed out of the reducer and was assisted to the hospital. According to his account, he did not entirely lose consciousness, but seemed to be overcome by mental confusion and great bodily weakness. I saw him within an hour after the onset of the symptoms. The picture was that of collapse. The complaint was headache and chilliness, although the man was perspiring freely. The skin and mucous membranes were intensely cyanotic; the temperature was 101 F.; the pulse was weak and dicrotic, rate 110. The

13. In addition to the references already given, the following will be found of interest:
Vaughan, V. C., Jr.: Report on Typhoid Fever in Troops Stationed in the Vicinity of Marseilles.
Freeman, A. W.: Med. Officer, London, **17**: 71, 1917.
Vaughan, V. C., and Palmer, G. T.: J. Lab. & Clin. Med. **3**: 635 (Aug.) 1918; ibid. **4**: 587 (July) 1919.

systolic blood pressure was 110; diastolic, 60. Six hours after the administration of 3 grains of camphor hypodermically, the blood pressure rose to 130 systolic and 85 diastolic. The blood was chocolate brown, flowing very freely. The red blood cell count was 3,520,000; white blood cells, 10,600; hemoglobin, 95 per cent. The differential count revealed nothing important. Owing to a peculiar strangury, the patient was unable to void for several hours. The urine, when obtained, was dark, and contained no sediment. Its specific gravity was 1.020; it was acid in reaction and negative for albumin, sugar and bile. There was a trace of anilin. Methemoglobin could not be demonstrated in the urine.

June 30, the man still had headache and complained of soreness in his chest. He was still cyanotic, though improved. The pulse was very soft, the systolic blood pressure, 115; diastolic, 60. The red blood cell count was 2,944,000; white blood cells, 4,400; hemoglobin, 95 per cent. The urine was normal in color with negative findings.

July 7, he was still slightly cyanotic, but headache had disappeared. The pulse was 88, and of much better quality. The red blood cell count was 3,112,000; white blood cells, 4,140; hemoglobin, 90 per cent.

July 13, he was no longer cyanotic. He felt well except for slight nervousness and insomnia. The red blood cell count was 4,208,000; white blood cells, 4,300; hemoglobin, 91 per cent.

Case 6.—*Anilin intoxication.*—S. B., aged 41, washed some clothing in anilin, Oct. 30, 1916, and immediately became ill, complaining of weakness and headache. Cyanosis was pronounced. His temperature was 99.5 F. The pulse rate was 88, the systolic blood pressure was 130, and diastolic, 98. The blood was chocolate brown. The red blood cell count was 3,420,000; white blood cells, 8,040; hemoglobin, 88 per cent. The urine was dark colored, with negative findings.

November 6, he was much improved. The blood cell count was 5,024,000; white blood cells, 8,800; hemoglobin, 90 per cent. The temperature and pulse were normal.

Case 7.—*Anilin intoxication.*—J. K., aged 40, poured iron into an anilin reducer and inhaled the fumes, July 12, 1916. He became ill with headache, dizziness, cyanosis and perspiration. The temperature was 99 F., pulse 96, water hammer type. The systolic blood pressure was 112, diastolic 60. The red blood cell count was 2,262,000; white blood cells, 4,800; hemoglobin, 92 per cent. The differential count was not important. The urine was dark colored with negative findings. The patient made a complete recovery.

Case 8.—*Anilin intoxication.*—N. M., aged 28, poured iron into an anilin reducer and inhaled the fumes, Aug. 9, 1916. He became cyanotic and complained of headache. The temperature was 98 F. The pulse was 92 and of good quality. The systolic blood pressure was 118 and diastolic 75. The blood was chocolate brown. The red blood cell count was 4,160,000; white blood cells, 4,400; hemoglobin, 95 per cent. The patient was unable to void for several hours.

August 10 he was much improved, but was still cyanotic. The red blood cell count was 3,800,000; white blood cells, 6,200; hemoglobin, 95 per cent. The urine was dark amber with negative findings.

August 16 the red blood cell count was 4,000,000; white blood cells, 6,000; hemoglobin, 95 per cent.

In this case, although the cyanosis was pronounced, and the blood very dark, the cell destruction was slight. The poison apparently overwhelms the oxygen carrying capacity of the blood by the formation of methemoglobin, which may be more important in producing cyanosis than either disintegration of the red cells or formation of anilin black, as described by Engelhardt.[1]

CUMULATIVE ACTION

In December, 1916, I began the study of ten cases subject to more or less exposure, to determine if possible the cumulative properties of benzene. The service of these men ranged from one week to five years and seven months. Monthly blood counts were made, and all were found to be practically normal.

It is my opinion, not that benzene and its amino-derivatives possess any very definite cumulative action, but that the anemias of which they are the cause follow a definite intoxication or a series of definite intoxications. It remains to be determined, however, whether or not the constant inhalation of even minute quantities of benzene vapor from spreading machines, cement cans and other sources would tend to interfere with proper oxygenation of the blood and tissues, even when there is no cell destruction, and thus undermine the worker's resistance to disease.

CONCLUSIONS

1. Workers chronically exposed to benzene may show leukopenia without any other symptoms, and make complete recovery.

2. Acute exposure to anilin and nitrobenzene vapors produced cyanosis with destruction of the red blood corpuscles, but with little change in the white corpuscles, with recovery. In one case in which free benzene was presumably present, there was destruction of white cells without appreciable destruction of red cells, and a more rapid recovery, that is, in three days.

3. The maximum white cell destruction by benzene, and the maximum red cell destruction by anilin-nitrobenzene, may not be reached for several hours after the onset of the symptoms.

4. Workers exposed for long periods to benzene may not have a leukopenia; apparently, therefore, the action is not cumulative.

1. Engelhardt, cited by Blyth, A. W.: Poisons: Their Effects and Detection, New York, the D. Van Nostrand Company, 1902.

PARAPLEGIA AFTER ARSPHENAMIN IN A CASE OF RETROBULBAR OPTIC NEURITIS *

T. J. DIMITRY, M.D.
NEW ORLEANS

This case is presented not solely for its extremely interesting features, but to some extent because of the arbitrary attitude of some of my confrères in attributing a sequence of the usual syndrome to be expected in an acute optic neuromyelitis of syphilitic causation to the administration of arsphenamin. Furthermore, the number of cases of the incongruous syndrome of retrobulbar optic neuritis with myelitis reported in the literature is limited, and the beneficial effects of arsphenamin on the retrobulbar neuritis, while the same remedy seemed to be the exciting agent in the development of the paraplegia, add increased interest.

History.—A man, aged about 34, unmarried, complained that his sight was failing him, one eye being, in fact, practically blind. This eye condition started, May 1, 1918, with a constant pain in the eyes, and a deeper pain both on movement of the eyeballs, and when the eyes were pressed back into the socket. He had always considered himself healthy, though he was of delicate structure. The family history was negative and did not show anything of interest, neurologically or otherwise. The patient had had the usual diseases of childhood, which apparently had no bad effect on him. He emphatically denied any venereal disease. He consulted his first oculist, May 3, when the vision of the right eye was 20/50 and of the left eye 20/15. Ophthalmoscopically, the fundus was reported negative. The vision in the right eye was not improved by lenses. Dark glasses and zinc drops

* Owing to lack of space, this article is abbreviated by the omission of a bibliography. The complete article appears in the author's reprints.

were prescribed. Pain continued in the eyes, and, May 7, vision had fallen to 20/200 in the right eye and 20/20 in the left. His refraction, on being determined again, showed no improvement, and the fundus was reported normal. A solution of atropin was instilled, and this greatly lessened the pain in the eyes.

May 8 he consulted a second oculist, who also found the fundus normal and could not account for the loss of vision.

Examination.—May 10, the patient consulted me. The vision was 15/200 in the right eye and 20/40 in the left. Ophthalmoscopically, the fundus details were negative. There was no diplopia, though there was a slight nystagmus in the right eye. The sinuses, as a possible cause of the blindness and the pain in the eyes, were ruled out. The field of vision showed the colors reversed, the spiral fatigue field of neurasthenia, and a central color scotoma present. The neurologist reported the patellar reflex exaggerated in one leg and sluggish in the other. This neurologic examination was so void of any aid in the diagnosis that a buried complex was thought of, and a tentative diagnosis of hysteria was made. The patient was advised to continue going to his office and to consult me the next day. He followed these instructions, and while on his way to the office he fell into a street excavation, slightly injuring his knee. It is questionable to what extent his impaired vision was a factor in this fall. for it was learned that for some time indefinite pains had caused him to use a pillow behind his back while driving his car, that he had been suffering from paresthesias in his legs, which had been quite annoying, and that some slight urinary disturbance had been present.

Despite the fact that the patient had recently gone blind in one eye, and the other was rapidly failing, he seemed unconcerned. This mental state changed in a few days, and he became so irritable that he was taken to an institution, May 13.

The neurologist who accompanied him remarked for the first time that he did not walk well, and that he appeared weak in the legs. His mental state was now such that it became necessary to resort to sedatives and hypnotics.

The Wassermann reaction by the original method and that of Tschernogowbou was negative. The total leukocytic count was 5,500. The differential count was: neutrophils, 66 per cent.; lymphocytes, 28 per cent.; large mononuclears, 6 per cent.

The specific gravity of the urine was 1.021. Its reaction was acid.

Tests for albumin, sugar, acetone and diacetic acid were negative; for indican, positive. Microscopic examination revealed an excess of leukocytes, much mucus, and hyaline and granular casts.

The patient suffered a complete loss of sight before any other symptoms developed to make possible a diagnosis, though some precursory symptoms obtained in his history were not recognized at the time as being important. A conspicuously healthy eye interior, ophthalmoscopically, in a blind patient offered no explanation, and it seemed that the nearly scientific branch of medicine, ophthalmology, must resort to that meaningless term "amaurosis."

Daily fundus examination elicited no information until the morning of May 13, when there was discovered a distinct elevation of the optic nerve of both eyes. This elevation was greater in the right eye. The pupils were widely dilated and did not respond to light. The patient's mental irritability and the choked disk made me suspicious of a brain tumor; hence, no spinal puncture was made at this time. Tuberculosis was ruled out by physical examination and roentgen-ray studies. A roentgenogram of the cranium was negative.

Treatment and Result.—On the afternoon of May 14, 0.06 gm. of arsphenamin was administered intravenously. On the following morning, the patient complained of stiffness in the legs, and pain in the back, and he asked that a hot water bag be placed over the region of the kidneys, for he had not voided his urine. It was then found that he could not move his right leg, and during the afternoon this paralysis extended to the other leg. It was necessary to catheterize the bladder and later to contend with an overflow of the urine. He suffered an inability to evacuate the bowels, and subsequently an incontinence of feces. He developed decubitus and a very painful hyperesthetic area of the left arm. The paralysis of the legs was absolute, and all voluntary motion, and sensation in all its qualities, including temperature and touch, was destroyed. Different degrees of deep and superficial anesthesia and hyperesthesia extended to within an inch of the nipple anteriorly, and not quite so high posteriorly. The reflexes were abolished in the legs with a flaccid paralysis, and the appearance of a rapid wasting. The whole presented a picture very alarming.

Two days after the injection of arsphenamin, the elevation in the optic nerve had improved and within the next day had disappeared entirely, leaving a normal appearing optic nerve, though the patient was blind.

As there was no longer fear of intracranial growth, a spinal puncture was made. It must be remembered that this puncture was made after the paraplegia developed; needle traumatism or introduced infection could not have been the cause for the paraplegia. When the definite paraplegia did develop, the diagnosis "retrobulbar optic neuritis with myelitis," both of syphilitic causation, won my acceptance only after a careful study of the literature of these associated conditions; and this diagnosis is confirmed by the laboratory tests and the therapeutic results obtained.

Spinal puncture was made, and during the operation the back was found rigid and offered some difficulty to the introduction of the needle. The fluid was clear and was not under pressure but, to the contrary, was obtained drop by drop. The pathologist who examined the fluid reported that with 0.75 c.c. of fluid, the Wassermann test was negative; the cell count was 173; the globulin test was ++++; smears for tubercle bacilli were negative; the colloidal gold test yielded a clear-cut zone reaction, indicative of, or in accord with, that found in tuberculosis; cell differentiation revealed: polymorphous neutrophils, 1 per cent; lymphocytes, 95 per cent.; endothelial leukocytes, 3 per cent.

A provocative blood test was found negative.

In spite of the apparently harmful effect of the arsphenamin, a second dose of 0.06 gm. of arsphenamin was given, May 21, and a dose of 0.09 gm. of neo-arsphenamin was given a few days afterward. Mercury was used by inunctions and the iodids were used in increasing doses, and for weeks the patient was taking 75 drops of saturated solution of potassium iodid three times a day.

I relinquished the case, June 19, and from that time on the only other medication was strychnin and electrical stimulation. Jan. 14, 1919, the patient informed me by mail that he could then walk and had a vision practically perfect. Jan. 24, 1920, he was on the streets getting about without any assistance, but there remained some bladder disturbance.

COMMENT

Did the arsphenamin produce the acute transverse myelitis? We know that the retrobulbar optic neuritis existed before the drug was administered, and its use produced an improvement in the optic nerve elevation. I did not think that the drug produced the myelitis, and I emphasized this belief by repeating the drug and a third injection to the benefit of the patient. There was no increased harm produced by the repeated injections; to the contrary, the patient improved. He again saw and walked. Apropos of the foregoing is a case report by Elschnig [1] on "a case of retrobulbar optic neuritis with myelitis," in which he says: "The eyes were affected first, and during the treatment paralysis developed and the patient refused further treatment." Ullrich von Hutten [2] thought, as did others, that "paralysis in syphilis was to be attributed to the use of mercury." In the same book [3] in which he makes this observation there is a report of a case of "acute myelitis with decubitis developing during the use of mercury inunctions." Will history

1. Elschnig: Klin. u. anat. Beitrag zur Kenntnis der acuten retrobulbar Neuritis, Arch. f. Augenh. 5: xxvi.
2. Von Hutten, in Nonne's Textbook, Cerebrospinal Syphilis, p. 4.
3. Nonne's Textbook, p. 263.

repeat itself and arsphenamin run the same gamut? I fear it will.

McCaskey [4] reports four cases from the literature and one that he observed in which paralysis developed after the use of arsphenamin. All of these patients were syphilitic. All received more than one injection. One received a Swift-Ellis treatment and another a subdural injection. It is extremely doubtful in my mind that these cases are to be explained on purely toxicological grounds, though the bad effect was produced by more than one injection. Other drugs have been thought to produce paralysis. Webber [5] states that "the use of strychnin given before a relapse in myelitis is a circumstance demanding special notice," for he has seen bad effects following the use of strychnin in disease of the spinal cord, and he does not feel justified in using it.

Collins [6] reports a case of sudden paraplegia occurring after the injection of "autolysin" in a syphilitic subject. He says: "The autolysin was a coincident in the production of the paraplegia and he could not eliminate syphilis despite the negative state of the blood and the spinal fluid."

Socin [7] reports a case in which "a woman, aged 38, with a history of abortions and miscarriages, whose husband died of softening of the brain, suffered with a syphilitic eruption on the body. She received two doses of arsphenamin. The second dose produced an encephalitis and a severe affection of the spinal cord, with a decubitus. The patient died. The study of the cord was interpreted as a toxic myelitis." I hesitate to accept his interpretations, for we lack exactness and undoubted proof in differentiating a toxic spinal lesion that might be confused with syphilitic condition. It is for us to discover more readily the spirochete and clarify this doubtful etiology.

Then is not arsphenamin injurious to nervous tissue? Erlich states that the drug is not injurious to nervous tissue. The drug was thought at one time to have an unfavorable influence on the optic nerve but not the cord. This was probably the outcome of the injurious effect of atoxyl and other aromatic arsenic preparations.

Schoenburg [8] says that to those who have used a great deal of arsphenamin in syphilis of the central nervous system, "one thing is clear, namely, that it is not injurious to the healthy or damaged optic nerves if administered in proper doses and at proper intervals."

St. John Johnson [9] experimented on rabbits with arsphenamin as to its therapeutic and toxic doses. Twelve rabbits were thoroughly impregnated with arsenic by arsphenamin injections. The dose of 1 decigram was lethal to but three rabbits; the others lived throughout the treatment, and at necropsy, arsenic was recovered in the tissues examined. In none of the twelve was an optic neuritis to be produced. These experiments, taken in connection with the fourteen cases of optic neuritis discovered during the survey of patients before or during the treatment of syphilis in which the optic nerve lesion disappeared rapidly under arsphenamin treatment, show that in these cases at least, arsenic has had no influence on the development of an inflammation of the optic nerve; rather contrariwise; when neuritis had already developed, the specific treatment caused rapid resolution. Thus it seems, Johnson concludes, the fear of production of blindness by therapeutic doses of arsphenamin is unwarranted.

The evidence presented justifies a parallel deduction as to its harmful effect on the spinal cord.

Further possibilities arose in the production of the paraplegia, demanding an explanation. In the case that I report was it a Herxheimer reaction? This reaction is an inflammatory response noted after the use of specific treatment in syphilis and is alone observed in syphilitic subjects. The reaction is spoken of as a disturbance of the endotoxins, and an excitation of the spirochete by insufficient dose of the drug.

I hesitate to accept as an explanation of this reaction that it is dependent on a questionable endotoxin or even on a toxin. The reaction might be explained as an indirect focal protein reaction, and this is occasioned by dead spirochetes. I believe, not that this was a Herxheimer reaction, but that it was a case of retrobulbar optic neuritis with myelitis, which is a definite clincal entity, and the paraplegia must play its part in the syndrome.

Hillion [10] defines the process as a clinical syndrome characterized by a diffuse myelitis, oftenest acute, preceded, accompanied or followed by an optic neuritis.

This clinical entity, so well defined, dates to the writings of Erb and Steffan, who in 1879 reported a case of transverse myelitis in association with a retrobulbar neuritis.

Goulden [11] collected fifty-two instances. The eye symptoms appeared first thirty-six times, the spinal cord symptoms ten, and there was simultaneous appearance of eye and cord symptoms three times. The order of appearance was not stated three times.

The cases reported by Dreschfeld, Knapp, Chisholm, Mohokian and Hennenberg showed a definite choked disk. A great number of all the cases were without fundus changes at the beginning, though the eyes were blind.

Weisenburg [12] states that there is rarely a return of vision, and that there are only three cases on record in which the return of vision was complete. There was usually a resulting white atrophy of the optic nerves.

The death toll has been at least 60 per cent., and thirty cases have gone to necropsy. In the anatomic and pathologic studies made, all are agreed that the optic nerve lesion presents the same pathologic condition as found in the cord, that is, a softening, a degeneration and a neuroglial proliferation.

Bielschowsky considers the neuritis primary and parenchymatous. Anatomic continuity of the lesion in the cord has not been demonstrated. Elschnig believes that the optic neuritis is interstitial and that the vision is destroyed mechanically.

The etiologic factor in the production is well stated by Nettleship,[13] who says that in his experience fifty per cent. of the symptomatic retrobulbar optic neuritis cases in contradiction to idiopathic are due to syphilis, and, further, that since 1899 experience has shown that a large percentage are caused by syphilis and in the future many so-called idiopathic cases will, with the aid of serum diagnosis and improved methods, come under this heading.

4. McCaskey, G. W.: Salvarsan and Neosalvarsan Mycelitis, J. A. M. A. **69**: 1960 (Dec. 8) 1917.
5. Webber: Boston M. & S. J., 1880, p. 102.
6. Collins: Neurological Clinics, pp. 172-181.
7. Socin: Cor.-Bl. f. Schweiz. Aerzte **46**: 1537 (Nov.) 1916.
8. Schoenburg, M. J.: Am. J. Ophth. **2**: 518 (July) 1919.
9. Johnson, St. John: Am. J. Ophth. **2** (Oct.) 1919.
10. Hillion, H.: Paris thesis, 1906-1907: "On désigne sous le nom de neuro-myélite optique aigüe, un syndrome clinique caractérisé par une myélite diffuse, le plus souvent aigue, précedée, accompagnée ou suivie d'une névrite optique à évolution parallèle."
11. Goulden, Charles: Ophth. Rec. July, 1914.
12. Weisenburg, in Posey and Spiller: The Eye and Nervous System, p. 569.
13. Nettleship, in Parsons: Pathology of the Eye **5**: 4, 1913.

In my case, though the Wassermann test was negative both for the blood and for the spinal fluid, the other tests show that the etiology was that of syphilis. I have been able to compile seventy-two cases. Forty-six cases were studied most carefully. Of the forty-six, seventeen patients undoubtedly had syphilis, shown either by a lesion or an acknowledgment of having had the disease. Twenty-eight died. Necropsy was held on twenty-one. Either a total or a partial atrophy was the result in all cases but three.

The subject has been the occasion for theses by Hillion, Gault, Picqué and Faure. Hillion reported forty-five cases. Devic reported twelve cases; Taylor gives a bibliography of twenty-five references.

CONCLUSION

It is well to remember that syphilis presents a vagary of symptoms at times lacking a definite explanation. What appears as an incongruous syndrome both pathologically and clinically is very often to be made clear when syphilis is taken into consideration, and an appreciation of the changes that might occur from a syphilitic arteritis, better known as a Huebner arteritis. To rid ourselves of dissenting opinions in unclassical cases, it will be essential to find the spirochete present. Then we may emphatically state the existence of the syphilitic disease.

3601 Prytania Street.

EPIDEMIC ACUTE HEMORRHAGIC JAUNDICE OF TOXIC ORIGIN

ITS SYMPTOMS AND PATHOLOGY

DOUGLAS SYMMERS, M.D.
Director of Laboratories, Bellevue and Allied Hospitals
NEW YORK

During a period of ten weeks, commencing the middle of December, 1919, sixteen patients were admitted to Bellevue Hospital suffering from a variety of acute hemorrhagic jaundice. Of this number nine died—a mortality of 56.2 per cent. Clinically and anatomically the disease presents features which, on the one hand, are strikingly similar to those of infective jaundice and yellow fever, and, on the other, to acute yellow atrophy of the liver. Moreover, it has been a subject of remark that cases corresponding in all essentials to acute catarrhal jaundice have recently been received in numbers noticeably in excess of the routine experience of former years. It is possible that some of these represent a mild form of the epidemic disease, although in such patients stupor or delirium and hemorrhages are conspicuous by their absence, and recovery is the rule.

In eight of the sixteen cases of acute hemorrhagic jaundice, unsuccessful attempts were made to find spirochetes in stained films of blood taken from living patients. In addition, fresh blood or urine, depending on the stage of the disease, or both, were injected into guinea-pigs in an effort to reproduce the changes, as has been claimed in infective jaundice and yellow fever; as a routine measure 15 c.c. of blood were divided into equal parts and injected into the peritoneal cavity of three guinea-pigs, and 50 c.c. of urine, removed by catheter, were centrifuged, and from 2 to 5 c.c. of sediment, according to the total quantity procured, were injected into one or several guinea-pigs. The results were uniformly negative. None of the animals dying spontaneously within the period of incubation—from six to thirteen days—or killed thereafter, showed the slightest indication of jaundice or hemorrhage. In three of the hospital patients, sections of the liver and kidney removed at necropsy were stained by the older method of Levaditi, but no spirochetes were found. In thirteen of the sixteen cases, blood cultures were negative; the others were not taken. In three patients who succumbed with symptoms of acute yellow atrophy of the liver, chemical examination for the heavy metals, particularly phosphorus, was negative (Dr. Gettler).

Of the sixteen cases, six were investigated by necropsy. In addition to jaundice and hemorrhages in the skin, mucous and serous membranes, various viscera and elsewhere, the kidneys were found to show cloudy swelling or necrosis of the tubular epithelium, while the changes in the liver varied from intense granular degeneration to those commonly described as acute yellow atrophy. In three instances the mucosa of the gastro-intestinal tract was greatly swollen and dirty grayish blue, while in the other three no changes were apparent to the naked eye, but were disclosed on microscopic examination.

In view of the fact that the disease occurs in epidemic form and is consequently to be expected in other quarters, its clinical aspects and the findings in those cases that were investigated postmortem are presented in this paper at some length.

SYMPTOMS AND PATHOLOGY

The prevailing type of epidemic jaundice, as we have seen it at Bellevue Hospital, is divisible into two symptomatic groups. The first group is characterized by jaundice of the conjunctivae, preceded, as a rule, by lassitude, digestive disturbances and other prodromes, and is accompanied by physical signs indicative of bronchitis. The patient takes to his bed, and in the course of the next few days jaundice becomes generalized and intense, the color is oftenest a greenish yellow, occasionally bright saffron, the conjunctivae are suffused, and hemorrhages are constant—epistaxis, hematemesis, melena, hemorrhagic vesicles about the lips and chin, and petechial or splotchlike extravasations in the skin or visible mucous membranes, in the former situation corresponding, in many instances, to scratch marks, the pressure of bedclothing, and other trivial injuries. By this time the mental condition of the patient is such as to fix the attention of the observer. The patient is languid, drowsy, stuporous or irritable and restless, sometimes irrational. The stools are clay colored. Vomiting and diarrhea occur but are not common. Frequently, indeed in the majority of cases, the patients complain of pain in various localities, and even though stupor be pronounced, signs of tenderness may easily be elicited by pressure on different parts of the body. In two of the Bellevue Hospital cases the combination of jaundice, clay colored stools, vomiting and epigastric pain and tenderness seemed to point to mechanical obstruction to the outflow of bile, and the abdomen was opened, but no cause was found. In the group under consideration, temperature, pulse and respiration are variable quantities, and appear to be determined largely by intercurrent conditions, such as bronchitis, pleuritis and the like. Moderate leukocytosis is the rule—from 11,000 to 24,000. The differential count is normal.

The urine contains albumin, bile and granular casts in abundance. At necropsy, these individuals show, in addition to the superficial signs of jaundice and hemorrhage, icterus of the deeper structures, notably the liver and kidneys, and hemorrhages in various tissues—the lungs, serous and mucous membranes, and soft tissues. In the lungs the physical signs seem to be due, in part at least, to the escape of blood into scattered groups of air vesicles. The kidneys show a degree of acute parenchymatous degeneration rarely surpassed, graduating not infrequently into necrosis of the tubular epithelium, diffusely or in large patches, with or without intratubular or interstitial hemorrhages. The liver exhibits cloudy swelling attended on occasions by dissociation of parenchyma cells and by fatty transformation and even death of cell groups, more particularly in those localities where bile imbibition is pronounced (the so-called icteric necrosis).

The second group is characterized by severe jaundice, wild delirium and rapid death. In such cases the liver presents histologic signs of diffuse necrosis, although the naked eye appearances may be those of a relatively well preserved organ. In other instances, necrosis of liver tissue is attended by innumerable hemorrhages, and the naked eye changes are then indistinguishable from those of the so-called acute yellow atrophy.

PATHOGENESIS

Perhaps the most illuminating feature in the pathology of the disease as a whole is to be found in necrosis of the gastro-intestinal mucous membrane without obvious interference with the escape of bile through the duodenal papilla. That bile does not escape, however, is shown not only by the degree of jaundice, but also by the acholic state of the intestinal contents, depending, apparently, on conditions in the liver cells and bile capillaries, rather than on mechanical obstruction to the exit of bile from the larger ducts. The changes in the gastro-intestinal mucosa are such as to suggest that the provocative agent is absorbed by the tributaries of the portal vein and conveyed to the liver, where the necrotic lesions correspond definitely to the distribution of the portal blood; that is to say, the liver lobules are destroyed, while the interlobular connective tissues with their blood vessels and bile ducts are relatively unchanged. The hemorrhagic extravasations in different tissues are secondary, most likely, to injury of the capillary endothelium by bile salts, promoted, perhaps, by lack of fibrinogen such as has been demonstrated in other destructive lesions of the liver, notably in experimental chloroform necrosis.

In view of the fact that we have not been able to produce the icteric and hemorrhagic changes in animals by the same methods that are said to yield positive results in so-called spirochetal jaundice, I am inclined to regard the disease under consideration as a toxic process, the reaction to which varies with the individual, some persons responding rapidly and with great violence, others more slowly and less severely. That the provocative agent is not being constantly renewed does not vitiate the contention, since it is known that the effects of certain poisons are delayed and that, once the liver is damaged in such manner that autolytic enzymes are released, a series of changes is initiated that becomes independent of the original cause. At the same time the toxic effects of bile are to be taken into consideration.

THE MORE PROLONGED CASES

Case 1.—*History.*—A man, aged 55, who was admitted to Bellevue Hospital, Dec. 15, 1919, and who died, December 23, stated that for two months he had been troubled with "indigestion" and pain in the abdomen, most marked in the epigastrium. About ten days before admission the pain in the region of the stomach became intense, radiating to the back and shoulders, particularly the right shoulder. At the same time the patient developed symptoms of retching and was unable to retain food, vomiting immediately after eating, and there was severe diarrhea. On admission he was intensely jaundiced and very drowsy. During his stay in the hospital he was frequently irrational, and complained of itching of the skin. Muscular twitchings occurred at intervals and lasted for considerable periods. On admission the patient's temperature was normal and remained so for six days; on the seventh day it was 100.5 F., reaching 101 on the eighth day, where it remained until death occurred on the ninth. The white blood cells numbered 15,200; the differential count was normal; hemoglobin, 65 per cent. The urine contained albumin, and bile and granular casts were abundant.

Because of the jaundice, clay colored stools, vomiting and the intense pain in the abdomen, the patient was operated on and the gallbladder opened and drained. It was found to contain a moderate quantity of slightly viscid bile.

Necropsy.—There was intense jaundice of the skin and visible mucous membranes, the viscera, heart valves, etc. The lungs presented innumerable pleural and parenchymatous petechial or splotchlike hemorrhages. The kidneys were markedly enlarged and very flabby, diffusely greenish yellow, and friable. The substance was swollen and opaque, and the markings were irregular in distribution, the tufts, however, standing out as minute reddish specks. The mucosa of the stomach from one end to the other presented a dirty grayish blue, succulent appearance, and was swollen and irregularly covered by tenacious mucus, the rugae being flattened. The mucosa of the entire intestinal tract was similarly swollen, thickly covered by a milklike fluid, and the folds, particularly in the jejunum, were extraordinarily prominent, edematous and dirty pinkish. The liver was about normal in size, smooth, deeply jaundiced, the markings fairly distinct, and the cut surface somewhat resembling a nutmeg. No focal lesions were visible. The mucosa of the larger bile ducts was bathed in thin mucoid secretion, the duodenal papilla was patent, and no obstruction was apparent in the vicinity.

Microscopic Examination.—The liver cells showed marked dissociation, as if the liver had been given a severe shaking, the cells were cloudy, irregular in size and distribution, indistinct in outline, and their nuclei obscured. In many instances the central veins were distended by blood, and groups of intensely jaundiced liver cells were arranged circumferentially to the central vein or in streaks through the lobule. The kidney showed widespread granular degeneration, particularly the epithelium of the convoluted tubules, with desquamation of bile stained cells into the lumen. The mucosa of the stomach, duodenum and jejunum showed a superficial necrotic layer made up of pinkish-staining débris and glandular remnants, among which at intervals were numbers of red cells and nuclear fragments. The deeper capillaries were irregularly but intensely injected. The epithelial cells in the lowermost glandular tubules were apparently well preserved or slightly swollen and granular. The lung showed innumerable intra-alveolar hemorrhages in scattered groups.

Case 2.—*History.*—A man, aged 54, who was admitted to Bellevue Hospital, Jan. 26, and died Feb. 3, 1920, stated that eight days before admission he had a chill followed by a splitting headache, but that previous to that time he had been feeling quite well. Three days later he was told that he "looked yellow"; and five days after this, when he was admitted to Bellevue Hospital, the conjunctivae and the skin of the entire body were deeply jaundiced. Just before admission the patient suffered a severe attack of epistaxis, and bleeding was still in progress on his arrival at the

hospital. The patient was languid, and there were small submucous hemorrhages in the lips and soft palate, and many punctate or slightly larger hemorrhages in the skin of the face. The epigastric and right upper regions of the abdomen were tender and resistant to palpation. For four days after admission the patient's temperature was normal. On the evening of the fifth day it was 103 F., and registered between 101 and 103 F. every evening thereafter until death. There was a well marked friction rub over the right side of the chest between the sixth and ninth ribs that became audible on the seventh day. The white cells numbered 24,000. The urine contained albumin, granular casts and bile. The day after admission the patient passed a tarry stool which responded to the guaiac test for blood. The Wassermann reaction was negative.

Necropsy.—The body was markedly jaundiced. There were several hemorrhagic specks in the region of the lips, and numbers of subendocardial hemorrhages. The mucosa of the stomach, duodenum and the first half of the jejunum was swollen, greyish green and gelatinous, bathed by a thin milk-like fluid. Pressure on the gallbladder was followed by the escape of bile through the duodenal papilla. The liver was about normal in size, bile stained, but otherwise showing no naked eye changes. The gallbladder was slightly distended by viscid bile. The right lung was the seat of a confluent lobular pneumonia, and abundant semipurulent fluid exudate was present in the corresponding pleural cavity.

Microscopic Examination.—Histologically, the most severe changes were apparent in the gastro-intestinal mucosa and in the kidneys. In the stomach and duodenum the mucosa was extensively necrotic. In places destruction of tissue was superficial, but at times practically the whole of the glandular layer was converted into pinkish-staining, structureless débris, in the tissues beneath which the capillaries were irregularly injected and distended. In the kidney the cells of the tubules, particularly in the cortex, were almost completely necrotic and were extensively desquamated and bile stained. Small hemorrhages were visible at intervals. The liver presented marked signs of cloudy swelling with dissociation of cells, and jaundiced areas were numerous, especially around the central veins, where many of the cells were undergoing necrosis.

CASE 3.—*History.*—A man, aged 60, who was admitted to Bellevue Hospital, Dec. 18, 1919, and died, Jan. 1, 1920, stated that for three weeks previous to admission he had been "feeling mean" because of general lassitude and aches and pains. His mental condition was such, however, that it was impossible to obtain an intelligent history. At the time of admission he was very irritable, but icterus was not apparent. On the second day after admission a yellowish tinge was noted in the sclerae, the next morning jaundice was distinct and the following day it was marked; hemorrhagic herpes appeared about the mouth, and epistaxis occurred. The patient was now extremely prostrated, irrational or stuporous by turns, and numbers of minute hemorrhages appeared in the skin. The edge of the liver was felt and the organ was tender, so much so that abscess was suspected. In the next two or three days, innumerable hemorrhages occurred in the skin, particularly in the line of scratch marks, and jaundice became extreme. The stools were clay colored. On admission the patient's temperature was 102; it rose to 104 F. on the second day, and by the fifth it fell to normal, after which it was subnormal until death, which occurred eleven days after admission. The leukocytes numbered 11,000. The urine contained albumin, casts and bile. The Wassermann reaction was negative.

Necropsy.—In addition to jaundice and superficial hemorrhages, necropsy revealed multiple hemorrhagic foci in the lungs. The liver was normal in size and consistency, and its icteric lobules stood out distinctly. Bile was expressed through the duodenal papilla, and no obstruction was apparent in or around the larger ducts. The gallbladder was slightly distended by thick, dark green bile. The mucous membrane throughout both the stomach and intestine was swollen and greenish gray. The kidneys showed no noteworthy naked eye changes.

Microscopic Examination.—The liver cells were swollen and cloudy and, in the immediate vicinity of the central veins, crowded with bile. There was marked granular degeneration of the tubular epithelium of the kidney and injection of its smaller blood vessels. The gastro-intestinal mucous membrane showed advanced and widespread alterations. The lowermost glandular tubules were well preserved, but at about the middle of the mucosa became transformed into a jumble of cells, many of which contained pycnotic nuclei, others nuclear fragments. The uppermost layer of the mucosa was converted into dull pinkish-staining débris and showed frequent signs of exfoliation of large masses of dead material. The capillaries in the submucosa were richly injected by red cells.

CASES WITH DIFFUSE NECROSIS OF THE LIVER

CASE 4.—*History.*—A boy, aged 16, who was admitted to the Psychopathic Pavilion, December 24, and died the following day, had complained of "stomach trouble" ten days previously, vomited, and turned yellow, according to the report of members of the family. Two days prior to admission he became acutely ill, excited and delirious. He was admitted in restraint, extremely restless and excited. Jaundice was intense, the tongue foul, the teeth covered by sordes. The patient soon lapsed into coma, and just before death the temperature registered 108 F.

Necropsy.—The body was deeply jaundiced. Hemorrhages were apparent in both upper eyelids, in the mouth and beneath the visceral pericardium and pleura and in the substance of the lungs. The liver appeared to be normal in size, its form was preserved, the capsule smooth, and the substance unchanged as far as the naked eye could detect, except that it was diffusely yellow. The gallbladder contained a very small quantity of thin, light colored bile. The kidneys and gastro-intestinal mucous membrane showed no naked eye alterations other than jaundice of the former. The brain was slightly congested. Cultures from the spleen remained sterile.

Microscopic Examination.—Destructive changes in the liver were so widespread and severe that, in sections stained by hematoxylin and eosin, it was not easy to identify the organ. In sections stained by the method of Van Giesen it was seen, however, that the perilobular connective tissue was well preserved or slightly more cellular than usual, and that it supported intact blood vessels together with large numbers of bile canaliculi, the lining cells of which were apparently only slightly changed. In frozen sections stained by sudan III, individual liver cells or small groups of cells crowded with fat globules were strewn through the periphery of the lobule, an occasional cell being more centrally placed. Otherwise the cells lying between the perilobular connective tissue and the central vein were converted into a mass of structureless material consisting of wrinkled, collapsed and ruptured cell membranes, nuclei in various stages of disintegration, granules of bile pigment, and free red cells arranged diffusely or in minute clumps and streaks.

The epithelial cells in the convoluted tubules of the kidney were swollen, opaque and granular, their nuclei obscured. In practically all the tubules the swelling was such as almost completely to obliterate the lumen. The tufts were bloodless and were composed of collections of nuclei of different shapes and sizes arranged without any semblance of order and lying in a pinkish, opaque matrix. In the cortex small hemorrhages were visible, while near the apexes of the pyramids were large extravasations. The lungs showed innumerable discrete and confluent intra-alveolar hemorrhages; in still other alveoli were dense collections of polymorphonuclear leukocytes. The spleen was congested, and the lymphoid follicles were centrally necrotic.

In some places the mucous membrane of the gastro-intestinal tract was well preserved, in other places it showed necrosis, sometimes involving the uppermost layers, at other times extending to the muscularis. The necrotic portions were represented by pinkish-staining granular débris, scattered through which were glandular remnants, red cells, nuclear granules and an occasional collection of lymphoid cells.

Chemical examination of the liver for phosphorus was negative.

Case 5.—*History.*—A man, aged 31, who was admitted to Bellevue Hospital, January 8, and died the same day, was profoundly stuporous and could not be roused. The entire body was deeply jaundiced. The patient's temperature was 103 F., pulse 135. Otherwise nothing could be learned of him.

Necropsy.—The skin was deep saffron yellow, and the visible mucous membranes were intensely icteric. There were numerous hemorrhagic extravasations in the omentum, mesentery and parietal peritoneum, pleurae and lungs, spleen and brain. The kidneys were congested and jaundiced, changes which were shared by other of the great viscera. The mucosa of the gastro-intestinal tract was bathed in yellowish chymelike material, but otherwise revealed no changes to the naked eye. The liver was markedly diminished in size, weighing 1,040 gm. The consistency was slightly softer than normal, the capsule thin, the color an intense saffron yellow with fine nutmeg markings. The gallbladder contained a small amount of blackish green bile and the duodenal papilla was permeable.

Microscopic Examination.—The histologic changes were essentially the same as those described in the previous case, namely, cloudy swelling of the kidneys, hemorrhages into the spleen and lungs, the latter associated with a lobular exudative pneumonia, superficial or diffuse necrotic lesions in the gastro-intestinal mucous membrane alternating with better preserved areas, and almost complete destruction of the liver. Sudan III and Van Giesen preparations showed changes not to be distinguished from those described in the preceding case—preservation of the interlobular connective tissue with its bile canaliculi and blood vessels, scattered groups of fat-containing cells near the edges of the lobules, and complete disintegration of the remaining cells with numerous hemorrhages.

Chemical examination of the liver for phosphorus was negative.

Case 6.—*History.*—A man, aged 21, who was admitted to the Psychopathic Pavilion, February 18, and died the following day, had worked Monday, the 16th, according to a statement of his brother. Tuesday he complained of having a cold, and Wednesday he became raving. On admission he was intensely agitated, shouting and resisting all efforts to care for him, trying to bite nurses and attendants. At this time he was slightly jaundiced, but in the succeeding twenty-four hours icterus became extreme.

Necropsy.—In addition to the intense jaundice, there were numerous hemorrhages into the lungs and spleen, and a massive extravasation into the soft tissues around the pancreas. The kidneys were swollen and icteric. The mucosa of the stomach appeared to be atrophic and irregularly congested, but otherwise no changes were apparent to the unaided eye. The liver was greatly reduced in size and weighed 890 gm. It was flabby, but increased in consistency, being almost leathery to the touch. Scattered beneath the capsule and throughout the substance were hundreds of irregularly outlined hemorrhages, between which the liver tissue was ochre-yellow and opaque. The gallbladder contained a few cubic centimeters of thin, light colored bile. The pia arachnoid was congested, but the substance of the brain was apparently normal.

Microscopic Examination.—To describe the histologic changes in this case would be a virtual repetition of what has been said of the preceding two cases, including the necrotic changes in the gastric mucosa and the widespread destruction of the liver lobules, although, in the latter situation, hemorrhages were far more frequent and extensive.

Chemical examination of the liver for phosphorus, antimony, arsenic, mercury and tin was negative. Blood removed at necropsy was injected into guinea-pigs with negative results.

SUMMARY AND CONCLUSIONS

1. There is a variety of epidemic jaundice attended by spontaneous or easily induced hemorrhages in the skin, mucous and serous membranes, viscera, and various soft tissues, by mental symptoms ranging from stupor to wild delirium, by clay colored stools, pain and tenderness differing in location and intensity, sometimes by vomiting and diarrhea, with or without elevation of temperature (the latter, when present, being due, apparently, to intercurrent conditions, such as bronchitis and pleuritis) and, finally, by such incidental phenomena as muscular twitchings and itching of the skin. The mortality is high. The disease lasts from a few days to two or three weeks, depending, in large measure, on the extent and severity of the necrotic changes in the liver. In the relatively small number of cases that we have seen at Bellevue Hospital it was noted that those corresponding to acute yellow atrophy of the liver and accompanied by violent mental disturbances occurred in young persons, while the more prolonged cases associated with stupor were found after the fiftieth year of age. All the cases that we have seen were in male patients.

2. Anatomically, in addition to jaundice and hemorrhages, the disease is characterized by cloudy swelling or even necrosis of the tubular epithelium of the kidneys, by cloudy swelling of the liver with or without dissociation of cells and foci of icteric necrosis, or by widespread necrotic changes corresponding in all essentials to those commonly described as acute yellow atrophy of the liver, and by diffuse or scattered superficial or deep areas of coagulation necrosis in the gastro-intestinal mucosa. In the more prolonged cases, changes in the gastro-intestinal tract are evident to the unaided eye; in the rapidly fatal cases no alterations in this locality are discernible to the naked eye, and it remains for microscopic investigation to disclose them.

3. The disease is not transmissible to guinea-pigs by intraperitoneal inoculation of blood or urine, and is probably not of spirochetal origin, but a manifestation of toxemia of unknown nature. Phosphorus and other heavy metals are not detectable on chemical examination of the necrotic livers. The structural alterations in the gastro-intestinal tract indicate that the provocative agent gains entrance through this channel. The necrotic changes in the liver in those cases that resemble acute yellow atrophy suggest that the toxic substance is absorbed from the gastro-intestinal tract into the tributaries of the portal vein, since the dead liver tissue corresponds quite definitely to the distribution of the portal blood, the lobules being totally destroyed, while the interlobular structures, including blood vessels and bile canaliculi, remain relatively well preserved. Jaundice seems to be due to inability on the part of the bile to escape from its intrahepatic capillaries, since there is no demonstrable obstruction in the larger ducts, microscopically or otherwise. The hemorrhages probably depend primarily on injury to the capillary endothelium brought about by the action of bile salts and encouraged by diminution in fibrinogen due to destruction of liver substance.

4. The association of intense jaundice with clay colored stools, and pain and tenderness in the region of the gallbladder and liver, has occasionally prompted surgical intervention. The occurrence of the disease in epidemic form, and the presence of more or less profuse hemorrhages in or from the skin and mucous membranes, should serve to arouse caution in the interpretation of symptoms that otherwise are suggestive of remediable obstruction to the escape of bile.

400 East Twenty-Ninth Street.

OCCLUSION OF THE RIGHT POSTERO-INFERIOR CEREBELLAR ARTERY

GEORGE W. HALL, M.D.
CHICAGO

The literature on the subject of occlusion of the postero-inferior cerebellar artery records the fact that the syndrome brought out by occlusion of this vessel corresponds very closely to that found in occlusion of the vertebral artery. Occlusion of the basilar artery may also produce a similar syndrome.

The patient whose history and symptoms I record has in the main recovered from the attack, so that the clinical diagnosis cannot be verified.

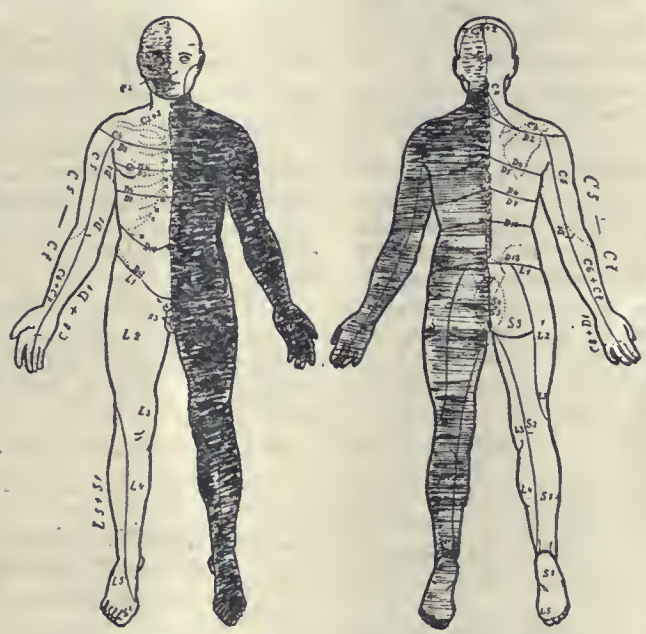
Breuer and Marburg [1] show that clinically and experimentally the differential diagnosis between occlusion of the postero-inferior cerebellar artery and the vertebral artery cannot be made with certainty. In one of their cases the vertebral artery was occluded and the postero-inferior cerebellar artery escaped, and yet the lesion occupied about the same region as in cases in which the postero-inferior cerebellar artery was occluded. If pontile symptoms are present, according to these authors, the vertebral artery rather than the postero-inferior cerebellar artery is probably the seat of the lesion.

REPORT OF CASE

History.—S. M., man, aged 35, chauffeur, referred to me by Dr. H. G. Dern, Nov. 25, 1919, said that while on his way to work about October 1, he suddenly became dizzy and fell to the ground, but did not lose consciousness. He was taken home and put to bed. When Dr. Dern first saw him he said he had vomited several times during the day. On examination at that time the physician observed the presence of a horizontal nystagmus; also when the patient attempted to bring a glass of water to his mouth with his right hand, marked ataxia was present. He had similar ataxic movements of the right leg on attempting to walk. There were no such movements of the left arm or left leg. The patient was hoarse and talked almost in a whisper for a period of four or five days. There was no dyspnea. The pulse, however, was very slow for several days.

About one week after the onset of the attack the patient noticed while walking along the sidewalk there was a constant tendency to deviate to the right, and before he realized it he was off the sidewalk. The dizziness improved, the ataxia got better, the vomiting ceased, and at the end of ten days or two weeks the patient was walking around the house and was feeling very well, as he expressed it. His condition then remained stationary until November 15, when while taking a walk he suddenly became dizzy and would have fallen had not an adjoining wall supported him. He was able to get back upstairs alone. His dizziness gradually improved until November 25, the date of his entrance to St. Luke's Hospital.

There was no history of any previous illness. He had never undergone any surgical operation. He denied syphilis or other venereal infection. His family history was entirely negative.



Areas (indicated by shading) in which there was loss of the sense of pain and temperature.

Examination.—I found the head slightly tilted toward the right. The patient had a tendency to go to the right when walking. Both pupils reacted to light and accommodation. The right pupil was smaller than the left. The palpebral fissure on the right side was narrow, and an apparent enophthalmos was present on the right side. Horizontal nystagmus was present but not marked. The optic disks were normal, and no other ocular paralysis was observed. There was no deafness. The facial muscles on the right side showed slight weakness, but were apparently normal on the left side. There was no deviation of the jaw on opening the mouth. On protruding the tongue there was noticeable a slight atrophy of the right side of the tongue. The palatal muscles and the larynx were negative. There was no lagging of either vocal cord. The heart action was normal. The respiratory tract was negative. The deep reflexes were normal except that the right knee jerk and the right Achilles were slightly decreased. The abdominal reflexes were present but decreased. The sensory findings showed a loss of pain and temperature sense and to a less extent tactile sense on the right side of the face, corresponding to the distribution of the sensory portion of the fifth nerve and more pronounced over its upper branches. There was a patch of herpes at the edge of the right naris. The right side of the face did not perspire, while the left side showed a profuse perspiration. A pin prick caused bleeding on the left side of the face very easily, indicating a vasomotor disturbance. There was no disturbance of sensation on the left side of the face. Posteriorly over the scalp, the region supplied by the cervical plexus on the left side, sensation was dull to the pin prick. Beginning in the region of the clavicle and involving the entire left side of the body there was a loss of pain and temperature sense only. The tactile and position senses were preserved on both sides of the body. There were no bladder or rectal disturbances. The systolic blood pressure was 120, diastolic, 80. The Wassermann reaction was negative with both blood and spinal fluid. The vestibular apparatus was carefully tested by Dr. Frank Brawley, who reported:

"Complete test of the vestibular apparatus indicates a lesion of the right side of the brain stem, which almost completely blocks the responses from the horizontal and vertical canals and both raphes of Deiter's nucleus. There are disturbances in the responses from the left side also, probably due to pressure. The areas involved correspond to the location of the postero-inferior cerebellar artery, but cover a greater area than Louis Fisher's [2] case."

COMMENT

While no definite etiology is given in this case, Salmon [3] states that 88 per cent. of the cases of thrombosis of the postero-inferior cerebellar artery occur in alcoholics or syphilitics. The characteristic symptoms, as stated by this author, include those recorded in this case. He also makes the statement that the symptomatology caused by thrombosis of the vertebral artery is analogous to that of thrombosis of the postero-inferior cerebellar artery. In one case he noticed disturbances of deglutition and paresis of the facial

1. Breuer and Marburg: Obersteiner's Arbeiten **9**: 181, 1902.

2. Fisher, Lewis, quoted by Jones: Equilibrium and Vertigo.

3. Salmon, A.: La trombose della arterie bulbari, Riforma med. **29**: 649, 1913.

muscles on the side of the lesion, transitory diplopia, and especially the sympathetic syndrome, as shown in this case, namely, enophthalmos, and narrowing of the pupil and of the palpebral fissure on the side of the lesion.

Spiller [4] has recorded the same syndrome, and states that it is not present in all cases.

A perusal of the literature discloses no previous reports on the testing out of the vestibular apparatus, except by Fisher, as stated in Brawley's report. In Fisher's case there is shown involvement of the horizontal canals without involvement of the vertical canals. He arrives at the conclusion that the anatomic arrangement is such as to bear him out in the statement that the normal connections leading from the horizontal canals to the vestibular apparatus through the inferior peduncle to the cerebellum are blocked, whereas the fibers from the vertical canals through the middle cerebellar peduncle to the cerebellum are not damaged.

In studying the symptoms from the standpoint of cranial nerve involvement, we find that the sensory portions of the fifth, sixth, seventh, eighth, ninth, tenth, eleventh and twelfth nerves have all been recorded in one report or another as having been involved, but not all have been involved in any one case. The spinal or sensory root of the fifth nerve on the side of the lesion has been involved in every case reported. That the sixth nerve, when involved, usually shows a transitory involvement, as evidenced by the temporary diplopia, and the paresis of the face on the side of the lesion, has been noted in a few instances. Vestibular symptoms due to involvement of those fibers entering the inferior peduncle especially are present in all the cases reported. Difficulty in deglutition, transitory in some cases and persistent in others, is very common. Paresis of one vocal cord producing temporary hoarseness may be present, and slowing of the pulse, most frequently transitory, has also been noted in a few cases. Slight hemiatrophy of the tongue on the side of the lesion, as shown in this case, has not, so far as I can learn, been previously referred to in the literature. However, Wallenberg [5] speaks of a slight paresis of the hypoglossal due to a lesion in the most laterally situated roots of the hypoglossal nucleus.

The sympathetic syndrome is a common symptom, and can be explained on the location of those fibers in the medulla which are in close proximity to those for pain and temperature, and are also situated near the spinal root of the fifth nerve in the dorsolateral portion of the reticular substance. The fibers for the tactile and position sense are more laterally located in this region and consequently escape injury.

It might be well to add by way of explanation that the fibers for pain and temperature sense located in this region of the medulla supply the opposite side of the body, which accounts for the clinical distribution of such disturbances.

The ataxia, vertigo and asynergy are cerebellar in character and consequently homolateral, owing to the constant involvement of the inferior cerebellar peduncle and Deiters' nucleus, which have to do with equilibrium through the spinal and vestibular connections with the cerebellum.

Wallenberg states that when difficulty of deglutition is present and persistent, both the vertebral and inferior cerebellar arteries are involved, while transitory paralysis of deglutition may be caused by involvement of the postero-inferior cerebellar artery alone. He injected the postero-inferior cerebellar artery and traced its course. He found that frequently there is only one postero-inferior cerebellar artery, and then it is usually the left. Several smaller arteries take the place of the missing cerebellar artery in such instances, and a large antero-inferior cerebellar artery replaces the missing posterior cerebellar artery.

While cases presenting the symptoms usually observed in occlusion of the postero-inferior cerebellar and posterior vertebral arteries are not so uncommon, yet at the same time the cases are so rare that the attention of the general practitioner is not attracted in a way to impress him with the frequency of this syndrome.

CONCLUSION

1. There is a constant syndrome producing disturbances in sensation over the distribution of the fifth nerve on the side of the lesion, with disturbances of the pain and temperature sense on the opposite side of the body.

2. There is a definite sympathetic involvement of medullary origin producing enophthalmos, narrowed pupil and narrow palpebral fissure on the side of the lesion.

3. In some cases the symptoms are more widespread than in others, as in this case, and present a slight hemiatrophy of the tongue on the side of the lesion.

4. Examination of the vestibular apparatus reveals certain definite localizing symptoms on the side of the lesion.

5. The occlusion of the postero-inferior cerebellar artery and the vertebral artery may present practically identical symptoms, so that clinically one cannot be sure whether he is dealing with an occlusion of one or the other artery.

104 South Michigan Avenue.

4. Spiller: J. Nerv. & Ment. Dis. **35**: 365, 1908.

5. Wallenberg: Anatomischer Befund in einem als akute Bulbaraffection . . . beschriebenen Falle (Embolie der Art. cerebellar. post.-infer. sinistra), Arch. f. Psychiat. **34**: 923-959, 1901.

VENEREAL CAMPAIGN IN PARIS DISTRICT OF THE AMERICAN EXPEDITIONARY FORCES

JOSEPH EARLE MOORE, M.D.
BALTIMORE

Since the cessation of hostilities, numerous papers have appeared [1] dealing in general and in particular with the results obtained in the venereal disease campaign in the American Expeditionary Forces. Nowhere was there a graver problem to be faced, and nowhere were more interesting results achieved than in Paris, the Mecca of every American in France.

The Paris district included the city of Paris itself and the country included in the province of Seine et Oise, which completely surrounds Paris, an area, roughly, of 400 square miles. Until January, 1918, Paris was the headquarters of the service of supply, with a permanent strength of from 2,000 to 4,000 men. In spite of the fact that the headquarters of the service of supply was moved to Tours in January, the permanent personnel of the district grew apace

1. Young, H. H.: Preventive Medicine as Applied to Venereal and Skin Diseases, J. A. M. A. **73**: 1668 (Nov. 29) 1919 (complete article in Tr. Sect. Urol., 1919, p. 202). Ashburn, P. M.: Factors Making for a Low Venereal Record in the American Expeditionary Forces, J. A. M. A. **73**: 1824 (Dec. 13) 1919. Davis, D. M.: A Campaign Against Venereal Disease in the Army of Occupation, J. A. M. A. **74**: 223 (Jan. 24) 1920.

with the American Expeditionary Forces at large, until, for the latter half of 1918 and early part of 1919, it averaged from 17,000 to 22,000 men. About one half of these men were stationed in Paris proper, the other half in the immediate environs or the surrounding country. No point in the district was farther away from Paris than 30 miles: the city was therefore easily accessible to all.

In addition to the permanent personnel there was always a large floating population of troops of the American Expeditionary Forces made up, until after the armistice, of casuals en route through the city, men absent without leave, and during the two months of the Marne-Vesle battles, about 1,000 men a day on short leave from the six American divisions at the front. Jan. 22, 1919, three days' leave to Paris was formally opened. Thereafter, an average of 1,500 men arrived daily. No accurate data are available as to the exact census of casuals in Paris, but it was estimated by the provost marshal that the daily floating population after July, 1918, was between 5,000 and 10,000.

Until March, 1918, no organized plan for handling the problem in Paris existed; and the inevitable result was an appallingly high rate per thousand, as shown in the accompanying chart. It can probably be said without fear of dispute that the rate of 480 per thousand troops, attained in January, 1918, was the highest ever reached in any part of the American Expeditionary Forces. In March, 1918, the plan of organization devised by Col. Hugh H. Young, senior consultant urologist to the American Expeditionary Forces, of placing with each combat division a trained urologist to care for the prevention and treatment of venereal disease, was extended to other areas of France, particularly the service of supply, and I was appointed urologist to the district of Paris.

METHODS OF FACING THE PROBLEM

The available methods of attack with which to face the problem were:[2] (1) to diminish the number of contacts by placing out of bounds houses of prostitution and areas frequented by street-walkers; (2) to cooperate with the French in the detection and treatment of infected women; (3) to eliminate, so far as possible, the factor of alcoholism by placing out of bounds cafés which sold liquor to Americans; (4) to make use of all measures of social hygiene in an effort to diminish contacts; (5) to provide, by means of a sufficient number of adequately staffed prophylactic stations, sufficient opportunity for the prevention ("early treatment") of venereal disease; and by careful physical inspections of all troops, for its early detection; (6) court martial for all men having contracted a venereal disease, and, (7) treatment of disease with the organization so that as little time as possible would be lost from military duties; and at the same time, segregation of all infected patients, to prevent the further spread of infection.

REPRESSION

The primary object of any military venereal disease campaign is, of course, to cut off infection at the source by diminishing contacts. The most effective measures to accomplish this are the first three just outlined. In Paris, however, these measures were utterly out of the question. Prostitutes were present in enormous numbers, and were, as a rule, exceedingly aggressive. They preferred Americans to the soldiers of any other nation because of the higher pay which the doughboy received. There are few houses of prostitution, about forty in all, with a total of only 400 inmates. The overwhelming majority of the estimated 75,000 prostitutes in Paris are street-walkers, either professional or clandestine. All women in houses are licensed by the police and inspected bimonthly by police physicians (a method which, as Flexner[3] and later observers have demonstrated, does not decrease the risk of infection); of the street-walkers only about 5,000 are licensed and inspected. The remaining 70,000, including practically all the clandestine prostitutes, are without supervision or control of any sort, and are permitted to remain undisturbed by the police so long as they are not too publicly offensive. Solicitation is the rule, and is carried on much more publicly than anywhere in this country. There are about 2,500 small hotels, any of which, as well as some of the more expensive and fashionable, are available as houses of assignation.[4]

Identification by a soldier of the source of his infection was in practically every case impossible, since usually he did not discover the name or address of his partner. So far as alcohol was concerned, the situation was precisely similar to that of prostitution. Many of the city's several thousand cafés were designated as out of bounds by the provost marshal, but no number of military police would have been sufficient to enforce the order. It may be considered that alcohol in any form was freely accessible to those who wanted it. Even under these "wide open" conditions it is felt that the use of alcohol played little part in the incidence of venereal disease among Americans.

It was at once apparent, then, that contacts could not be decreased by repression, as had been done with such remarkable success elsewhere in the American Expeditionary Forces, notably at some of the base ports.[2] It was useless to place houses of prostitution out of bounds, when such an abundance of prostitutes flourished on the streets. One could not designate certain streets or areas as forbidden to Americans because every street, no matter how small or how distant from the center of the city, was used by these women. In the same way, hotels and cafés could not be placed out of bounds, because, with very few exceptions, every hotel in Paris was available for use by couples without baggage, and every café was willing to sell whisky to Americans.

SOCIAL HYGIENE AND DISCIPLINARY MEASURES

Since it was impossible because of the circumstance of location to employ these powerful weapons, we were forced to rely, for the purpose of diminishing contacts, on measures of social hygiene and on the application of such disciplinary measures as could be accomplished. In March, 1918, the campaign was begun, with results that are strikingly shown in the accompanying chart. Within three months the incidence rate per thousand had been cut almost in half.

In the chart the annual rate per thousand was estimated by dividing the number of cases during a given period by the number of men in the command (which

2 Young, H. H. (Footnote 1).

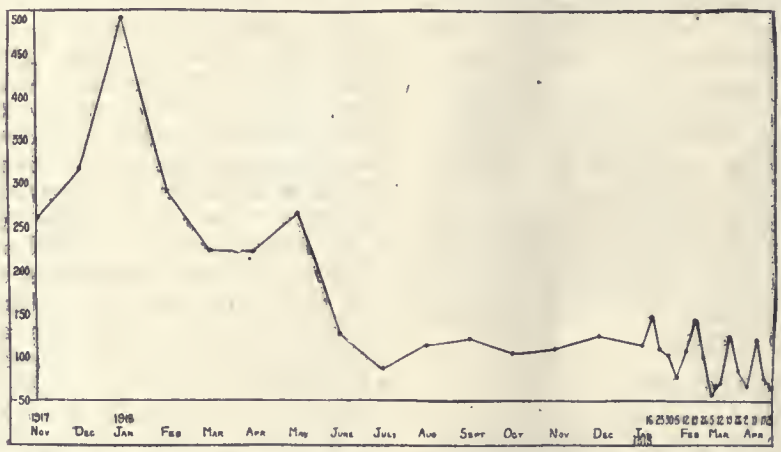
3. Flexner, Abraham: Prostitution in Europe, New York, Century Company, 1914.

4. Robinson, Daisy M.: Personal communication to the author. Dr. Robinson carried out during 1918 a most extensive investigation of the situation in Paris, and I am indebted to her for full and accurate data regarding the matters in this paragraph.

gave the rate for the period only, not for the year), and then by multiplying this result by the fractional part of a year which the period represents. Thus, if four cases occurred among 1,000 men in one month, the monthly rate was 4 per thousand, but the annual rate was 48 per thousand. From November, 1917, to December, 1918, the rate was computed by the month; thereafter it was computed by the week.

The period from November, 1917, to March, 1918, illustrates the high incidence rate attained when no special campaign was in force; the drop in the rate to one-half its previous figures in June, 1918, illustrates the results obtained when the measures inaugurated in March had begun to tell. The preliminary rise in May, 1918, is due to the uncovering of additional cases by active enforcement of the physical inspection order. There is a sustained level at about 110 per thousand, with a gradual rise at and following the armistice (November, 1918). The further lowering of the average rate during 1919 to about ninety-five per thousand is due to increased facilities for and more care in administering prophylaxis. The peaks of January 16, February 19, March 19, and April 9 are the results of pay day.

The factors which accomplished this decrease in the rate are worth detailing briefly. A campaign of education was begun, consisting of lectures to men and officers, and the liberal use of the U. S. Public Health Service film, "Fit to Fight." Lectures to the men were repeated until they had been told of the various military angles of venereal disease by medical officers, line officers, and most important of all, trained noncommissioned officers, who were better able to reach the level of the men than the average officer. It was found, with much surprise, that an overwhelmingly large proportion of the men had received no instruction whatever on the venereal disease question before coming to France.



Annual venereal disease rate per thousand troops, Paris district of the American Expeditionary Forces, from November, 1917, to April 23, 1919.

Through the cooperation of the various relief organizations, chiefly the Young Men's Christian Association, the Red Cross and the Knights of Columbus, efforts were made to provide enough recreational activities for the men to keep them off the streets. By the time the armistice was signed, the Y. M. C. A. alone had, in addition to its various canteens and hotels for officers and enlisted men, three large halls, capable of accommodating 14,000 men, in which vaudeville, moving pictures, boxing matches, dances, etc., were given nightly.

These measures accomplished something, but not enough. Many soldiers, even though thoroughly instructed in venereal disease matters and fully provided with the opportunity of Y. M. C. A. and Red Cross entertainment, were obstinate in preferring the society of women of the Paris streets. For this class, it was necessary to institute disciplinary measures. This was complicated by several factors: 1. The soldiers in Paris were, for the most part, soldiers in name only, since most of them were highly skilled office or technical workers, whose day was entirely taken up by routine duties, uncomplicated by drills or other military inconveniences. Thus they were as a whole unaccustomed to and intolerant of restrictions or discipline. 2. They were divided into small detachments, often commanded by officers whose prime interest was technical work, who came into contact with their men only during office hours, and who, being uninterested in discipline for themselves, were careless of the welfare of their men. As a result of this, the general custom was that after the day's work was done, the soldier's night belonged to him, to do with as he would. 3. Detachments were widely scattered in various large or small barracks, so that just after the armistice, 125 detachments lived in fifty-two different places. As for the floating personnel, they were usually left entirely to their own resources and were wholly beyond the reach of officers or discipline.

Owing to these facts, the "all night leave," with its consequent multiple exposures and failure to use prophylaxis until from twelve to fourteen hours after the first intercourse, was a tremendous evil. In June, 1918, over one half of all prophylactic treatments were taken after all night exposures. The question then became one of preventing men from being on the streets all night. In those camps or barracks situated outside the city, the commanding officer was requested to allow his men leave to Paris only once a week, and to insist that they return by midnight. In the city itself, all troops were required to be in their barracks by 9 p. m., unless furnished with a pass to visit a designated place of amusement. Enforcement of these seemingly stringent measures was accomplished by roll calls in all barracks, when every man must be present or accounted for, and by the cooperation of the military police, who were required to examine passes of all men found on the streets after 9 p. m. Rigid enforcement of General Pershing's admirable General Order 77, 1918, was insisted on, especially those points relating to the questioning of all men returning from pass by a guard as to exposure, with compulsory prophylaxis if exposure was admitted, and compulsory prophylaxis without regard to exposure if a man returned intoxicated.

Every effort was made to stimulate a feeling of organization pride and competition. A copy of the weekly venereal disease report was sent to the commanding officer of each organization, with the request that it be posted on the bulletin board where all ranks had an opportunity to see "just where their outfit stood." When all of these methods failed, and an organization had a persistently high incidence rate,

recommendations were sent to the commanding general that all pass privileges for its men be suspended for a given period. This was frequently done with a most salutary effect. With several detachments of negro troops situated outside the city, it was found necessary to adopt the measure instituted by Col. George Walker at one of the base ports—that of compulsory prophylaxis for every negro soldier each time he reentered the camp after leaving it, without reference to whether or not he admitted exposure.

Bimonthly physical inspections were thoroughly carried out, in conjunction with the district dermatologist. A great deal was accomplished by these means. The rise in the rate for May, 1918, shown in the chart, is directly due to an increase in the number of inspections and to more care used in making them.

All of the disciplinary measures outlined failed somewhat in the accomplishment of their purpose so long as troops remained widely scattered in small detachments. The length to which this practice had gone is exemplified by one organization, whose 150 men were quartered in twenty-five different places all over the city. The remedy for this was concentration. The ideal solution would have been one large camp, in which all men and officers could be quartered. Unfortunately, for many reasons, the ideal or anything closely approaching it was wholly impossible. Some progress was nevertheless made, in spite of seemingly insuperable difficulties, and by February, 1919, about 10,000 men (approximately one half of the strength) had been concentrated in eight large barracks. In all of these places it was possible to institute proper pass regulations to obviate the "all night evil," and to insure prompt administration of prophylaxis.

PROPHYLAXIS

When the incidence rate had reached a stationary level at about 110 per thousand, it became obvious that exposures could not be decreased much below this point, no matter what social and disciplinary measures were applied. Matters would have thus stood at an impasse had it not been for prophylaxis. The feeling grew that if prophylactic treatment could be made more efficient and more widely available, and that if more men could be persuaded or forced to use it, the rate could be still further lowered. Moreover, for the large group of casuals and leave men, none of the foregoing measures were applicable, and from the first our whole reliance had perforce to be placed on prophylaxis.

In order to make the treatment easily available, stations were opened in every barracks which housed more than fifty men, in the two officers' hotels, all the Y. M. C. A. and Red Cross hotels used for casuals, and in a large building centrally located near the Opera and especially rented and equipped for the purpose. Knowledge of the location of the stations was disseminated to permanent troops through bulletin boards, and to incoming casual troops by cards distributed at all the railroad stations, which cards also contained warnings of the prevalence and danger of venereal diseases and advised continence as the only sure preventive. All military police on street patrol were furnished with a complete list of stations, and each man required thoroughly to familiarize himself with the location of the station nearest to his beat, so that inquiries could be promptly and properly answered. The magnitude to which this work grew can be seen by the fact that in March, 1919, there were in the district seventy-two prophylactic stations, which gave a weekly average of 5,000 treatments. I have at hand the statistics of 95,916 treatments given in a period of a little more than twelve months.

The number of stations being sufficient to care for all needs, the quality of the treatment administered was the next point to be considered. All attendants were carefully trained, and their records of successes and failures were checked up weekly. Daily inspections of all stations were carried out by a sergeant, and weekly inspections by a medical officer. The results obtained with their bearing on the venereal disease rate will be fully discussed in another communication.

The application of these measures reduced the incidence rate from a high point of 148 per thousand on January 16 (due to the general rise throughout the American Expeditionary Forces after the armistice), to an average level of 94.6 per thousand for the next fourteen weeks (to April 23, beyond which point I have no figures). The rate for the Paris district after June, 1918, was consistently about four times as high as that for the American Expeditionary Forces as a whole, but was only very slightly higher than that for the regular army in time of peace. Considering the unparalleled situation of our troops in Paris, their freedom from the censorious eyes of home surroundings, and the greatly increased facilities for sexual contact over any other location in France or in this country, the record seems very satisfactory indeed.

TREATMENT

Regarding the treatment of venereal disease in the district, there remains but little to be said. It was impossible to carry out the general plan as originally outlined for combat organizations, of having all patients treated by the organization medical officer, for the reason that most of the organizations in Paris were too small to have a medical officer. For this and other reasons, it was thought advisable to centralize the handling of these cases in the district. In March, 1918, a dispensary was opened in the attending surgeon's office. This rapidly grew to a tremendous size and necessitated expansion of space, which was provided by the Red Cross in American Red Cross Military Hospital No. 9. This hospital was the only one in the American Expeditionary Forces devoted entirely to the handling of venereal (and skin) disease. It contained only seventy beds, by far the largest part of the service being ambulatory. The skin service was combined with it, and the dispensary end grew to the size of approximately 500 patients (300 venereal and 200 skin) daily, requiring the service of sixteen medical officers and fifty enlisted men. In the venereal disease outpatient clinic, during twelve months of which I have record, almost 4,000 new patients were seen, thus divided: gonorrhea, 1,667; chancroid, 485; syphilis, 490; nonvenereal, including other types of genitourinary diseases, 1,126, making a total of 3,968.

It was possible by this means to treat practically all of the venereal disease in the district without loss of time from duty, and with more satisfactory therapeutic results than are ordinarily obtained in civilian dispensaries at home, since the patients, being under military control, were forced to return for further treatment whether they desired it or not. The only drawback to this system was that the segregation of infectious cases was not possible except in the case of primary or secondary syphilis, in which an effort was made to hospitalize the patients until they were no longer infec-

tious. As regards the methods employed in treating venereal disease, they were the same as those used elsewhere in the American Expeditionary Forces and are fully detailed in the "Manual of Military Urology." [5]

CONCLUSION

1. By the use of social hygiene and disciplinary measures, the annual venereal disease rate of the Paris district of the American Expeditionary Forces was reduced from an average level of 313.5 per thousand (for the first five months during which no special steps were taken to combat the evil) to a level of 142.4 for the following nine months. If the first two months of this second period are disregarded, since this length of time was necessary for any measures to take effect, the average rate was reduced to 113.6.

2. This figure (113.6 per thousand) represents the lowest level attained by the repressive and substitutive measures outlined. However, during the next four months, by extending the use of, and improving the quality of, prophylactic treatment, a further reduction to an average level of 94.6 per thousand was accomplished, in spite of the fact that during this period the rate throughout the American Expeditionary Forces at large was gradually rising.

3. It is hoped that the various methods employed may prove useful to medical officers in charge of the health of troops, especially when stationed in large cities. Certain of the points mentioned will suggest themselves as available in a campaign against venereal disease in civil life.

316 Professional Building.

NERVE DEAFNESS DUE TO CONGENITAL SYPHILIS IN THREE CHILDREN

M. B. KAY, B.S., M.S., M.D.
Pediatrician, Presbyterian Hospital
PITTSBURGH

Deafness, or partial deafness, is being more and more often ascribed to syphilis. Inherited or congenital syphilis in infancy and childhood attacks the eighth nerve with great frequency.

The cases reported herewith are remarkable not because syphilis has produced deafness, but because it has attacked all the children of this family in the same manner, every other part of the body escaping except the eighth nerve.

Though the mother has had four self induced abortions (all abortions coming after the birth of these children), the three children were perfectly healthy children at birth, having none of the stigmas of syphilis and they continued so until at least the end of the first year. Owing to the fact that at least a year had elapsed before signs of deafness developed, these are undoubtedly cases of "late hereditary syphilis," and illustrate the accepted idea of the occurrence of deafness late in the disease.

So far as the parents know, no case of deafness had appeared in their families prior to the birth of these three children. The family history is not remarkable except for the important fact that the father admits a genital sore twelve years before. (At first he denied all venereal history.) This sore was treated locally, no internal medication having been given. He denies ever having had a skin eruption. The mother and father both show ++++ Wassermann reactions.

The mother, who, when I first saw her, informed me that she had suffered much from "rheumatism in the chest and sciatica," has since been put on antisyphilitic treatment and has been entirely relieved of what she considered very distressing symptoms.

REPORT OF CASES

Case 1.—*History.*—I. R., girl, aged 7, born by spontaneous delivery at full term, was healthy at birth, no blemishes were noted, and she weighed between 7 and 8 pounds. She was breast fed until the fifth month, after which she did poorly on a proprietary food. At 1 year she sat up, and at 16 months walked and talked. She "was like a natural child until the nineteenth or twentieth month, and then went back." Otitis media appeared at the seventh month, and pertussis at 4 years. The present illness dates from the nineteenth month, at which time the baby began to point to objects and would no longer pay any attention when spoken to or take any notice of noises. This apparent failure to hear has persisted to the present time.

Examination.—The patient was fairly well developed and apparently mentally alert, but was unable to hear sounds of any sort. She spoke no words, but could write all the letters of the alphabet in large print, though she could not write them in order. The epitrochlear glands were enlarged on the right side, but otherwise the findings were not remarkable. The patient was 47½ inches tall and weighed 39½ pounds. Sept. 10, 1919, the result of a blood Wassermann test was ++++.

Case 2.—*History.*—E. R., girl, aged 5, born by spontaneous delivery at full term, and breast fed until the ninth month, had pertussis at 2 years, but no other diseases of childhood. She sat up at 7 months, and walked at 13 months, up to which time she was apparently a normal baby. At 13 months, "she seemed to go back and could do nothing." She was never well nourished from this period, and the present illness dates from the thirteenth month. Her history from this point on resembles that of Case 1.

Examination.—She was a fairly well developed child, 43 inches in height, weighing 38½ pounds, and mentally alert. She made known all her desires by motions and sounds, and spoke no words.

Case 3.—*History.*—G. R., boy, aged 4 years, born by spontaneous delivery at full term, weighed 7½ pounds, was healthy at birth, and was breast fed until the ninth month. He had pertussis at 1 year, the only disease of childhood. He sat up at the sixth or seventh month, walked at 12 months, and could apparently hear at the age of 1 year. He was "like any other child until 1½ years old," after which time he made no progress so far as speech was concerned.

Examination.—The patient was fairly well developed, and mentally quite alert. He did not talk, but made signs quite intelligently, and could carry on a sign language with his sisters. The pupils reacted to light and accommodation normally. He could hear a very loud sound, but paid no attention to ordinary or loud conversation.

TREATMENT AND RESULTS

Each of these children was put on ascending doses of potassium iodid. Jan. 13, 1920, each child was taking 35 grains, three times a day. All of them were having the expected nasal discharge produced by the drug. One half grain of mercury with chalk, three times daily, very promptly caused gastric distress and was stopped for the time.

All three children were brighter and were beginning to hear loudly spoken words. All could hear the ticking of a watch at a few inches; this they could not do when first seen. All were beginning to talk, using such words as mamma, papa, yes, no, pie, and a few others; and they were learning new words rapidly. When

5. Young, H. H.; Keyes, E. L., Jr., and associates: Manual of Military Urology, Paris, Masson et Cie, 1918.

spoken to in a fairly loud tone, the children immediately paid attention, showing that they could hear. The first patient had grown ½ inch and had gained 5 pounds. The second patient had grown ½ inch, and gained 3½ pounds. The third patient had grown 1½ inches, and gained 4 pounds.

The general result has been good, but the question that must be answered to the parents is, What will be the final result? I believe that little may be promised as to the recovery of the sense of hearing. Such patients show slight improvement if any, an irremediable damage having already been done by the time these patients are brought to one's attention. Further care of these children should provide for their education in a proper institution. They will also be put on inunctions of mercury, and the routine antisyphilitic treatment will be continued to the time when repeated Wassermann reactions cease to be positive. I believe it advisable to continue potassium iodid beyond this point, the guide, of course, being the improvement or failure of the sense of hearing.

1201 Highland Building.

SEVERE MERCURIAL STOMATITIS CAUSED BY THE ADMINISTRATION OF CALOMEL

REPORT OF TWO CASES

ARCHIE EWING GORDIN, M.D.
Attending Surgeon, Mississippi State Charity Hospital
JACKSON, MISS.

During the last two months two severe cases of mercurial stomatitis have come under my observation: an acute case, and a case of thirteen years' standing, showing the result after recovery. At this time it seems especially appropriate to report these cases, as calomel is being extensively used as a routine cathartic, though many eminent therapeutists are advising against its routine use.

REPORT OF CASES

CASE 1.—*History.*—W. H., a white man, aged 50, a farmer, whose habits were good, and who had always enjoyed good health except for the usual diseases of childhood, had malaria in 1916. He had been slightly salivated on several occasions after taking calomel. Oct. 25, 1919, he felt bad and was constipated. He took several cathartics, such as castor oil and magnesium sulphate. These did not give him the proper relief, so he concluded he was "bilious," and took two "liver pills," not knowing that they contained 1 grain of calomel each. The patient stated that he would have taken calomel, but he remembered the disagreeable salivation which he had noticed several times before. The pills did not have the proper effect, but on the following day he became salivated, saliva dropping from the corners of his mouth. This was followed the next day by an increase in salivation, but the patient, having work to do, was out in the rain for several hours. On the third day his gums and tongue became very painful, and saliva poured from each side of his mouth. Feeling very weak, aching in every joint and somewhat nauseated, he became alarmed and summoned a physician. On this day I was called in consultation, and found the patient very much weakened; severe diarrhea, aching in joints, and soreness of the mouth were his chief complaints. Saliva was dripping from the mouth. There were two black gangrenous streaks, one on each side of the tongue, and several black gangrenous areas on the inner sides of the gums. The entire tongue and mucous membranes were much inflamed. On the fourth day the black streaks on the tongue were increasing, and several small gangrenous areas were noticed on the buccal mucous membrane. The throat was red and swollen, and the patient showed marked tenderness over the jaws. The odor from the mouth was exceedingly offensive.

The only treatment that had been given was a mouth wash with compound solution of sodium borate (Dobell's solution) at frequent intervals.

Examination.—The patient was sent to the Baptist Hospital, where an examination revealed no signs of any physical disability other than the foregoing. Examination of the blood was negative for malaria. The blood count revealed: white cells, 8,000, with 64 per cent. polymorphonuclears and 36 per cent. small lymphocytes; the Wassermann reaction was negative. The specific gravity of the urine was 1.013; there was a slight ring of albumin and there were a few granular casts.

The temperature ranged from 97.6 to 98.6 F., being subnormal most of the time. Diarrhea was present throughout the disease, and salivation persisted till death. The pulse was very weak and irregular during the last three days.

Treatment and Course.—The gangrenous areas were cauterized with 50 per cent silver nitrate solution; eliminative treatment with magnesium sulphate was begun, as was also stimulative treatment with strychnin and digitalis. The patient was put on a soft diet. This treatment was continued throughout the illness, except that chromic acid was used at intervals in place of the silver nitrate to cauterize the gangrenous areas. Cauterization was carried out twice a day.

On the fifth day the gangrene continued to spread, involving the entire upper and lower gums, with several gangrenous spots on the soft palate. The condition became progressively worse; there was gangrene of nearly the entire inner surface of the mouth, and the teeth became loosened and painful to the touch. The patient's general condition also became very grave, with a rapid, irregular pulse, weakness and complete loss of appetite; he became very restless and finally sank into semiconsciousness and died on the seventeenth day.

During the course of the illness, especially during the last few days, large gangrenous sloughs came from the inner surface of the mouth, sometimes hanging down into the esophagus, causing the patient almost to strangle. Before his death the only tissue in the mouth that was not gangrenous was a small strip in the middle of the tongue, about 1 by 6 cm., posteriorly. The gangrene was moist, and extended deep into the tissues underlying the mucous membrane.

CASE 2.—*History.*—L. G., a white man, aged 18, a farmer, of moderate habits, had had malaria when he was 5 years old, and his physician gave him a dose of calomel. The following day he became severely salivated. His condition became progressively worse, with weakness, diarrhea, salivation, and finally gangrene of the entire inner side of mouth. This condition lasted about three weeks, at which time the patient began to improve, and by the end of two months he was able to get out of bed. During the course of the illness his mouth was extremely sore and inflamed, with a profuse saliva. Nearly the entire right cheek sloughed away, and all but one or two teeth became loosened and fell out. The patient gradually improved, but because of soreness was unable to open his mouth. Later, scar tissue formed, making it impossible for him to open his mouth at all. From the time of his recovery till the present time he had fed himself through a small space, where a tooth had fallen out.

Examination.—On entrance to the Charity Hospital, the patient was poorly nourished and poorly developed. There were no physical disabilities other than the following: The patient was unable to open the mouth at all. On the right side of face there was a hard scar, circular in outline, involving the entire right cheek. It was adherent to the bony structures underlying it. There seemed to be bony union between the inferior and superior maxilla on the right side. The condition of the condyles could not be determined, as the scar made any motion of the condyles impossible. The inner side of the mouth could be seen only by passing a cystoscope

through the space left by the absence of a tooth. The exact condition could not be made out, but there seemed to be very little mucous membrane left, there being an excessive amount of scar tissue in all parts of the mouth. The tongue appeared normal. Roentgenographic examination revealed a bony formation between the upper and lower jaws on the right side, but did not show the condition of the condyles satisfactorily.

Operation and Findings.—A plastic operation was performed to cover up the cheek and to get motion in the jaws. Only the pathologic condition will be described here, as it is too early to give the end-results of the operation. I may say here, however, that after operation the mouth could be opened to the extent of about 1 inch. A flap from the neck was turned upward to cover the defect in the cheek. Mucous membrane was transplanted in various places in the mouth.

There was a very ugly formation of scar tissue, taking in the entire right side of the cheek and firmly attached to the bony structures underlying it; the lips and corner of the mouth on the right side were absent. The mucous membrane on the under surface of the lips was gone, and the lips were adherent to the gums. Thick scar tissue held the mouth firmly closed. The entire buccal mucous membrane had been replaced by scar tissue. The tongue was bound to the floor of the mouth by bands of scar tissue.

The inferior and superior maxillary bones were strongly united by bony union. The floor of the right antrum had entirely sloughed away, the inferior maxilla forming its floor. A few teeth still remained in front, the right lower canine, one bicuspid and the right upper first molar. These were very much distorted and did not come in contact, but overlapped and pressed firmly against the opposite gums. The condyles were not involved.

COMMENT

These are the two most severe cases that have come under my observation in a relatively short time, though a number of milder cases of salivation have been seen. It surely seems time for general practitioners to take these conditions into consideration and to discontinue the promiscuous use of calomel as a cathartic.

I believe I am safe in saying that calomel is misused more than any other drug, especially in the Southern States. There are certain sections in the South where calomel is used in 90 per cent. of all diseases. Many practitioners continue to administer calomel for its effect on the liver, in spite of the fact that all standard textbooks on pharmacology teach that it has no action on this organ. As recently stated: "Calomel, being insoluble in the mouth and the stomach, passes through without affecting them in transit. . . . As soon as the calomel enters the intestine, it is attacked by the alkaline pancreatic and intestinal juices, which decompose it into mercury and yellow mercuric oxid. The latter dissolves slowly and incompletely in alkaline intestinal fluid. The small quantity of mercuric ions thus liberated excites peristalsis. . . ."[1] We are certain now that the action of calomel as a cathartic is simply a mechanical irritation due to the metallic mercury liberated, and that it has no action on the liver.

In the South calomel is widely used, every family using it, every druggist prescribing it, and, unfortunately, the majority of physicians using it, and allowing the laity to labor under the wrong impression that it cleans the liver in "bilious disorders" (this term being applied when no other diagnosis is made). We as physicians should strive to correct this false impression. There are certainly many efficient cathartics which are less dangerous.

857 North Jefferson Street.

1. Use and Abuse of Cathartics, J. A. M. A. 74:248 (Jan. 24) 1920.

CANCER OF THE CERVIX AND ITS TREATMENT

REPORT OF CASE

ROBERT M. LEWIS, M.D.
BALTIMORE

If all cases of uterine cancer could be seen in their incipience, and appropriate treatment given, the end-results would be brilliant. I herewith summarize the history of a case of cancer of the cervix which is interesting because it is the earliest case of the kind that I have seen.

REPORT OF CASE

History.—J. A. E. M., woman, aged 48, married, primipara, referred, June 15, 1916, by her family physician, Dr. Roland Fisher, Denton, Md., complained of uterine hemorrhage. A working diagnosis of very early operable cancer of the cervix was made. The final diagnosis was squamous cell carcinoma of the cervix. The patient had suffered with a constant bleeding from the uterus for the last one and one-half years. Her clothes were saturated with blood, requiring frequent changing every day. She was unable to tell whether she had menstrual periods or not, as the flow of blood was so continuous and free. Some loss of strength was also noted.

Examination.—There was no loss of weight and no pain or discomfort anywhere. There were no local symptoms referable to the bladder or rectum and no indigestion or cough. The general physical, as well as the other routine examinations, revealed nothing to contraindicate operation. The abdominal examination was entirely negative. No glands were palpable in the inguinal regions. Pelvic examination revealed a moderately relaxed outlet. The cervix was small and firm; from the external os a small bud of bleeding granular tissue protruded. This was removed with forceps for microscopic examination. (A frozen section cut within a few minutes of its removal showed that this was squamous cell carcinoma.) The body of the uterus was in good position, normal in size and shape, and freely movable. The ovaries were normal. The broad ligaments were not infiltrated.

Operation and Results.—I performed an abdominal panhysterectomy, June 17, 1916, the parametrium and paracervical tissues being removed widely. No enlarged glands were found. Convalescence was uneventful as one would expect, and the patient has remained well to this day.

COMMENT

The area of disease was tiny. The growth had become pedunculate, and most of it was removed by the original curettage. The disease found in and beneath the cervical mucous membrane measured about 1 cm. across. Further sections of the rest of the cervix revealed no other involvement. No disease was found in the parametrium.

Proverbially, "hindsight is clearer than foresight." Of course, if one could be sure in such a case that the size of the surface growth represented the extent of the disease, and that the latter did not burrow back widely into the cervical tissue, an amputation of the cervix, or even in this exceptional instance, a local cauterization, would be quite sufficient to effect a cure.

Unfortunately, until one has an extirpated specimen in one's hand, and, indeed, even then, one cannot tell how far a cancer may extend into the neighboring and apparently healthy parts.

I have often recalled a regrettable instance in which I amputated a cervix that appeared to be hypertrophied, but not the seat of a carcinoma. Examination of the specimen after removal disclosed an early squamous cell cancer well up in the cervical canal and apparently removed in toto. In spite of the fact that

the amputation seemed well wide of the disease, I urged the patient to submit to a radical panhysterectomy. She refused to consider it, and later died of cancer.

Another typical instance was that of a patient examined by a well-known gynecologist in whom the disease appeared in a plaque just above the os, measuring only 1 or 2 cm. across its surface. The cervix was not enlarged. Curetting, however, proved that it was entirely honeycombed with carcinoma.

Occasionally, a radical hysterectomy is not possible on account of the general condition of the patient. In such a case (as yet unreported) the patient was operated on by Dr. P. McC. Keating, in 1914. After performing a high cervical amputation, Dr. Keating discovered a very early cervical cancer. Nothing further was done, since to subject the woman to a radical operation would have been to court disaster, and no radium was available. It is gratifying to find that now, nearly five years after operation, the patient remains well—a living evidence of the surgeon's good judgment.

THE IDEAL TREATMENT

What now constitutes the ideal treatment of this type of case? We all remember the old rule of table-manners to the effect that "all things that can be eaten with a fork must be eaten with a fork." Ten years ago this might have been parodied to read: "All patients with cervical cancer that can be operated on, must be operated on."

During the last few years there has been a great increase in experience in the use of radium, which has established it in all cases as a formidable rival of the accepted Wertheim operation. The high mortality of the latter—even in most skilful hands—as well as its failure to effect a permanent cure in the great majority of the extensive, though still possibly operable, cases of cervical cancer have almost or quite persuaded many that it should be given up, and treatment with radium substituted.

Kelly, Burnam, John Clark, Ransohoff and others believe that a very high percentage of early cervical carcinomas can frequently and quickly be destroyed with radium alone. This is quite certainly true. My own opinion is that in this kind of case there is an excellent chance of cure either by the use of radium or by an operation well performed, but that the best chance is given by first treating the condition in the early cases thoroughly with radium, and then performing the usual wide abdominal panhysterectomy.

I do not believe that the results will be so good if the procedure is reversed, i. e., if the operation precedes the use of the radium. Before operation we are able to place the radium high up in the cervix close to the parametrium, while after it the vagina is shortened and the radium cannot safely be placed near the area of danger. In the case of early cervical cancer, operation should be comparatively easy and the mortality correspondingly low.

Given an operable but extensive cancer of the cervix, I believe our best chance of cure lies in the use of radium alone. Even if the mass shrinks to small proportions after radiation, the safest course is not to operate but to depend on further heavy treatments with radium.

Finally, when confronted with an inoperable cervical cancer, I do not believe that the use of any of the palliative measures, such as slow heat or acetone, are to be considered, as the results of none of them are even comparable with those obtained by the intelligent use of a sufficient quantity of radium. By it the great majority of patients in whom the disease is distressingly extensive can be tremendously improved, and some even cured.

1418 Eutaw Place.

Clinical Notes, Suggestions, and New Instruments

A CASE OF COMPLETE VOLVULUS OF THE ENTIRE MESENTERY

WALTER D. WISE, M.D., BALTIMORE

REPORT OF CASE

Mrs. X, admitted to the hospital, Oct. 31, 1919, had been operated on two years previously in another city for pelvic trouble, but had not entirely recovered, having some abdominal discomfort and, at various times, attacks of severe pain and vomiting. On the day before admission she was seized with an attack more severe than usual and grew progressively worse, vomiting was constant, the pain was severe, and constipation was complete. She was operated on in about thirty hours after the beginning of this attack. An incision to the left of the previous scar gave entrance into the free abdomen and showed considerable straw-colored fluid and a loop of distended intestine. Under the scar was an intestinal coil tightly adherent to the parietal wall and containing in its wall a rather firm mass; running from this mass there were two bands, one of which was causing the obstruction. Both were released, and the distended and discolored loop began immediately to improve in appearance. The adherent section of the bowel was easily freed, and could then be brought up into the field. It was seen that a mass about the size of an egg was embedded partly in the intestinal wall and slightly in the mesentery. By tedious dissection it could be removed in its capsule without irreparable damage to the intestinal wall. The peritoneal coat of the intestine was sutured satisfactorily and the abdomen closed. During the dissection the diagnosis of the tumor had been suspected, and a section revealed that the suspicion was correct: it was a gauze sponge. Convalescence was smooth and satisfactory for seven days, when there was an attack of pain and some vomiting, which were relieved by an enema. Three days later, the patient had a similar but more violent attack beginning in the late afternoon. I did not see her until the next morning. She had been vomiting persistently and was considerably shocked or prostrated. Pain was of moderate degree, and the bowels had moved in the early morning as a result of an enema. Because of the character of the vomiting and her general appearance, an immediate operation was advised. Exploration revealed adhesions of the intestine to the parietal wall and almost countless numbers of viscerovisceral adhesions. The small intestine was moderately distended and very dark in color. On separation of any of the adhesions, there was profuse venous bleeding. Even with the most careful handling and gentleness, hemorrhage soon became a factor to be considered. It seemed impossible to locate the cause of the obstruction. However, by patient dissection, with considerable loss of blood, a view was finally obtained. It could be made out that there was a herniation of a large section of intestine through an arch made by two adherent loops, but reduction of this did not change the appearance of the bowel. It was then seen and could be demonstrated to onlooking surgeons that there was a torsion of the mesentery of at least one complete turn, probably a turn and a quarter from right to left. The adhesions were by this time freed sufficiently to permit of rotation of the mesentery, and as soon as this was done the intestine resumed its normal color. There were a considerable number of thrombosed vessels in the mesentery, but

as the subsequent history disclosed, not enough to cause trouble. As soon as the torsion was relieved, the venous bleeding ceased. The abdomen was closed except for a small drain. Salt solution was given during the operation and subsequently. The patient had a surprisingly calm convalescence, and left the hospital, December 6, restored to health.

COMMENT

Torsion of the entire mesentery is a rare condition. In 1903, Dr. George Tully Vaughan[1] reported a case of his own seen at postmortem, and reviews the literature, abstracting the histories of twenty other cases; of these, seventeen came to operation, with four recoveries—a mortality of 76 per cent.

In 1914, Weible[2] reported a case in which the patient recovered, and gives a summary of sixty-six other cases, including those reported by Vaughan; of these there were twenty-two recoveries.

In 1917, Vaughan[3] reported another case of twisting of the whole mesentery, with a loss of the patient on the table.

In 1917, Garrow[4] reported a case seen at necropsy in which there was a twist of three and one-half turns, or 1,260 degrees.

According to these figures, the case herewith presented is the seventieth to be reported, and the twenty-third in which the patient recovered.

1800 North Charles Street.

1. Vaughan, G. T.: Am. J. M. Sc. **125**, 1903.
2. Weible: Surg., Gynec. & Obst. **19**: 644, 1914.
3. Vaughan, G. T.: Virginia M. Semi-Month. **22**: 89 (May) 1917.
4. Garrow, R. P.: J. Roy. Army Med. Corps, December, 1917.

QUININ IN INFLUENZAL PNEUMONIA

A. J. CAFFREY, M.D., MILWAUKEE

During the epidemic that began in the fall of 1918, I used quinin sulphate in influenza and influenzal pneumonia chiefly for its diaphoretic and antifebrile effect. From a clinical study at that time, I found that patients could take liberal sized doses of from 10 to 20 grains every four hours the first day, and 5 grains every four hours during the course of the disease, without showing marked signs of cinchonism.

Since reading Cohen's[1] article on the treatment of the pneumonias, I have been using quinin hydrobromid, as I found it difficult to get the dihydrobromid, which he recommended as the preferable salt; however, from a study of the effect of this salt, the hydrobromid, it seems to have given more satisfaction than the sulphate, in that the patients seemed more restful, it reduces the fever promptly, and in most instances keeps it under 100 F.; and in hospital cases in which blood counts were repeatedly made, I found usually following the first large dose a marked leukocytosis; I never found a real crisis in any of the cases in which it was used. This may not be due entirely to the effect of the drug, because, most of the influenzal pneumonias being bronchial and lobular in type, the course is by lysis rather than by crisis, which occurs usually in the lobar type.

I gave 25 grains for the first dose, 10 grains for the second dose, and continued throughout the course of the disease with 5 grains every four hours; and from my limited study of its effect, I agree with Dr. Cohen that the quinin salts combat bacterial poisons and tissue poisons, and give clinical evidence that they are pneumococcicidal if given in sufficient doses. I have never had a complaint of quinin amblyopia or marked tinnitus aurium and head noises which patients usually complain of when the drug is used in other troubles. Since quinin is said to be ecbolic, I do not know what effect it might have in pregnancy accompanying pneumonia, as none of my patients were pregnant during their illness.

I have never felt that the emergency of the effect of quinin in any of my cases justified the method of administering it intravenously or intramuscularly. It seems to me that the disturbance and pain incident to this method of administration would have a bad effect on any one ill with pneumonia, and there is always a possibility of abscess formation with necrosis when a large dose is given intramuscularly.

COMMENT

This treatment, quinin being the chief drug used in combating the disease, with other auxiliary drugs, such as digitalis, atropin and pituitary extract, good nursing, nourishing diet, fresh air, etc., was followed out in twenty-seven cases of influenzal pneumonia with only one death. It is understood, of course, that the number is too small to establish the specificity of quinin. The low mortality in my series may have been accidental, but it is the lowest I have ever had in the same number of cases in other years.

1. Cohen, S. S.: Present Status of the Definite Treatment of the Pneumonias, J. A. M. A. **73**: 1741 (Dec. 6) 1919.

ICE-BOX FIXATION IN THE WASSERMANN TEST FOR OFFICE PRACTICE

OSCAR BERGHAUSEN, B.A., M.D., CINCINNATI

A year ago I,[1] advocated the method of ice-box fixation in the Wassermann test, using simple alcoholic extract of syphilitic organs as antigens. Further experience has convinced me that this method is satisfactory in the examination of a large number of serums for diagnostic purposes. The results obtained are usually either strongly positive or negative when the fixation is carried out at a temperature not exceeding 4 C (39.2 F.). Slight inhibition in hemolysis is unusual and, when obtained, is always recorded as negative. Serums obtained from patients not syphilitic always give a negative reaction.

When cholesterinized antigen is used in the original Wassermann reaction with fixation in the water bath at 37 C. (98.6 F.), more positive reactions are obtained than with simple alcoholic extracts as antigen and fixation in the ice box over night; but serums obtained from patients definitely not syphilitic may give a positive reaction with cholesterinized antigen, and for this reason the result is not always reliable for diagnosis. When the serum has been obtained from a syphilitic patient under treatment, some attention may be paid to a positive result obtained only with cholesterinized antigen, since this reaction is the last to disappear.

After examining about 3,000 serums at the Cincinnati General Hospital, which has a modern refrigerating system, the problem arose as to how it might be possible to secure a constant low temperature of 4 C. or less by a simpler method, in order to make the method of ice-box fixation practical for a smaller laboratory. After a little experimentation I found that the "Frigidaire" refrigerator, manufactured in Detroit, was satisfactory for this purpose. It is run by electricity at an expense of less than $5 a month, and can be set to maintain a constant temperature of 4 C. in the lower chamber. It has been my custom to place the rack containing the test tubes in the lower left hand chamber, cover them with a sterile towel, and remove them about sixteen hours later, finishing the reactions by adding the requisite amount of sheep corpuscles and amboceptor and then placing the racks in a water bath at 37 C. Occasionally, serums which have anticomplementary properties, especially when they have been preserved for three or four days, will show a lack of hemolysis in the control tube containing no antigen. Such serums must be tested again, the standard Wassermann technic of fixation in the water bath at 37 C. for one hour being used. Usually it will be found that such serums give a strongly positive reaction by this method.

As a routine, two alcoholic extracts of syphilitic organs are used as antigens. It is not necessary to employ the Noguchi acetone insoluble fraction of lipoids as antigen, for simple alcoholic extracts give better results when the method of ice-box fixation is used. Comparative results, with the same antigen and the same serums, have shown this mthod to be more satisfactory than the Hecht method, with active serum. The reactions are always either distinctly negative or positive; slight inhibition in hemolysis occurs infrequently. Results are thus recorded: Wassermann (original) negative or positive; Wassermann (Frigidaire) negative or positive.

19 West Seventh Street.

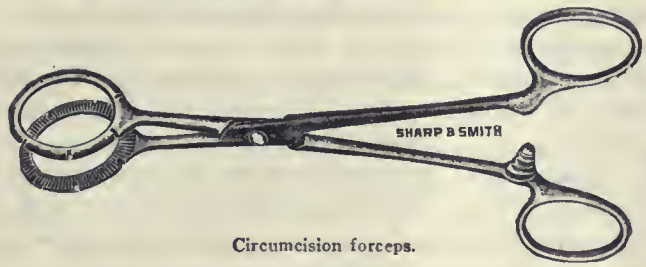
1. Berghausen, Oscar: Superiority of the Method of Ice-Box Fixation in the Wassermann Test, J. A. M. A. **72**: 996 (April 5) 1919.

CIRCUMCISION FORCEPS

MYER N. MOSKOVICH, M.D., PHILADELPHIA

The circumcision forceps here illustrated consist of a pair of handles, not unlike those of the ordinary hemostatic forceps, terminating in circular jaws corrugated on their inner surfaces and having seven equidistantly placed indentations to permit the passage of sutures while the forceps are still in place. Various sizes may be had, and they are best employed in older children and in adults when no edema or swelling of the prepuce exists.

The forceps may be used with any of the various methods of performing a circumcision. The blades are opened and one ring is passed over the penis with the handles pointing toward the head of the patient. A dorsal slit is now made and the ring brought up to the level of this slit, with the handles between the cut edges of the prepuce. The latter is everted over the ring, the second ring passed over the head of the penis and the forceps clamped. The projecting prepuce is cut with a knife or curved scissors, sutures are inserted at the points of indentation, and the forceps are removed.



Circumcision forceps.

It will be difficult to convince the reader of the full value of this little instrument, because of the fact that the doing of a circumcision is already such a simple procedure that further simplification hardly seems possible. Certain facts, however, remain:

1. The time taken to perform the operation is diminished considerably.

2. Perfect coaptation with earlier union and a minimum amount of scarring results.

3. The procedure is practically bloodless, all bleeding points being checked, through mere pressure, before the forceps are removed.

Jefferson Medical College.

A NEW USE FOR COVER GLASS FORCEPS

RALPH WALDO PLACE, M.D., SOMERVILLE, MASS.

Cilia forceps are not what they ought to be. I have tried several and I have bent and filed them; but they will not hold the slippery hairs in trichiasis. Some time ago I gave them up in favor of ordinary spring forceps, the kind opticians use in setting up eyeglass frames and known as tweezers. These served me well, and I still use them sometimes in the "corners"; but one day after working a long time on a particularly difficult case I happened to try a pair of cover glass forceps. These grasped the hairs better than anything I had ever tried, and I have used them satisfactorily ever since. Of course, they should be used only for this work, and they should be carefully sterilized.

165 Medford Street.

A Case of Quadruplets.—I recently delivered a woman, after a six months' pregnancy, of quadruplets. A reference to statistics shows that they occur once in every 371,126 deliveries, and for this reason I thought it worth while to publish my experience. This was a case of multiple impregnation of a single ovum, as there was a common chorion. Each fetus was within its own amniotic sac, and all were males. The placenta, if not a common one, was so anastomosed that it could not be differentiated. All the fetuses were dead at the time of delivery.—CHARLES E. FALLET, M.D., De Soto, Mo.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

LACTIC ACID-PRODUCING ORGANISMS AND PREPARATIONS (See New and Nonofficial Remedies, 1920, p. 156).

BACILLUS BULGARICUS-SQUIBB.—A pure culture in vials, of the *Bacillus bulgaricus* type A, the *Bacillus bulgaricus* type B (*Bacillus acidophilus)* and *Bacillus paralacticus*, each vial containing 12 Cc.

Actions and Uses.—Bacillus Bulgaricus-Squibb is designed for internal administration, topical applications in nasal and throat affections and for direct application to abscesses, wounds and old ulcers. See general article, Lactic Acid-Producing Organisms and Preparations, New and Nonofficial Remedies, 1920, p. 156.

Dosage.—The contents of one tube daily after meals or before retiring. The culture is marketed in packages of twelve vials. The culture should be kept in a cold place, and is not guaranteed beyond the date stamped on the package.

Manufactured by E. R. Squibb & Sons, New York. No U. S. patent or trademark.

POLLEN EXTRACT PREPARATIONS (See New and Nonofficial Remedies, 1920, p. 226).

POLLEN ANTIGEN-LEDERLE (SPRING TYPE).—A liquid obtained by extracting equal parts by weight of dried pollens of timothy, red top, June grass, orchard grass, sweet vernal grass, meadow foxtail, meadow fescue, rye and wheat by a vehicle of 67 per cent. glycerine and 33 per cent. saturated solution of sodium chloride. It is standardized so that each Cc. contains 14,000 pollen units; a pollen unit has been arbitrarily chosen by Koessler, Noon and Freeman as the equivalent of one-millionth gram (0.000001 Gm. or 0.001 Mg.) of pollen. The Hygienic Laboratory has prescribed no U. S. Standard of Potency. The antigen after preparation is made into fifteen different dilutions by the addition of a proper amount of the glycerine-sodium chloride solution diluent.

Actions and Uses.—See general article, Pollen Extract Preparations, New and Nonofficial Remedies, 1920, p. 226.

Dosage.—The product is supplied in fifteen different doses. Each dose consists of 0.1 Cc. of the respective dilution. Accompanying each dose is a vial containing 9 Cc. of sterile water with which to make the pollen antigen of isotonic strength immediately before administration. For prophylaxis, the complete series (doses 1 to 15) containing progressive amounts of pollen protein should be given, beginning about six weeks before the hay-fever season. For treatment of an actual attack of hay-fever, fewer doses are generally sufficient.

Manufactured by the Lederle Antitoxin Laboratories, New York. No U. S. patent or trademark.

Pollen Antigen-Lederle (Spring Type) Series A.—Marketed in packages of five vials containing for each consecutive dose (numbers 1 to 5 inclusive) 2.5, 5, 10, 20 and 25 pollen units, respectively, and five vials of sterile water with which to make the proper dilution of each dose.

Pollen Antigen-Lederle (Spring Type) Series B.—Marketed in packages of five vials containing for each consecutive dose (numbers 6 to 10 inclusive) 30, 50, 75, 100 and 150 pollen units, respectively, and five vials of sterile water with which to make the proper dilution of each dose.

Pollen Antigen-Lederle (Spring Type) Series C.—Marketed in packages of five vials containing for each consecutive dose (numbers 11 to 15 inclusive) 250, 375, 500, 750 and 1,000 pollen units, respectively, and five vials of sterile water with which to make the proper dilution of each dose.

Pollen Antigen-Lederle (Spring Type) Complete Series.—Marketed in packages containing 15 doses as described in Series A, B and C above.

Pollen Antigen Immunity Test—Diagnostic Test for Spring Type Hay-Fever-Lederle.—Consists of 0.01 Cc. of No. 15 dilution of pollen antigen-Lederle (spring type). It represents 100 pollen units of the combined pollen protein. May be used cutaneously or intradermally.

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SATURDAY, APRIL 24, 1920

The postal situation is well known by all our readers. Matter sent by parcels post, and periodicals, have been meeting with lengthening delays in transmission. More recently delivery of even first-class mail has been delayed. This item is published to explain delay which may occur in the receipt of The Journal. The copies are delivered at the Post Office at the usual time each week, and any delay in their receipt must be charged to the postal conditions. It is hoped that our readers will allow for the present difficulty and not request additional copies until sufficient time has elapsed to make sure that missing copies will not be received.

EXPERIMENTAL LOBAR PNEUMONIA

Many attempts have been made to produce lobar pneumonia experimentally in animals, but only with occasional and partial success, and under experimental conditions not encountered in the spontaneous disease in man. In order that experimental results may be of the maximum value, a method is required by which lobar pneumonia can be regularly produced in animals, without otherwise modifying their physical condition or surroundings, so that the clinical, bacteriologic and pathologic changes of all stages of the disease may be studied and compared with the disease in man. The work of Blake and Cecil [1] at the Army Medical School, on the experimental production of lobar pneumonia in monkeys by the intratracheal injection of pneumococci, appears to fulfil these requirements, and furnishes an enlightening chapter in experimental medicine.

In a series of thirty-seven normal monkeys, lobar pneumonia was produced in thirty-two; two others died of pneumococcus septicemia; and in three which received small doses, no disease was produced. Pneumococci, in amount from 1 to 0.000001 c.c. of an eighteen hour culture, were introduced into the lumen of the trachea by means of a sterile needle inserted between the cartilages below the larynx. In most of the animals Type I pneumococcus was used, but pneumonia was also produced by Types II, III and IV. Following the inoculation, blood cultures, leukocyte counts and observations of the temperature, clinical course and physical signs were made. Symptoms of illness usually appeared in from twelve to thirty-six hours after inoculation. The report is accompanied by protocols of a number of the cases. The temperature curves, often with critical drops on the seventh to the ninth day, were similar to those seen in lobar pneumonia in man. Blood cultures showed varying grades of pneumococcemia, which in nonfatal cases usually disappeared before the crisis, but in some of the severer infections increased enormously before death.

In several respects the features of experimental lobar pneumonia in monkeys showed a parallelism with those of the disease in man which is not only of great experimental interest, but opens the way for the determination of a number of clinical questions related to lobar pneumonia, the answers to which till now have been impossible or largely matters of opinion or surmise.

The finding of pneumococci in the blood within six hours after the introduction of the organisms into the trachea, and before the signs of pneumonia appeared, will go far toward clarifying our conception of the mode of invasion in pneumonia, whether hematogenous or bronchigenic, and furnishes apparently clear evidence in favor of the bronchigenic origin of the disease. This view is further strengthened by the failure of intravenous or subcutaneous injections of pneumococci to produce pneumonia, and by the observation that even when the intratracheal route was employed in monkeys, with lobar pneumonia usually resulting, there were occasional instances in which a pneumococcus sepsis was produced without clinical or postmortem evidence of lobar pneumonia.

By examining the animals early (three hours) after intratracheal inoculation, Blake and Cecil were able to demonstrate the penetration by pneumococci of the bronchial wall near the hilum. The further spread of pneumococci, as observed in other animals in the series, was apparently by way of the interstitial tissue and lymphatic system of the lung, and hepatization began centrally and proceeded toward the periphery of the lung. The pathology of the pneumonic lesion produced in the monkey was identical with that seen in lobar pneumonia in man.

The preliminary rise in leukocytes in monkeys after inoculation was followed by a fall, the rapidity and extent of which was proportional to the severity of the disease and the degree of pneumococcal invasion of the blood. In the less severe cases, the preliminary fall in leukocytes was followed by a rise, accompanied by decrease in the number of pneumococci in the blood until the blood became sterile, usually several days before crisis. This relation of leukocytosis to severity of disease, in which failure of leukocytosis was indicative of serious prognosis, affords experimental sup-

1. Blake, F. G., and Cecil, R. L.: J. Exper. Med. **31**: 403 (April) 1920.

port of the clinical observation in man that, in general, the prognosis in patients showing a moderate leukocytosis is better than in those in whom there is no leukocytosis or a leukopenia.

Instances of empyema, delayed resolution, pericarditis and persistent pneumococcal sepsis occurred in monkeys just as in the natural disease in man. Monkeys inoculated in the throat and nose with pneumococci did not develop lobar pneumonia, although the organisms persisted for many days, whereas inoculation of the lower respiratory tract regularly produced the disease. As the authors point out, these facts indicate that in monkeys, something besides the mere presence of virulent pneumococci in the upper respiratory tract is necessary for the development of pneumonia; and presumably the same is true in man. The rôle of contact with the sick was shown in one experiment, in which one animal of several exposed to monkeys sick with pneumonia developed lobar pneumonia.

In addition to the elucidation of the mechanism of infection in pneumonia, this demonstration of a method whereby lobar pneumonia may be produced regularly under controllable experimental conditions is perhaps of still greater importance in that it affords opportunity for the experimental study of prophylactic immunization against pneumonia, and for determining the actual value of antipneumococcic serums in the cure of the developed disease. We shall await the results of these investigations with interest.

SCURVY NOT A BACTERIAL DISEASE

Acquired beliefs are not easily given up when once they have become deeply rooted in the customary thought and writing of a period. This fact has often been illustrated by the tenacity with which medical men tend to cling to traditional theories that have been tried by the tests of science and found wanting. It was a long time before the version of the etiology of malaria now current became accepted by every physician. Before the possible significance of insects in the transmission of disease became common knowledge, the idea of ascribing real bodily danger rather than mere temporary discomfort to the seemingly unimportant mosquito made slow headway.

On the other hand, when once some novel type of agent has been clearly demonstrated to be concerned in the causation of hitherto unexplained diseases, it soon tends to achieve a degree of popularity that may subsequently actually become detrimental. Thus, when bacteria were at last universally admitted to be potent causes of pathologic changes in man, bacteriology was promptly called on to explain many of the unsolved mysteries of disease. For centuries, scurvy was regarded as a disease due to dietetic errors. Then came the time when the theories of the etiology of scurvy began to include that of a bacterial origin. Following Coplans,[1] Jackson [2] and her collaborators in this country have offered some experimental support for this view. Thus they found coccus-like bodies in microscopic sections of lesions in scorbutic guinea-pigs, and they isolated gram-positive and gram-negative organisms from the diseased joints, muscles and lymph nodes of these animals. Pure strains of these bacteria introduced into guinea-pigs gave rise in most instances to hemorrhagic and other lesions in the bones, joints, muscles, lymph nodes and organs.

It is not difficult to believe, however, that animals in a scorbutic condition due to dietary deficiencies may readily be susceptible to a secondary bacterial invasion, just as terminal infections in many chronic conditions have no direct relation to the primary disease. Of late the study of experimental scurvy has been extensively prosecuted in England and America, with the result that the disease can now be evoked, averted or cured with considerable precision by purely dietary control. This fact of itself negatives the probability that bacterial infection is a prime factor in the genesis of scurvy. The products of putrefaction have also been charged with responsibility for the appearance of scurvy. Torrey and Hess [3] have concluded, however, that scurvy, both of guinea-pigs and of infants, is not associated with an overgrowth of putrefactive bacteria in the intestinal tract.

The most convincing evidence against the bacteriologic hypothesis has been offered by Givens and Hoffmann [4] from the Research Laboratories of the Western Pennsylvania Hospital, Pittsburgh, who have made bacteriologic examinations of the blood and tissues of scorbutic animals. Blood from the latter, regardless of the diet producing the disease, has been found to be sterile. The enlarged front joints of guinea-pigs developing scurvy on oats alone were sterile; this was likewise true in the majority of cases of guinea-pigs developing scurvy on other special diets. Occasionally, staphylococci or diplococci were isolated; but these could not be made to produce scurvy when introduced into healthy guinea-pigs. The intestinal flora likewise showed no differences between the scorbutic and non-scorbutic animals which could explain the genesis of the disease.

With the bacteriologic hypothesis left without tenable scientific confirmation, with McCollum's theory that chronic constipation is a decisive factor abandoned,[5] and with an abundance of experimental evidence in favor of the view that dietary deficiencies play the decisive part in the genesis of scurvy, the current

1. Coplans, M.: Tr. Epidemiol. Soc. **23**: 1, 1904.
2. Jackson, Leila, and Moore, J. J.: J. Infect. Dis. **19**: 478 (Sept.) 1916. Jackson, Leila, and Moody, A. M.: Ibid. **19**: 511 (Sept.) 1916.
3. Torrey, J. C., and Hess, A. F.: Proc. Soc. Exper. Biol. & Med. **15**: 74, 1917-1918.
4. Givens, M. H., and Hoffmann, G. L.: Preliminary Observations on the Relation of Bacteria to Experimental Scurvy in Guinea-Pigs, J. Biol. Chem. **41**: xxxiii (March) 1920.
5. Cohen, B., and Mendel, L. B.: J. Biol. Chem. **35**: 425 (Sept.) 1918. Chick, H.; Hume, E. M., and Skelton, R. F.: Biochem. J. **12**: 131, 1918. Hess, A. F., and Unger, L. J.: J. Biol. Chem. **35**: 479 (Sept.) 1918. Harden, A., and Zilva, S. S.: Biochem. J. **12**: 270, 1918.

studies on antiscorbutics are placed on a more stable foundation. It matters little that they have in the main been tested primarily on animals, notably the guinea-pig and the monkey; for the essential identity of the disease in these animals and in man has been generally accepted by investigators.

MEDICAL ASPECTS OF THE JUVENILE COURT

The first juvenile court in the United States, as we are informed by Belden,[1] was established by the Illinois legislature, July 1, 1899. It marked the beginning of the juvenile court movement in this country. Previous to that time some states had provided for separate hearing of children's cases, but the Illinois law was the first serious attempt in the United States at modification of court procedure so far as it related to children. Shortly afterward, Colorado came to the front and passed a special juvenile court law, which has been a model for other states.

In general, the special modification of court methods which has been necessary in the development of the juvenile court has been based on the fundamental principle that the child is a ward of the court. One of the chief distinctions between the usual criminal procedure and the juvenile court procedure lies in the matter of evidence. The purpose of the court is not to discover whether a crime has been committed but rather to ascertain what were the underlying conditions that caused the commission of the crime. Were they physical, mental, social? Then comes the question as to what should be done with the culprit for the best interest of the people and of the child.

Obviously, the matter of first importance is the physical and mental status of the child, for these are intimately associated with what he is and how he became what he is. Furthermore, a knowledge of his family and personal history is equally essential to a successful rehabilitation. Such investigation requires special adaptability on the part of the court. The procedure may be regarded as extralegal. The problems presented require expert and special knowledge not usually available. To Illinois belongs the credit for introducing such practical study of children before the courts, by the establishment of the Juvenile Psychopathic Institute. Shortly afterward the Seattle juvenile court established a "department of social diagnosis," which is still maintained. Strangely enough, physical examinations are given much more generally than mental examinations. In thirteen courts, mental clinics are maintained as part of the court organization. An excellent plan is that of the Judge Baker foundation of Boston, which provides that a large proportion of children before the juvenile court are given thorough physical examinations; their mental condition is thoroughly studied, and especially qualified investigators attached to the staff gather social data. All the information in a given case is then assembled and studied at a staff conference, and the diagnosis of the child's condition, and a recommendation as to the kind of treatment needed, is made by the director or his assistant. The group clinic idea is thus utilized to its utmost in proper placing of the child who may be either physically, mentally or morally deficient.

As a result of this work, some of the underlying causes of child delinquency and neglect are becoming more evident. The need for early recognition and treatment of abnormalities in physical, mental or moral development has been conclusively demonstrated. In a statistical table, Belden shows that there are now 246 courts, representing practically every state in the Union, which give some special attention to these problems. In fourteen states there was no report of mental examinations in clinics or by persons having special psychiatric knowledge. There remains, then, considerable need for improvement and for the establishment of uniform methods of study. The problem is a fundamental one for the community, and physicians may well lend their aid to its solution.

1. Belden, Evelina: Courts in the United States, Hearing Children's Cases, Pub. 65, Children's Bureau, U. S. Department of Labor, Government Printing Office, Washington, D. C., 1920.

BEANS AND GROWTH

The modern chemistry of the proteins has profoundly modified some of the older tenets of nutrition. With the advent of a better knowledge of the digestion and disintegration of the proteins into amino-acids, and with an appreciation of the part which the latter play as the real nitrogenous nutritive units for the construction of protein in the body, new points of view have arisen. In constructive metabolism, at least, the physiologist must deal primarily with amino-acids, of which familiar proteins are known to furnish a varied assortment. Some of these are not essential in the sense that they must be furnished as such to the organism; for they can be synthesized by the living tissues. Other amino-acids, on the other hand, and perhaps a majority of those related to proteins, cannot be thus built up anew by animal structures; hence, so far as they may be indispensable, they must become available to the body in the food if the organism is not to suffer from a lack of such "building stones," as they have been called.

Information of the sort just referred to has served to explain why gelatin, for example, is not a "complete" protein from the nutritive standpoint, and why it cannot serve as the sole source of nitrogenous units in the body. Gelatin lacks in its chemical makeup certain of the amino-acids, without which protein cannot be built up in the body. Thus it lacks cystin, tryptophan and tyrosin. Other isolated proteins are known to be chemically defective in comparable ways.

In some instances it is a relative rather than an absolute shortage of some amino-acid component that limits

the nutritive value of a protein. Osborne and Mendel,[1] for example, have furnished striking instances of the significance of this in actual nutrition experiments. One of the most impressive cases has just been elucidated by Johns and Finks[2] at the Protein Investigation Laboratory of the Bureau of Chemistry in Washington. The principal protein of the navy bean has been shown to be inadequate for growth even when an abundance of other needed foodstuffs is supplied in the ration. An explanation had been sought in the ready putrefaction of the beans, leading to supposedly harmful products in the intestine and thereby retarding growth. But Johns and Finks have ascertained that the protein of the bean is exceptionally deficient in its yield of the amino-acid cystin, an essential source of sulphur for the body tissues. When cystin or a cystin-yielding protein is added to the bean diet, growth at once becomes satisfactory, provided the beans are cooked. Why cooking is a significant factor in making the bean diets more ideal is not clear, unless the process renders the protein more readily digestible.

Under ordinary circumstances, of course, navy beans do not represent the sole source of protein, even to ardent "bean lovers"; they are supplemented by other protein foods. Nowadays, however, it occasionally happens that diets are extremely limited by intentional or accidental circumstances. Knowing the limitations of the navy bean, we can avert nutritive disaster, if it should be threatened through exigencies of the ration, by making good what the delectable legume lacks.

1. Osborne, T. B., and Mendel, L. B.: J. Biol. Chem. **20**: 351, 1915.
2. Johns, C. O., and Finks, A. J.: Studies in Nutrition, II, The Rôle of Cystine in Nutrition as Exemplified by Nutrition Experiments with the Proteins of the Navy Bean, Phaseolus Vulgaris, J. Biol. Chem. **41**: 379 (March) 1920.

Current Comment

LOOK UP ITS RATING

Modern business has become so complex that it is no longer possible for those engaged in trade to know, offhand, the financial responsibility of their prospective customers. The commercial agency is a natural development; it aims to supply the technical (financial) information which the conservative business man needs but is otherwise unable to get. When John Doe & Co. contemplates entering into business arrangements with Henry Roe & Son to a degree that involves financial obligations, it looks up Roe in the rating book of Dun or Bradstreet and probably calls for a special commercial report on the concern. These facts are so elemental and obvious as to be trite. The complexity of modern medicine, especially in the pharmacologic field, has made it a physical impossibility for physicians to know the scientific status of scores of pharmaceutical products put out under proprietary or brand names. It was recognition of this fact that brought about the creation by the American Medical Association of the Council on Pharmacy and Chemistry. This body of experts, serving without remuneration and reporting without fear or favor on the newcomers to the pharmaceutical world, places at the disposal of physicians unbiased information, free alike from prejudice or prepossession. As the commercial agency reports on the commercial probity of individuals and firms, so the Council on Pharmacy and Chemistry reports on what might be called the scientific probity of proprietary and unofficial pharmaceutical products. The commercial agency issues, at no small expense to its customers, rating books; the Council on Pharmacy and Chemistry issues, at a nominal price, "New and Nonofficial Remedies." The commercial agency, for a substantial fee, will furnish reports on business concerns; the Council on Pharmacy and Chemistry[1] will, without any expense to the profession, furnish reports on proprietary products used for the relief or cure of human ailments. The careful business man avails himself of the services of the commercial agency; there are financial interests at stake. The conscientious physician will avail himself of the services of the Council; there are, it may well be, lives at stake.

1. Write to the Secretary of the Council on Pharmacy and Chemistry, 535 North Dearborn Street, Chicago, Ill.

LONGEVITY IN THE UNITED STATES

The expectation of life or, better, the average duration of life at various ages and in different racial groups, has been a common theme of statistical inquiry. Improved and more exact methods of calculation, together with the accumulation of additional data, are, however, continually stimulating fresh studies in this field. A recent article by Forsyth[2] on the trend of longevity in the United States, although it deals only with the census records from 1890 to 1910, contains some important figures. In 1890 the expectation of life for a male native white of native parentage at 10 years of age was 56.1; by 1910 this had fallen to 54.1. At the age of 40 the expectation in 1890 was 32.8; in 1910, 29.9. In fact, in each age group and in both sexes the average expectation showed a notable loss for the two decades from 1890 to 1910. A large loss in expectation was also shown by the native white of foreign or mixed parentage. On the other hand, the foreign-born whites, especially the males, gained materially in the average duration of life during the same period. Forsyth emphasizes especially two points: first, the remarkable longevity enjoyed by native Americans of native parentage, which he considers probably unequaled anywhere else on earth; and second, the gradual loss of this superiority at a rate of about one year each decade. He seems inclined to attribute this "momentous retrogression" to certain unspecified "factors in the American mode of living"; but it seems evident that the conditions are very complex. The "native whites of native parentage" are being added to all the time from various racial stocks not perhaps as resistant as the original native stock. From decade to decade, therefore, the native whites of native parentage represent an ethnically different

2. Forsyth, C. H.: Quart. Pub. Am. Statistical Assn. **16**: 495 (Dec.) 1919.

group. Whether the loss in expectation is due to some mingling of less resistant strains or whether the shortening in average duration of life is due to purely environmental factors can perhaps hardly be determined. The question is one that must be considered in connection with the fact that in recent years in this country the general mortality has increased disproportionately in the ages above 40. At all events, the bearing of the census of 1920 on the trend of longevity will be awaited with interest.

ENCEPHALITIS IN HORSES

There occurs an epidemic disease of horses, known as enzootic encephalitis, or Borna disease, which has been observed in many parts of the world, including the United States. This disease exhibits certain resemblances to lethargic encephalitis, which makes it of peculiar interest at the present time. Not only are the symptoms in some respects similar to those of the human disease, but also the pathologic anatomy, as described by Joest and Deegen,[1] is much the same as that of lethargic encephalitis. In both diseases there is an absence of recognizable anatomic changes outside the central nervous system, in which in each the conspicuous feature is a marked perivascular infiltration of small round cells, without polymorphonuclear infiltration or much involvement of the meninges. The vascular lesions are chiefly in the brain, the cord being much less involved. Numerous studies of the equine disease have left the etiology undetermined. While some have attributed it to an intoxication from infected food, several others have found cocci in the nervous tissues. A recent investigation of enzootic encephalitis in Argentina [2] has corroborated the previous anatomic studies and in addition has led to the isolation of a gram-negative diplococcus which produces what seems to be the same disease when injected subdurally into horses. In view of our complete lack of knowledge concerning the etiology of lethargic encephalitis, there is no little interest in this demonstration that a coccus, resembling somewhat the meningococcus, is capable of producing a marked nonsuppurative cerebral perivascular round cell infiltration, despite the fact that no such organism has been found in the human disease.

Association News

NEW ORLEANS SESSION

Sailing of S. S. Comas Cancelled

The Passenger Traffic Department, Southern Pacific Lines, advises that owing to labor disturbances at New York, it has been compelled to cancel the sailing of the S. S. *Comas*, which was scheduled to leave the port of New York, Wednesday, April 21, for New Orleans. Refunds may be secured on presentation of tickets at 165 Broadway, Room 2015, New York City, or if desired, the department will arrange for your trip to New Orleans by rail.

1. Joest and Deegen: Ztschr. f. Infektionskr. d. Haustiere **9**: 1, 1911.
2. Kraus, R.; Kantor, L., and Quiroga, R.: Sobre la etiologia de la meningo encefalitis enzootica (Enfermedad de Borna) de los equinos, Rev. d. Instituto Bacteriologico del Departamento Nacional de Higiene **2**: 239 (Oct.) 1919. For further reference see page 1198, this issue.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

CALIFORNIA

Beck in Los Angeles.—Dr. Emil G. Beck, Chicago, spoke before the Los Angeles Surgical Society, February 18, on "The Balance of Power in Immunity."

State Board Upheld.—A decision by the State Supreme Court of California has upheld the board of medical examiners in its action, two years ago, in suspending for one year the license of Dr. John K. Suckow, Los Angeles, on the ground that he had performed an illegal operation. The case was appealed to the higher court on the grounds that the board was not qualified to administer punishment and that the defendant had done nothing to merit suspension. Both of these claims were rejected.

State Society Meeting.—The annual meeting of the Medical Society of the State of California will be held at Santa Barbara, May 11, 12 and 13, under the presidency of Dr. Henry A. L. Ryfkogel, San Francisco, with headquarters at the Hotel Ambassador. Dr. Noble W. Jones, Portland, will discuss the "Prognosis After the Removal of Focal Infections;" Dr. Russell D. Carman of the Mayo Foundation, Rochester, will talk on the "Roentgenologic Aspect of Gastric and Duodenal Ulcers," and Edward C. Kendall, Ph.D., also of the Mayo Clinic, will speak on "A Chemical Consideration of the Thyroid."

Personal.—Dr. Wilfred H. Kellogg, Sacramento, who resigned as secretary of the state board of health last month, was appointed director of the state hygienic laboratory, Berkeley, April 3.——Dr. Robert K. Macklin, Pasadena, has just been discharged from the Letterman Hospital, San Francisco, after a long treatment for injuries received overseas. He was honored by fifty of his fellow practitioners from Los Angeles, March 28, who presented him with an automobile fully equipped.——Dr. Harry W. Martin, Los Angeles, sustained a fracture of the spine while diving into shallow water at the Bimini Baths near Los Angeles, April 19.

ILLINOIS

Chicago

Low Death Record for Chicago.—Health Commissioner Robertson announced on April 6 that the death rate for 1919 was 11.75 per thousand. The previous low record was 13.95 in 1904.

Crerar Library Closed.—The board of directors of the John Crerar Library announces that as it has been unable to secure an extension of its lease, the library will be closed May 1. It will be reopened as soon as the new building at the corner of Michigan Boulevard and Randolph Street is ready for occupancy. At present this is expected to be by September 1.

Illegal Practitioners Fined.—David Hertz of 2015 Potomac Avenue was arrested by the Department of Registration and Education of the State of Illinois, for practicing medicine without a license and was fined $25 and costs.——Mrs. Katrina Smish of 4933 South Robey Street was also arrested by the department and fined $25 and costs for practicing midwifery without a license.

Physicians Exonerated.—Dr. Ira R. Willets was exonerated by a coroner's jury, April 14, in the case of Blanche Warner who died April 1 at the German Deaconess Hospital from a supposed illegal operation.——A coroner's jury on April 16 recommended the release of Dr. William James Mitchell, held in custody in connection with the death of Mrs. Marie C. Hopkins. Dr. Mitchell was considered entirely free from blame.

Local Committee Organized for Relief of Vienna.—A Vienna Relief Committee has been organized to solicit funds for the relief of the starving inhabitants of Vienna, and an appeal has been issued through the secretary, Dr. Carl Beck. The circumstances of this once beautiful city are indeed pitiful. "She has become a dark and dreary place—the dreariest on earth. Resurrection seems hopeless," says a

letter from Dr. Adolf Lorenz and Prof. Anton Eiselsberg. The address of the relief committee is 1826 Conway Building.

MARYLAND

City to Open New Clinic.—The Baltimore City Health Department has recently opened a clinic at 2000 North Charles Street, especially for persons supposed to be suffering from tuberculosis. The municipal tuberculosis dispensary at 1418 Light Street, closed during the war, has been reopened by the health department. Commissioner C. Hampson Jones reports that the department now has four tuberculosis clinics in operation. The clinics are in charge of Dr. John E. O'Neill, physician in charge, Dr. Bartus T. Baggott, assistant physician, and Miss Anna L. Murphy, nurse.

Plans for Municipal Hospital.—Announcement has been made by Surgeon-General Ireland of the Army that the U. S. Army General Hospital No. 2, at Fort McHenry, will be given up by the Army June 1 and turned back to the War Department as "surplus property." In view of the fact, the mayor of Baltimore has named a committee composed of Dr. John M. T. Finney, chairman; Drs. Arthur M. Shipley, Winford H. Smith, Henry B. Thomas, C. Hampson Jones, and several prominent laymen, to inaugurate a movement to obtain the hospital buildings at the fort for a municipal hospital.

Measles On Increase.—Measles is claiming the attention of the Baltimore City Health Department; 216 new cases and two deaths having been reported during the past week. The situation is being watched closely because of the serious complications—frequently bronchopneumonia—that follow carelessness in handling cases of measles, which is approaching the epidemic stage in the city. Scarlet fever also appears to be on the increase, the new cases for the week numbering forty-eight. There were twenty-six cases of diphtheria and twenty-seven cases of chickenpox. Influenza lingers, the records of the department showing thirty-eight cases and four deaths.

County Districts Face Shortage of Physicians.—Unless steps are taken to offset the advantages offered by the large cities to young men entering the medical profession, the country districts will, in the near future, be without competent physicians, according to a statement recently made by Dr. John Whitridge Williams, dean of the Johns Hopkins Medical School. To meet the situation, he suggests the establishment by counties or by the state of public health centers, whose physicians and nurses would be paid regular salaries to supplement their incomes from regular practice. Some such arrangement as this will have to be made in the not distant future or the country districts will be without a sufficient quota of physicians.

Personal.—Dr. Adrian S. Taylor of the faculty of the Johns Hopkins University, and Drs. Ralph G. Mills and Charles W. Young, graduates of the Johns Hopkins Medical School, will leave June 5 to do medical work at University Hospital, Nanking, China. Dr. Thomas Dwight Sloan of the University Hospital, Nanking, recently addressed members of the Johns Hopkins Christian Association on "The Progress of Medicine in China."——Dr. John M. T. Finney will sail for London in June.——Drs. Harry W. Wheaton, Baltimore, and George F. Sargent, Towson, assistant physicians at the Sheppard and Enoch Pratt Hospital, Towson, have resigned.——Dr. Martin W. Peck, Towson, has been appointed assistant physician at the Sheppard and Enoch Pratt Hospital.——Dr. Elmer V. McCollum, Ph.D., has been made a corresponding member of the Royal Academy of Belgium.——At the recent commemoration day exercises of Johns Hopkins University, a portrait of Dr. John Whitridge Williams, dean of the medical school, was presented to the university by Dr. William H. Welch, and a portrait of Dr. Florence R. Sabin, professor of histology, was presented by Dr. William H. Howell.

MASSACHUSETTS

Personal.—Dr. Edward P. Hand, formerly city physician of Holyoke, has been elected physician to the Tuberculosis Hospital and has been succeeded by Robert E. Cleary.

Bill to Raise Standard Rejected.—By a vote of fifteen to seventy-one the house of representatives, March 31, refused to substitute for an adverse committee report the bill to raise the standard for the regulation of the registration of physicians.

Will Not Extend Vaccination Law.—By a vote of eight to seventeen, the state senate rejected the bill reported unanimously by the committee of public health to extend the provision of the compulsory vaccination law to pupils in private schools.

Report of the Cancer Commission of Harvard University.—The seventh annual report—1918-1919—of the Collis P. Huntington Memorial Hospital for Cancer Research states that the work of the institute during the two years included in the report was considerably curtailed, owing to the call of the war on the members of its staff. With the return of peace, reorganization of all research work has been going on. The facilities of the organization have been insufficient to accommodate the public, because of the interest being taken by the public and the medical profession in the treatment of cancer by radium. Special attention has also been given, during the past year, to the establishment of a new roentgen-ray machine of great power for use in the treatment of cancer. In the biologic department, studies are being made of changes in the living cell, which is an indispensable prelude to the study of the nature of cancer. A new building is proposed for the housing of the new roentgen-ray equipment. During the coming year the commission proposes to maintain its hospital for the investigation of the treatment of cancer and allied diseases and to make a special study of the use of radium and of the new roentgen-ray apparatus.

MICHIGAN

Personal.—Dr. Wynand Van K. Pyle, Grand Rapids, has returned after two years' service with the 339th Infantry in Russia.

Society Meeting.—The annual meeting of the Michigan State Medical Society will be held at Kalamazoo, May 25 to 27, under the presidency of Dr. Charles H. Baker, Bay City.

Tuberculosis Clinic.—A free clinic for tuberculosis is being conducted at Ludington under the auspices of the state antituberculosis society and is under the charge of Dr. Edwin R. Van der Slice, Lansing.

District Versus Divisional Plan.—The Detroit Department of Health, in its *Weekly Review* of April 10, says that theoretically, if a nurse is confined to a district and performs all service—school, tuberculosis, contagion, infant welfare, and prenatal—within the district, more will be accomplished than if the same nurse confines herself to one service and covers a wider territory. During the three months' trial of the district plan in Detroit, the following figures show that more nursing service is actually being performed under the new system:

FIELD NURSING SERVICES PER NURSE PER MONTH

	Divisional Plan	District Plan
School and contagious disease	140	316
Infant welfare and prenatal	152	226
Tuberculosis	101	98

MINNESOTA

Clinical Club Organized.—The younger physicians of Minneapolis have organized the Minneapolis Clinical Club and elected the following officers: president, Dr. Stanley R. Maxeiner; vice president, Dr. Clifton A. Boreen, and secretary-treasurer, Dr. Floyd O. Woodward.

Forty Fellows Enrolled.—The Mayo Foundation of the University of Minnesota has forty scholars and fellows enrolled for a full three years' course leading to a graduate degree. These men get an annual allowance, which is paid out of the endowment fund of the foundation.

Personal.—Dr. C. L. Martin has resigned his fellowship in the Mayo Foundation, Rochester, to take charge of the surgical work at a hospital in Wayne, Neb.——Dr. J. C. McRae has been granted a leave of absence for one year by the Mayo Foundation to accept a commission with the American Red Cross.

MISSOURI

Personal.—Dr. Eugene Lee Myers has resigned from the staff of the St. Louis College of Physicians and Surgeons.——Dr. Harry L. Ratliff, Webb City, superintendent of the Jackson County Tuberculosis Hospital, has resigned.——Dr. Owen P. McPherson, Kansas City, has recently received the Medal of the First Order of St. Sava, from the Serbian government.——Dr. David Wise, Joplin, was seriously cut and bruised about his head and shoulders, March 28, when another automobile collided with his coupé.——Dr. Karl E. Baker, Carthage, has been appointed commissioner of health for Jasper County.

State Society Meeting.—The sixty-third annual meeting of the Missouri State Medical Association was held in Jefferson City, April 6 to 8, under the presidency of Dr. Nimrod P. Wood, Independence. St. Joseph was selected as the next place of meeting and the following officers were elected: president, Dr. Wilson J. Ferguson, Sedalia; vice presidents, Drs. Robert L. Neff, Joplin, Thomas J. Rigdon, Kennett, Thomas Chowning, Hannibal, W. C. Taylor, St. Louis, and James Q. Chambers, Kansas City; secretary, Dr. Edward J. Goodwin, St. Louis (reelected); treasurer, Dr. J. Franklin Welch, Salisbury, and delegates to the American Medical Association, Drs. Franklin E. Murphy, Kansas City, Stuart L. Baysinger, Rolla, Charles R. Woodson, St. Joseph, and Elsworth S. Smith, St. Louis. The association adopted a resolution asking the governor and state legislature to establish a hospital at Columbia as part of the Missouri University Medical School to offer four years' work instead of the two years' course in the present university hospital.

NEW YORK

Health Conference Postponed.—The annual conference of health officers, which was to have been held June 22 to 24, has been postponed and will probably convene in September.

Personal.—The home of Dr. Joseph A. Blake, Tarrytown, was destroyed by fire on April 10, causing damage estimated at $100,000. Dr. Blake's hands were severely burned while he was endeavoring to prevent the spread of the flames.

Report of State Hospital Commission.—The annual report of the state hospital commission for the last fiscal year shows that in spite of the fact that $1,033,380 was spent last year for new construction, repairs and improvements to the institutions belonging to the state, the overcrowding is still 21 per cent. beyond their certified capacity.

Drive for Mental Defectives.—A drive to raise $250,000 has been begun by the Home and Farm Institution for Mental Convalescents, Inc., with headquarters at 198 Broadway. Twenty-five nonsectarian organizations are taking part in the campaign. A site in Sullivan County has been donated by Joseph B. Olidort who is heading the campaign.

Hearing on Narcotic Drug Bill.—A hearing on the bill of Senator Cotillo was held before the senate health committee on April 15, at which the bill met with a good deal of opposition from certain representatives of the medical profession. The bill is in line with the federal law and forbids the prescribing of narcotic drugs to addicts in the regular course of practice. The measure was endorsed by the house of delegates of the Medical Society of the State of New York at its recent meeting.

Health Centers Approved.—The New York State Charities Aid Association has passed resolutions endorsing the Sage-Machold bill, now pending in the legislature, which provides for a comprehensive extension of the public health work of the state through the establishment of a statewide system of health centers, with an appropriation of state funds to supplement the expenditures made by communities in carrying on this work. The purpose of the bill is to take modern medical, laboratory, hospital and dispensary facilities to the doors of the people of moderate means and those who live in rural and industrial communities.

New York City

Dispensary Clinical Society Organized.—The medical and surgical staff of St. John's Hospital, Brooklyn, have organized the dispensary Clinical Society at St. John's Hospital with Dr. Harry P. Mencken, Flushing, chief of the dispensary service.

Association of Tuberculosis Clinics Meets.—This organization met in the New York Academy of Medicine on the afternoon of April 14. Among the speakers were Drs. Isaac Ogden Woodruff, James Alexander Miller, Alfred F. Hess, Dwight C. Martin and Geza Kremer.

Postgraduate Fund Grows.—The endowment committee of the New York Post-Graduate Medical School and Hospital announces that it has raised $610,000 of the $2,000,000 needed. The committee has resolved on intensified efforts to reach the goal set. The present campaign has drawn much attention to the lack of opportunity for graduate study for men of moderate means as contrasted with the provisions made for undergraduate study for poor boys.

Personal.—Dr. Seth M. Milliken, who was recently sued by a patient for $200,000 for alleged false imprisonment in the psychopathic ward of Bellevue Hospital, has been exonerated by a supreme court jury.——Dr. H. Holbrook Curtis is seriously ill at his home on Central Park West.——Dr. George E. Brewer was shot and wounded in the leg by the man who killed Dr. James W. Markoe in St. George's Protestant Episcopal Church, April 18.——The National Academy of Science, at its annual meeting, April 22, conferred a gold medal on Dr. Alexis Carrel.——Dr. Benjamin Jablons has returned after an absence of five years during which time he served with American Ambulance Hospital, Paris, and later with the American Expeditionary Forces in France.——Dr. Bruno S. Horowicz, assistant sanitary superintendent of the Staten Island Health Department, has applied to the courts to have his name changed to Bruno S. Harwood.——Dr. Louis Berlin, Bay Ridge, has been cited by the French government as Officier de l'Académie with silver palms.

OHIO

Clinic for Venereal Diseases.—Cleveland announces that it will open a clinic for the diagnosis and treatment of venereal diseases at Fairview Park Hospital, May 25.

Drug Suspects and Drugs Seized.—In a drug raid in Toledo, April 8, city detectives seized $30,000 worth of morphin and opium and arrested a woman and four men accused of smuggling these drugs from Canada.

Medical Building for Columbus.—Plans have been drawn for a medical office building to be erected on East State Street, Columbus, just east of St. Francis Hospital at an estimated cost of $250,000. The building will be a four story, fireproof structure containing eighty offices.

Graduate Courses in Medicine and Surgery.—Western Reserve University School of Medicine, Cleveland, has announced courses of two months' duration in medicine and surgery during next June and July. Satisfactory completion of the courses by graduates in medicine will establish credits toward the A.M. degree in medicine.

State Association Meeting.—The seventy-fourth annual meeting of the Ohio State Medical Association will be held in Toledo, June 1 to 3, under the presidency of Dr. James F. Baldwin, Columbus. The annual orations will be delivered by Dr. Lewellys Franklin Barker of Johns Hopkins University on "High Blood Pressure, Its Causes and Management," and by Dr. Hugh Cabot, Ann Arbor, formerly of Boston, on "Non-Tubercular Infections of the Kidney."

County Buys Hospital.—The sale of the Springfield Lake Tuberculosis Sanatorium was consummated March 23, when Summit County purchased the interests of the other joint owners, Mahoning, Stark, Columbiana and Portage counties. For their respective shares, Mahoning received $90,690.29; Stark, $80,011.21; Columbiana, $44,038.32, and Portage, $25,068.95. Each county is given a year in which to remove its patients with the exception of Stark which has been given two years. Each county will also pay a weekly rate for its patients remaining during this period.

Personal.—Dr. George W. Wood, Wilmington, has been appointed resident physician at the Ohio Soldiers and Sailors Orphan Home, Xenia.——Dr. Robert H. Grube, Xenia, has been elected president of the Association of Health Commissioners of Southwestern Ohio, and Dr. Charles H. Tate, Dayton, has been elected secretary.——Dr. Delos W. Hogue has been appointed medical supervisor of the public schools of Springfield.——Dr. Rollin D. Worden, Ravenna, has been appointed commissioner of Portage County exclusive of Ravenna City.

Occupational Diseases Must Be Reported.—An amendment to the occupational disease reporting law, which becomes effective May 4, provides a penalty for physicians who refuse or neglect to report occupational diseases to the state board of health. By the terms of this bill, any physician who is attending or called to visit a patient whom he believes to be suffering from lead poisoning, poisoning from phosphorus, arsenic, brass, wood alcohol, mercury or their compounds, from anthrax, compressed air illness or from such other occupational diseases or ailments as the state department of health shall require to be reported, must make such reports to the state health commissioner within forty-eight hours from the time of the first visit, giving the name, address and occupation of the patient, the name and address in business of the employer, and the nature of the disease. It further establishes a penalty for the neglect or refusal to obey this law, a fine not to exceed $100 or imprisonment not to exceed ninety days. These reports are to be made on the standard schedule blanks provided and distributed by the state department of health.

Cincinnati

Trachoma.—Dr. Oscar M. Craven, medical director of the health department of Cincinnati, reports that forty-two positive cases and twenty-four suspected cases of trachoma have been found in the city.

Physicians Honored.—Drs. Byron Stanton, Stephen C. Ayres, John C. MacKenzie and A. O. Mathews were made honorary members of the Cincinnati Academy of Medicine at its meeting April 5. Dr. Stanton has been a member of the academy for sixty-three years.

Illegal Practitioners Prosecuted.—It is reported that E. C. Branch was convicted, March 24, 1920, in the municipal court of Cincinnati, of the illegal practice of medicine and surgery. He was fined $50 and costs.——Michael Jordan was found guilty of the illegal practice of medicine and was fined $100 and costs by the municipal court of Cincinnati.

Organ of Academy of Medicine Appears.—The first issue of the *Cincinnati Journal of Medicine*, the official organ of the Cincinnati Academy of Medicine, has appeared under the editorial charge of Dr. Charles L. Bonifield. The initial number carries, practically in full, the report submitted by a special committee of the Cleveland Academy of Medicine outlining a comprehensive plan for the extension of functions and activities of the local medical society.

PENNSYLVANIA

Coeducation at the University of Pennsylvania.—An official communication from the University of Pennsylvania refers to the item published in Pennsylvania news, in THE JOURNAL of March 27, conveying the idea that the faculty is opposed to coeducation. The statement says that the news item is a gross exaggeration and relates the facts as follows: "One of our classes adopted a resolution stating that the class was opposed to coeducation in the school of medicine and desired to be so recorded. No such action has been taken by the other three classes and no objection has been raised by any member of our faculty to the best of my knowledge and belief."

Renew Fight on Hospitals.—The Anti-Sectarian Appropriations Association's fight against payment of state money to alleged sectarian hospitals and homes was renewed April 8. Willis Collins of Norwood, secretary of the body, brought mandamus proceedings in the Dauphin county court, Harrisburg, to prevent State Treasurer Kephart's paying appropriations made by the legislature in 1919 to five institutions, including two in Philadelphia. Similar action was brought by Collins last August against more than sixty institutions, but the court sustained the Attorney-General's contention. The suits today are each against a single institution and raise the question of legality of appropriations to institutions on the ground that they are denominational or sectarian. The actions are against the Jewish Hospital Association of Philadelphia which was voted $30,000; the Sisters of Mercy, who have charge of the Dubois Hospital, $25,000; Duquesne University of the Holy Ghost of Pittsburgh, $50,000; the Protestant Deaconesses, and Evangelical Lutheran body operating Passavant Hospital, Pittsburgh, $32,000, and St. Timothy's Memorial Hospital and House of Mercy, Roxborough, an Episcopal institution, $50,000. The Attorney-General's department accepted service of the papers and will file an answer in thirty days.

Philadelphia

Northern Medical Association Meets.—The seventy-fourth anniversary of the Northern Medical Association will take the form of an Italian dinner to be held at Leoncovallo Café, May 20. The guests of honor will be the deans of the Philadelphia medical colleges.

Money for Insane Asked.—Dr. C. Lincoln Furbush, director of public health, submitted to the council an ordinance to appropriate $50,000 for the department for the insane of the Philadelphia General Hospital. Ernest L. Tustin, director of public welfare, submitted an ordinance to transfer $89,000 from the department of public welfare for improvements at the house of correction.

Civil Service Report.—The Civil Service Commission made public the result of examinations for the position of superintendent of the new Bureau of Hospitals in the Department of Health. This post, paying $5,000 a year with free house rent, food and fuel, is one of the choicest places in the classified service. Only two of the twelve who took the examination obtained more than the required average of 70. They are Dr. John D. Jungmann and George C. Signor. Most of those who took the examination also tried for the appointment as assistant superintendent, which pays $3,000.

Fifty Thousand Dollars to Clean Up Streets.—To enable him to prosecute the war he has declared on municipal filth, Dr. C. Lincoln Furbush, director of public health, will ask the council for a large additional appropriation for the abatement of nuisances, which he will use in the elimination of insanitary conditions wherever they exist in the city. In making that announcement, Dr. Furbush indicated the sum he would ask would probably be $50,000. There was need, he said, of from $50,000 to $100,000 for the abatement of nuisances in addition to the amount available for that purpose.

Personal.—Dr. Samuel W. Woodhouse, a graduate of Jefferson Medical College, has been appointed keeper of the collections of the Pennsylvania Museum and School of Industrial Art.——Dr. Ellen C. Potter, medical director of the Woman's Medical College Hospital, has been appointed chief of the division of child health, state department of health, to succeed Dr. Dorothy Child, resigned.——Dr. Joseph S. Neff, former director of public health and charities, has resigned as a member of the advisory council of the state health department, as he sails for Europe shortly.——Dr. William Hewson has been appointed electrocardiographist at the pathologic laboratory of the Philadelphia General Hospital.

TENNESSEE

New State Officers—The eighty-seventh annual meeting of the Tennessee State Medical Association was held in Chattanooga, April 6 to 8, under the presidency of Dr Andrew F. Richards, Sparta. Nashville was selected as the meeting place for 1921, and the following officers were elected: president, Dr. Leon L. Sheddan, Knoxville; vice presidents, Dr. George R. West, Chattanooga, for east Tennesse; Dr. Powell K. Lewis, Doyle, for middle Tennessee, and Dr. John J. Shea, Memphis, for west Tennessee; trustee of the journal, Dr. Charles J. Broyles, Johnson City (reelected); secretary, Dr. Olin West, Nashville (reelected), and treasurer, Dr. Joseph F. H. Gallagher, Nashville (reelected).——The eye, ear, nose and throat section of the association elected Dr. Edward C. Ellett, Memphis, chairman; Dr. Eldred B. Cayce, Nashville, vice chairman, and Dr. Louis Levy, Memphis, secretary.

CANADA

Military Hospital Closed.—The Saskatchewan Military Hospital, Moose Jaw, has been closed.

New Medical Building for Alberta University.—Draft plans for the erection of a new medical building for Alberta University, Calgary, to cost $750,000, have been prepared.

Smallpox Ban Lifted.—The smallpox ban between Sault Ste. Marie, Ont., and Sault Ste. Marie, Mich., has been lifted so that it is not necessary for Americans visiting the Canadian side to be vaccinated or show certificates of vaccination before returning to the United States.

Extension Asked for Medical College.—A deputation from the University of Manitoba has petitioned the government to consider the provision of an extension to the medical college and to grant an appropriation this year for preliminary steps in connection with the new university at Tuxedo. The addition will be for laboratories.

Provincial Health Laboratory.—The government of British Columbia is establishing a provincial health laboratory, one branch of which will be in connection with the Vancouver General Hospital under the charge of Drs. John A. E. Campbell and Gibbs, and the other to be attached to the Royal Jubilee Hospital, Victoria, under the charge of Dr. Miller.

Personal.—Dr. Harold Orr, Medicine Hat, Alta., has been appointed by the provincial government to take charge of the administration of the venereal disease act, and clinics will be located at Edmonton, Calgary, and if need be at Medicine Hat and Lethbridge.——Dr. John Park has been reelected chairman of the Edmonton, Alta., Board of Health.——Dr. Wallace H. Cunningham has been appointed medical officer to the board of education of St. Catherine's, Ont.

GENERAL

Book Plates Wanted.—THE JOURNAL would be glad to receive copies of the book plates of physicians, of medical libraries, or of medical institutions, for use in a review of the subject. Copies of the book plates of noted physicians, now dead, will be especially appreciated. Mark envelop—"BOOK PLATE."

Health Authorities to Meet.—The eighteenth annual conference of state and territorial health authorities with the U. S. Public Health Service will be held in Washington, May 26 and 27.

Pediatric Society Meeting.—The thirty-second annual meeting of the American Pediatric Society will be held at the Moraine Hotel, Highland Park, Ill., May 31 and June 1 and 2, under the presidency of Dr. Thomas S. Southworth, New York City.

Medical School Recognized.—Inadvertently the name of the University of Illinois School of Medicine was omitted from the revision of Table D which appeared last week in the State Board Statistics. This medical school should have been included among those that are recognized in all states.

Social Hygiene Workers Needed.—The United States Civil Service Commission announces examinations for the following positions under the interdepartmental social hygiene board, receipt of application for which will close, May 4: director of bureau of the division or section of protective social measures, salary $3,500 to $4,500 a year; supervisor of protective measures, salary $2,000 to $3,600 a year; field agent, protective social measures, $1,800 to $3,000 a year, and special assistant agent, protective social measures, salary $900 to $1,500 a year. An examination will also be held on May 5 to fill positions of field agent in protective social measures, under the auspices of the board, with salaries ranging from $1,200 to $3,000. Further information may be obtained from the United States Civil Service Commission or from local civil service boards.

Vocational Rehabilitation.—Final legislative action has been taken in the Senate and House on the bill to establish vocational rehabilitation of persons injured or disabled in industry from any cause. This legislation will give federal and state aid to all persons who are suffering from physical defect, injury or disease, and who are partially or totally incapacitated from remunerative occupations. This aid will include the training and instruction of such persons for entering gainful occupations. The work is to be carried on under the direction of the federal board of vocational training. This board is to cooperate with vocational training boards of the several states, and the sum of $1,000,000 is apportioned among the several states according to the population of each state. Each state is required to expend an amount equal to that expended by the federal government. The bill has passed both the Senate and House and awaits the report of the conference committee before going to the President.

Bequests and Donations.—The following bequests and donations have recently been announced:

University of Cambridge, England, a donation of $100,000 for the erection and equipment of an institute for parasitological research, with an additional $50,000 for its upkeep and maintenance, by Mr. and Mrs. A. P. Molteno.

The Ontario Honorary Advisory Council for Scientific Research has made provision for forty bursaries, studentships, and fellowships to be awarded to qualified science graduates who will prepare for a career in scientific research in connection with the natural resources of Canada.

Toronto General Hospital, a donation of $250,000 toward lifting the debt on that institution, by Sir Joseph Flavelle.

Grant Hospital, Chicago, $10,000, Alexian Brothers Hospital, Chicago, $5,000 by the will of Jacob Birk.

Emergency Hospital, Chicago, $400,000 by the will of Captain Charles Haines, St. Charles, Ill.

Henry Phipps Institute, Philadelphia, a donation of $500,000 by the family of Henry Phipps.

Home for Aged Protestant Women and Home for Aged Persons, Nashua, N. H., each $312,500, by the will of Miss Mary E. Hunt, Nashua.

St. Vincent's Hospital, New York City, $100,000; Cancer Hospital, New York City, and Brooklyn Hospital, $25,000; Brooklyn Home for Consumptives, $20,000, by the will of Daniel J. Carroll, New York City.

Sheppard-Towner Bill.—National support and stimulation of maternity and child welfare are the objects of Senate Bill No. 3259, which has already had two readings in the Senate and has been referred to the committee on public health and national quarantine. This bill authorizes the appropriation of $480,000 each year, $10,000 to be paid annually to each state for the establishment and admjnistration of boards of maternity and infant hygiene. In addition, it provides for the appropriation of $2,000,000, increasing about $400,000 annually after five years, to be apportioned to various states according to population, and not to be available unless matched dollar for dollar by state approprition. The bill aims at cooperation with the several states in the promotion of the care of mothers and children; instruction in hygiene of maternity and infancy and the establishment of a federal board of maternity and infant hygiene for the administration of the act and to make investigation, studies and reports on related subjects.

FOREIGN

Hospital at Omsk Closed.—The American Red Cross Hospital at Omsk, Siberia, has been evacuated and the patients taken to the Cadetsky Corpus Hospital, Omsk. During the nine months' existence of this hospital, 6,009 patients received treatment.

The Lannelongue Prize.—Prof. D. Giordano of Venice has been invited to be a member of the jury to award the Lannelongue prize (5,000 francs and a gold medal) offered by the French Surgical Association to the surgeon who has made the greatest discovery or done the most important work of the preceding five years.

Rockefeller Foundation Donation to Vienna Sufferers.—In response to a telegram from Dr. Linsly R. Williams of Johns Hopkins University, in which he states that more than 3,000 physicians are destitute and only 200 of the most pitiable cases can be taken care of by the American fund, the Rockefeller Foundation has made a donation of $10,000.

Hospital Wing Named for Red Cross Worker.—One of the wings of the new municipal hospital, Lens, France, has been named after Miss Ella Harris, Philadelphia district manager of the American Red Cross, in that district of devastated France. The other three wings of the hospital are named after Premier Clemenceau, Marshal Foch and the mayor of Lens.

Epidemic Diseases.—Typhus fever is said to be ravaging eastern Galicia. During January and February 45,000 cases were reported.——Cholera and dysentery have broken out in Feodosia, Sebastopol and other cities of the Crimea, in addition to typhus fever, which is already epidemic. Sebastopol is virtually without water as it is dependent on a distilling plant which is out of service on account of lack of fuel.

Personal.—It is reported that Dr. Lorrin A. Shepard, held as hostage by Turks after the withdrawal of a French relief column from Aintab, has been released.——Dr. L. W. D. Jackman, said to be a medical missionary at Sadiya, Assam, is reported to have been sentenced to two years' imprisonment for having shot and killed Major H. D. Cloete. Evidence was produced to show that Dr. Jackman committed the deed on hearing his wife's confession of infidelity.

Lectures on Tuberculosis in Children.—A special course on tuberculosis in children will be given at the Hospital for Sick Children, 149 Rue de Sèvres, Paris, May 4 to June 12, by Drs. H. Méry, P. Armand-Delille and L. Girard of the hospital staff. Lectures will be delivered at 5 p. m. on three days in each week, Tuesday, Wednesday and Thursday, and will embrace discussions of the etiology, pathology, varieties, diagnosis, prevention and treatment of the disease.

Child Welfare Work in Belgium.—A national children's bureau has been established in Belgium. The bureau is directed by a board of forty members, called the "Conseil supérieur des œuvres de l'enfance." This board has the decision on all questions relating to the protection of children; it issues orders concerning the functions of subsidized agencies; it takes necessary measures for the protection of children within the limits of the law; and determines the use of funds at the disposal of the bureau.

Taking Medicines Out of Poland.—Health Commissioner Louis E. Van Norman, at Warsaw, reports that grave concern is being manifested by the Polish Medical Association over the large amount of medical supplies that are constantly being taken out of the country both east and west. The country women, who formerly brought in constant supplies of herbs to the drug stores in Warsaw, are reaping fortunes by selling their agricultural products at high prices, so that they no longer bother with selling herbs. The medical association is preparing a memorandum to the government asking for the infliction of severe penalties for taking medical supplies out of the country.

New Archives for Internal Medicine Launched in Vienna.—A bulky journal of 210 pages, 6 by 10 inches, has reached us as the first issue of the *Wiener Archiv für innere Medizin*, published by twenty-four internists connected with the universities of Vienna, Prague and Innsbruck. Profs. W. Falta and K. F. Wenckebach (Frankgasse 2, Vienna) are the editors. The *Archiv* is to be issued irregularly, thirty to forty printed forms forming a volume; subscription price 54 marks. Urban and Schwarzenberg, Maximilianstrasse 4.

Vienna, are the publishers. The six articles in the first number are on the pathology of the lungs, circulation, vegetative nervous system and on palpation of the pulse. They will be reviewed in the foreign literature department.

Tribute to Majocchi.—Prof. Domenico Majocchi of the chair of skin diseases and syphilis in the University of Bologna soon completes his fortieth years' incumbency, and his pupils and other friends are planning to present him with a gold medal on the anniversary. An appeal has been issued for contributions, signed by the president of the Italian Società di dermatologia e sifilografia, the president of the Associazione professionale dei dermosifilografi italiani, the president of the Ordine dei medici, the rector of the university and the head of the medical faculty and of the local medical society. The secretary is Prof. G. Pini, Via S. Stefano 18, Bologna. The tribute is to be a feature of the annual meeting of the Società italiana di dermatologia e sifilografia which convenes at Bologna June 6. The list of Majocchi's works fills about half a column in the Surgeon-General's Catalogue.

Deaths in Other Countries

Baron **Kanehiro Takaki**, M.D., formerly inspector-general of the Japanese navy and leader in military hygiene, especially in the eradication of beriberi from the navy. He studied medicine in England in the seventies and visited the United States in 1905. Honorary degrees were conferred on him by Columbia and the University of Pennsylvania among others, and he lectured in this country. His work "Military Hygiene in the Japanese Navy" was published at New York in 1906.——Dr. **A. Ceradini**, professor of bacteriology at the University of Turin and president of the Reale Società d'igiene, aged 44.——Dr. **P. Regard** of Geneva, aged 62.——Dr. **Ricardo Mesa Torres**, a prominent physician of Santiago, Chile.——Dr. **R. Schmucker**, medical head of the Rudolf Children's Hospital, Vienna, aged 67.——Dr. **L. Hauser** of Darmstadt, aged 75.——Dr. **E. Burchard**, a neurologist of Berlin.——Dr. **M. Stolz**, professor of gynecology at the University of Graz.——Dr. **M. Siegfried**, professor of physiologic chemistry at the University of Leipzig.——Dr. **T. Senise**, professor of medical pathology at the University of Naples, author of works on the symptomatology of the respiratory and cardiovascular systems, and senator, aged 72.——Dr. **M. Fürbringer**, professor of anatomy at Amsterdam, Jena and Heidelberg in turn, aged 74.——**James Pointon**, Southport, England; M.R.C.S. (Eng.), L.R.C.P. (Lond.), 1878; aged 69; senior medical officer of the Cunard Steamship Company; senior house surgeon to the Children's Infirmary, Liverpool, and honorary medical officer of the North Dispensary, Liverpool; surgeon of the Steamship *Royal George;* died at sea, April 11, from heart disease, and in accordance with his wishes, was buried at sea.

LATIN AMERICA

Leprosy in Venezuela.—According to the last report of the Office of Public Health of Venezuela there was a total of 720 lepers isolated in the two leprosariums of that country on Sept. 30, 1919.

Personal.—Dr. Pedro Alemán is now making a professional visit to New York City.——Dr. F. Vallarino, one of the physicians of the Santo Tomás Hospital of Panama, is now on his wedding trip in New York City.

Eugenics in Uruguay.—A bill has been introduced in Uruguay according to which no person will be able to marry unless he previously obtains a physician's certificate, showing the applicant is free from chronic, communicable disease.

International Sanitary Conference.—According to the provisional program for the Sixth International Sanitary Conference of the American Republics, to be held at Montevideo, Dec. 12-20, 1920, the following subjects will be discussed: sanitary laws and regulations adopted by the different countries since the fifth conference; enforcement of resolutions adopted at preceding conferences; report of the contagious diseases most prevalent in the different countries; measures adopted to prevent the introduction and the spread of bubonic plague; prevalence of cerebrospinal meningitis, infantile paralysis and lethargic encephalitis; present status of the campaigns against tuberculosis, yellow fever, malaria, trachoma and hookworm disease; data relative to leprosy and the measures taken to prevent its spread; present status of the campaign against venereal diseases; organization of the quarantine service in the different countries, and vital statistics of the different countries.

Government Services

Copies of Report of the Surgeon-General Not Available

According to law, only 2,500 copies of the report of the Surgeon-General can be printed, and additional copies cannot be printed without a special act of Congress. We are informed by Surgeon-General Ireland that all of the copies of the 1919 report have been distributed, and that it is impossible to obtain a special act for the printing of additional copies at this time.

The New Medical Reserve Corps

Commissions in the new Medical Reserve Corps are issued by the War Department only to those former medical officers who have applied either by means of the usual Form 150, accomplished at the time of discharge, or by formal application by letter to the Adjutant-General or Surgeon-General. Those who had service during the World War and who have not yet received commissions, should, if they desire to become members of the new Medical Reserve Corps, make application therefor by letter to the Adjutant-General of the Army.

The Medical Veterans of the World War

During March, 1920, 116 new members were admitted. The total membership now is 2,827.

Med. Corps, U. S. A.	1,337
Med. Corps, U. S. N.	56
U. S. Public Health Service	66
Contract Surgeons, Army	90
Act. Asst. Surgs. U. S. P. H. S.	48
Members Local Boards	531
Medical Examiners Local Boards	189
Members Med. Advisory Boards	510

Building for Army Medical School

The Army appropriation bill contains a provision for the expenditure of $500,000 for suitable buildings to be used by the Army Medical School on the Walter Reed Hospital grounds at Washington, D. C. It is left to the discretion of the Secretary of War and the Surgeon-General to determine the kind and character of such buildings. The bill carrying this appropriation has been favorably reported to the House of Representatives by the committee on military affairs. The same bill also contains a provision for the erection and completion of buildings at the Letterman General Hospital, San Francisco, in the amount of $94,900.

Work on Army Medical Center

Work on what is expected to be the largest medical center in the country will be started at Walter Reed General Hospital when plans now being drafted and calling for the assembling of the army medical school, nurse school, medical museum and library, at an estimated cost of $10,000,000 are put into effect, it was announced yesterday. As the commencement of the project depends on congressional appropriations, it will probably be late in the summer before the erection of the army medical school building, the first of the proposed structures, will be begun. An appropriation bill for $500,000 is now pending before Congress as the initial sum to cover the cost of this building.

It is proposed to purchase 40 acres of land to the north and west of the present hospital site and Congress has granted $350,000 for its purchase. The plans also call for the building of additional wings to the present main building. The work of medical reconstruction and physiotherapy will be carried on in the enlarged institution and an adequate headquarters will be provided for the entire hospital corps. When completed, the enlarged hospital established on a permanent basis will accommodate from 500 to 700 beds or more.

The main purpose of enlarging Walter Reed is to provide a central point for the entire medical work of the army.

With this idea in mind, medical authorities of the army will be able to carry out a plan of gathering together all the army medical agencies, the need for which has been felt for many years.

MEDICAL OFFICERS, UNITED STATES NAVY, RELIEVED FROM ACTIVE DUTY

ALABAMA
Tuscaloosa—Collier, D. M.

COLORADO
Denver—Hayes, O.

ILLINOIS
Chicago—Guinea, W. E.

MASSACHUSETTS
Chelsea—Regan, W. F.

NEW YORK
Brooklyn—Grussner, A. S.

NORTH CAROLINA
Goldsboro—Hood, M. H.

TEXAS
Anson—Jones, A. M.

VERMONT
Burlington—Hogan, W. L.

HONORABLE DISCHARGES, MEDICAL CORPS, U. S. ARMY

Note.—In the following list, L. signifies lieutenant; C., captain; M., major; L. C., lieutenant-colonel, and Col., colonel.

ARIZONA
Leupp—Warren, B. A. (C.)
Metcalf—Lien, F. O. (L.)
Salt River—Whiting, S. D. (C.)

ARKANSAS
Clarendon—Houston, M. F. (L.)
Eureka Springs—Tatman, A. E. (L.)

CALIFORNIA
Los Angeles—Chase, F. H. (C.)
Hartford, W. S. (L.)
Keyes, H. S. (M.)
Lucey, D. D. (L.)
Pasadena—Macklin, R. K. (L.)
Turlock—Collins, J. L. (L.)
Ventura—Mason, J. S. (L.)

COLORADO
Denver—Allen, K. D. (C.)

DISTRICT OF COLUMBIA
Washington—Cook, R. L. (L. C.)
Tobias, H. W. (M.)
Walker, L. A. (M.)

GEORGIA
Augusta—Stanley, R. H. (M.)

ILLINOIS
Chicago—Galland, W. H. (C.)
Kerr, N. (M.)

INDIANA
Mooresville—Brackney, M. F. (C.)

IOWA
Adel—Irvin, H. C. (C.)
Batavia—Baldridge, J. H. (C.)
Cedar Rapids—Aborn, C. E. (C.)
Davenport—Kulp, R. R. (L.)
Eldora—Nyquist, D. M. (L.)
Indianola—Simons, J. D. (L.)
Terril—Schooley, A. H. (L.)

KANSAS
White City—Goss, H. L. (L.)

KENTUCKY
Louisville—Percefull, A. C. L. (M.)
Stirling, W. C., Jr. (C.)

MARYLAND
Baltimore—Cummins, J. E. (L.)

MASSACHUSETTS
Boston—Brackett, E. G. (Col.)
Brookline—Townsend, D. (C.)

MICHIGAN
Flint—Scott, R. D. (L.)
Lansing—Rapp, J. H. (L.)
Onaway—Wastell, F. W. (C.)
Posen—Nevius, F. P. (C.)
Traverse City—Holliday, G. A. (C.)

MINNESOTA
Rochester—Plum, F. A. (C.)

MISSOURI
Adrian—Robinson, E. E. (L.)
Lamar—Allee, G. D. (C.)
Trenton—Kimberlin, H. C. (L.)

MONTANA
Kalispell—Little, W. S. (C.)
Stevensville—Fales, L. H. (C.)

NEBRASKA
Kearney—Strong, J. A. (C.)
Lincoln—Hickman, C. C. (L.)
North Platte—Wurtele, F. J. (M.)

NEW JERSEY
Camden—Moon, A. C. (C.)

NEW YORK
Brooklyn—Jablons, B. (M.)
Nafis, W. H. (M.)
Collins—Hadley, R. V. (L.)
New York City—Cotter, J. J. (C.)
Eldridge, W. W. Jr. (C.)
Newton, S. B. (M.)
Symonds, C. W. (L.)
Ogdensburg—Miller, C. R. (L.)
Rochester—Casey, M. L. (C.)
Troy—Panitch, W. (C.)
Yonkers—Butler, E. F. (M.)

NORTH CAROLINA
Fairmont—Price, H. L. (L.)
Mount Airy—Absher, D. C. (M.)

OHIO
Columbus—Busby, J. L. (L.)
Elyria—Smith, A. B. (M.)
Urbana—Smith, M. L. (L.)

OKLAHOMA
Ardmore—Gregory, D. A. (C.)
Muskogee—Fischer, W. O. (L.)
Pryor—Tilly, G. W. (C.)
Stillwater—Mallory, J. H. (L.)

OREGON
Bandon—Mann, S. J. (C.)

PENNSYLVANIA
Greensburg—Bell, W. S. (L.)
Harrisburg—Moffitt, G. R. (M.)
McDonald—Dixon, C. W. (C.)
New Castle—Brown, T. C. (L.)
Philadelphia—Artman, E. L., Jr. (L.)
Cadwallader, C. (L.)
Shimer, W. S. (C.)
Pittsburgh—Wishard, W. H. (L.)
Wilkes-Barre—McGinley, J. L. (L.)

TENNESSEE
Memphis—McMahon, B. C. (M.)
Waters, C. T. (L.)

TEXAS
Beaumont—Scheller, L. (L.)
Denison—Freels, A. M. (C.)
Stein, J. F. (L.)
Lufkin—Dillen, O. M. (L.)
Maryneal—Fillmore, H. D. (C.)
Montgomery—Covington, C. M. (L.)
Ralls—Harrison, F. (M.)
San Antonio—Fickessen, W. R. (C.)

VIRGINIA
Richmond—McCabe, J. L. (L.)

WISCONSIN
Madison—Hough, A. G. (C.)
Reedsville—Festerling, E. G. (C.)
Siren—Oliver, L. H. (L.)

Foreign Letters

PARIS

March 18, 1920.

Vaccines in Surgical Affections

At a recent session of the Société de chirurgie of Paris, there was an interesting discussion on the employment of vaccines in the treatment of carbuncles, especially by the method of Pierre Delbet. The latter combines Pasteur's method of attenuated cultures with the modern method of killed cultures. He found it possible by this means to inject a considerably larger dose, several billions of micro-organisms, at one time. Despite the massive dose, he has never observed any reaction analogous to that described by Wright as the negative phase, which Delbet thinks is the result of an excessive initial dose. On the contrary, certain toxic reactions were observed, often very violent, and despite their intensity, these were found to constitute a good omen. In the process of aging, the toxicity of the culture is probably attenuated though not entirely destroyed. After some attempts, Delbet fixed on 4 c.c., representing about thirteen billions of organisms, as a safe and effective dose. The vaccine is, naturally, a stock vaccine of streptococcus, staphylococcus and *Bacillus pyocyaneus* (the last in great abundance: eight billions). Delbet believes it unnecessary to use the specific micro-organism and, like Wright, he has not only abandoned autogenous vaccines, but he even questions whether better results are not obtained with a vaccine prepared from cultures of a micro-organism other than that which is the causative agent in a given case. The method has been employed since 1913, since which time no case of carbuncle in Delbet's service has been treated by surgical incision; boils, lymphangitis and erysipelas also respond very promptly to this treatment.

Professor Hartmann had occasion to employ the vaccine on himself for axillary adenitis. The after-pain was moderate, but for twenty-four hours the arm was virtually paralyzed. It seems to him that a crucial incision is indicated in certain advanced cases: in fact, in any case such intervention exerts a sedative influence on the pain.

Dr. Robineau found that on the day after injection the pain had subsided, palpation revealed that the carbuncle had decreased to half its original size, and the peripheral inflammation had disappeared. Recovery is usually complete in ten days, a distinct advantage over surgical treatment, by which relief from pain and recovery are not so promptly obtained. Dr. Grégoire recited his experiences with the vaccine in seventeen cases of subacute and acute osteomyelitis, leaving the severe toxic forms out of discussion. Fourteen resulted favorably, one was treated only recently, and two cases were partial failures in that sequestrums had formed. In some cases in which diffuse suppuration apparently threatened a joint, Dr. Grégoire made several punctures; the puncture fluid was at first frankly purulent, but gradually became of a viscous, albuminous character. In all cases, the temperature dropped in a few days after treatment, and the general condition improved rapidly. Recovery was effected in from thirteen to 178 days. One half of the patients were well in from thirty to sixty days. Dr. Ombrédanne declared that there should be left out of consideration, not only the severe toxic forms, but also the lighter acute forms susceptible of resolution, limiting ourselves to the acute suppurative forms which are usually treated by incision. In these cases he had variable results; besides some undoubted cures, he had complete failures and even disasters. Vaccinotherapy should be employed only after careful study of the indications. Professor Broca, on the contrary,

maintained that vaccines should be employed in severe cases, precisely because no harm can result. In a particularly bad case an extensive sequestrum was formed despite vaccinotherapy, and an operation was necessary, but the patient's life was saved, and Broca is persuaded that this was due to the vaccine.

The Printers' Strike and the Medical Press

From time to time in these pages have been recorded the difficulties with which the scientific press in general and the medical press in particular are now contending. For almost a month, these troubles have been aggravated by a strike of the printers. All of the large publishers of Paris have suspended. Fortunately, some of the medical journals are printed in provincial towns, and these are able to continue publication despite the strike. However, the *Presse médicale*, which is printed in Paris, has not been issued for three weeks, and the editors have announced that, depending on the circumstances and duration of the strike, they will later publish double numbers in the interests of their subscribers. Besides the periodical publications, many books are also delayed by the same strike.

The Red Cross Crusade Against Epidemics

At the first meeting of the General Council of the League of Red Cross Societies, held in Geneva, March 2-9, twenty-eight national societies were represented. It might be of interest to note that the same nations participated in the first council of the League of Nations. The general council decided to place at the top of the list of adopted resolutions the text of Article 25 of the constitution of the League of Nations, stipulating that the members of the League of Nations agree to encourage and further the establishment and cooperation of duly authorized voluntary national societies of the Red Cross. In the course of the session there was read an appeal from the League of Nations asking the Red Cross to combat the ravages caused by epidemics in central and eastern Europe. The council adopted a resolution expressing its full accord and complete sympathy with the suggestions, but pointing out that nothing could be done unless the necessary food, clothing and means of transportation were forthcoming. These the governments ought to provide; the League of Red Cross Societies on its part would seek the immediate extension of voluntary aid to the afflicted regions. The resolution closed with these words: This is the first time that, as the result of the collaboration of two great organizations, the League of Nations and the League of Red Cross Societies, there is born a more certain and adequate hope of the solution of the tragic problems that bring distress to the world.

LONDON

April 3, 1920.

The Association of Surgeons of Great Britain and Ireland

The formation of the Association of Surgeons of Great Britain and Ireland was described in a previous letter (THE JOURNAL, Feb. 21, 1920, p. 538). The first annual meeting will be held in London in May. The association exists for the "advancement of the science and art of surgery, and the promotion of intercourse and friendship among the surgeons of the United Kingdom." The number of fellows is not to exceed 250, and all must be engaged in purely surgical practice, in the teaching of surgery, or in surgical research. A fellow on ceasing to be a member of the active staff of his hospital will become a senior fellow, and will retain the privilege of attending the meetings. A general meeting will be held once a year, in May, in some town in the United Kingdom which possesses a university or medical school. The first meeting, and subsequently at least every third meeting, should be held in London. Fellows will be required to speak—not read—their communications, and will be allowed not more than fifteen minutes. No reporters are to be present, and no reports of the meetings are to be sent to the journals or newspapers. The first general meeting will begin at the Royal College of Surgeons of England, when the president, Sir John Bland-Sutton, will deliver an address. There will be a discussion on "The Ritual of the Surgical Operation." The specimens in the war collection in the museum of the Royal College of Surgeons will be exhibited by Professor Keith. Sir George Makins will speak on selected specimens of wounds of vessels, and Sir Cuthbert Wallace on gunshot injuries of the abdomen. Two afternoons will be spent at various London hospitals, where cases will be shown and operations witnessed.

A "Dog's Protection Bill"

The defeat of a "dog's protection bill" introduced into the House of Commons last year has already been reported. Nothing daunted, the antivivisectionists have made another attempt. Sir F. Banbury, in introducing the bill, reminded the house that similar bills had been read a second time on three previous occasions. The present bill was in the form in which it left the "standing committee" last year. Sir Watson Cheyne moved an amendment declining to proceed with a measure which would impose a serious obstacle to medical research. He pointed out that the reason the dog was chosen was that of all animals its physiologic processes approached that of man. The surgery of the brain had been built up by experimenting on dogs. The experiments which caused pain were very few indeed. After an attempt to move the closure, the bill was talked out. In a letter to the *Times*, Dr. Thomas Lewis points out that almost the whole modern progress in diseases of the heart hinges on experiments on dogs. Auricular fibrillation was first recognized in man as a result of experiments on six London mongrels. The next step to be discovered was what fibrillation actually is. That cannot be done with observation on patients; it can be done only by observing the condition of the exposed heart of an animal. Thanks to the defeat of the bill last year, this work has been for twelve months in progress, and we are within sight of the goal. Already we have obtained a deeper insight into the condition. Dr. Lewis' views were quoted with effect by one of the opponents in the present bill.

The National Health Insurance

Like everything else after the war, national health insurance has become much more expensive than it was before. Dr. Addison, minister of health, has introduced a bill into Parliament increasing the benefits in the case of men from $2.50 to $3.75 a week for sickness and from $1.25 to $1.75 for disablement. In the case of women the benefit is to be increased from $1.75 to $3. These benefits necessitate an increased contribution of 6 cents a week for each insured person, of which it is proposed to derive 4 cents from the employer and 2 cents from the employee. Sanatorium benefit is to be taken out of the insurance act altogether, as the first stage of a comprehensive policy dealing with the whole problem of tuberculosis in all sections of the population.

The ministry of health is making an important addition to its machinery for the prevention of disease by appointing a new staff of outdoor medical officers with general duties, clinical and administrative. The new posts will be held either on whole or on part time basis, but only the duties of the whole-time officers are as yet defined. The latter, stationed in their various areas, will act in a clinical capacity, either as referees or as consultants. They will examine insured persons referred to them either by the practitioners working under the national insurance act or by the approved societies; they will advise either or both of these on the

question of capacity for work, and they will assist the physicians in matters of diagnosis or treatment. In their administrative capacity they will examine health insurance medical certificates and records, and conduct inquiries arising on any points relative to the treatment of the insured. It is proposed to appoint in the first instance eighteen whole-time officers for England and three for Wales, and to create also a certain small number of supervisory posts."

Medical Inspection from the Cradle to the Grave

The board of education has issued consolidated regulations relating to the special services of elementary education for promoting the healthy physical and mental development of children. The most important provision is one securing a continuity of medical records from elementary to secondary schools. This great reform was suggested in Sir George Newman's recent report. It means that a child will now have a complete health record through all school life until it is about to enter on its future career. Indeed, it may be that the record will go back to birth or even to the period of the antenatal clinic, for medical care is now exercised at day nurseries and nursery schools. Industry will thus be provided with records of fitness, and it will be possible for business firms to prevent the weak or diseased being employed in work endangering life or threatening the safety of others. Moreover, a complete national health census will be secured and the localization and spread of disease, its complications and after-effects worked out. The new order is thus, though a small measure, an integral part of a movement for the state control of health of great magnitude. A new link has been forged in a chain that will stretch from cradle to grave, as the subjoined tabulation demonstrates:

Antenatal Clinic	Voluntary Agencies or Local Authorities
Day nurseries till 2 years	Day nurseries
Nursery schools, from 2 to 5 years	Board of education
Public elementary schools, from 5 to 14 years	Board of education
Secondary schools, from 14 to 18 years	Board of education
Employment	National health insurance (Ministry of Health) Board of Trade, Home Office, etc.

Rewards for Professional Research

In the *Times,* Sir Ronald Ross, one of the deputation which (as stated in a previous letter) brought the question of rewards for scientific discoveries before the government, returns to the subject. The proposal was that the state should expend a maximum sum of $100,000, a year for giving thirty or more moderate life pensions to men whose medical researches have been of accepted general value to the public without being remunerative to themselves. Owing to the number of the pensions and the small amounts of many of them, not only major discoveries but also much minor good work would receive recompense. At present, the Medical Research Committee dispenses subsidies for research, but that is a different matter. Mr. Balfour, who received the deputation, raised the difficulty that it was often hard to decide who had made the particular discovery. Sir Ronald Ross points out that such difficulties occur in the case of almost every kind of reward—when learned societies give medals, when the Royal Society elects new fellows, when the Nobel prizes are bestowed, and even when any state grants titles and honors. If the mere difficulty of selection is a bar to rewards, then scarcely any rewards at all can ever be bestowed. But in practice it is found that the difficulty can easily be overcome by keeping detailed registers of the work of all possible candidates, and by delegating the task of selection to competent committees. Even if an error is sometimes made—if a reward is given to the second best or third-best man—no great harm will be done, because in fact scientific discoveries are generally made by several persons, all of whom deserve the gratitude of the community.

Deaths

James Wright Markoe ⊕ New York City; College of Physicians and Surgeons in the city of New York, 1885; aged 58; a Fellow of the New York Academy of Medicine; consulting gynecologist to Vassar Brothers' Hospital, Poughkeepsie; consulting surgeon to the Neurological Institute and Caledonian Hospital, Brooklyn, and director and chief surgeon of the first division of the Lying-In Hospital of the City of New York; was shot and instantly killed, April 18, in St. George's Protestant Episcopal Church, New York City.

Arthur Frank Wilhelmy ⊕ Decatur, Ill.; Cincinnati College of Medicine and Surgery, 1896; aged 47; major, M. R. C., U. S. Army; a member of the attending staff of St. Mary's and Macon County hospitals; a member of the Decatur Board of Health; during the war with Spain captain, Illinois National Guard; while driving in his automobile over a grade crossing, April 16, was struck by an Illinois Central train and instantly killed.

James Thomas Searcy ⊕ Tuscaloosa, Ala.; University of the City of New York, 1867; aged 80; from 1892 to 1919 superintendent of the Alabama Bryce Insane Hospital; a Confederate veteran; president of the Medical Association of the State of Alabama in 1892 and 1893, and of the American Medico-Psychological Association in 1912-1913; died at the home of his daughter in Tuscaloosa, April 6.

George S. Dare, Rising Sun, Md.; Jefferson Medical College, 1866; aged 77; a member of the Medical and Chirurgical Faculty of Maryland; founder and for several years president of the Cecil County Medical Society; a director of the Union Hospital, Elkton; state director of the Baltimore Central Railroad; died, March 24.

Daniel F. Everts, Romulus, N. Y.; Long Island College Hospital, Brooklyn, 1876; aged 76; a member of the Medical Society of the State of New York, and president of the Seneca County Medical Society in 1882; a veteran of the Civil War; health officer of Romulus for several years; died, April 11, from pleuropneumonia.

Adlia C. Stanley, Tillar, Ark.; St. Louis College of Physicians and Surgeons, 1898; aged 67; a member of the Arkansas Medical Society; president of the Bank of Tillar, and formerly secretary and treasurer of the Good Bar Shoe Company, St. Louis; died in a hospital in Little Rock, March 25, from cerebral hemorrhage.

Frederick William McDonald ⊕ Wylam, Ala.; Birmingham (Ala.) Medical College, 1905; aged 40; once president of the Jefferson County Medical Association and a member of the medical staff of the Tennessee Coal, Iron and Railroad Company; died in an infirmary in Birmingham, April 6, from pneumonia.

George Eghert Fulton, Bluffton, Ind.; Miami Medical College, Cincinnati, 1878; aged 64; a member of the Indiana State Medical Association; a member of the state legislature in 1889 and 1891; local surgeon of the Toledo, St. Louis and Western Railroad; died, April 2, from pneumonia following influenza.

Daniel Arthur Chapman, Republic, Pa.; College of Physicians and Surgeons, Baltimore, 1907; aged 34; a member of the Missouri State Medical Association; a medical officer of the Second Missouri Infantry, with Mexican Border service in 1916; died in a hospital in Pittsburgh, April 5, from pneumonia.

Rozier Clageth Bayly ⊕ Alexandria, Va.; Georgetown University, Washington, D. C., 1905; aged 38; lieutenant, M. C., U. S. Army, and discharged, June 16, 1912; died in the Episcopal Eye, Ear, Nose and Throat Hospital, Washington, D. C., March 28, three days after an operation for mastoiditis.

Henry Brooks Baker, Ypsilanti, Mich.; Bellevue Hospital Medical College, 1866; aged 82; superintendent of vital statistics and secretary of the Michigan State Board of Health for nearly thirty-five years; once vice president of the American Social Science Association; died, about April 3.

Joseph Alexander Dambourges Jacques, Marlboro, Mass.; Montreal School of Medicine and Surgery, 1901; aged 43; for many years a member of the board of trustees of the Marlboro Public Library; died, April 4, from heart disease.

⊕ Indicates "Fellow" of the American Medical Association.

Joseph Simms, New York City; Eclectic Medical College of the City of New York, 1871; aged 86; a veteran of the Civil War; a member of the Anthropological Institute of Great Britain and Ireland; a specialist in physiognomy; died, April 11, from cerebral hemorrhage.

S. M. Mosely, Huntington, Ark. (license, state medical board, Arkansas, 1903); aged 54; mayor of Huntington; died in the Sparks Hospital, Fort Smith, Ark., March 29, from the effects of a gunshot wound of the abdomen, believed to have been accidentally inflicted.

Milton V. Cunningham, Youngstown, Ohio; College of Physicians and Surgeons, Chicago, 1894; aged 52; for two years city physician of Youngstown; a member of the staff of St. Elizabeth's Hospital; died at Santa Ana, Calif., March 24, from cerebral hemorrhage.

Justin Adfer Walling, Millbridge, Me.; Medical School of Maine, Brunswick and Portland, 1882; aged 51; a member of the Maine Medical Association, and president of the Washington County Medical Association; died recently.

Fred Charles Hunt, Girard, Ohio; University of Buffalo, 1897; aged 44; lieutenant, M. C., U. S. Army, and discharged, Jan. 11, 1919; died in St. Elizabeth's Hospital, Girard, March 20, as the result of middle ear disease.

Chauncey E. Koon, Grand Rapids, Mich.; Chicago Medical College, 1873; aged 76; visiting physician to Butterworth Hospital and a member of the staff of the Detention Hospital; a veteran of the Civil War; died, April 6.

Robert Lount, Hempstead, N. Y.; State University of Iowa, College of Homeopathic Medicine, Iowa City, 1881; aged 75; for twenty years health officer of Hempstead; died, April 5, from cerebral hemorrhage.

Robert Lee Long ⊕ Atlanta, Texas; Memphis, Tenn., Hospital Medical College, 1902; aged 46; lieutenant, M. C., U. S. Army, and discharged, Dec. 21, 1918; was killed in a grade crossing accident, March 23.

Francis T. Overdorff, Johnstown, Pa. (license, Cambria County, Pa., 1885); a practitioner for forty-nine years; aged 79; a veteran of the Civil War; died in Johns Hopkins Hospital, Baltimore, April 5.

Benjamin F. Walker, Colerain, S. C.; Medical College of the State of South Carolina, Charleston, 1861; aged 87; for four years surgeon in the Confederate service during the Civil War; died, April 7.

John Peter Marshall ⊕ Warren, Ohio; Jefferson Medical College, 1908; aged 37; a member of the American Academy of Ophthalmology and Oto-Laryngology; died, about April 5, from septicemia.

Harry Anderson Upshaw ⊕ St. Louis; Marion-Sims College of Medicine, St. Louis, 1898; aged 42; lieutenant, M. R. C., U. S. Army; died in St. Anthony's Hospital, St. Louis, April 3.

George W. Seibert, Lebanon, Pa.; Jefferson Medical College, 1879; aged 65; for a time a member of the board of health of Lebanon; died in the Harrisburg Hospital, March 29.

Robert Sewell Johnston, Orange, Texas; Vanderbilt University, Nashville, Tenn., 1882; University of Nashville, Tenn., 1883; aged 57; died in San Antonio, about March 7.

Frederick Blecker Callin, Akron, Ohio; Ohio Medical University, Columbus, 1893; aged 63; who had been spending the winter in St. Augustine, Fla.; died suddenly, March 28.

John N. Thomas, Reed City, Mich.; Grand Rapids, Mich., Medical College, 1903; Hahnemann Medical College, Chicago, 1904; aged 37; died, March 29, after a surgical operation.

Herbert S. Hill, Springfield, Mo.; Rush Medical College, 1869; aged 76; a member of the Missouri State Medical Association; died in a hospital in Springfield, April 1.

James Mortimer Bodwell, Phenix, R. I.; Medical School of Maine, Brunswick and Portland, 1894; aged 51; a member of the Rhode Island Medical Society; died, March 25.

Eli L. Eberhard ⊕ South Whitley, Ind.; Medical College of Ohio, Cincinnati, 1880; aged 62; local surgeon for the Nickel Plate and Vandalia systems; died, March 30.

John W. Nabersberg, St. Paul; Medical Department, University of Iowa, 1865; aged 91; a veteran of the Civil War; died, March 24, from hemorrhage of the bladder.

Charles Van Hook Ingle, Evansville, Ind.; University of Pennsylvania, Philadelphia, 1902; aged 41; died at the home of a relative at Los Angeles, recently.

Isaak Moskovich Zimmerman ⊕ San Diego, Calif.; Imperial University, Warsaw, Poland, 1885; aged 56; died, March 15.

Goldsby King ⊕ Selma, Ala.; Medical College of the State of South Carolina, Charleston, 1880; aged 63; died, April 5, from acute dilatation of the heart.

Edward Thayer Twitchell ⊕ Ashmont, Boston; Harvard University Medical School, 1886; aged about 60; died, April 6, in Santa Barbara, Calif.

Samuel Lowry Wiggins ⊕ McKeesport, Pa.; Jefferson Medical College, 1873; aged 71; surgeon to the McKeesport Hospital; died, April 3.

James Keirl Gilder, Newberry, S. C.; University of the City of New York, 1878; aged 64; died in the Columbia, S. C., Hospital, April 6.

William O. Hitchcock ⊕ Dallas, Ga.; Southern Medical College, Atlanta, Ga., 1889; aged 57; died, March 31, from cerebral hemorrhage.

Hiram H. Shafer, Alliance, Ohio; Western Reserve University, Cleveland, 1882; aged 65; died, March 31; from cerebral hemorrhage.

John William Dodson, Rochester, N. Y.; University of the City of New York, 1888; aged 55; died, March 24, from cerebral hemorrhage.

George Pitkin Cooley, New Britain, Conn.; Homeopathic Medical College of Pennsylvania, Philadelphia, 1862; aged 91; died, April 2.

Winfield Kennedy Sharp, Pendleton, S. C.; Louisville, Ky., Medical College, 1874; aged 74; a Confederate veteran; died, March 18.

Thomas R. Carothers, Rock Hill, S. C.; Medical College of Virginia, Richmond, 1877; aged 65; died, March 31, from heart disease.

William A. Yeagy, Dillsburg, Pa.; Jefferson Medical College, 1890; aged about 57; died about April 3, from malignant disease.

Abraham B. Bradford, Belleview, Tenn.; Vanderbilt University, Nashville, Tenn., 1881; aged 67; died, April 4, from pneumonia.

Robert F. Wichterich ⊕ Cape Girardeau, Mo.; Barnes Medical College, St. Louis, 1899; aged 52; died in his office, April 2.

Vallandingham Bodey, Dayton, Ohio; Starling Medical College, Columbus, Ohio, 1895; aged 56; died, about March 23.

Theodore Pachali, Reading, Pa. (license, Berks County, Pa., 1881); aged 74; a practitioner since 1865; died, March 26.

Elmer E. Gibble, Philadelphia; University of Pennsylvania, Philadelphia, 1893; aged 53; died, April 6, from pneumonia.

Frank Worthington Wilson, Muskegon, Mich.; University of Michigan, Ann Arbor, 1879; aged 65; died, March 21.

Royal Lee Hobbs, Reisterstown, Md.; Johns Hopkins University, Baltimore, 1918; aged 25; died, March 29.

Jeremiah A. Proctor, Union City, Ind.; St. Louis University, 1844; aged 90; died, April 7.

Marriages

LIEUT. ALBERT GOULD WENZELL, M. C., U. S. Navy, Washington, D. C., to Miss Emma Pettit of Harrisburg, Pa., on board U. S. S. *Mercy*, at Brooklyn Navy Yard, April 8.

THOMAS STEVEN CULLEN, Baltimore, to Miss Mary Bartlett Dixon of Baltimore and Easton, Md., at Princeton, Md., April 6.

WILLIAM AUGUSTUS DEAN, Tulsa, Okla., to Miss Fannie Belle Hamilton of Seneca, S. C., at Tulsa, April 3.

ALEXANDER F. ROBERTSON, Staunton, Va., to Miss Frances Sexton of Hazelhurst, Miss., March 26.

ALBERT VALE HUFFMAN, South Bend., Ind., to Miss Maude Tiner of Indianapolis, February 14.

OLIVER HAZARD PERRY PARRIGAN, Monticello, Ky., to Miss Mai Akers of Sonora, Ky., April 7.

LARCUS B. ALLEN to Miss Mary Vaughn Shealy, both of Alexander City, Ala., April 5.

MARSHALL BURR CATLETT to Miss Ethel Bercot, both of Fort Wayne, Ind., March 30.

DOUGLAS LAMAR HEAD, Concord, Ga., to Miss Adel Smith of Atlanta, Ga., March 25.

The Propaganda for Reform

In This Department Appear Reports of The Journal's Bureau of Investigation, of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Fraud on the Public and on the Profession

SOME ADULTERATED OR MISBRANDED MINERAL WATER

Harris Spring Water.[1]—The Harris Springs Water Co., Harris Springs, S. C., shipped some Harris Spring Water in January, 1917, from South Carolina to Georgia. Examination of this water by the Bureau of Chemistry disclosed *B. coli* in small quantities; the total number of organisms growing on agar at 37 C. exceeded 100 per c.c.; molds and liquefying organisms were also found. The government officials charged that the water was adulterated for the reason that it consisted in part of a filthy, decomposed, and putrid animal and vegetable substance. It was also declared misbranded as the quantity of the contents was not plainly and conspicuously marked on the outside of the package. In October, 1918, the company was found guilty and fined $25. —[*Notice of Judgment No. 6613; issued March 22, 1920.*]

Sprudel Concentrated Spring Water.—The West Baden Springs Co., West Baden, Ind., in August, 1917, shipped a quantity of "Sprudel Concentrated Spring Water," which was adulterated and misbranded. Examination by the Bureau of Chemistry showed that six out of eight bottles examined contained bacilli of the colon group and the product was declared adulterated because it contained "filthy and decomposed animal or vegetable substance." It was declared misbranded because the label stated that the water was "fortified with some of the natural products of the water" when as a matter of fact it contained added salts not obtained from the West Baden Springs. Furthermore, it was declared misbranded because it was falsely and fraudulently represented as a treatment for gout, rheumatism, diabetes and obesity "whereas in truth and in fact it was not." In November, 1918, the company pleaded guilty and was fined $100 and costs.—[*Notice of Judgment No. 6641; issued March 22, 1920.*]

American Apollinaris Mineral Water.—The Standard Bottling and Extract Co., Boston, in the name of the American Apollinaris Co., shipped in December, 1915, a quantity of "American Apollinaris Mineral Water" which was adulterated and misbranded. It was adulterated in that a product other than Apollinaris Water had been substituted in whole or in part for Apollinaris Water. It was misbranded, first because the label falsely and misleadingly represented to purchasers that the article was Apollinaris Water when it was not, and further, because the quantity of the contents was not plainly and conspicuously stated on the outside of the package. In September, 1919, the company entered a plea of *nolo contendere* and was fined $25.—[*Notice of Judgment No. 6661; issued March 29, 1920.*]

Robinson Spring Water.[2]—The Robinson Springs Co., Pocahontas, Miss., shipped in July, 1917, a quantity of Robinson Spring Water. The government charged that this article was misbranded because certain therapeutic or curative claims made on or in the trade package were false and fraudulent and applied knowingly and in reckless and wanton disregard of their truth or falsity. The false and fraudulent statements were such as to lead the purchaser to believe that Robinson Spring Water was effective as a remedy for Bright's disease, diabetes, dropsy, cystitis, gout, rheumatism, indigestion, kidney and bladder troubles when in truth and in fact it was not. One C. L. Bradley appeared in the suit claiming the water as his property and denying that the therapeutic claims were false and fraudulent. Bradley averred that many reputable physicians had testified to the therapeutic value of this water in the treatment of the diseases for which he recommended it. Judge Jack in delivering his charge to the jury emphasized the fact that the government was not attacking the water as bad or unfit for use but was attacking the therapeutic claims made for it. In his charge Judge Jack had the following pertinent comments to make on the Food and Drugs Act:

> "The Pure Food and Drugs Act is one of the best laws of its character placed on the statute books in many years. It simply means that a man shall correctly brand or label that which he ships in interstate commerce, that the purchaser must be informed of the character of the article bought, and must not be deceived as to its curative properties, in other words, that the drug must not be sold under false representations.
>
> "Barnum, the veteran showman, used to say that the American people like to be humbugged. That is, perhaps, more or less true. Consequently, a man who deliberately bets his money on a shell game, or who invests his savings in a gold brick, receives, and is entitled to, little sympathy. There is, however, a class of people, not ordinarily over credulous or gullible in ordinary matters of business, who, when stricken with a fatal malady, like drowning men, grasp at straws, and fall easy victims to quack doctors and patent medicine fakers. Such a man, when told by his physician that his case is hopeless and his days numbered, against his own better judgment, tries one nostrum after another in the desperate hope that he may find a cure. Such a man is the more easily persuaded to buy an alleged remedy whose efficacy he may doubt if he knows that it is at least perfectly harmless. These remarks are made to impress on your minds the wisdom of the law and the importance of its strict enforcement.
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> "If the water in question has the qualities attributed to it by the owner, it is not only his right to so advertise it but is to the interest of the public that he should do so. On the other hand, if the water has not the qualities ascribed to it, then such false advertising by labels on the bottles should be suppressed, and the deception of the public should be stopped."

The jury returned a verdict for the government and on Feb. 25, 1919, a decree of condemnation and forfeiture was entered.—[*Notice of Judgment No. 6623; issued March 22, 1920.*]

Ferro-Manganese Regent Spring.—The Excelsior Springs Mineral Water and Bottling Co., Excelsior Springs, Mo., shipped in May, 1917, a quantity of "Ferro-Manganese Regent Spring." The product was declared misbranded because it was falsely and fraudulently represented "as a remedy for alcoholism, chronic rheumatism, dyspepsia, diabetes, Brighst's disease, albuminuria, dropsy, sciatica and insomnia, when, in truth and in fact it was not." Furthermore, the quantity of the contents was not plainly and conspicuously marked while the label was so worded as to deceive and mislead purchasers into the belief that it was a natural mineral spring water when in fact it was an artificial carbonated water. In December, 1918, the company pleaded guilty and was fined $15 and costs.—[*Notice of Judgment No. 6665; issued March 29, 1920.*]

Indoor Life and Tuberculosis.—There is every reason to assume that the habitual inhalation of air vitiated by dust, the products of respiration, combustion and decomposition, and by the possible presence of toxic fumes and gases, plays an important rôle in the causation of respiratory diseases. All the injurious effects are intensified when human beings are obliged to occupy rooms with an air supply insufficient for the proper oxygenation of the blood, and also when, because of inadequate floor space, contact infections are more frequent. As a result of these adverse conditions we note an undue prevalence of consumption, pneumonia and septic sore throat in crowded workshops, dwellings, prisons and, formerly, also in military barracks and on battleships.—G. M. Kober, *Pub. Health Rep.*, March 26, 1920.

1. This is the second case of misbranding of Harris Spring Water; the other case is described in Notice of Judgment No. 4441.
2. This is the fourth case of misbranding of Robinson Spring Water; the other cases are described in Notices of Judgment Nos. 4072, 4073 and 6467.

Correspondence

EXPERIMENTAL WORK ON CAUSATION OF LETHARGIC ENCEPHALITIS

To the Editor:—In THE JOURNAL, March 27, Dr. Simon Flexner published a comprehensive article on encephalitis lethargica. On page 868 he refers to the experimental work which my associates, Drs. Loewe and Hirshfeld, and myself have done on the etiology of the disease in transmitting it to rabbits and monkeys. In this reference he states that "Apparently they did not succeed in infecting those animals by inoculating the affected nerve tissues themselves." This is an error in statement, probably due to an oversight on the part of Dr. Flexner.

In the *New York Medical Journal,* May 3, 1919, we described the successful inoculation of a *Macacus rhesus* monkey with an emulsion of brain from an encephalitis patient. An emulsion of the brain of this animal was injected intracerebrally into another *Macacus,* and we reported that this animal developed a hemiparesis six days after the inoculation. Despite the period intervening between the inoculation and the development of symptoms, the paralysis was thought to have been due to hemorrhage following the injection, and we reported "lesion possibly traumatic." Subsequent study of this brain revealed that, in addition to the hemorrhage and necrosis, the typical vascular lesions of encephalitis were found, and we reported this observation in the *Journal of Infectious Diseases,* November, 1919. In the same article we also reported the successful inoculation of a rabbit with a filtrate of the other hemisphere of the same brain, which had been preserved in 50 per cent. glycerin for two months. We therefore feel that we have succeeded in infecting animals by inoculating the affected nerve tissues.

ISRAEL STRAUSS, M.D., New York.

"THE CAUSE OF ABSCESS OF THE LUNG AFTER TONSILLECTOMY"

To the Editor:—Dr. Clendening, in his article in THE JOURNAL, April 3, 1920, protests against the use of the motor-driven ether apparatus. He says: "These ingenious little mechanisms force ether into the posterior pharynx, under what is really a very high [sic] pressure." The instruments which I have used daily for years—the Yankauer and the Beck-Mueller instruments—produce *no pressure* in the posterior pharynx, as can be demonstrated by holding a piece of lint in the back of the throat. The ether enters the mouth through a curved cannula and is thrown against the buccal wall external to the molar teeth, and from there the current is thrown more upward than toward the posterior pharyngeal wall and the glottis. It sounds like a joke to hear one say that "the pressure balloons out the posterior pharyngeal space" and that it "impedes coughing." None of these things have ever occurred with the machines with which I am familiar. This apparatus enables the anesthetist to maintain a constant anesthesia, and thus aids materially the operator to do his work in a surgical manner. In the presuction and motor-driven-ether days a tonsillectomy was the dirtiest piece of surgery imaginable. Now it is a respectable procedure. The patients never vomit and they inhale less blood, less pus and less vomitus.

His second conclusion—that there is a "direct relation between the tonsil and the lung"—seems unwarranted. The Doctor's argument for a direct infecting channel from the tonsil to the apex of the lung does not seem at all convincing. The lung is enclosed in a serous sac, one portion of which covers the lung and the other the parietal wall, and there is no possible way of having a direct infection without having a previous inflammation and adhesion of the walls of the pleura. One would conclude from the Doctor's inference that there is an unknown open lymphatic sewer drain direct from the tonsil to the apex of the lung. The case he cites to prove his contention certainly does not prove anything except that the whole bronchial tree is more or less of a reservoir for the infectious material which drops down from the mouth, the sinuses and the tonsils.

The relief of such cases as he referred to, i. e., a troublesome bronchitis relieved after removing infected tonsils, has been the experience of thousands of men. This knowledge is so common that many of the laity come to the specialist and ask to have the nose, tonsils and sinuses examined for a focus of infection. In a series of more than a thousand consecutive tonsillectomies done under local anesthesia by myself and immediate colleagues, there has not been a single instance in which so much as a bronchitis developed after the operations. It would seem, then, if such a serious infection was so frequent, and their path of infection such a straight channel, that certainly one out of a thousand of our cases might have shown some kind of infection.

As to the matter of stopping hemorrhage, we are scolded as maudlers. If the Doctor knows of a *noli tangere* method of stopping a hemorrhage, please let us have it. It is a very simple matter to sew up a tonsillar cavity, and by properly placing one's sutures, a sufficient pressure can be brought to bear to control almost all postoperative hemorrhage. I have never seen a case of bronchitis nor lung abscess from sewing up a tonsil cavity. I, too, agree that unnecessary probing or sponging in the cavity is detrimental. He mentions one of Dr. Richardson's cases of lung abscess following the sewing up of a tonsil, and attributes the abscess to that operation. Did not Dr. Richardson give ether to stop his hemorrhage, and could not the abscess be attributed to either the ether or the insufflation of infected mucus and blood?

If the Doctor expects to "retain the confidence of the rest of the profession" he will have to give us more evidence of his "direct path from the tonsils to the lung," and he will have to *show* some of us men who have used the invaluable so-called pressure anesthesia apparatus for years without any evidence whatever of harm that it is really harmful.

OSCAR WILKINSON, M.D., Washington, D. C.

To the Editor:—An interesting article entitled "The Cause of Abscess of the Lung After Tonsillectomy" by Logan Clendening, M.D., appeared in THE JOURNAL, April 3. The argument is: Lung abscesses have occurred rather frequently of late years; motor apparatus for anesthesia has been used rather frequently of late years; therefore lung abscesses are caused by motor apparatus. Therefore motor apparatus are to be discontinued until we find that they are not to blame, on which finding they may presumably be used again. The author has nothing to say of the rather important question of measured pressure, of ether concentration, or of the precise point of delivery of the vapor. I have assisted at many hundred tonsillectomies done by insufflation anesthesia and have never witnessed "ballooning of the posterior space." Nor have I ever seen pressure per se impede coughing. The refutation of this absurd notion is thrust on one only too often in the presence of a reduction in the concentration of the anesthetic vapor.

One is impelled to ask: Wherein lies the peculiar viciousness of a motor apparatus, as compared with its predecessor, the foot bellows? Is it because it is electrical, complicated, rather more difficult to manage, and more expensive to buy and maintain? To insist on the discontinuance of motor apparatus implies the cessation of insufflation anesthesia. Inhalation methods alone remain. Ether by inhalation will

not maintain anesthesia in adults suffering tonsillectomies. More powerful agents must be employed. We are familiar with chloroform maintenance. We know its advantages and its dangers. Some of our best operators prefer this method in expert hands. As a routine, chloroform has been used with decreasing frequency. It is being replaced by ether insufflation.

I know of no better way to protect the patient against the possibility of lung abscess than a strict adherence to the correct details of a properly conducted insufflation method. These details are essentially as follows: The delivery of the vapor must be made intranasally through catheters which terminate below the base of the tongue, behind and below the tonsils and any subsequent hemorrhage. By this means, blood, saliva, and portions of tonsil are blown into the mouth away from the larynx. The volume of air delivered should be sufficient for the respiratory needs, from 15 to 20 liters a minute. The pressure should not exceed 30 mm. of mercury. The concentration of ether should remain between 60 and 70 mm. vapor tension.

The latter part of the article will give the nose and throat surgeon food for thought. It appears that there are cases of lung abscess in which motor apparatus have not been used. The familiar relationship between tonsil and lung must therefore account for this. The surgeon is told not to dabble in the denuded area (presumably the tonsillar fossa). He is also consoled with the thought that there is "no good reason for getting out every particle of tonsillar tissue," this being quite impossible unless done "at the first step of the operation."

Paluel J. Flagg, M.D., New York.

"PRONUNCIATION OF DUODENUM"

To the Editor:—The inquiry of a librarian (The Journal, April 10, 1920, p. 1040) as to how to pronounce a simple word like "duodenum," which can be found in any dictionary—and by any dictionary I do not mean a medical dictionary, but one by professional lexicographers and philologists—emboldens me to ask the question I have long had in mind: Why not a dictionary by the American Medical Association? Perhaps the librarian had looked in the regular dictionaries, and the physicians whom she heard using the word had never looked.

There are about half a dozen medical dictionaries on the market now, all covering the same field approximately, and there is little choice among them, although each publisher claims an advantage for his. In these days of efficiency and scarcity of paper, one dictionary ought to be enough for the medical profession in this country. Few of the existing dictionaries are bold enough to indicate clearly the quality of vowels, being content for the most part to point out the stressed syllables. The derivations of the words are variously given. Rarely a definition is poorly given or misleading. In one instance I recall having seen a technical word misspelled and correctly spelled in the same dictionary, and correctly defined in each place.

The ideal medical dictionary would be one edited by a board of lexicographers and philologists. The definitions would be originally supplied by specialists in various medical branches. The pronunciations would be clearly indicated by the use of all the diacritical marks and characters employed by regular dictionaries of the English language. The derivations of the words would be clearly explained, and when from the Greek the original type would be employed. If one is intelligent enough to appreciate Greek in Latin characters he would surely appreciate it in the original type. Unusual terms would have a reference to the original use.

A philologist's choice should be indicated in such words as anemia, anaemia; leucemia, leucaemia; leukemia, leukaemia; poik-, poek-, pek-, poic-, poec-, pecillocyte, spirochaeta, spirochaita, spirocheta. As well ask a lexicographer to diagnose a neoplasm under the microscope as to let the average medical man settle such spellings.

The abstractors of Current Medical Literature for The Journal, and the compilers of the splendid *Quarterly Cumulative Index* published by The Journal, are in excellent position to find all the new words used in medicine. Once such a dictionary has gotten under way, a yearly supplement could be furnished to each subscriber. In a five year period a new edition could be put out. "Why not?"

M. W. Lyon, Jr., M.D., South Bend, Ind.

TITLES TO HIDE THE IDENTITY OF DRUGS

To the Editor:—At its next meeting, the U. S. Pharmacopeial Convention should consider the giving of technical names to those drugs the names of which are practically the same in English and in Latin, for the reason that the physician often wants to prescribe these drugs and does not want his patient to know what he is ordering. Such drugs include quinin, morphin, codein, cocain, strychnin, and there may be others that I do not at this moment recall. In this city "pulv. cinchonae fortior" is ordered when quinin is wanted. Outside of this city no one would know what was desired. I order erythroxylinae when I want cocain; some druggists do not know what I want. As we have acetylsalicylic acid for aspirin, or acetphenetidin when phenacetin is wanted, so we should have technical names for the other drugs. I hope to be present at the convention for the revision, when it meets here. I hope it will give this matter careful consideration.

C. R. Dufour, Phar.D., M.D., Washington, D. C.

[Comment.—We question the need for Pharmacopeial titles for salts of quinin, morphin and cocain especially designed to hide the identity of these drugs from the patient. Patients who are sufficiently intelligent to recognize terms such as cocainae hydrochloridum, morphinae sulphas or quininae sulphas may be trusted to know the identity of the drugs which they are taking—particularly since the Harrison Narcotic Law safeguards the use of narcotic drugs.—Ed.]

THE OLD QUESTION: THE DISCOVERER OF ANESTHESIA

To the Editor:—In The Journal, April 10, 1920, Dr. S. Adolphus Knopf directs attention to the discovery of ether as an anesthetic agent by Dr. William T. G. Morton, and expresses the hope that a statue of that distinguished physician may be placed in the Hall of Fame.

While it is generally accepted that Dr. Morton made an independent discovery of ether as an anesthetic, and applied it practically at the Massachusetts General Hospital, Oct. 16, 1846, it is likewise believed that sulphuric ether was employed as an anesthetic by Dr. Crawford W. Long as early as March 30, 1842. On that occasion Dr. Long removed a growth from the neck of a Mr. James Venable, the original bill for that service being still in existence.

It would appear, then, that Dr. Long applied ether in practical use more than four years before Dr. Morton called attention to its anesthetic properties. Unfortunately, Dr. Long delayed in announcing his discovery, and to him no credit can be given for acquainting the world at large with this great blessing. But ample proof has been produced to show that the Georgia physician was the first to discover ether anesthesia, so that further argument on the subject would seem unnecessary. S. J. Lewis, M.D., Augusta, Ga.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TUBERCULOSIS AMONG ESKIMOS—TREATMENT OF LEUKOPLAKIA

To the Editor:—1. Please give me reference or information relative to the frequency of tuberculosis among the Eskimos. 2. What can you say of the treatment of leukoplakia?

A. E. HUBBARD, M.D., Peoria, Ill.

ANSWER.—1. Franz Boas (Ann. Rep. Bureau Am. Ethnol. **6**, 1884-1885) and E. W. Hawkes (Canada, Geol. Survey, Mem. 91, 1916) comment on the prevalence of infectious respiratory diseases among the Eskimos of Alaska and Labrador. Dr. Grenfell (Labrador, the Country and the People, New York, Macmillan Company, 1910) writes: "Consumption is the main enemy of these people who live here in one of the purest atmospheres in the world" (p. 178). "The worst enemy of the Eskimo is, again, tuberculosis, and from that in one form or another most of the people die" (p. 179). "During fifteen years of medical mission work on the coast of North Newfoundland and Labrador, I have discovered that one out of every three or four deaths on the coast is due to tuberculosis" (pp. 256-257).

2. It is impossible to outline adequately the treatment for leukoplakia in a patient one has not seen. In general, it is recommended that the teeth be examined and cared for by a competent dentist; that abstinence from tobacco and similar irritants be enforced; that complicating conditions, such as syphilis, receive appropriate attention. In the early stages of the disease, mild astringents and alkaline mouth washes are employed. In long standing and advanced cases, caustics, such as 20 per cent. chromic acid; freezing with carbon dioxid snow, roentgen ray and radium are utilized. The condition is one best treated by a competent dermatologist.

ORGANIZATION AND CONDUCT OF HOSPITAL FOR DIAGNOSTIC PURPOSES

To the Editor:—Can you tell me if there is a publication which gives, in outline, how to organize, finance and conduct a small hospital for diagnostic purposes? Kindly advise me as to where such information could be secured.

RALPH GETELMAN, M.D., Philadelphia.

ANSWER.—A brief article describing an institution especially designed for this purpose appears under Medical Education, Registration and Hospital Service, in the adjoining column. See also:

Birtch, F. W.: A "Group Study" Plan for a Diagnostic Team Acting as a Laboratory for the Profession, THE JOURNAL, May 27, 1916, p. 1672.
Behlow, W. W.: Group Study, THE JOURNAL, Feb. 3, 1917, p. 360.
O'Neill, B. J., and Pollock, R.: Analysis of First Two Hundred Cases Studied at San Diego Diagnostic Group Clinic, *California State J. Med.*, Butler Building, San Francisco **16**: 428 (Sept.) 1918.
Knapp, H. B.: Cooperation Among Doctors, THE JOURNAL, May 16, 1914, p. 1578.
Lewis, F. P.: Group Study, a Necessity in Ophthalmic Research, THE JOURNAL, Nov. 22, 1919, p. 1617; June 28, 1919, p. 1893.
Gutmann, J. H.: Cooperation in Medicine, *Albany M. Ann.*, Albany Medical College, Albany, N. Y., October, 1912.
Cabot, R. C.: Better Doctoring for Less Money, *Am. Magazine*, April, 1916, p. 7.
Axtell: Team Work in Medicine, *J. Kansas M. Soc.*, 303 Commerce Building, Topeka, Kan., September, 1916.
Medical Partnerships—So-Called Group Plan, *Bull. M. & Chir. Fac. Maryland*, 1211 Cathedral Street, Baltimore, June, 1916.
Blain, A. W.: Development of Private Pay Clinic, *J. Michigan M. Soc.* 91 Monroe Avenue, Grand Rapids, Mich. **17**: 354 (Sept.) 1918.
Davis and Warner: Dispensaries and Their Management and Development, New York, the Macmillan Company.

PRIVILEGES ACCORDED PHYSICIANS DRIVING AUTOMOBILES

Information is desired as to what towns or counties have passed ordinances, police regulations, etc., giving special privileges to physicians driving automobiles. It is desired to know how these privileges were granted—by city ordinance or by police regulations—and specifically what the privileges are. Address THE JOURNAL.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARKANSAS: Little Rock, May 11-12. Sec. Regular Bd., Dr. I. J. Stout, Brinkley. Sec. Eclectic Bd., Dr. C. E. Laws, Fort Smith.
GEORGIA: Atlanta, June 9-11. Sec., Dr. C. T. Nolan, Marietta.
HAWAII: Honolulu, May 10-14. Sec., Dr. R. W. Benz, 1141 Alakea St., Honolulu.
ILLINOIS: Chicago, June 14-17. Director, Mr. Francis W. Shepardson, Springfield.
LOUISIANA: New Orleans, June 10-12. Sec., Dr. E. W. Mahler, 141 Elk Place, New Orleans.
LOUISIANA: New Orleans, May 4. Sec., Homeo. Bd., Dr. F. H. Hardenstein, 702 Machesa Bldg., New Orleans.
MICHIGAN: Ann Arbor, June 8-10. Sec., Dr. B. D. Harrison, 504 Washington Arcade, Detroit.
NATIONAL BOARD OF MEDICAL EXAMINERS: Philadelphia, May 19-26. Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia.
NEBRASKA: Lincoln, June 9-11. Sec., Department of Public Welfare, Mr. H. H. Antles, Lincoln.
NEVADA: Carson City, May 3. Sec., Dr. Simeon L. Lee, Carson City.
NEW YORK: New York, Albany, Syracuse, Buffalo, May 18-21. Assistant, professional examinations, Mr. Herbert J. Hamilton, Education Bldg., Albany.
TENNESSEE: Memphis, Nashville and Knoxville, June 11-12. Sec., Dr. A. B. DeLoach, 1001 Exchange Bldg., Memphis.
WYOMING: Cheyenne, June 7-9. Sec., Dr. J. D. Shingle, Cheyenne.

A CLINIC BUILDING FOR THE PRACTICE OF GROUP MEDICINE

E. L. MYERS, M.D., N. M. WHITEHILL, M.D., AND B. T. WHITAKER, M.D.

BOONE, IOWA

This clinic building has been designed and built for the use of three physicians in order to secure the advantages of economy and efficiency that come with the grouping of several practices in a single plant. The building is a face brick and Bedford stone structure, 40 by 72 feet, one story, although built on a foundation sufficient to carry two or more stories. It stands on a prominent corner lot 40 by 100 feet, 28 feet of which is used for a garage for three cars. The building, including the garage, is heated from the central heating plant of the city. An open court at the rear is used for ambulance emergency cases, as it is easily accessible to the roentgen-ray department. Intercommunicating telephone and signal call light systems are used.

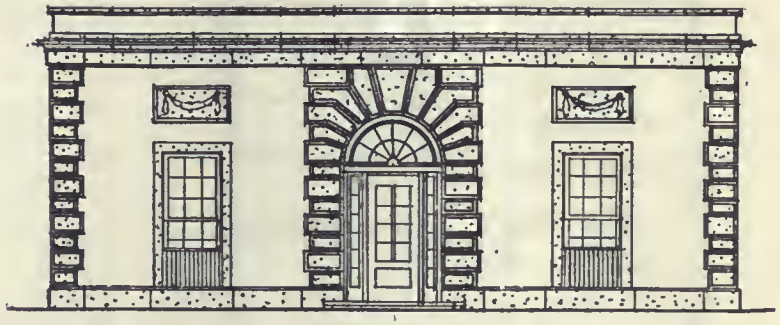


Fig. 1.—Front elevation of clinic building for practice of group medicine.

The general arrangement is fairly well described by the accompanying illustration of the floor plan. The reception room, 15 by 24 feet, opens just off the front vestibule, and on the opposite side is the library, which at times is used for the overflow from the reception room. The corridor leading from the reception room to the offices of the three physicians has a floor covered with carpet. The vestibule floor is of hand made flemish tile. Each physician has a private suite of two rooms, fitted to suit his peculiar needs, consisting of a consulting room and a treatment, examination or operating room. The latter is finished in white enamel,

having tile floors and hospital metal furniture. The interior is finished in Circassian walnut, except the work rooms and laboratories, which are enameled. A rest room is provided for women, children and those who have to wait long for treatments, roentgen-ray or laboratory tests, etc. The laboratory is completely furnished for chemical, bacteriologic and microscopic work, and is in charge of an expert technician. In the roentgen-ray department the latest equipment, both for treatment and diagnosis, has been installed. The transformer room and developing room are lined with lead. Complete physical therapy equipment has been installed for the treatment

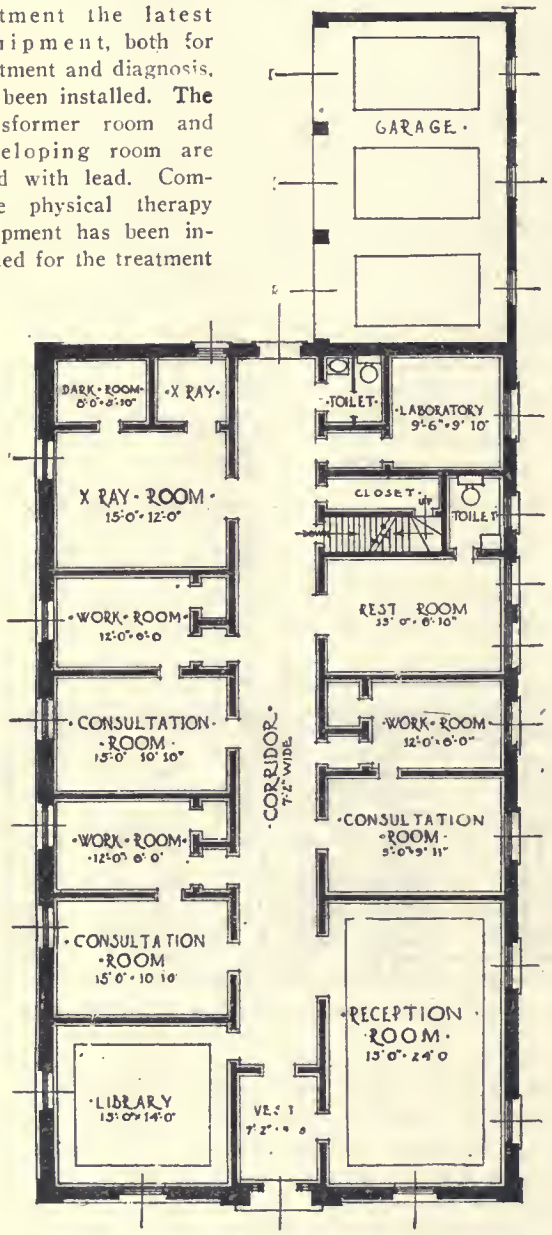


Fig. 2.—First floor plan, 40 by 72 feet, including garage.

of skin diseases, joint and muscular conditions, tuberculosis, neurasthenia, etc. The building was erected in 1919 at a cost of $25,000, including interior light fixtures, decorating, heating, plumbing and electric wiring.

The medical and surgical work will be handled as specialties, and as the work increases, plans will be carried out for enlarging the building by extending the first floor or adding a second story. The business of the organization is carried on through the main office by a salaried manager. The building and equipment are owned and controlled by a corporation, while the business is carried on as a partnership, the running expenses being paid out of a common fund and the members of the partnership sharing in the net income.

The results so far have more than justified this radical move from the generally accepted methods of practice; and if the proper organization can be effected, with men selected for their peculiar fitness, with energy, enthusiasm and consideration for all members of the organization, and free from dissensions and jealousies, the plan is bound to grow as it means better service and greater efficiency. If our short experience is any criterion, we are very optimistic regarding the future of this plan.

Alabama January Report

Dr. Samuel W. Welch, chairman of the Alabama State Board of Medical Examiners, reports the written examination held at Montgomery, Jan. 13, 1920. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Six candidates were examined, all of whom passed. Five candidates were licensed by reciprocity. One candidate was licensed on Army credentials. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Birmingham Medical College		(1914)	80.2
University of Oklahoma		(1915)	81.6
University of Pennsylvania		(1908)	88.3
Memphis Hospital Medical College		(1913)	79
Vanderbilt University		(1919)	84.6, 86.5

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Chicago Medical College		(1881)	Wisconsin
Tulane University		(1918)	Louisiana
Omaha Medical College		(1890)	Illinois
Vanderbilt University		(1917)	Tennessee
University of Texas		(1911)	Texas

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
University of Virginia		(1912)	U. S. Army

Dr. Welch also reports that one candidate, a graduate of the University of the South in 1906, received a license to practice medicine, March 10, 1920, through reciprocity with Louisiana.

Arizona January Report

Dr. Ancil Martin, secretary of the Arizona Board of Medical Examiners, reports the written examination held at Phoenix, Jan. 6-7, 1920. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 16 candidates examined, 11 passed and 5 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
College of Physicians and Surgeons, Los Angeles		(1916)	86.3
Rush Medical College		(1903) 92.4, (1912)	86.9
Kansas Medical College		(1910)	84.1
Washington University		(1910)	83.3
University of Buffalo		(1918) 81.6,	83.4
Jefferson Medical College		(1900) 98.9, (1909)	90.2
Vanderbilt University		(1917)	76
University of Virginia		(1895)	88.5
	FAILED		
University of Louisville		(1893)	83.1
Baltimore Medical College		(1904)	81.4
American Medical College		(1892)	71.6
Eclectic Medical University, Kansas City		(1918)	54.9
St. Louis Medical College		(1885)	70.8

Hawaii January Report

Dr. J. R. Judd, secretary of the Hawaii Board of Medical Examiners, reports the written examination held at Honolulu, Jan. 13-15, 1920. The examination covered 8 subjects and included 64 questions. An average of 75 per cent. was required to pass. Of the 11 candidates examined, 5 passed and 6 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Johns Hopkins University		(1915)	88
Cornell University		(1916)	82
University of Pennsylvania		(1913) 85, (1919)	78
Tokyo Imperial University		(1916)	75
	FAILED		
Bennett College of Eclectic Medicine and Surgery		(1868)	67
Detroit Homeopathic College		(1909)	67
Nagasaki Special Medical School		(1906)	69
Osaka Prefecture Higher Medical School		(1907) 68, (1914)	57
Tokyo Charity Hospital Special Medical School		(1915)	68

Social Medicine and Medical Economics

THE HEALTH PROBLEMS OF A SMALL CITY

C. H. MAYO, M.D.
ROCHESTER, MINN.

Serving the community as health officer has long, but mistakenly, been looked on as a lowly and trouble-making occupation. When the constitution of the United States was written general public health problems were not recognized. In order to make the constitution acceptable to a people who had left Europe because of a desire for freedom, the personal liberty and privilege of the individual was made as unrestricted as possible. As the states developed, health problems increased but, from lack of knowledge of both conditions and methods, were relatively few until a recent period. The city charter was usually drawn for the appointment of a health officer by the council at a salary of $150 a year. The health work was seldom well looked after, as the position was usually a political one, the appointee being too busy or not adapted to the work. The average salary of state health officials is only $4,000 or $5,000 a year, inadequate to be sure, but the fault has been with the profession. The city attorney was more important and better paid.

For several weeks in 1908, Rochester suffered from a continued epidemic of scarlet fever. I called a public meeting to discuss the problem and pointed out that the city was getting a bad name for its failure to control contagious disease, and that farmers feared to come to town to trade; this appealed to the business men. The council chamber was stormed, and the health officer resigned; I was asked to accept the position the same evening, and accepted the appointment. The council granted $2,000 a year for an expense account; there was also several hundred dollars a year income from fees. I appointed a deputy health officer, half time, at $1,500 a year, and an assistant inspector, half time, at $50 a month, also a clerk at $50 a month; and I donated the office, light and heat.

I was later elected to the city school board, a most harmonious and progressive group of individuals, its president a woman. Since then we have sold and rebuilt all but one of the city schools, and have built a high school covering a city block, as well as six fire-proof buildings, housing in all more than 2,000 children. In the high school commercial courses are given, as well as manual and vocational training; there are classes in cooking, dressmaking and housekeeping for the girls. Here also we have a great swimming tank with a gymnasium for the girls and one for the boys, with a physical director for each group; an attractive and instructive moving picture exhibit is given usually twice a week. There is a large school band and orchestra. Military training and drill have been given for the last three years (not compulsory), with most of the older boys in uniform. Here we give the first two years of the regular university course under state supervision at one seventh of the expense at which it can be obtained by nonresidents at the state university. This results in about four times as many of our students securing advanced education as those in other places, and these boys and girls are more mature when they leave home to complete the course at the university amid city surroundings. We have a school nurse who keeps watchful care of absentees. If there is sickness among the children of the poor, the health officer is notified either by the school nurse or the city nurse, the latter being supported by the civic league. The state conducts a school for the care and education of backward children at a cost to the state of several hundred dollars a year for each child; it will allow $100 a year for each child for the education of these children in their home city. Few such children receive any education, as their parents keep them at home. The local school board, on investigation, gathered in sixty-six such children, and bought an automobile for the school nurse, who calls for several of these children who could not otherwise attend school. We conduct four such so-called "opportunity rooms" with practically no expense to the city. We are now developing a baby clinic and child welfare clinic with a special nurse and rotating medical service, all under the supervision of the health office. It is hoped that this will give the health officer a full and continuous record of all the children in the city.

It may be asked, Why speak of this school work? From the health office standpoint our greatest trouble in the control of disease comes from the great mass of un-Americans who resist health control of contagious disease as an affront to their personal liberty. This is also true of those who are naturalized, and we have 14,000,000 unnaturalized foreign population, of whom 7,000,000 cannot speak English. By this practical instruction of the children in health work, and by following up the instruction, we secure results which will make these children demand public health protection in the future for their children, as their right while receiving education. In the fall, when school opens, the health officer secures, on request, the services of several physicians of the city, and a complete record is made of each child's general condition on entering school; this examination is of appearance, weight, eyes, ears, throat and physical condition. All previous diseases are recorded on the card, and each year it is added to as the physical health record during school life. The city dentists donate their services, and have established a dental clinic at the high school. All poor children receive free treatment for throat troubles, and free glass fitting.

Inspection of dairy cows and barns is very essential to control bovine tuberculosis and to prevent milk-borne disease. Small cities are denied this protection, although it is shown in many sections of our country that from one eighth to one fourth of the milch cows slaughtered are tuberculous. After two years of effort, mostly educational, with the public and the council, we secured the passage of an ordinance to compel the tuberculin test, with stable and milk production inspection and bacterial tests. The mayor promptly vetoed the ordinance and so we called a public meeting; this time I wished the women to be present, as the mother will fight for the best health interests of the child; the father, a business man, is afraid he will antagonize a customer or a possible one if he takes a pronounced stand in new or progressive movements to which there is opposition. The influence of this meeting justified the council in passing the ordinance over the mayor's veto.

A city veterinarian was then appointed. The next step was to secure the passage of a garbage ordinance under the control of the health office. I then secured a small farm of 30 acres, 2 miles from the city, equipped it and started a hog-feeding farm, and constructed hog houses, waterworks and concrete feeding platforms. I built two small houses and barns for the collectors, and purchased an auto truck, horses and collecting wagons. The garbage is collected from all parts of the city three times a week; a charge of 10 cents a week is made to residences, but there is no charge to hotels. Hogs are purchased weighing from 60 to 80 pounds, double treated with vaccine and serum for cholera, and sold when they weigh from 225 to 300 pounds. During the last year the place has paid for itself, and I presented the outfit together with more than $2,000 accumulated funds and $5,000 worth of hogs to the city of Rochester for the use of and to be under the control of the city health department. During 1919, hogs costing $14,100 were purchased and sold for $29,200. In this manner the health department is financially aided.

The development of the plan has been of fascinating interest to me.

Book Notices

The Diseases of Infants and Children. By J. P. Crozer Griffith, M.D., Ph.D., Professor of Pediatrics in the University of Pennsylvania. Two volumes. Cloth. Price, $16 net. Philadelphia: W. B. Saunders Company, 1919.

The author has presented a review of the diseases of infants and children that is well-nigh encyclopedic. He has consulted a vast amount of medical literature, periodicals and textbooks, and discusses the whole subject in a systematic manner.

He first describes the development of the fetus, and then considers the hygiene of infancy, devoting considerable space to amusements, training, sleep, exercise and other factors in infant disturbances—simple factors that are too often overlooked in the search for obscure causes. The section on sleep is interesting, although the author seems to have overlooked a recent analysis by Strauch which has special reference to psychic factors. The section on breast-feeding is complete, and presents many practical suggestions. In discussing artificial feeding in the first year, Griffith points out the essential features of the two methods known as percentage feeding and the caloric method. He shows that the caloric method is, in the nature of things, an impossibility, without a knowledge of the percentage composition of the milk mixture. In his description of calculations for preparation of correct milk mixtures, the author again presents the card first published in The Journal in 1918, which is an excellent ready reference for easy calculation.

The fifth chapter concerns foods other than milk, and the sixth, proprietary and special named mixtures. "The proprietary foods," the author says, "are unreliable and unnecessary: unreliable, because they are never the perfect substitute for mothers' milk, in spite of the claims of the manufacturers; unnecessary, because it is rare that they cannot be entirely dispensed with." Diet after the first year and diet in sickness are considered, after which the author takes up the characteristic diseases in infancy and in childhood. In the latter section he gives an excellent outline as to the methods of examination and diagnosis, the significance of individual symptoms, a brief discussion of infant mortality, and a general discussion of therapeutics as especially applied in infancy. This concludes the first division of the book.

The second division takes up the diseases of infancy and is divided into twelve sections, in which are discussed diseases of the various body systems—circulatory, respiratory, etc. In this discussion the author shows familiarity with current American and foreign periodical literature and gives due credit for phrases or facts which are borrowed. The treatment recommended is usually rational and simple. The author makes no mention under either measles or scarlet fever of attempts at the use of convalescent serum, although this subjcet has received considerable attention in recent literature. In the treatment of whooping cough, he is not convinced that vaccines have any value, but believes their use, both as prophylactic and curative is relatively harmless, and may be tried experimentally. In his discussion of the etiology of mumps, he gives many references to foreign literature, but has overlooked some important American investigations: Tunnicliff et al.

In the discussion of poliomyelitis, the after-treatment of the paralyses seems somewhat meager. The extensive studies of Lovett and others of the Boston school deserve mention. Infantile scurvy receives notable attention, but in this case, references to much work done since 1914 are missing and constitute a serious oversight. In this part of the book, pages 610 and 611, several typographic errors are noted. A special chapter is devoted to the diatheses. The author points out that the old view as to the diatheses was succeeded by a tendency to believe that such peculiar systematic reactions do not exist, but that recently it has been found that the diatheses do, in fact, exist. He classifies the diatheses as a "constitutional peculiarity which acts as a predisposition." Special attention is given to the spasmophilic, lymphatic, neuropathic and exudative types. In the discussion of digestive disturbances, there are colored plates of the types of infant stools, which are instructive.

These volumes will be found especially helpful by the general practitioner who is confronted with children's practice. A well-arranged and fully detailed index to each volume and a general index will enable him to turn quickly to practical discussions of many difficult problems. The books are well printed and beautifully illustrated. There are more than 400 excellent half-tones and twenty fine colored plates.

A Practical Treatise on Ophthalmology. By L. Webster Fox, M.D., LL.D., Professor of Ophthalmology, Medico-Chirurgical College Graduate School. Cloth. Price, $8. Pp. 831 with 306 illustrations. New York: D. Appleton and Company, 1920.

In the new edition of his admirable treatise the author has not only eliminated all ambiguous expressions that may have accidentally appeared in his former work, but also, by incorporating new symptoms, new points of diagnosis and new methods of treatment, has brought it strictly up to date. An especially noteworthy feature of the book is an appendix containing surgical operations, observations on military ophthalmology, and a very large formulary. To all who recognize Dr. Fox's skill as an operator, the technic of his own operation for the relief of conical cornea is of special interest. The operation of excision of the tarsal cartilage in trachoma, which has been ignored in most textbooks, is fully described. The chapters dealing with the various ocular manifestations in constitutional and nervous diseases, subjects passed over very superficially in many textbooks, are discussed in detail. The profusion of illustrations, the happy selection of subjects for the colored plates, and the general typographic excellence of the book will undoubtedly assure the author of a most hearty reception by his professional colleagues.

Arithmetic of Pharmacy. By A. B. Stevens, Ph.D., Ph.C., College of Pharmacy, University of Michigan. Fourth edition. Cloth. Price, $1.50 net. Pp. 100. New York: D. Van Nostrand Company, 1920.

This practical little book well covers the field expressed by its title. The mathematics of pharmacy is complicated by the necessity of changing from metric to apothecaries' measure and vice versa; by the fact that there are three kinds of thermometers used for measuring heat, and by the custom of writing formulas for solutions by percentages of the various ingredients. The methods and figures given in Stevens' book will save considerable time for those finding such calculations necessary. Each department is followed by suggestive problems, and their solution will be a valuable exercise for pharmaceutic and medical students, as well as for physicians.

Common Diseases of the Skin with Notes on Diagnosis and Treatment. By G. Gordon Campbell, B.Sc., M.D., C.M., Lecturer on Dermatology and Pediatrics, McGill University. Cloth. Price, $4. Pp. 229, with illustrations. New York, the Macmillan Company, 1920.

This gives in alphabetical order the commoner diseases of the skin. Fully half the book is taken up with halftones made from photographs which are reasonably good. The text contains nothing but a very short description of the symptoms and a similarly short outline of treatment. With the greatest desire to be indulgent to it, no reason can be found by the reviewer for the publication of such a book, in the face of the existence of a number of really excellent elementary books on skin diseases.

Modern Surgery: General and Operative. By John Chalmers DaCosta, M.D., LL.D., F.A.C.S., Samuel D. Gross Professor of Surgery, Jefferson Medical College, Philadelphia. Eighth edition. Cloth. Price, $8 net. Pp. 1697, with 1177 illustrations. Philadelphia: W. B. Saunders Company, 1919.

This book—a standard work which has made itself a place in American surgery—is now in its eighth edition. The author indicates that the book does not include all of the work done during the war, for sufficient time has not elapsed to place a just estimate on such work. The book is, however, complete and up to date, and is well illustrated.

Medicolegal

Liability for Typhoid Fever Contracted on Boat

(Chicago, D. & G. B. Transit Co. v. Moore et al. (U. S.), 259 Fed. R. 490)

The United States Circuit Court of Appeals, Sixth Circuit, in affirming decrees in favor of eight out of eleven libelants who sought damages for illnesses alleged to have been contracted on a steamer from Detroit, says that it has no difficulty in affirming the conclusion that contaminated water was, during several hours at least, and through the steamer's negligence, provided for the passengers on board. The boat ran aground in Hay Lake, a broadening out of St. Mary's River, about 12 miles below the Soo, and was not released for about six hours, her sea cocks, from which water was supplied to the boat, being embedded in the mud. When she was released, water was pumped from the river into the fresh-water system, without being sterilized or even filtered, and without any attempt to get rid of the mud in the sea cocks except by blowing out with steam. The record indicated that the water of the river at the point from which the water in question was taken was unfit for human consumption; and the boat's officers recognized this, and did not themselves drink it, nor allow the crew to drink it, the faucet ordinarily available to the crew being wired up. Nor was the water served on the table. But neither the faucets in the staterooms nor the fountains in the saloon were sealed, nor was any notice given to passengers that the water obtainable therefrom was not wholesome. In this the steamer was clearly negligent; for it could not be assumed that passengers would refuse to drink the water merely because it was roily.

As opposed to these and kindred considerations were the facts that the water in question was not shown by actual analysis to have contained the typhoid germ; that other methods of infection, as by flies, milk and otherwise, were possible; and that the possibility of infection by other means than the water in question was not conclusively negatived. In fact, it must be conceded that the existence of the typhoid germ in the water taken from the river, and served on board the boat, was not proved beyond all possible doubt. But such degree of proof was not necessary. A preponderance of the evidence, a showing of greater probability, was all that was required, and in this court's opinion the evidence preponderated in favor of the final conclusion of the court below. Indeed, there were several features which, taken together, persuasively pointed to that conclusion, including (*a*) the fact that so large a number of typhoid cases was shown to have developed on the boat; and (*b*) that, so far as appeared, there were no typhoid cases among the passengers on a sister ship which passed over the course at approximately the same time, but which did not take water from the river.

Each of seven of the libelants having been attended throughout his illness by a reputable local physician, and in each case the disease having been pronounced unquestionably typhoid or of that nature, and treatment given accordingly, this court must reject the contention that the testimony of these physicians was unreliable because based only on clinical sympoms. The most that the court would be justified in concluding here is that, in the absence of confirmation by laboratory tests, a clinical diagnosis of typhoid fever is not absolutely conclusive. But the results of evidence in cases of this nature do not require absolute scientific certainty, and the court thinks the testimony of the attending physicians established, by a fair preponderance of the evidence, the existence of typhoid or similar fevers. That in the case of each of several of the libelants, expert medical witnesses of high standing expressed the opinion that, on the hypotheses contained in the question submitted to them, the patient was not suffering from typhoid fever, at most raised only a question of fact.

The court also thinks that there was sufficient evidence in the case that one of the libelants contracted arthritis as a result of drinking the impure water, and that in another passenger an attack of gallstones was the direct and immediate result of typhoid fever caused by drinking the water.

An award of $1,500 damages as actual compensation for pain and suffering from typhoid fever, the court holds cannot be considered excessive; and in addition to that, it approves of various allowances for loss of time and services to business, while, in the gallstone case, in addition to the allowance for pain and suffering from typhoid fever, $2,000 for past and future suffering on account of the gallstone trouble, as well as $1,545.69 for medical expenses incident to the typhoid fever and gallstone trouble combined, are approved.

Chiropractor as Assistant to Regular Physician

(State v. Young (Mo.), 215 S. W. R. 499)

The St. Louis Court of Appeals says that the defendant, who was charged with practicing medicine without a license from the state board of health, admitted that he was a chiropractor, but contended that he was engaged as an assistant to a regularly licensed physician, and offered evidence to that effect, which was excluded. But such exclusion was not error, as the defendant could not escape the effect of the statute by showing that in practicing his profession he was employed by another and acted under another's direction. Under the law of Missouri, one engaged in chiropractic is practicing medicine. However, the judgment of conviction in this case was reversed, and the cause remanded, because the verdict being general in character was bad, in view of the fact that the information charged separate and distinct offenses, namely, practicing medicine, attempting to practice medicine, and advertising as a physician, without a license. The verdict should have been specific as to whether he was guilty of one or the other of the effenses, or of all of them. As it was, some of the jury may have believed him guilty of one of the offenses, and some of another, while he was entitled to have twelve men believe him guilty of either one or all of the stated violations of the statute.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, New Orleans, April 26-30.

Air Service Medical Assn. of the U. S., New Orleans, April 26.
Alpha Omega Alpha Honorary Fraternity, New Orleans, April 26.
American Association for Thoracic Surgery, New Orleans, May 1.
American Association of Anesthetists, New Orleans, April 26-27.
American Association of Physicians, Atlantic City, May 4-5.
American Climatological and Clin. Assn., Philadelphia, June 17-19.
American Gastro-Enterological Assn., Atlantic City, May 3-4.
American Gynecological Society, Chicago, May 24-26.
American Laryngological Association, Boston, May 27-29.
American Medico-Psychological Assn., Cleveland, O., June 1-4.
American Ophthalmological Society, Hot Springs, Va., June 15-16.
American Otological Society, Boston, May 31-June 1.
American Pediatric Society, Highland Pk., Ill., May 31.
American Psychopathological Assn., Cleveland, O., June 5.
American Radium Society, New Orleans, April 26.
American Surgical Association, St. Louis, May 3-5.
American Therapeutic Society, Philadelphia, May 7-8.
Arkansas Medical Society, Enreka Springs, June 8-9.
Assn. for Study of Internal Secretions, New Orleans, April 26.
Association of American Peroral Endoscopists, Boston, June 1.
Assn. of Amer. Teachers, Diseases of Children, New Orleans, April 27.
California State Medical Society, Santa Barbara, May 11-13.
Connecticut State Medical Society, New Haven, May 19-20.
Georgia Medical Association, Macon, May 6-8.
Illinois State Medical Society, Rockford, May 18-20.
Iowa State Medical Society, Des Moines, May 12-14.
Kansas Medical Society, Hutchinson, May 5-6.
Louisiana State Medical Society, New Orleans, April 24-26.
Maryland, Med. and Chir. Faculty of, Baltimore, April 27-29.
Massachusetts Medical Society, Boston, June 8-9.
Medical Veterans of the World War, New Orleans, April 26-27.
Michigan State Medical Society, Kalamazoo, May 25-27.
Mississippi State Medical Association, Jackson. May 11-12.
Nebraska State Medical Association, Omaha, May 24-26.
New Hampshire Medical Society, Concord, May 12-13.
North Dakota State Med. Assn., Minot, June 15-16.
Ohio State Medical Association, Toledo, June 1-3.
Oklahoma State Medical Association, Oklahoma City, May 18-20.
Rhode Island Medical Society, Providence, June 3.
So. Section Am. Laryn., Rhin. & Otol. Society, New Orleans, Apr. 27.
Western Electro-Therapeutic Association, Kansas City, Mo., May 27-28.
West Virginia State Medical Association, Parkersburg, May 18-20.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

March, 1920, **159**, No. 3

*Physical Signs of Foreign Bodies in Bronchi. T. McCrae, Philadelphia.—p. 313.
*Oculopupillary Fibers of Sympathetic System: Division of First Thoracic Root in Man. W. G. Spiller, Philadelphia.—p. 325.
*Epidemic Acute and Subacute Nonsuppurative Inflammations of the Nervous System Prevalent in the United States in 1918-1919: Encephalitis; Encephalomyelitis; Polyneuritis; Meningo-Encephalo-Myeloneuritis. L. F. Barker, E. S. Cross and S. V. Irwin, Baltimore.—p. 337.
*Pleural Effusion with Inversion of Diaphragm Producing an Abdominal Tumor; Acute Pulmonary Edema Following Tapping. D. Riesman, Philadelphia.—p. 353.
*Retroperitoneal Liposarcoma: Chemical Analysis. E. F. Hirsch and H. G. Wells, Chicago.—p. 356.
Vascular Reactions in Vascular Hypertension. J. P. O'Hare, Boston.—p. 369.
Dangers of Ascariasis. B. C. Crowell, Rio de Janeiro, Brazil.—p. 380.
*Evidence of Nephritis and Urinary Acidosis. J. H. Barach, Pittsburgh.—p. 398.
*Association of Fever with Fracture of Skull. A. O. Wilensky, New York.—p. 402.
Subcutaneous Emphysema: Complication of Influenzal Pneumonia. Report of Seven Cases. J. Meyer, Chicago, and B. Lucke, Philadelphia.—p. 417.
*Gross Pathology of Influenzal Pneumonia in France. H. Bakwin, New York.—p. 435.
Chronic Nontuberculous Lung Infection. C. G. Field, Iowa City, Iowa.—p. 442.
*Psychologic Theory of Cause of Epilepsy: Special Reference to Abnormal Muscular Expression of Strong Emotional Drive. C. A. Marsh, Newcastle, Ind.—p. 450.

Physical Signs of Foreign Bodies in Bronchi.—Decreased expansion on the affected side, the presence of very fine râles and the "asthmatoid wheeze," McCrae regards as signs of value in the diagnosis of foreign body in a bronchus. Some foreign bodies, such as a peanut, set up a very acute general process which is fairly distinctive. Other structures, such as metallic objects, cause permanent changes, usually in a lower lobe. The chief errors in diagnosis are to mistake the signs for those of pneumonia in the early stages and in the acute cases, and for tuberculosis after the body has been present for some time.

Oculopupillary Fibers of Sympathetic System.—The conclusion is formulated by Spiller that in man the oculopupillary fibers do not decussate, or at least in very slight degree, in the pons or below this in the medulla oblongata or cervical cord. In two cases of tubercle of the pons, which is a lesion destroying the axis cylinders where it exists and not permitting them to pass through as does glioma, the oculopupillary symptoms were on the side of the lesion. Spiller has repeatedly seen oculopupillary paralysis of the sympathetic on the side of the lesion resulting from occlusion of the posterior inferior cerebellar artery. This occlusion produces softening in the lateral part of the medulla oblongata. Spiller admits the possibility that the sympathetic fibers may decussate in the cerebral peduncle, but says the evidence of this is far from conclusive.

Encephalitis.—In the experience of Barker and others a cell count in the cerebrospinal fluid of from ten to 100 small mononuclears, along with a positive globulin reaction, with negative Wassermann and negative bacteriologic smears and cultures, is, at the time of an epidemic of encephalitis, strong corroborative evidence of the existence of the disease in a patient in whom the process is for any other reason suspected to exist. Negative findings in the cerbrospinal fluid do not, however, rule out the diesase. The clinical course of the disease is discussed and eight cases are analyzed. A very fine list of selected references is given, including papers of importance as earlier sources of conception of nonsuppurative encephalitic syndromes; papers on nonsuppurative encephalitis by American authors (before the present epidemic); papers on the pathologic anatomy and histology of nonsuppurative encephalitis; papers on the recent epidemic of nonsuppurative encephalitis North American, South America, Great Britian, France, Oceanica (Australia), Austria, Germany and Africa.

Pleural Effusion with Inversion of Diaphragm Producing an Abdominal Tumor.—On the occasion of a necropsy, Riesman found in the left upper abdominal quadrant a large, smooth, tense tumor, which on further exploration, proved to be a bag made by the inverted diaphragm and filled with pleural fluid. Since then he has seen this tumor twice, clinically. The condition is a mechanical result of great intrapleural pressure.

Retroperitoneal Liposarcoma.—Hirsch and Wells report the microscopic and chemical examination of a retroperitoneal liposarcoma without myxomatous elements, weighing 69 pounds, being the largest solid tumor on record. It illustrates the capacity of malignant tumors to store up protein and fat, despite extreme emaciation of the host.

Evidences of Nephritis and Urinary Acidosis.—The observation made by Barach show that in the most severe type of exertion (Marathon race), albumin and casts and red blood cells occur in all individuals. The casts were of the broad and narrow, hyalin and granular variety. Some of the casts showed red and white corpuscles. The amount of albumin was greatest in those who ran strenuously, finishing earliest, from three hours and fourteen minutes to four hours and fifteen minutes. Observations of the blood pressure and pulse rate in these cases showed that the largest amount of albumin and blood and casts occurred in those individuals who showed the greatest degree of circulatory disturbance. This was manifested by a marked fall in both the maximum blood pressure and in the pulse pressure. In the less strenuous type of exertion are usually found an increased urinary acidity, albuminuria, cylindruria and, at times, blood cells. A critical analysis of these findings, however, shows, first of all, that in the more strenuous effort the amount of albumin, the presence of blood cells and the number and type of casts all depict a more serious renal disturbance than is found in the less strenuous form of exercise. Urinary acidity was increased after exercise in 85 per cent. of the cases, but it did not occur more frequently, nor was the acidity higher in the severe exertion cases than in the milder ones. There is a positive relationship between the degree of albuminuria and cylinduria and the type of physical exertion; but these observations show that no such relationship can be established between the urinary acidity and the occurrence of albumin, casts and blood cells in the urine.

Association of Fever with Fracture of Skull.—Fever occurred in fifteen of a series of seventy-two cases of fracture of the skull recently studied by Wilensky. In another series of cases of fracture of the skull admitted to the hospital in a different period of time, twenty-two patients of a total of seventy-seven developed fever. In the fifteen febrile cases of the first series the fractures were situated in the posterior fossa in six cases and in the middle fossa in two cases; in the others the fractures were distributed over the vertex and sides of the skull. One fracture was compound externally; one communicated with the middle ear and two fractures with the nasal cavities; the others were all closed fractures. Eight of the patients who developed fever died; in four of these the cause of death was a meningitis.

Pathology of Influenzal Pneumonia in France.—One hundred and six necropsies are analyzed by Bakwin. Changes in the rectus muscle were observed in 33 per cent. of the cases. Empyema was rare, occurring in less than 4 per cent. of the cases. Acute laryngitis was comparatively rare, occurring in only six out of thirty-eight larynges examined (16 per cent.). Sphenoid sinusitis was a very common complication and was found in twenty out of twenty-two cases examined (90 per cent.). Seven out of thirty-five antemortem blood cultures showed pneumococci. The rest were sterile, with the exception of one, which showed a meningococcus. The bacteria found in the organs at necropsy were varied; *Streptococcus hemolyticus*, the pneumococcus, staphylococcus, nonhemolytic streptococcus, *B. influenzae* and gram-negative cocci being found in the various cases in the order of frequency given above.

Cause of Epilepsy.—Marsh is of the opinion that epilepsy is an abnormal muscular reaction to strong mental states. It is an abnormal expression because such muscular activity does not gain the end for which the emotional state was generated. It is unnatural, also, since it is effort undirected. The epileptic, because of his peculiar make-up cannot avoid the dangers of too great stress as the normal man meets it, but by an emotional drive that cannot be readily checked, labors on to mental exhaustion in unconsciousness. This is not deep enough to involve the motor of life centers of the brain, so a convulsion takes place. Viewing epilepsy in this light, it is now possible, in treating this disorder, to institute more rational methods than has previously been had in surgical procedure and in empirical therapy.

Archives of Internal Medicine, Chicago

March 15, 1920, 25, No. 3

*Studies on Arthritis in Army, Based on Four Hundred Cases. R. Pemberton and J. W. Robertson, Philadelphia.—p. 231.
*Id. Basal Metaholism in Arthritis. R. Pemberton, Philadelphia, and E. H. Tompkins, Boston.—p. 241.
*Id. Studies on Nitrogen. Urea, Carbon Dioxid Combining Power, Calcium, Total Fat and Cholesterol of Fasting Blood. Renal Function, Blood Sugar and Sugar Tolerance. R. Pemberton, Philadelphia, and G. L. Foster, San Francisco.—p. 243.
*Method of Analyzing Electrocardiogram. H. Mann, New York.—p. 283.
*Irritation of Vagus and Hemorrhagic Erosions of Stomach. K. Nicolaysen.—p. 295.
*Clinical Studies on Respiration: VI. Comparison of Various Standards for Normal Vital Capacity of Lungs. H. F. West, Boston.—p. 306.
Experimental Determination of Influence on Abnormal Cardiac Rhythms on Mechanical Efficiency of Heart. J. A. E. Eyster and E. C. Swarthout, Madison, Wis.—p. 317.
*Platelet Count and Bleeding Time in Diseases of Blood. H. C. Gram, Copenhagen.—p. 325.

Arthritis.—Of four hundred cases of arthritis studied by Pemberton and Robertson, it was found that 256 patients had arthritis only; 112 had a combination of arthritis and myositis; twenty-two had myositis only; seven had nerve involvement (neuritis) only, and three were listed as doubtful. One hundred and seven persons were taken sick in the apparent absence of demonstrable surgical foci. Two hundred and ninety-three persons showed demonstrable surgical foci. Of this latter number 208 showed foci in the tonsils. One hundred and thirty-four persons in the entire series were positive for a genito-urinary focus. Seventy-eight showed a combination of both dental and tonsillar foci. It was also found that thirty-eight persons showed some combination of foci other than dental and tonsillar, as for instance dental and genito-urinary or tonsillar and genito-urinary.

Basal Metabolism in Arthritis.—Of the twenty-nine cases studied by Pemberton and Tompkins, 80 per cent. showed a metabolism within normal limits; 20 per cent. showed a metabolism slightly below normal limits. The metabolic data give no explanation for this deviation. From the respiratory quotients no abnormality can be detected in the percentage of calories obtained from the three foodstuffs. Nothing abnormal was found in the pulse, temperature or minute volumes of air breathed at the times of the determinations. In the cases showing a basal metabolism below the normal limits, no particular relation could be determined between the severity of the disease, age or condition of the patient (whether active or bed-ridden), atrophy of muscle, edema or other factors.

Studies on Nitrogen, Urea, Etc., in Arthritis.—In a series of sixty-seven observations in fifty-seven cases of chronic arthritis, the fasting blood nitrogen fell within normal limits in all but two cases. One of these patients had cirrhosis of the liver and renal calculus. He gave 45.4 mg. of nitrogen per hundred c.c. of blood. The other patient had a chronic arthritis of one knee. He gave 38.5 mg. The carbon dioxid combining power of the blood in seventeen cases of chronic arthritis fell well within normal limits. The same was true of the calcium of the circulating blood, and the total fat and cholesterol of the fasting blood. The authors go into considerable detail in their discussion of a definite relation between the intake of food on the one hand, and the incidence or perpetuation of symptoms of the disease on the other in cases of chronic arthritis. This relation is best illustrated by the fact that the institution of a reduced diet in appropriate cases may be followed by marked benefit. Of the three foodstuffs, the evidence at hand, although not yet complete, has indicated that carbohydrate is most concerned in this connection. Studies were carried out in sixty cases of arthritis on the fasting level of the blood sugar and on the response of these cases to the so-called glucose tolerance test. The results are given in full. Experience suggests that the sugar tolerance test may sometimes be helpful to indicate whether all foci of infection have been removed. The disturbance of the sugar tolerance due to focal infection, apparently accompanies the failure of the organism successfully to maintain its wall of defense and is apparently restored to normal when this defense returns. In this light a lowered tolerance, following on a focus, becomes an intermediary, or, at least, a concomitant step in the pathology of arthritis and possibly other conditions as well.

Analyzing Electrocardiogram.—A new method is presented by Mann in which the ordinary three leads of the electrocardiogram are combined in a single curve, the monocardiogram. The usefulness of this method of analyzing the electrocardiogram is explained.

Irritation of Vagus and Stomach Erosions.—All of Nicolaysen's experimental observations were made on animals. Ten cases in human beings were observed clinically. In the first group of six cases, irritation of the vagus was produced during the course of the illness which in every case was situated in the brain or its membranes. In the second group of three cases the disease involved the chest, the lungs and pleura being the seat of infiltrating processes. In a case of cancer of the breast with metastases in the lung and pleura there was infiltration of the vagus and symptoms of vagus paralysis. In one case, one of peritonitis with empyema, it is possible that there may have been involvement of the nerves of the stomach in the abdomen as well as in the thorax, although the proof that such was the case cannot be supplied. The vagus nerves and the nerves of the stomach in these ten cases should have been examined microscopically, but the material was gathered originally in the course of a study of ulcer of the stomach; it was only later that Nicolaysen's attention was directed to the hemorrhagic erosions of the stomach in these cases. The results of the study shows that in most of the cases in which hemorrhagic erosions were found, there had been irritation of the vagus or the possibility of such irritation. To conclude from these cases that hemorrhagic erosion always results from irritation of the vagus does not seem warranted, in Nicolaysen's opinion. It is possible, that in some of these cases it concerns a coincidence. However, Benke's results and the pilocarpin experiments in rabbits favor the conclusion that vagus irritation may cause erosions.

Determination of Normal Vital Capacity.—A group of 129 persons were studied by West for the purpose of comparing various standards for determining the normal vital capacity. A standard based on the body surface area is advised, since it has been shown that the vital capacity varies with this function more uniformly than with others tried. When the weight of the patient cannot be obtained, a standard based on the height is recommended.

Platelet Count in Diseases of Blood.—The method of Oluf Thomsen for counting the platelets in citrated plasma is described by Gram. The number of platelets in normal individuals lies between 200,000 and 500,000. The platelets are diminished in number in pernicious anemia, in most cases of lymphatic leukemia and in some cases of myeloid leukemia. Normal values are found in hemophilia, and augmented values are found in many cases of simple anemia and some of myeloid leukemia. The diagnostic and prognostic importance of the platelet count in diseases of the blood is discussed. The bleeding time determination of Duke helps to disclose a latent hemorrhagic diathesis due to platelet deficiency, as symptoms may not appear without a provocative cause. It is shown that platelet counts of less than 100,000 per c.mm. generally cause a tendency to bleed. The counting of the

platelets and determination of the bleeding time is considered by Gram as of extreme importance as a preoperative measure, especially in cases of aplastic anemia, in which an operation often is performed for explorative, occult cancer being suspected.

Boston Medical and Surgical Journal

March 11, 1920, **182**, No. 11

Malignancy and Radiation. Study of Relation of Structure of Cancer Tissue to Radiation. F. Bryant, Worcester, Mass.—p. 263.
Cesarean Section. N. W. Emerson, Boston.—p. 272.
Next Step in Campaign for Infant Welfare. Education of Women of Nation for Motherhood. I. W. Brewer, Watertown, N. Y. —p. 276.

Journal of General Physiology, Baltimore

March 20, 1920, **2**, No. 4

Device for Regulating Temperature of Incubators Either Above or Below Room Temperature. J. H. Nortbrop, New York.—p. 309.
Hereditary Adaptation of Organisms to Higher Temperature. J. H. Northrop, New York.—p. 313.
Stereotropism as a Function of Neuromuscular Organization. A. R. Moore, Woods Hole, Mass.—p. 319.
Regeneration and Neoteny. E. Uhlenhuth, New York.—p. 325.
Comparative Studies on Respiration. Toxic and Antagonistic Effects of Magnesium in Relation to Respiration of Bacillus Subtilis. M. M. Brooks, Cambridge, Mass.—p. 331.
Intensity and Process of Photoreception. S. Hecht, Omaha.—p. 337.
Labyrinth and Equilibrium. Mechanism of Dynamic Functions of Labyrinth. S. S. Maxwell, Berkeley, Calif.—p. 349.
Studies in Dynamics of Histogenesis. Tension of Differential Growth as Stimulus to Myogenesis. E. J. Carey, Omaha.—p. 357.
Nature of Directive Influence of Gravity on Arrangement of Organs in Regeneration. J. Loeb, New York.—p. 373.
Cause of Influence of Ions on Rate of Diffusion of Water Through Collodion Membranes. J. Loeb, New York.—p. 387.
Effect of Temperature on Facet Number in Bar-Eyed Mutant of Drosophila. J. Krafka, Jr., Urbana.—p. 409.

Journal of Immunology, Baltimore

November, 1919, **4**, No. 6

*Influence of Desiccation on Natural Hemolysins and Hemagglutinins in Human Serum. J. A. Kolmer.—p. 393.
*Nature of Thermolabile Hemolysins. J. A. Kolmer, Philadelphia. —p. 403.
Complementary and Opsonic Functions in Their Relation to Immunity. A Study of the Serum of Guinea-Pigs Naturally Deficient in Complement. H. D. Moore, Burlington, Vt.—p. 425.

Influence of Desiccation on Natural Hemolysins and Hemagglutinins.—Kolmer maintains that drying normal human serum on cover glasses and in paper at ordinary room temperatures frequently results in marked or complete deterioration of the normal isohemagglutinins. Deterioration of these normal isohemagglutinins is especially evident within the first to fourth days after the serums have been dried. Similar results were observed with hemagglutinins in normal human serums for the corpuscles of the lower animals. Human serums containing large amounts of normal hemagglutinins when dried under ordinary conditions and properly kept in a refrigerator may prove satisfactory for microscopical tests for at least two weeks, due to the presence of sufficient agglutinins escaping destruction. Only such serums should be used for drying and tests should be made at the end of the first week to determine if agglutinins are present before the cover glasses are used for the typing of bloods. The hemolysins found in normal human serums for the corpuscles of persons and the lower animals also deteriorate on desiccation under ordinary conditions and are somewhat more susceptible than the hemagglutinins. For the grouping of blood, serums should be kept in a fluid state sealed in ampoules at a low temperature, both hemagglutinins and hemolysins in normal human serums being highly susceptible to heat.

Nature of Thermolabile Hemolysins.—The experiments reported on by Kolmer indicate that the natural hemolysins in human serums are distinct substances and not differentiated complements. Natural hemolysins are susceptible to heat being inactivated (masked) or destroyed when serums are heated at 56 C. and totally destroyed by heating at 62 C. The natural hemolysins in human serums vary in resistance to heat, antisheep hemolysin being most resistant (thermostable) and antiguinea-pig hemolysin being most susceptible (thermolabile).

Medical Record, New York

April 3, 1920, **97**, No. 14

*Infection of Intestinal Origin Complicating Pregnancy, Labor, and Puerperal State. E. P. Davis, Philadelphia.—p. 551.
*Mental Deficiency and Criminality. M. G. Schlapp, New York. —p. 554.
Ductless Glands and Constitutional Diagnosis. J. Gutman, Brooklyn.—p. 558.
Mental Hygiene During Childhood. I. S. Wile, New York.—p. 561.
Electronic Reactions of Abrams: Obert Phenomena. A. Abrams, San Francisco.—p. 565.
Psychoanalysis of Heart. A. R. De Janis, Boston.—p. 568.

Bearing of Intestinal Infection on Pregnancy.—The intestine in the human being swarms with bacteria, notably the colon bacillus. The mechanical conditions prevailing in the abdomen as pregnancy advances are such that interference with the peristalsis of the bowel and the accumulation of fecal matter during pregnancy are inevitable. In addition to this, congestion of the abdominal viscera must be present to some degree during pregnancy in the majority of patients, and a combination of these two conditions, Davis says, furnishes a state of affairs exceedingly favorable for the development of infection of intestinal origin. This may manifest itself most frequently in appendicitis, cholecystitis, infection of the lymphatics of the intestine and peritoneum, or infection of the blood stream. While some patients pass through pregnancy without the use of purgatives and laxatives this is not true of the majority. What is described is to render the fecal mass in the bowels soft and unirritating and to promote peristalsis and to keep the bowel in a tonic condition. In the use of drugs care must be taken that the ganglia in the uterine muscle are not stimulated to contraction by drugs which stimulate peristalsis of the bowel, for excessive uterine peristalsis will cause abortion. That there is danger in the prolonged retention of hard feces in the intestine of the pregnant woman has been demonstrated. What is especially needed to promote intestinal peristalsis in pregnancy is exercise by walking. Where this cannot be procured, calisthenic exercises during pregnancy are of considerable value, and should these be impossible massage by skilful hands may often be employed to great advantage. Exercise, cold bathing followed by gentile rubbing, the plentiful use of fruit, water and cereal foods, and regular and systematic attention to the matter will enable many patients to pass through pregnancy without the use of purgatives. If laxatives are necessary, refined petroleum with compound licorice powder, is often successful. In the presence of toxemia, drugs which act vigorously on the eliminative organs must be used, but without this indication purgation during pregnancy should be avoided.

Observation Hospital for Mental Defectives.—Schlapp urges the erection of a detention hospital where all persons suspected of defectiveness can be examined properly and their condition ascertained. There should be the closest of contact between this hospital and the courts and other public institutions. The proper execution of tests requires periods of fasting, quiet, and observation, which cannot be observed unless the patient is detained. Besides reception and consultation rooms, wards, recreation, and living quarters, such an institution as would meet the requirements must have laboratories fully equipped both for complete tests and research. Every provosion should be made for prompt and thorough examination by a staff of specially trained observers and nurses and there should be either a sufficient endowment fund or an assured appropriation in order to prevent embarrassment, or limitation in the scope of work.

Missouri State Medical Ass'n Journal, St. Louis

April, 1920, **17**, No. 4

Pneumoperitoneum. John L. Tierney, St. Louis.—p. 137.
*Clinical Value of Complement Fixation Test for Tuberculosis. E. P. Buddy, St. Louis.—p. 145.
*Interpretation of Complement Fixation Reaction in Tuberculosis. George Ives, St. Louis.—p. 147.
Medical Problems Suggested by War. Roland Hilt, St. Louis.—p. 150.
Goiter. James B. Williams, Joplin.—p. 155.
Infection. A. C. Ames, Mountain Grove.—p. 157.

Value of Complement Fixation Test for Tuberculosis.—Buddy analyzed this test in thirty-six cases of suspected

tuberculosis. Twenty patients, or 55.5 per cent., gave a positive reaction. There were eight positive Wassermanns and six clinically diagnosed as having syphilis and tuberculosis. Of sixty-nine cases with diagnosis other than tuberculosis, twelve, or 17.3 per cent., gave positive complement fixation tests. Of the sixty-nine cases, one in every 5.7 cases gave a positive complement fixation reaction and one in every 8.6 cases gave a positive Wassermann. Buddy points out that the complement fixation test for tuberculosis is of some value in the cases of positive tuberculosis. A negative reaction in this class usually indicates far advancement with every grave prognosis. It has a clinical value as additional evidence in clinically active tuberculosis. In suspected cases it has a slight value only in being an additional factor for or against tuberculosis. A diagnosis of clinical tuberculosis cannot be made from a positive reaction, neither can tuberculosis be excluded from negative reaction. It is not of so much value in tuberculosis as the Wassermann reaction is in syphilis. It is an aid only when considered in conjunction with complete history and thorough physical examination.

Id.—Ives maintains that this test can never determine positively whether or not a patient is ill with tuberculosis. On the other hand, the results of the test are in fairly close harmony with the true condition of the patients who have been tested, and hence the test should influence judgment in arriving at a diagnosis. This test should not displace clinical observations, but if properly used it will stimulate the clinician to make more accurate and thorough observations.

Modern Medicine, Chicago

March, 1920, **2**, No. 3

Untilled Fields of Public Health. C. E. A. Winslow, New Haven.—p. 183.
Influence of War Concepts of Mental Diseases and Neuroses. S. I. Schwab, St. Louis.—p. 192.
Hemiplegia, Spontaneous and Traumatic. W. D. Wise, Baltimore.—p. 200.
Industrial Medicine. N. Barnesby. New York.—p. 226.
War Contributions to Industrial Surgery. S. R. Maxeiner, Minneapolis.—p. 231.
Welfare Work in a Japanese Electric Plant. G. M. Price, New York.—p. 235.
Survey of Public Health Topics. J. Schevitz, Oklahoma City.—p. 242.
Detection of Typhoid. F. M. Meader, Albany.—p. 244.
Reduction of Infant Mortality. D. M. Lewis, Charleston, W. Va.—p. 247.
Trade Union Disability Insurance. B. Emmet, Baltimore.—p. 250.
Why a Public Health Nurse? G. M. Rines, Armour, S. D.—p. 262.

Philippine Journal of Science, Manila

October, 1919, **15**, No. 4

Formosan Termites and Methods of Preventing Their Damage. M. Oshima.—p. 319.
New Scale Insect on Rhizophora. T. D. A. Cockerell.—p. 385.
Balantidium Haughwouti, N. Sp. Parasitic in Intestinal Tract of Ampullaria Species. W. De Leon.—p. 389.

Public Health Journal, Toronto

March, 1920, **11**, No. 3

Ventilation. J. J. R. MacLeod.—p. 101.
Recreation as Public Health Measure. A. B. Dawson.—p. 119.
Mentally Deficient in Ontario. J. Hodgins.—p. 126.
Why Community Organization? A Statement of a Need and Some Suggestions for Meeting It. J. Collier.—p. 135.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Surgery, London

January, 1920, **7**, No. 27

Specimens of Long Bones in British Army Medical Museum Showing Processes of Infection and Repair. A. Keith and M. E. Hall.—p. 302.
*Loss of Abdominal Reflexes in Affections of Abdomen. G. Williams.—p. 320.
*"Monobloc" Operative Treatment of Tuberculous Lymphangitis; Report of Case. W. S. Handley.—p. 324.
*End Results in Partial Amputations of Foot. S. T. Irwin.—p. 327.
Hemangioma Group of Endothelioblastomata. J. Fraser.—p. 335.
Morbid Consequences of Mobile Ascending Colon; Record of 180 Operations. G. E. Waugh.—p. 343.
*Results of Bridging Gaps in Injured Nerve Trunks by Autogenous Fascial Tubulization and Autogenous Nerve Grafts. H. Platt.—p. 384.
Excision of Subclavian Aneurysm. L. R. Braithwaite.—p. 390.
*Local Discoloration of Abdominal Wall as Sign of Acute Pancreatitis. G. G. Turner.—p. 394.
Gastric Ulcer: Plea for Gastrectomy: Roentgen-Ray Diagnosis. H. B. Scargill.—p. 396.
*Fracture of Atlas Vertebra. G. Jefferson.—p. 407.
Idiopathic Dilation of Sigmoid Flexure and Pelvic Colon: Recurring Intestinal Obstruction. G. H. Makins.—p. 423.
Case of Osteitis Deformans (Osteoporosis, Osteomyelitis Fibrosa), With Pronounced Affection of Forearm. H. French.—p. 425.

Loss of Abdominal Reflex in Abdominal Conditions.—Analysis of a considerable number of cases has convinced Williams that the loss of the abdominal reflexes in abdominal conditions may be regarded as a phenomenon of fatigue of the reflex, this fatigue being caused by a previous stimulation of the reflex by a painful affection in the abdominal area; and it is suggested that the fatigue of the reflex may be cerebral rather than spinal. The local loss of the reflex, e. g., the right lower reflex in appendicitis, or the general loss of all four reflexes of a patient whose abdominal wall is in good condition, is of considerable clinical value; but its value is not absolute, and it must be determined together with the other features which go to make up the picture of the case.

Monobloc's Operative Treatment of Tuberculous Lymphangitis.—Although the treatment of tuberculous lymphangitis by the excision of the primary focus, the affected vessels and the glands of which they are afferents, is recognized as, perhaps, the only effective treatment for tuberculous lymphangitis of the limbs, Handley doubts whether the importance of excising all the affected tissues in one piece has been properly emphasized. Obviously, if the removal is carried out in sections, the chances of a reinfection of the wound are greatly increased. He cites a case of tuberculous lymphangitis following injury to a tuberculous wart of long standing in which the result was not perfect, and the policy of attacking the recurrences, which sometimes gives such satisfactory results in carcinoma, was followed with a considerable degree of success. From the microscopic examination of many specimens, Handley is convinced that lupus vulgaris is essentially and primarily itself a lymphangitis of the cutaneous and subcutaneous lymphatics, and that it differs from "tuberculous lymphangitis" only in its slow and limited spread through the lymphatics. The principal reasons for this belief are: The plane primarily affected, namely, the superficial layer of the dermis, is the plane of origin of the lymphatic vessels of the skin. Changes in the lymphatic vessels of origin can be seen beyond the clinical edge of the area of lupus. Moreover, isolated giant cell systems can often be found in the subcutaneous tissue, showing that this layer also is affected as well as the skin, and these isolated giant cell systems are usually found close to the blood vessels, in the situation of the comitant lymphatics.

End Results in Partial Amputations of Foot.—The conclusion reached by Irwin as the result of an investigation of partial amputations of the foot is, that, unless more of the limb can be saved than that found in Lisfranc's amputation, the function of the limb, as estimated by the man's capacity for work, his ability to keep time, and his value as a unit in the general industrial machine, will be improved by the complete amputation of the foot through the ankle joint after the manner of James Syme.

Bridging Gaps in Injured Nerve Trunks by Autogenous Fascial Tubulization and Autogenous Nerve Grafts.—In the eighteen operations analyzed by Platt in which fascial tubulization combined with autogenous nerve grafts, fascial tubulization alone, and autogenous vein tubulization (one case), were used, there was a complete absence of any sign of recovery. The shortest period over which observations were made was four months, the longest period twenty-six months. Secondary exploration in four cases showed complete silence of the nerve trunk to direct faradic stimulation. End-to-end suture was accomplished in all after exsection of the bridged segment. At the re-exploration operations, partial or complete obliteration of the lumen of the fascial tube was noted. In two specimens examined his-

tologically, one, a tubulization alone, showed obliteration of the lumen of the tube by fibrous tissue in which no nerve fibers could be found. In the second, a graft and tubulization combined, nerve fibers were present in the center of the obliterated tubule eighteen months after the operation. There was no sign of continuity between the proximal and distal ends through this strand of nerve fibers. Platt is of the opinion that the early re-exploraion of all graft and fascial bridge operations is advisable.

Local Discoloration of Abdominal Wall as a Sign of Acute Pancreatitis.—The case of a woman, aged 54 years, suffering from an acute abdominal illness of three days' duration, is cited by Turner. On the abdominal wall, surrounding the umbilicus, was an area of discoloration about 6 inches in diameter, of a bluish color, very like the postmortem staining seen on the abdominal wall or the appearance of the skin in a late case of extravasation of urine. The area was slightly raised, and pitted on pressure. The patient suffered from acute pancreatitis, with much effusion into the peritoneal cavity. She lived nine days after operation, and the postmortem examination disclosed a sloughing pancreas with much fat necrosis. In another similar case there were two large discolored areas in the loins. They were about the size of the palm of the hand, slightly raised above the surface, and of a dirty greenish color. There was a little edema with pitting on pressure, but there was no pain or tenderness. The urine was full of sugar. A diagnosis of acute pancreatitis was made; and this was confirmed by an immediate operation. Turner says he has never seen mention made of this sign.

Fracture of Atlas Vertebra.—Four cases of fracture of the atlas vertebra are described by Jefferson, and forty-two cases previously recorded in the literature are analyzed. The common cause of the accident is a fall on the head, and the probable mechanism of fracture is tension of the atlas ring due to lateral spreading of the lateral masses, owing to the divergence of the lines of force passing through the bone. Two other possible mechanisms are outlined, the head being in extreme extension, but neither fits in with the nature of the accidents usually recorded. Atlas fracture is by no means necessarily fatal; 45.7 per cent. of the patients have recovered. When complicated by a fracture of another vertebra, the mortality is higher. The commonest of such complications is a fracture of the odontoid process, next in frequency being rotary dislocation of the atlas on the axis. It is pointed out that inability to rotate the head may occur in some forms of atlas fracture. It is not pathognomonic of a broken odontoid. The accident is probably by no means uncommon, but as very clear and sharp roentgenograms are necessary in order that the fracture may be detected, the atlas injury is often overlooked. Cord injury is often absent (50 per cent.). Useful aids in diagnosis may be obtained from signs of injury to the great occipital nerve. Treatment will generally be conservative, directed to immobilizing the head by a "Minerva" plaster or a Lorenz bed.

Glasgow Medical Journal

March, 1920, **11**, No. 3

Practical Significance of Attention to Detail in Abdominal Operations. A. E. Maylard.—p. 97.
Dr. Dover of Powder Fame. W. Downie.—p. 112.
Ocular Sequels of Malaria. W. H. Manson.—p. 127.

Journal of Laryngology, Rhinology and Otology, London

March, 1920, **35**, No. 3

Adenomata (Glandular Tumors) of Larynx. I. Moore.—p. 65.
Anatomy of Membranous Labyrinth. J. K. Dickie.—p. 76.
Semicircular Canals: Simple Method of Demonstrating their Relative Position to Each Other and Their Planes of Incidence. J. D. Lithgow.—p. 81.
Digital Retraction of Epiglottis During Indirect Laryngoscopy. A. Ryland.—p. 82.

Journal of State Medicine, London

March, 1920, **28**, No. 3

Sanatorium Treatment of Pulmonary Tuberculosis. J. Watt.—p. 65.
Venereal Disease: A Plea for Statesmanship. A. Corbett-Smith.—p. 86.
Public and Individual Housing Ideals. S. A. Barnett.—p. 91.

Journal of Tropical Medicine and Hygiene, London

March 1, 1920, **23**, No. 5

Sadd Dermatitis. A. J. Chalmers and A. F. Joseph.—p. 57.
*Treatment of Three Cases of Malignant Tertian Malaria. P. J. Veale.—p. 59.

Malignant Tertian Malaria.—Veale treated three cases of malignant malaria by injecting intravenously a solution of disodium hydrogen phosphate and sodium chlorid in a strength of 3 per cent. each, the dose varying from 60 to 100 c.c., with excellent results. These patients had been given prophylactic quinin in varying doses before admission. All showed the gametes of *P. falciparum* in the blood, and the primary object was to clear these very resistant bodies from the blood. No quinin was administered during the time of observation.

Practitioner, London

March, 1920, **104**, No. 3

Postdysenteric Colitis: Seat of Lesion and its Treatment. J. Cantile.—p. 161.
Tests for Tuberculosis of Lungs and for Consumption. H. B. Shaw.—p. 167.
Medicolegal Notes. J. Collie.—p. 181.
Dislocation of Shoulder Joint and its Treatment. A. H. Todd.—p. 186.
Modern Conceptions of Heart Disease. W. Edgecombe.—p. 197.
Recent Work on Tropical Diseases. R. T. Hewlett.—p. 210.
Cause and Treatment of Abdominal Hernia. W. B. Cosens.—p. 220.
Ciliæ of Respiration. C. O. Jones.—p. 228.
Plea for Compulsory Restraint on Use of "Domestic Measures" in Administration of Medicine. H. O. Gunewardene.—p. 235.

Sei-I-Kwai Medical Journal, Tokyo

Oct.-Dec., 1919, **38**, Nos. 10-12

*Comparative Study of Bruck and Wassermann Reactions. M. Terada.—p. 44.
Action of Adrenin and Various Extracts of Glandular Organs on Veins. Tugane.—p. 51.

Comparison of Bruck and Wassermann Reactions.—Terada made a comparative study of both reactions by using the serum of 150 syphilitic and nonsyphilitic patients whose cases were clinically diagnosed. In the primary stage of syphilis, Wassermann's reaction was positive in seventy-five cases, Bruck's reaction was positive in fifty cases; in the secondary stage (of syphilis), the former was positive in eighty-eight cases and the latter in eighty-five cases. In the tertiary stage, Bruck's reaction was positive in eighty-six cases and the Wassermann in eighty cases. In cases in which the presence of syphilis was very doubtful, the Wassermann reaction was positive in thirty-nine cases and Bruck's reaction was positive in forty cases. Finally, in nonsyphilitic cases, the Wassermann was positive in twelve cases and Bruck's reaction was positive in twenty-five cases. Bruck's reaction always showed a smaller positive percentage than Wassermann's in each stage of syphilis, while Bruck's reaction always indicated a higher positive percentage than Wassermann's in nonsyphilitic cases. Terada recommends Bruck's reaction as an aid in the diagnosis of syphilis when a complicated method, such as Wasserman's reaction, cannot be used. Naturally, however, the decision of a serious question such as the diagnosis of syphilis should never depend on Bruck's reaction alone.

Archives des Mal. du Cœur, etc., Paris

November, 1919, **12**, No. 11

*Anemia in Young Children. E. Lenoble.—p. 481.
*Rachitis with Embryonal Bone Marrow. Idem.—p. 488.
*Functional Aortic Insufficiency. J. Bret.—p. 494.
Interpretation of Oscillometer Findings. E. May.—p. 502.

Anemia in Young Children.—Lenoble reports a case of pseudoleukemic anemia, or actual myeloid leukemia with anemia, in a child of 3, the blood picture the reverse of the usual formula in children. He comments that the rôle of hematology and pathologic anatomy has been well studied in anemia but the rôle of parasitology and serology has scarcely begun to be investigated. Another boy of 3 presented hemolytic jaundice of the pernicious anemia type, with intestinal hemorrhages for over a year. The tint was more waxy than jaundice, and the upset in the blood picture suggested

that a parasite or toxin was responsible. There was nothing to suggest syphilis in either case.

Rachitis with Embryonal Bone Marrow.—The infant of 17 months had rachitis and inherited syphilis, but Lenoble exonerates the spirochete from the responsibility for the rachitis, the blood being approximately normal. But the bone marrow of the femur showed what he calls *réviviscence embryonnaire,* of the type described by Dominici as latent myeloid reactions. This finding is particularly important in connection with the theory that rachitis is primarily a disease of the bone marrow—a reaction of the bone marrow to chronic infections and intoxications.

Functional Aortic Insufficiency.—Bret's experience with seven cases seems to warn that the Corrigan syndrome without true diastolic hypotension is probably of functional nature. Functional aortic insufficiency may be found in the course of chronic nephritis, associated or not with adherent pericardium. It is a disturbance in the heart action rather frequently observed with high blood pressure. Mechanical factors elsewhere in the aorta may contribute to its production, as he explains.

Journal de Médecine de Bordeaux

Feb. 10, 1920, **91**, No. 3

*Cicatricial Stenosis of the Larynx in Children. E. J. Moure.—p. 59.
*Sarcoma of Kidney. Oraison and Faure.—p. 60.
*Variations in Acidity of Gastric Juice in Vitro. H. Barthe and Malgoyre.—p. 63.
*Colloidal Therapeutics. J. Vergeley.—p. 64.

Cicatricial Stenosis of the Larynx in Children.—Moure refers to conditions left after long wearing of a tracheotomy tube. When the opening for it had been made not in the trachea but through the tissues above, the stenosis can be corrected more easily than where the opening is in the trachea itself. It is better not to attempt the operation on children under 7 or 8 as the passages are so small, and the laryngostomy followed by cleaning out the cavity and consecutive dilation may entail pulmonary complications. If the stenosis is the result merely of a bad position of the tube, correcting its position may cure the stenosis, which is inflammatory rather than cicatricial. Patience is necessary here, watching over the throat to prevent exuberant granulations around the tube, excising them from time to time and cauterizing with the actual cautery or with 1 per cent. zinc chlorid. In time the passage will become permeable, but the tube should never be discarded without ascertaining with the mirror that the vocal organ is freely permeable. The children have to be trained to breathe through the natural passages, by plugging the tube during the day and, later, at night. There is no need to use special tubes for the purpose. Even if the stenosis is from cicatricial tissue inside the larynx, it can only benefit from the above measures, being in better condition for the correcting operation when the child has reached the proper age. In a case described in a boy of 3, the tube had been introduced just below the thyroid, and the opening had filled up with granulations which had to be excised or cauterized every two weeks for over two years. Then the opening gradually healed, and three years after the tracheotomy had been done, the training of the child to breathe through the natural passages was begun. In four months the tube could be discarded, and several months later the tracheal fistula was closed. The boy is now 10 and the larynx and trachea have developed apparently normally.

Sarcoma of the Kidney.—The young man suddenly developed symptoms suggesting right pyelonephritis. Intense anemia and progressive weakness imposed nephrectomy although there was no hematuria and the functioning of the kidney did not seem to be much impaired notwithstanding the sarcomatous degeneration. The patient was too weak to rally. The whole course was less than four months.

Variations in Acidity of Gastric Juice in Vitro.—Barthe and Malgoyre present evidence that the gastric juice increases or loses in acidity on standing. Their findings showed a loss of from 10 to 33 per cent. in three cases the forty-eighth hour, and a gain of from 6 to 20 per cent. in the others. In one case there was a loss of 25 per cent., but this was made up and surpassed later, the third day showing an increase of 20 per cent. over the findings when the gastric juice was first drawn.

Colloidal Therapeutics.—Vergely here gives a survey of the field of colloids in therapeutics and the experiences to date with these inorganic ferments, metallic ferments or electric colloid metals as they are variously called. Their catalytic action is explained by their enormous surface. A liter of a 0.5 per thousand solution of colloidal gold, for example, presents a surface of 150,000 square centimeters, while the same weight of gold in a compact form presents a surface of only 50 square millimeters. In therapeutics, they whip up the organism but if it is unable to respond, they can do no good. If the patient is unable to produce more leukocytes, if the opsonic index is too low, there is no chance of success. In selecting the colloid to use, he advises the metal that has been found most active against the bacteria, etc., involved. He adds that injection of a colloid may favor the production of a fixation abscess when this is attempted at the same time. There is a place for colloidal therapeutics, he concludes, besides vaccine therapy and serotherapy, but its principal indication is in chronic disease or infection in which a specific chemotherapy is required.

Lyon Médical

Feb. 10, 1920, **129**, No. 3

*Roentgen Study of Atony of the Digestive Tract of Nervous Origin. F. Barjon.—p. 109.
*Auto-Experimental Study of Pruritus. P. Jourdanet.—p. 116.

Atony of Digestive Organs.—Barjon emphasizes the importance of atony of the esophagus and stomach in the clinical picture of neurasthenia and other nervous disturbances. The discovery of atony of any segment of the digestive tract sustains the assumption of a nervous origin for the various disturbances noted anywhere in the body. If the symptoms from the atony are accepted as of organic origin and an operation is done, the symptoms continue afterward the same as before. He describes three extreme cases, and warns to seek for atony of the digestive tract before operating in all dubious cases.

Auto-Experimental Study of Pruritus.—Jourdanet remarks that as pruritus is a sign that the nerve terminals are suffering, it belongs to the sphere of the neuropathologist. He has been making a detailed study of it in his own person as he could bring it on at will by taking antipyrin. He is subject to itching eruptions when he takes this drug but never has pruritus at other times. His experience confirms that the pruritus is most severe at points subjected to strain or pressure. Scratching fastens, increases, and generalizes the pruritus, as also sudden exposure to air. He received a telegram announcing a death in the family, and an explosion of generalized pruritus followed immediately on this emotional shock, and persisted for an hour.

Paris Médical

Feb. 7, 1920, **10**, No. 6

*Radiotherapy of Uterine Fibromyomas. A. Béclère.—p. 101; of "Primary" Neuralgia. A. Zimmern.—p. 105; of Local Tuberculous Processes. P. Cottenot.—p. 107.
*Radium Treatment of Uterine Cancer. Th. Nogier.—p. 111.
*Radium Puncture in Treatment of Cancer. C. Regaud.—p. 118.
*Radium Treatment of Cancer of Esophagus. Dufourmentel.—p. 124.

Radiotherapy of Uterine Fibromyomas.—Béclère credits Foveau de Courmelles with the first application of the roentgen rays in treatment of uterine fibromyomas. His first communication on the subject appeared January, 1904. Béclère's own experiences with over 400 cases compel the assumption that radiotherapy is applicable to every uterine fibroma except where conditions demand surgical intervention at once. He gives weekly exposures, and records the size of the fibroma at each sitting; this testimony demonstrates the primary and direct action of the rays on the fibromas. In three cases the roentgen rays induced the retrogression of uterine fibromas which had developed several years after the natural menopause.

Radiotherapy of Neuralgia.—Zimmern relates that the success of roentgen treatment of neuralgia by raying the roots of the nerves involved has been remarkably constant in all forms of neuralgia except the facial. Sciatica and neuralgia of the brachial plexus have responded especially promptly and completely. Relatively small doses are required; not more than one or two applications of 3 H units notably attenuate the pains or cure them completely. The area exposed for brachial neuralgia should be from the fourth cervical to the first thoracic vertebra. He has made a special study of radiotherapy of neuralgia since 1913, and increasing experience, he says, has confirmed its value.

Radiotherapy of Local Tuberculous Processes.—Cottenot is the radiologist at the Saint Louis Hospital and his experience confirms the beneficial action of roentgen-ray treatment in many cases of tuberculous gland, joint and bone disease. With osteitis and arthritis he prefers to combine it with immobilization, making as many windows in the cast as possible, so that cross-fire raying can be done. In certain other forms of local tuberculosis, curetting followed by raying seems to insure a permanent cure.

Radium Treatment of Uterine Cancers.—Nogier gives illustrations of the different devices he uses in applying radium treatment to the vagina, uterus or rectum to insure a certain space and filtration between the radium and the tissues, and still have the radium in the heart of the tumor, so as to take advantage of all the rays.

Radium Puncture in Treatment of Cancer.—Regaud refers to needles loaded with radium emanations and plunged into the neoplasm. The circles of influence from the radium emanations thus overlap and the entire area of the cancer is subjected to the treatment. In a cancer of the breast, for example, twenty-five needles can thus be plunged into the breast and others run horizontally through enlarged glands in the axilla. One of the illustrations shows four radium puncture needles thus implanted in a neoplasm in the tonsil, with safety threads attached to the needles. He warns that this radium puncture is so potent that it is harmless only by keeping the needles scrupulously from encroaching on sound tissue. The fifty cases he has thus treated in the last eight months are too recent for a final judgment as to the outcome; all were inoperable cases.

Radium Treatment of Cancer of the Esophagus.—Dufourmentel reports a few cases in which the patients have been relieved from pain, and swallowing has been improved, and there has been a gain in weight during the five months or more since radium treatment of the cancer of the esophagus is being systematically applied. Others have survived for from thirteen months to three years, and during this remission they were relieved of pains and dysphagia.

Progrès Médical, Paris

Feb. 7, 1920, **35**, No. 6

Case of Spleen—Ganglia Form of Myeloid Leukemia with Subacute Course. J. Chalier and R. Crémieu.—p. 57.
The Crisis in Infectious Diseases. M. Loeper.—p. 58.
Protein Therapy. H. Paillard.—p. 61.

Schweizerische medizinische Wochenschrift, Basel

Feb. 19, 1920, **50**, No. 8

*Diabetes in Wartime. D. Gerhardt.—p. 141.
*Adaptation of the Parasite to Its Host. B. Galli-Valerio.—p. 143.
Getting Patients Up Early After Childbirth and Operations. Häberlin. —p. 148.
*Tuberculosis and Abortive Treatment of Syphilis. Tièche.—p. 149.

Diabetes in Wartime.—Gerhardt observed eleven cases of diabetes in soldiers which began with high glycosuria and great loss of weight, but under dietetic measures it subsided to a final complete cure after return home. Emotional stress and nervous influences may have cooperated, but the diabetes was influenced by dieting as readily as any diabetes. In 11 cases of war diabetes in the Würzburg hospital, 2 died in coma within three months of the onset of symptoms; a third died in coma after a carbuncle although he had been in good condition notwithstanding high glycosuria for two years. The others improved under treatment and were discharged. Among the 16 civilian cases, 3 died in coma and 3 showed no benefit from treatment, but all the others were materially improved. The dietetic restrictions of the war seemed to have rather a favorable influence on diabetes, and the lessons learned therefrom will benefit diabetics in future. Various explanations for this have been given, but Gerhardt ascribes it to the low calory content of the food, and especially the small proportion of albumin, and the large proportions of carbohydrate-containing vegetables. It is seen to be not necessary to exclude meat and cheese absolutely. The diabetics did even better on this diet than if they had conscientiously followed a strict antidiabetic diet without careful medical supervision. Too little carbohydrates may do harm as well as too much.

Adaptation of Parasites to the Host.—Galli-Valerio cites a number of observations in which it has been possible to trace the adaptation of a protozoon from the exterior to a casual host until it became an actual parasite; or, after being a parasite of one species, it adapted itself to another. The sequence is usually through the invertebrates to the vertebrates. His long review of the subject emphasizes anew the importance of comparative pathology and parasitology for human pathology and epidemiology. It shows how a new parasitic disease is liable to develop among us at any moment. Such was the case with the trench foot of the war. It shows further the danger for man from the widespread prevalence of flagellata among the invertebrates.

Tuberculosis and Abortive Treatment of Syphilis.—Tièche warns that abortive treatment of syphilis may be fraught with considerable danger when the patient is already tuberculous. The tuberculosis may be whipped up by the specific treatment of the syphilis, in some cases, while in others no effect is apparent. The combination of arsphenamin and mercury may upset the balance of antibody production. Special caution is necessary with an inherited taint. He advises extreme caution, bearing in mind that the syphilis is more amenable to treatment later than the tuberculosis, if the latter is roused to a progressive course, and also that the syphilis in itself does not have such an injurious influence on the tuberculosis as the means taken to abort it.

Policlinico, Rome

Feb. 2, 1920, **27**, No. 5

Inaugural Lecture of Dermatology Course. A. Ducrey.—p. 127. Conc'n in No. 6, p. 160.
*Ficai Corpuscles in Typhus. G. Ficai.—p. 133.
*Edema of the Larynx in the Pregnant. S. Pusateri.—p. 135.
Prophylaxis of Endemic Goiter. G. Cavina.—p. 137.

Special Corpuscles in Typhus.—Ficai reports finding in infected lice and in the brain of persons who had died at the height of typhus, numerous corpuscles of a diameter of 2 or 3 microns in the capillaries, but larger ones, round or oval, were found both in and outside of the large nerve cells of the cortex and of the nuclei of the base. Nothing resembling these corpuscles could be found in diseases other than typhus in his research.

Edema of the Larynx in the Pregnant.—Pusateri reports the case of a healthy woman of 30, with two healthy children, nearly at term with her third pregnancy. She had been exposed to scarlet fever, and suddenly developed acute edema of the larynx. Repeated attempts at intubation failed, while tracheotomy and means to hasten delivery were opposed by the family until the second day, by which time the fetus had died, and tracheotomy had to be done as a last resort. The woman died in coma in a few hours. The case teaches the necessity for prompt intervention with acute edema of the larynx in the pregnant; even intubation is liable to prove ineffectual. The danger to the fetus from the lack of oxygen, etc., justifies prompt artificial delivery. This not only saves the fetus but may have a favorable influence on the mother by the loss of blood and the rapid oxygenation of her blood. The pressure on the diaphragm from the pushing up of the viscera by the enlarged uterus hampers the functioning of the respiratory organs, and aggravates conditions from the acute edema.

Feb. 9, 1920, **27**, No. 6

The Controlateral Achilles Tendon Reflex. A. Giannelli.—p. 159.
*Spina Bifida in Adults. F. Fermi.—p. 166.

Spina Bifida in Adults.—Fermi recently encountered three cases of spina bifida in young persons of about 17. In one the deformity had spontaneously corrected itself almost completely. Notwithstanding the favorable history in these cases, he still proclaims the advantage of early operative intervention to ward off serious mishaps.

January, 1920, **27**, Medical Section, No. 1

*The Future of Medicine. A. Murri.—p. 1.
*Reproduction of the Malaria Parasite. T. Pontano.—p. 36.

The Future of Medicine.—Murri takes thirty-five pages to reply to Mackenzie's recent book with this title, which was reviewed in THE JOURNAL, Feb. 7, 1920, p. 415. He regards as extremely important Mackenzie's insistence that the future of medicine rests with the general practitioner; but he declares that Mackenzie goes too far in his effort to "simplify." To simplify too much is to retrogress. Murri also quotes from his own writings of thirty-three years ago describing what he called paralysis of the auricle, which has been recently rediscovered and entitled auricular fibrillation. Murri thinks that the practitioner will get a much better idea of the condition when it is called paralysis of the auricle than from the term fibrillation. He protests further against Mackenzie's assertion that there is always pain with incipient disease, citing a number of conditions, such as when albuminuria is casually discovered, in which there are absolutely no subjective symptoms.

Reproduction of Macrogametes of Plasmodium Vivax in the Blood Stream.—Pontano presents evidence of this occurrence in a case described, with a colored plate showing the gametes of *Plasmodium vivax* in different phases of reproduction, and says that even one positive observation outweighs a thousand negative findings. The attack of malaria was the first relapse after a latent interval of nearly five years.

Riforma Medica, Naples

Jan. 3, 1920, **36**, No. 1

Cultivation of the Gonococcus in Gelatin with Beer Yeast. L. Morini.—p. 2:
*Collateral Physical Signs of Central Pneumonia. C. Sofrè.—p. 3.
Artificial Pneumothorax in Treatment of Wounds of the Chest and Lung. E. Santoro.—p. 5.
Treatment of Latent Malaria. A. Jona.—p. 12.
*Protein Reaction and Fever. G. Galeotti.—p. 13.

Central Pneumonia.—Sofrè relates that he has sometimes had patients with high fever for several days, the face red, occasionally slight coughing, but none of the usual signs of pneumonia or of any other pulmonary disease could be detected. The course of the case, the increase in the cough, the progressively abundant expectoration, and the drop in the fever by crisis all testified to the correctness of the diagnosis of pneumonia and its central location. The extra resonance and the weakness of the vesicular murmur are restricted to one zone of the lung, usually corresponding to a single lobe, but there is nothing otherwise in the history to suggest emphysema.

Fever and Protein Intoxication.—Galeotti recalls that any heterogenous protein introduced parenterally in man or animals induces fever. On the other hand, in experiments on animals and in spontaneous fever in man, the fever every time could be traced to the presence in the organism of heterogenous or denatured or disintegrated, dead protein. Even exogenous poisons, he continues, never induce fever unless they modify the protein metabolism. Fevers can thus all be explained by this conception of protein intoxication. The heterogenous protein molecules can not be adsorbed, and they are thus unutilized, and they hamper the functioning of the cellular protoplasm. They may even exert a destructive action as they cling to the cells. This toxic action persists until by advanced hydrolysis the protein substances lose their colloid structure and become simple molecules (polypeptids and amino acids).

Jan. 24, 1920, **36**, No. 4

*Benzol in Treatment of Leukemia. F. Ravenua.—p. 86.
*Signs of Hyperthyroidism in Early Diagnosis of Pulmonary Tuberculosis. A. Gallotti.—p. 88.
*Pressure in the Brain as Element in Cerebral Hemorrhage. G. Paoletti.—p. 92.
*Electropuncture of the Spine in Tabes. F. Piccinino.—p. 94.
Lethargic Encephalitis. A. Montefusco.—p. 96.
Functions of the Optic Thalamus. A. Jappelli.—p. 97.

Benzol in Leukemia.—Ravenna reports three cases of chronic myeloid leukemia in which benzol treatment was systematically applied. They show that extreme caution is necessary with it, and that the effect is purely symptomatic. The symptoms inevitably return, sooner or later, and in a graver form, against which we are disarmed. In the favorable cases, under benzol the drop in the number of leukocytes is proportionately greater, in the immature forms; more uric acid is eliminated and the leukopenia continues to progress after suspension of the drug. In one of his cases the leukocytes numbered 234,000 in the obese woman of 57. Under 80 drops of benzol daily, the number dropped to 8,800. After a few months of substitution of Fowler's solution for the benzol, the leukocytes ran up to 43,000 but were again brought down to 11,000 under benzol. Nine months later they again ran up but subsided again under two months of 80 drops of benzol daily. A year later the number was 11,000. After another year or two the leukocyte count was found to be 265,000, and the number then was not modified by benzol, but was brought down to 22,000 with two months of roentgen exposures, 3 H units at a sitting, and the general health improved. Necropsy in the two other cases failed to show any injury from the benzol, or special accumulation of leukocytes in any organ. One patient was a man of 35; roentgen treatment brought the leukocytes down from 400,000 to almost normal. After a few months the symptoms flared up again and vigorous benzol treatment induced only transient improvement, the man dying the fifteenth day of the acute exacerbation.

Signs of Hyperthyroidism in Early Diagnosis of Pulmonary Tuberculosis.—Gallotti describes six cases in which toxic action from the insidious tuberculosis induced a more or less complete hyperthyroid picture. The goiter was treated with electricity, and tonics were given. The results indicated that treatment of the thyroid in such cases is liable to have a favorable influence on the pulmonary tuberculosis. He has encountered so many cases of this combination that he now suspects pulmonary tuberculosis in every case of exophthalmic goiter until this can be excluded. His experience indicates further that enlargement of the thyroid seems to imprint a benign character on the tuberculosis.

Prophylaxis of Cerebral Hemorrhage.—Paoletti queries why hemorrhage in the elderly occurs only in the cerebral vessels and not in the vessels of the abdomen or limbs. It seems as if there must be some special condition in the brain which favors rupture of vessels. The condition peculiar to the brain is that the vessels are subjected to a constant pressure from the cerebral fluid, although the intensity of this pressure may fluctuate. It is possible, he suggests, that when this pressure is less than usual, the vessel walls stretch as they are released from the usual pressure, and, as they stretch, they rupture. This assumption of hemorrhage *ex vacuo* not only explains all the facts observed, but suggests that when symptoms indicate impending cerebral hemorrhage or minute extravasation has already occurred, intraspinal injection of a little artificial serum might restore the normal intracerebral pressure, and thus ward off future injury from this source. He thinks that at least it is worth a trial in institutions for the aged, in treatment and in prevention of apoplexy.

Electropuncture of the Spine in Tabes, etc.—Piccinino has found vigorous revulsion applied to the spine effectual in treatment of tabes, often curing the ataxia or other disturbances. He prefers for the purpose a needle connected with the negative pole. This induces an electrolytic action deep in the tissues, but strictly localized. The positive electrode is placed on the spine above or below, with continuous current from pile or battery, connected with street lighting current, with galvanometer and rheostat. In cases rebellious to courses of mercury, this electropuncture at the points most diseased seems to attract the drug to these points, and clinical improvement results. The negative pole branches and

this can be connected with two needles; one is inserted to a depth of 1, 2 or more cm. and a current of 10 or 15 milliamperes is turned on. The electrolysis causes bubbles of gas around the needle; when this occurs, the second needle is introduced and the first withdrawn. This avoids sudden shocks, and in this way from fifty to 100 punctures can be made at a single ten or fifteen minute sitting, under a local anesthetic and epinephrin. This method of intrapolar catalysis, he says, is applicable to any form of meningomyelitis, especially those with spastic phenomena.

Brazil-Medico, Rio de Janeiro

Jan. 3, 1920, **34**, No. 1

Black Tongue in Influenza. M. Couto.—p. 1.
*Hyperplasia of Lymph Glands in Abdominal Pathology. C. Bourroul and Z. do Amaral.—p. 1.
Single Giant Middle Finger. A. Ferreira de Magalhães.—p. 3.
Amyl Nitrite in Treatment of Hemoptysis. Misservy.—p. 5.

Hyperplasia of Abdominal Lymph Glands.—Bourroul and do Amaral report the case of a boy of 9 who suddenly developed intense pains in the abdomen. An exploratory laparotomy the fifth day revealed merely enlargement of lymph glands, simple hyperplasia. The mesentery was studded with these enlarged glands, some as large as a pigeon's egg, compressing the bowel at different points. After the exploratory laparotomy, the pains gradually subsided and disappeared completely by the end of the second week. The boy had been given iodid, epinephrin, atropin and a single injection of arsphenamin. No attempt was made to remove any of the glands as sarcomatosis was assumed. Only microscopic examination of an excised scrap revealed the benign and curable nature of the lymphatism. The authors cite in connection with this case Symmers and Greenberg's study of lymphoid hyperplasia in the appendix, The Journal, Feb. 15, 1919, p. 468.

Jan. 10, 1920, **34**, No. 2

Commencement Address. A. Peixoto.—p. 17.

Jan. 17, 1920, **34**, No. 3

Case of Pellagra. F. I. da Silva.—p. 34.

Jan. 24, 1920, **34**, No. 4

Certain Drugs Used in Dermatology. F. Terra.—p. 49.
*Leprosy in Pernambuco. A. Rocha.—p. 52.

Leprosy in Pernambuco.—Rocha states that the asylum for lepers founded in his district in 1786, and still efficiently functioning, has aided materially in keeping the number of cases of leprosy at a low figure. There are now forty-seven men and thirty-six women inmates. Segregation is not compulsory.

Gaceta Médica de Caracas

Nov. 15, 1919, **26**, No. 21

Fever Should be Combatted. A. Machado.—p. 223.

Dec. 15, 1919, **26**, No. 23

*Typhoid in a Syphilitic. D. Lobo.—p. 247.
Fracture of Carpal Scaphoid Bone. Idem.—p. 249.
Experiences with Local Anesthesia in Venezuela. E. Alamo Gutiérrez.—p. 250.

Typhoid in a Syphilitic.—Lobo relates that the typhoid in the young man did not seem to be modified by the various measures applied. The fever kept running up at times, and ulcerations developed in the tonsil, neck, arms and elsewhere. The Wassermann reaction was negative, but under tentative treatment for syphilis the disease took a turn for the better at once.

Dec. 31, 1919, **26**, No. 24

*Treatment of and by Fever. F. A. Risquez and others.—p. 259.
Cyclic Vomiting. Villegas Ruiz and others.—p. 263.

Treatment of Fever and Treatment by Fever.—Risquez reviews the arguments in favor of the assumption that the fever is a useful defensive reaction, Machado in a previous article having presented the other side. Villegas gages the fever and the necessity for intervention by the amount of elimination of metabolic products through the kidneys. He does not expect baths and packs to reduce the temperature directly, but only by aiding in the elimination of waste and soothing the heat centers.

Revista del Instituto Bacteriológico, Buenos Aires

October, 1919, **2**, No. 3

*Enzootic Meningo-Encephalitis. R. Kraus, L. Kantor and R. Quiroga.—p. 239.
*Heterogenous Antibodies. III. A. Sordelli and C. E. Pico.—p. 261.
*Heterogenous Antigens. R. Wernicke and A. Sordelli.—p. 281.
*Mixed Tumor on Rat. A. H. Roffo.—p. 283.
*Vaccine Treatment of Whooping Cough. J. L. Parera.—p. 285; Idem. J. Bacigalupo.—p. 291.
Mosquito Host of Malaria Found in Buenos Aires. J. Petrocchi.—p. 295.
*Biologic Tests for Kinship between Species of Animals. G. Fischer and L. Kantor.—p. 303.
*Endemic Goiter and Cretinism in Argentina. R. Kraus.—p. 309; Idem. R. Wernicke.—p. 325.

Encephalitis in Horses.—Kraus and his co-workers cultivated a diplococcus from the lesions of the brain in the contagious enzootic which for several years has been affecting horses in Argentina. The symptoms are explained by the infiltration of the cerebral vessels, and the presence of the diplococcus with which they were able to reproduce the disease in rabbits and in horses. Over twenty large photomicrographs accompany the article and seven illustrations of animals with the disease. It was first observed, they say, at Borna, near Leipzig, in 1894, and is usually called Borna disease.

Heterogenous Antibodies.—Sordelli and Pico found that when a hemolysin for sheep or goat corpuscles was added to a suspension in physiologic saline solution of an alcoholic extract of guinea-pig kidney tissue, in a few hours agglutination and precipitation occurred and the fluid became clear. They experimented with other lipoids and antigens, and explain the phenomenon as a reaction between an antibody and a heterogenous antigen. It does not occur in the absence of sodium chlorid.

Heterogenous Antigens.—Wernicke and Sordelli state that light is thrown on the nature of heterogenous antigens by their success in isolating a substance (containing nitrogen and phosphorus, with the property of fixation of heterogenous hemolysins), from an alcoholic extract of horse kidney tissue treated with acetone, ether and benzol.

Mixed Tumor in Rat.—Roffo gives eleven photomicrographs of a spontaneous carcinosarcoma found in an old white rat.

Vaccine Treatment of Whooping Cough.—The vaccine is made from sputum, and the impressions from this treatment were quite favorable, although Bacigalupo reports over 12 per cent. unmodified by it in his 495 cases.

Biologic Tests Show Kinship Between Species.—Fischer and Kantor found it impossible to induce anaphylaxis in various members of the cavy family. This negative response sustains their biologic kinship. They found further a similar analogous response to inoculation of transplantable guinea-pig lymphosarcomas, and also to the response to precipitin tests. The animals investigated were the guinea-pig and the cuis or *Cavia pallas*. The article is illustrated.

Endemic Goiter in Argentina.—Kraus states that no statistics have been compiled in regard to the prevalence, etc., of goiter and cretinism in Argentina, but that both are known to occur in the mountainous regions of the country while the Buenos Aires and Córdoba districts seem to be free from goiter. The insect host of Chagas' disease is prevalent, and it has been found at various points to be infected with the trypanosome, *T. cruzi*, which induces Chagas' parasitic thyroiditis. But Kraus does not know of any instance of Chagas' disease in Argentina, the endemic goiter and cretinism having apparently no connection with the trypanosome. The acute form of Chagas' disease as observed in Brazil is characterized by the thyroiditis and the presence of the trypanosome in the blood. The chronic forms may be confounded with endemic goiter and cretinism; the differential diagnosis is difficult in mountainous districts. It is possible that this South American trypanosomiasis is a superinfection of endemic goiter and cretinism. He urges research in this line to determine whether Chagas' disease is common in mountainous districts in Brazil where endemic goiter and cretinism abound, while it is absent from the plains—as in the Argentina flat country—notwithstanding the presence of

the infected insect host. Some of the illustrations show groups of cretins in the mountain districts and cretin dogs.

Endemic Goiter and Cretinism in Argentina.—Wernicke relates that the localities where goiter is endemic in Argentina have soil and waters that differ completely from those which Bircher incriminated in Switzerland as responsible for endemic goiter.

Berliner klinische Wochenschrift, Berlin

Dec. 1, 1919, **56**, No. 48

*Renal Calculi Following Spinal Injuries. E. Holländer.—p. 1129.
*Scarlet Fever. G. Zuelzer.—p. 1131.
Leukocyte Count in Malaria. M. Stoss.—p. 1135.
Body Heat in Relation to Work. J. Fischer.—p. 1137.
Prevention of Infant Mortality. F. Lenz.—p. 1139.

Causes Producing Renal Calculi Following Injuries to the Spinal Column.—Holländer gives an elaborate and detailed explanation of the phenomenon to which Kurt Müller called attention in 1895, namely, that following certain injuries to the spinal cord, there is frequently a rapid and bilateral formation of calculi in the renal pelvis. He ascribes the condition to the paralysis of the renal pelvis and the ureter, resulting directly from the injury to the spinal column.

Early Diagnosis of Scarlet Fever.—Zuelzer endeavors to show that scarlet fever is recognizable in the incubation stage several days before the onset of the fever. He ventures in explanation of the maximal enlargement of spleen and liver at the onset of the fever in scarlatina, typhus and malaria the hypothesis that the causative agent attacks these organs first. He has found quinin treatment of scarlet fever efficacious in the early stages, and has effected cures by its use. As it is doubtless true that the disease is spread during the incubation stage, this constitutes an added reason for its early recognition. As a prophylactic measure he recommends that in every case of infectious sore throat large doses of quinin should be prescribed. If scarlet fever is not present, no harm is done; in fact, Fraenkel recommends quinin as the most rational treatment for angina. In Prussia the case mortality from scarlet fever before the war was 10 per cent. He states that percussion of the liver is facilitated by a deep inhalation, distending the abdomen.

Dec. 8, 1919, **56**, No. 49

Reforms in Medical Education. B. Fischer.—p. 1153.
*Genesis of Blackwater Fever. T. Zlocisti.—p. 1157.
*Hemolysis with Urine in Chronic Nephritis. L. Neufeld.—p. 1159.
*Potassium Permanganate Treatment of Smallpox. W. Bender.—p. 1160.
Value of Liquor Carbonis Detergens. Herxheimer and Altmann.—p. 1162.

Pathogenesis of Blackwater Fever.—Zlocisti expresses doubt whether on the basis of the known material a uniform genesis for all cases of blackwater fever can be established. He endeavors to show that the theory that blackwater fever is due to the harmful effects of quinin administration is untenable, by citing a special case in which grave hemoglobinuria developed when no quinin was being taken and it subsided under large doses of quinin.

Hemolytic Phenomenon of Urine in Chronic Nephritis.—Neufeld calls attention to a peculiar phenomenon occurring in a case of severe nephritis as revealed in the serologic examination of the urine of a series of syphilitics. The volume of albumin in the urine of the patient in question was 0.7 per cent. The Wassermann reaction in the blood was strongly positive; in the urine, absolutely negative. This negative urine reaction as opposed to the strongly positive blood finding contradicts, he thinks, the usual serologic findings in other body fluids containing albumin. Investigation revealed the fact that the urine contained a very active hemotoxic substance, laking sheep blood and beef blood but not human, guinea-pig or rabbit blood. He found further that this hemotoxic substance seems to have nothing to do with syphilis but is often found with severe nephritis, especially in cases with manifestations of uremia. The hemolytic substance is not destroyed by boiling. It seems to occur proportionately to the albumin content of the urine.

Potassium Permanganate in Treatment of Smallpox.—Bender condemns red light therapy and endorses the potassium permanganate treatment of smallpox as effective in dealing with the dermatologic aspects of the disease. The convalescent stage is much shortened on account of the accelerated desquamation process, especially if the peeling of the palms of the hands and the soles of the feet is aided by mechanical removal. The isolation period is reduced, which lessens the number of melancholy states and hysterical attacks. Dreyer has the face, arms and hands painted with a saturated aqueous solution of potassium permanganate three or four times a day for the first two days and then the entire body once a day. This stains the skin brown and thus realizes a kind of colored light therapy, he says, besides its other advantages. Bender found it impossible to apply the solution so often or in such concentration, as it caused smarting, but by diluting it and applying it to part of the body at a time, he obtained excellent results in his eight cases.

Deutsche medizinische Wochenschrift, Berlin

Dec. 4, 1919, **45**, No. 49

Alimentary Factors Influencing the Blood in Children. L. F. Meyer and A. Japha.—p. 1345.
Dermoids of the Neck. H. Wendriner.—p. 1355.
Secondary Covering of Wounds with Skin. H. Walther.—p. 1356.
Silver Salvarsan in Treatment of Syphilis. Fabry.—p. 1358.
Tuberculin Treatment of Tuberculous Pleurisy with Effusion. C. Stuhl.—p. 1360.
The Friedmann Tuberculosis Treatment. Lydia Rabinowitsch.—p. 1362.
What Is Hypnosis? M. Levy-Suhl.—p. 1363.
Effect of Methylene Blue in Malaria. P. Kaufmann.—p. 1365.
Production of Artificial Râles for Teaching Purposes. W. Hildebrandt.—p. 1365.

Münchener medizinische Wochenschrift, Munich

Dec. 5, 1919, **66**, No. 49. F. Penzoldt Number

*Variable Virulence of Tubercle Bacilli. G. Hauser.—p. 1398.
Paratyphoid Colonies. L. Heim.—p. 1399.
*Significance of Sarcinae in the Stomach. Gerhardt.—p. 1400.
*Pulmonary Syphilis. G. Schröder.—p. 1401.
Protein Therapy. A. Schittenbelm.—p. 1403.
Roentgen Therapy in Pulmonary Tuberculosis. O. de la Camp.—p. 1405.
Psychogenic Disturbances During the War Period. G. Specht.—p. 1406.
Studies on the Thorax. E. Zeltner.—p. 1407.
*Neuroses of the Diaphragm. F. Jamin.—p. 1408.
*Intermittent Therapy: I. Value of Intervals. H. Königer.—p. 1410.
Protein Substances Found Within Bacterial Cells, and Chemical Composition of Bacterial Cell-Membranes. E. Toenniessen.—p. 1412.
Value of the Sachs-Georgi Reaction. L. Hauck.—p. 1413.
Treatment of Acute Appendicitis. Hagen.—p. 1414.
*Petruschky Treatment of Surgical Tuberculosis. Heubach.—p. 1415.
Prophylactic Vasectomy in Tuberculosis of the Sexual Organs. E. Pflaumer.—p. 1415.
Pathologic Anatomy of Typhoid Occurring in the Army. H. Merkel.—p. 1416.
Surgical Aspects of Chronic Gastric and Duodenal Ulcer. F. Doederlein.—p. 1420.
*Infants Born during War Period. Jahreiss.—p. 1421.
Cadaveric Odor of Breath as Sign of Impending Death. O. Rüdel.—p. 1422.
*Acute Participation of Ovary in Epidemic Parotitis. Ruge.—p. 1422.
Echinococcus Cyst in Liver Simulating Gallstones and Pleural Empyema. Reismann.—p. 1423.
*Pityriasis Rosea and Trichophytosis. Fried.—p. 1423.

Variable Virulence of Tubercle Bacillus Infections.—Hauser reports as the result of animal experimentation that the virulence of the human type of tubercle bacillus found in various cases of tuberculosis in man varies between very wide limits. Strains of weak virulence after repeated introduction in the eye of a rabbit regain the average virulence for a rabbit's eye. In acute miliary tuberculosis the virulence of the tubercle bacillus may be unusually low.

Diagnostic Significance of Sarcinae in the Stomach.—Gerhardt states that it has been his experience that sarcinae in the stomach may always be taken as an indication of stasis, usually from organic pyloric stenosis, accompanied by considerable gastrectasia. In some cases the stasis was only temporary, caused partly by slight organic changes combined with reflex spastic closing of the pylorus, and partly the result of motor insufficiency due to acute gastritis. The amount of free hydrochloric acid present seemed to have no bearing on the colony of sarcinae.

Pulmonary Syphilis.—The fact that pulmonary syphilis is often overlooked clinically, and that it is so commonly mistaken for pulmonary tuberculosis has led Schröder to endea-

vor to clarify in some measure its clinical picture. The most important means of establishing a differential diagnosis is the roentgen ray. An exact anamnesis is important. Syphilitic changes in the upper respiratory passages and elsewhere should be looked for. The localization, or atypical seat, of the lung process is significant. Absence of tubercle bacilli should be weighed. A more protracted course than in tuberculosis should be noted.

Neuroses of the Diaphragm.—Jamin recalls that the diaphragm, owing to its position between voluntary and involuntary muscles and forming a partition between the abdomen and the thorax with its own sensory innervation, is not infrequently the seat of psychogenic sensory and motor disturbances, in which the thoracic and abdominal muscles are involved in various ways. The resulting neuroses may easily lead to diagnostic errors as to conditions in thoracic and abdominal organs, the functioning of which may in fact be thereby impaired. Early diagnosis and psychotherapeutic treatment of these neuroses are therefore essential. Systematic breathing exercises will exert a prophylactic influence, and, while valuable for all, they are especially indicated for young persons who are weakly and nervous.

Intermittent Therapy: Value of Intervals Without Treatment.—Königer thinks that too little attention has been paid in the past to the value of rest periods, or intervals without treatment, which his investigations and observations would lead him to regard as an integral part of therapy. The periods of suspension should be as carefully investigated as the choice of a remedy, its dosage and manner of administration.

Inunction Tuberculin Treatment of Surgical Tuberculosis.—Heubach states that he has been using the Petruschky method since April, 1918, in both hospital and private practice, having given this treatment in eighty cases of tuberculosis of the lymph glands, forty-five cases of tuberculosis of the bones and joints, and in five other isolated cases. More than 50 per cent. of the cases were grave, and only 5 per cent. were mild. In every case he was impressed with the favorable effect on the course of the disease. The usually intractable fistulas in tuberculosis of glands and joints, and the abscesses in vertebral tuberculosis healed after the second or third tuberculin inunction. In a few cases a second series of treatments following a four to eight week interval became necessary, but he seldom failed to secure the desired results. Many of the severe cases he would formerly have regarded as hopeless. Sufficient time has not elapsed to speak of the percentage of permanent cures. He considers the beneficial effect of the treatment to be indirect, in that it strengthens the natural resistance of the organism.

Infants Born During War Period.—Jahreiss considers the question as to how the development of the fetus is affected by the changed nutrition of the mother. The results of his investigations on children born in the Augsburg Maternity during 1918 and the first seven months of 1919 are to the effect that the children born during this period were perfectly normal in weight, length and size of head.

Acute Participation of the Ovary in Epidemic Parotitis.—Ruge reports an acute condition of the ovary which arose in the course of mumps. There were symptoms of internal hemorrhage which precluded a diagnosis of acute oophoritis and favored ovarian hematoma; or possibly a combination of the two. Five weeks after it was first discovered the ovary had returned to normal size.

Treatment of Pityriasis Rosea and Trichophytosis.—Fried recommends mercurial ointment for the treatment of pityriasis rosea and trichophytosis, as it effects a speedy cure and is cheaper and simpler than the roentgen ray.

Wiener klinische Wochenschrift, Vienna

Dec. 4, 1919, **32**, No. 49

*War in Relation to Hereditary Syphilis. K. Hochsinger.—p. 1173.
*Epinephrin in the Elderly. A. Arnstein and H. Schlesinger.—p. 1179.
Bradycardia: IV. L. Hess.—p. 1181.
*Lung Enlargement in Syphilis. A. Edelmann.—p. 1182.
Roentgen Diagnosis of Diseases of the Spleen and Liver. A. Henzelmann.—p. 1185.
Quinin in Childbirth. L. Knapp.—p. 1185.
Traumatic Purpura. R. Gruss.—p. 1185.
*By-Effects with Smallpox Vaccination. K. Wagner.—p. 1186.

War in Relation to Hereditary Syphilis.—Hochsinger, basing his opinion on investigations applied to 123,284 births in Vienna, reaches the conclusion that syphilis among the newborn and infants decreased during the war period.

Unusual Effects of Epinephrin in the Elderly.—Arnstein and Schlesinger record that sometimes, following subcutaneous administration of epinephrin in elderly patients, the blood pressure drops, either with or without a preceding brief rise. In many cases this is associated with cardiac weakness, in which case tachycardia commonly results. Or the response may be bradycardia for several hours, often without accompanying decrease of blood pressure.

Lung Enlargement in Syphilis.—Edelmann reports on the basis of extensive investigations that tertiary syphilis may lead to lung changes in the nature of lung enlargement and emphysema. This finding, he thinks, serves to throw light on a certain proportion of the cases of so-called idiopathic emphysema occurring in middle life.

Observations on Smal'pox Vaccination.—Wagner reports some peculiar phenomena following vaccination for smallpox in a woman of 36, who, with the exception of hay-fever, from which she had suffered since she was 14 years old, was perfectly healthy. She had been vaccinated two years previously without success. Following revaccination in July, 1919, with the appearance of the pustule, doughy swelling of the skin developed over the whole surface of the body. The patient was unusually pale and listless. Temperature ranged between 37.5 and 38.8. Marked dyspnea was present and the pulse was slow and tense. Respiration was asthmatic. The tonsils were somewhat enlarged and covered with grayish-white spots. The liver was enlarged. Specific gravity of urine was from 1.009 to 1.018. The albumin content was 0.05 per cent. and remained at this level for several days. There were no casts and no red blood cells, but renal epithelial cells were present in considerable numbers. The affected arm was red and swollen. These inflammatory phenomena disappeared in a few days without treatment. Wagner raises the question whether the hay-fever could have been in any way connected with the phenomena. Sore throat was observed in five other cases of the series of thirty and accompanied by a still higher fever (up to 40.2 C.). The sore throat yielded readily to local treatment. Sore throat was not epidemic at the time, nor were the weather conditions such as to favor its development. During this same period of vaccination, cases of severe illness and even fatalities following vaccination were reported from other sources.

Zeitschrift für Tuberkulose, Berlin

February, 1920, **31**, No. 6

*Treatment of Pulmonary Tuberculosis in Sanatoriums and in the Home. F. Köhler.—p. 321.
Induced Right Pneumothorax with Left Pleurisy with Effusion. E. Als.—p. 333.
*The Tuberculous Psychoneurosis. G. Ichok.—p. 334.
Repose versus Occupation in Treatment of Pulmonary Tuberculosis. H. Hayek.—p. 350; Idem. H. Maendl.—p. 352.

Treatment of Pulmonary Tuberculosis.—Köhler declares that sanatorium measures are often applied too arbitrarily. The patients may actually suffer from cold, when reclining or sleeping out of doors. "The exposure of the décolleté gowns of the present day may be extremely harmful for anemic and tuberculous girls and women. . . . Toughening procedures have their day before 35 for the healthy, but after this the aim should be to spare the organism, and chief among the measures for this purpose is a proper supply of warmth. This is particularly necessary for persons with poor blood, the tuberculous, the nervous, the rheumatic, and those with disease of the kidneys or sexual organs."

The Tuberculous Psychoneurosis.—Ichok insists that the tuberculous psychoneurosis is a characteristic syndrome which requires individual treatment and is of general social importance. Pronounced psychoses are rare in the tuber-

culous, but this psychoneurosis is extremely common. Toxic action from the tuberculosis toxins cannot be alone responsible, as the psychoneurosis does not necessarily become more severe as the intoxication progresses, while, on the other hand, the psychoneurosis may develop complete even with the mildest forms of the disease. Ichok ascribes it mainly to a subconscious sense of organic inferiority (*organminderwertigkeit*). The source of the psychoneurosis should be sought, possibly by psychanalysis, to enable the patient to divert his mental processes into useful channels.

Zentralblatt für Chirurgie, Leipzig

Feb. 14, 1920, **47**, No. 7

The Mechanics of Concussion of the Brain. H. Rahm.—p. 146.
*Volvulus of the Sigmoid Flexure. C. Pochhammer.—p. 148.
Suture for Abdominal Wall. H. Hans.—p. 149.
Closing an Artificial Anus. J. Kinscherf.—p. 151.

Anastomosis for Volvulus of the Sigmoid Flexure.—Pochhammer sutures together, side to side, the lowest parts of the loop that he has just untwisted. The anastomosis opening must be 6 or 8 cm. long, to allow free passage of the contents. The loop above is thus functionally excluded, and it finally nearly shrivels away. He has thus treated four patients with volvulus of the sigmoid flexure in the last two years. Other technics expose to danger of recurrence, while with this method recurrence is impossible.

Feb. 21, 1920, **47**, No. 8

*Habitual Dislocation of the Patella. G. Marwedel.—p. 170.
*Postoperative Tetany. W. Haas.—p. 171.
*Operation for Undescended Testicle. P. Frangenheim.—p. 173.
Orchidopexy plus Funiculopexy for Testicle Retained in Inguinal Canal. E. Glass.—p. 174.

Habitual Dislocation of Patella.—Marwedel says that he knows of fifty different methods for correction, but that the technic he describes here is superior to all others. He slits the capsule and laps the lips in a special way as he shows in his illustrations.

Cure of Postoperative Tetany.—Haas was able to cure the tetany and bring it on again at will in a severe case by administering beef parathyroid tablets. In a short time the patient's own parathyroids had recuperated; they had only been damaged, not removed, at the goiter operation. Haas adds that in resecting the thyroid in a woman seven months pregnant, he found the parathyroids three or four times their normal size, and regards this as a hint to give parathyroid treatment to pregnant women showing signs of parathyroid insufficiency, and to keep it up until far into lactation. Or grafting of parathyroids might be considered. There is no theoretical ground for giving thyroid treatment alone in tetany; the thyroid may actually annul any action from the parathyroids.

Simplified Operation for Undescended Testicle.—When Frangenheim finds it difficult to bring the testicle down to its proper place, he lengthens the spermatic cord by shifting its position to back of the epigastric vessels, thus shortening its course without injury to the elements of the cord. The testicle is easily drawn through behind the inferior epigastric artery and vein, as he explains with an illustration. The procedure is much facilitated by raising the pelvis quite high. He has applied it successfully in ten cases.

Zentralblatt für Gynäkologie, Leipzig

Feb. 21, 1920, **44**, No. 8

The Corpus Luteum in Relation to Menstruation. A. Labhardt.—p. 185.
*Operative Treatment of Incontinence of Urine. A. H. M. J. van Rooy (Haarlem).—p. 192.
*Eudemic Diphtheria in Maternities. E. Hollatz.—p. 195.

Operation for Incontinence of Urine.—Van Rooy applied the Goebell-Stoeckel technic in a case of incontinence of urine that had resisted all treatment for sixteen years. It had followed forcible removal of a calculus from the bladder. A flap of muscle was brought down to each side of the neck of the bladder, working through a transverse incision above the symphysis. Then, through an incision in the vagina, the ends of the muscle flaps were sutured together around the neck of the bladder to make a new sphincter, as it were. Eight months have passed since the operation, and there has not been a trace of incontinence since. The patient, an unmarried woman of 36, urinates only every three and a half or four hours. The muscle loop draws the neck of the bladder upward, and this partially kinks it. The pyramidalis was the muscle used to reenforce the sphincter.

Endemic Diphtheria Among the Newly Born.—Hollatz states that since 1910 thirteen reports have been published of endemics of diphtheria among the newly born. In nearly all the cases the nose was the seat of the process.

Feb. 28, 1920, **44**, No. 9

*Injection of Fluid into the Placenta. B. Schwarz.—p. 217.
Isolated Compression of Abdominal Aorta. J. Suerken.—p. 223.
Amniogenous Deformities. C. v. Goetzen.—p. 225.

Hydraulic Turgidization of the Placenta.—Schwarz extols Gabaston's method of injecting a fluid into the placenta as a simple and harmless means to arrest hemorrhage and aid in the spontaneous separation of the placenta. He has applied it in sixteen cases. As the placenta swells from the injected fluid, the effect in detaching it from the uterus wall is the same as when the uterus wall contracts under the placenta, while the distention of the placenta stimulates the uterus to contract, and its heavier weight exerts greater traction. A still further advantage is that the turgidized placenta offers a better hold for the hand in case continuance of the hemorrhage demands Credé expression. The saline is injected through the umbilical cord vein until some resistance is felt; usually 300 or 400 c.c. are enough. It never seemed to do any harm in his cases. (Gabaston's original communication on this hydraulic method of aiding in detaching the placenta was summarized in THE JOURNAL May 2, 1914, p. 1443.)

Mededeel. uit het Geneesk. Lab. te Weltevreden, Java

1919, No. 4

*Immunity of Common Fowls to Plague. P. C. Flu.—p. 116.

Immunity of Fowls to Plague.—Flu inoculated ten hens or cocks with a fraction of or one or two loops or a whole slant culture of plague bacilli of a strain which killed guinea-pigs in a 1:10,000 loop dose injected subcutaneously. The fowls were inoculated by the vein, subcutaneously or intramuscularly, but none showed signs of sickness, phagocytosis always insuring the prompt disappearance of the plague bacilli. They retained their virulence to the last, up to four days, but all seemed to act merely as foreign bodies, and were incorporated by the phagocytes. Domestic fowls, he states, have a temperature of 42 C., and he regards this as significant, as he, Kolle and Strong have noted that the plague bacilli rapidly decrease in virulence when cultivated at a temperature as high as 40 to 42 C.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Jan. 10, 1920, **1**, No. 2

*The Fight Against Venereal Disease. T. M. van Leeuwen.—p. 112.
*Shape of the Stomach. E. H. van Lier.—p. 119.
*Whooping Cough. W. F. Enklaar.—p. 126.
Wassenaar's Visual Phenomenon. S. J. R. de Monchy.—p. 129.
*Treatment of Lupus. P. J. Mink.—p. 130.

The Campaign Against Venereal Disease.—Van Leeuwen reiterates that the efforts to deprive venereal diseases of their endemic character require the personal cooperation of medical men. It would result in incalculable advantage if all would keep a record of every case, especially of syphilis, and record the effect of the disease on the patient and on his family as the years pass. He appeals to physicians in general to aid in this and in other ways the organized efforts to repress the spread of these diseases.

The Shape of the Normal Stomach.—Van Lier compares the conflicting statements of various authors as to the shape of the normal stomach, saying that the shadow cast when the stomach is weighed down with a suspension of bismuth cannot be accepted as the normal finding. Even the necropsy findings do not represent the physiologic stomach; the rigor mortis, the gases that may form in half an hour after death.

and other factors distort the shape of the stomach. He gives roentgenograms of the dog stomach, after a fine rubber tube filled with a contrast suspension had been sutured to the outside of the stomach from the esophagus to the pylorus. The shadow of the fasting stomach shows the rubber tube crumpled up in a bunch, the fasting stomach having evidently contracted into small compass. With the heavy contrast meal, the stomach assumes a sac shape, with a tube shape at the pylorus end.

Prophylaxis of Whooping Cough.—Enklaar suggests that contagion of whooping cough and possibly of measles might be prevented by arranging the classes according as the children have had the disease or not. If a case develops in a school room, those who have had the disease can continue at school, but the susceptible should be kept at home until the danger of contagion is past.

Acid Treatment of Lupus.—Mink applied trichloracetic acid in a case of lupus refractory to light treatment, and was surprised at the prompt benefit.

Jan. 17. 1920, **1**, No. 3

*Prophylaxis of Venereal Disease. H. T. M. van Leeuwen.—p. 201.
*Functional Dyspepsia. C. G. Vervloet.—p. 207.
*Epidemiology of Cholera. C. S. Stokvis.—p. 216.
Contract Practice in Rural Districts. H. C. van den Bijllaardt.—p. 223.

Prophylaxis of Venereal Disease.—Van Leeuwen enumerates the reasons why he rejects as bound to prove ineffectual any official recommendations for individual prophylaxis among civilians. His five years' experience as secretary of the Netherlands Society for Combating Venereal Disease has convinced him that the best plan is for the authorities merely to enjoin abstention from extramarital intercourse in prevention of venereal disease, but to provide ample facilities for medical care at suitable hours and places for the infected, leaving it to the physician in charge to decide whether in a given case it is necessary or useful to apply local preventive measures. Van Leeuwen makes a point of always carefully instructing in the first signs and symptoms of venereal disease, and in the danger of infecting others during these six or eight weeks.

Functional Dyspepsia.—Vervloet remarks that the diarrheas from insufficiency of the digestive glands form the largest contingent of the cases of functional intestinal derangement. The glandular secretions may be deficient in quantity or quality. He found gastric achylia or hypochylia in 25 of 84 cases of fermentation diarrhea, and in 6 cases the pancreas also was functionally insufficient. Undigested starch and much cellulose in the stools should suggest investigation of the chemistry of the stomach, and in 30 per cent. some secretory anomaly then becomes evident, as a rule. Treatment to substitute the lacking gastric juice soon improves the diarrhea. Diarrhea from putrefaction processes or defective digestion of fats is seldom found with achylia, and the products are less irritating than the acids generated in the fermentation processes. He never saw a case in which the intestinal disturbances had preceded the hypochylia, but was able to trace the reverse sequence very plainly in two cases; the defective functioning of the secretory system of stomach and pancreas had preceded the colitis, with a catarrhal intestinal condition bridging the intermediate period. In 32 cases of diarrhea with gastric achylia or hypochylia there were only 8 in which there was distinct putrefaction; in the other 24 there was abnormal fermentation. The abnormal fermentation of carbohydrates and cellulose forms the link between the gastric achylia and the colitis. Perhaps investigation of other digestive ferments may throw further light on functional dyspepsia. In treatment, bed rest will often be found a valuable adjuvant. The findings in the stools should guide the diet.

Epidemiology of Cholera.—Stokvis insists that nowadays we pay too exclusive attention to bacteria, and overlook other circumstances that may have a causal or accessory significance. We should study epidemics by a "mass epidemiology" instead of by individual cases. Of course when the epidemic has once got a firm foothold, it is spread by contact, but this is inadequate to explain the earlier phases.

Hygiea, Stockholm

Feb. 29, 1920, **82**, No. 4

*Masks in Prevention of Contagious Disease. A. Josefson.—p. 113.

Masks in Prophylaxis of Contagious Disease.—Josefson had masks used by the nurses in his service almost from the beginning of the influenza epidemic, and states that none of the nurses in the influenza wards contracted the disease, as all scrupulously wore the masks. In the adjoining surgical ward, where masks were not worn, some of the nurses were down with the disease all the time. The wearing of masks with whooping cough, diphtheria, scarlet fever, mumps, etc., he observes, might arrest the spread of the infection. In conclusion, he warns that pregnant women should be protected with special care against influenza.

Ugeskrift for Læger, Copenhagen

Feb. 12, 1920, **82**, No. 7

*Roentgen Ray Diagnosis of Gout. Hans Jansen.—p. 217.
*Huge Cavities in Lungs. F. Tobiesen.—p. 221.
Lethargic Encephalitis. H. Jacobsen.—p. 227.
*Perirectal Carcinoma. L. Melchior.—p. 231.

Roentgen Ray Diagnosis of Gout.—Jansen's roentgenogram of the hand of a man of 47 showed callus-like masses of bone and destructive processes—the picture not fitting into the frame of any known disease except gout, and it was on an unprecedented scale for gout.

Large Cavities in Lungs.—Tobiesen reviews the necropsy findings in five of six cases of a large cavity in one lung, and compares them with six cases on record, all on the left side. In the majority, the huge cavity had been mistaken for pneumothorax. In one of his five cases the cavity was on the right side. In all, the entire lung or nearly the whole lung formed a cavity traversed by trabeculae which corresponded to the vessels.

Perirectal Carcinoma.—Melchior recalls that cancerous stenosis of the intestines practically always has been explained by a cancerous growth in the bowel mucosa or secondary fibrous bands. The conditions were different in three cadavers recently examined; the rectal mucosa was intact, and the stenosis was the result of a metastatic carcinomatous infiltration of the connective tissue around the rectum and encroaching on it. In one of the cases the conditions had compelled a laparotomy, and the patient, a previously healthy man of 55, died. The primary cancer was a very small neoplasm in the esophagus which had not caused any clinical symptoms at the time of death. The "periproctal cancer" and tendency to stenosis was a necropsy surprise in the second case—a woman of 33 with multiple metastases of a mammary cancer—and also in the third, a man of 68 with gastric cancer.

Feb. 19, 1920, **82**, No. 8

Strophanthin. Marie Krogh.—p. 249.
Progressive Lipodystrophy in Young Woman. J. Helweg.—p. 261.

March 4, 1920, **82**, No. 10

Acute Orbital Disease Originating in Nasal Sinuses. S. H. Mygind—p. 305. To be cont'd.
*Immunity to Influenza. H. C. Hall.—p. 317.
*Intestinal Contents of Mummies. J. W. S. Johnson.—p. 326.

Immunity After Influenza.—Hall states that at the Bispebjærg hospital among the 500 patients with influenza in four weeks early in 1920, 8.2 per cent. had had the disease during the 1918-1919 epidemic.

The Intestines of Mummies.—Johnsson relates that the mummies found in the excavations at Nagaed-der in Upper Egypt had not been embalmed. The intestines contained relics of grains and epithelial cells of a common plant, the trichodesma, which is a household remedy to this day in certain countries for intestinal irritations and catarrhal conditions of the air passages. He believes that the plant had been taken as a medicine because it was not found regularly among the eighty mummies, only in a few, and in three it was accompanied with mouse bones which are known to have been used medicinally by the ancients. The alkali of the bone powder was accompanied with scraps of cyperus and trichodesma. These mummies date from before the embalming period, more than 5,000 years B. C.

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THE OBLIGATIONS OF MEDICINE IN RELATION TO GENERAL EDUCATION

PRESIDENTIAL ADDRESS *

W. C. BRAISTED, M.D.
Surgeon-General, U. S. Navy
WASHINGTON, D. C.

In the old Navy a midshipman was defined as a person with no rights and few privileges. Many societies and associations have a feeling akin to this about their president and regard him as a sort of lay figure on which to drape honors but from whom no serious participation in affairs is expected. It is no empty honor and no small privilege to be permitted to address the American Medical Association. I hope no one will think that I am exceeding my rights or straining my privileges in taking for discussion a subject which has been largely entrusted, during the Association's long campaign for the education of the public and the improvement of our medical schools, to members having special knowledge and special ability. It is my good fortune to be granted the floor here this evening, and I firmly believe that, while leadership belongs to the few who enjoy peculiar qualifications, intelligent cooperation is the obligation of all; that if the measures concerted in committees are to succeed they must have behind them the force of general approval and of lively interest in proportion to their importance. I therefore conceive that it is my part to foster by every means in my power a general participation in the educational program which has characterized this Association since it incipience.

It is glorious to think that the practical, material benefit which we anticipate from this meeting is only secondarily for ourselves. We want to be more capable in the service we render to our patients rather than to increase either fame or fortune. This is very well as far as it goes, but it is not enough. We must realize afresh at each annual convocation that before being members of the Association we are physicians, before physicians citizens, before citizens men. So far as we neglect the functions of the citizen or forget the obligations created by man's social environment and repudiate every duty not directly connected with private practice, we are recreant to a high trust.

In the recent war the medical men of America laid aside their practices at no small sacrifice and with no small risk to their future prospects to play the patriot; and so did lawyers, business men, teachers in colleges, scientific investigators, and so on. It was a noble stand to take, but the glory of this spontaneous uncalculating action will be considerably dimmed if, now that the threat of invasion, the foreign menace to our institutions has passed, we relapse into that narrow life pursued by so many who tacitly maintain that because they sustain important private relations to the sick they are absolved from participation in the struggle for the betterment of town, city, county, state and country, and of the world itself.

In this matter of responsibility outside of mere professional life we all need education, and what more fitting opportunity than this to solicit from you all a holier dedication to your patients' interests by thinking of what they need to be told, how they should be guided and how helped when they are not actually suffering from bodily ailments? When we do this we are at the threshold of social and preventive medicine —a medicine of education as well as of prescribing and operating.

EDUCATION OF THE PUBLIC IN HEALTH MATTERS

The education of the general public in matters relating to health has not been entirely overlooked in the United States. A good deal has been done, especially in the last few years, but the sum total is small indeed when considered, on the one hand, in relation to the importance of the subject, and, on the other, to our great territory, huge population, vast resources, multiplied and highly productive forms of energy and our general advance along all lines. Certainly in many details of health regulation and health promotion we are behind the older nations of Europe, relatively if not absolutely. True, we have an infinity of things to enrich and brighten life which they lack, but these have resulted from a desire for comfort and the reduction of manual labor, and have not grown out of the pursuit of health, which, as a matter of fact, is not always enhanced but may be seriously jeopardized by ease and luxury.

After the dissipation of life incident to all great wars, men invariably turn to the importance of saving life and prolonging it, and health-giving measures excite at least a temporary interest. We shall therefore miss a great opportunity if we do not at this time use every endeavor to press home the great self-evident truths about health and long life as they affect national prosperity and race permanence.

Is there any one who doubts for a moment that the physical integrity of its citizens and their ability to deploy all the energy which unvitiated, untainted nature can generate are of the first importance for the onward and upward progress of this republic? Is the health of the nation a national concern? If so, then the nation as such should go into the matter with the same busi-

* President's address before the American Medical Association at the Seventy-First Annual Session, New Orleans, April, 1920.

ness acumen, on the same scale and with the same continuity of effort manifested in any other vital public concern. There is certainly no occasion to advance arguments on this score. No educated and thoughtful man can deny that physical stamina plays an enormous part in the prowess and permanence of peoples. We see families, tribes and races spring up from a mysterious, nebulous origin that baffles alike the research of the philologist and ethnologist, reach a climax of development and power, and then decline. These fluctuations of fortune are genetically connected with physical conditions such as geographic location and its corollaries climate, food supply, parasitic infections, local foci of disease and perhaps the necessity for more or less consanguineous marriages. As a result of local conditions unfavorable to the propagation and perpetuation of a race, religious and social usages are evolved which form a sort of counterpart to those protective physical processes seen everywhere in nature.

One of the most remarkable and anomalous incidents of history is the way the Hebrews have preserved their race entity and characteristics though deprived for two thousand years of a local habitation and though prior to their final dispersion they had been for centuries the objects of foreign domination—enslaved, driven out, carried into captivity. While today the Jews may enjoy the benefits of other civilizations than their own, it is generally recognized that in the earlier periods of their history their cohesion and their national achievements were largely the result of a unique and remarkably extensive hygienic and sanitary system far beyond anything employed by any other race. Their peculiar observances were not due to the influence of physicians, to whom there is scant and none too favorable reference in the Old Testament, but embodied the wisdom of Egypt and Mesopotamia and had behind them the force of civic and religious obligation and were administered by the priestly caste. Carl Sudhoff of Leipzig, the modern authority on medical history, has characterized the Hebrew Sabbath day of rest and the direct prophylaxis of disease as the two greatest hygienic thoughts of mankind.

THE STATE'S NEED OF STURDY MEN

Can we pretend for a moment that the stability of Rome through twelve centuries of existence under kingly, republican and imperial rule, vexed by enemies within and without, was not dependent in a large degree on the extensive municipal provisions for health, which included an ample and excellent water supply, adequate drainage, extramural sepulture, and on the universal respect for physical prowess and physical hardihood inculcated by kings and consuls and not by the physicians, who to their lasting shame cared little for these things? We know how much the national life of Sparta owed to its rigid discipline and the paramount emphasis laid on bodily vigor, and how Athens all through its glorious period of intellectual development continued to cultivate physical perfection, not only because the artistic sense of the Greeks was gratified by beauty of form and symmetry of proportion but also because the old Homeric and pre-Homeric belief still survived that the deformed or depraved physique was to some extent an index of mental abnormality and moral blemish. In all this we are not up to the level of the Greeks of 500 years before Christ; for while science has gone far toward demonstrating the extent to which conduct and happiness depend on conformation and structure, we do practically nothing about it.

To my mind the most paradoxical feature of our modern civilization is the indifference of a comparatively educated and well informed world to the human body, which is the most marvelous of nature's products and has been styled by Sir James Paget "the most complex mass of matter in the known world."

We are astonished when we reflect that man inhabited the earth and examined himself and his surroundings for thousands of years without discovering what seems to us so evident a thing as the circulation of the blood. But is it not extremely likely that future ages will comment with astonishment and scorn on our stupidity in not carrying on as a nation a systematic effort to improve physical development and to further physical conservation; in allowing our children to grow up in utter ignorance of their bodies and, if ignorant, necessarily neglectful of them?

I submit that the nation's health is a national concern; that it underlies all industrial and business effort; that it is the fundamental element in successful competition with rival nations, whether under the slow and prolonged strain of commercial contests or the sudden and imperious demands of armed conflict; that if we look ahead, as true love of country compels us to do, and estimate the trend of future events, we must acknowledge that physical vigor will, in a large measure, decide our complete development and permanent possession of the land which our forefathers won for us not only on the fields of battle but in strenuous struggles against the elements; in the mighty labor of felling forests, tilling the soil and developing the resources hidden in the heart of the earth.

I am very far from undervaluing the work of the many agencies already engaged in indoctrinating the people in the fundamentals of health; but it is undeniable that so far their efforts have been inadequate to the magnitude of the task as I conceive it. The campaign must be one of concerted measures, nation-wide in extent and unflaggingly prosecuted.

TEACHING OF HYGIENE IN PRIMARY SCHOOLS

I think that up to the present we have been guilty of a cardinal error in seeking wholly to proselyte the adult. Our preaching has been to people enslaved by the chains of lifelong habits. We have advised men with damaged hearts and kidneys and blood vessels to eat and drink and smoke less; to take moderate exercise; to learn to relax and play; to avoid undue excitement so that they might spin out the thread of life by a few years. We have appealed to high school, college and university students to abjure tobacco and alcohol; have held up personal purity as something of supreme importance, given instruction about venereal diseases, instituted courses in personal hygiene that perhaps conveyed to them for the first time in their lives some rudimentary knowledge of their own bodies. In all this we have overlooked two things. The man of middle life cannot make his depraved body over and replace worn out organs. If he stops work he dies for lack of occupation. If he gives up some habit that has become an integral part of his being, he may suffer devitalizing mental and bodily reactions not unlike those of the opium eater deprived of his drug. The best he can do, and what he is most likely to do under the influence of this health propaganda, is to plan to

bring up his children on the lines suggested. This would seem at first blush to be a very definite and valuable result; but whoever has attempted in his own family to reform modes of living, whether in the matter of food, dress, ornaments, study or pastime, knows how difficult, how nearly impossible it is to accomplish any radical change which differentiates wife and children from the bulk of their associates and makes them the objects of comment. Young people are more gregarious than adults, and far more bound by the ethics and standards and practice of their kind.

In the second place we forget the pitiless logic of youth. The lad or maiden who has for five, ten or fifteen years been goaded to study grammar, mathematics, languages; on whom there has been exerted insistent pressure to acquire mental attainments, cannot easily be persuaded later on that a subject kept in the background or displaced in favor of something else is the one of paramount importance. We cannot expect the young to believe that hygiene, physiology and health are matters of prime importance; that their parents and teachers really esteem them such, when everything else has come ahead of these subjects. The children are right, because we do put first what we esteem to be first. They infallibly consider that health teachers are mere faddists and reformers, and that it is more vital to the gratification of their ambitions and their success in life to know the length of the Amazon and to be able to give the order in which different politicians have occupied the White House than to understand the oxygenation of the blood or the nature of a reflex movement.

I propose that we abandon at once all half measures, get away from routine, conventional methods and embark on something new, radical, revolutionary, but something at the same time perfectly feasible, if undertaken on a scale fully commensurate with the colossal results desired. We recognize that the nation must be composed of individuals having a maximum of physical strength and we believe that these individuals must be carefully educated; that is to say, mentally and morally developed, if we are to be something more than the world's bully, and if America has a destiny and a mission related to the world's ultimate amelioration. But just as our race as a whole must have physical integrity for survival in the struggle with its rivals, so the individual must have health and strength as a groundwork for all mental development.

SOUND HEALTH THE FIRST REQUISITE OF A LIBERAL EDUCATION

Let us throw out as irrelevant and misleading the occasional benefits conferred on humanity by the prodigious accomplishments of some individual whose genius bordered on insanity; let us forget that here and there an invalid, a neurasthenic, a neurotic has enriched the intellectual life of the world or done some epoch-making thing. Such facts do not invalidate the general proposition that sound health is the first prerequisite of a liberal and rounded education, and let us as a nation proceed henceforth not simply to give intellectual adherence to that proposition but to act on it. In other words, let us begin the child's education by teaching him health before everything else; first in point of time, first in importance.

Our primary schools have received not a little attention lately. They are better built and have better lighting and ventilation than in the past. We examine the pupils for enlarged tonsils, bad teeth and granulated lids. We are instituting various commendable reforms, which should be continued and expanded, but they all belong to what might be called an extrinsic method of procedure. We must have something intrinsic. We must get possession of the child himself, affect his inner consciousness, modify his personality and give his life a definite bent, so that he will progressively and increasingly contribute by his own efforts to secure and preserve the health indispensable for the fullest use of the opportunities of high school, college and university. One of the most valid arguments against the higher education of women is the well recognized fact that the intense mental application of the really serious student is often accompanied by suppression or irregularity in certain important bodily functions. Therefore, an accumulated reserve fund of health, and habits of health, are as essential to her success at college as the girl's ability to pass the entrance examinations. It is too late to acquire health habits when the need for them begins to be felt, nor can we impart a proper sense of the importance of our health message to the high school girl if we wait until she is 16 to deliver it.

The primary school is universally recognized as the place to acquire certain things indispensable to future mental development and ultimate success. There is world unanimity about these essentials, but how common it is to have to take children out of school for reasons of health before they have got well into the three r's—reading, writing and aritlimetic. What I propose is to go back of the three r's and begin all education by instilling into the child before he can read or write some knowledge of the human machine and the laws that regulate its upkeep; to elaborate and intensify this teaching step by step with other instruction, showing by practical illustration how to obtain the maximum yield from this machine.

Childhood is the habit-forming and the impressionable age. Churches wisely recognize this, and by means of the catechism, the Sunday school, and numerous other direct and indirect influences, seek to fashion the plastic mind and heart of the young into harmony with their worthy purposes.

In our plans to develop citizens with a proper sense of their public duties and privileges we take advantage of many of the instincts of childhood. We exhibit the flag, we have the children sing patriotic songs; later we give them outlines of community interests and civic economics. Occasions of national importance, military parades, the presence in the locality of some great public character are seized on to arouse and develop the patriotic spirit. But so far we have not gone to the root of the matter or seriously attempted to make health and the health cult the foundation of the child's education, which I conceive to be the only way by which later we may have lawmakers and law-abiding people who will put healthy living ahead of every other kind of living. The beginning should be made in the kindergarten, where already something is accomplished toward teaching appreciation of form and color; but the wonderful opportunities of this golden period are otherwise almost wholly thrown away. In kindergartens and primary schools singing might with propriety be insisted on. Children love to sing, and every harmless natural impulse should be fully utilized. There is an enormous moral value for young people in everything that illustrates the power of cooperation.

A few good voices will carry along with them the feeble, inaccurate ones. The total volume is inspiring. Each feels that he has contributed something toward the pleasurable result. Furthermore, singing has great value as a health measure because it requires expansion of the lungs. Children love to romp and play, but some of them need to be taught to play right; to breathe through their noses. When they do not do this there is an obstruction. It should be corrected before the consequences to cranium and ear become serious. Defects of bony and muscular structures should be discovered in kindergarten and primary school, because when found early many of them can be corrected.

The teaching of physiology and hygiene to the youngest pupils requires no book, but it does require a trained teacher. Unfortunately, however, there are teachers who do not care for that feature of the work even though they are competent. The reason for their indifference to the subject is that they did not grow up in that atmosphere of health culture which I would like to see created for the next generation. Some teachers prefer telling and reading fairy stories, and a little of that is good; but we have too much of it. The young pupil grows to demand entertainment and then to resent any call on him for serious work. Pleasure in work is an undoubted aid to concentration, and hence, if, in the instruction of a child, we can in some measure coincide with natural bent and inclination for certain studies, there is great gain; but this is essentially different from attempting to conduct education as a holiday excursion up the steep slopes of Parnassus, a journey which still has to be made on foot and involves for rich and poor in worldly goods or mental attributes no small privation and effort. Pleasure in work should be the aid, not the object.

The really clever teacher makes his subject entertaining and interesting but does not wander far afield in search of mere diversion. The teaching of health and the first anatomy and physiology lessons will be by the Socratic method of question and answer, and by the still older case-method first known as the parable. There will be no fear of lack of interest when the day's session begins with a tale like this: "John ran away from his mother. He was so little and he ran so fast that he fell down. There was a piece of glass just where he fell and he struck the sharp edge of it with his hand. What happened? What made the blood come? What is blood? Do animals have blood? What is it for? How was the bleeding stopped?" Such lessons can be varied and multiplied indefinitely and made practical by reference to or, when possible, by actual demonstration with natural objects and natural phenomena.

They are very much mistaken who tell you that children cannot think and would have early instruction rely in the main on memory. Even very young children do far more thinking and think far more accurately than the average adult realizes. They are not capable of abstract thought; but in relation to the things of everyday life they are constantly observing and trying to deduce conclusions.

The child is forever discovering new and surprising aspects of his terrestrial environment and is eager to investigate them. He gets into many a scrape through ceaseless experiment with cause and effect. He is eternally asking, "Why?" What a field is this young mind for the sowing of seed, and how much needless suffering and disappointment he can be spared if we will only teach him the important things first.

In the kindergarten and in the lower grades of the primary school which are to be devoted, in the proposed scheme, to health and hygiene, clean hands, clean finger nails, clean faces, proper carriage, proper breathing; sound, well-brushed teeth, and all the little details of physical deportment that are matters both of social convention and of health (like the use of a handkerchief for a moist nostril, holding up the hand to cover the sneeze or cough) will receive reward and make for class standing exactly as does the correct solution of an algebra problem or a good recitation in the higher grades. As the pupil grows and advances, the health instruction will be increased and extended, and will, I am sure, serve to make chemistry, physics and natural history more interesting in themselves, while, conversely, these topics will render more intelligible the hygienic lessons.

PUBLIC SCHOOLS AS NATURAL HEALTH CENTERS

Our public schools, then, must become the health centers of their respective communities. Every measure carried out in them should be fully explained, so that the wisdom of preventive measures shall be fully appreciated by the pupil and he may become an advocate of them for the rest of his life. Will not the children who have been cured of hookworm and its attendant anemia, and come to feel the joy of physical and mental vigor for play and for work; be lifelong converts to health propaganda, and will they not be deeply interested when the cause of their previous disability and its cure is explained?

In connection with the bowl of hot broth furnished daily there may be lessons in diet. Temperance in all details of food and drink may be inculcated at the same time that the evils of alcohol, tobacco and narcotic drugs are set forth. Then the necessity for scalding knives, forks and spoons must be emphasized and the menace of the mouth secretions fully explained. The child must acquire, on the grounds of health, the same horror of the mouth secretions that refined people have for the spitting habit.

Such a program may commend itself to you, but the difficulties attending its execution are rather staggering. In the first place, we must have better teachers, and that means teachers who have had special training and will therefore expect better pay. There will be need for special textbooks, and this is one of the most critical features of the whole business; for good books of any kind for children's use, and especially textbooks, are among the hardest things in the world to produce. A mere rehashing and boiling down of an advanced treatise will not meet the requirements at all. We must captivate the imagination. We must arouse and hold interest in the topic discussed; we must stimulate thought, avoid overtaxing the memory and teach only facts which are scientifically sound, however simple the presentation. Now we have men and women perfectly capable of handling hygiene, physiology and physics in the proper way, but publishers are slow to take up new lines until they are convinced that there is a demand justifying the expense of an edition; and so long as such a movement as this is begun in a small tentative way and as a local experiment, publishers will hesitate.

While on the subject of schoolbooks, and having in mind the examinations conducted under the draft law,

which revealed a high percentage of refractive errors in our adult population, I cannot refrain from making something more than a passing comment on the type used in the schoolbooks supplied to young children. Some thought has been given to schoolroom illumination and to proper posture in reading, but nine children out of ten, if left to themselves, get their noses on the paper when they write; hold the book too close when they read, and will do both without regard to the quantity or source or direction of the light. Dr. G. I. Hogue, in an address before the schoolteachers of Milwaukee, estimated that 30 per cent. of the schoolchildren of this country had some visual defect. In Milwaukee, 27.24 per cent. of the schoolchildren had visual defects. In New York City, out of 650,000 children in the public schools, 30 per cent. at least were two grades behind what they should have attained. Ninety per cent. of these backward pupils are suffering from some defect in eye, ear, nose or throat. He estimates that out of 22,000,000 schoolchildren in the United States, some 6,000,000 suffer from ocular trouble. Good food, ample exercise in the fresh air, and hygienic surroundings will counterbalance a host of objectionable practices; but the ever-growing strain imposed on the human eye by modern life calls for special consideration. I profess no special knowledge of the pathology of the eye, and I have consulted no specialist preliminary to making these remarks; but I do not hesitate to declare that the time is ripe for a reform in the construction of children's schoolbooks.

CAUSES OF EYE STRAIN IN CHILDREN

When you get home from this meeting take your child's geography, history or arithmetic—if not blessed with a child of your own, a nephew, a niece, a neighbor's or a patient's child can supply you—and observe what a large proportion of the text is in fine print. The paper is good; the illustrations are attractive, and the binding is child-proof; but the questions for review, the footnotes, and much of the explanatory matter are set up in six point. I think I am very conservative in the opinion that no child of 10 or under should have to study a book printed in anything smaller than twelve point lower case or eight point capitals, and older children should not have to con by the hour a type finer than ten point. If fine print could be officially stigmatized as a menace to eyesight; if the federal government were to forbid the transmission through the mails of children's schoolbooks improperly printed, we would have a ready solution of the problem. Left to the example of the individual school or to the individual state, the correction of an evil of this kind will not be achieved for many, many years.

This thought and a consideration of the difficulty of securing the services of properly trained teachers and sanitary inspectors and physicians not merely for local experiment, for the collection of data, as a demonstration of some useful doctrine, but as part of a continuous and permanent health campaign, lead naturally to a consideration of government responsibility for the public health fostered and encouraged in the children but affecting also the adult in relation to trade and commerce, preparation for war and so on.

I wish that the public had a fuller appreciation of the really great educational work of our distinctly military services. Through the work of the medical officers of the Army and Navy, our government may be said to have been carrying on for years a health propaganda, within the sphere of the activities presided over by two cabinet officers, affecting directly some 200,000 men in time of peace, and, to a much more limited extent of course, in the past three years acting on a force of several million men. But if we continued to maintain an army of from two to three hundred thousand men and a navy of a hundred thousand, the matters of health which are made prominent in military service would still not directly touch half of 1 per cent. of our population, and we have these men under our influence for relatively short periods—not more than from four to eight years out of a life of three score. This humanitarian, educational work is an incident and not the chief purpose of the departments referred to.

We have to admit, then, that vital as it is for us to maintain a high standard of physical development for the eventualities of war, neither the Secretary of War nor the Secretary of the Navy has any way of concerting measures which will assure for the military needs of the country the necessary number of men of sound bodies with unimpaired special senses. We reject every year thousands of applicants for enlistment who are ineligible for service by reason of conditions which might be regarded as preventable but which are not prevented. We reject men with serious defects of the teeth, with inferior vision or color perception, insufficient development of muscle, bone and tendon, poor heart-action and a defective innervation. Furthermore, the conditions of life in this hurried age; the social environment of the tenement; insufficient training in the home or the lack of a home, and the ravages of alcohol and syphilis in parents, are making for the development of neurotic and unstable types unavailable for service training in peace and of worse than no value for war. All these men are debarred at the recruiting office, but what becomes of them? The Secretary of War and the Secretary of the Navy have no cognizance of them, but they remain a part of the nation, an element of weakness, a burden, a disgrace, and transmit their defects and weakness to their children. The bad teeth; the weak, strained eyes; the overworked, injudiciously used hearts, and the distorted and depraved nervous systems are all preventable. Whose care is it to concert far-reaching plans to fend off from the younger generation and future generations ills that are not by any means an inevitable concomitant of birth?

NEED OF A FEDERAL DEPARTMENT OF HEALTH

Besides those specifically charged with the defense of the country, we have eight other presidential advisers or cabinet officers, each at the head of an extensive establishment and, together, they are supposed to have a supervisory action in regard to the great fundamental needs of the nation; and yet no one of them is specifically charged with the care of the nation's health. Neither the Department of the Interior nor the Department of Labor takes health into account on any considerable scale. It is by what might be called an accident of birth that our very efficient but small Public Health Service is conducted by the Treasury Department.

The U. S. Public Health Service, originally called the U. S. Marine Hospital Service, dates from 1798, when Congress made provision for the medical care of sailors in our merchant marine by generously mulct-

ing each sailor 20 cents of his monthly pay for the support of hospitals ashore and for the pay of the physicians who worked in them. The money was to be collected by the several collectors of customs, who were of course officials of the Treasury Department. It was not until nearly a hundred years later that this body of physicians had any but a curative function.

In 1878 Congress directed the supervising surgeon to prepare and forward to state and municipal health authorities weekly abstracts of consular reports and other information relating to contagious and epidemic diseases; but it is interesting to note that even in 1796 Congress had recognized some measure of responsibility for public health by passing an act requiring all revenue officers to cooperate in the execution of state health laws.

In 1879 Congress appropriated $50,000 for a National Board of Health, whose existence was limited to a period of four years. This board owed its creation to the terrible epidemic of yellow fever raging in the Mississippi Valley. It was after this that the Marine Hospital Service was financed by funds voted by Congress for the specific purpose of preventing the spread of epidemic disease, more particularly smallpox and yellow fever.

In 1892 the Marine Hospital Service achieved notable results in preventing the introduction into this country of the cholera so extensively prevalent in Europe. Then came the passage of an interstate quarantine law and later a national quarantine act in virtue of which a systematic examination of all immigrants has since been maintained. Gradually this service has assumed a distinctly educational function. Its research laboratory was one of the first agencies of the kind. Its work in connection with malaria, pellagra, hookworm, infantile paralysis, leprosy, rabies, typhoid and Rocky Mountain fever, school hygiene, the pollution of water, trachoma, the problems of rural life, and railroad and industrial sanitation, has been of a high order.

I give this outline of the history of the United States Public Health Service because I think too little is known of what it has accomplished; because its growth in importance shows very plainly that, as the value of this kind of work became more and more apparent, ways and means were found to make it possible. The work has been economically done by trained experts often opposed by local prejudice but far more seriously hampered by general indifference and by the fact that they could act only in an advisory capacity, and were only a side issue in the Treasury Department, whose main concern was with other and very unrelated affairs.

This history of the Public Health Service illustrates how the government has been able to play a rôle of considerable importance in promoting public health though acting in an ancillary capacity, and we see how from purely medical practice its members have assumed more and more an educational function. Then, too, in recent years the government's obligations have been recognized by the passage of pure-food and child-labor laws; by enactments regarding the sale of narcotic drugs; by assigning to the Public Health Service supervision of the manufacture and sale of serums and vaccines. But today the public health is, so far as the federal government is concerned, a matter of secondary importance, whereas it should be first.

WASTAGE OF LIFE AND NATURAL RESOURCES

As a people we are of all civilized nations the most wasteful of human life as well as of food, natural resources and public funds. France and Italy have a minister of public education, and England has a ministry of health. During the year 1917 our railroads, which under government administration cost us a million dollars a day, were responsible for 194,000 injuries, 6,300 of which resulted in more or less serious crippling, and for 10,000 deaths. In the same year the funds assigned for the maintenance of the U. S. Public Health Service, including its laboratory, its department of zoology, its field work, the salaries of 200 medical officers and 1,800 other employees totaled $3,250,000. That is to say, the national government's expenditure for its only accredited and official agency for the care of the national health was at the rate of a little over 3 cents a head for the total population. As regards vital statistics, birth registration and morbidity reports we are far behind Europe.

Doubtless the size of the land in which we dwell and the large population account somewhat for our laxness in these things, and of course the nature of our political organization does not make for a uniform and general plan of endeavor to increase physical endurance and physical capacity for output. Absorption in local needs and exaggerated or misconceived ideas of local rights bring a forgetfulness of the interdependence of these states and of the universality of public health interests. How often it happens that the least salubrious section of a state becomes the least populous, though its forests or mines or water power entitle it to be the most thickly settled. If sparsely inhabited, it of course has scant funds for ditching and draining, wholesale eradication of mosquitoes, adequate water supply or whatever the remedy may be. Under federal administration the greatest need would constitute the greatest justification for reclamation, and help would be more generally and systematically extended to counties and states which could not afford to remedy expensive local defects.

A department of health in Washington would be purely civilian in composition and would call to its aid or give its assistance to all private or corporate forms of endeavor, very much as the Army and Navy call on the Carnegie Foundation, the Rockefeller Institute or the American Red Cross. Then we would coordinate effort for improved public health of every kind and make it continuous and progressive instead of desultory and sporadic, and many problems would be diligently attacked which now, in spite of their importance, must wait until some great calamity excites public attention or arouses the sympathy of a philanthropist.

FACTS REVEALED BY THE OPERATION OF THE DRAFT LAW

We have learned and the general public has learned a good deal about our national weakness from the facts revealed by the operations of the draft law. Massachusetts, stimulated by the knowledge of the number and character of the rejections for military service, and other sections of the country alive to the declining birth rate of the white race are proposing enactments to remedy crying evils in the physical development of our people; but years may pass before other sections awake to the importance of these efforts. Mean-

while the whole nation is concerned, and the nation as a whole should be at work to remedy what is wrong.

If Massachusetts or Louisiana were to conclude that fine print and footnotes in children's textbooks were producing eye strain in the pupils of the primary classes in its public schools, and passed laws forbidding the use of a book in any of their public schools unless the type was of an ordained and specified size, this would be fine for the children of those two states. If, again, these sections of the country took steps to improve the general physical development of the young, this would be commendable and useful; but to what extent could Massachusetts or Louisiana supply the needs of the country in time of war? There is much to be learned from war, hard and cruel lesson though it be. As a nation shows itself in war so it is in peace. There is in war a test of the nation's capacity for the tasks of peace. War disrobes us of the figments of conceit and fancy, of self-satisfaction and egotism, and leaves us naked before the mirror of truth. The World War has been a liberal education to some of us. It should be used as a means of enlightenment to everybody.

How are we to explain the fact that the older sections, such as New England, New York, Virginia, North Carolina and Louisiana, lead in nervous and mental disorders; that in defects of the eye New York, Boston, and New England generally and the cities of Ohio, Michigan and Illinois were the most conspicuous; that Rhode Island led in defect rate and Vermont came next, while Kansas had the lowest defect rate of all the states; that the extreme northeast, including New York and New Jersey, made the poorest showing in regard to the teeth? Are these fortuitous facts or are they susceptible of explanation and correction? It is clear that when we have as physicians informed ourselves on these topics there must be education of the public to prepare it to cooperate with, and there must be legislation to enforce, the necessary corrective measures.

There is a mystery in the report of the Provost Marshal General that Oklahoma and Arkansas for the number of men examined gave the highest percentage of men going into Class A, and Arizona and Rhode Island the lowest—men in Class A being the fully qualified, able to see and hear well, able to transport themselves by walking, having a circulatory apparatus able to stand the stress of physical exertion, the intelligence to understand and execute military maneuvers, obey commands and protect themselves.

NATION-WIDE VERSUS STATE CONTROL OF HEALTH MATTERS

How unpractical to expect that any one state alone, or even two or three, should go into the study of these things at considerable expense, or that just and reliable conclusions could be arrived at from such a partial study! These are national matters most easily, most economically and most satisfactorily studied as national questions by national rather than local agencies. Not for a moment do I undervalue the investigations carried on by benevolent and scientific societies or corporations. One would have to be profoundly ignorant, deeply prejudiced, singularly ungrateful, to do so. Such enterprises excite discussion and help to create public opinion; but how slow is the general advance, how lacking in uniformity and concentration are the efforts of individuals and societies working in the interests of a hundred million people! In America we are too prone to leave general measures for general betterment to professed philanthropists; and here as elsewhere what is everybody's business is nobody's business. There is a supineness, an inertia, a criminal neglect in the nation which surrenders to private agencies matters which are of vital concern to the development and expansion of the race and to its triumph in peace or war. Shall we be content to rely on the public spirit of liberal and enlightened millionaires, of a Carnegie or Rockefeller, to do for us, with all our boasted wealth and civilization, things which smaller and less rich nations regard as essential obligations of the governments they maintain and support; and is it not a devitalizing, corrupting, enervating, in every way demoralizing influence in our national life to trust for essentials of national happiness and success to what we must admit are accidental agencies?

I can perfectly understand a strong disinclination to any step that might appear to open the way for government control or restriction of the practice of medicine or that tended to paternalism, especially in view of the agitation developing here and there for all sorts of medical, dispensary and hospital privileges. On the other hand, history teaches that when in the complexities of modern life radical tendencies assume such force as to result in insistent demands for unusual and excessive privileges, it is easier to anticipate and circumvent than to overthrow them in open conflict. History teaches also that greed and violence are usually the result of previous injustice or neglect. There are no fortuitous happenings in nature. The geologists have long since ceased to talk of catastrophism; the physicists and chemists no longer recognize spontaneous combustion, nor do the biologists admit spontaneous generation. In the same way the convulsions of society always have a definite cause, although it may be deeply hidden. Whenever the superior intelligence and education of a given time or locality are threatened with overthrow by the force of an unreasoning mass, we may be sure that there has been neglect on the part of the superior or better favored to discharge its obligations to the inferior or less favored element. If as a nation we are lacking in all the proper provisions for promoting health and longevity; if the physicians who know about these things ignore their obligation to agitate in the matter and obtain results on legitimate lines; if everything that we consider needful to health in connection with industries, public carriers, charities, and the like is not done according to the means and the light we possess, we may be sure that sooner or later a wave of protest and clamor will sweep over the nation and that we physicians, along with other members of the educated classes, will have to pay an excessive price for previous passivity and indifference.

As a general proposition, I am firmly opposed to the disposition to saddle every public and semipublic enterprise on the government, a tendency arising from a profound misconception of government and its legitimate function, and often associated with a disinclination on the part of those displaying it to perform their own individual duty. But I am unqualifiedly in favor of a national department of health with a cabinet officer at its head which shall by its very creation give a great object lesson to our people and shall correlate and vastly expand all the efforts now put forth for the improvement of the race, the prolonging of life and the full development of physical capacity for work and

production. By reason of what it has accomplished in the past and because of the incalculable volume of influence which its individual members can exert in the various communities where they labor, I believe this this Association can effect this legitimate enlargement of government effort as soon as it sets to work whole-heartedly to do so.

I have drawn your attention to the vast latent possibilities for health propaganda in the public schools. I have tried to show that the nation's health, being a vital national concern, should be the particular care of a department of government on a par with the importance, dignity and power of existing departments which affect commerce, labor, revenue, agriculture, the mails and military preparedness; that popular government cannot ignore the human element, the physical element in the people. Permit me now to advert briefly to the practice of medicine as bearing on general scholastic training.

In the main, the medical curriculum of our leading colleges seems satisfactory, judged by the results. There are two points, however, which I do wish to mention briefly. In a recent able and discriminating paper, Dr. Hobart A. Hare of Philadelphia has brought out the well recognized fact that all recent graduates and many old practitioners are profoundly ignorant of drugs and how to prescribe them so as to get the desired results, and he has made an extremely important distinction between the invaluable researches of the scientific pharmacologist on the one hand and the teaching of practical therapeutics on the other. The medical student has no need, as an undergraduate, to engage in experimental work; but he should be taught what and how to prescribe, and to this end should have a short, simple course in practical pharmacy and a very thorough course in applied therapeutics.

In the second place I beg to submit that hygiene and sanitation are not given sufficient prominence in our medical courses. This is amply proved by the poor showing made in these subjects by the candidates appearing before the National Board of Medical Examiners. These topics should receive special emphasis, and the candidate for a diploma must be made to realize that competence in surgery, obstetrics or bacteriology will not atone for deficiency in a branch which, while not by any means fully setting forth the modern conception of medicine as a profession dealing with people collectively, socially and industrially, at least paves the way for a grasp of that conception.

For the medical school to provide a few lectures on hygiene is not enough. The school which does no more than this is not alive to the call of the twentieth century, which demands through the voice of rich and poor, of high and low, better living conditions for the world. We are tempted sometimes to berate the public for its indifference to health and its callousness to the wise injunctions of medical writers and speakers concerned with prolonging life by care of the body; but is not the public bound in such a matter to be behind the professed master, and are we not as the whole rather sunk in crass indifference? How many capable practitioners are really in a position to give sound, scientific advice on the thousand and one details bearing on the preservation of health derived from a knowledge of hygiene in any way comparable to the knowledge they are bound to possess in a score of other things if they are really the kind of physicians they ought to be? Is not our profession constantly brought into discredit by the ignorance of the family physician and of the eminent specialist about matters of real and vital interest to the general public?

PRACTICAL KNOWLEDGE OF HYGIENE NEEDED BY PHYSICIANS

Our semiscientific and popular current literature, and even the daily papers, are constantly giving out bits of information about the flea, the louse, the bedbug and the mosquito in their relation to the transmission of disease. A layman does not quiz his physician about anatomy or pathology, but he does turn to him for enlightenment about these and kindred matters bearing on health and disease which he can understand and on which he would like to be informed. When the physician cannot fully satisfy the questioner about the rôle of these insects; about the potability of water; the danger of damp, newly constructed buildings; the proper trap to a water closet, and the infections that may be acquired from intimate contact with domestic animals, he loses enormously in prestige and, what is more important, he loses the chance to thrust home some valuable lesson in public health and public duty.

We are beginning to develop here and there schools offering special courses and special degrees in hygiene, and I think this is a forward step, for we must have men of special training prepared to do advanced research work in this field; but can any one reasonably pretend that the medical profession can wisely permit this branch to become one for specialists only, and that, while pathology belongs to the physician, hygiene and sanitation are not his sphere? On the contrary, will not the exhaustive teaching of hygiene and of public health medicine in our medical schools immeasurably enlarge the scope and improve the character of the practice of medicine itself?

Let us institute a thorough course in hygiene and sanitation, making a real knowledge of the subject indispensable for graduation. We could include in this course whatever features of the specialties bear directly on the public health.

RESTRICTIONS AS APPLIED TO CANDIDATES FOR ADMISSION TO MEDICAL SCHOOLS

Far more important than determining what particular subjects are to be emphasized and how the medical student's time is to be apportioned in classroom and laboratory is the standard of fitness to which a young man must conform before he can be permitted to study medicine. Admission to a medical school contains the implied promise that diligent application for a given period will qualify him for a diploma as a doctor of medicine. In justice to the public, to the profession, and to the candidate we must endeavor to establish three things before the medical school opens its doors to him. The prospective physician must be sound in body; he must have sufficient mental training and acquirements to enable him to pursue the course with profit; he must give evidence of those personal, temperamental and moral qualities which promise reasonable adaptation to the highest aims and purposes and to the best practice of the American profession.

The first step in establishing the standard for admission to a profession is of course to define the scope of that profession. The distinction between medicine as an unlimited science and medicine as an art, more limited in scope and confined to a comparatively nar-

row field, was alluded to in these words by Huxley: "It is so difficult to think of medicine otherwise than as something which is necessarily connected with curative treatment that we are apt to forget that there must be and is such a thing as pure science of medicine." I have this distinction in mind when I urge that we shall not so arrange our scheme of medical instruction as to make it lean unduly to fitting men only for the practical curative art biased by the American inclination to demand immediate and practical results in a business and financial way. Some of our graduates will infallibly prove by temperament ill adapted to private practice; and if they have had during their student days no vision of medicine, no introduction to it as a science, they will drift out of medicine entirely. If our schools are wholly planned with the idea of turning out only men who can at once become practical bedside clinicians, do we not to some extent limit the chances of our country's taking a prominent part in the further development of the science of medicine? It is this fear which makes me feel that there is a place in our medical faculties for teachers of certain scientific branches even though they are not themselves practitioners. It behooves us to have close affiliations with the pioneers, and as Maeterlinck has well said: "We must beware of abandoning ourselves unreservedly to the prevailing truths of our time."

The distinction between the science and the art of medicine is a vital one. In the program of our medical instruction we must recognize that these two aspects of medicine exist, and we should provide instruction that will make it possible for graduates to be scientific and practical healers of disease or to develop as purely scientific investigators.

People have been inclined in the past to consider the clergyman and the churchman dogmatic; but dogmatism is also the besetting sin of medical centers, medical schools and practicing physicians. We may not be able to prevent individual practitioners from being narrow and prejudiced in their old age, but we can at least start our young men off in their professional career with a strong impulse toward liberality of judgment and breadth of view.

There is, I am convinced, a real danger in the modern trend to practical instruction so called. The danger of neglecting the necessary fundamental and more or less abstract teaching for the distinctly enjoyable clinical and bedside work is increased by the realization that the latter has stronger attractions for the student and that it greatly facilitates the acquisition and retention of information furnished in the classroom. Students and even teachers speak of schools as theoretical and practical, having in mind apparently the distinction between didactic lectures and laboratory exercises; but it is very easy for an unconscious transposition of ideas to lead one to think of theoretical instruction as removed from the domain of usefulness to the sick because the word theoretical is connected with the idea of speculation and hypothesis. Now, as a matter of fact, by theoretical instruction in medicine we mean the abstract handling and presentation of scientific truth as compared with its application as a practical means of healing. With this clarification of terms it becomes manifest at once that the school must be primarily the place for medicine as a science; for if the young physician have not scientific knowledge, what is he to apply when he comes to the bedside?

ERAS OF MEDICAL TEACHING

We have known in this country the era of strictly practical medical teaching. The physician jogged along from house to house, and the neophyte who accompanied him saw the patients and picked up what he could about them through the dissertations of the preceptor. It was followed by the era of cheap medical schools where men were shown at clinics the manifestations of disease: where they committed to memory prescriptions for fever or diarrhea or cough. These schools had short courses, and the fees for diplomas were essential to their maintenance. We have, through the American Medical Association, rung the death knell of the medical diploma mill. But historical justice compels us to admit that there was much excuse, in our country's undeveloped period, for giving some kind of brevet to men willing to settle and supply what primitive rude aid they could in remote and sparsely settled sections that would never have attracted or adequately compensated those who had spent the time and money necessary for more complete training in the half dozen high-grade medical schools we possessed. Conditions are very different now; there is a more equal distribution of wealth and education throughout the land; standards and requirements of various geographic sections are more uniform.

Now let us not be led astray by the insistent demand that our improved schools shall turn out men able from the start to display a high degree of curative skill, for then we shall unconsciously develop a type of school that for our times and standards is little more than a glorified elaboration of the narrow, superficial institution of an earlier day. Let us teach the science of medicine as far as we know it and superimpose on and combine with that, regardless of time and cost, the art of applying it. Let us not be afraid to weed out those candidates for admission to the schools who have neither the acquisitive nor constructive faculties which give promise of development. Let us be primarily concerned with what our graduates will do for American patients and American advance in medicine five and ten years after graduation.

I look forward to the time when we shall have in this country an even higher standard than now and uniform medical requirements with comprehensive courses of five and six years as in England, France and Italy. The small, ambitious and ill financed private medical schools of the past have made impossible for us the practice of giving medical degrees of different values representing different degrees of preparation such as prevails abroad, because no school could expect to attract students if it conferred a degree less pretentious than that of the others. That a need for something of this kind has been recognized by the profession in this country is shown by the rise of the American College of Surgeons and other American colleges, to be a fellow of which implies an advance in attainments beyond those of the ordinary graduate. This need is shown, too, by the existence today of the National Board of Medical Examiners, an incorporated but privately supported organization whose aim is to stamp the successful candidates coming before it as men of peculiarly liberal acquirements.

The gradual elevation of state requirements for license to practice and their constant approach to uniformity justify this board in looking forward to a time in the near future when we shall have a single standard for the whole country; when men who have by their

actual work confirmed the justice of their title to practice in one locality shall not be under the painful necessity of undergoing examinations afresh if questions of health, family, finance, research or specialization lead them to remove to another section; when we can as a nation have proper reciprocal medical relations with the great educational centers and the licensing bodies of Europe. It is in view of all this and because of the need of a good deal of reform in our actual conduct of examinations that the National Board of Medical Examiners was organized. It is in pursuance of our desire to secure from Europe proper recognition of American progress in medical education, to tighten the bonds which unite us with our foreign brethren and to enable us to profit by their greater experience that this board invited to America as its guests the following distinguished gentlemen: Sir Humphrey Rolleston, K. C. B., of the Royal College of Physicians; Col. H. J. Waring, Fellow of the Royal College of Surgeons; Dr. Norman Walker of Edinburgh, and Professors Grégoire and Roussy of the Faculty of Medicine of the University of Paris.

In practice and in our preparation for practice we swing pendulum-like from extreme to extreme, and it would almost seem as if real activity, earnestness and conviction are radical and exaggerated, and that inevitably the effort to moderation and a rational conservatism involves inaction.

Galen in trying to stabilize medicine, to free it from wild speculation and the vagaries of individual schools and the excesses of individual teachers, bound it with iron bands and stopped all progress for thirteen hundred years. The Faculty of Paris, standing like a rock for a maximum of book learning, insisting that the physician must be a savant, holding to narrow conceptions of the dignity of the profession, despised the manual operations of surgery, exacted from aspirants for a license an oath to do no surgery, and by cutting itself off from the opportunities for acquiring that knowledge of anatomy, physiology and pathology afforded by operative investigation made the practice of medicine in France as dead and as meaningless as the branch which it so effectively circumscribed for four centuries. But just here is a feature of the development of medicine that we are apt to overlook. It was not until the itinerant bone setters, the cutters for stone, the oculists, the herniotomists succeeded in being admitted to the schools that they exercised any vital effect on the profession. The schoolmen were narrow, as every one admits, but the practical men who had not been to school were butchers, and they had no real influence until surgery in the person of Felix cured Louis XIV of a fistula in ano which had never been benefited by salve or unguent. Maréschal, successor of Felix as court surgeon, influenced Louis XV to establish five chairs of surgical instruction, and La Peyronie induced him to pass an ordinance making it obligatory for masters of surgery to qualify first as masters of art.

THE EVILS OF TOO PURELY ACADEMIC INSTRUCTION

In recent years we have perceived with ever increasing intensity the evils of a too purely academic instruction, and in the inevitable reaction to practical methods we run the risk of going to an equally dangerous extreme the other way. It behooves us to find a way to teach so that the two lines shall have their proper proportion.

The Renaissance, which introduced a deeper and wider study of the classics, was at the same time the period of humanism, a term I like because it suggests in itself how with the revolt against dogma came a fuller recognition of the human side of life; of the rights, the claims, the needs of the individual and an increasingly general recognition of the fact that the study of mankind is man. The Renaissance marked also what may be called the resurrection of the human body from the grave of ignominy and contempt into which it had been cast by the early Christian and medieval church in its fight against the lusts of the flesh.

Through the stretch of the centuries men have sought in vain the anatomic seat of the soul. Samuel Johnson aptly remarked that "all power of fancy over reason is a degree of insanity." We waste no time today trying to locate the soul in pituitary body or pineal gland, and we insist that physical findings are the basis of diagnosis and treatment; but the physician's preliminary education must take into account the sentimental and imaginative side of life. What true and worthy practitioner fails to feel the appeal of the soul in the searching look, fastened on him as he enters the sickroom? The physician's principal function, as in the days of Hippocrates, is still to assist the healing power of nature. We know that with all our science much of our medicine is without efficacy so far as its direct ostensible purpose is concerned. The doctor's personality, his power to inspire hope and confidence, his understanding of human conduct, his analysis of character remain his chief asset at the bedside. All ages, whatever the attainments of science, have produced great healers, and the family physician of an earlier generation with his kindly sympathy, his unselfish devotion, his capacity for toil and vigils must ever remain the ideal minister to the sick. It is the personality of the upright, big-hearted man whom people trust to use what knowledge he possesses rather than abstract scientific qualifications that counts in the long run. Can we expect men to qualify for the sacred function of receiving the confidences of sufferers in mind and body if we expunge poetry and philosophy and art from their preliminary education and wholly replace fairy tale and legend, Longfellow, Tennyson, Hawthorne and Shakespeare by so-called strictly scientific premedical work? We want a man broad in interests and understanding, not the recluse who finds more pleasure in dissecting a beetle than in viewing a sunset, who gets more soul satisfaction out of the hum of a machine just because it is a machine than in listening to a Patti singing the Last Rose of Summer. Dr. W. M. Beach of Pittsburgh well epitomized all this when he said at Atlantic City last year that "proficiency in the physician requires development in the direction of spirituality; there is a curative force that is moral."

THE KIND OF MEN NEEDED

We want the men who take up medicine in America to be big men; big in heart, big in brain, blessed with vigorous health. The possession of a store of facts is nothing as compared with evidence of native ability and sterling integrity of character. Before we permit a young man to matriculate in medicine we should have assurance that he is careful of his health and careful of his financial obligations; that he commands the respect of former classmates; that he has qualities that make for leadership: above all else that he understands and justly values and possesses that indefinable,

exquisite, delicate something as intangible but as real as the bloom on the plum and the fragance of a wild flower—the sense of honor. Our inquiry into the premedical career of a prospective physician will be of infinitely more value if it enlightens us on these points than if it merely establishes his ability to memorize a book and on admission we discover that the high marks and the multiplicity of diplomas were won by a physical and moral runt. When our schools generally, as one or two now do, come to view the premedical standing as one to be deeply investigated and carefully passed on, we shall have fewer graduates, perhaps, but a relatively larger number of real physicians in whose ranks there will be no fee-splitters, no men of shady reputation and questionable conduct to disgrace us and forfeit our title to the confidence of fathers and mothers.

It is time that the subject of examinations be very thoroughly gone over by professional educators, and substitutes found for such methods of testing a candidate for promotion or honors as do not indicate reasonably lasting acquisition. The bulk of our examinations as at present conducted have but little to recommend them. Their only merit and the reason why the pedagogic world hesitates to discard them lie in the powerful stimulus they provide to the study of even the most difficult branches and the most obnoxious details. When, however, we stop to consider that the labor incited by examinations is usually not for the acquisition of knowledge but for the passing of the examination; when we admit that the modern examination determines, in the main, a very ephemeral form of attainment, we may find that something better than the examination may not be so very difficult of accomplishment after all.

PRESENT METHODS OF EXAMINATION

The present method is vicious for two reasons: First, it fails largely of its object because we do not get a correct idea of mental capacity and mental development, nor a proper appreciation of a student's grasp of the subject by examinations which he can undergo successfully by cramming. In the second place, cramming is a devitalizing process and the very opposite of memory cultivation, because behind the effort to acquire is the deliberate conscious purpose of unloading the mind of the stores taken aboard as soon as a given contingency has passed. The willingness to forget and the deliberate effort to forget negative and weaken the retentive power.

Memory is still an essential, but written examinations often demonstrate only that facile and superficial memory which picks up and carries for a while under stress of need very much as a stream in freshet carries down rocks and earth, dropping the heaviest first and bearing the sand even to its own finish in the ocean.

For years, in our examinations at the Naval Medical School in Washington, we have allowed laboratory notes to be used by candidates in the chemistry and hygiene laboratories, considering that memory for the exact quantities in various solutions is not required, nay, undesirable, where men are trying to do accurate work. What we demand are the principles involved, the meaning of the steps, the interpretation of the results. This is the method followed by the National Board of Medical Examiners. It is in the necropsy room, the laboratory and the hospital ward that we test the candidates in an endeavor to ascertain what they know by what they do, instead of judging entirely by what they say or write.

It is gratifying to observe that medical men are giving more and more thought to the subject of premedical education, and I consider this a most favorable augury for the future of American medicine. We may not yet be in absolute accord as to the means of obtaining the best type of medical student, but it is something to agree that we need in medicine the scientific investigator as well as the scientific practitioner, and that each is dependent on the other. We are agreed too that what we require in preparation for medicine is not scholarship but a process of training which shall develop a certain mental attitude as well as a certain degree of mental power. This unites us at once with the interests of the legal and other liberal professions, and a common platform as to our desires inevitably simplifies the problem of arranging a satisfactory high school course. If we wanted a strictly scientific course as a preparation for medical study we should be compelled to arrange for the paths of school and college education to diverge very early from those to be pursued by men looking to some other career; but I hope we realize today as never before that the true aim of preliminary education is not so much to fit men to study medicine or law or architecture as to help them achieve the fullest success in the pursuit of these several callings. If our primary requirement is for capable men, then we can combine with every other profession which is similarly more concerned with molding character and increasing the range of mental outlook than in making the final technical course easier by a preliminary one which invades the territory of the professional school.

BASIS FOR SCIENTIFIC STUDY

We must concede the soundness of the contention of Bain of Aberdeen that: "In a right view of scientific education the first principles . . . of all the great sciences are the proper basis of the complete and exhaustive study of any single science."

Sir George Makins, president of the Royal College of Physicians, does not think that we should relegate the teaching of physics, chemistry and biology to the premedical period for fear that the medical student may not have a sufficiently thorough grasp of these subjects. On the other hand, Thomas Huxley held very emphatically to an opposite opinion. He said: "The great step toward a thorough medical education is to insist on the teaching of the elements of the physical sciences in all schools, so that medical students shall not go up to the medical colleges utterly ignorant of that with which they have to deal; to insist on the elements of chemistry and the elements of physics being taught in our ordinary and common schools so that there shall be some preparation for the discipline of the medical colleges."

I agree with both Makins and Huxley. My own view is that these subjects should be taught in the school and college course and in the medical school also. In the preliminary courses, pupils should acquire a knowledge of the great fundamental principles involved and the methods employed in scientific work, because all this emphasizes the value of accurate observation and correct interpretation of facts, and both of these mental processes are invaluable in every department of human activity. The future lawyer, doctor, business man needs this training. In the medical school chemistry, physiology and biology will be taught with reference to their bearing on medicine. But the premedical courses must be very different from those now pursued. The textbooks must be simpler and the

courses be made general, and then pupils must be compelled to master what they go over. There is far too much superficial teaching, too much smattering of knowledge at present. This leads to nothing and negatives the very object in view. Huxley appreciated this and usually preferred to teach the beginners himself, so as to be sure that they started with a proper comprehension of the fundamentals, and he left to colleagues and advanced students the subsequent conduct of the classes.

I should put biology and physiology or nature lessons among the earliest, since they go naturally with the health teaching and the hygiene by which all schooling should begin. Next would come physics, which will be attractive to the great majority of active-minded youngsters who are animated by a desire to do things, to make things, to understand electrical devices, automobiles, telephones, flying machines and the like; but I would see to it that they did not waste their time in trifling manual accomplishments but were enabled to understand the principles involved—the development and transformation of energy, latent heat, expansion and contraction of gases and gravitation. Chemistry would come later still. The college course would permit a resumption of the physics and chemistry, at least for medical students, while others would elect something more distinctly related to the careers they planned to embrace.

It will be impossible, I fear, to allow for more than two years of college for the intending student of medicine with five years of classroom and practical work still ahead of him. We want him to graduate while relatively young so that he may face the discouragements and trials of early practice and the long uphill climb to a financial competency while still possessed of the resilience, the buoyancy, the freshness, the enthusiasm, the high courage and the endurance of youth.

In enumerating these so-called scientific features of premedical education it is important to remember that a slightly greater familiarity with them prior to matriculating in medicine will not compensate for the dwarfing effect of a course restricted to them and unbalanced by studies of a complementary character, bearing always in mind that the object of premedical work is to develop, not to indoctrinate. Bain has well said that "the defect of the practical man is the limitation of his tests to his own sphere of working; he seldom learns to extend his method into other spheres." Now the sciences have a definite place in all education quite apart from the direct acquisition of useful facts. Observation, analysis of evidence, accuracy of statement and definition, the insistence on proof and demonstration are among the features that render scientific studies so useful in themselves; but are we not guilty of unpardonable onesidedness if we let only the physical part of the animal man occupy our pupil's attention in our enthusiasm for nature study?

It is many years since Mr. T. Davison wrote these significant words: "A man who has been trained to think upon one subject, or for one subject only, will never be a good judge in that one; whereas the enlargement of his circle gives him increased knowledge and power in a rapidly increasing ratio. So much do ideas act not as solitary units but by grouping and combination; and so clearly do all the things that fall within the proper province of the same faculty of the mind intertwine with and support each other. Judgment lives, as it were, by comparison and discrimination."

MISTAKES OF THE MIDDLE AGES

Education, and as a part of it medical education, in the Middle Ages, was distinctly scientific in character. The strong literary bias and the study of languages which became so marked in the seventeenth and eighteenth centuries did not develop until the Reformation and after. This is not commonly appreciated, but it is a fact. Mathematics, astronomy, chemistry—or, if you choose, astrology and alchemy—and even metaphysics, grammar and rhetoric, as they were taught, were not literary studies but distinctly along the lines of scientific training. True, much of the science of the Middle Ages is held in contempt today; but science and its standards are forever changing, and we cannot require of educators that they shall teach the unknown but only that they shall be abreast of their times.

Now, then, when we consider that for 400 years the premedical studies of Europe were grammar, rhetoric and dialectic, making the trivium; and music, arithmetic, astronomy and geometry, making the quadrivium (called collectively the seven liberal arts but really sciences not arts), and when we realize how absolutely sterile of results was the medical practice to which these premedical studies lead up, have we not some basis in history for questioning the extreme ground which some people take today in decrying the value of the humanities and insisting on purely technical preliminaries?

The Hon. A. J. Balfour, an Eton and Cambridge man, author of the Education Bill, one of the early champions of the higher education of women, an earnest advocate of technical training and of every form of practical instruction which might enable the British man of business to hold his own with foreign competitors, epitomized his thoughts on education in a speech delivered in 1899 at the Ley School. He admitted that a few years of Latin and Greek study do not suffice to accomplish the intended purpose of introducing the scholar to the beauties of ancient literature in the original, but he did insist on the importance of some form of literary education, nay, regarded this as indispensable. I think the opinion of so versatile a man as Balfour, once a successful opponent of Gladstone, leader of the House of Commons, an uncompromising yet locally popular secretary for Ireland and the representative in Parliament for the laboring men of East Manchester, is well worth heeding.

THE PLACE OF LATIN AND GREEK

There is no question that we must give up Greek, and I believe that Homer, Sophocles and other ancient authors will give more pleasure through the good translation of ripe scholars than from the perspiring schoolboy's own efforts; but I consider that Latin, if ably taught, has a place in our schools. I do not offer in support of this study that it helps in acquiring scientific nomenclature, for that is as roundabout and difficult a way of doing the thing as Charles Lamb's roasting of a pig by burning down the place of his abode. I believe in three or four years of Latin because, along with other and indirect benefits, it is the easiest and surest way of teaching boys and girls to write and speak English correctly. I cannot take the time to marshal the arguments for this contention. Suffice it to say that the elasticity and simplicity of our construction, the practical lack of declension and conjugation inherent in our language, as well as many features of American life and thought, combine to

make for careless and inaccurate writing and speaking. Latin is not an elastic, plastic vehicle of thought like Greek, English or French, but an inflexible one cast in an iron mold. Properly taught to young people of reasonable intelligence, the translation of Latin into English prose can be made as fascinating as a picture puzzle, once those forms have been mastered which are essential features of the organic structure of a sentence and give the clue to its meaning. The study of Latin is thus a powerful though indirect method and, because indirect, the easiest way of teaching English grammar. It should be begun early when the necessary memorizing will be least laborious, and continued beyond the time when the pupil would be put at English grammar, a study of great difficulty and universally obnoxious. Grammar can be taught, as it were, objectively and solely through Latin, which illustrates the rules of construction in a way that our own language does not.

NEED FOR MORE ATTENTION TO ENGLISH

And if I am right in this idea, I think the place of Latin is secure in the schools because the one thing that we must insist on is that our boys and girls, whatever their purpose and destiny in life, shall speak and write English correctly. Nowhere in the world is there such need for the teaching of the national language, because nowhere is the school population made up of such a variety of elements, and in the case of many their mother tongue is not English. With no pretension to a mastery of style and no great sympathy with the exaggerated purist, I am nevertheless frequently surprised by the laxness, the inaccuracy, the atrocious barbarisms of the language of daily conversation and even of the public press, the magazines and the books printed in this country. Long observation as examiner on Navy boards has brought me to a realization of the sad fact that the young men of America can go through the high school and even obtain a baccalaureate degree, and yet be incapable of writing plain and simple English correctly. In this respect I submit that we are behind our parents and grandparents. What would have been an occasion for mortification and reproof fifty years ago is today a jest, and our young people are permitted a slovenliness of expression which surely reflects a decay of standards in more ways than one, encourages mental laziness and must have a depreciating effect on cerebration itself.

It is to deem knowledge of little value and to take a narrow, selfish and limited view of intellectual pursuits of any kind to deliberately despise and neglect language, the instrument by which we contribute to others and make them sharers of our work and its results. The crying need of premedical scholastic training in America, and of all school and college training at the present time, is for reform in the teaching of English. By this is not meant that boys and girls must write in learned or stilted or flowery style. Nothing of the kind. But accuracy and clarity of expression are valuable for all and essential for the professional man.

With all due respect to our capable, earnest and largely underpaid teachers, I must confess to a feeling that our public school courses are suffering from too large a variety of subjects to permit thoroughness. This is serious, because it is not so much what is taught that counts, as the permanence of the knowledge and the effect on the acquisitive mechanism produced by the way study is conducted. A superficial acquaintance, a smattering, a glossing over of a thing is pernicious in the extreme. Better no schooling than such a process. For some of this mistaken policy and for the idea that school must be a place of entertainment and amusement rather than of hard, grinding work, I hold the parents responsible. Too many of them, while contributing little enough toward education in the home, resent the pressure of the teacher and yet desire their children to leave the high school with a large variety of showy accomplishments.

What is put before the student of any age must demand effort; must consider what he may be able to attain by expansion and not what he starts with. For true progress education must be calculated not from the standard of averages either of ideals or capacity but with a conception of a maximum achievement and ability. It must give opportunity to all according to their talents but provide always for the development of future leaders and thus insure a gradual heightening of standards and conceptions.

As we contemplate the anomalous developments of the past year are we not bound to pause and consider whether we have not long been radically wrong in our whole system of education? The constant clamor of recent years to make education practical, to make the school courses adequate training for the real business of life may have arisen from a mistaken conception of what the real business of life is. Have we been a little hasty in assuming that poetry and philosophy, and much of what the thoughtlessness of American youth regards as old fashioned and useless, are not beneficial enough to justify the time they take from the supposed practical studies? Have we unconsciously been encouraging courses of study that breed only money-makers and worshipers of mammon? When our sons have been prepared for business and have made their money, and when our daughters have married men of wealth, the one thing needful, will it not be too late for them to acquire a taste for the highest and best things money can procure; can we expect that a love of beauty in nature and art will spring into being, that our children will have proper standards of beauty if the seeds for such tastes and such love were not sown in youth?

The true object of government, whether it be that of a state or of a university, is to broaden the vision of countless individuals as to the meaning of life, and to increase their capacity to add to the sum of human happiness, not only by some positive accomplishment, but by the development of those keen sympathies which recognize all that is good in others while supplementing their weaknesses and retrieving their failures.

Finally, we have to recognize that in every field of endeavor the best men are largely self-taught. In the progress toward the predestined goal disclosed by the lifting mirage of the future, each chooses his own path and has his own peculiar problems to solve. As he advances further and further into the kingdom of truth he discards authority and flings off the fetters of tradition. It is only the mediocre man satisfied with a stereotyped career that can be fully equipped by any system of schooling for all the eventualities of his small and narrow life. What the school and college can do for all is to develop the capacity for true feeling and sound thinking. The medical profession must agitate in season and out of season for a high standard of physical capacity as a basis for intellectual achievement and for normal conduct. It must show its full appreciation of proper values by using every means to divert from its ranks those who have failed to demonstrate the possession of principle as well as of mental proficiency.

SYPHILITIC SCARS OF THE SPIRIT

JOSEPH COLLINS, M.D.
NEW YORK

As one's experience with syphilis of the nervous system becomes more extensive, one becomes more deeply impressed with the fact that the literature of the subject lacks adequate statement or description of manifestations of such infection or of the results of it. Indeed, the mental scars of syphilis have had very scant attention from physicians. The various ways in which general paresis displays itself, the dementia of syphilitic encephalitis and the mental accompaniments of syphilitic endarteritis have been discussed and described, but the minor mental and emotional changes attending cerebral syphilis, and particularly those that are permanent sequelae of such disease that has gone on to recovery, have not been properly recorded. The reason for it is that they are so variable, they are so slight, and, perhaps I may add, so nonpathognomonic. However, they often succeed in thwarting the victim's career, reducing him from a man of promise or a man of accomplishment to a man of no importance or a dependent.

The clinical display of syphilis of the nervous system is very different today from what it was twenty-five years ago. Indeed, syphilis of the nervous system is today different from what it was ten years ago. This may be because the syphilitic virus is less virulent than it was in former times, but probably it is because the disease is diagnosed more frequently and earlier than it was and because it is treated properly and adequately. "Properly" means with mercury and arsphenamin, and "adequately" not only until all clinical manifestations have disappeared but until the Wassermann reaction of the serum has remained negative for a long time. It also means that the medical profession by and large has come to a deeper realization that potassium iodid is not an antisyphilitic agency in the true sense of the term, but a medicament that is of inestimable service in dissipating the products of cell proliferation due to syphilis.

Now that ten years have elapsed since I began the use of arsphenamin and mercury in the treatment of syphilis of the nervous system, I have had abundant opportunity to witness cessation of the progress of syphilitic nervous disease. In some instances, fortunately, this cessation has been accompanied with functional restoration to a degree that approximates normal. I have also encountered many cases in which the syphilitic disease was conquered by the combined resources of nature and of art, but in which the functional restoration was not complete. When such disease is of the intracranial contents, the symptoms are more conspicuous than when they are of the intraspinal contents. For instance, a tabes may be brought to a standstill, and the only evidence of the syphilitic scar is sexual impotence or slight impairment of vesical tonus. On the other hand, syphilitic meningo-encephalitis or syphilitic encephalitis may after recovery leave a scar which displays itself in altered behavior of the patient which is apparent only to those who come in intimate contact with him, in slight impairment of his intellectual and emotional capacity, which, although slight, is enough to shape his career, turning it from success to failure.

REPORT OF CASE

I have in mind the case of a young man of 26 who had made commendable progress in the mercantile world solely from his own effort and ability, and who was looked on by his friends as a man of promise. He left his house one morning of September, 1915, in apparently normal health. A half hour later he was brought home by a policeman and a stranger, who said they had found him lying in the street. He was not unconscious. He said he had been seized with sudden dizziness and had fallen. When he attempted to get up he was so giddy that he could neither preserve his station nor walk. For the next three days he complained in addition of nausea, and he frequently vomited. Gradually the dizziness disappeared, and at the end of two weeks he was able to sit up, and in four weeks he returned to his work. It was then noted that he was neither so alert nor so responsible as he formerly was, and he so failed to satisfy his employers that he was asked to absent himself from business and stay at home until he got well. From that time conspicuous mental symptoms developed. His family related that in addition to being drowsy and stupid, unresponsive and ambitionless, his behavior began to be very queer. He would drink while he was lying down, stuff his mouth full of food until he could not get any more in, attempt to swallow it without chewing it, urinate in his clothes, and throw his clothing or anything that he happened to pick up out of the window. In brief, his behavior was that of a man who had lost his mind. Unless he was specifically interrogated he made no complaint; then he would say that he felt "run-down" but that there was nothing else the matter with him.

The physician whose counsel was sought learned that he had married clandestinely six months before and that soon after that event his wife complained of a sore throat. When she went to a physician he diagnosed her disease as syphilis. Examination of the husband's blood revealed a ++++ Wassermann reaction, and he was put on mercurial treatment. He had received forty intramuscular injections when the symptoms that I relate developed. That is, he was under treatment when the first symptom indicative of meningeal involvement occurred. That symptom was paralysis of the facial nerve. Two months previous to the development of the symptoms noted, the right side of the face became immobile. It developed abruptly and involved all the branches of the nerve. After two or three weeks it gradually improved, but the remains of it were quite conspicuous when I first saw him. Six weeks after the attack of vertigo he made no complaint save that he was run-down. He admitted that he felt dizzy at times, but he had no headache, never saw double, and did not complain of stiff neck. He was inert, listless, unresponsive, neglectful of his appearance, and changed in manner and habit; but his conduct was no longer conspicuously bizarre. The only somatic signs of organic disorder of the nervous system were the residue of the facial paralysis, exaggeration of the tendon jerks, and an extensive, fanlike projection of all the toes when the sole of the foot was irritated. The Babinski great toe phenomenon was elicited on both sides, on the right more conspicuously and characteristically than on the left, and there was a right patellar and ankle clonus. His speech was somewhat indistinct and inebrious, and his answers were laconic; but there was nothing about his speech that suggested general paresis. His general appearance was that of a very ill man. He was emaciated and pale, and during the examination the skin was bathed in clammy perspiration. He weighed 98 pounds, his ordinary weight being 130. The laboratory tests were all corroborative of the diagnosis of basilar meningo-encephalitis, the spinal fluid containing about 150 cells. The following morning he was stuporous, and arousable with difficulty. When aroused he remained so only a moment, and then lapsed back into a condition as if he were overwhelmed by sleep. Indeed, his appearance and reaction were very much like a person in the beginning stupor of uremia or acidosis. Although he answered questions correctly, not infrequently he would stop in the middle of an answer and relapse into a stuporous state. He was able to get out of

bed unaided, to stand and to walk, but the latter was accomplished very insecurely. There was no trace of hemiplegia. The stuporous condition lasted about two weeks. At the end of that time he was confused as to time and place, and had practically no recollection of what had transpired from the time he entered the hospital. He gave a fairly comprehensive, sequential account of his illness up to that time. In reply to questions concerning his illness, he made the stereotyped reply, "Search me." However, he discussed the improvement that he had experienced, but without emotional accompaniment and without projection of plan or ambition. He read the papers and gave a fairly intelligent account of what he read, but he confined his attention to the comic sections and the sporting pages.

Gradually he began to display what might be called a triviality of conduct, a lack of responsibility, with no indication of gratitude for his recovery, no plans for the future, and no expression of desire to get home or to take up the activities of life again. After he had been under treatment for three weeks, during which time he had had two intravenous and two intraspinal injections of arsphenamin and daily mercurial inunctions, the Wassermann reactions of both the serum and the cerebrospinal fluid became negative, and the cells of the latter dropped to 11 per cubic millimeter. The only abnormality that it disclosed was slight globulin excess.

Gradually the patient's mental condition improved. He was no longer incontinent of urine or feces. He became more cognizant and observing of his surroundings; he took a keener interest in reading and diversion; he manifested more solicitude for the visits of his family, and displayed greater pleasure at such contact. His orientation of time and place became quite normal, his memory gradually improved, and his capacity for attention showed a greater awareness and retentiveness. He was neither depressed nor exalted, but displayed a general feeling tone that was not quite normal, though not particularly abnormal.

When he was taken into problems like mental arithmetic, in which he was formerly very alert, he became readily confused. His chief behavioristic phenomenon was untidiness of his person and of his room, which was very foreign to him when he was well, and unconcern for his future. He was then given a series of intravenous injections of arsphenamin and was discharged from the hospital seven weeks after his entrance. During that time he had gained 20 pounds. He went to a sanatorium, where he continued to receive antisyphilitic treatment, with both arsphenamin and mercury, for another six weeks.

Four months after he had come under observation he returned home, and he received no further treatment for three months. At the end of that time the serum Wassermann reaction was weakly positive, but the cerebrospinal fluid remained negative. His physician put him under treatment again and continued treatment for about a year. Altogether he received about thirty intravenous arsphenamin treatments, four intraspinal and scores of inunctions and injections of mercury.

LATER HISTORY

I recently saw him again. More than three years had elapsed since he left the hospital. He related that a few weeks after he returned home, that is, six months after the beginning of the illness that is chronicled above, he obtained employment with a firm that sold automobile accessories and stayed with it two or three months, but as he did not get on very well he left and went with an automobile firm. This firm did not value his services, and after a short time he was again looking for employment. He secured a position with another mercantile firm, and remained with it six or seven months, but not making any progress he changed again and went with the General Electric Company, where he remained two years, during which time he never received an advance of wages. At a time when $50 a week was considered an acceptable wage for the average worker, he was earning only $21. To make matters worse, they gave him less acceptable work. This he considered an affront, and he decided to leave them; then he secured a job with another company, but to little financial advantage. He made no effort to return to the work in which he was trained, namely, the charge of a department in a large store. On being asked why he did not do so he replied that he was convinced he could not do the work satisfactorily, not because he was not well or because he had any difficulty in dealing with people, but, as he expressed it, "I can't think readily of the things to say that would facilitate the work that I would have to do." In other words, he realized that he had become a little indifferent, lacking in the mental elaboration that should be externalized in speech, inclined to be laconic in his answers, and silent. He thought that there were some people in the organization in which he had worked that might be interested in him and that they might give him an opportunity should he solicit it, but he had not been able to bring himself to do it.

He had no particular complaint, and he admitted that he felt well. Nevertheless, he had keen insight of his condition, as illustrated by his remarks about his previous position and by a realization that his wife had abandoned him because he was not able to provide for her. He also realized that his best efforts were not being translated into considerable money. His mother related that he was a little indifferent and that he had few social and no civic interests. His diversions were very simple and childish. Practically the only thing he cared about doing was to go to moving-pictures. He had not kept up with his friends, and he manifested very little inclination for social contact. It was not so much that he did not participate in ordinary pleasure and relaxation as that he had no initiative to plan them or to prompt them. He was not lacking in certain kinds of energy, for when he was out of a position, whether from his own volition or the desires of others, he set resolutely to work to find another; but the work he accepted was not consistent with his education or with his position in life, nor did he attempt to utilize former experience to help him to any position. On examination, the most striking defect was on the affective side of his consciousness. Memory and attention were but slightly impaired. He recalled the incidents of his illness, the room that he occupied in the hospital, where he went after leaving the hospital and how long he remained there, and a great many incidents of his illness; but when he attempted to particularize them, he displayed slight amnesia. On effort he had very commendable capacity for attention. For instance, when the paragraph of a newspaper was read to him, although he did not seem to be paying keen attention, nevertheless he repeated the substance of it without particular hiatus.

But his unfortunate experience had congealed him emotionally. Nothing appealed to him very much save the satisfaction of physical needs. His wife had forsaken him, the career in which he had made a success was closed to him, his mother manifested concern and despair, but they did not seem to touch him. He treated the situation and the prospective sterility of life for him as if they were matters of no importance. To all outward appearance and in casual contact he was quite normal. Spiritually, however, he was but an image formed in the likeness of his previous self.

Physical examination revealed no evidences of organic disorder of the central nervous system. The pupils, tendon jerks, the muscle tonus and the capacity for coordination were quite normal. There was no tremor, no disorder of speech, no disturbance of sense or sensibility. The only physical abnormality was a sluggish vascular system: bradycardia and poor peripheral circulation. Although he did not give the impression of vigor, he had regained his weight; and his appearance was that of a man in good health. His Wassermann reactions had been persistently negative for two years. His soul bore the syphilitic scar, and it will continue to bear it until he yields the spirit. It would be difficult to find a more instructive example of the curability of syphilis of the nervous system in the ordinary sense of the term. But what a miscarriage of therapeutic justice, what a mockery of our studied effort. Though cured, he is but the simulacrum of his former self.

COMMENT

The experience is instructive, in that the encroachment of the central nervous system by the spirochete occurred while the patient was under antisyphilitic treatment by mercury; and more instructive is the experience that the symptoms yielded so promptly to intensive arsphenamin and mercury treatment. Although it is impossible to say how long the infection had been in existence when the meningeal symptoms displayed themselves, it is probable that it was more than a year. Had it not been that his wife showed a florid syphilis, there would have been no information concerning his affection.

That the burden of the pathologic process was borne by the meninges of the base of the brain is evidenced by the facial paralysis and by the vertigo; but that there was also inflammation of the cortical meninges is indicated by the stupor, the apathy, the disturbed cerebration and the sequelae.

The information furnished by examination of the cerebrospinal fluid tended to corroborate the diagnosis of predominant meningeal involvement. It is worthy of note that at no time did the patient complain of headache; nor were symptoms that are given much weight as important diagnostic accompaniments of basilar meningitis, such as nuchal rigidity, basilar and cervical tenderness and diplopia, present.

No satisfactory explanation can be given of the Babinski great toe phenomenon elicited in both feet during the first few days of his profound cerebral illness. The only explanation that can be given is that there was a meningeal involvement over the cortical motor areas. One would expect that in such a condition there would be evidences of motor irritation or of motor inhibition; but as these were lacking, it must be assumed that an associate edematous condition of the superficial cortex prevented manifestations of the one or the other. Indeed, the clinical picture which the patient presented at the height of his disease was not at all unlike that of certain cases of wet brain of alcoholism or of influenzal encephalitis, and it may legitimately be assumed that the dislocation of the patient's mental components was caused by a pathologic condition made up of inflammation and edema not unlike that which occurs particularly in the latter disease.

The chief object in calling attention to this variety of cerebral syphilis is to emphasize the fact that although the infection is thwarted and the patient regains what seems to be his health, he is left with a scar of his mind and his emotions which permanently cripples him to a certain degree. It is easy to measure this degree by psychometric test; but the most telling way of expressing it is to say that it has thrown him from the social, civic, marital, financial level that he had attained, which was a commendable one, to a much lower one at which he can barely support himself and can make no contribution to the welfare, the interest or the support of others. Had he been reduced another peg he might have become a hobo, a wanderer or a charge on his family or the community.

Such experiences as these teach us that syphilis of the nervous system is a curable disease; but the lesson that we learn from it is that the earlier the treatment is instituted the greater is the victim's chance of complete functional recovery.

37 West Fifty-Fourth Street.

ARSPHENAMIN REACTIONS

JOHN F. MARTIN, M.D.
Junior Assistant Physician, Department of Dermatology, Boston Dispensary
BOSTON

In large hospital clinics where syphilis is treated with various arsphenamin preparations, reactions occur more or less frequently, depending on the care taken in preparing solutions, the purity of contents, the elapsed time between the making of the solution and its administration to the patient, the amount of arsphenamin given, operative technic and skill, and factors within the patient. While a given brand of arsphenamin might, through some circumstance, very rarely prove toxic, the precautions taken to make such possibilities remote (chemical, animal and clinical controls) usually mean that arsphenamin has to be discharged for want of evidence. Arsphenamin might have been guilty of causing some of the reactions on which this paper is based, but this could not be proved.

When directions are carefully followed in preparing the arsphenamin solution, and in administering it to the patient, if a reaction follows, then the cause of the reaction is attributable either to the brand of arsphenamin used or to the patient. Printed directions accompany each ampule of arsphenamin, whether it be diarsenol, arsenobenzol, salvarsan or arsaminol, and are specific and easy to understand; and it is laxness in following these directions that accounts for the greater number of reactions to treatment. When a trained and careful person prepares the solutions of arsphenamin, reactions will seldom occur in hospital clinics or in private practice.

NECESSARY PRECAUTIONS

One should note any departure from the normal lemon-yellow color of the brand of arsphenamin being used, and then immerse the ampule in 95 per cent. alcohol for fifteen minutes to detect obscure cracks. Cracked ampules or ampules that contain discolored arsphenamin are to be rejected, the substance having become oxidized. It is a good plan to mark down the serial numbers of the ampules used in order to check up with the manufacturer in case the arsphenamin is suspected of being the cause of a reaction. One is further directed to prepare individual solutions, and when this is not practical, not to prepare more solution than can be disposed of within half an hour. Using the syringe-container method, and allowing six minutes for each 0.5 gm. of arsphenamin in solution, limits the number of ampules that may be used at one time to five. The sooner the solution is disposed of, the less danger of oxidation.

Using the directed technic for one brand of arsphenamin while preparing the solution of another will, in some cases, cause reactions. Salvarsan (Metz) calls for freshly distilled water of not more than room temperature; diarsenol requires warm, freshly distilled water; and arsenobenzol is to be dissolved in boiling hot, freshly distilled water. Salvarsan becomes oxidized when dissolved in hot water. The directions call for freshly distilled water or physiologic sodium chlorid solution, prepared from chemically pure sodium chlorid —not from table salt. It is directed that normal sodium hydroxid (4 per cent.) or 15 per cent. solution be used to neutralize and alkalize arsphenamin in solu-

tion. Faulty preparation with impure or altered sodium hydroxid, or contaminated distilled water, may cause reactions.

Neutralizing arsphenamin, which is a dihydrochlorid salt, requires a definite amount of sodium hydroxid to render it slightly alkaline and suitable for use. A large percentage of reactions resulting when technic is not strictly followed are due to hypo-alkalization, while hyperalkaline solutions, due to faulty measuring of sodium hydroxid solution, causes reactions at times. A graduated pipet or buret is recommended to be used, the certainty being a normal-sized drop and accurate measure. Arsphenamin is precipitated as a basic salt by sodium hydroxid; it requires a definite amount to redissolve the precipitate, changing the basic salt to a monosodium salt, the solution being just alkaline to litmus paper. On further addition of a definite amount of sodium hydroxid, a disodium salt is formed which is completely soluble in water. The basic precipitate and monosodium salt will cause reactions, the disodium salt in solution, properly diluted and filtered, being suitable for use.

All manufacturers agree that solutions should be of room temperature. Injecting too cold solutions into the circulation will induce chill reactions. Too rapid giving of the solution, particularly in high concentration, will cause reactions in some instances. One is advised not to give more than 0.1 gm. of drug (30 c.c. of solution) in two minutes; the gravity method is the one advised; the rate of flow is controlled by the size of the needle (No. 18 or 20 B. & S. gage) and the height of the column of fluid. The syringe-container method is favored by many operators, and while not as "fool proof" as the gravity method, an expert can handle difficult work with greater precision.

Giving too large a dose of arsphenamin at the beginning of a course of treatment accounts for some reactions. Lack of preliminary preparation for treatment —a laxative the night before, and a light breakfast four or five hours before operation—is sometimes a cause. Every patient should be given a careful physical examination to determine organic or functional impairments, as findings may limit or contraindicate arsphenamin treatment. When two or more reactions occur from a multiple ampule solution, in the majority of instances the fault will be found in the technic of preparing the solution, and the usual cause will probably be hypo-alkalinity.

FACTORS ATTRIBUTABLE TO THE PATIENT

Both arsphenamin and the technic in preparing its solution having been excluded, factors attributable to the patient are to be considered. Tissue susceptibility to arsphenamin medication include allergic idiosyncrasy, an inherited dominant susceptibility to arsphenamin medication; anaphylaxis, protoplasmic sensitization from repeated doses; blood synthesis reactions, in which arsphenamin becomes altered or precipitated from causes not understood, or ascribed to excess of carbon dioxid in the blood, or faultily prepared arsphenamin solutions; and the nitritoid reaction, ascribed to the action of arsphenamin in destroying spirochetes and liberating large quantities of bacterial protein to which the tissues have become sensitized. The Herxheimer reaction is attributed to the stimulating activity of nonsterilizing doses of arsphenamin.

Reaction symptoms occur singly or in syndromes, while the injection is being given, soon after the patient leaves the table, or a few hours or days later. The most common type of table reaction is the vasomotor syndrome, usually manifesting dermal capillary flushing, dyspnea, coughing, nausea and subcutaneous edema, two or more symptoms being present. The vasomotor type of reaction has been ascribed by Pardo [1] and others to the vasodilating action of arsphenamin. Insufficient alkalization of arsphenamin solutions account for a large number of this type of reaction. Hirano [2] claims that arsphenamin anaphylactoid symptoms are due in many cases to a deficient epinephrin content in the blood resulting from sudden consumption after intravenous injection of arsphenamin, and from an inhibition of epinephrin secretion by the suprarenals. When repeated reactions of this type occur, preceded by a number of arsphenamin treatments without reaction, epinephrin deficiency as a possible factor causing the reaction is to be considered. Preinjection of epinephrin tends to prevent this reaction, as well as relieve the symptoms when it occurs.

Another type of reaction occurring infrequently, but liable to occur while the patient is on the table, is the "spine pain," characterized by the patient's complaining of stabbing pains in the lumbosacral region. The pain is usually intense; it is in most cases accompanied by vasomotor symptoms, and might be the result of vasomotor influence on various viscera, and registering on respective nerve centers in the spinal cord.

According to Kolmer and Yagle,[3] arsphenamin causes hemolysis, particularly when injected in concentrated solution, but is not so likely to do so when in weaker solution or when isotonic salt solution is used instead of distilled water. Hemolytic action of arsphenamin solutions is said to be increased by hyperalkalization. Dilute solutions of neo-arsphenamin (0.9 gm. in 90 c.c. or more of water) are claimed to cause hemolysis, while concentrated solutions (0.9 gm. in 30 c.c. or less of water) are not hemolytic.

FUNCTIONAL AND ORGANIC IMPAIRMENTS

Reactions other than those due to anaphylaxis and blood synthesis arise from functional and organic impairments causing certain viscera to be more susceptible to arsphenamin medication. Neurologic reactions present the hysterical type, usually not attributable to arsphenamin but to psychophysical upsets, before or after treatment. Syncope, headache, vertigo, neuritis pseudo-epilepsy, and Herxheimer manifestations affecting special nerve centers occasionally arise, owing either to sensitization, vasomotor action, or activating syphilitic lesions. Reflex enuresis has been observed in two cases, immediately following arsphenamin treatment.

Aside from gastro-intestinal manifestations in anaphylactic reactions, there are symptoms that patients complain of at times, such as nausea, diarrhea, colic, anorexia and indigestion. They are not severe enough to be classed as true reactions, but may be termed incidents, being due, in most cases, to functional or organic impairments.

Dermal reactions sometimes occur, and appear to be due to too large doses of arsphenamin, dominant

1. Pardo Castello, V.: Rev. de med. y cirug. de la Habana **24**: 13 (July 10) 1919.
2. Hirano, N.: Nature of Anaphylactoid Symptoms Caused by Intravenous Injection of Arsphenamin, Japan Med. World, June 22, 1919.
3. Kolmer, J. A., and Yagle, Elizabeth M.: Hemolytic Activity of Solutions of Arsphenamin and Neo-Arsphenamin, J. A. M. A. **74**: 643 (March 6) 1920.

susceptibility, anaphylaxis, faulty elimination, blood synthesis, and the administering of toxic arsphenamin solutions. The eruptions appearing may be scarlatinal, maculopapular, or may simulate dermatoses, as pityriasis rosea.

"Arsphenamin jaundice" is a coined term applied to jaundice manifested by patients who have received arsphenamin medication. There are two forms, corresponding to the catarrhal or hepatogenous, and the toxic or hematogenous, the former being due to obstructive elimination arising from such causes as cholangeitis or hepatitis, which may or may not be due to arsphenamin treatment. The hematogenous form is probably due to toxic products of arsphenamin blood synthesis, toxic arsphenamin solutions, sensitized hepatic tissue, or overworked hepatic function, resulting in low-grade or toxic degeneration. Chronic hepatitis may be a contributory cause.

Jaundice following arsphenamin treatment usually occurs after a number of doses of arsphenamin have been given, and it has been observed that patients that show an exhausted or diminished tolerance, manifested by various reactions, are prone to have jaundice at a later period if arsphenamin treatment is carried on without a rest from treatment of one or more weeks. The usual case of arsphenamin jaundice clears up in from two to four weeks; the severe, toxic type of jaundice, while rare, is likely to be fatal.

Reactions to arsphenamin treatment are a warning signal that there is a cause to be found, and that a review of the patient's history, physical condition, the brand of arsphenamin used, and the technic of preparing the solution and administering it to the patient should be undertaken. It sometimes happens that treatment has been too prolonged, in persistently positive cases, and the tolerance to arsphenamin, and also to mercury, has become exhausted. In such cases a rest from treatment of one or two months does much to rejuvenate the patient.

CLASSIFICATION OF UNTOWARD INCIDENTS AND REACTIONS

Sequelae arising from arsphenamin medication may be thus classified: the incidents, slight untoward symptoms occurring in patients with normal tolerance to arsphenamin, such as vertigo, palpitation, disturbances of taste and smell, or slight nausea; the reactions, usually occurring in syndromes, and causing discomfort and sometimes incapacity, which may be ascribed to allergic or acquired susceptibility to arsphenamin, functional or organic complications, or toxic arsphenamin solutions; the grave reactions (sometimes fatalities), such as dermatitis exfoliativa, toxic jaundice, hemorrhagic encephalitis, and gangrene; the accidents, such as thrombosis, phlebitis, and infiltrations about a vein.

With careful observance of all precautions in the administering of a properly prepared arsphenamin solution to a risk-free patient, if treatment is not too energetic, reactions may be reduced to a minimum, both in private practice and hospital clinics. Each patient, during a course of treatment, should be carefully observed as to individual susceptibility and tolerance for arsphenamin. Standard treatment may serve as a guide for the average case, but one must individualize to prevent reactions and best treat the patient.

1647 Beacon Street.

SUMMARY OF BUREAU OF CHEMISTRY INVESTIGATIONS OF POISONING DUE TO RIPE OLIVES*

G. G. DeBORD, M.S.
R. B. EDMONDSON, A.B.
AND
CHARLES THOM, PH.D.
WASHINGTON, D. C.

In the study of poisoning due to ripe olives, a large amount of material representing this industry and its commercial product has been handled by the Microbiological Laboratory of the Bureau of Chemistry. Every phase of olive handling has been considered. The details of this work will be published elsewhere. A summary of the general findings may be of wider interest than the purely bacteriologic report. In the course of this investigation, 2,161 commercial containers have been examined. Of these containers, 560 were glass and 1,601 were tin. Cultures were made from the first 500 containers opened by us, including both tin and glass. Satisfactory odor and appearance were so uniformly accompanied by sterility that culture was subsequently limited to material which did not pass physical examination. In all, 618 containers were examined bacteriologically, and from these samples many different organisms were isolated, among them *Bacillus botulinus* in the following cases:

ISOLATION OF BACILLUS BOTULINUS

1. *Bacillus botulinus* was isolated from seven glass jars of the same batch that caused the deaths of twelve persons in Ohio and Michigan. The actual olives involved in these two poisoning cases were not seen. Seven jars out of forty-six of the batch examined were shown to contain a highly virulent toxin. The organisms isolated from these jars when tested against antiserums proved to be Type A of Burke [1] and Dickson [2] which type is more commonly found in the Pacific Coast states. Type B, which is more common in the Eastern states and apparently also in Europe, has not been reported thus far in olives, although reported by Dickson as occasionally found in California.

2. The organism was found in bits of dried pimiento stuffing adherent to the inside of an empty glass bottle received from Kalispell, Mont. Stuffed olives from this bottle appear to have caused the death of five persons. Here again Type A was found.

3. *Bacillus botulinus* (Type A) was isolated from the interior of one of the olives from the glass jar connected with the New York poisoning cases.

4. The organism was isolated from the interior of an olive from the original glass bottle concerned in the deaths of seven persons at Memphis, Tenn. It was similarly isolated from two more olives which had been thrown into the yard and later recovered. All of these organisms were Type A. These olives were

* From the Microbiological Laboratory, Bureau of Chemistry, United States Department of Agriculture.

* The authors are indebted to Dr. L. T. Giltner of the Pathological Division of the Bureau of Animal Industry, U. S. D. A., for constant cooperation from the pathologic side in determining the toxicity of cultures and in typing them.

1. Burke, G. S.: Notes on Bacillus Botulinus, J. Bacteriol. 4: 555 (Sept.) 1919.

2. Dickson, E. C., and Howitt, Beatrice M.: Botulism: Preliminary Report of a Study of the Antitoxin of Bacillus Botulinus, J. A. M. A. 74: 718 (March 13) 1920.

part of a batch closely related to that concerned in the Ohio and Michigan cases.

5. Olive relish which recently caused the death of one person in Richmond, Calif., was examined by Dr. Fellers of this bureau and found to contain toxin capable of producing the death of experimental animals. Preliminary cultural examination indicates the presence of *Bacillus botulinus*. This sample was in tin.

ODOR OF OLIVES

From the standpoint of the safety of the consumer, it is important to know that in all of the material infected with *Bacillus botulinus* examined by us the odor detected when the container was opened, or the odor of the olives when secured separately from the original container, was distinctly offensive. The offensiveness of the olives, if washed, iced or served in connection with highly flavored foods may be reduced to a minimum. It is recorded, however, that some of the consumers in the cases mentioned above detected the spoiled condition and refused to eat them. Others less acquainted with ripe olives or less keen in their sense of smell consumed the product. Some of them later recorded their objection to the fruit before they died. In only one case (New York) was there any expressed liking for the product.

The real difficulty seems to lie in a widespread lack of acquaintance with a normal odor of ripe olives. Many samples showing the whole range of quality from the highest grade to manifestly putrid material were examined and compared. Tabulation of the physical examination at the time of opening checked absolutely with bacteriologic results in the selection of unsound material. It is impossible to select toxin containing samples from other spoiled samples without animal experiments. These results, therefore, emphasize the necessity of careful examination at the time of opening the container, and of the destruction of any suspected material.

STERILIZATION

Bacteriologic examination of the canned samples revealed the presence of many species of organisms other than *Bacillus botulinus*. Among these organisms were members of the colon group and many nonsporulating aerobes. Both our investigations of the time and temperature used in processing and the presence of these nonsporulating organisms in the containers indicate that the amount of heat applied was entirely inadequate for sterilization. Resistant spore-forming organisms when present, as they occasionally proved to be, withstand very much higher temperatures than were used in the majority of plants visited.

The practice of shipping olives and holding them at the factory either in water or weak brine in barrels or tanks appears to be fairly common in the industry. The salt content observed was never high enough to prevent the activity of micro-organisms. The fermentation of the tanks or barrels examined varied from the acid type without gas production to that of putrefactive decomposition with abundant gas. The odor given off from some of the barrels was very offensive. During this holding period, a barrel or tank of olives infected with any particular organism becomes contaminated throughout by its multiplication. The olives from such an original barrel or tank are graded first into several sizes, and then graded again according to color. One such originally infected container, therefore, may contribute infected olives to several of the final lots so packed. Sterilization of food carrying such extensive contamination with all sorts of organisms is very difficult.

There is another aspect to this fermentation aside from its possibilities of producing a poisonous product The odor of putrefaction already noted is generally recognized as evidence of a product at least partially decomposed. Decency demands that products so decomposed as to be offensive be eliminated from human food. Such products should be destroyed rather than cleaned up, canned and sterilized.

CONCLUSIONS

1. More efficient sterilization should be employed in order to prevent further outbreaks of botulism.

2. Shipping or holding in brine solutions, if tolerated at all, should be so modified as to exclude any undesirable fermentations.

3. Olives from the time of picking until processed in the final container should be handled with the same degree of care and cleanliness as any other perishable food product.

DENTAL SURGERY AND ORGANIC HEART DISEASE

P. J. CALVY, M.D.
FOND DU LAC, WIS.

In discussing this subject I do not intend to detract in the least from the brilliant results attained by dental surgery in the treatment of disease caused by focal infection about the teeth; rather, I mean to call attention to the very real danger which at times and under special conditions exists when radical treatment by extraction is attempted. Special reference is made to organic disease of the heart.

In a given case in which focal infection does exist about the teeth, together with organic cardiac disease, it is fair to assume, other causes being excluded, that the condition is caused or aggravated by the infection, and treatment for its removal should be instituted; but before this is done, certain results are to be anticipated. Are we going to stir up a latent infection in the heart and create an acute condition which may endanger the patient's life? This is possible. It has come to be accepted as proof of the accuracy of the diagnosis and the necessity of the operation that if the condition for which relief is sought by extraction of teeth is temporarily aggravated after the operation, the cause of the trouble has been determined and the procedure was justified. The deduction is logical. It is common experience to note that an arthritis or neuritis becomes acutely painful after the infection which causes it is, so to speak, stirred up. It is called a reaction, and is seldom thought of in connection with cardiac disease; but when this reaction takes place and affects a vital organ, such as the heart, results may be serious. Here the diagnostician in internal medicine should take a stand and be the judge when it comes to determining methods of procedure; and dental surgery will have to develop a technic which will reduce this danger to a minimum, as it is positively to be reckoned with.

Drainage of the infected area, such as an apical abscess, is the result which is desired; but this result, at times, and under certain conditions, is precisely what is not obtained, unless proper technic and after-treatment are employed.

After extraction, if the tooth socket is examined at any time during the first three or four days, it is found

to be filled with a firm clot of blood, which precludes drainage and affords an ideal soil for the rapid growth of bacteria; and the traumatism to the structures around the tooth greatly increases the opportunity for absorption. It is under such conditions that there is a rapid rise of temperature, increased pulse rate, and an acute attack or exacerbation of a chronic trouble, as exemplified by the history of the subjoined cases.

REPORT OF CASES

Case 1.—A thin, anemic woman, aged 42, came seeking relief for attacks of vertigo and general weakness, complaining also of having precordial pain and irregular heart action. Examination of the heart revealed a systolic mitral murmur, slight dilatation and an intermittent action, with nothing in the general history to account for the condition. The throat was negative. The teeth showed evidence of trouble. A hard swelling was found on the alveolar process of the jaw in the region of an impacted and partially unerupted third lower left molar. Pus was oozing out of a small opening on the top. The patient said that this condition had been present for five or six years. Roentgenograms of all the teeth revealed abscesses of the third lower left molar and second bicuspid. Extraction was advised, and the teeth were removed at the hospital the following day by a very competent man. Twelve hours later the temperature had risen to 102.5, and the pulse was 110; thirty-six hours later the temperature was 104, and the pulse 130. The tooth sockets were cleaned out and irrigated with an antiseptic solution, and in three hours the temperature had dropped to 100 and the pulse to 110. Twenty-four hours later another rise of temperature and pulse rate took place. Irrigation of the tooth sockets was again resorted to, with the same results. Thereafter irrigation and cleansing by antiseptic solutions prevented a further rise in temperature and increase in pulse rate.

On the fifth day after extraction, the heart trouble had become worse, the pulse rate remained high, the intermittent heart action was more pronounced, the murmur was more audible and the patient was very weak, being obliged to remain in bed for two weeks under treatment directed to the condition of her heart.

Case 2.—A woman, aged 64, had an exploratory laparotomy performed for suspected recurrent carcinoma in the pelvis, hysterectomy having been performed three years previously for cancer of the uterus. Examination before operation disclosed hypertrophy of the heart, the systolic blood pressure being 140, and the diastolic, 110. A slight systolic murmur was present at the apex. The patient remained in bed in the hospital for a week before the operation. Laparotomy was performed, but it amounted to nothing more than an exploration, and I do not think it could be held responsible for the results, as the patient recovered from the short ether anesthetic and operation in a few days. On the eighth day after the operation she requested to have two lower second bicuspids extracted, saying that they were sore and had been giving her trouble for a long time. Extraction was done under local anesthesia. Twenty-four hours after extraction of the teeth, the temperature rose to 101, and the pulse to 125. Local treatment, as in the previous case, improved the symptoms somewhat. During the next twenty-four hours the pulse became weaker and more irregular, but the temperature did not rise above 100. The mitral murmur became more audible, the systolic blood pressure began to fall, the pulse rate and general weakness increased, and the patient died of dilatation of the heart at the end of the third day.

COMMENT

Other and as typical cases can be reviewed from private practice and from the records of St. Agnes Hospital, where severe cardiac actions have occurred after the extraction of infected teeth.

It is not to be presumed that all patients with cardiac diseases are necessarily poor risks for extraction; but when the focus of infection to be eradicated is the probable cause of the heart trouble, the possibility of making matters worse must be borne in mind. No doubt valvular disease in well compensated hearts, especially in young persons, cannot be considered dangerous; but in older persons in whom the myocardium is degenerated, accompanied by valvular disease, when the energy index is low and cardiac decompensation is imminent, such hearts show that they are beginning to break under their load, and in such cases it behooves us to make haste slowly.

ACUTE MIDDLE EAR INFECTIONS IN CHILDREN

FROM THE STANDPOINT OF THE PEDIATRICIAN *

LINNAEUS EDFORD LA FÉTRA, M.D.
Visiting Physician in Charge, Children's Medical Division, Bellevue Hospital; Associate in Diseases of Children, Columbia University College of Physicians and Surgeons
NEW YORK

Among infants and children, acute ear infections take rank in number and importance only second to respiratory and gastro-intestinal disturbances. They are a common occurrence in affections of the upper respiratory tract, and frequently prove formidable complications in scarlet fever and measles. In private practice among children, hardly a day passes during the winter season without one's coming across an acute ear inflammation, and in hospital practice it is not an uncommon thing to have to incise two or three drums daily in the infants' wards during the season of respiratory infections. Being acquainted with this susceptibility to ear infections, the pediatrician is always on the lookout for ear inflammations, and consequently is likely to see their development from an earlier stage than does the otologist. Routine examination will frequently reveal the ear inflammation before the baby has shown any manifestations referable to the ear by the mother or the nurse.

As to symptoms, complaint of pain in the ear, if present, is of course important; but young infants do not well localize their pains, and frequently a baby will cry and put his hand on the abdomen, and complain of pain in the stomach, when examination will reveal a bulging drum as the cause of the pain. Rolling the head or putting the hand to the ear are suggestive, but often they have no significance. Absence of any complaint of pain or even of general restlessness is no proof that the ear is not inflamed. Temperature elevation is nearly always present, but this also, like pain, may be absent even when the drum is bulging. Tenderness in front of the ear is a very reliable sign, but this too is occasionally lacking even when there is high temperature and bulging of the drum. Moreover, many children deny tenderness, in spite of the involuntary wincing of the mouth. Stiffness of the neck is occasionally present even without enlarged lymph nodes under the mastoid muscle and without mastoiditis. To sum up the indications of middle ear disease, a bulging drum is the only diagnostic sign. On examination, retraction of the drum and in addition some redness is frequently the first sign of inflammation in the rhinopharynx and often confirms a suspicion of acute rhinitis as cause for fever up to 102 or 103 F. when there is as yet no running or stuffiness of the nose. The next sign of ear involvement is some red-

* Read before the Section of Otology, New York Academy of Medicine, Feb. 13, 1920.

ness along the malleus, and the next, some fulness and redness of Shrapnell's membrane. These signs are present so commonly with head colds in children, and subside so readily, that this small degree of otitis can be considered a very common accompaniment of acute rhinitis.

The next signs that appear mean an otitis media, namely, redness and bulging of the drum membrane, first behind and later in front. Occasionally the drum looks only gray, owing to thickened epithelium, which must be removed to get a view of the drum itself. The retraction meanwhile increases, and the appearance of the drum is that of a small red ring or doughnut. When accompanied by a high temperature, these signs are sufficient justification for incision of the drum; but by far the larger number of such cases will subside in a day or so if the nostrils are treated by a weak epinephrin solution, and hot irrigations of the ear are employed. I find that most otologists incise such drums, and the practice is undoubtedly a good one, for such an ear will frequently return to normal more quickly after being incised than if not opened. I have seen this in many cases when both ears became inflamed successively and in which the first one was incised. I appreciate fully the dangers of fulminating mastoid, and am aware that the knowledge and experience of such cases is the reason why the otologist practically always makes an incision when he sees a bulging drum. And yet the making of an open wound with the dangers of additional infection from the outside has seemed to me a procedure to be avoided, if possible without risk to the child. It is only when the temperature is high, the pain acute and the bulging marked that I have deemed it best to incise at once. The infrequency of mastoid complications and the very satisfactory results of conservative treatment are my justification for awaiting further indications than those of the day of onset. If the tenderness elicited by pressure on the tragus increases, if there is tenderness of the tip of the mastoid, and if the temperature remains high after twenty-four hours and the bulging persists, incision is necessary.

The paracentesis should be done under anesthesia, preferably chloroform, though an exception may be made to this rule if the patient is an infant and only one drum is to be incised. The incision should be a J or U shape, and should be carried well upward. Irrigation with hot boric acid solutions immediately after incision is of advantage, and it is always satisfactory to hear the child gulp or swallow during this irrigation, as this shows a free opening through the drum, with passage of the irrigation fluid into the throat. The temperature, the pain, the tenderness in front of the tragus, and the tenderness of the tip of the mastoid—if that has been present—should all subside after two or three days. It is quite common, however, for the temperature to remain elevated until the discharge becomes purulent. This may be two or three days after the incision.

Mastoid involvement has been, in my experience, a very infrequent complication of middle ear disease; among infants in hospital practice not more than 1 per cent. and in private practice not more than 2 per cent. There is, however, great variation in different years. For several years I saw not a single case in private practice, the next year six or eight, and then a number of years only one or two cases. The rarity of mastoid complications in infants' wards of hospitals is worthy of comment, not more than three or four a year occuring among hundreds of cases of acute otitis.

During the month of January, 1920, there were in the children's wards of Bellevue Hospital 248 admissions; eleven patients had primary otitis media and thirty-one had otitis secondary to other conditions, mostly of the respiratory tract. There were among these respiratory conditions seven cases of bronchopneumonia, six of bronchitis, four of acute pharyngitis and two of lobar pneumonia. During the year 1919 there were only two cases of mastoiditis among 400 cases of otitis media. It is a common observation that in cases of bronchitis or bronchopneumonia the complicating otitis media occurs usually from four to seven days after the onset of the primary disease. Often in cases of bronchitis the ear will become involved after the temperature of the acute bronchitis has subsided to normal. In these cases it is probable that the continued coughing of the early convalescent stage causes an infection of the eustachian tubes.

The otitis that complicates measles is far more likely to result in mastoiditis than we have been taught to believe, and is almost as serious as the otitis complicating scarlet fever.

The chief reliable sign of mastoid inflammation is sagging of the posterior superior quadrant of the drum with the adjacent wall of the canal. Tenderness above the tip on a line directly behind the meatus at the site of the mastoid emissary vein, and tenderness of the upper part of the mastoid in the region of the zygoma are very important if they can be elicited. Other suggestive signs are a profuse discharge or the sudden cessation of a profuse discharge. In little babies, and occasionally in older children, an edema over the mastoid process is important. It should be emphasized that vacillations of temperature without the canal signs are not reliable, though if these temperature elevations are continued and unexplained by pneumonia, pyelitis or by gastro-intestinal disturbance, they must be regarded as pointing to mastoid involvement. If successive blood counts show an increase in the number of polymorphonuclear cells and in the total leukocyte counts, they are also valuable; but single blood counts are of little importance since the blood in children is susceptible to a polymorphonuclear and total leukocyte increase.

To my mind the indications for the mastoid operation are a persistence of the signs already mentioned, in spite of free drainage through the wide incision in the drum. It is manifest that if the inflammation is not subsiding there must be increasing destruction of the mastoid cells, and the only method of cure is by posterior drainage through the mastoid bone, together with clearing out of all the cells and bony tissues that are infected.

Sinus thrombosis is so exceedingly rare in my experience that I can say very little about those signs. In several instances, however, this diagnosis has been suspected chiefly because of a marked septic type of the temperature curve. It cannot be emphasized too often that marked vacillation in the temperature is a most unsafe guide to either mastoid disease or to sinus thrombosis. The temperature in children is so readily changed by slight causes that there must be localized evidence in order to make a diagnosis. Particularly, one should be on the lookout for pneumonia, pyelitis, tonsillitis, inflammation of the lymph nodes in the neck, and gastro-intestinal disturbances. During epidemics of grip it may be impossible to find any local condition

to explain the temperature variations; but without definite evidence of trouble in the mastoid or in the signs as determined by positive blood cultures, such diagnosis should not be made. In a baby, aged 19 months, sinus thrombosis was suspected but did not exist, and in another instance sinus thrombosis was suspected, probably because of tenderness along the mastoid muscle. This tenderness was an inflammatory reaction in the edge of the muscle extending down from the mastoid process, which had been opened.

Of actual labyrinthine disease complicating mastoiditis I have seen only one case; it is, of course, very rare.

I have said nothing with regard to operations of mastoid and sinus, because they belong distinctly to the realm of the otologist. My plea to the general practitioner and to the pediatrician with regard to ear infections in children is that careful routine examination of the ears be made in all cases in which fever is present. It cannot be emphasized too often that to the man who treats children, the otoscope is just as necessary as the stethoscope.

113 East Sixty-First Street.

USE OF MERCUROCHROME-220 AS A GERMICIDE IN OPHTHALMIA NEONATORUM

A PRELIMINARY REPORT

C. A. CLAPP, M.D.
Assistant in Clinical Ophthalmology, Johns Hopkins University
AND
M. G. MARTIN, M.D.
Senior Resident Physician, Baltimore Eye, Ear and Throat Hospital
BALTIMORE

Since the appearance of the article by Young, White and Swartz,[1] calling attention to the germicide dibromoxymercuryfluorescein (mercurochrome-220), showing its penetrating power as well as its germicidal action on the gonococcus, with its slight irritability, we have used it in four cases of gonococcal ophthalmia neonatorum with exceedingly satisfactory results:

CASE 1.—M. D., aged 3 weeks, whose eyes had discharged pus since birth, the only treatment having been boric acid irrigations, was brought to the dispensary of the Baltimore Eye, Ear and Throat Charity Hospital for treatment, Jan. 6, 1920. Examination revealed the typical acute gonorrheal conjunctivitis with swollen lids and purulent secretion, the cornea being clear. Smears showed many pus cells containing gram-negative diplococci. A 2 per cent. solution of mercurochrome was freely instilled in each eye at the hospital, and boric acid irrigations were continued at home as before.

January 7, the lids were not glued together, there were no crusts at the margins, the edema was subsiding, and there was only a small amount of pus in each conjunctival sac. Smears were taken and no gonococci were found. The eyes were again flushed with the 2 per cent. solution, and boric acid irrigations were continued.

January 9, edema of the lids had disappeared: no free pus and no gonococci were found in smears. The eyes were again flushed with the 2 per cent. solution.

January 10, there was no purulent secretion, and a smear was negative. The 2 per cent. solution was again instilled. Although instructions were given to return in two days, the patient was not observed again.

CASE 2.—A. T., aged 11 days, appeared for treatment at the Baltimore Eye, Ear and Throat Dispensary, Jan. 6, 1920, being brought by an aunt who said that the child was delivered by a midwife and no drops were used. Its eyes became sore three or four days after delivery. Examination revealed acute purulent ophthalmia neonatorum with edema of the lids and much free pus, the right lid being more swollen than the left. The corneas were clear. A smear showed numerous pus cells with gram-negative intracellular diplococci. A 2 per cent. solution of mercurochrome was used at the hospital after cleansing with boric acid, and a similar solution was given the aunt with instructions as to the method of use every two hours.

January 9, the left conjunctival sac was almost entirely free from pus, and edema of the lids was much less, the right lid being still swollen. A purulent secretion still showed gonococci, but there was much less secretion and the organisms were fewer. The treatment was ordered to be continued.

January 12, the patient was admitted to Sydenham Hospital with a diagnosis of acute indigestion, and died, but no connection was attributed to eye treatment by the physician in charge. The note in reference to the eyes was that "they were almost free from inflammation."

CASE 3.—B. R. was born in Maryland Lying-In Hospital, Jan. 10, 1920, and Credé's method was employed. Nine days later the lids became edematous, with purulent conjunctivitis which showed an abundance of gonococci. A drop of 1 per cent. silver nitrate solution was instilled into each eye with cleansing, and 10 per cent. argyrol was used every three hours.

January 21, all the symptoms were exaggerated, the discharge being very profuse and the lids edematous, although the cornea remained clear. At 5 p. m. on this date a 2 per cent. solution of mercurochrome-220 was used, and was continued every three hours in place of all other treatment.

January 22, the eye showed marked improvement, the edema of the lids and the secretion both being lessened.

January 23, there was no edema of the lids, but there was considerable serous discharge: no gonococci were found in smear.

January 24, there was a slight serous discharge.

January 26, the patient left the hospital. The secretion was very slight and no gonococci were found.

February 4, the mother reported that the child's eyes were normal.

CASE 4.—A. D. had a smear taken from the eyes two days after birth, as the mother had been under treatment, although the baby's eyes showed no inflammation. The smear showed the presence of gonococci. Two per cent. solution of mercurochrome was instilled every two hours. Three days later no gonococci could be found on staining a smear.

COMMENT

It is not necessary in a report of this character to go into the chemistry or the experimental data of this new germicide, as they were thoroughly treated in the article referred to; nor do we present this as a new sure cure. Rather do we wish to call our colleagues' attention to its application in eye infections, especially infections with the gonococcus. While we have used it in some other infections, it has not seemed as yet more efficacious than the older remedies.

To be sure, these infants frequently improve on cleansing treatment alone, but there seemed a very marked improvement on using the new remedy. The crucial test will come in the cases of gonorrheal conjunctivitis in the adult. While we did use it in the last stages of one case with seemingly marked improvement, we do not feel justified in including it in this report.

A 2 per cent. solution can be used with impunity and, with only a slight burning effect for the first few seconds. Though it is rather disagreeable to use on account of the red stain, it is no more objectionable

1. Young, H. H.; White, E. C., and Swartz, E. O.: A New Germicide for Use in the Genito-Urinary Tract: "Mercurochrome-220," J. A. M. A. **73**: 1483 (Nov. 15) 1919.

than argyrol, and will not produce a permanent stain, as occasionally happens with the silver preparations. In the cases reported there was a marked improvement after its use was begun, and apparently a much more rapid convalescence.

THE METABOLISM OF A DWARF

STUDIES IN METABOLISM: I

FRITZ B. TALBOT, M.D.

BOSTON

The metabolism in this case is recorded because in the first place it is somewhat unusual, and in the second place no other studies on the metabolism of dwarfs of the same age have been made.

REPORT OF CASE

F. D., a boy, had been under the observation of the overseers of the poor, and had always been placed in excellent homes. The family history was unknown. He was very small and thin in spite of the fact that he had had plenty of good food and outdoor exercise. He had had none of the infectious diseases. At 3 years of age he was much undersized, and is said not to have gained much in weight or size since that time. When 7 years old he weighed, when dressed, 12.6 kg. (27 pounds, 5 ounces) and was 91.5 cm. (36 inches) tall, the normal weight for the age being 21.9 kg. (48 pounds, 1½ ounces) and the height 114.3 cm. (45 inches). His physical examination, aside from his small stature, was normal. A diagnosis of a dwarf boy with rickets was made. His basal metabolism is given in Table 1. The figures represent the basal metabolism without food. His temperature was 98.8, and he had had nothing to eat since midday.

Table 2 shows the results of his metabolism studied during two active periods while fasting and with a temperature of 99.7 F. He weighed at this time 12.93 kg.

The recent work of Benedict and Talbot,[1] about to appear in a forthcoming publication of the Carnegie Institution of Washington, gives, for the first time, the

TABLE 1.—BASAL METABOLISM, MAY 17, 1918

Carbon Dioxid Produced Calculated to Hour Basis, Gm.	Heat Produced per 24 Hours					
	Total Calories	Per Kilogram, Calories	Per Square Meter Body Surface — Lissauer, Calories	Per Square Meter Body Surface — Du Bois, Calories	Average Pulse Rate	Relative Activity
11.22	777	58	1,335	1,257	104	I asleep
11.32	784	58	1,347	1,269	105	I asleep

complete curve of the basal metabolism of children from birth to puberty, and makes possible comparisons which in the past were not feasible.

The basal figures found for F. D., as compared with the normal studied by us, showed that his total metabolism for twenty-four hours was 780 calories against an average of 900 calories for normal boys of the same age. Although his metabolism was slightly diminished, it was almost within the variation of the normal. When the total calories of F. D. were compared with the total calories of normal boys of the same weight, it was found that he was producing more calories than the average, the total calories for F. D. being 780 against 675 calories for normal boys. This is slightly above the possible variation from the normal.

His metabolism, studied from the point of view of unit of body weight, was found to deviate markedly from the normal. His calories, 58 per kilogram, against the average for normal boys of the same age, 40 calories per kilogram, show an increase of 45 per cent., and his metabolism per kilogram of body weight an increase of 13.7 per cent. above the normal. It is evident, then, that the intensity of his metabolism is greater for each unit of body weight than that of a normal boy. His variation from the normal is striking, and although possibly characteristic of certain types of dwarfs, it may be due to the fact that there is very little fat on his body. As might be expected, his metabolism per unit of body surface was 12 per cent. higher than that of normal boys of the same age, and 11 per cent. higher than that of normal boys of the same weight. This is probably because of the relatively large amount of active protoplasmic tissue and the absence of the inert blanket of body fat, as well as the relatively increased amount of body surface.

TABLE 2.—METABOLISM WHILE FASTING, MARCH 25, 1918

Carbon Dioxid Produced Calculated to Hour Basis, Gm.	Heat Produced per 24 Hours					
	Total Calories	Per Kilogram, Calories	Per Square Meter Body Surface — Lissauer, Calories	Per Square Meter Body Surface — Du Bois, Calories	Average Pulse Rate	Relative Activity
16.15	1,051	..	.....	.....	122	IV
19.56	1,273	98	2,245	2,118	130	III

COMMENT

There is no evidence in the physical examination or clinical status of this boy to explain his failure to grow or to prove that he suffered from any disturbance of the glands of internal secretion. Intellectually he was said to be up to other boys of the same age. He had no disturbance of digestion, and his dwarfism may have been merely another evidence of infantilism. His metabolism showed that he did not belong to the class of individuals who have diminished glandular secretion, as in cretinism, myxedema, or hypopituitarism, in which there is a lowered metabolism.

The maximum number of calories used by him shows that when he was restless, even while lying flat in the respiratory chamber, his metabolism would increase nearly 50 per cent. It is evident, of course, that with more active exercise, his metabolism would have increased very much more. It is fair to assume, therefore, that his protoplasmic mass must work at a greater rate of speed than is the case in children who have deficient glandular secretion. It is possible that his increased metabolism might be due to excessive activity of some gland of internal secretion for which no clinical sign was found.

The result of the metabolism studies on this boy show that in order to make him gain in weight he must receive as many calories as a normal boy of the same age, and a great many more calories per kilogram than a normal boy of the same age or weight. Undoubtedly he will require at least twice as many calories as the basal metabolism gives, or approximately 120 calories per kilogram. This is similar to what was found to be true in atrophic infants who required from 160 to 180 calories per kilogram before they gained.

311 Beacon Street.

1. A preliminary communication on this work (Benedict, F. G.: Energy Requirements of Children from Birth to Puberty) appeared in the Boston Medical and Surgical Journal **181**: 107 (July 31) 1919.

Differential Diagnosis.—In appendicitis beginning suddenly there is a rise in temperature; in acute perforation of the stomach or duodenum the temperature falls.

THE SUBOXIDATION SYNDROME IN CHILDHOOD

CHARLES GILMORE KERLEY, M.D.
AND
LOUIS BERMAN, M.D.
NEW YORK

The condition which we have designated as the "suboxidation syndrome" is found with few exceptions among the offspring of the well-to-do. The forebears of the children presenting this syndrome are usually those who have lived indoor occupational lives for two or more generations—those who have been occupied with intellectual pursuits and not by manual labor.

A child with the suboxidation syndrome is one whose physical functions are habitually below the normal. He may be overweight, or of average weight, but he is usually underweight. There is a lowered capacity in endurance, and the emotional control is defective. As a rule, the child is precocious and mentally overactive, and possesses much nervous energy. One of the striking features is a dryness of the skin with a tendency to erythema and mild eczema. Patchy areas of inflammation are particularly prone to appear about the mouth. Perspiration is scanty, and the child rarely perspires except on very hot days, and then only under active exercise. The hands and feet readily become cold in cold weather, and this feature is complained of by the parents. They feel low temperature keenly. Extra heavy outdoor garments are required during the winter months. A moderate anemia is present in most cases. The appetite is often capricious, and constipation is the rule.

One of the frequently encountered features of this syndrome is a marked tendency to afebrile rhinitis and bronchitis. The child is scarcely free from one attack when another supervenes. There is a chain of these respiratory affections throughout the winter. The "colds" are sufficiently severe and frequent in occurrence to interfere seriously with the activity of the patient, and much time is lost in school and outdoors. It is rare to find a patient of this type who has not had both tonsils and adenoids removed, with little or no benefit.

As a class they are rather immune to infection of the respiratory tract, although pneumonia and infectious bronchitis may, of course, occur. While they show a certain resistance to bacillary affections of the respiratory mucous membrane, they quite frequently are subjects of protein sensitization; and bronchitis, when it occurs, is likely to be of the spasmodic type.

Another feature of the syndrome is the tendency to attacks of recurrent vomiting. The child vomits once or repeatedly for a few hours or a day or two. The vomiting seizures may have occurred at fairly definite intervals for several months or years.

In some of these patients, transient skin rashes or eczema may be the predominating manifestation that brings him to us; or it may be because of the anemia or that he is underweight or that he has not gained in height for a period of several months.

Others will give the history of an elevation of the temperature, lasting one or more days, occurring at fairly regular intervals, without other manifestations than those of heavy breath and a coated tongue.

Not all cases show an identical train of acute manifestations. In one respect, however, these children are very similar: They have a defective metabolism for the soluble carbohydrates and for the hydrocarbons, particularly for cow's milk fat in the amount that we have accustomed ourselves during the last few decades to give to children.

ILLUSTRATIVE CASES

CASE 1.—A boy, aged 3 years, weighing 29 pounds and without physical abnormality, had been subject to recurrent attacks of elevation of the temperature since the age of 1 year. They occurred about every two months. There was loss of appetite, coated tongue and listlessness, with a temperature of from 101 to 103. There was rarely vomiting, the fever periods lasting from three to five days. The skin showed scattered areas of erythema. He was put on a diet free from cow's milk fat, and sugar. During the next eight months there were no further attacks of illness, and he had gained 3½ pounds in weight and 2½ inches in height.

CASE 2.—A girl, aged 6 years, who weighed 47½ pounds and who was without physical abnormality, had a habitually coated tongue and habitually poor appetite. Meal times were a trial to the other members of the family. In disposition she was irritable, her complexion was sallow, the skin was dry over the back of the neck, where there was persistent erythema. There were patchy areas of eczema about the mouth, causing considerable disfigurement. She was subject to frequent catarrhal colds. One followed the other so rapidly that it was difficult to say when one was finished and another began. Tonsils and adenoids had been removed without benefit. It was with concern that the parents looked forward to the approaching winter. She was given a diet from which sugar was largely excluded, enough being allowed to make the food palatable. Butter was forbidden. One pint of skimmed milk was allowed daily. Aside from these restrictions, the food given was that of any well child of her age. After two months under this management she weighed 53 pounds, a gain of 6¾ pounds. There had not been a day's illness. The tongue was clean, with no trace of eczema. She was happy and good natured. During the last six months there have been only two slight colds, and the skin remains clear.

CASE 3.—A girl, aged 8 years, weighing 51½ pounds, gave the history of early eczema and difficult feeding, and "had always been on a diet for her skin." The immediate occasion for the consultation was the occurrence of vomiting attacks at intervals of from four to five weeks. The attacks usually lasted from one to two days, during which time the vomiting occurred frequently. The tongue was much coated at this time, and there was a moderate elevation of the temperature —from 100 to 102. After a seizure she was left very weak, and required several days for recuperation. The heart and lungs were normal. The blood showed 50 per cent. hemoglobin, the red cells, 4,700,000. The urine was entirely negative. She had been taking 1 quart of milk daily in addition to that used on cereals and in puddings. Sugar had been allowed with the customary freedom. She was put on the usual mixed feeding suitable for a child of her age, with restriction to skimmed milk and no sugar. After ten weeks and four days she weighed 56 pounds, a gain of 4½ pounds. The mother reported that during the interval there had been no vomiting and no fever; the tongue remained clean and the bowels regular. This case has been followed for five months without a return of the vomiting seizures.

CASE 4.—A boy, aged 7 years, with a height of 47½ inches and a weight of 42 pounds, came to us, Jan. 2, 1920, because of "frequent colds, persistent wheezing in his chest and a cough which was relieved only by warm weather." The condition had existed for three years, with a particularly severe cough since the preceding November. The patient was thin, pale and weak. The appetite was poor. Food had to be forced. The blood showed 70 per cent. hemoglobin and 4,200,000 red cells. The urine was negative. The heart action was rapid and the heart sounds were normal. Examination of the lungs revealed mucous and sibilant rales fairly evenly distributed. There was slight bronchial spasm. The tonsils and adenoids had been removed. There was no eleva-

tion of the temperature. Acting under medical orders the child had been generally supplied with sugar, cream, milk and butter with the idea of improving his physical condition. Our treatment was to order a general mixed diet largely sugar-free, 1 pint of milk daily, and very little butter. The further instructions were that the boy should remain in bed until 10 a. m. each day, rest one and one-half hours after the midday meal, and retire at 7 p. m.

One pint of a vichy water was to be drunk daily. He was allowed to go outdoors, and no cough mixtures were given. There was a betterment of the cough in three days, with a gradual cessation and entire disappearance in eighteen days. Fourteen days after our first examination the bronchitis had entirely disappeared. After six weeks under treatment, the weight was 47 pounds, a gain of 5 pounds, with a marked improvement in the general appearance of the patient, and an entire absence of cough. The appetite was most satisfactory, and foods such as vegetables and cereals, which the patient previously had to be coaxed and forced to eat, were taken eagerly. The child had remained free from the cough for ten weeks.

COMMENT

A noteworthy feature in nearly every case treated has been the improvement in appetite and the marked gain in weight as soon as the fat and sugars which had been given above the capacity of the patient had been removed from the diet. Foods such as vegetables and cereals which had been taken with reluctance and then in small quantities are often taken eagerly.

The management of children presenting the suboxidation syndrome suggested in the foregoing brief case histories will appear in detail in a later publication.

An examination of the urine in a certain percentage of these cases shows a slight but constant acetonuria on an ordinary diet, even when the patients are apparently well. Those subject to attacks of vomiting show a marked acetonuria during the attack. A great majority exhibit a marked acetonuria with acute febrile illness.

A study of the blood by one of us (L. B.) of the patients we have come to classify as "suboxidation syndrome," when apparently well, has shown a variable hyperglycemia varying from 130 mg. of glucose per hundred c.c. of blood as the lowest, to 280 mg. per hundred c.c. as the highest, in a series of sixty-seven cases, the average being 163. Of these, twenty-seven presented themselves with recurrent vomiting, sometimes alternating with bronchitis or eczema as the predominating symptom, and showed an average blood sugar of 175 mg. per hundred c.c.; three who came for recurrent pruritus averaged 170 mg. per hundred c.c.; eleven who exhibited eczema as the predominating symptom averaged 148 mg. per hundred c.c.; two who came for recurrent attacks of fever, with coated tongue and acetone breath, averaged 162 mg. per hundred c.c.; twenty-three who had frequent colds and bronchitis as their chief complaint averaged 160 mg. per hundred c.c.

The blood sugar of ninety-two children not belonging to this group was also examined. These varied between 80 and 125, averaging 105. They included those who came for examination and feeding, for malnutrition, adenoids, intertrigo, enuresis, simple anemia, constipation, proteinogenous asthma, obesity, chronic nephritis, essential headache, chronic cervical adenitis, anorexia, acute bronchitis, tics, nonepileptic convulsions, recurrent vomiting with dilated stomach and redundant sigmoid, recurrent vomiting, frequent colds, asthma due to enlarged tonsils and adenoids relieved by operation, migraine, urticaria, mucous colitis, flat-foot, chorea, seborrheic eczema of the scalp, cardiac disease, tetany, pylorospasm, gonococcus vaginitis, epilepsy, habit spasm, chronic otitis media and enlarged tonsils.

We have examined four cases belonging to the suboxidation syndrome group characterized by attacks of vomiting at the height of the attack. They showed a hypoglycemia, the figures being 80, 85, 85 and 70 mg. per hundred c.c. One case of bronchitis with bronchospasm examined in the attack had 75 mg. sugar per hundred c.c. of blood.

Ten cases classifiable clinically as belonging to the suboxidation syndrome group have not shown any definite hyperglycemia at the time of examination. Of these there were four cases of frequent colds, with an average blood sugar of 105 mg. per hundred c.c.; two cases of eczema averaged 97; three cases characterized by recurrent vomiting averaged 106, and one of recurrent diarrhea showed 105. We believe that a study of their sugar tolerance would show it impaired, and we hope to make a study of their blood sugar curve after the ingestion of sugar.

DETERMINATION OF BLOOD SUGAR

The method used to determine the blood sugar was an adaptation of Benedict's [1] modified picric and picrate method to finger blood along the lines followed by Epstein in applying the original picric acid method:

Of the blood, 0.2 c.c. was obtained from a finger and was immediately mixed with 0.8 c.c. of distilled water, the blood laking after a little shaking. To this, 1.5 c.c. of Benedict's picric acid picrate reagent was added drop by drop and thoroughly mixed. The precipitated proteins were then thrown down by centrifuging. Of the supernatant fluid, 1 c.c. was taken, 0.5 c.c. of 20 per cent. anhydrous sodium carbonate added, and the mixture, corked with absorbent cotton, was placed in a water bath for ten minutes. This was compared in the Kuttner colorimeter with a standard solution of potassium dichromate, made up by matching against a solution of glucose containing 0.2 mg. to the cubic centimeter, treated as the blood was treated, described above.

132 West Eighty-First Street—1421 Madison Avenue.

MERCURIC CHLORID POISONING FROM VAGINAL INJECTIONS—TWO FATAL

P. BROOKE BLAND, M.D.
PHILADELPHIA

In the local treatment of acute and chronic pelvic affections, vaginal irrigations are valuable and helpful measures. Usually they are harmless; when carelessly and indifferently employed, however, they may result in extensive local organic destruction and occasionally cause death, as emphasized in two of the clinical instances herewith presented.

CASE 1.—*History.*—Mrs. E. F., aged 29, seen in consultation June 4, 1918, with Dr. George Cunningham, Vineland, N. J., first menstruated at the age of 20, and menstruation had always been regular. It recurred every twenty-eight days, and was not accompanied by pain. The discharge continued from four to five days, and it had always been rather profuse. Frequently it contained clots. She was married at 21, and had had three pregnancies. All continued to full term and terminated normally. She was never sutured.

Present Illness.—Four weeks prior to admission to the Vineland Hospital, the patient took a copious douche of hot

1. Benedict, S. R.: A Modification of the Lewis-Benedict Method for the Determination of Sugar in Blood, J. Biol. Chem. 34: 203 (April) 1918.

water, to which were added two "blue tablets," (mercuric chlorid). These were employed, she said, to prevent conception. Very soon after the irrigation, the patient was seized with violent burning pain in the vulva and vagina. The family physician prescribed various agents without relief. The following day, the vulva became intensely swollen and red, and presented all the signs of violent inflammation.

TABLE 1.—BLOOD ANALYSES

	Mg. per 100 C.c. Whole Blood
Jan. 14, 1920:	
Nonprotein nitrogen	204
Urea nitrogen	97.3
Creatinin	10.6
January 19:	
Nonprotein nitrogen	330.4
Urea nitrogen	102.6
Creatinin	11.1
January 23:	
Nonprotein nitrogen	370.3
Urea nitrogen	152.5
Creatinin	11.6

Urination was difficult and extremely painful. This process continued for several days and latterly had been accompanied by a profuse seropurulent discharge. The material frequently contained long pieces of shreds and membrane.

Examination and Course.—Four weeks subsequent to taking the douche the vulva was still somewhat swollen and inflamed. The vagina showed most striking changes. The canal was almost completely closed, and its diameter would not permit the introduction of my index finger. The mucosa had entirely sloughed away and the tube was lined by red, resistant, tender, granular membrane. There were no marked constitutional symptoms at any time. Operative measures were recommended for the vaginal stenosis, but were refused, and the patient passed from the hands of her family physician. No further record could, therefore, be obtained of the case.

CASE 2.—*History.*—Mrs. E. J., aged 21, admitted to Jefferson Hospital, Oct. 11, 1919, first menstruated at the age of 17, one year subsequent to her marriage. It had always been regular, and of the twenty-eight day type. The flow had been scanty and extremely painful. The last menstrual period occurred Aug. 30, 1919, or approximately two months before her admission to the hospital.

Present Illness.—Two days before, in order to prevent conception, the patient took a douche of hot water to which she added a teaspoonful of "white powder" (mercuric chlorid). One quart of water was used. Immediately after the irrigation she was seized with violent burning pain. The family physician was called, who applied oils and gave the patient an alkaline douche. The treatment gave temporary relief. The following day the vulva became greatly swollen and discolored. The pain was intense. Shortly afterward a profuse seropurulent discharge appeared which later on contained particles of tissue.

TABLE 2.—DIFFERENCE BETWEEN PATIENT'S BLOOD AND THE NORMAL

	Normal, Mg.	Patient's Blood, Mg.	Difference, Mg.
Nonprotein nitrogen	From 25 to 35	370.3	335.3
Urea nitrogen	From 12 to 23	152.5	129.5
Creatinin	From 1 to 2	11.6	9.6

Examination and Course.—The woman was rather delicate. She was suffering great agony. The pupils were normal. The lips were parched, dry and cracked. The tongue and pharynx were extremely red and dry. The mucous membrane throughout the throat was intensely injected. The lungs were normal. The heart presented a moderately loud systolic murmur, and its rate was rapid. The abdomen was somewhat distended, and was rather resistant and tender, especially above the pubic arch. The vulva was found to be extremely swollen, red, tender and in a state of violent inflammation. The labia were pendulous and edematous. The vaginal orifice was covered with a yellowish green exudate, and a profuse seropurulent discharge, foul and offensive, was pouring from the vaginal opening. Digital examination was attempted, but was impossible on account of the intense pain. The temperature was normal. The pulse rate ranged from 100 to 130. Respirations were practically undisturbed. The urine contained a large quantity of albumin, a great variety of casts, and a large number of white and red blood cells. The general systemic symptoms became worse, and she died of complete suppression of urine, October 18, seven days after her admission to the hospital.

CASE 3.—*History.*—Mrs. T. S., aged 28, admitted to Jefferson Hospital, Jan. 9, 1920, had always been in good health and never suffered any serious disease. Menstruation began when she was 13. It was always regular and lasted from three to four days. The flow was accompanied by pain on the first day, but there were no clots. The last period occurred Oct. 13, 1919, approximately three months before her admission to the hospital. She married at the age of 22 and had had three pregnancies. The first pregnancy terminated in abortion at the end of five weeks. This was not induced. The second pregnancy continued to full term, and she was delivered normally. Her third conception occurred, Oct. 13, 1919, and terminated, by self induction, Jan. 8, 1920.

TABLE 3.—URINALYSIS

Date	Specific Gravity	Reaction	Albumin	Sugar
1/14/20	Q.N.S.*	Acid	Trace	Negative
1/16/20	Q.N.S.	Acid	Light cloud	Negative
1/17/20	1.015	Acid	Cloud	Negative
1/18/20	1.014	Acid	Cloud	Negative
1/19/20	1.010	Acid	Trace	Negative
1/20/20	1.015	Alkaline	Trace	Negative
1/21/20	1.012	Acid	Trace	Negative
1/22/20	1.015	Alkaline	Faint trace	Negative
1/23/20	1.010	Alkaline	Trace	Negative

	Microscopic Examination			
White Blood Cells	Blood	Casts	Acetone	Urea, per Cent.
Many	Negative	Many	Negative	Negative
Many	Negative	Occasional granular	.....	1.1
Many	Pus	Occasional granular	.....	1.4
Many	Pus	Occasional granular	.....	1.2
Many	Pus	Many		
5-6	Pus	Many		
8-10	Negative	Hyaline	.....	2.2
5-6	Negative	Many	.....	1.4
.....	Negative	Many	.....	1.0
.....	Negative	.....	.....	....

* Quantity not sufficient.

Present Illness.—This began, January 8, following a uterine irrigation of hot water to which she added two "tablets" (mercuric chlorid). The douche nozzle was carried deliberately into the cervical canal, and the irrigating material was allowed to flush the interior of the uterine cavity. Immediately thereafter the patient was seized with sharp abdominal pain. This was intermittent in character and occurred about every five minutes. Abortion occurred the following day. A fetus 3 inches in length was expelled, and the placenta and membranes came away one hour later. Subsequently the patient developed vomiting and diarrhea. She also felt creepy and suffered a rather violent chill. She had a profuse bloody discharge, which was exceedingly foul. She also developed general joint pains. Urinary excretion became extremely slight. The skin of the patient became extremely dry, and her mouth cracked and parched. The family physician treated her for suppression of urine and uremia by placing her in hot packs. He was not informed by the patient or husband of the true condition of affairs.

Examination and Course.—The patient was admitted to the hospital with complete urinary suppression. No urine had been passed during the preceding twenty-four hours, and none was passed for four days subsequently. Diarrhea and vomiting were more or less constant. These were uncontrollable. She complained of intense restlessness and violent headaches. She also suffered with a burning sensation in the region of the vagina and bladder. Her mouth was swollen.

The teeth were tender, and the breath was extremely offensive. The eyes were normal. The lips were dry and cracked. The tongue was dry, coated and furred. The throat was injected. The breath was extremely foul. The lungs were normal. The heart action was regular, and no adventitious sounds were heard. The abdomen was somewhat distended and rather rigid and tender over the kidneys and in the midline, low down. The mucous membrane of the vagina was normal. There was a seropurulent discharge from the uterus. The cervix was patulous and allowed the introduction of the finger. A large slough of endometrium was removed during the examination.

The last specimen of blood was drawn on the morning the patient died, and the comparison (Table 2) will show the difference compared with the normal.

A complete blood count, January 10, revealed: hemoglobin, 60 per cent.; red blood cells, 3,130,000; color index, 0.91; white blood cells, 15,800; the red cells appeared to be normal; polymorphonuclear neutrophils, 98 per cent.; polymorphonuclear eosinophils, 2 per cent.; polymorphonuclear basophils, 0; small mononuclears, 9 per cent.; transitionals, 0. January 18: polymorphonuclear neutrophils, 94 per cent.; polymorphonuclear eosinophils, 2 per cent.; polymorphonuclear basophils, 0; small mononuclears, 2 per cent.; large mononuclears, 1 per cent.; transitionals, 1 per cent.

The symptoms of the patient gradually became worse, and she died, January 23, two weeks after admission.

1621 Spruce Street.

Clinical Notes, Suggestions, and New Instruments

A CARDIAC DEVELOPMENT DEFECT, WITH RETURN TO NORMAL

STAFFORD McLEAN, M.D., NEW YORK

This case will be of interest to those who are consulted regarding prognosis in infants with congenital cardiac conditions.

REPORT OF CASE

History.—The child, a girl, was delivered at the Sloane Maternity Hospital through a vaginal cesarean operation by the late E. B. Cragin. The mother, aged 31, was an eclamptic primipara. She was six and a half months pregnant; her blood pressure was 200 and there was 80 per cent. albumin in the urine. The birth weight was 2 pounds, 1 ounce. On account of the infant's condition the customary measurements were omitted. On the hospital record there is noted a heart murmur present at birth, but there is no mention of cyanosis. A nevus about 1.5 cm. in diameter was present at the outer canthus of the right eye. During the first three months of life this was treated by three applications of liquid air with a good result.

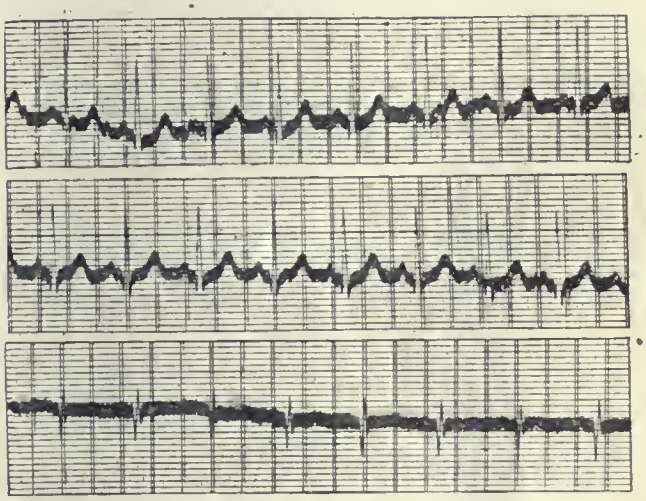
The infant was placed in an incubator, where it was kept for six weeks. The weight on the fourteenth day was 1 pound, 14 ounces. It was discharged from the hospital at the age of 3 months with a weight of 5 pounds, 11 ounces. At 6 months the weight was 5 pounds, 12 ounces. Breast milk was given for the first two months, when modified whole cow's milk was substituted.

First Examination.—The infant was first seen by me when 9½ months old. Its weight at that time was 9 pounds, 13 ounces. It was badly nourished, and was intensely cyanotic over the entire body, the cyanosis being marked on the face, lips and hands. The fingers showed marked clubbing; no cardiac enlargement could be made out. A loud systolic murmur was heard over the entire chest, most intense over the area of cardiac dulness. No difference in intensity could be detected between base and apex. The murmur was not transmitted to the vessels of the neck. The heart rate was 260. The systolic blood pressure was 75. The red blood cells were 7,000,000, and the hemoglobin was 105 per cent. Craniotabes was present.

Treatment and Course.—The amount of food was increased, cereals were given with a spoon, and before the twelfth month orange juice, beef juice and yolk of hard boiled egg were added. The increase of weight was slow but continuous, and at the twentieth month the weight was 21 pounds, 8 ounces. At this age she was on a varied diet of milk, potato, scraped beef, apple sauce, etc. The murmur did not change in character between the tenth and twentieth month, but the cyanosis became less intense.

The child began to walk at the twentieth month. Examination at the twenty-second month after an interval of two months failed to reveal a murmur, the cyanosis had disappeared, and the clubbing of the fingers was hardly noticeable. When seen again at thirty months there was no clubbing. At 22 months of age she had pertussis. At 25 months of age she had epistaxis several times; this occurred at infrequent intervals until the thirtieth month.

At 32 months of age the child presented a robust, healthy appearance. The physical examination disclosed nothing abnormal. Weight was 31¾ pounds, height 34¾ inches, abdomen 20¾ inches, chest 21 inches, and head 18¼ inches. No enlargement of the heart could be demonstrated by percussion; the apex was in the fifth space, 2½ inches to the left of the midsternal line, the right border was apparently at the border of the sternum.



Electrocardiogram by Leads I, II and III; between the corresponding line of successive pairs of ordinates the time interval is one-fifth second. The space between abscissas represents 0.1 millivolt.

Roentgenologic Findings.—When the child was 33 months of age, roentgenograms were made by Dr. Archibald H. Busby. He reported: "Plates show no material enlargement of the heart. The right border is about 1 inch to the right of the midsternal line. The shadow at the base of the heart on the left side is rather broad, the cause of which does not appear to be auricular, but rather within the vessels about the heart."

Electrocardiographic Findings.—An electrocardiogram made about the thirty-second month by Dr. H. E. B. Pardee is reproduced here. His opinion was that the record showed an unusual ventricular complex for a child of that age in that it suggested an approach to left ventricular predominance, though this was not frankly developed. He inferred that the heart might have been subjected to some abnormal influence. In his experience the usual electrocardiogram of children of that age showed a normal relation of the R waves or a suggestion of right ventricular predominance. He knew of no congenital anomaly which would lead to a left-sided hypertrophy except aortic narrowing.

Present Condition.—The child is now 5 years, 11 months of age. She is a sturdy, well nourished child with no symptoms or physical signs of cardiac abnormality. The weight is 40 pounds, height 42 inches, chest 20⅜ inches, and abdomen

20 inches in circumference. She has had none of the infectious diseases of childhood, with the exception of pertussis as noted above. Her heart apex impulse is in the fifth space, 2⅜ inches from the midsternal line; the second aortic sound is loud but cannot be considered abnormal.

COMMENT

The case is unusual from several angles. It is unusual for pregnancy terminated at 6½ months to result in a living child. It is uncommon for an infant to survive whose weight drops to a point as low as 1 pound, 14 ounces.

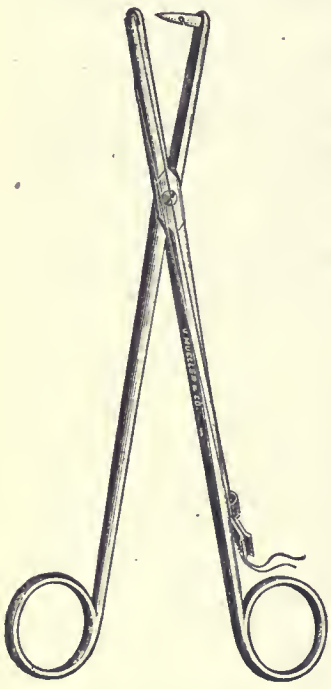
Speculation is futile regarding the defect or defects in many of the infants with cardiac symptoms. That the symptoms were due to a developmental defect rather than a fetal endocarditis is borne out by the history and the outcome. It would seem possible that the disappearance of the symptoms was due to the return of the heart to normal rather than to the development of an unusual degree of compensation. A defect in the ventricular septum existing without any associated lesion could explain the symptoms and their subsequent disappearance.

17 East Seventy-First Street.

A NEW INSTRUMENT FOR LIGATING BLEEDING BLOOD VESSELS AFTER THE REMOVAL OF TONSILS

JOHN A. CAVANAUGH, M.D., CHICAGO

The instrument here described has been a great comfort to the originator, as he can leave all patients after tonsillectomy with a feeling of safety, knowing he will not be called because of hemorrhage. The instrument can be used with ease when the bleeding vessel is deep in a cavity, as it requires but little space.



Instrument for ligating bleeding blood vessels after removal of tonsils.

It is similar in shape to artery forceps. On the end of one arm there is a needle about half an inch long; at the end of the other arm is a rounded end, perforated, through which the needle will pass.

Parallel with the arm and extending beyond the perforating area in this arm is a forklike process with two prongs to form a groove between the rounded part and the fork part for the passage of a thread, which is grasped by the needle as it passes through. On the handle of the perforated blade is a spring for the purpose of placing the threads and of holding them taut, which is very essential.

The instrument is now ready for use. The size of the catgut should be noted, for if it is too large it will not engage in the needle; No. 0 or No. 1 may be used. The catgut should be moistened shortly before use; otherwise it will be stiff, will not remain taut, and will be harder to draw through the instrument and tissue. Every bleeding vessel that shows itself should be tied, as this is easily done and one need not be afraid of future hemorrhage. The bleeding area is grasped with artery forceps. One should take the instrument that is threaded, and introduce it as one would a second forceps, to grasp the tissue deeper, make slight traction on the hemostat and allow the needle to pass through the tissue, which, when withdrawn, leaves the thread buried under the bleeding vessel and engaged in the perforated end of the needle.

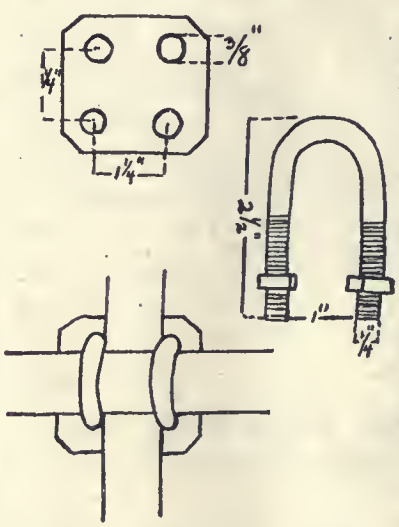
As soon as the needle is drawn through with thread attached, the thread in the spring is loosened and the thread will be more easily drawn through. The artery forceps may now be removed, or one may wait until the ligature has been tied.

7 West Madison Street.

A SIMPLE CLAMP FOR MAKING BALKAN FRAMES OF IRON PIPE

GEORGE T. JOHNSON, M.D., TERRE HAUTE, IND.

These clamps can be quickly made by any blacksmith, from materials in general use. Each clamp consists of an iron plate made of one-eighth inch sheet iron, and two U bolts. Four holes are drilled in the plate to admit the free ends of the U bolts. The dimensions given are suitable for use with one-half inch pipe.



Clamp for making Balkan frames of iron pipe.

A joint made with these clamps will not slip under a great load. They will likewise fasten the upright pipes firmly to the ordinary iron bed. If it is desired to make the frame independent of the bed, crutch rubbers serve admirably on the lower ends of the upright pipes and prevent any possible damage to the floor.

It is best to have sixteen clamps for each frame so that one can make any arrangement suitable for the individual case. The accompanying illustration shows how the clamp is applied.

RAPID ABSORPTION OF MERCURIC CHLORID IN A CASE OF POISONING

SEYMOUR DEPORTE, M.D., ARDMORE, OKLA.

B., a white girl, aged 21, waitress, was suddenly seized with terrific abdominal pain, and symptoms of a severe gastroenteritis with vomiting and purging. The temperature was subnormal, ranging between 95.4 and 96 F.; the skin was cold and clammy; the pupils were markedly dilated, and the radial pulse was not perceptible.

On questioning the patient, it was ascertained that she had inserted two 7.3 grain mercuric chlorid tablets into the vagina to prevent conception.

She was brought to the hospital and was given electric sweat box treatment for rapid elimination, calcium sulphid was given grain for grain, diuretics were given freely, and strychnin hypodermically. Egg albumin by mouth gave no relief. She craved water continually, but would not take nourishment.

Hot water bottles were used with electric heat appliances. The temperature remained subnormal throughout. Urination was scanty, and finally entirely suppressed. There was diarrhea with tenesmus and sanguinolent discharges, and the skin was infiltrated with a dark pigment.

She was easily roused and her mind was clear. Questions were readily answered.

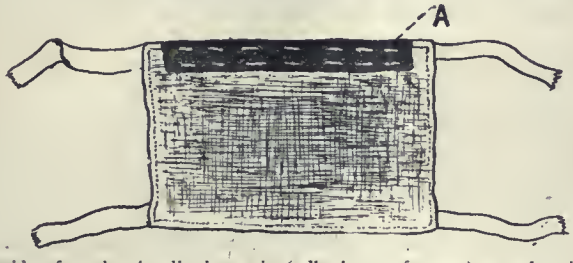
Vaginal examination revealed great tenderness with slight bloody discharge. Not a drop of urine could be obtained within eighteen hours.

The patient died in about twenty-four hours of the time she was brought to the hospital from acute traumatic nephritis.

SURGEON'S MASK FOR THOSE WHO WEAR GLASSES

C. E. LOCKE, JR., SAN FRANCISCO

On entering the operating room, one often sees a surgeon who is being annoyed because his mask does not fit. Especially is the surgeon who wears glasses bothered. If his mask is adjusted to cover the nose, then his glasses soon become so "smoked up" that vision is difficult. The remedy is simple: A narrow strip of adhesive tape is sewed adhesive side up to the upper edge of the mask on its internal side, as shown in the accompanying illustration. This sticks the mask to the bridge of the nose and under the eyes. Thus



Inside of mask: *A*, adhesive strip (adhesive surface up) sewed to it.

the mask is prevented from sliding, and also the warm breath is prevented from passing upward and condensing on the glasses, rendering them more translucent than transparent. Another more simple method of accomplishing the same result is by the use of a strip with a double face of adhesive tape, such as is made by Johnson and Johnson to secure wigs to the head.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

BARBITAL SODIUM-ABBOTT (See New and Nonofficial Remedies, 1920, p. 84).

The following dosage form has been accepted:

Elixir Barbital Sodium-Abbott.—Each fluid ounce contains barbital sodium-Abbott 20 grains.

CHLORAZENE (See New and Nonofficial Remedies, 1920, p. 137).

The following dosage form has been accepted:

Aromatic Chlorazene Powder.—A powder composed of chlorazene, 5 per cent.; sodium bicarbonate, 5 per cent.; eucalyptol, 2 per cent.; saccharin, 1 per cent.; sodium chloride, 87 per cent.

DESICCATED CORPUS LUTEUM-HOLLISTER-WILSON (See New and Nonofficial Remedies, 1920, p. 204).

The following dosage forms have been accepted:

Capsules Corpora Lutea Desiccated-Hollister-Wilson 2 grains.—Each capsule contains desiccated corpus luteum-Hollister-Wilson 2 grains.

Capsules Corpora Lutea Desiccated-Hollister-Wilson 5 grains.—Each capsule contains desiccated corpus luteum-Hollister-Wilson 5 grains.

Tablets Corpus Luteum Desiccated-Hollister-Wilson 2 grains.—Each tablet contains desiccated corpus luteum-Hollister-Wilson 2 grains.

Tablets Corpus Luteum Desiccated-Hollister-Wilson 5 grains.—Each tablet contains desiccated corpus luteum-Hollister-Wilson 5 grains.

DIPHTHERIA IMMUNITY TEST (SCHICK TEST) (See New and Nonofficial Remedies, 1920, p. 304).

The Gilliland Laboratories, Ambler, Pa.

Schick Test.—Marketed in packages containing a capillary tube of diphtheria toxin (standardized) and a 5 Cc. vial of physiological solution of sodium chloride for dilution, the amount being sufficient for 20 tests; also marketed in packages containing four capillary tubes of diphtheria toxin and four vials of physiological solution of sodium chloride. Two-tenths (0.2) Cc. of the dilution is injected intradermally which represents 1/50 minimum lethal dose for a guinea-pig of 250 gram weight.

CORPORA LUTEA SOLUBLE EXTRACT—HOLLISTER-WILSON.—A sterile solution of those constituents of corpus luteum which are soluble in physiological solution of sodium chloride containing in each Cc. 0.02 Gm. of soluble matter in addition to sodium chloride, and chlorbutanol as a preservative.

Actions and Uses.—See general article on Ovary, New and Nonofficial Remedies, 1920, p. 201.

Dosage.—1 Cc. daily in extreme cases. Less according to individual cases.

Manufactured by the Hollister-Wilson Laboratories, Chicago.

Ampoules Corpora Lutea Soluble Extract-Hollister-Wilson.—Each ampule contains 1 Cc. corpora lutea soluble extract-Hollister-Wilson.

Corpora Lutea Soluble Extract-Hollister-Wilson is made by extracting desiccated corpus luteum with physiological solution of sodium chloride, and is adjusted to contain 0.02 Gm. of soluble extract in each Cc. The equivalent weight of dried corpus luteum represented by this amount of soluble extract is variable ranging from about 0.06 Gm. to 0.18 Gm.

Corpora Lutea Soluble Extract-Hollister-Wilson is a straw colored liquid with the peculiar odor of corpora lutea.

EUCATROPINE. — Euphthalmine. — Phenyl-Glycolyl-Methyl-Vinyl-Diacetonalkamine Hydrochloride.—$C_5H_6N(CH_3)_4(C_6H_5CHOH.COO)HCl$ = The 1,2,6,6-tetramethyl-4-mandeloxy-piperidine hydrochloride. Eucatropine was first introduced as euphthalmine.

Actions and Uses.—Eucatropine produces prompt mydriasis free from anesthetic action, pain, corneal irritation, or increase in intra-ocular tension. It has little or no effect on accommodation, and such effect as it has disappears more rapidly than with atropine, cocaine, homatropine, etc. In its effects on the general system, eucatropine very closely resembles atropine. It is useful as an aid in ophthalmoscopic examinations in place of atropine, homatropine, etc.

Dosage.—From 2 to 3 drops of a 5 to 10 per cent. solution, according to the age of the patient and the nature of the case, are instilled into the eye.

Eucatropine is prepared by methylating vinyl-diacetonalkamine (M. P. 161 C.) esterifying the methyl vinyl-diacetonalkamine with mandelic acid, treating the free ester in ether solution with gaseous hydrogen chloride, and recrystallizing the precipitated hydrochloride.

Eucatropine is a white, granular, odorless powder; permanent in the air.

Eucatropine is very soluble in water; freely soluble in alcohol and chloroform; insoluble in ether.

Eucatropine melts not below 183 C.

The aqueous solution of eucatropine (1:50) is clear and colorless and is neutral to litmus.

Aqueous solutions of eucatropine (1:50) are precipitated by sodium carbonate test solution, potassium mercuric iodide test solution, iodine test solution, picric acid test solution and many other reagents for the alkaloids.

Add a few drops of nitric acid to about 0.005 Gm. of eucatropine, evaporate the mixture to dryness on a water bath, cool and add a few drops of alcoholic potassium hydroxide test solution together with a fragment of potassium hydroxide. No violet color results (*distinction from atropine, scopolamine or hyoscyamine*).

Incinerate about 0.5 Gm. of eucatropine, accurately weighed. The ash amounts to not more than 0.1 per cent.

Dissolve about 1 Gm. of eucatropine, accurately weighed, in 10 Cc. of water, make alkaline with ammonia water, shake with successive portions of ether until extraction is complete, washing the ether layer each time with water and adding the washings to the original solution before the next extraction, allow the solvent to evaporate spontaneously, dry the residue to constant weight at 80 C. and weigh. The residue of eucatropine base is not less than 86 per cent.

Recrystallize the free base obtained as above from petroleum ether. The crystals melt at not below 111 C.

Eucatropine-Werner.—A brand of eucatropine complying with the N. N. R. standards.

Manufactured by the Werner Drug and Chemical Co., Cincinnati, Ohio. No U. S. patent or trademark.

Early Diagnosis of Cancer.—Unfortunately the very smallest cancers give no symptoms unless they are on the skin or lip or tongue or elsewhere on the surface of the body, in which situations the earliest diagnoses can be made. Cancers the size of a pea or but a little larger are often diagnosed and removed by a surgeon with an assured favorable result, if the operation has been properly done. In the stomach and internal organs, however, the cancer does not give rise to symptoms until it is quite large, and it is important, therefore, for any one who has any disturbance of the stomach or intestines, loss of weight or anemia, to go at once to a surgeon, because by modern chemical methods and by the use of the roentgen ray, a diagnosis can often be made long before the cancer can be felt or seen. One of the last symptoms of cancer is pain, which is caused by the growth pressing on the nerves as it spreads out through the tissues. —*Health News*, Albany, N. Y., February, 1920.

PROCEEDINGS OF THE NEW ORLEANS SESSION

MINUTES OF THE SEVENTY-FIRST ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, HELD AT NEW ORLEANS, APRIL 26-30, 1920

HOUSE OF DELEGATES

First Meeting—Monday Morning, April 26

The House of Delegates met in the Orleans Parish Medical Society Building, New Orleans, and was called to order at 10 a. m. by the Speaker, Dr. Hubert Work, Pueblo, Colo.

Preliminary Report of the Committee on Credentials

The Chairman of the Committee on Credentials made a preliminary report for this committee, stating that the committee desired at this time to report progress, and that more than a quorum of delegates had qualified.

As there was no objection, the report was accepted.

Next in order was the roll call by the Secretary.

The Secretary stated that the registration of the delegates in attendance recorded the presence of more than a quorum.

A quorum being present, the Speaker announced that the House was constituted and ready for the transaction of business.

The next order of business was the presentation, correction, and adoption of the minutes of the Seventieth Annual Session.

The Secretary stated that the minutes had been printed and circulated among the members of the House of Delegates, with the request for criticisms or corrections, but none had been received.

It was moved that the reading of the minutes of the Seventieth Annual Session be dispensed with and approved as printed.

Seconded and carried.

Addresses of Executive Officers

Drs. Hubert Work, Speaker; Alexander Lambert, President, and William C. Braisted, President-Elect, addressed the house. See addendum.

Reports of Officers

Report of the Secretary

To the Members of the House of Delegates of the American Medical Association:

The following report for the year 1919-1920 is respectfully submitted:

MEMBERSHIP

The membership of the various constituent state associations which is the membership of this Association, according to records in the Secretary's office, April 1, 1920, was 83,338, as shown in the accompanying table.

FELLOWSHIP*

The Fellowship of the Scientific Assembly of the American Medical Association on May 1, 1919, was 45,412. During the year 477 Fellows have died, 123 have resigned, 171 have been dropped as not eligible, 303 have been dropped for nonpayment of dues, and the names of ten have been removed from the rolls on account of being reported "not found," making a total of 1,084 names to be deducted from the Fellowship roll. There have been added to the Fellowship roll 3,307 names of which 2,136 were transferred from the subscription list of THE JOURNAL. The Fellowship of the Association on April 1, 1920, was 47,045, a net increase for the eleven months covered by this report of 1,633.

This gain in the number of Fellows, as in previous years, is due largely to circularizing subscribers to THE JOURNAL who are eligible to Fellowship, urging them to become Fellows.

DEATHS OF OFFICERS

During the year, two of the officers of the Association have died:

Dr. Emery Marvel, Atlantic City, N. J., Second Vice President, died in Philadelphia following a surgical operation, Jan. 8, 1920. Dr. Marvel was the chairman of the Local Committee on Arrangements for last year's annual session.

Dr. Elmer Ernest Southard, Cambridge, Mass., chairman of the Section on Nervous and Mental Diseases, died in New York City on Feb. 8, 1920, after a brief illness.

INTERIM APPOINTMENT

Early last fall, Dr. J. B. Blake, Boston, resigned as a member of the Council on Scientific Assembly, and the President appointed Dr. Frank P. Gengenbach, Denver, to serve on this council until this annual session.

ORGANIZATION

In my report submitted at the last annual session, a comment was made relative to the activity of the Association in assisting those physicians who had been in military service to resume civil practice, and it was stated that the almost universal opinion was that these physicians were finding a hearty reception in the localities where they formerly practiced, and that where they had elected to locate in new communities, they were in practically all instances welcomed by the medical profession. Attention was called to the task which confronted the Association along with its constituent state associations and their component societies to assist in bringing about a better state of affairs in the medical profession. It is gratifying to report that since the 1919 annual session, the organized medical profession has met the obligation which was then anticipated, and that in large part the members of the Medical Reserve Corps have again taken up civil practice.

There are, however, new obligations somewhat similar in character which must be undertaken. As noted last year, it cannot be expected that an exact prewar status will ever be restored. There are new economic and civil relationships affecting every calling which have and will develop during the reconstruction period. All of these are of peculiar interest to the individual practitioner both in his personal and family relationships and in his ability to serve the public. In all these questions, the American Medical Association, as the inclusive nonsectarian organization of practitioners of medicine of the United States, must have an active interest, and must give its best endeavor to the solution of the problems involved. Many of these will command the attention of the House of Delegates, and where it is advisable investigations should be directed to be conducted by the several Councils of the Association so that when the House of Delegates next meets, it shall have at hand data which will warrant the determining of the policy of the Association in these various matters.

In order that the Association shall be able to cope with these problems, it is advisable to strengthen our organization wherever this is possible. Not only should the various branches of the organization—the county, state and the national—put forth earnest efforts to increase membership, but a concerted effort should be made to attain a closer and more intimate cooperation between these branches. There is a possible danger which should be guarded against

* These figures do not include those who are still Fellows of the Scientific Assembly by virtue of their being commissioned and on active duty as Medical Reserve Corps Officers, but who, previous to their military service, were not Fellows.

—namely, a multiplicity of organizations in the same territory having practically the same objective. Whenever an unnecessary new organization in an already occupied territory is effected, there is always the danger that rivalry will result between the two organizations which consciously or unconsciously will interfere with the effectiveness of the organization of the medical profession in that locality. In a few instances, new organizations of this character have diverted from the county and the state branches of the Association the activities of certain members who previously had taken a leading part in county and state work, and it has been proposed even that financial support should be given to certain of these new bodies in a manner which might deprive the branches of the American Medical Association of the benefits of funds which, if available, could be used best through the regular channels of the state and county organizations. It is, of course, recognized that the American Medical Association and its several branches, as well as these newer organizations, are purely voluntary organizations. No one can be compelled to hold a membership which he does not desire, nor should he be forced to withdraw from or refuse to join any other organization in order that he may maintain his membership in a component branch of the American Medical Association. Nevertheless, it seems advisable to submit this matter to the House of Delegates in the hope that the members will give careful consideration to the advisability of strengthening the organization wherever this is possible, and that the question in turn may be brought to the attention of the state associations and the county societies, and that in all branches of the organization, members of the medical profession shall be urged to devote themselves to the advancement as well as the extension of the county, state and national bodies.

Other matters in which the office of the Secretary has been active, are reported to the House of Delegates from other sources.

Respectfully submitted,

ALEXANDER R. CRAIG, Secretary.

ORGANIZATION OF CONSTITUENT ASSOCIATIONS

Constituent Association of	No. Counties in State	No. Component Societies in State Assn.	Number Counties in State Not Organized		Physicians in State (6th Ed. Directory)	Number Members of State Association		No. A. M. A. Fellows in State	No. Subscribers to Journal in State*
			1919	1920	No.	1919	1920		
Alabama	67	67	.....	.....	2,530	1,751	1,728	411	368
Arizona	14	11	3	3	333	188	213	160	106
Arkansas	75	63	12	12	2,587	1,001	1,042	380	286
California	57	43	17	14	5,929	3,273	3,311	2,099	1,462
Colorado	63	29	34	34	1,713	881	950	582	384
Connecticut	8	8	.....	.....	1,701	1,048	1,054	653	400
Delaware	3	3	.....	.....	264	102	123	73	57
Dist. Columbia	.....	.....	.....	.....	1,237	573	567	366	274
Florida	54	32	22	22	1,296	566	572	285	282
Georgia	154	92	63	62	3,436	1,426	1,188	539	565
Idaho	44	19	16	25	449	123	184	94	140
Illinois	102	101	1	1	10,909	6,894	7,049	4,584	2,373
Indiana	92	91	1	1	4,765	2,093	2,331	1,333	591
Iowa	99	99	.....	.....	4,004	2,259	2,342	1,332	710
Kansas	105	67	42	38	2,683	1,637	1,760	837	420
Kentucky	119	117	3	2	3,503	2,130	2,353	731	398
Louisiana	64	40	24	24	2,023	1,029	1,203	470	415
Maine	16	15	1	1	1,179	720	712	326	162
Maryland[1]	23	21	2	2	2,268	1,047	1,143	708	579
Massachusetts[2]	14	14	.....	.....	5,870	3,709	3,840	2,243	1,284
Michigan	83	81	2	2	4,598	2,978	2,620	1,685	763
Minnesota	86	83	3	3	2,548	2,037	1,335	1,115	658
Mississippi	81	78	3	3	1,975	361	499	281	263
Missouri[1]	114	103	14	11	6,063	3,345	3,402	1,529	847
Montana	50	17	27	33	661	375	375	190	144
Nebraska	92	64	29	28	2,237	882	1,116	652	469
Nevada	16	3	13	13	152	79	73	43	39
New Hampshire	10	10	.....	.....	657	528	526	279	79
New Jersey	21	21	.....	.....	3,046	1,814	1,748	1,187	727
New Mexico	28	12	16	16	456	207	199	108	100
New York	61	61	1	.....	15,877	8,540	9,110	5,302	3,158
North Carolina	100	86	14	14	2,237	1,231	1,377	433	464
North Dakota	52	51	2	1	604	429	431	269	125
Ohio	88	87	1	1	7,802	3,832	4,670	2,432	1,323
Oklahoma	77	67	12	10	2,672	1,583	1,638	610	284
Oregon	36	33	3	3	1,128	712	707	263	261
Pennsylvania[3]	67	63	4	4	11,539	6,626	6,687	4,407	2,372
Rhode Island[3]	5	5	.....	.....	759	409	400	296	132
South Carolina	46	41	4	5	1,237	719	640	305	280
South Dakota	67	10	8	8	646	368	385	236	163
Tennessee	96	67	29	29	3,481	1,599	1,612	643	429
Texas	248	178	71	70	6,236	3,059	3,102	1,395	768
Utah	29	4	25	25	477	229	266	173	123
Vermont	14	12	2	2	639	423	406	163	87
Virginia[4]	100	59	41	41	2,509	1,773	1,735	591	463
Washington	39	19	20	20	1,673	1,100	1,096	535	352
West Virginia	55	43	12	12	1,759	1,081	1,078	481	298
Wisconsin	71	71	.....	.....	2,783	3,041	1,904	1,110	625
Wyoming	22	5	17	17	254	93	92	73	76
Misc., Foreign, Govt. sub. for Army, Navy & U. S. P. H. S.	.....	.....	.....	.....	.....	.....	.....	137	2,799
Canal Zone	.....	.....	.....	.....	.....	109	102	20	26
Hawaii	5	.....	.....	.....	.....	72	72	40	40
Porto Rico	7	.....	.....	.....	.....	93	126	34	44
Philippine Isl.	.....	.....	.....	.....	.....	110	144	43	82
Totals	3,039	2,366	614	612	145,384	82,288	83,338	45,266	30,119
Commissioned Officers[5] and Honorary Fellows								1,779	
								47,015	

* Not including Fellows of American Medical Association.

Note.—The number of members of the different associations stated in this table is in accord with the membership of the several associations as they were reported to the Secretary on April 1, 1920.

The lack of an effective uniform system for reporting the membership of the state associations accounts for whatever discrepancies this table shows and detracts from the value of the statement.

Component societies are those societies which compose the state association. A component society may include one county or more.

1. The state of Maryland has 23 counties and the city of Baltimore; Missouri has 114 counties and the city of St. Louis.

2. These state associations are divided into district societies, and these are listed in the table as component societies. Some of these districts are smaller and some larger than the county, the county lines being ignored.

3. Provision is made for the physicians in each of these counties to join the component society in an adjoining county.

4. Virginia has recently adopted the plan of organization and is now establishing component county medical societies.

5. This figure includes the Medical Corps of the Army, the Navy and the Public Health Service.

Report of the Board of Trustees

Dr. Philip Marvel, Chairman, presented the following report, which was referred to the Reference Committee on Reports of Officers.

To the Members of the House of Delegates of the American Medical Association:

In these times of unusual political and social unrest, with the general dissatisfaction accompanying high cost of living, it is a pleasure to be able to report that the various activities of the Association are progressing satisfactorily and that so far as THE JOURNAL is concerned the year has been one of the most satisfactory in its existence.

The detailed statement which appears in tabular form in the addenda will show that there were 3,760,351 copies of THE JOURNAL printed in 1919—265,504 more than during the previous year—and that the average weekly circulation was 72,314. On January I the actual circulation was 74,919; this number does not include extra, sample or special copies that were sent out week by week. THE JOURNAL mailing list on Jan. I, 1920, as compared with January I of the preceding year shows an increase of 7,375; that is to say, there was an increase of over 7,300 in the circulation of THE JOURNAL during the year 1919—a remarkable showing considering all the conditions.

ADVERTISING DEPARTMENT

The advertising department makes an unusually good showing: this is due partly to the amount of advertising space sold, but more particularly to increased advertising rates. Naturally, the larger the circulation of a periodical the more valuable it becomes as an advertising medium and the higher is the rate for advertising space it commands. However, the past year has been one of great prosperity, and business firms have been very liberal in advertising. This must be kept in mind in planning for the future. It is needless to add that we are keeping our advertising up to the standard which has prevailed for many years; that if we cared to lower this standard there might be still a larger increase in the advertising income.

SPANISH EDITION

The first year of the Spanish Edition of THE JOURNAL has been reasonably satisfactory. Its publication was undertaken with some hesitancy because it meant a venture in an entirely

new field. Other periodicals had been published in this country in the Spanish language for circulation in South and Central America, but their publication was undertaken for commercial reasons. Our Spanish Edition entered the field solely as a scientific periodical for educative and scientific purposes, and it has been received with approbation. The field was a difficult one to work in the first place because there was not available any physician's directory, or any even fairly reliable list of physicians of standing. However, a list of such physicians has been gradually assembled so that now there is a fairly reliable one at the Association headquarters. Included in this list are the physicians of Central and South America and the Philippine Islands.

Another difficulty has been the mailing facilities; these have been anything but satisfactory. Under normal conditions it takes a long time for a communication to reach the South American countries, with the exception of those bordering on the Gulf of Mexico.

At the end of the year the subscription list comprised 2,908 names. To those who appreciate the difficulties and know the conditions that prevailed at the beginning, this must be regarded as quite satisfactory. Roughly, this circulation is as follows: The largest number of subscribers naturally are in Mexico—539; Cuba next, 530; Argentina, 270; Brazil, 194 (in Brazil Portuguese is the language in general use, therefore it is rather remarkable that this number of subscribers has been secured there); Chile, 179; Spain, 142; Peru, 101. The rest of the circulation is in Bolivia, Colombia, Costa Rica, Ecuador, Guatemala, Honduras, Nicaragua, Paraguay, Salvador, Santo Domingo, Uruguay, Venezuela, Panama and Porto Rico.

It is not to be expected that this journal could be published without a loss for the first few years. As will be remembered, the venture was undertaken at the request of the International Health Board of the Rockefeller Foundation, which agreed to pay half the loss. It should be explained in this connection that the number of copies of each issue printed was 4,500 to 5,500, and that the excess above those subscribed for was sent out as sample copies. Hereafter, of course, there will be fewer sample copies distributed; consequently a less expense with an increased income. During the months of January, February and March the circulation has been steadily increasing. The actual loss to the Association to date has been less than $10,000, which amount promises to be returned with more than gratifying results within the first five year period of its publication.

Archives of Internal Medicine

The Archives of Internal Medicine has made a good showing for the past year. On December 31 there were 2,593 subscribers—seven less than the previous year. This decrease was due to the fact that the government, which during the war had taken a large number of copies, had since cut down its order considerably. There was actually an increase of 227 in our domestic list, and of forty-five in the foreign list.

A reference to the auditor's report will show that this journal made a net gain last year of $1,692.82, as compared with a loss the previous year of $1,320.58. This better showing is explained in part by the fact that the two volumes for 1919 were smaller than in previous years, and in part also by the increased subscription price. Previous to last year the regular price was $4 per annum, but if taken in combination with one or more of the other Association periodicals only $3. The price at the present time has been made $5, and the combination price $4. Last year there were only 217 subscribers who paid the full $5 rate.

American Journal of Diseases of Children

The American Journal of Diseases of Children likewise made a very satisfactory showing: On Jan. 1, 1920, there were 2,531 names on the mailing list—an increase of 417 over January 1 of the previous year—and the auditor's report shows a gain of $784.37, as compared with a gain of $404.62 in 1918. In this journal, the number of pages for 1919 was much increased over that of the previous year.

The subscription price was also increased from $3 to $4, but here again practically all the subscribers get it at the club rate of $1 less than the regular price.

Archives of Neurology and Psychiatry

None of the other special journals published by the Association seems to have given more satisfaction or to have been more appreciated by the specialists for whom it is published than the Archives of Neurology and Psychiatry. The circulation on Jan. 1, 1920, was 1,158. Considering the special character and the limited number of men to whom such a journal will appeal, this circulation in a year is phenomenal; it is larger than that of any other journal devoted to these subjects in any language.

Naturally a loss might have been expected, but the loss as shown in the auditor's report—$2,695.40—is greater than it should be, and indicates that, considering the size of the publication, the number of pages (the two volumes for 1919 contained 1,546 pages), the number and character of the illustrations—many being in colors—the original price of $5 was too low, especially as the subscribers, with very few exceptions, pay $1 less than the regular price in combination with other journals. The price of this periodical will, therefore, be raised from July 1 to $6, which means $5 in combination with any other of the Association's publications.

Archives of Dermatology and Syphilology

In January we commenced the publication of the Archives of Dermatology and Syphilology, which has started out very well.

Archives of Surgery

It is proposed to commence the publication of the Archives of Surgery in July. It is now planned to publish this at first as a bimonthly; later, as the amount of material increases, it will become one of the monthly publications.

Publication of Special Journals

The Constitution states that the object of the American Medical Association is to promote the science and art of medicine. The Trustees are of the opinion that there is no better way of doing this than by aiding the various scientific workers in the publication of their contributions. The Association is unusually well equipped mechanically to do the printing; and its facilities for direct contact with the profession make possible the promotion of these publications in an economic manner. This undoubtedly is being thoroughly appreciated, for other special groups are beginning to look to the Association to help them out in the publication of their special periodicals. For instance, an appeal from a large number of physicians was received by the Trustees urging the Association to publish a journal to take the place of the *American Journal of Obstetrics and Diseases of Women and Children*. The present condition of our printing plant is such, however, that it does not seem advisable to attempt the publication of any more journals for a while.

While the Trustees favor the publication of these journals by the Association they feel that they should not be published at a loss, but rather at cost or at slightly above cost.

Quarterly Cumulative Medical Index

This is another of the scientific publications of the Association, of which the Association should be proud. The circulation at the end of the year was 738—an increase of only 88 during the year. However, no effort has heretofore been made to push the circulation of the Index. From now on and until the scientific men of our profession know that there is such a help for research workers at a nominal price, more effort will be made to increase the circulation.

The Index last year sustained a loss of $1,787.12. Here again we realize that the price is lower than it should be, and after July 1 there will be an increase of $1, making it $5 per annum. Those who know the book appreciate the fact that this is an extremely low price for one of its kind. It could not be published without a greater loss if it were not for our splendid facilities.

Cooperative Medical Advertising Bureau

This Bureau is no longer an experiment, it is a great success; it is so regarded, we believe, by all the state journals it represents, which means by all the state journals except that of Illinois. It has now become self-supporting, and at the end of 1919 it was possible to rebate a considerable sum to the journals represented, as was done at the end of 1918.

As we have stated in our former reports, the Bureau has demonstrated that it is possible to secure for these journals a fair amount of advertising of which neither the journals themselves nor the medical profession need be ashamed. The Bureau has removed the temptation to accept that class of advertising which for so many years had been not altogether creditable.

Council on Pharmacy and Chemistry

In reply to the suggestion made last year by President Bevan that there should be closer cooperation between the large pharmaceutical houses and the Council on Pharmacy and Chemistry, the Council has submitted to the Board of Trustees the following statement:

"Cooperation of the Pharmaceutical Houses: At the opening meeting of the House of Delegates last year, President Arthur Dean Bevan suggested the desirability of greater cooperation between the large pharmaceutical houses and the Council on Pharmacy and Chemistry. The need of such cooperation has been recognized by the Council from the first. In no one direction has the Council made greater effort than in its endeavor to secure the fullest cooperation of the various pharmaceutical houses. The difficulty has been, and always must be, the fundamental antagonism between objectives that are largely commercial on the one hand and purely scientific on the other. Nevertheless, the Council has always believed—and has acted on the belief—that there is a possible middle ground wherein the interests of therapeutics would not be injured but would go hand in hand with a commercial development based on enlightened self interest.

"The profits to be made by a pharmaceutical house from the sale of a staple drug—a pharmacopeal, National Formulary, or nonproprietary preparation—which enters into free competition with other drugs of the same kind, are moderate; the profits to be made from the sale of a proprietary medicine on which the manufacturer holds a monopoly are usually large—sometimes enormous. There are, broadly, two kinds of proprietary preparations advertised to physicians: One represents laborious research ending in the production of a new medicinal chemical; this product can be patented and the manufacturer can obtain a seventeen-year monopoly on its manufacture and sale. The other represents no research but comprises simple mixtures—frequently of the "shotgun" variety—of well known pharmaceuticals, or biologic products sold under trade names. As these do not represent anything new or original the manufacturer is unable to obtain a patent, but by means of the trade name he can and does obtain a perpetual monopoly. This, from a business standpoint, is more valuable than the limited monopoly granted by a patent. It is not surprising that proprietary remedies of the latter type flourish so long as physicians unthinkingly accept and prescribe them solely on the manufacturer's valuation.

"The Council has practically the undivided support of manufacturers of medicinal chemicals; that is, of proprietaries of the first mentioned type. But pharmaceutical firms which have found it profitable to promote proprietaries of the second type—"specialties," unscientific or ordinary mixtures of pharmaceuticals or biologic products sold under trade names—have not supported the Council.

"When the Council was organized, it was hoped and believed that all the large pharmaceutical houses would find it possible and desirable, if not actually more profitable, to shape their business methods so as to make their proprietary and other articles conform to those conservative standards on which the Council bases its rules, and thus render such articles acceptable for New and Nonofficial Remedies. It soon developed, however, that the methods of the pseudochemical companies, whose sales propaganda in the interest of unscientific nostrums with its attending damage to scientific medicine had led to the establishment of the Council, had found their lodgment in most of the pharmaceutical houses. It was a genuine disappointment to the Council to find that some of the large and old-established firms were not only unwilling to cooperate with the Council, but in many instances exhibited a definite antagonism to the Council's work.

"The object—and duty—of the officers of pharmaceutical houses is primarily to pay dividends to their stockholders. Through skilful advertising or the persuasiveness of "detail men," they are able to induce physicians to prescribe their controlled products, on which there are large profits, even though such products have not only not been accepted by the Council, but, in many instances, have been disapproved. Is it any wonder that concerns which put out such products are indifferent or openly antagonistic to the work of the Council? The matter is largely one of business policy. When the medical profession as a unit will support the Council in its work, then such firms will find it good business policy to accede to Dr. Bevan's suggestion—but not before."

Evidently the problem resolves itself into this: The Council, constituted of scientific men, working without remuneration in the interest of scientific medicine and the medical profession, expects—and rightfully—the cooperation and support of the members of that profession. What is needed, therefore, is the active, sympathetic cooperation of physicians; the cooperation of pharmaceutical houses will follow as a matter of course.

The Propaganda Department

The interest of the profession and the public in the work of the Propaganda department is increasing. During the past year the department has received more inquiries from newspapers regarding medical "copy" than ever before, and has also had an unusually large number of inquiries relative to itinerant quacks. Data were furnished which, in many instances, sufficed to bring action that materially protected the public; in some instances the information was used as the basis of legal action against the quacks. The department also has answered a remarkably large number of inquiries from schools and colleges, due to the attention that teachers are giving to the nostrum evil, and to the knowledge they have of the availability of the Propaganda department's educational material. More than the usual number of inquiries has been received regarding those "patent medicines" whose most potent ingredient is alcohol. The pamphlets, educational posters and stereopticon slides that are prepared and issued by the Propaganda department continue in active demand. One of these pamphlets was considered of sufficient importance to be introduced into the records of a government committee that was considering a bill designed to restrict advertisements relating to the treatment of venereal diseases and of certain sexual disorders. A new edition of "Nostrums and Quackery" is in the hands of the printers and will be issued shortly. This department of THE JOURNAL continues to justify its existence. As a clearing house for information on the subjects with which it deals it proves a boon alike to the profession and the public.

Increased Expenses

The steadily increasing cost of production is likely to cause serious concern if it continues much longer. As an illustration we might refer to the price of paper used in THE JOURNAL. A reference to the auditor's report for 1918 will show that paper for THE JOURNAL that year cost approximately $162,000. Last year—1919—it was over $217,000—an increase over the preceding year of approximately $55,760. There was an increase in circulation, but this was small as compared with the increase in cost of paper. We entered this year with a still further increase; at the lowest estimate, our paper for the current year will cost in the neighborhood of $35,000 more than last year, even though there should be no further increase. Wages in the printing trade are still advancing; an increase that went into effect last February, 1920, adds at least $22,000 to the pay in the printing department. The increase in these two items alone—paper and labor in the mechanical department—will add at least $57,000 to the expense this year. In addition there is a steady increase in the wages for all the other help—stenographers, typists, clerks, etc.

While there is no immediate cause for anxiety it is well for us to realize that we must be prepared for whatever the future may have in store. It may be necessary either to increase the subscription price of THE JOURNAL—say $1.00 a year—or to reduce its size. However, this is for the future. Your attention is called to these matters that you may know the conditions that have developed and which are developing.

Hospital Standardization

At the meeting of the Association in Atlantic City in 1919 the House of Delegates adopted the following resolution, which was presented by the Reference Committee on Reports of Officers:

"That the Trustees be instructed to establish a Council on Hospitals as an independent body, or a Bureau on Hospitals as a body subsidiary to one of the already existing councils, the details of the organization to be left to the Trustees with power to act."

In reference to this action of the House of Delegates the Board desires to place before you the following facts: For

many years the work of the Council on Medical Education has necessarily embraced the accumulation of data relating to hospitals. This phase of the Council's work gradually increased in importance to a degree that two years ago it was found necessary to create in the office a special section on hospitals—which, in reality, is a bureau of the Council on Medical Education—having hospital work particularly in charge. The efficient secretary of the Council on Medical Education has directed this work both before and since the bureau was established. During the last seventeen years a vast amount of valuable information concerning the hospitals of the country has been obtained by means of personal inspection, correspondence, answers to questionnaires sent to members of attending staffs, officers and ex-interns of hospitals, and in this work the secretary has sought and obtained the splendid cooperation of the component county and state medical societies. The data so obtained have been recorded, indexed and filed in the office of the Association, and have been the basis of the lists of hospitals published in the directory, and lists of hospitals approved for intern training which, since 1914, have been widely distributed. The character and the great utility of the data on file are further shown in the reports of the Council on Medical Education to the House of Delegates for the last several years, and particularly in the reports for 1919 and for this year.

Your attention is directed also to the fact that the standardization of hospitals is intimately related to medical education. The extensive means within the jurisdiction of the Association, which may be utilized to advance and maintain the standards of medical education, may be, and in fact are being used coincidently to standardize hospitals. These means include those resources of the Association embraced in its organized personnel and well-equipped office, its many and varied files and indexes of information relating to the medical profession, and its command of the cooperative influence of its membership as represented in the constituent state and county societies—resources which make unnecessary the expenditure of extremely large sums of money.

In this connection your attention is directed to the fact that, comparatively speaking, the Association has never spent a large sum of money annually for the standardization of medical education. The great things accomplished have come about through the sentiment created in the public mind through annual conferences and by the publication of statistics relating to medical education and business and the resultant support of the members of the Association of the policies, educational standards and classifications put forward by the Council on Medical Education.

Experience has shown that work worth while, such as has been accomplished by each of the various Councils of the Association, has depended largely on one man. With no desire to belittle the splendid advice and assistance of the members of a Council who are responsible to the Association for the adopted policies, minimum standards of work and methods of procedure, after all the real responsibility for efficiently carrying out the program and for the collection and compilation of the accumulated data rests chiefly on its secretary acting with the related personnel of the Association headquarters under the direction of the General Manager.

Therefore we are of the opinion that the work which the Association may most efficiently and fruitfully carry on in the standardization of hospitals is provided for in the bureau already created in the office and under the jurisdiction of the Council on Medical Education. This opinion is justified also by the fact that the present industrial unrest with the increasing cost of labor, in all departments, the high price of the necessities of life and of the materials needed in productive commercial pursuits, demand the utmost economy, consistent with efficient production in the management of the affairs of the Association.

In conformity with the statements made above, the Board of Trustees recommends to the House of Delegates the change in name of the "Council on Medical Education" to the "Council on Medical Education and Hospitals." In view of the fact that no existing organization has the legal power to standardize hospitals, the Board recommends that the House of Delegates direct the Council on Medical Education to substitute the term of "approved hospitals" for that of "standardized hospitals" in its official reports and publications.

In the addenda are statistics in tabular form covering the circulation of THE JOURNAL, etc.; the treasurer's statement, and the complete auditor's report. No reference is here made to the work of the various councils—the Council on Health and Public Instruction, the Council on Scientific Assembly, the Judicial Council and the Council on Medical Education—as these Councils will make complete reports direct to the House of Delegates.

Respectfully submitted,

FRANK BILLINGS. A. R. MITCHELL.
THOMAS MCDAVITT. H. BERT ELLIS.
D. CHESTER BROWN. OSCAR DOWLING.
WENDELL C. PHILLIPS. W. T. SARLES.
PHILIP MARVEL.

Addenda to Trustees' Report

SUBSCRIPTION DEPARTMENT

The regular weekly issue of THE JOURNAL of the American Medical Association from Jan. 1, 1919, to Dec. 31, 1919, inclusive (52 issues), was as follows:

January 4	68,466		July 5	72,163	
January 11	67,738		July 12	72,292	
January 18	67,053		July 19	73,113	
January 25	67,828		July 26	72,169	
		271,085			289,737
February 1	67,979		August 2	72,182	
February 8	68,617		August 9	72,769	
February 15	68,500		August 16	72,615	
February 22	68,872		August 23	72,692	
		273,968	August 30	72,333	
					362,591
March 1	68,806				
March 8	69,120		September 6	72,259	
March 15	69,062		September 13	72,436	
March 22	69,672		September 20	72,473	
March 29	72,627		September 27	73,737	
		349,287			290,905
April 5	73,300		October 4	73,233	
April 12	70,425		October 11	73,797	
April 19	71,488		October 18	74,026	
April 26	72,530		October 25	73,906	
		287,743			294,962
May 3	72,649		November 1	74,753	
May 10	76,312		November 8	74,227	
May 17	72,610		November 15	75,043	
May 24	71,715		November 22	76,092	
May 31	73,183		November 29	76,539	
		366,469			376,654
June 7	72,260		December 6	77,022	
June 14	72,112		December 13	77,016	
June 21	72,449		December 20	76,935	
June 28	72,157		December 27	76,999	
		288,978			307,972
Total					3,760,351
Weekly average					72,314

PERCENTAGE OF PHYSICIANS RECEIVING THE JOURNAL

The following table gives the number of physicians in the United States (based on the sixth edition of the American Medical Directory), the number receiving THE JOURNAL, and the approximate percentage in each state. It does not include copies sent to physicians in the United States Army, the United States Navy or the Public Health Service:

State	Number Receiving JOURNAL	Physicians in State 6th A. M. Dir.	Approx. Percentage 6th A. M. Dir.
Alabama	758	2,530	29
Arizona	262	333	78
Arkansas	638	2,587	25
California	3,491	5,929	61
Colorado	979	1,713	57
Connecticut	1,071	1,701	63
Delaware	129	264	49
District of Columbia	639	1,237	51
Florida	510	1,296	39
Georgia	1,084	3,442	31
Idaho	239	458	52
Illinois	6,961	11,095	62
Indiana	1,894	4,765	39

State	Number Receiving JOURNAL	Physicians in State 6th A. M. Dir.	Approx. Percentage 6th A. M. Dir.
Iowa	2,037	4,004	50
Kansas	1,230	2,668	46
Kentucky	1,102	3,483	31
Louisiana	786	2,060	38
Maine	481	1,179	40
Maryland	1,217	2,268	53
Massachusetts	3,469	5,926	58
Michigan	2,402	4,598	52
Minnesota	1,706	2,566	66
Mississippi	507	1,975	26
Missouri	2,355	6 063	38
Montana	336	661	51
Nebraska	1,103	1,960	56
Nevada	81	159	51
New Hampshire	365	666	55
New Jersey	1,777	3,153	56
New Mexico	202	456	45
New York	8,452	15,877	52
North Carolina	878	2,257	34
Nortb Dakota	400	604	66
Ohio	3,751	8,089	46
Oklaboma	872	2,672	33
Oregon	545	1,157	47
Pennsylvania	6,608	11,495	57
Rhode Island	435	752	58
South Carolina	565	1,433	40
South Dakota	406	695	60
Tennessee	1,065	3,481	30
Texas	1,965	6,246	31
Utah	303	488	62
Vermont	258	653	38
Virginia	1,068	2,552	42
Washington	881	1,698	52
West Virginia	764	1,759	43
Wisconsin	1,703	2,817	60
Wyoming	151	254	60

The number of Fellows and subscribers on THE JOURNAL mailing list each year since, and including, 1900, is indicated below. Libraries, colleges, advertisers, exchanges, etc., are not included:

Year	Fellows	Subscribers
January 1st, 1900	8,445	4,633
January 1st, 1901	9,841	8,339
January 1st, 1902	11,107	10,795
January 1st, 1903	12,553	12 378
January 1st, 1904	13,899	14.674
January 1st, 1905	17,570	15,698
January 1st, 1906	20,826	17,669
January 1st, 1907	26,255	20,166
January 1st, 1908	29,382	20,880
January 1st, 1909	31,999	18 983
January 1st, 1910	33 032	19,832
January 1st, 1911	33,540	20,504
January 1st, 1912	33,250	21,620
January 1st, 1913	36,082	19,863
January 1st, 1914	39,518	19,751
January 1st, 1915	41,254	20.430
January 1st, 1916	41,938	22,921
January 1st, 1917	42,744	22,156
January 1st, 1918	43,420	23,117
January 1st, 1919	42,366	24,687
January 1st, 1920	44,340	30,032

During 1919 there were transferred to Fellowship 2,118 from the subscription department, and 20 from THE ARCHIVES OF INTERNAL MEDICINE, THE ARCHIVES OF NEUROLOGY AND PSYCHIATRY and the AMERICAN JOURNAL OF DISEASES OF CHILDREN—a total of 2,138. Four hundred and twenty-one were discontinued as Fellows, but continued as subscribers.

TREASURER'S REPORT

Report of the Treasurer of the American Medical Association for the year ended December 31, 1919.

ASSOCIATION RESERVE FUND

Reserve Fund as at December 31, 1918		$208,727.38
Investments		63,242.75
Interest—Bonds	$10,959.96	
Interest—Uninvested	256.33	
		11,216.29
Reserve Fund as at December 31, 1919		$283,186.42
Balance as at December 31, 1919		$ 265.34

TREASURER'S GENERAL ACCOUNT DAVIS MEMORIAL FUND

Balance as at December 31, 1918	$ 3,651.80
Interest received for the year	110.36
Balance as at December 31, 1919	$ 3,762.16

AUDITORS' REPORT

CHICAGO, January 19, 1920.

To the Board of Trustees,
American Medical Association, Chicago, Illinois.

Dear Sirs:

In accordance with your instructions, we have audited the accounts of the American Medical Association for the year ended December 31, 1919, and now submit our report thereon.

SURPLUS ACCOUNT

The surplus at the beginning of the year amounted to $471,661.50, and the surplus at the end of the year amounted to $456,839.39, a decrease of $14,822.11, which may be accounted for as follows:

Transfer to Reserve Fund	$ 63,621.71
Less Net Gain on Operations	48 799.60
Net Decrease in Surplus	$ 14,822.11

The net decrease in surplus is spread over the assets and liabilities as follows:

Decrease in Assets:		
Current Working Assets (Increase)		$ 11,683.64
Prepaid Expenses (Decrease)		1,713.69
		$ 9 969.95
Less Decrease in Property and Equipment		20,908.89
		$ 10,938.94
Add Increase in Liabilities:		
Advance Payments on Publications	$ 3,524.63	
Increase in Accounts Payable	358.54	
		3,883.17
Net Decrease in Surplus as above		$ 14,822.11

FINANCIAL POSITION

The financial position of the Association as at December 31, 1919, is shown in the following statement:

ASSETS: BALANCE SHEET AS AT DEC. 31, 1919.

Property and Equipment at Cost, less Depreciation:			
Real Estate and Buildings			$209,109.68
Machinery			48,850.62
Type and Metals			7,577.81
Furniture and Equipment			13 843.63
Chemical Laboratory			1 650.26
Library			817.95
			$281,849.95
Reserve Fund Investment			283 186.42
Current and Working Assets:			
Inventory of Materials, Supplies and Work in Process		$52,621.41	
Accounts Receivable:			
Advertising	$39,544.94		
Cooperative Medical Advertising Bureau	5,633.36		
Reprints	2,738.24		
Miscellaneous	63,407.96		
		111,324.50	
Directory		510.54	
Cash in Bank and on Hand		24,788.77	
			$189,245.22
Prepaid Expenses:			
Insurance		$ 611.31	
Session — 1920		293.19	
			904.50
Total			$755,186.09
LIABILITIES:			
Accounts Payable:			
Cooperative Medical Bureau		$ 6.736.23	
Sundry		112.87	
			6,849.10
Advance Payments on Publications			8,311.18
Association Reserve Fund			283,186.42
Surplus			456,839.39
Total			$755,186.09

The balance sheet submitted, in our opinion, correctly reflects the financial position of the Association as at December 31, 1919, subject to provision for accrued interest, taxes and "Journal" subscriptions paid in advance, less subscriptions and memberships due and unpaid.

We examined the securities representing the investment of the Association Reserve Fund, and found them in order.

We verified the cash on hand by actual count and the cash in bank by certificates obtained from the Association's bankers. The following is a statement of the cash balances:

Continental and Commercial National Bank	$ 21,331.06
First Trust and Savings Bank (Treasurer's Account)	265.34
Cash on Hand	3 042.37
Cashier's Fund	150.00
Total	$ 24,788.77

OPERATIONS

The operations of the Association for the year ended December 31, 1919, are shown in the following statements:

INCOME AND PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDED DECEMBER 31, 1919

JOURNAL:		
INCOME:		
Fellowship Dues and Subscriptions		$357,684.78
Advertising		395,598.38
Jobbing		13,291.14
Books		12,835.69
Reprints		4,589.67
Insignia		2,251.40
Miscellaneous Sales		8,627.33
Interest		2,783.98
Net Recoveries on Bad Debts		125.79
		$797,788.16
Expenses, Schedule "1"		$618,311.83
Net Income from Journal		$179,476.33
MISCELLANEOUS INCOME:		
Cooperative Advertising Bureau	$ 195.56	
American Journal of Diseases of Children	784.37	
Archives of Internal Medicine	1,692.82	
Rent, Building "B"	300.00	
		2,972.75
		$182,449.08
Association Expenses—Schedule "2"	$71,503.83	
Less Rentals	3,720.00	
	$67,783.83	
Miscellaneous Expenses—Schedule "3"	65,865.65	
		133,649.48
Net Gain on Operations		$ 48,799.60

JOURNAL EXPENSES—SCHEDULE "1"

Wages and Salaries			$231,529.14
Editorials, News and Reporting			9,370.11
Paper—Journal Stock			217,625.86
Paper—Miscellaneous			7,767.81
Electrotypes			11,173.05
Binding			423.72
Ink			6,438.17
Postage—First Class			19,699.26
Postage—Second Class			32,738.27
Journal Commissions			8,232.05
Collection Commissions			1,155.73
Discounts			14,279.05
Express and Cartage			3,295.22
Exchange			3,179.25
Office Supplies			1,704.33
Telephone and Telegraph			1,005.96
Office Jobbing			5,311.67
Miscellaneous			11,951.10
Power and Light			3,992.66
Fuel			3,511.15
Factory Supplies			6,447.32
Repairs and Renewals—Machinery			4,486.33
			$605,317.21
Depreciation:			
Property and Equipment	Rate	Amount	
Machinery	15%	$8,620.69	
Furniture and Equipment	15%	1,836.59	
Factory Equipment	15%	559.33	
Type	15%	616.44	
Metal	20%	1,361.57	
			12,994.62
			$618,311.83

ASSOCIATION EXPENSES—SCHEDULE "2"

Association	$ 19,682.81
Health and Public Instruction	10,288.24
Pharmacy and Chemistry and Chemical Laboratory	18,760.70
Medical Education	13,081.87
Organization	2,627.02
Therapeutic Research	1,045.91
Laboratory Depreciation—10%	183.36
Building "A" Expense	131.27
Session 1919	5,702.65
Total	$ 71,503.83

MISCELLANEOUS EXPENSES—SCHEDULE "3"

Building "B" (New) Depreciation 5%	$ 7,973.98
Building ("A" old to be razed)	14,379.93
Biographical Expense	17,983.32
Insurance and Taxes	6,214.26
Legal and Investigation Expense	3,500.00
Building "B" Maintenance	1,334.56
Cumulative Index	1,787.12
Depreciation Library—20%	204.49
Archives of Neurology and Psychiatry	2,695.40
Spanish Edition, Journal A. M. A.	9,792.59
Total	$ 65,865.65

The audit embraced an exhaustive test of the various sources of income and the verification of the cash disbursements with proper vouchers on file.

We are pleased to report that we found the accounting records to have been kept in the usual good order and that every facility was afforded us for the proper conduct of the audit.

Yours truly,

MARWICK, MITCHELL, PEAT & Co.

Report of the Judicial Council

Dr. M. L. Harris, Illinois, Chairman, presented the report of the Judicial Council, which was referred to the Reference Committee on Report of Officers:

To the Members of the House of Delegates of the American Medical Association:

There have been no questions referred to the Council for adjudication during the past year. The two matters remaining in the hands of the Council from the last House of Delegates are the revision of the Constitution and By-Laws, and the further consideration of the feasibility of establishing some system of old age or invalidity insurance for members of the profession.

The Constitution and By-Laws as revised are herewith submitted.[1] At first glance it may seem that many radical changes have been made, but on closer investigation it will be found that such is really not the case. During the past few years of the evolutionary development of the Association, quite a number of changes have taken place in the character of the work done as well as in the manner of doing it, and some of these changes, although fully recognized, have not been clearly set forth in the By-Laws.

The Constitution, likewise, has failed to state correctly the character and form of the organization. The opportunity has been taken, therefore, to define the organization as it really is and has been since the reorganization in 1901. It will be noted that the verbiage has been changed in many places for the purpose of clarification and to eliminate ambiguity and duplications, but on comparison it will be found that there have been no changes made in principles or fundamentals.

Taken up more in detail, the first change noted in the Constitution is in the definition of the organization. The word "federacy," as defined in the American Dictionary and Cyclopedia, expresses correctly the character of the organization; hence this word has been used in defining it. Since the reorganization the Association has been a federacy, yet the fact has never been clearly set forth in the Constitution.

The objects of the Association have been expressed in the broadest and simplest manner possible. By omitting to mention a few of the things contained in the old Constitution under the title "Objects," we do not by implication eliminate a great many more things which the Association may do but which are not mentioned. In defining the objects of an association such as this, it is desirable to state them as briefly and as broadly as possible. The constituent associations and component societies are defined and the difference between members of the American Medical Association and Fellows of the Scientific Assembly made clear. The composition of the House of Delegates, together with its powers, are set forth, and the general officers of the Association defined.

There have been no material changes in the Scientific Assembly or the sections. No changes have been made in the section on "Funds," except to shorten it up slightly; likewise no changes in the method of amending the Constitution.

Concerning the By-Laws, it will be found that many paragraphs which were but duplications have been eliminated; likewise some sections which were already set forth in the Constitution and hence were but repetitions. Most of these are apparent at a glance, and as they add nothing to nor take anything from the present By-Laws, need not be further elaborated. There have been some changes made in the verbiage without changing the sense where it seemed that by so doing the meaning could be clarified.

As there are many points which are common to all of the standing committees or councils, these have all been grouped

1. These appear in the official handbook of the House of Delegates.

together to save repeating them under each council, thus materially shortening the sections on councils.

Much thought has been given to rewording the Constitution and By-Laws and it is felt that the changes made correctly express the conditions as they exist and that these instruments are now brought up to date.

Old age And Invalidity Insurance

During the past year the Council has been collecting data on the subject of old age and invalidity insurance for members of the association. A brief questionnaire was sent to the secretary of every county medical society in the organization. The questionnaire asked for information as to the number of physicians in the county dependent on financial aid and as to how many of that number were members of the county medical society: the number over 65 years of age dependent because of age, with the age of each, if known: and the number under 65 dependent because of physical disability, with the cause of physical disability, if known. Reports were received from every state in the Union, and the reports covered 53.48 per cent. of the total number of physicians in the entire country, or 77,083 of the 144,116, the estimated total number of physicians in the country. One hundred and fifty-six were reported to be dependent on financial aid; 120 on account of old age, and thirty-six on account of physical disability. Only 42,824 of the 77,083 physicians reported on are members of the American Medical Association, and of this number seventy-seven or less than 0.2 per cent. were dependent. This gives an estimated number of 146 dependents out of a total membership of 81,239. There were no dependents reported in twenty-eight states, including the District of Columbia. Georgia heads the list with the largest number, namely sixteen out of 896 reported on, or 1.78 per cent. Rhode Island's report covered 100 per cent. of the members, while that of New York covered only 23 per cent., statistics from the city not being obtainable.

In studying these statistics, as incomplete as they may be, one is impressed with the remarkably small number of dependent physicians. It is quite likely that the number of physicians over 65 and unable to practice by reason of age and who have not been able to save a competence for their old age is much greater than that stated, but they are living with members of the family and hence not dependent on charity. The number under 65 who are dependent by reason of physical disability likewise seems rather low, and no doubt a more searching inquiry would increase the number of dependents due to old age as well as to physical disability. As so many of the states failed to report any dependents, even where a majority of the members were covered by the report, it would seem to the Council that the question of rendering financial aid should rest with the state organization and be treated as a local matter.

Respectfully submitted,

M. L. Harris, Chairman, Randolph Winslow,
I. C. Chase, William S. Thayer,
H. A. Black, A. R. Craig, Secretary.

Report of the Council on Health and Public Instruction

Dr. Victor C. Vaughan, Michigan, Chairman, presented the report of the Council on Health and Public Instruction, which was referred to the Reference Committee on Reports of Officers.

The report follows:

To the Members of the House of Delegates of the American Medical Association:

Activities During the Year

Owing to the early date of the meeting this year, the time covered by the Council report is from May 1, 1919, to March 1, 1920, a period of ten months.

Reorganization of Federal Public Health Activities

In its report for 1919, the Council stated that one of the more urgent needs in the present public health situation was increased knowledge regarding organized and official public health activities as a basis for constructive legislation. This is a work for which the Council is especially well fitted. In its report for 1914, the Council said, regarding the need of a careful study of the public health work of the federal government with a view to determining exactly what the federal government is doing and can do for public health: "The need for such an investigation hardly needs more than to be stated. The American Medical Association stands unreservedly pledged to the securing at the earliest possible moment of an adequate national health organization. In the discussion of this subject . . . a lack of accurate and complete information regarding present health activities on the part of the federal government has been apparent. Extreme claims have been made on both sides, one set of advocates asserting that the United States government was doing more for public health than any other national government in the world, the other asserting that practically nothing was being done by our government which could compare with the health activities of European nations. Such a condition is not credible to a scientific organization."

"This statement is true today. In addition, no careful study has ever been made, from a legal standpoint, of the exact limitations of the federal government along public health lines. What can the national government do under the constitution for public health? No one is today in a position to answer this question authoritatively. As a result, bills are drafted and measures proposed that would probably, if adopted, be unconstitutional, while such measures as the Harrison Narcotic Law, a law intended solely for the improvement of public health conditions in a broader sense, are passed ostensibly as revenue measures and are later by amendment converted into revenue producing measures with serious injustice and inconvenience to law-abiding physicians. If Congress has the power to regulate the sale of habit-forming drugs for the public good, then it is not necessary for Congress to pass such measures under the guise of revenue laws which after their passage are distorted and misconstrued by federal officials into unfair and inequitable revenue producing measures. This country will never have a federal department of public health such as has been advocated rather vaguely for fifty years past until the public health functions and powers of the federal government under the constitution have been definitely determined. Two questions must be answered: First, what can the federal government do for public health; and second, what is the federal government now doing for public health. These questions are not at present being considered by any other organization, yet their solution is fundamental to the development of public health in this country. They are problems to which the American Medical Association can fittingly and properly direct its attention. Having secured some authoritative information on these two questions, we will then be able to put the influence of the American Medical Association behind an intelligent movement for a national health organization."

Immediately preceding the Atlantic City session, the Secretary was asked to meet with the Executive Committee of the Association of State Health Officers for the purpose of discussing the reorganization of federal public health work. Later at a joint meeting of the Council and the Executive Committee of the State Health Officers an agreement was made to cooperate in endeavoring to secure a reorganization of federal public health agencies. A joint committee, consisting of the Chairman, the Secretary and Dr. W. S. Rankin from the Council, and Dr. S. J. Crumbine, Secretary of the State Board of Health of Kansas, Dr. C. St. Clair Drake, Director of Public Health in Illinois, and Dr. Allen W. Freeman, Commissioner of Health in Ohio, representing the Association of State Health Officers, was appointed to coordinate the work of the two bodies. After considerable correspondence, a conference was held at the Association headquarters in Chicago, July 28-30, 1919, at which were present the members of the Joint Committee, other members of the Executive Committee of the Association of State Health Officers and advisers on legal and technical questions.

After three days spent in discussing the details of the proposed reorganization and the essential provisions of a bill for this purpose, it was recognized that it was not possible to draft a satisfactory bill for the reorganization of the federal public health work until more information was available regarding the present public health activities of the federal government, what work was being done in the different departments, what appropriations were being made, how much was being spent, what was being accomplished, etc. It was realized that it would be impossible to draft a workable bill without authoritative and official information on these points. The possibility of the Council undertaking a survey of federal public health work was then discussed. Following the adjournment of the conference, this discussion was carried on by correspondence. Continued discussion of it led to the realization of the fact that any such survey carried on by private or unofficial agencies would neither be constructive nor authoritative and that such a study could be made only by a commission created by Act of Congress, authorized and empowered to summon before it the heads of the various bureaus and departments of the federal government, to call for official reports, estimates, records of expenditures, etc., and to carry on a systematic, official survey of the entire health work being done by the federal government, what reorganization and rearrangement was possible and advisable and how this could best be brought about. The Secretary and Dr. C. St. Clair Drake were appointed a Subcommittee to prepare a measure for accomplishing this purpose. Careful study of the situation in Washington, together with an inquiry into the legal and parliamentary questions involved, showed that the best form of securing the end sought was by means of a joint concurrent resolution. Such a resolution was accordingly drafted and introduced into the Senate by Hon. Joseph E. France of Maryland, as Senate Joint Concurrent Resolution 14, and into the House by Hon. E. E. Denison of Illinois as House Joint Concurrent Resolution 33. The resolution provides for a joint committee to consist of three members of the Senate and three members of the House "to make a survey of and report on those activities of the several departments, divisions, bureaus, offices and agencies of the Government of the United States which relate to the protection and promotion of the public health, sanitation, care of the sick and injured and the collection and dissemination of information relating thereto." The Committee is directed to report to Congress

1. The statutory powers and duties conferred by the Congress on any department, division, bureau, office or agency of the United States Government to carry on any work pertaining to the conservation and improvement of the public health, together with any rules and regulations authorized or promulgated thereunder;

2. The organization now existing in the Federal Government for the purpose of carrying out these powers and duties, together with the personnel of, appropriations for, and expenditures by each department, division, bureau, office, and agency during the fiscal year ended June 30, 1919;

3. The coordination now existing between said departments, divisions, bureaus, offices, and agencies, together with any conflict, overlapping, or duplication of powers, duties, functions, organization, and activities;

4. The cooperation and coordination now existing between the Government of the United States and the government of the several States or extragovernmental agencies for the conservation or improvement of the public health;

5. Such further information as such committee may deem proper;

6. Such recommendations as such committee may deem advisable to offer for the improvement of the public health work of the United States Government.

This resolution, which is short and easily understood, provides for the first time for a systematic study of the public health activities of the federal government as a basis for reorganization. The resolution passed the Senate December 20. It was, at the time this report was written, still in the Committee on Rules in the House, although there is a good prospect of its being adopted by the House at an early date.

At the New Orleans session of the American Public Health Association in October, 1919, one afternoon session was devoted to the discussion of this question, following which the American Public Health Association adopted a resolution unanimously endorsing the action of the joint committee, urging the passage of the resolution by Congress and authorizing the appointment of a committee to represent the American Public Health Association and to cooperate with the joint committee in securing the passage of this resolution. The committee appointed by the President of the American Public Health Association consisted of Dr. Haven Emerson, New York City, Dr. Charles V. Chapin, Providence, Rhode Island, and Mr. Lee K. Frankel of New York.

The formulation of this resolution providing for a congressional survey of federal public health work and the submission of recommendations for the reorganization, coordination and improvement of federal public health activities, constitutes for the first time in the history of this movement a definite, sound and practical program. In the furtherance of this program, the Council has enlisted the cooperation of the American Public Health Association and the Association of State Health Officers. The joint committee which has been created forms an effective means whereby the combined influence of the three organizations represented can be utilized for constructive public health work. The Council feels that for the first time in the history of the Association we are on the right track. It is hoped that the concurrent resolution may pass the House during the present session and the committee may be appointed to carry on its survey during the summer recess of Congress so as to report early in December. If this is not possible, then there are gratifying prospects of the passage of this resolution as soon as the new Congress convenes under a new administration.

MEDICO-LEGAL WORK

In its report for 1919, the Council made the following statement regarding its previous work and plans on medicolegal lines:

"Another task taken up by the Council was a study of the legal relations and responsibilities of physicians and the legal aspects of public health. This field, for obvious reasons, has never been carefully studied either by physicians or lawyers. It offers no prospect of financial reward to lawyers and it is only of interest to physicians so far as their personal interests are involved in some specific case. The Secretary has for many years collected a large amount of material on this subject. One volume of a proposed four-volume set was issued in 1915, namely, "Digest of Supreme Court Decisions on Medical Practice Acts," in which were indexed 752 court decisions on this subject, 396 of which were abstracted. Work was begun and nearly completed on the second volume, "A Digest on the Medicolegal Relations of Physicians," for which approximately 1,800 supreme court decisions were collected and abstracted. This work can probably be completed and prepared for publication in a few months. In the field of malpractice, there are probably 1,500 cases on record which have gone to courts of last resort for opinions, while on the fourth subject, "The Powers and Duties of State Boards of Health," there are approximately 800 decisions on record. This work should be completed and published, as it comprises material that is not available in any other form nor through any other agency."

During the past year the second volume of the medicolegal series on "Medicolegal Relations of Physicians" has been completed and is now being prepared for publication. This digest contains 3,000 Supreme Court decisions on all the personal, legal relations of physicians except malpractice and will be of great value to the profession in affording authoritative information on many legal questions of vital importance to physicians. Plans are now being made for the compilation of the third volume on "Powers and Duties of Health Officers" which the growing work of municipal, county and state health departments has rendered imperative.

Vital Statistics Legislation

In its report for 1919, the Council summarized the history of vital statistic legislation in this country showing that, in 1906, at the time that the Committee on Medical Legislation, the forerunner of the Council on Health and Public Instruction, took up this work in cooperation with the Division of Vital Statistics of the Bureau of the Census, there were only ten states in the Union that had any effective laws for the registration of deaths and only eight in which there was any birth registration, and that through the formulation of the model bill on vital statistics and the cooperation of the various organizations interested, the model bill had been adopted in the past fourteen years in all of the states except seven, viz., Alabama, Arizona, Delaware, Iowa, Nevada, South Dakota and West Virginia. During the past year, Alabama and Delaware have adopted the model law, leaving now only five states which are as yet without satisfactory legislation on this subject. These are Arizona and Nevada, in which no satisfactory system of registration has ever existed; Iowa and West Virginia, in which the old obsolete system of registration through county clerks still persists; and South Dakota, in which the Secretary of the State Historical Society is the Registrar of Vital Statistics which are collected and recorded as historical rather than public health data. In Arizona and Nevada, the model law should be adopted at the next session of the legislature. In the other three states such amendments to the existing law should be adopted as will render these states eligible to admission to the Registration Area of the United States Census. This work, which is absolutely essential for any modern public health work, should be completed at the earliest possible moment so that the Registration Area for Births and Deaths in this country will include the entire country.

The House of Delegates has repeatedly endorsed the model law and has repeatedly urged its adoption on the various state associations. This support has been of the greatest assistance in securing the passage of these laws in the different states. In order that this work may be completed, the Council requests the House of Delegates to reaffirm its endorsement of the model law and to urge the state medical associations in Arizona, Iowa, Nevada, South Dakota and West Virginia to take the lead in educating public opinion in these states and to endeavor to secure at the next session of their legislature the adoption of such measures as will bring their states into the Registration Area in harmony with the rest of the country.

Committee on Protection of Scientific Research

The Committee on Protection of Scientific Research which has done such excellent work in the past in educating the public and in preventing the passage of legislation restricting scientific investigation has during the past year done one of the best pieces of work in its record. Senate Bill 1258, introduced by Senator Myer of Montana, while apparently only intended to forbid the use of dogs for experimental purposes in the District of Columbia, was in reality an opening wedge for general restrictive legislation. The bill was referred to the Judiciary Committee of the Senate and by this Committee was referred to a subcommittee consisting of Senator Norris of Nebraska, Chairman, Senator Colt of Rhode Island and Senator Ashurst of Arizona. Hearings covering several days were held in Washington the first week of November, 1919. The usual lobby of antivivisectionists, officers of antivivisection societies and others was present to urge the passage of the bill. The scientific side of the case was presented by an imposing array of distinguished scientific men under the leadership of Dr. Walter B. Cannon of Harvard Medical School. It is doubtful if any discussion of this question has ever been more brilliantly or convincingly conducted. The full report of the hearing published by the committee forms an interesting collection of scientific data as well as an exposition of the misstatements and fallacious arguments of the antivivisectionists. The bill has never been reported out of committee.

Soon after the organization of the original Committee on Defense of Scientific Research, a set of rules for the care of animals in scientific laboratories was formulated, printed and copies distributed to each medical college and scientific laboratory in the country with the request that they be posted and enforced. This voluntary action on the part of the medical profession for the regulation of any possible abuses in animal experimentation has proved one of the strongest arguments against the adoption of special legislation for this purpose. Although these rules are still being enforced, the length of time that has elapsed since their distribution made it advisable in the opinion of the Committee to print a new edition of the rules and send them out to all scientific laboratories. Copies of these rules with a circular letter have been sent to each of the eighty-five medical colleges and eleven additional laboratories. Requests for additional copies have been received from many of the laboratories and the rules have been posted and are being enforced now in practically all of the scientific laboratories throughout the country.

In addition to the series of twenty-eight pamphlets on Protection of Scientific Research prepared by the Committee and issued by the Council which has now become a standard series on this subject, two other pamphlets are now in course of preparation, one on the value of animal experimentation in the study of nutrition by Professor McCollum of Johns Hopkins University, and the other by Doctor Cannon, the Chairman of the Committee, summarizing the entire series and presenting in a single, concise pamphlet the entire case for scientific research, with special reference to the question as to why the dog is essential to scientific investigation.

Committee on Conservation of Vision

At the annual meeting of the Council held on October 4, 1919, the following Committee on Conservation of Vision was appointed: Dr. Cassius D. Wescott, Chairman, Chicago; Dr. George S. Derby, Boston; Dr. George Edmund de Schweinitz, Philadelphia; and Dr. John E. Weeks, New York City. In addition to the twenty pamphlets now on hand forming the popular series on Conservation of Vision, two others are now under consideration, one on crossed eyes and one on cataract. The Chairman of the Committee and the Secretary of the Council have held several conferences with a committee from the American Optical Association with a view to the inauguration of a campaign for the education of the public on conservation of vision and the detection and correction of errors of vision, especially among schoolchildren and industrial employees. This plan which is developing rapidly will, if consummated, be financed by the American Optical Association and directed by a committee on which the Council and its Subcommittee will be represented.

Committee on Cooperation with the National Education Association

This Committee which is at work on health problems in education was reorganized at the October meeting of the Council by the appointment of the following Committee: Dr. John M. Dodson, Chairman, Chicago; Dr. R. W. Corwin, Pueblo; Dr. George W. Goler, Rochester, N. Y.; Dr. Edward Jackson, Denver; and Dr. Henry L. K. Shaw, Albany, New York. Dr. Dodson, Dr. Corwin and Dr. Goler attended the annual meeting of the National Education Association in Cleveland on February 24. A fourth pamphlet in the series prepared by this Committee on the results of health conservation work in the rural schools is now in preparation.

Committee on Social Insurance

This Committee, appointed by the Council in 1915 to carry on a study of social insurance in its relation to the medical profession, presented reports to the House of Delegates at the annual sessions of 1916, 1917 and 1919. No report was presented in 1918 owing to the fact that Doctor Lambert, the Chairman of the Committee, was in service in France. The House of Delegates each year has approved of the report of the Committee, and has directed it to continue its work. The House of Delegates has not as yet seen fit to commit the Association to any positive position on this question, evi-

dently feeling that the time had not yet come for the Association going on record either for or against social insurance. Members of the House of Delegates, of course, understand that the House of Delegates is the only body under the Constitution and By-Laws of the Association that has any power or authority to adopt any policy or commit the Association to any opinion on this or on any other question. Its determination lies entirely outside the jurisdiction of the Council. Evidently this fact is not clearly understood by many of our members, inasmuch as in the last few months statements have appeared in several of our state journals either in the editorial or correspondence columns criticizing the Council for failure to take a positive position against social insurance. Such criticism, of course, is entirely unwarranted as it is not the function of the Council to formulate the policies of the Association.

The failure of the Davenport bill to pass the New York legislature leaves no state in which this question is at present up for discussion in any concrete form, while the growing opposition of physicians and the increasing attention given to it in professional circles will probably prevent the passage of social insurance bills in any state without the medical profession being thoroughly informed and prepared to participate in the discussion of them. The objects which the Council had in view in creating this Committee, viz., to arouse the medical profession to a discussion of this subject and to prevent the premature adoption of any such measures in this country as in England without the full knowledge of the medical profession, have evidently been accomplished.

Midwinter Conference

The regular Midwinter Conference on Public Health and Legislation was held at the Auditorium Hotel in Chicago on Thursday, March 4. Owing to the war, this was the first conference which the Council has held since 1917. In spite of this lapse of three years and of the fact that many state and municipal health officers were unable to attend on account of serious epidemics, the attendance was one of the largest and most gratifying that has been present at any of the conferences of the Council. Following the policy of making this Midwinter Conference a rallying point for other organizations, committees, councils, conferences, etc., an effort was made to concentrate as many meetings as possible in the week of the session. The Executive Committee of the State Health Officers, the Joint Committee of the Council, the State Health Officers Association and the American Public Health Association, the Executive Committees of the American Public Health Association and the National Tuberculosis Association and the National Association of Colleges and University Health Officers were all held in connection with the Conference. Plans are now under consideration for a more extensive Conference next year and for the centering of the greater number of our public health meetings and conferences at this time.

Special Committees

The Council desires to bring to the attention of the House of Delegates a growing tendency to relapse into the conditions which existed before the creation of the Council in regard to the appointment of special and independent committees. Previous to the organization of the Council, there had developed during a number of years many independent and overlapping committees, each of which was endeavoring to functionate separately and independently and each of which was asking for appropriations to carry on its work. In order to concentrate all of the public health and public relation functions of the Association under a permanent and responsible Council, the House of Delegates in 1910 created the Council on Health and Public Instruction which took over all of these conflicting and independent committees. In the last few years there have been created several independent and uncoordinated committees for special purposes, usually in response to a motion of resolution introduced by some member of the House often without careful consideration of its relation to the existing executive machinery of the Association. Special committees appointed in the midst of the annual session are often hastily selected and without due consideration to the various factors deserving of recognition. Much better results are secured by the creation of such special committees as may be needed as subcommittees of one of the existing permanent boards or councils, selecting men carefully after due consideration to the needs of the situation. The Council, therefore, recommends that the House of Delegates, in taking action on subjects lying within the field of the Council, instead of creating special and independent committees, instruct the Council to appoint such committees and to inaugurate and carry on their work as a part of the Council activities.

Increased Taxation Under the Harrison Law

In its report for 1919, the Council called attention to the increased registration tax for physicians under the Harrison law which had been increased from one to three dollars. The Council pointed out that this law was enacted by Congress to carry out our international obligations in compliance with the recommendations of the Shanghai Commission on the Control of Opium Traffic; that it was extremely doubtful whether Congress had any authority under the Constitution to regulate the importation and sale of a drug so long as the object of the regulation was the improvement of the public health or moral status of the people; and that in order to give Congress jurisdiction on this subject, the Harrison law, like the Esch phosphorus bill, had been put in the form of a revenue measure. The American Medical Association and its Journal cooperated heartily and cheerfully in the enactment of this measure, in the hope that it would be of material value in restricting the use of narcotic drugs to legitimate purposes. The medical profession of the country also accepted the imposition of a tax and the inconvenience of registration as its contribution to the operation of the law and as necessary accompaniments of any practical plan for the control of illicit traffic in habit forming drugs. The object of the law is not and never has been the production of revenue. The revenue feature is incidental and secondary. Yet in the revenue bill for 1918 the license tax for physicians under the Harrison law was increased from one to three dollars. Estimating the number of physicians in the United States at 150,000, this increase of two dollars a year forms an unwarranted and inequitable tax on physicians of $300,000 a year. A license law is no more effective with a three dollar license fee than with a one dollar fee. The only possible justification for the Harrison law is the public good. The expense of the operation of the law, therefore, should be borne by the public and not by a special tax levied on one particular class. While the increase in the tax on physicians might have been justified in 1918 as a war measure, now that the war is over there is no possible justification for its continuance. The Council, therefore, recommends that the House of Delegates record its emphatic disapproval of this exploitation of physicians and that it demand the reduction of the registration fee for physicians to a nominal amount for so long as the law remains in force.

Regulation of Habit Forming Drugs

The Harrison law has now been in operation a sufficient length of time to afford a fair opportunity for determining its effectiveness. It must be admitted that it has failed of the purpose for which it was enacted, viz., the restriction of the use of habit forming drugs to legitimate purposes. While definite figures are lacking, it is estimated that there is at present imported each year into this country between four and five times as much opium as is needed for medical purposes. Reports indicate that efforts to enforce the law in the face of this oversupply of drugs have resulted in a marked increase in the illict distribution of opium, morphin, heroin, cocain and other inhibited drugs, while the extortion of unfortunate victims of drug habits has been made possible by the illegal methods under which the traffic is necessarily carried on. The enormous profits of illegal traffic in drugs has led to systematic efforts to increase the number of prospective customers while the opportunities for profits due to the dishonest enforcement of the law in differ-

ent localities has led to blackmail and official corruption. The present situation is exactly the same that would have resulted if a federal law had been passed forbidding the use of alcoholic liquors but leaving their manufacture and distribution unrestricted. The attempt to regulate the use of habit forming drugs and to restrict their use to legitimate purposes by a license law has evidently failed. Nothing but continued failure and scandal can result so long as it is possible to produce and bring into this country each year many times the amount of these drugs needed for legitimate purposes. The only effective method of control is by the government, through the U. S. Public Health Service, being given complete control of the importation and distribution of habit forming drugs, the forbidding of their manufacture or importation by any private individual or firm, the ascertaining of the approximate amount needed each year for legitimate purposes, the importation of this amount under government control and its distribution to properly qualified and registered persons through the Public Health Service with the requirement of strict accountability for all drugs issued. The Council recommends that it be instructed to inaugurate an investigation into (1) the amount of narcotic drugs required for each year for legitimate purposes; (2) the amount of narcotic drugs now actually imported into the country; (3) the devising of effective methods by which these drugs under proper government supervision may be restricted to legitimate uses.

The tabulation of the educational material printed and distributed by the Council, together with the work done by the headquarters office, is submitted herewith:

PAMPHLETS PRINTED FOR DISTRIBUTION FROM APRIL 23, 1919, TO MARCH 16, 1920

Baby Welfare		1,000
Conservation of Vision Series		1,000
Minimum Health Requirements for Rural Schools		10,000
Protection of Research Series		2,000
Save the Babies		65,000
Sex Hygiene Series		24,000
Social Insurance Pamphlet XI		5,000
Summer Care of the Baby		16,000
What We Know About Cancer		18,200
What You Should Know About Tuberculosis		8,500
Why Should Births and Deaths Be Registered		10,000
Total		160,700
Anthropometric Tables	2,000	
Record Sheets	2,000	
Score Cards	10,000	
Total	14,000	

OFFICE WORK

Letters Received from April 23, 1919, to March 15, 1920	3,892
Letters Written from April 23, 1919, to March 15, 1920	4,442

SOURCES OF REQUESTS FOR INFORMATION

Source	Number
Attorneys	6
Boards of Education	5
Boards of Health	43
Clubs	5
Federal Departments	22
Hospitals, Sanitariums, etc.	23
Libraries	72
Ministers	27
Nurses	72
Other associations, organizations, etc.	58
Physicians	374
Publications	7
Universities, colleges, schools, etc.	97
Young Mens and Young Womens Christian Associations	12
Miscellaneous	818
Total	1,641

Respectfully submitted,

VICTOR C. VAUGHAN, Chairman,
WALTER B. CANNON,
WATSON S. RANKIN,
MILTON BOARD,
HAVEN EMERSON,
FREDERICK R. GREEN, Secretary.

Report of Council on Medical Education

Dr. A. D. Bevan, Illinois, Chairman, presented the report of the Council on Medical Education, which was referred to the Reference Committee on Reports of Officers.

The report follows:

To the Members of the House of Delegates of the American Medical Association:

The functions of the Council on Medical Education are: 1. To make an annual report to the House of Delegates on the existing conditions of medical education in the United States. 2. To make suggestions as to the means and methods by which the American Medical Association may best influence favorably medical education. 3. To act as the agent of the American Medical Association in its efforts to elevate the standard of medical education. Having these functions in mind, the Council desires to submit the following report:

TABLE 1.—ENROLMENTS OF MEDICAL STUDENTS FOR SIX YEARS, SHOWING VARIATION IN NUMBERS BY CLASSES

College Session	Freshmen	Sophomores	Juniors	Seniors	Totals
1914-1915	3,373	3,919	3,675	3,864	14,891
1915-1916	3,582	3,094	3,559	3,727	14,022
1916-1917	4,107	3,117	2,866	3,674	13,764
1917-1918	4,283	3,521	2,893	2,933	13,630
1918-1919	3,104	3,587	3,272	3,089	13,052
1919-1920*	4,069	2,760	3,306	3,267	13,554

* Estimate.

The single line drawn through the table underscores the figures which show the lowest ebb in the enrolment in the respective classes following the adoption of higher entrance requirements. The smaller number of freshmen in 1918-19 was due to enlistments in the World War. While the figures for 1919-20 are estimated they are fairly accurate since reports from all but a few colleges were obtained.

TABLE 2.—CAPACITY OF MEDICAL SCHOOLS UNDER LIMITED ENROLMENTS

Medical Colleges	No. Colleges	Total Enrolment 1st Yr.	2d Yr.	3d Yr.	4th Yr.	Average Total Enrolments 4 Yrs.	Enrolment per College
Enrolments limited	16	1,136	1,121	1,151	1,151	4,559	285
Report highest capacity with efficiency:							
4-year colleges	31	2,222	2,109	2,063	2,056	8,450	273
2-year colleges	8	307	304	.....	.....	611	76
Estimated highest capacity with efficiency:							
4-year colleges	10	430	430	410	410	1,680	168
2-year colleges	3	65	65	.....	.....	130	43
Totals, Class A colleges	68	4,160	4,029	3,624	3,617	15,430	227
Class B colleges:							
Capacity reported	5	240	240	240	240	960	192
Capacity estimated	5	135	135	140	140	550	110
Totals, Class B colleges	10	375	375	380	380	1,510	151
Totals, A and B colleges	78	4,535	4,404	4,004	3,997	16,940	

I. PRESENT STATUS OF MEDICAL EDUCATION

In 1906, the United States had 162 medical schools, or over half the world's supply. The number has been reduced, largely by the merging of from 2 to 5 medical schools in each of various cities, until now there are 86. Although the number is reduced, the character has been greatly improved. Of the 86 now existing, 77 are regular or non-sectarian; 5 are homeopathic; 1 is eclectic and 3 are nondescript affairs, 2 of which are semi-osteopathic and the third is not recognized in its own state (Missouri).

Since 1906 the proportion of medical schools requiring college work for admission increased from only 4, or 3 per cent. of the 160 medical colleges, to 79 or 92 per cent. of the 86 colleges now existing. The changes in this respect are shown in Chart 1.

Through the reduction in the number of medical schools and the adoption of higher entrance requirements, a material

reduction in the number of medical students was expected. The total has been reduced from 28,142 in 1904 to 13,052 in 1919 but the quality of the students has been very largely improved.

During the present college session the enrolment is approximately 13,554 students, or about 500 more than were enrolled a year ago. As shown by Table 1, the lowest ebb in enrolments following the adoption of higher requirements has been passed and a rapid return to larger enrolments is to be expected.

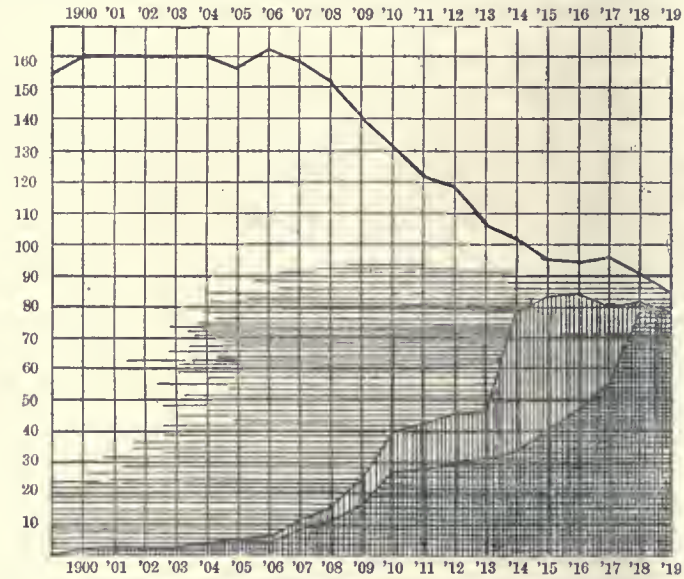
EFFECT OF PRELIMINARY REQUIREMENTS ON STUDENT ENROLMENT

Early in the campaign for higher requirements of preliminary education some feared that medical schools would be unable to secure students. A reduced enrolment in the first session naturally followed the adoption of the higher requirements but in subsequent sessions, in all the better medical schools, enrolments have returned to normal proportions. The present enrolments in freshman classes in most schools greatly exceed those of the previous years. Furthermore, the enrolments in premedical classes show that still larger numbers will begin the study of medicine in the next two years. It is important, therefore, that only those be admitted who are well qualified to study medicine. Scholarships are being rapidly established so that few students need be barred because they are lacking in money.

The present enrolment in all medical schools based on returns from the majority of institutions is estimated at 13,554, an increase of 502 over the total enrôlment in 1919. It is evident, therefore, that following the enforcement of higher standards for admission, the low mark in the number of matriculations has been passed, and that higher enrolments in subsequent years may be expected.

CHART 1.—MEDICAL SCHOOLS AND ENTRANCE REQUIREMENTS

The heavy line at the top shows the total numbers of medical schools existing in the various years. The horizontal shading (indefinite) shows those requiring for admission a four-year high school education; the vertical shading those requiring one year of college work and the heavy shading those requiring two years of college work.



	1900	'01	'02	'03	'04	'05	'06	'07	'08	'09	'10	'11	'12	'13	'14	'15	'16	'17	'18	'19
Totals	160	160	160	160	160	158	162	139	151	140	131	132	118	107	106	96	95	96	90	85
Totals (a)	158	158	158	157	156	153	156	148	135	116	91	80	72	60	24	12	10	10	9	6
Totals (b)	..	..	..	..	..	..	1	2	5	8	13	14	16	16	44	44	38	30	1	..
Totals (c)	2	2	2	3	4	5	5	9	11	16	27	28	30	31	34	40	47	56	80	79

Figures show (*a*) those requiring for admission a high school education *or less;* (*b*) those requiring one year of college work; (*c*) those requiring two or more years of college work.

LIMITATION OF ENROLMENTS

The limitation of enrolments by some medical schools and the excessive numbers of premedical students have caused some alarm lest medical schools may not have room for all the well qualified students who apply. An investigation (see Table 2) shows that the 16 Class A medical schools which have limited their enrolments can care for 4,559 students. Thirty-nine medical schools report that their maximum capacity with efficiency of teaching would enable them to care for a total of 9,061 students. An estimate based on the inspection of 13 Class A medical schools from which no reports were received shows they can enroll and properly train altogether about 1,810 students. The 68 medical schools in Class A, therefore, could enroll without overcrowding 15,430 medical students or about 1,500 more than are at present enrolled (13,554 est.) in the 85 medical schools of the United States. By securing more teachers; by the enlargement of laboratories, and by the completion of college buildings already planned or in course of construction, the numbers of medical students who can be satisfactorily taught could be further increased to 17,000 or 18,000 students.

The existing medical schools, therefore, are more than adequate to meet present needs, and in future as the numbers of students may increase, ample provision can be made for them.

It is the duty of the better medical schools to enlarge their facilities so as to care for as many students as possible, since otherwise many well qualified students will be forced into poorer schools.

THE AMERICAN STANDARD OF MEDICAL EDUCATION

The standard of medical education as it has developed in this country, and which may be called the American standard consists of:

(*a*) Two years of premedical college work.
(*b*) Four years in an acceptable medical school, and
(c) A year's internship in an approved hospital.

Of the 86 colleges, as shown in Chart 1, 78 now require for admission 2 years of college work in addition to a four-year high school education. The admission requirements to medical schools in the United States are now on a par with those in other leading countries.

The Council's "Ideal Standard," adopted in 1905, urged medical schools to require for admission a year of college work, including courses in physics, chemistry and biology, this work to be obtained either in a college of arts and sciences or in the medical school. A special committee of the Council in 1907, however, found that most colleges of arts and sciences did not favor disarranging their schedules so to give in a single year three sciences which included laboratory work. Medical schools which were departments of universities proceeded rapidly to require two years of college work for admission. A few medical schools established premedical courses, but in no instance was the work given in a satisfactory manner. It was soon evident that the Council's one-year requirement should be merely a stepping stone to the two-year standard. Since Jan. 1, 1918, therefore, in accordance with instructions from the House of Delegates in June, 1916, the requirement of two years of college work for admission has been an essential for the Class A rating. Only one medical school is now offering a premedical science course. All others are requiring that the work be taken in colleges of arts and sciences.

The advantages in requiring that the premedical work be taken in approved colleges of arts and sciences are:

(1) The physics, chemistry and biology are taught without reference to their special bearing on medicine. It is not known today what particular facts obtained in the study of these sciences will be most useful in the medical research of tomorrow.

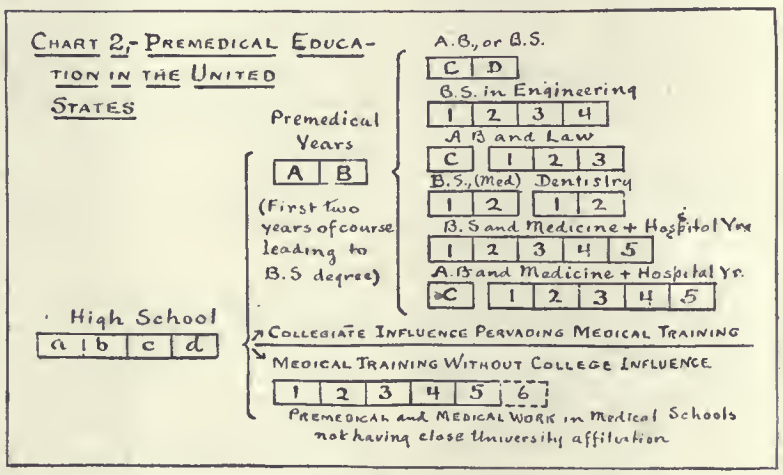
(2) The quality of the premedical work is assured since it is obtained in reputable colleges of arts and sciences in the course leading to the degree of Bachelor of Science. This provides also a satisfactory standard for measuring the value of irregular or so-called "equivalent" courses.

(3) The student is left free to make a final choice of his life work until he is best qualified to do so. He may have medicine in mind when he enters the university but he enters the classes working for the Science degree. He has a chance to compare notes with those studying for other callings and may find that he is better fitted for some other occupation or profession than medicine. If so, he can make the change without any loss of time (see Chart 2) since his premedical courses are equally acceptable toward other callings. Had he enrolled immediately in a premedical course of a medical school and then desired to change to some other profession it might be at the loss of one or more years spent in premedical work. This freedom of choice is of great importance since reports show that from 10 to 30 per cent. of "premedical" students change to some other calling before their two-year course is completed.

(4) Students now enter medical schools with the benefit of two years under the college influence and atmosphere, the contact with students in other departments, the social life, and the athletics, which are bound to affect their entire lives.

(5) The arrangement is a safeguard against medical cults. A student who, in a reputable college, has studied genuine science in his courses in physics, chemistry, and biology will seldom be misled by the fallacious claims advanced by unscientific cults.

The one disadvantage of the arrangement is the lack of uniformity in the courses in physics, chemistry and biology given in different colleges or universities. Efforts are now being made to correct this defect.



This chart shows (*a*) that the student is under the influence of college life and atmosphere during his two premedical college years; (*b*) that he is not required to make a final decision in regard to his life work until he has finished all premedical work, and (*c*) that at any time he can change to some other calling without difficulty.

THE HOSPITAL INTERN YEAR

This part of the Council's educational standard, adopted in 1905, is largely taking care of itself. For many years a large majority of medical graduates have voluntarily secured internships in medical hospitals and the proportion has rapidly increased since ten state licensing boards have required internship as an essential qualification for the license. These states are Pennsylvania, New Jersey, Alaska, Rhode Island, North Dakota, Washington, Illinois, Michigan, Iowa and Texas.

Eleven medical colleges have adopted the requirement of a fifth year to be spent by the intern in an approved hospital before the M.D. degree will be granted. Many more hospitals are now seeking interns than can ever be supplied by medical schools. This gives the college the opportunity to select for its students those hospitals which are considered in best position to furnish adequate intern training. Under the method devised by Rush Medical College of Chicago, the faculty arranges with some member of the attending staff of each approved hospital to report at regular intervals regarding the work done by the intern. Through reports from the interns also information in regard to the character of the hospital is obtained. A somewhat similar scheme is reported as working out fairly well at the University of Minnesota Medical School also. The colleges which have adopted the intern year as a requirement for the M.D. degree and the years when the requirement became, or becomes, effective are given in the accompanying table.

	Affects Matriculants	Affects Graduates
University of Minnesota Medical School	1910-11	1915
Leland Stanford Junior Univ. School of Med.	1914-15	1919
Rush Medical College (University of Chicago)	1914-15	1919
University of California Medical School	1914-15	1919
Northwestern University Medical School	1915-16	1920
University of Vermont College of Medicine	1915-16	1920
University of Illinois College of Medicine	1917-18	1922
Loyola University School of Medicine	1917-18	1922
College of Phys. and Surgs., Los Angeles	1918-19	1923
Columbia Univ. Coll. of Phys. & Surgs., New York	1918-19	1923
Detroit College of Medicine and Surgery	1919-20	1924

SUPPLY OF HOSPITAL INTERNS

There is a real demand for medical graduates to serve as interns in hospitals, but this demand could not be met even if the number of medical colleges and the number of graduates annually should be doubled or trebled. The number of hospitals seeking interns has been tremendously increased and new hospitals are rapidly being erected. Last year 1,126 hospitals, with a total of 270,000 beds, were using or seeking interns. Counting that one intern is needed for every thirty beds, these hospitals would require 9,000 interns each year—more than three times the number of medical graduates in 1919! No such number of graduates is necessary to meet the normal demand for physicians. The intern problem requires some other remedy:

(*a*) The internship might be extended to two years by which the annual output of graduates would supply twice as many hospitals.

(*b*) The hospitals might pay salaries to recent graduates inducing them to remain for several years as resident physicians or surgeons.

(*c*) Hospital assistants or nurses might be trained to do much of the work now devolving on the intern—as suggested by Dr. Goldwater.

(*d*) The situation is relieved in some hospitals by the employment of stenographers who, at the time the patients are examined, take down histories from dictation by the members of the attending staff.

Meanwhile, the number of hospitals is now so large that only those will be able to secure interns which are willing to furnish a valuable clinical training.

NO SCARCITY OF PHYSICIANS; NEED BETTER DISTRIBUTION

A tabulation prepared in August, 1919, shows that the United States has one physician to every 720 people as compared to one to 1,500 in Great Britain. Investigation shows that, with a few exceptions, the demands made for physicians come from the sparsely settled districts in which it would be difficult for a physician to make a living.

The main difficulty is the imperfect distribution rather than a shortage of physicians. Meanwhile, the medical care for rural districts is being gradually improved through better roads, the use of automobiles, interurban railways, telephones and other like improvements. These are enabling the patients in rural districts to obtain more readily the services of physicians in nearby cities.

The Council on Medical Education is now making another survey of all medical schools, the purpose being to ascertain the present problems in medical education. This survey is revealing many changes since 1904; new buildings, more and better equipped laboratories, many more full-time teachers, greatly increased financial resources, closer relations with hospitals and dispensaries, more abundant clinical facilities and greatly improved methods of clinical teaching are everywhere in evidence. The very radical improvements in certain

particulars cause the present conditions to stand out in strong contrast to those found in the Council's survey in 1906.

EXIT THE UNEQUIPPED MEDICAL COLLEGE

About 40 of the 162 medical schools existing in 1906 were without laboratories and without clinical material, yet in 1907 each of these institutions turned out from 12 to 105 graduates. Now most of the medical schools have from five to fifteen well equipped laboratories, and there is not one which does not have at least three laboratories. As to clinical material most medical colleges now actually own or control a teaching hospital, while there is not one which does not have relationship with a hospital in which at least amphitheater clinics can be held.

INDEPENDENT MEDICAL SCHOOLS DISAPPEARING

Again private medical schools—those not having university connection—have largely disappeared. Now of the 85 medical schools, 66 are actually medical departments of universities and in 52 of these the universities have assumed full control not only of the entrance qualifications of the students admitted but also of the finances and the methods of teaching, so that the academic spirit of the university now pervades the medical school also. Of the 68 Class A medical schools, 60 are departments of universities. The influence of university life has been largely increased since now the students have obtained two years of premedical preparation in the liberal arts college.

Of the 86 medical colleges now existing 70 are in Class A, 8 are in Class B and 8 in Class C. Of the 70 in Class A, 59 give the complete four-year course, while 11 offer only the first two years.

When the present survey of medical schools is completed, the Council is planning a revision of its classification. There is, at present, a wide variation between the highest and the lowest of the medical schools now rated in Class A. It is contemplated, therefore, that a subdivision of the Class A group be made, placing the 25 or 30 medical schools which come up to a definite standard in a Class A +, and leaving in A those which are doing sufficiently good work that they can be recommended to all state licensing boards. Certain medical schools which are found seriously deficient will have their rating changed to Class B. It is expected that this subdivision of the present Class A group will lead those rated in A to bring about further improvements.

II. MEASURES OF IMPORTANCE IN MEDICAL EDUCATION

The second function of the Council was to suggest the means and methods by which the American Medical Association can best influence favorably medical education. In this connection we submit the following:

IMPROVING HOSPITAL SERVICE

The Council has given a great deal of careful study to the conditions underlying hospital service which is clearly one of the most important problems now confronting the medical profession, and is convinced that the American Medical Association with its constituent state societies is particularly well equipped to carry on this work. In this connection, the following statement will show the progress of the work in connection with hospitals conducted by the American Medical Association and its Council on Medical Education.

HOSPITAL WORK OF THE AMERICAN MEDICAL ASSOCIATION

Since 1903, the American Medical Association has conducted a clearing house of information relating to all matters in which physicians are interested. This has included information relating to hospitals. From a small beginning the information has rapidly increased in quantity as have also the sources and methods of obtaining information. At first, the information consisted of data obtained through correspondence with physicians, references to articles relating to hospitals and hospital problems published in THE JOURNAL, references to books dealing with these problems, etc. As hospitals increased in numbers and as the demand for information increased, the means for obtaining data were also expanded so that, at the present time, the Association has under the Council on Medical Education, a definite Bureau on Hospitals, which in 1918 had a man who devoted part of his time to the work and for the last year another man has been engaged on full time. This work is intimately tied up with that relative to the many other lines of work carried on at the headquarters of the American Medical Association and especially with medical education, medical licensure, the biographical index and the medical directory. The bureau is aided by committees in the various states, representing the state medical societies, which, in turn, work in harmony with the county societies of their states.

This work of collecting information relating to hospitals and the furnishing of such information to those having need of it, therefore, has been a continuous but a constantly increasing work since 1903. There have been intervals, however, when special and more extensive efforts have been made to secure information in connection with hospitals.

In 1905, a closer relationship between the American Medical Association and hospitals was established when the Council on Medical Education urged that an internship be required as a part of the regular medical course. In 1905, also, the work with hospitals received an additional stimulus through the more detailed information which was obtained from all hospitals as a basis for the lists published in the American Medical Directory.

In 1912 a careful reinvestigation of all hospitals was made for the purpose of ascertaining which were in a position to furnish acceptable internships.[1] Such information as had been collected by the Council through reports from the hospitals, special questionnaires, etc., was submitted to the various state committees for verification. These committees did excellent work, and in several states inspections were made of most or all of the hospitals.

The following schedule was adopted in order that a uniform standard of measurement might be provided for the use of all committees. The outline follows:

1. Buildings and grounds; light; heat; ventilation; repairs; cleanliness, etc.
2. General supervision; superintendence, etc.
3. Trustees; ownership and general conduct; whether conducted in the interests of the community and scientific medicine, or solely for the profit of the attending staff.
4. Medical staff; its organization, character, etc.
5. Intern service: existence of; proportion of, to patients.
6. Nursing; training school for nurses; orderlies, etc.
7. Laboratory; roentgen ray, clinical, laboratory facilities, etc.
8. Records; histories; library, etc.
9. Out-patient department; emergency service; necropsies, etc.
10. Educational functions; teaching; research; influence on local profession, etc.

This general survey of 1912-1914, covered 2,224 hospitals having twenty-five or more beds and reports were received from 2,085, or 98.2 per cent. The reports provided more reliable and up-to-date information regarding all hospitals and enabled the Council in 1914 to publish in tabular form information relating to 852 hospitals which provided internships for 3,006 interns annually. A small, first edition of this tabulation was printed in February, 1914; it was submitted to the various state committees for revision and, after numerous corrections, was published in October, 1914. About 5,000 copies of this pamphlet were printed and circulated. The medical schools were provided with a sufficient number of copies so that each senior student could obtain one.

In a later general survey, that of 1915-1916, the committees of twelve states inspected all or most of the hospitals in those states. In Pennsylvania all hospitals were inspected by a committee of the Bureau of Medical Education and Licensure the chairman of which was a member of the State Advisory Committee on Hospitals. In New Jersey, also, all hospitals were inspected by a joint committee of the State Board of Medical Examiners and the state medical society. This committee also was the one appointed to cooperate with the Council on Medical Education. Based on the data thus obtained, a second revision of the list of hospitals providing internships was published in August, 1916. The list contained the names of 687 hospitals which provided 3,340 internships each year—more than could be filled by the number

1. The results of this investigation were presented at the annual conference of the Council on Medical Education in February, 1915, and the report including the personnel of the various state committees was published in the American Medical Association Bulletin, March 15, 1915, page 316.

of students being graduated annually. The demand for this pamphlet has been constantly increasing.

The records showed that the number of hospitals had been largely increased since the previous inspection and information brought to light a larger number of small, private hospitals, so that, all together, there were approximately 5,000 hospitals having twenty-five or more beds. It was seen that an era of hospital construction had already well begun which likewise called for larger facilities for the collecting and preparation of information relating to hospitals and hospital problems.

Early in 1918 the third general survey of all hospitals was begun. As in previous surveys, an abundance of information collected by the Council was sent to the state advisory committees for their guidance in the work. This information included: (*a*) Digests of information collected by the Council regarding all hospitals in the state. (*b*) Lists of all hospitals in the state as published in the latest directory. (*c*) A collection of selected literature bearing on hospitals and hospital efficiency. (*d*) A letter of instructions by which state committees would carry on the work in a uniform manner. (*e*) A tentative schedule of the essentials in a hospital for the satisfactory training of interns. (*f*) Forms on which additional data might be obtained by the committees as well as blanks on which reports of each committee's work could be prepared and returned to the Council.

Each committee was asked to consider the material sent and to inspect all hospitals as far as possible, or otherwise verify the information relating to each institution and to furnish the Council with an A-B-C rating for all institutions. In this survey, as reported a year ago, it was found there were approximately 6,000 hospitals having twenty-five or more beds, a total capacity of 250,000 beds.

The committees are still at work but reports have already been sent in for 1,298 hospitals of which 1,240 have been graded. Of these, 323 (26 per cent.) are in Class A; 448 (36 per cent.) are in Class B; 321 (26 per cent.) are in Class C, and 148 (12 per cent.) are below Class C. These ratings are being systematically recorded and the supporting data filed. Reports regarding certain disreputable hospitals have been obtained and these are barred from the lists published in the American Medical Directory.

The Association is informing itself thoroughly as to how well each hospital is meeting the needs of its community. At the same time it is giving the hospital the best possible assistance and information.

ATTITUDE OF HOSPITALS

Hospitals, generally, are taking the common sense view, that the survey is a part of a large movement for hospital betterment. They see that hospital standardization is an inevitable process, and that they will soon be expected to measure up to certain standards of equipment, organization and practice. Many of them strive promptly to effect the improvements in organization and in service necessary to secure and retain a Class A rating.

GROWTH OF HOSPITAL SERVICE

The character of our correspondence shows that the hospital information collected is rapidly turning to service. Requests are constantly coming from hospital staff members, superintendents, physicians, interns, nurses, and others for advice and information about hospital architecture, construction, management, staff organization, money raising campaigns, intern problems, nursing and the training of nurses, special hospitals, laboratory work, records, standards, social service, special courses, industrial medicine, etc. The indexing of information under appropriate titles has enabled us to promptly furnish the information requested.

A series of articles presenting hospital plans of special merit have been prepared in collaboration with several architects and are being printed in THE JOURNAL.

The "Schedule of Essentials in a Hospital for the Satisfactory Training of Interns" reported last year has been welcomed and several thousand copies have been distributed. In response to an insistent demand from persons responsible for the operation of hospitals, we are preparing a schedule of essentials for all hospitals which are to be given an acceptable rating whether they desire interns or not.

Another revision of the list of hospitals that furnish acceptable internships, will soon be ready for publication. Like the previous issues, it will be in tabulated form and will include a great deal of detailed and useful data relating to the hospitals, showing those that admit women interns and those that have training schools for nurses.

The rapid growth of hospital service indicates that the work should be continued along the following lines: (*a*) Push the collection of data regarding hospitals from all possible sources so that the clearing house for such information may become still more serviceable. (*b*) A further development of the Hospital Service Department in THE JOURNAL and the accumulation of a line of hospital literature. (*c*) Perpetuation of indexes and classifications already completed or begun. (*d*) Provision for inspection of hospitals where it is considered necessary, and where inspection by other agencies does not furnish satisfactory information. (*e*) Creation of a permanent hospital committee in each state and the retaining on it of competent and experienced men. (*f*) Continuation of the relationship with the individual hospital by which we may not only obtain information direct from the hospital but also that the hospital may receive the greatest benefit from such cooperation. (*g*) A friendly cooperation with other agencies working for the betterment of hospital service.

AGENCIES INTERESTED IN HOSPITAL DEVELOPMENT

The American Medical Association, as the organization representing the medical profession of America, must necessarily continue its splendid clearing house of information on hospital matters the same as it supplies information on other topics in which physicians are interested. With its component state and county medical societies; with its complete biographical index of physicians and with its close relations with medical colleges and state licensing boards, the Association is admirably equipped to carry on efficient investigations with much less expense than is possible by other organizations. At the same time the Association welcomes the work done by other organizations and will lend its hearty cooperation toward the common end.

The American College of Surgeons during the last few years has conducted an investigation of hospitals. Their appeals to the attending staffs, boards of trustees and the public have stimulated an increased interest in hospital standardization. The Catholic Hospital Association also began an energetic campaign for the improvement of the hospitals in that denomination. The rapid growth in both the number and the size of hospitals shows that the field for investigation is not only extremely important from the public point of view but is also large and difficult. There is, therefore, room for all the work that can possibly be done to bring about a continuous and systematic supervision of these institutions which are of such vast importance to the public.

THE AMERICAN CONFERENCE ON HOSPITAL SERVICE

At the annual conference of the Council on Medical Education in March, 1919, following an address by the president of the American Hospital Association, a resolution was adopted which led to the creation of the American Conference on Hospital Service. The first meeting was called by the President of the American Medical Association and held in the Association Building Monday, April 21, 1919. Delegates were present from the American Medical Association, the American Hospital Association, the American College of Surgeons, the Association of American Medical Colleges, the Catholic Hospital Association, the American Nurses' Association, the American Association of Hospital Social Workers, the Federation of State Medical Boards of the United States. A partial organization was effected under the name of the American Hospital Conference and, after the appointment of an executive council, another meeting was called to be held at Cincinnati in September in connection with the annual meeting of the American Hospital Association. At the September meeting the organization was completed, the name being changed to the American Conference on Hospital Service. A third meeting was called, to follow the

annual conference on medical education in Chicago, in March, 1920. Beside the associations represented at the first meeting in Chicago, the new association included in its membership the medical departments of the United States Army, Navy and Public Health Service. Permanent officers and a board of trustees were elected and it was decided to create several committees. The meeting in Chicago resulted in a further perfecting of the organization and the naming of the personnel of committees on hospital service and record, hospital internship, nursing and social service as related to industrial medicine. It is hoped that this organization will result in securing the cooperation of all who are interested in hospital development.

GRADUATE MEDICAL EDUCATION

During the last year, the Chairman of the Council, assisted by Dr. Louis B. Wilson, of the Mayo Foundation, Chairman of the Council's special committee on graduate medical education, inspected all but a few of the graduate medical schools of the country and their report is briefly summarized as follows:

1. Opportunities for American medical graduates to study in Europe are at present largely limited to short "courses" of lectures and clinical and laboratory demonstrations. Positions permitting individual study of, and responsibility for, the diagnosis and treatment of patients are properly filled by each country's own medical graduates.

2. In the United States opportunity for graduate study is sought (a) by those desiring to study for a few weeks or months, and (b) those desiring to study for several years.

3. The short-term graduate students,—about 6,000 this year in the United States—are (a) general practitioners seeking courses in continuation of their undergraduate studies, and (b) partially prepared specialists seeking to perfect their technic, usually in some minor surgical field.

These two classes of graduates possess the following general characteristics:

Nearly all have practices, either general or more or less special, which they cannot leave for any considerable length of time; many are inadequately trained in the fundamental medical sciences; in the brief periods they can leave their practices, they are averse to spending much time on fundamentals, and, in most instances the time at their disposal is entirely inadequate to obtain even a proper start in the fundamental subjects. Most of them desire work in operative technic in surgery. A small proportion seek to study cases for clinical diagnosis. Most wish to be "crammed" and can afford to pay a reasonable fee for instruction.

The existing postgraduate schools take almost all applicants for short terms of study, though many do not enter because they cannot get the courses desired. University medical schools should provide opportunities for the better prepared men of these classes to combine diagnosis with treatment.

4. The long term graduate students,—about 4,000 in the United States this year,—are (a) those who wish to devote two or more years to study for practice in some special field, and (b) a small number who wish to prepare themselves for public health work or for teaching or research in the fundamental branches.

Opportunities for graduate students to prepare themselves by long periods of work in the clinical specialties are woefully lacking. Opportunities for long term courses in public health or in the fundamental branches exceed the demand, but fellowship stipends and ultimate financial rewards are too small to permit many without private resources to select such fields for their life work. The remedy is an adequate endowment for student fellowships and teaching positions.

On the basis of the inspection, the committee arrived at the following conclusions: (a) That the present facilities for graduate medical work in this country are entirely inadequate. (b) That the legitimate demand for work of this kind should be met. (c) That this demand, which has heretofore been made by proprietary schools should be met by the universities. (d) That it would be desirable for 15 or 20 strong university medical departments to consider the development of graduate medical departments. A suggested plan for such a school is as follows:

The graduate medical department should probably be independent of the under-graduate department, and with a separate faculty; an adequate teaching hospital and out-patient department; clinical laboratories for both out-patient department and hospital, and research laboratories. In addition to a general teaching hospital, it should have the control of special hospitals, such as eye, ear, nose and throat, orthopedic, infectious diseases, etc.

Provision should be made in the curriculum for at least five classes of students.

Group 1. For young men who have completed their medical course and their hospital internship, a course of probably three years, such as is given at the University of Minnesota. As far as possible these positions should be fellowships carrying with them a living salary. These students, at the satisfactory completion of their work, should be given a degree of Master of Science or Doctor of Philosophy in Surgery, Ophthalmology, or whatever specialty they have been studying.

Group 2. For men who have completed their medical course and internship and have been in practice for three to five years, a course of at least a year of special training which in addition to their practice would be the equivalent of the three year course of Group 1. These men, if they demonstrate their fitness, should be given the same degree as the men in Group 1.

Group 3. For men who have been in general or special practice a course of six months or more of training in some chosen special line. At the satisfactory completion of this work the student should be given a certificate.

Group 4. For a large group of practitioners short courses of from four or six weeks should be given in any field of work they desire. These courses should be known as practitioners' courses; they would furnish an opportunity for the practitioner to become more competent, but should not be regarded as preparing the practitioner for a specialty. No certificate of any kind should be given for this work.

Group 5. Certain courses should be planned also for practitioners who live near the medical school and could devote a few hours once or twice each week to some special subject without discontinuing their practice. This would enable practitioners to keep in touch with the newer developments in clinical and laboratory work.

As to compensation men who devote their entire time to teaching in the graduate school should be paid adequate salaries. The compensation of the clinical teachers could be met from tuition fees. In the Graduate Medical School of Harvard we were told that about 75 per cent. of the fee went to the teachers and 25 per cent. toward general expenses.

III. Elevating the Standards of Medical Education

The third function of the Council was to act as the agent of the American Medical Association in its efforts to elevate the standards of medical education.

Towards this end, the Council, in 1905, established an annual conference on medical education. During the last few years the conference has been held concurrently with the annual meetings of the Association of American Medical Colleges and the Federation of State Medical Boards, and has grown into an annual congress on medical education and licensure. This congress has been entirely informal and is without legal powers. Nevertheless, as an open forum in which problems of medical education and licensure have been presented and discussed, it has been of great service in elevating educational standards. We hope that the newly organized American Conference on Hospital Service will also become closely identified with this annual congress.

The congress held March 1-3, this year, in Chicago, was a most successful and instructive meeting. Over 200 delegates were present, representing not only medical educators and representatives of state licensing boards, but also presidents of prominent universities, and representatives of educational boards and foundations. Beside the usual reports of progress in medical education and licensure, the papers dealt with

special functions of state universities, full-time teachers and research in medical schools; graduate medical education in the United States and abroad; problems and inter-state relations in licensure and a series of reports on medical teaching in the preclinical branches. Among the speakers were President George E. Vincent, of the Rockefeller Foundation; Abraham Flexner, of the General Education Board; President Thwing, of Western Reserve University; President Wilbur, of Leland Stanford University, and President Jessup, of the University of Iowa.

URGENT NEEDS IN MEDICAL EDUCATION

There are three special needs which require the attention of those interested in the best medical education:

1. The age of students on graduation.
2. The financial side of medical education.
3. The development and reorganization of medical schools on sound educational lines.

THE AGE OF STUDENTS ON GRADUATION

At the annual conference held by the Council in 1917, it was shown that the average age of students on graduation and completion of the hospital year was 28 years plus. This brings the student into the practice of his profession at a far too advanced age. In Central Europe and in Great Britain, physicians enter practice at about 25 or 26 years of age. The solution seems to be to save two years of the student's time by a reorganization of the intermediate and high school curriculums. A comparison of the educational scheme in the United States with that of European countries shows that about two years of time are lost by the average student in this country during his grammar and high school courses. The student of the United States on graduation from high school, would at the same age in Europe have completed the equivalent of two years of work in our colleges of arts and sciences. Agencies in the United States having to do with high school and college education are planning to reorganize the secondary school curriculums so as to save these two years of time. This would enable the average student to graduate two years earlier from the medical school.

THE FINANCIAL SIDE OF MEDICAL EDUCATION

Many plans now under consideration for the development of medical education seem to utterly disregard the cost.

The fees of each medical student on the average are about $150 each year, while the cost of his instruction is about $450. In many institutions the cost is $1,000 or more and is still mounting. With the increasing cost, fees could be raised to possibly $250. In the interests of the whole community the cost of medical education should be kept as low as possible. For example, the cost of maintaining a hospital for medical teaching should not be borne by the medical school. No hospital should be created and maintained primarily for the teaching of medicine. The first function of a hospital is to take proper medical care of patients, and as a second function, medical teaching and research.

The use of great municipal, state and denominational hospitals should be placed at the disposal of our medical schools for teaching and research. With proper control such a combination of hospital and medical school can be of great mutual benefit. For example, the state hospitals in several states have also been made the teaching hospitals of the state university medical schools. It is pleasing to note also that in several cities—e. g., Augusta, Memphis and Louisville—city hospitals have by contract been made the teaching hospitals of local medical schools. Such combinations are in the interests of the public and receive enthusiastic and generous support. Out-patient departments likewise would serve a more useful function in the community if they were utilized for medical teaching. Special hospitals, such as maternity, orthopedic, children's, eye and ear, psychopathic, etc., should also be associated with medical teaching.

THE ALL-TIME CLINICAL FACULTY

The much discussed plan of all-time clinical teachers is so extravagant that it cannot be generally adopted by the medical schools of the country. A school without unlimited resources could not consider it and even a school with large resources can secure better results with a given amount of money by adopting the part-time plan. The all-time clinical teacher experiment has not been encouraging and it is difficult to secure the best type of men for these positions under restrictions that exclude them from the rewards of professional work well done. It is no secret that these all-time clinical positions have gone begging and well trained clinicians have refused to accept them.

For medical schools having a reasonable endowment, the most practical plan of organizing the clinical departments would be to provide the head professor in each department with a salary of about five thousand dollars a year, and with 10 or 20 beds in the hospital which he can use for his private patients. He should be permitted to devote two hours a day to this private work and be expected to devote the necessary time to teaching duties. If a professor in a clinical chair abused his privileges it would be easy to correct or eliminate him. Living salaries also should be paid to associates; younger men who would do the bulk of the teaching and clinical research. Their greater compensation is the educational opportunity by which after a few years they can become masters of the science and art of medicine and be able to enter successfully into the practice of their specialties. This plan is not an experiment but has been gradually developed after years of experience in the medical departments of the best universities of the world.

REORGANIZATION OF MEDICAL EDUCATION

Some weaknesses have developed in the process of changing our old type of medical schools into medical departments of universities. In the transition the laboratory branches of the medical course have been placed in the hands of university professors who are not in close touch with the practice of medicine and the medical profession. As a consequence,—and as shown by the testing of medical education in the war,—the laboratory branches are not being well taught, even in our best schools, from the standpoint of the training of practitioners of medicine. The college professors of anatomy and physiology have many of them drifted from the science and practice of medicine and from the medical profession.

The American Association of Anatomists, composed largely of the teachers of anatomy in medical schools, is no longer affiliated with medicine. Its meetings are largely devoted to scientific discussions of the embryology of the rat and lower forms of life and have little or no relation to the science and art of medicine. In many medical schools splendid courses in embryology and comparative anatomy are given but applied human anatomy which is an every day necessity to the practitioner of medicine, is not taught. The college professor of anatomy is sometimes incompetent to teach it and as a result the students suffer. Men of the non-medical type have no place as teachers of anatomy in a medical school and their places should be filled by men who have had a complete medical training. Their first duty is to train practitioners of medicine.

SOME WRONG TENDENCIES IN CLINICAL TEACHING

Medicine passes through cycles. In Trousseau's time, in 1860-1870, the chemists thought chemistry would solve all medical problems, and Trousseau in a clinical lecture pointed out the fallacies of their claims. The same place in the cycle has returned and the chemists and laboratory workers are again claiming that all medical problems are to be solved by the chemical route. To many of these men, the older methods of physical examination, careful clinical observation and morbid anatomy, are old and worn out things in the light of the newer medical chemistry. And some of these men have succeeded in so impressing university trustees, that men who have had special training only along chemical lines are being appointed to chairs of medicine rather than men with a broad clinical training. This tendency is not in the best interests of medical education, of the medical profession, or of the patient.

Sir James Mackenzie in his recently published book on the future of medicine has done a real service in calling attention to the great importance of clinical research along the broad

lines of the clinical observation of the patient and the attempt to properly interpret from the symptoms and history the pathology in the case.

SOME TENDENCIES IN OUR MEDICAL SCHOOLS

At present in this country the university professors in the laboratory branches have been given too large a part in reorganizing our university medical schools and in developing the medical curriculum. It is clearly our duty to call attention to this fact and see that this tendency is corrected. The first and highest duty of the medical school is to train competent practitioners of medicine and this cannot be done by the college professor of embryology and comparative anatomy, or by the chemist working in a clinical laboratory or by the research worker in some isolated medical institute. This problem is to be met by placing the reorganization of medical education in the hands of medical men.

1. The teachers of the laboratory branches should be required to have a medical training which would give them a medical point of view; they would keep in touch with the art and science of medicine, and would realize that their first duty was to assist in training practitioners of medicine.

2. The teachers of the clinical branches should have a broad medical training in both the science and the art of medicine; they should be great clinicians in their special fields, who understand not only what anatomy and physiology, pathology and pharmacology the student needs to acquire, but also what he needs to know to become an expert practitioner of medicine. Fortunately in the last twenty years many such men have been trained in this country.

The controlling element of a medical faculty must consist of a group of medical men in the closest touch with the science and art of medicine and with the medical profession. Such a group must have as its members the professors of medicine, surgery, obstetrics and pathology. Such a group must control a teaching hospital and an out-patient department, with adequate clinical and pathologic material and well equipped laboratories. This plant should be located where it can secure ample clinical material with little or no cost to the medical school.

There is no desire to belittle the importance of the laboratory branches in medicine. But a medical school is a school in which to train doctors and not anatomists or physiologists. If it fulfills its first and most important function, the training of practitioners of medicine, it will also be training teachers and research workers.

SUMMARY

This report is summarized as follows:

(a) Instead of 162 medical colleges which existed in 1904 —over half the world's supply—this country now has 86, the character of which has been greatly improved. Instead of only 3 per cent. in 1904 requiring two or more years of college work for admission now 92 per cent. have that standard.

(b) The lowest ebb in the enrolment of medical students, due to the adoption of higher entrance qualifications, was 13,052 students in 1918-19. An estimate shows that the enrolment in the present session is 13,554 students. The increased enrolments of premedical students show that the classes in medical schools will continue to increase at least during the next several years.

(c) The trend of medical schools to limit their enrolments of medical students is in the interests of better medical education. Even with this limitation, the capacity of Class A medical schools is sufficient to care for many more than are at present enrolled in medical schools and this capacity can be easily expanded to meet future needs.

(d) With the higher standards adopted during the last sixteen years the requirements for admission to medical schools in the United States are now on a par with other leading countries.

(e) The American scheme of premedical education is of particular advantage in that a student can postpone his final selection of the medical profession until he is best qualified to make that choice.

(f) Hospital internships are voluntarily obtained by a great majority of medical graduates. An internship has been made an essential qualification for the license in ten states. It has been adopted as an essential for the degree by eleven medical schools.

(g) The present demand for hospital internships could not be met even if the number of medical schools and the number of graduates each year should be doubled or trebled—a measure not necessary to meet the normal demand for physicians.

(h) The hospital intern problem may be solved by (a) extending the internship to two years; (b) employing resident physicians; (c) training assistants or nurses to do much of the work now devolving on interns; (d) having stenographers take down histories from dictation at the time staff members examine patients.

(i) There is no scarcity of physicians in the United States; there is, however, an imperfect distribution of the present supply. Medical care in rural communities is improving rapidly with better roads, automobiles, etc., by which services of physicians in nearby cities may be more readily secured.

(j) A re-inspection of all medical colleges is being made by the Council preparatory to a revision of the classification of medical schools. This re-survey is also revealing many improvements as compared with conditions found in 1906.

IMPROVING HOSPITAL SERVICE

(k) The improving of hospital service is now one of the most important works confronting the medical profession. It is a work in which, naturally, physicians are most largely concerned. The American Medical Association, therefore, should take an active part in this work.

(l) The work of the Association in connection with hospitals has rapidly grown since 1903. Under the Council on Medical Education there is now a Bureau on Hospitals with a man who devotes his entire time to the work. With the rapidly increased interest in hospital development during the last few years the work has been correspondingly extended.

(m) Besides the collecting of hospital information each biennium for the American medical directory, more elaborate surveys of all hospitals were made in 1912-14, and in 1915-16. A third extensive survey is now in progress.

(n) An advisory committee on hospitals to cooperate with the Council has been appointed by every state medical association. These committees are doing splendid work and several have undertaken the personal inspection of all hospitals in their states.

(o) The Association should continue to (a) conduct a clearing house of hospital information; (b) further develop the Hospital Service Department in THE JOURNAL; (c) perpetuate its indexes and classifications; (d) inspect hospitals where satisfactory information is not otherwise obtained; (e) create permanent hospital committees in all states; (f) develop closer relationship with individual hospitals; (g) cooperate with other agencies working for better hospital service.

(p) An organization known as the American Conference on Hospital Service has been created at the suggestion of the Council on Medical Education in which the various agencies interested in hospitals are represented. The first meeting was held at the American Medical Association headquarters, Chicago, April 21, 1919. Subsequent meetings for the completion of organization were held in Cincinnati, September 9-10, 1919, and again in Chicago, March 3-4, 1920.

NEEDED IMPROVEMENTS IN MEDICAL EDUCATION

(q) There is great need in this country of increased and improved facilities for graduate medical education. This need could be best supplied by our leading university medical departments.

(r) Efforts should be continued to so rearrange educational methods that the average age of medical graduates may be reduced by at least two years. The solution now seems to be in a reorganization of intermediate and high school education.

(s) The extravagant and unnecessary expenditure of money in the development of medical education should be deprecated. In some recent plans for development this point seems to have been utterly disregarded.

(t) There is a serious tendency in present day medical education to drift into the ultra-scientific and to ignore or belittle the development of a closer relationship of the preclinical and clinical branches. This tendency will be decreased if it is required that teachers of the laboratory departments in medical schools shall have had a complete medical training by which they will obtain the medical point of view.

Respectfully submitted,

COUNCIL ON MEDICAL EDUCATION.
ARTHUR DEAN BEVAN, Chairman,

ROBERT C. COFFEY,
WILLIAM D. HAGGARD,
ISADORE DYER,
WILLIAM PEPPER,
N. P. COLWELL, Secretary.

Report of the Council on Scientific Assembly

Dr. J. S. Horsley, Virginia, Chairman, presented the report of the Council on Scientific Assembly, which was referred to the Reference Committee on Sections and Section Work.

The report follows:

To the Members of the House of Delegates of the American Medical Association:

Shortly before the adjournment of the final meeting of the House of Delegates at Atlantic City, the following preamble and resolution were submitted by the delegate from the Section on Obstetrics, Gynecology and Abdominal Surgery:

WHEREAS: An effort is being made to organize an international Congress of Obstetricians and Gynecologists at a meeting in Brussels during September next, at which American Obstetricians and Gynecologists will have representation, therefore, be it

Resolved, That the Section on Obstetrics, Gynecology and Abdominal Surgery of the American Medical Association unanimously approves of this movement, stands ready to cooperate in every way, and cordially invites the Congress to hold its initial meeting in New York at a convenient date to be determined.

The House received and referred this communication to the Council on Scientific Assembly but it did not empower the Council to act in this particular matter which does not fall within the scope of the Council as it is defined in the By-Laws of the Association. Consequently, the Council respectfully reports that it has taken no action.

On January 10, the Council held a conference with the secretaries of the sections at the headquarters of the Association. All the sections were represented either by their secretaries or one of the other executive officers. All the members of the Council were present except Dr. Roger S. Morris, who was absent on account of serious illness. In compliance with the Standing Rules of the House of Delegates for the guidance of the Council on Scientific Assembly, and with unanimous consent of all in attendance at the conference, arrangements were made so that each section will hold one meeting on each of the days assigned for section meetings during the 1920 annual session. Seven sections will convene each morning at 9 o'clock as follows: Surgery, General and Abdominal; Ophthalmology; Diseases of Children; Pharmacology and Therapeutics; Nervous and Mental Diseases; Preventive Medicine and Public Health, and Urology. Eight sections will convene each afternoon at 2 o'clock as follows: Practice of Medicine; Obstetrics, Gynecology and Abdominal Surgery; Laryngology, Otology and Rhinology; Pathology and Physiology; Stomatology; Dermatology; Orthopedic Surgery, and Gastro-Enterology and Proctology. It will be noted that most of the sections which at the 1919 annual session met during the morning hours, this year will hold their meetings in the afternoon hours, and that the majority of the sections which met last year in the afternoon hours will meet this year in the mornings.

The Council appreciates the interest and hearty cooperation manifested by the section officers who attended this conference. In the opinion of the Council this has made it possible to provide a well balanced scientific program for the entire Scientific Assembly—a program which will be interesting and instructive to all the Fellows who attend the annual session and yet one which maintains or improves the scientific standards of the sections.

In the development of its work, the Council has come to the point where it feels that its effectiveness would be increased if it were constituted in a somewhat different manner than that now defined in the By-Laws. Consequently, the Council asks that it shall be reorganized so that it shall consist of five appointed members and shall have associated with it, ex-officio, the President-Elect of the Scientific Assembly, the Editor of THE JOURNAL and the Secretary of the Association. The members of the Council desire also to emphasize the value to the Council of the experience which members have gained from serving as section officers. The Council recommends that Section 7, Chapter VII of the By-Laws shall be amended so as to provide for the changes in the composition of the Council which have been suggested and to define the functions of the Council as follows:

The function of the Council on Scientific Assembly shall be: (1) To secure cooperation between the sections. (2) To pass upon questions of policy in relation to section work. (3) To stimulate the development of the sections. (4) To consider at first hand applications for new sections, or for changes in existing sections, and to report to the House of Delegates. (5) To assign and to appoint officers for the meetings of the section on miscellaneous topics. (6) To arrange the programs for the general meetings of the Scientific Assembly.

At the last annual session of the House of Delegates, the Section on Dermatology requested that the title of that section be changed to the "Section on Dermatology and Syphilology." As this is a question of policy in relation to section work, and also is a change in the existing sections, the matter has been brought to the attention of the Council, and after giving the subject careful consideration, the Council recommends that the request of the Section on Dermatology be complied with, and that Section 1, Chapter IX of the By-Laws be amended by substituting for the present Item 11 in that section reading "Dermatology" the words "Dermatology and Syphilology."

In compliance with the suggestions offered at the conference of secretaries of sections, in order to make the statement more definite, the Council recommends that Section 11, Chapter XI of the By-Laws shall be amended by substituting for the present wording of the section the following:

SEC. 11.—LENGTH OF PAPERS AND DISCUSSIONS.—The time allowed for the presentation of a paper before a section shall be limited to fifteen minutes. No one shall discuss any paper more than once, nor for longer than five minutes except with the unanimous consent of those present.

In order to clarify the meaning of Section 5, Chapter XI, it is recommended that the section be amended by adding at the end of the second sentence the words "of the section," so that the section shall read:

SEC. 5.—EXECUTIVE COMMITTEE.—Each section shall have an executive committee, which shall consist of the last three retiring chairmen. In case of absence of a member of the executive committee from a Scientific Assembly, the vacancy shall be filled by the chairman of the section. This committee (as constituted at the close of the Scientific Assembly) shall examine and pass on all papers read before the section, and shall endorse for publication only those that are of scientific or of practical value, and which will reflect credit on the section before which they were read.

Respectfully submitted,

J. SHELTON HORSLEY, Chairman,
E. S. JUDD,
F. P. GENGENBACH, ALEXANDER R. CRAIG.

Report of Committee on Red Cross Medical Work

Dr. C. W. Richardson, Chairman, presented the report of the Committee on Red Cross Medical Work, which was referred to the Reference Committee on Reports of Officers.

The report follows:

To the Members of the House of Delegates of the American Medical Association:

The Committee on Red Cross Medical Work wishes to report that having put itself in relationship with the American Red Cross, it found that the American Red Cross decided it was useless to call a meeting of the committee, or to put it into action this year on account of the cessation of the war, and that no further need of general action between the Red Cross and the American Medical Association existed. The committee requests therefore, that it be discharged.

Respectfully submitted,

CHARLES W. RICHARDSON, Chairman,
CHARLES R. REYNOLDS, JOEL T. BOONE.

ADDENDUM

(Insert page 1232, Preceding Reports of Officers)

Dr. J. Voncken of Belgium was introduced and through the Speaker thanked the delegates for his warm reception and expressed his pleasure at being present.

The Vice-Speaker, Dr. Dwight H. Murray, New York, took the Chair, after which the Speaker delivered an address, which was referred to the Reference Committee on Reports of Officers.

Address of the Speaker, Dr. Hubert Work

To the House of Delegates:

Again it is my pleasure to convene this body of selectmen, from the membership of the American Medical Association.

By common consent, reduced to Constitution and By-Laws, this House of Delegates is the governing branch of the Association—the machinery which correlates the scientific product of the annual meetings. You work under articles of government which you amend or abrogate at will. No coordinate branch of the Association may direct or compel, beyond your pleasure. All of its officers are elected and their duties defined by you.

This recapitulation is intended to recall to mind your prerogatives and responsibilities in the art of government.

Constitutional Changes

The Judicial Council in its report now in your hands, has made recommendations for changes in the Constitution and By-Laws, for your consideration and action. In the main the changes consist of reconstruction of the text for the purpose of clarity, with the deletion of all matter relating to the Committee on Red Cross Medical Work, also of the text referring to the Ad Interim Committee, with minor changes.

The Ad Interim Committee

The purpose of the Ad Interim Committee, designed to act for the House of Delegates in emergency, was well conceived.

Its predetermined personnel was probably unfortunate. Authority for quick action should be vested in a small, wieldy body of Fellows for emergency service. If this committee be continued, it should, I believe, consist of the Speaker, the Secretary, and three sitting members of the House, to be elected annually. As now constituted the Ad Interim Committee includes the President of the Board of Trustees and imposes interlocking duties on him. Ex-presidents of the Scientific Assembly may lapse their interest in the Association. Certainly their official responsibilities have passed.

The President and President-Elect are not subject to the House of Delegates, so that four of the seven members of this committee as now constituted to act for the House, are not responsive to it, while the dual allegiance of the President of the Board of Trustees embarrasses him.

A substitute for the existing Ad Interim Committee may be provided by delegating its prescribed emergency duties to the Board of Trustees, or to the Executive Committee of the board, as you may determine. Argument that this might concentrate power would be valid. However, it would pass to officers whose acts are subject to review by the House.

The new By-Laws propose that the Speaker shall nominate members of the Standing Committees, presumably because of his more intimate knowledge of the qualifications of Fellows and of the duties of these councils, which come directly under the jurisdiction of the House. Heretofore members of these committees have been nominated by the president of the Scientific Assembly, whose term of office ends one year thereafter and four years before that of his appointees.

A suggestion well worth considering but not recited in the proposed amendments, is that of reducing the number of Trustees of the Association to seven or five members; the subdivision of the United States into trustee districts, and the lengthening of their term of office, perhaps coupled with a prohibition against reelection, at least until after one year has intervened.

This suggestion implies a substantial reduction in the operating expenses of the board and need not endanger its working efficiency.

To limit the number of board members, implies concentration of authority, but at the same time, to fix a limit to their continuous service, would preclude the very remote possibility of self-perpetuation and would bring to the board, each year, a new member directly from the profession without.

The further suggestion for a districting of the United States, if approved, would avoid the election of two or more Trustees from a circumscribed, undefined section, and would result in as wide geographic representation on the Board of Trustees as we now have.

The relations of this House to the Assembly of the Scientific sections become more clearly defined each year. Inasmuch as the House is the executive of the Scientific Assembly, including the election of its officers, it would appear that all section units of the Scientific Assembly should indicate by nomination to the House, those whom they would approve for the presidency and vice presidency of the Scientific Assembly. This plan, if adopted, would afford each section an opportunity to compliment members who had distinguished themselves, and at the same time put before the House many potential presidents, for consideration, both for immediate and subsequent elections.

Department of Public Health

Our Association should again address itself to procuring a separate governmental department of public health. The public mind has been prepared for it by the exigencies of the late war. Health service is not logically a part of the national treasurer's duties, nor the Surgeon-General properly subordinated to the Adjutant-General of the Army. This is not a new subject to you but an old ambition which can now be revived with more than reasonable assurance, but preferably from different angles of approach. A concurrent resolution preliminary to such action, recently made favorable progress in Congress, but as heretofore, has failed because of the limitations of individual sponsors.

Those favorable to government supervision of the public health, through a separate department created for that purpose, now hold, or are aspiring to high office. It is possible that the influence of our 80,000 members exerted on our Congressmen at home, with powerful influence reaching from above them in Washington, may become effective.

The Art of Medicine

At one time physicians were said to practice the art and science of medicine. The art of medicine is the applying of its science; the selling of the science of medicine, if you please. It comprehends the refinement of the little things in practice and dictates the treatment of the patient. Homeopathists cast the future of their practice on it and popularized their dogma. The Christian scientists, likewise all quacks, thrive through attention to an art once attached, but now largely lost, to internal medicine, but which has been developed by surgeons, independently.

Masters of great clinics are famed for their art in organization and the results attained, partly through the consciousness of the patient. The present status of sanitation and of preventive medicine as a whole falls within the Art of Medicine primarily, and its world-wide acceptance supports the argument.

This is not a plea for less Science in medicine, but for more Art; for a development of the latter, pari passu with the former; for the symmetrical development of ethical medicine; for its protection against the cults which practice the Arts of Medicine without its Science; from the charge that it is becoming a trade-science, neglectful of the psychic sensibilities, the observance of which distinguishes our profession from veterinary medicine.

Doubtless the greatest immediate menace to public confidence in ethical medicine is pending through isolated, operative surgery in unscrupulous hands. Unless the Art of Surgery can be re-associated with the Science of Medicine and their interdependence again established, the morale of surgeons will necessarily suffer, since the quickest diagnosis can be made by exposing the suspected organ. But the rights of the patient may have been violated. This is a real danger and not a groundless alarm. The remedy for it logically lies in the hands of the American College of Surgeons, together with others who are surgeons first and operators afterward.

Military Training

The vexed question of Compulsory Military Training has been confused by Members of Congress and personal campaigners until the public apparently believes that Universal Military Training would invite war, but without it, the country would be safe.

Congressmen, alarmed by our mounting cost of government; ex-service men who resented the draft; timid women lacking the spirit of the great American mother; pacifists and conscientious objectors unite in protest against it.

If the public could realize that 35 per cent. of our young men of draft age were disqualified for military service in the World War because of physical defects, and logically also for effective citizenship, the opportunity afforded in training for correcting these defects, the leveling influence of contact between young men from every social station. Furthermore, that physical correction, mental development and vocational training are the objects sought and that instruction in the Manual of Arms is the least concern of those who favor this free summer school for boys; perhaps the narrowed vision of these thoughtless ojectors would expand. This duty also appears to fall within the province of physicians, patiently to lead the public toward that which is best for it.

In Memoriam

Since we last met three of our members have answered their last roll call.

Floyd M. Crandall; of keen intellect, industrious, of pleasing personality and absolute loyalty to the highest ideals in medicine, died as he had lived, serene and unafraid. He was the supervising architect of our Association's laws. All changes for many years were reviewed by him. Our code of professional morals is couched in his language, and will live afterward. Those who knew him best admired him most. Nothing was too troublesome for him to do for a friend or for his profession. Reward was to him an incident and expressed appreciation an embarrassment. We can go forward without him but not so far, nor so safely.

E. C. Cantrell, for many years a trustee with floor privileges, followed by active service as a delegate in this House, fell in service to his profession. He heard the call of his country intended for younger men. He answered it and rendered distinguished service as an officer. When his uniform was mended and folded and put away, he heard another call for help. The sea-wall of his state had failed and people perished. It was his summons from beyond the Great Divide, and he, too, stepped out into the night, searching for the lost trail. Worn by voluntcer service to his country and exhausted by voluntary service far outside of his community responsibilities, he did not die; he was overwhelmed.

Clinton P. Meriwether, with partially restored health, found his greatest usefulness in the later years of his life; to this Association, to his profession and to his country at war. He fought the battle of life with his nemesis beside him. It walked with him, sat down with him to dine, slept with him and eventually slew him. But never, did his great courage fail nor his step falter. And when the shadow of his life was merged into the darker shadow of the Valley, "with a cheery smile and a wave of the hand he wandered into an unknown land."

Three upright, tried and true physicians. We are proud that we knew them, and comforted by the belief that the light everlasting is falling on the upturned faces of these men.

Reference Committees

The Speaker resumed the Chair and announced the following Reference Committees:

SECTIONS AND SECTION WORK

Hugh T. Patrick, Chairman ..... Illinois
Lee Masten Francis ..... New York
Frank E. McCullough ..... U. S. Navy
S. R. Roberts ..... Georgia
Southgate Leigh ..... Virginia

RULES AND ORDER OF BUSINESS

W. R. Bathurst ..... Arkansas
John S. Helms ..... Florida
W. S. Lindsay ..... Kansas
E. A. Pray ..... North Dakota
Leroy Long, Chairman ..... Oklahoma

MEDICAL EDUCATION

J. H. Hall, Chairman ..... Colorado
W. H. Seeman ..... Louisiana
Frederic E. Sondern ..... New York
L. Hektoen ..... Illinois
F. F. Russell ..... U. S. Army

LEGISLATION AND PUBLIC RELATIONS

Franklin E. Murphy ..... Missouri
J. E. Lane ..... Connecticut
S. E. Lambert ..... Washington
J. H. J. Upham, Chairman ..... Ohio
Le Roy Crummer ..... Nebraska

HYGIENE AND PUBLIC HEALTH

J. W. Schereschewsky, Chairman ..... U. S. P. H. S.
A. T. McCormack ..... Kentucky
C. Van Zwalenburg ..... California
J. W. Flinn ..... Arizona
C. St. Clair Drake ..... Illinois

AMENDMENTS TO CONSTITUTION AND BY-LAWS

W. B. Russ ..... Texas
E. A. Hines ..... South Carolina
Albert E. Bulson, Jr. ..... Indiana
Edward Heckel ..... Pennsylvania
Rock Sleyster, Chairman ..... Wisconsin

REPORT OF OFFICERS

Thos. S. Cullen, Chairman ..... Maryland
F. B. Lund ..... Massachusetts
Homan Taylor ..... Texas
B. R. McClellan ..... Ohio
C. R. Odgen ..... West Virginia

CREDENTIALS

S. W. Welch ..... Alabama
Jos. M. Aikin ..... Nebraska
J. B. Gibby, Chairman ..... Pennsylvania
John C. Rockafellow ..... Iowa
D. E. Sullivan ..... New Hampshire

MISCELLANEOUS BUSINESS

C. J. Whalen ..... Illinois
T. H. Halsted ..... New York
Geo.. E. Reading ..... New Jersey
J. W. Bell ..... Minnesota
F. C. Warnsbuis ..... Michigan
C. E. Humiston, Chairman ..... Illinois

Dr. John D. McLean, Pennsylvania, rose to a point of order. He stated that the Speaker had authority to nominate members for Reference Committees, but they were to be elected by the House.

The Speaker stated that he had authority to appoint the Reference Committee, and the Committees so appointed, and announced would stand unless the House decided otherwise.

Dr. A. T. McCormack, Kentucky, moved that the members of the various Reference Committees as nominated by the Speaker be elected.

Seconded and carried.

The next in order was an address by Admiral William C. Braisted, U. S. Navy, President-Elect of the Association.

The Speaker stated that Admiral Braisted had requested the privilege of addressing the House after his induction into office, which request was granted.

Report of Secretary

The Secretary presented his report, which was referred to the Reference Committee on Reports of Officers. (See page 1232.)

Address of Dr. Alexander Lambert

The President of the Association, Dr. Alexander Lambert, New York City, delivered an address which was referred to the Reference Committee on Reports of Officers:

For a number of years there has been slowly developing a realization of the influence and value of hospitals as institutions. It is also evident that the rapidity of the growth of these institutions and the amount of benefit to be derived from them depends on the development of many different interests which are focused in each hospital, making it an institution and not merely a shelter in which the sick may rest and recover.

As a modern development nursing came first and then the beginnings of modern surgery followed by the practical application of preventive medicine causing the separation of communicable diseases from the general wards. Then followed the development of the social service side of the institution through which the great human relationship of the sick and injured was not lost sight of when they entered the hospital. Through which also the care and treatment of the sick and injured did not cease when they left the hospital, but continued with therapeutic intent out into their daily environment. It soon developed in the minds of the surgical side of the profession, as the great possibilities of modern surgery were unfolded, that the best surgical technic could not be brought to perfection without a tremendous development in the hospital as an institution in which all the multiple details of the best surgical technic could be obtained. To bring this about required a standardization and development of hospital organization itself. The development of all medicine under the expanding influence of scientific research forced, as necessities, into the hospitals, several kinds of laboratories such as roentgen ray, chemical and pathological.

Simultaneously with this technical growth within the hospital, medical education has developed and coincidentally it became increasingly evident that the future development of the medical school and the hospital were inseparably linked together. It was further noticeable that on the one hand the most painstaking care of the sick and injured was carried out in the hospitals connected with the medical schools and on the other hand the medical schools needed the biggest hospital opportunities. The executive side of the management of the hospital, of course, endeavored to keep pace with the development in the technical or medical side, and it was soon evident that it required a combination of medical and executive ability to run to the best advantages a large hospital, and required the vigorous energy of able-minded trustees to manage the institution as a whole and keep it in existence as an endowed or a self-supporting institution.

The activities of all these various interests centered in the hospital could not proceed without the various societies back of the individuals engaged being equally interested in a subject of such importance. About a year ago, at the call of the President of the American Medical Association, a meeting was held at which it was decided to hold a conference of the societies interested in hospitals, and representatives from the following societies were invited to meet together in September, in Cincinnati:

American Association of Industrial Physicians and Surgeons.
American Association of Hospital Social Service Workers.
American College of Surgeons.
American Hospital Association.
American Medical Association.
American Nurses' Association.
Association of American Medical Colleges.
Catholic Hospital Association of the United States.
Federation of State Medical Boards of the United Sates.
International Compensation Board.
National League of Nursing Education.
National Organization for Public Health Nursing.
The Medical Departments of the Army and Navy and the U. S. Public Health Service.

At the Cincinnati meeting a permanent conference was organized to meet regularly as a forum for the discussion and development of the common interests. The separate societies here represented have in the past through misunderstanding and through lack of knowledge of one another's aims, failed to coordinate and have instead often produced discord and brought about results injurious to the best development of the hospital as an institution. It is only through the continuous mutual education of the various groups that the necessary knowledge of what a hospital should be in a community can be developed in the minds of those most interested in hospital work. No individual group of the hospital conference is at present capable of developing the hospitals of this country as they should be developed.

The subject is of such great and constantly increasing importance to the medical profession that it is time the American Medical Association should take cognizance by special action of a subject of such vital interest to its members and should lend its support and influence through definite and continued action. Such action in the American Medical Association can only be brought about through the existence of a standing committee, formed as are the other councils of the American Medical Association.

In the first place the question arises whether or not a new council should be formed or a bureau developed under some existing council. Of the existing councils, the Judicial Council does not come under consideration. Questions of hospital management and development should not be placed among its duties. There is already existing a Bureau of Hospitals under the Council on Medical Education, a report on which is in the handbook at present before you. The activities of this bureau are built around the interests of medical education and the instruction of interns, and its information largely gathered from interns in the hospitals and from those interested in hospitals in the relation to the intern. This bureau has collected and possesses a tremendous amount of information not yet tabulated and at present, therefore, useless, which is not directly of interest in the relation of medical education or the internships, but as soon as tabulated it will be of enormous value to the profession for their information regarding the general situation in hospitals.

Hospitals having interns comprise probably 20 per cent. of all the hospitals in the country. Eighty per cent. of the smaller hospitals scattered through the country will, in all probability, never be able to obtain interns and yet in the mass these must be depended on to give the greatest amount of care to the sick and injured of the country.

One realizes as one reads this report of the Council on Medical Education that the entire hospital situation has been considered solely on the narrow line of rendering hospitals centers for postgraduate training of prospective doctors and the larger aspect of the hospital problem of having the hospitals serve their communities as vital centers in the protection of the population as well as places in which the sick may be cared for is completely ignored.

In reading the report the impression might be gained that the American Medical Association intended to attempt to dominate the entire hospital situation, and domination at the present time is not what is desirable when cooperation is essential to success.

The plan as outlined corresponds exactly to what has been done in regard to medical schools and has worked well in solving this problem, but the hospital question is more extended than that of medical schools, and any attempt to classify hospitals along the single line of whether they possess interns or not does not meet the exigencies of the problem at all, but would be sure to create an antagonism, whether just or not. The Bureau of Hospitals, therefore, should not be under the Council of Medical Education and cannot so be without great injury to the smaller hospitals and without causing incessant antagonism and injury to the medical profession throughout the entire United States. Should it be, however, under the Council on Health and Public Instruction? It is possible for this House of Delegates so to transfer it if in their wisdom they see fit. A committee on hospitals can be formed by the Council on Health and Public Instruction without further action or change in the By-Laws, since

this Council has power to form committees, and it is so stated in the By-Laws.

Can you obtain the best men in the profession to work as a subordinate committee in a bureau under another committee? For such must be the line of communication to the House of Delegates for any definite plans that any bureau on hospitals may care to submit, provided that there are no differences of opinion regarding the carrying out of these plans. The hospital situation in the country is of such great importance that the responsibility for it and for the action of the American Medical Association concerning it must, it would seem, be taken by the House of Delegates itself and the group of men acting for it must have direct and unobstructed access to it at all times to obtain the sanction of the House for its plans for the development of a subject so large and important, reporting of course, as all the councils do, to the Board of Trustees between the meetings of the House of Delegates. It seems, therefore, that the customary action of the House of Delegates should be followed in dealing with a subject that is of great importance and which is bound to grow in this importance and to continue for a long period of time, that is, to form a standing committee to care for the interest of the Association in the matter and to work in cooperation and harmony with all other interests and other societies acting in the same field. It would seem to be wise, therefore, that a new council, and not a bureau under one of the present councils, should be formed to take charge of this subject.

Among the other reasons given in the discussion which has developed up to this time, it is said that there are already too many councils, and also that the American Medical Association could not afford it. In the first place that there are too many councils already, or that to add a new council will make too many, is equivalent to saying that the American Medical Association must take up no further interests; it must be satisfied to be limited in its public interest to preventive medicine and to medical education and that in the further growth of the nation and in the growth of the social conscience of the community for the care of its sick or in other future development or interests of the medical profession, the American Medical Association shall take no further part. Such a view, gentlemen, comes only when men look back at the end of successful careers and cease to look forward. It is not the thought of the vigorous years of life. That the American Medical Association cannot afford to bring into existence a new council on hospitals, but can continue a bureau on hospitals is hardly consistent logic, because the main expense of such a Council is practically connected with the carrying on of an efficient bureau and expanding the efficiency and developing the knowledge already obtained in the present bureau—in short, developing broadly what has already been so well begun.

There is no question that the American Medical Association cannot afford at present to spend great sums in any new direction; neither are great sums here required, particularly since the societies outside the American Medical Association interested in hospital development are not asking nor expecting nor desiring the American Medical Association to shoulder the main expense in the development of the hospital situation. They do expect cooperation and assistance from the American Medical Association, and that cooperation can well be defined and be effective under small expense. The American Medical Association cannot afford to refuse to meet half way these many hospital interests in the development of this great public and professional need. The expense, if properly managed, unquestionably should not be greater than could have been safely borne by the American Medical Association during the last year, and the future outlook of the American Medical Association justifies the adventure.

The advice of the following gentlemen was sought on the hospital situation: Drs. W. J. Mayo, John M. Dodson, Richard C. Cabot, Adrian V. S. Lambert and A. R. Warner. There was no formation of these gentlemen as a committee nor meetings as a committee, but the request was made that they should act as advisers to the President. It is evident from their communications that in their opinion coordination between the American Medical Association and the other societies, as already mentioned, as represented in the American Conference on Hospital Service is essential for the best development of the hospital situation in the United States. The question of whether this should be done through a bureau in an already existing council of the American Medical Association or through a newly formed council on hospitals brings out differences of opinion. On the one hand, it is believed that the best cooperation can be obtained and the most effective work can be done through a council, rather than a bureau. On the other hand, it was bluntly stated that the other societies in the conference were eager for the cooperation of the American Medical Association but were jealous lest the cooperation should turn into an attempted domination by the largest society, and this was feared and would surely be resented. The discord and antagonism between the College of Surgeons and the American Medical Association was considered so deplorable that everything should be done to bring about its cessation and every endeavor must be exercised to prevent its increase and continuance.

There is a strong feeling among the other societies that a bureau of the American Medical Association under an existing council, as Health and Public Instruction, would create less antagonism than if a separate council were formed. The greatest antagonism of all would arise if the bureau were continued under the Council on Medical Education, since it is believed that the interest of medical education and of interns often runs counter to that of the smaller hospitals. The majority of opinion, however, favors the formation of a separate council rather than a bureau.

The belief has been confidently expressed that though working together in a common interest, mutual confidence and cooperation would soon replace distrust.

In considering the cooperation of various societies interested in hospital work, it seems beyond question that the best results will be obtained if each society continues to be responsible for that special hospital function in which it already has shown the predominant activity. That is, the American Medical Association to continue the predominant guidance of medical education and all matters relating to hospital interns; the College of Surgeons to continue the development of hospital standardization and hospital records, and concentrate its energies therein; the American Hospital Association to develop the administrative functions of hospitals and furnish to all concerned the information required for all physical needs of hospitals. No one group can master all these subjects, and no group should confine its interest to any one subject; but through mutual committees and exchange of information, all facts obtained by each should be forwarded to the other groups to be the common property and knowledge of all. The questions of the future development of nursing and the education of nurses press for solution, and the medical profession must do its share to solve the problems here presented and not stand aloof as it has done in the past. Occupational therapy and the reconstruction of the injured that they may obtain the greatest economic returns from their handicapped existence are new points of view to be reckoned with in estimating the value of the end-results of hospital work. The social service division in hospitals has won for itself recognition as a necessity in hospital responsibility to the patient. It has developed among the laity with tremendous rapidity; but, curiously enough, has won its position in the hospitals not so much against the opposition of the medical profession as it has in spite of the studied and unintelligent indifference of the majority of hospital staffs.

The American Medical Association contains among its Fellows many who are interested in all the various hospital activities, and it is the only society possessing men especially interested in the medical side of the care of the sick as contrasted with the surgical care. It most effectively can supervise the development of the hospital from the standpoint of what is best for the sick individual coming to regain his lost health.

The American Medical Association should not limit its interest to the activities of a bureau under medical teaching

or care of interns, or limit its interest in any way. The responsibilities of the medical profession in the future development of hospitals are as extensive as the hospital activities. The responsibility of the American Medical Association to its members is also equally broad. The American Medical Association can ill afford to neglect its opportunities to assist in the growth of hospital development, nor to refuse to cooperate with all the other societies interested therein. It would seem, therefore, that the interests of the American Medical Association in its relation to hospital development will best be conserved by the appointment of a standing committee on hospitals, and it is recommended that the House of Delegates create a Council on Hospitals and amend the By-Laws to this effect.

Memorial Resolution

Dr. A. T. McCormack, Kentucky, moved that when the House adjourns, it adjourn in honor of the memories of Dr. Emory Marvel, Atlantic City, N. J.; Dr. E. E. Southard, Boston, Mass.; Dr. Floyd M. Crandall, New York, N. Y.; Dr. C. E. Cantrell, Greenville, Tex.; Dr. C. P. Merriweather, Little Rock, Ark.; Dr. K. A. J. Mackenzie, Portland, Ore.; Dr. Abraham Jacobi, New York, N. Y.

Seconded and carried.

Report of the Board of Trustees

Dr. Philip Marvel, New Jersey, Chairman, presented the report of the Board of Trustees. He also presented a supplementary report, both of which were referred to the Reference Committee on Reports of Officers. (See page 1233.)

Report of the Judicial Council

Dr. M. L. Harris, Illinois, Chairman, presented the report of the Judicial Council, which was referred to the Reference Committee on Amendments to the Constitution and By-Laws. (See page 1238.)

Report of Council on Health and Public Instruction

The report of the Council on Health and Public Instruction was called for. Dr. Victor C. Vaughan, Michigan, Chairman, requested the Secretary of the Council on Health and Public Instruction, Dr. Frederick R. Green, Illinois, to read the report.

Dr. Green presented the report, which was referred to the Reference Committee on Legislation and Public Relations. (See page 1239.)

Report of Special Committee on Narcotic Drug Situation

The Speaker stated that there was a special committee appointed last year on Narcotic Drug Situation in the United States, and that Dr. E. Eliot Harris, New York, was Chairman of this Committee. He asked Dr. Harris to present the report.

Dr. Harris requested Dr. A. T. McCormack, Kentucky, a member of the Committee, to present the report, which he did, and then the report was referred to the Reference Committee on Legislation and Public Relations.

The report will appear in THE JOURNAL next week.

The House then took a recess until 3 p. m.

Second Meeting—Monday Afternoon, April 26

The House of Delegates reconvened at 3 p. m., and was called to order by the Speaker.

Report of the Council on Medical Education

Dr. N. P. Colwell, Secretary of the Council on Medical Education, in the temporary absence of the Chairman of the Council, Dr. Arthur Dean Bevan, Illinois, presented the report of the Council, which was referred to the Reference Committee on Medical Education. (See page 1243.)

Report of the Council on Scientific Assembly

Dr. J. Shelton Horsley, Virginia, Chairman, presented the report of the Council on Scientific Assembly, which was referred to the Reference Committee on Sections and Section Work, and that part of the report relating to Amendments to the By-Laws was referred to the Reference Committee on Amendments to the Constitution and By-Laws. (See page 1251.)

Dr. Arthur T. McCormack, Kentucky, moved in behalf of the Committee to strike out the statement of Mr. Eugene Debs in the report of the Special Committee on Narcotic Drug Situation in the United States, and that the report be referred to the Reference Committee on Legislation and Public Relations.

Seconded and carried.

Report of the Committee on Red Cross Medical Work

Dr. Charles W. Richardson, District of Columbia, Chairman, presented the report of the Committee on Red Cross Medical Work, which was referred to the Reference Committee on Reports of Officers. (See page 1251.)

(Insert Ends Here)

New Business

Under the head of "new business," Dr. Randolph Winslow, Maryland, presented the following communication, which was referred to the Reference Committee on Miscellaneous Business:

NEW ORLEANS, April 25, 1920.

At a recent meeting of the Baltimore City Medical Society, a paper entitled "An Argument in Favor of the Establishment of a Medical Newspaper, Comparable to the Trade Journal of Other Walks of Life," was read by Dr. Bertram M. Bernheim.

The Society passed a resolution asking that this paper dealing with the advisability of establishing such a journal be laid before the House of Delegates of the American Medical Association for their consideration.

The Society fully realized the difficulties of carrying out such a project at this time, especially on account of the high cost of printing, but nevertheless felt that it was very essential to give this important matter the most serious consideration at this time, especially on account of the tremendous influence it would have on the education of the people of the United States in health matters.

Mr. Speaker, I move that the Secretary be given authority to distribute this paper to the members of the House and to the various officers of the Association, and that the paper be referred to the proper committee for its consideration and report of that part of the communication dealing with the proposed establishment of a Lay Medical Journal by the American Medical Association.

THOMAS S. CULLEN.

Dr. Edward L. Hunt, New York, offered the following resolution, which was referred to the Reference Committee on Hygiene and Public Health:

Resolved: That the American Medical Association declares its opposition to the Institution of any scheme embodying a system of compulsory contributory insurance against illness, or any other scheme, which provides for medical service to he rendered contributors or others, provided, controlled or regulated by any State or the Federal Government.

Dr. James F. Rooney, New York, offered the following resolution, which was referred to the Reference Committee on Hygiene and Public Health:

Resolved: That the delegates from the State of New York, pursuant to their instructions, desire herehy to express their opposition to any scheme for Compulsory Health Insurance.

Dr. Charles J. Whalen, Illinois, and Dr. F. C. Warnshuis, Michigan, representing their State Delegations, supported the resolution offered by Dr. Rooney.

Dr. Frederic E. Sondern, New York, presented the following, which was referred to the Reference Committee on Hygiene and Public Health:

At the last Annual Meeting of the Surgical Section of the Medical Society of the State of New York, the following resolution was passed:

"It is moved that the Chairman of this Section he empowered to appoint a Committee of Seven from the Medical Society of the State of New York and an honorary committee of seven American Medical Association members (Barker, Cushing, W. Mayo, Longcope, Billings, Tinker, Jones) to review the question of the sale of endocrine products and combinations without a physician's prescription and if they approve such action to bring the matter to the attenion of the American Medical Association House of Delegates for the purpose of further action to prevent the sale of endocrines without a prescription.

WHEREAS: The promiscuous use of the laity of preparations of the glands of internal secretion has led to manifest harm, and

WHEREAS: The uncontrolled use of potent glandular derivatives carries with it the danger of self-medication, be it

Resolved, That the Surgical Section earnestly request that the American Medical Association take the necessary steps to prevent any endocrine preparation being sold to the public except on a physician's prescription. This resolution will be endorsed this afternoon by the Association for the Study of Internal Secretions now in session.

Dr. F. F. Russell, U. S. Army, spoke of the necessity of having published the medical and surgical history of the World War, and stated that the Surgeon-General of the Army had asked Congress to appropriate $150,000 for this purpose. This history would make approximately fifteen volumes of 600 pages each, and that the edition would be 3,000 copies. He moved that a committee of three be appointed by the Speaker to draft a resolution approving in principle the use of this money by Congress for this purpose.

Seconded and carried.

Ad-Interim Committee

The Secretary presented the following report for the Ad-Interim Committee:

NEW ORLEANS, April 25, 1920.

To the House of Delegates, American Medical Association.

GENTLEMEN: — Speaking for the Ad-Interim Committee, there is one brief matter to report.

About Oct. 1, 1919, a letter was received by the President of the American Medical Association from the Surgeon-General of the Army, containing this paragraph:

> "It is requested that you obtain from the members of the American Medical Association, who served in the World War, suggestions with regard to the function and administrative organization of the medical corps of the Army."

To which the President replied: "As President of the American Medical Association, it is my firm conviction that no greater service can be rendered by the profession of this country to the Army, than by giving constructive suggestions for your consideration, tending toward improvement and development of the Army Service."

A meeting of the Ad-Interim Committee was called and was held in Chicago to consider the request of the Surgeon-General. The question was of such importance that the Committee conferred with the Board of Trustees then in session. It was agreed between the Board of Trustees and the Ad-Interim Committee that it would be unwise at that time to proceed without further consultation with the Surgeon-General of the Army. A committee, consisting of the President of the American Medical Association, with Drs. Billings and Simmons, was appointed to confer with Surgeon-General Ireland. A conference was then held with the Surgeon-General, General McCaw and Colonel Russell, in Chicago, on December 1.

At this meeting, it was agreed: First, to request sanction from the House of Delegates that the American Medical Association should assist, in every way possible, in the development of the Walter Reed Medical School, which it is hoped will become the nucleus of a more comprehensive medical center project now in contemplation. Second, that an effort was contemplated to have sanctioned by the medical schools requiring an intern year before a medical degree in the Walter Reed or other Army hospitals as hospitals in which students could serve as interns and be duly credited for a degree by such service. Third, it was further agreed that when Congress should pass the Army Reorganization Plan, the finding on what basis the Medical Corps and Medical Reserve Officers should act, then the Surgeon-General would submit for constructive suggestions a plan of reorganization of the Medical Corps and Medical Reserve Corps to a Committee of Medical Reserve and Regular Officers having had experience at home and abroad in the recent war. Until such time as these preliminaries are accomplished, there appears to be no further action necessary to be taken by the Committee of the American Medical Association as appointed by the Ad-Interim Committee.

It is therefore recommended that the House of Delegates confirm the action of this subcommittee acting for the Ad-Interim Committee.

Dr. A. T. McCormack, Kentucky, moved that the action of the Ad-Interim Committee be approved.

Seconded and carried.

Dr. H. B. Gibby, Pennsylvania, Chairman, presented a supplementary report for the Committee on Credentials, stating that 107 delegates had been so far seated.

It was moved and seconded that the report be accepted.

Carried.

The Speaker appointed the following committee to prepare suitable resolutions asking Congress to publish as soon as possible the medical and surgical history of the War: Dr. Gerald B. Webb, Colorado; Dr. Walter R. Steiner, Connecticut, and Dr. Leroy Crummer, Nebraska.

Dr. John D. McLean, Pennsylvania, stated that a resolution was introduced last year in the House of Delegates urging that the publications issued by the Surgeon-General of the Army during the War be placed in such a position as to be available to the medical profession, but that he could not find any record of the resolution.

Dr. Frank Billings, Illinois, stated that this resolution was referred to the Board of Trustees. After conference with the Surgeon-General of the Army, other officers, and the librarian, the Board of Trustees found there were no available books for distribution to the medical profession. He further stated that the supply of books published by the Army Medical Department and offered for free distribution had been exhausted.

On motion, which was duly seconded and carried, the House of Delegates adjourned to meet at 9:30 a. m., Tuesday, April 27, 1920.

(To be continued)

Causes of Death in U. S. Registration Area.—The Census Bureau's annual compilation of mortality statistics for the death registration area in continental United States shows 1,068,932 deaths as having occurred in that area in 1917, representing a rate of 14.2 per 1,000 of population. Of these deaths, nearly one third were due to three causes—heart diseases, pneumonia and tuberculosis—and nearly another third resulted from the following nine causes: Bright's disease and nephritis, apoplexy, cancer, diarrhea and enteritis, arterial diseases, influenza, diabetes, diphtheria and bronchitis. The deaths from heart diseases (organic diseases of the heart and endocarditis) numbered 115,337, or 153.2 per hundred thousand population. Pneumonia (including bronchopneumonia) was responsible for 112,821 deaths, or 149.8 per hundred thousand. Tuberculosis in its various forms caused 110,285 deaths, of which 97,047 were due to tuberculosis of the lungs. The death rate from all forms of tuberculosis was 146.4 per hundred thousand, and from tuberculosis of the lungs, 128.9. Bright's disease and acute nephritis caused 80,912 deaths, or 107.4 per hundred thousand. Apoplexy was the cause of 62,431 deaths, or 82.9 per hundred thousand. Cancer and other malignant tumors caused 61,431 deaths, of which number 23,413, or 38 per cent., resulted from cancer of the stomach and liver. The rate from cancer has risen from 63 per hundred thousand in 1900 to 81.6 in 1917. Diarrhea and enteritis caused 59,504 deaths, or 79 per hundred thousand. Arterial diseases of various kinds, atheroma, aneurysm, etc., resulted in 19,055 deaths, or 25.3 per hundred thousand. Influenza was responsible for 12,974 deaths, or 17.2 per hundred thousand. Deaths from diabetes numbered 12,750, or 16.9 per hundred thousand. Bronchitis caused 12,311 deaths, or 16.3 per hundred thousand. Typhoid fever resulted in 10,113 deaths, or 13.4 per hundred thousand. Measles, whooping cough and scarlet fever were together responsible for 21,723 deaths of both adults and children, or 28.8 per hundred thousand. The rates for the three diseases separately were 14.3, 10.4 and 4.2, respectively. Deaths due to external causes of all kinds—accidental, suicidal and homicidal—numbered 81,953 in 1917, corresponding to a rate of 108.8 per hundred thousand population.—*Pub. Health Rep.* **34**:1474 (July 4) 1919.

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SATURDAY, MAY 1, 1920

POISON IVY, OAK AND SUMAC

There are many perennially recurring menaces to health which the physician is never allowed to overlook or forget, because the advent of afflicted patients serves as a potent reminder. If the cause of danger is an avertible one, like the fourth-of-July fireworks or the human contamination of water supplies bringing about a high morbidity rate for typhoid fever, it is well worth while to keep preaching the necessity of prevention. The campaigns of warning and education carried on annually by The Journal in relation to the two life-threatening features just cited, for example, have finally resulted in greatly reducing the harm done by eradicating the causes or at least reducing their frequency. At this season the publicity columns are likely, and with good reason, to direct attention to the impending menace of the mosquito and the undesirability of the fly.

The summer season is likewise the period when poisonous plants flourish and exert their noxious effects. Hence it is timely to send out the usual warnings about ivy and sumac poisoning.[1] The species of *Rhus* which are responsible for it infest virtually all parts of the country, except mountain elevations above about 6,000 feet and arid lands. They are not infrequently found growing along city streets, in parks and on private property as well as in the fields, pastures and woodlands of the country. Consequently there is scarcely a physician who has not encountered cases of intoxication from these poisonous plants. Indeed, medical experience testifies to the widespread discomfort and even serious illness which annually result.

It is generally agreed that the active principle common to the poison oak, ivy and sumac is toxicodendrol, an acid resin (not an oil, as stated in *Public Health Reports*). As little as 0.001 mg. is said to be sufficient to produce vesication of the skin. This remarkable potency must be kept in mind in attempting to explain the readiness of injury and the ease with which the poison "spreads" on the skin. Several commonly quoted peculiarities of ivy poison need to be critically considered. One of these is the belief that persons of suitable susceptibility may become poisoned without any contact whatever with the harmful plants. One frequently hears the statement that the mere observation or passing of the plants may be followed by intoxications. As toxicodendrol is nonvolatile, such alleged occurrences, often reported from apparently authentic sources, need careful consideration. The government experts have reached the conclusion that probably many cases supposed to have originated through the transfer of some volatile emanation have actually been due to direct or indirect contact. The exact manner in which the poisoning has occurred may readily be overlooked, since in many instances the appearance of the eruption is delayed for several days, and traces of the poison sufficient to produce injury may be conveyed by clothing or other articles long after contact with the plants. Sweet and Grant [1] add that numerous attempts to produce poisoning experimentally by emanations from *Rhus* plants, and from the active principle itself, have been unsuccessful. On the other hand, there is excellent foundation for the popular belief that smoke from the burning plants will give rise to irritation, and some of the worst cases of *Rhus* poisoning undoubtedly originate in this manner. Another tradition concerns the alleged immunity of certain persons. Here, too, careful investigation tends to indicate that this is at best one of degree, and that complete insusceptibility of man has neither been demonstrated nor induced.

In considering a rational treatment, it should be known that the irritant substance is soluble in alkalis, in gasoline and in alcohol, but is precipitated by lead acetate. At one time lead washes formed a popular treatment for ivy poisoning. They accomplish at best the precipitation of the poison in situ. It must then be removed in some way to avert further danger; and many persons are susceptible to intoxication by lead as well as by ivy poison. The widely advocated scrubbing with soap and hot water is efficacious only so far as it mechanically removes the toxicodendrol before it penetrates the skin. To spread the toxic agent inadvertently by washing rather than to remove it can only aggravate the danger. This applies particularly in the case of commonly used alcoholic lotions; their use must be thorough and liberal lest they merely serve to dissolve the poison and hence distribute it. The treatment with hot alkaline solutions of potassium permanganate is not as widely recognized as it merits to be. The principle involved consists in the destruction of the poison by this oxidative agent. The discoloration of the skin by the reagent can readily be removed by lemon juice or other means.

The physician has in this connection a larger function than the mere diagnosis and relief of ivy poisoning. He ought to lead in an effective crusade to destroy the

1. A timely paper on this subject has been published by the U. S. Public Health Service (Sweet, E. A., and Grant, C. V.: Ivy and Sumac Poisoning, Pub. Health Rep. **35**: 443 [Feb. 27] 1920) from which various statements have been taken.

noxious vegetation, which flourishes in most unsuspected places. A campaign of popular education in the nature of the dangers involved as well as in the recognition of the harmful plant forms should be started every year. Communities should be waked up to the importance of eradicating the persistently growing poison ivy. It is surely not too much to expect that a few seasons of persistence fostered by medical sanction will decrease one of the causes of a "seasonal torment" that need not be with us.

DOES HEMATOGENOUS JAUNDICE OCCUR?

The occurrence of jaundice as a symptom of conditions in which there is an obstruction of the bile ducts either outside of the liver or within the hepatic tissue has long been readily understood. In contrast with this obstructive or mechanical jaundice, there has been considerable discussion in recent years regarding the possibility of a nonobstructive type, referred to commonly as hemolytic jaundice. For the genesis of this it has been assumed that hemoglobin, the assumed precursor of the bile pigments, is somehow liberated in abnormal quantities in the circulation. From this free blood pigment bilirubin is supposed to be formed apart from any participation of the liver, in which the conversion normally takes place. Such considerations have therefore led to the differentiation of the usual "hepatogenous" jaundice from the less common "hematogenous" jaundice in which, no disorder of the liver or biliary ducts being apparent, the bile pigments were supposed to be found in the blood vessels or elsewhere in consequence of the destruction of erythrocytes and the conversion into bilirubin of the blood pigment thus liberated.

In order to establish the independent identity of the so-called hematogenous or nonobstructive jaundice, it is necessary to be able to exclude all conditions which might involve obstruction to the usual flow of bile at any point in its course from the liver cells. Among the facts offered in evidence for the existence of the nonhepatic jaundice has been the failure to find either macroscopic or microscopic indications of interference with secretion when necropsies in supposed cases have been performed. Furthermore, it is pointed out that in the alleged hematogenous jaundice the stools are normally colored, so that no lack of a discharge of bile into the bowel, such as occurs in biliary obstruction, can be assumed. Again, it is pointed out that a tendency to anemia associated with a susceptibility of the red blood corpuscles to hemolysis often constitutes the appropriate accompaniment of the jaundice symptoms. Finally, the removal of the spleen, an organ which has frequently been held responsible for the hemolytic phenomena, is said to abolish the jaundice of hematogenous origin; in the latter event the liver and its ducts can scarcely be assumed to play any part.

Without reviewing further the varied arguments that have been advanced in support of the occurrence of a jaundice independent of any liver factors, it should be understood that such statements have not been allowed to go unchallenged. The classic objection is found in the well-known experiments of Minkowski and Naunyn demostrating, for some species at least, that although extensive hemolysis accompanied by icterus can be induced by means of certain poisons, jaundice does not ensue if the liver has been previously removed. Again, it has repeatedly been pointed out that in cases of assumed hematogenous jaundice, the existence of minute obstructions of the bile passages and the occurrence of hepatic lesions discoverable only by careful histologic study undoubtedly occur.

Naunyn,[1] to whom we owe many important contributions to the knowledge of jaundice, in lately reviewing his extensive experience, has remarked that in considering so-called hemolytic jaundice in individual cases, all too little attention has been paid to the possible existence of obstruction factors. Thus, he asserts that there is no convincing evidence whether bile salts are actually absent or present in the icteric urine. The presence of these compounds would at once point to a hepatogenous origin of the jaundice. Naunyn, who is convinced that the liver plays a part in all cases, regards hemolytic jaundice as the outcome of an infectious disease in which a cholangeitis frequently is the conspicuous feature. The harmful agent, whatever it may happen to be, is believed to find its way to the liver as a rule from intestinal sources. The implication is that if more careful studies of the liver could be made at suitable times, hepatic damage sufficient to produce partial obstruction would be detected. In other words, icterus invariably means implication of the liver.

Gerhart [2] also has recently come to a similar conclusion. He points out that at times the stools of patients suffering from hemolytic jaundice are actually decolorized, or the pigments may be diminished. Hence, careful repeated observations may disclose symptoms of bile obstruction when they are unsuspected. The determination of the degree of obstruction, i. e., the complete or incomplete freedom of bile flow, is not easy, so that the argument of color in the feces must be used with caution by advocates of either side of the controversy. Gerhart likewise intimates the difficulty of excluding minute obstructive changes in the liver—alterations too small for obvious notice, yet sufficient to produce some reabsorption of bile in localized areas. He has also cited cases in which relief gained from extirpation of the spleen was only temporary, in harmony with the fact that the fundamental liver factors are by no means excluded through

1. Naunyn, B.: Der Ikterus und seine Beziehungen zu den Cholangien (Erkrankungen der Gallenwege), Mitt. a. d. Grenzgeb. d. Med. u. Chir. **31**: 537, 1919.
2. Gerhart D.: Beitrag zur Lehre vom hämolytischen Ikterus, Mitt. a. d. Grenzgeb. d. Med. u. Chir. **31**: 644, 1919.

this surgical procedure. Finally, numerous cases of hemolysis in which jaundice never occurs can be cited.

Before abandoning the theory of an independent hematogenous jaundice, it must be recalled, however, that Whipple and his associates in San Francisco have reported experimental evidence of the occurrence of bile pigments in the urine after injection of hemoglobin into dogs with the liver excluded from the circulation. What value is to be assigned to these observations in the face of the current tendency to reemphasize the significance of the liver in most, if not all, forms of jaundice remains to be seen.

ALIMENTARY PROTECTION AGAINST HEMOLYTIC STREPTOCOCCI

Hemolytic streptococci have deservedly acquired the reputation of being dangerous invaders of the human organism. The menace which they represent has been aggravated of late by the repeatedly verified observations that these types of micro-organisms are frequently harbored not only by the sick, but also by normal persons. For this reason the unsuspected dissemination of the streptococci becomes a serious possibility. Cultural studies made in various army camps during the war gave indisputable evidence of the large extent to which the hemolytic streptococci are found in the throat and tonsils.[1] As an illustration, we may cite Smillie's[2] observation that about 50 per cent. of normal throats harbor these bacteria; the assertion of Blanton, Burhans and Hunter[3] that hemolytic streptococci could be obtained from the tonsils of normal persons in 90 per cent. and from the depths of the tonsils in 80 per cent. of their cases; and likewise the observations of Pilot and Davis,[4] showing that in the crypts of the faucial tonsils hemolytic streptococci occur in nearly 100 per cent. Such facts have been brought to bear on the question of the efficacy of complete tonsillectomy as a procedure for the elimination of a breeding place for hemolytic streptococci.

From the foregoing circumstances it becomes evident that large numbers of streptococci must be constantly passing beyond the pharynx into the alimentary canal. Furthermore, the same dangerous types can reach the gastro-enteric tract through the medium of food. What becomes of them? Are they readily destroyed by some protective mechanism in this part of the body, or do they continue to thrive and furnish an added menace by reappearing in the stools ready for further dissemination in sewage? These questions have recently been put to a test by Davis,[5] who examined the feces in fifty-three cases without finding hemolytic streptococci. They were absent even from the feces of scarlet fever patients, who almost always have these micro-organisms in their throats in very large numbers.[6]

As hemolytic streptococci are not ordinarily found in appreciable numbers in the gastro-intestinal tract of rabbits, though these animals are especially susceptible to experimental infection with *Streptococcus hemolyticus*, Davis introduced large amounts of virulent cultures of the organisms into the stomach of this species. Occasionally the bacteria pass through the canal under these exceptionally severe conditions and appear in the feces. As a rule, they do not thrive or gain a permanent foothold there. Rabbits with generalized streptococcus infection in the joints and blood showed no hemolytic streptococci in the intestinal contents.

One naturally inquires how this alimentary protection is acquired. Davis has referred it to the gastric secretion. Juice of normal acidity from man kills hemolytic streptococci within five minutes, though the gastric secretion in achylia may not kill them in several hours. This is only a new added instance emphasizing the enormous advantage of proper acidity in the stomach in controlling the alimentary flora. In the fecal mixture at body temperature, *Streptococcus hemolyticus* likewise does not seem to thrive long. Such facts may serve to exonerate this type of streptococci from primary responsibility for some of the manifestations of enteritis which were charged to it before the modern sharp differentiations could be made. Whether or not hemolytic streptococci play a significant part in the production of pathologic lesions of the bowel, under conditions in which the defenses against the microbial invaders fail, remains to be more carefully investigated.

Current Comment

THE TREATMENT OF ATROPHY IN DENERVATED MUSCLES

When the nerve supply to a peripheral muscle is interfered with, atrophic changes in the latter are likely to follow. The atrophy, until recently, has usually been ascribed to the inactivity supposed to follow the loss of innervation. The routine treatment has therefore been of a character expected to counteract the disuse of the contractile tissue. Electric stimulation, massage, passive movements, hydrotherapy and other mechanical procedures have been employed to avert muscular atrophy, particularly when there seems to be a chance for a regeneration of the nervous connections if all the tissues concerned are kept in good physiologic con-

1. Some of the literature is reviewed by Tongs, M. S.: Hemolytic Streptococci in the Nose and Throat, J. A. M. A. **73**: 1050 (Oct. 4) 1919, in a paper representing studies concluded with the aid of a grant from the Committee on Scientific Research of the American Medical Association.

2. Smillie, W. G.: Beta Hemolytic Streptococcus, J. Infect. Dis. **20**: 45 (Jan.) 1917.

3. Blanton, W. B.; Burhans, C. W., and Hunter, O. W.: Studies in Streptococcic Infections at Camp Custer, Mich., J. A. M. A. **72**: 1520 (May 24) 1919.

4. Pilot, I., and Davis, D. J.: J. Infect. Dis. **24**: 386 (April) 1919.

5. Davis, D. J.: The Fate of Streptococcus Hemolyticus in the Gastro-Intestinal Canal, J. Infect. Dis. **26**: 171 (Feb.) 1920

6. Ruediger: J. Infect. Dis. **3**: 755, 1906.

dition. The Cambridge physiologist Langley [1] suggested four years ago, however, that muscular atrophy in a denervated muscle is due, not to inactivity, but to continuous fibrillation. A connection between atrophy and fibrillation has long been recognized; thus, Barker [2] wrote in 1910: "Where the degenerative atrophy is due to lesion of the anterior horns or of the motor nuclei of the cerebral nerves, fibrillary twitching is commonly present." The relations of cause and effect are not clearly indicated here. If the disuse theory is to be abandoned, there seems to be no rational basis for the employment of therapeutic measures intended to promote the circulation and thus retain the nutrition and functional capacity of the muscles involved. Actual experimentation on animals with denervated muscles has, indeed, shown the futility of electrical stimulation and massage. As a denervated muscle is not a muscle at rest, the only indication of possible success in treatment thus far found has been in ionization with salts to stop the twitching.[3] The report recently published in THE JOURNAL by Hartman and Blatz [4] is a further record of inability to demonstrate benefit from either galvanic stimulation or massage. As was to be anticipated, the fibrillation was not checked. Although it may not be a welcome necessity to throw the current treatment of such muscular atrophy into the discard, particularly when no promising substitute procedures are suggested, a frank recognition of the truth alone can lead to progress.

CHOLIN IN THE BODY

Cholin is a nitrogenous base which can be obtained as a derivative of the phosphatid lecithin by mild decomposition. Cholin is not devoid of physiologic potency, though it can scarcely be regarded as a pronouncedly toxic substance. Some closely related compounds, notably neurin and muscarin, are far more potent. A few years ago it was widely believed that cholin might arise from disintegration of lecithin in the nervous tissues, in which the lipoid is abundant, or elsewhere in the body, and might exhibit toxic effects. These were assumed, for example, to manifest themselves in certain types of nerve degeneration and in the cell destruction following application of roentgen rays. There is reason to believe now that many of the earlier reports of the presence of cholin in blood and tissue fluids rest on inaccurate procedures of analysis. Reid Hunt,[5] who devised a physiologic test that permits detection of as little as 0.00001 mg. of cholin, was unable to obtain evidence that this substance is of any significance in either physiologic or pathologic processes. A corroboration is further afforded by the studies of Guggenheim and Löffler [6] at Basel. They estimate that a liter of blood serum contains from 0.002 to 0.02 gm.; the same quantity of urine contains about the same proportion of cholin. In several diseases investigated, no characteristic variations in the content of cholin in the body fluids could be observed.

1. Langley, J. W.: J. Physiol. **50**: 337 (July) 1916.
2. Barker, L. F.: Diseases of the Nervous System, Osler's Modern Medicine **7**: 70, 1910.
3. Langley and Hashimoto: J. Physiol. **52**: 15, 1919. Langley, J. N., and Kato, I.: Ibid. **49**: 417, 1915.
4. Hartman F. A., and Blatz, W. E.: Treatment of Denervated Muscle, J. A. M. A. **74**: 878 (March 27) 1920.
5. Hunt, Reid: J. Pharmacol. **7**: 301, 1915.
6. Guggenheim, M., and Löffler, W.: Ueber das Vorkommen und Schicksal des Cholins im Tierkörper: eine Methode zum Nachweis kleiner Cholinmengen, Biochem. Ztschr. **74**: 207 (April) 1916.

BOTULISM DUE TO OLIVES

The continued occurrence of fatal outbreaks of botulism poisoning caused by contaminated olives prompts our frequent reference to this situation. Many of the features of botulism outbreaks are still quite obscure; and in view of the urgent necessity for practical methods of prevention, every contribution to our knowledge of this form of food poisoning should be closely considered by sanitarians and health officials. The summary of the investigations of the Bureau of Chemistry on olive poisoning, given elsewhere in this issue,[1] contains material of general interest and practical application. Four of the five outbreaks reported in the summary were due to a toxin produced by the Type A of *Bacillus botulinus;* the organism responsible for the fifth attack is not yet differentiated. Type A is the type found in California, and differs from the type present in the Eastern states and apparently from that observed in Europe. The summary leaves one in some uncertainty as to whether green olives as well as ripe olives have been implicated in botulinus poisoning. In the Montana outbreak, olives stuffed with pimiento are considered to have been the source of the trouble, and in another instance "olive relish" in a tin container was the substance involved. It is not clear whether the "relish" was made of green or ripe olives, but it is certainly true that green and not ripe olives are commonly used for "stuffing." The title of the Bureau of Chemistry summary, on the other hand, seems to limit the poisoning to ripe olives, so that a clear statement on this point seems desirable. The important question as to whether or not *B. botulinus* contamination in canned food is always accompanied by physical signs of decomposition seems to be answered in the affirmative by the experience of the government investigators. They state that in all of the material examined by them in which *B. botulinus* was present, the odor was distinctly offensive. This characteristic is a doubtful safeguard, however, since olives washed, iced or served with highly flavored foods may not betray their dangerous nature, particularly to persons unfamiliar with the natural taste of ripe olives. The source of the odor does not seem to be cleared up by these investigations. Whether the disagreeable smells are due to the products of *B. botulinus,* or whether the other micro-organisms apparently always present in the imperfectly sterilized contents of the jar or can have given rise to the putrefactive conditions, is left undetermined by the evidence printed in the article cited. The conclusions of the Bureau of Chemistry workers that more efficient methods of sterilization should be employed, that brine packing should be modified, and that olives should be handled with the same degree of care and cleanliness as any other perishable food product seem abundantly justified.

1. DeBord, G. G.; Edmondson, R. B., and Thom, Charles: Summary of Bureau of Chemistry Investigations of Poisoning Due to Ripe Olives, this issue, p. 1220.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Personal.—Dr. Frank W. McCorkle, Huntsville, has resigned as assistant health officer of Madison County to become county health commissioner of Decatur County, Ga. Dr. Roscoe C. Stewart, Huntsville, has been selected as Dr. McCorkle's successor.

Bacteriologic Society Organized.—The Birmingham Bacteriological Society, with a charter membership of fourteen, was organized by laboratory experts and physicians at Birmingham, March 17. Dr. A. H. Olive was elected president; Miss Blanche Frazier, vice president, and Dr. James R. Bean, secretary-treasurer.

CONNECTICUT

Personal.—Dr. Walter H. Brown, health officer of Bridgeport, has been appointed associate director, department of health service, national headquarters, American Red Cross. ——Dr. John W. Churchman, New Haven, professor of surgery in Yale University, has been named Officier de l'Académie with silver palms in recognition of work done as chief of the medical service of Military Hospital No. 32 bis, during 1916.——Dr. William B. Terhune, New Haven, has been appointed director of the division of mental hygiene of the state board of health.

ILLINOIS

Chicago

Personal.—Dr. William R. Cubbins has been appointed chief of the surgical staff of Cook County Hospital; Dr. Joseph A. Capps, chief of the medical staff; Dr. Channing W. Barrett, chief of the gynecologic staff; Dr. Edwin R. LeCount has been placed in charge of the pathologic laboratories and Dr. Julius Hess of the department of diseases of children.——Dr. Daniel H. Williams has been honored by the University of Pennsylvania by having his name given to a special organization among the medical students, known as the Daniel H. Williams Surgical and Oral Society. The prime object of the organization is to encourage research work.

Teaching Health to Children.—A child health school for the training of teachers of health to children will be held this summer at the University of Chicago. There will be a group of underweight children to serve as a demonstration of methods of conducting nutrition classes and teaching general health habits. Assistant Prof. Lydia J. Roberts of the department of home economics, who has recently returned to the university after making a nutrition survey of children for the U. S. Children's Bureau, will be the director, and Dr. Mendenhall of the Children's Bureau and Dr. Walter H. O. Hoffmann of Rush Medical School will serve as medical advisers.

INDIANA

Nurses' Home at City Hospital.—The city board of health of Indianapolis has decided to start action to provide a bond issue for the construction of a nurses' home at the City Hospital. The undesirability of the living quarters has made it difficult for the hospital to keep up its required staff of nurses.

Personal.—Dr. James B. Young, Cumberland, has been appointed associate medical director of the Indianapolis Life Insurance Company, succeeding Dr. Mitchell A. Devaney, deceased.——Dr. Charles C. Crampton, Delphi, has been elected commander of the local post of the American Legion.

Postgraduate Course.—The Indiana University School of Medicine will give a postgraduate course in disease production and immunity in its department of pathology, beginning June 1, 1920. The course will cover a period of six weeks of lectures and laboratory work.

IOWA

Clinic at Grinnell.—A free clinic for children needing medical or surgical attention has been established at St. Francis' Hospital, Grinnell.

Personal.—Dr. Jefferson D. Blything has been appointed city physician of Davenport on recommendation of the Medical Society of Davenport.——Dr. James W. Richards has been appointed health physician of LeClaire.——Dr. Alphonse L. Hageboeck, Davenport, was elected commodore of the Davenport Boat Club, April 5.——Dr. Charles L. Barewald has been elected mayor of Davenport.——Dr. Don M. Griswold, Iowa City, has accepted the chair of public health and hygiene in the Medical School of the University of Iowa, and by this acceptance becomes state epidemiologist.

MARYLAND

Personal.—Dr. William H. Welch, for thirty-five years pathologist of Johns Hopkins Medical School and now director of the School of Hygiene and Public Health, celebrated his seventieth birthday anniversary, April 8.——Dr. Winifred Cullis, professor of physiology in the London School of Medicine for Women, University of London, and chairman of the Committee on International Relations of the University Women of Great Britain, spoke in Baltimore at the College Club recently both to the students of Goucher College and to the College Women of Baltimore.

University of Maryand Enlarged.—A bill recently passed by the Maryland legislature combines the Maryland State College of Agriculture with the University of Maryland School of Medicine under the name of the University of Maryland. The new institution now possesses, therefore, a college of arts and sciences, a military school and schools of medicine, dentistry and pharmacy. A new board of nine trustees has also been established. The legislature also appropriated $42,500, each year, for the medical school for the next two years and in addition appropriated $185,476.85 for the other departments of the university for the year 1921, and $165,416.89 for the year 1922. Another appropriation of $203,000 was made for buildings and equipment. This adds one more to the list of states having state universities, the total now being twenty-nine.

MICHIGAN

Clinic Opened.—A clinic for the treatment of crippled and deformed persons has been opened in Detroit under the auspices of the local board of health. The expenses are being paid by the Sigma Gamma fraternity, and members of that organization are serving as attendants. Drs. Carroll L. Storey and Nathaniel Ginsberg are in charge of the clinic.

The Carstens Semicentennial.—Members of the Wayne County Medical Society gave a testimonial dinner, April 13, in honor of Dr. J. Henry Carstens, Detroit, who has just completed his fiftieth year as a practitioner of medicine. Dr. George E. McKean, president of the Wayne County Medical Association, officiated as toastmaster, and speeches touching on different phases of Dr. Carstens' life were made by Drs. Daniel La Ferte, Theodore A. McGraw, Guy L. Kiefer, Preston M. Hickey, Angus McLean, John N. Bell and H. Wellington Yates.

MINNESOTA

Personal.—Dr. Leroy E. Doolittle has been appointed school physician of Duluth.——Dr. Archibald L. McDonald, Duluth, has been elected president of the St. Louis County Medical Association and Dr. Herbert G. Lampson, secretary.

Health Work in State.—Following out an idea which originated when Dr. Walter R. Ramsey, St. Paul, suggested that the children's specialists of the state organize and bring their advice to the inhabitants of the counties rather than to restrict expert diagnosis of the children's cases to people living in the larger cities, twenty-four specialists on diseases of children, ten dentists, fourteen medical directors of tuberculosis sanatoriums, many eye and ear experts, the Minnesota Obstetrical and Gynecological Society and a trained dietitian have formed an advisory staff for the Minnesota Public Health Association and have conducted health clinics in almost every county of the state during the last year.

NEW YORK

Poster Contest Time Limit Extended.—The time limit of the contest started by the bureau of venereal diseases of the state department of health in which a prize of $100 was offered for the best poster illustrating the quotation "Healthy Parents Head Happy Families," and which was noted in THE JOURNAL of March 13, has been extended from May 1 to June 1.

Clean-Up Week.—In a letter to mayors, village presidents and boards of health, Dr. Hermann M. Biggs, state commissioner of health, has designated the week beginning April 26 as the annual clean-up week. The commissioner emphasizes the necessity of impressing the citizens of each community with the date and purpose of clean-up week in order that the large amount of filth and rubbish which has accumulated during the winter may be collected and properly disposed of. Local authorities are urged to make adequate provision for the prompt removal and destruction of all such material. The suggestion is made that a local committee composed of representatives of various organizations be formed in each community for the purpose of supervising the work.

New York City

Jacobi Memorial.—The New York Academy of Medicine will hold a memorial meeting in honor of Dr. Abraham Jacobi's ninetieth birthday anniversary, May 6, at 8:30 p. m. A bas-relief of Dr. Jacobi will be presented by George McAneny and will be accepted by the president of the academy, Dr. George David Stewart. The principal address will be delivered by Dr. George E. Vincent of the Rockefeller Foundation.

New Quarantine Regulations.—Amendments to the sanitary code provide the following minimum periods of quarantine: diphtheria, twelve days from onset, after which until two cultures taken not less than twenty-four hours apart, preferably from both nose and throat, fail to show the presence of diphtheria bacilli; scarlet fever, thirty days after onset, providing discharges from nose and ears have ceased; cerebrospinal meningitis, fourteen days from onset; acute anterior poliomyelitis, three weeks from onset; typhoid fever, until ten days after the patient's temperature reaches normal, and further until two specimens of feces collected after an interval of at least twenty-four hours are found to be free from typhoid bacilli.

PENNSYLVANIA

Institutions Closed.—The Emergency Hospital, Erie, established to meet the scarlet fever epidemic, closed for the reception of patients, April 3, and will definitely close the end of this month.——State Health Department Dispensary No. 11, Chambersburg, established by the late Dr. H. X. Bonbrake, was discontinued, March 26.

Personal.—Dr. James F. Trimble, Greensburg, has been appointed medical director of Westmoreland County.——Dr. Fred Wade Paton, Bradford, medical director of McKean County, has resigned.——Dr. Isaac H. Shelly, Jr., Ambler, has been appointed a member of the eye, ear, nose and throat staff of the Montgomery County Hospital and also consultant at the Norristown State Hospital.

New Officers.—At the annual meeting of the board of directors of the Pennsylvania Society for the Prevention of Tuberculosis held in Philadelphia, April 14, Dr. James M. Anders, Philadelphia, was elected president of the board of directors, succeeding Dr. Thomas McCrae, Philadelphia; Drs. Joseph S. Neff, William D. Robinson, Philadelphia, and Dr. William C. White, Pittsburgh, were elected vice presidents; Dr. Ware Brinton, Philadelphia, was made secretary; J. William Hart, treasurer, and Drs. Elmer H. Funk, Philadelphia, and Thomas McCrae, Philadelphia, were elected members of the board.

State Police to Aid in Fighting Disease—Important cooperative work between the state police force and the state department of health in the campaign for eradication of social diseases has been arranged and hereafter when state policemen make arrests in raids, medical officers will accompany them and conduct examinations. If necessary, state policemen will assist the health authorities in maintenance of a quarantine against persons found suffering from infectious diseases. The details of the cooperative plan were worked out by Major Lynn G. Adams, the superintendent, following an address to the troop officers by Dr. Sigmund L. Gans of the department of health, who outlined the procedure under the act of 1919. State police work in the bureaus of fire protection and criminal identification will be materially expanded this year.

Philadelphia

Appropriation for Insane.—An ordinance to appropriate $50,000 to improve conditions of the insane at the Philadelphia General Hospital and to create thirty-eight important positions was approved by council's health committee, April 22, and referred with a favorable recommendation to the finance committee. The new system established would range from a medical director at $5,000 a year to two hydrotherapists at $900 a year each, requiring an appropriation of $35,373 annually. The ordinance would also appropriate $14,000 for alterations necessary for the introduction of new methods of treatment of patients at the institution.

Personal.—Drs. John Welsh Croskey and Lawrence Webster Fox have been elected censors of the Philadelphia County Medical Society to fill the vacancies caused by the resignations of Dr. Jay Frank Schamberg and Dr. Judson Deland.——Dr. John Blair Spencer, physician in chief of the department of public welfare, returns this week from Washington, D. C., where he went about ten days ago to submit to an operation necessitated by an injury received while serving in the Navy during the late war.——Dr. Andrew A. Cairns, chief of the city health bureau, has been appointed a member of the advisory board of the department of health to succeed Dr. Joseph S. Neff, former director of health and charities, who resigned.——Dr. Miriam Warner has been appointed physician to the women patients of the Holmesburg Institutions, including the Home for the Indigent and Brown's Farms.——Dr. Randle C. Rosenberger has resigned as director of the pathologic laboratories at the Philadelphia General Hospital.

SOUTH CAROLINA

Personal.—Dr. T. B. Brown, Charleston, has taken charge of the Anderson Clinic, succeeding Dr. L. W. Blake, resigned.——Dr. Reuben G. Hamilton, Rockton, has been elected head of the public health service of Fairfield County, with headquarters at Winnsboro.

Increased Appropriation.—The Medical College of the State of South Carolina has received an appropriation from the state of $71,000 for maintenance, as compared with $49,500, the previous appropriation. An additional appropriation of $60,000 was made for the physiology building and equipment.

Medical Bill Now Law.—Governor Cooper on March 10 signed the medical bill, requiring all chiropractors, osteopaths, homeopaths and other healers to submit to examination before the state board of medical examiners.——The state board of medical examiners held a meeting, April 19, at Greenville, to formulate the new rules for the examination and licensure of practitioners, and the first examination will be held on June 22.

To Study Trachoma.—Drs. Edward F. Parker, Charleston; Charles W. Kollock, Charleston; Edwin R. Wilson, Sumter; Pinkney V. Mikell, Columbia; E. Mikell Whaley, Columbia; Martin Crook, Spartanburg, and Waller H. Nardin, Anderson, have been appointed by Dr. James A. Hayne, Columbia, state health officer, as a committee to investigate trachoma and other infectious diseases of the eye, and to formulate rules and regulations to prevent the spread of these diseases among schoolchildren.

New State Officers.—The South Carolina Medical Association, at its seventy-second annual meeting, held in Greenville, S. C., April 20 and 21, elected the following officers: president, Dr. Washington P. Timmerman, Batesburg; vice presidents, Drs. Miles J. Walker, York; William A. Boyd, Columbia, and William W. Fennell, Rock Hill; secretary-treasurer, Dr. Edgar A. Hines, Seneca, and councilors, Drs. Archibald E. Baker, Charleston; Samuel E. Harmon, Columbia; Thomas L. W. Bailey, Clinton; Leland O. Mauldin, Greenville; T. N. Duten, York; Charles R. May, Bennettsville; Harry L. Shaw, Sumter, and Leighton A. Hartzog, Olar.

VIRGINIA

To Fight Swamp Menace.—The health committee of Newport News has made recommendation that the council appropriate an emergency fund of $5,000 to defray the expenses of the fight against the malaria menace in the swamps and marshes in the city.

Institute for Colored Physicians.—By the aid of the missionary fund of the National Tuberculosis Association, the colored physicians of Virginia have been given a course of lectures and clinic work in tuberculosis at the Piedmont Sanatorium, Burkeville. The instructors comprise the heads of the three tuberculosis sanatoriums of Virginia and the medical director of the state tuberculosis association. Patients of all stages of tuberculosis were examined and the practitioners were drilled in the technic of chest examinations. The course will be repeated in June.

Health Center for Norfolk.—The public health department of Norfolk, through its director, Dr. Powhatan S. Schenck, has for several years been developing plans for a public health center for the city. A large amount of money has been secured for the work and plans for the buildings have been prepared. The proposed site for the buildings is the court house block at Bank Street. In the middle of the group will be the old Academy building which will be remodeled to contain the children's court, domestic relations court and other enterprises connected with these courts. On the sides and to the front of this will be grouped the general medical building, the prenatal building, the detention building, and administration and emergency buildings. The latter will be equipped so that it may be used for accident, operation and emergency cases. The general medical building will be fully equipped to treat all diseases except contagious diseases.

CANADA

Mental Hygiene Course.—The social service department of the University of Toronto is completing enrolment in the special extension course in mental hygiene. About thirty-five will take lectures in this course which will be conducted daily until June 11. Applications have come from Hamilton, Ottawa and other parts of the province of Ontario.

Harvey Club Election.—At the annual meeting of the Harvey Club, London, Ont., the following officers were elected: honorary president, Dr. Clarence M. Crawford, Whitby; president, Dr. Francis W. Hughes, London; vice president, Dr. John I. Ferguson, London; secretary, Dr. James W. Crane, London (reelected), and treasurer, Dr. Uriah E. Bateson, London.

Venereal Disease Council.—At the meeting of the Ontario committee of the Canadian Council for Venereal Diseases held, March 5, in Toronto, the lieutenant-governor was elected honorary president; Dr. Charles A. Hodgetts, Ottawa, president; Dr. Storms and Mrs. Torrington, Toronto, were elected vice presidents; Dr. Robert R. McClennahan, Hamilton, was elected secretary, and M. L. Wood, treasurer.

Six-Year Medical Course.—Recently a conference was held in Montreal at which were present representatives of the medical department of the University of Toronto and the University of McGill. The delegation representing the University of Toronto included Profs. John J. Mackenzie, Benjamin P. Watson, Duncan A. L. Graham, Velyien E. Henderson, Drs. Edward Stanley Ryerson and Alexander Primrose, C. B. No final decisions were reached at that conference, but there was a preliminary discussion of the curriculum to be adopted by both institutions from the first to the sixth year. Both Toronto and McGill had decided to introduce the six-year course before the war.

Canadian National Council for Combating Venereal Diseases.—The first municipal committee in connection with the above organization has been organized in Toronto with Hon. Mr. Justice Riddell as honorary chairman; Dr. Frederick W. Marlow, chairman, and Dr. Gordon A. Bates, secretary. Coincident with the organization of this committee, there was shown in Massey Hall, Toronto, the film drama "The End of the Road." About 17,000 viewed this moving picture, and at the same time addresses were delivered of an educational character. The first work of the national council committee will consist in general education among the people to prove to them the seriousness of the problem of venereal diseases. Government treatment schemes will be inaugurated in various parts of the dominion. An endeavor will be made to secure a large membership.

Tuberculosis Board for Military Hospitals.—A board of tuberculosis sanatorium consultants has recently been appointed by the director of military services of the Soldiers' Civil Re-Establishment. The personnel of this board is as follows: Drs. Charles D. Parfitt, Gravenhurst; John R. Byers, Ste. Agathe des Monts; William M. Hart, Qu'Appelle, Sask.; Arthur F. Miller, Kentville, N. S., and David A. Stewart, Ninette, Man. This board will visit the twenty-three sanatoriums throughout Canada in which patients of the department are receiving treatment. The board will study the whole situation in Canada with regard to the treatment of tuberculosis occurring among soldiers, and as far as possible will bring about uniform standards of treatment, equipment, records, etc. The medical superintendents of these sanatoriums have been instructed to cooperate in every way with the board.

Personal.—Surg.-Gen. John T. Fotheringham left Toronto, March 18, for a trip to the West Indies.——Dr. Gerald Allison, Picton, Ont., has returned after serving with the R. A. M. C. in Turkey.——Dr. Russell J. Collins, Kentville, N. S., has been appointed medical superintendent of the Balfour Sanatorium, Balfour, B. C.——Dr. William H. G. Aspland, Toronto, who was with the British Red Cross Society in 1914, is now living in Yorkshire, England.——Dr. Richard D. Cowan, Toronto, after three years of war work, has engaged in graduate work in the Middlesex Hospital, London, England.——Dr. Helen MacMurchy, Toronto, has been appointed head of child welfare under the department of public health, Ottawa.——Dr. Thomas J. McNally, Guelph, who has been district medical officer of health for the counties of Grey, Bruce and Simcoe, Ont., has been transferred to the Sarnia district.——Dr. George L. Sparks, London, after returning from overseas a short time ago, was appointed district medical officer of health for Fort William, Ont.

GENERAL

Tri-State Physicians Meet.—The forty-seventh semiannual meeting of the Northern Tri-State Medical Association of Indiana, Ohio and Michigan was held in Goshen, Ind., April 8, in connection with the annual session and as the guest of the Elkhart County Medical Association.

International Opium Convention.—Under terms of the Versailles Treaty of Peace and the Covenant of the League of Nations, all signatory nations are under obligation to ratify the opium convention and to enact the necessary legislation for its enforcement within twelve months. General supervision over the execution of the convention is entrusted to the League of Nations.

Post-Graduate Hospital Endowment Fund.—The New York Post-Graduate Medical School and Hospital reports that a total of $751,694 has been reached in its $2,000,000 endowment fund campaign. Among the large contributors were: Mrs. James Farrell, $25,000; Mrs. Stephen Olin, $500; J. M. W. Hicks, $500; Mrs. Vanderbilt, $500; F. W. Jennings, $500, Hornblower, Miller, Garrison and Potter, $500; Anonymous, $5,000; Henry J. Davis, $500; Fred Huyler, $500; Warner B. Leeds, $500, and Artemus Ward, $1,000. An anonymous contribution of $20,000 has also been received.

Military Surgeons Hold Meeting.—At the annual meeting of the Association of Military Surgeons of the United States held in New Orleans, April 22 to 24, under the presidency of Col. Joseph A. Hall, M. C., Ohio N. G., Cincinnati, the following officers were elected: president, Asst. Surg.-Gen. John W. Kerr, U. S. P. H. S., Washington, D. C.; vice presidents, Med. Dir. (Captain) Frank M. Pleadwell, M. C., U. S. Navy, Washington, D. C.; Col. Charles Lynch, M. C., U. S. Army, Washington, D. C., and Col. David S. Fairchild, Jr., M. C., Iowa N. G., Clinton, Iowa, and secretary-treasurer and editor, Col. James Robb Church, M. C., U. S. Army, Washington, D. C. (reelected). The 1921 meeting will be held in Washington, D. C., probably in October.

Bequests and Donations.—The following bequests and donations have recently been announced:

Paterson, N. J., General Hospital; St. Josephs' Hospital, and Barnert Hospital, each $5,000; Paterson Orthopedic Association and Paterson Eye and Ear Infirmary, each $4,000, by the will of William H. Heap, Paterson.

Paterson, N. J., General Hospital; St. Joseph's Hospital, and Barnert Hospital, each $5,000, by the will of Lewis Levi, Paterson.

Woman's and St. Luke's hospitals, New York City, each $5,000; Society of Widows and Orphans of Medical Men of New York City, $1,000, by the will of Mrs. Anna M. Sandham.

Children's Hospital, Philadelphia, $1,000, and after the death of one relative $10,000, by the will of Mrs. Francis A. Roberts.

Philadelphia Home for Incurables and Philadelphia Home for Consumptives, each $1,000, by the will of Catherine A. Delk.

New York Post-Graduate Medical School and Hospital Endowment Fund, $250,000, contingent on the raising of $1,000,000, by James F. Brady and Vincent Astor.

FOREIGN

Personal.—The Copenhagen University has awarded the Salomonsen prize to Prof. V. Ellermann for his works on leukemia in fowls. The fund for promotion of research on diabetes has been awarded to Dr. H. C. Hagedorn.——Prof. Vittorio Maragliano, son of Senator and Professor Maragliano of Genoa, has had two fingers amputated on account of roentgen injury in his professional work as radiologist.——Prof. K. Landsteiner of Vienna has accepted a call to the Hague as chief of the public hospital, and has resigned his post as director of the institute for pathology at the Wilhelminenspital a Vienna.

Nicolai and the Berlin Medical Students.—THE JOURNAL mentioned Jan. 26, 1918, that Prof. G. F. Nicolai on his return to Germany had been imprisoned for publishing a

book, "The Biology of War," in which he pointed out the warping of the conceptions of German scientists and military men in the course of hostilities, disregarding humanity and citing specific instances. Nicolai escaped by aeroplane to a neutral country, but returned later and was recently appointed professor extraordinary by the minister of public instruction, K. Haenisch. When he opened his course of lectures, the students created such a disturbance, denouncing him as a traitor, that he has been unable to continue the course. The governing board of the University of Berlin has also recently formally declared that he is unworthy of a chair in the university "as he had forsaken the country and his civilian duties and had published in a neutral country a book which placed poisoned weapons in the hands of the foe." The *Deutsche medizinische Wochenschrift* comments that "members of all parties must agree in this judgment, and the grounds therefor. It is remarkable, however, that the university authorities did not protest in this way at the time Nicolai was given the chair last October." Before the war he was privat-docent of physiology.

Deaths in Other Countries

Dr. **M. T. Buch** of Helsingfors, author of manuals "Physiology of Appetite and Hunger," "Physiology of Digestion" and smaller works along these lines, aged 70.——Dr. **Norberto Barbot** of Montevideo, formerly chief of the public health service in the state of Rio Negro and for many years the leading physician of Fray Bentos, aged 57.——Dr. **Oriol Solé Rodríguez,** the minister representing Uruguay at Lima, Peru, aged 60. He had been a member of the Uruguayan parliament and minister from Uruguay at Hamburg, and later in Italy and Brazil until appointed minister plenipotentiary to Peru, aged 60.——Dr. **Isidro Lobo,** formerly inspector general of the medical department of the Argentine army with which he had been connected since 1883.——Dr. **A. Steiger,** a well known ophthalmologist of Zurich.——Dr. **R. Archambault,** medical inspector of the port of Rosario, Argentina.——Dr. **V. Ferreira dos Santos,** who occupied a high position in the medical department of the army of Portugal.

LATIN AMERICA

Scientific Board in Nicaragua.—In accordance with the recommendation of the superior board of public health, the government has established a scientific board for the eradication of yellow fever. The board will have charge of all matters relative to yellow fever cases and the prevention of the disease. Telegraph, telephone and postal frank privileges have been granted to this body.

New Sanitary Convention Between Brazil, Uruguay and Argentina.—Uruguay has taken the lead in the effort to unify sanitary requirements in regard to third class passengers arriving at their ports. The president and public health service of Uruguay ask that each of the countries will appoint a delegate to confer and adopt a uniform plan of requirements with which the navigation companies will have to comply.

Tribute to Two Men of Science.—Under this heading the *Crónica Médica* of Lima, Peru, publishes an official notice from the president of the republic to the effect that as it is the duty of the public powers to present to the gratitude of the people and of posterity the memory of men who by their knowledge and character have contributed to national progress, he has ordered that statues of the two physicians, Dr. H. Unánue and Dr. B. Herrera, be erected in the university park at Lima at the expense of the state.

Dismissal of Dr. Ribeyro.—Dr. Ramón Ribeyro, director of the National Institute of Vaccine of Peru, has just been dismissed from his position by the director of public health. In his letter commenting on this matter, Dr. Ribeyro recalls that he had occupied this position for twenty-four years and had just been appointed corresponding member of the Society of Exotic Pathology of Paris because of his work on tropical diseases.

Academy of Medicine Offers Prize.—The Academy of Medicine of Porto Rico offers its fifth annual prize for the best work on "A Practical and Economic Plan for Rural Sanitation in Porto Rico." The prize amounts to $500. The contest is open only to physicians located in Porto Rico, and the articles must be typewritten, make no mention of the author's name (this should be given in a separate closed envelop, having the same motto as the original article), and be in the hands of the secretary of the academy, Dr. P. Gutiérrez Igaravídez, San Juan, on or before Sept. 15, 1920.

Government Services

Health Conditions of the Army

During the week ending April 16, there was a slight increase in the hospital admission and death rates, but a decrease in the number of new cases of communicable diseases. Measles is reported in numbers from several stations, but nowhere has it assumed epidemic proportions. Of fifteen deaths from disease, eight were caused by tuberculosis, and two by pneumonia. Eight new cases of influenza, five of pneumonia, three of scarlatina, two of diphtheria and three of varicella are reported from the American Expeditionary Forces in Germany.

Public Health Service Hospitals

Up to date, twenty-one army hospitals have been turned over to the Public Health Service by the War Department. No others are now available, and the Committee on Public Buildings and Grounds will be called on to appropriate at least $15,000,000 for the purchase and construction of additional hospital units to take care of immediate requirements for ex-service men under the War Risk Insurance Act. In the Urgent Deficiency Bill, just approved by the House Committee on Appropriations, $7,666,000 is placed at the disposal of the Public Health Service for its fiscal requirements to June 30, 1920.

Army Reorganization Bill

The Army Reorganization Bill has passed both the Senate and House, but because of some differences it will be submitted to a conference committee. The House bill fixes the entrance age limit of an Army medical officer at 54 years; the Senate bill at 50 years. The former provides for the promotion of medical officers according to length of service by a board of from three to five officers, subject to review by the Secretary of War; the Senate bill provides promotion to the grade of captain after three years' service, to major after fourteen years, to lieutenant-colonel after twenty years and to colonel after twenty-six years. Both bills provide that medical officers who were in service during the World War and are now in the Medical Reserve Corps will be eligible for appointment in the regular Army after July 1, 1920. Commissioned rank for nurses is prescribed in both bills.

Foreign Letters

LONDON

April 10, 1920.

Military Control of the Army Medical Department

In the House of Commons, Lieutenant-Colonel Fremantle delivered a powerful criticism of army medical administration. He pointed out that the director-general of the army medical service was responsible only for the provision of physicians, nurses, drugs, instruments and dressings. When a breakdown occurred it was almost invariably in the provision of hospitals, or equipment, or in transport arrangements. The tragic breakdowns in the Crimean and South African wars were due to the difficulty of coordination. The result was the hospitals commission, which recommended that the director-general of the army medical service should be on what was then called the army board; but all that was arranged was that he should be summoned to the army council whenever his advice and special knowledge were required. But who knew when the advice of the specialist was required? Expeditions were undertaken without consulting him. The report of the Dardanelles commission showed that the errors were due largely to the lack of cooperation and provision in thinking out the probabilities. A committee of investigation recommended that the director-general of the army medical

services should come under the adjutant-general, because sanitation was so much a question of discipline. It was; but hospitals depended on other things that came from the quartermaster-general, from military intelligence and from the chief of the general staff, and there was no reason why hospitals or other branches of the medical service should come under any one of those three officers. An officer was needed on the army council who would be responsible for all materials and supplies, and who would have the power required to get hospitals efficient. Lord Esher, who presided over the committee referred to, had said: "How much the suffering undergone by our soldiers in the war was due to the shortsightedness of my committee will never be known." Certainly, the control of the adjutant-general's branch of the army medical corps was and is responsible, not only for the early failure to grip the medical factors of this war, but for the hampering conditions under which Sir Alfred Keogh worked. His triumphs and those of the army medical corps were achieved in spite of obstacles that the subordination of science to ignorance, of elasticity to military discipline, explains but cannot justify. Lieutenant-Colonel Fremantle appealed to the government to strengthen the army council by placing on it the director-general of medical services and to free from the control of a purely military officer a body of men mostly volunteers from highly trained professions and dealing with technical difficulties altogether outside the orbit of vision in which the soldier pure and simple habitually moved. Mr. Churchill, secretary of state for war, complimented Lieutenant-Colonel Fremantle on his speech, and promised that it would be carefully studied and examined by those in the war office specially concerned with the subjects mentioned.

An Appeal for Medical Journals from Austria

In the *Times*, Sir Clifford Allbutt makes an appeal on behalf of Austrian physicians and students. He has heard from Professor Wenckebach that their penury is so great that they cannot afford a cent for books or journals, home or foreign. He therefore appeals to Great Britain for recent medical and scientific literature for which students in all faculties are athirst. He describes the zest with which a group of students will pounce on any fragment of a journal which may drift into their bare libraries. Sir Clifford Allbutt therefore begs the readers of the *Times* not to throw away journals, books or papers, and perhaps to make some little sacrifice to spare such literature for the Vienna University. A London firm has undertaken to forward them in bulk.

The Rationing of Butter and Sugar in the Case of Invalids

The only foods now rationed are butter and sugar. The maximum amount of government butter which food committees can grant is 4 ounces weekly in ordinary cases and 8 ounces in cases of tuberculosis, diabetes and cancer. Applications for extra butter must be accompanied by a certificate that failure to obtain the extra ration would either (*a*) be definitely prejudicial to the health of the applicant or (*b*) delay his recovery. A certificate to the effect that the applicant is unable to digest margarin will no longer be required in view of the difficulty experienced by physicians in giving such certificates. In making this concession, the ministry impresses on physicians that there is still a serious shortage in supplies of imported butter, and asks for their cooperation in limiting such applications to cases in which they are fully satisfied that, owing to exceptional circumstances, margarin will not meet the needs of the patient. Extra allowances of sugar may be granted up to 1 pound weekly (inclusive of the ordinary ration) to applicants unable to take solid food, either on account of difficulty in swallowing or because their disease necessitates a "slop" diet, and up to 10 ounces weekly (inclusive of the ordinary ration) to children under 2. Food control committees will not themselves deal with, but will forward to the medical section of the ministry applications for extra sugar in the cases of: (*a*) elderly persons who by reason of infirmity are on a specially limited diet; (*b*) delicate children who are unable to eat much solid food or whose parents are, through lack of means, unable to provide substitutes for sugar, and (*c*) tuberculous patients whose diet is certified by the physician to be limited either by reason of poverty or because of the disease's being in an acute stage, and when a larger allowance is recommended than the committee itself is empowered to grant.

A National Institute of Psychology and Physiology as Applied to Industry and Commerce

An appeal for the foundation of such an institute has been made with the support of leaders of industry; psychologists and physiologists, like Dr. C. S. Meyer of Cambridge, Prof. C. S. Sherrington, and Prof. E. H. Starling; and educationists such as Sir Robert Blair and Sir Alfred Keogh. Of the means proposed, one of the chief is the establishment of a well-equipped laboratory or laboratories for research into various occupations, in order to determine the conditions necessary to get maximum output with minimum of fatigue and discomfort to the worker, such as elimination of unnecessary movements; and to study the causes of mental and muscular fatigue and the methods of reducing it. Tests would be made in the laboratory for the purpose of establishing standards by which workers can be selected for the occupations for which they are best suited, mentally and physically. These standards would enable parents and after-care committees to be advised as to the best vocations for children, and would thus eliminate much waste at the outset, and prevent the discontent which arises when a worker finds out too late that he has taken up an unsuitable occupation and is a square peg in a round hole. The facts established by research would be collected and classified, and from time to time published in such a form as to bring out their practical value. Another function of the institute would be to provide training courses and lectures for investigators, managers, foremen and welfare workers in the practical applications of psychology and physiology, and it would undertake investigations at factories and offices in relation to any special problem. It would study the conditions that tend to promote the health, comfort and welfare of the worker, and also the psychologic relations between employer, manager, foreman and worker, with special reference to securing harmony and cooperation. It would further undertake propaganda work among employers and employed, and cooperate actively with organizations of both, for the furtherance of national unity and prosperity.

The Measurement of Emotion

At the Royal Society of Medicine, Prof. A. D. Waller, F.R.S., gave a very interesting lecture on the measurement of human emotion. He pointed out that emotion produced appreciable changes in the skin, such as vasomotor effects and sweating. He believed that there existed other phenomena under the control of the central nervous system. Cell metabolism was probably influenced directly by impulses arising in the central nervous system. Under certain influences the porous envelops surrounding every cell became more porous, and cell metabolism increased; under others, they became less porous, and cell metabolism diminished. These changes could be appreciated by the alterations produced in the resistance to the electric current. The hand of a subject was placed in the arm of a Wheatstone bridge and the resistance measured. A painful stimulus, physical or psychic, then caused a deflection of the mirror galvanometer. He thought that the alteration of

resistance was due to nervous impulses passing down the peripheral nerves and acting on the cells through their surrounding membranes. In the passive state, resistance varied in different individuals and at different times of the day. There was a definite daily cycle in resistance, which was highest during the early hours of the morning and lowest in the afternoon. These periods corresponded with the periods of minimum and maximum metabolism. For these observations the palms or soles should be used; with other surfaces of the body the reactions were less marked and were open to doubt. The reason for this was obscure. A practical demonstration was then given on an assistant and a volunteer from the audience. The striking of a match with the threat of burning caused an immediate deflection of the galvanometer. The actual burning caused a greater diminution. A deflection occurred when the subject coughed. This was due, not to any emotion associated with the cough, but to the passage of a nervous impulse down the nerves of the arm. There was an interval between the cough and the deflection of the galvanometer, which was attributed to changes at the periphery rather than in the highest centers. Contrary to expectation, hysterical subjects proved less likely to show deflection than normal persons.

Leprosy as a Deficiency Disease

The fish hypothesis of leprosy was advocated with his characteristic persistency by Sir Jonathan Hutchinson throughout his long life. The incredulity with which it was received did not disturb him in the least. The greatest observer of his age, if indeed not of any age, he read the book of nature with infinite care and the insight of genius. Like all reformers, he had encountered incredulity and opposition in his greatest advances. If here they were more lasting, the only thing to do was to go on teaching. He maintained that leprosy was due to eating fish in a state of incipient decomposition. The cause was "some ingredient or parasite generated by or introduced into fish which had not been cured or cured badly." A study of the geographic distribution convinced him that neither climate nor race had anything to do with the disease. The observation that it prevailed almost exclusively on islands, on the shores of continents, and along the courses of rivers led to the conviction that it must in some way be due to the eating of fish. He accumulated an immense amount of evidence, such as the following: Leprosy is more prevalent among Roman Catholics than among those by whom fish is not eaten by reason of religious ordinance. The Jains and high-caste Brahmans of India, who are strict vegetarians, are almost free from leprosy. Leprosy did not affect the Hottentots until smoked fish was introduced among them. The number of lepers in the whole of India is five in 10,000, while in the fishing island of Minicoy it is 150 in 10,000. All over the world leprosy is a disease of the tribes that fish and not of those that hunt. Of these and kindred facts adduced by him and too numerous to mention, no other explanation than his has ever been given. But the discovery of the bacillus of leprosy by Hansen in 1874 caused a revival of the contagionist doctrine of leprosy, and it was assumed that a disease due to a specific bacillus could not be due to any article of food. And so the position has remained. But at the Royal Society of Medicine a paper has just been read by Mr. A. S. Dutton which tends to show that after all Hutchinson was right—as he always was—in the conclusion which he drew from the facts, though not in his pathologic speculation. He could not have arrived at the truth in this, for the conception of "deficiency diseases" did not then exist. Mr. Dutton referred to Hutchinson's observation that leprosy never developed in the United States except in parts of California, which he attributed to the fact that it was almost the only country where colonization took place without an initial stage of considerable hardship, and that a good variety of foods was practically always available. Mr. Dutton remarked that though leprosy was considered to be due to *B. leprae*, it was curious how closely the nervous symptoms of beriberi resembled those of lepra anaesthetica. Each was also prevalent in the far East. Lepra anaesthetica could occur without lepra tuberculosa and be present for a considerable time before the latter. This appeared to support the food theory. Mr. Dutton suggested that when the food supply was mainly fish, a deficiency in diet occurred. The salting of fish would produce a loss in its nutritive value. Leprosy might eventually be recognized as partly a deficiency disease, sometimes owing to a predisposition caused by a diet mainly of fish, and sometimes to a diet deficient in various necessary elements. If the bacillus then gained access to the body, the whole chain of tuberculous manifestations would be added.

BELGIUM

April 3, 1920.

Miners' Nystagmus

It is fairly well known with what great activity the industries of the Liége basin have combated occupational diseases in general. The hookworm dispensaries for miners obtained appreciable results, and in this preventive campaign, Professor Malvoz succeeded in eradicating a disease that had become a great menace. A rather curious disease observed in the mines, and against which serious measures are being taken, is miners' nystagmus. In reality, among all miners who work under bad lighting conditions, in metal mines as well as coal mines, visual fatigue is common. The fatigue may be limited to the photoreceptor structures of the eye (causing hemeralopia and defective retinal perception), but most often it passes this stage and attacks the centers that govern muscular equilibrium and the protective reflexes of the eye, causing nystagmus and blepharospasm. It results in visual disorders which become progressively worse, and which lead finally, especially among coal miners, to psychic disorders from exhaustion of the central nervous system (amblyopia, tics and neuroses). The latter eventuality is fortunately rare; ordinarily the troubles are limited to the visual apparatus. The manifestations are extremely variable in different subjects, and even in the same subject at different times. The clinical evolution of this fatigue depends on the physical condition of the individual person and on his physiologic resistance. There are periods of aggravation and remission. The symptoms are aggravated by enfeebling intercurrent diseases, such as pneumonia and typhoid fever. Workmen who are poorly nourished, weakened by overwork or privation, and those with domestic difficulties are easy prey for serious forms of the disease. Good physical condition, and proper rest and nourishment, on the contrary, act as deterrents to the development of the disease. Dr. Stassen has just published a statistical and experimental work on the subject. Of almost 20,000 miners examined by him, about 5,000, or 25 per cent., presented signs of varying degree of ocular fatigue. In the metal mines, only the benign and occasionally the moderately intense forms were found. In coal mines, however, all degrees of ocular fatigue were encountered. Of 1,000 coal miners, eighty had slight visual fatigue at the end of the day, 125 had some slight nystagmus, thirty had a marked diminution of vision with nystagmus, ten were partly incapacitated for work, and two had ocular neurosis and general nervous disorders which made them totally incapacitated for work. Dr. Stassen says that improved lighting of the mines is the first requisite in the prevention of visual disorders among miners. He cites cases of severe ocular fatigue which disappeared after the men

worked in pits with galleries lighted by incandescent electric lamps or in metal mines lighted by acetylene lamps. A successful campaign against miners' nystagmus requires the cooperation of the public authorities, mine owners and miners, a cooperation based on the same principles as the campaign against hookworm disease among miners in Liége province.

Abdominal Hysterectomy

Dr. Frans Daels presented an interesting paper on the indications and technic of total abdominal hysterectomy before the Académie royale de médecine. He insists on hysterectomy in the treatment of cancer of the cervix. After a careful bacteriologic study of the parametrium, he has reached the conclusion that the streptococcus infection which exists in the carcinomatous area in 60 per cent. of the cases extends besides, six times out of ten, to the parametrium and to the lymphatic glands. The preliminary treatment before operation on patients with infection consists in curettage and cauterization of the base of the cancerous crater, followed by applications of radium for fifteen days. This preventive treatment permits better clearing away of the carcinomatous lesion and improves the general condition, but it does not inhibit the infection or prevent the infected tissues from coming in direct contact with the peritoneum, the ligatures and the suture lines. Therefore, the author wonders if it is not possible to disinfect these tissues, or, at the very least, to stop the extension of the infection. Clinical and laboratory experience justify him in recommending a solution of silver nitrate, 1 per cent. in a 0.5 per cent. solution of nitric acid, as having a direct bactericidal action and as stimulating proliferation. This topical treatment does not prevent Dr. Daels from considering careful peritonization of the true pelvis as the best preventive of extension of the autochthonous infection. In two of his cases the surfaces were successfully covered with large transplants from the peritoneum. After the hysterectomy is done, the walls of the vagina are fixed to a band formed by suturing the round ligaments together. This assures the organs of the true pelvis their normal plastic and static surroundings.

Lethargic Encephalitis

Lethargic encephalitis has made its appearance in Belgium. In western Europe the disease first appeared at Verdun in 1915, and at Bar-le-Duc in 1916. It was first clearly recognized in Paris and London in March, 1918, and numerous papers have appeared on the subject in France and England. In the latter country, the government organized a scientific investigation; the report of this commission concludes that lethargic encephalitis is a clearly defined disease. The first paper on the subject in the Belgian medical press was that by Drs. Burger and Focquet. At a recent meeting of the Académie royale de médecine, Dr. Paul Masoin reported several cases of the disease, and recalled some cases which appeared in Flanders a year ago, especially at Ruddervoorde, where it assumed epidemic proportions. These cases were the subject of a report by Professor Van Ermengem to the Conseil supérieur d'hygiène in October, 1919. The disease was restricted to a few villages of Flanders for one year, but is now distributed over all provinces. For this reason, Dr. Masoin proposed that the academy recommend that the department of hygiene direct the attention of the medical profession to the disease and request all physicians to report suspected cases to health inspectors and to note any peculiarities which might help in studying the disease. Up to the present no attention has been paid to this appeal, except in one instance, the report by Drs. Lamalle and Leroy of the apparition of the disease in Liége. Their case was observed during a small epidemic of influenza.

Deaths

Cassius M. Witmer ⊕ Santa Ana, Calif.; Jefferson Medical College, 1881; aged 61; for thirty-five years a practitioner of Marble Hill, Mo.; formerly a member of the board of managers of the State Hospital, Farmington, Mo.; president of the Bollinger County Bank, Lutesville, Mo.; director of the Bank of Marble Hill, Mo., and of the South East Missouri Trust Company, Cape Girardeau, Mo.; vice president of the Telephone Company at Advance, Mo.; died, April 11, from cerebral hemorrhage.

Bernard Bartow ⊕ Buffalo; University of Buffalo, 1874; aged 70; a member of the American Orthopedic Association and American Academy of Medicine; orthopedic surgeon to the Children's Hospital and consulting orthopedic surgeon to the Central and Municipal hospitals, Buffalo; emeritus professor of orthopedic surgery in his alma mater; died in the Children's Hospital, Buffalo, March 29.

William Henderson Ruddick, Boston; Harvard University Medical School, 1868; aged 75; a member of the Massachusetts Medical Society; assistant surgeon of the Seventh Massachusetts Infantry during the Civil War; also a veteran of the war with Spain; formerly assistant superintendent of the New Hampshire State Hospital, Concord; died, April 8.

Buford Nelson Dunavant ⊕ Memphis, Tenn.; Memphis (Tenn.) Hospital Medical College, 1906; aged 37; major, M. C., U. S. Army, and attached to the 115th Field Artillery; formerly major, M. C., N. G., Tenn., and assigned First Infantry; was shot and fatally wounded by policemen summoned to quiet a disturbance at his residence, April 11.

Peter Winslar Franklin Corning, Londonderry, N. H.; Baltimore Medical College, 1906; aged 47; a member of the New Hampshire Medical Society; while driving in his automobile over a grade crossing south of Londonderry, April 12, was struck by a train, and died while being taken to the Lawrence (Mass.) General Hospital.

Seth Wicks ⊕ Chicago; University of Illinois, Chicago, 1903; aged 40; captain, M. R. C., U. S. Army, with service at Camp Custer, Mich., and discharged Jan. 29, 1919; instructor in biology in his alma mater; died in Lake View Hospital, Chicago, April 24, after an operation for appendicitis.

Edward Joseph Connell ⊕ New York City; Cornell University Medical College, New York City, 1899; aged 43; assistant otologist to the Lincoln Hospital, and assistant ophthalmologist and aural surgeon at the Fordham University Dispensary, New York City; died, April 11, from pneumonia.

Henry Sherman Kilby, North Attleboro, Mass.; Harvard University Medical School, 1878; aged 68; a member of the Massachusetts Medical Society; for many years school physician and a member of the school committee of North Attleboro; died, April 10.

Mead Charles Carpenter ⊕ Linesville, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1895; aged 55; while driving in his automobile over a grade crossing of the Pennsylvania system at Linesville, April 9, was struck by a train and instantly killed.

Kire Le Clare Clock, Ravenwood, Colo.; Barnes Medical College, St. Louis, 1899; aged 56; physician of the Victor-American Mine; died, April 22, from the effects of poison, self-administered, it is believed, with suicidal intent.

Isaac Irwin Kalbach, Glen Riddle, Pa.; Jefferson Medical College, 1893; aged 48; a member of the Medical Society of the State of Pennsylvania; died in the Taylor Hospital, Ridley Park, Pa., April 16, from cerebral hemorrhage.

Robert Lee Taylor, Cleveland, Tenn.; University of Nashville, Tenn., 1897; aged 50; died in his office, April 7, from the effects of a gunshot wound of the head, self-inflicted, it is believed, with suicidal intent, while despondent.

Walter Ross, The Pas, Manit.; Manitoba Medical College, Winnipeg, 1909; aged 33; Major, Canadian A. M. C. and D. A. D M. S.; died in the Canadian Hospital, Buxton, England, February 6, from pneumonia.

Martin Friedrich ⊕ Cleveland; Western Reserve University, Cleveland, 1894; aged 63; chief of the Bureau of Communicable Diseases of Cleveland; for many years health officer of the city; died, April 8.

Henry Oliver Conoway, Grand Island, Neb.; Eclectic Medical Institute, Cincinnati, 1875; aged 71; formerly of Phillips, Neb.; died in the Grand Island General Hospital, April 1, from cerebral hemorrhage.

⊕ Indicates "Fellow" of the American Medical Association.

Earl E. Craig, Wilson, Ark.; University of Tennessee, Nashville, 1907; aged 41; a member of the Arkansas Medical Society; was killed by the overturning of his automobile in Wilson, March 30.

Arthur O. Sax ⊕ Chicago; Hahnemann Medical College, Chicago, 1897; aged 52; professor of theory and practice of medicine in his alma mater; died, April 23, from valvular heart disease.

Charles Ernest Walters, Dexter, Mo.; Barnes Medical College, St. Louis, 1907; aged 41; captain, M. C., U. S. Army; a member of the Missouri State Medical Association; died, March 26.

Percy Bissell Grant, Roblin, Manit.; Manitoba Medical College, Winnipeg, 1908; aged 39; died in the Winnipeg General Hospital, January 5, from appendicitis.

John Trumbull, Vina del Mar, Chile, S. A.; Harvard University Medical School, 1880; aged 64; died in Valparaiso, Chile, February 26, from chronic endocarditis.

Iverson L. Lofton, Nashville, Tenn.; University of Nashville, Tenn., 1860; aged 79; a Confederate veteran; died, March 20, from cerebral hemorrhage.

Victor H. Parker, Carmi, Ill.; Jefferson Medical College, 1876; aged 67; died in a hospital in Jacksonville, Fla., April 6, from cardiorenal disease.

Joseph Johnston Shanks, Salem, Va.; University of the City of New York, 1882; aged 63; died at McAlpin, W. Va., March 31, from pneumonia.

John J. Theorell, Porter, Ind.; Hahnemann Medical College, Chicago, 1898; aged 71; died, February 20, from chronic interstitial nephritis.

Thomas John Nolson Gatrell, Santa Ana, Calif.; Rush Medical College, 1900; formerly of Oberlin, Ohio; died, February 12.

Valentine Bowers, Frankfort, Ind.; Central College of Physicians and Surgeons, Indianapolis, 1880; aged 77; died, March 4.

Julius Jerome Goldstein, New York City; University and Bellevue Hospital Medical College, 1909; aged 33; died, April 14.

William James Weeks, Ottawa, Ont.; Queen's University, Kingston, Ont., 1865; aged 80; died, February 22, from heart disease.

A. Thomas Buchanan, Chicago; St. Louis Medical College, 1872; aged 78; a veteran of the Civil War; died, April 22.

Reuben T. Giffin, Burnett's Creek, Ind.; Fort Wayne (Ind.) College of Medicine, 1892; aged 75; died, March 3.

H. Burton Kirkland, Berea, Ohio; Eclectic Medical Institute, Cincinnati, 1891; aged 52; died, April 21.

Franz G. Koehler, Philadelphia; aged 92; a practitioner since 1849; died, March 8, from pleurisy.

James Case Brixey, Chicago; College of Physicians and Surgeons, Chicago, 1905; died, April 22.

Robert Reid Weir, Itasca, Texas; University of Nashville, Tenn., 1884; aged 62; died recently.

Simon D. Hornocker, Silverville, Ind. (license, Indiana, 1897); aged 87; died, March 16.

Marriages

CHAUNCEY DEWITT BEEBE, Sparta, Wis., to Miss Marguerite Dreneen Bittner of New York City, at Chicago, April 3.

HAROLD KOCH SHAWAN, Detroit, to Miss Jane Coleman, at Chicago, April 19.

CHARLES ALLEN MCWILLIAMS to Miss Nona Harry, both of Gulfport, Miss., April 8.

WARREN ASHLEY COLEMAN to Miss Christine Edwards, both of Eastman, Ga., May 1.

JAMES HOWARD HUDDLESON, JR., to Miss Mary Ellen Pascoe, both of New York City, February 17.

JOSEPH G. WILSON to Miss Anne Dunning, both of New York City, April 19.

HENRY WILLIAM ABELMANN to Miss Anabel Borg, both of Chicago, April 17.

FREDERICK HOLTON MORRISON, Newton, N. J., to Miss Mary C. Shaw of Stanhope, N. J., March 24.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

SOME MISBRANDED DRUG PRODUCTS AND NOSTRUMS

Quinin Sulphate and Calomel Tablets.—The Drug Products Company, New York City, shipped in September, 1917, quantities of "Quinin Sulphate Tablets" and "Calomel Tablets" which were adulterated and misbranded. The tablets of quinin sulphate were labeled as 2 grain tablets. Analysis by the Bureau of Chemistry showed that they actually contained only about 1½ grains (1.54 gr.) of quinin sulphate to each tablet. The calomel tablets were labeled as ¼ grain, while the Bureau of Chemistry's analysis showed that they actually contained less than ⅛ grain (0.156 gr.) calomel to each tablet. In December, 1918, the company pleaded guilty and was fined $20.—[*Notice of Judgment No. 6636; issued March 22, 1920.*]

Some Miscellaneous Tablets.—The Carroll Dunham Smith Pharmacal Co. of New York City shipped in September, 1917, a number of tablets which were declared adulterated and misbranded. Some "Acetanilid Tablets" which were labeled as 5 grains were found to contain only 2.98 grains, or a shortage of 40 per cent. Some "Nitroglycerin Tablets" which were labeled as ⅟₁₀₀ grain were found to contain only 0.0139 grain, or a shortage of 30 per cent. Some "Acetylsalicylic Tablets" labeled as 5 grains were found to contain only 4¼ grains, or a shortage of 15 per cent. Some "Acetphenetidin and Salol Tablets" labeled as containing 2½ grains each of acetphenetidin and salol were found to contain only 0.37 grains acetphenetidin and 1.45 grains of salol per tablet, being a shortage of 85 per cent. and 42 per cent., respectively. Some "Quinin Sulphate Tablets" which were labeled 2 grains were found to contain approximately 1.3 grains, or a shortage of 33 per cent. In December, 1918, the company pleaded guilty and was fined $25.—[*Notice of Judgment No. 6682; issued March 29, 1920.*]

Hostelley's Hypophosphites.—William H. Hostelley, who traded as W. H. Hostelley & Co., Philadelphia, shipped in November, 1917, some "Hostelley's Hypophosphites (Syr. Hypophos. Comp.)" and also "Hostelley's Chemically Pure Hypophosphites (Sol. Hypophos. Comp.)" which were adulterated and misbranded. These products were adulterated because when analyzed by the Bureau of Chemistry they were found to vary widely both from their declared composition and also from the National Formulary requirements. The "Syr. Hypophos. Comp." was also declared misbranded because it was falsely and fraudulently represented as a cure for tuberculous manifestations, neurasthenia, rickets, anemia, bronchial affections, nervous insomnia and senile depression "when in truth and in fact it was not." The "Sol. Hypophos. Comp." was also declared misbranded because it was falsely and fraudulently represented as a cure for tuberculous manifestations, alcoholic or sexual neurasthenia, all nervous and mental diseases, physical depression, senile decay and anemia when it was not. In February, 1919, Hostelley pleaded guilty and was fined $100 and costs.—[*Notice of Judgment No. 6747; issued April 9, 1920.*]

Stoddard's Pinus-Codeia and Miscellaneous Tablets.—G. S. Stoddard & Co., New York City, in November, 1917, shipped "Stoddard's Pinus-Codeia" and various tablets which were misbranded. The "Pinus-Codeia" was misbranded in that it failed to bear a statement of the quantity or proportion of codeia contained in each fluidounce of the article and it also failed to state that codeia is a derivative of opium. Some "Salcetol-Codeia Tablets" were misbranded in that

while they contained acetanilid, the amount of this drug was not declared on the label; neither did the label carry the information that codein sulphate is a derivative of opium. "Salcetol Phenylamine Ammonii Salicylate Tablets" was falsely and misleadingly labeled in that it was represented that the tablets contained ammonium salicylate when they did not and for the further reason that while the tablets did contain acetanilid the quantity or proportion of acetanilid was not declared. "Salcetol Co. No. 2 Infant Corrective" was sold under the claim that it contained bismuth subnitrate, zinc sulphocarbolate and phenylacetamide when as a matter of fact it contained none of them. It was further misbranded in that the label declared that it contained 1/30 of a grain calomel and no sugar when, as a matter of fact, it contained more than 1/30 of a grain of calomel and did contain sugar. "Cannabin Co. Tablets" were labeled as containing 1/40 gr. strychnin phosphid and 1/100 gr. brucin to each tablet; as a matter of fact they contained only about 1/77 gr. of strychnin phosphid and no brucin. In February, 1919, the company pleaded guilty and was fined $70.—[*Notice of Judgment No. 6714; issued April 9, 1920.*]

Dr. King's Star Crown Brand Pills.—The Northern Drug Co., Duluth, Minn., shipped a quantity of this stuff in August, 1917. The federal chemists reported that these pills consisted essentially of aloes and oil of pennyroyal and were coated with chalk, charcoal and sugar. The preparation was falsely and fraudulently represented as a cure for delayed and painful menstruation and menstrual irregularities, when it was not. In November, 1918, the company pleaded guilty and was fined $5.—[*Notice of Judgment No. 6713; issued April 9, 1920.*]

Marshall's Pain Drops and Other Nostrums.—Irving J. Carter, who did business as the M. W. Marshall Medicine Co., Redgranite, Wis., shipped in August, 1917, a number of nostrums which were misbranded. The Bureau of Chemistry analyzed these and reported on them as follows:

"Marshall's Unequaled Pain Drops."—This was found to consist essentially of red pepper, opium, ammonia, alcohol and water with rosemary flavoring. The nostrum was falsely and fraudulently represented as a cure for rheumatism, neuralgia, cholera morbus, all bowel complaints, sore throat, spinal disease, diphtheria in its most malignant form, liver and kidney complaints and various other conditions. It also was said to "contain no poisonous . . . matter" when it actually contained 2 grains of opium to the ounce.

"Marshall's Lung Syrup."—This "syrup" was found to consist essentially of morphin sulphate, ammonium chlorid, vegetable extractives, glycerin, syrup and flavoring material. It was falsely and fraudulently represented as a cure for consumption, asthma, whooping cough, pleurisy, croup, etc.

"Dr. J. C. Brown's Unequaled Liquid Drops."—The "drops" were found to consist essentially of red pepper, ginger, oil of sassafras, camphor, ammonia, trace of morphin, alcohol and water. They were falsely and fraudulently represented as a cure for sick and nervous headache, rheumatism, all bowel complaints, spinal diseases, diphtheria, etc., and were also labeled as containing no poisonous matter when in fact they contained 2 grains of opium to the ounce.

"Marshall's Blood and Liver Pills."—These pills were found to consist essentially of aloes and other plant material, chalk, sugar and starch. They were falsely and fraudulently represented as a cure for inflammation of the liver, stoppage of the menses, "irritable vindictive feelings and passions," kidney disease, nervousness, fevers, dyspepsia, etc.

"Egyptian Oil."—This was found to consist essentially of linseed oil with volatile oils, including sassafras and cedar oils and camphor. It was falsely and fraudulently represented as a cure for piles, diphtheria, coughs, colds, earache and erysipelas.

"Arctic Oil Liniment."—This liniment consisted, essentially, of a liquid in two layers. The upper layer contained kerosene, linseed oil, castor oil and camphor; the lower contained alcohol, ammonia, water, plant extract and a trace of iodin. It was falsely and fraudulently represented as a cure for diphtheria, rheumatism, catarrh, all kinds of lameness, etc.

"Rheumatic Oil."—This also separated into two layers. The upper layer was found to consist essentially of kerosene, linseed oil, castor oil and camphor; the lower to contain alcohol, ammonia, water, plant extract and a trace of iodin. It was falsely and fraudulently represented as a cure for rheumatism, neuralgia, colic, nervous headache, diphtheria, spinal and hip complaints, colic and distemper in horses, etc.

In June, 1919, Irving J. Carter pleaded guilty and was fined $50.—[*Notice of Judgment No. 6748; issued April 9, 1920.*]

Correspondence

THE USE OF DRUGS IN OIL

To the Editor:—During the last winter I have been carrying on investigations in the use of drugs in oil, subcutaneously, intramuscularly and intravenously. Although the work has by no means reached a definite form to warrant publication as a completed investigation, I am, nevertheless, prompted to communicate the present results in this preliminary way, because it would be well for other hands to repeat whatever results may have been reached thus far.

In brief, it has been found that the local action of drugs, notably epinephrin, and local anesthetics, such as procain, exhibit a strikingly prolonged drug effect when the drug is administered subcutaneously and in an oil vehicle. It has been possible, therefore, to use epinephrin in oil for such clinical conditions as bronchial asthma, certain urticarial eruptions and in certain types of pneumonia, the method being to establish a local subcutaneous depot of epinephrin in oil, and to procure rather continuous epinephrization effects by repeating the subcutaneous inoculation every eight to twelve hours. With the collaboration of Dr. Theodore Blum it was possible to produce local anesthesia without apparent ill or toxic effect, for a duration of from ten to twelve hours, using the local anesthetic (procain) in oil.

Intravenously, it has been possible to give as much as 10 c.c. of olive oil at one time to a dog and to repeat this dose every third or fourth day, until as much as 100 c.c. has been administered. In rabbits the danger of fatal embolization from the intravenous use of oil is very great, while in dogs this is not so. In man, oil was administered intravenously in doses of 0.25 to 1.5 c.c. in a very small group of cases with no apparent signs or symptoms of embolization.

The intravenous effect of giving a drug in oil, in general, is to produce a gradual, uniform, even and prolonged effect, of a less intensity as compared with the administration of the same drug in aqueous solution, in which the effect would be abrupt, irregular, erratic, rather transient, and of striking intensity. Also, it has been demonstrated that increasing amounts of oil, when added to a definite and constant amount of drug, will diminish the intravenous effect of the drug until no intravenous effect is observed when sufficient oil is used. In other words, within limitations, the less oil used for a definite amount of drug, the more marked the intravenous effect. We have worked mainly with epinephrin, crystalline strophanthin, and to a lesser degree, with nitroglycerin and pituitary extract.

The drug with oil is embolized in the pulmonary capillary bed. We infer that the different pharmacologic action noted from the intravenous use of epinephrin in oil, for instance, as compared with the effect of the same drug in aqueous solution, is probably due to the fact that the drug in oil is carried to the pulmonary capillary bed and there enmeshed to form a local depot.

H. R. MILLER, M.D., New York

THE MENACE OF THE HOMICIDAL DEFECTIVE

To the Editor:—The lamentable assassination of our distinguished colleague, Dr. James W. Markoe, once more shows us the nonsense of our present insanity laws. I enclose a circular which the Brooklyn Neurological Society is sending to every hospital staff and every county society in New York, asking their cooperation in a fight for rational laws dealing with not only our mentally ill patients, but in criminal cases as well.

The agitation for a correction of our present defective insanity laws and procedure should be nation wide.

JOHN F. W. MEAGHER, M.D., Brooklyn.

The circular reads:

For years this society has advocated a readjustment of our insanity laws, not only for the welfare of our patients, but for the protection of society. Insanity, as it is usually termed, is a medical and not a legal problem. As the laws now stand, a judge or a jury has the deciding opinion as to whether a man is sane or insane; safe to be at large, or unsafe; and neither by education nor by training is either competent to decide. Most judges, having sound common sense, realize this and prefer to abide by the opinions of psychiatrists. There are a few who do not. Some of the most dangerous types of insanity—particularly paranoid conditions without deterioration—are the most difficult ones to diagnose.

Not infrequently such cases are merely asked in court whether they are insane, and on replying in the negative, are discharged forthwith! And a potential homicidal patient is thrown back on to society! We as physicians are helpless, for in this branch of medicine—psychiatry—a judge or jury are by our present laws clothed with superior diagnostic powers!

The Medical Society of the County of Kings, with a membership of one thousand physicians, indorsed our attitude, and in February so notified the governor. But unless all physicians, individually and collectively, will interest themselves in this subject, and interest both the press and the public, our efforts will not bear fruit. Instead, the present laws and the present procedure will remain as they are to the detriment of our patients, and a danger to society.

Will you not send resolutions to the governor, and to the members of the legislature, asking for an investigation into our insanity laws?

For let it be reiterated again, that insanity is a mental disorder — a medical problem—rather than a legal one. Personally, I know that most members of the bar agree to this. There should be no division of authority.

JOHN F. W. MEAGHER.
President, Brooklyn Neurological Society.

"OXYGEN INFLATION OF THE PERITONEAL CAVITY"

To the Editor:—With reference to the experience described by Dr. Armitage Whitman (THE JOURNAL, April 10, 1920, p. 1021) we would say that it is ill advised for any patient who has had the peritoneal cavity inflated with oxygen to assume the erect posture for at least twenty-four to thirty-six hours after the roentgen examination. For any one to submit to inflation and then maintain an erect posture, attempting to carry on his business and walking to and from his office to the hospital, would be, to say the least, extremely dangerous. In our attempt to render inflation an office procedure we have of late deflated our patients, in which case they are almost immediately relieved and may assume the erect posture much earlier. Deflation, with a few hours' rest in the recumbent posture, would have given Dr. Whitman the much sought for relief.

WILLIAM H. STEWART, M.D., ARTHUR STEIN, M.D.,
New York.

"TUBING AS A CAUSE OF REACTION TO INTRAVENOUS INJECTION, ESPECIALLY OF ARSPHENAMIN"

To the Editor:—In THE JOURNAL, April 10, 1920, appeared an article under this title from the pen of Stokes and Busman, in which the attention of the profession is called to reactions due to new rubber tubing. Permit me to state that I can fully corroborate their views, not on experimental grounds such as is furnished by the authors, but from a purely practical experience. A number of years ago, at least four or five, we were struck out of a clear sky by a number of reactions of the nature so vividly pictured by Stokes and Busman, most of them accompanied by herpetic eruptions. This happened in my service at Mount Sinai Hospital, and caused the closest scrutiny into technical errors, toxicity of drug, and the so-called "Wasserfehler," in which I was assisted by Dr. S. Bookman, physiologic chemist of the pathologic department of the hospital. All other causes having been excluded, I came to the conclusion that the reactions were due to new rubber tubing, a suspicion which was fortified by a subsequent analogous experience.

Since that time it has been the standard rule at Mount Sinai Hospital not to use new rubber tubing for intravenous injections until after it has been boiled in soda solution on three successive days for one hour each day.

We believe that by this procedure we have eliminated the so-called tubing reactions.

HERMANN GOLDENBERG, M.D., New York.

THE MEANING OF NONA AS APPLIED TO LETHARGY

To the Editor:—In Flexner's recent article on lethargic encephalitis (THE JOURNAL, March 27, 1920, p. 865) there is a reference to the obscurity of the term "nona," applied to this disease in southern Europe, and a philological surmise that it is really a mispronunciation of "coma." This seems to me a bit far fetched. I think there is a clearer etymological explanation. About thirty years ago, in 1890 when the African sleeping sickness was first called to the attention of students of tropical medicine, there was an epidemic of lethargy among the silkworms in southern France and northern Italy. At Strasbourg, where I was studying, this was spoken of as Schlaffsucht (Schlafsucht?) der Seidenraupen, or lethargy of silkworm caterpillars. In Italian, this form of the worm is called "nona," in French, "nonne." There was a great deal of discussion as to a possible common cause of this condition, "malattie de la nona," and human sleeping sickness, and some confusion in the application of the term. It seems quite reasonable to surmise that malattie de la nona, or "nona" for short, at first correctly applied to the lethargy of the silkworm, was finally made to include human lethargy as well. This explanation is offered to Professor Flexner for what it may be worth.

PERCY FRIDENBERG, M.D., New York.

FACTS LEADING TO PUBLICATION OF "ARMY FROWNS AND SMILES"

To the Editor:—Will you please be equally as fair to me and publish this reply in your next issue, as you were in publishing the article written by Surgeon-General Merritte W. Ireland in a recent issue regarding my book?

It is unnecessary to enter into a lengthly discussion of the issues involved; suffice it to say, everybody will agree that it is most unusual for a sane man near 34 years old to make such bold statements as I do in my book and then not only sign them but also add to his signature a "sworn affidavit that they were true," unless he knew whereof he spoke.

There are two clear, outstanding reasons why I was not allowed to testify in my own behalf, not even reprimanded for "making false statements," given an honorable discharge from the army two months after having been branded as a liar, and then refused a thorough investigation by the leading government officials of the United States: First, because they are the biggest bunch of back-boneless, pussy-footed white-washers that ever held power in any nation, so far as I know, so help me God. Second, because they knew full

well that I could prove the statements made in my book. Therefore my appeals for justice have been ignored or refused.

DOLPHUS E. COMPERE, M.D., Dallas, Texas.

[NOTE.—Possibly we ought to apologize for printing this communication; we publish it that we may be considered "equally as fair."—ED.]

COMPULSORY VACCINATION

To the Editor:—Compulsory vaccination is repugnant to the popular conception of our institutions. A small minority of our people object to it on business, religious or moral grounds, and a rather extensive minority heedlessly neglect it, so that I suppose today a third of our population is unvaccinated. It is doubtful, even if the courts sustained a compulsory vaccination law, whether it could be enforced with any useful degree of efficiency. Under such circumstances, nothing but the compulsion of fear will drive these recalcitrant ones to seek protection against this dread affection; for, so long as the state takes on itself to protect them by isolation and quarantine of the infected ones, so long will this efficient safeguard be neglected. And my suggestion is that they be driven by personal fear to seek this protection voluntarily. To that end I would repeal all law aimed at smallpox, and leave its victims free to mix indiscriminately with society; but I would provide by law for free vaccination to all comers.

WILLIAM B. ELY, M.D., Ainsworth, Neb.

"MEDICINE A HUNDRED YEARS AGO"

To the Editor:—In the abstract of Deelman and Delprat's paper (THE JOURNAL, April 17, 1920, p. 1138), the allusion to operations by Dupuytren and Larrey for kidney stone should read *bladder* stone. The first attempt even for renal calculus by Durham (London)was not made until 1870, and the first success was by Ingalls (Boston), Nov. 8, 1873.

J. RAWSON PENNINGTON, M.D., Chicago.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

DEFINITION OF ANOCI-ASSOCIATION, METABOLISM, HORMONES AND VITAMINS—EPINEPHRN TEST OF GOETSCH

To the Editor:—I shall be obliged to you for information on the following:

1. What is anoci-association; its philological derivation; different forms, applications, etc.?
2. A good definition of metabolism; the different kinds — "basal metabolism," etc.; philological roots; scientific applications, etc.
3. What are hormones; philological derivation; classification, names of those known; practical application?
4. What are vitamins; derivation of this word; classification, application, known kinds, etc.?
5. What is the epinephrin test of Goetsch; technic and clinical applications?

A. I., Ciudad del Carmen, Camp. Mexico.

ANSWER.—1. "Anoci-association" is coined from *a* (Latin privative particle) + *noci* (Latin *nocere,* to injure) + association (Latin *associatio*). Noci-association is the unconscious discharge of nervous energy under the stimulus of trauma, especially in surgical shock. The term anoci-association was introduced by Dr. G. W. Crile to characterize his method of so conducting the anesthesia and managing the operation that this injurious nervous discharge is prevented and counteracted. The procedure contemplates isolating the operative field from the brain by blocking the conduction of harmful sensory and traumatic impulses through the use of a proper local anesthetic. The patient is gently managed before operation, and if no contraindication exists, a preliminary injection of morphin or morphin and scopolamin is made. When the patient is under the influence of the anesthetic (Dr. Crile prefers nitrous oxid anesthesia), the field of operation is blocked by infiltration with procain (novocain), 1:4,000. The operation is conducted with gentleness, so as to avoid any unnecessary trauma. At the close of the operation a local injection of quinin and urea hydrochlorid avoids nerve exhaustion from after-pain and postoperative stimulation.

2. The term "metabolism" is derived from the Greek (μεταβολή, change). It is the act or process by which, on the one hand, the stable nonliving food is built up into complex and unstable living material, and by which, on the other hand, the living matter in protoplasm is broken down into less complex and more stable substances within a cell or organism. Metabolism has been divided into constructive metabolism (anabolism) and destructive metabolism (catabolism). The former comprises the processes by which food substances are converted into protoplasm, while catabolism is the means by which protoplasm breaks down into simpler products as waste or excretory products. In a broad sense, metabolism includes all processes involved in the maintenance of animal life. Basal metabolism is a measure of the energy metabolism of a normal fasting person at rest. It is determined by ascertaining the heat production or gaseous interchange, and is expressed in calories per kilogram of body weight.

3. The term "hormone" was introduced by Prof. E. H. Starling to characterize a group of chemical substances which, formed in one organ, are carried by the blood stream to an associated organ and there excite a specific functional activity. The word is coined from the Greek (ὁρμάω, arouse or excite). The active principles of internal secretions are hormones. Those which have been described are secretin (gastric hormone), hormones of the liver, pancreas, kidney, testis, ovary and corpus luteum, epinephrin and the active substances of the thyroid apparatus, the thymus gland and the pituitary body. The rational treatment of diseases of the ductless glands by organotherapy is based on recognition of the physiologic activities of the hormones.

4. Vitamins (from *vita,* life, and *amin*) are a class of substances of unknown chemical composition, believed to be necessary to normal nutrition and growth, and absence of which from the diet, it is stated, produces certain deficiency diseases, such as beriberi, scurvy and rickets.

5. The test referred to is that called "skin reaction of Goetsch." Eight minims of a 1:1,000 solution of epinephrin are diluted with an equal quantity of sterile water and injected hypodermically into the arm. Immediately there is formed an area of blanching around the point of injection, and about the margin of this usually a red areola gradually shading off into the surrounding tissue. In about half an hour the center of the white area becomes bluish gray to lavender, and at the end of about one and a half to two hours the red areola takes on the bluish or lavender color, while that in the center disappears. This lavender areola remains for about four hours from the time of injection and is the most characteristic part of the test. Accompanying the local reaction may be increase in pulse rate, with palpitation of the heart and an exaggeration of the tremor and nervous symptoms in general. The test is designed to elicit evidence of hyperthyroidism.

MARINESCO AND OGILVIE METHODS OF INTRASPINAL THERAPY

To the Editor:—Please describe the Marinesco and the Ogilvie technics for intraspinal therapy with neo-arsphenamin and arsphenamin. Please omit name in published answer.

W. S. R., Charleston, W. Va.

ANSWER.—The method of Marinesco, which Minea assisted in elaborating, was first published in the *Zeitschrift für physikalische und diätetische Therapie* (**17**:194, 1913) and soon after in the *Bulletin de l'Académie de médecine* (**71**:259, 1914). It consisted in the addition of from 6 to 12 mg. of neo-arsphenamin to 2 c.c. of the blood serum of the patient, after this had been inactivated. The mixture was placed on the water bath at 37 C. for forty-five minutes, and was then injected into the subarachnoid space. An injection was made every seven or eight days for as long as seemed indicated.

Ogilvie's method was first described in THE JOURNAL, Nov. 28, 1914, p. 1936. The technic employed is as follows:

About 50 c.c. of blood are drawn into a centrifuge bottle by means of a McRae vacuum needle. The bottle is immediately placed in a large centrifuge and the fibrin and cellular elements are thrown down. It requires a speed of about 3,000 revolutions for fifteen minutes to produce a perfectly clear serum. It is rarely necessary to centrifuge more than once if the blood is freshly drawn, but the process should be repeated if the serum is not absolutely free from cells and fibrin. To 15 c.c. of serum is then added the amount of arsphenamin to be given. This is done by mixing the arsphenamin as for an intravenous treatment, using freshly distilled and boiled water, and bringing the total quantity up so that each 40 c.c. of the solution will contain 1.0 dg. (0.1 gm.) of the drug. Each cubic centimeter of this solution will then contain 2.5 mg. of arsphenamin. With a 1 c.c. pipet, graduated into tenths, the desired amount can be readily measured from 0.25 mg. upward. In adding the sodium hydroxid it is of the greatest importance to use only the exact amount required to alkalize the solution very faintly. When this has once been determined by testing with litmus paper, the sodium hydroxid should always be added quickly, and not drop by drop. It is also very important that the temperature of the arsphenamin and serum be the same when the two are mixed. The serum is then gently agitated to mix the two thoroughly, and is placed in a thermostat at 37 C. for forty-five minutes. From this it is placed in a thermostat at 56 C. for thirty minutes. It is now ready to be given intraspinally, and it should be used as soon after preparation as possible. Under no circumstances should a serum be used that is more than three hours old.

BENEDICT'S BASAL METABOLISM DETERMINATION

To the Editor:—What is the Benedict method of basal metabolism determination as referred to by Dr. G. W. McCaskey in the opening sentence of his article in THE JOURNAL, April 3, 1920, p. 927?

FRED B. MORGAN, M.D., Clinton, Iowa.

ANSWER.—This method is based on the determination of the respiratory exchange by means of a calorimeter, this exchange being accepted as an index of alterations both in the character and in the amount of the basal metabolism, showing oxygen intake and carbon dioxid output. The method, which is complicated and can be performed only in a properly appointed laboratory, is described fully by Benedict in a number of articles. The more important of these are:

J. Biol. Chem. **20**: 263, 1915; *Boston M. & S. J.* **174**: 857 (June 15); 898 (June 22); 939 (June 29) 1916; **178**: 667 (May 16) 1918; **181**: 107 (July 31); 415 (Oct. 2) 1919; *Am. J. Physiol.* **41**: 275, 292 (Sept.) 1916.

See also:

Peabody, Meyer and Du Bois: *Arch. Int. Med.* **17**: 980 (June) 1916.
Means: *Boston M. & S. J.* **174**: 864 (June 15) 1916.
Gephart and Du Bois: *Arch. Int. Med.* **17**: 902 (June) 1916.
Moulton: *J. Biol. Chem.* **24**: 299 (March) 1916.
Aub, Du Bois and Soderstrom: *Arch. Int. Med.* **19**: 823, 840 (May) 1917.
Peabody, Wentworth and Barker: *Arch. Int. Med.* **20**: 468 (Sept.) 1917.
Bowen, B. D., and Boothby, W. M.: *J. Urol.* **1**: 469 (Oct.) 1917.
Abbott, M. E.: *Canadian M. Assn. J.* **8**: 491 (June) 1918.
Du Bois, Eugene F.: *M. Clin. N. Am.* **2**: 1201 (Jan.) 1919.
Gardner and Peppard: *Journal-Lancet* **39**: 495 (Sept. 15) 1919.
McCaskey: *New York M. J.* **110**: 607 (Oct. 11) 1919.

URTICARIA FOLLOWING USE OF PROCAIN

To the Editor:—Has the use of procain ever produced severe urticaria, even running to very pronounced angioneurotic edema?

H. C. AREY, M.D., Excelsior, Minn.

ANSWER.—Many cases are recorded in which drugs have caused urticaria, but procain is not on the list. Drug urticaria is presumably an anaphylactic reaction. It has followed administration of all sorts of drugs, when taken by mouth or when injected subcutaneously or intradermally. Angioneurotic edema, which is really a giant urticaria, has also been caused by drugs.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARKANSAS: Little Rock, May 11-12. Sec. Regular Bd., Dr. I. J. Stout, Brinkley. Sec. Eclectic Bd., Dr. C. E. Laws, Fort Smith.
FLORIDA: Jacksonville, June 14-15. Sec., Dr. Wm. M. Rowlett, Citizens Bank Bldg., Tampa.
GEORGIA: Atlanta, June 9-11. Sec., Dr. C. T. Nolan, Marietta.
HAWAII: Honolulu, May 10-14. Sec., Dr. R. W. Benz, 1141 Alakea St., Honolulu.
KENTUCKY: Louisville, May 17. Sec., Dr. A. F. McCormack, 532 W. Main St., Louisville.
LOUISIANA: New Orleans, June 10-12. Sec., Dr. E. W. Mahler, 141 Elk Place, New Orleans.
MASSACHUSETTS: Boston, May 11-13. Sec., Dr. Walter P. Bower, Room 144, State House, Boston.
MICHIGAN: Ann Arbor, June 8-10. Sec., Dr. B. D. Harrison, 504 Washington Arcade, Detroit.
MINNESOTA: Minneapolis, June 1-4. Sec., Dr. Thos. McDavitt, 539 Lowry Bldg., St. Paul.
MISSOURI: St. Louis, June 14-16. Sec., Dr. Geo. H. Jones, State House, Jefferson City.
NATIONAL BOARD OF MEDICAL EXAMINERS: Philadelphia, May 19-26. Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia.
NEBRASKA: Lincoln, June 9-11. Sec., Department of Public Welfare, Mr. H. H. Antles, Lincoln.
NEW YORK: New York, Albany, Syracuse, Buffalo, May 18-21. Assistant, professional examinations, Mr. Herbert J. Hamilton, Education Bldg., Albany.
OHIO: Columbus, June 8-11. Sec., Dr. H. M. Platter, State House, Columbus.
TENNESSEE: Memphis, Nashville and Knoxville, June 11-12. Sec., Dr. A. B. DeLoach, 1001 Exchange Bldg., Memphis.
WYOMING: Cheyenne, June 7-9. Sec., Dr. J. D. Shingle, Cheyenne.

A SMALL COMMUNITY HOSPITAL

EDWARD F. STEVENS, A.I.A.
BOSTON

Small communities at a distance from the larger cities are often greatly handicapped by the lack of adequate facilities for the care of the sick and by lack of provision for operation and emergency treatment. Philanthropic citizens, with big hearts, but often with limited means, try to fill this need by securing rooms in an office building or a dwelling house, and the temporary hospital is established and much excellent service rendered. The office building or residence, however, not having been designed for the purpose, and having been built without regard to hygiene or convenience, fails to function properly. There is much lost motion and lack of complete service, and oftentimes a more retarded recovery than with a building planned for the purpose. The community in which the little hospital here illustrated is to be built has been served by the "office building" type of hospital, and while good results have been accomplished, the new hospital will undoubtedly relieve much suffering.



Fig. 1.—Front view of building (from architect's drawing): Exterior walls are of red brick with roof of red tile; exterior woodwork is painted white; the colonial style is especially adapted to this building, because of its prominent site and spacious grounds.

This hospital is located on a commanding site, away from the noises of business and traffic, with sunny exposure. The exterior of the building is in the southern colonial style of architecture, with the body of red brick. The finish of the portico, cornice and airing balconies is of wood, painted white. The roof is of red tile. The interior finish will be simple in character, with due regard to hygienic construction and ease of maintenance. The floors will be covered with linoleum, and the doors will be of the no-panel hospital type. The walls of the surgical department will be enameled, and the floors will be of tile or terrazzo. The colors employed on the walls will probably be delicate grays or tan. The hardware is to be special hospital type.

The placing of all of the administrative and surgical treatment departments on the first floor allows the exclusive use of the second floor for patients. The operating department, on the first floor, is quite complete, and is sufficiently removed from the entrance to avoid annoyance from that source. From the same section, the roentgen-ray department is approached. The staff room serves as a surgeons' dressing-room. The office is sufficiently near for proper administration. The remainder of the first floor is devoted to the kitchen, dining-rooms, heater and storage rooms. The rear entrance serves as an ambulance approach. While there is space provided for an elevator, the stairs are made broad and are easily ascended.

On the second floor are the rooms for patients, divided into several three-bed wards and private rooms. The serving kitchen, sink room, toilets, bath and linen room provide the necessary accommodation for the proper service for the patients. At each end of the building, large airing balconies enable all patients to be brought into the open air.

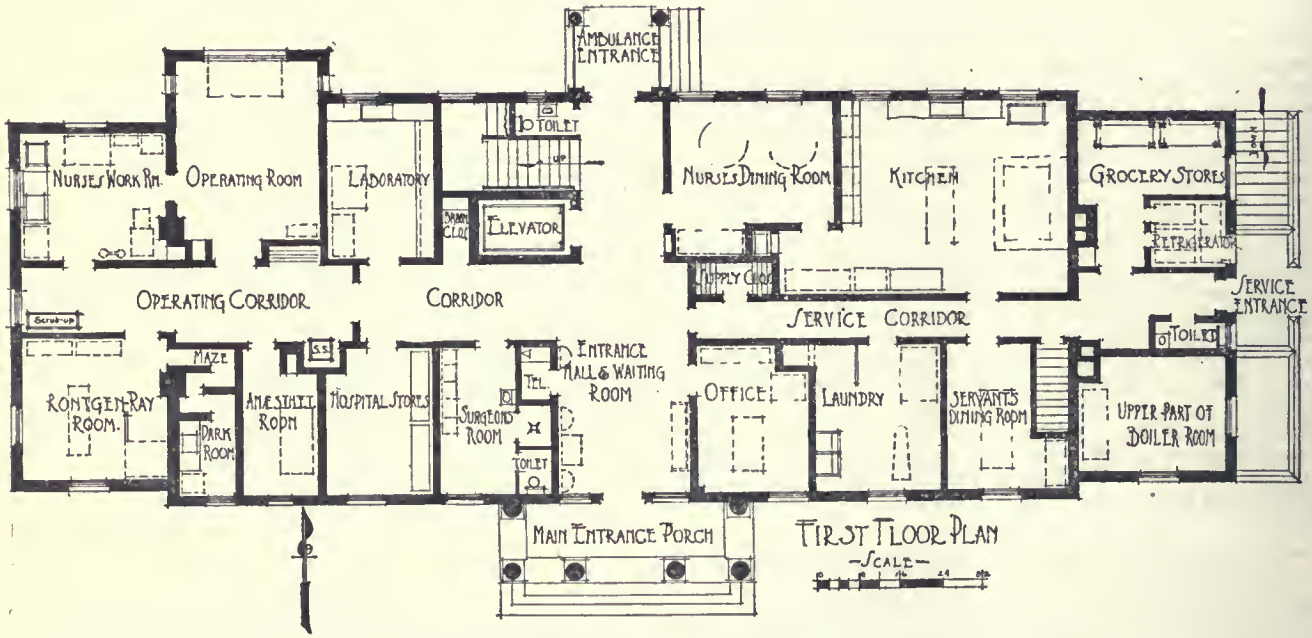


Fig. 2.—First floor plan: All of the administrative functions are provided for on the first floor; note the compactness and convenience of the arrangement; the placing of parts with relation to each other is worthy of study.

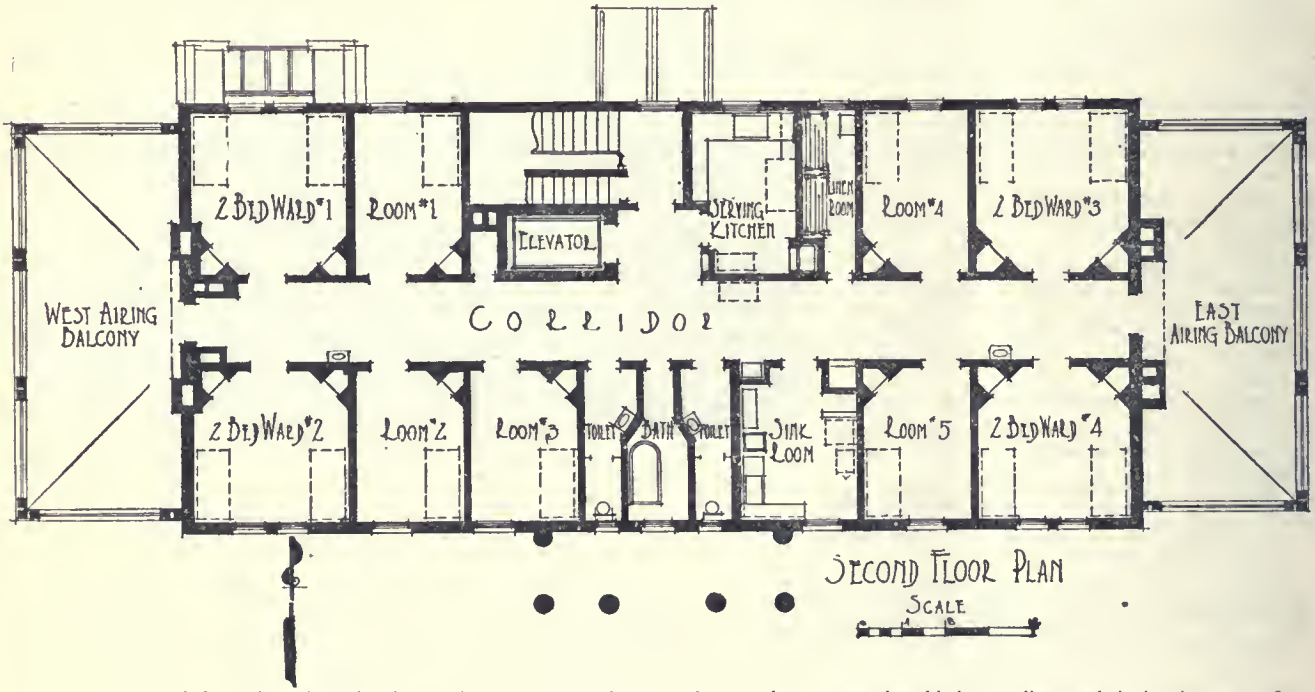


Fig. 3.—Second floor plan: Attention is called to central location of stairway, elevator, serving kitchen, toilets and bath, there are five private rooms and four two-bed wards; at each end is a large airing balcony.

Social Medicine and Medical Economics

SOCIAL PEDIATRICS*

HENRY L. K. SHAW, M.D.
Clinical Professor, Diseases of Children, Albany Medical College
ALBANY, N. Y.

In no branch of modern medicine has there been so much progress as in that of the prevention of disease. Emphasis is now being largely directed to health rather than to disease. The triumph of the medical corps in the World War both in this country and abroad over that invisible and insidious enemy—disease—was due largely to preventive measures. Every returned soldier and sailor has received practical instruction in public health, and a new vision of the domain of medicine came to all medical officers who entered the service.

Sir George Newman expresses the present trend of thought when he says that the "first duty of medicine today is not to cure disease but to prevent it." All our human knowledge and experience should be applied to the prevention of disease. Herein lies our greatest service to mankind. To cure is splendid and praiseworthy, but to prevent disease is Godlike and magnificent. Dr. Lyon writes that "some physicians fail because they take a narrow and individualistic view of their work. They get the patient so close to their eyes that they cannot see the public. They see their trade, but fail to recognize their profession." In the struggle for existence and the necessity for making a livelihood, the attitude of the medical profession toward social problems is likely to be narrow, selfish and individualistic. We need a broader vision, and we should appreciate that the claims of the health of the public are greater than those of any individual. Gittings, in an address on "Physicians and Social Service," said that as a class "we have been slow to recognize the importance of many of the lessons taught by sociology, and have allowed our study of disease, the figure in our limelight, to blind us to much of the background out of which disease emerges. The art of medicine of yesterday was too conservative in its conception of its true functions. So far as it has gone, the prevention of disease has proved to be one of the greatest achievements of the science of medicine of today."

Not one of us will dispute this statement; but what is being done to spread the gospel of public health among the physicians of this country? They must be educated, or rather reeducated, in modern medical social problems. A physician engrossed in private practice with its many demands and responsibilities will not have much leisure in which to take up any new line of study. The most satisfactory method lies in the medical school. The mind of the medical student is receptive and plastic, while it is hard to teach new tricks to old dogs. Dr. Ira S. Wile, in an address at the meeting of this section at Rochester in 1912, said that "medical schools exist for the purpose of supplying the community with men who are trained in caring for the public health. If the schools fail to teach their students the methods of preservation of life, they fall short of their ideal purpose. The position of the physician is altering, in that the community no longer regards him merely as an individual, capable of curing individual diseases, but as a specially gifted man, capable of guiding the public in and to health." The physician should be looked on as the leader in public health activities; but this work in a community can never be elevated to a higher degree than the medical profession raises it. A stream is no purer than its source, and we must elevate and educate the source.

OPPORTUNITIES OPEN TO MEDICAL MEN IN SOCIAL WELFARE WORK

My object in this paper is to present a plea for systematic training in social pediatrics in our medical colleges. The prospective medical student should be directed in his premedical course to study sociology and economics and obtain a comprehensive grasp of the organization of modern society. This subject should appeal very strongly to those of us who specialize in diseases of children. By virtue of our training and experience we should take an active part in all social welfare agencies. The child forms the basis of most of our public health work. The foundation for many of the diseases and most of the defects of later life is laid in early childhood. The study of the child in health, the preservation of health and the prevention of disease are as essential in the practice of our profession as that of the study of the diagnosis, pathology and treatment of disease. We have not realized the great opportunities for service and the fulfilment of our highest professional ideals in directing and assisting social welfare and educational work. By our indifference we have allowed the nonmedical social worker to grasp a great opportunity and gather all the honor and glory. The physician, and not the social worker, is the logical arbiter of all problems relating to health. He is the one who should advise and direct and perhaps supervise the activities of health and sociomedical activities. He can uphold the honor and dignity of his profession on a loftier level than by simply being a purveyor of pills. Social medicine opens up great opportunities and new territories for service to members of the medical profession.

Dr. Richard Bolt, general director of the American Child Hygiene Association, proposes as an ideal scheme for the education of medical students in the essentials of infant and child welfare work:

1. A clear understanding of the structure of modern society, with special emphasis on the changes which are taking place in medicine from an individualistic to a community service.
2. Familiarity with the general methods of all social agencies working for the welfare of the child.
3. A knowledge of the causes of infant mortality, and the most approved methods of prevention.
4. A good working knowledge of obstetrics, especially in its relation to the nursing and social needs of the community.
5. Experience in maternity (prenatal) service.
6. A course of pediatrics, laying stress on the fundamentals in infant hygiene and infant feeding.
7. Thorough instruction in modern pediatric methods, with actual experience in a babies' dispensary and in an infant welfare center for prophylactic work.

I wish to submit a syllabus of a course of instruction in social pediatrics which is being carried out at the Albany Medical College. It is not perfect or complete by any means, but it will serve to illustrate the possibilities of such a course and point out some of the functions of social pediatrics.

INSTRUCTION IN SOCIAL PEDIATRICS AT ALBANY MEDICAL COLLEGE

The Child in Health:
- Anatomy and physiology of infancy and childhood.
- Difference from adults.
- Growth and development.
- Periodic physical examination.

Vital Statistics and Demography:
- Birth registration. Stillbirths. Illegitimacy.
- Methods of improving.
- Mortality statistics:
  - Rates at different ages and seasons.
  - Effect of season and climate.

Mortality During Childhood:
- Definition and significance.
- Distribution in the United States and other countries.

*Read before the Section on Pediatrics at the One Hundred and Sixty-Fourth annual meeting of the Medical Society of the State of New York, New York, March 23, 1920.

General causes: Prenatal; natal; postnatal; preventable; nonpreventable.
Causes by age periods.
Effect of poverty and ignorance.
Influence of domestic and social conditions:
Age and nationality of mother.
Effects of alcohol and venereal disease.
Food; nursing; milk; proprietary foods; diet.
Preventive methods:
The mother (maternal work; number of children; age of mother).
The child.
The surroundings.
Social conditions: housing, sanitation, etc.

Prenatal and Maternity Care:
Childbirth statistics.
Causes of death: Baby: fetal and congenital; mother.
Instruction of expectant mothers.
Systematic examinations.
The mother in industry.
Regulation of midwives.
Prenatal clinics and maternity centers.
Care of mother during pregnancy.
Care of mother: at confinement; hospital.
Prevention of blindness.
The prenatal nurse.

Infant Hygiene:
Foundling asylums; baby farms; boarding out and adoption; infant hospitals.
Instruction of mothers: breast-feeding, etc.; proprietary foods.
Importance of pure, clean and safe milk.
Infant welfare stations: municipal; private.
Day nurseries: objects: regulation and inspection; the child welfare nurse.

Child Hygiene:
Preschool period: diet and nutrition; physical examination; correction of defects; posture, teeth, adenoids, tonsils, rickets; nursing schools.
School age:
Medical school inspection; physician-nurses.
Periodic examinations: weight, height, etc.
Early treatment of defects: vision, hearing, nose and throat, skin, etc.
Dental clinics; mouth hygiene.
Treatment of dental defects.
Prevention of infectious diseases.
Diet and nutrition; school lunches.
Mental examination; special classes.
Physical training; open air classes.
Supervised play; recreation and playgrounds.
Health education of teachers and pupils.
Little mothers' leagues; Junior Red Cross; Crusaders.
School sanitation, ventilation, fumigation, lighting, cleaning.
Adjustable seats and desks.
The school nurse.

Care and Education of Abnormal Children:
Backward and mentally deficient children.
Institu ional care; commitment.
The crippled child.
The blind child.
The deaf and dumb child.
The delinquent child; juvenile courts.

The Child in Industry:
State and national legislation.
Approved standards of child labor.
Employment certificates.
Educational and physical requirements.
Supervision and periodic examinations.
Widows' and mothers' pensions.

Tuberculosis in Children:
Physical examinations.
Protection of exposed children.
Home supervision.
Preventoriums; sanatoriums; day camps, etc.
Follow-up work.

Child Welfare Propaganda:
Extension and educational work.
Exhibits, posters, moving pictures, newspaper publicity, pamphlets, etc.
Lectures and demonstrations.
Administration of Child Welfare centers.
National Child Welfare Organizations:
American Child Hygiene Association.
Child Health Organization.
Child Labor Committee.
American Public Health Association.
Parent-Teachers Association.
State and local child welfare organizations.

Health Agencies:
Federal:
Children's Bureau.
U. S. Public Health Service.
Department of Education.
State:
State department of health.
Division of child hygiene.
Vital statistics.
Public health nursing.
State board of charities.
State department of education.
Municipal:
Health department.
Board of education.
Child welfare stations.
Private:
Day nurseries.
Maternity centers.
Playground associations, etc.

POSSIBILITIES OF COOPERATION

Clinical facilities for demonstration and practical instruction can be provided in any city large enough to maintain a medical college. The city bureau of health could make available its various departments, including child welfare stations, tuberculosis clinics, milk and dairy inspection, vital statistics, etc. The bureau of education could provide opportunities for the study of the health and hygiene of the school-child, dental clinics, nutrition classes, and the follow-up work of school nurses. Private agencies that support day nurseries, playground associations, orphan asylums, infants' homes and other places of child welfare work would cooperate in this work of instruction. In fact, the interest of all agencies engaged in health, welfare and relief work could be secured and a full cooperation arranged.

CONCLUSION

We are now entering on a world wide era of reconstruction in which the subject of health will receive more attention than it has in the past. The medical profession must advance with the spirit of the times and be prepared to take an active and leading part.

Let us, therefore, by our own interest and influence hasten the day when social pediatrics shall take a prominent place in the curriculum of our medical schools. The physicians of the next generation will then be equipped for greater service for mankind.

361 State Street.

COMPULSORY HEALTH INSURANCE

At a social insurance session of the National Civic Federation, presided over by Samuel Gompers, Mr. James W. Sullivan of the American Federation of Labor made the following points:

The state may justly carry out measures intended to protect all its citizens alike against the various menaces to health and to control treatment of the sick. In the matter of meeting wage losses, the state may be expected to supervise associations for the purpose, and supply the machinery for such supervision. How much further should it go? The trade unionist stops to reflect when in theory he is brought to the line which sets the wage-workers aside as wards of the state, as subjects of special regulation, and as material for a social machinery run by state officials.

Sickness insurance! What is to be insured? What is sickness? Who is sick? Who is to decide when one is sick? Who is to say when one's sickness is his own fault? Who is to determine justly many questions in the matter of sickness? To what degree is sickness a mere matter of the mind? People of robust mentality ignore the aches and pains which frighten timid people. One's habitual attitude toward sickness counts for much. Some have the doctoring habit, some the "patent medicine" habit, some the habit of ignoring what sends other people to bed. Under any form of sickness insurance, voluntary or compulsory, a certain proportion of the members of any group would quickly develop the habit, to be indulged in to the maximum degree, of being "on the funds."

A fair statement of the present attitude of organized labor is that, in the case of sickness insurance, as with respect to many other propositions, it refuses to take a plunge in support of a project which is part of the program of socialism. Nor is it prepared to support without careful scrutiny measures drawn up by associations not in its membership; it will not approve of any law which will tend to break down its own systems of mutual assistance; it regards the degree to

which the interposition of the state shall extend as a matter to be settled in favor of the principle of liberty of the individual; it resents an indiscriminate classification of wage-earners as objects of public relief; it looks to wider measures than sickness insurance in the social campaign for the reduction of the death rate, the prevention of sickness, the improvement of public methods of caring for the sick and, finally, for the general sharing of the burdens of sickness.

Book Notices

LA RACHIANESTHÉSIE GÉNÉRALE. Par Professeur Thomas Jonnesco. Paper. Price, 4 francs net. Pp. 126. Paris: Masson et Cie, 1919.

This is an exposition of Jonnesco's method of what he calls general spinal anesthesia. The author wishes to make clear that the essential thing is the method he uses and not the particular substance stovain, which is only an adjuvant that may be replaced by any other local anesthetic in which the surgeon may have confidence. The author uses stovain and strychnin sulphate. He lays great stress on having the substances properly prepared. For his own use he has them prepared in separate ampules: a definite amount of strychnin dissolved in 1 c.c. of distilled water in one ampule, and a definite amount of stovain crystals in another ampule. Both, of course, are sterilized. He emphasizes the importance of having the stovain sterilized by heating it to 100 C. on three different occasions. When ready to be used, the strychnin solution, always 1 c.c. in amount, regardless of the quantity of strychnin contained, is mixed with the stovain in the ampule, and solution is favored by gently heating the ampule. When thoroughly dissolved, it is drawn up in the syringe and slowly injected. Four points of election are given for injecting the solution: the inferior lumbar, the dorsolumbar, the superior dorsal and the midcervical, depending on the extent of the anesthesia desired. It is stated that there are no contraindications to the use of the method; but the dose of stovain, as well as that of strychnin, must be adjusted very carefully to the age and general condition of the patient. During five years the author and his associates performed 11,329 operations by this method. Of this number, 1,035 were high or midcervical, and 10,289 low injections. In this number were included operations on all parts of the body, from head to foot. It is asserted that there were only two deaths that could be attributed to the anesthetic, and these, which occurred in the hands of two of his associates, were due, according to the author, to faulty technic from lack of experience, in that too large a dose of stovain was used for cervical injections. Notwithstanding the excellent results that the author reports and the enthusiasm with which he defends them, the method has found few followers outside of his own associates. He himself says: "It is always necessary to bear in mind that spinal anesthesia is not an empirical method and that it is not to be considered a simple maneuver to be executed according to definite fixed rules in advance. The method requires to be applied by a man of science, conscious of his duty, and knowing that he has in his hands an excellent, exact and powerful agent, but only on condition that he take pains to understand it and to employ it intelligently."

RAMBLING RECOLLECTIONS: AN AUTOBIOGRAPHY. By A. D. Rockwell, M.D. Cloth. Price, $4 net. Pp. 350, with 7 illustrations. New York: Paul B. Hoeber, 1920.

Dr. Rockwell, now in his eightieth year, has been so long out of the active whirl of medical life that one is reminded by this book that he is not only still alive but active so far as writing is concerned. To those who were engaged in practice twenty-five or thirty years ago, the name A. D. Rockwell immediately calls to mind one of the most pretentious and practical books on medical electricity published in this country—Beard and Rockwell's Medical and Surgical Uses of Electricity—a book the popularity of which is attested by the fact that it passed through some ten or twelve revisions and editions. It and the miscellaneous contributions on the subject by these two men had much to do with the wide use of electricity during the last two decades of the nineteenth century. The medical battery—at least the faradic box—was then to be found in the offices of half the physicians of the country. Its uses as a therapeutic agent were almost unlimited, and it was recommended for a variety of conditions, from constipation to ectopic gestation.

The title of this autobiography is descriptive of the book. It is made up of recollections more or less rambling in character. But this is not a fault for the author presents it not as a real biography but rather as comments on men and things, with the story of his own life incidentally woven in. A book of such character—written by a man of wide experience, including that of both private and army surgeon in the Civil War, and extending over three fourths of a century—could not be other than interesting and instructive.

PRAKTISCHE BAKTERIOLOGIE FÜR AERZTE UND STUDIERENDE. Von Dr. L. Paneth, Assistent am kgl. Institut "Robert Koch" in Berlin. Paper. Price, 8 marks. Pp. 158, with illustrations. Berlin: Urban & Schwarzenberg, 1919.

This is a brief manual describing laboratory technic for diagnosis of infectious diseases. In general it will be of little use for American physicians and laboratory workers, as many of the methods differ materially from those used in our laboratories. Where the methods are the same, descriptions are available in American publications.

Medicolegal

Treatment of Osteomyelitis—General and Special Employment

(Nelson v. Farrish et al. (Minn.), 173 N. W. R. 715)

The Supreme Court of Minnesota, which affirms a judgment in favor of the defendants who were sued for alleged malpractice in the treatment of a child afflicted with osteomyelitis in the radius, says that defendant Farrish was called, November 12, to treat the case. The disease grew worse, and, on the 18th, defendant Portmann was called. He attended with Dr. Farrish, examined the arm, and gave directions as to treatment. He did not take full charge of the case, was apparently not expected to return unless called, and, when he left, gave directions that if they "needed him any more to call him." On the 22d he was called again, and came. Dr. Farrish also was present. Dr. Portmann gave some directions as to treatment, but did not come, and apparently was not expected to come again without being called. Dr. Farrish continued to treat the arm. It continued to grow worse, and, December 2, Dr. Portmann was again sent for. He was not at home and, instead, his son came and the next day took the child to a hospital, where he and defendant Portmann performed an operation on the following day. Dr. Farrish's employment then ceased. In January the parents took the child to a hospital in St. Paul, where a surgeon performed an operation in the presence of defendant Portmann, and found it necessary to remove the radius, which was done.

It was conceded by all that the proper treatment for osteomyelitis was by operation, consisting in opening the shaft of the bone and affording drainage of the pus and removal of diseased tissue. The plaintiff charged that the defendants did not advise or suggest that treatment, and did not correctly diagnose the case until the disease had progressed so far that the bone was beyond treatment and the use of the arm virtually lost, whereas it might have been saved. The defendants, on the other hand, insisted that they did promptly diagnose the disease and advised the parents of its true nature, and seasonably advised operative relief, and that the parents objected to any operation, until it was too late to save the arm. The trial judge instructed the jury that if the defendants within a reasonable time made a correct diagnosis and clearly advised the parents of the nature

of the ailment, of the importance of an immediate surgical operation, and of the result likely to follow a refusal, and the parents refused to permit such operation, the verdict of the jury should be for the defendants; but that if the defendants failed to diagnose and treat the child with reasonable and ordinary skill, and such failure resulted in the injury complained of, then the defendants were liable for damages. The supreme court finds no error in this instruction, and holds that the evidence was such as to sustain a verdict for the defendants.

The plaintiff contended that defendant Portmann was employed generally to diagnose, treat and cure, and complained that the jury was instructed that he was called in consultation with Dr. Farrish; but, under the evidence, the supreme court thinks that the ruling was right. However, so far as concerned his liability for what occurred on the occasion of his visits, it was not very material in which capacity he was called. He was called as a physician and surgeon to diagnose the disease and prescribe or direct treatment for its cure, regardless of what Dr. Farrish had done. While he was there he owed the duty to employ reasonable professional skill. The court did not rule or instruct otherwise. There was no claim on his behalf that he had not ample opportunity to diagnose correctly the disease. He claimed that he did so, and advised the family of his diagnosis. In this connection it is pertinent to observe that there was no question but that Dr. Farrish's employment was general. Since the jury found in his favor, it is difficult to see how it could have found otherwise as to Dr. Portmann, whether his employment was general or as a consultant. In no possible view of the case could it be said that the obligation or liability of Dr. Portmann was greater than that of Dr. Farrish. The difference between general and special employment relates mainly to the obligation of the physician to continue his attention. If called generally he must give such continued attention and attendance as the condition of the patient requires. But if called specially and only for the occasion, he owes no duty to repeat his visits or continue his treatment. The court thinks it was the effect of the testimony of the plaintiff's witnesses that defendant Portmann was not expected to return, except when called, and that he owed no duty to do so, and could be held liable for only such damages as resulted from his connection with the case on the occasion of his visits.

Breach of Contract to Furnish Medical Services—Chronic Diseases—Prolapsus

(Caffey v. Northwestern Hospital Association (Ore.), 183 Pac. R. 762)

The Supreme Court of Oregon, in affirming a judgment in favor of the plaintiff for $1,500 damages, says that this was an action for breach of a contract to furnish the plaintiff medical and surgical services in case of illness. The contract stated that it did not cover chronic diseases. In reply to a letter which described fully the plaintiff's condition, the defendant said, in effect: "Your disease is chronic, and not subject to treatment under our contract; but come down, and if we find it is not chronic we will treat you." The reply was substantially a refusal to treat her under the contract for the disease from which she was suffering, on the ground that it was chronic, and therefore not within the contract. No person in the plaintiff's condition would have gone after having been informed that, if she had the sickness which she claimed to have, she would not be treated. If the trouble was, in fact, a chronic one, the defendant was justified; otherwise, its refusal was a breach of the contract which rendered it liable in damages.

The evidence introduced as to the disease from which the plaintiff was suffering indicated that in 1910 she suffered from prolapsus uteri, and that as a result of an operation she was completely cured of that trouble, and was in sound health when she became a party to the contract with the defendant; that this condition continued for about two and a half years; that later, when the plaintiff did hard work or lifting, she had temporary prolapsus, but that her condition always became normal on ceasing such work. The effect of the plaintiff's testimony was that she had frequent attacks or recurrences of the trouble at intervals, produced by overwork or lifting, but that the trouble was not continuous. The evidence on behalf of the plaintiff indicated that she was much more susceptible to attacks of this character than the ordinary woman, but this fact alone did not render the disease chronic.

It is a fact well known, even to laymen, that there are persons whose bones are so brittle from disease or malnutrition that they are broken by blows or falls which would do no particular injury to a person whose bones are normal; but it does not follow that such persons have chronic broken arms or legs. Some persons are poisoned by the slightest contact with poison ivy, while others are not affected by it; but it does not follow that the susceptible person is afflicted with chronic ivy poisoning.

A chronic disease is one of long duration or characterized by slowly progressive symptoms. It appeared that the plaintiff's first attack was cured in three weeks by an operation; that she remained in good health for more than two years, and that subsequent attacks were cured by avoiding the causes which produced them. Whether the plaintiff's ailment was chronic was a question of fact for the jury, which was instructed, in substance, that the burden of proof was on the plaintiff to show that she was not suffering from a chronic ailment.

Lastly, it was a forced construction of the contract to say that it required the defendant to render services only in the city where it had a hospital, when three things were promised the members of the association: (1) free hospital service where a hospital was provided; (2) free medical treatment, without any specification as to where it was to be rendered, and (3) free surgical treatment under the same conditions.

Epilepsy Not Ground for Annulment of Marriage

(Behsman v. Behsman (Minn.), 174 N. W. R. 611)

The Supreme Court of Minnesota, in affirming a judgment refusing to annul a marriage contract on the ground that one of the parties thereto was an epileptic at the time of the marriage, holds that proof that the defendant was an epileptic at the time of such marriage was not, in the absence of a showing of fraud on the part of the afflicted party in concealing the epileptic condition, sufficient to warrant a decree of annulment. It holds that, the legislature not having prescribed epilepsy as a ground for the annulment of marriage, and the courts of the state never having recognized that disease as a cause for nullifying a marriage contract, the judgment of the trial court denying such relief was justified, notwithstanding a finding of fact that the defendant was an epileptic at the time of the marriage. The findings of the trial court in this case were, in effect, that the parties were married in 1907; that the issue of such marriage was three children; that the defendant was and had been ever since she was 2 years of age an epileptic; that the disease continued to grow on her until Sept. 3, 1915, when she became insane and was committed to a hospital for the insane; that she was becoming more irrational and violent and was not expected to improve in her condition; that the plaintiff and the defendant lived together as husband and wife until shortly before the defendant became insane, and that the plaintiff did not know that the disease with which the defendant was afflicted was epilepsy until about Sept. 3, 1915. As conclusions of law, the court found that the plaintiff was not entitled to have the marriage annulled, but that he was entitled to the custody of the children, and the supreme court is of the opinion that the judgment should stand. Section 7090 of the General Statutes of Minnesota of 1915 provides that no marriage shall be contracted between persons either of whom is epileptic, feebleminded or insane, and Section 7107 provides that when either party to a marriage is incapable of assenting thereto for want of age or understanding, or when the consent of either has been obtained by force or fraud, and there is no subsequent voluntary cohabitation of the parties, the marriage may be annulled; but the legislature has not prescribed epilepsy as a ground for annulment of marriage, nor have the courts of Minnesota recognized that disease as cause for nullifying the marriage contract.

Society Proceedings

COMING MEETINGS

American Association for Thoracic Surgery, New Orleans, May 1.
American Association of Physicians, Atlantic City, May 4-5.
American Climatological and Clin. Assn., Philadelphia, June 17-19.
American Gastro-Enterological Assn., Atlantic City, May 3-4.
American Gynecological Society, Chicago, May 24-26.
American Laryngological Association, Boston, May 27-29.
American Medico-Psychological Assn., Cleveland, O., June 1-4.
American Ophthalmological Society, Hot Springs, Va., June 15-16.
American Otological Society, Boston, May 31-June 1.
American Pediatric Society, Highland Pk., Ill., May 31.
American Psychopathological Assn., Cleveland, O., June 5.
American Surgical Association, St. Louis, May 3-5.
American Therapeutic Society, Philadelphia, May 7-8.
Arkansas Medical Society, Eureka Springs, June 8-9.
Association of American Peroral Endoscopists, Boston, June 1.
California State Medical Society, Santa Barbara, May 11-13.
Canadian Medical Association, Vancouver, B. C., June 22-25.
Connecticut State Medical Society, New Haven, May 19-20.
Georgia Medical Association, Macon, May 6-8.
Illinois State Medical Society, Rockford, May 18-20.
Iowa State Medical Society, Des Moines, May 12-14.
Kansas Medical Society, Hutchinson, May 5-6.
Massachusetts Medical Society, Boston, June 8-9.
Michigan State Medical Society, Kalamazoo, May 25-27.
Mississippi State Medical Association, Jackson, May 11-12.
Nebraska State Medical Association, Omaha, May 24-26.
Nevada State Medical Association, Lake Tahoe, June 25-26.
New Hampshire Medical Society, Concord, May 12-13.
North Dakota State Med. Assn., Minot, June 15-16.
Ohio State Medical Association, Toledo, June 1-3.
Oklahoma State Medical Association, Oklahoma City, May 18-20.
Rhode Island Medical Society, Providence, June 3.
Southern Minnesota Medical Assn., Fairmont, Minn., June 28-29.
Western Electro-Therapeutic Association, Kansas City, Mo., May 27-28.
West Virginia State Medical Association, Parkersburg, May 18-20.

MISSOURI STATE MEDICAL ASSOCIATION

Sixty-Third Annual Meeting, held at Jefferson City, April 6-8, 1920

Artificial Anus

DR. W. T. COUGHLIN, St. Louis: A preoperative explanation of the operation to the patient is advisable. The amount of relief to be expected varies with the indication for the operation. Not much benefit to the primary condition is to be expected when the operation is undertaken for cancer of the bowel below. The decision for or against the operation should be left to the patient except when the operation is performed for the relief of acute obstruction.

Autoplastic Repair of Ununited Fractures and Bony Defects

DR. ERNEST F. ROBINSON, Kansas City: Bone surgery has passed through many changes and contradictory phases, but we have at last arrived at a satisfactory rational method in the autoplastic repair of bone. Some fundamental facts have been deduced in reference to the autogenous repair of fractures: 1. Fractures in which good functional results may be secured by external means (and this number in recent years has been greatly increased by modern military splints and devices) should not be operated on. 2. In fractures which cannot be properly reduced and immobilized, autoplastic repair is usually the only safe procedure. All metal devices, Lane plates, nails, screws, clamps and all foreign bodies in bone fractures are a failure, and prevent rather than produce union. Autoplastic graft is resistant to infection. It is absorbed or becomes an integral part of the bone itself. Two methods of bone transplantation may be considered: (*a*) the bone inlay, as perfected by Albee, or (*b*) the dowel peg or intramedullary splint. In either or both we must have: (1) an aseptic operative wound; (2) a live transplant from the same individual—preferably with periosteum; (3) actual contact between graft and bone, and (4) perfect and complete immobilization. Usually there is complete absorption with bone organization. Occasionally, early absorption takes place because of specific ferments. My own preference is in favor of the medullary transplant over the bone inlay, as there is less likelihood of infection and no foreign substance (such as catgut or tendon sutures to be absorbed) is left in the wound. In the great percentage of cases, union with satisfactory results can be assured. Such operations are as uniformly successful as are any in surgery.

Traumatic Aneurysm

DR. HERBERT S. VALENTINE, Kansas City: In traumatic aneurysms, particular attention is called to the possibility of hemorrhage from one false aneurysm giving rise to one or even more secondary aneurysms. Couteaud's observations regarding the weakness of the pulse proximal to an arterial lesion may be of value, especially when other localizing symptoms are absent. Contrary to the commonly accepted ideas, it has been found by English surgeons that in many cases simultaneous ligation of vein and artery may be safer as regards both life and avoidance of gangrene, than is ligation of the artery alone.

Treatment of Dacryocystitis by Curettage and Rapid Dilatation

DR. JOHN GREEN, JR., St. Louis: Curettage of the sac and duct as a treatment for chronic dacryocystitis was proposed by Thompson in 1918. This method proved fairly successful in my hands, but some failures led me to supplement this procedure by immediate rapid dilatation of the lacrimonasal duct. The dilated duct thus affords adequate primary and secondary drainage. The operation is facilitated by the use of specially designed lacrimal sac burrs and lacrimal duct reamers.

Subconjunctival Injections in the Treatment of Ulcers and Infected Wounds of the Cornea

DR. W. H. SCHUTZ, Kansas City: The lack of any generally accepted method of treating corneal infections led me to try mercuric cyanid. Dr. E. L. Jones of Maryland for some time persisted in drawing attention to this method, and declares that it has proved the most reliable and effective means of treating the conditions described. The power and healing effects of the injections are thought to be due not to the specific drug itself but to some process in which the drug merely acts to increase the circulatory activities to distend and flush the lymph channels. The advantages of this method may be thus summed up: There is no destruction of corneal tissue; the site of the ulcer, the stage it is in, or the size or any other reserve, need not be considered. The healing is sure and rapid, the transparency of the cornea more marked and scar formation less evident. The influence of the treatment on the subjective symptoms is very evident and positive. Immediately after injection, the pain is more or less of a severe type, lasting from ten to thirty minutes, but made bearable by the application of hot compresses. When the postoperative pain has ceased, further suffering from the disease vanishes entirely in the majority of cases; and in the few instances in which it does not, the amelioration is so positive that the patient seldom fails to express words of gratitude.

The Present Status of Nitrous Oxid Anesthesia

DR. MORRIS H. CLARK, Kansas City: The failure of nitrous oxid to keep pace with ether and chloroform as a general anesthetic is due to difficulty in mechanically handling the gas, and failure to recognize that it is a selective anesthetic not applicable to all cases. It is an anesthetic of details. Nitrous oxid should never be given except in connection with oxygen. Modern apparatus should have these necessary requirements: reducing valves for both nitrous oxid and oxygen, and means of controlling the rate of flow, percentage of mixture and pressure in the breathing bag. Ether attachment should be present in case of need. Ether in small amounts may be used to bridge over more painful procedures, or for stimulation during shock. The amount need not be more than from 1 to 4 drams during the course of a long anesthetic. This small amount produces no harmful aftereffects.

Cardiolysis for Chronic Mediastinopericarditis

DR. ELSWORTH S. SMITH, St. Louis: The condition may be recognized through the presence of chronic ascites not explainable in other ways, and physical signs of fixation of heart dulness, diastolic shock, retraction of interspaces about the apex and below the angle of the left scapula, and through fluoroscopic examination. Up to June, 1913, Sommers had collected data on only thirty-eight cases performed abroad

and none in this country, and since that date we have found only one in this country, so that the two cases here reported are the fourth and fifth cases recorded in this country. Among these forty-five reported cases there had been only nine failures, in four of which necropsies revealed errors in diagnosis.

The Actual Cautery in the Treatment of Superficial Cancers

Dr. Charles F. Sherwin, St. Louis: The only cure for cancer is a total destruction of all its pathologic cells. Any such cells not quickly destroyed by treatment gradually become more resistant and are often stimulated into increased rapidity of growth. Good cosmetic results are desirable, it is true, but quick and certain destruction of all tumor cells is absolutely imperative regardless of any cosmetic result, for cancer let alone or left behind will surely kill. In those types of superficial cancers variously known as rodent ulcers, and epidermoid or basal-cell carcinomas, which tend to remain localized, total extirpation of the affected area together with a strip of normal skin and underlying tissues afford the best possible chance of complete cure. This can be accomplished by clean excision with a scalpel; but if it accidently cuts into cancer, it will scatter and implant it along any further line of the incision. The electric cautery loop at a dull red heat cannot thus transplant cells, but cuts skin readily, does not char, yet destroys cells 2 or 3 mm. beyond the incision line; controls practically all hemorrhage at once; blocks lymphatics; readily permits gross differentiation of normal and pathologic tissue; obtains the entire lesion at once for microscopic diagnosis, and, with properly regulated heat, is capable of exceedingly fine dissection about tendon sheaths, eyelids, etc. Local anesthesia makes the procedure painless; the postoperative pain is negligible unless bone is involved; the area granulates readily; the scar is often either unnoticeable or a slight smooth depression, or in extensive areas contracts into a raised line. The final result is limited only by the judgment of the operator as to the boundaries of the lesion, a factor likewise necessarily present in any form of treatment. We do not advocate cautery excision in squamous cell cancers in which adjacent lymphatics and glands early become involved, as lower lip, breast and similar types. Soldering irons at dull red heat or less are ideal for large lesions, or for temporary cleaning up of foul, ulcerated, incurable cases. Cauterizing bone is often necessary in far advanced cases, but causes considerably more pain, and is very slow to discharge the sequestrum and heal. Caustics act largely on the surface, are never subject to such accurate control as to depth and boundaries, cause great pain, more often stimulate the tumor to rapid growth, and usually cause an unsightly scar. Radium is often as painful as the cautery wound, never removes the cancer bearing area, requires weeks or months to effect the complete retrogression, occasionally stimulates more rapid growth, and often after apparent cure, nodules recur in the scar. However, it usually conserves adjacent tissues, and its cosmetic results are often equal to or occasionally better than the cautery scars.

Operative Treatment of Carcinoma of the Tongue

Dr. V. P. Blair, St. Louis: The majority of carcinomas of the tongue are probably mildly malignant, the unsatisfactory results and the high mortality rate being due to late and inefficient operation. Some cases are highly malignant from the onset. Surgical intervention should be undertaken early, with complete elimination of all conditions which suggest the possibility of cancer. These operations may be only a wide local excision, but can be made as radical as can an operation on the breast. The preoperative and postoperative treatment of these patients is of the utmost importance. Careful attention to the details of these will permit of more extensive operations. Roentgen-ray and radium treatments of sufficient activity are helpful adjuvants to surgery.

Summer Diarrhea of Infants: A Study of the Pus Cells in the Stools

Dr. John Zahorsky, St. Louis: It has been found that the majority of cases of summer diarrhea show a great increase in the cellular content of the stool. Our study indicates that most of the diarrheal diseases of summer are infectious processes. Adults are a common source of the virus that produces diarrhea. The method of conveyance is by contact, insects and, more frequently, by milk and ice cream.

Feeding of Athreptic Infants

Dr. Maurice J. Lonsway, St. Louis: In athrepsia or marasmus it is necessary to give in large amount food which contains the elements necessary to nutrition and which does not cause gastro-intestinal disturbances. Whole lactic acid milk with the addition of glucose, dextrin and maltose, in the form of corn syrup as advocated by Marriott, meets these requirements. High percentages of carbohydrate can be given. It is not necessary usually to remove the fat. These babies begin to gain as soon as the caloric intake is sufficient. This is sometimes 200 or more calories per kilogram.

Interpretation of Bacteriologic Evidence in Influenza and Infections of Unknown Origin

Dr. R. A. Kinsella, St. Louis: The variety of reports published on the bacteriology of epidemic influenza leads to doubt as to the validity of our usual methods of investigating causes of infection. Furthermore, we are disturbed by the reflection that perhaps many of the bacteriologic reports bearing on the cause of infectious processes are fallacious. Obviously, there is need of adopting a central fundamental principle about which our studies can revolve. Such a principle is offered in the consideration that native bacteria, being both adaptable and adapted to their surroundings, do not cause epidemics. Conversely, the bacteria that cause epidemics cannot be those that are common inhabitants of human bodies, but must be unadapted and unadaptable invaders. This principle is effectively illustrated by contrasting adapted and unadapted members of the same group: namely, colon bacilli with typhoid bacilli; Group IV pneumococci with Group I pneumococci; diphtheroid bacilli with diphtheria bacilli, and green streptococci with hemolytic streptococci. Following such a principle, we shall not be misled into ascribing the etiology of influenza to such common varieties as green streptococci and the Pfeiffer bacillus. An analogous situation exists in the study of the so-called streptococcus infections. There is no doubt about the virulence of the hemolytic variety, or about its contagiousness. But we cannot intelligently attach etiologic importance to such ever-present, adapted bacteria as the green streptococci, when considering highly individualized disease processes. Such bacteria as green streptococci and Pfeiffer bacilli depend for their invading activities on a profound local lowering of resistance.

A Plea for a State General Hospital Articulated with County General and Other Hospitals, and the Completion of Medical Education in the University of Missouri

Dr. Frank G. Nifong, Columbia: Modern medicine and the hospital idea in medical service are inseparable. Hospital and health service is one of the functions of the state for the promotion of the general welfare and it is also the business of the local communities and counties. This matter is not second in importance to education. The county general hospital is a crying need for our more populous counties, no less needed than in our cities. The obligation of the state to give its citizens higher and technical education is a well established principle. The general welfare can be promoted in no better way than by furnishing the best possible medical education to its citizens. We need a great medical center in Missouri University both for undergraduate and for graduate work. The medical department of the university should cooperate with the state board of health in all its activities. To accomplish the various purposes, the state medical department must have adequate clinics and hospitals. A state general hospital articulated with various county and other standardized hospitals would furnish exceptional and unique clinical facilities. This would bring all the people and profession of the state into intimate touch with all health matters and health service.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Physiology, Baltimore

March 1, 1920, **51**, No. 2

Blood Volume Studies. I. Experimental Control of a Dye Blood Volume Method. C. W. Hooper, H. P. Smith, A. E. Belt, and G. H. Whipple, Berkeley, Calif.—p. 205.

*Blood Volume Studies. II. Repeated Determination of Blood Volume at Short Intervals by Means of the Dye Method. H. P. Smith, San Francisco.—p. 221.

Blood Volume Studies. III. Behavior of Large Series of Dyes Introduced into the Circulating Blood A. B. Dawson, H. M. Evans, and G. H. Whipple, Berkeley, Calif.—p. 232.

*Blood Volume Studies. IV. Blood Volume as Determined by Change in Refractivity of Serum Nonprotein Fraction After Injection of Certain Colloids into the Circulation. I. McQuarrie and N. C. Davis, San Francisco.—p. 257.

*Influence of Splenic Extract on Number of Corpuscles in Circulating Blood. A. W. Downs and N. B. Eddy, Montreal.—p. 279.

Physiologic Changes Produced by Variations in Lung Distention. Efficiency of Pulmonary Circulation in Overcoming Obstruction. F. P. Chillingworth and R. Hopkins, New Orleans.—p. 289.

*Experiments on Pathologic Physiology of Acute Phosgen Poisoning. W. J. Meek and J. A. Eyster, Madison, Wis.—p. 303.

To What Extent are the Physiologic Effects of Carbon Dioxid Due to Hydrogen Ions? M. H. Jacobs, Philadelphia.—p. 321.

*Gastric Response to Foods. Response of Normal Human Stomach to Vegetables Prepared in Different Ways. R. J. Miller, H. L. Fowler, Olaf Bergeim, M. E. Rehfuss and Philip B. Hawk, Philadelphia. —p. 332.

Relation of Suprarenals to Certain Experimental Hyperglycemias (Ether and Asphyxia). G. N. Stewart and J. M. Rogoff, Cleveland. —p. 366.

*Experimental Production of Edema as Related to Protein Deficiency. E. A. Kohman, Chicago.—p. 378.

Dye Blood Volume Method.—A method is outlined by Smith in which the dye blood volume method is adapted to repeated determinations on the same animal at short intervals. The soundness of the method is demonstrated by controls done in vitro as well as repeated determinations performed in rapid succession on the same animal. The experimental error does not exceed 5 per cent. Fluctuations in blood volume greater than this are sometimes seen over long periods of time. These fluctuations arise from physiologic factors, the exact nature of which is not yet understood. The dye used is brilliant vital red.

Blood Volume Determinations After Injection of Certain Colloids into Circulation.—McQuarrie and Davis outline a method of determining blood volume which consists essentially in reading refractometrically the serum nonprotein increase after the intravenous injection of a known amount of acacia or gelatin solution, or a mixture of the two. By this method they have found in the dog an average of 9.76 c.c. blood per hundred grams body weight. In the rabbit an average of determinations using samples removed five minutes after injection of medium gives a volume of 6.49 c.c. per hundred grams body weight. Of great importance is the fact that hemolysis, lipemia and cholemia do not affect the accuracy of determinations by this method.

Influence of Splenic Extract on Number of Corpuscles in Circulating Blood.—Downs and Eddy found that the subcutaneous injection of protein-free splenic extract is followed immediately by a decrease in the number of erythrocytes in the circulating blood. The decrease is temporary. The decrease is probably the result of a direct hemolytic action of the splenic agent. The decrease is frequently accompanied by a very transient increase in the number of white corpuscles.

Pathologic Physiology of Acute Phosgen Poisoning.—A study was made by Meek and Eyster of the pathologic physiology of acute phosgen poisoning. The microscope and the roentgen ray both show an early injury to the linings of the deep respiratory passages. Irritation from this results in a certain amount of reflex cardiac inhibition and vasoconstriction. Coincident with these changes there is a direct action of the gas on the red blood cells, which causes them to agglomerate and obstruct the pulmonary capillaries. The removal of red blood cells from the active circulation in this way results in a decreased hemoglobin percentage. The plugging of the capillaries throws a strain on the right heart and a right-sided cardiac dilatation is apparent. These are the chief characteristics of Stage 1. Even during Stage 1 the injury to the alveolar membranes and the increased pressure have initiated the transfusion of fluid from the blood into the tissue spaces and later into the air passages of the lungs. The rapid development of this edema is the chief characteristic of Stage 2. It results in hemoglobin concentration, reduction in blood volume and decrease in heart size, all three of which proceed to extreme degrees. Death ultimately results from decreased oxygenation of the pulmonary blood and from oxygen starvation of the tissues due to decreased blood volume, the latter, as Underhill states, being probably the more important.

Response of Normal Human Stomach to Vegetables Prepared in Different Ways.—A study was made by the authors of the response of the normal human stomach to thirty different kinds of vegetables prepared in different ways. The evacuation times and acid responses of the stomach were determined and physical and chemical changes in the ingested food noted. In general, raw vegetables low in protein, such as carrots, celery, tomatoes, cabbage, lettuce and cucumbers, leave the stomach rapidly, develop moderately high free acidities but little combined acidity and leave the stomach without great change. Boiled vegetables show much more rapid and complete disintegration. Vegetables high in starch, such as potatoes, show very considerable starch digestion before leaving the stomach. In certain cases hardly any starch reaction could be obtained toward the end of digestion.

Experimental Production of Edema as Related to Protein Deficiency.—The findings obtained by Kohman from experimental study she believes warrant the general conclusion that if it is necessary to limit the amount of protein in a diseased condition or in a period of national economic stress (as was necessary in some of the European countries during the recent war), it is advisable to administer the low protein diet in a form free from excess of water and any acid producing foods. Symptoms of developing edema must be looked for and adequate protein supplied immediately to effect a cure.

American Review of Tuberculosis, Baltimore

March, 1920, **4**, No. 1

Tuberculosis Problems of To-day: Doctrines, Conditions and Needs. D. A. Stewart, Ninette, Manitoba.—p. 1.

Tuberculosis Problem in San Francisco. G. H. Evans, San Francisco. —p. 12.

Prevention of Tuberculosis: What We Should Teach To-day. W. J. Dobbie, Weston, Ontario.—p. 23.

Experiment in Sanitary Education. H. R. M. Landis, Philadelphia. —p. 32.

Boston Medical and Surgical Journal

April 8, 1920, **182**, No. 15

Medical Aspect of Dental Irritation. W. A. Lurie, New Orleans. —p. 359.

*Ileostomy for Postoperative Obstruction Following Appendectomy. E. P. Richardson, Boston.—p. 362.

Surgical Treatment of Acute Empyema by Valve Drainage, Provided by Flap of Skin, Fascia, and Muscle, under Local and Paravertebral Anesthesia. W. R. Morrison, Boston.—p. 366.

Chest Conditions Resulting from War Wounds and Their Surgical Treatment. B. H. Alton, Worcester, Mass.—p. 369.

*Severe Case of Gas Bacillus Infection with Recovery. D. S. Adams, Worcester.—p. 373.

Treatment of Intestinal Obstruction.—In the consideration of the treatment of obstruction, Richardson says a distinction should be made between obstruction occurring shortly after operation and obstruction occurring from spontaneous causes, or long enough after operation for adhesions to cicatrize. The place of enterostomy is distinctly different in these two classes of cases. In the first class, its place as an evil occasionally necessary is clear. In the second class, obstruction by recent adhesions, it may be both palliative and curative. Good results depend on operation being undertaken early, and it is far better to operate on an occasional case unnecessarily than to postpone operation until the latter stages of obstruction have developed.

Gas Bacillus Infection and Recovery.—A patient who received a gunshot wound of the leg developed gas gangrene

extending up to his perineum and groin within thirty-six hours. It was rapid in its advance, and yet was controlled by amputation through, and not above, the active process. The case appeared hopeless, but to give the man the benefit of the doubt, Adams performed a guillotine amputation about mid-thigh, with preservation of skin flaps. Dichloramine-T dressings were applied to the raw surface. During the operation 800 c.c. of fresh blood was given, followed by 1,500 c.c. of physiologic sodium chlorid solution containing 2 per cent. sodium bicarbonate. The result was excellent.

Medical Record, New York

April 10, 1920, **97**, No. 15

Study of Certain Bands in Right Upper Abdominal Quadrant. W. S. Bainbridge, New York.—p. 593.
Observations After Severe Gunshot Fractures of Long Bones. C. W. Perkins, New York.—p. 598.
Case of Bilocular Uterus with Carcinoma in Left Horn. O. C. Melson, Rochester, Minn.—p. 604.
*Differential Diagnosis Between Pains of Tabes Dorsalis and Those of Focal Infection. A. M. Crance, Bay City, Mich.—p. 606.
Mon-Arsone in Treatment of Syphilis. B. L. Wright and L. A. Kennell, U. S. Navy, and L. M. Hussey.—p. 607.
Cases of Sudden Canities in History. C. G. Cumston, Geneva, Switzerland.—p. 609.
Bronchial Asthma. E. Zugsmith, Pittsburgh.—p. 611.

Differential Diagnosis Between Tabes and Focal Infection.—Crance cites a case diagnosed as tabes, the patient being treated unsuccessfully for syphilis, in which complete relief from symptoms followed the extraction of abscessed teeth. All the physical signs were suggestive of tabes, but intense antisyphilitic treatment for nine years failed to give relief to the patient. Wassermann tests had always been negative, but the lightning pains were typical. Romberg's sign was slightly positive and there was a suggestion of an ataxic gait. Three weeks after the extraction of all abscessed teeth, the patient was completely relieved of all his symptoms, nor had any of them returned within two months, when he was last seen.

New York Medical Journal

April 3, 1920, **111**, No. 14

*Study of Effects of Alcohol from a New Angle. C. S. Potts, Philadelphia.—p. 573.
*Alcohol a Nerve Stimulator. W. H. Porter, New York.—p. 579.
Chemical Aspects of Wood Alcohol Problem. C. Baskerville, New York.—p. 580.
Lesions in Wood Alcohol Poisoning. C. Norris, New York.—p. 583.
Wood Alcohol and the Eyes. C. W. Cutler, New York.—p. 585.
Wood Alcohol Poisoning. A. Comora, New York.—p. 588.
Narcotic Drugs and State Legislation. A. D. Greenfield, New York.—p. 588.
Management of Empyema. A. McGlannan, Baltimore.—p. 590.

Effects of Alcohol.—While not attempting to say anything good of the use of alcohol as a beverage, Potts endeavors to show that statements of its bad effects on the human race are exaggerated. He also protests against allowing hysteria, hypocrisy and cowardice to influence the settlement of medical questions. It has long seemed to him that if alcohol was nearly as potent a factor in causing mental and physical deterioration as is claimed by many, by this time the world should be peopled almost entirely with physical and mental weaklings. Therefore, the world, instead of progressing as it has, should have gone backward, and the average length of life should be much less in spite of the increase in knowledge and skill in the treatment of disease. Potts believes that most of the indictments of alcohol are based on the results of laboratory work and the study of statistics, and that such evidence is often fallacious and not consistent with actual experience. Potts gives biblical, historical and biographic references to prove his point that alcohol does not cause mental and physical deterioration. Speaking on the effects of alcohol in those who do not use it and do not wish any one else to do so, Potts claims that many such are undoubtedly mentally peculiar. They exhibit a form of bolshevism in that they want to rule or ruin. They alone are right. In furtherance of their views they believe in false statement, vilification, and slander of those who do not agree with them. They refuse to believe conclusive evidence (which according to an old definition means insanity). They advocate confiscation and destruction of legally owned property, illegal exercise of police power, and they tempt people to do the things they protest against, so that they can show how wicked the world is. Potts is of the opinion that this intolerant exhibition of superiority deliberately shown by this extreme section is based on a form of egoism; it is a consequence of a psychologic self-gratulation and self-esteem which borders on an obsession and is regarded by some authorities as pathologic. The burthen of Potts' paper is summarized as follows: That alcohol is not necessarily a deterrent to good work and to the attainment of greatness; that the world is not going backward in spite of its long continued use of alcohol, and so far as its use is concerned is in no danger of doing so; that every one who uses acoholic beverages is not per se a drunkard and unable to do his share of the world's work. Potts does not dispute that it may be a cause of harm, both from the medical and social point of view, but it also, from the former point of view, may be an agent for good. He believes that legislation influenced my perversion of facts, hysteria, hypocrisy and cowardice is of more danger to the country than alcohol. There never was a time when common sense was more needed and never a time when it was less prevalent.

Alcohol a Nerve Stimulator.—Clinical observation has convinced Porter that many lives have been saved by the proper use of alcohol. He considered it to be a great mistake to drop so valuable an agent from the pharmacopeia—an agent whose action is so definitely known.

Porto Rico Medical Association Bulletin, San Juan

March, 1920, **14**, No. 125

*Rapid Staining Technic for Malaria Plasmodium. P. Gutiérrez Igaravídez.—p. 1.
*Garlic as Condiment and Drug. F. del Valle Atiles.—p. 5.
Precautions with Roentgen-Ray Work. J. Barreiro Lago.—p. 10.

Staining Technic for Malaria Plasmodium.—Gutiérrez describes experiences with the different staining methods in vogue to decide which method is the most practicable and reliable. His final conclusion is in favor of the Tiedmann technic, slightly modified. A 1 per cent. solution of methylene blue in methyl alcohol is made, and a similar solution of eosin, and these are kept in dark colored vials. When ready to use, 10 gm. of each solution and 10 gm. of methyl alcohol are mixed, and 10 or 15 drops of the reagent mixture are poured on the smear of blood dried in the air. Then 20 or 30 drops of neutral, filtered water are added immediately, and the slide is tilted to insure the complete blending of the stain and the water. In one and one-half minutes—counting from the moment the stain had been dropped on the specimen—the preparation is rinsed rapidly with water and dried with blotting paper, when it is ready for examination under the microscope. The water used does not have to be distilled water but it must be neutral; he prefers rain water for the purpose. Filtered water from any source can be used, provided that it is neutral. He tests for this by adding a small amount of pulverized hematoxylin to a test tube containing 100 c.c. of the water and agitating gently. If the water turns yellow, this shows acidity, while a deep violet tint indicates that it is alkaline. A light violet tint indicates that the water is neutral and suitable to use. By adding a few drops of a 1 per cent. solution of sodium bicarbonate to the water and then a little more hematoxylin, comparing the tint with a control tube, the neutral reaction can soon be realized. This staining technic shows up all the forms of the plasmodium of malaria and other parasites of the blood, and it is excellent also for the differential leukocyte count. In conclusion he emphasizes that with this simple and reliable technic any practitioner can examine blood specimens, himself, without expensive equipment or relying on a distant laboratory.

Garlic as a Drug.—Del Valle Atiles discusses the therapeutic effects of garlic as reported in the literature, and urges further study in this line as tradition has long credited *Allium sativa* with medicinal virtues. The records of comparatively recent years show that garlic has been advocated in whooping cough in adults, in tuberculosis, in infantile diarrhea, in typhoid, in treating wasp stings, as a stimulant of secretions and as a vermicide, diuretic, anticatarrhal, etc.

Surgery, Gynecology and Obstetrics, Chicago

April, 1920, **30**, No. 4

*Localization or Elimination of Cerebral Tumors by Ventriculography. W. E. Dandy, Baltimore.—p. 329.
*Experimental Study of Ureteral Ligation; Demonstration of Late Results to Ureter and Kidney. J. R. Caulk and R. F. Fischer, St. Louis.—p. 343.
Abnormalities Resulting from Remains of Omphalomesenteric Duct. Report of Two Cases. M. Barron, Minneapolis.—p. 350.
Gangrene of Ectopic Kidney from Twisted Pedicle. J. L. Ransohoff, Cincinnati.—p. 356.
*Toxic Goiter Following Influenza. C. A. Roeder, Omaha.—p. 357.
Diverticulum of Descending Colon Causing Hydronephrosis. G. F. Straub, Honolulu.—p. 359.
*Narcosis Tremor and its Treatment. T. Rietz, Västervik, Sweden. —p. 361.
Unreliability of Tempertaure in Otitis of Infants and Children as an Indication for Mastoid Operation. F. Whiting, New York.—p. 364.
*Wassermann Reaction and Miscarriages. H. Goodman, New York. —p. 368.
*Use of Potassium Mercuric Iodid for Skin Disinfection. W. F. McKenna and H. A. Fisher, Brooklyn.—p. 370.
*Study of Arteries Supplying Stomach and Duodenum and Their Relation to Ulcer. T. B. Reeves, Rochester, Minn.—p. 374.
Pneumoperitoneum. B. H. Orndoff, Chicago.—p. 386.
Gas Cysts of Intestine: Report of Case. H. G. Sloan, Cleveland. —p. 389.
Rhinophyma. M. G. Seelig, St. Louis.—p. 394.
Abdominal Surgery in Casualty Clearing Station and Evacuation Hospital. W. M. Thompson, Chicago.—p. 398.
*Utilization of Transposed Uterus for Cure of Extensive Vesicovaginal Fistula. Report of Case. C. E. Dowman, Atlanta.—p. 403.
*Skin Grafting by Means of Freezing with Ethyl Chlorid. G. Torrance, Birmingham.—p. 405.
Murphy Button Retained Four Years; Complicated by Ulcer at Site of Gastro-Enterostomy. A. F. Tyler, Omaha.—p. 406.
Amputation Stump Retractor. P. W. Sweet, Rochester, Minn.—p. 407.
Facility in Closure of the Paramidian Upper Abdominal Incision. C. A. Pannett, London, England.—p. 408.
Enucleation of Eyeball and its Substitute Operations. J. E. Weeks, New York and Allen Greenwood, Boston.—p. 410.

Ventriculography.—Ventriculography has been done by Dandy in more than seventy-five cases. The majority of these patients had hydrocephalus: in many cases ventricular dilation was suspected and the injection of air made the diagnosis certain. In many others, the injection was made in order to determine whether the disease was progressive or stationary, in other words, as a means to determine whether or not operative treatment should be instituted. In many cases, Dandy says, the localization of the growth can easily be determined by signs and symptoms and in such instances he has at present no intention of instituting ventriculography, although he feels that eventually this method may be important in differentiating the type of tumor and determining the kind of operative treatment which is necessary. This possibility is strongly suggested by two of the cases described. Five cases are described, each representing entirely different findings and showing the range of usefulness of this procedure when tumors of the cerebral hemisphere are suspected. In all but one of these, the ventriculogram was the only means by which a positive localization could be made. One tumor occluded a lateral ventricle and dislocated both lateral ventricles. Another tumor altered the size and shape of one lateral ventricle. In a third case a cerebral tumor, though suspected, was eliminated by the hydrocephalus. In a fourth case a unilateral hydrocephalus was demonstrated.

Ureteral Ligation.—Faced with the difficulties of deligating a ureter, such as reopening an abdominal wound and searching for a small tie in a pelvis imbedded with plastic exudate, and the ureter incorporated with the uterine vessels, with the consequent danger of hemorrhage and the possibility of cutting the ureter with a resulting fistula—certainly a much more serious operation than a double nephrostomy—and with the same difficulty attending a ureterovesical anastomosis (with the exception of hemorrhage), Caulk and Fischer are of the firm belief that the safest method of protecting the individual is an immediate double or single nephrostomy. If a woman has undergone a pelvic operation complains of pain in the kidney, which is usually about the third day, and this kidney is found to be enlarged and palpable, not having been so beforehand, such symptoms are highly suggestive of ureteral ligation. If the patient's condition would warrant it, a ureterogram would clinch the diagnosis. It is then for the surgeon to decide whether it is better for the patient to allow the kidney to die or to try to protect it. The danger of a unilateral nephrostomy should be extremely slight, as it can be done under local anesthesia and certainly quickly under gas.

Toxic Goiter.—Eight cases are cited by Roeder. Of these, three had adenomas which suddenly became very toxic. Five cases of hyperthyroidism had their onset definitely following influenza.

Narcotic Tremor.—Thirty-three cases of narcosis tremor have been studied by Rietz. With two exceptions only, the patients were men. Most of the patients were between the ages of 25 and 40. Neither the hospital records nor the objective examination of the patient has afforded any exact means of determining the factors which may possibly be considered as favoring the appearance of the spasms. Neither the technic used in administering the anesthetic nor the anesthetic seem to make any difference nor does the position of the head, etc. The part of the body on which the operation was performed was irrelevant to the appearance of the tremor. On the hypothesis that narcosis tremor is the result of an abnormal irritation of the brain produced by the anesthetic which is conducted thither by the blood, Rietz has endeavored to overcome this phenomenon. To eliminate, at least for a moment, the influence of the irritated motor centers, during an operation on a boy, aged 16, he pressed, for a few seconds, on the neck in the fossa carotica. The result was evident at once; the narcosis tremor disappeared as by magic. It appeared again, however, when the pressure was removed. Renewed experiments had precisely the same effect. When pressure was again applied for a somewhat longer period (about one-quarter minute), the spasms ceased definitely. Although on some occasions the maneuver had doubtful results or none at all, continued observations still showed that the measure was of value. In the thirty-three cases mentioned the measure was used twenty-nine times; four patients had short spasms which ceased of themselves and did not call for treatment. The other twenty-nine cases fall into three groups as follows: In Group 1, the effect was certain in nineteen cases; in Group 2, the effect was uncertain in five cases; in Group 3 the effect was nil in five cases. In no way does the result vary so far as the degree of unconsciousness is concerned nor does the result bear any relation to the duration of the narcosis. It is easier to apply pressure in this region if one stands at one side of the patient and turns his head over toward the other side. The pressure is applied either with the thumb or the four fingers together.

Wassermann Reaction and Miscarriages.—Goodman found that among 1,320 pregnant women, 87 per cent. were Wassermann negative. Only 6.7 per cent. gave a 4 plus positive reaction, and in 2 per cent. more of the cases, the Wassermann was 3 plus positive. Of the Wassermann negative multiparas, 37 per cent. had suffered one or more miscarriages as compared to 52 per cent. of the 4 plus positive cases. Only one woman among the 1,320 gave a history of having been known to be infected with syphilis, although approximately one woman out of each eleven gave a strongly positive Wassermann reaction, indicating in all probability a syphilitic infection

Potassium Mercuric Iodid Skin Disinfection.—The results obtained by McKenna and Fisher in their experimental work show conclusively that solutions of potassium mercuric iodid or tincture of iodin in dilutions free from any harmful action, are efficacious in killing bacteria on and in the skin, and, therefore, must be considered as having a definite value in lessening the possibilities of bacterial infection in surgical operations as well as in the treatment of traumatic wounds. These experiments also show that potassium mercuric iodid, in a concentration of 1:100 in acetone, or in 70 per cent. alcoholic solution is more efficient for this purpose than is the official tincture of iodin. The greater penetration of the potassium mercuric iodid in acetone and the more rapid evaporation of this solvent make this solution the most desirable one for use. Furthermore, solutions of this double iodid do not stain, and produce no irritation or blistering of the

skin. In these respects, therefore, potassium mercuric iodid, in a strength of 1 per cent. in 70 per cent. alcohol—or better, in acetone—is preferable to iodin for disinfecting the skin.

Relation Between Ulcer and Arterial Supply of Stomach.—The investigation reported on by Reeves shows that the anatomic arrangements of the arteries along the lesser curvature of the stomach and throughout the first inch of the duodenum are such that the arteries are predisposed to thrombosis. The plexus of vessels in the submucosa on the lesser curvature is made up of much smaller and longer arteries without as free anastomoses as in other regions of the stomach. The branches from this plexus run a very tortuous course to enter the mucosa. The resistance offered the blood stream is constantly greater and, as a result, the blood current is slower as it enters the small arteries of the mucosa. The submucous plexus of arteries in the first inch of the duodenum is made up of relatively few vessels in comparison with other parts of the duodenum. They are small and do not anastomose freely; they give off branches to the mucosa some of which simulate the gastric type of spiral artery. The rather limited blood supply and the gastric type of artery predispose to thrombosis. Since the vessels are more liable to be occluded by emboli, it is reasonable to suppose that they are an important factor in the production of ulcer by hematogenous infections. Reeves submits the hypothesis that possibly slight deviation from the normal may contribute to peptic ulcer.

Transplanting Uterus in Vesicovaginal Fistula.—In the case reported by Dowman a most extensive vesico-uterovaginal fistula resulted from the pressure of the child's head. She had been attended by a midwife who had allowed her to remain in labor for six days. A physician was then called and removed a dead child by means of forceps. Following this delivery the patient had a constant dripping of urine from the vagina, and no longer voided in the normal way. On examination, Dowman found complete destruction of almost the entire posterior wall of the bladder. This defect was filled in by making use of the uterus. The uterus was freed from all its attachments and was then placed in an extreme anteverted position so that the posterior wall of the fundus could be utilized as the posterior wall of the reconstructed bladder. That part of the bladder wall which was thus accessible through the abdominal opening was sutured to the posterior surface of the uterus by means of chromic catgut sutures, in such a manner as to bring the mucous membrane of the bladder in contact with and approximated to the peritoneal covering of the uterus. The patient was last seen six years after the operation and seemed healthy in all respects. Her bladder had given her no further trouble.

Skin Grafting with Aid of Ethyl Chlorid.—In the method used by Torrance, the thigh is shaved and cleaned with ether and alcohol; and an area on the top of the thigh about the size of a silver dollar is frozen and is cut out with a sharp razor just within the frozen area going well down into the fatty layer. The grafts are applied immediately to the granulation surface and when they become "thawed out" they will be found to be firmly glued to the granulation surface. They very rarely show a tendency to separate if the granulations are in good condition when the grafts are applied and if care is taken not to rub them off. A dry dressing is applied and is changed every day if there is any discharge from the surrounding granulations.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

March 6, 1920, **1**, No. 3088

*Dyspeptic and Other Referred Symptoms Associated with Disease of Gallbladder and Appendix. H. Rolleston.—p. 317.
*Tumors Complicating Pregnancy, Labor, and Puerperium: Cancer of Uterus. H. R. Spencer.—p. 320.
Therapeutic Value of Oxygen in Pulmonary Lesions. J. C. Meakins.—p. 324.
*Cutaneous Manifestations in Case of Branchial Fistula. A. Eddowes.—p. 326.

Referred Symptoms in Disease of Gallbladder and Appendix.—The question how morbid changes in the gallbladder and appendix induce symptoms in other viscera and distant parts is gone into to some length by Rolleston, although nothing new is brought forward. The various mechanisms that may be at work in different cases are tabulated as (1) reflex, (2) mechanical, (3) toxic and (4) infective. Reflex: Irritation in the appendix or gallbladder may cause hypertonus of the stomach and spasm of, or failure to relax on the part of, the pyloric or ileocecal sphincter, leading to gastric or ileal stasis and so to excess of acid or to toxemia. Very often the appendix when removed shows little macroscopic change to correspond with the prominent symptoms that then disappear; microscopic examination may be necessary to reveal the evidence of past inflammation in its walls, especially fibrosis in the submucous coat, and often the changes are very slight. Mechanical: Pericholecystitic adhesions may embarrass the movements of the stomach, interfere with the passage of food through the pylorus, or even lead to an hour-glass stomach. Though often the legacy left by cholecystitis, these adhesions may be due to duodenal or gastric ulcer. Periappendicular adhesions may cause intestinal stasis and so toxemia, and the same result, only in a more marked degree, may be produced by an appendix adherent across the lower part of the ileum. Toxic: Absorption of bacterial toxins from the gallbladder or appendix may set up general toxemia, cause myocarditis, and damage the mucous membrane of the stomach and intestines, thus giving rise to hemorrhage. Infective: Micro-organisms from the appendix or gallbladder may infect the kidneys, especially the right. Infection of the gallbladder is prone to spread to the pancreas, and local thrombophlebitis of branches of the iliac veins, secondary to appendicitis, may give rise to small pulmonary emboli and pleurisy; malignant endocarditis has been found to be associated with gallbladder infection and with appendicitis. The differential diagnosis of appendix and gallbladder dyspepsia from gastric and duodenal ulcer presents considerable difficulties, but roentgen-ray bismuth or barium meal may give valuable assistance in differentiation. Other conditions mentioned as being caused by disease of the gallbladder and appendix are: chronic colitis; glycosuria and diabetes; cardiac symptoms; pyelitis and pyelonephritis; synovitis and arthritis.

Cancer of Uterus and Pregnancy.—Figures quoted by Spencer indicate that in the child-bearing period of life cancer not combined with pregnancy is at its maximum in patients over 40, but when combined with pregnancy, under 40; and that below 30 the frequency of cancer is six times as great in the pregnant as in the nonpregnant. Spencer's youngest patient was 26 years of age. He has had ten cases in all. Three patients are alive twenty-five, twenty-two and nineteen years after operation, respectively. Each one of the ten patients was a multipara.

Skin Symptoms in Branchial Fistula.—Falling of the hair of the scalp and eyebrows, some loss of eyelashes, skin dry and rather scaly were the cutaneous symptoms in Eddowes' case of branchial fistula. The patient's grandmother had a similar condition.

Edinburgh Medical Journal

March, 1920, **24**, No. 3

*Treatment of Fracture of Mandible. W. Guy.—p. 138.
Transfusion of Blood for Hemorrhage. J. M. Graham.—p. 142.
Artificial Rotation of Head in Persistent Occipito-Posterior Positions. J. L. Lackie.—p. 168.
Tuberculosis in One Division of English Navy. C. J. Campbell.—p. 173.
Case of Diffuse Hypertrophy of Breasts. B. S. Simpson.—p. 176.

Treatment of Fracture of Mandible.—Guy maintains that in the vast majority of cases of fractured mandible, immobilization is not only not necessary, but inadvisable, or even prejudicial to a successful issue. The aim of treatment should be reestablishment of function at the earliest possible moment. It is of importance that the fracture should at the termination of treatment be united; it is of still greater importance that the patient should have a lower jaw which is functional, which, in short, he can use. Immobilization in many instances defeats the attainment of this result.

Japan Medical World, Tokyo

Feb. 28, 1920, **10**, No. 9

Anthropometry of Civilized Man. Arthur MacDonald.—p. 185.
Action of Epinepbrin and Hydrochloric Acid Against Tetanus Toxin. R. Kobayashi.—p. 185.
Toxin and Antitoxin of Bacillus Influenzae. Y. Watanabe.—p. 186.

Lancet, London

March 20, 1920, **1**, No. 5038

Hunter, Gaskell and Evolution of Nervous System. W. L. Brown.—p. 641.
*Heat Hyperpyrexia. W. H. Willcox.—p. 648.
*Syphilis at a Venereal Clinic. E. F. Skinner.—p. 650.
*Later History of Four Cases of Total Laryngectomy for Malignant Growths. C. Symonds.—p. 652.
*Intravenous Injection of Tartar Emetic in Guinea-Worm Infections. J. W. S. Macfie.—p. 654.
Case of Abnormal Descent of Testicle. J. A. C. Macewen.—p. 655.
*Syphilitic Spondylitis: Negative Wassermann Reaction. S. C. Evans and C. F. Marshall.—p. 656.

Heat Hyperpyrexia.—Cases of illness due to exposure to high atmospheric temperature are analyzed by Willcox. The clinical types were: (1) heat exhaustion (mild type); (2) gastric type; (3) choleraic or gastro-intestinal type; (4) heat hyperpyrexia (sunstroke). In types 1, 2 and 3 heat hyperpyrexia may suddenly develop unless great care be taken in the removal of patients from a hot atmosphere. Types 2, 3 and 4 are all dangerous, and in them the prognosis is grave. Of eighty severe cases of effects of heat, thirteen (16.2 per cent.) were of the gastric type, nine (11.2 per cent.) of the choleraic, and fifty-eight (72.5 per cent.) were hyperpyrexial. The onset was often quite sudden. Heat hyperpyrexia frequently occurred in the very hot weather in hospital patients suffering from another disease. In them the temperature would often suddenly rise to 110 F., coma and convulsions supervening. Frequency of micturition is a characteristic early symptom, and is sometimes associated with urethral pain. The temperature is somewhat raised, from 100 to 102 F. or so, and the skin is hot and dry. These preliminary symptoms usually last for a few hours, sometimes as long as forty-eight, after which mental excitement and delirium supervene and the temperature rapidly rises to about 110 F. Marked cardiac dilatation, often associated with a systolic murmur, occurs in the severe cases. On examining the urine, indican was found present in excess in all of six acute cases in which a special examination was made. Acetone and diacetic acid were found present in small amount in one out of eight acute cases specially tested. Albumin was detected in small amount in three out of eight acute cases. No casts were seen. Of nervous symptoms, restlessness and delirium occur with the onset of hyperpyrexia, and are quickly followed by stupor and coma, with incontinence of urine and feces. Muscular twitching and convulsions are very common with the high temperature. The knee-jerk is almost always absent in the pure heat-stroke cases during the acute stage. In severe cases the knee-jerk does not return for three or four weeks, in milder cases it returns earlier. The presence of knee-jerks is a valuable prognostic sign, for when they have returned there appears to be much less risk of a relapse, and the patient may then be evacuated with safety. Many of the severe cases after the hyperpyrexia has subsided show a pyrexia, the temperature remaining for several days about 102 or 103 F. For the gastric type of case removal to a cool atmosphere, sodium bicarbonate in frequent full doses by the mouth, and free purgation give the best results. The choleraic type of case is treated on similar lines to cholera. Heat hyperpyrexia demands treatment with sprays of ice-cold water and fans, quinin dihydrochlorid being given intravenously or intramuscularly if there is the slightest suspicion of malaria. Convulsions are treated by venesection, or morphin or chloroform inhalations.

Syphilis in Women.—Skinner presents his analysis of 354 cases of syphilis seen in the course of one year. A few observations are specially emphasized. For instance primary cases are still in a grave minority of admissions. Women do not seek advice in the primary stage, and steps should be taken to disseminate knowledge of the dangers of venereal disease and the advantages of the clinics amongst the female population. Continuity of treatment is essential for cure, and discontinuity a possible danger. Only where treatment is commenced before the Wassermann reaction has become positive can a cure be definitely promised.

Results of Laryngectomy for Cancer.—Symonds' patients have lived in comfort and happiness, and done useful work for eight, twelve, fifteen and a half, and twenty-two years, respectively. One patient died of old age; here was the most extensive of all the operations.

Tartar Emetic in Guinea-Worm Infections—Ten cases of guinea-worm infection in various stages were treated by Macfie at Accra by means of intravenous injections of tartar emetic. In five of the ten cases the whole guinea-worm was still in the body at the time when treatment was begun. In two, the sore healed under treatment and the worm did not come away; one of these patients was seen a month and one a week after the cessation of treatment, and appeared to be cured. In one, part of the worm was pulled out and broken off during treatment; this case, nevertheless, did well and was apparently cured. In one the sore closed temporarily, but reopened, and the worm was eventually wound out. One was lost sight of at an early stage. In five of the cases part of the guinea-worm had been pulled out and broken off before treatment was begun; all these cases showed signs of acute inflammation of the affected limb. The inflammation subsided and the guinea-worm sore healed in three of these cases, the portions of the worm which had not been pulled out remaining in the body but causing no inconvenience. One was complicated by the presence of a suppurating wound, so that the effect of treatment was not clear. And one was lost sight of at an early stage. In all but one of the cases treated intravenous injections of tartar emetic, even in the small doses given (3.5 to 9 grams), appeared to have a beneficial action. They appeared to relieve the inflammation caused by the breaking of the worm, to effect the healing of the sore without the previous removal of the worm, and to shorten the duration of the affection. In most of the cases it was impossible to continue the injections as long as had been intended, either because the patients had left Accra or because they themselves had concluded, perhaps prematurely, that they were cured and in no need of further treatment. In the cases which were longest under observation it appeared as if the antimony had killed the guinea-worm in the body and allowed it to be absorbed.

Syphilitic Spondylitis.—The case Evans and Marshall report resembles Fournier's in affecting the same vertebrae, but differs in the absence of cavitation of the vertebrae, abscess formation, and muscular atrophy. The process of new bone formation predominated over bony destruction. This is characteristic of most cases of syphilitic spondylitis and distinguished them from tuberculous disease. Noteworthy features of this case are the rarity of the lesion, its occurrence in spite of treatment, and the persistently negative Wassermann reaction, the first test being made when the vertebral lesions were in active development. This case would therefore appear to serve as a warning against placing too much reliance on the Wassermann reaction, both as regards diagnosis and prognosis.

Medical Journal of South Africa, Johannesburg

January, 1920, **15**, No. 6

Experimental Determination of Vertebrate Hosts of Some South African Cercariae from the Mollusks Physopsis Africana and Limnaea Natalensis. A. Porter.—p. 128.
Injury to Eye by Contents of Golf Ball. R. C. J. Meyer.—p. 133.
Case of Purpura Hemorrhagica. J. J. Levin.—p. 135.

South Africa Medical Record, Cape Town

Feb. 28, 1920, **18**, No. 4

Some Impressions of Surgical Work in France. H. A. Moffat.—p. 63.
Some Cases of Encephalitis (Lethargic?). H. A. Loeser.—p. 66.
Surgical Treatment of Cancer of Uterine Cervix; Nineteen Cases. R. Sharp.—p. 68.
*Case of Rupture of Bladder. L. Gordon.—p. 72.
Case of Convulsions in a Child, Lasting 24 Hours and Terminating Fatally. C. Sand.—p. 73.

Traumatic Rupture of Bladder.—An unusual feature in Gordon's case, one of traumatic intraperitoneal rupture of the bladder was the obtaining of urine in considerable quan-

tities after catheterizing the patient. The patient had been kicked on the lower abdomen. The house surgeon, suspecting an injury to the bladder, passed a catheter and obtained about 10 ounces of blood-stained urine. Eight hours later 16 ounces of urine were drawn off. The bladder was washed out with boric solution, the amount of solution returned being apparently the same in quantity as was injected. About thirty-six hours later Gordon saw the patient. He suspected an intraperitoneal rupture of the bladder, but as the chief sign in these cases, that with the inability to urinate no urine is obtained on catheterization, was absent, the diagnosis seemed unlikely; still, it was made, and it appeared probable there was a laceration involving the inner coats chiefly with a small leak setting up peritoneal irritation. On opening the abdomen, the peritoneal cavity was found to contain urine, and a large tear the size of a half-crown piece, circular and ragged in outline, was discovered on the posterior wall of the bladder, an inch above the trigone, immediately behind and in line with the urethra. The bladder contained no urine. The conclusion was that on each occasion the catheter had been passed, the point had passed through the rent in the bladder wall and had tapped the urine from the peritoneal cavity. The laceration was closed. The point which seems emphasized in this case is that the possibility of a rupture of the bladder when urine is returned in large quantities after a catheter is passed must not be ignored, and further, that the diagnostic method of injecting a measured quantity of fluid into the bladder and observing the quantity returned cannot always give helpful information.

Bulletin de l'Académie de Médecine, Paris

Feb. 10, 1920, **83**, No. 6

*Fever Whips Up the Kidneys. G. Etienne and R. Druesne.—p. 127.
*The Schick Diphtherin Reaction. J. Renault.—p. 130.
Is Ambidextcrity Desirable? F. Regnault.—p. 132.

Kidney Functioning During Fever.—Etienne and Druesne found an unusually low ureosecretory index by the Ambard formula in 43 febrile patients with pneumonia, typhoid, acute rheumatism, tuberculosis or other disease. The output of urine was satisfactory and the kidneys were presumably normal in all but 5. The Ambard constant was within normal range only in 6, but in the 5 with diseased kidneys, the constant was much above the normal. With sound kidneys, the urea content of the blood was normal. These and other findings testify that the fever whips up the kidneys to extra functioning, just as it whips up the heart and the lungs to a more rapid rate. The acceleration of the heart beat drives the blood faster through the kidneys, and they eliminate waste faster and more thoroughly as long as they are adequate to the task. When they fail, or when the kidneys become too congested to keep up the work, then the Ambard constant runs up. Their figures show that the fever may whip up the kidneys to accomplish 200 per cent. of their former work.

The Schick Diphtherin Reaction.—Renault reports application of the Schick test to 281 children during a recent epidemic of diphtheria. None of those giving a negative reaction contracted the disease. Those with a positive reaction did not always develop the disease, even when diphtheria bacilli were found in the throat. The Schick test does not preclude the search for carriers, as children in both the positive and negative groups may be carriers.

Bulletin Médical, Paris

Feb. 28, 1920, **34**, No. 12

*Confusional Mental States: The Toxic-Infectious. A. Delmas and H. Beaudouin.—p. 189; The Post-Traumatic. P. Juquelier.—p. 193; Accompanying Psychoses, Neuroses and Organic Nervous Disease. L. Marchand and A. Barbé.—p. 197; Treatment. J. Roubinovitch and R. Dupouy.—p. 201.

March 6, 1920, **34**, No. 13

The Humoral Reactions with Vaccination and Their Connection with Allergy. P. Gastinel.—p. 219.

Confusional Mental States.—This entire issue of the *Bulletin* is devoted to this subject. The first article describes the toxic-infectious types. Headache is the capital symptom; insomnia, tremor, contractures, digestive and urinary disturbance and low blood pressure are also suggestive. Juquelier discusses posttraumatic mental confusion. Usually it entails gaps in the memory and grooves in the nails showing the nutritional upset. Marchand and Barbé discuss confusional states in relation to psychoses, neuroses and organic disease of the nervous system. Roubinovitch and Dupouy review the field of treatment with special regard to the heart and the general condition, and organotherapy as indicated. Experiments on cats have demonstrated the gravity of thyroid insufficiency in gravid animals, and this is confirmed by the benefit from thyroid treatment in pregnancy disturbances. It may be useful also as preliminary to ovarian treatment at the menopause, at puberty and during lactation. Symptomatic measures alone are not enough; the cause of the confusional condition must be discovered, and during convalescence psychotherapy is indispensable to aid in restoring mental balance.

Bulletins de la Société Médicale des Hôpitaux, Paris

Jan. 30, 1920, **44**, No. 4

Myoclonic Epidemic Encephalitis. Sicard and Kudelski.—p. 121; Idem with Paresis.—p. 123.
*Ascending Myoclonus. P. Carnot and C. Gardin.—p. 125.
*Paget's Disease of Bone. De Massary and Lechelle.—p. 134.
*Congenital Cyanosis. Variot and Bouquier.—p. 137.
*Rupture of Abdominal Aorta. E. Duhot and others.—p. 143.
*Herpes Zoster of the Ear. A. Souques.—p. 146.
Typhoid Meningitis. G. Laroche and Peju.—p. 150.
*Polyglandular Syndrome with Tardy Epilepsy. G. Etienne and G. Richard.—p. 154.
Primary Tricuspid Endocarditis. Rémond and Minvielle.—p. 158.
Amyotrophy with Abnormal Course. A. Rémond.—p. 159.

Ascending Myoclonia.—Carnot and Gardin found lesions in the nerve cells of the cortex and medulla and thrombosis of the veins in the meninges at necropsy of a young man who died the seventeeth day after the onset of ascending paramyoclonus. It started in the legs and spread up to the abdomen, arms and face, with fever and delirium. They also report a case of acute chorea in a young woman, five months pregnant, with a purpuric eruption and slight fever, with death in less than a week. They do not know how to class these two cases, but incline to label them influenza. Oettinger recalled that during the 1889-1890 epidemic of influenza, Leyden and Guttmann reported some cases with narcolepsy (*schlafsucht*) with a fatal outcome in some of the cases. In the discussion that followed, Sainton recalled Dubini's description in 1846 of what he called electric chorea. The description fits some of these cases of epidemic encephalitis. The jerking of the muscles, he said, is like that from an electric current, and it may be accompanied with paralysis or atony of the muscles innervated by the radialis. In Dubini's description of his thirty-six cases of epidemic electric chorea, there is no reference to any other forms characterized by somnolency.

Paget's Disease of the Bone.—The disease was restricted to one femur and developed at the age of 45.

Congenital Cyanosis.—Variot and Bouquier state that within a recent ten days four newly born infants with congenital cyanosis died when they were from 10 to 15 days old, and necropsy showed a widely patent arterial canal with congestion of the lungs and emphysema, as with death from asphyxia.

Spontaneous Rupture of Abdominal Aorta.—The rupture occurred in consequence of acute insufficiency of the kidney in a syphilitic man of 32, after recovery from a long suppurating war wound compelling amputation.

Herpes Zoster of the Ear.—The herpes zoster involved the outer ear and front part of the tongue, and there were also facial paralysis and deafness—the whole forming what may be called the syndrome of the geniculate ganglion.

Polyglandular Syndrome with Tardy Epilepsy.—Etienne and Richard report a third case in which symptoms of endocrine insufficiency accompanied epilepsy developing after 20 or 30, and in which notable improvement was realized under thyroid plus ovarian treatment. The seizures stopped at once after this organotherapy was begun and pushed, although there were certain equivalents at each menstrual period for two or three months The phenomena in the case confirmed

the assumption that the brain disturbance was of vascular origin, spasm of the arteries explaining the symptoms, and this could be traced to insufficient functioning of both the thyroid and ovaries.

Journal de Médecine de Bordeaux

March 10, 1920, **91**, No. 5

*Subarachnoid Meningeal Hemorrhage. P. Mauriac and E. Ferré. —p. 111.
Gas Phlegmon in Abdominal Wall Containing Needle Migrating from Intestine. R. Villar.—p. 114.
Anomalies of Arteries of the Kidney. G. Jeanneney and L. Massé. —p. 117.
Management of Watering Places. Cornet.—p. 120.

Subarachnoid Meningeal Hemorrhage.—In one of three cases described—all in young men—no cause for the sudden meningeal hemorrhage could be discovered, and after blood had been released by lumbar puncture, recovery was complete in two weeks. In the second case the hemorrhage followed the pulling of several teeth. The third case was diagnosed as uremia with convulsions, as the urine contained albumin. But lumbar puncture revealed the hemorrhage. Complete recovery followed in each case. The writers warn that too much fluid must not be released at one time by lumbar puncture, or the hemorrhage may be started anew.

Lyon Chirurgical

September-October, 1919, **16**, No. 5

*Volvulus of the Sigmoid Flexure. R. Ingebrigtsen.—p. 469.
*Traumatic Shock. J. Bosquette and P. Moulonguet.—p. 478.
*Recent Fractures of Neck of Femur. P. Santy.—p. 495.
*Pseudocoxalgia in Relation to Phimosis. J. Veyrassat.—p. 513.
*Intermittent Ascent and Descent of Testicle. J. Murard.—p. 519.
*Umbilical Ecchymosis a Symptom of Wounds of Liver. P. Bonnet.—p. 524.
*Resection of Scapula in Treatment of Fistulas. Bosquette.—p. 527.
*Causalgia. R. Leriche.—p. 531.

Volvulus of the Sigmoid Flexure.—As the preferable treatment for volvulus of the sigmoid flexure, Ingebrigtsen recommends resection of the loop as this, he says, is the only means to prevent recurrence. If the intestine is no longer viable, resection is the only recourse. Resection in two stages is the procedure recommended if the intestine has not sufficient vitality for an operation at one sitting, for in that case the general condition of the patient will be bad. As the first step, an artificial anus is made, which is closed later. This is done even though the sigmoid flexure does not show signs of gangrene. Primary enterorrhaphy follows the resection if the general condition of the patient permits.

Clinical Notes on Traumatic Shock.—Bosquette and Moulonguet confess to their inability to explain the origin of shock, but they have reached some definite conclusions in regard to it. They regard shock as a morbid entity. Its evolution is independent of the nature of the wounds received, and also of infectious complications and surgical intervention. When it passes off, the change is brought about suddenly and is not ordinarily associated with any event in the history of the case nor with any form of medication. The prognosis in shock cases is less favorable if a tourniquet has been applied for a long time, but there is no evident relation between the type of wound and the shock that may or may not accompany it: both legs may be crushed without any sign of shock. It seems as if there must be some individual predisposition to shock as the intangible factor common to so many unlike cases.

Delbet Treatment of Recent Fractures of Neck of Femur.—Santy, desiring to try Delbet's method of treating fractures of the neck of the femur (which consists essentially in first reducing the fracture as perfectly as possible and then passing a metal screw through the greater trochanter and lengthwise through the neck into the head of the femur), but not having at hand the special instruments recommended by Delbet, decided to use such simple tools as he had at hand. With these he was able to perform the operation in a satisfactory manner. He describes his simplified technic, thinking thus to encourage others who are not supplied with special instruments to try the Delbet method. He bored the hole for the screw with an ordinary gimlet, 10 cm. long, and used an ordinary screw from 8 to 10 cm. long and 6 mm. average diameter. He gives roentgenograms from seven cases.

Pseudocoxalgia in Relation to Phimosis.—Confirming the conclusions of Adams (THE JOURNAL, June 4, 1887, p. 631) and Reverdin, Veyrassat cites a case of his own to show that intermittent coxalgia and pseudocoxalgia may be associated with phimosis, and that circumcision will relieve the trouble, just as it often does hysteria and neurasthenia.

Sudden, Intermittent, Abdominal Migration of the Testicle.—Murard reports what he regards as a rare case of migration of the testicle; in fact, he has been able to find in the literature only one analogous case, that of Sébileau and Descomps. A boy, aged 14, after a hard day's work, although characterized by no violent effort, suddenly felt a severe pain in the region of the left groin. The pain was so severe that he almost lost consciousness. Then he noticed that the left testicle had disappeared. After five days it reappeared in place, and this was accompanied by the same severe pain as before. This continued to occur about every month, the testicle remaining away for about five days. Sudden and severe pain always accompanied its coming and going. The patient presented himself at the hospital at the age of 16. The last attack had occurred two weeks previously, but since then the testicle had not reappeared as usual, except for half a day. The testicle could not be palpated and an incision was made lengthwise of the inguinal canal. The cord was in place, but there was no testicle at its extremity. While the palpating finger was searching in vain for the testicle, the traction on the cord caused it to suddenly emerge from a sac formed by the vaginalis and peritoneum. The testicle was found to have no ligament attaching it to the scrotum or the neighboring parts. It was of normal size, though it had no epididymis. The vas deferens terminated a little below the inguinal ring. With the idea of attempting an anastomosis, the vas deferens was cut into at three different points, but was found to be impermeable, for which reason it was decided to perform orchidopexy, which was done by the Walther method. Murard left this service two days later, and while he heard a month later that the fixation had held, he is unable to give further details of the end-result.

Umbilical Ecchymosis as a Symptom of Wounds of Liver.—Bonnet reports a case of thoraco-abdominal injury, associated with wounds of the lung and the convex surface of the liver, in which an ecchymosis in the upper half of the umbilicus appeared, as a secondary symptom of the injury of the liver. He offers the case as a contribution to the study of the symptomatic influence of wounds of the convex surface of the liver affecting the suspensory ligament.

Resection of the Scapula in Treatment of Thoracic Fistulas.—Bosquette thinks that partial resection of the scapula should be regarded as the routine treatment in certain cases of thoracic fistula. If a thoracic fistula does not yield readily to treatment, there is a lesion at the base of the tract or there is a foreign body keeping up the suppuration. Accordingly, a cure will be effected by the suppression of the causal lesion if the walls of the tract are not so rigid and immobile as to prevent approximation. In the latter case Bosquette recommends resection of the scapula as very efficacious and points out two advantages of the method: it suppresses a rigid portion of the wall which maintains a dead space and constant suppuration, and, furthermore, it furnishes in the muscle and periosteum strips that are thereby liberated, very useful plastic material for the filling in of gaping wounds. There are two principal indications for the resection of the scapula: (1) when it forms the rigid roof of an intercostoscapular bullet track, and (2) when the scapula extends like a cliff over one of the borders of the fistulous wound and thus prevents the walls of the fistulous tract from coming together.

Causalgia.—Leriche remarks that causalgia was born with the war and is disappearing with it. As Weir Mitchell pointed out, the atrocious pain finally subsides in all cases. Leriche here explains the causes, the mechanism, and the technic for curing this vasomotor disturbance by perivascular sympathectomy, as repeatedly described in these columns.

Lyon Médical

Feb. 25, 1920, **129**, No. 4

Citrate Method of Blood Transfusion. Murard and Wertheimer.—p. 161.

Médecine, Paris

February, 1920, **1**, No. 5

French Neurology of the Last Five Years. Laignel-Lavastine.—p. 261.
*Motor Disturbances After Influenza and Epidemic Encephalitis. P. Marie and G. Lévy.—p. 270.
Loss of Tendon Reflexes after Skull Wounds. A. Souques.—p. 274.
*Neuralgia Persisting After Herpes Zoster. J. A. Sicard.—p. 278.
*The Pilomotor Reflex. A. Thomas.—p. 283.
*Epilepsy and Syphilis. L. Babonneix.—p. 286.
*Signs of Sciatica. G. Roussy and L. Cornil.—p. 290.
Diagnosis and Surgery for Spinal Cord Tumors. T. de Martel.—p. 292.
Toxic Factors in Psychoses. A. Barbé.—p. 297.
Nervous and Mental Complications of Influenza. P. Courbon.—p. 301.
*Atechnia. Laignel-Lavastine.—p. 303.
*Arsphenamin in General Paresis. Laignel-Lavastine.—p. 309.
The General Practitioner and the Insane. P. Courbon.—p.309.

Motor Disturbances Following Influenza and Epidemic Encephalitis.—Marie and Lévy have encountered since the fall of 1918 a number of cases with involuntary movements, choreiform or rhythmic swaying of the limbs or trunk, or tremor, or masklike expression, or twisting of the trunk interrupting the gait. The patients were all comparatively young, and all but one had passed through a febrile disease, presumably influenza or epidemic encephalitis, from two to two and a half months before. In all, the motor phenomena gradually became attenuated in the course of a year, but never disappeared completely. In one case the slowness and stiffness of motion seem to be increasing. These motor phenomena, they say, do not fit into the frame of any known disease.

Neuralgia After Herpes Zoster.—Sicard explains that lymphocytosis in the spinal fluid is often found after herpes zoster, and it testifies to the reaction on the part of the ganglia, nerve roots and meninges in the region involved, as has been confirmed at necropsy. This segment is the cross-road where the pains meet, and in certain cases the pains pass into a chronic stage, and operative treatment offers the only chance for success. His experiences on the cadaver seem to show that traction to tear out the nerve (Franke), is useless and dangerous; severing the posterior root alone (Guleke), is liable to entail motor paralysis. Sicard prefers excision of the spinal ganglion and resection of the two adjacent posterior and anterior roots. The ligature includes both roots between the dura and the ganglion, and then the ganglion is torn out. This gangliectomy has to be repeated on four segments of roots. This extradural procedure causes comparatively little trauma, and is all under direct inspection. Intradural section of the posterior roots entails loss of spinal fluid. He applied this latter method also in two cases, successfully in one, but the other patient died. In three cases the extradural gangliectomy cured two of the patients immediately, but the pains persisted in the other case. One patient with chronic neuralgia after herpes zoster, involving the ophthalmic and superior maxillary nerves, died after gasserectomy.

The Pilomotor Reflex.—Thomas explains the difference between the goose-flesh reflex and the pilomotor reflex, and their diagnostic importance as evidence of functioning of the sympathetic system.

Treatment of Epilepsy.—Babonneix says "Cherchez l'hérédo-syphilis" in epileptics and, on the least suspicion of it, give specific treatment at once, striking hard and fast and perseveringly. "When syphilis is a factor, anything is possible, even the impossible, sometimes."

Motor Signs of Sciatica.—Roussy warns that true sciatica may be accompanied by inability to bend the trunk toward the side of the lesion as the patient stands. Another test is to flex suddenly the foot on the leg, the limb extended to the utmost. As this stretches the nerve and induces pain, the nerve is drawn up, flexing the thigh on the pelvis, the leg at the knee. The sharpest pain with this is felt in the calf or back of the thigh. A similar effect is realized when the tip of the foot is twisted inward, à rotation on the anterior posterior axis of the foot. This induces such pain that the patient usually flexes the limb. These three tests have proved instructive in the three years of experience with neuralgia after war wounds involving the sciatic.

Loss of Technical Skill.—To express this, Laignel-Lavastine has coined the term "atechnia," meaning by this loss of the skill acquired by training in any line. It includes aphasia, amusia, apraxia and similar conditions of acquired incapacity.

Arsenic in General Paresis.—Laignel-Lavastine asserts that as paresis is supposed to be incurable, we are justified in attacking it vigorously, but treatment should begin before the phase of actual dementia is reached. He advises arsphenamin treatment to ward it off if the characteristic meningeal reaction is evident four years after the primary infection. The lumbar puncture fluid reveals in this that the individual is a candidate for paretic dementia long before any clinical symptoms become manifest, and vigorous treatment then offers many chances for permanently warding it off.

Paris Médical

Feb. 21, 1920, **10**, No. 8

*Technic for Operations on Diaphragm Region. A. Schwartz and J. Quénu.—p. 149.
*Epidemic Hemeralopia. R. Tricoire.—p. 152.
*Adhesion of the Soft Palate. J. Rouget.—p. 155.
Amebiasis of the Liver. P. Hornus.—p. 157.
Streptococci in War Wounds. P. Pruvost.—p. 159.

Operations in Diaphragm Region.—Schwartz and Quénu give a further illustrated description of what they call a thoraco-phreno-laparotomy, the main features of which were summarized in an abstract on page 1315, Oct. 25, 1919. They expatiate on the ample access it affords to the spleen and to all organs in the hypochondrium, the cardia, ligation of the coronaries, etc.

Epidemic Hemeralopia.—Tricoire encountered 320 cases of night blindness among soldiers. He ascribes it to lack of vitamins, as all the men threw it off promptly under cod liver oil.

Adherent Palate.—Rouget reports three cases of adhesion of the soft palate to the pharynx wall after an operation for adenoids or tonsils. The parents are inclined to incriminate the surgeon, but Rouget presents evidence that inherited syphilis is probably responsible for the postoperative conditions which entailed the synechia. In two of the cases described the Wassermann reaction was positive, and the third child had a brother with iridochoroiditis. Marfan regards inherited syphilis as the cause of adenoids in the the majority of cases.

Presse Médicale, Paris

Feb. 21, 1920, **28**, No. 15

Mode of Reaction of Blood to Extravascular Causes for Loss of Balance. A. Pruche.—p. 141.
*Lengthening the Achilles Tendon. R. Toupet.—p. 143.

To Lengthen the Achilles Tendon.—Toupet slits the tendon lengthwise from side to side and cuts the flaps across so that they overlap. The tendon flaps are then slipped along on each other until the tendon is of the desired length. Nine illustrations accompany the article.

Progrès Médical, Paris

Feb. 14, 1920, **35**, No. 7

*Mechanism of Acute Retention of Prostatic Origin. F. Legueu.—p. 67.
Familial Psychosis in Native Congo Family. E. Terrien and R. Saquet.—p. 72.

Acute Retention of Urine of Prostatic Origin.—Legueu presents evidence that the retention with hypertrophied prostate is due more to nervous influences on the sphincter than to the size of the prostate.

Feb. 21, 1920, **35**, No. 8

*Chronic Inflammation of the Omentum. A. Aimes.—p. 79.
Angina Pectoris. Chauffard.—p. 83.

Chronic Inflammation of the Omentum.—Aimes emphasizes the importance of seeking for epiploitis in all inflammatory processes in the abdomen. It may even simulate cancer by the debility and emaciation it may induce and the immobility of the inflamed mass. Bakes resected the adherent transverse colon in one case which proved to be merely an inflammatory tumor that had developed around three ligature threads. The posterior aspect of the omentum should be examined at operations, and all damaged portions should be resected.

Revue Médicale de la Suisse Romande, Geneva

February, 1920, **40**, No. 2

*Care of the Feet. Roux.—p. 61.
Exploration of Stomach Functioning. E. Cottin and M. C. Saloz.—p. 83. Cont'n.
Prophylaxis of Venereal Disease. Ch. Morin.—p. 92.
Legislation Against Alcohol. H. Preisig.—p. 104.
Hypothyroidism in Course of Tuberculosis. T. Stephani.—p. 108.
Partial Resection of Cervical Sympathetic for Right Hyperhidrosis. A. Kotzareff.—p. 111.

Care of the Feet.—Roux implanted a piece of fat, about 0.5 cm. thick, under the head of the fifth metatarsal bone through a lateral incision, and thus cured the pains resulting from the lack of the normal cushion of tissues at this point. In another case, after correcting hallux valgus, he implanted a pad of fat under the head of each first metatarsal bone. The fat was taken from the lumbar region. The woman had long been hobbling on account of pains from her feet, but these procedures restored clinically normal conditions persisting during the year to date. He says of high heels that a foot pointing downward from a nearly 4-inch heel forces the big toe into the tip of the shoe, and the foot rests exclusively on the heads of the metatarsal bones. The wearer is thus preparing for herself hallux valgus and pain under the heads of the metatarsal bones, all of which may be aggravated by arthritis, exostosis or bursitis. Correction of these conditions requires an operation and tedious treatment, and the correction persists only if the precautions are taken which should have been taken in the beginning. The various operative methods are analyzed. "Their results demonstrate," he says, "the wisdom of avoiding hallux valgus." The steep streets of his Swiss city seem to be particularly injurious in this respect. He adds that the interned soldiers, "walking with their feet parallel, using all their ten toes, have taught the advantages of the American army shoe. It would be perfect if it were not so ugly—*disgracieux à faire retourner les passants.* . . . By Americanizing the Swiss shoe, planting the feet parallel, and using all the toes in walking, we can ward off flat foot, pain under the heads of the metatarsal bones, hallux valgus, and the surgeon—all at one stroke."

Schweizerische medizinische Wochenschrift, Basel

Feb. 26, 1920, **50**, No. 9

*Silver Sodium Salvarsan. O. Nägeli.—p. 161.
*The So-Called Epicondylitis Humeri. J. Dubs. Conc'd in No. 10, page 187.
Testing Vision for Railway Service. A. Erb.—p. 169.

Silver Sodium Salvarsan.—Nägeli has injected this drug 800 times and regards it as progress in the treatment of syphilis. The first batch he received induced by-effects of an angioneurotic character more frequently than with neoarsphenamin, but with later batches these disturbances were less pronounced and less frequent.

Epicondylitis Humeri.—Dubs' analysis of the literature and personal experience with nine cases have confirmed that tennis elbow and the Vulliet-Franke epicondylitis humeri are identical. It develops after athletic or industrial use of the elbow or a single trauma of the epicondyle. But, in both conditions, the trouble is in the capsule of the elbow joint, not in the epicondyle itself. The course is usually over several months, refractory to treatment, but final recovery is the rule.

March 4, 1920, **50**, No. 10

Prevention of Roentgen-Ray Injuries. H. Hopf.—p. 181; Idem. E. Wölfflin.—p. 186.
The Railroad Medical Service. J. Michalski.—p. 191.

March 11, 1920, **50**, No. 11

*Epidemic Encephalomyelitis. R. Stähelin.—p. 201; Idem. H. Reich.—p. 207.
Goiter in Relation to Height. H. Hunziker.—p. 209.
*Epilepsy and Inherited Anosmia. M. Alikhan.—p. 211.

Epidemic Encephalomyelitis.—Stähelin insists that this is the proper name for what is being called lethargic encephalitis, as the pathologic anatomic findings are the same in all cases while the clinical manifestations may differ widely. In some of his seventeen cases the necropsy findings first cleared up the diagnosis, the symptoms having been rudimentary or atypical. In some cases they seemed to indicate cerebral hemorrhage. In four cases the epidemic encephalomyelitis was confirmed by necropsy, but in each it had developed consecutive to influenza, and necropsy revealed accompanying lesions of influenzal pneumonia. From the records to date it seems that about 33 per cent. of the typical severe cases terminate fatally and numerous others are left with chronic sequelae. He does not know of any convincing testimony on treatment with hexamethylenamin, iodin or lumbar puncture, or as to transmission of the disease by direct contact or by carriers.

Reich says that the disease seems to be appearing all over Switzerland and reports ten cases personally studied. Necropsy in one showed besides the typical lesions of the epidemic encephalomyelitis, findings in the lungs such as are typical of the hemorrhagic lobular, influenzal pneumonia. One lad of 17 developed the disease two days after his father.

Anosmia and Epilepsy.—Alikhan gives the tree of a family of thirty members in four generations, eleven of whom have no sense of smell and four very little, while two members of the later generation are epileptics. The anosmia was transmitted through the women, none of the male descendants having married. The transmission occurred the same through the descendants from a second marriage of the great grandmother. This connection between anosmia and epilepsy should suggest study of the hippocampus major in epileptics and in those with anosmia.

Chirurgia degli Organi di Movimento, Bologna

February, 1920, **4**, No. 1

*Arthrodesis of Shoulder. G. Serafini.—p. 1.
*Lesions of Sesamoid Bone of Big Toe. G. Serafini.—p. 7.
*Radial Neuritis. G. Vernoni.—p. 29.
Recurring Radial Paralysis. V. Putti.—p. 45.
*Motor Plastic Operations: Cinematization. I. Scalone.—p. 50.
*Rotary Movements in Cinematization. V. Putti.—p. 65.
Huge Lymphangioma of the Thigh. G. Pirotti.—p. 87.
Reconstruction of Crucial Ligaments. V. Putti.—p. 96.
Glue in Artificial Limbs. A. Landini.—p. 102.
*The Anatomic Artificial Leg. C. Ghillini.—p. 121.

Arthrodesis of the Shoulder.—The paralysis of the arm, of spinal origin, in the eight months' infant was followed by spontaneous fracture of the humerus about two years later, and the arm hung limp. Serafini describes the operation with two wire sutures which restored the use of the arm to a certain extent, although the humerus is still elastic and frail. Functional use will correct this, it is hoped.

Trauma of Sesamoid Bone of Big Toe.—Serafini has encountered two cases and summarizes from the literature twenty-two cases of alleged fracture and three of lateral dislocation, and refers to the many cases of inflammatory lesions in the sesamoid bone of the big toe. In his own cases the bone had fractured during a long march or from a fall, and a complete cure followed its removal in one case; improvement is progressing in the other under medical measures.

Radial Neuritis.—The girl was healthy until, at 13, right radial paralysis developed, without pain. It subsided under the usual measures in three months, but bluish patches were noticed on the arm afterward for some time. A year later the paralysis returned as also the purpura in the radial territory. No relief was obtained by any measures, and after three months there was intense pain in the upper arm. A large bluish patch ulcerated, and the disturbances kept up until the radial trunk was exposed and adhesions separated, physiologic saline injected around the nerve, and the nerve wrapped in a segment of artery from a dog. A few months

later the paralysis returned, and it has persisted for three years to date. Bacteriologic examination of the blood the second year disclosed a pathogenic hemorrhagic pseudo-diphtheria bacillus. This may have been responsible for the apoplectiform neuritis. Reexamination ten months later was negative, and the serum showed no agglutinating power for this bacillus, but guinea-pigs inoculated with it developed hemorrhages in the skin and, in one animal, in the sheath of a nerve. In the course of six years the girl has thus had four attacks of right and three of left radial paralysis, and at present the radial paralysis is bilateral.

Cinematization of the Arm.—Scalone's illustrations show the tunnel in the stump, traversing the whole mass of the muscle. The end of the stump can be flexed and extended with the entire force of the muscles. A rod passed through the tunnel can be swung to and fro, each end able to describe an arc of over 90 degrees, and exerting great force as it moves an instrument to and fro or up and down.

The Rotation Method for Cinematization of the Arm.—Putti slits the end of the stump for nearly 10 cm., separates the bones, and sutures the skin to make two sausage-like prongs of the end of the stump. Objects can be held between these prongs as between two fingers and, by rotating the arm, an object can be turned with considerable force. These natural prongs have proved particularly useful in one case illustrated in which the man had lost not only both hands, but also his eyesight. With his prong stump he can feed himself, etc., and he has trained the other stump so he can palpate and thus read the raised Braille letters. He is thus saved from the necessity of prosthetic appliances. In this case the prong stump can be rotated for very nearly 165 degrees.

The Anatomic Artificial Leg.—Ghillini made the skeleton frame for the leg exactly to correspond to the human skeleton, the wooden femur, tibia and fibula reproducing the natural curves and valgus, with sponge rubber artificial muscles. In the case described, this anatomic leg has given the very best results in functioning and appearance, and Ghillini declares that the prosthetic appliances of the future will certainly be on the basis of anatomy instead of the old system of straight pegs, etc.

Pediatria, Naples

March, 1920, **28**, No. 5

*Children of Women Doing Gainful Work at Home. C. Carmagnano.—p. 209.
Syringomyelia in Two Children. G. Di Giorgio.—p. 226.
*Encephalomeningocele. A. Versari.—p. 230.

The Children of Women Doing Wage-Earning or Piece Work at Home.—Carmagnano's investigations showed more unfavorable conditions for the children of women of this class than for any other industrial workers. He urges that the legal measures to protect prospective and nursing mothers should be applied to this class as well as to factory workers.

Encephalomeningocele.—Versari reviews the literature on hernia of the brain and meningocele, and reports the successful removal of an occipital meningocele which contained an extension of brain tissue. The bottle-fed infant was only 5 days old at the time, and it died a few months later, but had never presented any appreciable nervous disturbances.

Policlinico, Rome

Feb. 16, 1920, **27**, No. 7

*Paraplegia in Malaria. F. Sabatucci.—p. 193.
*Intraspinal Anesthesia. G. Trogu.—p. 198.
*Seasickness. G. Dragotti.—p. 200.

Paraplegia in Malaria.—Sabatucci reports two cases in soldiers. After a period of weakness in the limbs, followed by intermittent claudication and rectovesical sphincter incompetency, a spinal cord "stroke" followed, entailing paraplegia and retention of urine and stools, with bed-sores in one case. The paraplegia was lax at first but finally became spastic and gradually improved under quinin. One still has slight spastic paraparesis and the other the same accompanied by sphincter incontinence. The spinal cord *ictus* developed after a long march or other effort.

General Anesthesia by Intraspinal Route.—Trogu urges the more general adoption in suitable cases of the Schlimpert-Kehrer method of high sacral anesthesia, and of the intraspinal general anesthesia by Riche's lumbar technic. The latter method is particularly useful for long tedious operations on much debilitated patients. In a recent case the patient required a gallstone operation early in convalescence from typhoid. The 8 per cent. solution of procain was injected by the lumbar route, 1 cg. of the procain to each 5 kg. of body weight, a total of 0.095 gm., withdrawing a total of 10 c.c. of spinal fluid, and mixing it with the anesthetic in the syringe as the injection proceeded. The anesthesia was complete up to the thorax, and the suppurating gallbladder with numerous stones was removed without pain or mishap; a large abscess in the margin of the liver was evacuated at the same time.

Seasickness.—Dragotti recalls that all movements of the body liable to sway the lymph in the semicircular canals may induce symptoms like those of seasickness. A cold or hot douche of the ear may not only produce the same symptoms, but may arrest them when they have been brought on by the movement of the ship. Infants escape seasickness as their semicircular canals and the endolymph are not completely developed. Prevention and treatment of seasickness can aim, he says, only to reduce the excitability of the semicircular canal system, as we are unable to prevent the endolymph from being swung about. The bromids therefore, he declares, are the most effectual means in prevention, and strontium bromid irritates the stomach least of the various salts. Small doses are best, 1 gm. three times a day, beginning a week before going on board the ship and keeping it up during the entire voyage. Other sedatives might also be used. The labyrinth in time loses its extreme excitability. The same effect might be realized on land with the revolving chair or other means to train the semicircular canals to bear the swinging of the endolymph without reaction.

Riforma Medica, Naples

Jan. 31, 1920, **36**, No. 5

*Bacteriology of Epidemic Encephalitis. Maggiora, Mantovani and Tombolato.—p. 114. Boccolari and Panini.—p. 126.
Antigonococcus Vaccine by the Mouth. M. Giorgis.—p. 114.
Epidemic Diseases on Northern Front. U. Carpi.—p. 117.
Walking Case of Epidemic Encephalitis. A. Abbruzzetti.—p. 120.
Prosthetic Appliances for Reconstruction of the Face. B. De Vecchis.—p. 121.
Intraspinal General Anesthesia. I. Di Pace.—p. 125.
Present Status of Intestinal Lambliosis. G. Molinari.—p. 126.

Bacteriologic Findings in Epidemic Encephalitis.—Maggiora and his co-workers report that they isolated from the blood in three cases of severe lethargic encephalitis a gram-positive diplococcus which reproduced in guinea-pigs a fatal disease with torpor, paresis and jerking of muscles, and punctiform hemorrhages in the gray matter of the brain. The diplococcus is a facultative anaerobe and passage through animals seemed to enhance its virulence. Boccolari and Panini report the finding of a gram-negative diplococcus in the blood of patients with lethargic encephalitis and from the blood from the heart in one fatal case. Guinea-pigs inoculated with it developed a diffuse diplococcemia.

Annaes Paulistas de Med. e Cir., S. Paulo

December, 1919, **10**, No. 12

Removal of Large Ranula. Alvaro Camera.—p. 265.
Luargol in Treatment of Inherited Syphilis and Leishmaniasis. Rezende Puech.—p. 268.
Model Death-Certificates. Rezende Puech.—p. 277.

Archivos Brasileiros de Medicina, Rio de Janeiro

December, 1919, **9**, No. 12

*Cysticercosis of the Brain. J. Santa Cecilia.—p. 881.
Psychanalysis. A. Medeiros E. Albuquerque.—p. 887.

Cerebral Cysticercosis.—In the case reported by Santa Cecilia, the patient was a syphilitic man of 20, and the cerebral symptoms were ascribed to a probable gumma, but no benefit was derived from systematic treatment on this basis. He died during a second attack of convulsions, and necropsy disclosed cysticercosis of the brain. There had been no focal symptoms, merely headache and bilateral choked disk

Brazil-Medico, Rio de Janeiro

Jan. 31, 1920, **34**, No. 5

*Pains in the Stomach. J. Rocha Vaz. Commenced in No. 3, p. **33**.
New Species of Sarcophaga. W. Belfort Mattos.—p. 66.

Pains in the Stomach.—Rocha Vaz agrees with those who think that the sensations of heat and cold experienced when fluids are ingested do not proceed from the stomach but from the lower end of the esophagus. Even an excess of hydrochloric acid is not directly responsible for pain.

Crónica Médica, Lima, Peru

December, 1919, **36**, No. 678

Comparison of Influenza Epidemics. E. Odriozola.—p. 403.
*Relapsing Fever in Peru. Eleodoro del Prado.—p. 408.
*Anatomy in Ancient Peru. F. Quesada.—p. 415.
Recent Progress in Gynecologic Instruments. C. E. Roe.—p. 430.

Relapsing Fever in Peru.—Del Prado relates that epidemics of mixed typhus and relapsing fever have long been known in Peru, although the two diseases have often been confused. It is a current saying that relapsing fever paves the way for typhus. Not until 1917 was the differential diagnosis of relapsing fever made with precision in Peru and the spirochete discovered, and effectual measures of prophylaxis undertaken against it. Del Prado had charge of the campaign against relapsing fever in the two provinces most ravaged by it in 1918. The disease is endemic in the mountainous districts and appears only sporadically in the coast provinces. Some of the principal endemic foci are in cold regions, on the brow of the mountains. The disease spreads thence to the coast. The hemorrhagic forms have been most prevalent in the epidemics of the last two years.

Anatomy in Prehistoric Peru.—Quesada does not agree with those who regard the evidences of trephining found in the tombs of the period of the Incas as testifying to a knowledge of anatomy. The trephining was probably done for some religious rite or purpose and shows no knowledge of anatomy, and neither does the evidence of setting of fractures or embalming of the bodies. But the ancient Indian language has a number of words corresponding to stomach, pharynx, esophagus, liver, gallbladder, bile, pancreas, intestines, peritoneum, heart, etc., but he thinks that they probably were applied only to animals, not to man. At the same time, the numerous portrait heads made of clay showed a knowledge of the superficial anatomy of the face.

Semana Médica, Buenos Aires

Nov. 27, 1919, **26**, No. 48

Extraperitoneal Cesarean Section and the Indications for It. T. A. Chamorro.—p. 661.
Dental Clinics for School Children. E. Zawels.—p. 694.

Dec. 4, 1919, **26**, No. 49

The Physical Laws of Cardiac Insufficiency. L. J. Facio.—p. 699.
*Water Worm Kills Mosquito Larvae. A. Bianchi Lischetti.—p. 702.
Syphilis Complicating Gonococcus Processes. C. A. Castaño.—p. 704.
Paroxysmal Hemoglobinuria. H. L. Caretti.—p. 706.
Preventorium Dispensary and Consultorium in Prophylaxis of Tuberculosis. J. S. Picado.—p. 710.
*Biologic Reactions in Diagnosis of Tuberculosis. F. Jauregui and N. Lettieri.—p. 714.
Case of Syphilitic Facial Diplegia. N. Ragusin.—p. 718.
Case of Epidemic Meningitis. A. B. D'Atri.—p. 720.
The Hydrocephalus Cry. G. Giacobini.—p. 722.
Sexual Hygiene. L. Mathé.—p. 723.
Vaccine Treatment of Diphtheria. C. E. Pico.—p. 726.

Worm Enemy of Mosquitoes.—Bianchi relates that he found that the larvae of mosquitoes disappeared from aquariums and jars when the water contained a certain worm of the planaria genus. In the course of four hours, in one test, six of the planaria specimens devoured a total of 106 larvae, only two extra large ones being left of the 108 that had been placed in the water in small lots during the four hours. The same planaria specimens were then transferred to a jar containing 200 larvae, and in twelve hours no larvae were left alive, the smaller ones having been devoured, and the others eviscerated by the planaria. The author is professor of comparative anatomy and physiology at the University of Buenos Aires.

Biologic Tests for Tuberculosis.—The article describes a number of biologic reactions which can be utilized for the diagnosis and prognosis of tuberculosis, according to Maragliano's biologic method. For example: The normal human serum does not contain lecithin. When it is found in the serum the probabilities are in favor of tuberculosis being responsible for this. Tests for nucleins, albumin, precipitins, toxi-albumins, kinetoxins, thermoprecipitins, immune serum and analysis of the urine, applying the Russo, diazo and Weiss-Moritz tests—all these form a basis of data on which can be built an accurate estimate of the case and its outlook.

Siglo Médico, Madrid

Jan. 17, 1920, **67**, No. 3449

Public Health Questions in Spain. Francos Rodriguez.—p. **35**.
*Incontinence of Urine in Children. F. González Aguilar.—p. **37**. Conc'n.

Incontinence of Urine.—Reviewed on page 988.

Jan. 24, 1920, **67**, No. 3450

Practical Index for Attacks of Hysteria. E. Fernández Sanz.—p. 49.
*Critical Review of Cataract Operations. I. Barraquer y Barraquer. —p. 51. Begun in No. 3449, p. 33.

Cataract Operations.—Barraquer explains how his method of vacuum extraction of cataract in the capsule avoids the risks of other technics. He has now a record of over 1,000 operations of the kind and has a set of films showing the technic in moving pictures.

Deutsches Archiv für klinische Medizin, Leipzig

Jan. 27, 1919, **128**, No. 3-4

*Use of Digitalis. L. Krehl.—p. 165.
*Elimination of Water by the Kidneys. R. Siebeck.—p. 173.
The Participation of the Kidneys in Influenza. Kuczynski.—p. 184.
*The Pathologic Physiology of the Innervation of the Stomach. P. Klee. —p. 204.
*Origin of Gallstones. Aufrecht.—p. 242.
*Ochronosis. O. Gross.—p. 249.

Technic for Administering Digitalis.—Krehl remarks that nowadays he scarcely ever meets any case of heart disease of any kind that has not been stuffed with digitalis. It is administered hit or miss, while in his own practice he tries to modify the circulation without giving digitalis unless it is strictly indicated. He has had cases in which the edema subsided without drugs under bed rest alone, even with valvular disease of all kinds, syphilitic myopathies, or cardiac insufficiency from chronic nephritis; it is immaterial whether the pulse is permanently irregular, fast or slow, or whether there are extrasystoles. He never knew strict bed rest fail to benefit when the diet was restricted to 1 or 1.5 liters milk in the twenty-four hours. The amount of milk that can be allowed, the necessity to drop salt, and the length of time these restrictions have to be kept up, gage the severity of the case. And the same individual gage is found in each recurring attack. It is possible, he says, that the Karell cure might prove equally beneficial with rice and fruit, scanty salt and measured water intake being the main principle involved. It has been his experience that the outlook was more favorable the greater the rise in the specific gravity of the urine as diuresis increased. Water may pass off likewise in sweat or be eliminated by the lungs. He urges further study of the factors which modify the insensible perspiration in these cases. If the relief from casting off the excess of water does not restore clinically normal conditions in the circulation, then we have digitalis to fall back on. This seems to increase the amount of blood pumped by the heart per second, besides its influence in improving the strength of the beat. He gives digitalis at once or not according as the patient has been getting digitalis and is suffering much and the circulation is much hampered.

Elimination of Water by the Kidneys.—Siebeck reports experiences which show that when a given amount of water is ingested, its elimination within a given period depends on whether much or little water has been ingested during the preceding period. When used to test kidney functioning, the outcome may be misleading unless it is known whether the tissues are already saturated with water or are avid for

water. The "water drinking test" seems to act not only on the kidneys but on the water economy of the body in general.

Innervation of the Stomach.—Klee devotes nearly forty pages to his research on the vomiting reflex. He studied it in decerebrated cats by stimulation of the vagus in the neck. The act began always with the persistent closure of the pylorus.

Origin of Gallstones.—Aufrecht has sometimes found at necropsies that the bile in the biliary passages contained such numbers of fine blackish concrements that it felt sandy. This and other findings sustain the assumption that with stagnation of bile the pigments in the liver cells may form concrements which may become the nucleus for gallstones.

Ochronosis.—Gross states that cartilage placed in homogentisic acid turns brown exactly as in clinical ochronosis. This throws light on alkaptonuric arthritis, as there seems to be something in normal blood which destroys homogentisic acid, while this substance is lacking in the blood with alkaptonuria.

Deutsche medizinische Wochenschrift, Berlin

Dec. 11, 1919, **45**, No. 50

*Treatment of Eclampsia. R. T. von Jaschke.—p. 1377.
*Diabetes Under War Conditions. A. Magnus-Levy.—p. 1379.
Pathologic Physiology of Human Body Temperature. Mayer.—p. 1382.
Friedmann's Tuberculosis Treatment in Orthopedic Cases. J. Elsner. —p. 1384. To be cont'd.
*Treatment of Lupus. L. Freund.—p. 1386.
Nitrobenzene Poisoning. K. Bohland.—p. 1388.
State Insurance in Relation to Aid to Mothers During Confinement. M. Hodann.—p. 1389.
Emigration of Physicians to Latin America. Mühlens.—p. 1389.

Combined Treatment of Eclampsia.—Von Jaschke gives a detailed account of his management of eclampsia cases. He begins his treatment with a subcutaneous injection of 0.015 gm. of morphin hydrochlorid. The sick-room is darkened and the patient is carefully protected against all outside noises. After a fifteen minute interval a superficial ether narcosis is instituted, during which the urine is drawn and a digital examination made to determine the condition of the fetus, followed by venesection. Without the narcosis, exploration or the mere use of the catheter might precipitate a convulsion. The urine should be examined for albumin, and the character of the sediment and quantity of the urine should be carefully noted, as the latter has an important bearing on the prognosis and may affect the therapy. If the child is living, the os fully dilated and the head low in the pelvis the narcosis should be deepened and the child extracted with forceps. The birth should not be forced unless the development of the organs in question and the position of the child permit such a procedure without undue risk. The withdrawal of less than 500 c.c. of blood is useless. More than 500 c.c. should not be drawn until it is seen how much blood is lost at delivery. If eclampsia occurs postpartum, which is rare, venesection can be dispensed with provided the patient has lost a half liter or more of blood during the expulsion of the placenta. After venesection the Stroganoff narcotic chloral treatment is instituted. In severe cases with frequent convulsions it is well to give also, subcutaneously or intravenously, 500 c.c. of Ringer's solution (usually two doses in a twenty-four hour period). Throughout the course of the eclampsia he warns to beware of allowing conditions favoring aspiration pneumonia and biting of the tongue. (The Stroganoff method was described in THE JOURNAL, Feb. 12, 1916, p. 530.)

Diabetes Under War Conditions.—Magnus-Levy cites the mortality rate among the civil population of Berlin in support of the now quite generally known fact that diabetes decreased quite perceptibly in Germany during the war period. Before the war, during the 1900-1914 period, there was a gradual increase of mortality from diabetes, the number of deaths, annually, rising from 245 to 444. During the 1915-1918 period, on the other hand, there was an uninterrupted decrease in the annual number of fatal cases down to 202. Before the war, Magnus-Levy had been inclined to ascribe the increase in diabetes of the previous half century to the nerve-racking age of machinery and the rapid pace at which all classes of people lived, as compared with former years. He has been compelled to change his view, for diabetes has decreased in spite of the fact that the war brought with it a vastly greater strain on the nervous system than was known during peace times. He now thinks that the former increase was due mainly to overeating and the more luxurious mode of living.

Combined Treatment for Lupus.—Freund describes the method of treating lupus that gives the best results of the many that he has tried during his twenty-three years' experience. He has been using this method routinely for some time. If a given case is adapted to this treatment, that is to say, if the focus of the disease is circumscribed and neighboring mucosae are not invaded, the field of operation is cleansed and iodinized and a local anesthetic is applied. Then, at a distance of 1 cm. from the edge of the diseased tissue, a circular incision, the knife held perpendicular, is made in the healthy tissue just deep enough to cut through the layers of skin. The area thus circumscribed is then dissected off in such a manner as to remove all the diseased tissue in the skin and in the underlying tissue layers. Hemorrhage is controlled by compression, torsion and, if need be, by ligatures. The defect is covered with sterile gauze and bandaged. In a day or two the bandage is removed and the defect exposed to an erythema dose of roentgen rays. The raying is continued daily for seven or eight days, six minutes at a time; the tubes of 4-5 Benoist or Bauer hardness; the secondary current 1 milliampere, and the focal distance from the skin, 20 cm. After the irradiation, fresh petrolatum bandages are applied to the wound, which heals promptly in from eight to twenty-six days, according to the size. Freund has applied this treatment in lupus tumidus et exulcerans of the forehead, the eyelids, the nose, the cheeks, neck, ear, chin, heel, back and buttocks, with areas up to 15 cm. in diameter. With one exception (lupus of the heel) excellent cosmetic results were secured.

Wiener klinische Wochenschrift, Vienna

Dec. 11, 1919, **32**, No. 50

*Theories in Regard to Death by Scalding. H. Pfeiffer.—p. 1195.
*Microscopic Studies of the Skin. H. Schur.—p. 1201.
Permeability of the Blood Vessels. J. Bauer and Aschner.—p. 1204.
War in Relation to Paresis. E. Herzig.—p. 1207.

Various Theories in Regard to Death by Scalding.—After a careful study of the phenomena and symptoms in connection with death by scalding, Pfeiffer rejects the shock theory and reaches the conclusion that scalding is only a special type of a large group of pathologic conditions from the action of heat. Autointoxication of the organism by the waste products of protein metabolism is characteristic of the whole group. Whenever, through the destruction of large quantities of body protein, waste products are formed in large quantities and are retained in the system, thus causing the physiologic defensive system to break down; and, for this or other reasons, the circulation is overloaded with protein degenerative products, the now well known and characteristic picture of protein-waste toxicosis is sure to develop. Pfeiffer thinks that this working hypothesis will explain many hitherto obscure pathologic processes besides those from burns.

Microscopic Studies of the Skin.—Schur approves Lombard's method of microscopic study of the skin in the living organism, and suggests some modifications by way of improvement. The technic, as he describes it, is very simple. The portion of the skin to be examined is moistened with a drop of oil or glycerin (Schur prefers liquid petrolatum), whereby it becomes transparent and is thus more readily examined by the naked eye, magnifying glass or microscope. But as the reflex light is often disturbing, Schur recommends that a cover-glass (10 by 10 mm.) be placed over the oiled spot. In this way a picture is obtained that compares favorably with any histologic preparation. Schur follows the custom of making a general survey of the field with the magnifying glass, noting thus quickly the spots that he desires to examine later with the microscope. The light must fall on the object from nearby, at an angle of about 45 degrees. The Osram light is easily attached to the micro-

scope. The difficulties of the examination lie not in the technic, he exclaims, but in the anatomic interpretation of the picture seen, as from lack of experience we scarcely know what we may normally expect to see.

Zeitschrift für Urologie, Berlin

November, 1919, **13**, No. 11

*Physiology of Ureters and Kidneys. E. Pflaumer.—p. 407.
Bladder Disturbance in Soldiers on Active Service. V. Blum.—p. 449.
Technic for Pyelography. C. Hammesfahr.—p. 452.

Physiology of Ureters and Kidneys.—Pflaumer concludes his report of experiments of different kinds on the urinary apparatus of about 100 dogs under cystoscopic control. A number of physiologic features were thus detected which impressed him with their efficiency for the purpose designed, such as the arrest in secretion of urine when there is stasis in the ureter or distention of the bladder. He remarks that the fact that urine spurts synchronously from both ureter mouths suggests a central control. Mechanical stimulation of the ureter mucosa does not affect its contractions or the secretion of urine. With a pressure on the kidney of 60 mm., mercury, the secretion of urine is arrested, but change of position has an immediate effect on production of urine. The erect position reduces it, while raising the pelvis increases it.

His results encourage raising of the pelvis in treatment of oliguria, as it facilitates the outflow from the veins and thus promotes production of urine. Another practical lesson from his data is that the polyuria sometimes observed with retention of urine from hypertrophy of the prostate, etc., is not of reflex origin but is a sign that normal conditions no longer prevail in the kidney, as otherwise the stasis in the bladder would check urine production. The polyuria is thus an early sign of kidney disease and warns to clear away at once the obstruction to the flow of urine.

Zentralblatt für Chirurgie, Leipzig

Feb. 28, 1920, **47**, No. 9

*Treatment of Harelip. R. Drachter.—p. 194.
*Marking Site for Incision. E. König.—p. 197.
To Reduce Pain with Local Anesthesia. O. Stracker.—p. 199.

Correction of Harelip Apart from the Median Line.—Drachter's illustrations show how he cuts a diamond out of the upper lip, the side angles at the junction of the red lip with the skin on each side. The angles left by excision of the diamond must be about 150 or 160 degrees. The raw edges are drawn together and sutured, the lip flaps meeting evenly. He operates under local anesthesia, and waits until the child is several months old, but the operation can be successfully done when the infant is only 6 or 8 weeks old if in good condition otherwise. The child should not be weaned for the purpose. No dressing is necessary after the suture.

Marking the Site for the Incision Beforehand.—König mentions among the advantages of the practice that the operator does not have to palpate anew for the guiding points after he has disinfected his hands for the operation. It is also a great help in plastic operations to decide the exact path for the knife. Another advantage is that the changes in the tissues from local anesthesia will not mislead as to the location of the gland or tumor below.

Zentralblatt für Gynäkologie, Leipzig

March 6, 1920, **44**, No. 10

*Sign of Impending Parturition. Momm.—p. 233.
*Spinal Cord Tumors in the Pregnant. C. Meyer.—p. 238.
*Construction of Artificial Vagina. H. Brossmann.—p. 240.

Sign of Impending Parturition.—Momm states that the decrease in weight of pregnant women on the third from the last day of pregnancy, considered along with other data, will often be found a useful means for determining approximately the completion of term. From the two hundred and seventy-first to the two hundred and seventy-eighth day of pregnancy the weight of the patient increases regularly and quite uniformly, the daily increase averaging 56 gm. Beginning with the third day from the last, up till the onset of labor, there is a sharp decline in weight; during the last forty-eight hours the patient loses 690 gm. on an average. He tabulates the weight findings in the last ten days, day by day, in twenty women. In every instance, the sudden drop in the weight was followed by the onset of labor in two or three days.

Spinal Cord Tumors in the Pregnant.—Meyer gives a case report of a sarcoma involving the spinal cord, first noticed early in the pregnancy, and emphasizes the necessity for the differential diagnosis as operative removal may ward off danger. Otherwise, spinal cord tumors are liable to be mistaken for myelitis and allowed to progress to a fatal outcome, or they may be classed as pregnancy toxicoses not treated early enough by interruption of the pregnancy.

Construction of Artificial Vagina.—Brossmann gives an account of two cases in which he made an artificial vagina. Both operations were successful. In the first case he used the Baldwin-method, as it appeared simpler, and because in most of the cases described in the literature the Baldwin method had been used. In the second case he used the Schubert method and found it more satisfactory. With the Baldwin operation, there seemed to be danger of gangrene in the sutured intestinal loop, followed by septic peritonitis, as described by Guggisberg and Pitha. With the Schubert operation, laparotomy was dispensed with, and the whole operation took place outside the peritoneum; furthermore, the newly formed vagina was more spacious. The only danger that he could see in the Schubert method was that if the sigmoid flexure should, in a given case, be too short and the proximal end of the rectum could not be drawn down to the sphincter without undue stretching, gangrene at the end of the rectum might supervene. It might be well to avoid such a contingency by assuring oneself of the condition of the sigmoid flexure in advance by digital examination.

Zentralblatt für innere Medizin, Leipzig

Feb. 28, 1920, **41**, No. 9

*Present Status of Treatment of Syphilis. W. Hesse, Berlin.—p. 153.

Treatment of Syphilis.—Hesse draws the balance sheet for treatment of the different stages of syphilis from thirty-four articles published in German literature, mostly during 1919. He states that mercury has been almost universally abandoned in treatment of general paresis on account of injury therefrom, and he adds that the capricious course of this disease renders difficult any estimate of the effect of treatment.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Jan. 24, 1920, **1**, No. 4

The Fight Against Venereal Disease. T. M. van Leeuwen.—p. 285.
*Prophylaxis of Diabetes. W. Hoogslag.—p. 295.
*Diphtheria Bacilli Carriers. G. J. Huet.—p. 303.
*The Neck Reflex in Prognosis. D. J. Jonkhoff.—p. 307.
Case of Aplasia of Female Genitals. J. G. de Graaff.—p. 309.

Prophylaxis of Diabetes.—Hoogslag relates that during the period when the populace of the Hague was on war rations, 600 diabetics applied for cards entitling them to certain privileges in the rationing. He assumes that this proportion of 600 diabetics in a population of 350,000 probably extends throughout the country. If this is the case, there are 11,000 diabetics among the total 6,500,000 inhabitants of the Netherlands. He calculates further that these 11,000 diabetics average daily 25,000 liters of urine, with an average of 2 per cent. of sugar. This totals 500 kg. of sugar, and, he declares, a loss of this amount of sugar every day cannot be regarded with indifference these days. The loss in earning capacity and the personal sufferings of the diabetics render it imperative to keep them in the most favorable possible condition. Statistics confirm the increasing prevalence of diabetes, and that the moderate cases with only from 0.5 to 1.5 per cent. sugar, are the ones that in the course of years develop the severer complications. In six recent cases of the kind, the men of 52 to 61 had had from 0.3 to 1 per cent. sugar in the urine for six, eight or twelve years, but paid no heed to the doctor's advice about dieting, as they felt well and strong. Two of them died suddenly in a street car or at a picnic; another developed hemiplegia, bed

sores, and furunculosis, and died in coma; another, gangrene and fatal coma; and another developed headache after a strenuous day, and coma proved fatal the next day. Only one of the group had 4 per cent. sugar, but his robust health persisted for four years, when a furuncle developed in the neck after a local trauma and he died in coma in three days. Several in the group held important positions, and if they had dieted to keep their urine free from sugar, they might have had many more years of useful service. The dietetic restrictions might have become less severe in time, as tolerance is increased by keeping the urine free from sugar. He tabulates the details of the diet which cleared the urine of sugar after an average of 5 per cent. or 2.5 per cent. had long been voided in two cases. In conclusion he urges the family physician to have the urine examined once a year of every member of a family in which there is a diabetic, and he appeals to the life insurance companies to provide for examination once a year of the urine of each policy holder without expense to the latter. Thirty patients have been treated with the Allen-Joslin fasting method, with most encouraging results. He commends Joslin's work to Netherlands physicians, saying, "There can be no question of humbug about it," and adding, "American medical science is taking such excellent advantage of the unlimited financial resources at its disposal that it is to be anticipated that ere long it will become of preeminent importance."

Diphtheria Bacilli Carriers.—Huet declares that the ground is still unstable under our feet in this matter of healthy carriers. They are more common than generally assumed, and how long they can harbor the bacilli is still a question. Twenty children who had been exposed to diphtheria were inoculated with sheep antitoxin, and only one developed diphtheria, but all but four of the others had the bacilli in throat or nose during the following month and two of the children, for two months. By mistake, two smears were taken from one child the twenty-ninth day; the first proved negative, the second positive. Three diphtheria bacilli carriers were found among twenty-five newly admitted inmates of the institution, a sanatorium for children.

The Neck Reflex.—In Jonkhoff's case of status epilepticus the head was twisted to the right and when it was passively turned around to the left, the right arm, which was in extreme extension, became flexed, while the left arm, which had been flexed, straightened out. This neck reflex could be elicited only during the coma. There was also at times a reflex action in the legs and in the eyes from turning the head, but it was inconstant and weak. Necropsy after nine days of coma disclosed extensive hemorrhage in the central convolutions and right ventricle. These neck reflexes were described by Magnus and others, and eight cases have been reported in which they were found in meningitis, hydrocephalus, apoplexy, or idiocy.

Jan. 31, 1920, **1**, No. 5

*To Repress the Spread of Venereal Disease. T. M. van Leeuwen.—p. 365.
*The Physician's Duty in Prophylaxis of Venereal Disease. G. van Rijnberk.—p. 367.
*Large Families and Child Mortality. Floris Hers.—p. 371.
Organization of First-Aid Service in Large Cities. C. J. Mijnlieff.—p. 391.
Case of Rupture of Spleen. J. F. O. Huese.—p. 401.

Prophylaxis of Venereal Disease.—Van Leeuwen insists that it is necessary to arrange graduate courses on the diagnosis and treatment of venereal diseases, easily accessible to general practitioners. This is important for the early recognition of these diseases and prevention of infection of others. The necessity for ample facilities for treatment is generally recognized, but the importance of persevering in the treatment as long as it is needed must be emphasized more. By cooperation of the national, state and municipal public health services with the sickness insurance companies and enlightenment of the public much can be accomplished, and efforts in all these lines are now under way in the Netherlands. He reiterates that the burden of repressing the spread of venereal disease rests on the general practitioner, with specialists only as consultants, except in the larger medical centers.

The Physician's Duty in Prevention of Venereal Disease.—Van Rijnberk comments on a recent article by van Leeuwen in which, while urging the importance of individual preventive measures, and discussing how they should be applied, he had exclaimed: "But I, for my part, shall never regard it as my duty to hold myself in readiness at every hour of the day or night to disinfect any and everyone that applies for this purpose." Van Rijnberk protests that this view is the result of nonmedical considerations. "One might as well refuse to cauterize the wound from the bite of a dog if one knew that the man had been tormenting the dog. What physician would say, 'I do not regard it as my duty to take any steps to ward off rabies from a man that torments dogs.' Wherever danger lurks that the physician can ward off, and he is called on to ward it off, he should never refuse. But he can protect himself against being routed out at all hours of the night, to apply preventive measures, by raising his fees. Those who expose themselves repeatedly to infection will be deterred from applying to him if he charges much for his services, when demanded at untimely hours. But he should give his services whenever they are demanded. It would certainly impress outsiders very strangely to see the physician later welcome and treat the syphilitic patient when, if it had not been for his refusal to apply the preventive measures, the syphilis would not have developed."

Large Families and the Death Rate Among the Children.—Hers records conditions in these lines in a certain district in Holland, giving twenty-one pages of statistics and tables from 1,385 families. They seem to demonstrate that five children is the limit that the mother can bear and rear. The other children in large families die off, from 20 to 50 per cent. dying under the age of 2.

Norsk Magazin for Lægevidenskaben, Christiania

March, 1920, **81**, No. 3

*Erosions in Stomach Mucosa. K. Nicolaysen.—p. 225.
*Bandl's Ring Impedes Delivery. K. Brandt.—p. 241.
*Case of Acanthosis Nigricans. J. H. Bidenkap.—p. 245.
*Transfusion in Pernicious Anemia. O. Scheel and O. Bang.—p. 250.
Disappointing Results with Convalescents' Serum in Treatment of Influenza Pneumonia. O. Bang.—p. 255.
Growth of Children in Summer. K. Zeiner-Henriksen.—p. 262.
Mammary Cancer: Eighty Cases. S. F. Holst.—p. 272.

Erosions in Gastric Mucosa from Stimulation of the Vagus.—Nicolaysen relates that in ten cadavers he found hemorrhagic erosions in the stomach or duodenum or both; in nine, death had occurred from some lesion such as meningitis or chest disease in which the vagus had undoubtedly been irritated. This confirms the results of his research on twenty-five rabbits injected with pilocarpin; they all developed similar erosions in the stomach. Some of the animals displayed marked vagotony, but the erosions healed rapidly. When the rabbits were given sodium bicarbonate to neutralize the hydrochloric acid, no erosion—that is, no loss of substance—developed in the gastric mucosa. Stimulation of the vagus can thus induce these erosions, but whether they are always due to this is another question.

Bandl's Ring Impedes Delivery.—Brandt describes his third case in which contraction of the lower limit of the contractile portion of the uterus prevented delivery. Only one of the three children escaped with its life.

Acanthosis Nigricans.—There were no papillary growths and the pigmentation subsided after a two months' course in the young man with dementia praecox, otherwise physically sound.

Blood Transfusion in Pernicious Anemia.—Scheel and Bang tabulate the daily findings in regard to the blood and urobilinemia after transfusion of 900 c.c. of blood drawn into 120 c.c. of a 2 per cent. solution of sodium citrate. The patient was a man of 33 with pernicious anemia, his third attack. In two weeks the erythrocytes had increased from 850,000 to 3,118,000; the hemoglobin from 19 to 66 per cent.; the bile pigment in the blood serum had dropped from 45 to 7, and the urobilin figure from 875 (4,500 the second day after the infusion) to 42. The improvement progressed for a time, but the man returned about four months later in his fourth attack, the erythrocytes having dropped to 1,382,000 and the hemoglobin to 28.

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CLEARNESS IN MEDICAL SPEECH*

JAMES S. McLESTER, M.D.
BIRMINGHAM, ALA.

When Polonius asked Hamlet, "What do you read, my lord?" Hamlet replied, "Words, words, words." Any one who has served for five years as an officer of this section cannot fail to recall a great deal that was brilliantly conceived and skilfully presented; but if his memory is good he will not have forgotten the occasional paper which, because of its structure and the manner of its presentation, represented to the audience little more than words.

I wonder, then, whether the section will permit, as a sort of swan song, an attempt at constructive criticism on the way in which our work is presented. It must be understood, however, that I dare not offer my own as an example lest I be regarded in the same light as the teacher who advised his pupils that "a preposition is not a good word to end a sentence *with*." I come rather as the man who, though himself no musician, enjoys good music when he hears it.

ESSENTIALS OF A GOOD PAPER

There can be but one valid reason for reading a paper before this section. The author should have something worth hearing. To measure up to this criterion it has been agreed that he must tell of carefully planned original investigation, must be able to establish definitely new facts or principles, or must give such a complete summary in some particular field as will justify deductions of value. And yet, the fulfilment of even these requirements is insufficient to gain for him an appreciative audience; for in addition his material should be presented in a clear, agreeable form, requiring the least degree of effort on the part of his hearers. Unfortunately, we encounter at times papers which are lacking in these particulars. How much better it would be for the high standards of the section if the prospective author, with these requirements constantly before him, would subject his own work to the closest scrutiny.

The writer should be brief. He should bear in mind both in the preparation of his paper and in its presentation that he is being given a hearing before a group of busy men and that time is precious. The time limit for papers is being gradually shortened, for it has been demonstrated that the careful writer can present in a well planned communication an amazing amount of material in a wonderfully brief space of time. This ability can be cultivated. Based on experience as a listener, I venture to make three pertinent suggestions: Come directly to the point with as few preliminaries as possible; omit every unnecessary detail, and avoid repetition.

He should be able to awaken interest in his subject, else it will be difficult to follow him, his facts will not be widely understood, and his conclusions will soon be forgotten. As an illustration, I have in mind a paper from the pen of a well known physician with an intimate and comprehensive knowledge of his subject, which, because of its rambling paragraphs and poorly constructed sentences, was unconvincing and most difficult to follow. The result was that his ideas were understood by few and remembered by none. A few months later a second paper from the same pen produced quite another effect, the difference being due to the evident care with which this paper was written.

Medical literature, to be followed with sustained interest, requires that we avoid ornateness and superabundance of detail, while striving for unity, proper emphasis, coherence, and clearness of thought.

For the sake then of unity, so often violated, the topic should be limited definitely to such aspects as can be covered clearly within the allotted time; each part should be held to a single point until it is clearly understood, and at the end we should be able to grasp the whole as a single concept. Proper emphasis is served when each part of the communication is spaced according to its value and the whole is given a strong ending. Coherence demands such an orderly sequence of ideas and of paragraphs as will make the entire presentation easy to follow. Clearness in composition depends first of all on clearness in thought, then on precision in the choice of words and care in the construction of sentences and paragraphs. No matter how meritorious the work, it cannot achieve full success unless these principles of English composition are observed.

For fear of being misunderstood, I hesitate to liken the successful medical author to the ad writer, and yet the legitimate aims of the two for a certain distance run parallel. The object of each is to say a great deal in few words, to adhere consistently to the main idea, to emphasize the right point, to hold the reader's interest, and to be readily understood.

We often wonder why the literature of some of our English colleagues is so much more readable than our own. I think I know the reason. Is it not that, having little or no conscience for good English, we do not try? In this connection I might repeat the oft quoted statement that genius is an infinite capacity for taking pains. Careful prevision of composition and paragraphs, and repeated revision of sentences is essential to the production of readable English. It is said that a good writer never ceases to revise his sentences, and

* Chairman's address, read before the Section on Practice of Medicine at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

that the lines which appear easiest are often the result of greatest effort. To go over it all time and again, to see to it that compound sentences are well balanced, to put the important word at the end of the sentence, and to avoid redundancy—this is the price one must pay for a sympathetic hearing and a lasting impression.

A summary embodying the author's conclusions is always of advantage. It enables the audience to grasp in one concept all that has been said; and when the paper is published, it has the additional advantage of telling the busy reader whether or not the article contains the thing for which he seeks.

After the summary has been written, should come the choice of a title. It should be accurate, expressive and brief. It should not be necessary, as is sometimes the case, for the reader to analyze the title with scrutiny in order to determine the real subject.

Even the most carefully prepared paper dealing with the most brilliant work may fail to elicit interest because of the manner of its presentation. Poor enunciation and rapidity of speech are deadly faults; but still more fatal to interest is the speaker who talks into his manuscript rather than to his audience. The custom adopted in the smaller special societies of speaking rather than reading a communication should be encouraged.

Sometimes, too, it is apparent in the reading of a paper that the author is not thoroughly familiar with its contents; he stumbles and hesitates—a thing that can be avoided if he takes sufficient pains beforehand to be certain of what he is going to say and of how he is going to say it. Thorough and intimate familiarity with one's subject creates a certain infectious enthusiasm which cannot fail to enlist the attention of the audience.

Illustrations by means of charts or lantern slides add greatly to the interest of a paper, for, when visualized, a thing becomes easier to grasp and is more readily fixed in the memory. Even here thought and care are necessary, for illustrations should be graphic and well arranged, and every unnecessary detail should be omitted. When it is advisable to include varying details in one table, like data should be included in vertical columns, and each column should be clearly marked. It is a mistake to attempt too much in one chart, for it should be possible to grasp almost at a glance the information conveyed by a single table. Complicated charts that convey a great mass of unrelated facts are difficult to read and should be avoided.

THE DISCUSSIONS

Finally, still in the rôle of critic, may I speak of our discussions? We were taught long ago that we should discuss an individual paper only once; but nothing has ever been said, at least publicly, of the number of times we may with propriety appear on the floor at a single session. However enthusiastic we may be and how genuinely interested in the entire field of medicine, unless we have some pertinent message to convey it would be well to limit ourselves at any one session to a discussion of two or, at most, three papers. It is of advantage to an individual, as well as to his audience, not to speak too often or too much. The audience then is likely to find him more interesting, and his words will carry greater weight.

Again, the suggestion might be offered that the speaker strive to come directly to the point with as little introduction as possible. He should know exactly what he wishes to say, taking care to omit all extraneous matter, and when he has said it he should quit. We sometimes hear a man who, through embarrassment, doesn't know how to stop, and in seeking a suitable conclusion he repeats over and over again and wanders on. Another man gets half way through a sentence or paragraph and, realizing that it is poor rhetoric or bad grammar, tries to go back and revise it. When once started it is far better as a rule to plunge ahead. Prevision in speaking is good, but revision is impossible.

The object of the discussion, I take it, is not alone to elicit new facts but chiefly to reveal varying points of view. The glimpse we get of the different ways in which these men of varying mental types react toward the same fact is not only interesting but also of much value. It broadens us and helps us to mold our own manner of thinking. In a discussion the speaker should adhere definitely to a consideration of the material presented, and should not attempt to drag into view the far-fetched details of his own work. I recall vividly the instance of a physician whose paper could not be placed on the program, but who was asked to open a discussion dealing with a similar topic. Giving scant consideration to the article just read, he immediately launched into a narration of his own independent studies without attempt at comparison or correlation, and the audience heard, as it were, simply a second paper. The section is naturally interested in hearing a Fellow tell of his own work in its bearing on the subject in hand, but the connection should not be too remote nor the details too elaborate.

The physicians who read papers before this section are in possession of facts and conclusions of infinite importance. How necessary, then, that knowledge of such inestimable value be presented through a medium which is worthy of the subject! A poor lens in a microscope will obscure and distort the object we desire to study; in like manner will imperfections in the expression of our ideas mar and obscure and nullify the thoughts we wish to convey.

930 South Twentieth Street.

TREATMENT OF MALIGNANT TUMORS OF THE ANTRUM*

G. B. NEW, M.D.
ROCHESTER, MINN.

The usual treatment of malignant tumors of the antrum has been the resection of the upper jaw. The results have been operative mortality, very frequent early recurrences, and a small percentage of cures. By the use of the cautery and radium in the treatment of these conditions, I believe that two advances have been accomplished: first, the elimination of an operative mortality, and second, a marked decrease in the percentage of cases showing recurrences. The number of cures in the treatment of these patients by this method cannot yet be determined, but the present results are very encouraging. The cautery has been employed in the treatment of malignant tumors for many years. At the Mayo Clinic for the last three years, malignant tumors of the antrum have been treated by the use

* From the Section on Laryngology, Oral and Plastic Surgery, Mayo Clinic.

* Read before the Southern Section of the American Laryngological, Rhinological and Otological Society, Cincinnati, Feb. 21, 1920.

of heat in the form of a soldering iron followed by radium treatment, and we believe that the immediate results are much better than when resection of the jaw was performed.

During the two and one-half years from Jan. 1, 1917, to July 1, 1919, thirty-three malignant tumors of the antrum were examined at the Mayo Clinic; fifteen of



Fig. 1.—Water cooled retractor in place on diseased side; soldering iron going in above the alveolar process. The antrum is opened through this route in cases in which the cheek is involved.

this group were so far advanced that we did not believe that any form of treatment would prove of benefit. Eighteen cases were treated by the use of the cautery and radium, although in many of these the lesion was

TABLE 1.—INCIDENCE OF TYPES OF TUMORS OF THE ANTRUM

	Cases		
	Inoperable	Operable	Total
Squamous-cell epithelioma	11	8	19
Sarcoma	2	6	8
Malignant (no microscopic examination of tissue)	2	..	2
Malignant (type of cell not determined)	..	1	1
Epithelioma (mixed-tumor type)	..	1	1
Basal-cell epithelioma	..	1	1
Fibromyxoma (malignant)	..	1	1
Total	15	18	33

so extensive that a resection of the jaw would not have been indicated. Since more than half of the patients whom we have examined were treated, the group cannot be called a selected group. The giant-cell tumor and adamantinoma are not included in this list, as they are not true malignant tumors. Of the eighteen cases treated, sixteen were primary tumors of the antrum, and in two the antrum was secondarily involved by a direct extension from the upper jaw.

INCIDENCE OF TYPES OF TUMORS

The data in Table 1 show that squamous-cell epithelioma of the antrum is more than twice as frequent as sarcoma and that it represents more than one half of all malignant tumors of the antrum. The figures in Table 2 seem to indicate that almost two thirds of the malignant tumors of the antrum occur in males.

SYMPTOMS

As a rule, the diagnosis of malignancy of the antrum is not made until the condition has become self-evident by the bulging cheek or palate, or the involvement of the floor of the orbit or the nose. The earliest symptom of malignancy of the antrum usually is pain. At first, it may be only a burning or an itching sensation over the cheek due to irritation of the fifth nerve. Later the pain is dull and is frequently referred to the

TABLE 2.—RELATIVE FREQUENCY OF TUMORS IN MALES AND FEMALES

	Cases		
	Inoperable	Operable	Total
Male	8	13	21
Female	7	5	12
Total	15	18	33

teeth; it is usually relieved when the tumor perforates the wall of the antrum into the mouth or cheek. In some cases, the first complaint is nasal obstruction, and in others the increased nasal discharge brings the patient for an examination. In one of our cases the patient's only complaint was a burning sensation over the cheek. He had no external signs of any neoplasm, nor increased nasal discharge. The antrum was dark on transillumination, and on exploration it was found

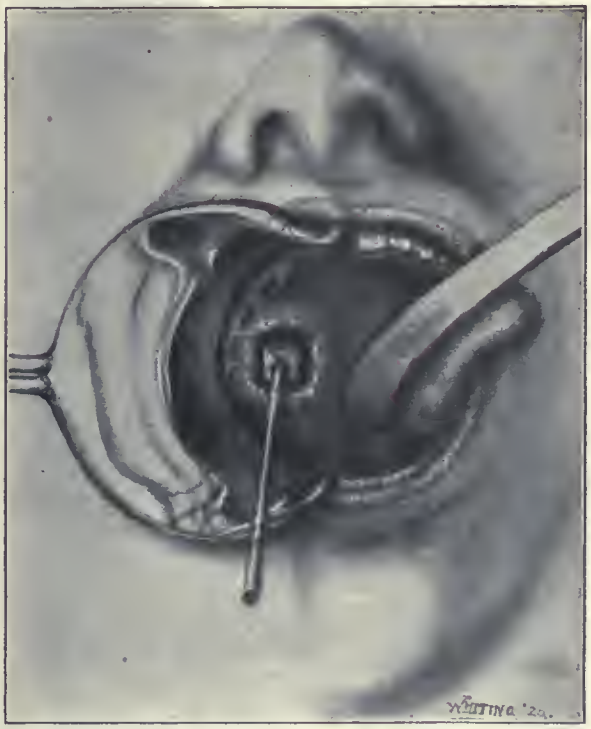


Fig. 2.—Method of opening into the antrum in cases in which the palate is involved.

to be filled with squamous-cell carcinoma. The nose may be obstructed or the cheek floor of the orbit or palate may bulge as the condition becomes more extensive. Frequently the antrum is irrigated from time to time and later repeatedly curetted until the external signs of malignancy develop, and the diagnosis is made, often when it is too late for radical treatment.

SELECTION OF CASES TO BE TREATED

In the selection of cases to be treated, the type of malignancy as well as the extent of the tumor has to



Fig. 3 (Case 13).—Sarcoma of the left antrum of two and one-half months' duration, in a patient aged 63.

be considered. A rapidly growing lymphosarcoma or round-cell sarcoma may be very extensive and still be treated by the cautery and radium, but it would be hopeless to attempt treatment for a squamous-cell epithelioma of similar size. The age of the patient and the length of the history of the condition are impor-

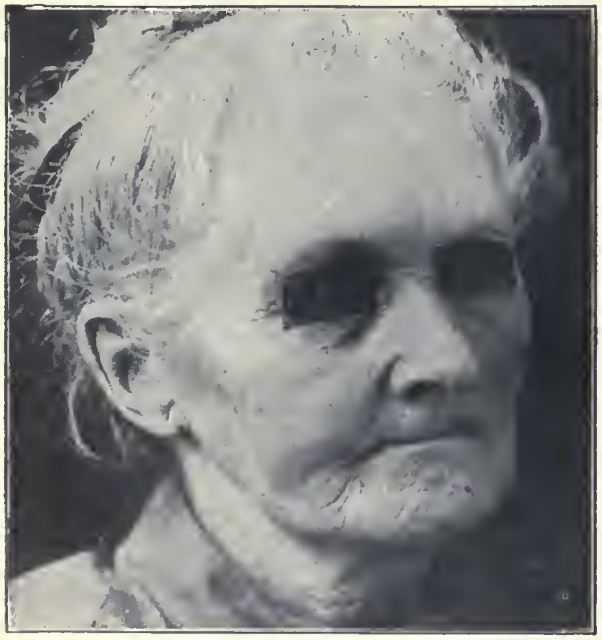


Fig. 4 (Case 13).—Same patient as in Figure 3 four months after operation. No recurrence after nineteen months.

tant factors. Involvement of the nose and sinuses or floor of the orbit makes the prognosis grave, although it does not exclude the possibility of help from treatment. Glandular involvement occurs late in malignancy of the antrum and may be in the parotid, submaxillary or cervical regions: when it is present, the possibility of helping the patient is very slight. No patients with glandular involvement were selected for treatment.

TREATMENT

The usual treatment of malignant disease of the antrum, resection of the upper jaw by means of the Fergusson incision or some modification of this, has not produced a large percentage of cures on account of the difficulty of entirely removing the tumor. The operative mortality, following resection of the jaw, given in the literature from the European clinics, is from 12 to 30 per cent. Kocher,[1] speaking of the results in resection of the upper jaw for malignant tumors, says that recurrence is the rule because removal of all diseased tissue is not certain by our present methods. Schley[2] says that the average operative mortality of resection of the upper jaw in recent years in America has been from 12 to 13 per cent., that this has been accomplished by almost complete control of sepsis and



Fig. 5 (Case 7).—Fibromyxoma (malignant) of the left antrum, after operation.

hemorrhage, and that pneumonia should be no more frequent after this operation than after the average operation. During the operation for resection of the jaw for malignancy of the antrum, a definite portion of the bone is removed; and usually on account of the bleeding, it is impossible thoroughly to inspect the wound for any pieces of growth that may have been left.

The realization of the value of the use of slow heat in contrast to any cutting operation in malignant disease is by no means new, especially in cases in which it is difficult to determine the exact limits of the growth. The great value of the heat is that it penetrates far beyond the point at which it is applied.

In the treatment of malignant growths of the antrum, the patient is anesthetized with ether by the drop method. The mask is removed after he is asleep. The head of the table is lowered to prevent any secretion in the pharynx from draining into the trachea. A

1. Kocher, T.: Operative Surgery, London, Adam and Blac, 1911, pp. 394-398.
2. Schley, W. S.: The Surgical Treatment of Cancer of the Superior Maxilla, Ann. Surg. **69**: 8-11 (Jan.) 1919.

mouth gag is inserted on the side opposite the growth, and a water cooled retractor is inserted on the diseased side; a curved retractor holds the tongue out of the way. This gives good exposure and prevents burning the lips or cheeks when the cautery is used. The growth is attacked at the point at which it appears in the mouth, either through the palate or from above the alveolar process (Fig. 1). If the growth has not bulged the cheek or palate, the opening into the antrum is made above the alveolar process, as in the Denker operation. If both the cheek and the palate are involved, a large area of the palate and the jaw is removed with the cautery (Fig. 2). The soldering iron is used as a cautery at a dull heat; a red iron carbonizes and prevents the penetration of heat. The electric cautery has such a large heating element in the handle that it prevents a good view of the cautery point. The soldering iron is carried up gradually into the antrum, and the entire growth is thoroughly cooked for from thirty to forty-five minutes. The limits of the growth



Fig. 6 (Case 7).—Postoperative appearance of patient. Note the slight deformity of the left cheek. No recurrence in twenty-eight months.

are known from the clinical examination, and the cautery is used at the location in the antrum cavity at which it is most needed. Since there is practically no bleeding with this treatment, the walls of the antrum may be inspected to determine whether or not the growth has been thoroughly removed. As the patient begins to wake up from the anesthetic, the irons are removed, the mask is applied to the face, and the patient again put to sleep with ether. This may have to be repeated two or three times before the cauterization is completed.

A knowledge of the pathology of the different types of malignancy is essential in determining the treatment. The rapidly growing sarcomas respond well to radium treatment so that it is not so essential that in this group of cases such thorough cauterization be given as is needed in cases of squamous-cell epithelioma of the antrum, which is a most malignant type of tumor. The mixed tumor type of epithelioma or the cylindroma is of rather low grade malignancy and does not require such radical treatment. The aim of the treatment is entirely to eradicate the growth at the time of the first treatment by the use of thorough cauterization followed by radium.



Fig. 7 (Case 15).—Postoperative appearance of patient with extensive epithelioma of the left antrum. The left eye was lost from reaction; the glass eye is in place and the cheek is slightly deformed. No recurrence in seventeen months.

Bloodgood[3] uses the cautery in the treatment of malignant disease of the jaws and antrum, but recommends that the growth be removed in stages under local or chloroform anesthesia. He attacks the growth through an external incision in the cheek. It has been my experience that it is best to cauterize the growths very radically at the first operation, since this gives the patient the best chance of recovery, rather than removing portions at successive operations. I also believe



Fig. 8 (Case 15).—Postoperative opening into the left antrum.

that the deformity is less and sufficient exposure is obtained by going in through the palate or above the alveolar process than by making an external incision.

3. Bloodgood, J. C.: Treatment of Tumors of the Upper Jaw with the Cautery: A Preliminary Report, South. M. J. **12**: 248-256 (May) 1919.

Ether anesthesia has been employed with no untoward results in these cases.

We have used the radium salts or the emanations in tubes directly introduced into the antrum at the point at which it seemed most needed, either at the time of the operation or from ten days to two weeks later, after some of the slough had cleaned up. We use 100 or 200 mg. for from twelve to twenty-four hours inside the antrum, besides giving radium treatment outside the cheek with screening and distance. The radium is frequently used by means of multiple needles inserted into the wall of the antrum from the inside. The dosage in all cases depends on the type of malignancy, its duration, and extent. The radium treatment may be repeated in three weeks, if indicated. The patients are kept under observation; they return every month or six weeks so that if any recurrence takes place they may have immediate care, since this is very essential in order to control early recurrences. Following the treatment, most of the inside of the antrum comes away as a sequestrum in two months' time, and large openings are left in the palate; but they may be readily closed by prosthetic appliances. There is little inconvenience if the opening has been made above the alveolar process.

RESULTS

Cautery and radium treatment of malignant tumors of the antrum have been followed by no operative mortality and no postoperative chest complications. Two of the patients lost the eye on the side involved from the reaction from the cautery and radium, but in both



Fig. 9 (Case 17).—Epithelioma of the mixed tumor type of the right antrum after operation.

cases the floor of the antrum was involved. Of the eighteen patients with malignant tumors of the antrum who were treated, three are dead, two have extensive recurrences, and ten are well and have had no recurrences over a period of from eight to twenty-eight months. In seven of these ten cases, there has been no recurrence after more than one year (Table 3). In three cases, data regarding the present condition of the patient were not obtained. The ten patients who are well cannot yet be considered cured, but their cases should be classified as having been without recurrences for a period of months or years. The results of the



Fig. 10 (Case 17).—Lack of deformity of the face after operation. Large postoperative opening in the antrum, shown in Figure 10.

treatment of malignant tumors of the antrum, by the use of the cautery and radium, seem to indicate that the operative mortality that usually accompanies the surgical treatment of these conditions has been eliminated, and the immediate results have been improved markedly (Figs. 3 to 10).

TABLE 3.—RESULTS IN EIGHTEEN CASES OF MALIGNANT TUMORS OF THE ANTRUM TREATED BY CAUTERY AND RADIUM

Number	Age	Sex*	Duration of Lesion Before Operation	Pathologic Diagnosis	Length of Time Since Last Operation	Present Condition, Result
1 65024	62	♂	6 months	Malignant	7 months	Dead
2 109408	38	♀	Recurring; first operation in 1914	Epithelioma	15 months	No recurrence
3 207005	28	♂	2 years	Lymphosarcoma	26 months	Data not obtainable
4 207386	56	♂	6 months	Squamous-cell epithelioma	27 months	Hopeless recurrence
5 207662	62	♂	19 months	Squamous-cell epithelioma	27 months	Data not obtainable
6 208383	58	♀	16 months	Basal-cell epithelioma	27 months	Data not obtainable
7 210487	19	♂	3 years	Fibromyxoma (malignant)	28 months	No recurrence
8 229112	38	♂	1 year	Lymphosarcoma	22 months	No recurrence
9 231539	39	♀	15 months	Squamous-cell epithelioma	12 months	Dead
10 235481	17	♂	3 years	Fibrosarcoma	8 months	No recurrence
11 235903	47	♂	3 years	Epithelioma	20 months	Recurrence
12 238077	47	♂	3 months	Squamous-cell epithelioma	12 months	Dead
13 239838	63	♀	2½ months	Sarcoma	19 months	No recurrence
14 244630	39	♂	5 months	Squamous-cell epithelioma	13 months	No recurrence
15 245402	57	♂	6 months	Squamous-cell epithelioma	17 months	No recurrence
16 250256	15	♂	5 months	Sarcoma	15 months	No recurrence
17 262797	35	♂	16 months	Epithelioma (mixed tumor type)	8 months	No recurrence
18 272557	12	♀	?	Sarcoma	9 months	No recurrence

* In this column, male is indicated by ♂ and female by ♀.

THE IMMEDIATE STERILIZATION AND CLOSURE OF CHRONIC INFECTED WOUNDS

A NEW METHOD APPLICABLE TO WOUNDS OF BONES AND SOFT TISSUES *

W. WAYNE BABCOCK, M.D.
PHILADELPHIA

With the mass of the chronic infections of the war, the aim of the Carrel-Dakin treatment—the early closure of the wound—has not been attained. Few of the soft tissue wounds, and I dare say less than 1 per cent. of the thousands of bone infections returned from overseas, have been brought to an aseptic suture. Despite the widespread use of surgical solution of chlorinated soda (Dakin's solution) and the presence of medical officers especially trained in its use, some of our large army hospitals could not up to May 1, 1919, show even a single case of aseptic operative closure for osteomyelitis.

A treatment successful in the hands of highly skilled enthusiasts may fail in routine use when it exacts infinite care as to detail over prolonged periods of time, and when it is adapted only to selected cases and requires repeated operations and multiple and, at times, exceedingly painful dressings. The average surgeon is not constituted to stand on tiptoe all the time, his technic is not invariably perfect, and his soul rebels against the constant infliction of pain. It is not strange, therefore, that he has so often failed in his Carrel-Dakin treatment.



Fig. 1.—Injection of osteomyelitic sinus with saturated solution of zinc chlorid. Gauze is applied to prevent the solution from spurting over bystanders. Forcible injection into sinuses should not be made without protecting the general circulation with a tourniquet. For the pelvis and other bones when a tourniquet cannot be used, the cavity is thoroughly packed with small pledgets of cotton soaked with zinc chlorid.

* From U. S. General Hospital No. 6, Fort McPherson, Atlanta, Ga., Col. T. S. Bratton commanding.

* Owing to lack of space, this article has been abbreviated in THE JOURNAL by the omission of several illustrations. The complete article appears in the reprints, a copy of which may be obtained on application to the author.

We have sought an agent for chronic pyogenic infections that would do rapidly, under adverse conditions and in one operation, what the Carrel-Dakin treatment does so slowly under the most favorable circumstances and with two or more operations. This is the

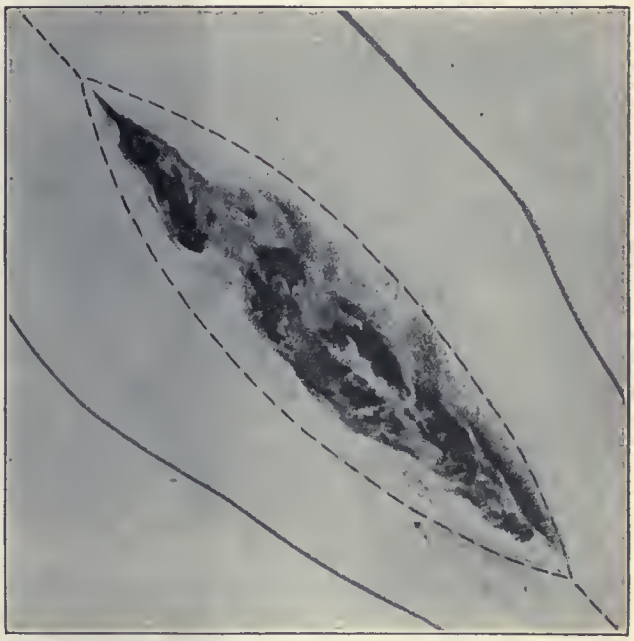


Fig. 2.—Plan of skin incision for the excision of scar and sinuses. A long incision with free exposure of the bone is essential.

apology for presenting a new method for the immediate disinfection and closure of chronic infected wounds. As to its value in acute infections and against the specific granulomas, we cannot at this time say. We have used the method in closing more than 100 chronic wounds of soft tissue, and in about 250 cases of chronic osteomyelitis.

The soft tissue infections were chiefly granulating areas associated with gunshot injuries of nerves, and the method obviated the necessity of waiting the routine three months after the wound had healed before operating on the damaged nerve. A number of chronic ulcers, some of which previously had been treated by skin grafting, and several infected hernia wounds, also healed primarily after the sterilization, excision and suture. The bone infection cases were unselected, had a variety of infecting micro-organisms, and included the worst cases the ward surgeons could find at Fort McPherson. So far as we know, in only one was the bacterial count below infinity. All had from one to nine sinuses, and had had from two to eight previous operations. Some had multiple sequestrums, complete fracture, associated abscesses, and joint or peritoneal complications. The duration of the disease had been from seven months to more than a year, during part of which time, in most cases, there had been weeks or months of Dakin treatment. A few lacked skin preparation when brought to the operating room, and had purulent crusts, pustules or skin abrasions. It was our desire to determine what results could be obtained under unfavorable conditions.

The osteomyelitis most frequently involved the tibia and femur, but the pelvis, humerus, fibula, radius, tarsus and metatarsus, ribs, clavicle, scapula and mandible were also treated. In two pelvic cases the peri-

toneum was opened, while the hip joint and the knee joint were each invaded five times, from a previously purulent field.

As to the final percentage results, it is too early to speak positively except in regard to soft tissue wounds

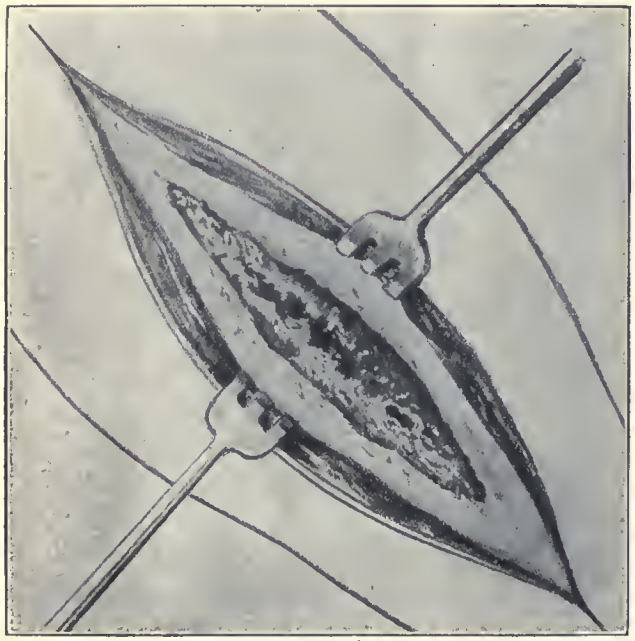


Fig. 3.—Freeing of skin and periosteum by retraction with sharp retractors.

which, as a rule, are easily and satisfactorily handled by the method.

With the bone infections, devitalized and insufficient soft tissue, multiple and often closely adjacent scars, complicated sinuses and hemostasis have presented difficulties not found in the usual operation. As a consequence, the operative results could not be judged as after the usual aseptic operation. Tightly sutured wound edges not infrequently showed a limited necrosis. Accumulated secretions from the enormous wound surface often escaped through stitch holes or between sutures. Stitch abscesses and spreading phlegmons were very rare, and usually all openings were closed and the wound firmly healed at the end of six weeks. Of the first 100 cases only four have required reoperation, none of the older healed cases have relapsed, and our present evidence is that a good technician should be able to overcome from 70 to 95 per cent. of his chronic bone infections by a single operation, the percentage varying with the location, extent of the lesion, amount of viable soft tissue remaining, and thoroughness of the operation.

In our 350 cases, there was one death attributable to the operation. This occurred before the danger of injecting zinc chlorid without a tourniquet was appreciated.

TECHNIC

The method consists of four procedures carried out in one operation under anesthesia:

1. Chemical sterilization of all sinuses and wound surfaces by the injection and application of a saturated solution of zinc chlorid.

2. Delineation of infected areas by the injection or application of an alkaline ethereal solution of methylene blue.

3. Mass excision of the entire area of infection.

4. Wound closure with the obliteration of all dead spaces.

Skin Preparation.—If possible, the wound area should be prepared by daily shaving, washing with soap and water, removal of all scabs and crusts, and the application of a 2 per cent. yellow mercuric oxid in zinc oxid ointment for three days preceding the operation. If possible, to reduce the area of skin excised, adjacent skin lesions, pustules, excoriations and eczematous areas should have healed before the operation.

Wound Sterilization.—On the operating table, under local or general anesthesia, the skin is (*a*) thoroughly scrubbed with "B" solution (compound solution of cresol, 2; turpentine, 10, and gasoline, 88 parts); (*b*) painted with 3 per cent. solution of tincture of iodin, and (*c*) sterilized by a saturated solution of zinc chlorid which is thoroughly injected under pressure or packed with small moistened pledgets into all sinuses and cavities, applied to all unhealed and granulating surfaces, and rubbed very carefully over the scar and skin adjacent to the wound. Five minutes are allowed for the penetration of the zinc solution, and great care is taken that every recess of the wound is reached. If injected under pressure, the general circulation must always be protected by a tourniquet. Obviously, the injection will not be made into fistulas connecting with the bladder, intestine or any other important viscus, nor will this method be used in the presence of erysipelas or other acute spreading infection, or before the normal tissue barriers to sepsis have been erected.

Color Delineation.—The antiseptic staining solution, the composition of which is given herewith, is then

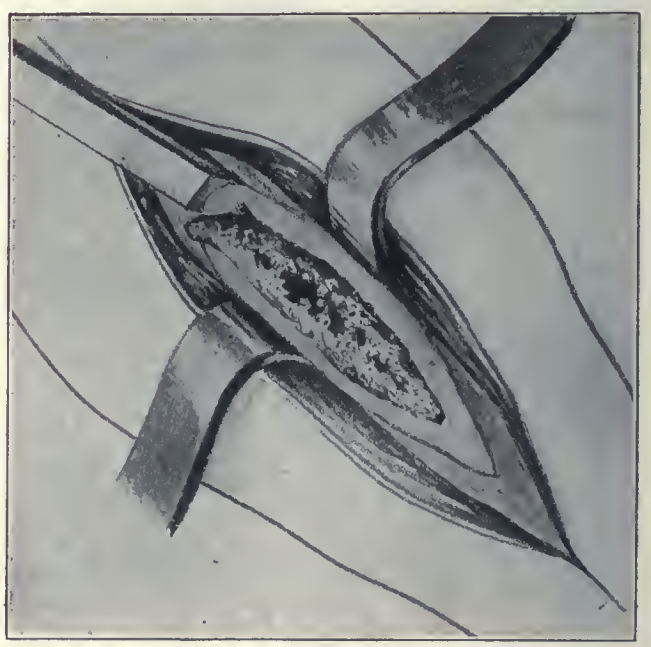


Fig. 4.—Removal of diseased bone, sinuses and attached overlying skin and scar en masse. The protection of the skin margins and soft tissues by towels and gauze is not shown.

thoroughly applied to all eroded surfaces and injected under pressure or packed with cotton pledgets into all cavities and sinuses. As soon as this solution has evaporated, the exposed granulating surfaces are left dark blue-black, dry, bloodless on manipulation, and

sterile. If a section is made through the sinus, it will be found that the coloring has penetrated to a depth of from 1 to 3 mm. Outside this is a much wider zone of avascular, grayish white tissue that has been sterilized and devitalized by the zinc chlorid. Some of the sequestrums removed after the treatment from deep bone cavities have produced no growth on culture mediums.

ANTISEPTIC STAINING SOLUTION

	Gm. or C.c.
Saturated alcoholic solution of methylene blue....	20
Caustic potash	3
Phenol	5
Ether .....to make	100

Excision of Infected Area.—The entire field is again painted with tincture of iodin, and a very free skin incision made, so planned as to permit later closure and to surround and be well outside of all scars and sinuses, which are to be excised as near as possible *en bloc*. The instruments are now changed, the skin margins well separated from the adherent underlying tissues by traction with sharp retractors, and dry towels or gauze clipped in position to isolate the wound. The incision is now deepened to the bone, the periosteum is freely incised and retracted from the entire

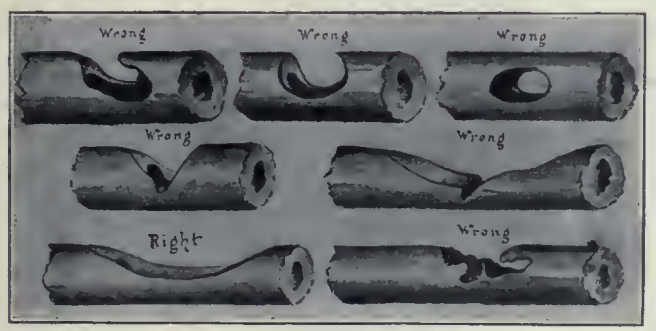


Fig. 5.—General plan of bone resection, and method of converting pockets, cups, deep gutters and holes in bone into shallow saucer-like defects (semidiagrammatic).

circumference of the bone, protected by towels or gauze, and, beginning some distance from the diseased area, with sharp chisels, the infected bone is freely excised with the attached overlying skin, scars and sinuses. Care is taken not to divide the bone completely, but the healthy medullary cavity should be freely exposed. A blue color indicates that all infected areas have not been removed and that the excision is to be continued. The operator should use very sharp knives, gouges and chisels, and work centripetally from outside the septic focus, rather than with curets, which tempt one to work from within out. If possible, all soft tissues and bone should be removed to a distance of at least 1 cm. beyond the blue coloration.

The bone incisions are so placed as to leave smooth surfaces with no holes, gutters, cups or pockets that will remain as "dead spaces" when the soft tissues are closed, and the incision should leave only well vascularized bone and soft tissue free from bone chips and splinters.

Scars.—As a rule, the scar is excised. If too large, however, for excision it is partially excised and the residual part freed, with as thick a layer as possible of underlying tissue to maintain its nourishment.

Large Bone Defects.—These, especially if near the articular ends, may be filled by pediculated flaps of muscle or other soft tissue, or lined by large pediculated thick skin flaps. We have found the inward transposition of the head of the tibialis anticus and extensor longus hallucis useful for filling large defects of the head of the tibia. The defects left by removing skin flaps may be closed by plastic operation or skin grafting. In case there is a complete fracture, the bone ends should be beveled to chisel edges, and appro-



Fig. 8.—Massive nontraumatic osteomyelitis of tibia, of one year's duration; four previous operations; bone riddled with sinuses containing pus, sequestrums and exuberant granulations before operation.

priate extension and immobilization should be maintained in the after-treatment.

Multiple Sinuses.—These should be excised if possible. If left, the entire sinus tract will usually later be expelled in the form of a tube of necrotic tissue. To avoid secondary hemorrhage, no zinc infiltrated tract should be left adjacent to a large blood vessel.

Secondary Hematomas.—These are difficult to overcome entirely. Bleeding from bone may be controlled by gauze pressure or by pressing bits of muscle into the bone. Bleeding from soft tissue should carefully be corrected by forcipressure, fine catgut ligatures, or sutures. A lateral stab or incision through an adjacent scar may be left for drainage. Tube drains we have discarded. We have observed no secondary hemorrhage when the method has been accurately followed. In a case in which a surgeon failed to excise and to suture for a treated sinus adjacent to the femoral artery, secondary hemorrhage necessitating ligation occurred on the third day.



Fig. 9.—Lesion shown in Figure 8, five weeks after operation; immediate sterilization, excision, and closure without drainage.

Wound Closure.—The muscles and soft tissues are sufficiently liberated from the skin and bone and each other to fit into the bone defects. If possible, the bone should be covered by a layer of muscle and aponeurosis as well as by skin. Muscles should be well freed and sutured with the edges inverted and rolled in, so as to fill all bone cavities or depressions. Plain catgut sutures are used to unite the deep tissue layers, and

the skin is closed with an everting mattress suture of silkworm gut. Only a dry technic is employed. A sterile 10 per cent. solution of sodium bicarbonate is kept at hand to neutralize the zinc chlorid in case of accident.

After-Treatment.—The early dressings should be copious and should give supporting pressure. Wet, nonirritating, antiseptic dressings are applied for the first week, and until all tissue reaction has subsided. For this purpose we use Solution "C," which is injected into the gauze dressings through incorporated rubber tubes every two to four hours. The part is well supported, and is kept quiet, elevated and warm.

SOLUTION "C"

	Gm. or C.c.
Chloral hydrate	1
Alcohol	10
Glycerin	25
Saturated solution of boric acid	65

In the after-dressings, the surgeon should refrain from probing, injecting, milking, squeezing, or introducing tubes or any other thing into the wound. If there is marked distention from retained wound secretion, a stitch may be cut and the wound margins slightly separated. Daily wet dressings should be continued until complete healing has occurred. The adjacent skin is to be kept clean and coated with 2 per cent. yellow mercuric oxid ointment. As with other closed wounds, Dakin's solution is not to be employed. In several of our early cases, union was prevented by its use.



Fig. 1 (Case 1).—Appearance of the ulcer in granuloma inguinale, showing the irregularly serpiginous outline, the character of the scab and, where this is lost, the dense fibrous base.

Approximation stitches are removed on the third or fourth day. The patient should not use the part until it is soundly healed and no longer tender. The wounds are usually much less painful than those left open for Dakin treatment. Should a chronic bone sinus form after the operation, thus indicating a technical defect, the operation may be repeated, with the expectation of finding a simplified surgical problem.

Unless the surgeon can prevent the entrance of the zinc chlorid into the general circulation during and for five minutes after the injection, and unless he is able to excise freely all chlorided tissue adjacent to the important structures, he should not employ the method.

2033 Walnut Street.

Home Treatment by Quack Medicines.—If there is anything urgently required in the education of the populace at the present moment, it is that of emphasizing the evil of home treatment by quack medicines. By such practice, skilled advice is withheld and delayed in the beginning of disease, and irreparable harm is the result.—*Medical Press and Circular* **109**:66 (Jan. 28) 1920.

GRANULOMA INGUINALE IN THE UNITED STATES

DOUGLAS SYMMERS, M.D.
Director of Laboratories, Bellevue and Allied Hospitals
WITH THE COLLABORATION OF
ALBERT D. FROST, M.D.
Pathologic Intern, Bellevue Hospital
NEW YORK

Granuloma inguinale is a chronic ulcerative lesion of the inguinal region which may involve the external genitals, the perineum, the inner surface of the thighs, the anus, and, in the female, the vagina. According to one view, the infection is of venereal origin; in other quarters it is regarded as an independent disease. The ulcers persist for years, are serpiginous, and may involve extensive areas of skin in direct connection with or independent of the external genital apparatus. In most instances the process shows no tendency to spontaneous healing, although this method of cure is not unknown.

As far as I have been able to learn, so-called granuloma inguinale has not hitherto been recognized as a lesion indigenous to the United States. On the other hand, it is endemic in many tropical countries, and absent in others. Thus, in certain of the West Indian Islands it does not occur at all, while in British Guiana it is widely prevalent. Moreover, it presents different aspects in different races. In negroid peoples the manifestations are the most pronounced. When other races, as Indians, become infected in a country where most of the sufferers are negroes, the lesion presents recognizable differences in the two nationalities in that the growth in the Indian is less coarsely granular in appearance and tends to remain localized, whereas in the negro it spreads extensively. In the Fiji Islands, the Melanesian immigrants are said to suffer from a disease which, although it resembles the ordinary form of granuloma inguinale, differs from it in that the lesions are softer, more prominent and spread by contact, so that multiple discrete growths arise. In addition, variations in severity depend on the part involved. Thus, growth and destruction are more rapid on mucous than cutaneous surfaces. Finally, there is a variety of granuloma inguinale attended by such marked obstruction to the lymphatics that it produces chronic edema of the vulva, penis or scrotum, resembling elephantiasis.[1]

Since, in the tropics, there are many granulomatous formations about which little is known, it is impossible to state with certainty whether the several chronic ulcerative lesions occurring in the region of the

1. Daniels, in Allbutt and Rolleston: System of Medicine **2** (Part 2): 708, 1912.

groin and external genitals are manifestations of one and the same process, or anatomically related reactions arising in response to different causative agents, or the result of combined factors. However this may be, there is at least one variety of granuloma inguinale that has been frequently observed and whose clinical features appear to be much the same, no matter in what country they are seen. In this particular variety, cell inclusions were described by Donovan [2] in 1905 and have since been found in ulcerative lesions of the groin in widely remote parts of the world. These intracellular inclusions have been studied by Walker,[3] who regards them as small encapsulated bacilli belonging to the Friedländer group. The evidence that they bear a direct causative relationship to granuloma inguinale, however, appears not to have been definitely established. On the other hand, it has been suggested that the presence of these intracellular bodies is due to secondary infection of venereal or other pudendal lesions and that, once established in the tissues, they dominate the local pathologic process and promote destruction of tissue. At Bellevue Hospital we have recently had occasion to study two chronic ulcerative lesions of the groin occurring in negroes. From the secretions in both cases, intracellular bodies morphologically identical with those described by Donovan were found. One of the cases appeared to represent a typical example of granuloma inguinale as encountered in the tropics. The other, however, was possibly syphilitic in nature.



Fig. 2 (Case 2).—Large ulcer of the head of the penis and of the tissues of the thigh just below the right groin, both ulcers covered by exuberant granulations.

REPORT OF CASES

CASE 1. — A negro man, aged 29, who was admitted to the Urological Service of Drs. Keyes and Jeck, by whom I was asked to see the patient, stated that he was a native of Georgia and that he had never been outside the United States. Two years previous to admission to Bellevue Hospital, a pustular lesion appeared on the head of the penis. This was soon followed by ulceration and sloughing, which finally involved the skin of the right inguinal region and the corresponding perineum and scrotum. The Wassermann reaction was negative with both the cholesterinized and the crude alcoholic antigens. The ulcerative area was serpiginous in outline and covered by an elevated, dirty brownish scab made up of innumerable nodular masses, many of which showed numbers of superimposed laminae (Fig. 1). Removal of the scab revealed a broad serpentine ulcer extending a few millimeters beneath the surrounding skin. The edges of the ulcer were rather sharply defined, and the base was composed of smooth, dense, light cream colored or whitish tissue which was bathed in thin, slightly cloudy fluid. The scrotum was edematous.

The occurrence in a negro of an extensive serpiginous ulcer of the inguinal region that had been present for two years immediately suggested that the disease belonged in the category of the tropical granulomas. Smears from the secretion, stained by the method of Gram, confirmed this suspicion in that many of the polymorphonuclear leukocytes revealed intracellular bodies corresponding in all respects to those described by Donovan; that is, micro-organisms of coccoid, diplococcoid or short bacillus-like forms lying in a clearly defined area of vacuolation. In most of the cells these micro-organisms were arranged in clusters; occasionally they were solitary or grouped by twos and threes. In rare instances isolated forms were observed lying between the leukocytes. No capsules were demonstrable by special methods of staining.

A few days after these observations were made, Dr. Juan Iturbe of Caracas, Venezuela, saw the patient, and out of a broad clinical experience with the disease, confirmed the diagnosis of granuloma inguinale, at the same time concurring in the identification of the intracellular inclusions as indistinguishable from those familiarly encountered in the tropics.

A small portion of tissue was removed from the edge of the ulcerating area for microscopic examination. The stratified squamous epithelial covering at the edges of the ulcer was markedly thinned and the epithelial pegs were atrophic. The subepithelial connective tissues were extremely sclerotic and enclosed occasional collections of small round and plasma cells, together with groups of dilated ducts of sweat glands.

The patient died, but no necropsy was obtained.

CASE 2. — A negro, aged 26, admitted to Bellevue Hospital, Jan. 13, 1920, and discharged at his own request, February 26, was a native of Pennsylvania, and said that he had never been outside the United States. In February, 1916, he developed a sore on the penis, but no history of secondary symptoms of syphilis could be elicited from him. Two months after the appearance of the penile sore, a pimple appeared on the anterior part of the right thigh, just below the groin. Ulceration soon followed, and in the course of the next two months the lesion stretched completely across the anterior surface of the thigh. The patient came to Bellevue Hospital and was treated by intravenous injections of arsphenamin, and the ulcer in the inguinal region healed. Shortly after he left the hospital, however, the scar broke down and the ulcer soon reached the same proportions as formerly. At the time of the patient's second admission, he presented an ulcerated area involving the head of the penis, together with a large ulcer on the front of the right thigh (Fig. 2). Both ulcers were covered by exuberant granulations. The epitrochlear lymph nodes on both sides were palpable, but otherwise there were no clinically detectable evidences of syphilis. The Wassermann reaction was negative with both antigens (icebox fixation).

The patient was given five intravenous injections of from 0.5 to 0.9 mg. of neo-arsphenamin, mercuric salicylate into the muscles and mixed treatment by mouth. The exuberant granulations in the ulcer on the thigh were curetted away, and at the end of six weeks healing was practically complete, while the ulcerated area on the head of the penis showed marked improvement. The patient left the hospital against advice.

At the time of admission, films were made from the secretions of the ulcers on the penis and thigh, and from both places showed gram-negative inclusions lying in large mononuclear cells and presenting identical morphology with those found in the first case, although not in the same number of cells

2. Donovan: Indian M. Gaz. **39**: 414, 1905.
3. Walker, E. L.: J. Med. Res. **37**: 427 (Jan.) 1918.

(Fig. 3). When found, however, they were not to be distinguished from the Donovan bodies of granuloma inguinale, and occurred in the cells either singly or in small groups, occasionally in such large numbers that they could not be counted.

At operation, the curettings were received into sterile dishes, brought to the laboratory, and the tissues were crushed by platinum tipped forceps and emulsified in sterile salt solution. Material from this emulsion was streaked successively on plates of plain agar, blood agar, dextrose and ascitic agar and North's medium, and inoculated in dextrose broth; and although various contaminants were found, no microorganisms corresponding to any known pathogenic form were grown, nor was any prevailing or constant growth to be recognized in the cultures. Anaerobic cultures were likewise negative. Before operation, bouillon cultures from the ulcer on the thigh yielded similar results. Since *Bacillus mucosus-capsulatus* is readily cultivated by these methods, we assume that the micro-organism obtained by Walker and so identified by him in cultures from granuloma inguinale was probably not present in this case, although in films from the secretions in both cases apparently identical intracellular bodies were found. In other words, the identity of these bodies seems still to remain doubtful, in spite of Walker's valuable work.

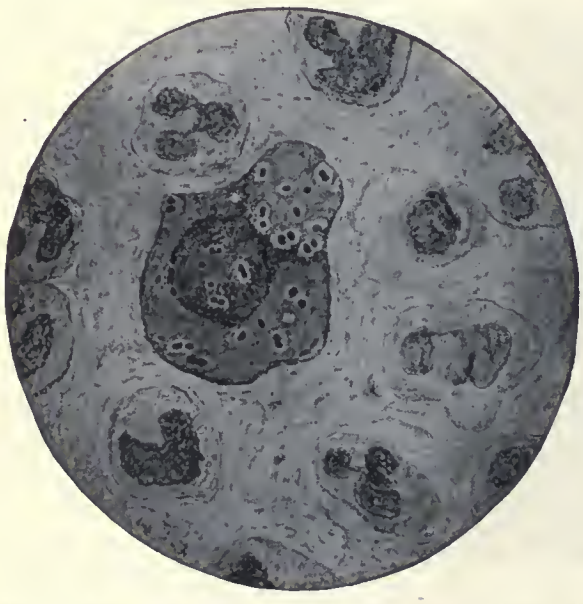


Fig. 3 (Case 2).—Pen and pencil sketch of film from secretions of ulcer: At the center is a large mononuclear phagocytic cell enclosing numbers of coccoid, diplococcoid or short bacillus-like parasites, each lying in a clear zone of vacuolation (Donovan bodies), and in other parts of the field are polymorphonuclear leukocytes.

Guinea-pigs were inoculated intraperitoneally and rabbits intracutaneously with the emulsion of tissue removed at operation without the slightest evidence of reaction. Microscopic examination of the tissue taken from the patient's thigh showed, at the periphery of the ulcer, a markedly hyperplastic superficial layer of stratified squamous epithelium, beneath which were granulations associated with small round cells and numbers of eosinophils.

COMMENT

Whether or not our second case is to be classified with tropical granuloma inguinale is uncertain. Syphilis and the secondary invasion and phagocytosis of Donovan bodies cannot be denied. It remains, however, for subsequent investigation to show whether these bodies are or are not to be found in ulcerative lesions of different kinds, particularly in the region of the genitals, where it is possible that an open wound and local conditions of heat, moisture, etc., invite the entrance and multiplication of invaders whose presence promotes ulceration and prevents healing. Among physicians in the tropics, granuloma inguinale is usually accepted as a disease in which these bodies play an important rôle, and the intravenous use of tartar emetic is said to be curative.[4] It is also said that the same drug is advantageously to be employed in the treatment of such parasitic diseases as bilharziasis, filariasis and leishmaniasis. That the lesions in our second case responded favorably to intensive antisyphilitic treatment suggests but does not prove the syphilitic nature of the original lesion. On the other hand, it raises the question whether arsenic compounds, if pushed, may not act as effectually in granuloma inguinale as those of antimony, since the two metals belong in the same group, and their physiologic action is in many respects similar. Whatever the intracellular bodies may be, their constant occurrence in certain groin ulcerations in different parts of the world must be of some significance as either initiating or promoting destruction of tissue. Our experience at Bellevue Hospital would appear to establish the fact that lesions similar to or identical with those of granuloma inguinale, as it is seen in the tropics, associated with morphologically indistinguishable intracellular parasitic inclusions, are occasionally to be found in American negroes who have never been exposed to the vicissitudes of tropical life—in short, that the disease is indigenous to the United States.

THE TRIPOD METHOD OF WALKING WITH CRUTCHES

AS APPLICABLE TO PATIENTS WITH COMPLETE PARALYSIS OF THE LOWER EXTREMITIES

ROBERT W. LOVETT, M.D.
BOSTON

Complete paralysis of both lower extremities is not necessarily a bar to some form of ambulatory activity. This has been repeatedly demonstrated in infantile paralysis, and the same generalization can be extended to similar flaccid paralyses resulting from fracture of the spine or gunshot wounds of the spinal cord. As the latter class of cases has been called to our notice by the war, a consideration of how these patients also may be taught to walk is one object of this paper.

If a cadaver is stood upright on its feet, the knees flex and the body crumples down on the floor. If the knees are held rigid by the application of splints to hold the knees extended, and if the cadaver is steadied in the upright position by the pelvis, the trunk falls forward. Exactly the same thing happens to a patient with flaccid paralysis below the waist. If the knees are prevented from flexing by splints, the erect position can be maintained without crutches only if the gluteus maximus muscles are strong enough to hold the trunk from falling forward, that is, if they can hold the trunk extended on the legs. The two muscles most necessary to maintain the erect position are the quadriceps extensor femoris and the gluteus maximus.

It has been found, in aiding patients with such a distribution of paralysis to walk, that if the knees are kept from flexing by simple splints, the loss of the gluteus maximus can be compensated for by a peculiar method of using the crutches for what may be called "tripod" walking. If the crutches are placed apart

4. Aragão and Vianna: Memorias do Instituto Oswaldo Cruz 5: 211, 1913.

and slanted well forward at their lower ends, they form the two anterior points of a tripod, while the third and posterior part of the tripod is formed by the body of the patient inclined forward at its upper part, with the feet well behind. The apex of the tripod thus comes at the shoulder level of the patient, his body and legs forming the posterior support of the tripod, and the crutches the two anterior supports. Such a position is stable because (*a*) the base of support is a large triangle bounded by the three points of support of the tripod, and (*b*) the body is stable in the over-extended position because hyperextension of the hips is checked by the "Y" ligament of Bigelow, and, with the knees stiffened by the braces, the center of gravity falls in front of the hip joints and keeps them extended and firm. A paralyzed patient with no power below the waist can stand unsupported easily in this position, provided there are no contraction deformities in hip, knee or ankle.

The patient must next be taught confidence in this position. If he has been long confined to his bed or chair he will in large measure have lost his sense of upright equilibrium, which must be dealt with by itself and restored by repeated practice in standing on crutches with support near at hand, or by standing with both hands resting on the foot rail of the bed. When he has sufficiently acquired the sense of balance to have self-confidence, he should begin on progression. This is accomplished by hitching one crutch a few inches forward, then the other crutch, and then, in cases of complete flaccid paralysis, jerking the feet forward together a few inches by a body movement, bearing down with the hands on the crutch bars and sliding the feet over the floor. If any degree of power remains in the iliopsoas muscles, which is often the case when the gluteus maximus and all muscles below it are paralyzed, the feet can be more easily advanced one at a time, only those patients affected very severely having to slide along both together. Most patients without any power in the hip flexors are able to accomplish this advancing one foot at a time by a twisting of the body.



Position necessary in tripod walking (Case 5).

The one essential in bad cases is that the tripod should have a large base, and the body be sufficiently inclined forward to keep the center of gravity in front of the hips. If it falls behind them the patient will double up backward like a jack-knife on account of flexion of the hips.

For holding the knees extended one uses the Thomas caliper splint, the simplest, lightest and best of all such apparatus. Two uprights, one outside and one inside of the leg, pass from the shoe to just below the gluteal fold. They are shaped to the leg, and at the bottom each is bent to a right angle. The bent parts of the upright slip into a tube in the heel of the shoe. At the top the uprights are fastened to a posterior, flat, curved band passing just below the gluteal fold, and a fenestrated knee cap of leather holds the knee extended. The splints can be jointed at the knees for greater comfort in sitting, but the joint must be provided with an automatic drop catch which locks when the knee is extended. The use of a pelvic band on the braces rests on no anatomic or mechanical basis and is never necessary.

If much abdominal weakness is present, a cloth corset is advisable to support the abdomen and give greater steadiness.

In flaccid paralysis of the lower extremities it is a fact that any patient of average intelligence, with one good arm and one arm good enough to hold a crutch, can be made to walk, provided deformities of the hip, knee and ankle are not present, or have been corrected. This walking in some cases may be a very imperfect affair, and is of course wholly dependent on apparatus; but it is better than spending one's life in a wheel chair, and many patients with apparently no power of any consequence develop a surprising amount of usefulness.

REPORT OF CASES

CASE 1.—*Poliomyelitis.*—A woman, aged 29, paralyzed by poliomyelitis in the summer of 1916, was very helpless. In February, 1917, she was furnished with caliper braces and a cloth corset, and her routine in July, 1918, is shown in the following memorandum furnished by her:

"Gets out of bed into chair alone. Gets in and out of bath and dresses without help. Often dresses and gives 3-year-old boy his bath. Also once in a while washes old English sheep dog. Can make beds, dust, etc. Gets downstairs by sitting down on steps, then into chair downstairs without help. Goes into kitchen almost every day and does some cooking. Has done canning and put up preserves and jellies. Has often washed and ironed. Also cleans sliver every week. Can get out on porch and out of doors in wheel chair over a little runway. Has raked and watered the garden a little and planted seeds. Has Red Cross meeting every week and cuts and sews. Can get into almost any chair alone from wheel chair. Goes automobiling a good deal, but has to be helped into machine. Has been away week ends, taking small wheel chair into machine. Walks every day in the house and out of doors a great deal on the grass. Does daily exercises and has frequent massage. Is steadily improving."

CASE 2.—*Poliomyelitis.*—A man, aged 40 was paralyzed by poliomyelitis in 1908, and up to July, 1917, had never walked, having spent the intervening years in a wheel chair. His paralysis was practically total from the waist down, with involvement of the abdomen and some of the erector spinae muscles. Braces and corsets were applied in November, 1917. In December of that year he wrote: "Friday I walked probably 20 feet, turning around twice. . . . I find that I can walk in the natural way, that is move one foot and one crutch, and then the other foot and the other

crutch." In March and April, 1919, he wrote: "I am now able to get out of my chair without help and get back in the same way. I back the chair against the wall, turn a little on my side, and get on my feet holding on the arm. Then I can straighten up, take my crutches and go on. . . . Have been over three steps with the help of a banister, and can get in and out of an automobile by myself." Subsequently he informed me that he had attended a large dinner at one of the hotels, going in an automobile, taking his crutches, and walking into the hotel across the lobby to the elevator, and in to dinner.

CASE 3.—*Poliomyelitis.*—A boy, aged 11 years, was referred by Dr. Henry Ettinger of New York, and was seen in April, 1917. He had suffered from poliomyelitis in 1911, and was unable to stand or walk for some years on account of a flexion deformity of both hips, holding them at right angles to the body. There existed total paralysis of both legs, including the gluteus muscles, but some degree of hip flexor power persisted, probably in the psoas muscles, which was the cause of the deformity. Abdominal paralysis was nearly complete, and there was weakness of the back muscles. The legs were brought into line with the body by operation (Soutter fasciotomy) in April, 1917, and by September the boy could walk in the manner described. He can now walk indefinitely on the level with braces, crutches and a corset, but cannot go up or down stairs on his crutches without assistance.

CASE 4.—*Fracture of the spine.*—A girl, aged 19, referred by Drs. Scott, Sherwood and Brindley, of Temple, Texas, had been injured in an automobile accident in August, 1916, and immediately lost all power in both lower extremities, and sensation from the knees down, the loss extending up on the left thigh. She had a deformity in the dorsolumbar region, and the roentgen ray revealed a fracture of the twelfth dorsal vertebra, with some side displacement. Laminectomy was performed three days later, and a ridge of bone was found compressing the cord. The ridge was cut away, but there was no improvement immediately following the operation, and retention of urine persisted for over a year. At the end of a year she was still unable to control the bowels.

The patient was seen by me in July, 1918, and at this time she had a well marked kyphos at the seat of fracture, the functions of the bladder and rectum were nearly normal, sensation was normal to a point 2 inches below the knee on both sides, knee jerks were lost, and ankle clonus was absent. There was practically no motion in the lower extremities, but there was some slight power left in the hip muscles. The girl had never stood or walked since the accident.

She was equipped with braces and a corset, and in a month was walking without assistance. In January, 1919, she wrote: "I am walking with my crutches every day, and gaining strength all the time. With the crutches I am most confident."

CASE 5.—*Fracture of the spine.*—A girl, aged 11 years, was referred by Dr. C. S. Buchanan of Bennington, Vt., and admitted to the Children's Hospital in February, 1920. In June, 1919, she had fallen out of a tree and sustained a compression fracture of the eleventh dorsal vertebra, which was very evident in the roentgenogram taken at the time of her admission to the hospital. Sensation and motion were immediately lost below the level of the injury, and paralysis of the bladder and rectum was present. A laminectomy had been immediately performed, but it was followed by no improvement, and she had been helpless, so far as getting about was concerned. Power in the legs was entirely absent; there was a trace of power in the muscles of the hips, but not enough to move the limbs. Sensation was wholly absent below the level of the injury. At the time of her admission to the hospital, function of the bladder and rectum had returned, but there was a considerable kyphos in the lower dorsal region.

She was fitted with caliper braces and taught to use the crutches in the tripod fashion. In March, 1920, she was able to walk the length of the hospital corridors, and could get up and down from her wheel chair without assistance by taking hold of the bottom of the bed. She developed a pressure sore which lasted for a few days on one of the toes from too much walking, which is a warning of how careful one must be in regard to pressure from brace or shoe in cases with total abolition of sensation.

COMMENT

These cases have been selected from a fairly large number of similar ones, as they were obviously severe and some of them of fairly long standing.

They show that persons with very low grades of power in the legs, hips, abdomen and back can be taught to walk, to get up and down from a chair, and many to go up and down stairs. The two latter achievements constitute the difference between independence and dependence in the life of the affected person.

CONCLUSION

It need only be repeated that any intelligent patient with flaccid paralysis below the waist, with one good arm and one arm good enough to hold a crutch, can be taught to walk by the tripod method, and to get up and down out of a chair unaided, provided contraction deformities are not present, or have been removed by operation.

234 Marlborough Street.

MECKEL'S DIVERTICULUM

REPORT OF CASE

DANIEL L. BORDEN, A.M., M.D.
Associate Professor of Surgery, George Washington University
WASHINGTON, D. C.

Owing to the rarity of its pathologic lesions, Meckel's diverticulum presents an interesting study. The case here reported, although terminating fatally,



Fig. 1.—Appearance of Meckel's diverticulum when abdomen was first opened. The diverticulum is protruding up through distended intestine.

offers an unusual feature which makes it worthy of consideration.

Meckel's diverticulum is an occasional sacculation, cecal appendage or tube of the ileum, produced when the intra-embryonic segment of the vitelline duct fails to close. This closure should occur normally about the fifth week of fetal life.

Historically this condition was first described by Rysch, an anatomist, but it was not until 1808 that

Meckel gave to the scientific world an accurate and minute account of this abnormality. He showed that the diverticulum existed either as a free blind pouch

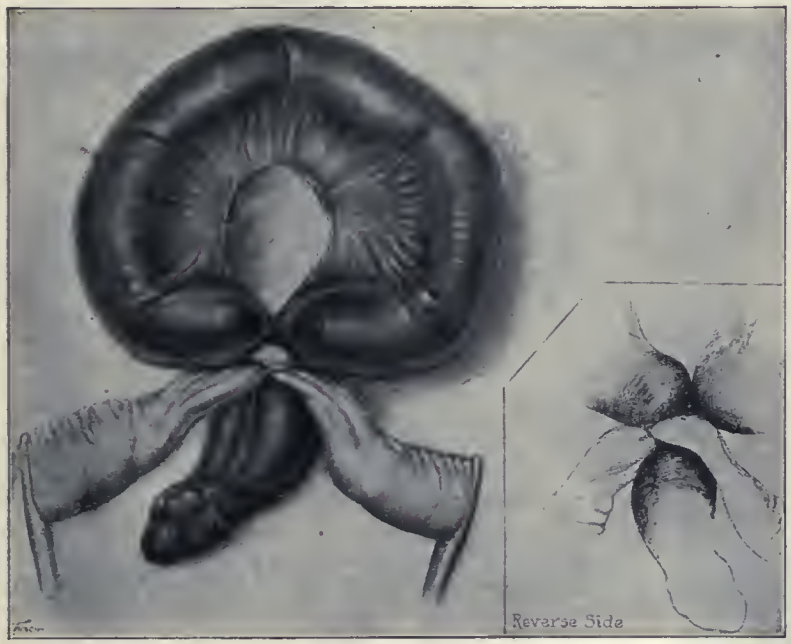


Fig. 2.—Strangulated intestine and Meckel's diverticulum after resection.

or as a tube attached to the anterior abdominal parietes, generally at the umbilicus. This tube may be closed or open; and when open, it forms the so-called congenital fistula, discharging fecal material through the umbilicus. The blind pouch diverticulum varies in length from 2 to 25 cm. and is usually located on the free border of the intestine between 4 and 90 cm. from the ileocecal valve. Structurally, being a part of the alimentary unit, the diverticulum is composed of four coats similar to the intestine, namely, serous, subserous, muscular and mucous.

As Meckel's diverticulum is a developmental defect derived from an unobliterated vitelline duct, it presents some statistical facts of interest. The condition is seen in only 2 per cent. of human beings, and in this 2 per cent., few come to the attention of the surgeon, for, unless they are complicated by a pathologic condition or discovered by accident at abdominal section, their presence is never known. Balfour reports only fifteen cases of diverticulum out of 10,600 laparotomies performed at the Mayo Clinic during a period of three years. Pathologic complications of the diverticulum are more commonly seen during active middle life, and they occur in males more frequently than in females. Out of a collected series of 130 cases, Keen reports its occurrence in 100 males to thirty females.

Uncomplicated Meckel's diverticulum, unless it is a congenital fistula, produces no symptoms. As the diverticulum is an intimate part of the small intestine, it is subject to the various pathologic lesions seen in the ileum and the acute inflammations similar to those of its neighbor, the appendix. Like the appendix, therefore, in the closed type of diverticulum it is subject to ulceration, catarrh, perforations and gangrenous inflammation, and often it is a haven for foreign bodies. Apple seeds, grape seeds, cherry stones, fish bones and, in one instance, a Murphy button have been reported found in its lumen.

Either the pouch or band form of diverticulum offers opportunity and possibility for bowel obstruction. In the band form the intestine becomes twisted about, or strangulated by the band in much the same manner that it does in some forms of postoperative adhesions. In the pouch form, there is possibility of the diverticulum's invaginating itself into the intestinal lumen, producing a certain degree of obstruction with ultimate intussusception. On the other hand, as in the case here reported, the free diverticulum may tie a knot about itself, including a loop of intestine.

Owing to its rarity and its similarity to both acute appendicitis and intestinal obstruction, the differential diagnosis of a pathologic condition of Meckel's diverticulum is not usually made until the abdomen is opened.

The treatment of uncomplicated diverticulum is similar to the surgery of the appendix. The diverticulum is resected and the stump inverted into the ileum.



Fig. 3.—Diagrammatic representation of successive steps in knot tied by diverticulum around loop of intestine.

In the event of a pathologic complication involving Meckel's diverticulum, the surgeon may be confronted by extremely serious conditions.

REPORT OF CASE

History.—F. J., aged 26, white, married, private, Company G, engineers, whose mother, father, five brothers and four sisters were living and well, had a negative history except for a severe burn on the left side of the face in childhood, had always been well, and denied any previous abdominal trouble. The present illness began suddenly at 10 p. m., April 4, 1918. The patient was walking home, after having taken a cup of coffee and a piece of toast, when he experienced a sudden cramplike pain in the lower right quadrant of the abdomen. The pain was so severe that he had to be taken to his station at the Washington Barracks, Washington, D. C. He vomited continually throughout the entire night, and suffered constant and severe abdominal pain. Next morning he was transferred by ambulance to the Walter Reed General Hospital, where he was seen at noon, fourteen hours after the onset of the attack.

Physical Examination.—The patient weighed 130 pounds. His facial expression was extremely anxious, pinched and exhausted. His general appearance was very bad and gave every evidence of a severe intra-abdominal complication. There was notable general rigidity of the abdominal wall,



Fig. 4.—Photograph of gangrenous mass, intestine and diverticulum.

with the rigidity somewhat accentuated over the lower right quadrant. Tenderness was also general, but more marked over McBurney's point. No abdominal mass was palpable. A tentative diagnosis of ruptured appendix was made and immediate operation urged.

Operation and Result.—Through a right rectus incision the abdomen was opened, when a large amount of bloody, foul, fecal smelling peritoneal fluid escaped. A dark gangrenous mass 4 inches long and 1 inch in diameter protruded through distended coils of intestine. Careful separation of the loops of intestine and a following of the mass to its base revealed that it led to a long coil of gangrenous intestine. When this green gangrenous mass of strangulated intestine was liberated there was a marked odor of colon. A diagnosis of Meckel's diverticulum with strangulation and bowel obstruction was evident.

The mesentery of the strangulated intestine was involved down to its postperitoneal attachment, making resection very difficult. The mass, however, was excised and an end to end suture anastomosis was done. To determine the size of the opening at the point of anastomosis, the bowel was inverted by the index finger at the point of union. The lumen seemed amply large. The abdomen was drained and closed in layers. The patient, although shocked, left the table in fair shape considering his previous condition.

April 6, twenty-four hours after operation, the patient's general condition was unquestionably better. On this day he passed a fair quantity of gas but no fecal matter. April 7, he continued to pass gas, but there was some distention. April 8, there was marked distention with signs of obstruction. He began vomiting, and operation seemed imperative. Under local anesthesia an enterostomy was performed, at which time 2 quarts of fecal matter were evacuated. His condition continued very grave, and on April 9 he was given 500 c.c. of blood. Although temporarily improved by this, he died at 9 p. m.

Necropsy.—The enterostomy opening was found 145 cm. from the cecum. Above the enterostomy the small intestine was distended with gas and fecal matter. The end-to-end anastomosis was found 40 cm. from the cecum. At the point of anastomosis there was an indurated mass obstructing the bowel. There was no evidence of leakage from the bowel into the peritoneal cavity.

COMMENT

The case presents an unusual pathologic lesion of Meckel's diverticulum. As is shown in the illustrations, the diverticulum had tied itself into a complete knot, around the base of, and strangulating a coil of intestine about 2 feet in length. In order to untie this knot the diverticulum had to be cut near its base and the path of the tie of the diverticulum retraced by means of a hemostat. Mr. W. H. French, the artist, was present at the operation, and very kindly made an accurate drawing illustrating the picture presented at operation as well as the manner in which the diverticulum was tied.

815 Connecticut Avenue.

THE CATALASE CONTENT OF THE CEREBROSPINAL FLUID*

ABRAHAM LEVINSON, M.D.
AND
FRANK C. BECHT, M.D.
CHICAGO

The presence of catalases in the cerebrospinal fluid is still more or less of an open question. Barbieri [1] concluded that no catalases are to be found in the fluid—a conclusion to be expected from the method he employed, as all his results are from fluids subjected to prolonged centrifugalization followed by the withdrawal and testing of the supernatant fluid. It has already been shown,[2] that the blood serum contains no catalase when fully freed from corpuscles. Thus, a similar result is to be expected from the liquid portion of the cerebrospinal fluid.

METHOD AND RESULTS

In this work the apparatus described by one of us was employed.[3] The peroxid used was the ordinary commercial 3 per cent. solution, acid in reaction and with acetanilid added as a preservative. The solution was neutralized immediately before the test by the addition of the required amount, 1.5 c.c. of half normal sodium hydroxid; one c.c. of fluid and 25 c.c. of hydro-

* From the Sarah Morris Hospital for Children and the Department of Physiology and Pharmacology, Northwestern University Medical School.

1. Barbieri: Chemische und biochemische Untersuchungen über das Nervensystem; Untersuchungen über die Katalase im Liquor cerebrospinalis, Biochem. Ztschr. **42**: 137, 1912.

2. Jolles: Beiträge zur Kenntnis der Blutfermente, München. med. Wchnschr. **51**: 2083, 1914. Jolles and Oppenheim: Beiträge zur Kenntnis der Blutfermente, Virchows Arch. f. path. Anat. **180**: 185, 1905.

3. Becht: Observations on the Catalytic Power of Blood and Solid Tissue, Am. J. Physiol. **48**: 171, 1919.

gen peroxid were used in each test. The bottles were shaken for ten minutes in each case. Because of the small amounts of oxygen released, no correction was made for temperature and pressure. Most of the tests were run in duplicate only, on account of the difficulty in securing enough fluid. It was impossible to make cell counts in all cases.

The results of our experiments are given in the accompanying tables.

Table 1 shows the findings in eight fluids secured from nonmeningitic cases. In no case was more than 5 c.c. of oxygen generated and, therefore, it is evident that in nonmeningitic cases, in which the number of cells is small, the catalytic power of the fluid is negligible.

Table 2 shows the findings in three cases of tuberculous meningitis and one case of anterior poliomyelitis. In two cases the amount of oxygen released was greater than in nonmeningitic cases, and in two cases quite comparable to the amounts released in the fluid in Table 1.

Table 3 shows the findings in ten observations on suppurative meningitis. In general, the results here are an increased amount of oxygen released from hydrogen peroxid by the action of the fluid. The increase is by no means parallel with the number of cells, but a fluid with a large number of cells is usually a fluid with a relatively high catalytic power. The

TABLE 1.—FINDINGS IN NONMENINGITIC FLUID

Name	Diagnosis	Date	Interval	Reading	Cells per C.mm. at Time of Catalase Determination	Other Tests
F. C.	Chorea	10/17	½ hr.	0, 0	4	0
C. F.	Microcephalus	11/14	½ hr.	0, 0	4	0
B. W.	Meningism	11/11	2 days	2, 2	2	Globulin slightly positive
G. B.	Normal	11/11	2 days	3, 2, 2	4	0
J. J.	Scarlet fever and diphtheria	11/22	4 days	5, 5	0	0
D. E.	Epilepsy	10/28	1½ hrs.	2, 2, 2	1	0
L. S.	Brain tumor	12/1	1 hr.	4, 4, 4, 4	50 lymphocytes	0
L. R.	Cerebral hemorrhage	11/20	19 hrs.	2, 2	2	Globulin positive

TABLE 2.—FINDINGS IN TUBERCULOUS MENINGITIS AND POLIOMYELITIS

Name	Diagnosis	Date	Interval	Reading	Cells per C.mm. at Time of Catalase Determination	Other Tests
B. M.	Tuberculous meningitis	11/22	5 hrs.	9, 11	800 cells, 80% lymphocytes	Tubercle bacilli in fluid
J. J.	Poliomyelitis	10/30	7 days in ice box	6, 6	13 cells	Chemical tests positive
S. B.	Tuberculous meningitis	12/11	5 days	0, 0	No cells now; 110 lymphocytes immediately after removal from body	Tubercle bacilli found in fluid; globulin positive
S. B.	Tuberculous meningitis	12/11	2½ days	3, 2	4 red cells no white cells	Tubercle bacilli in fluid

pellicle when added to a test markedly increased the amount of oxygen released. Fluid that gave a fairly high catalase reading directly after the fluid was removed from the body gave a lower reading if examined after the fluid had been standing. This shows that the catalase depends on the presence of leukocytes, and varies directly with the number of leukocytes present in the fluid. Since leukocytes degenerate on standing, the catalase reading becomes lower.

PRACTICAL VALUE OF THE CATALASE TEST

While the presence of catalase indicates the presence of many cells or of a coagulum in the fluid, we see no advantage in the catalase examination for practical purposes. The cell count done immediately after withdrawal of the fluid from the body will give more accurate information without necessitating the use of complicated apparatus.

TABLE 3.—FINDINGS IN SUPPURATIVE MENINGITIS

Name	Diagnosis	Date	Interval	Reading	Cells at Time of Catalase Determination	Other Tests
E. L.	Meningococcus meningitis	11/11	½ hr.	14, 14	5,544 per c.mm. 90% polymorphonuclears	All bacteriologic and chemical tests positive
L.	Meningococcus meningitis	10/30	4 days in ice box	6, 7	10 per c.mm.	All bacteriologic and chemical tests positive
L.	Meningococcus meningitis after 90 c.c. serum	10/30	1 hr. at room temp.	20, 21	26 per c.mm.	Very high protein content; all other tests positive
P. M.	Meningococcus meningitis	11/12	2 days	12, 12	.....	All tests positive
R.	Meningococcus meningitis after 30 c.c. serum	10/30	5 days in ice box	19, 18	.....	All tests positive
C. U.	Chronic basilar meningitis	10/20	4 hrs.	7, 7	100 per c.mm.	All tests positive
L. C.	Meningococcus meningitis	10/17	19 days	6, 5, 6	.....	All tests positive
J. S.	Meningococcus meningitis before serum	12/11	4 days	4, 5	No white cells	All tests positive
R. T.	Streptococcus meningitis	12/28	24 hrs.	20, 20, 38*	2,000	Streptococcus in direct smear in great numbers; all tests positive
R. T.	Streptococcus meningitis	12/28	3½ hrs.	40, 35, 65*	960	Streptococcus in great numbers; all tests positive

* The pellicle was included in these tests.

CONCLUSIONS

The catalytic power of the fluid is determined by the number of cells or coagulum present, thus, perfectly normal fluid free from cells and coagulum contains no catalase.

The catalase test as applied to cerebrospinal fluid is of no practical value.

THE ROENTGEN-RAY TREATMENT OF VERRUCA PLANTARIS

H. H. HAZEN, M.D.
Professor of Dermatology and Syphilology, Georgetown University School of Medicine, and Howard University School of Medicine.

AND

F. J. EICHENLAUB, M.D.
Instructor of Dermatology and Syphilology, Georgetown University School of Medicine.

WASHINGTON, D. C.

Search of the literature at our disposal has failed to reveal anything more than a casual reference to the roentgen-ray treatment of that most stubborn of all warts, the plantar variety. Sutton [1] speaks of it in connection with the use of carbon dioxid snow, and mentions it without giving technic or results. Shultz [2] speaks of it briefly in the same way. We can find no case reports showing actual results, the amount of treatment required, and the technic used. Our own

1. Sutton, R. L.: Am. J. M. Sc. **144**: 71 (July) 1912; An Extensive Case of Plantar Warts, J. A. M. A. **62**: 1320 (April 25) 1914.
2. Shultz: X-Ray Treatment of Skin Diseases, New York, Rebman Company, p. 145.

results have been so uniformly good that we present them with our technic.

We have records of sixteen private cases treated by the roentgen ray. All received the same general plan of treatment, individual cases requiring different amounts, as shown in the table. We are unable to assign any reason for this difference in response to treatment of lesions which are very similar in size, nature and duration. Some of those of longest duration responded most quickly to treatment, and neither size nor location appeared to play any part. Another peculiarity noted was that almost invariably the pain disappeared in from two to four days after the first treatment. Why this should be we cannot say, unless it is due to an action on the nerve terminals analogous to the action of the roentgen ray in pruritis. Since pressure, the cause of the pain, is in no way affected at this early stage, we can offer no other explanation.

Our technic is to give 1⅓ Holzknecht skin units every three to four weeks. We estimate our dosage according to the method long advocated by MacKee,[3] and recently described by him. In our work we use a

RECORDS OF SIXTEEN CASES TREATED BY ROENTGEN RAY

Case No.	No. of Warts	No. of Treatments	Total H Skin Units	Result
1	1	3	4	Cured
2	1	2	2⅔	Cured
3	4	3	4	Cured
4	5	7	9	Not benefited*
5	1	3	4	Cured
6	1	2	2⅔	Cured
7	1	4	5⅓	Cured
8	1	3	4	Cured
9	6	3	4	Cured
10	1	1	1⅓	Cured
11	1	2	2⅔	Cured
12	1	2	4	Cured
13	4	4	5⅓	Cured
14	1	7	9	Cured†
15	20	3	4	Cured
16	1	2	2⅔	Cured

* In case 4 there were flat warts, a variety notorious for its resistance to roentgen-ray treatment, no matter where located.

† The patient in case 14 discontinued treatment before being cured and then had a recurrence which required a second course of treatments, thus accounting for the large number of units required.

7½ inch spark gap, 9 inches focal skin distance, 4 milliameperes, and one minute, ten seconds to obtain 1 H. When the lesion has disappeared we usually give an additional treatment to be sure of a complete cure. Hence many of those, who, as shown in the table, received two or more treatments, would have required one less had we given the minimum. It should be noted that we use no filter in this work, as we feel that on superficial lesions results are much better with the unfiltered ray.

The cure seems to be permanent. Some of our patients have been followed for five or six years, and have had no recurrence. On the basis of such results as these we have abandoned all other forms of treatment, using the roentgen ray alone, and quite confidently give a favorable prognosis. As the table shows, only one case, and that not the ordinary variety of plantar wart, has failed to respond true to form.

1621 Connecticut Avenue N.W.

3. MacKee, G. M.: Am. J. Roentgenol. **6**: 602 (Dec.) 1919.

Differential Diagnosis.—In acute perforation the patient lies still, fearing to breathe; in gallstone colic he rolls about with pain.—Sir D'Arcy Power, Surgical Aphorisms. *Clin. J.* **49**:28 (Feb.) 1920.

SIGNIFICANCE OF THE DIFFERENT TYPES OF PNEUMONIA FOLLOWING INFLUENZA

A THERAPEUTIC INDICATION

B. S. KLINE, M.D.
NEW YORK

In a study of the pulmonary lesions following influenza, the impression was gained that an associated pulmonary edema is a factor of great importance in determining the rapid extension of the inflammation throughout the lung, and that in the absence of this edema, the lesion remains localized about the bronchial branches.

TABLE 1.—NUMBER OF LOBES INVOLVED

Lobes	Cases
1.	6
2.	15
3.	25
4.	33
5.	75
Total	154

The observations recorded in this paper were made during the epidemic of influenza in the American Expeditionary Force hospital center at Bazoilles, Vosges, France, between Sept. 2 and Dec. 27, 1918.

About 200 patients died there with pneumonia following influenza, and of these, 154 came to necropsy. In all cases there was a tracheitis and bronchitis. The most striking lesion, however, was observed in the lungs. In the vast majority (86 per cent.), the consolidation was widespread, involving three or more lobes; in one half of the cases all five lobes were affected.

Table 1 shows the extent of the pulmonary involvement in the series.

The pulmonary consolidation in these cases varied in character; discrete lesions in some cases contrasted sharply with confluent consolidation in others. The discrete lesions were peribronchial and peribronchiolar; the confluent lesions were coalescing lobular in type. A considerable number of the cases showed both discrete and confluent consolidation.

TABLE 2.—INCIDENCE OF DISCRETE, CONFLUENT AND COMBINED CONSOLIDATION

Type	Duration Short, 1 Week or Less	Moderate, From 1 to 2 Weeks	Long, Over 2 Weeks	Total Cases
Peribronchial and Peribronchiolar	2	7	11	20
Coalescing Lobular	14	36	14	64
Combined Peribronchial, Peribronchiolar and coalescing lobular	10	33	27	70

Table 2 shows the incidence of the three types.

In peribronchial and peribronchiolar pneumonia, the lung was quantitatively much less involved than in the other types, and this may explain the longer average duration of the disease and the smaller percentage of fatal cases of discrete pneumonia, as compared with the confluent pneumonias.

DESCRIPTION OF PULMONARY LESIONS

In the coalescing lobular pneumonia of short duration, the involved lobes are more voluminous than normally. They are heavy, soggy and solid. Excised

portions, when placed in water, settle down or submerge, but do not sink to the bottom of the container. On section of an involved lobe, a considerable portion, usually the posterior, or the entire lobe, is found consolidated; the surface is smooth, moist and dark red. Over the cut surface a considerable amount of bloody fluid exudes from the air spaces. The picture is that of congestion, edema, hemorrhage and consolidation of entire lobules or portions of these, with extensive coalescence of the inflammatory process. Scattered throughout the involved areas, there are seen lobules or groups of relatively little affected alveoli. The tissue is rubbery rather than friable, and is quite compressible.

In the coalescing lobular pneumonia of moderate duration, the involved lobes are more voluminous than normally; they are heavy and solid. Excised portions, when placed in water, submerge or sink to the bottom of the container. On section of an involved lobe, a considerable portion, usually the posterior, or the entire lobe is found consolidated; the surface is somewhat moist, finely granular and grayish red or gray. The coalescence of the inflammatory process is more striking than in the lesions of shorter duration, and suggests lobar consolidation. It differs from the hepatization in lobar pneumonia in that the cut surface of the involved lobe is less coarsely granular, the tissue much less friable and more compressible.

In the cases of long duration, the lesions vary. In some, the general features are similar to those described in the foregoing. In these old cases, however, the cut surface is coarsely granular and the tissue quite friable.

In others, the surface is pasty and the tissue is easily compressed, causing an exudation of moist, viscid fluid. There are also cases in which resolution is further advanced with scattered areas of pasty consolidation only about the bronchial branches. In the cases of longest duration, small or large portions are firm, grayish, somewhat translucent, and traversed by gray flecks and strands.

In the peribronchial and peribronchiolar pneumonia, the involved lobes are more voluminous than normally. They are cushiony and solid, or cushiony, soggy and solid. On section a considerable amount of relatively uninvolved tissue is seen; the consolidation is localized about the bronchial branches, and extends from a few millimeters to several centimeters from the lumen. In this type, the oldest lesions are frequently seen near the hilum of the lobe.

The discrete consolidation varies in appearance, depending on the duration, and shows changes comparable to those described in the confluent pneumonia. It differs, however, in that in cases of short and moderate duration, the consolidated tissue is much less moist than that of the type described above.

In the combined peribronchial, peribronchiolar and coalescing lobular pneumonia, the involved lobes show a combination of the changes described in the discrete and confluent pneumonias.

In over one half of the cases there was an associated pleurisy, usually slight. Not infrequently, a terminal edema was noted in cases of each type.

These cases were studied bacteriologically by Dr. R. C. Curtis. Pneumococci, *Bacillus influenzae,* and *Micrococcus catarrhalis* were recovered in about the same percentage in the three types. In all cases the myocardium showed parenchymatous changes, and in the majority, dilatation of the right heart was observed postmortem.

COMMENT

From the observations noted in the foregoing, it would seem that in some cases following a tracheitis and bronchitis, pulmonary congestion and edema occur, and the inflammatory process extends from the bronchi throughout the edematous lung, producing the widespread coalescing lobular consolidation.

In other cases following the tracheitis and bronchitis, there is little if any pulmonary edema, and the inflammatory process extends only a small distance beyond the bronchial branches, producing a discrete peribronchial and peribronchiolar consolidation.

There is a third type of cases in which the tracheitis and bronchitis is followed by an extension of the inflammatory process about the bronchial branches; and following this discrete pneumonia, there is extensive pulmonary congestion and edema with extension of the process from about the bronchial branches throughout the lobe, producing a coalescing lobular consolidation.

A detailed histologic report of the lesions will be given later, but at this time it may be stated that histologically the sections corroborate the impression of extension of the inflammation through edematous lung in cases of coalescing lobular consolidation and of absence of associated edema in peribronchial pneumonia.

A factor of great importance in determining the rapid extension of the inflammation throughout the lung, if the foregoing hypothesis is correct, is the associated pulmonary edema. In the absence of pulmonary edema the lesion remains discrete and the disease is less severe.

Digitalis and venesection are each reported [1] to have a beneficial action in pneumonia following influenza. It may be that these measures are instrumental in preventing pulmonary edema, thus limiting the extension of the inflammation.

CONCLUSION

There is evidence for the belief that in pneumonia following influenza, an associated pulmonary edema is a factor of great importance in determining the rapid extension of the inflammation throughout the lung, and that in the absence of this edema, the lesion remains localized about the bronchial branches.

1. Herrick, J. B.: Treatment of Influenza by Means Other than Vaccines and Serums, J. A. M. A. **73**: 482 (Aug. 16) 1919. Edgerly, E. T.; Manson, F. M.; Dwinell, W. G., and Carr, J. G.: The Influenza Pneumonia Epidemic at Camp Dodge, Am. J. M. Sc. **158**: 212 (Aug.) 1919. Ravaut, P.: Treatment of Influenza, Paris méd. **8**: 390 (Nov. 16) 1918, p. 390.

Tuberculosis and Occupation.—The latest occupational mortality statistics for the United States for 1909 show that the mortality from tuberculosis in agricultural pursuits was 8.7 per cent.; among bookkeepers and accountants, 22.5 per cent.; and in servants and waiters, 27.4 per cent. If we stop right here the evidence would be overwhelming in favor of outdoor employment. But when we find that the tuberculosis mortality in government officials and bankers is less than 8.7 per cent., and that for draymen, hackmen and teamsters it is 23.4 per cent., it becomes apparent that in estimating the hazards of indoor occupations, other factors, such as physique, habits, exposure to dust, social conditions and standards of living must be considered.—G. M. Kober, *Pub. Health Rep.*, March 26, 1920.

VENEREAL PROPHYLAXIS

P. M. ASHBURN, M.D.
Colonel, Medical Corps, U. S. Army
WASHINGTON, D. C.

In a recent article[1] I expressed the opinion that venereal prophylaxis or "early treatment" after an impure sexual connection reduces the liability to venereal infection to one third of what it would be without it, and that in France, where practically all exposures on the part of our troops could fairly be considered impure and at least potentially infectious, there resulted one infection to thirty exposures without the use of prophylaxis, and one infection to ninety exposures followed by its use. Many officers who had thought prophylaxis more efficient than these figures indicate raised the objection that men who acquired infection after the use of prophylaxis did so as a result of failure to use it promptly or properly.

Concerning the charge that it was not used properly, I suspect that such was the case in many instances; but vigorous and continued efforts were and are made to see that it should be so used. Perfection is not likely to be obtained, but a reasonably good technic is applied in most instances.

TABLE 1.—TIME ELAPSING BETWEEN INFECTING INTERCOURSE AND USE OF PROPHLAXIS

Time Within Which Prophylaxis Was Used	Cases	
	No.	Per Cent.
15 minutes	132	5.6
30 minutes	438	18.5
45 minutes	510	21.6
1 hour	1,015	43
2 hours	1,629	69
3 hours	1,884	79.8
4 hours	1,998	84.6
After 4 and within 12	196	8.3
Period not stated	165	6.9

Concerning the charge that prophylaxis was not or is not promptly used by persons acquiring infection, I now have some testimony. Since early in September, 1919, a questionnaire accompanied by the following statement from the Surgeon-General of the Army has been submitted to each patient in whom a new case of venereal disease was detected:

> The soldier will be informed that this information is desired for use in the control of venereal disease, that it will be held confidentially and not used to his detriment, that he is under no compulsion to furnish it but that information will be appreciated. He will be asked to tell the truth or to refuse to answer, but to avoid making misleading statements. A report of this sort will be sent in on each new case of venereal disease detected, but if the soldier refuses to furnish any of the information asked for, that fact will be stated.

By Feb. 26, 1920, 5,000 case reports had been received and compiled; 4,755 men answered the question as to whether or not their infections followed the use of prophylaxis, of which number 2,359 men said that theirs did. The answers of these 2,359 men as to the time elapsing between the infecting intercourse and the use of prophylaxis are given in Table 1.

It is apparent that efforts at disinfection of a penis, as of hands or throat, cannot always be successful, even though the effort be made very soon after the exposure to infection. There is much the same reason, however, for making the attempt at disinfection that there is for a surgeon's attempting to disinfect the hands which he has contaminated or injured while operating on a syphilitic or suppurative lesion, and more reason, so far as the available evidence indicates, than for attempting to disinfect a throat exposed to infection from any one of the respiratory diseases.

Among these 5,000 infected men the average number of sexual contacts followed by prophylaxis was, for the preceding year, 15.3 for each infection following its use, while the average number of contacts without prophylaxis was, during the same period, 11.6 for each infection following its neglect. In order to determine, if possible, whether the use of prophylaxis prevents one type of venereal disease more than it does others, a comparison was made of the relative proportions of the three diseases in the first 2,000 cases in which infection followed the use, and in the first 2,000 in which it followed neglect of prophylaxis. The results are given in Table 2.

TABLE 2.—COMPARISON OF EFFECT OF PROPHYLAXIS ON THREE VENEREAL DISEASES

	Gonorrhea Per Cent.	Chancroid Per Cent.	Syphilis Per Cent.
Without prophylaxis	67.2	15.6	17.2
With prophylaxis	64.5	18.9	16.6

This comparison shows differences, but they are not so great as might be expected. The suggested causes of them are:

(*a*) Chance: They may be due to the run of the (report) cards; i. e., it may be that an undue proportion of the cards showing the use of prophylaxis relate to men who contracted the diseases in the Philippines, Europe or some other foreign part where chancroid is more common than in the United States.

(*b*) Greater carelessness in the use of one feature of the prophylaxis than of others; e. g., it may be that thorough inunction is relatively neglected.

(*c*) Contamination due to rubbing; i. e., friction of inunction may cause cracks and abrasions and so permit the entrance of pyogenic organisms, which cause ulcers diagnosed as chancroids.

TABLE 3.—PERCENTAGE OF VENEREAL DISEASES AMONG UNITED STATES TROOPS FROM 1903 TO 1915

Year	Diseases		
	Gonorrhea Per Cent.	Chancroid Per Cent.	Syphilis Per Cent.
1903	61	20	17
1904	65	17	17
1905	66	17	16
1906	66	16	17
1907	64	20	15
1908	70	16	13
1909	69	14	15
1910	65	16	17
1911	57	15	27
1912	60	17	22
1913	57	17	24
1914	57	22	20
1915	60	18	20

(*d*) Effect of urinating. The urination always practiced with prophylaxis may be an important factor in the prevention of gonorrhea.

(*e*) Normal variations. The differences in percentages may be merely such as are within the normal variations that occur in large groups of cases, and without significance. Table 3 shows the percentages of these three diseases in the totals of venereal disease reported among troops serving in the United States

1. Ashburn, P. M.: Factors Making for a Low Venereal Record in the American Expeditionary Forces, J. A. M. A. **73**: 1823 (Dec. 13) 1919.

for the years 1903 to 1915. The increase in syphilis after 1910 is probably attributable principally to the use of the Wassermann test.

OCCURRENCE OF BILATERAL SYMPATHETIC OPHTHALMOPLEGIA

ITS SIGNIFICANCE IN LETHARGIC ENCEPHALITIS

WILLIAMS B. CADWALADER, M.D.
Instructor in Neurology and Neuropathology, University of Pennsylvania School of Medicine; Neurologist, Presbyterian Hospital
PHILADELPHIA

I wish to call attention to the diagnostic importance of the occurrence of bilateral sympathetic ophthalmoplegia in cases of lethargic encephalitis. So far as I know this has not been previously recorded, and it is of great significance in the diagnosis of this disease.

It is well established that the pons and the medulla oblongata are traversed by a tract containing oculopupillary fibers. A lesion of this tract causes contraction of the pupil and narrowing of the palpebral fissure and slight retraction of the eyeball of the same side.

The tract passes through the dorsomedial region of the pons and medulla oblongata. Focal disease of the pons and medulla may therefore produce symptoms of "sympathetic ophthalmoplegia." This sign, however, so far as I know, has not previously been observed on the two sides at the same time. Recently I have had two cases of lethargic encephalitis in which both pupils were contracted and both palpebral fissures were narrowed, that is, the signs of bilateral "sympathetic ophthalmoplegia." In one of these the clinical diagnosis was confirmed by postmortem examination.

Bilateral involvement of the sympathetic fibers of the eyes can be caused only by a diffuse or inflammatory lesion of the brain stem, so that when it is associated with the characteristic mental confusion of lethargic encephaltis it should be regarded as a diagnostic sign of that disease.

However, because of the bilaterality of the narrowing of the palpebral fissures and contraction of the pupils, it is not likely to attract attention and is overlooked; but when it occurs only on one side at the time, the contrast quickly directs attention to it.

Bilateral sympathetic ophthalmoplegia is not known to occur in other diseases.

1501 Spruce Street.

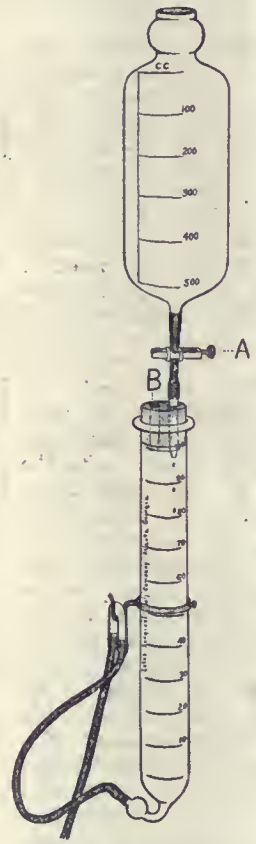
Industrial Health Hazards.—An industrial health hazard should be interpreted to mean any working condition which is responsible for or contributes to physical injury or illness, including the presence of poisonous fumes, vapors, gases, liquids and most factory dusts; excessive heat, cold and humidity; the handling of materials known to retain or suspected of retaining harmful bacteria; the frequent lifting of heavy weights, long hours of labor, muscular strain, and like conditions which predispose workers to disease. It is alleged, for instance, that there are over 600 branches of industry where poisonous fumes, gases, or liquids are present, and more than sixty-five industries in which dust is a menace to health. There are an unknown number of processes where fatigue is the result of muscular strain, and where organic weakness of the workers, often unknown to them, increases susceptibility to occupational disease. In view of this situation is it not advisable to know the effect on health of varying plant and municipal conditions? When the cost of information is so relatively slight, what objection is there to provision for the veritable barometer of health which morbidity statistics create?—*Pub. Health Rep.*, April 9, 1920.

Clinical Notes, Suggestions, and New Instruments

A DEVICE FOR THE INTERMITTENT FLUSHING OF WOUNDS

EDGAR G. BALLENGER, M.D., AND OMAR F. ELDER, M.D.,
ATLANTA, GA.

By means of the device shown in the accompanying illustration, wounds may be flushed intermittently with medicating solutions, such as surgical solution of chlorinated soda (Dakin's solution), every half hour, two hours or otherwise as desired. It has merely to be connected to an irrigating container and the screw compressor on the tube leading from it so adjusted that a given number of drops flow per minute. When the fluid collects to the level of the tube at *C*, siphonage is established and the solution flows through the exit tube into the wound.



Device for intermittent flushing of wounds.

The *amount* may be varied by raising or lowering the tube at *C*, while the *frequency* of the flushing is regulated by the rate of the drops per minute. In this manner wounds may be flushed with solutions as desired without the necessity of a nurse or an attendant, the only thing necessary being to keep the solution in the irrigating container, which may be of sufficient size to last for twenty-four hours.

The hole in the rubber stopper *B* permits siphonage, when established, to empty the solution collected in the apparatus.

The *force* with which the solution comes into the wound can be varied as desired by the height to which the device is carried above the wound.

Multiple connections may be made as desired. When a continuous drip is needed, it is only necessary to remove the tube from *C* and allow it to hang.

If we had had such a device in France, the employment of Dakin's solution would have been much less troublesome than it was.

It is as simple to use as the rectal drip, being altogether automatic; it greatly lessens the work of the nurses, and at the same time gives treatment exactly on time.

LETHARGIC ENCEPHALITIS AS A COMPLICATION OF PREGNANCY AND LABOR

A. Y. P. GARNETT, M.D., WASHINGTON, D. C.

A woman, aged 26, secundipara, had a fairly typical attack of lethargic encephalitis beginning about February 6, when she was eight months pregnant. Her family history and previous personal history were negative; the menstrual history was negative, and her previous labor, eighteen months before, had been normal. Until February 6 she had been normal, and there had been no complications of her pregnancy. At this time she became nervous, complained of tingling in the arms and legs and extreme weakness. The temperature was 102.5. Later she became semidelirious and restless. At this time she was seen by Dr. Loren Johnson, Dr. Moore and Dr. Hough in consultation, and a diagnosis of lethargic encephalitis was made. The symptoms were typical. There was diplopia, ptosis of the lids, nystagmus and marked mental and physical exhaustion. The patient's mind wandered, her

answers to questions became vague and rambling, her eyes closed and she apparently lapsed into sleep after very slight mental or physical effort. The pupillary reflexes were sluggish, the tendon reflexes hyperactive, and the superficial abdominal reflexes absent. There was no Babinski reflex or Kernig sign, and no nuchal rigidity. The heart and lungs were negative; the pulse, 100, regular in force and frequency; the systolic blood pressure 110 and the diastolic, 70. The urine was negative. The blood showed a normal white blood cell count and differential, and a moderate secondary anemia; a blood culture was negative. The blood Wassermann test was negative, and an examination of the spinal fluid by Dr. Hough revealed a clear fluid under moderately increased pressure, with protein content increased ++, 18 cells per cubic millimeter, Wassermann test negative, and colloidal gold test negative.

The patient had been removed to Garfield Hospital, as the home surroundings were not suitable for treating a case of this sort. The pregnancy at this time was normal in every way; the head was not engaged and was in the left occipitoanterior position; the fetal heart was 140 and regular. The temperature was irregular, at first occasionally rising to 101 or 102.5, the highest it reached at any time, and later becoming normal or subnormal. The pulse was rapid, from 100 to 120. The blood pressure continued somewhat below normal. For two weeks previous to labor the patient complained of great pain in the legs, which I thought was aggravated possibly by pressure of the head in the pelvis. I therefore raised the buttocks on a pillow, and elevated the head away from the pelvis.

Her mental and general physical condition gradually and slowly improved, but was far from normal when she went into labor, February 29. When labor began the head was unengaged in the right occipitoposterior position with the occiput inclining to the right iliac fossa. The pains developed rapidly, were strong and when she was nearly fully dilated the head was easily brought over into the pelvis, rotated to the anterior position, and the membranes ruptured. The patient went through a normal delivery in two hours, and had no undue bleeding afterward, and apparently no shock. Her pulse was 90 at the beginning of labor, and 106 at the end. There was no complaint of the labor pains. She apparently did not suffer at all, and said that though she felt them, the pains caused her little or comparatively little suffering. She had no anesthetic from beginning to end. She was returned to the ward in good obstetric condition. Though the night nurse was ordered to catheterize the patient, this was overlooked, and she passed no urine until the following morning. When I saw her at this time the uterus was fairly well contracted, the entire lower abdomen distended though not painful, the bladder on a level with the fundus of the uterus. Catheterization produced 72 ounces of urine.

The baby was a normal infant weighing 6½ pounds. The puerperium has been perfectly normal with no fever and no pain and though the milk was very scanty she has endeavored to nurse her baby. She has had no inclination to void, and there appears to be a partial paralysis of the bladder. Though allowed on the commode for half an hour at a time, she cannot void until the bladder contains at least 40 ounces of urine. Her mental condition has continued to improve and has cleared up, until now, with the exception of an occasional hallucination and some pain in the legs, she has perfectly recovered. There has been no treatment except for the anemia. For this she was given ten injections of sodium cacodylate, and at present her hemoglobin is 80 per cent. and the red blood count, 4,100,000, which is an improvement. The spinal fluid was examined again, March 12, by Dr. Hough, and showed a clear fluid, under normal pressure, with protein content +, and 9 cells per cubic millimeter, which is not quite normal but indicates improvement.

The particularly interesting part of this case to me from an obstetric point of view is the apparently painless labor and the partial paralysis of the bladder, indicating that there may have been some destruction of the posterior nerve roots simulating tabes dorsalis.

1824 Massachusetts Avenue.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

PITUITOL OBSTETRICAL.—Pituitary Extract Obstetrical-Hollister-Wilson. An extract of the posterior lobe of the pituitary body of cattle, approximately three times the strength of Solution of Hypophysis, U. S. P., preserved by the addition of chlorbutanol, each Cc. containing 0.005 Gm. It is standardized according to the method of G. B. Roth (Bulletin 100, U. S. Hygienic Laboratory).

Actions and Uses.—See general article Pituitary Gland, New and Nonofficial Remedies, 1920, p. 205.

Dosage.—0.3 to 1 Cc. (5 to 15 minims) hypodermatically or intramuscularly.

Manufactured by the Hollister-Wilson Laboratories, Chicago. No U. S. patent or trademark.

Ampoules Pituitol Obstetrical 0.5 Cc.—Each ampoule contains pituitol obstetrical 0.5 Cc.

Ampoules Pituitol Obstetrical 1 Cc.—Each ampoule contains pituitol obstetrical 1 Cc.

PITUITOL SURGICAL.—Pituitary Extract Surgical-Hollister-Wilson. An extract of the posterior lobe of the pituitary body of cattle approximately six times the strength of Solution of Hypophysis, U. S. P., preserved by the addition of chlorbutanol, each Cc. containing 0.005 Gm. It is standardized according to the method of G. B. Roth (Bulletin 100, U. S. Hygienic Laboratory).

Actions and Uses.—See general article Pituitary Gland, New and Nonofficial Remedies, 1920, p. 205.

Dosage.—0.3 to 1 Cc. (5 to 15 minims) hypodermatically or intramuscularly.

Manufactured by the Hollister-Wilson Laboratories, Chicago. No U. S. patent or trademark.

Ampoules Pituitol Surgical 1 Cc.—Each ampoule contains pituitol surgical 1 Cc.

RADIUM BROMIDE (See New and Nonofficial Remedies, 1920, p. 238).

Radium Bromide, Radio Chemical Corp.—Supplied in the form of a mixture of radium bromide and barium bromide. All deliveries are made subject to the tests of the U. S. Bureau of Standards.

Manufactured by the Radio Chemical Corp., New York.

RADIUM CARBONATE (See New and Nonofficial Remedies, 1920, p. 239).

Radium Carbonate, Radio Chemical Corp.—Supplied in the form of a mixture of radium carbonate and barium carbonate. All deliveries are made subject to the tests of the U. S. Bureau of Standards.

Manufactured by the Radio Chemical Corp., New York.

RADIUM CHLORIDE (See New and Nonofficial Remedies, 1920, p. 240).

Radium Chloride, Radio Chemical Corp.—Supplied in the form of a mixture of radium chloride and barium chloride. All deliveries are made subject to the tests of the U. S. Bureau of Standards.

Manufactured by the Radio Chemical Corp., New York.

RADIUM SULPHATE (See New and Nonofficial Remedies, 1920, p. 241).

Radium Sulphate, Radio Chemical Corp.—Supplied in the form of a mixture of radium sulphate and barium sulphate. All deliveries are made subject to the tests of the U. S. Bureau of Standards.

Manufactured by the Radio Chemical Corp., New York.

PROCEEDINGS OF THE NEW ORLEANS SESSION

MINUTES OF THE SEVENTY-FIRST ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, HELD AT NEW ORLEANS, APRIL 26-30, 1920

(*Continued from page 1257*)

HOUSE OF DELEGATES

Third Meeting—Tuesday Morning, April 27

The House of Delegates met at 9:30 a. m., and was called to order by the Speaker.

The minutes of the previous meeting were read, corrected, and approved.

Dr. H. B. Gibby, Pennsylvania, Chairman, presented a supplementary report for the Committee on Credentials, stating that 110 delegates had registered, were entitled to and had been seated in the House of Delegates.

It was moved and seconded that the report be accepted. Carried.

Report of Reference Committee on Sections and Section Work

Dr. Hugh T. Patrick, Illinois, Chairman, presented the report of the Committee on Section Work, as follows:

To the House of Delegates:

The first part of the report of the Council on Scientific Assembly relates to an International Congress of Obstetricians and Gynecologists. The Council took no action on this.

Concerning the present plan of half day sessions of the sections, your committee conferred with the Secretary of the Association. As a result, he volunteered to request the officers of the sections to get, so far as possible, the sense of the members on this plan, this information to be for the future use of the Council on Scientific Assembly.

The remainder of the report of the Council on Scientific Assembly relates to matters involving changes in the By-Laws, and consequently your committee recommends that this part of the report be referred to the Reference Committee on Constitution and By-Laws.

Respectfully submitted, HUGH T. PATRICK, Chairman,
LEE MASTEN FRANCIS, S. R. ROBERTS,
FRANK E. McCULLOUGH, SOUTHGATE LEIGH.

It was moved that the report be adopted.

Seconded and carried.

Report of Reference Committee on Medical Education

Dr. J. N. Hall, Colorado, Chairman, presented the following report of the Reference Committee on Medical Education:

Your committee has considered the report of the Council on Medical Education, and wishes to commend the careful and thorough labors which have characterized the efforts of this Council these many years and from which the known improvement in medical education has resulted.

Your committee wishes particularly to endorse the intention of the Council to reclassify the medical schools on the basis of the present survey as detailed in the report, and herewith endorses the changes in classification which were reported. Concerning the routine work of the Council in relation to hospitals, your committee wishes to endorse the continuation of the various activities outlined in the report, and commends particularly the expressed intention of friendly cooperation with other agencies interested in hospital development.

Your committee endorses the efforts of the Council to secure a reorganization of academic education, allowing medical graduation at a less advanced age and to obtain extension of the facilities for graduate medical instruction.

Your committee is of the opinion that the much discussed plan of full-time clinical teachers is still in an experimental stage, and that no final judgment should be expressed at this time.

Relative to the "reorganization of medical education, wrong tendencies in clinical teaching and other tendencies in medical schools," your committee cannot endorse many of the statements made concerning preclinical instruction by non-medical men. While these unsatisfactory tendencies doubtless exist in many instances, they are generally due to economic conditions. It is at present impossible to obtain the required number of such teachers having complete medical training.

Your committee believes that this problem deserves further study, and also that each college should consider the need of a well balanced faculty to avoid such difficulty.

In general, however, your committee recommends the adoption of the report and urges the House of Delegates to lend every financial and moral support to the Council in the furtherance of its work.

Respectfully submitted, J. N. HALL, Chairman,
L. HEKTOEN,
FREDERIC E. SONDERN, W. H. SEEMAN.

Dr. M. L. Harris, Illinois, moved that the report be adopted.

Seconded and carried.

Report of the Reference Committee on Legislation and Public Relations

Dr. J. H. J. Upham, Ohio, Chairman, presented the report of the Reference Committee on Legislation and Public Relations, as follows:

The Reference Committee on Legislation and Public Relations had referred to it the reports of the Council on Health and Public Instruction and of the Special Committee on the Narcotic Drug Situation.

REPORT OF THE COUNCIL

Your committee has carefully considered the report of the Council, and is impressed by the broad scope of the field of operations covered by the Council and its committees and the progressive spirit shown in dealing with many problems of vital importance to the medical profession.

In accordance with the request of the Council, the committee has considered both the reports for 1919 and for 1920, and makes the following recommendations:

1. That the House of Delegates endorse and approve of Senate Concurrent Resolution No. 14, which has passed the U. S. Senate and is now pending in the House, providing for a joint congressional committee to make a survey and report on the federal public health activities, and that it urge its passage by the House. The creation of a congressional committee and the inauguration of a survey of federal public health work will furnish the fundamental information needed and will mark a long step forward in the securing of such a national health organization as our country requires.

2. That the medicolegal work of the Council, which has previously been endorsed by the House of Delegates, be approved and that the Council be directed to complete this work.

3. That the work of the Council in securing the passage of the model bill for the registration of births and deaths be approved, and that the state medical associations in Arizona, Nevada, South Dakota, Iowa and West Virginia, the only states now without adequate laws on this subject, be urged to take the lead in educating public opinion in these states and in securing the passage of the model bill at the next session of their legislatures, in order that the registration area may be completed and that birth and death registration, the basis of all modern health work, may be uniform throughout the entire country.

4. That the work of the Committee on Protection of Scientific Research be approved, and that the Council be directed to reprint the hearings before the Senate committee on the antivivisection bill as one of its educational pamphlets.

5. That the work of the Committee on Health Problems in Education be endorsed, and that the Secretary of the Coun-

cil be instructed to ask the secretary of each state association to have a committee appointed to attend the next meeting of the State Teachers' Association and to ask for the appointment of a committee from the State Teachers' Association to cooperate with the medical profession in promoting better health conditions in our public schools.

6. That the House of Delegates record its disapproval of the inequitable increase of the registration fee for physicians under the Harrison law and demand the reduction of this fee to a nominal amount so long as this law remains in force.

7. That the House of Delegates, while recognizing the fact that much good has been accomplished by the Harrison law, is of the opinion that the narcotic drug problem cannot be solved through any restrictive licensing system which permits of the importation of unlimited amounts of opium and cocain, and that the only effective solution is for the federal government to take complete control of the importation of habit-forming drugs, the restriction of such importations to the amount required for legitimate purposes, and the distribution through the Public Health Service of such drugs to properly qualified and responsible persons.

8. That the Council on Health and Public Instruction be directed to inaugurate an investigation and submit a report on (1) the amount of narcotic drugs required each year for legitimate purposes; (2) the amount of narcotic drugs now actually imported, and (3) methods by which these drugs may be restricted to legitimate uses.

REPORT OF THE COMMITTEE ON THE NARCOTIC DRUG SITUATION[1]

Your committee endorses the report of this committee, and desires to record its appreciation of the earnest and conscientious effort made to study this question and to present a synopsis of it to the House of Delegates. We recommend that the Council on Health and Public Instruction be directed to publish the report of the committee as one of its education pamphlets for distribution to those interested in the question.

We also recommend that the recommendations of the committee be adopted as follows:

1. That the ambulatory treatment of drug addiction, as far as it relates to prescribing and dispensing of narcotic drugs to addicts for self-administration at their convenience, be emphatically condemned.

2. That heroin be eliminated from all medicinal preparations, and that it should not be administered, prescribed or dispensed; and that the importation, manufacture and sale of heroin should be prohibited in the United States.

3. That the bill introduced by Senator France, No. 2785, and Representative Rainey, No. 11778, to provide aid from the United States from the several states in prevention and control of drug addiction and the care and treatment of drug addicts, be approved, and that Senator France and Representative Rainey be so notified.

4. In view of the statement in a government report that about 90 per cent. of the amount of narcotic drugs entered for consumption is used for other than medical purposes, the Treasury Department is respectfully urged to study and report on the narcotic drug situation, including the question of government control of these drugs.

5. That the Bureau of Public Health Service of the Treasury Department be respectfully requested to continue the compilation of state laws and regulations relating to habit-forming drugs, and bring them up to date.

Finally, your committee recommends that the report of the Council as a whole be adopted, and urges the Association to lend every encouragement and assistance to the Council in the continuation of its work.

Respectfully submitted,

J. H. J. UPHAM, Chairman,
S. E. LAMBERT, FRANKLIN E. MURPHY,
LEROY CRUMMER, J. E. LANE.

It was moved that the report be adopted.

Seconded and carried.

Report of the Reference Committee on Amendments to the Constitution and By-Laws

Dr. Rock Sleyster, Wisconsin, Chairman, presented the report of the Reference Committee on Amendments to the Constitution and By-Laws, as follows:

Your Committee on Amendments to the Constitution and By-Laws has carefully studied the suggested changes to the Constitution and By-Laws as contained in the report of the Judicial Council and recommended for adoption by that body. Your committee has met with members of the Council and has received from them the final draft containing certain changes made after the printing of the handbook and not contained therein. Reasons for changes and the rewording of certain sections have been given and explained. The Chairman of the Council will be glad to explain further to the House the reasons for suggested changes if it is your desire as the sections are read.

Your committee finds no radical changes have been made. The Constitution and By-Laws have been brought up to date in keeping with the character of work done and the manner of doing it, the wording has been abbreviated and simplified, and the English improved. The Association is indebted to the Council for a much improved draft of a Constitution and By-Laws. The changes made by the Council since the printing of the handbook, together with some changes suggested by your committee, will be called to your attention in the reading. As submitted in this reading, it is approved by your committee and recommended for adoption.

Respectfully submitted,

ROCK SLEYSTER, Chairman,
W. B. RUSS, E. A. HINES,
EDWARD B. HECKEL, A. E. BULSON, JR.

[NOTE.—The revised By-Laws are being printed, and will be ready for distribution in a few days. Copies will be sent on application.—ED.]

On several motions, duly seconded and carried, each section was adopted, and on a separate motion, duly seconded and carried, the Constitution and By-Laws were adopted as a whole.

Dr. Horace M. Brown, Wisconsin, moved that the Secretary be authorized to make such editorial changes as to punctuation, paragraphing, etc., as may be necessary for the perfection of the record, but only such as shall in no wise modify the meaning of the portions so edited.

Seconded and carried.

Report of the Reference Committee on Miscellaneous Business

Dr. F. C. Warnshuis, Michigan, Chairman, presented the report of the Reference Committee on Miscellaneous Business, as follows:

Your committee had referred to it the communication of the Baltimore City Medical Society, requesting that this House of Delegates give serious consideration to the establishment of a medical newspaper devoted to health news and kindred subjects for the education and information of the lay public.

Your committee did not receive a copy of the article referred to in the communication.

Your committee readily perceives the benefits that might be derived from such a publication. However, so many factors exist that at this time we deem it inadvisable to enter on such an undertaking. The committee, therefore, recommends that this House of Delegates postpone for the present further consideration of this project.

Respectfully submitted,

F. C. WARNSHUIS, Chairman,
CHARLES J. WHALEN, GEORGE E. READING,
N. B. VAN ETTEN, H. W. BELL.

It was moved that the report be adopted.

Seconded and carried.

The Secretary read a communication from Surg.-Gen. H. S. Cumming, United States Public Health Service, asking the House of Delegates to arrange for a representative of the American Medical Association to serve on a committee, acting under the Treasury Department, to study the distribution and use of habit-forming drugs.

The Speaker said that if there were no objections, this matter would be referred to the Council on Health and Public Instruction for action.

No objection being raised, it was so referred.

1. This report appears as an Addendum. See page 1324.

Resolution on Remuneration of Medical Officers in United States Civil Service

Dr. W. G. Morgan, District of Columbia, presented the following preambles and resolution, which were referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, The Congressional Joint Commission on reclassification of salaries has made certain recommendations concerning salaries of medical officers in the United States Civil Service, and such recommendations have been referred to the Committee on Reform in Civil Service, of the House of Representatives; and

WHEREAS, These recommendations are inimical to the interests of the medical profession, by subordinating the remuneration of medical officers to that of many others requiring less preparatory study: therefore, be it

Resolved, That the matter be referred to the House of Delegates for its consideration.

On motion, which was duly seconded and carried, the House of Delegates took a recess until 2 p. m.

Fourth Meeting—Tuesday Afternoon, April 27

The House of Delegates reconvened at 2 p. m. and was called to order by the Speaker.

Dr. H. B. Gibby, Pennsylvania, Chairman, presented a supplementary report for the Committee on Credentials, stating that 121 delegates had registered, were entitled to and had been seated in the House of Delegates.

It was moved and seconded that the report be accepted. Carried.

The report of the Reference Committee on Reports of Officers was called for.

Dr. Thomas S. Cullen, Maryland, Chairman, asked for further time, which was granted.

Dr. M. L. Harris, Illinois, Chairman of the Judicial Council, stated that under the By-Laws the Judicial Council made its own rules governing its work. There was an old standing rule which had been in operation for a number of years, but as these rules were not now in operation, since the Judicial Council had power to make its own rules, he moved that these old standing rules be rescinded.

Seconded and carried.

The Secretary read a communication, addressed to the President-Elect of the American Medical Association, extending an invitation to the members to visit the Cotton Exchange during their stay in New Orleans.

It was moved that the invitation be accepted.

Seconded and carried.

Report of Reference Committee on Hygiene and Public Health

Dr. J. W. Schereschewsky, U. S. P. H. S., Chairman, presented the report of the Reference Committee on Hygiene and Public Health, as follows:

Your committee has carefully considered the resolutions on compulsory sickness insurance, and reports it with amendments as follows:

Resolved, That the American Medical Association declares its opposition to the institution of any plan embodying the system of compulsory contributory insurance against illness, or any other plan of compulsory insurance which provides for medical service to be rendered contributors or their dependents, provided, controlled, or regulated by any state or the Federal government.

The Reference Committee also recommends the adoption of the following resolution:

Resolved, That the Council on Health and Public Instruction be instructed to investigate the relative adequacy of medical service and relations of the profession to the Public and report at the next annual session.

Respectfully submitted,

J. W. SCHERESCHEWSKY, Chairman,
A. T. MCCORMACK,
C. VAN ZWALENBURG,
L. H. TAYLOR,
C. ST. CLAIR DRAKE.

On separate motions, duly seconded and carried, each section of the report was adopted.

Dr. Arthur T. McCormack, Kentucky, then moved that the report of the committee be adopted as a whole.

Seconded and carried.

Resolutions on Medical and Surgical History of the World War

Dr. Gerald B. Webb, Colorado, Chairman, presented the following preambles and resolutions from the committee to which was referred the matter of publishing the medical and surgical history of the World War.

WHEREAS, The Surgeon-General of the Army has asked for an appropriation from Congress of $150,000 to publish a medical and surgical history of the part played by the United States in the World War, and

WHEREAS, This appropriation has been approved by the Chief of Staff and the Secretary of War, and is now in the hands of the proper committee in Congress as a part of the Sundry Civil Bill, and

WHEREAS, The American Medical Association of some 83,000 members, of which a large proportion served in the medical services of the United States, is of the firm belief that the expenditure of this comparatively small sum would be much more than repaid in the benefits to the medical profession and to the public, and

WHEREAS, Many very valuable lessons were learned by the medical profession during the war, and it is feared that many of these will be lost unless this history is immediately published, and that failure to do this would have the unfortunate result of depriving the medical profession and the public of scientific, sanitary, surgical and medical information of the greatest value to their well being, and

WHEREAS, The value of a similar history has been well demonstrated in the publication of the medical and surgical history of the Civil War, although its appearance was regrettably delayed;

Resolved, That the American Medical Association earnestly urges that the sum in question be appropriated for the purpose stated and the publication of the volumes be expedited as quickly as possible. And be it further

Resolved, That copies of this resolution be sent to the Speaker of the House, Mr. Good, Chairman, of the Committee in Charge of the Sundry Civil Bill, to the Secretary of War, and to the Surgeon-General of the United States Army.

Respectfully submitted,

GERALD B. WEBB, Colorado, Chairman,
WALTER R. STEINER, Connecticut,
LEROY CRUMMER, Nebraska.

It was moved that the report be adopted.

Seconded and carried.

Dr. M. L. Harris, Illinois, moved that a copy of the report be sent to the secretary of each state and territorial medical association, so that constituent associations may add their influence in urging this matter before Congress.

Seconded and carried.

Report of Reference Committee on Legislation and Public Relations

Dr. J. H. J. Upham, Ohio, Chairman, presented the following report of the Reference Committee on Legislation and Public Relations:

The committee has considered the resolution introduced by Dr. W. G. Morgan, and desires to report as follows:

The unofficial data furnished in explanation of these resolutions are so astounding that the committee feels this is a matter for careful investigation by the Council on Health and Public Instruction, and if the facts discovered show such a deplorable condition to exist as indicated, that the Council be instructed to memorialize the proper congressional committees, urging the proper provision for adequate pay for medical officers.

The committee also recommends that the Council be empowered to send representatives to appear at hearings of congressional committees.

Respectfully submitted,

J. H. J. UPHAM, Chairman,
S. E. LAMBERT,
J. E. LANE.

It was moved that the report be adopted.

Seconded and carried.

On motion of Dr. James F. Rooney, New York, which was duly seconded, the House of Delegates adjourned until 2 p. m., Thursday, April 29.

Fifth Meeting—Thursday Afternoon, April 29

The House of Delegates met at 2 p. m., and was called to order by the Speaker.

Remarks by President Braisted

Admiral William C. Braisted, President of the Association, was introduced by the Speaker, and addressed the House as follows:

Mr. Speaker and Members of the House of Delegates: I have accepted the position of President of this great Association with the feeling that it was the Association's tribute to the splendid work of our Navy during the great World War. Let this be known as the Navy Year and let the same spirit of cooperation and harmony which characterizes the Navy when it is called to service for the country's sake be the actuating principle of our work this year, and let us lose no opportunity to make every effort to make practical use of the great health lessons of the war for the benefit of our people. I am here to work with you as a practicing physician and as a citizen of this great country, and not as Surgeon-General of the Navy, and with no personal or service motive. For months I have carefully considered the present condition of this Association from every standpoint, and feel that I have a fair grasp of the practical working of the organization. I have a feeling of fraternal and affectionate interest in every member and a supreme desire to use whatever opportunity or influence I may have for the best good of this Association in its great efforts for the good of the nation. I beg of you, therefore, to join with me this year in harmonious and disinterested effort for so laudable a purpose and hope in my address to you at our next annual session to be able to meet you with a smiling face and a feeling that we have made the most of the precious opportunities for doing good that are entrusted to us.

In union and harmonious effort there will be invincible power and splendid result.

In discord and self-interest there will be disintegration of the Association as a body and dismal and lamentable failure in every good effort.

At the close of President Braisted's remarks, the Speaker said: The House of Delegates desires to express its appreciation to you as the President of the Association, as Surgeon-General of the Navy, and as a physician. We thank you.

Dr. H. B. Gibby, Pennsylvania, Chairman, presented a supplementary report of the Reference Committee on Credentials, stating that 125 delegates had registered, were entitled to and had been seated in the House of Delegates.

The Secretary called the roll, and 118 delegates responded.

Dr. Arthur T. McCormack, Kentucky, moved that the reading of the minutes of the previous meeting be dispensed with. Seconded and carried.

Election of Officers

The next order of business being the election of officers, Dr. J. N. Hall, Colorado, nominated Dr. Hubert Work, Pueblo, Colo., for President of the Association.

The nomination of Dr. Work was seconded by Dr. William F. Campbell, New York; Dr. C. R. Woodson, Missouri; Dr. J. M. Aikin, Nebraska; Dr. William E. Anderson, Virginia; Dr. C. Van Zwalenburg, California; Dr. Arthur T. McCormack, Kentucky; Dr. J. Richard Kevin, New York, and Dr. H. N. MacKechnie, Illinois.

Dr. John D. McLean, Pennsylvania, nominated Dr. George E. de Schweinitz, Philadelphia, for President of the Association.

The nomination of Dr. de Schweinitz was seconded by Dr. L. M. Francis, Delegate from the Section on Ophthalmology; Dr. William F. Bacon, Pennsylvania; Dr. Thomas C. Chalmers, New York; Dr. Edward B. Heckel, Pennsylvania; Dr. Arthur J. Bedell, New York; Dr. James F. Rooney, New York; Dr. R. P. Sullivan, Delegate from the Section on Surgery, and Dr. A. E. Bulson, Indiana.

Dr. L. A. Yarborough, Tennessee, moved that nominations be closed. Seconded and carried.

The Vice Speaker appointed as tellers Dr. J. D. Brook, Michigan; Dr. A. B. Graham, Indiana, and Dr. Arthur J. Bedell, New York.

Dr. Work received the majority of the votes cast and was declared elected President of the Association.

Dr. John D. McLean, Pennsylvania, moved that Dr. Work's election made unanimous. Seconded and carried.

The Vice Speaker appointed Drs. John D. McLean, L. M. Francis, and J. N. Hall as a committee to find the President-Elect and escort him to the platform. President-Elect Work was escorted to the platform by the committee.

In response to cries of "Speech! Speech!" he said:

Mr. Vice Speaker, and Members of the House of Delegates: For sixteen years, as was stated here, I have been in this House each year in some capacity. Four times you have elected me to the office of Speaker of the House of Delegates. For four years you have borne with me and encouraged me and supported me, and have had some fun with me. Now, as the last act, you have elevated me to the highest position that can be given to a medical man in the United States. I would like to find language to express my appreciation to you men, but somehow I cannot find words to convey to you my heartfelt thanks for the distinguished honor you have conferred on me. (Applause.)

At this juncture, the Speaker resumed the chair.

The other officers elected are as follows:

Vice President—DR. ISADORE DYER, New Orleans.

Secretary—DR. ALEXANDER R. CRAIG, Chicago.

Treasurer—DR. WILLIAM ALLEN PUSEY, Chicago.

Speaker of the House of Delegates—DR. DWIGHT H. MURRAY, Syracuse, N. Y.

Vice Speaker of the House of Delegates—DR. F. C. WARNSHUIS, Grand Rapids, Mich.

Trustees—DR. CHARLES W. RICHARDSON, District of Columbia; DR. W. T. SARLES, Sparta, Wis.; DR. WALTER T. WILLIAMSON, Portland, Ore.

President Braisted nominated the following as members of standing committees, and the House of Delegates confirmed the nominations:

Judicial Council—DR. I. C. CHASE, Texas, five years.

Council on Health and Public Instruction—DR. MILTON BOARD, Kentucky, five years.

Council on Medical Education and Hospitals—DR. RAY WILBUR, California, five years.

Council on Scientific Assembly—DR. J. SHELTON HORSLEY, Virginia, to succeed himself for the term of five years; DR. F. P. GENGENBACH, Colorado, to serve until 1924. He further recommends that the terms of DR. E. S. JUDD, Rochester, Minn., and DR. ROGER S. MORRIS, Cincinnati, shall each be extended one year, so that they shall respectively expire in 1922 and 1923. To complete the personnel of the Council in accordance with the amended By-Laws of the Association to go into effect at the close of this annual session, he nominated DR. J. E. LANE, New Haven, Conn., for the term to expire in 1921.

Supplementary Report of the Council on Scientific Assembly

The Secretary presented the following supplementary report of the Council on Scientific Assembly:

The Council on Scientific Assembly recommends that the House of Delegates shall avail itself of its privilege to elect, on unanimous vote of the Council, more than three Honorary Fellows. In order that the Association may honor the guests of the National Examining Board and other eminent physicians in attendance on this Annual Session by electing them to honorary fellowship, it reports that the following eminent physicians have been nominated for honorary fellowship by several sections, and that these nominations have been approved by the Council:

Dr. Norman Walker, Representing the three Scottish Medical Corporations.

Col. H. J. Waring, M.S., F.R.C.S., Representing the Royal College of Surgeons of England.

Sir Humphry D. Rolleston, K.C.B., M.D., Royal College of Physicians, London.

Dr. E. E. Desmarest, Professor of Surgery, University of Paris, Paris.

Dr. Gustave Roussy, Professor of Medicine, University of Paris, Paris.

Dr. Jules Voncken, Liége, Belgium.
Dr. Iwabo Tsuchiya, Tokyo, Japan, Physician to the Imperiail Court of Japan.

Respectfully submitted for the Council,

J. SHELTON HORSLEY, Chairman.

It was moved that the report be adopted and those nominated for honorary fellowship be elected. Seconded and carried.

Applications for Associate Fellowship

The Secretary then submitted applications for Associate Fellowship approved by the officers of the several sections.

On motion, duly seconded and carried, the Secretary was directed to cast the ballot of the House in those instances in which the applicant is eligible for Associate Fellowship in accordance with the provision set forth in the By-Laws, and when there is no objection to the applicant filed by the officers of the constituent association within whose jurisdiction the applicant resides.

Place of 1921 Annual Session

Dr. Frank Billings, Illinois, Secretary of the Board of Trustees, presented a supplementary report from the Board of Trustees, stating that invitations had been received to hold the next annual session of the Association in Boston, Saratoga Springs, Philadelphia, Washington, D. C., Indianapolis and Buffalo. These invitations were accompanied with letters of commendation from the commercial clubs from all of the cities mentioned with the exception of Boston. The invitation to meet in Boston came from the organized medical profession, and the invitation to meet there was extended by the Massachusetts State Medical Society, by the Suffolk County Medical Society, by the Harvard Medical School, and by Tufts Medical School.

The Board of Trustees was unanimous in recommending Boston as the next place of meeting. This approval of the Board of Trustees carried with it the suggestion to the House that the profession of Boston must give assurances to the Association that sufficient hotel accommodations will be provided. Furthermore, he called attention to the By-Laws, that in the event the place selected by the House of Delegates should appear to the Board of Trustees not to be suitable, the Board of Trustees was empowered to select another place for the meeting, provided it was done two months preceding the meeting.

On motion, duly seconded and carried, the report was adopted.

Resolutions from the Reference Committee on Legislation and Public Relations

Dr. J. H. J. Upham, Ohio, Chairman, presented the following resolutions for the Reference Committee on Legislation and Public Relations:

WHEREAS, The present governmental activities for the prevention of disease are inadequate to the needs of the nation; Therefore be it

Resolved: 1. That the House of Delegates of the American Medical Association reaffirms its position as favoring an adequate department of health with a cabinet officer at its head.

2. That the Council on Health and Public Instruction of the American Medical Association be instructed to request the Surgeon-General of the United States Public Health Service to designate three officers to act with the joint committee of the council, the state health officers, and the American Public Health Association, in conferring with the Senate Committee on Public Health and Quarantine and the House Committee on Interstate and Foreign Commerce in the preparation of a bill providing for a department of health, the nucleus of which shall be the United States Public Health Service.

3. That the President of the American Medical Association appoint two committees, each consisting of three Fellows who are affiliated with the Republican and Democratic committees and to attend the National Republican and Democratic conventions for the purpose of having written into both parties' platforms, planks favoring the establishment of a national department of health.

4. That the officers of the American Medical Association be instructed to bend every energy toward securing legislation providing for a national department of health.

5. That the Board of Trustees be requested to make such appropriations as may be necessary to carry out these resolutions.

For the Reference Committee on Legislation and Public Relations,

J. H. J. UPHAM, Chairman.

Dr. Arthur T. McCormack, Kentucky, moved that the resolutions be approved by the House by a rising vote and referred to the Council on Health and Public Instruction.

Seconded and unanimously carried.

Dr. John E. Lane, Connecticut, presented the following resolutions which were passed by the Section on Dermatology and recommended to the House for adoption:

WHEREAS, The deleterious effects of syphilis on the mortality and morbidity of the human race are so prevalent and so severe as to challenge the most serious attention of the entire medical profession; and

WHEREAS, In the scientific study of any disease, knowledge of its natural history is an item of cardinal importance; and

WHEREAS, Owing to the protracted course of syphilis, a continuous and complete clinical record of a given case can be secured only through the services of several successive medical observers; and

WHEREAS, It is highly desirable that a sufficient number of completed histories be accumulated and preserved and made easily accessible to students; and

WHEREAS, For the successful accomplishment of the purpose set forth above, the interest and cooperation of a considerable number of the best elements of our profession as represented in the membership of the American Medical Association are necessary; therefore be it,

Resolved (1) That the Section on Dermatology of the American Medical Association recognizes the importance of ascertaining the natural history of syphilis and of making this history accessible and in form serviceable to students of medicine; further

Resolved, (2) That the Section on Dermatology of the American Medical Association respectfully requests the trustees of the American Medical Association to appoint a committee from the sections most immediately concerned, whose duty it shall be to devise practical means and methods of accomplishing the foregoing specified purpose; and further

Resolved, (3) That the representatives of this section in the House of Delegates be requested to present these preambles and resolutions to the House of Delegates, and to ask its endorsement.

It was moved and seconded that the resolutions be adopted. Carried.

The Secretary stated that the foregoing preambles and resolutions came regularly into his hands and had been referred to the Reference Committee on Hygiene and Public Health.

Report from the Reference Committee on Hygiene and Public Health

Dr. J. W. Schereschewsky, Chairman of the Reference Committee on Hygiene and Public Health, then reported as follows:

The committee reports back the resolutions submitted from the Section on Dermatology with the recommendation that they be approved by the House and referred to the Council on Health and Public Instruction for action.

(It was moved and seconded that the recommendation of the Reference Committee be concurred in. Carried.)

RESOLUTION CONCERNING MIGRATION OF INDIGENT CONSUMPTIVES

WHEREAS, The National Tuberculosis Association, through investigations of its Committee on Indigent Migratory Consumptives, covering the last fifteen months, has found:

That there is a large migration of indigent consumptives to the Southwest in search of health;

That out of 1,786 cases, largely indigent or potentially indigent, reported from the Southwest in the last six months, 738, or 41.3 per cent., had been definitely advised to go there by physicians;

That this migration of indigent and potentially indigent consumptives is ill advised in that it causes much needless suffering and loss of life brought on by inadequate care, worry, homesickness and lack of proper food, which are conditions too frequently experienced after arrival; and, furthermore,

That the migration of this group is a menace to the public health, both during migration and after arrival, and is a financial drain and social burden to the communities to which the migration goes. Therefore, be it

Resolved, That in order to check this unnecessary and undesirable migration, physicians throughout the country be not only requested but urged *not* to advise their tuberculosis patients to migrate to the health resort states, unless such patients have sufficient funds to properly provide for their necessary care and comforts for at least one year.

AMENDMENT TO THE FOREGOING RESOLUTION. *Resolved,* That the Section on Preventive Medicine and Public Health hereby requests the House of Delegates to instruct the Council on Health and Public Instruction to investigate and report on, at the next annual session, the migration of consumptives from one state to another throughout the Union and the number of indigents so foisted on one state by another, and report definite suggestions to prevent this constant undesirable migration.

The Reference Committee on Hygiene and Public Health reports back the foregoing resolution with the recommendation that it, as amended by the Section on Preventive Med-

icine and Public Health, be approved by the House and be referred to the Council on Health and Public Instruction.

(It was moved and seconded that the recommendation of the committee be concurred in. Carried.)

RESOLUTION ON SALE OF ENDOCRINE PREPARATIONS

At the last Annual Meeting of the Surgical Section of the Medical Society of the State of New York, the following resolution was passed:

WHEREAS, The promiscuous use by the laity of preparations of the glands of internal secretion has led to manifest harm; and

WHEREAS, The uncontrolled use of potent glandular derivatives carries with it the danger of self-medication, be it

Resolved, That the Surgical Section earnestly request that the American Medical Association take the necessary steps to prevent any endocrine preparation being sold to the public except on a physician's prescription.

The Reference Committee on Hygiene and Public Health endorses the principles embodied in this resolution and recommends that the House of Delegates instruct the Council on Health and Public Instruction to investigate the matter in cooperation with the U. S. Public Health Service and report with appropriate recommendations at the next annual session.

(Dr. Arthur T. McCormack, Kentucky, moved the adoption of the resolution. Seconded and carried.)

RESOLUTIONS ON LEPROSY

The following resolution has been submitted by the Section on Preventive Medicine and Public Health:

WHEREAS, Leprosy is a national menace.

Resolved, That the House of Delegates be requested to ask the American Public Health Association to call a national conference to discuss every phase of the problem to the end that the public may be educated to the insidious spread of the disease, the possibility of cure or arrest in the earlier stages of the disease, and the necessity of segregation.

The Reference Committee on Hygiene and Public Health reports favorably on this resolution and recommends its approval by the House of Delegates.

(Dr. Arthur T. McCormack, Kentucky, moved that the resolution be referred to the Council on Health and Public Instruction with power to act. Seconded and carried.)

RESOLUTION OF THE SECTION ON PREVENTIVE MEDICINE AND PUBLIC HEALTH

The Reference Committee reports favorably on the following resolution regarding the selection of a site for a national leprosarium, and recommends that the matter be referred to the Council on Health and Public Instruction:

Resolved, That the board charged with the responsibility for selecting a site for a national leprosarium be requested to convene at the earliest possible moment and arrive at a decision as between the various sites offered; and that the Surgeon-General of the U. S. P. H. S. be urged immediately thereafter to establish said national leprosarium as provided by Congress.

(Dr. Frederic E. Sondern, New York, moved that the recommendation of the committee be concurred in. Seconded and carried.)

Resolution of the Reference Committee on Hygiene and Public Health

The Reference Committee on Hygiene and Public Health presents the following resolution and recommends its adoption:

Resolved, That the American Medical Association commend the activity of the U. S. Public Health Service and the several state health departments in the treatment and prevention of trachoma.

(On motion, duly seconded and carried, this resolution was adopted.)

Submitted for the Reference Committee,

J. W. SCHERESCHEWSKY, Chairman.

(Dr. W. E. Anderson, Virginia, moved that the report of the Reference Committee on Hygiene and Public Health be adopted as a whole. Seconded and carried.)

Report of Reference Committee on Reports of Officers

Dr. Thomas S. Cullen, Maryland, Chairman, presented the following report of the Reference Committee on Reports of Officers:

The several reports referred to this Reference Committee have been considered by the committee, which submits the following report.

REPORT OF SECRETARY

From the Secretary's Report, we learn that the membership in the state societies totals the astonishing number of 83,338 physicians, and that the Fellowship of the American Medical Association consists of 47,045 members. There has been a net gain of 1,633 Fellows during the year.

The Secretary chronicles the death of Dr. Emery Marvel of Atlantic City, Second Vice President of the Association, and the brother of Dr. Philip Marvel, Chairman of our Board of Trustees.

The Secretary also announces the death of Dr. Elmer Ernest Southard of Cambridge, Mass., Chairman of the Section on Nervous and Mental Diseases.

In the section devoted to organization, the Secretary gives a timely warning. "There is a possible danger which should be guarded against—namely, a multiplicity of organizations in the same territory having practically the same objective. Whenever an unnecessary new organization in an already occupied territory is effected, there is always the danger that rivalry will result between the two organizations which consciously or unconsciously will interfere with the effectiveness of the organization of the medical profession in that locality."

Your committee would like to emphasize the Secretary's warning.

The Secretary's report is short, but contains much valuable information.

REPORT OF THE BOARD OF TRUSTEES

Your committee has read with much interest the report of the Board of Trustees, and wishes it were possible for each member of the Association to have the opportunity of visiting the Association Headquarters, with its numerous Council and bureau headquarters, and to watch the printing of THE JOURNAL and of the monthly medical publications of our Association.

When it is realized that the total gross income for the year was nearly $800,000, one gathers some idea of the stupendous task the Editor and General Manager and the Trustees have before them.

One of the most striking things in the report is the publication of the Spanish edition of THE JOURNAL. The subscription list at the end of 1919 totaled 2,908. As mentioned in the report, this venture "was undertaken at the request of the International Health Board of the Rockefeller Foundation, which agreed to pay half the loss. The actual loss to the Association to date has been less than $10,000, which amount promises to be returned with more than gratifying results within the first five-year period of its publication."

The committee feels that this carrying of the Association publication to all parts of South America and to other Spanish speaking countries will be of inestimable value and further, that it will be a most potent factor in cementing the already very cordial relations existing between these countries and the United States.

Your committee was also impressed with the excellent circulation and financial showing made in the publication of the special journals. It noted with interest that the ARCHIVES OF SURGERY will make its initial appearance in July.

The QUARTERLY CUMULATIVE MEDICAL INDEX is of great value to the medical profession, and your committee was pleased to learn that notwithstanding the amount of labor and expense in its publication, the loss was less than $2,000.

A perusal of the Trustees' Report, "Cooperation of the Pharmaceutical Houses," is well worth the time of every member of the profession, and your committee would emphasize the statement of the trustees: "The Council, constituted of scientific men, working without remuneration in the interest of scientific medicine and the medical profession expects—and rightfully—the cooperation and support of the members of that profession. What is needed, therefore, is the active, sympathetic cooperation of physicians; the cooperation of pharmaceutical houses will follow as a matter of course."

Your committee would go still further and move that a vote of thanks of the House be extended to those scientific men who have devoted so much valuable time to the welfare of the Association.

The paragraph dealing with the Propaganda Department is most enlightening. It is doing a wide and varied work. The trustees say of it: "As a clearing house for information on the subjects with which it deals, it proves a boon alike to the profession and the public."

In the paragraph entitled "Increased Expenses," the trustees say: "The steadily increasing cost of production is likely to cause serious concern if it continues much longer." They then give a detailed report of the increased cost.

From a perusal of the Trustees' report, it is perfectly evident that they are exercising just as much care and judgment as they would if handling their own individual affairs, and the members of the Association may, with confidence, abide by their fidelity to their trust.

The Board of Trustees recommends that the House of Delegates direct the Council on Medical Education and Hospitals to substitute the term "Approved Hospitals" for that of "Standardized Hospitals" in its official reports and publications.

In this, your committee heartily concurs.

ADDRESS OF DR. ALEXANDER LAMBERT, PRESIDENT OF THE AMERICAN MEDICAL ASSOCIATION, TO THE HOUSE OF DELEGATES

Your committee read with much interest the President's sketch of the gradual evolution of the hospital from its beginnings until the modern hospital resulted, and were surprised and gratified to learn that nearly all the large associations in any way related to hospital management, nursing and the medical and surgical care of the sick were getting together to take stock of existing conditions, and to formulate plans for the betterment of hospitals and for the more adequate care of the sick entering their institutions.

The President in his address said: "The subject is of such great and constantly increasing importance to the medical profession that it is time the American Medical Association should take cognizance by special action of a subject of such vital interest to its members, and should lend its support and influence through definite and continued action."

That the Association has appreciated the importance of this matter is indicated in the report of the Board of Trustees, which says: "At the meeting of the Association in Atlantic City, in 1919, the House of Delegates adopted the following resolution, which was presented by the Reference Committee on Reports of Officers:

> "That the Trustees be instructed to establish a Council on Hospitals as an independent body, or a Bureau on Hospitals as a body subsidiary to one of the already existing councils, the details of the organization to be left to the trustees with power to act.' "

The Trustees further say, "In conformity with the statements made above, the board recommends to the House of Delegates the change in name of the Council on Medical Education to the "Council on Medical Education and Hospitals."

"In view of the fact that no existing organization has the legal power to standardize hospitals, therefore: The board recommends that the House of Delegates direct the Council on Medical Education to substitute the term 'Approved Hospitals' for that of 'Standardized Hospitals' in its official reports and publications."

This House of Delegates at its meeting on Tuesday, April 27, changed the name of the Council on Medical Education to that of the "Council on Medical Education and Hospitals."

As pointed out in detail, in the Trustees' report, the Council on Medical Education has a vast amount of valuable data relative to the hospitals of the United States. This was gradually accumulated, as in the medical centers the hospitals and medical schools were of necessity so intimately associated, the one with the other, that in such instances it was essential to gather full data relative to the hospital at the time the medical school was inspected. These data will be of great value to all those associations engaged in this splendid work.

The Board of Trustees, also, is greatly interested in the furtherance of the work, and will do all in its power to make easy the task of the Council on Medical Education and Hospitals.

We are deeply indebted to Dr. Lambert for having made this important question the subject of his address to the House of Delegates, and we are more than pleased that this House has so promptly ratified the request of the trustees and set the necessary machinery in motion.

That the Council on Medical Education and Hospitals next year will have much to say on approved hospitals, we have no doubt whatsoever.

REPORT ON THE ADDRESS OF THE SPEAKER OF THE HOUSE OF DELEGATES

The recommendations of the Speaker relative to the Ad-Interim Committee and to the method of nominating the standing committees have already been acted on by the House of Delegates, and hence need not be considered here.

His suggestion that it might be advisable to reduce the number of the trustees to seven or to five members and subdivide the United States into trustee districts, is worthy of serious consideration. Your committee feels that the number of trustees might well be reduced to seven, and would suggest that the recommendation of the Speaker be given serious consideration by the House at the next annual session, and that the matter be at once referred to the Judicial Council, in order that it may report a concrete proposition at the next session.

Your committee also feels that it would be well for the House of Delegates, next year, to consider the Speaker's suggestion that each section unit of the Scientific Assembly should indicate, by nomination to the House, those whom they would approve for the Presidency and Vice Presidency. This, as the Speaker has well said, "will put before the House many potential presidents for consideration, both for immediate and subsequent elections."

Your committee endorses most emphatically the Speaker's suggestion relative to the establishment of a separate governmental department of public health, and urges on this House the wisdom of at this time placing itself squarely behind the movement looking to the speedy establishment of a cabinet office devoted solely to health matters, and presided over by a member of the medical profession.

In order that this matter may receive immediate consideration, we recommend that the Council on Health and Public Instruction be requested to study the subject carefully from every angle, and then to enlighten the entire membership of the Association as to the best means of securing the establishment of this cabinet physician.

Your committee fully concurs in what the Speaker has said relative to compulsory military training, and feels that the House of Delegates of the American Medical Association should place itself on record as being in thorough accord with the principle of compulsory military training.

Your committee read with the keenest appreciation the beautiful tributes of the Speaker to the memory of our departed colleagues, Floyd M. Crandall, C. E. Cantrell and Clinton P. Meriwether, and would respectfully suggest that copies of these tributes be sent to the families of these "three upright, tried and true physicians."

Your committee feels that this is the time and place to express, on behalf of the House of Delegates, our deep appreciation of the masterly way in which our Speaker has guided the deliberations of the House. He has been the only Speaker that the House has ever had; he has conducted the business of the House with justice and dispatch, and with an understanding and kindness that could not be excelled, and his rare sallies of wit have smoothed out many difficulties. On behalf of the House, we can truly say, There is only one Hubert Work.

THOMAS S. CULLEN, Chairman,
F. B. LUND,
HOLMAN TAYLOR,
B. R. MCCLELLAN,
C. R. OGDEN.

The report was considered section by section, and on separate motions, duly seconded and carried, was adopted.

Dr. Thomas S. Cullen, Maryland, then moved that the report be adopted as a whole.

Seconded and carried.

Resolution of Thanks to Senator Owen

Dr. Oscar Dowling, Louisiana, asked unanimous consent, which was granted, to introduce the following resolution:

WHEREAS, The American Medical Association has repeatedly and consistently advocated the establishment of a Department of Public Health, and

WHEREAS, Senator Robert L. Owen, of Oklahoma, has whole-heartedly supported this proposition and made every possible endeavor to cause the enactment of a law creating a department, be it

Resolved, That the American Medical Association tenders to Senator Owen a vote of thanks in recognition of genuine service to humanity.

It was moved that the resolution be adopted.

Seconded and carried.

Supplementary Report of the Council on Health and Public Instruction

Dr. Milton Board, Kentucky, member of the Council on Health and Public Instruction, presented the following resolution, which was adopted April 28, 1920, by the Council on Health and Public Instruction:

WHEREAS, The House of Delegates of the American Medical Association, at the 1917 session at New York, adopted a resolution declaring that alcohol was not a stimulant, nor a food, and was of little if any value as a drug for internal administration, and

WHEREAS, The statement was made during the recent epidemic of influenza that whisky was necessary in the treatment of this disease, and that avoidable suffering and death was resulting through lack of whisky for this purpose.

Resolved, That the House of Delegates of the American Medical Association reaffirms the resolution adopted in 1917, and further records its opinion that whisky is not necessary for the proper scientific treatment of influenza.

It was moved and seconded that the resolution be adopted.

After discussion by Drs. C. Van Swalenburg, California; Arthur T. McCormack, Kentucky; James F. Rooney, New York; Charles J. Whalen, Illinois, and Randolph Winslow, Maryland, which brought out the opposition of certain of these speakers to any action which might be construed as imposing on the physician inability to prescribe what he thinks is necessary in the treatment of his patient, a motion was made by Dr. J. H. Wilson, Pennsylvania, that the resolution be tabled.

Seconded and carried.

Telegram on Tuberculosis from Surgeon General, U. S. P. H. S.

The Secretary asked unanimous consent, which was granted, to read the following telegram from the Surgeon General of the United States Public Health Service:

Washington, D. C., April 27, 1920.

President, American Medical Association,
New Orleans, La.

I desire to urge more active participation by the general practitioner and by general hospitals in treatment of tuberculosis to insure earlier diagnosis, properly trained interns and other personnel to popularize treatment in the home climate, and to provide additional facilities. I earnestly endorse the resolution passed by the National Tuberculosis Association in 1916, recommending that general hospitals should admit tuberculosis patients and provide separate wards for that purpose. Sanatoriums and specialists in tuberculosis will always be needed and we should have more of them, but I believe that success in the antituberculosis campaign is largely dependent on, first, convenient facilities for observation and prompt treatment of patients with open tuberculosis; and second, in a sharpened perception and higher degree of skill by which the family doctor will make an early diagnosis or even forestall the development of clinical tuberculosis in the adult before a definite diagnosis is possible; to provide adequate care for tuberculous ex-service men and others, and protect infants from infection. Enlist the aid of the general practitioner, allay phthisophobia, and improve home treatment of tuberculosis. The opening of general hospitals to this most common of all serious diseases will materially assist.

CUMMING, Surgeon General, U. S. P. H. S.

It was moved that the telegram be referred to the Board of Trustees, specifically empowering that body, at its discretion, to retransfer the subject matter or any part thereof

Seconded and carried.

Appreciation of Hospitality at New Orleans

Dr. M. L. Harris, Illinois, moved that the American Medical Association, through its House of Delegates, express by a rising vote its great appreciation of the extremely gracious manner in which the medical profession, the charming ladies, and hospitable citizens of New Orleans and Louisiana have entertained the Association and its guests during this session.

Seconded and unanimously carried.

On motion of Dr. John E. Lane, Connecticut, the House of Delegates adjourned.

ADDENDUM

Report of the Committee on the Narcotic Drug Situation in the United States

At the present time the people of the United States are awake as never before to the menace of the narcotic drug situation. This situation was made acute by the activity of the federal authorities acting under recent decisions of the U. S. Supreme Court, which decisions interpreted the Harrison Narcotic Law as applied to the practice of medicine. Under the social pressure exerted by the demand for facts and guidance, the medical profession should take the lead to which their position entitles them, and should not be compelled to follow in the wake of the great work already begun of stamping out drug addiction. That such a demand is not too radical or sensational is indicated by the fact that the narcotic drug habit is declared a "pestilence" by the New York City Board of Health in a recent amendment to its Sanitary Code. The profession has already responded to the situation by the appointment of committees for investigation in the hope of answering some of the most pressing questions. It is after a year of investigation, of conference, and of study that the committee appointed by the American Medical Association presents the following report.

There are certain preliminary questions which will be asked in some form by one who approaches the problem of drug addiction in a constructive attitude. These may be stated in the following form:

1. Can the use of narcotics as we now know it be said to be a "modern" problem?
2. Is there proof that drug addiction is widespread enough to constitute a social menace?
3. Is there genuine danger of an increase of drug addiction in proportion to the population?
4. What measures have been taken to meet the danger of drug addiction as it now exists? How far do these measures meet the present situation?
5. In what direction should the measures now employed in the treatment of drug addiction be extended?

We shall undertake to point out in this report that drug addiction in the sense in which we ordinarily use the word at the present time is a modern problem; that for certain reasons connected in part with commerce and the spread of civilization it is widespread; and that because of the growth of cities with their close association, as well as because of the ease of communication, there is grave danger of the rapid increase of the drug habit unless we take advantage of the present interest and get control of the situation through law and the care of those already victims and therefore centers of imitation-suggestion. We shall review in the words of men who know from actual experience with large numbers of cases the measures taken to meet the menace, and on the basis of conclusions from these facts shall recommend future action.

1. The poppy plant and its qualities were known throughout the Mediterranean basin at an early period. It is mentioned in the poetry of Homer and the words of Hippocrates. That such knowledge followed the travel routes of the ancient world is beyond question. But the use of opium to any great extent in the East, in India and China, seems to coincide with the spread of Mohammedanism and with the ban of Islam on alcoholic beverages. The use of the pipe and the custom of chewing spread rapidly from this period until the Chinese government took measures to stop it. The soil of India was peculiarly adapted to the growth of the poppy, where it early became an article of commerce as well as a government monopoly. In 1757, this monopoly passed into the hands of the East India Company, and from that company to the British government.

We have few facts to indicate that drug addiction came to notice as a menace among Western peoples until after the discovery of the opium alkaloids, particularly morphin, and after the perfecting of the hypodermic syringe. In 1855, Dr.

Wood of Edinburgh advised the introduction of morphin by incision. It was only fifty-four years ago that the injection of morphin under the skin was introduced into France. While we know that opium smoking was known, particularly to those in touch with the East, still in general the effects of opium smoking are less deleterious than those of morphin. Moissan[1] shows that the smoke of opium contains only a trifling amount of morphin. "The effect is apparently due, not to that alkaloid, but to such decomposition products as pyrol, acetone and pyridin, and hydropyridin bases." Browne[2] found that after smoking an opium mixture containing 8.98 per cent. of morphin, 7.63 per cent. was left in the dross, so that only 1.35 per cent. of morphin was carried over in the smoke or decomposed by the heat.

Still more recent than the use of morphin with the hypodermic needle is that of cocain and of heroin, now perhaps the greatest drug menace of city life. Heroin has been in use only about twenty years. The ease with which these drugs can be used as snuff ("happy dust"), and their recent use by gangsters, make this a separate problem. Already physicians are distinguishing morphin and heroin users as distinct types. We shall see the evidence in the reports incorporated herewith.

The facts stated indicate that we are not dealing with the opium smokers or eaters of another age and civilization, but with a problem which in one phase dates back to the middle of the nineteenth century with the introduction into use of the hypodermic needle. In another phase, heroin addiction dates back not more than ten years. As it is a recent problem, small wonder that we find the facts not classified. To those who know the facts regarding the rapid spread of the drug habit among the population, there seems serious basis for alarm.

2. When we attempt to answer in terms of fact the question of the extent of the use of narcotic drugs, we are surprised at the inadequacy of our information. If we turn to commercial statistics, we find that it is only very recently that the extent of the commerce in these drugs could be estimated. Laws and regulations governing their sale and use did not provide for tracing them from the importer to the ultimate consumer. But tables compiled from the registrations under the Harrison Narcotic Law and published in a report on the "Traffic in Narcotic Drugs," made by the Treasury Department of the United States under date of June, 1919, give some idea of the ramifications of the traffic. These tables showed the use by manufacturers in 1914 of 118,282 pounds of opium and of 767,283 ounces of morphin, heroin and cocain, in the order named. Of 4,092 manufacturers making proprietary medicines, 1,098 reported the use of either opium, morphin, heroin or cocain in their preparations. It has been estimated that fully 90 per cent. of the opium entered for consumption is used for other than medicinal purposes.

The system of registrations required by the Harrison Narcotic Law showed a total of 233,491 registrations—125,905 physicians, 42,240 dentists, 10,399 veterinarians, 48,196 retail dealers, 3,799 hospitals, 76 importers, and 831 wholesale dealers. This list gives some idea of the range of legitimate dealing with drugs. In addition, there is of course the large amount of smuggling from Canada and Mexico in addition to that possible from our own long coast line on the two oceans and the Gulf of Mexico. Even on the basis of what is known, the astounding fact is revealed that enough opium is consumed in the United States to provide every man, woman, and child with thirty-six doses a year on the estimate of 1 grain to a dose. When we contrast this with an annual per capita consumption in Austria of one-half grain; in Italy of 1 grain; in Germany of 2 grains, and in France of 3 grains, we have some concept of the appalling extent of the use of drugs in the United States.

Probably the most serious attempt to determine the extent of drug addiction among the population was attempted by the compilers of the report of the Treasury Department to which we have referred. Five sets of questionnaires were issued. No. 1 was sent to the chiefs of police of 1,263 cities of the United States having a population of more than 5,000. Out of 760 replies, 372 reported no data. No. 2 was sent to 3,271 wardens of state, county and municipal prisons and reformatories. Of the 760, only 126 contained certain information. No. 3 was sent to 2,464 superintendents of state, county and municipal almshouses, 584 to superintendents of state hospitals, 471 to superintendents of insane asylums, and 1,582 to county and municipal hospitals—a total of 5,101 institutions. Replies were received from 1,520, about 30 per cent. of the the number. No. 4 was addressed to 3,023 state, district, county and municipal health officers. Of the 983 replies received, 777, or 26 per cent., contained information of value. No. 5 was sent to 4,568 superintendents of private hospitals and sanatoriums. Only 227 returned information of any value. It will be seen from the most casual glance at the percentage of returns that they can have very little statistical value. When we subtract from those returned with something definite in the way of numbers the inevitable wastage from inexactness and carelessness, it is probable that 20 per cent. of the total possible amount of information would be a liberal estimate of the returns from this questionnaire. The most valuable result of the attempt was to show in a startling way the lack of proper records and reliable statistics as to drug addiction.

3. Estimates as to the number of drug addicts in the United States vary from 200,000 to 4,000,000. For reasons already stated, we distrust estimates based on the questionnaire material quoted above. If we estimate from the compulsory registration of narcotic drug addicts in the Greater City of New York district in force since July, 1919, we should find that there had been 7,741 registrations. But this is believed to be considerably less than the whole number resident in this district. In view of New York's transportation problems and traffic dangers, it gives us pause to find that 23 per cent. of 3,500 registered addicts were chauffeurs, motormen and drivers. Such a fact in itself shows the menace of the drug problem.

From the facts we have thus far presented, the extent of the use of drugs in the United States is proved more by the amount of legitimate commerce in them than by exact satistics as to the number of addicts. But the figures concerning this commerce speak for themselves. It is, however, well to remember that after our entry into the European conflict there was created in this country what was known as the War Trade Board. One of the duties of this board was to restrict the importation and exportation of merchandise to actual necessities. Opium and its alkaloids, also coca leaves and cocain were among the items restricted. Although this board has gone out of existence, certain functions performed by it are still in force and are performed by other departments. Decisions relative to the importation of narcotic drugs are now being made by the State Department. It is still true that England permits the exportation to this country of the drugs mentioned in the Harrison act only in cases in which the importer has obtained permission to import these drugs from the State Department.

4. The recognition of drug addiction as a national problem can be said to date from the passage of the Harrison Narcotic Law in 1914. In general, the scope and purpose of this law appear to be "a regulation of the distribution of narcotic drugs, and the limiting of their consumption by human beings to cases where they are administered, prescribed or dispensed to a patient by a physician or dentist." Another purpose, as later declared by the Supreme Court, was "to prevent the possibility of narcotic drugs being illegally disposed of without payment of the tax and without the use of order forms." The drugs covered are specified to be "opium or coca leaves, or any compound, manufacture, salt, derivative or preparation thereof," and the persons entitled to register and required to pay a tax are limited to importers, manufacturers, producers, dealers, physicians, dentists, veterinary surgeons, and other practitioners permitted by some of the states.

State governments may impose restrictions and regulations governing the control of narcotic drugs, which, however, should be in conformity with the federal Harrison Narcotic Law. The present narcotic drug law in force in the state of New York, known as the Whitney Law, was framed with the idea of permitting the ambulatory treatment of addicts. "Ambulatory" treatment is the giving of a narcotic drug into the possession of an addict for self-administration. As the law now stands, it imposes on the entire medical and pharmaceutical professions a mass of annoying and petty restrictions and requirements which were thought to be necessary in order to prevent the abuse of the ambulatory method of treatment, which so temptingly lends itself to questionable practices by addicts and others. The whole weight of opinion is now against this method of treatment. It therefore seems unjustifiable to insist that reputable practitioners shall be inconvenienced by the necessity of familiarizing themselves with the technical requirements of two sets of laws and regulations not in harmony. When there is uniformity regarding treatment, classification and after-care of addicts,

1. Moissan, H.: Compt. rend. 4: 33 (Dec. 5) 1892, quoted from Encyclopaedia Britannica, Ed. 11.
2. Browne, F.: Report on Opium, Hong-Kong, 1908.

a long step will have been taken toward unification of state laws in harmony with the federal law.

CONFERENCES ON DRUG ADDICTION

In order to cover more fully the questions asked at the beginning of this report, particularly with reference to the treatment of addicts, the chairman of the committee held many conferences during the year in New York, Chicago, Washington, Philadelphia and Atlanta.

The following statements were taken from notes made at the several conferences. Those who revised the notes of their statements or furnished new statements are here quoted.[3]

CONCLUSIONS

As we review the testimony and experience of these physicians and officials who have dealt with thousands of drug users of all types of intelligence and character, it becomes evident that there is a high degree of agreement on the essential points. The main point, and the one on which all agree, is to get the patient off the drug as soon as possible. Whether this is to be done at once, or within a week, the sooner over, the better for the patient.

There was astonishing unanimity among those who took part in the conference as to the evil effects of the "ambulatory treatment," the giving of a narcotic drug into the posession of an addict for self-administration, with no control over the number of physicians furnishing a supply. This method of treatment is proved a failure, and there was agreement that it should be forbidden.

We think it is also apparent that the habitual users of narcotic drugs may be divided into two classes. In Class 1 we shall place all those who suffer from a disease or ailment requiring the used of narcotic drugs, such as cancer, and other painful and distressing diseases. Patients in this class are legitimate medical cases, and the physician should be ever mindful that his patient should protect him by not sharing the drug with others.

After excluding Class 1, we have left for consideration those who are addicts—those who use narcotic drugs for the comfort they afford and continue their use solely by reason of an acquired habit. In this class we have those who are suffering from a functional disturbance with no physical basis expressed in pathologic change.

We find in an article reviewing the literature dealing with the increased tolerance and withdrawal phenomena in chronic morphinism, by Dr. A. G. DuMez[4] of the United States Public Health Service, this statement: "The only knowledge of a positive nature that we really have at present concerning these problems is that . . . there is evidently present in the blood serum of tolerant animals (dogs) during periods of abstinence a substance or substances which, when injected into normal animals of the same species, causes the appearance of symptoms identical with the so-called withdrawal phenomena."

We cannot object to Dr. DuMez picking this choice bit of lonely literature for a place in his conclusion; but we do object to the phrase introducing it: "The only knowledge of a positive nature that we really have at present concerning these problems is that, etc."

In a reply to a letter calling his attention to this phrasing, Dr. DuMez wrote under date of March 17, 1920: "In my opinion, however, that portion of the concluding paragraph which states, 'And there is evidently present in the blood serum of tolerant animals (dogs) during periods of abstinence a substance or substances which, when injected into normal animals of the same species, cause the appearance of symptoms identical with the so-called withdrawal phenomena,' has not been conclusively proven." A word to the wise is sufficient.

We turn to the consideration of the persons classified as addicts after excluding all those who suffer from a disease calling for the use of narcotic drugs, and with the conviction that we are dealing with functional conditions for which the remedy is the withdrawal of the drug. On the basis of the testimony we have submitted in this report we suggest the following subdivisions of Class 2, in which we include addicts as just defined:

1. Correctional cases.
2. Mental defectives.
3. Social misfits.
4. Otherwise normal persons.

Such a classification as the one just suggested would aid in the solution of one of the most pressing problems connected with the treatment of drug addicts—the problem of after-care. All the testimony of those present at the conference agreed that if the addict is permitted to return to his old surroundings before he is built up physically, mentally and morally, a discouraging number return to the drug habit. But if they could be studied in an institution of mental and physical hygiene after they are taken off the drug, this result could in many cases be prevented. The correctional cases should be committed to institutions with no age limit—from the cradle to senility, if necessary. If they show marked improvement, they could be put on probation under the care of a technically trained person acting as probation officer. With defectives, institutional care must be provided where they can be comfortable and often self-supporting, but where they shall not be permitted to reproduce their kind. As to the social misfits and the otherwise normal, inasmuch as up to the present no completed treatment in the way of analysis and therapy has been provided, we shall devote the succeeding paragraphs to a consideration of what can be done for these classes of addicts.

THE PROBLEM OF THE SOCIAL MISFIT

When one finds himself in a situation to which adjustment and adaptation seem almost hopeless, there are two courses open. He can use his energy and initiative to alter the environment; or he can seek escape from the grim reality of the situation in an inner change. The adolescent often seeks escape in day dreams of a future which can be realized. For many emotional persons, religion, with its esthetic forms and duties, gives relief. Another class, sometimes because of constitutional inferiority, again perhaps because the situation is really hopeless, develops a neurosis or psychosis. Many geniuses belong to this class. Just why others under the same stress "neither wince nor cry aloud" may not be because of sturdy ancestry makes for stability; it may be that life has not given that which constitutes a terrible experience.

The social misfit has become much more of a problem with the development of individualism and rationalism. An earlier world accepted unhappiness and disease with resignation as the hand of Providence. Strangely enough, with the accumulation of an economic surplus and shortened hours of labor has come the problem of getting into the right place to enjoy the surplus and the leisure. Unremitting toil and consequent deadened nerves prevented such problems as arise with the change from a "pain economy" to a "pleasure economy," so that it may be said that a society which has enough of a surplus for leisure will also have more misfits. This is shown by the fact that these misfits are found in all social strata.

It is within a generation that a drifting industrial population with its enormous labor turnover has brought home to the commercial world what an expense on business is the social misfit, who is also an economic misfit; for the restlessness of inner life works its way out in drifting from job to job, listening to any agitator who assures him that this dissatisfaction and restlessness are the fault of some one besides himself. The studies of strikes made by men like Carlton Parker and Ordway Tead have brought it home to us that the basal instincts must be satisfied if organized society is to last. We know that the misfit can no longer be ignored. He is too numerous; he has learned the lesson of organization; and he has learned through association means of cheap satisfaction that deaden for a time his elemental cravings, even though they return him to society more of a menace and a care then before.

Both because society grows more humane and because the social sciences have taught us that humaneness has a practical bearing on group success, we are asking ourselves today why we have such numbers of misfits in society; men and women

3. The individual statements are included on a reprint of this report, which will be sent on receipt of a stamped addressed envelop.
4. DuMez, A. G.: Increased Tolerance and Withdrawal Phenomena in Chronic Morphinism, J. A. M. A. 72: 1069 (April 12) 1919.

who find their living conditions intolerable; who will seek refuge in the cheap and transient relief of drugs. Since modern psychology has taught us the importance of the infantile patterns in later life and of the life-long influence of early education, we have turned to scrutinize more closely just what our so-called democratic education has done to make life happier and more successful for the masses.

Even before the great war, earnest educators like Madame Montessori and Professor Dewey had been calling attention to the fact that our educational system was an anachronism: perfected in the cloister; disciplinary in character; made to fit a life of cultured leisure; teaching almost nothing of the life into which the child must go at the completion of his school life. With the older apprenticeship system destroyed by the minute subdivision of labor of the modern factory system, the child left the school to go to a factory where he learned some small process, often a "blind alley." When the terrible monotony of the process drove him out, there was some other minute process waiting for him in some other factory — no vision of what it all meant, of his work as a part of the whole. Thus, he marries, burdens himself with family cares, and becomes tied to the process. If he has "nerves," some day he will get a nightmare vision of himself as a piece of social wastage, a victim of conditions far more far-reaching than his individual life. When he becomes organized and vocal, society awakens to the fact that he is an I. W. W., a bolshevik, or what not. He is not wholly to blame.

Modern psychology pictures the original nature of man as eternal restlessness, curiosity and constructiveness. The child loves to take things apart and to "make things." Moreover, we, all of us, have enough of the self-regarding instinct for a social ultilization of these tendencies; that is, we like to do things which we feel are useful and for which we are given credit. If such primary instincts are forever thwarted, the social misfit develops. If he finds his environment impossible to manipulate through lack of training, he will seek forgetfulness in some form of self-gratification. And some form is usually found in the unwholesome environment of the ordinary city street. If he comes in contact with those using narcotic drugs, they will find him responsive to imitation-suggestion.

Within the past ten years the vocational guidance movement has been developing to meet such educational and economic situations as we have outlined. The aim of this movement is to get hold of the child while he is still in school, to study his mental make-up, to arouse in him ambition, and then to give him guidance into a vocation for which he seems fitted. It has grappled with the problem of the child who asks for his working papers as soon as he is old enough, who often has no reason except that he is "tired of school." Studies made of these children in a number of cities show that without guidance they almost invariably drift into the blind alleys of the commercial and industrial world, from which they could be saved by a longer school life with specific trade or commercial training. The cities of Cincinnati, Chicago, Boston, Philadelphia and New York have more or less well-developed systems of guidance to lessen the number of misfits, and are working to increase their usefulness by devising better vocational, trade and commercial tests as well as by placement and careful follow-up work. This whole movement is based on the belief that happiness is a by-product of normal, useful activity, and that the child can be directed along the way, whether he be brilliant, mediocre or stupid. Its social philosophy teaches that the goal of society is to provide so flexible a social system that there shall be no misfits among the normal members of a population as a result of lack of guidance and training in the years when vocational choices are made.

If a proper scheme of vocational guidance can be put into operation, we shall have a better satisfied and happier industrial population, with fewer misfits from this social stratum to become gangsters and narcotic addicts. And since the heroin user is young, it is not too late to reclaim him to normal and happy living by vocational guidance and training in an institution which will teach him to face a new and useful life after he is cured of his habit. The therapeutic value of vocational training has been evidenced with the cases of shell shock among the soldiers who are being reclaimed to happiness and usefulness under the direction of the federal Bureau for Vocational Education; and doubtless the same results can be obtained in the reclamation of youths who have lost their touch with reality in a less noble cause.

It is already understood that much of the success of vocational guidance depends on the follow-up, even with normal children, to counteract the restlessness of youth which impels them to move on at the first difficulty. Statistics show an average of three jobs for working children in the first two years. To counteract this tendency with the cured addicts, it will be imperative to devise a wise probation system. Many an otherwise hopeless misfit can be permanently saved by the supervision of a wise and experienced probation officer, acting with authority.

Under a proper system of classification in the institution for the after-care of the addict, it will be necessary to segregate the correctional, the mental defective, and the social misfit groups. We already have state provision for the care of correctional cases and mental defectives. The facilities may have to be increased, but the plan for care and training is already known through the work of such institutions as Letchworth Village for defectives and Elmira for correctional cases. But the problem of the misfit and of the drug user who appears normal except for the drug weakness has yet to be solved. That a solution is worth while is shown by the economic loss to the community resulting from their productive failure, their irregularity at work, and the tendency through their example toward an increase in the number of addicts.

When addicts of these types (social misfits and otherwise normal persons) are sent to an institution where they are to be restored to normality by both mental and physical therapy, the misfit can be aided by vocational guidance, as we have shown. By a study of the addict which will include intelligence and vocational tests, there is no reason why his aptitudes may not be recognized and developed as well as in the cases of the wounded soldier who finds it necessary to change his life work. And the very interest aroused by this new occupation, together with the absorption necessary in learning a new process, will lead the addict to forget the past. When the new vocation is entered, a judicious follow-up system should be maintained lest in moments of discouragement old memories reawaken and urge a return to the old haunts and habits.

ADDICTS OTHERWISE NORMAL

As to those persons otherwise normal who have become drug addicts, here we have a complicated problem. We may be dealing with a man or woman who has been doing work for which he is well trained and fitted. We may have such a person working under too great strain. Then the "last straw" is laid on the burden, and in the altogether human search for relief, even for a few hours, the drug is perhaps taken occasionally, and the habit finally formed. The literary genius who has to finish his manuscript for the publisher; the social worker whose district must be covered at whatever cost to herself; the physician or nurse with an epidemic sweeping the city, and who must not stop—any of these may realize too late that he has become a slave to the drug. What shall we do with him?

The newer psychology has distinguished the conscious activities of the human mind from its subconscious activities—those that take place on another level, and which include lost memories, impressions from the earliest period of infancy, and the effects of shock which have expanded beneath the level of the daily activities and which have spread from one association center to another until all the activities of life are influenced by the background of experiences that can be recalled with the greatest difficulty, if at all. This subconscious life, sometimes of great intensity, has a tremendous pull on the conscious daily life. We like people because of their resemblance to others whom we have forgotten. In the domain of smell are registered impres-

sions a thousand times as intense as those of taste. We have here a causation of likes, dislikes, attractions and repulsions whose origin we cannot understand. And buried in this part of the mind's activities is often the answer to the question why an otherwise normal person, physically well developed, makes decisions which we call regressions. Such regressive tendencies, if yielded to, mean disaster to the very soul.

Psychanalysis as a form of mental therapy undertakes the reclamation of this unexplored part of the ego. And here is the greatest hope for the salvation of the otherwise normal person whose will is not strong enough to shake off the drug habit.

If, under psychanalysis, the "sore spot" in the individual subconscious mind is discovered and a process of reeducation begun, the theory holds that there will be released an increased energy. And the reclamation of this "normal" addict will depend on the power he will have, under guidance, to direct this libido into higher thought and emotional levels. Studies made of individuals much given to day dreaming indicate that these dreamers have an oversensitive ego which makes their outer adjustments difficult, and thus makes for regression. The power to generalize their experiences is of the greatest assistance to these persons. And the pain of the world can be expressed in music; the longing of the world in marble, in painting, and in other creative forms. It is well recognized that man is a constructive animal, and is willing to spend himself in work in which he has joy and which brings him the respect of his fellow men. Teach this otherwise normal drug addict to irradiate and sublimate this libido which he is so wantonly wasting on the fetish of drug addiction. His strong desire is a measure of his energy. Let him be taught to direct that energy into wholesome channels which will give him as great pleasure and which will recreate his soul.

Such is the task of the men and women in charge of the institution for the educated men and women who are drug addicts: They are to be both trained and sympathetic, wholesome and strong-willed; friends and guides into a new life in which the base desires for self-gratification is, not suppressed, but directed into new channels which will make for the happiness of the individual and the race.

Recommendations

We therefore recommend:

1. That the ambulatory treatment of drug addiction, as far as it relates to prescribing and dispensing of narcotic drugs to addicts for self-administration at their convenience, be emphatically condemned.

2. That heroin be eliminated from all medicinal preparations, and that it should not be administered, prescribed or dispensed; and that the importation, manufacture and sale of heroin should be prohibited in the United States.

3. That the bills introduced by Senator France, No. 2785, and Representative Rainey, No. 11778, to provide aid from the United States for the several states in prevention and control of drug addiction and the care and treatment of drug addicts be approved, and that Senator France and Representative Rainey be so notified.

4. In view of the statement in a government report that about 90 per cent. of the amount of narcotic drugs entered for consumption is used for other than medical purposes, the Treasury Department is respectfully urged to continue to study and report on the narcotic drug situation, including the question of government control of these drugs.

5. That the Bureau of Public Health Service of the Treasury Department be respectfully requested to continue the compilation of state laws and regulations relating to habit-forming drugs and bring them up to date.

THE SCIENTIFIC ASSEMBLY

THE OPENING GENERAL MEETING

Tuesday Evening, April 27

The opening meeting of the Association was held at the Shriners' Temple, and was called to order at 8:30 p. m. by the President, Dr. Alexander Lambert, New York.

Prayer was offered by Bishop J. M. Laval.

Dr. Albert E. Fossier, Chairman of the Local Committee of Arrangements, announced the various entertainments to be given the members of the Association and its guests, and stated that the committee had earnestly cooperated with the officers of the Association to make the New Orleans session a success, both from a social and a scientific standpoint.

Addresses of Welcome

In the absence of Hon. Martin Behrman, mayor of New Orleans, Mr. A. G. Ricks welcomed the members and guests to New Orleans on behalf of the mayor.

Address of Welcome by Dr. Homer Dupuy, President of the Louisiana State Medical Society

Dr. Dupuy said in part: On me is bestowed the distinguished privilege and great honor of bringing to this Association a message of cordial welcome from our great state society. We knew that when you accepted the invitation to meet in New Orleans, we had a task of some magnitude; but with a united profession, with considerate action, unified sentiment and irrepressible enthusiasm, we buckled down to the task, and it is now up to you to witness the results of our work.

New Orleans loves you; Louisiana loves you and honors you, and hopes that when you leave us, you will carry away with you happy and pleasant recollections of your visit to this city. We extend to you a hearty welcome to New Orleans.

Address of Welcome by Hon. John M. Parker, Governor-Elect of Louisiana

Mr. Parker said in part:

Mr. President and Members of the American Medical Association: Today, probably for the first time in the history of Louisiana, we have made arrangements by which we see our way clear to take proper care of our insane asylums, our feebleminded asylums, and the other institutions that stand close and dear to the heart of every sincere medical man.

Within the last few years in traveling over the state of Louisiana, I have been impressed with the fact that we do not give proper heed and devote proper care to those unfortunates that are left on our hands. We have overlooked too often the fact that those who are absolutely unable to help themselves and who have been dependent on the charity of state and cities represent a steadily growing number of people to whom you minister, and to whom your services as guardian angels are more needed than any other class of people in the world. I have made up my mind regarding one thing, and that is, while I am governor, no politics shall directly or indirectly creep into any of our institutions. (Applause.)

I am delighted to have the privilege of appearing before you. I want your help in this work. Our institutions should be regarded as sacred, and their interests upheld and zealously fought for by the members of your profession.

I trust that when you return to New Orleans in the next few years, it will be a source of great pleasure and pride for us to tell you what has been accomplished by having taken advantage of your valuable assistance and influence in connection with our institutions. (Applause.)

Address of the President

Admiral William C. Braisted was introduced as President of the Association, and delivered his address, entitled "The Obligations of Medicine in Relation to General Education," which was published in THE JOURNAL, May 1, 1920, p. 1203.

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SATURDAY, MAY 8, 1920

TETANY

The increased irritability of the nervous system associated with muscular tremors and occasionally convulsive seizures, a group of symptoms designated as tetany, not long ago appeared likely to find a scientific explanation in the study of the functions of the parathyroid glands. Excision of all of the latter leads to the characteristic nervous manifestations of tetany. These are also noted in man in association with gastric disease, particularly in patients who have long suffered from obstruction at the pyloric orifice. The attempt to relate gastric tetany to parathyroid insufficiency has encountered obstacles; for the parathyroid structures usually have been found to appear intact in these cases, and the condition is often relieved by gastro-enterostomy. It will therefore be understood why medication with parathyroid substance has been of questionable advantage in the treatment of gastric tetany. The results have been disappointing thus far, if they may not actually be described as failures.

Even if the cases of tetany, as they are seen during pregnancy and after parturition, in infants, in gastric disease, in certain occupations, and in parathyroid insufficiency have no apparent immediate etiologic relationship, it is not impossible that in ultimate analysis the increased nervous irritability may have a common metabolic cause. Wilson [1] and his co-workers at the Johns Hopkins Medical School found that, following parathyroidectomy in dogs, the equilibrium between acids and bases is displaced in favor of the bases, and that in tetany which develops after such a procedure there is well marked alkalosis. The results have been confirmed by McCann [2] at the Harvard Medical School, who agrees that there is a marked increase in the carbon dioxid-combining power of the blood plasma, coincident with the development of tetany.

McCann has extended the study to the phenomena of gastric tetany. He found that after operations on the stomach which exclude the acid secreted from the duodenum, tetany develops, accompanied by an increase in the carbon dioxid-combining power of the plasma similar to that of parathyroid tetany. These facts have led McCann, like some of his predecessors, to the conclusion that tetany is a condition of alkalosis in which a disproportion between rates of secretion of acids and alkalis by the gastro-intestinal tract may be a factor.

A disproportion of acids and bases leading to accumulation of the latter—an alkalosis—might conceivably be due to a heaping up of alkali in the organism or to a withdrawal of acid such as the gastric juice represents. Tetanic symptoms can, indeed, be induced by excessive injections of sodium carbonate or bicarbonate. MacCallum [3] and his collaborators have presented a somewhat different feature for consideration. They noted that when the pylorus is obstructed and the gastric juice with its hydrochloric acid is constantly removed, there ensues a decrease in the chlorin of the blood plasma and a consequent increase in the alkali reserve which becomes extreme. The electrical excitability of the nerves is heightened, and spontaneous twitchings arise. These are symptoms of gastric tetany. According to MacCallum, all this can be prevented by constantly furnishing a large supply of chlorids. He states that it is less easy to cure the condition by the administration of chlorids. It is easy to understand that sodium chlorid, which is reported to be efficacious in this experimental gastric tetany, might serve as a source of hydrochloric acid. But what becomes of the sodium ion? And why are chlorids more efficacious, as we are told, than acids? Here are seemingly conflicting factors which need to be reconciled or explained before a rational treatment of gastric tetany can finally be instituted.

1. Wilson, D. W.; Stearns, Thornton, and Janney, J. H., Jr.: J. Biol. Chem. **21**: 169, 1915; Wilson, D. W.; Stearns, Thornton, and Thurlow, M. D.: Ibid. **23**: 89, 1915.

2. McCann, W. S.: A Study of the Carbon Dioxide-Combining Power of the Blood Plasma in Experimental Tetany, J. Biol. Chem. **35**: 553 (Sept.) 1918.

RACIAL MORTALITY

The United States offers an opportunity for studying the mortality of various race stocks such as has probably never been presented before in the world's history. Diverse races of mankind are here gathered together under identical climatic and similar social and economic conditions. In the case of certain races, the absolute numbers are large enough to warrant definite conclusions. Several more or less elaborate studies of racial mortality in some of the Eastern states and cities have appeared since the census of 1890, and one of the most important of these has recently been published by Dublin and Baker.[4]

This investigation deals with the 1910 mortality of race stocks in the states of Pennsylvania and New York. Six nationalities, as distinguished by the country of birth, were present in numbers sufficient to justify differentiation: Austro-Hungarians, Russians, Italians, Germans, British and Irish. In Pennsylvania in 1910 these six foreign groups together comprised

3. MacCallum, W. G.; Lintz, Joseph; Vermilze, H. N.; Leggett, T. H., and Boas, E.: The Effect of Pyloric Obstruction in Relation to Gastric Tetany, Bull. Johns Hopkins Hosp. **31**: 1 (Jan.) 1920.

4. Dublin and Baker: Quart. Pub. Am. Statist. Assn. **17**: 13, 1920.

18.0 per cent. of the total white population and 93.3 per cent. of all the foreign born; in New York 26.4 of the total white population and 86.9 per cent. of all the foreign born.

In correspondence with previous statistical investigations, it is shown that the group composed of the native born of native parents has a much lower mortality than the native born of foreign or mixed parentage and than the foreign born. This is true for both sexes and for virtually every age period; but the disparity is greatest at the adult ages. The foreign born and the native born of foreign or mixed parentage have mortality rates agreeing much more closely with one another than with the native stock.

Three of the foreign born groups (Austro-Hungarian, Russian and Italian) present mortality conditions which, when compared with those for the native born, are fairly favorable, except for those age groups exposed by industrial conditions to special occupational risks. Italians, for example, in Pennsylvania and New York State show, on the whole, little difference in their death rates from those prevailing in their home country.

Quite different is the position of the foreign born German, British and Irish living in the United States. In these groups the mortality is very high compared with the mortality in native born Americans of native parentage; for each racial group, moreover, the death rates in the United States are less favorable than in their native land, even apart from their greater liability to death from violence in hazardous employments.

Analysis of the rates from individual causes of death reveals some facts of great significance. As in previous inquiries of this sort, the outstanding feature with regard to pulmonary tuberculosis is the great handicap of the Irish. In both New York and Pennsylvania the rate for this cause among Irish males, ages 25-44, is twice as large as for natives; Pennsylvania, 376: 185; New York, 663: 352. The Irish also show high death rates from pneumonia, cancer, organic diseases of the heart and Bright's disease, although in their own country such excessive rates do not occur. At ages 65-84 Irish males at home show a mortality from Bright's disease of but 115 per hundred thousand as against the very high rates of 1,146 and 1,299 for Irish born males living in Pennsylvania and New York. The foreign born groups of German and British stock show a similar, although less striking, excess from pulmonary tuberculosis and from the so-called degenerative diseases. It is certainly noteworthy that while the rate for nephritis and Bright's disease in British males, ages 45-64, living in England and Wales was 116 per hundred thousand, the figures for Bright's disease alone among British born males living in Pennsylvania and New York were 240 and 288, respectively.

Dublin and Baker raise the point whether the common assumption that immigrants to this country represent the most vigorous strains among their own people is really justified. The results of this and other studies on racial mortality do not permit an unqualified affirmation. Those who maintain that centuries of economic and social struggle in the older countries have brought to the top the best racial material, leaving at the bottom the physically weak and consequently economically unsuccessful who seek to better themselves by emigration, may find some support in such mortality records as here cited. At all events, the importance of similar studies based on the results of the 1920 census is decidedly manifest.

FACTORS IN THE PRODUCTION OF EDEMA

The problems of the etiology of the various types of edema are far from being solved. The significance of a renal factor interfering with normal excretion has long been appreciated; but there are without doubt numerous extrarenal factors that may play an important part. Thus, alterations in the vascular permeability, preventing the customary passage of fluids from the blood vessels, may affect the circulation so as to damage the kidney functions. Experimental edema can be produced by the administration of certain poisons, such as arsenic or snake venom. Whether they act solely on the renal vessels or on capillaries elsewhere in the body is not always clear; at any rate, they injure the vessels sufficiently to prevent the usual distribution or excretion of fluids, and edema results. Again, as illustrations of extrarenal factors in edema, it has been suggested that changes may occur in the physical or chemical character of the tissues so that they retain water in excess of their usual quota.[1]

Epstein[2] has described cases of edema associated with parenchymatous nephritis in which a hydremia occurs accompanied by a diminished amount of protein in the blood.[3] The latter is assumed to be due to loss of protein through the urine. Epstein advises the liberal feeding of protein as the most effective way of managing such cases. We have already referred to preliminary reports on the unexpected appearance of edema in animals that were kept on a diet largely made up of carrots.[4] Even in the earlier stages of Kohman's investigation it appeared likely that the malnutrition responsible for the edema was not due to lack of fat, to which "war dropsy" has frequently been ascribed, but rather to an insufficiency of protein in the diet.

The further prosecution of these important studies has served to fasten responsibility for the edema in

1. These various factors are discussed by Hewlett, A. W.: Pathological Physiology of Internal Diseases, New York, 1917, p. 437.

2. Epstein, A. A.: Concerning the Causation of Edema in Chronic Parenchymatous Nephritis, Am. J. M. Sc. **154**: 638 (Nov.) 1917.

3. The theory is discussed in The Cause of Edema, Correspondence, J. A. M. A. **73**: 782 (Sept. 6) 1919.

4. Denton, M. C., and Kohman, E.: Feeding Experiments with Raw and Boiled Carrots, J. Biol. Chem. **36**: 249 (Nov.) 1918. Kohman, E. A.: A Preliminary Note on the Experimental Production of Edema as Related to "War Dropsy," Proc. Soc. Exper. Biol. & Med. **16**: 121 (April 16) 1919. The Cause of War Edema, editorial, J. A. M. A. **73**: 274 (July 26) 1919.

Kohman's experiments even more convincingly on the protein factor.[5] When young rats are fed diets in which carrots are the only source of protein, a large percentage of the animals develop edema. This is not due to a lack of fat or vitamins, as experiments specially planned to include an abundance of these have demonstrated. Salts do not play any appreciable part in the production of this type of edema, for even when the salt content is doubled there is no noticeable effect on the occurrence of edema. The latter is not due to simple starvation on low calory intake, for the mere replacement of part of the carbohydrate with an adequate protein, casein, serves to avert edema on an otherwise unaltered diet. Henceforth, therefore, the level of protein intake must not be overlooked when symptoms of edema develop; and the possibility of protein feeding must be considered as a therapeutic measure. This is not intended to signify that the suggestions just offered have universal application. Kahn[6] has estimated the protein content of the blood in a number of cases of parenchymatous nephritis with edema of varying grades without finding deviations of the sort described by Epstein and which, according to the latter, should be benefited by a high protein diet. Kahn regards the cases of so-called nephrosis described by Epstein as very rare. Reminding us of the remarkable stability of the blood serum protein level even in disease and of the difficulty in altering it appreciably by feeding protein, Kahn concludes that "feeding patients suffering with chronic parenchymatous nephritis on a protein-rich, fat-poor diet is a rather risky undertaking." In view of the striking experimental evidence of interrelations between protein deficiency and edema, however, clinical investigators should not abandon the suggestions emanating from the physiologic laboratory without more conclusive assurances that they cannot apply to human disease.

5. Kohman, E. A.: The Experimental Production of Edema as Related to Protein Deficiency, Am. J. Physiol. **51**: 185 (Feb.) 1920.
6. Kahn, Max: The Protein and Lipin Content of Blood Serum in the Nephritides, Arch. Int. Med. **25**: 112 (Jan.) 1920.

Current Comment

THE PRESIDENT-ELECT, DR. HUBERT WORK

Since 1916, the House of Delegates of the American Medical Association has been a peculiarly efficient representative body. Delegates representing the organized medical profession of the United States have met, have expressed their individual views, have passed resolutions and taken action on questions of great moment to our profession and to the nation, have participated in lively debate, and in a kindly, democratic manner, without friction or ill feeling. To no one is this state of affairs due so much as to Dr. Hubert Work of Colorado, first Speaker of the House of Delegates, and now President-Elect of the American Medical Association. Dr. Work was born near Marion, Pa., July 3, 1860. By a happy coincidence, the date of his birth approximates the most patriotic date in our history; his name indicates the chief function in his career. He was graduated from the University of Pennsylvania School of Medicine in 1885. Early in his professional career he was engaged in public medical service; during the late eighties he was a member of the State Board of Medical Examiners of Colorado; for four years he was president of the State Board of Health and later president of the Colorado State Medical Society. In 1904 he began his first term as a member of the House of Delegates, and since that date he has served the American Medical Association continuously as a member of the House, as a member of the Judicial Council, and finally as Speaker of the House. Only those acquainted with the intricacies of parliamentary procedure can realize how well fitted Dr. Work has been for his task: always calm, reserved, and ever ready with kind comment or witty repartee, his spirit has infused into the body of delegates the desire for progress and cooperation, which has resulted in efficient action. With all his service to medicine and to the American Medical Association, he has yet given himself largely to other organizations. As a citizen he has achieved the distinction of candidacy



HUBERT WORK, M.D.
PRESIDENT-ELECT OF THE AMERICAN MEDICAL ASSOCIATION

for the United States Senate and was defeated by a small majority. For several years he has represented his state as a member of the Republican National Committee, a position of no small importance in our political system. During the war, Colonel Work was medical adviser of the Provost Marshal General, and here his diplomatic qualities were of inestimable service in correlating the work of the medical department of the army with that of the Provost Marshal General's Office. In electing him to the highest position it has to bestow, the American Medical Association shows its appreciation of the worth of his services to the medical profession and to the public.

THE ANNUAL SESSION

Prior to the meeting there was considerable anxiety on the part of many concerning the success of the New Orleans Session of the American Medical Association, the anxiety being due to the supposition that there was not a sufficient number of hotels to accommodate the expected attendance. From various quarters came reports that men were not planning to attend because of this lack of hotel accommodations, and, naturally, those pessimistically inclined looked for a moderately small registration. As a matter of fact, the attendance at New Orleans exceeded the expectations of the most optimistic; the registration reached 3,681. Hence, so far as number is concerned, the Session was an immense success. But it was successful from every point of view—in the unusual social features provided by the hospitable physicians and citizens of the convention city; in the attention given to the exhibits, and in the scientific character of the work of the sections. The social features were typical of the city. The largest available hall was taxed to such an extent by the Carnival Ball, which took the place of the usual President's Reception and Ball, that many of those attending the session were unable to gain admission. The grand Fête Champêtre and Pageant at the City Park was a beautiful spectacle—it was such as could be presented in but few other cities. The House of Delegates, in an unusually important session, took timely action on questions of great interest to both the medical profession and the public, the details of which will be found in the published minutes. Among other things, an exhaustive report on the use and abuse of narcotic drugs was submitted; action was taken urging Congress to make necessary appropriations for the publication of the Medical History of the World War; and resolutions were adopted declaring opposition to the institution of any plan embodying the system of compulsory health insurance. The Local Committee on Arrangements and the medical profession of New Orleans and Louisiana well deserved the thanks conferred on them by the House of Delegates. Their untiring efforts made the New Orleans Session the success it was. In spite of the fact that the attendance was so large as to tax the hotel accommodations of the city to the limit, the Session will be remembered with pleasure by all who attended. The arranging for the annual session of the Association, including the provision of numerous meeting places, large exhibit space and lodgings for from four thousand to five thousand physicians and their guests, is no small task. The cooperation of the Local Committee on Arrangements is the determining factor in the success of the Session. The New Orleans Committee, which had unique and difficult problems to handle, did its work well.

CONGENITAL ECTODERMAL DEFECTS

Congenital ectodermal defects, such as aplasia of the teeth or absence of circumscribed patches of skin, are by no means unknown to medical observers. The combined absence of teeth and hair is rarer. Perhaps the most unusual anomaly of the ectodermal tissues is found in persons exhibiting a congenital absence of teeth, total alopecia, and also a lack of both sweat and sebaceous glands in the skin. A case of this sort, the second of its kind reported in the American journals, and the sixth in the world's literature of the subject, has been studied at the Mayo Clinic by Goeckermann.[1] The patients of this type have usually presented features that suggest the existence of heredosyphilis. If this were responsible for the cutaneous defects, one would expect to find signs of atrophic changes in the skin. Microscopic examinations of sections from the epidermal structures in the Rochester patient, however, showed a total absence of sudoriferous and pilosebaceous structures. There were no signs of regressive changes in the skin. There was an entire absence of such cell inclusions as might warrant an assumption that embryonal vestiges of lanugo hair and sweat glands had ever existed. Hence the influence of syphilis in the production of these congenital defects is probably nil. If it is present, this is probably only an incidental feature. Perhaps these congenital defects of the ectoderm are not as rare as medical history suggests. Frequently the persons involved are in excellent health and have no occasion to submit to such critical examinations as might reveal subtle defects of the skin. Only a few years ago the Stokes-Adams syndrome was an apparently rare condition. When attention was drawn to its precise identification, cases of heart block began to multiply in surprising numbers. Perhaps congenital ectodermal defects of the sort described by Goeckermann and exhibiting a total absence of sweat glands, an almost total absence of sebaceous glands, a hypotrichosis with absence of lanugo hair, and a dental aplasia, will be discovered to be less rare when it is appreciated that the features which they present actually exist.

1. Goeckermann, W. H.: Congenital Ectodermal Defect, with Report of a Case, Arch. Dermat. & Syph. **38**: 396 (April) 1920.

Significance of Pain.—To understand the full significance of pain in any case, we have to know a great many matters which are still hidden from us. The tissues capable of producing pain, the nerves in whose distribution the pain is felt, the manner in which the pain spreads, and the laws governing the spread of pain; the character of the pain itself; the manner of its onset and its variations, and the phenomena with which it is associated, are all matters which it is necessary to understand before we are qualified to undertake an investigation into disease.—J. MacKenzie *Brit M. J.* **1**:109 (Jan. 24) 1920.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Health Law Valid.—By the decision of Judge Leon McCord, in the Montgomery Circuit Court, the State Board of Health of Alabama was declared to have been created by a valid law, and will continue to exercise the duties of the administration of the state health law. An appeal has been taken by physicians of Birmingham who allege that in violation of the provisions of the constitution, the legislature provided that the board of health should be named by the Alabama Medical Association, a private corporation.

State Association Meeting.—At the fifty-third annual meeting of the Medical Association of Alabama held in Anniston, April 20-22, under the presidency of Dr. James S. McLester, Montgomery, Montgomery was selected as the place of meeting for 1921, and the following officers were elected: president, Dr. Louis W. Johnston, Tuskegee; vice presidents, Drs. Thomas J. Brothers, Anniston, and John C. McLeod, Opp; censors, Drs. William R. Jackson and Vivian P. Gaines, Mobile, and Walter S. Britt, Eufala. Dr. Henry A. Christian of Harvard University delivered the Jerome Cochran Lecture, on "Bright's Disease with Special Reference to Its Treatment."

CALIFORNIA

Higher Entrance Requirements in University of California Medical School.—It is stated, officially, that in and after August, 1922, students matriculating in the University of California Medical School will be required to have completed satisfactorily not less than three years of collegiate work. This raises the minimum collegiate requirement from two to three years.

ILLINOIS

Central Illinois Physicians to Meet.—The Central Illinois Medical Society will be the guests of the Decatur Medical Society, May 25. The principal address will be delivered by Dr. Charles Spencer Williamson, Chicago.

Personal.—Dr. J. Warren Van Derslice, Oak Park, has been elected president of the Colonial Club, Oak Park.——Dr. Howard B. Boone, Chandlerville, has been reappointed local surgeon for the Chicago, Peoria and St. Louis railroad.

Clinic for Rock Island County.—The Rock Island County Board of Supervisors has voted $6,000 for the establishment of a venereal disease clinic in the county. The state will appropriate $200 a month toward the upkeep of the clinic.

Medical Veterans to Meet.—A meeting of the Medical Veterans of the World War will be held at the Christian Union Church, Rockford, May 19, to organize the Illinois section of the association. Luncheon will be served. Any physician who was in the service during the World War or who was a member of a local or district draft board or advisory board is eligible for membership. Notification should be sent to Dr. John E. Tuite, Rockford.

Chicago

Short Term Nurses Graduate.—The graduating exercises of the third class of the training school for home and public health nursing, established by Dr. John Dill Robertson, health commissioner of Chicago, were held April 27, when a class of 609 was graduated. The work of the new course began May 3.

Medical Society Banquet.—The annual banquet of the Aux Plaines branch of the Chicago Medical Society was held at Oak Park, April 15, with an attendance of more than 300. The principal speakers were Mr. Marquis Eaton, chairman of the Chicago chapter of the American Red Cross, Dr. J. Warren Van Derslice, Oak Park, president of the Illinois State Medical Society and Dr. Norman Bridge of Los Angeles.

IOWA

Middleton Returns.—Dr. Edward D. Middleton has returned to Davenport after prolonged service during the World War, in which he served with the Canadian Expeditionary Forces, and was stationed on the French and Belgian fronts, at the Dardanelles, and in Palestine, Egypt, Bulgaria and Southern Russia.

State Society Meeting.—The sixty-ninth annual meeting of the Iowa State Medical Society will be held at Des Moines, May 12 to 14, under the presidency of Dr. William L. Allen, Davenport. Drs. Robert H. Babcock, Chicago, and Charles H. Mayo, Rochester, Minn., will deliver the addresses in medicine and surgery, respectively.

Reversed by Supreme Court.—The Iowa Supreme Court reversed a verdict of the Dubuque District Court which found Dr. C. Allen Snyder, Dubuque, guilty of second degree murder. Dr. Snyder is said to have been charged with performing an illegal operation on Mrs. Grace Wolfe, from which she died in 1917. In reversing the verdict the supreme court held that the evidence was insufficient to warrant conviction.

MARYLAND

Bequest to Johns Hopkins.—Through the first administration account of the estate of Eugene G. Mergenthaler, the Johns Hopkins University has received securities and cash amounting to $186,444.22 of the legacy of $200,000 bequeathed the university to build a laboratory, a building devoted to the technical arts or a library building.

Personal.—Sir Gregory Foster, Lieut.-Col. Thomas Renton Elliott, Dr. George F. Blacker and Dr. Grafton Elliot Smith, British physicians, left for Philadelphia after two days in Baltimore inspecting the Johns Hopkins Medical School. The physicians came at the invitation of the Rockefeller Foundation and their itinery permits inspection of hospitals in Philadelphia, New York, Boston, Chicago and St. Louis.——Dr. Harry M. Slade, Reisterstown, has been reappointed secretary to the board of health of Baltimore County and health officer of the fourth district for two years. The other district health officers appointed for the same period are: Drs. Charles L. Mattfeldt, Catonsville; Harry F. Shipley, Granite; Henry A. Naylor, Pikesville; James H. Wilson, Fowblesburg; Eugene W. Heyde, Parkton; Alexander R. Mitchell, Hereford; John H. Drach, Cockeysville; Walter S. Carswell, Ruxton; Robert W. Shermantine, Sparks; James F. H. Gorsuch, Fork; Walter M. Carmine, Sparrows Point; Thomas B. Hall, Mt. Winans; Harry W. Wheaton, Baltimore, and John W. Harrison, Middleriver. ——Dr. William H. Welch and Dr. Ira Remsen, both of Johns Hopkins University, have been appointed to the Board of Electors for the Hall of Fame of New York University. ——Dr. Cyril H. Haas, who was in Turkey several years before the war and who served at the Turkish capital during the war, recently delivered several lectures in the medical amphitheater of the Johns Hopkins Hospital. He came to the United States to speak at the recent conference of student volunteers at Des Moines, Iowa.——Dr. Warren H. Lewis, professor of physiologic anatomy at the Johns Hopkins Medical School, has been elected an honorary member of the Society of Medicine, Ghent. Dr. John J. Abel, Woodlawn, professor of pharmacology at Johns Hopkins University; Dr. William S. Halsted, director of the surgical clinic at the Johns Hopkins Hospital, and Dr. Elmer V. McCollum of the Johns Hopkins School of Hygiene and Public Health have been made associate members of the Royal Society of Medical and Natural Sciences of Brussels.

MISSISSIPPI

Appropriation for Feebleminded School.—The state legislature passed a bill just before adjournment, carrying an appropriation of $100,000 to establish a state school for the feebleminded.

Hospital for Meridian.—The Meridian board of trade has presented the Matty Hersee Charity Hospital buildings, land and equipment to the city of Meridian. The board recently acquired the property by raising a public subscription fund from the city and have deeded the institution to the city free from all debt or other incumbrances.

New Building for Medical School.—The Mississippi legislature has appropriated $250,000 for a new chemical building at the University of Mississippi which will provide laboratory and other facilities for students in the medical school. An additional appropriation of $10,000 was made to secure permanent equipment for the medical school, exclusive of chemistry. Additional funds were appropriated for the university with which salaries of all teachers could be reasonably increased. The total appropriation for the university exceeds $1,000,000.

MISSOURI

Polyclinic at St. Joseph.—A polyclinic is to be established at Community Hall, St. Joseph, under the charge of Dr. George R. Stevenson. Seven rooms have been set aside for the use of the clinic.

Damages Awarded Physician.—In the trial of the suit in the Barry County Circuit Court of Dr. William T. J. Bailey, Cassville, against J. W. LeCompte, Cassville, for damages received when he was attacked by a bulldog at the LeCompte home, the jury awarded $1,000 to the physician.

Library Club Election.—At the annual meeting of the Kansas City Library Club, April 12, Drs. Edward H. Skinner, Matthew W. Pickard and Logan Clendening were elected directors for three years. At the meeting of the directors, April 16, Dr. Edward H. Skinner was elected president, Dr. Matthew W. Pickard, vice president, and Dr. Harold P. Kuhn, secretary-treasurer.

Health Officers Organize.—In response to a call issued by the state board of health a meeting of deputy state commissioners of health was held at Jefferson City, April 6, and a permanent organization was formed under the name of the Missouri Health Officers' Association. The following officers were elected: president, Dr. G. C. Rogers, Clinton; vice presidents, Drs. Ulysses F. Kerr, Springfield, and Tolman W. Cotton, Van Buren; secretary, Dr. George H. Jones, Jefferson City, and directors, Drs. James W. Bruton, Ozark, Robert E. Crabtree, Butler, and William P. Smith, Troy.

NEBRASKA

Roentgenologists Elect Officers.—At the annual meeting of the Omaha Roentgen Society, March 27, Dr. Joseph Colt Bloodgood of Johns Hopkins University delivered the principal address. Dr. B. H. Harms was elected president; Dr. Norman C. Prince, vice president, and Dr. William L. Ross, secretary.

Personal.—Dr. W. H. Clatterly has been appointed city physician of Lincoln, succeeding Dr. Herman A. Gerbig.——Phelps County Medical Association gave a dinner in Holdrege, April 16, in honor of the seventy-fifth birthday of Dr. Samuel F. Sanders. Dr. Rachael A. W. Long was chairman of the committee of arrangements.

NEW YORK

Albany Medical College Recognized.—A letter from the superintendent of public instruction of Pennsylvania states that recognition was restored to the Albany Medical College by the Pennsylvania Bureau of Medical Education and Licensure, Oct. 15, 1919. This is a correction to Table D published in The Journal of April 17, which indicated that the Albany Medical College was not recognized in Pennsylvania.

Tuberculosis Clinic.—The Buffalo Tuberculosis Association has made appropriation for a free clinic for the diagnosis of tuberculosis to be opened in Tonawanda, May 6, under the charge of Drs. John H. Pryor, John G. Stowe and C. Grabau, all of Buffalo.——A free clinic is being held at Rome Court House under the auspices of the Oneida County Tuberculosis Committee, the state department of health, Rome Board of Health and Dr. Charles R. Mahady, the local health officer.

New York City

Dr. Wilmer Addresses Academy.—At the meeting of the New York Academy of Medicine, April 15, a paper was read by Dr. William Holland Wilmer, Washington, D. C., on the "Injurious Effects on the Eye of Various Toxemias."

Association of Tuberculosis Clinics.—The Association of Tuberculosis Clinics, which originated in 1906, now has a membership of thirty clinics, and 280 active and associate members. The objects of the association are the organization of dispensary control of tuberculosis in New York City; the development of a uniform system of operating dispensaries organized for this purpose; the placing of patients under observation until they are satisfactorily disposed of; the prevention of patients' drifting from one dispensary to another; the facilitation of the attendance of the patients at dispensaries most convenient to their home; the facilitation of the work of visiting nurses in the homes; the provision for each patient requiring it of assistance by a system of special funds or benevolent organizations, and proper hospital, dispensary or sanatorium care; the cooperation with, and assistance to as far as possible, the department of health in the supervision of tuberculosis. Dr. James Alexander Miller has been reelected president of the association and the present board of directors consists of Dr. John S. Billings, Jr., representing the New York Tuberculosis Association; Miss Elizabeth Gregg, representing the nurses department of health; Dr. Dwight Clifford Martin, representing the department of health, Manhattan; Dr. Victor Mildenberg, representing the department of health, Queens; Dr. James A. Miller, representing Bellevue Hospital; Mr. Graves Moore, representing Brooklyn Bureau of Charities; Dr. Arthur E. Neergaard, representing the Presbyterian Hospital; Miss Blanche Potter, representing auxiliaries; Dr. Joseph C. Roper, representing the New York Hospital; Dr. Henry G. Schweitzer, representing the department of health, Bronx; Dr. Ambrose A. Scouler, representing the department of health, Brooklyn, and Dr. Max Taschman, representing Mt. Sinai Hospital.

NORTH CAROLINA

Health Officers Meet.—At the annual meeting of the North Carolina Health Association held in Charlotte, April 19, Dr. Romulus L. Carlton, Winston-Salem, was elected president; Dr. Lawrence J. Smith, Wilmington, vice president, and Dr. George M. Cooper, Raleigh, secretary and treasurer.

Personal.—Dr. John Whitehead, Salisbury, who has been seriously ill at his home, is much improved.——Dr. Carl A. Nevs, Greeneville, S. C., has been appointed acting chief narcotic agent for North Carolina.——Dr. Richard F. Yarborough, Louisburg, has resigned as physician at the State College, Raleigh.

Hospital Men Elect Officers.—The North Carolina Hospital Association held its annual meeting in Charlotte, April 19, and elected the following officers: president, Dr. James M. Parrott, Kingston; vice presidents, Drs. James R. Alexander, Charlotte; Paul R. MacFadyen, Concord, and Miss Gilbert Muse, High Point; and secretary-treasurer, Dr. John Q. Myers, Charlotte.

State Board of Examiners Selected.—At the meeting of the Medical Society of the State of North Carolina the following were nominated members of the state board of medical examiners: Drs. Lester A. Crowell, Lincolnton; Lucius N. Glenn, Gastonia; John G. Murphy, Wilmington; Clarence A. Shore, Raleigh; William M. Jones, Greensboro; William P. Holt, Duke, and Kemp P. B. Bonner, Morehead City.

Society Meeting.—The sixty-seventh annual meeting of the Medical Society of the State of North Carolina was held in Charlotte, April 20 to 22, under the presidency of Dr. Carl V. Reynolds, Asheville. The following officers were elected: president, Dr. Thomas E. Anderson, Statesville; vice presidents, Drs. Charles S. Lawrence, Winston-Salem, William H. Ward, Plymouth, and John M. Manning, Durham; secretary-treasurer, Dr. Benjamin K. Hays, Oxford (reelected), and Dr. Lewis B. McBrayer, Sanatorium, was made active secretary-treasurer during the absence of Dr. Hays in Denver. Pinehurst was selected as the place of meeting for 1921.

OHIO

Conference of Health Commissioners.—The first session of the conference of Ohio health commissioners with the state department of health will be held in Columbus, May 12-14.

Tribute to Dr. Holmes.—The Carnegie Corporation of New York, has donated $250,000 to the University of Cincinnati College of Medicine as a tribute to the late Dr. Christian R. Holmes.

Medical School to Be Reorganized.—It is reported that the Ohio-Miami Medical College of the University of Cincinnati will be reorganized, by which the heads of the departments of medicine, surgery and obstetrics will be on a full time basis, following the plan suggested by the General Education Board.

Maternity Hospitals Must Be Licensed.—All institutions, maternity or lying-in hospitals or institutions admitting maternity cases are now required to obtain a license from the state department of health. Heretofore only institutions engaged exclusively in this work have been licensed. The regulations provide that certain sanitary equipment and measures must be employed, and that records be kept for both mother and child.

Personal.—Dr. Charles Saur, Norwood, has been appointed physician to the Hamilton County Home, succeeding Dr. Charles A. Neal, Norwood, resigned.——Dr. Levi M. Jones, Jamestown, fell while going to make a professional call, fracturing his nose and sustaining severe bruises of the face. ——Dr. Louis A. Thompson, for four years surgeon of the

Central Branch, National Military Home Hospital, has been appointed surgeon at the Hampton, Va., Soldiers' Home.——Dr. George W. Wood, Wilmington, has been appointed resident physician to the Ohio Soldiers' and Sailors' Home, Xenia.

PENNSYLVANIA

Hospital for Drug Addicts.—A site has been purchased by the state in Cumberland County on which to erect an institution for drug addicts. An appropriation of $30,000 was provided by the legislature for establishment of the institution and it is planned to erect three cottages and to improve the buildings already on the site.

New Medical Organization.—Physicians of Beechview, West Liberty, Brookline, Dormont and Mt. Lebanon met in Dormont, April 22, and organized the South Hill Medical Association which will eventually become a branch of the Allegheny County Medical Society. Dr. Chauncey L. Palmer, Mt. Lebanon, was elected president, and Dr. John L. Steffy, Brookline, secretary.

Personal.—Dr. John F. Norris, for several years superintendent of the Somerset Home and Hospital, has resigned to accept a similar position in a hospital in the West.——Dr. James F. Trimble, Greensburg, has been appointed medical director of Westmoreland County.——Dr. Clare B. Kirk, Mill Hall, has been made chief of the tuberculosis dispensary at Lockhaven.——Dr. John B. Critchfield, Lockhaven, has been appointed state medical supervisor of the state department of health, succeeding Dr. John Herbert Waite, Flemington, resigned.

Commission to Advise on Legislation Relative to Insanity.—The last legislature of Pennsylvania created a commission to revise and codify the laws relating to the insane and feebleminded. The commission appointed includes: Hon. Isaac Johnston, Media; Drs. Owen Copp and Charles Frazier, Philadelphia; Dr. Theodore Diller, Pittsburgh, and Daniel Herr, Esq., Harrisburg. The commission organized in Philadelphia, April 24, and at that time Judge Johnston was chosen chairman of the commission and its work was outlined. The commission desires to hear from any person suggestions affecting the matters within its scope.

Philadelphia

Personal.—Dr. Asa Copeland has been appointed outdoor physician in the bureau of health.——Dr. James M. Anders has been elected president of the Pennsylvania Society for the Prevention of Tuberculosis.

Drunkenness Statistics.—The arrests for drunkenness in April were 66 per cent. more than for January, February and March, according to Superintendent of Police Mills. For the first three months of the year the average was twenty-four arrests a day, but in April this number rose to forty. For the same period in 1919, the arrests averaged ninety-eight daily. From July 1 until December 31, 1919, the total number of arrests for drunkenness was 6,499, while for the same six months in 1918, the arrests totaled 20,162.

SOUTH CAROLINA

State Board Members Named.—At the annual meeting of the South Carolina Medical Association the following were elected members of the State Board of Medical Examiners: Drs. Joseph T. Taylor, Adams Run; Josiah S. Matthews, Denmark; Frank M. Lander, Williamston; Baxter M. Haynes, Spartanburg; Joseph Roddey Miller, Rock Hill; Julius H. Taylor, Columbia, and George B. Edwards, Darlington; at large, Dr. A. Earle Boozer, Columbia.

New Officers.—At the annual meeting of the South Carolina Medical Association held in Greenville, April 20-21, under the presidency of Dr. Ebenezer W. Pressly, Clover, Columbia was selected as the place of meeting for 1921, and the following officers were elected: president, Dr. Washington P. Timmerman, Batesburg; vice presidents, Drs. William A. Boyd, Columbia, and William W. Fennell, Rock Hill; secretary-treasurer, Dr. Edgar A. Hines, Seneca (reelected).

TEXAS

Women's Auxiliary Organized.—An auxiliary to the Washington County Medical Association has been organized by the wives of the members and the following officers have been elected: president, Mrs. Walter F. Hasskarl, Brenham; vice president, Mrs. John W. Tottenham, Jr., Brenham; secretary, Mrs. Oliver S. Moore, Burton, and treasurer, Mrs. Waldo A. Knolle, Brenham.

Personal.—Dr. Edgar L. Gilcreest, Dallas, has returned after two years' service overseas as Major, M. C., American Expeditionary Forces, and has accepted a position in the department of surgery of the University of California, and has moved to San Francisco.——Dr. Otto F. Schoenvogel, Brenham, has been appointed local surgeon for the Houston and Texas Central Railroad, succeeding Dr. Thomas J. Pier, resigned.——Dr. Isaac A. Withers has been appointed city health commissioner of Fort Worth, succeeding Dr. Webb Walker, resigned.

New State Officers.—At the fifty-fourth annual meeting of the State Medical Association of Texas, held in Houston, April 22 to 24, under the presidency of Dr. Robert W. Knox, Houston, Dr. Ira C. Chase, Fort Worth, was elected president to fill the vacancy caused by the death of Dr. Thomas T. Jackson, San Antonio; Dr. Thomas J. Bennett, Austin, was made president-elect; Drs. William S. Miller, Estelline, and Walter Shropshire, Yoakum, were elected vice presidents. Drs. Joseph C. Bloodgood and Lewellys F. Barker, both of Johns Hopkins University, delivered the addresses in surgery and medicine, respectively. Dallas was selected as the next place of meeting.

CANADA

Personal.—Major Fred J. Colling, Toronto, has been awarded the Order of the British Empire for valuable services rendered with the C. E. F. in Siberia. He was for a time senior medical officer to the British Mission in Siberia.

Societies to Meet.—The congress of the Canadian Public Health Association will be held in Vancouver during the week of June 21, under the presidency of Dr. Henry E. Young, Victoria, B. C. During the same week the Canadian Medical Association will hold its annual meeting.

New Medical Organization.—At a meeting of medical men of Ontario engaged in psychiatric work, held April 28, in the Rockwood Hospital for the Insane at Kingston, Ont., it was decided to form the Ontario Medico-Psychological Association. The objects of this organization will be to promote greater interest in nervous and mental cases, social welfare work and defective children, as well as greater care in the selection of immigrants. The following officers were elected: president, Dr. Edward Ryan, superintendent of the Rockwood Hospital for the Insane, Kingston; vice president, Dr. Harvey Clare, medical director of the Ontario Mental Hospital, Toronto; secretary, Dr. Clarence M. Crawford, Ontario Hospital, Whitby; executive committee, Drs. Walter M. English, Hamilton, Goldwin W. Holland, Charles K. Clarke and Robert G. Armour, Toronto, and Nelson H. Beemer, Mimico.

Work of Nova Scotia Red Cross.—The public health course for nurses, organized under the auspices of Dalhousie University, Halifax, in cooperation with other welfare organizations of Halifax, and financed by free scholarships granted by the Red Cross, is to be supplemented by the organization of two traveling clinics. Col. Frank V. Woodbury will devote his entire time to organization of staffs and to the details and equipment of transport for the two traveling clinics that are to go throughout the province during July and August. Trained specialists will accompany these clinics, who will be prepared with outfits and equipment for the removal of tonsils and adenoids and the correction of other remediable defects found in schoolchildren. A dentist with chair and outfit is also included, a tuberculosis specialist, an eye specialist, a nursing corps to assist physicians in their work and to do social service work. The entire personnel will aim to cooperate closely with the local members of the medical profession. The plan also contemplates the transportation of facilities for impressing sanitary lessons, such as educational moving picture films and graphic lessons by projecting lanterns and trained lecturers.

GENERAL

Psychologists to Meet.—The American Medico-Psychological Association will hold its annual meeting at the Hotel Statler, Cleveland, June 1-4, under the presidency of Dr. Henry C. Eyman, Massillon, Ohio.

Research Institute of Baking.—By cooperation between the American Association of the Baking Industry and Dunwoody Institute, Minneapolis, the American Institute of Baking is to be operated at the Dunwoody Institute for three years. The purpose of the institute is to investigate with scientific precision questions relative to the materials and processes used in baking and to cooperate with other organizations in

solving such problems as bakery sanitation, the health of bakery workers, nutritional value of bread and the adoption of valuable dietaries.

Bequests and Donations.—The following bequests and donations have recently been announced:

Jewish Hospital, $10,000 for the endowment of a room in memory of himself and wife, and Mount Sinai Hospital, Philadelphia, $30,000, and Jewish Sanatorium, Eaglesville, $10,000 by the will of Herman Praeger.

Children's Homeopathic Hospital, Philadelphia, $18,000, Hahnemann Hospital, Philadelphia, $30,000, for the endowment of six beds, and $102,000 to be divided between four institutions among which are the Home for Consumptives of the Protestant Episcopal Mission and Home of the Merciful Savior for Crippled Children, by the will of Adeline L. Albright.

Episcopal Hospital, Philadelphia, endowment of a hospital bed as a memorial for members of the order who died during service in the World War by the Order of Sons and Daughters of St. George.

Children's Memorial Hospital, Chicago, $62,500 by the will of Mrs. Frances H. Mason.

Holds Bogus Diplomas.—Reports published recently in medical journals in Spain state that a "doctor" by the name of José Luis Blanco of Boston does not legally possess the educational qualifications claimed by him. A report states that he first appeared in Spain, claiming to hold a medical diploma from the "University of Philadelphia." The medical society of the town of Orense, where he settled, became convinced that he was not a regularly graduated physician. They discovered that he had practiced in Boston where he claimed to be a graduate of the University of Valladolid, Spain, although reports from that university say that a medical degree had never been conferred on him. A communication from Dr. Walter Bowers of Massachusetts states that about three years ago an investigation of this "doctor" was begun, but that he left the state and has not been heard of since. It is further reported that Sept. 12, 1914, Blanco was convicted in a Boston court and fined $75 for nonsupport of his wife and two children.

European Physicians Tour America.—A group of eminent European physicians are making a tour of the United States as guests of the National Medical Examining Board. The party consists of Sir Humphry Davy Rolleston of the Royal College of Physicians, London; Col. Holburt J. Waring, Royal College of Surgeons of England, representing the conjoint board of England; Dr. Norman B. Walker, Edinburgh, representing the triple qualification board of Scotland; Prof. G. Roussy and Professor Demorest, representing the Faculty of Medicine of Paris, and Prof. James C. Connell, Kingston, Ont., president of the Dominion Medical Council, Canada. The object of this tour is not only that the members may become acquainted with the members of the profession of this country, but also that they may look into the status of medical education, medical standards, etc., especially. The group were present at the meeting of the Association of Military Surgeons of the United States and at the annual session of the American Medical Association.

FOREIGN

Prize for Prosthetic Appliance.—The Instituto Ortopedico Rizzoli of Bologna offers a prize of 3,500 lire for the best orthopedic work or invention. This is the Umberto I prize, and is open to physicians of any land. For further details address the president of the institute at Bologna. Competition closes Dec. 21, 1920.

Conference on Tuberculosis in the Northland.—The *Norsk Magazin for Lægevidenskaben* announces that the First Tuberculosis Conference of the Northland is to meet at Stockholm, June 28 to 30, this year. Among the subjects to be discussed are the present and desirable laws referring to the tuberculous; management of the convalescent stage, occupation and colonies; laryngeal tuberculosis, and surgical treatment of pulmonary tuberculosis, including artificial pneumothorax.

Infant Welfare Exhibition in India.—A maternity and infant welfare exhibition was held in Delhi, India, in February at which the proper care of mothers and babies was shown by means of models, charts, slides, pictures, leaflets, lanterns, etc., and prematernity, maternity, infant welfare, childhood, domestic science, hygiene, first aid and home nursing topics were discussed. A public show was also held at which more than 2,000 babies were presented. The exhibition lasted for one month and thousands of women from every part of India were in attendance.

Public Health Congress.—Under the auspices of the Royal Institute of Public Health, a congress on public health will be held in Brussels, May 20 to 24, under the patronage of King Albert of Belgium. The honorary chairman is Dr. Theophilus J. Kelynack, 37 Russell Square, London, England, and the president is Lord Leverhulme. The congress will be divided into six sections with the following chairmen: state medicine, Dr. J. de Moor; naval, military, tropical and colonial, Gen. O. Wibin; municipal hygiene, F. Hachez; industrial hygiene, Dr. E. Malvez; hygiene and women's work, Dr. D. Gilbert, and bacteriology and chemistry, Drs. Bordet and F. Ranwez.

Foundation of the Cajal Institute at Madrid.—The *Progresos de la Clínica* of Madrid gives the royal decree establishing the Instituto Cajal as a center for scientific research in different branches of biology, and to prepare students to carry on research in other countries. The institute is also to offer facilities to a limited number of foreign research workers, especially those from Latin America, and will invite foreign professors to lecture on their specialties. The new institution will include the laboratories already installed in 1901 for biologic research and the laboratories maintained by the Junta para ampliación de estudios equipped for research on experimental physiology, neuropathology and histology. A new building is planned and the whole will form part of the Instituto Nacional de Ciencias.

Red Cross Council.—At the first general council of the League of Red Cross Societies held in Geneva, Switzerland, March 2 to 8, in the Salle du Grand Conseil of the City Hall, Geneva, twenty-seven of the thirty societies in the council were represented, India, South Africa and Uruguay failing to send representatives. The board of governors was increased by the addition of representatives from Argentina, Australia, Spain, Sweden and Switzerland for a period of four years, and Belgium, Brazil, Canada, Denmark and Serbia for a two-year period. Dr. A. Depage of the Belgian Red Cross was elected chairman of the newly formed medical section of the council and Mr. Willoughby G. Walling, vice chairman of the American Red Cross, was elected chairman of the organization section. The medical section discussed child welfare, tuberculosis, communicable diseases, nursing, medical information, sanitation, vital statistics, social hygiene, malaria, libraries and public health laboratories. Drs. Richard P. Strong, general medical director of the league, and A. Depage of the Belgian Red Cross were appointed medical representatives of the formulating committee to which was submitted the conclusions of the two new sections.

The International Surgical Congress.—It is announced that the Fifth Congress of the International Surgical Association is to be held at Paris, July 19 to 23, 1920, and the addresses on cardiovascular surgery are to be delivered by Tuffier of Paris on the heart; by Sencert of Strasbourg on the large vessels; Jeanbrau of Montpellier on transfusion of blood, and by Alessandri of Rome on the heart and large vessels. The second topic for discussion is surgical radiology, and Régaud of Paris and N. S. Finzi of London will open the subject of treatment of tumors with roentgen and radium rays. The subject of surgical hematology is to be opened by Depage and Goovaerts of Brussels whose address is entitled "Analysis of the Blood and the Biologic Reactions in Surgical Affections." Fractures of the thigh is the fourth topic, and the discussion is to be opened by Patel of Lyon and Major Maurice Sinclair of Fairport. Tetanus, the fifth topic, has been assigned to Donati of Modena and Commins of London. The addresses will be published in time for them to be discussed understandingly. A seven day excursion to the battle fields in France and Belgium is planned (815 francs per person). The notice in our French exchanges adds that the American speakers had not been appointed at the date of writing. The address of the Secrétariat is 72 rue de la Loi, Brussels.

Deaths in Other Countries

Dr. **Hector Treub,** professor of gynecology and obstetrics at the University of Amsterdam, founder of the Netherlands journal for these specialties, co-editor of the *Geneeskundige Bladen* and frequent contributor to other journals, textbooks, etc., aged 64. The list of his works fills a page in the Surgeon-General's Catalogue.——Dr. **D. Schwabach,** the otologist of Berlin noted for his time test of hearing by air conduction and bone conduction, aged 73.——Dr. **E. Schwalbe,** director of the pathology institute at the University of Rostock, was shot during the recent rioting there, aged 49.——Dr. **V. de la Guardia y Madan,** a prominent physician, statistician and medical journalist of Cuba, chief of the vaccine service, aged 70.——Dr. **W. Kempner,** formerly assistant at the Institute for Infectious Diseases at Berlin, author of works on trypanosomiasis, and, with his wife, Dr. Lydia

Rabinowitsch-Kempner, of works on tuberculosis, aged 50. ——Dr. **Victor Santos**, professor of hygiene at the University of Valladolid.——Dr. **N. Zuntz**, director of the institute for study of animal physiology at Berlin, and author of numerous works on comparative physiology, aged 73.——Dr. **A. Neumann**, surgeon to the Friedrichshain Hospital at Berlin, succumbed to lethargic encephalitis, February 21, aged 54.——Dr. **F. Hermann**, professor of anatomy at Erlangen, aged 61.——Dr. **H. Strahl**, professor of anatomy at Giessen, aged 63.——Dr. **E. I. Rosenthal**, professor of internal medicine at Copenhagen, aged 69.

LATIN AMERICA

Department of Radiology in Cuba.—There has been created a department of radiology in the University of Havana, which, for the time being, will be installed in the Hospital Calixto García.

National Laboratory at Santo Domingo.—The municipal council of Santo Domingo has agreed to transfer to the national department of health the municipal laboratory for reorganization as a national laboratory.

School for the Blind in Mexico.—The School for the Blind of the City of Mexico completed its fiftieth anniversary, March 24. The school was founded by Ignacio Trigueros, who also founded a school for the deaf and dumb.

Superior Council of Health in Costa Rica.—The president of Costa Rica has just appointed a superior council of health consisting of three members. The first appointees are Dr. Luciano Beeche, Dr. Carlos Durán and José Maria Soto.

Narcotic Legislation in Santo Domingo.—A recent law enacted in Santo Domingo prohibits the trade in narcotic drugs, and makes it illegal to import, produce, compound, sell, distribute or possess opium or any of its derivatives or synthetic substitutes for opium. The law does not apply to preparations containing less than 2 grains of opium, ¼ grain of morphin, or ⅛ grain of heroin.

Rural Sanitation in Brazil.—An exhaustive report of the rural sanitation work accomplished in the State of Paraná, Brazil, has just been published. The report embraces over 300 pages and has over a hundred illustrations, maps, etc. The work was conducted in cooperation with the Rockefeller foundation; and during the period from September to December, 1919, there were examined by the commission in charge of the work 6,103 individuals, 96.6 per cent. of whom were found infected with some kind of intestinal parasites. A total of 22,679 treatments were furnished, 2,402 homes inspected and thirty-eight lectures given in addition to 6,425 persons vaccinated and 218 malaria cases treated. Dr. H. C. de Souza Araujo is the chief of the federal sanitary commission in charge of this work, which, in its present form of cooperation between the state and the federal government, began in September, 1918.

Vital Statistics of Uruguay.—The department of public health of Uruguay has just published the morbidity and mortality report for the years 1913-1916. It embraces only the reports of cases and deaths due to communicable diseases. During the year 1916 the number of cases of communicable diseases reported in the whole country amounted to 6,818, the number of deaths to 2,641, and the total number of deaths reported to 20,338; the general death rate per thousand of inhabitants was therefore 14.75 during the year 1916. During 1915 the total number of deaths was 16,602, the number of deaths for infectious diseases was 2,008, and the mortality rate per thousand inhabitants 12.33. During the year 1914 the total number of deaths was 15,350, the number of deaths for infectious diseases 1,827, and the mortality rate 11.66 per thousand. During the year 1913 the total number of deaths was 15,374, the number of deaths from infectious diseases 1,721 and the mortality rate 12.01 per thousand. During the year 1913 there were reported 11 cases and 5 deaths from leprosy, 9 cases and 2 deaths from plague and 12 deaths from beriberi; in 1914, 9 cases and 2 deaths of leprosy, 2 cases of plague and 22 cases and 2 deaths of beriberi; during the years 1915, 10 cases and 9 deaths from leprosy, 1 case of plague and 1 case of beriberi; and during the year 1916, 6 cases and 11 deaths of leprosy, 7 cases and 2 deaths from plague and 6 cases of beriberi. The number of deaths for tuberculosis was 1,329 in 1913, 1,540 in 1914, 1,604 in 1915, 1,982 in 1916. No mention is made in the report of how complete these statistics are, nor is any attempt made to explain the comparative increase of the mortality and morbidity in recent years.

Government Services

Marine Hospital Improvements

The Sundry Civil Bill contains provisions for the remodeling of the Marine Hospital at Boston and the erection of medical officers' quarters. There is an appropriation of $67,700 for this purpose in the bill.

The sum of $23,000 is appropriated for remodeling the boiler plant and power house at the Marine Hospital at Fort Stanton, New Mexico; $43,000 is appropriated for an additional hospital ward at the Marine Hospital at Savannah, Ga.

Health Conditions of the Army

There was a moderate increase in the admission rate for sickness, attributable to general causes, during the week ending April 23. Fifty-eight cases of measles were reported, seventeen of these from Camp Taylor, but no other epidemic disease was unusually prevalent. Of thirteen deaths from disease, ten were due to tuberculosis, explained by the fact that many cases of this disease are under treatment in the hospitals as an aftermath of the war. Conditions in the American Expeditionary Forces in Germany are excellent, nine admissions for influenza representing the greatest number of cases of any one epidemic disease.

Medal Awarded

The Distinguished Service Medal has been awarded to Lieut.-Col. Walter C. Montgomery, Medical Corps, U. S. Army, New York City, for exceptionally meritorious and conspicuous service.

"He served with marked distinction as division surgeon of the Twenty-Seventh Division; when confronted with a shortage of personnel he displayed marked initiative and resourcefulness in organizing additional sanitary personnel. During the action along the Hindenberg line, September 25 and 30, by his high professional attainment, sound judgment, and loyal devotion to duty, he so conducted the personnel at his disposal as to provide successfully for the evacuation of 4,000 casualties in four days."

Appropriation for Medical History of War Refused

The House Committee on Appropriations has refused to provide for the publication of the medical and surgical history of the World War. The Surgeon-General of the Army made request that $150,000 be set aside for the study of the problems of hygiene, medicine and surgery which were involved in the medical care of the Army, based on the knowledge and observations of physicians who guarded the health of our soldiers. The policy of retrenchment in government expenditures is given as the reason for the omission of this appropriation from the Sundry Civil Bill recently reported to the House of Representatives.

Medical Officers in Pay Bill

Medical officers of the Army, Navy and Public Health Service receive substantial increases in pay by the Army and Navy Pay Bill which has passed Senate and House. The following increases are authorized: colonels in the Army, captains in the Navy, and assistant surgeon-general in the Public Health Service, $600; lieutenant-colonels in the Army, commanders in the Navy, and senior surgeons in the Public Health Service, $600; majors in the Army, lieutenant-commanders in the Navy, and surgeons in the Public Health Service, $840; captains in the Army, lieutenants in the Navy and passed assistant surgeons in the Public Health Service, $720; first lieutenants in the Army, lieutenants, junior grade, in the Navy, and assistant surgeons in the Public Health Service, $600; second lieutenants in the Army and ensigns in the Navy, $420; contract surgeons of the Army serving full time will receive the pay of second lieutenants. These increases will be retroactive to Jan. 1, 1920.

Provision is also made for granting commutation of quarters, heat and light for officers of the Navy and Public Health Service as are now granted to commissioned officers of the Army. These benefits are made effective until June 30, 1922.

Provision is also made for transportation at government expense for the wife and dependent children of an officer of the Army, Navy and Public Health Service when such officer is ordered to make a permanent change of station.

Appropriations for Health in Sundry Civil Bill

Under the Sundry Civil Bill, $46,000,000 is made available for medical and hospital services for beneficiaries of the Bureau of War Risk Insurance; $4,000,000 for medical services and supplies for beneficiaries of the Public Health Service other than War Risk Insurance patients; $355,000 for the prevention of epidemics, including smallpox, influenza and infantile paralysis.

The powers and duties of the Interdepartmental Social Hygiene Board are extended. This board was originally created in 1918 as a war measure, to fight venereal disease in the Army and Navy. The Sundry Civil Bill appropriates $1,015,000 for the continuance of the activities of this board under the direction of Dr. Thomas H. Storey, executive secretary. Of this sum, $80,000 is for administrative expenses; $150,000 for assisting the states in protecting the military and naval forces against venereal diseases; $450,000 to be allotted to the states for the prevention, treatment and control of venereal diseases; $85,000 for payment to universities and other like institutions to discover more effective medical measures to prevent and treat such diseases; $250,000 to universities and other organization to develop educational measures for their prevention. The provision is made that such university or organization shall itself first expend a sum twice as large as that received from the federal government.

MEDICAL OFFICERS, UNITED STATES NAVY, RELIEVED FROM ACTIVE DUTY

ALABAMA
Mobile—Rowe, J. F.

CONNECTICUT
New Haven—Hoegen, J. A.

FLORIDA
Williston—Freeman, G. C.

ILLINOIS
Chicago—Welch, P. B.

KENTUCKY
Louisville—Caldwell, C. N.

MASSACHUSETTS
Salem—Chisholm, L.
Worcester—French, L. M.

PENNSYLVANIA
Philadelphia—Stull, H. T.

Foreign Letters

LONDON April 16, 1920.

A Medical Research Council

From time to time, the important work of the Medical Research Committee (a body formed under the National Insurance Act to direct medical researches and for which a grant of money was made) has been reported in THE JOURNAL. The government has decided to transform this committee into a new body, termed the Medical Research Council, with an enlarged sphere of duty and with considerably enhanced responsibilities. The council will carry out its functions under a committee of the Privy Council, whose constitution will be the lord president of that body, the minister of health, the secretary for Scotland, and the chief secretary for Ireland, the latter ministers having ex-officio charge of the health of their divisions of the United Kingdom. The Medical Research Council thus becomes a permanent subcommittee of the Privy Council, and under its governing body can enter into all contracts, can hold personal property, and can dispose of this, including parliamentary grants. The Medical Research Council thus obtains direct access to the ministers directly associated with its work; there will be no intervention of any permanent official when the Medical Research Council wishes to urge any measures on those in supreme charge of the health of the United Kingdom. Another point is that the advice of the Royal Society is to be taken in respect of the personnel of the council. The first council consists of the existing Medical Research Committee, and is thus constituted: Mr. C. J. Bond, F.R.C.S., consulting surgeon to Leicester Infirmary; William Bulloch, F.R.S., professor of bacteriology in the University of London; Dr. T. R. Elliott, F.R.S., physician to University College Hospital; Hon. William Graham, M. P.; Viscount Goschen; Dr. Henry Head, F.R.S.; Gowland Hopkins, F.R.S., professor of biochemistry in the University of Cambridge; Sir William Leishman, F.R.S., director of pathology, Army Medical Service; Noel Paton, F.R.S., professor of physiology in the University of Glasgow, and Hon. E. F. Lindley Wood, M. P. Three members of the council will retire at intervals of two years, and appointments to their vacancies, or to any other vacancies that may casually arise, are to be made by the supervising committee of the Privy Council after consultation with the existing body itself, and with the president of the Royal Society.

The International Health Council

Dr. Addison, minister of health, presided at a luncheon given by the government to the members of the International Health Council. The council was formed, at the suggestion of the ministry of health, to discuss a scheme for the establishment of a health section of the League of Nations. Several meetings have been held in London, and a draft scheme has been agreed on, which will be submitted for approval to the League of Nations. Six countries were represented: America (Surg.-Gen. Rupert Blue), France, Great Brittain, Italy, Japan and Poland. The chairman said that a draft constitution had been agreed on, and he hoped that the council would be able to agree primarily on it in a day or two. He hoped the council would do everything possible to promote research of an international character. They were at the beginning of what would prove to be one of the most useful branches of the League of Nations, the stability of which would depend largely on the extent to which it helped to promote the well-being of the different peoples in the world. In that respect the International Health Council would be one of its most important branches.

New Hospital System for Paying Patients

In the *British Medical Journal* is described the foundation at Birmingham of St. Chad's Hospital, an institution for paying patients which is quite novel in this country. A company was formed. It was agreed that the institution should not be advertised in any way and that no patients should be admitted except on the recommendation of a member of the medical staff, and on conditions laid down by the Medical Committee. Patients are divided into two classes: those who pay a composition fee, and ordinary patients. The former receive nursing, home accommodations and all professional attendance, and constitute 90 per cent. of the total admissions. The "composition system" is illustratetd by these examples: "C. D., suffering from chronic appendicitis, is accepted for an inclusive charge of $105. This covers the cost of the operation, the anesthetic, and three weeks' stay in the hospital. The anesthetist receives a direct payment of $5 from the inclusive fee." "G. H. is admitted with obscure gastric symptoms and stays in the hospital four weeks for a composition charge of $160. His case requires full investigation, and may call for a consultation between a physician and surgeon, a roentgen-ray examination, and subsequent operation. The cost is covered by the single inclusive payment." The medical staff consists of twenty-three members, each of whom is a consultant and a member of the staff of one of the Birmingham hospitals. An important point is that each member of the staff has the right to call on any other member for consultation in the case of a "composition" patient without fee.

Sex Education and the Birth Rate

The National Birth Rate Commission, whose report will be presented to the prime minister this month, has been reconstituted to continue its inquiry. The terms of reference include consideration of the development and education of

young citizens for worthy parenthood, under the following heads: 1. The various methods of educating boys and girls in sex hygiene before they leave the home and school, and the extent to which graded instruction in sex matters can be usefully given by parents, schoolteachers, ministers of religion, physicians and others. 2. Those influences and conditions which favor or retard the bodily and mental development of the adolescent citizen, so far as these are concerned with the attainment of worthy parenthood. 3. The extent to which worthy ideals of citizenship and parenthood can and should be inculcated by education in its widest sense. Other matters included in the terms of reference are the influence of various industrial occupations on the birth rate; the housing problem; schemes for the "endowment of motherhood" and widows' pensions; problems of migration within the Empire; new discoveries in dietetics; the relation of religious belief to the birth rate; the 1921 census, and the coordination of inquiries in Great Britain and the dominions with those in France, the United States and other countries.

PARIS

April 1, 1920.

Death of Prof. Felix Garrigou

Dr. Felix Garrigou, professor of hydrology at the Faculty of Medicine of Toulouse, died recently at the age of 85. He devoted all of his activities to a study of French mineral waters and to the improvement of our thermal resorts. He was the sole representative of teachers of hydrology in France, for the faculty of Toulouse is the only one with a chair in hydrology. Before the war, this instruction was completed each year by a scientific excursion to one of the hydrologic centers of France.

Recognition of American Services by the Academy of Medicine of Paris

At the meeting of the Academy of Medicine, March 23, Professor Letulle of the Faculty of Medicine gave a very instructive account of the importance of the services rendered to France by the American Red Cross campaign against tuberculosis, during the twenty-two months of its activity (from September, 1917, to July, 1919). The figures of the pledged funds alone, sixteen million francs, indicate the large scale on which the campaign was conceived. Following this address, the Academy of Medicine, on the proposal of Professor Vincent, adopted the following resolution:

"The Academy of Medicine, after hearing the report of Professor Letulle, expresses recognition and gratitude to the American Red Cross for the great services which it rendered to France during the war by the campaign against tuberculosis."

In previous letters (THE JOURNAL, Dec. 6, 1919, p. 1782; Jan. 31, 1920, p. 338) mention has been made of the services of the Rockefeller Commission in aid of the campaign, especially by its educational tours in the provinces. The Academy of Medicine also desired to associate this commission in the tribute to the American Red Cross, and on motion of Dr. Netter, adopted the following resolution:

"The Academy of Medicine is happy to take this occasion to thank the American Commission for the Prevention of Tuberculosis for the services which it has already rendered and continues to render to France."

Institute of Optics

Mention has previously been made of the creation of an institute of theoretic and applied optics, destined to revive in France the manufacture of optical instruments and optical glass. The institute will start its lectures on advanced optics, April 12. M. Dunoyer, doctor of science, will deliver a course on optical instruments, and M. Chrétien, the astronomer, will conduct the course on calculation of optical combinations. In addition, lectures will be given by M. A. de Gramont on spectroscopy, by M. Appert on the nature and applications of glass, by M. Cotton on the significance of polarized light, by M. Mouton on the microscope and its use in biology and natural science, and by M. de Broglie on the properties of roentgen rays and gamma rays.

Commission on School Hygiene and Physical Education

M. Honnorat, minister of public instruction, has just formed a commission on school hygiene and physical education. The purpose of the commission is an immediate study for early application of the appropriate measures for improving the sanitary conditions of public schools, for combating the diseases of teachers and pupils, especially tuberculosis, for assuring methodical development of the body, and for encouraging and making practical physical exercise and outdoor sports. Among others, Drs. Langlois and Léon Bernard have been appointed members of the commission.

Confederation of Intellectual Workers

Under this name, there is being formed a confederation open to all associations of intellectual workers, for the purpose of representation, coordination and defense of the interests of all those who derive their principal means of existence from intellectual and mental work.

Increasing the Birth Rate

The National Alliance for Increasing the Birth Rate of France recently submitted to all members of the chamber of deputies a scheme of allowances for large families, including these essential clauses: 1. Every head of a family of French nationality, having in charge more than two legitimate or acknowledged children under 13 years, shall receive for the third child an annual allowance of 360 francs, for the fourth 480 francs and for each additional child 600 francs. 2. Children from 13 to 16 years of age, for whom the head of the family has entered into a written contract of apprenticeship, or who, having completed their primary education, devote their activities exclusively to studies at a public educational institution at the expense of their parents shall be considered as children under 13 years.

MEXICO CITY

April 25, 1920.

The Sixth Mexican Medical Congress

As previously announced, the Mexican Medical Congress met at the City of Toluca, April 14-21, and it was a complete success, not only because of the number of physicians present, but also because of the quality of the papers submitted, the number of associations represented, and the resolutions adopted. It would be impossible to summarize in a letter the work accomplished, and I will therefore only mention the papers which attracted most attention.

SUBJECTS DISCUSSED

In Section I the most important papers were Dr. Ocaranza's study of the physiology of the spleen, and Dr. T. López's on the mechanism of phonation; in Section II, Dr. J. J. González's on a new case observed in Mexico of the exotic disease known as "anakhre" or "goundou"; Dr. López Bonaga's on the palliative treatment of epilepsy by intraspinal injections of stovain, and Dr. Perrín's on the Weil-Felix reaction in typhus fever, this paper being illustrated with lantern slides. In the ten cases studied by this author, the blood from typhus fever patients agglutinated the proteus

X 19, while, when the blood serum was normal or from typhoid fever patients, it did not agglutinate the culture. Should these results be confirmed by other investigators, this would strengthen the belief of some clinicians as regards the identity of the Mexican tabardillo with the petechial typhus observed in Europe. Dr. Arroyo discussed the Lange reaction, presenting a summary of 150 cases. Dr. Cicero discussed the present status of our knowledge of the treatmnt of leprosy, and three members discussed the treatment of syphilis, one of them, Dr. C. Barriere, of Guadalajara, stating his agreement with what we may call the conclusions of the French school—choice of neo-arsphenamin over arsphenamin, nonuse of mercury when arsenicals are employed, and making the treatment chronic and intermittent. From his several years of practice, another speaker advocated the conclusions held by the American school, which seem, as also those of German specialists, to prefer arsphenamin (considering neo-arsphenamin as a less active spirocheticide) and its use together with mercurials, trying in the early cases to obtain a radical cure, which is considered possible in view of the numerous cases of reinfection reported recently. Mention was made of the recent work of A. Knauer of Würzburg, who injects 45 cg. of arsphenamin in the internal carotid for the treatment of general paresis, and stress was laid on the need of controlling the therapeutic results by means of serologic observations. Another paper described the experience of Dr. F. Robles, who, in the Hospital Morelos (for prostitutes), has employed arsphenamin injections in much greater strength than usual, up to 1.2 gm. He has had two deaths in his series of 800 injections, the former occurring in cases in which no large doses were used.

Drs. Fausto Vergara of Tampico and Camarillo of Puebla discussed venereal prophylaxis, the first recommending the creation of a national association, somewhat similar to the American Social Hygiene Association, but resorting also to the use of specific treatment, while the second advocated reglementation and urged more scientific treatment of prostitutes, recording in their carnets (record books) not only the present status of their health, but also the results of the Wassermann reaction. Dr. Eliseo Ramírez discussed hereditary syphilis, demonstrating that recently there have been included in this group two classes of children—those who have inherited the infection and those who, while not actually infected, suffer from a hereditary dystrophy. Dr. D. Manuel Vergara, of Puebla, is inclined to believe that Malta fever is prevalent in his city, as shown by his observations, and cultures and inoculations he has made in goats. Dr. Ernesto Cervera discussed the Ronchez reaction, a modification of the Wassermann test recently proposed in France, concluding from his eighty cases that, in general, the modification should not be accepted, as while not more sensitive or specific than the original, its technic is more complicated. Dr. García Rendón presented a monograph on Noguchi's *Leptospira*, claiming to have reproduced the leptospirosis in guinea-pigs, as done elsewhere by Noguchi. Dr. Demetrio López reports that he has obtained good results with Daniélopolu's treatment for typhus fever. The last papers presented in this section were by Drs. Alberto Oviedo of Morelia, who thinks he has found a new germ in the blood of typhus fever patients, which he calls *Leptonema;* Manuel Pérez Amador, who compared the results of the fixation of the complement in syphilitic and normal cases, and Vergara, who described the dengue epidemic at Tampico. In the Section on Pharmacology and Therapeutics, mention must be made of Dr. Bulman's study on saccharose, Dr. Gilberto Cicero's paper on blood transfusion, and the address by the pharmacist Donaciano Morales, who attacked the favor shown "patent medicines."

OTHER PAPERS AND PROCEEDINGS

In the Section on Surgery, papers were presented by Dr. Castillo Nájera on the treatment of spermatocystitis through the catheterization of the ejaculatory ducts, and by Professors Ulises Valdés and Malda on surgical technic. In the Section on Ophthalmology there were discussed the action of tuberculin on the eye, the early treatment of glaucoma; cataract extraction by Barraquer's technic; spinal puncture in the treatment of optical neuritis; syphilis as a factor in the ocular complications of typhus fever and influenza, etc. In the Section on Gynecology and Obstetrics, the following papers attracted attention: Dr. U. Valdés', on the differential diagnosis of appendicular and uterine peritonitis; E. Landa's, on occurrence of vertex presentations in Mexico; Dr. Ramírez,' on ovarian sclerosis, and Dr. Castañeda's, on criminal abortion in Mexico. Dr. Bonansea presented a paper on the diseases of the cow's udder, and Dr. Pruneda on public health propaganda. In the legal medicine section, Mr. Demetrio Sodi and Drs. García discussed the legal classification of lesions, and Mr. José Torres Torija legal anthropometry.

In the general sessions, Dr. Terrés, the president of the congress, discussed the need of confining medical practice to one branch of medical science to obtain the best results, although without neglecting the study of the others. Dr. Amor, dean of the School of Medicine, discussed sclero-polycystic ovaritis, and finally Dr. Perrín presented a paper on phagocytosis, illustrated with lantern slides.

Both the federal and local authorities, as well as the local medical society, did everything in their power to make the meeting a success. While the papers presented were not very original, it was seen that an effort was being made to keep in touch with modern developments in medicine.

Among other resolutions the congress adopted the following recommendations: creation of a course in public health in the University of Mexico; establishment of laboratories for diagnostic and research purposes; restrictions on the selling of secret "patent medicines," identical with those on narcotics; employment of arsenicals for the treatment of syphilis, especially as a prophylactic measure, and regulation of the practice of medicine in the whole country.

The next congress will meet in 1922 in the city of Saltillo, Coahuila, and will be presided over by Dr. D. M. Vélez. The secretary will be Dr. Everardo Landa, whose address is 4a Calle del Apartado 130, Mexico City.

Marriages

WILLIAM LAURENCE WHITTEMORE, New York City, to the Hon. Ivy Lorna Jervis of Shanklin, Isle of Wight, England, April 22.

HAROLD DOUGLAS LIVINGSTONE SPENCE, Utica, N. Y., to Miss Mary Gladys Davidson of Hampstead, London, Dec. 9, 1919.

CHARLES WHEATLEY, Lieut., M. C., U. S. Navy, to Miss Mary Frances Shane, both of Washington, D. C., April 5.

WALTER HASKELL HARPER, Spartanburg, S. C., to Miss Marie Christena Peterson of Rodney, Mich., April 22.

LYDIA ALLEN DEVILBISS, Topeka, Kan., to Mr. George Henry Bradford of St. Louis, March 29.

GEORGE BOLLING LEE, New York City, to Miss Helen M. Keeney of San Francisco, April 21.

GILBERT MOMBACH, Cincinnati, to Miss Rosalie Eckstein of New York City, April 20.

DUNCAN PARHAM, Rochester, Minn., to Miss Althea Puech of New Orleans, April 21.

ALBERT F. LESLER to Miss Estelle Weiss, both of New York City, April 19.

HUGH CHAPLIN to Miss Virginia Deems, both of New York City, April 17.

Deaths

Henry Martyn Bannister ⊕ neurologist and for many years a member of the editorial staff of THE JOURNAL, died at his home in Evanston, May 1. He was born July 25, 1844, the son of Rev. Henry Bannister, and was graduated from the National Medical College, Washington, D. C., in 1871. He was a member of the party which made the United States Geological Survey of the territories, including Alaska, in 1872, and on his return located in Chicago. He was one of the founders and joint editor with the late Dr. James S. Jewell of the *Journal of Nervous and Mental Diseases,* and co-author with the late Dr. Daniel R. Brower of a textbook on insanity. For several years he was assistant superintendent of the Kankakee State Hospital. He had been an invalid for many years on account of arthritis deformans, but still kept up his literary work so far as he could. He was a man wonderfully well read in medical science, and was learned, not only in his own specialty but in the broad fields of literature and science; a man of delightful personality and beloved by all who knew him.

Sidney Freeman Wilcox, New York City; New York Homeopathic Medical College, New York City, 1880; aged 64; for twenty-two years professor of clinical surgery in the New York College and Hospital for Women, and later emeritus professor; consulting surgeon to the New York Hospital for Women, New York Ophthalmic Hospital, Laura Franklin Free Hospital for Children, Memorial Hospital for Women and Children, Brooklyn; St. Mary's Hospital, Passaic, N. J., Grace Hospital, New Haven, Conn., and Wesson Hospital, Springfield, Mass.; while operating in Thrall Hospital, Middletown, N. Y., April 20, died from cerebral hemorrhage.

Frederick C. A. Kellam, Jr. ⊕ Major, M. C., U. S. Army, Washington, D C.; Atlanta College of Physicians and Surgeons, 1909; aged 38; who was commissioned first lieutenant, Medical Reserve Corps, in 1911; graduated from the Army Medical School, and commissioned lieutenant, M. C., 1912; promoted to captain in 1915, to major in 1917, and to lieutenant-colonel (emergency), Oct. 8, 1918; died in the Walter Reed General Hospital, Takoma Park, D. C., April 5.

Charles Dudley Prescott, New Bedford, Mass.; Dartmouth Medical School, Hanover, N. H., 1867; aged 75; a member of the Massachusetts Medical Society; president of the Bristol County Medical Society in 1888 and 1889; quarantine physician and health officer of New Bedford from 1879 to 1881; from 1873 to 1879 physician at house of correction; a member of the staff of St. Luke's Hospital since 1884; died, March 22.

Henry Leland Akin ⊕ Omaha; John A. Creighton Medical College, Omaha, 1901; aged 47; major, M. R. C., U. S. Army, with two years' service in France, in charge of a hospital at LaRochelle, and discharged July 9, 1919; professor of gastroenterology, and of medicine and clinical medicine in his alma mater; died in his garage, April 20, from the effects of carbolic acid, self-administered, it is believed, with suicidal intent.

Howard A. McDonald, Prairie Home, Mo.; Beaumont Hospital Medical College, 1898; aged 45; formerly assistant secretary of the Missouri State Medical Association, and secretary of the surgical section of that association, and president of the John McDowell Medical Society; who had been a patient at State Hospital No. 3, Nevada, Mo., for several months, died in that institution, April 18.

John Henry Barbat ⊕ San Francisco; University of California, San Francisco, 1888; aged 57; formerly president of the San Francisco Board of Health and in 1918 president of the Medical Society of the State of California; member of the State Board of Medical Examiners from 1894 to 1898; lecturer on surgery in his alma mater; died, April 22.

Omar Adrian Kell, Salem, Ill.; Barnes Medical College, St. Louis, 1900; aged 48; a member of the Illinois State Medical Society; for several years resident neurologist at the Kankakee State Hospital; once mayor of Salem; died in the Missouri Baptist Sanitarium, St. Louis, April 11, from septicemia, due to an infection of the thumb.

Alfred Wharton, St. Paul; University of Pennsylvania, Philadelphia, 1857; aged 84; surgeon of U. S. Volunteers during the Civil War, and surgeon of the Sixth Minnesota Volunteer Infantry during the Indian outbreak of 1862; died at the home of his daughter in St. Paul, April 13.

⊕ Indicates "Fellow" of the American Medical Association.

Francis Achilles Davis ⊕ Chicago; Northwestern University Medical School, Chicago, 1899; aged 45; captain, M. R. C., U. S. Army, and discharged Jan. 20, 1919; formerly assistant professor of medicine in his alma mater, and a member of the medical staff of Wesley Memorial Hospital; died, May 3, from uremia and pneumonia.

William Varian, Buffalo; Pennsylvania Medical College, Philadelphia, 1854; aged 87; major and surgeon of U. S. Volunteers during the Civil War; at one time president of the Medical Society of the State of Pennsylvania; for several years secretary of the Titusville (Pa.) Board of Health; died, April 12.

Arthur Springer Hagan, Uniontown, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1901; aged 41; coroner of Fayette County for two terms; a member of the Medical Society of the State of Pennsylvania, and a member of the local board of education; died, March 31, following an operation .

Charles F. Lynch, Chicago; Bennett Medical College, Chicago, 1913; aged 33; major, M. O. R. C., U. S. Army; formerly district health officer at Aberdeen, S. D.; died in Presbyterian Hospital, Chicago, April 28, from septicemia following an infected wound of the finger.

John Edward Kidd, Wyoming, Ont.; Western University, London, Ont., 1909; aged 40; while driving over a grade crossing in his automobile, March 18, was struck by a train receiving injuries from which he died in Victoria General Hospital, London, March 21.

Christopher P. Linhart, Columbus, Ohio; Western Reserve University, Cleveland, 1882; aged 59; a member of the Ohio State Medical Association, and a specialist in diseases of the eye, ear, nose and throat; city school physician; died, April 15, from pneumonia.

Lewis Jasper Keeling, Atlanta, Ga.; Atlanta (Ga.) Medical College, 1914; aged 27; lieutenant, M. C., U. S. Army, and discharged, Dec. 13, 1918; was instantly killed, April 24, in a fall down an elevator shaft in the building in which he had his office.

Ernest Edgar Beckett, Seattle; Hering Medical College, Chicago, 1895; aged 47; a member of the Washington State Medical Association; captain, M. C., U. S. Army, and discharged Dec. 6, 1918; died, April 9, from cerebral hemorrhage.

Alexander Wallace Aiken ⊕ Chicago; University of Toronto and Trinity Medical College, Toronto, 1895; aged 49; died in the Presbyterian Hospital, Chicago, April 27, from septicemia following an infected wound of the finger.

Walter G. Spiess ⊕ Philadelphia; Medico-Chirurgical College of Philadelphia, 1903; aged 40; a member of the staff of the Kensington Dispensary for Tuberculosis; died, April 23, from encephalitis.

James Dismurkes Smith, Nelson, Mo.; Missouri Medical College, St. Louis, 1887; aged 60; a member of the Missouri State Medical Association; died, April 14, from cerebral hemorrhage.

Robert Emerson, El Paso, Texas; University of Illinois, Chicago, 1898; aged 63; for twenty years a resident of Chihuahua City, Mexico; died, February 23, from senile gangrene.

William L. Downey, Wenona, Ill.; Medical Department University of Iowa, Keokuk, 1865; aged 82; a veteran of the Civil War; for many years a druggist; died, April 7.

Fordyce Worth, Hesper, Iowa; Bennett College of Eclectic Medicine and Surgery, Chicago, 1870; aged 88; died in LaCrosse, Wis., March 14, from pneumonia.

William L. Griffin, Lamar, Mo. (license, Missouri, 1883); aged 82; a practitioner for fifty-four years; a veteran of the Civil War; died, April 1, from paralysis.

Ezra C. Harris, Springfield, Ohio; Starling Medical College, Columbus, Ohio, 1876; aged 75; a veteran of the Civil War; died, April 17, from heart disease.

John Henry Williard, Lewistown, Mont.; Medical College of Ohio, Cincinnati, 1869; aged 73; died at the home of his sister in Lancaster, Ohio, March 29

Carl W. J. Specht, Fairview, Okla. (license, Oklahoma, 1908); aged 66; a practitioner for thirty-four years; died in St. Louis, April 6, from pneumonia.

Franklin A. Weatherford ⊕ Chicago; College of Physicians and Surgeons, Chicago, 1895; aged 54; died, May 2, from cerebral hemorrhage.

Carl Kirschner, Erie, Pa.; Medico-Chirurgical College of Philadelphia, 1903; aged 42; died, April 19, from pneumonia.

Correspondence

PRIDE IN AN EXCELLENT TYPHOID RECORD

To the Editor:—So much criticism has been directed against the sanitation of rural districts that the extremely low typhoid death rate in Los Angeles County deserves special publicity.

Comparing the deaths in Los Angeles County rural districts (unincorporated section only) with the rates appearing in the eighth annual report on the prevalence of typhoid in larger cities (THE JOURNAL, March 6, 1920, p. 672), we discovered that the death rate was actually lower for our county than for the average of sixty cities during 1919. Many of the cities had a rate as high as 15 per hundred thousand, while the average was 4.2 per hundred thousand. The rate for Los Angeles County was 4 per hundred thousand population, as of July 1, 1919. During the year 1918 there was not a single death recorded from typhoid fever in the rural districts. During 1919, however, we had six deaths and twenty-six cases, the increase being due to the insanitary conditions prevailing among the Japanese vegetable growers.

The Los Angeles County Health Department comprises a bureau of twenty-six persons, and we are very proud of this record, which should be an encouraging note to those who continually decry the insanitary conditions in the rural districts.

J. L. POMEROY, M.D., Los Angeles.
County Health Officer.

A COMPARISON OF THE HUTCHINSON AND SPILLER OPERATIONS FOR THE RELIEF OF TRIGEMINAL NEURALGIA

To the Editor:—The radical operation for the treatment of trigeminal neuralgia is exceedingly satisfactory in its results.



Fig. 1.—Reproduction (reduced) of illustration bearing the legend: "Tic douloureux. Physiological extirpation of the Gasserian ganglion. Showing site of flap incision for Spiller-Frazier operation, and the blepharorrhaphy of the left eye for trophic ulceration of the cornea. In this case the conspicuous scar on the side of the face and the depression left by the division of the zygoma are shown."

Section of the sensory root, as a means of affording permanent relief, has been acknowledged almost universally as the accepted procedure. The technic as elaborated has well nigh reached a stage of perfection, in that the cosmetic results leave nothing to be desired and we now are able to conserve the motor root. Hutchinson, however, still advocates the resection of the outer two thirds of the ganglion. In his recent monograph on "Facial Neuralgia and Its Treatment" there are three references to what he calls the Spiller-Frazier operation, one of which is incorrect, and the other two misleading.

On page 118 it is stated that the operation is "more difficult, dangerous and uncertain than the extradural method."



Fig. 2.—Cosmetic results in patient after operation. The incision is entirely within the hair line, hidden from view.

Our experience with the operation at the clinic of the University Hospital has proved quite conclusively that the operation is not more difficult than methods which have for their object the total or partial removal of the ganglion; and, comparing the mortality of this clinic with that of Mr. Hutchinson's, it could hardly be said to be "more dangerous." Mr. Hutchinson, quoting the statistics from his own and Sir Victor Horsley's experience with 200 cases and a mortality under 5 per cent., characterizes the results as "surely satisfactory enough." In the last 129 cases in which the technic we now use was applied, there has been but one death, a mortality of 0.7 per cent. In this case the patient, ten days after the operation, when out of bed and about ready for discharge, had an apoplectic stroke. Whatever else may be said in comparison of the Hutchinson and the Spiller operation, the latter should not be presented to the medical public as "more dangerous."

A greater injustice is contained perhaps in the second reference. An illustration (Figure 1) is reproduced with the legend: "Tic douloureux. Physiological extirpation of the Gasserian ganglion. *Showing site of flap incision for Spiller-Frazier operation,* and the blepharorrhaphy of the left eye for trophic ulceration of the cornea. In this case the conspicuous scar on the side of the face and the depression left by the division of the zygoma are shown."

If the reader will compare Figure 1 with Figure 2 (photograph of patient operated on by Dr. Frazier) the misrepresentation is apparent. It will be seen in Figure 2 that the scar is entirely hidden, concealed within the hair line; furthermore, it has never been my practice to resect the zygoma.

On page 117, Hutchinson credits the operation on the sensory root, as a substitute for gasserectomy, to Horsley who in 1891 divided the sensory root behind the ganglion in only one case, the patient dying from shock seven hours after the operation. *"It appears,"* he writes, "that for many years this method was not again attempted. In 1901 and 1902, however, Spiller and Frazier again brought it forward." The dates

are correct, but it would have been more nearly the truth had he amplified his statement to include the following: (*a*) that Horsley, so far as one can ascertain from his publications, never repeated the operation and presumably abandoned it; (*b*) that the method of approach in Horsley's case was radically different and more difficult than that proposed by Spiller and Frazier (Horsley approached the sensory root by elevating the temporosphenoidal lobe after reflecting a dural flap); (*c*) that Spiller's recommendation was supported by a series of animal experiments which proved convincingly that the results would be permanent as the root could not regenerate itself; (*d*) that the claims of superiority of this operation, as safer than gasserectomy, were not made until proved by actual experience on the operating table, and (*e*) that, as a result of the combined experimental and clinical evidence, this operation (properly designated as the "Spiller" and not as Hutchinson styles it, the Spiller-Frazier method) has been recognized in all civilized countries as the appropriate radical procedure in the treatment of trigeminal neuralgia.

CHARLES H. FRAZIER, M.D., Philadelphia.

"QUININ IN INFLUENZAL PNEUMONIA"—USEFULNESS OF CALOMEL

To the Editor:—Two articles in THE JOURNAL, April 24, 1920, attracted my attention:

Dr. A. J. Caffrey of Milwaukee (p. 1166) writes on the value of quinin in influenzal pneumonia. During the great epidemic of 1918, while in Macedonia with the troops, I personally treated, and saw treated by my colleagues, a large number of cases of influenza and of bronchopneumonia. On account of the prevalence of malarial infection, many of these patients were vigorously plied with quinin dihydrochlorid. My own routine was 15 grains thrice daily. I can say with confidence that I saw no benefit from the administration of quinin in either influenza or bronchopneumonia.

Dr. A. E. Goodwin of Jackson, Miss. (p. 1163) condemns the free use of calomel as a cathartic, and cites two cases to support his argument. A man, aged 50, after taking 2 grains of calomel, developed extensive gangrene of the tongue, gums and palate which caused his death. In the second case, a child, aged 5 years, after a dose of calomel had diarrhea, salivation and sloughing of the cheek. From the history I regard it as a case of cancrum oris. The evidence of mercurial poisoning in these two cases is to me inconclusive, and would not influence me to discard a drug which I find invaluable.

JAMES CAMPBELL, M.B., CH.B. (ABERD.),
Washington, D. C.

"SPIRITS AND THE MEDICAL MIND"

To the Editor:—I have been hoping that some one else would do this; but, others failing, I desire to protest against the attitude of THE JOURNAL as depicted in the recent editorial on "Spirits and the Medical Mind" (THE JOURNAL, March 27, 1920, p. 890). If I may be very blunt that I may be very brief, I would protest against a spokesman for the profession who fails to distinguish between the London Society for Psychic Research and the spiritualistic cult. He fails, too, in accounting for the spread of the latter cult, when he ignores the item of phenomena, the one constant feature that wins proselytes to a system that has nothing else at all to support it. If these phenomena can be shown to be subjective, such a showing would be praiseworthy; but it is not serving any good purpose to simply call for the alienist. It is a question of fact, not of doctrines; of natural forces rather than of belief in the supernatural. "A mind adjusted to set up an adequate resistance" in advance is not an open and a judicial mind, and it would be more in keeping with the dignity of the American Medical Association to make "a patient analysis of the evidence to see what it really shows." There are physicians to whom medicine means more than the daily, diagnostic thought-habits of practicing specialists; who keep in touch with the progress of the world in all lines; who enjoy the large view of the present day, and hope that the darkness that limits human understanding may be pushed back for another gain in their generation. Such physicians are not uninterested in physics or philosophy. Those who have accepted the Einstein revelation may talk of our universe as confidently as of our world, and those who studied last year's books, from Haeckel to Whitman, may feel certain that nothing that ever had a real existence was ever lost. All will agree that the world grows. And the American Medical Association grows. Let it not hide now from "unrecognized forces." I beg to propose a Committee on Psychical Research as an addition to the active departments of this association. It might have a perfectly legitimate and fairly permanent occupation in the exposing of frauds. Then, perhaps, it might start a card index for communications—no sources barred—and assist the British, on the firing line again, in the newest phase of the oldest campaign in which mankind has ever engaged.

JAMES JOHNSTON, M.D., Bradford, Pa.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

BENZYL AND TOLYL

To the Editor:—1. My copy of the American Illustrated Medical Dictionary states that "benzene," C_6H_6, is called also "henzyl"; it states under "benzyl" that it is C_7H_7. Please clear up this apparent inconsistency.

2. I believe that the proper name for this C_7H_7 group should be "toluyl" to distinguish it from C_6H_5, and that the proper nomenclature of the substances developed therapeutically by Macht should be toluyl benzoate, toluyl acetate and toluyl alcohol; and that benzyl benzoate, benzyl acetate and benzyl alcohol denominate entirely different substances.

3. In your abstracts of medical journals you recently mentioned benzyl carbinol as having been found more suitable for local anesthesia than benzyl alcohol. I have not been able to secure this through a certain large chemical and drug house, and would appreciate any suggestions you could offer as to where a supply of benzyl carbinol might be obtained. I. F. S.

ANSWERS.—1. The symbol C_7H_7 may stand for either of two radicals derived from toluene. In one of these, one hydrogen atom of the benzene nucleus (C_6H_6) has been replaced by the methyl group (CH_3) and another hydrogen atom has been removed, leaving an uncombined linkage, thus: $C_6H_4\begin{matrix}CH_3\\ \diagdown\end{matrix}$ This is called "tolyl" (toluyl). In the other instance, only one hydrogen atom of the benzene nucleus has been removed, that having been replaced by the methyl group (CH_3) and one hydrogen in the methyl group having been removed, leaving an uncombined linkage, thus $C_6H_6—CH_2—$. This form is called "benzyl" to denote its relationship to benzoic acid.

2. If hydroxyl (OH) be attached to the tolyl radical, i. e., the OH group being attached to the benzene nucleus, the compound is not an alcohol but a phenol. Thus, tolyl hydroxid is cresol, $C_6H_4\begin{matrix}CH_3\\ \diagdown\\ OH\end{matrix}$. On the other hand, if the OH group be attached to the benzyl group $(C_6H_5CH_2)'$, an alcohol, benzyl alcohol ($C_6H_5CH_2OH$), results. Benzyl alcohol is also called phenyl methylol and phenyl carbinol.

3. Benzyl carbinol is synonymous with phenyl ethyl alcohol. It is a constituent of oil of rose and may be purchased under the second name of dealers in synthetic perfumes.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARKANSAS: Little Rock, May 11-12. Sec. Regular Bd., Dr. I. J. Stout, Brinkley. Sec. Eclectic Bd., Dr. C. E. Laws, Fort Smith.
DELAWARE: Wilmington, June 15-17. Pres. Medical Council, Dr. H. W. Briggs, 1026 Jackson St., Wilmington.
FLORIDA: Jacksonville, June 14-15. Sec., Dr. Wm. M. Rowlett, Citizens Bank Bldg., Tampa.
GEORGIA: Atlanta, June 9-11. Sec., Dr. C. T. Nolan, Marietta.
HAWAII: Honolulu, May 10-14. Sec., Dr. R. W. Benz, 1141 Alakea St., Honolulu.
ILLINOIS: Chicago, June 14-17. Director, Mr. Francis W. Shepardson, Springfield.
KANSAS: Topeka, June 15-16. Sec., Dr. H. A. Dykes, Lebanon.
KENTUCKY: Louisville, May 17. Sec., Dr. A. T. McCormack, 532 W. Main St., Louisville.
LOUISIANA: New Orleans, June 10-12. Sec., Dr. E. W. Mahler, 141 Elk Place, New Orleans.
MARYLAND: Baltimore, June 15. Sec., Dr. J. McP. Scott, 137 W. Washington St., Hagerstown.
MASSACHUSETTS: Boston, May 11-13. Sec., Dr. Walter P. Bowers, Room 144, State House, Boston.
MICHIGAN: Ann Arbor, June 8-10. Sec., Dr. B. D. Harrison, 504 Washington Arcade, Detroit.
MINNESOTA: Minneapolis, June 1-4. Sec., Dr. Thos. McDavitt, 539 Lowry Bldg., St. Paul.
MISSOURI: St. Louis, June 14-16. Sec., Dr. Geo. H. Jones, State House, Jefferson City.
NATIONAL BOARD OF MEDICAL EXAMINERS: Philadelphia, May 19-26. Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia.
NEBRASKA: Lincoln, June 9-11. Sec., Department of Public Welfare, Mr. H. H. Antles, Lincoln.
NEW JERSEY: Trenton, June 15-16. Sec., Dr. Alexander MacAlister, State House, Trenton.
NEW YORK: New York, Albany, Syracuse, Buffalo, May 18-21. Assistant, professional examinations, Mr. Herbert J. Hamilton, Education Bldg., Albany.
NORTH CAROLINA: Raleigh, June 21. Sec., Dr. H. A. Royster, 423 Fayetteville St., Raleigh.
OHIO: Columbus, June 8-11. Sec., Dr. H. M. Platter, State House, Columbus.
SOUTH CAROLINA: Columbia, June 22. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.
TENNESSEE: Memphis, Nashville and Knoxville, June 11-12. Sec., Dr. A. B. DeLoach, 1001 Exchange Bldg., Memphis.
TEXAS: Galveston, June 22-24. Sec., Dr. Thos. J. Crowe, Trust Bldg., Dallas.
VIRGINIA: Richmond, June 22-25. Sec., Dr. J. W. Preston, McBain Bldg., Roanoke.
WYOMING: Cheyenne, June 7-9. Sec., Dr. J. D. Shingle, Cheyenne.

Iowa January Report

Dr. Guilford H. Sumner, secretary of the Iowa State Board of Medical Examiners, reports that 15 candidates were licensed by reciprocity at the meeting held Jan. 22, 1920. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Chicago Coll. of Med. and Surg.	(1915), (1916),	(1917)	Illinois
Northwestern University	(1917),	(1918)	Illinois
Rush Medical College	(1919)		Wisconsin
University of Minnesota Medical School	(1917)		Minnesota
St. Louis University	(1918)		Missouri
John A. Creighton Med. Coll.	(1913), (1916), (1918, 2),	(1919)	Nebraska
University of Nebraska	(1919)		Nebraska
University of Virginia	(1897)		Georgia

Missouri January Examination

Dr. George H. Jones, secretary of the Missouri State Board of Health, reports the written examination held at St. Louis, Jan. 12-14, 1920. The examination covered 14 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 21 candidates examined, 18 passed and 3 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Hahnemann Med. Coll. and Hosp. of Chicago	(1898)		75.8
Harvard University	(1917)		77.9
Barnes Medical College	(1907)		76.1
Kansas City Medical College	(1905)		79.4
St. Louis College of Phys. and Surgs.	(1918)		75.1
St. Louis University	(1920) 79.8, 80.1, 83.1, 83.1, 84.7, 84.9, 88.1.		
Washington University	(1917) 83.1, (1918) 83.1, 84.8, (1919)		83.1
Columbia University	(1916) 90.7, (1917)		89.7

College	FAILED		
National University of Arts and Sciences	(1918)		*
St. Louis College of Phys. and Surgs.	(1918, 2)		*

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Chicago College of Med. and Surg.	(1914, 2),	(1917)	Illinois
	(1918)		W. Virginia
Medical College of Louisiana	(1911)		Louisiana
Johns Hopkins University	(1913)		Maryland
University Medical College of Kansas City	(1913)		Kansas
Washington University	(1913)		Illinois
University of Nebraska	(1919)		Nebraska
Meharry Medical College	(1915), (1917)		Kentucky
University of Munich	(1914)		Illinois

* No grade given.

New York January Report

Mr. Herbert J. Hamilton, assistant, professional examinations, New York State Board of Medical Examiners, reports that four candidates were licensed by endorsement of their credentials from Jan. 5 to Jan. 19, 1920. The following colleges were represented:

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Medico-Chirurgical College of Philadelphia	(1910)		Penna.
Woman's Medical College of Pennsylvania	(1909)		New Jersey
University of Virginia	(1916)		Virginia
National University, Athens	(1904)		Indiana

North Dakota January Examination

Dr. George M. Williamson, secretary of the North Dakota State Board of Medical Examiners, reports the oral, written and practical examination held at Grand Forks, Jan. 6-9, 1920. The examination covered 14 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 8 candidates examined, 6 passed and 2 failed. Six candidates were licensed by reciprocity. One candidate was licensed on a certificate from the National Board of Medical Examiners. The following colleges were represented:

College	PASSED	Year Grad.	Number Licensed
Northwestern University	(1918)		83
Rush Medical College	(1919)		85.5
University of Illinois	(1918)		87
University of Minnesota Medical School	(1917) 81.3, (1919)		81.5
Manitoba Medical College	(1908)		78

College	FAILED		
University of Vermont	(1908)		72
Chicago College of Medicine and Surgery	(1916)		64

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Chicago College of Medicine and Surgery	(1908)		Illinois
Northwestern University	(1916), (1917, 2)		Illinois
Rush Medical College	(1915)		Illinois
University of Minnesota Medical School	(1911)		Minnesota

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Rush Medical College	(1915)		N. B. M. Ex.

Pennsylvania January Report

Dr. Thomas E. Finnegan, secretary of the Pennsylvania Bureau of Medical Education and Licensure, reports the written and practical examination held at Philadelphia, Jan. 13-15, 1920. The examination covered 5 subjects and included 50 questions. An average of 75 per cent. was required to pass. Of the 95 candidates examined, 81 passed and 14 failed. The following colleges were represented:

College	PASSED	Year Grad.	Number Licensed
Howard University	(1906)		1
Atlanta Medical College	(1916)		1
Rush Medical College	(1917)		1
University of Louisville	(1914), (1915)		2
Johns Hopkins University	(1917)		1
Maryland Medical College	(1912)		1
Harvard University	(1914, 2), (1916),	(1917)	4
University of Michigan Medical School	(1917)		1
Albany Medical College	(1910)		1
College of P. and S. in the City of New York	(1895)		1
Columbia University	(1918)		1
Cornell University	(1907)		1
Syracuse University	(1916)		1
Hahnemann Med. Coll. and Hospital of Philadelphia	(1915), (1917, 2)	(1918)	4
Jefferson Medical College	(1914), (1915), (1916, 4), (1917, 16), (1918, 6)		28
Medico-Chirurgical College of Philadelphia	(1916)		3
Temple University	(1917)		1
Univ. of Pa.	(1916, 7), (1917, 11), (1918, 6)		24
University of Pittsburgh	(1917, 2), (1918)		3
McGill University	(1913)		1

College	FAILED		
George Washington University	(1918)		1
Howard University	(1918)		1
College of Phys. and Surgs., Baltimore	(1904)		1
Baltimore Medical College	(1910)		1
Johns Hopkins University	(1906)		1
Hahnemann Med. Coll. and Hosp of Philadelphia	(1916)		1
Medico-Chirurgical Coll. of Philadelphia	(1902), (1916)		2

Jefferson Medical College	(1917),	(1918)	2
Temple University		(1918)	3
University of West Tennessee	(1908)		1

West Virginia January Report

Dr. S. L. Jepson, secretary of the West Virginia Public Health Council, reports the oral and written examination held at Charleston, Jan. 13, 1920. The examination covered 10 subjects and included 100 questions. An average of 80 per cent. was required to pass. Of the 12 candidates examined, 7, including 1 osteopath, passed and 5, including 1 undergraduate, failed. Ten candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED		Year Grad.	Per Cent.
University of Maryland	(1916)	85,	(1919)	82.4
University of Cincinnati			(1919)	82.3
Jefferson Medical College			(1919)	85.8
University of Vermont			(1913)	90.2
Queen's University			(1914)	80.7
FAILED				
Eclectic Medical College, Cincinnati			(1918)	76.3
Chattanooga Medical College			(1904)	68.6
Memphis Hospital Medical College			(1912)	72
Medical College of Virginia			(1916)	78
Undergraduate				46.6

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Atlanta Medical College		(1914)	Georgia
University of Louisville		(1913)	Kentucky
Baltimore Medical College		(1909)	Virginia
University of Maryland		(1908)	Penna.
Washington University		(1914)	Missouri
University of Buffalo		(1914)	Penna.
University of the City of New York		(1882)	Virginia
Vanderbilt University		(1915)	Kentucky
Medical College of Virginia		(1916)	Virginia
University of Virginia		(1915)	Virginia

Vermont February Report

Dr. W. Scott Nay, secretary of the Vermont State Board of Medical Registration, reports the written and practical examination held at Burlington, Feb. 10-12, 1920. The examination covered 12 subjects and included 180 questions. An average of 75 per cent. was required to pass. Two candidates were examined, both of whom passed. The following college was represented:

College	PASSED		Year Grad.	Per Cent.
University of Vermont	(1913)	88.7,	(1919)	79.6

Book Notices

THE OXFORD MEDICINE. ADVANCE PAGES. Edited by Henry A. Christian and Sir James Mackenzie. Volume 1, Part 5. Paper. New York: Oxford University Press, 1920.

The first article is a well written, carefully thought out, philosophic discussion of the rationale of clinical diagnosis, by L. F. Barker. The origin, development and aims of diagnosis are clearly set forth, together with its relations to other branches of medicine as well as to other closely related sciences, especially the so-called premedical sciences. Among the latter, by the way, Barker would include sociology, psychology and—as a special branch of biology—anthropology. The article is well worth reading by student or practitioner; it views diagnosis from an angle not often considered. We should like it better were it a little more condensed. This might in part be accomplished by the shortening of lists of instruments, diseases, parts of the body to be investigated by the roentgen ray, etc. The intent of the article is not to furnish a textbook of clinical diagnosis with a complete or encyclopedic cataloging of the methods or the technic of diagnosis. These lists could well be illustrative, therefore, with something left to the imagination of the reader, who will be flattered at the assumption that he knows the rest rather than annoyed that the writer has at times deemed it necessary to name things of such elementary character that they ought to be common knowledge.

H. A. Christian, in ten pages, discusses in a general way tests of function. The saving feature is the bibliography, which points the reader to some of the more important original articles. It is clearly impossible to discuss with thoroughness in such limited space important subjects like the tests for renal, gastric and circulatory function. Gastric function in a little more than one page and circulatory in two pages are handled in scant, stepmotherly fashion. Peabody's article on respiration in disease is excellent. Du Bois considers the calorimetric methods of study of disease, and gives references so that those interested may find details that would be out of place in his article, which takes up only the general topic.

THE MEDICAL ASPECTS OF MUSTARD GAS POISONING. Alfred Scott Warthin, Ph.D., M.D., Professor of Pathology of the University of Michigan, and Carl Vernon Weller, M.S., M.D., Assistant Professor of Pathology, University of Michigan. Cloth. Price, $7. Pp. 267, with 156 illustrations. St. Louis: C. V. Mosby Company, 1919.

If the complete story of the scientific activities carried on in this country as part of the broad program for the winning of the war should ever be published, the scope of the work under way under the Chemical Warfare Service and the amount of the work already accomplished at the time of the armistice would undoubtedly astound all those not intimately connected with it. An important part of this work concerned medical problems, especially the pathology and pharmacology of the action of gases in use or proposed for introduction in offensive warfare. While much of this work was done in Washington, numerous problems were investigated in other laboratories throughout the country, as part of a program of cooperative research that has since become perpetuated through the continuance of the National Research Council as a peace-time organization. The work reported by Warthin and Weller was in part done under these auspices, and most of it has already been described in articles in the *Journal of Laboratory and Clinical Medicine*. These articles have now been collected and somewhat expanded to form this volume, and a brief discussion of the properties and effects of most of the gases used by the Germans serves as an introduction to the discussion of "mustard gas" and its properties.

This famous poison, undoubtedly one of the most important used in the war, has especially striking toxic effects which are discussed at length, both from the experimental side and from the point of observations on human material. As is now generally understood, this substance has no relation to mustard beyond a slight similarity of smell, being dichlorethylsulphid. We owe it to the German chemist Victor Meyer, who learned of its toxic properties as soon as it was first produced in his laboratory, by virtue of its effects on the assistant who worked with it. Experiments soon established its capacity for damage to living tissues, and the information thus obtained was utilized thirty years later with great effect by the organizers of "Schrecklichkeit."

The monograph of Warthin and Weller gives in great detail the pathologic effects of mustard gas on experimental animals, the lesions in human cases, a clinical study of thirty cases arising in manufacturing plants, and both experimental and clinical observations on treatment. An extensive bibliography completes this important contribution to what, it is to be hoped, is a closed chapter in human experience.

DIE THERAPIE DER HAUT- UND VENERISCHEN KRANKHEITEN, MIT BESONDERER BERÜCKSICHTIGUNG DER BEHANDLUNGSTECHNIK FÜR AERZTE UND STUDIERENDE. Von Prof. Dr. J. Schäffer. Cloth. Price, 22 marks. Pp. 485, with 87 illustrations. Berlin: Urban & Schwarzenberg, 1919.

This handbook, the first edition of which appeared in 1915, is the elaboration of a series of articles prepared for the *Medizinische Klinik* in 1913 under the title, "Dermatotherapeutische Winke für den Pratiker." The book is typical of the handbooks on special subjects of which there are so many in Europe. It is written is clear and concise style, yet is sufficiently comprehensive. Practically every method of treatment used in dermatology and venerology is described. The formulas are numerous, but one is struck by the fact that a large number contain drugs having trade names which are not familiar to American readers at the present time. As the physician must be able to arrive at a diagnosis before availing himself of the methods of treatment described, it seems obvious that a man with enough dermatologic training to make use of the book would not need it.

Miscellany

THE FIRST PHARMACOPEIA PUBLISHED IN THE UNITED STATES

ALEXANDER G. BROWN, JR., M.D.
RICHMOND, VA.

The occasion of the approaching tenth decennial session of the United States Pharmaceutical Convention, May 11, at Washington, D. C., calls to mind a fact probably known to few physicians and pharmacists, that the first pharmacopeia published in the United States was in the year 1778. It was written in Lititz, Lancaster County, Pa., during General Washington's Valley Forge encampment and campaign about Philadelphia in 1777-1778. This first pharmacopeia was written for the use of Continental Army hospitals. As far as known, only two copies of this original pharmacopeia exist, one being the property of the estate of Charles A. Heinitsh, a druggist of Lancaster, Pa., and the other being in the Library of the Surgeon-General's Office in Washington. This publication was written entirely in Latin. It contained thirty-two pages. It was printed by Charles Cist of Philadelphia.

The title page may be of interest:

PHARMACOPOEIA
Simpliciorum & Efficaciorum
in usum
Nosocomii Militaris
ad exercitum
Foederatarum Americae Civitatum
Pertinentis;
Hodiernae Nostrae Inopiae
Rerumque Angustiis,
Feroci hostium saevitiae, belloque
crudeli ex inopinato patriae nostrae illato debitis,

Maxime Accommodata.

Auctore Guliehno Brown, M.D.

Editio Altera

Philadelphiae
Ex' Officina Caroli Cist
MDCCLXXXI.

The author, Dr. William Brown (1752-1792), was the grandson of Dr. Gustavus Brown (1689-1765), of Port Tobacco, Md., and the son of Rev. Richard Brown of the Colonial Episcopal Church of Maryland. Although born in Haddingtonshire, Scotland, while his parents were temporarily residing abroad, he was an American. He graduated and received his M.D. degree in 1770, from the University of Edinburgh. The subject of his thesis was "De Viribus Atmosphaerae." After his graduation, Dr. Brown settled in Alexandria, Va. He soon attained a high professional standing, and became intimate with many of the leading men of the day, among them Washington, Jefferson and Madison. At the beginning of the Revolution, Dr. Brown entered the service of his country as surgeon to Colonel Woolford's regiment of Virginia troops but, Sept. 20, 1776, was elected assistant to Dr. Shippen, a chief physician of the Continental Army. On the recommendation of Gen. Hugh Mercer, one of Washington's greatest generals, he was elected by congress, July 2, 1777, to be physician-general of the middle department of the Continental Army in place of Dr. Benjamin Rush (1745-1813), which position he resigned, July 21, 1780, returning to private practice. On his resignation, Congress passed the resolution:

> That Congress entertains a high opinion of the ability, integrity and past services of Dr. William Brown, Physician-General; but as circumstances will no longer permit his continuance in the service, his resignation is accepted.

In resigning, he forfeited his right to pay in bounty lands; but so highly were his services esteemed that the general assembly of Virginia made an exception in his case and decreed that he should receive the pay due him, and also that he should be entitled to the bounty of land allowed surgeons of regiments raised under the authority of the state (Hennings Statutes, Vol. VI).

Dr. Brown married Miss Catherine Scott of Alexandria, Va., and had a large family. His son, Gustavus Alexander, became a physician and practiced in Alexandria, Va., many years.

Dr. Brown died, Jan. 13, 1792, and was buried at Preston, an estate near Alexandria, Va.

1135 West Franklin Street.

MEDICAL AID IN RURAL DISTRICTS

Inaccessibility of medical and nursing aid, according to studies of maternity care in six rural areas of four states made by the Children's Bureau of the U. S. Department of Labor, is responsible for much suffering and even death. In a northwestern county and in a southeastern county there were nearly twice as many persons per physician as the average for the United States; in a southern mountain county there were four times as many. A vast area in the far Northwest, larger than Connecticut, was served by three registered doctors. Moreover, most of the doctors in every rural county were located at the county seat, while the remoter parts of the county were entirely without medical service. More than one third of the families in the far northwestern county studied were 20 miles or more from the nearest doctor, ten being from 50 to 100 miles away. In a southern county more than one fourth of the families were 10 miles or more from a doctor, and in another county 25 miles was not an uncommon distance.

Actual miles were not the sole obstacle to obtaining medical help at confinement. Rough roads, crossed by rivers; slippery mountain trials, almost impassable at best, become totally so under bad weather conditions. As a result, doctors arrive from several minutes to twenty-four hours too late to deliver their patients. Many families, discouraged by repeated failures to get a doctor in time, are tempted to do without one altogether; to others the thought of a doctor does not occur unless the patient's condition becomes critical. In a southern county only sixty-eight out of 160 mothers had a doctor at their last confinement; in only eight out of sixty-six confinement cases in a northern county was a physician secured; and in still another more than two thirds of the women did not have a physician when their babies were born. Three were entirely alone, and forty-six had only their husbands in attendance. Women would in many cases leave home for confinement if hospitals were within reach. But one 5,500 mile area had no hospital; neither had the southern mountain county. Reaching a hospital meant a journey of several days by wagon trail, or one by stage across the roughest of mountain roads. In a large number of cases the mother has no nursing care, except that given by an untrained hired girl, a relative, or a neighbor. Figures gathered from five rural counties are small in number but appalling in significance: 45 out of 89 babies who died during their first year; 22 out of 28; 12 out 15; 10 out of 16; 10 out of 14, died before they were one month old. These figures are further corroborated by the Bureau of the Census which gives the increase in mortality rates from premature birth and injuries at birth. The first has increased from 17.5 per thousand of the population under 1 year of age in 1910 to 21.1 in 1917, and the other from 3.2 in 1910 to 4.6 in 1917. These excessive

rates are due to the condition of the mother and indicate plainly that motherhood is not receiving the protection it needs. As the census report itself says: these increases "should serve as food for thought."

Medicolegal

Unskilful Treatment of Injuries—Cross-Examination

(Smith v. Missouri, K. & T. Ry. Co. (Okla.), 185 Pac. R. 70)

The Supreme Court of Oklahoma, in reversing a judgment rendered in favor of the defendant railroad company, in this personal injury case, holds that, when a party has used reasonable care in selecting a physician or surgeon, but owing to unskilful treatment the injury has been increased, the party causing the original injury will be held liable for damages for the latter; and the issue is not whether the physician or surgeon was, in fact, a man of high skill, but whether he bore such reputation as would justify the plaintiff in calling for his services under the obligation to exercise good faith in the choice of his physician. The court says that it might be conceded that the plaintiff was not well served by the physicians first called to attend him, and those who treated him for the first year following the accident, as he was suffering from a broken bone in the arm and a dislocated joint, and these physicians did not discover the extent of his injuries. However, the plaintiff was not at fault on this account. All of these physicians were regularly licensed physicians and surgeons, and his good faith in calling them was not questioned. The trial court properly instructed the jury to the effect that it was incumbent on the plaintiff to make use of reasonable means to effect as speedy and complete a recovery as could reasonably be accomplished, and for that purpose he was required to use reasonable care in the selection of competent and skilful surgeons and physicians, and that, if he failed in this respect, he could not recover damages for an aggravation of his injury or result therefrom, occasioned by such failure. The plaintiff offered proof to the effect that the three physicians he called bore the reputation in that community as being skilful and competent physicians and surgeons. That evidence was objected to by the defendant, and the objection was sustained. It was error to exclude that evidence. It was competent for the plaintiff to show that he acted in good faith and used due care, by employing well-known and reputable physicians to treat his injury.

Finally, the plaintiff called another physician, on whose advice he was sent to Oklahoma City, where a roentgenogram of his arm was taken, which disclosed a broken bone and a dislocated joint, after which he employed two or three specialists to treat the arm. When these specialists were called at the trial to testify in behalf of the plaintiff as to the character of his injury and its probable duration, the defendant, on the cross-examination of these witnesses, was permitted, over the objection of the plaintiff, to attempt to show that the treatment he received from the physicians first called by him was not the proper treatment, and this character of cross-examination was carried to such an extent as to introduce a collateral issue into the case, one not raised by the pleadings, and the issue on trial, namely, the liability of the railway company for the plaintiff's injuries, was lost sight of, and the trial permitted to develop into a trial of the physicians. By reason of this irregular conduct of the trial, the real issue before the court and jury was so obscured that the collateral issue was the only one really tried by the jury, and on which the verdict was returned for the railway company. This character of cross-examination was not permissible for two reasons: (1) Because it was irrelevant, and tended to support an issue not raised by the pleadings and not submitted to the jury for determination. (2) Because it extended beyond the direct examination of the witnesses. An attorney has no right to cross-examine a witness, except as to the facts and circumstances connected with the matter stated in his direct examination. If he wishes to examine him on other matters, he must do so by making the witness his own, and calling him as such in the subsequent progress of the case. It was no answer to this assignment of error to say that this line of cross-examination was permissible to determine the competency of the expert witnesses, and to test their knowledge and skill, and that its tendency was merely to reduce the amount of the plaintiff's recovery; and since he did not recover anything by the verdict of the jury, the error, if any, was harmless. From an examination of the entire record the court is of the opinion that the improper cross-examination probably resulted in a miscarriage of justice, and was sufficient grounds for awarding a new trial.

Injured Employee Treating Himself

(Banner Coffee Company et al. v. Industrial Commission et al. (Wis.), 174 N. W. R. 544)

The Supreme Court of Wisconsin, in affirming an award of the industrial commission of $3,000 damages in favor of the widow of a teamster employed by the company, says that on February 19 he was kicked by a horse over the shin of his left leg. The injury did not appear to be serious, and he continued in the performance of his usual duties until the 27th. In the meantime he applied carbolic salve, and bandaged the injury with a cloth. During the afternoon of the 27th, he told a fellow workman that he could do no more: "everything is feeling numb; it is my back that shivers." He was told to go home and take care of himself. He went home, and on the same day the company was notified that he was in a serious condition. March 1, the company's physician called to see him. The physician found that he had a severely infected ulceration over the shin of his left leg, about the size of a dollar, with a temperature of 102 5. He had the man removed to a hospital, where he died, March 4, as a result of infection.

It was contended that the proximate cause of the man's death was his refusal to adopt such means as an ordinarily prudent person would use under like circumstances, the undisputed record showing, as it was contended, that the proximate cause of the infection was the failure to have immediate medical attention. But, while conceding that persons highly appreciative of the dangers resulting from infection would at once consult a physician, the court cannot say that this is true of the great mass of mankind under the same or similar circumstances. It is a matter of common knowledge that strong, healthy men engaged in manual labor frequently give such trifling injuries, which would arouse the apprehension of others, little thought; and in comparison with the number of such injuries, the instances followed by infection are not numerous. If they are treated at all, home remedies are applied, just as was done by this man. Carbolic salve was his remedy for cuts, bruises, etc., and this he applied. The injury itself was not sufficient to keep him from his work, and he went about performance of his daily duties, attaching little consequence to the injury. The court does not think it is customary for laboring men to rush to a physician every time they sustain a cut, bruise, or abrasion of the skin, and it cannot say as a matter of law that the conduct of this man was not that of the great mass of mankind under the same or similar circumstances.

Point was made of the fact that one of his fellow workmen, immediately after the kick, told him he had better see a physician. The district manager also testified that he saw him on the morning of February 20, and told him to go to a certain physician immediately; that he saw him a few days later, and asked him whether he had been to see a physician, and he said he had been treating himself, whereupon the district manager replied that he thought it would be best for him to go to a physician and have him examine him, and the man said he would. But, in the absence of any representation on the part of the company that it would be liable for the physician's fees, it could not be said that the man unreasonably refused to accept or receive medical services tendered to him by the company. What was said to him by his fellow laborer and the district manager amounted to nothing more than a suggestion on their part that he ought to see a physician. It goes without saying that their opinion in this respect

was no better than his. He was in a position to judge of the necessity of consulting a physician as well as they, and perhaps better. Furthermore, it was not at all plain from the record that, if he had consulted a physician, his life would have been saved.

Valid Provisions for the Quarantining of Persons with Venereal Diseases

(Ex parte McGee et al. (Kan.), 185 Pac. R. 14)

The Supreme Court of Kansas, in denying the petitioners a writ of habeas corpus, holds that Chapter 205 of the Laws of 1917, which undertakes to protect the public health by preventing the dissemination of dangerous communicable diseases, through isolation and quarantine measures, is not unconstitutional on the ground that it delegates legislative power, because it confers on the state board of health authority to designate such diseases as are infectious, or communicable in their nature, and to prescribe proper control measures. The court says that the necessity for legislation of this character was demonstrated by very recent events. If, when this statute was before the legislature, it had designated all the infectious, contagious and communicable diseases it knew, and had prescribed regulations for their suppression and control, it would have omitted the deadly influenza which soon afterward made such appalling inroads on the lives and health of the people of the state. To meet emergencies of this character, it is indispensable to preservation of the public health that some administrative officer or board should be clothed with authority to make adequate rules which have the force of law.

Nor were rules of the state board of health, adopted and published pursuant to the statute, and provisions of a city ordinance framed in accordance with the rules of the state board of health, unreasonable because they authorized the isolation of men infected with venereal disease at an institution provided by the state for the isolation and treatment of such diseases. It was not long after its enactment until specific application of the statute to venereal diseases became urgent, on account of social conditions attending the concentration of large bodies of troops at the three United States military establishments in the state. The state board of health declared syphilis, gonococcus infection and chancroid to be infectious, contagious or communicable in their nature, and notifiable diseases dangerous to the public health, and made and published rules and regulations for the control and suppression of such diseases. The rules necessarily involved the isolation of diseased persons, and facilities for isolation where such persons were found in localities where such facilities were totally inadequate. Provision was made for the quarantine and medical treatment of women at the industrial farm for women. Provision was made for the isolation of men in one of the penitentiary buildings, for their treatment at the penitentiary hospital, and for certain liberties outside the walls of the institution in connection with a few hours' work each day on the penitentiary farm. The portions of the state property thus set apart for the use of men were designated the "Kansas State Quarantine Camp for Men, at Lansing," and the portion set apart for the use of women was designated the "Kansas State Quarantine Hospital for Women, at Lansing." Experience demonstrated that the men sent to the quarantine camp thus established were, generally speaking, a bad lot, and the board of administration provided that they should be subject to such rules for the discipline and control of the institution as the warden, with the approval of the board, might adopt. The isolation orders ought not to have used the term "state penitentiary," and should be amended by employing the official designation, the "State Quarantine Camp for Men, at Lansing."

The question of whether the petitioners were diseased was one of fact, determinable by practically infallible scientific methods. The city health officer was authorized to ascertain the fact. He certified to the existence of disease, and, in the absence of a charge of bad faith, or conduct equivalent to bad faith, on his part, his finding was conclusive. Reasonableness of provisions relating to discovery and to examination need not be determined here. It may be observed, however, that while provisions of the latter class cut deeply into private personal right, the subject is one respecting which a mincing policy is not to be tolerated. It affects the public health so intimately and so insidiously, that considerations of delicacy and privacy may not be permitted to thwart measures necessary to avert the public peril. Only those invasions of personal privacy are unlawful which are unreasonable, and reasonableness is always relative to the gravity of the occasion.

A person regularly ordered to be isolated at the state institution is not entitled to a writ of habeas corpus for his discharge because he is able to provide himself with proper treatment, at an isolated place in the locality of his residence. The public health authorities are not obliged to take chances.

True Object of Harrison Narcotic Law

(United States v. Parsons (U. S.), 261 Fed. R. 223)

The United States District Count, District of Montana, says that the Harrison Narcotic Law is ostensibly a revenue measure, and within limits the courts must recognize it as such. At the same time, any one with sense enough to be at large without a keeper knows that the revenue feature, which possibly returns cents for dollars spent in administration, is only a fiction and device to enable Congress, otherwise disabled to suppress opium traffic and use, to hinder and obstruct such traffic so far as may be done incidentally to the exercise of revenue power. It is one of many like and regrettable devices to evade constitutional limitations, to impose duties of the states on the United States, and to vest the latter with nondelegated and reserved police power of the former. The limits are that, if in any such measure Congress incorporates arbitrary and unreasonable inhibitions, in that they are not calculated to promote the revenue features, but intended to promote some object not within congressional power, to that extent the statute is unconstitutional and void, and the courts are bound so to declare it. Section 2 must be construed to be in aid of the only object of the act that is constitutional, namely, to create and safeguard revenue. Nothing in Section 2 forbids purchases for any lawful use. Among such may be purchase to destroy, to absorb the supply, to prevent purchase by others, or to obstruct illegal traffic, all of which are lawful purposes, and none of which are within Section 2, even as purchase for personal use is not; and a demurrer is sustained to an indictment that charged purchase for personal use.

Society Proceedings

COMING MEETINGS

American Assn. of Genito-Urinary Surgeons, Rochester, Minn., May 31.
American Climatological and Clin. Assn., Philadelphia, June 17-19.
American Gynecological Society, Chicago, May 24-26.
American Laryngological Association, Boston, May 27-29.
American Medico-Psychological Assn., Cleveland, O., June 1-4.
American Ophthalmological Society, Hot Springs, Va., June 15-16.
American Orthopedic Association, Toronto, Ont., June 7-10.
American Otological Society, Boston, May 31-June 1.
American Pediatric Society, Highland Pk., Ill., May 31.
American Psychopathological Assn., Cleveland, O., June 5.
Arkansas Medical Society, Eureka Springs, June 8-9.
Association of American Peroral Endoscopists, Boston, June 1.
California State Medical Society, Santa Barbara, May 11-13.
Canadian Medical Association, Vancouver, B. C., June 22-25.
Connecticut State Medical Society, New Haven, May 19-20.
Illinois State Medical Society, Rockford, May 18-20.
Iowa State Medical Society, Des Moines, May 12-14.
Massachusetts Medical Society, Boston, June 8-9.
Michigan State Medical Society, Kalamazoo, May 25-27.
Mississippi State Medical Association, Jackson, May 11-12.
Nebraska State Medical Association, Omaha, May 24-26.
Nevada State Medical Association, Lake Tahoe, June 25-26.
New Hampshire Medical Society, Concord, May 12-13.
North Dakota State Med. Assn., Minot, June 15-16.
Ohio State Medical Association, Toledo, June 1-3.
Oklahoma State Medical Association, Oklahoma City, May 18-20.
Rhode Island Medical Society, Providence, June 3.
South Dakota State Medical Association, Sioux Falls, May 18-20.
Southern Minnesota Medical Assn., Fairmont, Minn., June 28-29.
Western Electro-Therapeutic Association, Kansas City, Mo., May 27-28.
West Virginia State Medical Association, Parkersburg, May 18-20.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Roentgenology, New York

February, 1920, 7, No. 2

Aviator's Heart. Roentgen-Ray Studies Under Conditions Simulating High Altitudes. L. T. LeWald, New York, and G. H. Turrell, Mineola, L. I.—p. 67.
Thoracic Aneurysms. A. R. Taft, Charleston, S. C.—p. 90.
Treatment of Cancer, Particularly of Tongue, Tonsil and Rectum, by Buried Emanation. H. H. Janeway, New York.—p. 92.
Radioactivity. A. Soiland, Los Angeles.—p. 102.
Technic of Radium Application in Cataracts. I. Levin, New York.—p. 107.
Influenzal Pneumonia from Clinical and Roentgen-Ray Study. J. Harkavy and J. H. Selby, Takoma Park, D. C.—p. 109.
Treatment of Pruritus Ani by Roentgen-Ray Radiation. W. J. Young, Louisville.—p. 116.

Annals of Surgery, Philadelphia

March, 1920, 71, No. 3

Possible Advances in Civil Medicine Suggested by Experiences in Treating War Injuries of Chest. J. L. Yates, Milwaukee—p. 241.
*Gunshot Wounds of Chest. R. H. Fowler, Brooklyn, and H. P. Mencken, Astoria, N. Y.—p. 257.
*Operative Results in Two Hundred Breast Tumors. B. B. Davis, Omaha.—p. 270.
*Case of Diaphragmatic Hernia. T. F. Riggs, Pierre, S. D.—p. 276.
*Congenital Diaphragmatic Hernia: Report of Case. L. Frank, Louisville.—p. 280.
Surgery of Ductus Communis Choledochus. J. C. O'Day, Honolulu.—p. 293.
Permanent Colostomy or Enterostomy Which May Be Closed by an Extraperitoneal Operation. R. C. Coffey, Portland.—p. 299.
Gastro-Enterostomy Still the Treatment for Chronic Gastric and Duodenal Ulcer. R. C. Coffey, Portland.—p. 303.
*Technic of Appendectomy: Description of a Rational, Safe and Easy Technic of the Operation for Acute and Interval Appendicitis. A. L. Soresi, New York.—p. 315.
Fractures of Pelvis. W. J. Ryan, Philadelphia.—p. 347.
Use of Free Skin Grafts to Replace Loss of Mucous Membrane of Mouth and Nose. G. M. Dorrance, Philadelphia.—p. 360.
Operative Treatment of Ununited Fractures of Mandible. R. H. Ivy, Philadelphia.—p. 363.
Bone Inlays and Bone Platings. R. J. Behan, Pittsburgh.—p. 377.
*Surgical Hazards in Diabetes. N. B. Foster, New York.—p. 382.

Gunshot Wounds of Chest.—In a series of gunshot wounds classified by Fowler and Mencken according to the anatomic region involved, wounds of the thorax (139) constituted 8.6 per cent. Of these 118 involved the chest wall. Twenty-one were intrathoracic wounds. There were no wounds of the heart seen. Penetrating wounds of the lung and pleura (twenty-one) composed 17 per cent. of gunshot wounds of the chest. Some of these cases are analyzed.

Results of Operation for Breast Tumor.—A little better than 62 per cent. of the patients operated on by Davis for breast cancer have been free of recurrence for from three to twenty years. To have a set form of incision Davis believes is a mistake. The location and extent should determine the line of incision and the amount of skin to be removed. If the growth is deeply seated, only a comparatively small amount of skin need be sacrificed. If near the surface, and especially if the skin is adherent, a much larger area should be removed. The most methodical part of the operation, as well as the more extensive, occurs beneath the skin. There is really no especial limitation to the amount of fascia and fat that may advantageously be sacrificed.

Diaphragmatic Hernia.—The contents of the hernia in Rigg's case consisted of the pyloric portion of the stomach, the greater portion of the transverse colon and almost the entire omentum. The hernia was of traumatic origin. The opening was to the right of the midline and was not through one of the normal openings in the diaphragm. The sac of the hernia was formed by the diaphragmatic peritoneum and the diaphragmatic pleura.

Congenital Diaphragmatic Hernia.—Frank's patient was 16 years old. He had a hernia of the stomach and duodenum into the right chest, almost half filling the right chest cavity. A successful operation was performed.

Technic of Appendectomy.—Soresi believes that the special points of the technic that he advises in all acute cases: ether-rubber preparation of the skin; pararectus incision; freeing of only the external portion of the cecum; raising up the cecum, so as to expose the base of the appendix, immediately severing the appendix close to its base and inverting it; then following the distal portion of the appendix and removing as much of it as possible; paraffin gravity drainage when pus is present; closure of the abdominal wound in all cases; paraffin gravity drainage of the abdominal wall; elastic closure of the skin, and the application of an elastic belt as an external dressing, answer all the desiderata. Life is saved more often if this technic is followed. The technic recommended is said to be ideal for all cases, because it prevents the spreading of infection in all cases and does not lower the resistance of the peritoneal organs, and does positively drain out safely any secretions that should be drained out. It prevents the formation of fecal fistula, of dangerous postoperative adhesions, of postoperative hernia; it allows a maximum of comfort to the patient.

Operating on Diabetics.—The treatment of patients with diabetes mellitus as a preparation for surgical operation Foster says requires a departure in no respect from recognized principles. The object of this treatment is the restoration of normal metabolism and the measure of success is the blood sugar and carbon dioxid of the plasma. Foster gives sodium bicarbonate emulsified in olive oil subcutaneously, from 10 to 15 gm. of sodium bicarbonate in 10 c.c. of oil. Attention to a copious fluid intake and catharsis is important. Some patients with moderately advanced diabetes can, by treatment of this type, be carried through operative procedures, but not all. Some, especially those with virulent infections of the cellulitis type, do not respond to any method or procedure.

Archives of Dermatology and Syphilology, Chicago

April, 1920, 38, No. 4

*Cultural Studies on an Infection of Skin. Endomyces Albicans. F. W. Tanner and B. Feuer, Urbana, Ill.—p. 365.
*Peculiar Fungus Infection of Skin (Soorpilze?). M. F. Engman, St. Louis.—p. 370.
*Necropsy Findings in Case of Congenital Scleroderma and Sclerodactylia. F. D. Weidman, Philadelphia.—p. 375.
*Congenital Ectodermal Defect. Report of Case. W. H. Gocekermann, Rochester, Minn.—p. 396.
Syphilis of Kidney, Ureter and Suprarenal. U. J. Wile, Ann Arbor, Mich.—p. 413.
*Saturation in Roentgen Therapy: Its Estimation and Maintenance. L. B. Kingery, Ann Arbor, Mich.—p. 421.
*Treatment of Chancroid with High Frequency Vacuum Electrode and Copper Sulphate Solution. L. H. Jacob, Philadelphia.—p. 434.
*Case of Acquired Circumscribed Hyperhidrosis. W. A. Pusey, Chicago.—p. 436.

Infection of Skin with Endomyces Albicans.—Tanner and Feuer report an investigation of a fungus that caused a series of lesions on the index finger of a woman. The fungus seems to be identical with *Endomyces albicans.*

Peculiar Fungus Infection of Skin (Soorpilze).—The condition present in Engman's case looked exactly like that of a *Tinea inguinalis* or that produced by *Epidermophyton inguinale.* The process was very rebellious to treatment. Preparations made with potassium hydroxid in the usual manner for looking for such organisms, disclosed a peculiar fungus. Prof. George Moore of the Missouri Botanical Gardens reported that the fungus belongs to the general group known as the hyphomycetes, or fungi imperfecti. This group is a sort of botanical wastebasket for those forms of which the life history is not completely known, and consequently it is not well defined. The plant belongs to the order Moniliales and resembles to some extent both Monilia and Oidium. There is the strongest probability, however, of its belonging to the genus Botrytis. As to the relation of the organism to other known pathogenic fungi, it comes closest to the well known 'Soorpilze' of thrush, which has received some ten or a dozen different names and the precise systematic position of which has never been satisfactorily worked out.

Necropsy Findings in Congenital Scleroderma and Sclerodactylia.—The diagnosis Weidman made in this case depends partly on the clinical features, but more on the morbid anatomic — essentially microscopic — findings. The disease

occurred immediately after birth, was associated with a bloody diarrhea and ended fatally. The only clinical feature, in fact, against the diagnosis of sclerema was the symmetry of the involvement. The hide-binding in this 15 day old baby, probably syphilitic, dying with enteritis and meningitis, suggests sclerema neonatorum; but it is symmetrical and periarticular, and at necropsy the induration is found to be purely subcutaneous. On these and other grounds, the diagnosis of sclerema neonatorum is rejected, and the case finally placed in the general group of scleroderma without affixing any new name to this pure subcutaneous form, believing it to be of the same known nervous causation as many other cases of scleroderma.

Congenital Ectodermal Defect.—Goeckermann's patient was a woman, 21 years of age. The case was typical of this group and presented no unusual features. The patients in this group all present a facies very closely resembling that of heredosyphilis. The influence of syphilis in the production of these congenital defects is probably nil. The reported cases of this group of ectodermal defects have exhibited a total absence of sweat glands, an almost total absence of sebaceous glands, a hypotrichosis with absence of lanugo hair, and a dental aplasia. Such patients suffer from a disturbance of the heat regulating mechanism, dependent on the inability of their skins to eliminate the necessary amount of water to keep the temperature level constant under varying external conditions.

Saturation in Roentgen Therapy.—An attempt is made by Kingery to establish an analogy between biochemical mass reactions and the changes produced in tissues by absorption of the roentgen rays.

Treatment of Chancroid with High Frequency Vacuum Electrode and Copper Sulphate Solution.—Jacob's paper is based on a study of fifty-two cases. Of these, four developed buboes, two of which resolved and two suppurated. Thirty-nine healed within two weeks, seven in three weeks, and six in from three to five weeks. No ulcer showed any tendency to spread after treatment. The cases detailed may well be compared with sixty-three cases of chancroids treated according to older methods, including treatment with: argyrol, calomel, black wash, dusting powder, phenol, iodin, iodoform, etc. Twenty-eight of these developed buboes, and had come under observation six months before. The reason for not having a larger percentage of early cures, Jacob thinks, is undoubtedly due to irregularity of attendance on the part of the patient. The method of treatment used was that first described by Robbins and Seabury in THE JOURNAL, Oct. 13, 1917, p. 1217.

Acquired Circumscribed Hyperhidrosis.—Pusey describes the case of a girl, aged 22, who had a sweating area on the extensor surface of the wrist and on the back of the hand toward the ulnar side, from 2½ to 3 inches wide and 5 inches long. It was sharply defined and its location did not vary. The skin was slightly pinkish and sodden. Sensation in it was diminished, but it was otherwise normal. The sweating occurred in almost constantly repeated attacks. By applying a 25 per cent. solution of aluminum chlorid cautiously over the affected area, the sweating was checked in the course of a week or ten days, and there has been no unusual sweating of this area for two months.

Archives of Neurology and Psychiatry, Chicago

April, 1920, **3**, No. 4

*Study of Brain Repair in Rat by Use of Trypan Blue; Vital Staining of Macrophages. C. C. Macklin and M. T. Macklin, Baltimore. —p. 353.
*Epidermoid Papillary Cystoma Involving Third Ventricle. D. J. MacPherson Boston.—p. 395.
*Brain Tumors as Seen in Hospitals for Insane. M. E. Morse, Boston. —p. 419.
Postbellum Neuroses. H. W. Wright, San Francisco.—p. 429.

Study of Brain Repair.—The method of brain repair following the production of an injury to the brain with the hot needle stab was studied by the Macklins for as long a period as seventy-four days after the trauma. A uniform technic of staining was carried out, each animal receiving intraneritoneally 4 or 5 c.c. of a 1 per cent. aqueous solution of Grübler's trypan blue forty-eight hours before being sacrificed, followed by a second dose after twenty-four hours. In those animals which were killed sooner than forty-eight hours after the operation, the same procedure was carried out, the dye being given at the proper intervals before the operation. The findings are set forth in detail. The illustrations accompanying this report are very well made and elucidating.

Epidermoid Papillary Cystoma Involving Third Ventricle.—In the case reported by MacPherson, the growth did not show the large polygonal cells with densely staining protoplasm, characteristic of tumors of the pars intermedia, nor did it resemble those arising from the choroid plexus. The infundibulum was distended, and its tissue partially replaced by the tumor with a suggestion of a tumor stalk near the right ventrolateral surface. Cross sections through the third ventricle and pituitary body, which was removed intact still attached to the brain, showed the duralike capsule of the growth to be continuous with the connective tissue of the gland. The pituitary gland was normal. The squamous epithelium of the tumor showed a suggestion of intercellular spines and well marked scaling; but no hair or sebaceous material was found Vacuolization and cilia formation are not differential, and there does not seem to be any adequate criterion by which one may judge how this epidermal tissue happened to be in this location. From the situation and character of the growth, it probably originated as a result of a developmental abnormality of the infundibulum or from a hypophysial "rest." In the grouping of the third ventricle tumors according to the symptomatology, suggested by Weisenburg in an excellent review of thirty cases, this case would be in Class 1. Though the aqueduct was not dilated, the posterior part of the ventricle and the periaqueductal structures were apparently involved indirectly as shown by the pupillary disturbance without, however, paralysis of associated ocular movements and a reeling gate suggestive of involvement of the red nuclei or superior cerebellar peduncles. The patient's tendency to drag his feet and the weakness of the legs might be interpreted either as evidence of pressure on the internal capsules or of cortical injury. One of the early symptoms in this case was the evidence of hypopituitarism. Another striking feature was the drowsy, somnolent, apathetic condition of more than one year's duration, with periods approaching normality. There was an internal hydrocephalus with increased intracranial pressure, cerebral anemia, edema and pituitary disturbance. The patient was 52 years old, and had been ill for sixteen years. The clinical diagnosis was cardiorenal psychosis. A complete report of the necropsy is given.

Brain Tumors as Seen in Hospitals for the Insane.—It is not a rare experience for the pathologist in a hospital for the insane to find at necropsy a brain tumor undiagnosed during life. Morse made an inquiry into the reasons for the lack of diagnosis, and whether the group of brain tumor cases in hospitals for the insane presents any special characteristics as to symptomatology, age or stage of disease on admission, which would distinguish them from cases in general hospitals. The histories and necropsy protocols of forty-six cases were studied, and in most instances were examined in frontal sections. In about one half of the cases the brains and cords were also studied histologically.

Arkansas Medical Society Journal, Little Rock

March, 1920, **16**, No. 10

Various Methods of Treating Fractures. C. E. Benefield, Conway. —p. 193.
Case of Meningitis. W. N. Freemyer, Little Rock.—p. 198.

Georgia Medical Association Journal, Augusta

February, 1920, **9**, No. 10

Mechanical Methods for Supporting Abdominal Walls and Viscera. G. M. Niles, Atlanta.—p. 53.
Health Organization. M. F. Haygood, Atlanta.—p. 56.
Lung Diagnosis. A. Elkin, Atlanta.—p. 58.
Etiology and Treatment of Morning Drop. C. Watterston, Birmingham, Ala.—p. 60.
Relation of Endothelium to Purpuras and Allied Disturbances. E .C. Thrasb, Atlanta.—p. 62.

Journal of Experimental Medicine, Baltimore

April 1, 1920, **31**, No. 4

*Source and Significance of Streptococci in Market Milk. F. S. Jones, Princeton, N. J.—p. 347.
*Experimental Studies on Diabetes. Series I. Production and Control of Diabetes in Dog. 1. Gross Anatomic Relations of Pancreas and Diabetes. F. M. Allen, New York.—p. 363.
*Effects of Carbohydrate Diets. F. M. Allen, New York.—p. 381.
*Studies on Experimental Pneumonia. I. Production of Pneumococcus Lobar Pneumonia in Monkeys. F. G. Blake and R. L. Cecil, Washington, D. C.—p. 403.
*Id. II. Pathology and Pathogenesis of Pneumococcus Lobar Pneumonia in Monkeys. F. G. Blake and R. L. Cecil, Washington, D. C.—p. 445.
*Experimental Syphilis in Rabbit. I. Primary Infection in Testicle. W. H. Brown and Louise Pearce, New York.—p. 475.

Streptococci in Milk.—To establish the possible types of streptococci which may appear in market milk, examinations of the vaginal discharges, saliva, feces and skin of cows in a large herd were undertaken by Jones. He found that the principal source of streptococci in milk is the cow's udder. The udder streptococci fall into two broad groups; those of the larger group agree in cultural characters and agglutination affinities with mastitis streptococci; the smaller group is composed of low acid producing streptococci. All the streptococci from the vagina, saliva, skin and feces have been nonhemolytic. Those from the saliva form a heterogeneous aggregation in which individuals fermenting raffinose, inulin and mannite predominate. From the skin a characteristic streptococcus has been found. It produces acid in dextrose, lactose, saccharose, maltose, raffinose, mannite and salicin, but fails to acidulate medium containing inulin. The fecal streptococci are characterized by the formation of large amounts of acid in dextrose, lactose, saccharose, maltose, raffinose, inulin and salicin. Mannite is not fermented. Neither the fecal nor the skin streptococci have been isolated from the bottled milk with any great frequency.

Experimental Diabetes.—The basis of these studies by Allen has been a form of diabetes produced by removal of the greater part of the pancreas of animals, leaving a remnant about the duct secreting normally into the duodenum, thus avoiding the rapidly fatal cachexia of total pancreatectomy and also the pancreatic sclerosis and deficient digestion of Sandmeyer diabetes and affording a very close and satisfactory reproduction of the clinical disorder. The observations support the conclusion that partially depancreatized animals show no inherent increase of tendency to diabetes.

Carbohydrate Diet in Diabetes.—The injurious effects of excessive carbohydrate diet were demonstrable by Allen in partially depancreatized dogs, in the same manner as in human patients. With severe diabetes there is rapid progress of emaciation and weakness and early death. With milder diabetes, there is frequently a transitional state following operation, when the fate depends on the diet. If the tolerance is spared for a time, recovery sometimes occurs to such extent that diabetes cannot be produced by any kind or quantity of feeding, but only by removal of a small additional fragment of pancreatic tissue. The proper degree of carbohydrate overfeeding is important in this early period for producing the most useful type of diabetic animals; namely, those having good digestion and general health combined with a permanent lowering of assimilative power, like the condition of human patients. In the early stage, glucose is more powerful than starch in producing diabetes, and animals which are progressing toward complete recovery on starch diet can be sent into hopeless diabetes by admixture of glucose. The difference seems to be merely of the rate of absorption, and indicates that a rapid flood of carbohydrate is more injurious to the pancreatic function than a slow absorption. Whenever permanent diabetes is present, so that complete recovery is impossible, starch brings on glycosuria more slowly than sugar, but just as surely. The difference in time in different cases amounts to days, weeks or months. The clinical lesson from such experiments is that even if a patient becomes free from glycosuria on withdrawal of sugar only, nevertheless other foods should also be limited. No significant differences were observed by Allen between the assimilation of different starches, or any extreme lowering of the carbohydrate tolerance by proteins, such as alleged by certain writers in connection with the "oatmeal cure." Repair of traumatic inflammation and hypertrophy of the pancreas remnant are mentioned incidentally as the basis of the early tendency to recovery, and also hydropic degeneration of Langerhans' islands as an accompaniment of the lowering of tolerance by excessive diet. These are believed to have their parallels in human cases, and are to be described more fully hereafter.

Experimental Pneumonia.—The method of inoculation used by Blake and Cecil was by direct intratracheal injection under aseptic precautions, by the insertion of a small caliber, dry, sterile needle into the lumen of the trachea between the tracheal cartilages just below the larynx and the introduction of the culture by means of a Luer glass syringe inserted into the stock of the needle. Thirty-seven normal monkeys were injected. In thirty-two instances lobar pneumonia in all its aspects resembling the disease as seen in man was successfully produced. In five cases the monkeys failed to develop pneumonia. In one instance lobar pneumonia was produced by experimental contact infection. Normal monkeys inoculated in the nose and throat with large amounts of pneumococcus culture have failed to develop lobar pneumonia though carrying the organism in their mouths for at least a month. They have likewise failed to show any evidence of upper respiratory tract infection. Monkeys inoculated subcutaneously or intravenously with pneumococcus culture have in no instance developed pneumonia, but have either died of pneumococcus septicemia or recovered without localization of the infection in the lungs. These observations lead the authors to conclude that the pneumococcus is the specific cause of lobar pneumonia. The pneumococcus is unable to initiate an infection of the normal mucous membranes of the upper respiratory tract or to produce pneumonia following intravenous injection, but must gain access to the lower respiratory tract by way of the trachea in order to cause pneumonia. Lobar pneumonia is, therefore, bronchiogenic in origin. Invasion of the blood stream by the pneumococcus in lobar pneumonia is secondary to infection of the lungs. The character of the leukocyte reaction during the course of lobar pneumonia bears a fairly definite relation to the course of the disease.

Pathology of Pneumococcus Pneumonia.—In this paper the authors describe the pathology of pneumococcus pneumonia experimentally produced in monkeys, in order to show that the disease is identical with lobar pneumonia in man, and, they present observations concerning the pathogenesis of lobar pneumonia based on study of the pathology of lobar pneumonia in monkeys. In lobar pneumonia the pneumococcus primarily invades the lung tissue at some point or points near the root of the lobe. The pneumococcus subsequently spreads throughout the lobe by way of the interstitial framework and lymphatic system. Lobar pneumonia, therefore, is primarily an interstitial infection of the lung. Consolidation in lobar pneumonia begins in the alveolar tissue proximal to the hilum and progressively spreads to the more distal tissue until complete lobar consolidation develops.

Experimental Syphilis.—A study was made by Brown and Pearce of the infections produced in rabbits inoculated in the testicles with two strains of *Spirochaeta pallida* which had been carried in rabbits for several years. Infection resulted in all instances; the incubation period varied, as a rule, between two and three weeks and under properly chosen conditions could be reduced to approximately three weeks or less. The resulting infection pursued a typically cyclic or relapsing course which affected both the spirochetes and the associated lesions in the testicle. The specific reaction in the testicle showed considerable variation in the speed and sharpness with which successive phenomena occurred as well as in the character and extent of the processes themselves. These reactions were of two fundamental types. In one group of animals, the reaction was characterized by an intense cycle of acute exudation and infiltration with a lesser degree of proliferation, followed by crisis and subsequent recurrence of secondary cycles of proliferative reaction of a minor degree. In the other group of animals, the reaction was more chronic in character and consisted largely of infiltration and

proliferation. The progress of the reaction was more gradual, and sharp alterations in its course were absent. The infection progressed by a succession of stages with slight and irregular remissions. In a third group of animals, the reaction was subacute, combining at the same time the processes of exudation, infiltration, and proliferation. The first cycle of reaction was fairly acute and terminated in a definite crisis with moderate regression which in turn was followed by recurrence and more or less pronounced secondary cycles of proliferation. In all cases of outspoken infection, there was diffuse involvement of testicle, tunic, epididymis, and cord, but as the infection progressed, the lesions underwent many transformations, so that a variety of lesions was formed from processes which in the beginning were of a common type. Eventually, the reaction became more irregular and the infection became centered in one or more foci which were commonly situated in the epididymis, tunics, scrotum, or mediastinum testis. These centers served as residual foci of infection.

Nebraska State Medical Journal, Norfolk

March, 1920, **5**, No. 3

Roentgen Diagnosis of Diseases of Chest. E. W. Rowe, Lincoln. —o. 65.
Blood Chemistry with Reference to Surgical Risks. C. L. Hustead, Falls City.—p. 72.
Preservation of Function in Joints. J. P. Lord, Omaha.—p. 74.
Tonsillar Diseases. J. B. McPherson, Hastings.—p. 77.
Influenza. H. J. Lenhoff, Lincoln.—p. 79.
Influenza. J. M. Patton, Omaha.—p. 80.
Influenza. C. Moore, Omaha.—p. 81.
Epidemic Cerebrospinal Meningitis in Crete. H. W. Quirk, Crete. —p. 86.
Meningitis in Crete in 1920. A. A. Conrad, Crete.—p. 87.

South Carolina Medical Ass'n Journal, Greenville

March, 1920, **16**, No. 3

Conservative Treatment of Compound Fractures. G. Benet, Columbia. —p. 62.
Contemplated Provision for Feebleminded in South Carolina. B. O. Whitten, Clinton.—p. 66.
Making of a Children's Doctor. F. H. Richardson, Black Mountain. —p. 69.

Texas State Journal of Medicine, Fort Worth

March, 1920, **15**, No. 11

Are Some Methods Commonly Practised in Gynecology Constructive or Destructive in Results? B. Saunders, Fort Worth.—p. 391.
Appendicitis Sometimes a Gynecologic Disease. C. E. Cantrell, Greenville.—p. 393.
Chronic Duodenal Dilatation. H. Crouse, El Paso.—p. 394.
Intestinal Obstruction. J. W. Burns, Cuero.—p. 397.
Intestinal Obstruction; Report of Cases. R. L. Ramey, El Paso. —p. 400.
Cases of Injury of Abdominal Viscera without Visible External Signs. C. C. Nash, Palestine.—p. 401.
Reducing Mortality in Prostate Operations. A. O. Singleton, Galveston. —p. 403.

Virginia Medical Monthly, Richmond

March, 1920, **46**, No. 12

Abruptio Placentae; Case of Complete Separation Before Labor; Cesarean Section; Recovery. V. Harrison, Richmond.—p. 317.
Prevalence of Neglected Gynecologic Disorders. E. H. Richardson, Baltimore.—p. 320.
What Does the Obstetrician Owe the Pregnant Woman in the Way of Prenatal Care? B. Lankford, Norfolk.—p. 325.
Influence of Great War on Surgery. W. L. Peple, Richmond.—p. 328.
Symptoms and Treatment of Acute Intestinal Intoxication with and Without Acidosis. J. S. Weitzel, Richmond.—p. 330.
Nitrous Oxid-Oxygen in Mouth and Throat Operations. H. Harrison, Norfolk.—p. 332.
Results of Operation on Six Hundred Women for Disease of Pelvic Organs and Outlet. G. P. LaRoque, Richmond.—p. 334.
How Shall Doctors be Obtained for Rural Districts? J. A. Gibson, Leesburg.—p. 335.

Wisconsin Medical Journal, Milwaukee

March, 1920, **18**, No. 10

Plea for Broader Conception of Preventive Medicine. A. J. Patek, Milwaukee.—p. 397.
Communicable Diseases in Army. V. C. Vaughan, Ann Arbor, Mich. —p. 400.
Medical Reserve Corps and Civilian Practitioner. W. S. Middleton, Madison.—p. 407.
Application to Civil Practice of Therapeutic Principles Established in Treating War Injuries to Thorax. J. L. Yates, Milwaukee.—p. 414.
Some Phases of Reconstruction Surgery. J. W. Powers, Milwaukee. —p. 417.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

March 13, 1920, **1**, No. 3089

War Lessons for Radiology. C. T. Holland.—p. 353.
Some Points in Connection with Renal Disease. C. R. Box.—p. 356.
*Life History of First Case of Myxedema Treated by Thyroid Extract. G. R. Murray.—p. 359.
*Use of Antistreptococcic Serum in Quinsy. N. C. Forsyth.—p. 361.
Three Cases of Acute Perforation of Duodenal Ulcer; Laparotomy; Recovery. E. Huntley.—p. 362.
*Papilliferous Carcinoma of Thyroid. B. Hughes.—p. 362.

Result in Case of Myxedema After Twenty-Nine Years.—When Murray first exhibited this patient in 1891, she was 46 years of age. She had then been ill for about five years. The condition was a typical myxedema. The patient was given thyroid extract prepared from a sheep's thyroid. A hypodermic injection of 25 minims of the extract was given twice a week at first, and later on at longer intervals. When the oral administration had been shown to be equally efficient, she took 10 minims by the mouth six nights a week, so that 1 dram was consumed in the course of each week. On this dose she remained in good health, and free from the signs of myxedema. She continued to take liquid thyroid extract regularly until early in 1918, when it became difficult to obtain, so that she was given dry thyroid extract in a tablet instead. She enjoyed excellent health until early in 1919, when she developed edema of the legs, and died in May, 1919, at the age of 74 from cardiac failure. This patient was thus enabled, by the regular and continued use of thyroid extract, to live in good health for over twenty-eight years after she had reached an advanced stage of myxedema. During this period she consumed over 9 pints of liquid thyroid extract or its equivalent, prepared from the thyroid glands of more than 870 sheep.

Antistreptococcus Serum in Quinsy.—On the assumption that the primary cause of quinsy was a streptococcus, Forsyth determined to treat all cases of quinsy with antistreptococcic serum. Cases were selected in which the abscess had not perforated and in which the conditions were definitely acute. The following routine was adopted: Serum (10 c.c.) was injected at once; if there was any doubt of diphtheria 2,000 units of antidiphtherial serum were added. Ten cases only were treated. The most definite result obtained in these cases was the relief of pain in from six to twelve hours; the more or less acute pain when swallowing was eased some hours after that, but within a definite time before the abscess ruptured. In no case was incision of the abscess required by reason of the severity of the symptoms, and in all so treated there was pus discharging from the abscess on the fourth day of the illness. The temperature approximated to the normal one or two days after the serum injection.

Carcinoma of Thyroid.—One unusual feature in Hughes' case was the age of the patient, 13 years. The whole gland and the involved lymph nodes were removed. Three months after operation there was no sign of any recurrence and the patient was perfectly well.

Japan Medical World, Tokyo

March 6, 1920, **10**, No. 10

Alzheimer's Change in Neurofibrillae. M. Hayashi.
Study of Last Influenza Epidemic in Japan. S. Yabe.

Lancet, London

March 27, 1920, **1**, No. 5039

*Late Results of Surgical Treatment of Chronic Ulcers of Stomach and Duodenum. J. Sherren.—p. 691.
*Significance of Arneth's Reaction; With Particular Reference to Pulmonary Tuberculosis. H. S. Treadgold.—p. 699.
*"Positive Throat" in Diphtheria Convalescents. J. L. Brownelle. —p. 706.
Life Assurance and Glycosuria. R. T. Williamson.—p. 708.
Diagnosis of Tuberculosis in Recruits and Pensioners. J. Guy.—p. 711.
*Bone Condition Analogous to Rickets in a Child of Five Months. H. K. Brade-Birks.—p. 712.
*Two Cases of Ichthyosis Hystrix in the Same Family. L. M. Davies. —p. 713.
Total Inversion of Parturient Uterus. W. G. Evans.—p. 713.

Surgical Treatment of Chronic Ulcers of Stomach and Duodenum.—Sherren maintains that the result of the operative treatment of chronic duodenal ulcer rivals that of any other major operation. With care during operation and with the after-treatment jejunal ulcer should become almost, if not quite, unknown. Gastrojejunostomy is the operation of choice in all except those in which the ulcer is involving the stomach or deeply eroding the pancreas. Both should be treated by excision. Among his cases "not quite well" are three in whom this latter condition was present. Sherren's successes more than two years after operation are a little over 80 per cent. of those operated on. This is considering all who cannot be traced or who died before the two-year period of other causes, thirty-two, as failures. The successes among those traced are over 90 per cent. Among 310 cases of chronic gastric ulcer in which operation was performed the mortality was 11. These figures include all ulcers treated by operation, except for acute perforation. All the partial gastrectomies except two are quite well, and none complain of any discomfort from the smallness of the stomach. I have been able to trace twenty-two patients treated by excision combined with gastrojejunostomy; all except two are quite well. Of the 219 survivors of those treated by gastrojejunostomy alone, of whom Sherren has been able to keep 187 under observation for over two years; 162 have remained perfectly well. To summarize the results: Of the 310 cases, 220 have remained perfectly well for more than two years or died at a later date of other causes after having had no further gastric trouble. This is 75 per cent. of those operated on. Sherren emphasizes that while gastrojejunostomy combined with general abdominal exploration and dealing with other diseased organs is curative in the majority of cases of chronic duodenal ulcer, each must be studied and those eroding the pancreas or spreading to the stomach removed. Gastric ulcers which have perforated and are adherent to neighboring organs, indurated ulcers on the lesser curvature, and all in which there is any suspicion of malignancy must be treated by partial gastrectomy. He believes that gastrojejunostomy for chronic gastric ulcer will become the less frequent operation. Symptoms arising later if the correct operative procedure has been adopted are due to mechanical or ulcerative changes in the region of the anastomosis, both prevented by careful technic in the majority of cases, and becoming less frequent as individual experience ripens.

Arneth's Reaction in Pulmonary Tuberculosis.—A series of thirty cases representative of various stages of pulmonary tuberculosis were examined by Treadgold; all had tubercle bacilli present in the sputum. All cases were examined on at least three occasions over a minimum period of two months. The average time each case remained under investigation was 3.8 months, and the average examinations made were 4.15 per case, a total of 124 blood films being counted. Analysis of these cases showed that twenty-nine had a more or less marked shift to the left, and one a definite and continuous shift to the right. There were ten deaths, ten cases discharged unimproved after treatment, and ten cases definitely improved. Although these figures bear out, to some extent, claims made by other observers that the more marked the left shift the worse the prognosis, it also reveals the great danger of drawing any conclusions from single Arneth examinations. Again, two consecutive examinations showing a marked rise in the Arneth count are not necessarily indicative of the improvement in the lung condition of the patient. In view of the fact that the average tuberculous sputum usually contains considerable numbers of well preserved neutrophil leukocytes, films of tuberculous sputums were stained by Unna's polychrome-blue method, and the results contrasted with blood films of the same patients taken the preceding day. The first ten cases examined proved remarkably constant, the maximum variation in the count between the sputum and blood films being in no case more than 5 per cent. Further investigation showed, however, that the leukocytes of many perfectly fresh tuberculous sputums were disintegrated and impossible to count and the method was abandoned. On the whole, Treadgold's observations showed that a shift to the left is usually present in cases of active pulmonary tuberculosis, the degree of shift being most marked, and generally progressive, in dying cases. It is less marked and is apt to remain fairly constant in cases which do not improve under treatment, while cases definitely improving usually show the least degree of shift, and this becomes progressively less as improvement continues. A constant and marked left shift in early suspected cases of pulmonary tuberculosis, where other sources of infection can be excluded, is presumptive evidence of active mischief. A left shift under 200 in old cases of "clinical arrest" is suggestive of recurrence and calls for minute and careful reexamination. Treadgold also reports on animal experiments.

Throat Antisepsis in Diphtheria.—A clinical study of fifty consecutive vaccine treated cases by Brownlie shows that local antiseptic throat applications are unreliable cures for the carrier and the positive throat. Diphtheria vaccine produces well defined degeneracy in morphological appearance of the cultured organism, followed by its complete dispersal from the locality invaded. In the past the diphtheria carrier has been subjected to hospital residence for weeks, perhaps months, which were avoidable. Diphtheria vaccine is effective in the treatment of the positive throat of diphtheria convalescents, and its use is administratively and economically sound.

Bone Condition Analogous to Rickets.—Brade-Birk's patient was breast fed. At the seventeenth week, when the child weighed 10 pounds 7 ounces, symptoms analogous to those of rickets were observed. The term "analogous to rickets" is used to prevent controversy as to terms. There seems to be a current belief that typical rickets cannot occur in a child so young; however, the signs in this case were typical.

Familial Ichthyosis Hystrix.—In Davies' cases the father's brother married the mother's sister. History of tuberculosis on father's side. No history of skin trouble or of illness of importance on either side. The mother's sister has four children, two of whom have typical ichthyosis. The mother describes the condition of her two boys at birth as follows: "They were born with their hands and their feet covered with a film, as if whitewashed." The white films refused to be washed off, but later, when the superficial layers had loosened, the underlying skin was rough and dry. When about 1 year old warts were first noticed on hands and feet, and these gradually spread and increased over rest of body. The other two children, who are unaffected, have been sleeping with them, and using the same towel. The mother has paid great attention to washing the boys. The two brothers are aged 12 years and 9 years, respectively. The skin of the face is dry and scaled, but clear of warts. Above the collar is a definite ring of grayish warts. The rest of the skin of the body is dry and scaly, and superimposed are numerous warts, varying in number in different localities. In the neighborhood of the joints, dorsal surface, and palms of hands and axillae the warts are especially numerous, and so closely packed that no normal skin can be seen. The penis also of the younger boy is covered wih warts. The warts are grayish in color, and measure about 2 to 3 mm.

Medical Journal of Australia, Sydney

Feb. 14, 1920, **1**, No. 7

Management of Diabetes. J. F. Wilkinson.—p. 141.
Neglected Factors in Prevention of Disease. F. S. Hone.—p. 145.

Feb. 21, 1920, **1**, No. 8

Diagnosis and Quinin Treatment of Malaria. E. N. Bateman.—p. 163.
Chronic Mastitis. H. C. Rutherford.—p. 166.
Papulo-Urticarial Rashes Caused by Ringlets of Caterpillars of Moth. J. B. Cleland.—p. 169.
Hydrochloric Acid Poisoning with Sloughing of Part of Esophagus. J. B. Cleland.—p. 170.
Case of Nervous or Hysterical Fever. A. W. Campbell.—p. 171.

Archives des Maladies de l'Appareil Digestif, Paris

February, 1920, **10**, No. 7

Appendicitis in Relation to Dysentery. Heuyer and Leveuf.—p. 385.
*Insufficiency of the Pylorus. C. Bonorino Udaondo and others (Buenos Aires).—p. 410.
*Cancer of the Duodenojejunal Flexure. A. Cade and A. Devic.—p. 419.

Gastric Myoma: Partial Gastrectomy. H. Bouquet.—p. 425.
*Changes in the Rectal Mucosa Following Intrarectal Ether Narcosis. R. Savignac and J. Vidal.—p. 428.

Insufficiency of the Pylorus.—Bonorino recalls the fact that the organic and functional processes induced by true pyloric incontinence are not well known, though quite worthy of attention. He reports what he regards as a pure type of the anomaly in a syphilitic man of 36 with gastroduodenal ulcer and symptoms from the digestive tract for about three years. They included long periods of constipation followed by similar periods of diarrhea, but the stools contained no mucus or visible blood. Improvement in the general condition followed specific treatment, but symptomatic and dietetic measures were long required to abolish the symptoms of the ulcer and the occult blood in the stools. The exceptional feature of the case was the permanent gaping condition of the pylorus which in the roentgen picture behaved like a simple open tube draining the stomach, an absolute and permanent insufficiency of the pylorus. This insufficiency was probably due to adhesions around the pylorus holding it open. The lower margin of the stomach and the antrum seemed to be somewhat less movable than normal. The roentgen ray disclosed that when the opaque mixture reached the pylorus it passed on into the duodenum continuously without any contractions of the walls being observable. Surgical intervention was recommended, but the patient refused and left the service. Other conditions entailing insufficiency of the pylorus are reviewed in connection with this case.

Cancer of the Duodenojejunal Flexure.—Cade and Devic report a case of duodenojejunal cancer in a woman of 72 which presented some peculiar points of interest. Eighteen months before the patient entered the service of Cade she noticed that she was losing weight and that her strength was failing. Not until a year later did the first gastric symptoms appear. Then the patient began to be awakened occasionally nights by a moderate epigastric pain that was accompanied by a feeling of intense hunger. One month before entering the hospital she was suffering from vomiting spells and pain. The material vomited contained much bile, and the stomach was dilated. Peristaltic waves of rare intensity were observable. In view of the precarious condition of the patient, the certain indications of stenosis, and the fact that liquid nourishment could not be borne, an immediate gastro-enterostomy was done, which, however, resulted fatally thirty-six hours after the operation. The writers recall that Pic emphasized that gastric dilatation, accompanied by bile in the vomitus, was distinctly characteristic of duodenal cancer located below the papilla of Vater, as was shown at necropsy to be the case here. The feeling of intense hunger at night is accepted as a sign of duodenal ulcer, but here it was a sign accompanying cancer. It would seem that stenoses below the papilla of Vater are announced by two quite different series of signs, the one series being of a gastric order (duodenal reflux, vomiting, dilatation) and the other intestinal (constipation and at times even phenomena of occlusion). The first series is the more common.

Changes in the Rectal Mucosa Following Intrarectal Ether Anesthesia.—Savignac and Vidal state that as the result of rectoscopic studies on a series of cases, they were able to conclude that, while intrarectal etherization by the Monod method, slightly varied, and which they describe in detail, caused a light, acute, transitory rectitis, the inflammation was only superficial and produced no important subjective symptoms. About the only trouble was a slight tendency to constipation for a few days following the narcosis.

Archives de Médecine des Enfants, Paris

March, 1920, **23**, No. 3

*Amyotonia Congenita. P. Haushalter.—p. 133.
Inherited Syphilis and Dystrophies. V. Hutinel and H. Stévenin. —p. 145. Cont'n.
*Purpura in Young Infant. T. Reh (Geneva).—p. 179.

Amyotonia Congenita: Oppenheim's Disease.—Haushalter reports three more cases of Oppenheim's disease to be added to the list of 155 cases collected by Comby. In Case 1 he emphasizes that the infant's respiration was almost entirely diaphragmatic owing to the atony of the inspiratory muscles; also that the mother while pregnant with this, her eighth child, rarely noted any movements of the fetus, and they were unusually slight. In Case 2 the significant feature was that while the child, up to the age of 4, had remained flabby and inert, keeping whatever position he was placed in, he then underwent a rapid transformation. He gradually learned to walk, to carry things to his mouth, to get up from the floor, and even to dress himself. At 5 he could only say "papa" and "mama," but then he rapidly learned to talk; at 7 he started school; could write at 8, and at 11 he was in classes with boys of his age and did not seem to be their inferior mentally. His height was then 1.25 meters; weight, 20.5 kg. There was no disturbance of circulatory, respiratory, digestive or urinary functions. His body was well proportioned. There was, however, a diffuse, generalized, muscular atrophy, in spite of which he could walk and run like other boys, without becoming overfatigued. Owing to the suppleness of his joints he could execute many tricks of contortionists. In Case 3 the congenital amyotonia, predominating in the lower extremities, accompanied by diffuse muscular atrophy, continued to progress until death at 12 from bronchopneumonia. The habitual posture assumed by the child, together with the looseness of the joints and the muscular atrophy, had finally brought about a strange, doubled-up condition of the body, the left side of the thorax resting on the anterior wall of the abdomen, the left hip joint on a level with the axilla, with excessive scoliosis similar to that sometimes seen in myopathies. While the lesions resembled those of a myopathy, this case could not be classed among myopathy cases owing to the fact that it was congenital.

Purpura in Infant.—The infant had an erosion in its mouth soon after birth and the pneumococcus gained access to the blood stream and induced symmetrical purpura and terminal pneumonia.

Bulletin de l'Académie de Médecine, Paris

Feb. 17, 1920, **83**, No. 7

Hyphomycetoma. P. S. de Magalhães (Rio de Janeiro).—p. 137.
Epidemic Encephalitis. Chauffard.—p. 140.
*Movements of Fetal Lungs. Balthazard and Piédelièvre.—p. 141.
*Spasm of the Esophagus. J. Guisez.—p. 147.
The French Navy in the Protection of France Against Disease. H. Chevalier.—p. 149.

Intra-Uterine "Drowning" of the Fetus.—Balthazard and Piédelièvre declare that the possibility of intra-uterine movements of the fetal chest, similar to respiratory movements, is now accepted generally by obstetricians and medicolegal authorities. These movements may draw in fluid, and the fetus may actually "drown" in consequence. This may occur with otherwise normal childbirths, and it may cause suspicion of infanticide. The only way to determine whether the drowning occurred in the uterus is to examine sections of the deep lung, as, under normal conditions, débris of the amniotic fluid are often found in the more accessible parts of the lung, although only in small amounts. Reuter's technic shows fetal epidermic cells in the amniotic fluid and the crystals of cholesterin from the meconium. When these are found in histologic sections of the lungs, there can be no doubt that the fluids were drawn deep into the lungs by the premature movements of the respiratory muscles. Still other elements of these fluids can be detected by the technic described.

Spasm of the Esophagus.—Guisez relates that he has examined with the esophagoscope 420 cases of primary spasm of the esophagus. Most of them were grave and permanent, but all were a local pathologic condition and usually yielded to local measures. His experience has demonstrated, he says, that the esophagus is an actual organ, with an active function in passing the food along. If the food is swallowed in chunks, the chunks are arrested at the narrower points and drinking, to wash them along, aids in the demands made on the esophagus wall, which responds after many repetitions with a permanent contracture. The primal cause, therefore, is defective mastication and only when this is corrected can the cure be permanent. As a rule, the subjects with spasm

of the esophagus are nervous or inclined to hysteria, but even when there is a tendency to nervousness, the lack of proper mastication is the primal factor.

Bulletin Médical, Paris

March 11, 1920, **34**, No. 14

The Question of the Care to Be Given the War Disabled. R. Le Fur. —p. 235.
Some Dangerous Syrups Listed in the Codex Français. Desquelle. —p. 237.

March 13, 1920, **34**, No. 15

The Military and Civilian Medical Service in French Colonies During the War. C. Simon.—p. 249.
*Acute Cervical Arthritis Following Scarlet Fever. Mayet and Laval. —p. 251.

March 17, 1920, **34**, No. 16

The Question of the Secondary Medical Personnel in Paris Hospitals. L. Brocq.—p. 263.
Treatment of Alcohol Addiction. D. Jaguaribe and F. Regnault. —p. 266.

Acute Cervical Arthritis Following Scarlet Fever.—Mayet and Laval state that the cervical vertebrae are a frequent point of attack for scarlet fever arthritis. Not only rheumatoid pains of short duration arise in this region, but genuine arthritis as well, which sometimes takes on a peculiar character. During the acute period the arthritis is characterized by pain and by a certain amount of swelling, sometimes taking the form of severe wryneck with extremely violent pain when any attempt is made to move the head. In some cases ankylosis results which may require orthopedic treatment by means of head and neck plaster casts (Minerva casts) applied under general anesthesia. They report a case of acute cervical arthritis, after mild scarlet fever, in which there was suppuration and intense but transient torticollis; it subsided after evacuation of the abscess under general anesthesia The pus was found back of the deep vertebral aponeurosis and prevertebral muscles, having worked in between the elements of the anterior common ligament, in front of the axis and third cervical vertebra. By the twenty-fifth day the cure was complete, the movements of the neck normal.

Lyon Médical

March 25, 1920, **129**, No. **6**

*Abscess in Lung. J. Chalier.—p. 249.
Beyrouth and Its Medical School. G. Gayet.—p. 284.

Abscess in the Lung.—The case reported by Chalier teaches that even with negative roentgen-ray findings, if the symptoms indicate a suppurative process in the lung, we should not hesitate to puncture. He introduced the needle at the point of least resonance and found pus at a depth of 6 cm. There was not more than 30 c.c. of pus, but prompt improvement followed its evacuation with speedy complete recovery. The general symptoms had dominated the clinical picture, progressive emaciation, with hollow eyes and extreme weakness, actual cachexia in a month's time, while the cough suggested acute tuberculosis. The abscess had developed after influenza with congestion of the base of the right lung.

Nourrisson, Paris

January, 1920, **8**, No. 1

*Diarrhea in Breast-Fed Infants. A. B. Marfan.—p. 1.
Medical Supervision of Wet-Nurses in the Provinces. P. Parisot. —p. 31.
*Skin Tuberculin Reaction in Children. Germaine Mioche.—p. 42.

Diarrhea in Breast-Fed Infants.—Marfan states that while diarrhea in breast-fed infants is frequent, in its primary form it is almost never associated with symptoms of infection or intoxication, at least not so as to present any serious or lasting symptoms. It has no profound effect on the nutrition, and is very rarely of a grave nature. He opposes the idea advanced by many that diarrhea in breast-fed infants frequently requires that the child should not be given the breast for a time; he thinks such indications are rare. Nor does he think that a change of nurse is often indicated. In the foregoing respects a radical distinction is to be made between breast-fed and bottle-fed infants, for the general nutrition and growth of the latter are quickly affected by diarrhea; hypothrepsia and athrepsia often result; toxic complications (cholera infantum) or secondary infections may arise requiring varied and rather complicated dietetic treatment. In breast-fed infants, if the diarrhea is light, the first day the intervals between feedings should be lengthened and the time at the breast should be shortened. The intervals may be lengthened to four hours and the time at the breast may be reduced to five or six minutes. During the intervals the infant should be given a few spoonfuls of pure boiled water. The second day the intervals are shortened somewhat; the third day the time at the breast may be slightly lengthened. Thus, by degrees, according to the effect secured, a gradual return to normal is brought about. But in severe cases three or four feedings are entirely suppressed and pure boiled water is substituted, a quantity about equal to the amount of milk usually taken by the child when well.

Skin Tuberculin Reaction in Children.—Mioche states that on the basis of experience gathered during five years in Marfan's service, the following conclusions may be drawn as to the clinical value of the tuberculin skin reaction: 1. It is the procedure of choice among the various diagnostic methods in which local reactions to tuberculin play a part. 2. Its diagnostic value is incontestable. 3. Starting with zero in the newly born, the number of positive cutireactions increases progressively with the age of the subject. 4. In children under 1 year of age a positive reaction is a sure indication of progressing tuberculosis and usually of approaching death. In older children it is not a reliable index of tuberculosis in evolution unless supported by clinical evidence; and in adults its diagnostic value is practically zero. 5. As a method that will permit the examining physician to diagnose tuberculosis in infants it is incomparably better than all others, for by means of it he can recognize the presence of the disease at its very onset and thus perhaps be able to render some service.

Paris Médical

Feb. 28, 1920, **10**, No. 9

*Fat Grafts. Mauclaire.—p. 165.
Meat and Infant Feeding. G. Schreiber.—p. 169.
Polypoid Syphilitic Chancre of the Tonsil. G. Portmann.—p. 174.
The Menace from Typhus in Eastern Europe and Asia Minor.—A. Vaudremer.—p. 176.

Fat Grafts.—Mauclaire expatiates on the numerous indications for and advantages of implants of adipose tissue and of the fatty bunches on the omentum, and reviews the literature on the subject He has used fat grafts to isolate adherent tendons and muscles, to isolate nerves embedded in fibrous tissue, and to fill up depressions, to reenforce suture of the intestines, to plug and arrest bleeding in wounds of the liver and fill up the cavity after removal of a cystic tumor, to obliterate a fistula into the liver, to aid in suturing the uterus after myomectomy or amputation, to fill the cavity after an operation for osteomyelitis, to interpose between articulating surfaces, and to plug a persisting fistula into the pleura. The results on the whole have been very good in his own and others' experience. The reason why fat grafts have not been used more extensively seems to be on account of a mistaken impression that their vitality is very low.

Progrès Médical, Paris

Feb. 28, 1920, **35**, No. 9

*Influenza After Pleurisy. Lortat-Jacob.—p. 91.
Rudiments of Alimentation. M. Loeper.—p. 92.
*Differentiation of Typhoid and Paratyphoid Bacilli. A. Sartory. —p. 95.

Influenza After Pleurisy.—Lortat-Jacob reports three cases out of a wider experience in which young women who had had pleurisy at some time developed galloping phthisis after a recent attack of influenza.

Differentiation of Typhoid and Paratyphoid Bacilli.—Sartory gives a table showing the different characteristics of the bacilli that may be cultivated from a patient with symptoms suggesting typhoid. The growth on fifteen different mediums can thus be compared. He prefers a peptone-glycerin culture medium after twenty-four hours in glycerin bile and then transfers to plates.

March 6, 1920, **35**, No. 10

*Radio-Active Mud in Treatment of Adnexitis. M. Chifoliau and H. Guillard.—p. 103.
*Diabetes and Acromegaly. Lereboullet.—p. 106.
*Exophthalmos with Jugular Thrombosis. Cordier and Rollet.—p. 108.

Radio-Active Mud in Treatment of Adnexitis.—Chifoliau and Guillard have been utilizing the by-products of radio-active minerals, a radio-active mud, in cases of disease of ovaries and tubes, and have found it very satisfactory. They apply it in the vagina, a cylinder of the substance wrapped in gauze and molded to fit the lesion to be treated, while ice is applied to the abdomen. The mud is left in place for one or two days and after a pause of two or four days the application is repeated. The pain and fever seem to be reduced at once and the inflammatory process rapidly subsided, they say, permitting a conservative operation at need, the acute stage of the ovaritis or salpingitis being thus very much shortened. Sixteen cases are described in detail.

Diabetes with Acromegaly.—The circumstances of the case described confirm that alimentary glycosuria or diabetes observed with acromegaly is due to nerve irritation at the floor of the third ventricle, from enlargement of the sella turcica. Contrary to diabetes insipidus, which is due to the pituitary itself, the glycosuria type seems to be the result of irritation in the vicinity of the pituitary, not in the latter itself.

Exophthalmos with Jugular Thrombosis.—The protrusion of one eyeball occurred suddenly in the terminal phase of thrombosis in the jugular vein in a man of 30 with endocarditis and asystolia. The condition was like that with intermittent exophthalmos from venous stasis only it was permanent.

Revue Franç. de Gynécologie et d'Obstét., Paris

December, 1919, **14**, No. 12

*Lipolysis in Fibromyomas of the Uterus. H. Keiffer.—p. 451.
*Radium Therapy in Menorrhagia and Metrorrhagia. P. Degrais.—p. 454.

Lipolysis in Fibromyomas of the Uterus.—Keiffer states that fibromyomas of the uterus may disappear during or after pregnancy by means of a complex mechanism, mainly through lipolysis, but associated with other degenerative processes. The details of lipolysis may be observed especially in the muscular fiber around the nucleus. The strands of connective tissue seem to resist longest the degenerative process. Toward the last the fibromyoma appears like a spongy tissue in the network of which is seen a complex mass in which fat droplets of various sizes, together with cellular refuse have accumulated. After childbirth some fibromyomas present the same characteristics as before pregnancy; others diminish in size, become softer, and seem to have disappeared, especially since the hemorrhages which accompanied them have ceased as well, but after three or four years the same fibrous bunches appear again and may develop into large growths. A third group of fibromyomas undergoes rapid and permanent retrogression.

Radium Therapy in Menorrhagia and Metrorrhagia.—Degrais having employed radium with success in numerous cases of menorrhagia and metrorrhagia, describes his technic and states what he regards as the indications for such treatment, namely, in cases associated with hemorrhagic metritis, uterosclerosis and fibromas. The results have been excellent, and on the basis of his experience with cases that have stood the test of time, Degrais believes that absolute cures can be effected by radium therapy.

Revue Médicale de la Suisse Romande, Geneva

March, 1920, **40**, No. 3

Acute Appendicitis at Onset of Attack. E. Kummer.—p. 133.
*Influenza Does Not "Tuberculize." R. Burnand.—p. 145.
*Fixation Abscess in Influenza. L. Probst.—p. 159.
Critical Review of Procedures for Exploration of Stomach. E. Cottin and M. C. Saloz.—p. 163. Conc'n.
*Gastric Cancer with Pulmonary Lymphangitis. G. Turrettini and I. Gerber.—p. 177.

Does Influenza Predispose to Tuberculosis?—Burnand's experience at the Leysin Sanatorium confirmed the lack of any immunity to influenza in the tuberculous, but he was unable to discover that influenza there or elsewhere had caused the flaring up of latent tuberculosis to any appreciable extent. There has been no recrudescence of tuberculosis throughout the country since the epidemic such as otherwise would be inevitable.

Fixation Abscess in Influenza.—Probst remarks that influenza is again the topic of the day in Switzerland, although the new epidemic is not so severe as in 1918 and 1919. His experience then and with recent cases has confirmed his previous announcements in regard to the benefit from a fixation abscess induced by subcutaneous injection of 1 c.c. of turpentine. He ascribes its efficacy to the hyperleukocytosis which it induces, as influenza is accompanied by pronounced lenkopenia. He thinks this explains also why influenza is mild postpartum. The hyperleukocytosis of parturition renders the infection mild, and there is nothing so effectual, he declares, to induce hyperleukocytosis as the fixation abscess. He warns not to incise the abscess until the disease is subsiding (apyrexia), and then to make an ample incision and clear out the abscess thoroughly.

Pulmonary Lymphangitis from Gastric Cancer.—Turrettini and Gerber report a case of cancer of the stomach in a woman of 30 which ran its entire course without local subjective symptoms. After nine months of progressive weakness and anemia thrombophlebitis of the jugular and innominate veins led to palpation of a tumor mass in the stomach, soon followed by invasion of the lymphatics in the lungs by the malignant process. Necropsy showed that more than half of the walls of the stomach had been involved in the cancer.

Revue Neurologique, Paris

December, 1919, **26**, No. 12

*Irritation in Pathology of Nervous System. Triantaphyllos.—p. 881.
*Suppression of the Babinski Reflex. Noica and A. Radovici.—p. 891.
Amyotrophic Paralysis Following Tetanus Antiserum. J. Lhermitte.—p. 894.
*Intraspinal Treatment of Neurosyphilis. G. Marinesco.—p. 901.

The Significance of "Irritative Phenomena" in Nervous and Mental Pathology.—Triantaphyllos defends the view that there is no such thing as a formula of cellular changes corresponding to so-called irritative lesions by which function is stimulated; that is, a formula that can be regarded as opposed to the destructive formula that diminishes the function. He holds further that every pathogenic agent and all pathologic conditions tend to abolish the function of the cell affected by the lesion. It is only when the pathogenic agent exerts an elective action on neurons that have an inhibitive effect on other neurons that the phenomena termed "irritative" appear. But these phenomena are not due to the fact that a so-called irritative lesion caused an increase in the function, but to the circumstance that a lesion with a destructive tendency has reduced inhibition (for the neurologic irritative phenomena) or has reduced the power controlling the normal ideation (for the psychic irritative phenomena).

The Suppression of the Babinski Reflex.—Noïca and Radovici give as the result of their experience that it is never safe to state whether the Babinski reflex is positive or negative if the foot of the subject is cold, as cold will often suppress the reflex temporarily.

Intraspinal Treatment of Syphilitic Disease of the Central Nervous System—Marinesco reviews his experience in this line since 1910 and states that he has fourteen patients with tabes or general paresis whom he treated with salvarsanized serum over six and seven years ago. He gives a brief summary of three of the cases of general paresis in which the clinical improvement has persisted to date, except that one patient, a physician of 35, who served all through the war with devotion and efficiency, recently had a relapse and died insane. The woman of 41 and another man are in clinical health to date, eight years after commencing the treatment.

Gazzetta degli Ospedali e delle Cliniche, Milan

Dec. 4, 1919, **40**, No. 97

*Charcoal Impregnated with Laudanum in Therapeutics. I. Simon.—p. 1059.

Laudanum with Charcoal.—Simon has found that laudanum adsorbed by animal charcoal can be given with good results in acute and subacute enteritis without grave lesions of the bowel wall. He impregnates the charcoal with a 2 or 4 per cent. solution of laudanum, and states that the effect of the drug is realized with much smaller doses than otherwise, while the charcoal adsorbs toxins.

Dec. 11, 1919, **40**, No. 99

*Salt as Antidote for Strychnin. G. Girihaldi.—p. 1084.

Dec. 14, 1919, **40**, No. 100

Malaria and the War. C. Pascale.—p. 1091.

Sodium Chlorid as Antidote for Strychnin.—Giribaldi cites authors who claim that sodium chlorid renders certain poisons less soluble, and describes research on rabbits and dogs which demonstrated that a strong solution of salt has a certain action in this line. The sodium chlorid must follow the strychnin in less than five minutes, either by the mouth or subcutaneously, for any effect to be apparent.

Riforma Medica, Naples

Feb. 7, 1920, **36**, No. 6

History of Symptomatic Treatment of Influenza. E. Maragliano.—p. 141.
*Purpura with Uterine Myoma. G. Verrotti.—p. 145.
Lethargic Encephalitis. P. F. Tunola.—p. 146.
Traumatic Hernia. E. Aievoli.—p. 159.

Purpura with Uterine Tumor.—Verrotti has encountered two cases in which annular teleangiectatic purpura developed below the umbilicus in women of about 40 with multiple fibromyomas in the uterus. After hysterectomy, the dermatosis subsided in about a week.

Feb. 14, 1920, **36**, No. 7

Inaugural Lecture of Syphilography Course. Stanziale.—p. 170.
*Influenzal Meningo-Encephalitis. D. Pace.—p. 175.
*Multiple Cartilaginous Exostoses. G. Marsiglia.—p. 177.
Deficiency Phenomena. G. Molinari.—p. 182.

Influenzal Meningo-Encephalitis.—Pace reports a case of coma and fever in a man of 41 who had not felt quite well since influenza four months before. The symptoms indicated acute congestion in brain and meninges, not improved by venesection, but lumbar puncture the fourth day seemed to arrest instantaneously the morbid process. In a second case the predominant symptom was delirium with high fever, but it yielded in the same way at once to lumbar puncture. Lymphocytosis was pronounced in the fluid in both cases. His retrospective diagnosis was influenzal meningo-encephalitis. The involvement of the brain in influenza is rare; he says that only a few cases have been reported in the different countries, including L. Litchfield's four published in THE JOURNAL, May 10, 1919, p. 1345.

Cartilaginous Exostoses.—Marsiglia analyses the literature on this subject and expresses the opinion that the exostoses are not local processes but develop from some single cause. This may possibly be the same cause responsible for rachitis, the effect in some cases being the latter, and in others, these exostoses. In a personal case described in a young man there were signs of rachitis along with the thirty-six exostoses, and when some of the larger ones were excised, the bone marrow ran out like oil from the gap left in the long bone. A familial and hereditary character was evident in this case. The thyroid was normal in aspect, but the short stature and rather backward mentality suggested possible loss of balance in the endocrine system.

Archivos Españoles de Pediatría, Madrid

December, 1919, **3**, No. 12

Two Cases of Achondroplasia. S. Cavengt.—p. 705.
*Eczema in Infants. E. de Oyarzabal.—p. 712.

Eczema in Infants.—De Oyarzabal remarks that as the skin is so sensitive in children with eczema, it may be advisable to refrain from washing the eczematous regions with soap and water, and use olive oil, cold cream, a benzoin or a hot 3 per cent. solution of boric acid. The region in children should be covered with a bandage to protect against scratching. If in the face, and if it itches much, it is better to give small doses of bromid or chloral to insure the child's sleeping. Eczema of the scalp, he says, readily improves under a 2 per cent. salicylated yellow petrolatum or oil containing 1 to 5 per cent. anthrasol, cleansing once a day with olive oil and occasionally washing with an infusion of chamomile. Eczema, rebellious to all other measures, may yield to roentgen-ray exposures. "With these, admirable results are obtained."

Repertorio de Medicina y Cirugía, Bogotá

January, 1920, **11**, No. 4

The Amino-Acids in Metabolism. E. Gómez. A.—p. 186.
*The Wassermann Reaction. J. Bejarano.—p. 195.
The Hygiene of Milk. G. Arbeláez R.—p. 205. Cont'n.

Estimation of the Clinical and Social Value of the Wassermann Test.—Bejarano insists that a decision as to whether a syphilitic can marry cannot be based on a single Wassermann test. A double plus reaction in inherited syphilis calls for treatment, and a triple plus reaction in acquired syphilis after a period of negative reactions justifies a prognosis of impending neurosyphilis. Even with negative blood reaction, an intense reaction in the cerebrospinal fluid suggests general paresis. He urges the appointment of a commission by the medical congresses to unify laboratory methods and control the work of different laboratories.

Revista Médica del Uruguay, Montevideo

February, 1920, **23**, No. 2

*Catatonia with Stupor and Uremia Following Influenza. Elio García.—p. 49.
*Headache with Mild Endocrine Disturbance. F. S. Garmendia.—p. 57.
*Psychology and Psychiatry. C. Payssé.—p. 61.

Catatonia and Uremia Following Influenza.—García knows of only two cases on record in which dementia developed complete in two or four weeks, but in the case he describes the interval from the onset of symptoms was only one week in the previously healthy young man. Catatonia then followed at once, with progressive stupor and reduction of all the vital processes, the young man lying like a living statue until death the third month. When first examined, three weeks after the onset of the apparently mild influenza, the blood serum contained 0.82 gm. urea per liter and the urine 9.5 gm., and the cerebrospinal fluid a few days later contained 0.48 gm. per liter. At this time there had been a brief period of delirium but the stupor and catatonia which then developed persisted without intermission to the last. In another case of influenzal psychosis the blood serum contained 1.2 gm. urea and the puncture fluid 1 gm., but recovery was soon complete.

Headache with Mild Endocrine Disturbance.—Garmendia reports two cases of headache for which thyroid insufficiency was evidently responsible, and which yielded to thyroid treatment. In another case, latent chronic suprarenal insufficiency was finally detected and under epinephrin treatment, supplemented by recalcification measures, the patient regained strength and the headaches disappeared. In his fourth case a young woman had violent headaches during the menstrual periods, with occasional milder headaches in the intervals, and menstruation was scanty and painful. Tachycardia, a soft pulse, and pains in the region of the ovaries confirmed the assumption of ovarian insufficiency, and under ovarian extract treatment there has been no return of the disturbances during the four months to date. The symptoms in the suprarenal case had been great weakness, frequent nausea, pains in the left hypochondrium, and intense and frequent headaches. Small patches of slight pigmentation were found in the axillae and at the waist. The headache in the thyroid cases was in the upper and front part of the head and lasted the whole day, the skin was dry, and the outer portion of the eyebrows was scant of hairs.

Psychology and Psychiatry.—Payssé is alienist to the Vilardebo Hospital, and he here devotes fifty-seven pages to analysis of the methods of psychology and the necessity for applying them in psychiatry.

Semana Médica, Buenos Aires

Dec. 11, 1919, **26**, No. 50

*Urobilinuria with Continuous Malarial Fever. R. E. Reynolds.—p. 735.
Vaccine Treatment of Foot-and-Mouth Disease. N. S. Lóizaga.—p. 738.
*Mercuric Chlorid Poisoning. M. E. Pignetto.—p. 741.
Vaccine Treatment of Diphtheria. P. Santillan.—p. 744.
Tuberculin Treatment of Pulmonary Tuberculosis. Wimmer.—p. 746.
Origins of Crystals. A. and A. Mary.—p. 747.
Examination of the Eyes. R. Argañaraz.—p. 749.
Dispensary and Preventorium. A. Casaubon.—p. 755.
Work of University Instructor. (Docencia libre.) Garcia.—p. 757.
Herpes Zoster Developing After Radium Treatment. Z. Guzman.—p. 762.

Urobilinuria and Continuous Malaria Fever.—Reynolds reports the case of a youth who had been sent to him with the diagnosis of pulmonary tuberculosis plus whooping cough. He found urobilinuria and a continuous fever, and was impressed by the way the physical signs in the lungs changed their location. The urobilinuria pointed to the liver, but the liver was not tender and the urobilinuria fluctuated from day to day. On this basis malaria was suspected and under quinin the urobilinuria promptly subsided, the supposed tuberculous lesions in the lungs cleared up, and the supposed whooping cough disappeared. Whenever the quinin was suspended, the urobilinuria reappeared. This is the most constant sign of continuous malarial fever, he reiterates, and it rises and falls with the fever, and yields with mathematical precision to quinin, even when the fever resists the action of the drug.

Prophylaxis of Mercuric Chlorid Poisoning.—Pignetto pleads for measures to put an end to the numerous cases of mercuric chlorid poisoning among women. He has had thirty-nine cases in his service alone in the last five years out of fifty-five attempts at suicides by different means. Ten died of the thirty-nine mercuric chlorid cases. Among the measures which he advocates to repress this almost epidemic of chlorid poisoning, is the enlightenment of the public in regard to the agonies from taking this drug. Few realize the tortures to which they are subjecting themselves when they take mineral poisons which are not speedily fatal.

Berliner klinische Wochenschrift, Berlin

Dec. 15, 1919, **56**, No. 50

Time Differences Between Electrocardiogram and Phonocardiogram of the Ventricle. T. Brugsch and E. Blumenfeldt.—p. 1177.
*Lymphoid Foci in the Thyroid Gland in Addison's Disease. M. Dubois.—p. 1178.
The Pathogenesis of Bone Cysts. K. Rohde.—p. 1184.
The Spirochete Findings of Karl Spengler and S. Fuchs-von Wolfring. F. W. Oelze.—p. 1186.
The Mode of Action of Iodin in Dysmenorrhea. Grumme.—p. 1188.

Lymphoid Foci in the Thyroid Gland in Addison's Disease.—In connection with the subject of lymphoid foci found in the thyroid gland in exophthalmic goiter, Dubois reports similar findings in six cases of Addison's disease, and states as the result of his investigations that in Addison's disease masses of genuine lymphatic tissue with typical germinal centers occur in the thyroid gland, and that this lymphoid tissue must be regarded as a heterotopic new growth, displacing the parenchyma. This new growth is not of an inflammatory nature, but is to be regarded as the result of an excitation arising from the suppression of the suprarenal system, which threw a heavier weight of responsibility on the thyroid gland. The formation of large follicles with germinal centers may have some connection with the status lymphaticus, which is constant in Addison's disease.

Deutsches Archiv für klinische Medizin, Leipzig

Feb. 18, 1919, **128**, No. 5-6

*Destruction of Albumin After Nephrectomy. E. Becher.—p. 261.
*Hypertrophy of the Pylorus with Pernicious Anemia. Anna Kleemann.—p. 271.
*The Albumin Quotient in Urine and Serum. B. Albert.—p. 280.
*Suppurative Perimeningitis. P. Morawitz.—p. 294.
*Syphilitic Aortitis. G. Hubert.—p. 317.

Residual Nitrogen After Nephrectomy.—Becher found a considerable increase of the residual nitrogen in the blood and tissues of a dog after nephrectomy. Retention alone cannot explain this; there must be increased destruction of albumin to account for all this waste.

Hypertrophy of the Pylorus with Pernicious Anemia.—Kleemann reports a case which confirms the frequent occurrence in pernicious anemia of symptoms which suggest cancer, and necropsy apparently confirms the scirrhous growth at the pylorus. But the microscope shows merely simple hypertrophy of the pylorus. It had developed in the course of the typical pernicious anemia in the man of 39. There may have been at first merely pylorospasm, but the hypertrophy soon followed. There had been also intermittent jaundice all through the disease, but the biliary apparatus seemed to be normal at necropsy, as also the pancreas and suprarenals, although there had been occasional alimentary glycosuria.

The Albumin Quotient in Urine and Blood.—Albert has materially simplified and shortened the technic for determining the ratio between the serum albumin and serum globulin in urine and blood serum. It is based on precipitation with trichloracetic acid and centrifuging. This test with parallel tests with other technics confirmed its reliability.

Perimeningitis.—Morawitz reports three cases of what he calls acute suppurative peripachymeningitis. It developed in two girls of 15 and a soldier, in the course of staphylococcus sepsis. The inner aspect of the dura was normal, but the adipose tissue between the dura and the periosteum of the vertebrae and the ligaments had become transformed into an abscess. It reached from the lumbar region to the neck in one of the cases. Lumbar puncture released pus, but the mind was clear throughout in all. The legs and lower trunk were extremely sensitive but not the arms. The pains and tenderness were most pronounced in the back, and especially in the lower thoracic and upper lumbar vertebrae. No osteomyelitic foci could be discovered. In one of the cases this perimeningitis seemed to be the only localization of the infection. Operative intervention should be considered when the perimeningitis is diagnosed in time.

Syphilitic Disease of the Aorta.—Hubert insists on prolonged specific treatment and that it must be vigorous. His 300 cases included 25 per cent. with tabes. In 60 cases the interval since infection averaged over twenty-three years. The range was from four to over forty years. The aorta was affected in 70 per cent. of all the cases of visceral syphilis, and in 14.6 per cent. of the total 1,485 syphilitics. In private practice, Romberg found it in 26.2 per cent. Hubert's 1,485 syphilitics included 750 men and 726 women, but twice as many men as women developed the aortitis. The pain or ache behind the upper portion of the sternum is almost pathognomonic. Some say they feel as if a stone were lying on the heart; others say that something has twisted or torn in this region. The pain may spread to both sides, to the back or neck or left arm. About a third of the patients complain of shortness of breath on exertion or vague stomach disturbances. The complexion often recalls that of cancer patients, but the exaggeration of the second aorta sound is the earliest symptom in most cases. A systolic murmur in the aorta was evident in some position in 75 per cent. of his cases.

Deutsche Zeitschrift für Chirurgie, Leipzig

July, 1919, **150**, No. 3-4

*Gangrene of Scrotum and Skin of Penis Following Erysipelas. Seemann.—p. 145.
Gunshot Wounds of the Joints. Schenk.—p. 152.
War Surgery in Russia. J. Halpern.—p. 184.
Wound Infections in General. Wieting.—p. 213. Conc'n.
*Spinal Protuberance as Sequel of General and Local Tetanus. H. F. Brunzel.—p. 258.
*Gastric and Duodenal Ulcers in Children. P. Theile.—p. 275.

Gangrenous Erysipelas of Scrotum and Penis.—In Seemann's case deep-seated erysipelas had developed from a gunshot wound of the buttock and extended to the back, abdomen, thighs and genital organs, and the penis became swollen to twice its normal size. The scrotum was puffed up like a balloon. Seemann punctured to relieve the pressure on the scrotum, 30 c.c. of a turbid, bloody, serous fluid being removed from either side. Examination of the fluid revealed streptococcus in pure culture. The whole scrotum and the skin of the penis, with the exception of a small strip

of the prepuce, soon became gangrenous. The gangrenous tissue was cut away, leaving the testes, spermatic cords and penis exposed as in an anatomic preparation. In one month the wound surfaces had healed sufficiently to consider undertaking repair measures. There was nothing of the scrotum left that could be used for plastic purposes. Seemann did not anticipate good results from a new scrotum, so he decided to reconstruct merely the penis. He drew the left testis through the inguinal canal and embedded it in the preperitoneal fat directly under and medial to the anterior superior iliac spine, and sutured together over it muscle and aponeurosis, allowing for drainage. This procedure could not be applied to the right testis because of an abscess in the abdominal wall. Seemann therefore removed the right testicle. The margins of skin were used to cover in part the corpora cavernosa and corpus spongiosum. To prepare for the covering of the balance of the penis, the incision wounds on the abdomen were freshened and drawn together with wire sutures. Following Pilz and Böhler, the fragment of prepuce was drawn down over the penis. A transverse flap was cut from the perineum, turned over 90 degrees toward the front, attached to the penis from below, and joined to the preputial fragment that was in place. A second long, wide strip was taken from the healthy portion of the lower abdomen and was used to cover the balance of the penis, being sutured to the preputial fragment, the perineal strip and the skin at the root of the penis. The end-result is entirely satisfactory. The penis is covered throughout with healthy and for the most part movable skin. The glans is exposed as after circumcision. The patient has no pain, and ability to cohabit has been preserved.

Spinal Protuberance After General Local Tetanus.—Brunzel reports a case of protuberance of the spine after tetanus in a girl of 9. It is the first instance on record, as far as he is aware, in which the patient recovered. The girl had been wounded in the left lumbar region by a charge of shot from a small shotgun used for shooting sparrows. The wound of entrance was about the size of a dime and located just below the twelfth rib. The kidney had been torn into three parts by the force of the explosion, as the gun had been fired at very close range. Twelve days afterward severe tetanus, with violent muscular spasms, trismus and fever, set in, but three months and a half after admission to the hospital the patient was dismissed with a small fistulous wound that had almost ceased oozing. She had had no spasms for more than two weeks. Shortly before the patient was dismissed it was noted that there was a small protuberance of the spine in the lumbar region. She could only bend at the hips; the back was held stiff. A roentgenogram revealed the presence of most of the shot in the region of the third and fourth lumbar vertebrae. The spine did not appear to be injured. The protuberance was evidently due to the extremely violent paroxysmal contractions of the muscles of the back, crushing vertebrae. Three years after the accident the patient had become a strong, healthy girl. The spine had recovered its elasticity, but the protuberance presented the same appearance as when the patient was dismissed from the hospital. Brunzel cites another case of a sergeant who suffered shrapnel injuries in the left humerus and in the left lumbar region. A month later terrible paroxysms of pain developed which were supposed to be due to an impinged nerve. A roentgenogram disclosed a shell fragment close to the second and third lumbar vertebrae. The spine was not injured. The pain crises continued and the patient had to be kept under the influence of morphin. An attempt to remove the foreign body had to be given up. In three or four weeks the pain crises gradually ceased and the patient recovered. A protuberance of the spine in the lumbar region was now discovered. On dismissal the back was still somewhat stiff, but the patient could stoop readily and was without pain. The discovery of the protuberance explained the clinical picture. The paroxysms of pain that had continued for weeks were without doubt due to tetanic muscle contractions from a purely local tetanus confined to the lumbar region.

Gastric and Duodenal Ulcers in Children.—Theile states that gastric and duodenal ulcers in children, while comparatively rare, are not unknown and occur much more frequently than is realized. Of 248 cases of ulcers of the gastroduodenal tract in children under 16, collected from the literature, there were 119 gastric ulcers and 185 duodenal ulcers. Of these cases, 89 were in boys, 98 in girls, and in 61 cases the sex was not mentioned. Theile reports a case of pylorus resection in a 2 year old girl, with good results, which he thinks will have the effect of increasing the confidence in this operation in the quite young. Tuberculous and uremic ulcers, and those in the new-born, give the least promise of success from operation. Although in typical marantic ulcers in infants the prognosis is very unfavorable, the good results secured from surgical intervention in the foregoing case will offer some encouragement. He describes further a successful operation for perforated gastric ulcer in a girl of 13. Appendicitis had been diagnosed as the idea of a perforated gastric ulcer was rejected as preposterous at that age. In a third case, gastro-enterostomy was done to relieve a hard duodenal ulcer, with stenosis of the pylorus, in a boy of 15, who had been presenting symptoms for about three months, vomiting at night, with great thirst. This is the youngest case of duodenal ulcer on record, he says.

Münchener medizinische Wochenschrift, Munich

Dec. 12, 1919, **66**, No. 50

Oxyuriasis of the Appendix. A. Läwen and A. Reinhardt.—p. 1433.
*Aorta Changes and Their Clinical Significance. G. Hubert.—p. 1436.
*Contour of the Lungs in Roentgenograms. H. Chaoul.—p. 1438.
Stomach Spasms in Nervous Dyspepsia. A. Bittorf.—p. 1439.
Epidemiology of Influenza. R. W. Brandt.—p. 1439.
Torpid Ulcers Following Gunshot Wounds. Urban.—p. 1440.
Turpentine Injections (Klingmüller) in Acute and Chronic Gonorrhea. G. Krebs.—p. 1441.
The Significance in Roentgenographic Services of Variations in the Current as Supplied by the Power Plant. W. Steuernagel.—p. 1443.
Casein Therapy. P. Lindig.—p. 1443.
"Urology and the General Practitioner." C. Posner.—p. 1444.
"Treatment of Surgical Tuberculosis." E. Peters.—p. 1444.

Aorta Changes and Their Clinical Significance.—Hubert says that clinical changes in the aorta are a frequent finding in patients in middle age and in more advanced years. They are often noted when they do not seem to be causing the subject any trouble whatsoever. Nevertheless, they are usually of great significance, for almost without exception they are an indication of an organic pathologic condition in the aorta itself. One and the same symptom may be the expression of widely different diseases, and thus present a variable significance, from which fact diagnostic errors are likely to arise. Hubert takes this as his justification for discussing in detail the various diagnostic values that attach to the pathologic processes in the aorta. The changes in the aorta fall naturally into three classes: percussive, auscultatory and roentgenologic, of which the last is the most important. A diffused area of aortal dulness is a sure indication of a far advanced pathologic process. Whether sclerosis or syphilis of the aorta is present must be determined by other means, for in connection with aorta changes one must ever bear in mind the old saying: "The diagnosis must never be based on a single symptom." The accentuation of the second aortic sound, if accompanied by hypertrophy of the left ventricle and an increased blood pressure, indicates an induration of the kidney either from sclerosis or through chronic injury to the glomeruli. If the accentuation of the second aortic sound is only transitory, it will be shown by the fact that the increase in blood pressure will only be transitory. The most frequent cause for the accentuation of the second aortic sound is to be sought in the aortal wall itself. This symptom if present manifests itself early. Likewise, the most frequent cause for the systolic aortic murmur is not valvular trouble but some pathologic condition in the wall of the thoracic aorta.

The Peculiar Contour of the Lungs in Roentgenograms.—Chaoul states, on the basis of investigations conducted on living subjects and cadavers as well, that the peculiar contour that the lungs present in a roentgenogram is due to the blood-filled pulmonary vessels which appear as positive shadows. The appearance of a double contour often seen is not produced by a bronchial wall, as some have maintained, but is due, Chaoul thinks, to the shadows of blood vessels

running parallel to a bronchus. The crossings of the vessels and the bronchi cause the lighter and suddenly darker shadow streaks.

Wiener Archiv für innere Medizin, Vienna

March 1, 1920, **1**, No. 1

*Respiration Affecting Shape of Chest. K. F. Wenckebach.—p. 1.
*Drumstick Fingers and Osteo-Arthropathy. F. Högler.—p. 35.
Palpation in Study of Pulse and Blood Pressure. J. Pal.—p. 77.
*Pathology of the Lungs. I. H. Eppinger and R. Wagner.—p. 83.
*Pathology of the Vegetative Nervous System. F. Depisch.—p. 147.
*Pathology of Peripheral Arteries. J. Wiesel and R. Löwy.—p. 197.

Pathologic Respiratory Conditions as Affecting Shape of Chest.—Wenkebach's article supplements one published in 1907 on the pathologic relations between the respiration and the circulation. He here discusses the six main factors influencing the form of respiration and shape of the thorax, ascribing much importance to extreme leanness as this allows the so-called asthenia shape of the thorax to develop even without any constitutional anomaly or congenital predisposition. He also emphasizes the importance of the muscles of the back in quiet, unconscious respiration as well as in forcible inspiration. He comments on the advantage of humming with the lips closed, as a breathing exercise and for study of the action of the abdominal muscles. With this, the diaphragm is drawn up extremely high in the chest as the humming continues to the limit of expiration. Coughing is still more instructive for study of the muscles involved in respiration. He recalls that the diaphragm like all other muscles is subject to reflex influences, and its excursions can be modified from distant points. When breathing quietly, with mouth closed, if the mouth is opened suddenly, the diaphragm rises a little. Continuing the even breathing with the mouth open, it is evident that conditions in the respiration are quite different from what they were before. The sinking of the root of the tongue when the mouth is opened may explain this difference in the tonus of the diaphragm. Whatever the explanation, there is no doubt that this modified behavior of the diaphragm is an element not to be overlooked in habitual mouth-breathing.

Drumstick Fingers.—Högler has coined the term "acropachy," from *akron*, "tip" and *pachy*, "thick," to define the condition and differentiate it from acromegaly. It accompanies four groups of diseases: those with abscess in the lungs; malignant disease; processes in the liver, mainly hypertrophic biliary cirrhosis, besides, unilateral acropachy from compression by an aneurysm or joint lesion. In one of the four personal cases described, there were evidences of lymphogranulomatosis and infantilism with the acropachy in the youth of 17. Under roentgen-ray treatment of the principal lymphogranuloma—in the chest—the tumor retrogressed almost entirely, and the fingers returned to approximately normal shape and size. The changes in the fingers with tabes and syringomyelia are not of this acropachy type. The various theories as to the etiology are compared, and the secondary and curable nature of the acropachy is emphasized.

Pathology of the Lungs.—Eppinger and Wagner reiterate that anything tending to modify the circulation and metabolism of the blood is liable to induce appreciable disturbance in the circulation as a whole even with a comparatively sound heart. In the last eight years they have encountered five cases in which the total circulation was much impaired from primary endarteritis of the finer ramifications of the pulmonary artery; the main artery was intact. They diagnosed the condition during life in three of the cases, the practical obliteration of the finer branches throwing extra work on the right ventricle alone, and this had become enormously hypertrophied. The left ventricle formed merely a crescent lying on the right ventricle, and the atrophy extended to the left auricle, which may even be smaller than usual, in comparison to the size of the right heart. The integrity of the valves is characteristic of these cases. They have found fourteen similar cases on record; of the total nineteen cases, eleven were in men and ten of the patients were between 20 and 40; one was over 60. The pulse is small and there is much cyanosis and edema when the right ventricle fails to do its work properly, but there is very little dyspnea. There may be occasionally a tendency to bleeding from the lungs. Before this phase is reached, the extremely enlarged right heart may be the only sign of the condition; cases are known in which there was some cyanosis early. A diffuse darkening of the lung in the roentgen picture testifies to stasis.

Bulbar Disease with Irritation of Only Half of the Vegetative Nervous System.—Depisch reports a case of this kind and compares it with others on record. They all testify that the fibers of the vegetative system become crossed on their way to the periphery, the same as the motor and sensory fibers. The primary cause was usually some localized hemorrhage in the medulla oblongata, entailing bulbar paralysis. The unilateral symptoms included a higher local temperature, the unilateral action of drugs, etc. He discusses the mechanism of the different symptoms, and gives considerable bibliography.

The Peripheral Arteries in Acute and Chronic Diseases.—Wiesel and Löwy exclaim that the peripheral vascular system has never been thoroughly studied. Their own research on twenty cadavers after long clinical study of the cases demonstrated that in all those in which death was due to insufficiency of the circulation, the middle coat of the smaller arteries showed constantly edema, degenerative processes or foci of calcification, etc., or all combined. These regular changes may be associated with myocarditis or they may alone dominate the clinical picture. They explain the inefficacy of digitalis in certain cases. The more advanced the peripheral changes, the less the action of digitalis, so that these changes should be suspected whenever digitalis fails in its expected action. This assumption is further justified by the efficacy of strychnin in raising the tonus of the vessels in such cases. These changes in the peripheral vessels must be an important factor in the pathology of stasis, especially in internal organs. They give five plates showing the changes found in the peripheral arteries and veins in their twenty cases.

Wiener klinische Wochenschrift, Vienna

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Scurvy Menace in Vienna. Harriet Chick and Elsie Dalyell.—p. 1219.
Oligodynamic Effects of Metals. G. Salus.—p. 1220.
Mental Diseases in the Army. G. Stiefler.—p. 1223.
*Hemorrhagic Diatheses. A. Kirch.—p. 1226.
*Treatment of Trichophyton Infection. O. Sachs.—p. 1229.
Submucosa Laryngitis in Relation to Erysipelas. R. Imhofer.—p. 1231.

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Effect of the War on Eye Diseases Among the Civil Population. R. Seefelder.—p. 1245.
Phototherapy in Severe Rectal Conditions Following Dysentery. A. Foges.—p. 1250.
Technic of Vein Puncture. Charnass.—p. 1251.
Gunshot Wound of Spleen; Extirpation; Recovery. S. Mitterstiller.—p. 1253.
Remarks on Nuclein Treatment. J. Donath.—p. 1254.

Hemorrhagic Diatheses.—There has been an increase of hemorrhagic diatheses, Kirch reports, during the war period, usually associated with scurvy. The various forms are clearly distinguishable hematologically. Aside from infections, the restricted war diet was the cause. A hemorrhagic diathesis, he says, presupposes vessel injury, and as blood platelets are an important factor in blood coagulation, they may have the intravascular function of making the vessel walls more dense. A deficiency in blood platelets might thus contribute to the permeability of the vessels.

Treatment of Trichophyton Infection.—Sachs commends intravenous injections of a 40 per cent. solution of hexamethylenamin in the treatment of deep trichophyton infection, with large nodules. As a first dose 6 gm. (15 cm. of fluid) are injected; on the second or third day after the first injection the dose is increased to 8 gm. In one case 8 gm. were given as a first dose, which was increased to 12 and 14 gm. The number of injections required and the exact quantities of hexamethylenamin that will be needed cannot be definitely stated in advance. Of ten patients so treated, one was cured after a single injection of 4 gm., another after three injections of 4, 6 and 8 gm., respectively, in ten days; another patient received four injections (once 6 gm. and three times 8 gm.), and was cured in fourteen days.

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THE FUTURE OF OBSTETRICS AND GYNECOLOGY AS A SPECIALTY*

REUBEN PETERSON, M.D.

ANN ARBOR, MICH.

Allow me to express my deep appreciation of the honor conferred on me at the last meeting of the section in selecting me to preside over this year's deliberations.

The honor, however, carries with it the obligation to deliver the chairman's address, the selection of the subject being left to your presiding officer. For a time I had it in mind to dodge the issue, as it were, and address you on a scientific subject. This course has decided advantages, since we physicians are accustomed to papers on scientific subjects, as we are wont to inflict them on a long suffering medical public on all occasions. On the other hand, the chairman runs no little risk of having his production, his address, far outclassed by the other scientific papers presented at this meeting. Consequently I have decided to attempt the "address" with the hope of holding your attention on account of the subject selected, since your presence here denotes that you are more or less interested in obstetrics and gynecology, although you may not be specialists.

THE SPECIALTY OF OBSTETRICS AND GYNECOLOGY

I would particularly call your attention to the title of my address, since it indicates the position I have for a long time taken and am prepared to defend regarding the specialty we are interested in. I beg you to note that the two divisions of the specialty have been linked together, and that the future of not two specialties but a single specialty will be considered. Again note what perhaps is a small matter, yet may not be without significance: The specialty is designated as obstetrics and gynecology and not the reverse. If obstetrics may be defined as the care of women during pregnancy, labor and the puerperium, and gynecology as the science of the diseases peculiar to women, it seems illogical to place what has to do with disease in advance of what has to do with care whereby disease may be prevented.

We are all more or less familiar with the discussion which has been carried on during the last twenty or more years regarding the place of gynecology as a specialty. While it probably has had little effect one way or another, for man's course in life is determined by inclination and self interest and not by what other people may say, it has shown certain fundamental defects in our medical make-up. The gynecologists as a class have deliberately confined themselves to the surgical aspects of the diseases of women, some of them openly declaring they knew nothing of obstetrics and did not care to learn. As surgeons of a special part of the human body, they have become masters of their art. It was inevitable, however, that they should become discontented with a small field of surgery, and that they should ambitiously push on toward adjacent fields. Thus we see abdominal linked to gynecologic surgery, and the gynecologist operating on men as well as women on the ground that he is an abdominal surgeon as well as a gynecologist.

The general surgeon was quick to see the inconsistency of such a position, and declared that it was time to do away with a specialty that no longer fulfilled the requirements of a specialty. The assertion that gynecologic surgery is after all merely surgery of a special field and that it can be acquired by any surgeon who is willing to devote the necessary time to its mastery, and hence should be included in general surgery, has had more and more advocates as time has gone on. Thus we see the tendency to combine gynecologic with general surgery in hospitals and teaching institutions.

It is obvious that the gynecologist would have escaped the embarrassing position of being "hoist with his own petard" had he stuck to his specialty, or, rather, enlarged his specialty so as to include all conditions and changes in the female genital tract in which his special work naturally lies. This would have led him to devote more time to the field of obstetrics, not necessarily the actual practice of obstetrics, for that is a matter of detail to be worked out by each individual, but paving the way for his true mission as a specialist, the prevention rather than the cure of disease.

The truth of the matter is, if we are honest enough to admit it, that the gynecologist has only himself to blame for the present condition of affairs. He threw himself into the development of pelvic surgery to such an extent that things outside of the operative part of one division of the specialty failed to interest him. At the society meetings he would spend hours in the discussion of operative technic, and suddenly feel the need of fresh air when a paper was read on a non-operative topic equally important and necessary to his specialty as it should have been practiced. He was bored to extinction by every part of obstetrics, everything connected with the proper conduct of pregnancy, labor and the puerperium, which if uniformly carried into effect would have made a larger part of his operative work unnecessary. For, with the exception of tumors and the results of venereal infection, the greater part of the gynecologist's work has been

* Chairman's address, read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

devoted to the task of restoring parts or functions rendered defective by neglect or bad management during pregnancy, labor or the puerperium.

Both in theory and in practice we are very apt in this country to treat too lightly the words "specialty" and "specialist." It is the common experience of heads of departments in hospitals and medical schools to receive applications from practitioners with little or no experience for opportunities to become specialists in different lines of work. It is no uncommon occurrence to receive a letter from some one ambitious to become a specialist in gynecology asking to be appointed chief assistant for a period of six months or more. The letters go on to explain that the writers have performed quite a number of abdominal operations successfully, but that they want a larger experience than their practice affords before taking up gynecology as a specialty, with never a word about obstetrics, except that they have given up obstetric work with the exception of the operative part—not a word regarding opportunities in the clinic to work out certain nonoperative problems in which they should be interested. Such things apparently never have been thought of; ambitious to a degree, the applicants want experience which not infrequently they offer to pay for, whereby they may devote their whole time to surgical gynecology, through which they plan to restore to health women suffering from lack of care during childbirth.

Where lies the blame for such a misconception of the requirements of a specialty? Why is it that men above the average intelligence, as shown by their success in practice and their medical standing in their state, should think of a gynecologist merely as a man who is devoting his life to surgical carpentering work in a special field? Is not the answer that the medical schools and hospital clinics must assume the blame fundamentally in that they have divorced obstetrics from gynecology, belittled the former and for various reasons, not the least important being economic, have given undue prominence to the surgical aspects of the latter? The result is that the ground work absolutely essential for one aspiring to devote himself to one division of the specialty of obstetrics and gynecology is lost sight of and there is a wild scramble for a short cut to fame and fortune, usually through the dexterous handling of the scalpel.

TRAINING OF THE SPECIALIST IN OBSTETRICS AND GYNECOLOGY

Obviously there are two ways of becoming a specialist in obstetrics and gynecology—one by way of practice, the gradual elimination of all medical work except in the field the practitioner is especially qualified for and interested in, the other by way of the large medical school and hospital clinics in obstetrics and gynecology. Many eminent obstetric and gynecologic specialists have achieved distinction through the first route. Financial necessities and lack of opportunity will always compel certain members of the profession to adopt the practice route toward specialism. In fact, if the narrow training in some of the hospital clinics is continued, probably better specialists in obstetrics and gynecology would be produced through the practice than the hospital route, owing to the general broad training which must result from the work of a studious, conscientious and capable general practitioner during the time he is preparing to specialize. Handicapped by the necessity of earning a livelihood while trying to perfect himself in his specialty, such a man, however, is always open to the temptation of choosing the path of least resistance, the surgical end of a specialty to the neglect of the ground work which, it is maintained, is absolutely essential to specialization in any field. Overwhelmed, buried by routine surgical work in a comparatively small field, he either remains content with a large income, or else satisfies his discontent by enlarging his surgical field and joining that large and it must be confessed ever enlarging company, men who started out to be obstetricians and gynecologists but ended in being general surgeons with a fondness for gynecology.

If there be a future for obstetrics and gynecology it must come, I believe, from the departments in the medical schools and from hospital clinics organized and maintained on the right basis. If the two divisions of the specialty be united it will flourish and be of immense benefit to womankind and future generations. If the two divisions of the specialty be separated in teaching institutions and in hospital clinics, in a generation or two at the farthest there will be no specialty of obstetrics and gynecology, nor will there be specialists in either of the two divisions. Obstetricians will cease to exist because the brightest of the rising medical generation will refuse to enter a specialty in which they are known as man midwives, where the work is of the hardest and the compensation very unsatisfactory. The surgically inclined bright young medical graduates of the future will certainly not choose gynecology as a specialty—why should they when they can be enrolled in a department of general surgery and become trained general surgeons of all parts of the human body?

It is time that the medical schools recognize the manner in which the obstetric teaching clinic has been neglected in the past, and take steps to see that such conditions are remedied. The obstetric teaching material must always be a great expense to an institution, for it is almost entirely composed of so-called charity cases. Women unable to meet the expenses of confinement seek the services of the indoor or outdoor departments of the obstetric clinic attached to a teaching institution because they have confidence that they will be well cared for. In order to avoid the great expense of providing adequate hospital teaching material for senior medical students, we see even today the continuance of the outpatient obstetric department where the student cares for the lying-in woman in her home, sometimes under, but more often without, competent supervision. Why this survival of a most time-wasting and illogical method of instruction in this particular branch of medicine? The explanation usually offered that the student by this method is taught under conditions he will have to meet when he begins practice does not explain why such a system is not in vogue in other teaching departments. Why not teach surgery and general medicine in the tenements? Surely the practitioner will not always be able to send his medical and surgical patients to a hospital, and must perforce treat fractures or pneumonia at the patients' homes. The true reason is that it is cheaper to build up an outpatient obstetric clinic with its wasteful and oftentimes poorly supervised teaching than to meet the expense of an adequate hospital inpatient clinic.

Almost any teacher of obstetrics will acknowledge that he prefers to instruct with hospital patients; but, he adds, for certain reasons the number of hospital obstetric beds at his command is not large, and hence

he utilizes the outpatient obstetric clinic to make up the deficiency. Would the heads of the departments of medicine or surgery take the same attitude? If their departmental teaching material were inadequate would they arrange for groups of students to be taught in the tenements? I think not. They would send forth a cry from the house tops about the shocking dearth of material until the governing body of the school or some benevolent gentleman or foundation provided for their teaching needs.

Why then the meek and lowly obstetrician? Is it true that he merits the gibe thrown at him by a gynecologist in a recent presidential address, who makes use of this remarkable sentence: "I may be wrong, but I have always maintained that a practitioner of medicine who is temperamentally fitted for the practice of obstetrics is entirely unfit to practice selected surgery or gynecology"? This is more than a gibe; it is a challenge. It says in substance to the obstetrician that he is a man infinitely inferior to the gynecologist. To be sure, he has certain bovine qualities fitting him to sit patiently by the bedside until a woman has had her baby; but perish the thought that he is in the same class with the brilliant, dashing gynecologist with his God-given surgical abilities. To make doubly sure that the obstetrician will keep his ladylike hands off the surgical side of the specialty of obstetrics and gynecology, the same essayist advocates that "the teacher of gynecology in cooperation with the psychiatrist of our medical schools should aid in selecting and directing men because of special fitness to the pursuit of this or any other important specialty." There are certain merits to this suggestion for, if during the course of this remarkable mental test these two collaborators, the gynecologist and psychiatrist, by any chance were to run across an applicant who had ambition to become an expert in everything, physical and functional, pertaining to the genital tract of women, it would be comparatively easy to have such a person become either a temporary or a permanent occupant of the psychiatric clinic.

The truth of the matter is that the obstetrician without adequate training in gynecology is handicapped as much as but no more than is the gynecologist without obstetric training. Both are unfinished products, and neither can afford to reproach or insult the other. Their deficiencies cannot be made good by adding diseases of children or abdominal surgery to their respective fields of labor.

As a matter of fact, the future of the specialty of obstetrics and gynecology depends on the policy of the medical schools toward the specialty in the next decade. They must face the issue now in order to provide for the future. If adequate funds and facilities are provided for departments of obstetrics and gynecology, and the two divisions combined under one head, the specialty will flourish; the subjects will be well taught, and high grade research work will be turned out. If, on the other hand, the policy of selecting separate heads for obstetrics and gynecology prevails, the reverse will take place. Obstetrics will languish because opportunities will not be afforded the department to consider and treat the results of obstetric complications and errors. Gynecology, separated from obstetrics, will tend to become more and more a surgical specialty, for reasons already set forth, and there will be no legitimate excuse for not making it a part of general surgery. Clinging with desperate grasp to abdominal surgery will not save it, for the general surgeon is or should be a master of that part of surgery. Inevitably the chairs of gynecology will disappear, possibly weakly nourished for a while under titles such as professor of clinical gynecology, but eventually they will be absorbed by general surgery. Vain will be the appeals to avert the inevitable. Talk about research in gynecologic fields or superior work of the gynecologist as compared with the general surgeon will fall on deaf ears. United with obstetrics, gynecology will survive; separated, it will gradually cease to exist.

Time does not permit, nor is this the occasion to take up in detail the organization of the ideal department of obstetrics and gynecology. It remains to consider only one feature of such a department, since the future of the specialty under consideration will depend on how well this part is provided for. I refer to the opportunities that will be furnished young graduates to spend five or more years in equipping themselves for their special work. No matter what may be the permanent personnel of the department, it is essential for the future of the specialty that a way be provided for the thorough training of these young men in obstetrics and gynecology. It goes without saying that they should be recompensed enough for their hospital and teaching work to keep them free from financial worries. Their hospital service should be so arranged and graded that they will be as much at home in obstetrics as in gynecology, and vice versa. In fact, the two divisions should be treated as one subject, the patients on whom the studies are being conducted being in different groups for hospital administrative purposes only.

It is comparatively easy under such a system to see that the surgical side of the specialty is not overemphasized. While in five years the assistant naturally becomes a trained obstetric and gynecologic surgeon, it is possible during this time to interest his eager young mind in other than mechanical problems. While he will be interested in surgery, he will recognize its limitations and be equally if not more interested in problems that will make surgery less and less necessary.

With a man so trained it makes no difference, if he goes into practice, instead of continuing his academic career, whether he decides to be a specialist in obstetrics and gynecology, or chooses to devote his time to one division of his specialty. One need not worry about the hardships of being up all night with a confinement case and then being obliged to do difficult hysterectomies the next day. These are details for each man to work out. So far as the future of obstetrics and gynecology is concerned, I myself am interested only in seeing that he keeps the faith and finds enough in his specialty to interest him so that he will do his regular work well and add a little something to the sum of human knowledge. Well grounded in obstetrics and gynecology, the specialty of his selection, I know that he will be interested in everything connected with it, and that, being interested, he will not be chasing after "the false gods" who seem to trouble some people so much.

RELATION OF ABDOMINAL SURGERY TO OBSTETRICS AND GYNECOLOGY

Finally, what about the relation of abdominal surgery to obstetrics and gynecology? If the preceding argument be correct, why is it necessary or even wise to include papers on abdominal in contrast to pelvic sur-

gery in the work of this section? The wisdom of such a course is at once apparent if it be borne in mind that the trained obstetric and gynecologic surgeon must be versed in abdominal as well as pelvic surgery in order to be competent to meet the emergencies which will arise in his special surgical work. While making no claims for specialization in abdominal surgery, the obstetric and gynecologic specialist must be prepared at any moment to resect the intestine and care for the appendix and gallbladder, if such surgery be demanded when the abdomen is opened for pelvic disease. This is only justice to the patient, and is common sense as well.

In order to be competent in surgical work of this description the obstetrician and gynecologist must not only have had the necessary technical experience but must be conversant with the literature and the constant improvements taking place in abdominal surgery. Hence it is fitting and a wise practice to include papers on this allied field of surgery in the work of the section.

Actual experience and technical skill in abdominal as contrasted with obstetric and gynecologic surgery should be acquired in departmental hospital clinics by cooperation with the general surgical clinics. Arrangements can easily be made for interchange of services at some period of the training, to the mutual benefit of the members of both the obstetric and gynecologic and general surgical staffs. In fact, this principle of free interchange of services should not be confined to surgery alone, but should apply to all departments of the hospital, where such an arrangement will make for better training in obstetrics and gynecology.

RECENT STATISTICS OF HEART DISEASE

WITH SPECIAL REFERENCE TO ITS INCREASING INCIDENCE *

FREDERICK L. HOFFMAN, LL.D.
Third Vice President and Statistician, Prudential Insurance Company of America
NEWARK, N. J.

The statistics of heart disease are probably the least satisfactory of medical statistics because of the apparent impossibility of a precise and inclusive definition. No disease better emphasizes the principles and suggestions laid down by the late Dr. Charles A. Mercier, on the subject of causation, with special reference to causes of death. Mercier's work on "Causation and Belief" should be read by all who desire to do full justice to controversial questions in medicine concerning the so-called causes of disease or death, or the conditioning circumstances affecting the results of treatment. As observed by Mercier: "The cause of death is always a function of two variables—the power acting to maintain the unchange that we call life, and the action or actions that increase the work that the power has to do." He refers to a definition adopted by the registrar general, observing: "The fatal manifestation of a disease is, I surmise, what the registrar general means by a terminal condition or mode of death; but as he gives no indication whatever as to what he does mean, this can be no more than a surmise. In such cases the disease may appropriately be called the principal cause of death, and the manifestation the precipitating or subordinate cause of death."

If so acute a mind as Mercier's could not arrive at a clear understanding of the terminology of disease, it is certainly a hopeless task for an average mind to attempt what seemingly defies analysis; but as a practical question it may safely be asserted that the ordinary definitions meet all reasonable requirements and that our vital statistics are approximately trustworthy except so far as modified by important and possibly far-reaching changes in the practice of classification. To no disease perhaps does this conclusion apply more than to heart disease, which, of course, is not a specific term but rather one which has simply the sanction of long continued use. In the earlier statistical reports, sudden death, for illustration, is of frequent occurrence, but is relatively rare in modern mortality investigations. As has been said by Dr. Theodore Fisher, "When we speak of sudden death, both medical men and those without medical training generally think at once of the heart"; but this by no means justifies the classification of a sudden death as being attributable, without the chance of error, to a diseased condition of the heart. There is no more illuminating discussion of sudden deaths than the treatise by Brouardel, whose masterly analysis brings out the fact that sudden deaths due to lesions of the circulatory system are by no means the only important causes or conditioning circumstances. He directs attention, for illustration, to lesions of the respiratory system, modifications of vascular tension, lesions of the digestive system and of the female genital organs, sudden death in fevers and in diabetes, diseases of the kidneys and alcoholism.

What is true of sudden death is even more true of dropsy and old age. These earlier terms, common in the practice of medicine fifty years ago, are now practically obsolete, it being clearly recognized that dropsy, for illustration, is a symptom and not a disease within the strict definition of the term. It is therefore grotesquely erroneous to compare the mortality from heart disease in modern registration reports with the returns of a generation ago, without the required correction, which frequently cannot be made for want of access to the original material. These remarks at the outset emphasize the urgency of extreme caution necessary in discussions of the changes in the incidence of diseases of the heart and circulatory system frequently bordering on the ridiculous and the grotesque. Before much progress can be made in scientific discussions of so-called heart disease, much further research in clinical medicine is imperatively called for.

No one has more clearly recognized this need than Sir James Mackenzie, perhaps the foremost authority on heart affections, and now the director of the Institute of Clinical Research of St. Andrews' University, Scotland. In his opening address, Sir James took occasion to lay it down as a first principle that, "as disease is made manifest to us only by the symptoms it produces, it is imperative that the first step should be to understand the nature and significance of symptoms." Calling attention to the vast amount of superficial and frequently thoroughly inaccurate information, he refers to the question of heart murmurs as evidence of heart impairment, although "the knowledge of how to assess the value of murmurs is lacking." Referring also to the practice of life insurance examinations for the purpose of ascertaining heart impairments, he remarks that life insurance examiners, whose duty it is to assess the

* Read before the Association of Cardiac Clinics at the New York Academy of Medicine, New York, Feb. 26, 1920.

value of symptoms, have not yet awakened to the fact that the methods employed are but a species of guesswork, and that they have not yet realized that accurate knowledge of this kind is absolutely necessary to the progress of medicine. Or, regarding the work of the ordinary doctor, who, he points out, "should not only be able to recognize the signs of disease, but able to say how much work a man with a given impairment should be able to perform," he comes to the lamentable conclusion that "this is the kind of knowledge which nowhere exists." This address by Sir James Mackenzie,[1] next to the work by Mercier, is one of the most valuable foundations for sane and conservative views on a subject which imperatively demands much more qualified consideration than it has thus far received, on the part both of the medical profession and of the laity.

HEART DISEASE AMONG MEN OF MILITARY AGE

It would obviously carry me entirely too far if I were to enlarge further on the clinical research aspects of heart affections and the problem of possibly profound changes in the relative rate of frequency occurrence during recent years. But I may properly direct attention to the importance of heart disease in childhood and youth, which has been made the subject of an admirable discussion by Dr. Charles W. Chapman, and the even more important question of "disordered action of the heart" (D. A. H.) or "valvular disease of the heart" (V. D. H.), in its relation to military service. The last named subject has been made one of extended inquiries by the Medical Research Committee, which include a brief but important discussion of terminology and an outline of symptoms, with a particular bearing on questions of statistical analysis. This work concludes with the suggestive observation that "the high incidence of the condition amongst men of sedentary occupation, and the frequency with which these men fail during training, call for more tender methods in the initial stages of training the conscript who for years has been accustomed to taking no exercise." This conclusion is applicable to the problem of occupational therapy as much as to the more restricted field of military usefulness. The work emphasizes the practical possibilities of heart disease prevention, and suggests a reconsideration of much of the advice summarized under the title of "What Heart Patients Should Know and Do," by Dr. J. H. Honan.

The relative frequency of heart diseases among men of military age has now been ascertained with reasonable accuracy, just as this has been the case in life insurance experience. In the latter, however, a certain element of selection operates, which is practically absent in military experience under the universal draft. The ratio of heart impairment in the army experience, represented by 85,143 cases, was 26.26 per thousand examined, or not quite 3 per cent. The rate was highest for the state of Washington, or 61.55 per thousand, and lowest for Wyoming, or 13.47 per thousand. It may be questioned whether the draft experience was sufficiently large and based on uniform methods of examination to justify final conclusions regarding the relative incidence of heart disease in different sections of the country.

The foregoing observation refers exclusively to valvular disease of the heart and endocarditis. Cardiac hypertrophy and cardiac dilatation are represented by an impairment rate of 4.65 per thousand examined, the range having been highest for Nevada, or 10.63, and lowest for Arkansas, or 1.57 per thousand. Myocarditis and myocardial insufficiency caused an impairment rate of 0.72 per thousand, having been highest for Maine, or 16.40, and lowest in the District of Columbia, or 0.17 per thousand.

Combining all forms of organic diseases of the heart, the total rejections on this account were equivalent to 30.74 per thousand examined, the rate having been highest in the state of Washington, or 68.84, followed by Maine, with a rate of 55.70; Utah, with a rate of 54.60; Michigan, with 50.30, and Maryland, with 46.58 per thousand. It would not seem safe to rely on these returns for a true measure of the geographic incidence of heart disease, but the data are suggestive of a further inquiry into the facts. It may be suggested in this connection that much more extended medical consideration should be given to the statistical results of the defects found in drafted men, as presented in a Senate report to the Surgeon-General of the Army by Lieut.-Col. Albert G. Love and Dr. Charles B. Davenport. The conclusions of these officers on the general subject of organic diseases and defects of the heart are given in full as follows:

> This group, which includes valvular disease of the heart, cardiac hypertrophy, cardiac dilatation, myocarditis, myocardial insufficiency, and endocarditis, is second in importance only to the great group of mechanical defects. Valvular disease of the heart was recorded in over 88,000 cases, cardiac hypertrophy in 11,389 more, myocarditis in 1,792, and endocarditis in 2,782. Altogether the group contains over 120,000 cases, or about 5 per cent. of the men examined. Of the 120,000 odd cases of organic defects of the heart, a large proportion properly enough was rejected for military service of any sort; namely, 90 per cent. There were, however, accepted for general military service, 2,872 cases of mitral insufficiency and 300 cases of mitral stenosis. One thousand one hundred and fifty cases of mitral insufficiency were placed in the limited-service group. Practically no cases were regarded as "remediable."

Recalling the words of caution of Sir James Mackenzie, it may safely be concluded that qualified ability for heart examinations on the part of many of the physicians employed in the draft examinations was wanting to give to the statistical results a full measure of scientific finality; but in a general way they may be relied on as sufficient for the purpose of emphasizing the important conclusion that all forms of heart impairment are not likely to exceed in relative frequency 3 per cent. of the men of military age, or about the same as were rejected on account of pulmonary tuberculosis (29.77 per thousand).

The results of life insurance experience are less applicable to practical requirements on account of the fact (1) that obvious cases of heart impairment do not present themselves for examination, and (2) that, in the words of Sir James Mackenzie, the methods of examination have hardly been sufficiently perfected to justify the rejection of a fair proportion of cases on the basis of mere murmurs, the true nature of which is not understood at the present time. In the experience of the Prudential Insurance Company of America, during the period 1915-1918, the rejections on account of heart impairments have been 24.4 per thousand examined, but the fact must not be overlooked that the practice of different companies varies and that while some are extremely cautious, others are grossly

1. The views of Sir James Mackenzie, in a more convenient form, are set forth in his treatise, "Principles of Diagnosis and Treatment in Heart Affections," London, 1916.

negligent in fully safeguarding their own interests against the ever-present risk of adverse selection.

INVESTIGATION OF THE MEDICO-ACTUARIAL COMMITTEE

An important contribution to the subject is the investigation of the Medico-Actuarial Committee into the mortality of males from organic diseases of the heart, which shows that the rate of mortality increases in insurance experience in about the same manner as among the public at large. Table 1 exhibits the mortality rates from diseases of the heart per 10,000 exposed to risk, according to the duration of insurance, for the three age periods 15-29, 30-44, and 45 and over.

TABLE 1.—MORTALITY RATES, PER TEN THOUSAND EXPOSED TO RISK, FROM ORGANIC DISEASES OF THE HEART *

Policy Years	Ages at Entry — Males			Females		
	15-29	30-44	45 and Over	15-29	30-44	45 and Over
1	0.7	1.2	5.1	0.9	1.5	7.5
2	0.4	1.3	8.6	1.1	2.2	9.6
3-5	0.7	3.0	14.1	1.8	3.0	14.0
6-10	1.5	3.7	25.4	2.3	3.2	26.1
11-24	3.8	9.8	45.9	3.4	9.7	48.1
Total	1.4	4.0	19.9	1.7	3.3	19.6

* Medico-actuarial investigation, 1913.

The medico-actuarial experience is most suggestive as regards the relative incidence of heart diseases at different periods of life for the two sexes. Table 2 shows the percentage of deaths from organic diseases of the heart in the mortality from all causes, according to age at entry and with distinction of sex.

TABLE 2.—PERCENTAGE OF DEATHS FROM ORGANIC DISEASES OF THE HEART TO ALL CAUSES *

	Ages at Entry		
	15-29	30-44	45 and Over
Males	3.0	5.9	10.6
Females	3.3	5.3	10.7

* Medico-actuarial investigation, 1913.

The table confirms the previous conclusion and at the same time illustrates the practical value of the proportionate mortality figure regardless of its inherent limitations. To make this comparison complete, Table 3 shows the comparative death rates per 10,000 exposed to risk, according to divisional periods of life, with distinction of sex, disclosing practically identical results for both males and females.

TABLE 3.—DEATH RATES FROM ORGANIC DISEASES OF THE HEART PER TEN THOUSAND EXPOSED TO RISK *

	Ages at Entry		
	15-29	30-44	45 and Over
Males	1.4	4.0	19.9
Females	1.7	3.3	19.6

* Medico-actuarial investigation, 1913.

STATISTICAL RESULTS OF THE PRESENT INVESTIGATION

Table 4 shows the mortality from different forms of heart disease in the United States registration area during selected years sufficient for the purpose of indicating the trend of the recorded mortality figure. This figure must not be confused with the probable actual mortality, which cannot be ascertained at present without a thoroughly qualified reexamination of original death certificates, to preclude the risk of serious errors in the earlier classifications.

It will be observed that in this table the rate of deaths from pericarditis and acute endocarditis have decreased, and quite materially so. In contrast, all forms of heart disease have increased from 131.9 per hundred thousand of population in 1900 to 169.0 in 1918. Within recent years the practice has become almost uniform for registration officers and others concerned with the tabulation and analysis of causes of death to amplify more or less doubtful death certificates by means of subsequent correspondence with the attending physician. In the case of the Prudential, probably not less than 10,000 letters a year are sent out to correct original errors, which materially changes the results of recent years when compared or contrasted with the past. It is regrettable that so much correspondence should be necessary, frequently to the annoyance of the attending physician, who alone is in a position to make out the original death certificate in exact conformity to rules of statistical practice as issued by the Census Office.

TABLE 4.—MORTALITY FROM HEART DISEASES, U. S. REGISTRATION AREA, 1900-1918

Year	Death Rates per Hundred Thousand of Population — All Forms of Heart Disease	Pericarditis	Acute Endocarditis	Organic Heart Disease	Angina Pectoris
1900	131.9	2.6	11.9	111.1	6.4
1905	152.1	1.7	12.5	131.2	6.7
1910	158.8	1.2	8.9	141.5	7.2
1915	165.1	1.1	9.1	147.1	7.7
1916	168.0	1.0	9.3	150.1	7.6
1917	170.0	1.1	8.9	153.1	7.9
1918	169.0	1.1	8.2	152.3	7.4

Table 5 shows the mortality from heart diseases in the original registration states, or such as constituted the registration area of 1900, being chiefly the states of New England, New York and New Jersey. In these states there has apparently been an increase of 52 per cent. in the mortality from heart diseases; but a large proportion, if not the major part of this increase is attributable to changes in death certification and classification, or the correction of death certificates in amplification of the original cause of death.

TABLE 5.—MORTALITY FROM HEART DISEASES IN THE TEN ORIGINAL REGISTRATION STATES

Year	Population	Number of Deaths	Rate per 100,000 of Population	No. Deaths to Every 100 in 1900
1900	19,685,989	26,879	136.5	...
1905	21,431,243	34,636	161.6	118
1910	23,813,784	42,865	180.0	132
1915	25,841,353	49,742	192.5	141
1917	26,658,060	55,425	207.9	152

How far this conclusion affects the returns for a state like Massachusetts, where the subject has received careful consideration for many years, is shown in Table 6, in which separate age periods are considered in detail for quinquennial periods, commencing with 1868 and ending with 1917. This table is extremely suggestive and clearly emphasizes that the larger portion of the actual increase in the combined rate falls on the age period 40 and over, when, of course, heart diseases are relatively more common than at the younger periods of life. No convincing explanation has been forthcoming why the deaths from heart disease at ages 60 and over should have increased from 414.2 per hundred thousand of population to 1,613.5 during a

period of fifty years. There certainly is nothing startling in the textbooks on the subject which would explain this extraordinary increase, if true, as a pathologic phenomenon similar to the considerable increase in the cancer death rate, to which every writer on the subject gives more or less extended attention. The heavy rise in the incidence of heart affections in old age is, therefore, probably much more apparent than real, and in all probability chiefly the result of formerly erroneous methods of death classification and the transference of deaths formerly classified as dropsy, old age, sudden death, etc., to the more specific group of heart affections.

TABLE 6.—MORTALITY FROM HEART DISEASES IN MASSACHUSETTS

	Death Rates per Hundred Thousand of Population					
	All Ages			Ages Under 5		
Year	Persons	Males	Females	Persons	Males	Females
1868-72	73.0	78.5	67.9	44.4	50.5	38.3
1873-77	83.1	89.1	77.5	45.8	50.4	41.2
1878-82	104.0	109.2	99.2	45.0	45.7	44.2
1883-87	126.4	130.6	122.5	62.7	65.5	59.8
1888-92	159.8	166.0	154.0	65.7	98.3	75.0
1893-97	156.4	162.5	150.6	77.4	86.8	67.8
1898-02	158.2	165.5	151.4	72.5	81.6	63.2
1903-07	191.7	201.5	182.3	69 5	79.6	59.2
1908-12	184 5	187.5	181.6	41.7	43.5	39.8
1913-17	215.1	218.5	211.8	32.8	34.3	31.3
	Ages 5-9			Ages 10-19		
Year	Persons	Males	Females	Persons	Males	Females
1868-72	14.0	11.6	16.5	22.2	18.9	25 4
1873-77	16.4	13.5	19.4	24.2	23.6	24 8
1878-82	23.3	22.9	23.6	25.0	24.4	25.6
1883-87	28.1	28.8	27.4	31.5	27.2	35.7
1888-92	31.5	28.2	34.9	37.2	36.4	37.9
1893-97	22.8	19.5	26.0	33.1	32.6	33.6
1898-02	20.5	19.4	21.7	26.9	25.1	28.7
1903-07	27.0	23.1	30.9	32.9	31.3	34.4
1908-12	26.7	23.7	29.8	32.5	28.7	36.3
1913-17	29.9	29.6	30.2	36.8	33.8	39.8
	Ages 20-39			Ages 40-59		
Year	Persons	Males	Females	Persons	Males	Females
1868-72	37.5	35.9	38.9	95.8	98.6	93 0
1873-77	41.6	40.0	43.1	110.6	115 0	106.4
1878-82	44.3	41.8	46.6	130.1	137.2	123 5
1883-87	47.0	44.5	49.3	162.4	159.4	165.2
1888-92	59.0	54.7	63.1	206.2	216.5	196 7
1893-97	52.5	50.2	54.6	200.0	209.3	191.3
1898-02	49.1	47.9	50.3	197.8	207.5	188 4
1903-07	55.1	54.3	55.9	239.9	259.2	221.3
1908-12	50.8	49.4	52.2	218.9	238.1	200 2
1913-17	56.6	55.8	57.4	256.3	283.2	230.3
	Ages 60 and Over			Ages 40 and Over		
Year	Persons	Males	Females	Persons	Males	Females
1868-72	414.2	510.0	333.2	187.7	210.7	166 0
1873-77	467.5	563.3	386.3	215.6	241.4	191.9
1878-82	622.0	712.4	545.5	278.3	305.1	254 3
1883-87	746.6	863.8	648.1	340.5	367.3	316.0
1888-92	960.3	1086.8	853.9	434.6	471.2	401.8
1893-97	1015.2	1157.6	898.9	442.7	477.7	411.3
1898-02	1091.5	1255.5	958.8	458.5	494.4	425.8
1903-07	1313.8	1511.6	1155.6	550.5	596.8	508.4
1908-12	1354.2	1487.8	1246.6	536.9	562.0	511.6
1913-17	1613.5	1750.2	1503.8	624.9	653.2	598.8

It may be useful to consider briefly here the relative incidence of different diseases, chiefly in adult life, and Table 7 presents the proportionate mortality from different causes, proving conclusively that, without reference to sex, heart diseases as a group are the most important affections, constituting 18.8 per cent. of the mortality from all causes at ages 40 and over. It is not conveniently possible to give this information by sex; but if the analysis were limited to females, cancer would occupy a much more important, if not a leading position in the relative standing of the different diseases.

Equally important is the fact brought out by the table that heart diseases at ages 40 and over constitute 85.8 per cent. of the mortality from heart diseases at all ages; in other words, the disease is largely one of well advanced adult life. In this respect, however, cancer is even more important, for the mortality from malignant disease is 91 per cent. at ages 40 and over, of the mortality from this disease at all ages. In contrast, the proportion is only 37.7 per cent. for pulmonary tuberculosis, and 58 per cent. for lobar pneumonia.

It will also be convenient to compare the mortality rates for different years since 1900, and for different

TABLE 7.—DEATHS IN THE U. S. REGISTRATION AREA DURING 1917

	All Ages		Ages 40 and Over		Per Cent. of All Ages
	Number	Per Cent. of All Causes	Number	Per Cent. of All Causes	
All causes	1,066,711	100.0	586,323	100.0	55.0
Pulmonary tuberculosis	93,290	8.7	35,151	6.0	37.7
Cancer	61,429	5.8	55,929	9.5	91.0
Cerebral hemorrhage and apoplexy	62 417	5 9	59 822	10.2	95.8
Heart diseases	128.719	12.1	110 426	18.8	85.8
Lobar pneumonia	74 517	7.0	43 236	7.4	58 0
Kidney diseases	82,657	7.7	70,725	12.1	85.6

causes, and in illustration of the comparative importance which should be attached to the apparent increase in diseases of the heart. Table 8 shows, for illustration, that while there has been a considerable decrease in the mortality from pulmonary tuberculosis, and a practically stationary condition in the mortality from pneumonia and violence, deaths from old age and ill-defined causes have very materially decreased, so much so that in the latter case they have practically become quite negligible. The decrease in the mortality in old age is of particular significance in that there is a strong reason for believing that deaths from this group have been largely transferred to the present group of affec-

TABLE 8.—MORTALITY IN THE TEN ORIGINAL REGISTRATION STATES AT ALL AGES

	Death Rates per Hundred Thousand of Population									
Year	All Causes*	Tuberculosis Pulmonary	Cancer	Apoplexy and Softening Cerebral	Arterial Diseases, Embolism and Thrombosis	Pneumonia	Kidney Diseases	Old Age	Violence	Ill Defined†
1900	17.1	172.8	63.8	76.0	9.3	175.4	91.6	50.1	87.5	16.6
1905	15.8	155.6	73.5	82.9	16.2	148.7	103.1	87.8	103.6	7.9
1910	15.6	140.6	82.8	87.3	30.0	158.6	109.3	25.8	97.0	16.3
1915	14.2	126.1	91.6	92.6	33.3	147.9	114.3	16.6	94.4	2.2
1917	14.9	127.5	94.5	100.5	37.8	164.4	119.7	12.4	108.6	2.5
	Number of Deaths to Every 100 in 1900									
1905	92	90	115	109	174	85	113	75	118	48
1910	91	81	130	115	323	90	119	51	111	98
1915	83	73	141	122	358	84	125	33	108	13
1917	87	74	148	132	406	94	131	25	124	15

* Rates per thousand.
† Principally dropsy, heart failure, sudden death, etc.

tions of the heart. The increase in the mortality from apoplexy and cerebral softening is probably a more accurate measure of the increasing intensity in life strain, and more so than the corresponding statistics for arterial diseases, embolism and thrombosis combined for the earlier portions of the periods, although for the last seven years of the period under consideration the rate has only increased from 30 per hundred thousand of population in 1910 to 37.8 in 1917.

The same conclusions apply to kidney diseases, which have increased from 91.6 per hundred thousand of

population in 1900 to 119.7 in 1917; but if the increase is considered only for the last seven years, the change is not of very material importance.

The question may here be raised that where so much doubt is cast on the unquestionable increase in cancer frequency, as measured by a change in the rate of incidence from 63.8 in 1900 to 94.5 per hundred thousand of population in 1917, why the much more startling and certainly extremely doubtful apparent increase in the mortality from heart disease should go unchallenged. The apparent increase in diseases of the kidneys is largely accounted for by the transfer of deaths from dropsy and the urinary and circulatory systems or groups.

Much interest attaches to the relative frequency of heart affections among the white and colored populations on account of disparity in the rates, of which no satisfactory explanation has thus far been forthcoming. For the registration area, 1914-1917, the information is shown in Table 9 that all heart affections, ages 40 and over, cause a rate of 536.2 per hundred thousand for the white population, against 672.4 for the colored. There can be no question, however, that the difference in the racial incidence of heart affections is real and not apparent. Numerous other investigations, including hospital experience, seem to sustain the point of view that the negro is more liable to this group of diseases, particularly to acute endocarditis, than is the white man. Since accurate diagnosis is more difficult in this case than in many other heart affections, it would seem a foregone conclusion that the higher rate of incidence is real, and for all practical

TABLE 9.—MORTALITY IN THE REGISTRATION AREA, 1914-1917, BY RACE AND AGE

	Death Rates per Hundred Thousand of Population					
	All Ages					
	All Races			White		
	Persons	Males	Females	Persons	Males	Females
Pericarditis	1.1	1.2	1.0	1.1	1.1	1.0
Acute endocarditis	9.1	9.4	8.8	8.8	9.2	8.4
Organic heart diseases	148.4	152.1	144.5	146.8	150.2	143.3
Angina pectoris	7.6	9.4	5.7	7.9	9.8	5.8
Total	166.2	172.1	160.0	164.6	170.3	158.5
	Ages 40 and Over					
Pericarditis	2.9	3.2	2.6	2.8	3.1	2.5
Acute endocarditis	19.6	21.0	18.2	18.7	20.3	17.0
Organic heart diseases	493.7	501.9	484.9	486.4	494.9	477.2
Angina pectoris	27.5	33.8	20.6	28.3	35.0	21.0
Total	543.7	559.9	526.3	536.2	553.3	517.7
	All Ages					
	Colored			Number of Colored Deaths to Every 100 White Deaths		
Pericarditis	2.1	2.2	1.9	191	200	190
Acute endocarditis	12.8	12.5	13.1	145	136	156
Organic heart diseases	169.7	178.0	161.3	116	119	113
Angina pectoris	3.7	3.8	3.7	47	39	64
Total	188.3	196.5	180.0	114	115	114
	Ages 40 and Over					
Pericarditis	5.8	6.2	5.4	207	200	216
Acute endocarditis	34.4	32.0	37.1	184	158	218
Organic heart diseases	618.7	618.1	619.4	127	125	130
Angina pectoris	13.5	12.6	14.6	48	36	70
Total	672.4	668.9	676.5	125	121	131

purposes a racial trait not explained on account of our present ignorance of the almost unexplored field of race pathology. The very much higher rate of incidence from angina pectoris in the case of the white population is also very suggestive, and is not explained by the possibility of erroneous diagnosis or death classification; for the rate for the white population is 28.3 per hundred thousand population at ages 40 and over, against only 13.5 for the colored. In other words, while the mortality from pericarditis is 107 per cent., in the case of the colored race, in excess of the normal rate for the white race, the mortality from angina pectoris is only 48 per cent. of the corresponding rate for the white population.

Much has been made of the alleged decrease in heart affections in England and on the continent, and the alleged increase in this country. The facts are quite to the contrary, at least as regards England and Wales, to which the present comparison is limited. Table 10

TABLE 10.—MORTALITY IN ENGLAND AND WALES FROM SPECIFIED CAUSES OF DEATH

	Crude Death Rates per Hundred Thousand of Population								
Year	All Causes*	Cancer	Pulmonary Tuberculosis	Heart Diseases	Apoplexy and Diseases of the Blood Vessels	Pneumonia, All Forms	Nephritis and Bright's Dis.	Violence	Old Age
1900	18.2	82.9	133.3	147.9	87.1	137.4	40.1	62.4	98.3
1905	15.3	88.9	114.6	142.3	83.9	130.5	37.6	57.1	92.8
1910	13.5	96.7	101.5	136.1	88.6	111.0	38.9	52.2	89.0
1915†	15.7	112.1	113.6	172.1	118.0	135.9	45.5	56.4	89.7
1917†	14.4	121.0	122.8	166.6	121.9	114.4	41.9	54.9	88.8
	Number of Deaths to Every 100 in 1900								
1905	84	107	86	96	96	95	94	92	94
1910	74	117	76	92	102	81	97	84	91
1915	86	135	85	116	135	99	113	90	91
1917	79	146	92	113	140	83	104	88	90

* Rate per thousand.
† Based on civil population only. Years 1915 and 1917 are not strictly comparable with previous years or with United States data.

shows conclusively that heart diseases have apparently increased in England and Wales from 147.9 per hundred thousand of population in 1900 to 172.1 in 1915, the later figures being less useful on account of the effect of the war. Equally suggestive is the apparent increase in deaths from apoplexy and diseases of the blood vessels from 87.1 per hundred thousand in 1900 to 118.0 in 1915. It is to be observed that the decline in the deaths from old age is less marked in England and Wales, although suggestive, being 98.3 per hundred thousand of population in 1900, but only 88.8 in 1917.

International vital statistics require to be used for comparative purposes with extreme caution. Few are in a position to make sure of the comparability of the data without personal inquiry in different countries and personal interviews with registration officials, practicing physicians, teachers of pathology, and the like. There is unquestionably a difference in point of view in the medical practice of America and England which cannot properly be ignored. Such statistics as are available can be relied on only in the most general way; no far-reaching conclusions can be adopted unless based on a painstaking inquiry into the actual facts, and we should not blindly accept mere statistical information, which may or may not be conclusive.

APPLICATION OF FINDINGS TO PRACTICE OF MEDICINE

The subject is entirely too large and too involved to admit of being briefly considered for the practical purpose of rendering substantial aid to the practitioner or the student of clinical medicine. From a life insurance point of view there is hardly a more important group of affections than diseases of the heart, than which probably no other is more typical of what is summed up in the term "adverse selection." As emphasized, however, by Sir James Mackenzie, we are very far indeed from having attained to a position in which the medical judgment, arrived at as the result of even the most thorough examination, can be relied on with absolute certainty in a considerable proportion

of borderland cases. Such attempts as have been made to reduce the experience which has been had to a statistical basis indicate, however, the far-reaching possibilities of really qualified research. The medico-actuarial mortality investigation, for illustration, considered the effect of an irregular pulse, of an intermittent pulse, of a pulse rate of from 90 to 100, and of a pulse rate over 100, on the subsequent expectation of life, with results which may safely be accepted at least as approximately conclusive, although the experience was not sufficiently large to be considered as final.

In the case of applicants with an irregular pulse, the ratio of actual to expected deaths was 95 per cent., but in this connection it is said in the report that:

> The low mortality is probably due to the inclusion of many cases where an irregular pulse was found on only one out of two or more examinations. Several of the companies whose experience comprised the largest part of the data were asked to investigate their cases, and it was found that the number with a persistently irregular pulse was small, the abnormality having been found in the first, but not in subsequent examinations. The committee was shown the experience of a company on a group of risks with persistently irregular or intermittent pulse, insured on substandard plans. There were about 120 deaths and the mortality was more than 50 per cent. in excess of the normal. The experience did not show separately the results of irregular pulse and intermittent pulse. Cases in which either of these conditions was found in only one out of two or more examinations were not included.

In further explanation, it is pointed out that in this class "there were undoubtedly many cases in which the condition was merely temporary, due frequently to excitement under examination; while in the substandard group of the company whose experience has been mentioned, the condition was apparently permanent." It is therefore made clear that the statistical results of the investigation cannot be relied on as entirely conclusive, for it is pointed out that the death rate from heart disease in the group considered "was distinctly heavier than the normal." Among applicants with an intermittent pulse at the time of entry into insurance, the ratio of actual to expected deaths was 113 per cent. It is explained in the report that the previous comments apply to this class also, an investigation having shown that in the great majority of cases the intermittent pulse was found on only one out of several examinations.

The death rate from heart diseases in this group was, however, "markedly higher than the normal." It is therefore safe to assume that a persistent irregular and intermittent pulse, determined by precise methods of examination, are symptoms of considerable diagnostic value.

Applicants with a pulse rate of from 90 to 100 experienced a ratio of actual to expected deaths of 172 per cent. In this group the death rate "from heart disease and pneumonia, and especially from tuberculosis of the lungs, was distinctly above the standard." The experience, which is based on 332 deaths, would seem to suggest that a high pulse rate is decidedly more indicative of a physical impairment than an irregular or intermittent pulse.

Applicants with a pulse rate over 100 represent a rather small group of individuals, no doubt on account of the attitude of the companies to reject most of such applicants unconditionally. The ratio of actual to expected mortality among this group was 205 per cent. The explanation concerning the mortality of this group of causes is, unfortunately, not sufficient for practical purposes. It is one of the lamentable defects of the medico-actuarial mortality investigation that the causes of death, in their relation to impairment, were considered only in a fragmentary manner, and not systematically presented for the larger purposes of clinical medicine.

The foregoing observations are, therefore, suggestive rather than conclusive. I have on more than one occasion suggested the urgency of a dual classification of deaths, known as the Budapest system, which would permit of a more precise judgment than is possible at present. To group the mortality from heart diseases, or the existence of impairments, without reference to secondary causes, frequently classed as primary, must needs lead to much confusion. To classify heart diseases as a group is in itself as misleading as the old classification of "fevers" and the modern classification of "malignant tumors," without reference to the site of the organ affected. Such affections as aneurysm of the valves, atrophy of the heart, displacement of the heart, fibroid disease of the heart, thrombosis or mitral stenosis are all indications of the serious limitations of the present method of a crude classification. Any one familiar with medical nomenclature is aware of the practical difficulties of a trustworthy and strictly comparable classification, even in the easily diagnosed case of valvular disease of the heart complicated by Bright's disease, or pericarditis complicated by some infectious disease of early childhood. There is, therefore, urgent need for an improvement in the statistical treatment of heart affections and in amplification of the death certificate, which should be made to include a few descriptive remarks to facilitate accuracy and uniformity in statistical analysis.

As an illustration of the foregoing, reference may be made to the etiology of pericarditis as presented by Dr. Robert B. Preble[2] in 1901. Dr. Preble, after pointing out that primary cases of acute pericarditis may clinically occur, although they are extremely rare, states that diseases in which "pericarditis appears as a complication are, in order of their frequency: pneumonia, 34 per cent.; rheumatism, 28.36 per cent.; chronic diffuse nephritis, 11.2 per cent.; tuberculosis, 10 per cent.; sepsis, 4.7 per cent.; aneurysm, 2.6 per cent., and typhoid, 1.7 per cent." He holds that the more extensive the pneumonia the greater the danger of this complication, but at the same time emphasizes the statistical difficulty of exact classification; for the mortality from pneumonia with pericarditis, according to Dr. Preble, is 92.4 per cent. Furthermore, pericarditis appears as a complication of all forms of nephritis, but particularly the chronic diffuse nephritis with contraction.

Reference may also be made here to a valuable paper on the four common types of heart disease, by Dr. Richard C. Cabot,[3] in 1914. The discussion is based on an analysis of 600 hospital cases of "failing heart," found to group themselves (1) as rheumatic, (2) nephritic, (3) arteriosclerotic and (4) syphilitic. These four types represent 93 per cent. of the total, the remainder being affected by either goiter or doubtful conditions.

The obvious purpose of all statistical inquiries into the mortality from heart affections is to aid early diag-

2. Preble, R. B.: Etiology of Pericarditis, J. A. M. A. **37**: 1510 (Dec. 7) 1901.
3. Cabot R. C.: The Four Common Types of Heart Disease, J. A. M. A. **63**: 1461 (Oct. 24) 1914.

nosis and disease prevention. Whether or not heart affections are on the increase is quite secondary to the truth, which is not in controversy, that there is an immense mortality from these diseases in comparatively early adult life, which, in the light of modern knowledge, lies unquestionably within the domain of prevention and relief. It has been said in this connection [4] that "greater accuracy of diagnosis and better statistics will hardly account for the remarkable increase in recent years in the percentage of deaths from heart disorders." The value of a periodic medical examination is therefore urged, and it is said that "the recognition of the signs and symptoms of decompensation seldom fails"; further:

> The routine examination of the heart at this stage may show some well marked valvular or other lesion, but there will often be found only such signs as a hasty examination is most apt to overlook. These may be merely a change in the quality of the first sound with a slight increase in cardiac dulness, or there may be associated an irregular pulse volume. Always in this field symptoms should receive equal or greater weight than physical signs.

Finally, the suggestive observation is made, which is fully sustained by every statistical inquiry into the subject, that "it is not the too often impossible *early* diagnosis of cardiac disease which is to be emphasized, but the *earlier* diagnosis."

As I have had occasion to say before, heart affections are of the first importance to life insurance companies. Much progress has been made during recent years which gives the assurance that examinations are made today with a much higher degree of accuracy and thoroughness than in former years. An illustration of the scientific aspects of this question is the recent discussion on "Heart Murmurs—Their Influence on Mortality," by Dr. Oscar H. Rogers and Mr. Arthur Hunter, before the Actuarial Society of America. This paper is an admirable contribution to a very limited literature, which it is hoped will be enlarged by the research work of institutions which recognize the urgency of more qualified consideration. The paper brings out the fact that applicants with mitral regurgitation without hypertrophy experience a mortality ratio of actual to expected deaths of 181 per cent. Among this class, persons underweight experience a mortality of 166 per cent. and persons overweight, of 209 per cent. Applicants affected with mitral regurgitation with hypertrophy experience a ratio of actual to expected mortality of 225 per cent. The importance of hypertrophy is emphasized by selected cases of mitral regurgitation with a history of inflammatory rheumatism, according to which applicants with little or no hypertrophy experience a ratio of actual to expected mortality of 299 per cent., whereas applicants with moderate hypertrophy experience a ratio of actual to expected mortality of 455 per cent.

The group of risks with aortic obstruction was, unfortunately, rather too small for entirely trustworthy conclusions. The ratio of actual to expected deaths among applicants with aortic obstruction without hypertrophy and with minor impairments was 179 per cent. Out of 227 deaths among this class, seventy-three, or 32 per cent., were from heart disease.

Applicants with functional heart murmurs also represent a relatively small group of risks, so that conclusions must be accepted with reserve; but the ratio of actual to expected deaths in this class was 114 per cent. The foregoing illustrations will serve the purpose of emphasizing the practical value in prognosis of statistical research practically limited to life insurance experience. I cannot do better than to restate the conclusions of Rogers and Hunter, which are deserving of most careful consideration:

> Functional heart murmurs, if carefully selected, are insurable among young applicants at standard rates; among applicants over 40 years of age, at rates calculated to provide for a substantial extra mortality.
>
> Mitral regurgitation, if carefully selected, may be insured on terms to provide for a mortality of from 150 to 250 per cent., ratings above 170 to depend on the degree of hypertrophy present in each case.
>
> Aortic obstruction is probably 25 points less favorable than mitral regurgitation.
>
> Hypertrophy of the heart, occurring in connection with heart murmurs, constitutes an additional impairment, and only moderate degrees of hypertrophy are insurable.
>
> Irregular or intermittent pulse increases the hazard of heart murmurs, and if more than slight, the combination results in a very high mortality.
>
> A heart murmur with a history of acute articular rheumatism is a very serious impairment.

COLLATERAL CAUSES OF DEATH

A qualified analysis of the mortality from diseases of the heart should include the collateral or subsidiary causes of death. This is possible only under the so-called Budapest system of dual death classification, which at present is not followed by a single registration department of this country. Some years ago, when I had occasion to discuss this question, I had an analysis made of the male mortality of the Prudential Insurance Company of America for the year 1909, limited, however, to only 2,686 deaths from diseases of the heart precisely registered as such, while in addition there were 1,855 deaths registered as due to other causes in which diseases of the heart were taken note of as a secondary or supplementary cause, disregarded for statistical purposes. There were, therefore, 4,541 deaths in which an impairment of the heart function contributed directly or indirectly to the death of the deceased. If this analysis is extended to all the different registered causes of death, some extremely interesting conclusions can be advanced which must unquestionably be of clinical, or at least prognostic, value. Thus, for illustration, there were 871 deaths from acute nephritis in this experience, of which 222, or 25.5 per cent., were complicated by diseases of the heart. There were 1,945 deaths from Bright's disease, of which 279, or 14.3 per cent., were complicated by heart diseases. In the aggregate ordinary male mortality experience of this company, out of 33,992 deaths, there were 20,547, or 60.4 per cent., without complications, while there were 1,855 deaths, or 5.5 per cent. of the total, complicated by diseases of the heart but in which cases heart disease was not specifically assigned as the immediate cause of of death. It is the practice of the Prudential to classify all deaths in which both heart and Bright's diseases are stated on the death certificate under the latter term. It is, therefore, self-evident that unless these facts are taken into account, erroneous conclusions are unavoidable.

CONCLUSION

I may say that of 8,408 deaths of males, 1,811, or 21.5 per cent., were complicated by diseases of the heart; and by specific impairments, 531 cases were

4. The Early Recognition of Heart Disease, J. A. M. A. 66: 1025 (April 1) 1916.

complications of valvular disease; 347 cases, of endocarditis; 339 cases, of myocarditis; 215 cases, of organic diseases of the heart not otherwise specified, and 169 cases, of cardiac asthma and dilatation, etc. In the same experience there were 390 deaths from Bright's disease complicated by arterial diseases, principally cerebral apoplexy, from which there were 307 deaths; and arteriosclerosis, from which there were seventy-three deaths.

The foregoing statement must be sufficient for the present purpose to emphasize the extreme importance of a complete collateral analysis of all the causes of death in any discussion of heart impairments, with particular reference to the question of a possible increase in the observed degree of relative frequency. To those who wish to pursue this question further, it may be suggested that the statistics of the Roosevelt Hospital are of particular value in this connection in that they are available for a period of more than twenty years, and so stated as to emphasize the relative importance of complications, or collateral impairments, as the case may be.

ROENTGENOLOGY OF TUBERCULOUS ENTEROCOLITIS *

R. D. CARMAN, M.D.
ROCHESTER, MINN.

The early symptoms of ulcerative tuberculous colitis are not sufficiently characteristic to make possible a definite clinical diagnosis, even in the presence of pulmonary tuberculosis. If any benefit is to come from treatment, it is imperative that the disease be recognized early, and for this recognition the roentgen ray furnishes the most certain means as yet available. A positive and independent roentgen diagnosis of tuberculous colitis is difficult, however, for there are no pathognomonic roentgen signs, as the filling defect and the absence of the normal barium shadow in the cecocolon are signs of any ulcerative lesion. Even the finding of *Bacillus tuberculosis* in the stool is of no value in determining the nature of the lesion in the intestine unless a tuberculous lesion in the lungs or *Bacillus tuberculosis* in the sputum can be excluded. Every patient with indefinite abdominal complaint should, therefore, have a complete roentgenologic and general clinical examination. Tuberculosis has such a predilection for the ileocecal coil that a lesion in this part of the intestine, especially if associated with pulmonary tuberculosis, is most likely tuberculosis. Distal segments of the colon are seldom invaded; the disease almost always involves the proximal portion, especially the small bowel, ileocecal valve, cecum, appendix, and ascending colon (Brunner [1]). Necropsies have demonstrated that from 70 to 90 per cent. of persons suffering with advanced pulmonary tuberculosis have tuberculosis of the intestine.

In reviewing the physiology of the colon, the following facts should be kept in mind for a better understanding of the abnormal colon: The cecum and ascending colon form a pouchlike expansion of the proximal part of the large bowel. Their walls are thinnest and therefore weakest, and capable of great distention. The interior depressions of the cecum correspond with the surface haustra. It is definitely known that food remains in this portion of the colon longer than in any other, and it is thought that this delay is largely due to haustration and antiperistalsis. With these physiologic functions in mind, it is not difficult to understand how their loss by disease explains the emptiness and gap in the physiologic barium shadow seen in ulcerative diseases of the colon. The bowel contents pass with abnormal rapidity, because the normal functions which retard the physiologic progress are absent.

PATHOLOGY OF TUBERCULOSIS OF THE INTESTINE

The pathology of tuberculosis of the intestine may conveniently be divided into three types: (1) nodular; (2) ulcerative, and (3) fibrous.

In the nodular type the lesion is made up of conglomerate tubercles which are principally extraluminal in their earliest stages. The nodules are not infrequently seen alone, apparently unaccompanied by tuberculosis elsewhere; they may rarely be seen in association with chronic ulcerative tuberculous ileocolitis, and in such case may be the sequel of pulmonary tuberculosis. This type can hardly be recognized roentgenologically unless it produces obstruction or encroaches on the lumen of the bowel.

The ulcerative type is frequently associated with the nodular, but in a typical instance ulcerative tuberculous colitis is the primary lesion. However, it is possible for tuberculosis to be associated with it in other parts of the body. This type is evidenced by irregularity of bowel contour in the roentgenogram; in the terminal stages it produces obstruction.

The fibrous or hypertrophic type of tuberculosis is manifested by a marked increase of fibrous connective tissue; the tubercles are discrete and relatively sparse. The large amount of fibrous tissue indicates a marked resistance on the part of the patient. It is the terminal stage of healing tuberculous colitis and pericolitis. This type gives practically the same roentgen picture as the ulcerative.

TECHNIC OF EXAMINATION

The technic of the examination is not difficult. In fact, it is the same as is used for all other diseases of the intestine. In the Mayo Clinic the enema is ordinarily employed; when necessary, the ingested meal is used; in a few cases both methods may be necessary. The enema is preferable since it demonstrates small irregularities of contour by actually outlining the bowel wall, whereas the ingested meal is so unevenly distributed throughout the normal bowel that its irregularity cannot be distinguished from that due to disease. This is especially true in cases in which there is little involvement. If the enema is employed, the colon is filled under observation up to and including the cecum. If the ingested meal is given, observations with the screen are made at intervals from the sixth to the eighteenth hour. Roentgenograms are made as a matter of record and for study.

ROENTGENOLOGIC SIGNS OF TUBERCULOUS COLITIS

The roentgenologic signs of tuberculous colitis are: (1) filling defects; (2) spastic phenomena, and (3) obstruction.

The first and most important roentgenologic sign of tuberculous ileocecal colitis is the filling defect, which is due to the ravages of the disease plus spastic manifestations. It is best seen during the screen

*From the Section on Roentgenology, Mayo Clinic.
* Presented before the Omaha Roentgen Society, March 27, 1920.
1. Brunner, C.: Tuberculose, Aktinomycose, Syphilis des Magen-Darmkanals, Stuttgart, Enke, 1907, p. 399.

examination with the opaque enema. Under pressure of the enema, the cecum and ascending colon are seen to fill irregularly and are decidedly narrowed in their transverse diameter. The normal haustral markings are absent, and Bauhin's valve is usually incompetent. After the pressure of the enema is relieved by shutting off the flow, the involved area usually empties and remains emptied, while the remainder of the colon may retain the enema for some time.

The filling defect and the localized absence of barium shadow in the cecum and ascending colon are not entirely characteristic of tuberculous colitis; I have seen them in ulcerative carcinoma of the cecum and chronic ulcerative colitis. Stierlin [2] has reported a case of carcinoma in the ileocecal coil with similar findings. Nevertheless, a lesion of the cecum and ascending colon without the physiologic barium shadow should always suggest the possibility of tuberculosis, and tuberculosis should be looked for in other parts of the body, particularly the lungs. If tuberculosis can be definitely demonstrated in the lungs, the lesion of the cecocolon, whether there is an absence of the physiologic barium shadow or not, is most likely tuberculous colitis.

Hypermotility has been emphasized by Brown and Sampson [3] as an important roentgenologic sign of tuberculous colitis. The term hypermotility can hardly be applied to this phenomenon because, strictly speaking, hypermotility refers to the passage of bowel contents, at an increased rate, along the entire alimentary canal. Hypermotility in our cases was usually due to diarrhea or achylia, and was of no more value as a diagnostic sign than a six-hour retention in the stomach would be. The gap in the barium shadow, I believe, does not represent hypermotility, but is the effect of diffuse infiltration of the bowel wall which produces rigidity of the part of the intestine affected. It is apparent from this that the physiologic functions of the diseased segment of the colon have been lost and the barium passes through it without hindrance, just as it does through a stomach diffusely infiltrated with cancer. In the absence of diffuse infiltration, spasm stiffens the walls, giving the same motoric effect.

Béclère and Mériel [4] state that an ulcerated mucosa manifests its irritability by an exaggeration of muscular peristalsis with an abnormally rapid progress of the contents of the intestine. I have never observed this muscular peristalsis, but I have seen marked spasm of the musculature of the colon due to irritability from an ulcerated mucosa, and I am inclined to think that Béclère meant spasm when he said peristalsis. Stierlin is evidently of the same opinion, for in discussing the same subject he mentions no acceleration of motility. Indeed, it has been demonstrated in operations, when the patient is under the influence of narcosis, that this spasmodic condition does exist and its extent is in proportion to the extent of the lesion. For example, if a solitary lesion is present, the spasm is localized and analogous to that seen in gastric ulcer. In this early stage of the disease usually there is no gap in the barium shadow of the ingested meal, but the irregularity of contour due to spasm may be visualized by the opaque enema even if the lesion is not demonstrable.

Stierlin, in 1911, first pointed out the absence of a physiologic barium shadow in the cecum and ascending colon in tuberculosis of the ileocecal coil. Much to his surprise, at a time when normally he expected to show the cecum and ascending colon in the roentgenogram, no shadow was visible; in its advance the shadow seemed to skip the cecum and the ascending colon. In this country Pirie [5] was the first to notice this phenomenon. By observations at half-hour intervals, continued for from four to twelve hours, he was able to prove that the tuberculous cecum does not retain the barium which normally accumulates there.

Spasm is a manifestation which, to a greater or less degree, accompanies many if not all gastro-intestinal lesions. It is one of the most perplexing conditions with which the roentgenologist has to deal. For instance, lesions so slight as to cause no irregularity of contour demonstrable in the roentgenogram may exhibit marked deformity and narrowing due to spasm. Indeed, the absence of barium from an involved area of the bowel is caused usually by spasm and infiltration of the intestine rather than by hypermotility. This type of spasm is intrinsic in origin and constant in situation; it is present at a second examination and cannot be effaced by antispasmodics.

In our cases, tuberculosis has been more frequent in the small than in the large bowel. The lesions are seen most often in the ileum and the jejunum, but the latter is less frequently affected. They occur in the bowel anywhere from a few inches to 1 foot or more apart and usually become confluent near the ileocecal valve. The affected areas are not more than one-half to three-quarters inch in width. They are slightly elevated, may or may not be studded with tubercles, and involve the entire circumference of the intestine. Palpation of the areas reveals the presence of ulcers in the mucosa.

The roentgen diagnosis of tuberculous enteritis is less certain than that of tuberculous colitis. This is probably due to the physiologic and anatomic difference between the small and the large intestine. The obstruction which is occasionally noted is not characteristic, for it is observed in other pathologic conditions. However, I have observed another sign which may have diagnostic value, namely, delay with irregular filling and segmentation of the small bowel; but further study will be necessary to establish this fact.

SUMMARY

A lesion roentgenologically demonstrated in the ileocecal coil, with irregularity of bowel contour and without the physiologic barium shadow in the cecocolon, although it may represent any ulcerative process, is probably tuberculous if pulmonary tuberculosis is present.

The tuberculous lesions may be nodular, ulcerative or fibrous. They are usually associated to a greater or less extent, dependent on the stage of the disease. The nodular type is recognized by means of the roentgen ray only if it encroaches on the lumen of the bowel, and the ulcerative and fibrous types by irregularity of contour, and in the terminal stages by obstruction.

The presence of spasm must not be overlooked, since it often causes irregularity of contour and is diagnostic even when the lesion itself is not demonstrable.

2. Stierlin, E.: Die Radiographie in der Diagnostik der Ileozoekaltuberculose und anderer Krankheiten des Dickdarms, München. med. Wchnschr. **58**: 1231-1235, 1911.

3. Brown Lawrason, and Sampson, H. L.: The Early Roentgen Diagnosis of Ulcerative Tuberculous Colitis, J. A. M. A. **73**: 77-85 (July 12) 1919.

4. Béclère and Mériel: L'exploration radiologique dans les affections chirurgicales de l'estomac et de l'intestin, Rapport 25, Congrès français de Chirurgie, Paris, 1912, p. 103.

5. Pirie, H., quoted by Archibald, E.: The Rôle of Surgery in the Treatment of Intestinal Tuberculosis, National Association for the Study and Prevention of Tuberculosis, 1917, pp. 117-134.

The opaque enema generally is preferable to the ingested meal in demonstrating the filling defect and spastic phenomena which are roentgenologic signs of tuberculous colitis. A gap in the physiologic barium shadow of the cecocolon in the more advanced cases is demonstrated by the ingested meal, but unquestionably the disease will be demonstrated earlier by the enema.

THE DIAGNOSIS OF EPIDEMIC ENCEPHALITIS

VALUE OF NASOPHARYNGEAL WASHINGS AND OF CEREBROSPINAL FLUIDS *

LEO LOEWE, M.D.
AND
ISRAEL STRAUSS, M.D.
NEW YORK

During the course of investigations carried on within the past year, Strauss, Hirshfeld and Loewe,[1] and Loewe, Hirshfeld and Strauss [2] established the fact that epidemic encephalitis was due to a filtrable virus. The successful cultivation of this filtrable virus was reported by us.[3] The experimental work embodied in these reports demonstrated the close relationship of the virus and the micro-organism to the nasopharynx. Berkefeld filtrates of nasopharyngeal mucous membrane from fatal cases of epidemic encephalitis, and cultures of these filtrates when injected intracranially into monkeys and rabbits, produced the typical clinical and pathologic pictures of the disease. In view of these findings we were led to investigate, by animal inoculation and cultural studies, the nasopharyngeal washings and the cerebrospinal fluids of patients suffering from epidemic encephalitis. In this communication we desire to report our results and to point out their value in diagnosis.

Material from the nasopharynx was obtained by means of nasal irrigation with physiologic sodium chlorid solution, pharyngeal swabs, or the West tube. We have never seen any ill effects from any of these procedures. Nasal washings were filtered directly, unless the presence of an excessive amount of mucus made it necessary to shake the washings with glass beads. For the most part pharyngeal swabs were used, the swabs being carried as high up in the nasopharynx as possible and strong pressure exerted. The pharyngeal swabs were washed in several changes of saline solution, small quantities being used in order to procure a maximum concentration. The slightly turbid fluid so obtained was then filtered. In one case the thick, tenacious, mucopurulent nasal discharge was finely emulsified by grinding in a mortar with sand and physiologic sodium chlorid solution and then submitted to filtration. The filters used in the work were the the standard 5 N or W. Berkefeld or Mandler filters, which we had found perfectly satisfactory as regards their ability to hold back the usual test organisms. All filtrates before being used were cultivated on ordinary laboratory mediums to insure sterility.

Our first nasal washing was injected intracerebrally into a *Macacus rhesus* monkey. Subsequently we confined our work to the intracranial inoculations in rabbits and to cultivating in kidney tissue-ascitic fluid medium. From two to four medium or fullsized rabbits were thus inoculated intracranially with each filtrate:

The hair over the left half of the skull was first removed and iodin applied. The head was steadied with the left hand, the body and legs being held by the assistant. With experience, it was possible to dispense with the aid of the assistant. The skull of a rabbit is so thin in certain areas that it can be pierced without trephining. With the exertion of moderate pressure and with a boring movement, the needle with stylet in place was inserted perpendicularly to the lateral surface of the skull at a point 0.5 cm. behind and on a level with the upper margin of the orbit. Three c.c. hypodermic syringes with small bevel, so-called deep injection, needles of from 18 to 20 gage were found best adapted for this work. Throughout the entire procedure, strict asepsis was observed. The amount of filtrate varied; as a rule no difficulty was experienced in injecting 1 c.c., if done slowly.

Rabbits that succumbed were examined postmortem, an attempt being made to remove the brain in sterile fashion. Blocks of brain were taken in sterile physiologic sodium chlorid solution and in 50 per cent. glycerin for cultural study. The remainder of the brain was placed in 10 per cent. dilution of liquor formaldehydi for section. The sections were embedded in paraffin and stained with hematoxylin and eosin.

Cultural studies were carried out with the original filtrates and with the brains of animals injected with these filtrates. Filtrates of brains were mainly used, owing to the difficulty of obtaining the brains uncontaminated. All filtrates were inoculated in amounts of from 0.25 to 0.5 c.c. into a series of tubes containing the ascitic fluid-kidney tissue medium. The tubes were sealed with petrolatum to establish a more perfect anaerobiosis, and were then incubated at 37 C. The positive growths were evident in from five to seven days. In a few instances, rabbits were injected intracranially with these cultures to establish their virulence.

Cerebrospinal fluids removed from patients under sterile precautions were similarly subjected to culture and animal inoculation. The fluids were cultivated in amounts from 0.5 to 1 c.c. The larger amount, when injected intracranially into rabbits, proved to be too toxic, the animals succumbing rapidly without definite pathologic lesions being present. When the dose was reduced, the more typical pathologic lesions were produced. Several times, in order to determine their pathogenicity, the organisms isolated from the spinal fluids, and those recovered from the brains of the animals examined postmortem were reinoculated into animals.

RESULTS

Two c.c. of a filtrate of the nasopharyngeal washings, containing thick mucopurulent discharge, from an epidemic encephalitis patient, were injected subdurally into a *Macacus rhesus* monkey. One week later the animal developed apathy, elevation of temperature, and paresis of both hind extremities. This condition persisted for eight days and then gradually disappeared. Lumbar puncture on the sixth day of the illness revealed clear fluid under increased pressure. There were 16 cells per cubic millimeter, mostly lymphocytes.

The nasopharyngeal washings from fourteen other patients with epidemic encephalitis were injected into a

* From the Pathological Laboratory of the Mount Sinai Hospital.

1. Strauss, Hirshfeld and Loewe: New York M. J. **109**: 772 (May 3) 1919.
2. Loewe, Hirshfeld and Strauss: J. Infect. Dis. **25**: 378-383 (Nov.) 1919.
3. Loewe, Leo, and Strauss, Israel: Etiology of Epidemic (Lethargic) Encephalitis, J. A. M. A. **73**: 1056 (Oct. 4) 1919.

total of thirty rabbits. Twenty-five of these animals were examined postmortem, fourteen showing the characteristic lesions to a greater or lesser extent. The lesions consisted of meningitis with round cell infiltration, perivascular and adventitial infiltration with mononuclear cells, focal infiltration with round cells, punctate hemorrhages and edema. These lesions were present singly, but most often combined. It required from one to fifteen days for the animals to succumb. Nine of the fourteen rabbits showing lesions were dead within four days. The short period usually discharged cured. In another case, Dr. Emanuel Libman made a diagnosis of encephalitis lethargica in a woman who was supposed to be suffering from toxemia of pregnancy, for which a therapeutic abortion had been performed. Washings from the nasopharynx were submitted to us for animal inoculation. Two animals injected with the filtrate of these washings died, one in twenty-four hours, and the other in four days. Microscopic examination of these brains demonstrated the characteristic lesions in both. The woman made a good recovery.

TABLE 1.—RESULTS WITH NASOPHARYNGEAL WASHINGS (BERKEFELD FILTRATES)*

			Animal Inoculations (Rabbits)										Diagnosis Established by	
			Virus					Original Organisms						
No.	Case	Culture	No. Inoc.	No. P. M.	No. with Lesions	Time Days	Org. Rec.	No. Inoc.	No. P. M.	No. with Lesions	Time Days	Org. Rec.	Culture	An. Inoc.
1	Lea	Pos.	2	2	1	4	Yes	..	..	..	..	....	Yes	Yes
2	Tob	Pos.	2	2	2	1,4	Yes	2	1	1	8	Yes	Yes	Yes
3	Wein	Neg.	2	1	0	..	No	..	..	..	..	....	No	No
4	Bit	Pos.	2	2	2	8,15	Yes	..	..	..	..	....	Yes	Yes
5	M. S.	Pos.	2	2	1	6	No	..	..	..	..	....	Yes	Yes
6	P. S.	Pos.	2	2	2	1,1	Yes	..	..	..	..	....	Yes	Yes
7	G-h	Neg.	2	2	1	7	No	..	..	..	..	....	No	Yes
8	Els	Pos.	2	2	1	2	Yes	2	2	2	7,12	Yes	Yes	Yes
9	Spar	Pos.	2	2	1	3	Yes	..	..	..	..	....	Yes	Yes
10	Sklo	Neg.	2	1	1	5	Yes	..	..	..	..	....	No	Yes
11	G-g	Neg.	2	2	0	..	No	..	..	..	..	....	No	No
12	Shuz	Pos.	2	1	1	2	No	..	..	..	..	....	Yes	Yes
13	G-n	Neg.	2	1	1	4	No	..	..	..	..	....	No	Yes
14	M. t	Neg.	4	4	0	..	No	..	..	..	..	....	No	No
15	Mach	Pos.	..	..	..	..	....	..	..	..	..	....	Yes	....
16	G-z	Pos.	..	..	..	..	....	..	..	..	..	....	Yes	....
17	W-h	Pos.	..	..	..	..	....	..	..	..	..	....	Yes	....
	Total	Pos. 11	30	26	14	..	Pos. 7	4	3	3	..	Pos. 2	Pos. 11	Pos. 11

* Explanation of abbreviations in this table and Table 2: No. Inoc., number of animals injected; No. P. M., number of animals examined postmortem; No. with Lesions, number of animals examined postmortem which showed the diagnostic pathologic brain lesions; Org. Rec., organism recovered? Cult., diagnosis established by culture? An. Inoc., diagnosis established by animal inoculation?

TABLE 2.—RESULTS WITH CEREBROSPINAL FLUID

			Animal Inoculations (Rabbits)										Diagnosis Established by	
			Virus					Original Organisms						
No.	Case	Culture	No. Inoc.	No. P. M.	No. with Lesions	Time Days	Org. Rec.	No Inoc.	No. P. M.	No. with Lesions	Time Days	Org. Rec.	Culture	An. Inoc.
1	Wein	Pos.	2	2	1	3	Yes	2	1	1	12	Yes	Yes	Yes
2	P. S.	Neg.	2	2	1	8	Yes	..	..	..	..	....	No	Yes
3	Sam	Pos.	2	2	2	1,4	No	2	1	1	14	Yes	Yes	Yes
4	Lea	Neg.	2	2	1	5	No	..	..	..	..	....	No	Yes
5	Mas	Pos.	8	5	3	2,2,5	Yes	4	2	2	7,10	Yes	Yes	Yes
6	M. S.	Neg.	2	0	..	..	....	..	..	..	..	....	No	No
7	King	Neg.	2	1	1	4	Yes	2	2	1	6	Yes	No	Yes
8	Bit	Pos.	2	2	1	4	No	(derived from rabbit brain 131)					Yes	Yes
9	Bit (6 days later)	Pos.	2	1	1	6	Yes	..	..	..	..	....	Yes	Yes
10	Spa	Neg.	2	2	0	..	No	..	..	..	..	....	No	No
11*	Els	Pos.	2	2	1	2	Yes	3	1	1	9	Yes	Yes	Yes
12	G-h	Neg.	2	2	1	1	No	..	..	..	..	....	No	Yes
13	Skol	Neg.	2	1	0	..	....	..	..	..	..	....	No	No
14	Shuz	Pos.	2	1	1	2	No	..	..	..	..	....	Yes	Yes
15	G-g	Neg.	2	2	0	..	....	..	..	..	..	....	No	No
16	G-n	Neg.	2	1	1	1	Yes	..	..	..	..	....	Yes	Yes
17	G-z	Pos.	..	..	..	..	....	..	..	..	..	....	Yes	....
18	Mach	Neg.	..	..	..	..	....	..	..	..	..	....	No	....
19	S-k	Pos.	..	..	..	..	....	..	..	..	..	....	Yes	....
20	G-n	Pos.	Organism also found in direct smear of centrifugalized fluid										Yes	....
	Total	Pos. 10	38	28	15	..	Pos. 7	13	7	6	..	5	Pos. 11	Pos. 12

* Hemorrhagic spinal fluid. Lesions in animals tend toward hemorrhagic encephalitis type.

required enhances the value of the test. The diagnosis was confirmed by animal inoculations in eleven of the fourteen nasopharyngeal washings tested, or 78 per cent.

The method was of distinct practical value in two instances. In one case, in the presence of a markedly bloody spinal tap, a differential diagnosis had to be made between intraventricular hemorrhage, cerebral neoplasm, cerebrospinal syphilis, and epidemic encephalitis. The symptoms and physical findings did not warrant making a definite diagnosis. One of the two animals injected with the filtrate of the nasopharyngeal washings of this patient succumbed within two days with the characteristic brain lesions. This patient subsequently ran the typical course of the disease, and was

Filtrates of nasopharyngeal washings from seventeen patients with epidemic encephalitis were cultivated on the kidney-ascitic fluid medium, with positive findings in eleven cases. Subcultures of many of these strains were taken successfully and carried along through several generations. In five instances the organism was recovered from the brains of animals injected with the virus of these nasal washings, and in three instances, from the brains of rabbits injected with the organisms isolated from these nasopharyngeal washings.

Cerebrospinal fluids, drawn in sterile fashion from sixteen patients having epidemic encephalitis, were injected intracranially into rabbits in amounts of from 0.25 to 1 c.c. Fifteen of the twenty-nine rabbits that died showed the characteristic microscopic lesions.

Eleven of these animals succumbed within four days, three within six days, and one, eight days after the inoculation. Animal inoculation, therefore, served to confirm the diagnosis in twelve of the sixteen cases tested, or 75 per cent.

Cerebrospinal fluids have yielded the filtrable microorganism in eleven of the twenty spinal fluids cultivated. It was found in one case on direct smear of the sediment of the centrifugalized spinal fluid. These strains were carried in one instance as far as the eighth generation. The same organism was recovered from the brains of eight rabbits injected with the spinal fluid itself, and from the brains of four rabbits injected with the organism derived from these spinal fluids.

CONTROLS

The filtrate of nasopharyngeal washings from a patient with influenza complicated by bronchopneumonia and sinusitis was injected intracerebrally into a *Macacus cynomolgus,* with entirely negative results.

TABLE 3.—CONTROLS

No.	Case	Disease	Culture	No. Rab. Inoc.	No. Rab. Exam. Postmortem	No. Rab. with Lesions	Result
		Nasopharyngeal Mucous Membrane:					
1	Lowy	Cardiovascular disease.....	Neg.	..	..	..	Neg.
2	S.	Appendicitis with peritonitis..	Neg.	3	0	..	Neg.
3	Y. R.	Megacolon	Neg.	2	1	0	Neg.
4	F.	Mediastinal tumor	Neg.	2	0	..	Neg.
5	B.	Carcinoma of stomach.....	Neg.	3	0	..	Neg.
6	Sa.	Postoperative hemorrhage ..	Neg.	2	0	..	Neg.
7	P.	Empyema-lung abscess	Neg.	2	0	..	Neg.
		Nasopharyngeal Washings:					
1	Giv.	Sinusitis	Neg.	..	..	..	Neg.
2	Roth.	Sinusitis; bronchopneumonia	Neg.	2	2	0	Neg.
3	K.	Mastoiditis	Neg.	..	..	..	Neg.
4	B.	Pyelitis	Neg.	..	..	..	Neg.
5	R.	Appendicitis; postop. pn. ..	Neg.	..	..	..	Neg.
6	Re.	Empyema	Neg.	..	..	..	Neg.
7	D.	Cholelithiasis	Neg.	..	..	..	Neg.
8	T.	Nephrolithiasis	Neg.	..	..	..	Neg.
		Cerebrospinal Fluids:					
1	Lew.	Brain abscess	Neg.	3	0	..	Neg.
2	Wach.	Brain tumor	Neg.	2	2	0	Neg.
3	Bay.	Psychasthenia	Neg.	2	0	..	Neg.
4	Blake	Uremia	Neg.	2	0	..	Neg.
5	Lutz	Multiple sclerosis	Neg.	..	..	..	Neg.
6	Dug.	Tuberculous meningitis.....	Neg.	..	..	..	Neg.
7	Fleigl	Cerebrospinal syphilis.....	Neg.	..	..	..	Neg.
8	S.	Spinal cord tumor.....	Neg.	..	..	..	Neg.

Filtrates of the nasopharyngeal mucous membrane from six patients dead of diseases other than lethargic encephalitis were used to control our rabbit inoculation experiments. Cases from the surgical wards were preferred, so as to eliminate the possibility of contact with the disease under investigation. Of the fourteen rabbits injected intracranially, only one died, and the brain of this animal had no demonstrable pathologic lesions. Encephalitis could not be produced in six rabbits by the intracranial inoculation of filtrates of nasopharyngeal washings from two patients, one suffering from influenza with bronchopneumonia, and the other from uncomplicated influenza.

Control cultural studies were carried out on the filtrates of seven nasopharyngeal mucous membranes and eight nasopharyngeal washings. This material was obtained postmortem or in vivo from cases other than epidemic encephalitis, with surgical cases preferred. Tissue-ascitic fluid cultures of this material were negative.

Cerebrospinal fluids of four cases (brain abscess, brain tumor, psychasthenia and uremia) were inoculated into nine rabbits in amounts of from 0.25 to 1 c.c. The brains of the two animals that died showed no gross or microscopic lesions.

Cultures were made of the cerebrospinal fluids in seven neurologic cases and one case of uremia with entirely negative results.

CONCLUSIONS

1. The Berkefeld filtrates of nasopharyngeal washings from cases of epidemic encephalitis produce characteristic lesions when injected intracranially into rabbits. This finding has served us as an aid to diagnosis in 78 per cent. of the cases so tested.

2. A minute filtrable organism, identical with that described before by us,[3] has been recovered in eleven of the seventeen nasopharyngeal washings cultivated, or 64 per cent.

3. Inoculation of rabbits with the cerebrospinal fluids of patients with epidemic encephalitis confirmed the diagnosis in twelve of the sixteen fluids injected, or 75 per cent.

4. Cultures of cerebrospinal fluids have been positive in ten out of twenty cases, or 50 per cent.

5. Our positive results with cerebrospinal fluid sharply differentiate this disease from poliomyelitis.

6. Our control studies have been uniformly negative.

LIPURIA ASSOCIATED WITH CHRONIC NEPHRITIS *

LOUIS BAUMAN, M.D.
NEW YORK
AND
G. H. HANSMANN, M.D.
IOWA CITY

Almost all of the recorded instances of fat in the urine appear under the caption "chyluria." The several features of this condition which are now more or less well recognized are the occurrence of fat, fibrinogen or fibrin, red and white blood cells in the urine, the direct quantitative relationship between the fat ingested and that excreted in the urine, and lastly, the increase in fat elimination during rest in the recumbent posture. Both the parasitic (filarial) and the nonparasitic forms have been explained by a fistulous communication of the lymphatics with some part of the urinary system. In 1908, Magnus-Levy [1] stated that lipuria could arise only in this manner. Five years later, Sakaguchi [2] found that the average fat elimination through the urine in health and in a variety of diseases was about 8.5 mg. per day, and that this amount could be increased fourfold by fat ingestion. Only in one case of chronic parenchymatous nephritis did the fat rise to 73 mg. This the author thought was probably due to an altered permeability of the renal tubules. In the course of their work on the behavior of stained fat in the animal organism, Mendel and Daniels [3] noted that rats fed on lard stained with sudan III excreted both fat and dye in the urine. Dr. Amy L. Daniels has kindly permitted us to insert two typical protocols of unpublished experiments.

* From the Department of Internal Medicine, State University of Iowa College of Medicine.

1. Magnus-Levy, A.: Ztschr. f. klin. Med. **66**: 482, 1908.
2. Sakaguchi, K.: Ztschr. f. physiol. Chem. **48**: 1, 1913.
3. Mendel, L. B., and Daniels, A. L.: J. Biol. Chem. **13**: 71, 1912-1913.

RESULTS OF EXPERIMENTS

Rat 1 received food containing 75 per cent. of lard stained with sudan. The next day the urine was distinctly pink. The residue obtained after evaporation of the ethereal extract was quite pink and contained fat as shown by the melting point and by the odor of acrolein on heating.

Rabbit 4 received 8 c.c. of sudan-stained oil administered by stomach tube. The following day the urine was pink and contained fat, as shown by the melting-point test and by the formation of a grease spot when brought in contact with paper.

More recently the work of Sanes and Kahn[4] also indicated that an abnormal permeability of the renal capillaries or epithelium might be a factor in the production of lipuria. The data at our disposal appear to support this view. At least, the available evidence makes it probable that there are at least two types of lipuria, the one associated with a fistulous communication, the other entirely due to an abnormal permeability of the renal cells.

REPORT OF CASE

History.—A white farmer (clinical number 4928), aged 37, who had never lived in a tropical region, married, and the father of four children, admitted to the University Hospital, Aug. 2, 1918, admitted a gonorrheal infection about one year previously but denied syphilis, though his wife had had two miscarriages. His family history was not significant. He had undergone two operations: an appendectomy, in 1913, and another operation for peritoneal adhesions one year later. He had also suffered from smallpox and scarlatina. His present illness began in March, 1918, with headache, swelling of the ankles and dyspnea. July 1, 1918, he first noted that his urine appeared cloudy and oily. Physical examination detected an edema of the legs, a hypertrophied heart, and blood pressure of 150 systolic and 100 diastolic. Blood examination revealed a moderate secondary anemia and a strongly positive Wassermann reaction, which was negative on three subsequent occasions after arsenical treatment. The patient was discharged much improved, Sept. 13, 1918, but was readmitted, November 26 of the same year, with headache, generalized edema and fulness of the abdomen. The heart was large, the liver palpable and tender, the blood pressure: systolic, 190, and diastolic, 120. In spite of treatment the headache increased in severity, and the eyegrounds, which were normal on the first admission, now showed albuminuric retinitis and retinal hemorrhages. The signs and symptoms of pneumonia developed, and death, which occurred, Dec. 16, 1918, was preceded by vomiting, convulsions and coma.

Urine Examinations.—The urine was always cloudy. Its specific gravity ranged from 1.013 to 1.018. It was neutral or alkaline, and contained much albumin and many casts and occasionally a few red and white blood cells. Fat globules were never present. The renal dietary test (August 6) showed a maximum specific gravity of 1.021, a variation of specific gravity of 17 points. The night urine measured 220 c.c. and had a specific gravity of 1.018. A sample of the turbid urine was evaporated to dryness and extracted with alcohol-ether mixture. The extract was precipitated with acetone. The precipitate gave positive tests for phosphorus and glycerol, thus indicating the presence of lecithin. The filtrate responded to the test for cholesterol.

The influence of fat ingestion on the fat content of the urine was studied by Bloor's method. The results are shown in the accompanying tables.

A second dietary test was performed, December 12. The maximum specific gravity was 1.020, the variation of specific gravity was 12, the night urine measured 950 c.c., and its specific gravity was 1.008. No retention of nitrogen or chlorin was found during a period of five days.

Blood Examinations.—The results are expressed in terms of milligrams per hundred cubic centimeters of blood. Owing to external conditions it was not possible to carry out all the determinations that we had in mind. August 6 (three hours after the midday meal), the urea-nitrogen content was 37; the uric acid, 3.8; the creatinin, 2; the cholesterol, 180; the glucose, 110; the chlorids, 703; the carbonates, 60 per cent. by volume, and the plasma proteins, 4,440. December 15 (patient in coma), urea nitrogen was 17.8, and the carbonates of the plasma were 44.7 per cent. by volume.

Necropsy Findings (by Dr. Frank Paul).—Each pleural cavity contained about 300 c.c. of yellowish, watery fluid, which coagulated spontaneously. The lower lobes of both lungs showed bronchopneumonia. The heart showed hypertrophy and dilatation, especially of the right side. The aorta was normal throughout. There was no enlargement of the thoracic duct or other lymphatics. The abdomen and its contents were normal except for the kidneys. These measured 13 by 8 by 3 cm. and weighed 215 gm. On section they cut with little or no resistance. The cortex measured 1 cm., was soft, and presented a yellowish, fatlike appearance. The capsules stripped easily. The pelvis contained an unusually large amount of fat. Frozen sections stained with sudan gave negative results. Further microscopic examination of the kidneys disclosed the fact that the tubules in the cortical region were swollen, and that the cells were large, cloudy and granular but not fatty. In some, the lining cells were entirely absent. The glomeruli were enlarged, and many showed an increase in connective tissue but no fatty or amyloid degeneration. A large number were adherent to the capsular wall. The capsules were thickened and very vascular. The capsular epithelium showed proliferation in certain instances. Areas of round-cell infiltration were present. The medulla was very vascular. The tubules were not as large as in the cortex. Their lining cells were clear. There was a slight increase in connective tissue. Sections of the kidney stained by Levaditi's method for spirochetes were negative. Excepting for a marked degree of endarteritis, microscopic examination of other organs, including the brain, was negative.

EFFECT OF FAT INGESTION ON THE URINARY FAT ELIMINATION

Date	Period	Fat Urine, Gm.	Cholesterol in Urine, Gm.	Comment
Aug. 21	12- 2 p.m.	0.15		
	2- 4 p.m.	0.06		
	4- 6 p.m.	0.08		
	6- 8 p.m.	0.035		
Aug. 23	10-12 m.	0.084		
	12- 2 p.m.	0.120		Noon meal rich in fat
Aug. 26	10-12 m.	0.1215		
	12- 2 p.m.	0.168		Noon meal rich in fat.
Aug. 28	8-12 m.	0.024	0.0003	
	12- 4 p.m.	0.116	0.0009	No breakfast; noon meal rich in fat.

COMMENT AND CONCLUSIONS

The clinical, chemical and pathologic data suggest a progressive nephritis, possibly of syphilitic origin, associated with lipuria and terminating in uremia. The lipuria was influenced by the amount of fat in the diet. The absence of coagulated protein, the scarcity or absence of cells in the urine, and the apparent absence of a fistulous communication, indicate that the lipuria was due to an altered permeability of the renal epithelium. The presence of lecithin and cholesterol are worthy of note (though both substances have been found by a number of authors on previous occasions). In this case there was no increase of cholesterol in the blood. The occurrence of typical uremic symptoms without cerebral edema or retention of urea has also been pointed out before. The incidence of syphilis in this case recalls the work of Stengel and Austin,[5] who noted the frequent occurrence of doubly refractile bodies in the urine in nephritis associated with syphilis.

4. Sanes, K. I., and Kahn, Max: On Nonparasitic Chyluria, Arch. Int. Med. **17**: 181 (Feb.) 1916.

5. Stengel, A., and Austin, J. H.: Tr. Assn. Am. Phys. **29**: 312, 1914.

ACUTE PERFORATION OF MECKEL'S DIVERTICULUM BY FOREIGN BODY (FISH-BONE)

REPORT OF CASE *

FREDERIC HAGLER, M.D.
AND
JOHN W. STEWART, M.D.
Visiting Surgeon and Resident Surgeon, Respectively, St. Louis City Hospital
ST. LOUIS

We have failed to find in the records of the St. Louis City Hospital any case similar to the one reported herewith, which we consider of sufficient interest and rarity to merit detailed mention.

REPORT OF CASE

History.—C. A., white man, aged 39, admitted to the hospital, Feb. 11, 1920, had suffered from abdominal pain for two days prior to admission. At first the pain was generalized, cramplike and intermittent. It was mild in the beginning, and the patient worked as usual on the first day. On the second day, the pain was more severe, confining the patient to bed. He was nauseated, but did not vomit. Late in the day, he had a severe chill. On the day of admission, the pain had become localized to the right lower portion of the abdomen, but was constantly increasing in severity. A self-administered dose of castor oil in the early morning had effected a large bowel movement, but there was no vomiting. Nausea had continued.

Examination.—The patient was well developed and well nourished. The head, neck, chest and extremities were normal. The abdomen was slightly distended; there was distinct muscular rigidity on the right side. Slight tenderness was present in the appendicular region. There was no dulness in the flanks, and no masses were palpable. Tenderness was elicited on the right side by rectal examination. The leukocyte count was 19,600. The systolic blood pressure was 135; diastolic, 80. A diagnosis of acute appendicitis was made, and an operation was performed.

Operation.—Under ether anesthesia the peritoneal cavity was opened by a vertical incision through the right rectus muscle. The appendix was found to be fastened with light adhesions to a large omental mass which lay just below the brim of the pelvis on the right side. After being freed, the appendix was removed in the usual manner. Further exploration revealed a loop of lower ileum, approximately 3 feet from the ileocecal valve, enclosed in the omental mass. When the omentum was separated, a pouchlike structure was found springing from the intestine, and slightly nearer the tip than the base of the pouch was a small perforation through which a stiff, slender sharp-pointed foreign body protruded. Some pus and intestinal contents were present in the omental mass. The mesentery was very edematous and contained a group of greatly enlarged glands. The loop of ileum which had been encased in omentum was cyanotic, lusterless, and apparently hopelessly damaged by infection and constriction. Accordingly, about 6 inches of damaged bowel bearing the perforated, pouchlike structure were resected, and end-to-end anastomosis was performed. Exploration revealed no other diverticulum in the small intestine. The incision was then closed in layers without drainage.

Postoperative History.—The first twenty-four hours following operation were normal, but on the second day the abdomen became markedly distended and tender. The pulse was rapid, the temperature elevated, and incessant vomiting developed. The wound was reopened, February 13, at which time a general peritonitis was well established. The intestinal loops were distended, dull red and lusterless. The intestinal wall immediately above and below the site of resection showed some small gangrenous areas, the mesentery showed some thrombosis, and there was some leakage at the line of anastomosis. Several inches of damaged intestine were fastened outside the abdominal cavity (to be opened a few hours later). Drains were placed, and the wound closed loosely. From this time the symptoms of general peritonitis increased steadily in severity. The patient succumbed to this condition, February 17.



Above, hardened specimen with glass rod in lumen of intestine and fish-bone projecting from perforation in diverticulum: below, opposite side of specimen after removal of the half of diverticulum nearest the camera.

Examination of Specimen.—The specimen consisted of a 6-inch section of lower ileum, from which a pouchlike diverticulum sprang, about midway between the mesenteric attachment and the free border. The lumen of the diverticulum was continuous with the lumen of the intestine, but was somewhat less in diameter. The length of the pouch was 3.5 cm., and it ended in a globular extremity. The structure of the wall of the diverticulum was identical with that of the adjacent ileum, and the layers of intestine and diverticulum were directly continuous. Lying within the lumen of the diverticulum was a slender fish-bone, one end of which was firmly impacted in the wall, while the other sharply pointed extremity protruded through a perforation located about halfway between the base and tip.

Microscopic examination of sections from the diverticulum revealed normal intestinal structure modified by inflammatory changes.

The diagnosis was Meckel's diverticulum, with acute perforation due to impacted fish bone.

COMMENT

Through several excellent clinical articles—those of Richter [1] and McDonald [2] being especially commendable—Meckel's diverticulum has become well recognized as a cause of various surgical lesions. It may cause intestinal obstruction, intussusception and volvulus; it harbors foreign bodies as does the appendix, and may be the seat of acute inflammation and perforation. Its pathology is closely analogous to that of the appendix, and its symptomatology is practically the same. Gebele [3] collected the records of four cases of simultaneous acute diverticulitis and acute appendicitis, while Pearce [4] has added the report

* From the Second (St. Louis University) Surgical Service, St. Louis City Hospital.

1. Richter, H. M.: Vitelline Duct Malformations, Surg., Gynec. & Obst. **2**: 668, 1906.
2. McDonald, A. L.: Meckel's Diverticulum as a Cause of Surgical Lesions, Journal-Lancet **38**: 259 (May 1) 1918.
3. Gebele: Zur Kasuistik der Entzündung des Meckelschen Divertikels, München. med. Wchnschr. **55**: 1236, 1908.
4. Pearce, W. F.: Perforation of Meckel's Diverticulum and Accompanying Appendicitis, U. S. Naval M. Bull. **13**: 546 (July) 1919.

of a case of acute appendicitis with simultaneous acute perforation of Meckel's diverticulum.

Stern [5] collected records of fifteen cases of acute perforation in 1917, and added two of his own; his list, however, is incomplete and comprises only a fraction of the total number of cases reported. Among the foreign bodies found in Meckel's diverticulum are coproliths, apple seeds, cherry stones, needle, Murphy button (reported by Peck [6]), fish bones, orange peel, ascarides and threadworms. These foreign bodies are usually found incidentally, and are seldom directly responsible for the perforation. We have found reference to only two other cases of perforation due to fish bones.

Aside from mere academic interest in this unusually rare case, we may deduce the practical lesson that if at operation the appendix does not seem sufficiently involved to account for the severity of the symptoms, then Meckel's diverticulum should be borne in mind in searching for the seat of trouble. We incline also to the belief that had we in this particular case instituted early enterostomy and abdominal drainage instead of primary resection, we might have secured a more happy result.

305 Lister Building—City Hospital.

5. Stern, K.: Ueber Perforation des Meckelschen Divertikels, Deutsch. Ztschr. f. Chir. **111**: 343, 1917.

6. Peck, C. H.: Murphy Button Retained for Three Years in Meckel's Diverticulum, Ann. Surg. **69**: 134, 1909.

UTERINE RUPTURE AT TERM AFTER PITUITARY EXTRACT

COMPLICATED BY PREMATURE SEPARATION OF THE PLACENTA *

ALICE F. MAXWELL, M.D.
SAN FRANCISCO

Uterine rupture is one of the most serious complications occurring during pregnancy. It is fortunate that the condition is a rare accident, since the emergency is followed by such high fetal and maternal mortality. Individual reports as to the frequency of the complication vary from one in 250 cases (Tauffer) to one in 6,100 cases (Leopold [1]). Statistics from the Berlin Frauenklinik (Koblanc [2]) give a frequency of one in every 462 cases; New York Lying-In Hospital (Lobenstine), seventy five in 60,000 cases, or one in 800; Moscow Maternity (Ivanoff, 1877-1901) one in every 956 cases, or 124 cases in a series of 118,581 confinements. Freund,[3] collecting statistics of seventeen investigators, reported a frequency of one in every 2,114 cases; in the Royal Maternity Charity in London for the years 1827-1856, eight cases in a series of 48,996 pregnancies, or one in 6,150 cases. The statistics with few exceptions are taken from hospital reports and do not show the true frequency, since it often occurs that the patient succumbs at once at home, or else survives the immediate shock of an incomplete rupture to die later when the delayed death is incorrectly attributed to peritonitis or some other condition.

Rupture of the uterus may be complete or incomplete, and may occur at any time during pregnancy or labor. Brandt states that it occurs eight times more frequently in multiparas than in primiparas. Spontaneous rupture during early pregnancy is one of the rarest accidents. Baisch,[4] in 1903, collected eighteen instances of rupture during pregnancy from scar, trauma, overdistention, or diseases of the chorion. Incarceration and placenta praevia may be determining factors, as illustrated in Arnold Lea's cases in which rupture occurred spontaneously at six months and seven and a half months, respectively. During the puerperium, a dissecting metritis with sloughing may terminate in rupture. Yet the great majority of cases rupture during labor and may either be spontaneous or follow trauma. The predisposing causes are numerous, and much stress is laid on the degenerative changes or weakening of the uterine musculature resulting from tumor growths, overdistention, and the scars from myomectomies, perforations and cesarean section. Frequently, however, microscopic evidence of any degeneration of the myometrium is wanting. Becker has reported an interesting case of repeated spontaneous rupture, and has collected twenty-seven similar cases from the literature. Within recent time the profession has been aroused by the many cases which occur in pregnancies following cesarean section. As early as 1886, Krukenberg [5] stated that rupture occurred in 50 per cent. of such cases; and even in 1914, Rongy [6] concluded that 3 per cent. of these women will have a ruptured scar with a 50 per cent. mortality. Prolonged labor following a disproportion between passages and passengers with undue thinning of the lower uterine segment predisposes to rupture. Among the many exciting causes we include uterine manipulation and the untimely use of oxytocics. My purpose in this paper is to report a case of uterine rupture occurring after the use of a small dose of pituitary extract.

Dale,[7] in 1906, had noticed that pituitary extract caused rhythmic contraction of the nonpregnant uterus. The extract was introduced in obstetrics in 1909 by Bell of the Royal Infirmary of Liverpool to overcome uterine inertia and check the bleeding of placenta praevia and of cesarean section; also by Foges and Hochstaetter of Vienna in the same year. These three investigators began the use of the preparation soon after the announcement of Frankl-Hochwart and Froelich that pituitary extract had a marked stimulating effect on the uterus of a pregnant animal.

Like all powerful physiologic principles that have been introduced in therapeutics, it was enthusiastically accepted as a valuable addition to the obstetric armamentarium. Reports began to appear illustrating its widespread acceptance, before its value, limitation and dosage were determined clinically. The dictum of the manufacturers of the product that "the drug was remarkably free from danger even when given in enormous doses" was accepted. Thus, Edgar,[8] in 1913, advocated its employment with an incompletely dilated cervix for uterine inertia in doses of from 0.1 to 0.4 gm. Gousew,[9] in 1913, after using the extract in forty-eight cases, declared that "irregular pelves not

* From the Woman's Clinic, University of California Hospital.

1. Leopold: Zur Behandlung der Uterusruptur, Arch. f. Gynäk. **36**: 324, 1889.

2. Koblanc: Beitrag zur Lehre von der Uterusruptur, 1895.

3. Freund: Deutsch. med. Wchnschr., June 5, 1890; abstr. Am. J. Obst., 1890.

4. Baisch: Beitr. f. Geburtsh. u. Gynäk. (Hegar's), 1903, No. 7, p. 249.

5. Krukenberg: Ueber das Verhalten alter Kaiserschnittnarben bei nachfolgender Schwangerschaft, Arch. f. Gynäk. **28**: 421, 1886.

6. Rongy: New York M. J. **99**: 878, 1914.

7. Dale: J. Physiol. **24**, No. 3, 1906.

8. Edgar: Pituitary Extract in Uterine Inertia, Am. J. Obst. **68**: 20 (July) 1913.

9. Gousew: Med. Press & Circ., Feb. 5, 1913.

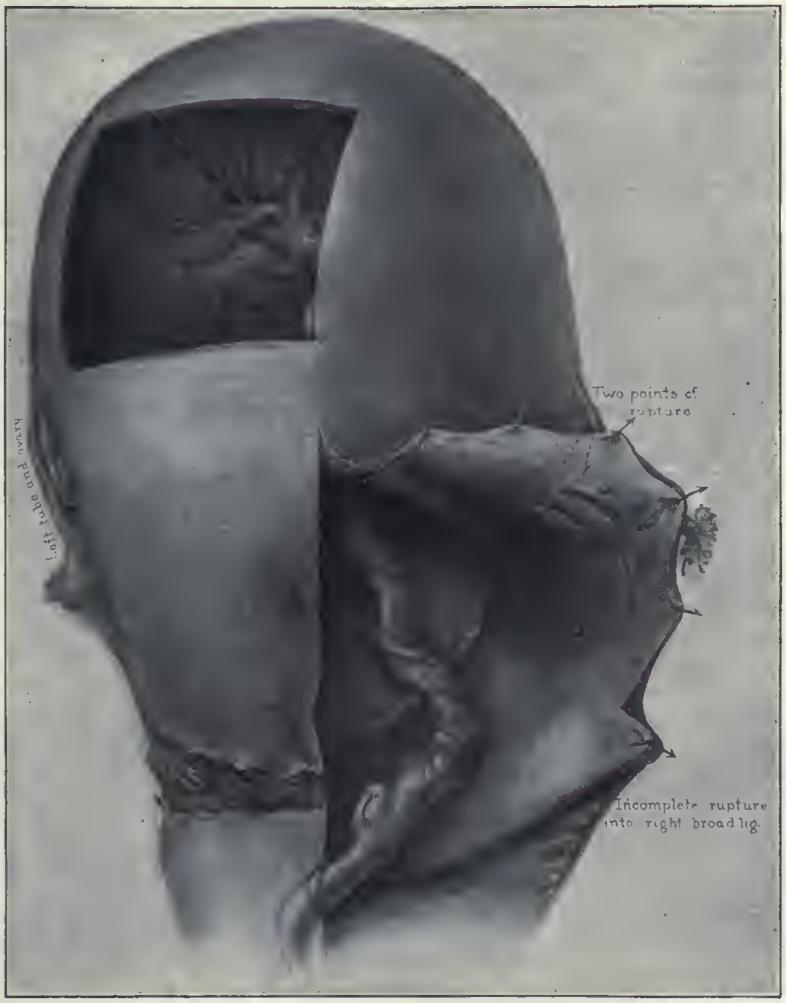
beyond a medium degree of contraction were no contraindication for its use even when the presenting part stood above the inlet." The employment of pituitary extract in contracted pelves to force the presenting part through the brim and pelvic cavity, and to stimulate labor pains in such malpositions as face and occiput posterior presentations, was not infrequent. It does not excite comment, therefore, that in the light of our knowledge of the powerful stimulating action of the drug, its indiscriminate use was followed by numerous complications. Thus, reports of fetal asphyxia, maternal collapse, tetanus uteri, premature separation of placenta and uterine rupture began to appear, the last resulting in a high mortality for mother and child.

McNeile[10] cites a case and collected statistics of fifteen cases of rupture after pituitary extract with thirteen maternal deaths; Wertenbaker[11] reported two additional cases of rupture, and numerous isolated reports of the same complication have appeared from time to time in the literature. The usual dosage was 0.1 gm., which was repeated when deemed necessary. On the strength of the many unfavorable reports following the administration of the drug in labor, the initial enthusiasm has been replaced by a more conservative notion as to its field of usefulness, and Norris[12] declares that the "innumerable reports of rapidly and safely terminated labors constitute the real danger of pituitrin." Most obstetricians today are keenly aware that in hypophysial extract we have a powerful therapeutic principle that can be employed in labor only when certain conditions are fulfilled in the presence of definite indications. Briefly stated, pituitary extract has no place in a normal labor, and its use should be limited to uterine inertia coming on when the head is well engaged without disproportion between the child and the mother's pelvis, with complete dilatation of the cervix, and without undue thinning of the lower uterine segment. The consensus is that a 1 c.c. ampule equivalent to 0.1 gm. of the drug is too large a dose, and that one half or one third of this amount is within safe limits and may be repeated frequently.[13]

The following case occurred in the obstetric department of the University of California Hospital:

REPORT OF CASE

Mrs. E. C., multipara, aged 44, 5 feet 7 inches in height, whose abdomen at term was not pendulous, and whose pelvis was normal, had had seven spontaneous miscarriages between one and three months, and eight full term pregnancies. She had never been curetted or had had any other gynecologic procedure. Her sixth labor was terminated by a midforceps operation for fetal indications. The fetus weighed 11 pounds. The seventh labor terminated spontaneously in ten hours, the child weighing 9 pounds. Our interest centers in her eighth full term pregnancy. When the patient was at term she had a sudden hemorrhage without pain. She could not be persuaded to enter the hospital, and refused to report for further examinations and was not seen again until midnight two weeks later, when she entered the hospital. She had been bleeding slightly for a week before entry, and had lost about 200 c.c. a few hours previous to admission. Examination revealed a soft abdomen, left occipitoanterior position, with a floating head. The cervix was undilated, and there were no signs of hemorrhage. The uterus was irritable, and contracted irregularly. One hour after entrance, the membranes ruptured spontaneously. Five hours later, weak pains began. The fetal heart was not heard at any time during the labor. At 9 a. m. the cervix was completely dilated; the head was well fixed. Because of the good condition of the mother, the absence of fetal heart sounds, and the cessation of all signs of hemorrhage, there was no indication to deliver the patient. One-third c.c. of pituitary extract (pituitrin, B. W. & Co.) was given intramuscularly, and the pains, which had been irregular, became more frequent and stronger. For one and a half hours the advance of the head was slow but steady, and then the pains became very weak and infrequent. The patient's condition at this time was good. With the head at the level of the spines, one-third c.c. of pituitary extract was repeated. Contractions began immediately, but were not



Incomplete and complete rupture in right uterine segment: normal implantation of placenta; premature detachment 5 cm. in extent.

10. McNeile, L. G.: Rupture of Uterus at Term, Am. J. Obst. **74**: 432 (Sept.) 1916.
11. Wertenbaker, William: Spontaneous Rupture of Uterus Following Administration of Pituitary Solution, J. A. M. A. **68**: 1612 (June 2) 1917.
12. Norris, R. C.: Use and Abuse of Pituitrin in Obstetrics, Am. J. Obst. **71**: 741 (May) 1915

13. In addition to the references already given, the following will be found of interest:
Brodhead: Spontaneous Rupture of Uterus During Labor, Tr. New York Obst. Soc. **17**: 51 (Nov. 9) 1909.
Davis: Review of Literature and Case Reports on Uterine Rupture, Surg., Gynec. & Obst., July, 1913.

tetanic, yet in a few minutes the patient complained of air hunger, went into extreme shock, and died within a few minutes after the administration of the drug.

At necropsy when the abdomen was opened, there was considerable free blood in the pelvis. There had been retroperitoneal bleeding, which had started in the right broad ligament and had extended along the vertebral column up to the lumbar region. The fundus of the uterus was intact, but the entire lower uterine segment to the right of the midline posteriorly was so thinned that only the peritoneum remained, and the body of the child could be seen through this layer. Here there were two slitlike ruptures of the peritoneum about 4 cm. long.

When the uterus was opened, the placenta was found attached to the fundus, but had separated over an area about 5 cm. in diameter. This condition explained the bleeding during pregnancy. An incomplete rupture was present on the right side, extending into the broad ligament through the uterine vessels. The child was in the left occipito-anterior position, weighed 10 pounds, and its palms and soles showed beginning maceration.

Microscopic examination revealed the typical invasion of the myometrium by blood cells at the site of rupture, but no degeneration of the uterine musculature in the region of the placenta or elsewhere.

COMMENT

There were no predisposing causes of rupture, that is, no cicatrix from previous operative procedures or sepsis, nor prolonged labor, the duration from first pain to time of rupture being less than six hours. Before the necropsy, it had been suggested that the premature separation of the placenta might have led to a weakening of the uterine walls by a diffuse hemorrhagic infiltration of the muscle fibers, but this was not confirmed at postmortem or by subsequent microscopic examination. Moreover, the site of rupture in the lower segment was remote from the placental site, namely, the fundus. Pituitary extract employed in a conservative manner was administered in the presence of well established indications and in doses well within the limits of safety, with disastrous results.

I think that this report should serve to emphasize that:

1. There is danger in the indiscriminate use of hypophysial extract in labor, especially in the doses usually given, namely, 1 c.c. ampules.

2. Even when employed for the strictest indications and in small doses, complications may ensue so rapidly that they cannot be met adequately even in well equipped hospitals.

THE TECHNIC OF NERVE SUTURE

BYRON STOOKEY, A.M., M.D.
NEW YORK

In a previous paper,[1] brief consideration of the surgical principles of peripheral nerve injuries as well as a few points of technic were discussed. The importance of the latter would seem to warrant further presentation in greater detail than was possible in the scope of the former article. On the utmost consideration of minute points of technic, more exacting perhaps than in almost any other field of operation, may depend, in large measure, the ultimate results of peripheral nerve surgery.



Fig. 1.—Lines of incision for exposure of the musculospiral nerve: *A*, exposure of the upper and middle thirds. The incision begins three finger breadths below the posterior angle of the acromion and is carried directly downward in the long axis of the arm to about the level of the insertion of the deltoid; it then turns abruptly outward to a point about 1 cm. dorsal to the insertion of the deltoid and thence continues directly downward approximately 6 cm. In the middle posterior part, the skin is widely undermined so as to bring in view more of the long head of the triceps. In the upper angle the outer and long heads of the triceps are separated; below, the outer head is split in the direction of its fibers. *B*, exposure of the middle and lower thirds. The incision begins at about the level of the insertion of the deltoid and on a plane slightly posterior. It is carried directly downward in the long axis of the arm from about 6 to 8 cm. and then passes abruptly anterior to the cleft between the brachialis anticus and the longitudinal fibers of the supinator longus. Both lines are perpendicular except in the lowermost part, whence the line curves slightly anterior into the antecubital fossa. In the upper part of the wound the outer head of the triceps is split in the direction of its fibers, thus exposing the nerve; the nerve is then exposed in the lower angle and traced upward. The outer head of the triceps at this point is tunneled under, and retracted with a band of gauze. Thus the entire nerve from its middle third to its termination in the antecubital fossa is exposed without permanent damage to any of the muscles.

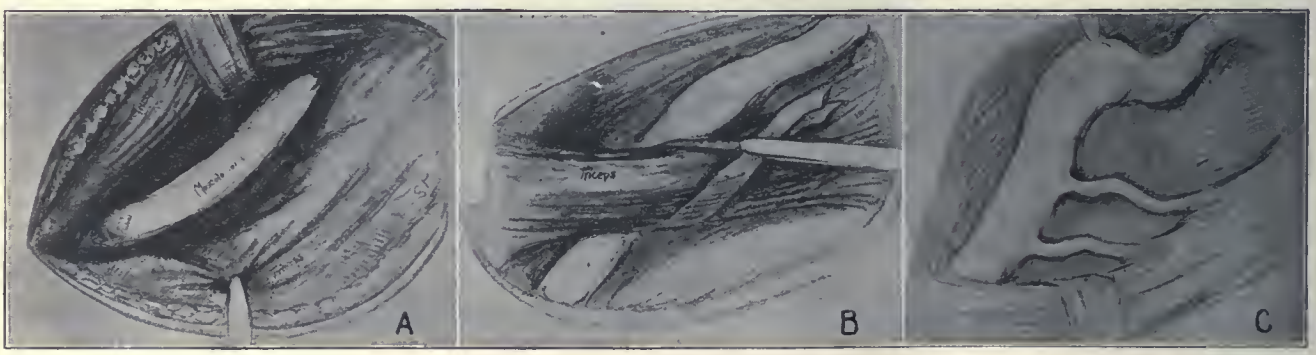


Fig. 2.—The musculospiral nerve bas been exposed in its middle and lower thirds by the incisions outlined in Figure 1 (the nerve has been somewhat enlarged out of proportion). *A*, the long and lateral heads of the triceps have been separated, exposing the musculospiral nerve; a piece of gauze is shown passing beneath the lateral head. *B*, the nerve has been exposed in the lower third; the lateral head of the triceps is shown tunneled under and retracted hy means of a piece of gauze; the gauze retractor stops the hemorrhage from the muscle and serves as an excellent retractor. *C*, the nerve has heen mobilized in both its middle and lower thirds and has been drawn into the anterior part of the wound. The nerve was caught in dense scar; the point of constriction may be noticed; muscular branches are seen which have heen freed but carefully safeguarded.

POSITION OF THE PATIENT

Sheets should be placed so as to permit free movement of the extremity. This is necessary in some cases in efforts to move the limb in order to approximate the nerve ends and also to enable the surgeon to alter the

1. Stookey, Byron: Surgical Considerations of Peripheral Nerve Injuries, Surg., Gynec. & Obst. **27**: 362 (Oct.) 1918.

incision and exposure. As a practical point it will be found helpful to cover the foot and lower limb, not involved in the operative field, with sterile stockinet, and also the forearm in operations on the upper extremity. The hand should be covered when not to be included in the operation with a tight fitting rubber or cotton glove. Both of these coverings fit snugly, permit of accurate observation of individual muscular movements and palpation of individual tendons during the electrical examination, and also admit of free movements of the extremity without deranging the draping and without loss of time.

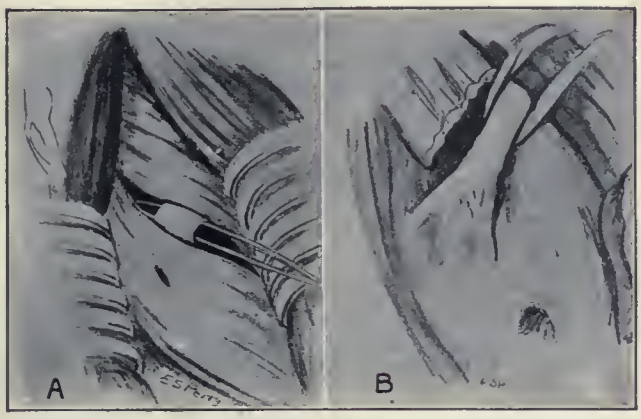


Fig. 3.—Exposure of the posterior interosseus nerve: *A*, the brachioradialis and extensor carpi radialis longus and brevis are retracted laterally; the extensor communis digitorum, mesially, exposing beneath the supinator brevis. The fibers of the supinator brevis are separated by blunt dissection in the direction of their course. In this manner the posterior interosseus nerve is readily identified. The forceps are shown passed beneath it. In most incisions an attempt is made to find the nerve at once by cutting through the supinator brevis parallel to the nerve. By so doing, unless the incision is directly over the nerve, frequently most hard to gage, difficulty is encountered in finding the nerve. However, by first splitting the fibers of the supinator longus, which run at right angles to the nerve, the latter is almost instantly found. *B*, the nerve having been identified as described above, the fibers of the supinator brevis are cut following the course of the nerve. The muscle is retracted and the nerve freely exposed to the point at which it breaks off.

MANAGEMENT OF OPERATIVE FIELD

By beginning the incision below and extending it upward, much of the troublesome venous bleeding, due to veins being cut successively as the incision is increased, may be avoided. When possible, the superficial scar should be excised. The skin edges should be well undermined so as to include the fatty fascial layer and to bring the fat with the skin edges into the new line of closure. Unless this is done, the line of union will stretch and a broad scar result. The flaps should be prepared for closure before searching for the nerve, all bleeding points tied, and the undermined edges packed with gauze after making certain that the proper line of closure has been insured. Unless this is done before nerve suture is accomplished, the extra maneuvering, coincident with preparation of the flaps, may derange the delicate line of nerve sutures.

When the deep scar is extensive, it is best to identify the nerve both above and below in normal areas, selecting, if possible, such points within the field as offer anatomic guides to the nerve in question; for example, the ulnar nerve in the ulnar groove behind the elbow, or its relation to the flexor carpi ulnaris tendon in the forearm, or the median nerve just under the mesial border of the biceps muscle, etc.

In following the nerve from above down and from below up, care must be taken to safeguard the delicate branches to adjacent muscles. This factor, together with the close proximity to large vessels, compels the neurosurgeon to advance slowly and with extreme caution. The nerve may be retracted conveniently by passing moist tapes, about 1 cm. wide, around the nerve, beginning on the side on which there are either large vessels or important branches, so as to avoid including them. The ends of the tapes are clamped with artery forceps, the weight of which may suffice to hold the nerve in any desired position, without injury to the nerve.

While dissecting through the scar, the knife should be changed frequently so as to have at all times one that is sharp. The scar is often penetrated with stray neuraxes which seem to give to nerve scar a denser and harder consistency than is usually found, owing, possibly, to the presence of neurokeratin.

When feasible, the deep scar should be excised. Frequently this is not possible. Instead, after the nerve has been freed, the scar may be infolded on itself and sutured. In this manner a smooth bed may be made, new scar formation avoided and troublesome scar hemorrhage circumvented. When a smooth bed for the nerve cannot thus be made, either a small part of a muscle belly (not a cut and raw muscle surface, for this only increases scar formation) may be sutured so as to form, by its fascial covering, a smooth surface for the nerve; or a fatty flap may be passed around the nerve or only under it. A free transplant will tend to form additional scar and should be avoided. Care should be taken to suture the fatty flap to adjacent

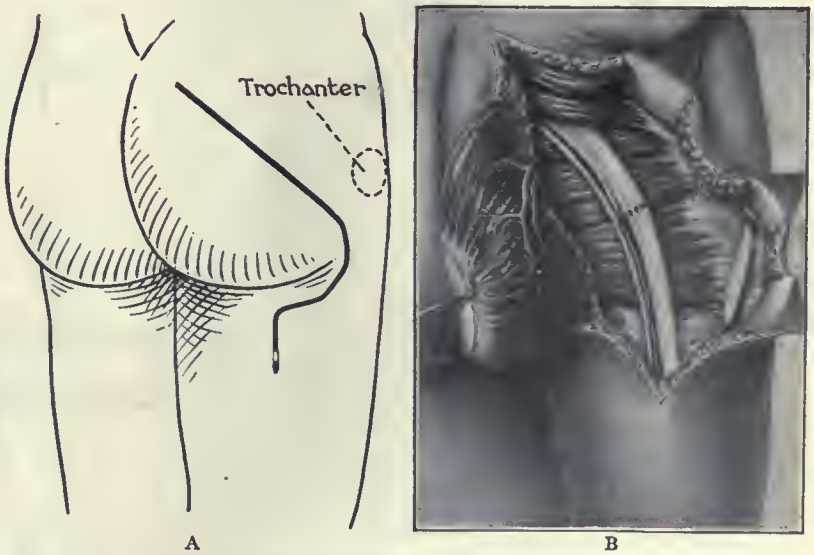


Fig. 4.—Incision and exposure of the sciatic nerve in its upper third: *A*, question mark skin incision. It begins above at approximately the level of the posterior inferior spine, extends obliquely downward and outward, about three finger breadths mesial and inferior to the great trochanter. It then curves over the gluteal fold toward the midline of the thigh posteriorly, from which point it may be continued any distance down the thigh. The skin is widely undermined until the insertion of the gluteus maximus insertion is exposed. *B*, exposure of the sciatic nerve from the lower border of the pyriformis to its entrance into the thigh. The gluteus maximus muscle is split in the direction of its fibers, by blunt dissection down to its insertion into the gluteal ridge. The insertion is then cut transversely across, about 2 cm. from the bone, so as to admit of resuture. The whole muscle is then reflected upward and mesially. If the incision is rightly placed, the blood vessels are also reflected upward, consequently with very little attendant bleeding. The nerve may be followed any distance into the thigh by direct prolongation downward of the exposure.

tissues on both sides of the nerve in order that constriction about the nerve may be prevented. Generally speaking, if the line of nerve suture has been made so as to obtain epineural approximation, no further protection of the nerve trunk is necessary.



Fig. 5.—Suture of the sciatic nerve and the nerve to the hamstrings. The external and internal divisions have been separated and the scar removed, after which the ends were brought together. The widely separated ends of the small nerve to the hamstrings have been found in the scar, freed and sutured. The upper inset shows the level of the incision; the lower inset, the tissue removed from the external and internal popliteal nerves.

Owing to the length of most nerve operations, the field should be protected more than is usual in shorter operations. For this purpose, moist cotton pads about 6 by 8 inches may be used. They are carefully placed so as to lie smooth and cover all of the field except in the direct line of the nerve. Being wet they stay in place, are smooth, and thereby facilitate the handling of the more delicate and fine threads used in nerve surgery. The threads are easily picked off the cotton, they stand out in contrast against the white background, and they remain in place when placed at any given point on the cotton. Furthermore, at the end of the operation the underlying tissues, as a result of being covered constantly with moist cotton, are not traumatized or dried, and appear as fresh as when first incised. When such pads are not used, the threads are often hard to find in the tissues and may become more or less adherent to them.

Constant irrigation is maintained with salt solution, particularly when the nerve ends are cut and during the time they are being sutured. This helps to arrest oozing from the scar tissue and bleeding from the nerve ends, and avoids trauma connected with sponging. If sponges are used, small bits of moist cotton are placed over the nerve ends. If the bleeding is more profuse, bits of torn muscle held over the bleeding points will be found useful.

The nerve being freed, the surgeon should palpate the parts involved as well as the whole nerve trunk exposed in the field.

Operative electrodes are then applied and each stimulus carefully noted by inspection and palpation. Occasionally responses may be appreciated by palpation which might otherwise have passed unnoticed. It must be remembered that even though a negative response results, it cannot always be interpreted to mean that neuraxes have not penetrated the scar and passed into the distal stump. Although having passed the scar, they may not have reached their ultimate destination within the muscle; or, having gained the muscle, they may not yet have formed the motor end plates. Hence a negative response cannot always be held to imply failure in downgrowth. The whole clinical ensemble as well as the anatomic field must be taken into consideration.

SPECIAL INCISIONS

For musculospiral nerve injuries in the upper and middle thirds, the position and incision described by Stookey and Guild [2] will be found to facilitate exposure and will also be found to be physiologically economical, in that no muscles are cut transversely, but they are split in the direction of their fibers.

For exposure of the middle and upper thirds, the arm should be placed perpendicular and at right angles to the body, with the forearm flexed over the chest, resting on a folded pillow and held in position by an assistant.

The landmarks for the skin incisions are: above, the posterior angle of the acromion; and below, the tip of the olecranon. The incision begins three finger breadths below the acromion, and continues downward to about the level of the insertion of the deltoid; thence it turns somewhat abruptly outward to a point about 1 cm. dorsal to the insertion of the deltoid, and continues directly downward approximately 6 cm. In the middle posterior part of the incision the skin edges are widely undermined.

In the upper angle of the wound, the posterior border of the deltoid and the long and outer heads of the triceps can be identified. The two heads of the

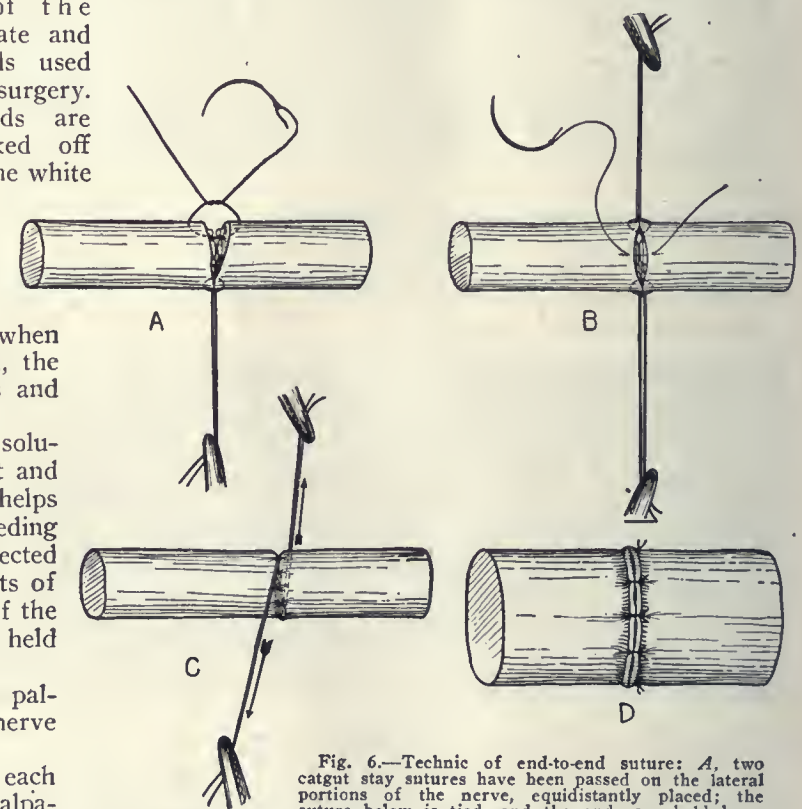


Fig. 6.—Technic of end-to-end suture: *A*, two catgut stay sutures have been passed on the lateral portions of the nerve, equidistantly placed; the suture below is tied, and the ends are held by a pair of forceps; the suture above shows the direction and depth of the bite; the suture is rather deep, passing between the funiculi, becoming, really an epineural, perineural, epineural suture; this suture is tied in like manner and clamped; these two sutures bring the deeper parts of the nerve together, prevent hemorrhage, and serve as a means of fixation of the nerve. *B*, the two stay sutures are shown in place and the nerve held in position while the fine silk epineural sutures are passed; sufficient sutures are used to insure epineural approximation; the sutures are placed so as to evert the epineural edges when tied. *C*, the anterior part of the nerve having been sutured, the stay sutures are reversed, exposing the under surface for suture; this shows the obvious advantage of the two lateral stay sutures over the single suture. *D*, the suture is here shown completed, the knots tied on one side and the epineural edges everted, insuring smooth epineural contact within.

2. Stookey, Byron, and Guild, Stacy: A Method of Exposing the Musculospiral and Posterior Interosseus Nerves, Surg., Gynec. & Obst. **28**: 612 (June) 1919.

triceps are separated in their fascial plane, and the incision carried downward through the glistening aponeurosis, beneath which the nerve will be found. The nerve is now traced to the lower angle of the wound. At this point, the nerve will be found passing abruptly toward the anterior part of the arm. The triceps in the anterior part of the incision is now incised perpendicularly in the direction of its fibers. The intervening muscle belly can be tunneled under and a complete exposure of the nerve thus obtained from the lower border of the teres major to the junction of the lower and middle thirds, with essentially no permanent damage to any of the muscles.



Fig. 7.—Intraneural injection of salt solution; internal neurolysis after liberation of both divisions of the sciatic nerve. This patient showed return of function in seven weeks.

For exposure of the middle and lower thirds, the anterior incision described above is carried from the level of the insertion of the deltoid downward for from about 6 to 8 cm.; it then passes abruptly anterior to the cleft between the brachialis anticus and the longitundinal fibers of the supinator longus, and thence downward, more or less perpendicularly, curving slightly inward to the antecubital fossa. The usual incision for the lower third of the musculospiral nerve is not sufficiently perpendicular and is placed too far anterior, near the belly of the biceps.

For further details and for a description of the exposure of the posterior interosseus nerve, the reader is referred to the original article.

For exposure of the sciatic nerve in its upper third, the incision advocated by Klotz is modified so as to permit one to follow the nerve into the thigh without an additional incision.

The incision begins approximately at the lower inferior spine of the innominate and is carried obliquely downward and out to a point about three finger breadths mesial to the great trochanter, thence curving downward and inward over the gluteal fold to the median line of the thigh posteriorly. The incision is more or less the shape of a question mark. The lower and outer angle of the skin incision is undermined until in line with the attachment of the gluteus maximus. This attachment is freely exposed. The deep incision is now made parallel to the fibers of the gluteus maximus, separating them in the direction of their course, beginning above at the upper angle of the skin wound and carried directly downward to a point three finger breadths below the great trochanter and thence downward across the insertion of the gluteus muscle. The insertion is cut approximately 2 cm. from the bony attachment and the whole muscle reflected toward the median line. If the incision has been correctly placed, the main vessels are reflected upward on the muscle and little bleeding is encountered. The nerve is freely exposed from the lower border of the pyriformis to its entrance into the thigh. By means of this skin incision the nerve may be traced any distance farther down the thigh merely by a direct prolongation downward in the midline.

OPERATIONS AVAILABLE

Neurolysis, i. e., liberation of the nerve either with or without intraneural injection of salt solution under pressure so as to perform, as it were, an internal liberation; end-to-end suture, with or without transposition of the nerve; nerve transplantation, either fresh autogenous or homogenous grafts preserved on ice in petrolatum or liquid petrolatum, or nerves preserved in alcohol, are the operations of choice. Nerve crossing, partial or complete, may be of limited value in certain selected cases in which the anatomy may admit of utilizing adjacent nerves. Here obviously only motor nerves having related cortical centers should be employed.

Certain operations are mentioned in order that they may be avoided, since it has been shown that they are of no value and may actually do harm. Nerve flaps, so ardently advocated by Mackenzie of Portland, are worthless, as Huber [3] and I [4] have shown in experimental work and in a critical review of all cases. Huber has also shown that suture à distance offers no practical hope of regeneration. Hofmeister's lateral implantation is also to be avoided.

The value of tubulization has not yet been definitely determined, though Huber's elaborate experiments, nearly concluded, will no doubt admit of their evaluation. He has found that Cargile membrane treated in 95 per cent. and absolute alcohol persists in the tissues for five or six months and causes little or no local reaction, whereas the usual membrane is absorbed within two or three weeks. Huber's Cargile membrane may, therefore, have a particular field of usefulness, not only in nerve surgery, but wherever such membrane is used to prevent adhesions and where it is desired to have it remain longer in the tissues than is possible with any other.



Fig. 8.—End-to-end suture of the median and ulnar nerves after transposition of the latter and the formation of a fatty bed for the nerves by means of a fat flap: *A*, the median and ulnar nerves are exposed; the ulnar has been transposed before severing its anatomic continuity in order to prevent axial rotation and prevent distortion of the nerve pattern. *B*, median and ulnar nerves have been sutured; fat flap has been passed beneath the nerves, covering over the scar tissue bed.

SUTURE MATERIALS

For stay sutures, 00 plain catgut is used. Fine silk offers the best material for grafts and epineural stitches

3. Huber, G. C.: A Study of Operative Treatment for Loss of Nerve Substance in Peripheral Nerves, J. Morphol. **2**: 1895; Transplantation of Peripheral Nerves, Arch. Neurol. & Psychiat. **2**: 466 (Oct.) 1919.
4. Stookey, Byron: The Futility of Bridging Nerve Defects by Means of Nerve Flaps, Surg., Gynec. & Obst. **29**: 287 (Sept.) 1919.

in end-to-end suture. The silk should be very fine, preferably Corticelli AAA, which contains three strands. These are untwisted and separated, waxed and passed on fine curved or straight needles. They are boiled at the time of operation and again waxed with sterile wax, after which they are ready for use. Silk thus treated has a certain amount of stiffness and lends itself readily to the delicate tying with forceps so essential to accurate approximation. Further, the silk passes through the small nerve grafts with greater ease and is finer than other forms of silk available. Instead of waxed sutures, arterial silk dipped in liquid petrolatum just before using will be found satisfactory.

All nerve sutures should be tied very carefully with forceps. On the manner of tying and the degree of tension may depend the accurate approximation of the epineurium and the end-to-end apposition of the nerve grafts.

TECHNIC OF END-TO-END SUTURE

A 00 plain catgut suture is passed on each side of the nerve, equidistantly placed, taking a deeper bite than the epineurium. While this suture passes somewhat within the nerve, it really becomes an epineural, perineural and epineural suture; for, if a smooth needle is used, the funiculi are pushed aside and the suture then lies between the funiculi in the perineural connective tissue and hence does very little harm to the nerve. By these sutures the nerve in its deeper parts is brought together, hemorrhage between the nerve ends is avoided, thereby diminishing the amount of scar between the nerve ends, and tension is taken off the finer epineural sutures. They may also serve to prevent axial rotation, particularly if they are placed before the excision of the intervening nerve scar is completed. These sutures are tied, leaving the ends about 3 inches long, to which artery forceps are clamped. They then serve to fix the nerve and facilitate in placing the fine epineural sutures.

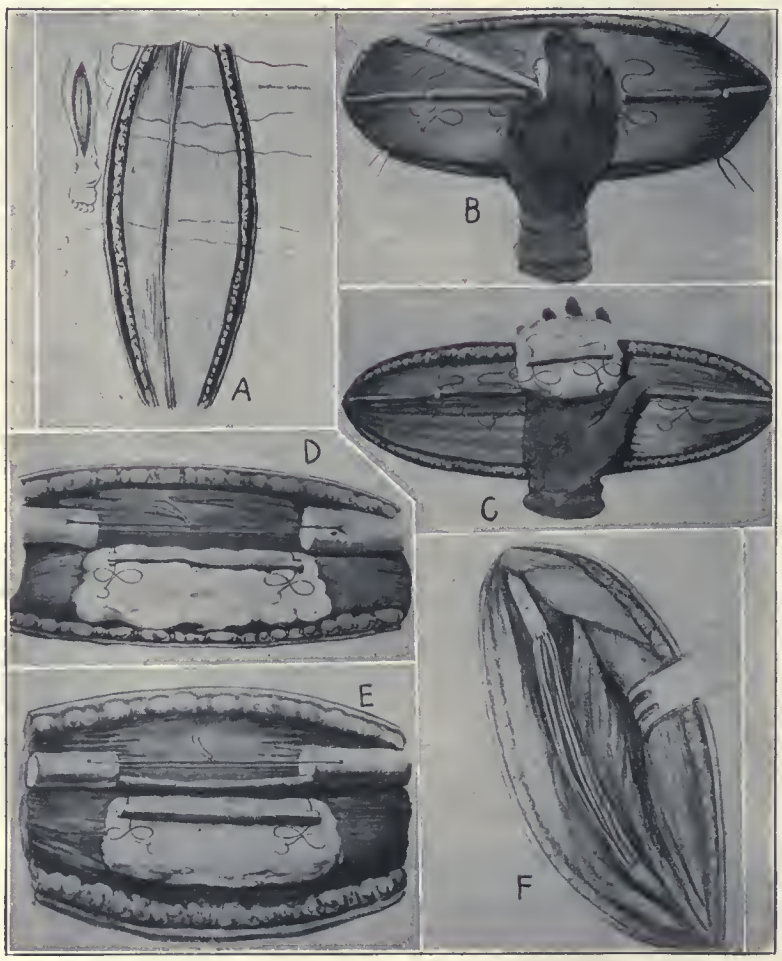


Fig. 9.—Technic of nerve transplant: *A*, cutaneous nerve on dorsum of leg is laid bare; the nerve segments are measured and the sutures are passed at precise intervals. *B*, a moist cotton pad about 4 inches square, smoothly folded, is placed over a nerve segment so as to include the sutures; by slight maneuvering with forceps, the sutures and the nerve transplant become adherent to the pad and may be lifted up with the pad; the transplant is not touched. *C*, the cotton pad is shown on which the nerve transplant is lifted together with the sutures, neatly curled, so as to avoid any entanglement; the transplant may then be carried to the operative field without handling and without danger of the threads tearing out, or the graft falling. *D*, the cotton pad is folded back parallel with the nerve segment and placed in the field, carrying the transplant in position for suture; the segment may be flooded off the pad by a small stream of salt solution. *E*, the first segment is shown sutured in place with the second segment ready for suture; after all grafts are in place the stay suture may be removed; it is used merely to facilitate suture of the delicate grafts. *F*, multiple autogenous grafts are shown sutured in place; in this instance the distance bridged was 12 cm.

The silk epineural sutures are then passed on the anterior surface between the two stay sutures. With very fine tooth forceps the *epineurium only* is grasped and each suture accurately placed and then tied with forceps so that the epineural edge is everted. If the sutures have been properly placed, eversion of the epineurium is easily accomplished and gives a smooth line of union on its inner surface. Each suture is cut as it is tied, sufficient sutures being used to insure complete approximation—the number naturally depending on the size of the nerve.

By reversing the two catgut stay sutures, i. e., by passing the one over and the other beneath, the undersurface is readily brought into view and sutured in like manner.

The advantages of the two stay sutures over a single stay are obvious. If a single stay is used, the nerve rotates in remaining sutures, and the nerve is not so easily fixed or its under surface brought into view. If the single stay suture is tied the lateral edges of the nerve become everted, making epineural approximation difficult.

In the presence of a small nerve defect, end-to-end suture may be accomplished by slight stretching, by transposition and by altering the position of the limb. Nerve stretching should be done with considerable caution, since the distance gained can be accomplished only by taking up the normal laxity of the nerve trunk in its contiguous parts, or by multiple tears, either within the nerve trunk or from the spinal cord. When excessive stretching is done, both are accomplished, not only but also, karyolysis of the anterior horn cells ensues, with subsequent degeneration of the neuraxes within the central stump, an unfortunate result to be studiously avoided.

Stretching should be done only up to the point of taking up the normal laxity of the nerve within its bed.

I have seen two cases in which overstretching was done in a two-stage operation, in which a considerable

interval intervened between the first and second operation. The nerve in both instances showed at the second operation marked sclerosis and internal hemorrhage throughout the nerve trunk, with subsequent scar formation as far as the nerve could be palpated. Normal nerve cross areas could not be obtained either central or distal, owing to scar, which was not present at the first operation.

Transposition of the nerve may permit defects to be overcome which might otherwise prevent end-to-end suture. A nerve may be freed and raised out of its bed over quite a distance without interfering with its nutrition. In transposing, care must be taken to safeguard nerve twigs and prevent the formation of sharp angles or kinks.

Huber [3] has shown experimentally the value of the multiple autogenous and homogenous grafts, as well as those preserved in alcohol and on ice, in petrolatum and liquid petrolatum. A few cases of successful grafts have been reported in France. The technic of the graft is such that unless done by those having considerable practice it is conceivable that the results may be disappointing. The utmost regard for minute points of technic is essential. Success depends in a measure on the accuracy with which the grafts are brought end on and in precise contact with the cross area of the central and distal stumps. If the sutures are not correctly placed, or if they are not tied properly, just sufficient tension being employed, the nerve ends are likely to be inverted. In place of the graft being end on, it may be turned so that its lateral surface lies against the central cross area. While neuraxes may penetrate, the probability of such penetration is greatly diminished by such faulty approximation. For these reasons, in estimating the ultimate value of the graft, the individual technic must be considered, for it plays a predominating rôle.

A sufficient number of grafts should be taken to cover the cross area of the central and distal stumps. Unless this is done, many central neuraxes, having no path down which they may grow, may become lost, though Huber has shown that a few are able to penetrate and grow down in the small connective tissue spaces between the nerve transplants. The aim of the surgeon should be to connect each funiculus with a graft. This may be accomplished by suturing each graft separately in the desired position. In this manner the central and distal connections may be established with a certain degree of precision. This is often not possible; nevertheless, it should be essayed. For the most accurate surgery, we must await more definite knowledge concerning the internal topography, such as Elsberg [5] and Riley have signaled they are doing.

TECHNIC OF THE GRAFT

When the nerve is freed from the scar tissue and the nerve ends successively incised until a satisfactory cross area is obtained and before the nerve continuity is completely severed, one or two stay sutures are passed at the proper level, so as to hold the nerve in alinement, prevent rotation, and help in fixation of the nerve ends during suture.

The distance to be bridged is accurately measured with a centimeter compass.

A skin nerve, such as the radialis or the cutaneus surae medialis on the dorsum of the leg, may be used. In order to save time, a second team may lay bare the nerve. Preferably a degenerate nerve should not be used such as one would find in the lower leg on the same side as a sciatic nerve injury. The sheath cells in such a nerve are no longer in the active stage; there may also be some increase in connective tissue, particularly if the injury to the parent nerve is of some standing. It is possible that whatever neurotropism there may exist would be diminished in such a nerve, as compared with a fresh transplant. However, this is of academic interest rather than of real importance. In view of the downgrowth of neuraxes in preserved specimens, one must question the value of the rôle imputed to neurotropism.

The nerve having been laid bare over the desired length, fine waxed silk sutures on curved or straight, smooth needles are passed in accordance with the distance to be bridged, as measured with the compass. A small margin is allowed for cutting the nerve segments.

The sutures are all passed in one direction, the nerve being held tense by small forceps either central or distal to the grafts. Under no circumstances should the *nerve segments* to be used in the graft be held by forceps.

The sutures are then curled carefully so as to prevent entanglement; the needles all on one side, and the free ends on the other.

The nerve segments are cut with sharp fine scissors or a thin knife, avoiding crushing the nerve ends.

Each segment is then picked up by covering it with a small, smooth, moist cotton pad. If the cotton pad is carefully placed over the nerve and sutures, they adhere to the moist cotton and each segment may thus be lifted from the wound and placed in the operative field.

By folding the cotton pad so that its free border is parallel to the transplant, the latter may be placed between the nerve ends so as to be in exact position for suture.

By means of the cotton pad the nerve is not handled, the threads do not become entangled, danger of pulling out the suture is eliminated, and the nerve may be manipulated into its proper position for suture with the least trauma. A small stream of salt solution will be found helpful in flooding the nerve off the cotton. During the process of suture, the nerve is irrigated with warm salt, thus creating a clear field and aiding in accurate funicular approximation of the graft. In this manner, each transplant is sutured separately, both distally and centrally, with whichever funiculus is desired. The sutures are tied with forceps and cut short.

The accuracy of the graft depends in a measure on the correct placing of the sutures, the exact amount of tension in tying, and the manipulation with the sutures during the process of tying.

471 Park Avenue.

5. Elsberg, C. A., and Wood, A. H.: Problems in the Diagnosis and Treatment of Injuries to the Peripheral Nerves, Arch. Neurol. & Psychiat. 2: 645 (Dec.) 1919.

Prevention of Normal Dissipation of Heat as Factor in the Pathology of Children.—A. Czerny expatiates on heat stagnation as an important element in the pathology of older children, the same as it has long been recognized in the case of infants. He states (*Therapie der Gegenwart*, January, 1919), that children used to overcrowding at home do not suffer from the heat stasis in school as much as children used to good hygienic conditions at home. The possibility of heat stasis must be borne in mind not only for well but for sick children as an element in the clinical picture, and the advantages of out-of-door living and sleeping should not be restricted to tuberculous children.

SPECIFIC NATURE OF THE HEMOLYTIC STREPTOCOCCUS OF SCARLET FEVER *

RUTH TUNNICLIFF, M.D.
CHICAGO

On account of the important part that hemolytic streptococci play in scarlet fever and its complications, various observers have undertaken to study the relation of these cocci to scarlet fever by means of immunity experiments.

Moser and von Pirquet [1] concluded that the streptococci from cases of scarlet fever were different from those in other diseases. They found that the serum from scarlet fever patients agglutinated scarlet fever streptococci in low dilutions, the serum from other children but rarely; that normal horse serum agglutinated streptococci from various sources, but only in low dilutions (from 1:4 to 1:64), while the serum of horses immunized with streptococci cultivated from the heart's blood of fatal cases of scarlet fever agglutinated the same streptococci in high dilutions (from 1:1,000 to 1:64,000). The same effects were produced on streptococci cultivated from the heart blood of cases of scarlet fever, which were not used in producing immunity (from 1:1,000 to 1:16,000), while streptococci from other diseases were agglutinated at only a little higher dilution than by normal horse serum (from 1:4 to 1:250), and the serum of horses immunized with the latter streptococci agglutinated streptococci from scarlet fever patients only in the same proportion as normal horse serum.

By means of immune serum, Meyer [2] differentiated streptococci of angina (scarlatinal, rheumatic, simple) from those of pyogenic infections, but found gradual differences in the reaction of the anginal streptococci which spoke against an identity among them.

The agglutinating action of serum from cases of scarlet fever on scarlatinal streptococci was studied also by Salge.[3] He found that those from scarlet fever were agglutinated by scarlatinal serum, but that it caused no agglutination of streptococci from other sources; however, he did not control his work by testing serum from other streptococcus diseases.

After repeating the experiments of Moser and von Pirquet, Aronson [4] concluded that in no case could he differentiate between streptococcus groups by the most careful agglutination.

Neufeld [5] also concluded that no specificity of streptococci isolated from scarlet fever could be shown by means of tests with immune rabbit serum.

Moser and von Pirquet [6] later showed that the serum of horses immunized with scarlet fever streptococci did not produce agglutination of all streptococci cultivated from scarlet fever blood.

Weaver [7] made an exhaustive study of agglutination of streptococci with human serum. He came to the conclusion that the agglutination of streptococci from cases of scarlet fever was in no way specific and could be of no value as a means of diagnosis. He found that some of the streptococci from scarlet fever were agglutinated by almost all scarlatinal serums, others only by some, and many not at all. Streptococci from scarlet fever were agglutinated also by serum from cases of lobar pneumonia and erysipelas at about the same dilutions as by scarlatinal serums, and the same was true with the few specimens of typhoid blood and puerperal fever serum examined. As the experiments were made before hemolytic and green-producing streptococci were differentiated, it is possible that some of Weaver's strains were not hemolytic and may even have been pneumococci.

Rossiwald and Schick [8] found that Moser's antistreptococcus serum (serum of horse immunized with scarlet fever streptococci) agglutinated many, but not all, strains of streptococci from scarlet fever patients. They isolated a streptococcus from a case of surgical scarlet fever, which was agglutinated by Moser's serum in high dilution. They concluded that the streptococci from scarlet fever that were not agglutinated by the immune horse serum belonged to a different group from those that were agglutinated.

Ruediger [9] immunized sheep with different strains of streptococci, and found that many strains of hemolytic streptococci from scarlet fever were agglutinated by the serum of the sheep immunized with a streptococcus isolated from a scarlet fever throat, but not by the serum of sheep immunized with a hemolytic streptococcus isolated from a phlegmon of the leg. Of the eleven strains obtained from scarlet fever patients, three were not agglutinated by the scarlet fever sheep serum. Two of these organisms had each been passed through more than fifteen rabbits; the third was obtained from the suppurating cervical glands of a very mild case of scarlet fever which had appeared at the end of the fourth week. He also obtained agglutination of hemolytic streptococci isolated from erysipelas and tonsillitis in as high dilutions of the serum as in some of the scarlet fever strains.

In my study [10] of the opsonic index in scarlet fever I found that the variations in the index for the scarlatinal hemolytic streptococcus even in mild cases indicated that practically from the first the scarlet fever patient is subject to a definite streptococcus infection. In the beginning of the attack the streptococco-opsonic index in the majority of cases was below normal; as the acute symptoms subsided the index rose above normal, to which it soon returned; definite local streptococcal complications were inaugurated by a depression in the streptococco-opsonic index, which rose again as improvement took place. These changes were specific for the hemolytic streptococcus, no changes occurring with staphylococci, pneumococci or *Streptococcus viridans*. Similar results were obtained by Banks.[11]

Recently Nakayama [12] studied agglutination of hemolytic streptococci with immune rabbit serum with considerable similarity in the results with various strains of streptococci from scarlet fever; but no distinct line could be drawn between streptococci obtained from the throat and from ordinary suppurative processes. His absorption experiments did not give decisive results; the agglutinins and opsonins did not always run parallel in the serum of the same rabbit, and it did not seem possible to classify streptococci by means of opsonins.

* From the John McCormick Institute for Infectious Diseases.

1. Moser and von Pirquet: Wien. klin. Wchnschr. **15**: 1086, 1902.
2. Meyer, F.: Deutsch. med. Wchnschr. **28**: 751, 1902.
3. Salge: München. med. Wchnschr. **49**: 1729, 1902; Zentralbl. f. Bakteriol., I, Ref. **32**: 643, 1903.
4. Aronson: Deutsch. med. Wchnschr. **29**: 439, 1903.
5. Neufeld: Ztschr. f. Hyg. u. Infektionskrankh. **44**: 161, 1903.
6. Moser and von Pirquet: Centralbl. f. Bakteriol. I, Orig. **34**: 560, 714, 1903.
7. Weaver: J. Infect. Dis. **1**: 91, 1904.
8. Rossiwald and Schick: Wien. klin. Wchnschr. **18**: 3, 1905.
9. Ruediger, G. F.: J. Infect. Dis. **3**: 755, 1906.
10. Tunnicliff, Ruth: J. Infect. Dis. **4**: 304, 1907.
11. Banks: J. Path. & Bakteriol. **12**: 113, 1908.
12. Nakayama: J. Infect. Dis. **24**: 489, 1919.

It has been found that the opsonin reaction may serve as a means by which green-producing streptococci may be reliably differentiated (poliomyelitis,[13] measles,[14] rubella,[14] influenza [15]). Therefore the experiments outlined below were made to study once more the question of the specificity of the hemolytic streptococcus in scarlet fever, especially in regard to opsonification, as agglutination of streptococci is uncertain.

A sheep was immunized with a hemolytic streptococcus, isolated from the throat of a severe acute case of scarlet fever. The sheep was inoculated intravenously weekly, at first with killed cultures, later with small numbers of living cocci. Opsonins were produced after the first injection, agglutinins after the sixth. The cocci were grown on goat blood agar twenty-four hours and suspended in physiologic sodium chlorid solution. Normal sheep leukocytes, collected in 0.2 per cent. sodium citrate solution and washed once in physiologic sodium chlorid solution, were used in the experiments. The serum, normal and immune, was heated for one-half hour at 56 C. to remove the thermolabile element, and then diluted to determine the point of opsonic extinction. The mixtures of serum, leukocytes and coccal suspension, equal parts, were incubated twenty-five minutes, smears stained with carbolthionin, fifty polymorphonuclear leukocytes counted, and the number of cells taking part in phagocytosis noted. Spontaneous agglutination of streptococci did not interfere with the opsonic determinations.

The agglutination experiments proved very troublesome. Plain neutral broth (Weaver [7]), calcium carbonate broth (Ruediger [9]), blood glucose broth (Hamilton and Havens [16]) and phosphate broth (Dochez, Avery and Lancefield [17]), all were found unsatisfactory on account of spontaneous clumping of the organisms. As I had previously observed that streptococci grow more diffusely in ascitic dextrose broth than in plain or dextrose broth alone, this medium was used. One part of ascitic fluid was added to four parts of 0.2 per cent. dextrose broth p_H 7.4. The cultures were incubated twenty-four hours, centrifuged, the supernatant fluid removed, and the organisms were washed once or twice with plain meat infusion broth p_H 7.8 and finally suspended in this medium. In the tests, the serum dilutions were made with plain broth, the dilutions running from 1:5 to 1:1,000, and an equal part of bacterial suspension was added to each tube of diluted serum, and the mixtures were incubated for one hour and fifteen minutes at 55 C., and then left at room temperature for three hours. A tube containing suspended cocci in broth but without serum and one with cocci in normal sheep serum diluted from 1:5 to 1:100 or higher were included in each agglutination test. As a rule the results were clear at the end of the incubation period. The immunizing streptococcus, however, was always included in each experiment to serve as a standard. Four strains were found to agglutinate spontaneously and therefore could not be tested.

The following hemolytic streptococci were used: 27 strains isolated early in the attack of scarlet fever, 2 before the appearance of the rash (throat 20, otitis media 1, mastoid 1, finger 2, empyema 2, gland 1); 9 from the throat and 2 from ears during convalescence; 1 from wound from possible case of scarlet fever; 3 from blood, cerebrospinal fluid and knee of suspected case of scarlet fever; 26 strains were isolated from cases which were not scarlatinal in origin—normal throats 5; influenza 5, empyema 2, sputum 2, lung 1; measles 2, throat, ear; erysipelas 3; diphtheria, 2; mastoid, 1; otitis media, 1; chronic rhinitis, 1; meningitis, 1; acute tonsillitis, 1; horse pneumonia, 1; acute sinusitis, 1; blood in lethargic encephalitis, 1.

All of these strains but one produced a wide zone of hemolysis (from 2 to 4 mm.) on goat blood agar plates, after twenty-four hours' incubation. The streptococcus that produced a narrow zone of hemolysis was isolated from the ear of a scarlet fever patient during the sixth week of the disease. The size of the colonies varied somewhat, but were generally small, round and smooth. The strains from erysipelas, influenza and lethargic encephalitis produced, as a rule, larger, flatter colonies than the others. With a few exceptions the streptococci fermented lactose and salicin, but not mannite or inulin, and hence would be classed as *Streptococcus pyogenes* (Holman [18]). Two scarlet fever strains, one from the finger and one from an empyema, fermented lactose and mannite but not inulin and salicin (*Streptococcus hemolyticus* one); one diphtheria streptococcus originally an anaerobe fermented salacin but not lactose, mannite or inulin (*Streptococcus equi*).

Of the hemolytic streptococci isolated from the throat and the complicating lesions of early cases of scarlet fever, all gave marked phagocytosis with the immune sheep serum except the two mannite fermenters, the point of opsonic extinction being from 1:30 to 1:1,500, 1:150 being the point at which phagocytosis ceased for the majority of the strains. The contrast between the specimens with normal and immune serum was very striking on account of there being little or no phagocytosis of these scarlatinal streptococci in normal heated sheep serum when first isolated.

Three scarlet fever streptococcus strains agglutinated spontaneously and could not be tested. One streptococcus from a gland, though opsonized, was not agglutinated by the immune sheep serum. The other twenty-three scarlet fever strains were all agglutinated by the immune serum at a dilution of from 1:50 to 1:2,000, 1:500 being the dilution at which the majority of the cocci ceased to agglutinate. Only an occasional strain agglutinated at 1:5 with normal sheep serum.

The hemolytic streptococcus from the finger and the one from empyema, both mannite fermenters, as well as the strains from otitis media of two scarlet fever cases in the fourth and sixth weeks, and from the wound, blood, cerebrospinal fluid and knee of two suspected cases of scarlet fever, were neither opsonized nor agglutinated by the immune sheep serum. The two mannite fermenters agglutinated spontaneously and could not be used for agglutination tests.

None of the hemolytic streptococci isolated from the throat late in scarlet fever, except in the instances to be noted, and none from sources other than scarlet fever, were opsonized by the immune sheep serum in dilutions higher than by normal serum; and none of these cultures were agglutinated by either normal or

13. Mathers, George, and Tunnicliff, Ruth: A Reaction of Immunity in Acute Poliomyelitis, J. A. M. A. **67**: 1935 (Dec. 23) 1916. Mathers, George, and Howell, K.: J. Infect. Dis. **21**: 292 (Sept.) 1917. Nuzum, J. W., and Willy, R. G.: Ibid. **22**: 258 (March) 1918. Davis, W. M.: Ibid. **24**: 176 (Feb.) 1919.

14. Tunnicliff, Ruth: J. Infect. Dis. **22**: 462 (May) 1918. Tunnicliff, Ruth, and Brown, M. W.: Ibid. **23**: 572 (Dec.) 1918.

15. Tunnicliff, Ruth: J. Infect. Dis., Ibid. **26**: 405 (May) 1920.

16. Hamilton, C. D., and Havens, L. C.: Hemolytic Streptococci, J. A. M. A. **72**: 272 (Jan. 25) 1919.

17. Dochez, A. R.; Avery, O. T., and Lancefield, R. C.: J. Exper. Med. **30**: 179 (Sept.) 1919.

18. Holman, W. L.: J. Med. Res. **34**: 377 (July) 1916.

immune serum. Here it may be said that one reason why the results of these experiments indicate a greater specificity than those of certain other observers is probably the heating of the serum, which destroys the labile factors that participate in the action of normal serum.

Hemolytic streptococci obtained from the throats of nine patients during convalescence from scarlet fever, one during the second, the others during the third and fourth weeks, were not agglutinated by the immune serum and not opsonized in higher dilutions than with normal serum. It is noteworthy that cultures of four of these patients had been taken previously and hemolytic streptococci obtained which reacted positively with the immune serum, but that during the third week the cultures of two of them gave only a few colonies of hemolytic streptococci, which in the one case tested did not react with the immune sheep serum. Cultures from both of these patients showed large numbers of hemolytic streptococci during the fourth week, which were opsonized and agglutinated in high dilutions with the immune serum. Neither patient complained of sore throat, but the tonsils were slightly redder than normal. From one patient hemolytic streptococci were isolated one week later, which were not opsonized or agglutinated by the immune serum. Further studies of scarlet fever patients along these lines must be made. The results so far indicate that the hemolytic streptococci isolated from the throat at the onset of the attack of scarlet fever are immunologically different from most of those obtained during convalescence, and that some of the hemolytic streptococci in complicating lesions may differ immunologically from the streptococci in the acute stage of scarlet fever. These results also suggest that immune sheep serum may be helpful in diagnosing suspected cases of scarlet fever and in determining the length of quarantine for patients with purulent discharges.

ABSORPTION EXPERIMENTS

Absorption experiments were made to determine whether the agglutinins and opsonins could be absorbed by the heterologous streptococci, from scarlet fever and from other sources, as thoroughly as by the immunizing coccus. Immune serum was therefore treated with the homologous and with two other hemolytic streptococci, one from a scarlatinal otitis, the other from erysipelas. The otitis streptococcus was opsonified and agglutinated by the untreated immune sheep serum. Killed centrifuged organisms were suspended in the immune serum, which then was incubated two hours and refrigerated for twenty-four hours, and finally centrifuged, the supernatant serum being removed. This process was repeated three times, when the serum was found no longer to opsonify or agglutinate the immunizing coccus. Absorption with the two scarlet fever streptococcus strains removed the opsonins and agglutinins for the nineteen scarlet fever streptococcus strains tested, but absorption with the erysipelas streptococcus failed to remove the opsonins and agglutinins for the scarlet fever streptococci. These results indicate clearly that the hemolytic streptococci that prevail in the throat in the acute stages of scarlet fever form a group immunologically closely related and apparently peculiar for scarlet fever.

CONCLUSIONS

The serum of sheep immunized with hemolytic streptococci from the throat in the acute stage of scarlet fever has been found to contain opsonins and agglutinins for the hemolytic streptococci that prevail in the throat and complicating lesions early in this disease, but not for hemolytic streptococci from other sources, such as erysipelas, mastoiditis, measles, influenza, diphtheria and the normal throat. The results of absorption tests also indicate that the hemolytic streptococcus from scarlet fever forms a distinct group, scarlatinal streptococci removing the opsonins and agglutinins for these cocci, while absorption with a hemolytic streptococcus from erysipelas has no such effect.

These results suggest that the hemolytic streptococci of scarlet fever form a distinct group from the immunologic point of view. Possibly the serum produced with this scarlatinal streptococcus group may prove of use in the diagnosis and treatment of scarlet fever, and eventually, perhaps, in determining the length of infectivity.

Clinical Notes, Suggestions, and New Instruments

A CASE OF UNUSUAL URINARY CALCULI

AUGUSTUS HARRIS, M.D., BROOKLYN

The stones shown in the accompanying illustration were removed from the bladder of a patient suffering from prostatism, and their unusual form prompted me to present the case.



Urinary calculi, about half their actual size.

REPORT OF CASE

A rather feeble man, aged 75, was admitted to the urologic service at the Kings County Hospital, Feb. 1, 1920, suffering with an attack of acute retention of urine. He stated that an ambulance surgeon from another hospital had tried for two hours to pass instruments into the bladder, without success.

On admission, the patient appeared weak and was suffering severe pain. The pulse was irregular and of poor volume. Two members of the house staff tried to catheterize but failed. There was moderate bleeding from the urethra, and apparently a false passage had been made. The prostate was markedly enlarged, smooth, and fairly hard. On account of the patient's general condition, an emergency suprapubic one-step drainage operation was immediately decided on.

Stovain spinal anesthesia was employed. I opened the bladder, and about 16 ounces of bloody urine were evacuated. On exploration, the bladder was found hypertrophied and trabeculated. No large pockets were discovered. Lying free on the floor of the bladder behind the prostate were five stones, four of which are depicted in the illustration. These were removed, and the bladder and tissues closed about the drainage tube in the usual manner.

The stones were light brown, smooth, and of light weight. They were shiny on the surface, as if varnished. The main body of each was round, and from it projected spines with smooth, rounded ends. They resembled rather closely a handful of jackstones, with which little girls play.

An analysis of one of the stones disclosed lamination on cross section. Microscopically, there were uric acid crystals and amorphous urates. Chemically, there was a mixture of uric acid, urates, xanthin and carbonates. The stones in the illustration are just about half their actual size. It would be interesting to know how these calculi took on this curious form.

The urine was alkaline in reaction.

306 Park Place.

PROCEEDINGS OF THE NEW ORLEANS SESSION

MINUTES OF THE SEVENTY-FIRST ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, HELD AT NEW ORLEANS, APRIL 26-30, 1920

(*Continued from page 1328*)

MINUTES OF THE SECTIONS

SECTION ON PRACTICE OF MEDICINE

WEDNESDAY, APRIL 28—AFTERNOON

The section was called to order at 2 o'clock by the chairman, Dr. James S. McLester, Birmingham, Ala.

Dr. McLester read the chairman's address, entitled "Clearness in Medical Speech."

Dr. Henry S. Plummer, Rochester, Minn., read a paper on "The Clinical Interpretation of Basal Metabolic Rate Estimations." Discussed by Drs. Emil Goetsch, Brooklyn; Leonard G. Rowntree, Minneapolis; Nelson W. Janney, Santa Barbara, Calif., and H. S. Plummer, Rochester, Minn.

Dr. Frank Billings, Chicago, nominated for Honorary Fellowship Sir Humphry D. Rolleston, London, England. Seconded and carried.

Drs. Rollin T. Woodyatt and William D. Sansum, Chicago, presented a paper on "The Nature of Fever." Discussed by Drs. W. S. Thayer, Baltimore, Alexander Lambert, New York; L. G. Rowntree, Minneapolis; Francis M. Pottenger, Monrovia, Calif., and R. T. Woodyatt, Chicago.

Dr. George Dock, St. Louis, nominated for Honorary Fellowship Dr. Twaho Tsuchiya, Tokyo, Japan. Seconded and carried.

Dr. Stewart R. Roberts, Atlanta, Ga., read a paper on "Types and Treatment of Pellagra." Discussed by Drs. Marvin L. Graves, Galveston, Texas; Allen Eustis, New Orleans; Henry S. Plummer, Rochester, Minn.; George Dock, St. Louis; W. K. Sheddin, Columbia, Tenn., and S. R. Roberts, Atlanta, Ga.

Dr. Bryce W. Fontaine, Memphis, Tenn., read a paper on "The End-Results of Focal Infections." Discussed by Drs. Frank Billings, Chicago; Joseph H. Pratt, Boston; Frank B. Wynn, Indianapolis; W. S. Thayer, Baltimore; Leon L. Solomon, Louisville, Ky.; Carleton Dederer, Bay City, Mich., and B. W. Fontaine, Memphis, Tenn.

Dr. Charles F. Hoover, Cleveland, read a paper on "The Clinical Diagnosis of Obstruction of the Hepatic Veins." Discussed by Sir Humphry Rolleston, London, England; Dr. Frank B. Wynn, Indianapolis, and Dr. C. F. Hoover, Indianapolis.

Dr. William Gerry Morgan, Washington, D. C., read a paper on "Phlebectasis of the Diaphragmatic Area and of the Lower Thoracic and Upper Abdominal Regions." Discussed by Drs. J. Russell Verbrycke, Jr., Washington, D. C.; Charles F. Hoover, Cleveland; Louis J. Genella, New Orleans; Frank Billings, Chicago; William S. Thayer, Baltimore, and W. G. Morgan, Washington, D. C.

THURSDAY, APRIL 29—AFTERNOON

The section was called to order at 2 o'clock by the chairman.

Sir Humphry D. Rolleston, London, England, read a paper on "Changes in the Clinical Types of Disease." No discussion.

Dr. U. J. W. Peters, Birmingham, Ala., read a paper on "Abscess of the Lung." Discussed by Drs. Charles F. Hoover, Cleveland; O. M. Gilbert, Boulder, Colo.; C. J. Fishman, Oklahoma City; A. C. Eustis, New Orleans, and U. J. W. Peters, Birmingham, Ala.

Dr. George Dock, St. Louis, read a paper on "Oxycephaly: Its Occurrence in Negroes." Discussed by Dr. Stewart R. Roberts, Atlanta, Ga.

Drs. Howard F. West and Joseph H. Pratt, Boston, presented a paper on "Clinical Experience with a Standardized Dried Aqueous Extract of Digitalis." Discussed by Drs. G. Canby Robinson, Nashville, Tenn., and C. F. Wahrer, Fort Madison, Iowa.

Dr. John Peter Schneider, Minneapolis, read a paper on "A Study of the Bile Pigments in Pernicious Anemia." Discussed by Drs. Leonard G. Rowntree, Minneapolis; F. J. Hirschboeck, Duluth, Minn.; Llewellyn Sale, St. Louis, and F. P. Schneider, Minneapolis.

Dr. Douglas VanderHoof, Richmond, Va., read a paper on "Spondylitis and Abdominal Pain." Discussed by Drs. Gustave Roussy, Paris France (translated by Dr. William S. Thayer, Baltimore); Sir Humphry D. Rolleston, London, England, and Douglas VanderHoof, Richmond, Va.

Dr. W. L. Bierring, Des Moines, Iowa, nominated for Honorary Fellowship Dr. Gustave Roussy, Paris, France. Seconded and carried.

Dr. Eugene S. Kilgore, San Francisco, read a paper on "The Influence of Quantitative Methods in the Advance of Clinical Medicine." Discussed by Drs. Henry A. Christian, Boston, and E. S. Kilgore, San Francisco.

FRIDAY, APRIL 30—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman.

Dr. Charles Spencer Williamson, Chicago, read a paper on "Gout: A Clinical Study of One Hundred and Sixteen Cases." Discussed by Dr. Walter L. Bierring, Des Moines, Iowa; Sir Humphry D. Rolleston, London, England; Alexander Lambert, New York, and C. S. Williamson, Chicago.

The chairman announced that Dr. G. Canby Robinson had resigned as secretary of the section for reasons which were beyond his control.

It was moved, seconded and carried that Dr. Robinson's resignation be accepted with regret.

The following officers were elected: chairman, Dr. Henry S. Plummer, Rochester, Minn.; vice chairman, Dr. G. Canby Robinson, Nashville, Tenn.; secretary, Nellis B. Foster, New York; delegate, Dr. James S. McLester, Birmingham, Ala.

Dr. James E. Paullin, Atlanta, Ga., read a paper on "Renal Glycosuria." Discussed by Drs. Nelson W. Janney, Santa Barbara, Calif.; Albert A. Hornor, Jr., Boston; Allan Eustis, New Orleans, and J. E. Paullin, Atlanta, Ga.

Drs. Nelson W. Janney, Santa Barbara, Calif., and Robert R. Newell, San Francisco, presented a paper on "The Treatment of Diabetes Complicated by Pulmonary Tuberculosis." Discussed by Drs. Francis M. Pottenger, Monrovia, Calif.; F. M. Allen, New York; William C. Voorsanger, San Francisco; L. J. Genella, New Orleans, and N. W. Janney, Santa Barbara, Calif.

Dr. William Engelbach, St. Louis, read a paper on "Arterial Hypertension Associated with Endocrine Dyscrasia." Discussed by Dr. Francis M. Pottenger, Monrovia, Calif.; Prof. Gustave Roussy, Paris, France, and Drs. C. J. Fishman, Oklahoma City; F. M. Allen, New York; William S. Thayer, Baltimore, and William Engelbach, St. Louis.

Dr. Loyd Thompson, Hot Springs, Ark., read a paper on "Syphilis of the Kidney." Discussed by Drs. John Witherspoon, Nashville, Tenn.; William H. Mercur, Pittsburgh, and J. B. McElroy, Memphis, Tenn.

Dr. William P. St. Lawrence, New York, read a paper on "The Effect of Tonsillectomy on the Recurrence of Acute

Rheumatic Fever and Chorea in Children." Discussed by Drs. Lewis A. Conner, New York; Alexander Lambert, New York, and W. P. St. Lawrence, New York.

Dr. W. R. Taylor, Fort Recovery, Ohio, presented the following resolution:

Resolved, That the members of the American Medical Association return their heartfelt thanks to the civil officers of the state of Louisiana, to those of the city of New Orleans, to the officers of the state medical society of this splendid state, and especially to the members of the Orleans Parish Medical Societies, and to all of the people of this city, rich in the history of our common country, for the magnificent manner in which they have instructed and entertained us.

On motion, duly seconded and carried, the foregoing resolution was adopted by the section.

SECTION ON SURGERY, GENERAL AND ABDOMINAL

WEDNESDAY, APRIL 28—MORNING

The meeting was called to order at 9 o'clock by the chairman, Dr. Dean D. Lewis, Chicago.

The following papers were read as a symposium on the "Thyroid":

Dr. James T. Mason, Seattle: "One Hundred Goiter Operations: Mistakes in Retrospect."

Dr. Frank H. Lahey, Boston: "Diagnosis and Management of Intrathoracic Thyroid Growths."

Dr. Joseph R. Eastman, Indianapolis: "Advantages of Local Anesthesia in Thyroid Operations."

Dr. Willard Bartlett, St. Louis: "Technic of Thyroidectomy."

These four papers were discussed by Drs. Henry S. Plummer, Rochester, Minn.; Emil Goetsch, Brooklyn; Edward G. Jones, Atlanta, Ga.; A. J. Ochsner, Chicago; Andre Crotti, Columbus, Ohio; M. L. Harris, Chicago; G. W. Crile, Cleveland; James T. Mason, Seattle; Frank H. Lahey, Boston; Joseph R. Eastman, Indianapolis, and Willard Bartlett, St. Louis.

Dr. Joseph C. Bloodgood, Baltimore, read a paper on "Chronic Cystic Mastitis." Discussed by Drs. William C. MacCarty, Rochester, Minn., and Joseph C. Bloodgood, Baltimore.

Dr. Alfred W. Adson, Rochester, Minn., read a paper on "Brain Abscess."

Dr. George J. Heuer, Baltimore, read a paper on "Surgical Experiences with an Intracranial Approach to Chiasmal Lesions."

These two papers were discussed by Drs. H. R. Donaldson, Atlanta, Ga.; G. M. Dorrance, Philadelphia; Alfred W. Adson, Rochester, Minn., and George J. Heuer, Baltimore.

Dr. Francis Le S. Reder, St. Louis, read a paper on "Hemangioma and Lymphangioma: Their Response to the Injection of Boiling Water." Discussed by Drs. Rudolph Matas, New Orleans; Vilray P. Blair, St. Louis, and Francis Le S. Reder, St. Louis.

THURSDAY, APRIL 29—MORNING

The meeting was called to order by the chairman.

Dr. Dean D. Lewis, Chicago, read the chairman's address.

Dr. Alexander Primrose, Toronto, read a paper on "Squamous-Cell Carcinoma of the Kidney." Discussed by Drs. A. D. Bevan, Chicago; W. J. Mayo, Rochester, Minn.; J. J. Gilbride, Philadelphia; A. J. Ochsner, Chicago, and Alexander Primrose, Toronto.

The chairman appointed Drs. Wallace I. Terry, San Francisco, and Willard Bartlett, St. Louis, to serve on the executive committee in the absence of Drs. W. D. Haggard, Nashville, Tenn., and E. Starr Judd, Rochester, Minn.

Dr. William A. Downes, New York, read a paper on "Congenital Hypertrophic Pyloric Stenosis in Infants: Review of One Hundred and Seventy-five Cases in Which the Fredet-Rammstedt Operation Was Performed." Discussed by Drs. Dean D. Lewis, Chicago; Roland Hill, St. Louis; A. A. Straus, Chicago; L. T. Le Wald, New York; A. D. Bevan, Chicago; J. L. Ransohoff, Cincinnati; W. A. Downes, New York, and A. D. Bevan, Chicago.

Dr. Wallace I. Terry, San Francisco, read a paper on "Ulcer of the Jejunum Following Gastro-Enterostomy." Discussed by Drs. J. Shelton Horsley, Richmond, Va.; W. J. Mayo, Rochester, Minn.; A. J. Ochsner, Chicago; A. A. Strauss, Chicago, and W. I. Terry, San Francisco.

Dr. A. D. Bevan, Chicago, read a paper on "Surgery of Cancer of the Large Intestine."

Dr. G. W. Crile, Cleveland, read a paper on "Operation for Carcinoma of the Rectum."

These two papers were discussed by Drs. Daniel F. Jones, Boston, and W. J. Mayo, Rochester, Minn.

At the request of the chairman the session was addressed by the following distinguished guests: Col. H. J. Waring, Royal College of Surgeons, London; Dr. E. E. Desmarest, professor of surgery, University of Paris, and Dr. Jules Voncken, Liége, Belgium.

Drs. Arthur Stein and William H. Stewart, New York, presented a paper on "Roentgenologic Experience with Pneumoperitoneum." Discussed by Drs. George E. Pfahler, Philadelphia; B. H. Orndoff, Chicago, and W. H. Stewart, New York.

Dr. Walter Lathrop, Hazleton, Pa., read a paper on "Ether Oil Colonic Anesthesia." Discussed by Drs. James T. Gwathmey, New York; Alexander Primrose, Toronto; J. Shelton Horsley, Richmond, Va.; G. W. Crile, Cleveland, and Walter Lathrop, Hazleton, Pa.

FRIDAY, APRIL 30—MORNING

The meeting was called to orde rat 9 o'clock by the vice chairman, Malvern B. Clopton, St. Louis.

The following officers were elected: Chairman, Dr. George P. Muller, Philadelphia; vice chairman, Dr. Edward Clarence Moore, Los Angeles; secretary, Dr. Urban Maes, New Orleans; delegate, Dr. R. P. Sullivan, New York; alternate, Dr. D. F. Jones, Boston.

Dr. Evarts A. Graham, St. Louis, read a paper on "Importance of the 'Vital Capacity' in Thoracic Surgery."

Dr. John L. Yates, Milwaukee, read a paper on "Prevention and Treatment of Pleurisy."

Dr. Carl Eggers, New York, read a paper on "Observations on the Relative Value of the Various Operative Procedures Employed in Acute Empyema."

These three papers were discussed by Drs. Alexander Lambert, New York; Martin B. Tinker, Ithaca, N. Y.; Arvine E. Mozingo, Indianapolis; James F. Mitchell, Washington, D. C.; Moses Behrend, Philadelphia; C. D. Lockwood, Pasadena, Calif.; George J. Heuer, Baltimore; T. T. Thomas, Philadelphia; Carl A. Hedblom, Rochester, Minn.; H. M. Richter, Chicago; Rosalie Slaughter Morton, New York; John B. Haeberlin, Chicago; E. A. Graham, St. Louis; John L. Yates, Milwaukee, and Carl Eggers, New York.

Dr. Addison G. Brenizer, Charlotte, N. C., read a paper on "The Use of Bone and Fascia Grafts in the Reconstruction of Bones and Joints."

Dr. Paul B. Magnuson, Chicago, read a paper on "Mechanic Stability of Fractures Following Operation."

These two papers were discussed by Drs. Harry M. Sherman, San Francisco; E. W. Ryerson, Chicago; W. R. Cubbins, Chicago; T. Turner Thomas, Philadelphia; Paul A. McIlhenny, New Orleans; A. G. Brenizer, Charlotte, N. C., and Paul B. Magnuson, Chicago.

SECTION ON OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY

WEDNESDAY, APRIL 28—AFTERNOON

The chairman, Dr. Reuben Peterson, Ann Arbor, Mich., called the meeting to order at 2 o'clock.

Dr. Reuben Peterson, Ann Arbor, Mich., read the chairman's address entitled "The Future of Obstetrics and Gynecology as a Specialty."

Dr. Arthur H. Curtis, Chicago, read a paper on "Chronic Leukorrhea: Its Pathology and Treatment." Discussed by Drs. Francis Le S. Reder, St. Louis; T. J. Watkins, Chicago; Peter B. Salatich, New Orleans, and Arthur H. Curtis, Chicago.

Dr. William J. Mayo, Rochester, Minn., read a paper on "Conservation of the Menstrual Function." Discussed by Drs. C. Jeff Miller, New Orleans; John O. Polak, Brooklyn; Robert T. Morris, New York; A. J. Ochsner, Chicago, and W. J. Mayo, Rochester, Minn.

Dr. Emil Novak, Baltimore, read a paper on "Relation of Hyperplasia of the Endometrium to So-Called Functional Uterine Hemorrhage." Discussed by Drs. Lucius E. Burch, Nashville, Tenn.; Henry P. Newman, San Diego, Calif., and Emil Novak, Baltimore.

Dr. John O. Polak, Brooklyn, read a paper on "A Plea for Total Hysterectomy in the Operative Treatment of Fibroid Tumors of the Uterus in Parous Women." Discussed by Drs. E. E. Montgomery, Philadelphia; Albert Goldspohn, Chicago; William Kohlmann, New Orleans; A. C. Scott, Temple, Texas, and John O. Polak, Brooklyn.

Dr. William W. Grant, Denver, read a paper on "Hernia of the Ovary." Discussed by Drs. George H. Lee, Galveston, Texas; Albert Goldspohn, Chicago, and William W. Grant, Denver.

The chairman announced that the following distinguished physicians were attending the Association session: Col. H. J. Waring, Royal College of Surgeons, England; Dr. E. E. Demarest, professor of surgery, University of Paris, and Dr. Jules Voncken, Liége, Belgium. On motion by Dr. Arthur H. Curtis, Chicago, duly seconded and carried, these gentlemen were elected to honorary fellowship and invited to participate in the proceedings.

Dr. John M. Maury, Memphis, Tenn., read a paper on "Results of the Exposure of Animal Ovaries to the Rays of Radium." Discussed by Drs. Henry Schmitz, Chicago, and John M. Maury, Memphis, Tenn.

THURSDAY, APRIL 29—AFTERNOON

The chairman called the meeting to order at 2 o'clock.

Dr. Mathias J. Seifert, Chicago, read a paper on "Abnormal Lactation." Discussed by Dr. William Kohlmann, New Orleans.

Dr. Isador C. Rubin, New York, read a paper on "Intra-Uterine Insufflation of Oxygen (Artificial Pneumoperitoneum) for the Determination of Potency of the Fallopian Tubes in Cases of Sterility." Discussed by Drs. J. O. Polak, Brooklyn, and Isador C. Rubin, New York.

Dr. Edward L. King, New Orleans, read a paper on "The Policy of Noninterference in the Treatment of Postabortive and Puerperal Infections." Discussed by Drs. J. O. Polak, Brooklyn, and Edward L. King, New Orleans.

Dr. James M. Mason, Birmingham, Ala., read a paper on "The Management of Acute Appendicitis in the Later Weeks of Pregnancy: Report of Case Treated by Cesarean Section and Appendectomy." Discussed by Drs. Arthur H. Curtis, Chicago; Francis Le S. Reder, St. Louis; David Ross, Indianapolis, and James M. Mason, Birmingham, Ala.

The chairman announced that Dr. T. J. Watkins, Chicago, who had been appointed a substitute on the Executive Committee, had been obliged to leave, and therefore he would appoint Dr. Arthur H. Curtis, Chicago, on the Executive Committee.

FRIDAY, APRIL 30—AFTERNOON

The chairman called the meeting to order at 2 o'clock.

The following officers were elected: chairman, Dr. John O. Polak, Brooklyn; vice chairman, Dr. Lucius E. Burch, Nashville, Tenn.; secretary, Dr. Sidney A. Chalfant, Pittsburgh; delegate, Dr. Edward Reynolds, Boston; alternate, Dr. S. M. D. Clark, New Orleans.

The paper of Dr. Carroll W. Allen, New Orleans, on "An Operation for Pruritus of the Vulva and Anus," was read by Dr. E. Denegre Martin, New Orleans. Discussed by Dr. Denegre Martin, New Orleans.

Dr. Richard R. Smith, Grand Rapids, Mich., read a paper on "Prolapse of the Urethra in the Female." Discussed by Drs. S. M. D. Clark, New Orleans; F. F. Lawrence, Columbus, Ohio; Arthur H. Curtis, Chicago, and Richard R. Smith, Grand Rapids, Mich.

Dr. John J. Gilbride, Philadelphia, read a paper on "Cysts of the Pancreas." Discussed by Drs. A. C. Scott, Temple, Texas; Moses Behrend, Philadelphia, and Marcell Hartwig, Los Angeles.

Dr. Moses Behrend, Philadelphia, read a paper on "An Improved Technic for Cholecystectomy Based on an Anatomic Study." Discussed by Drs. A. C. Wood, Philadelphia; J. B. Haeberlin, Chicago; M. J. Seifert, Chicago; J. J. Gilbride, Philadelphia; E. P. Quain, Bismarck, N. D.; H. M. Richter, Chicago, and Moses Behrend, Philadelphia.

Dr. Edgar P. Hogan, Birmingham, Ala., read a paper on "Appendicitis Caused by Amebae Dysenteriae: Postoperative Perforation of an Amebic Ulcer of the Cecum." Discussed by Drs. J. B. Haeberlin, Chicago, and Edgar P. Hogan, Birmingham, Ala.

SECTION ON OPHTHALMOLOGY

WEDNESDAY, APRIL 28—MORNING

The meeting was called to order at 9:15 by the chairman, Dr. Allen Greenwood, Boston.

Dr. Allen Greenwood, Boston, read the chairman's address, entitled "Postgraduate Ophthalmology."

Dr. James Bordley, Jr., Baltimore, read a paper on "Optic Nerve Disturbances in Diseases of the Posterior Nasal Sinuses."

Dr. Edward C. Ellett, Memphis, Tenn., read a paper on "Optic Neuritis Associated with Disease of the Nasal Sinuses."

These two papers were discussed by Drs. George E. de Schweinitz, Philadelphia; Lee M. Francis, Buffalo; William C. Posey, Philadelphia; Harry S. Gradle, Chicago; Samuel G. Higgins, Milwaukee; Hiram Woods, Baltimore; Harold Bailey, Springfield, Mo.; H. B. Lemere, Omaha; Herbert Moulton, Fort Smith, Ark., and Nelson M. Black, Milwaukee.

Dr. J. Herbert Claiborne, New York, read a paper on "Ocular Symptoms in Exophthalmic Goiter." Discussed by Drs. Albert E. Bulson, Jr., Fort Wayne, Ind.; W. H. Wilder, Chicago; Edward Jackson, Denver, and J. Herbert Claiborne, New York.

Drs. Walter B. Lancaster, Boston; Francis L. Burnett, Boston, and Louis H. Gaus, Boston, presented a paper on "Mercurochrome-220: A Clinical and Laboratory Report on Its Use in Ophthalmology." Discussed by Drs. J. Herbert Claiborne, New York; George S. Derby, Boston; Hiram Woods, Baltimore; Benjamin F. Travis, Chattanooga, Tenn., and Walter B. Lancaster, Boston.

THURSDAY, APRIL 29—MORNING

The meeting was called to order at 9:10 by the chairman.

Dr. J. Herbert Claiborne, New York, presented a pair of bifocal cataract glasses.

Sylvester J. Beach, Augusta, Maine, presented a rapid clinical perimeter.

Dr. J. Ellis Jennings, St. Louis, presented a new lantern for the detection of color blindness.

Dr. Lawrence T. Post, St. Louis, presented a thermaphor devised by Dr. William E. Shahan, St. Louis.

Dr. E. A. Robin, New Orleans, presented a colored woman, aged 31, whose vision had been failing for eight years, and asked for a diagnosis.

Dr. Sidney L. Olsho, Philadelphia, presented a new trial frame with more delicately adjusted tilting temples for use in spectacle and eye-glass fitting.

Dr. Edward J. Curran, Kansas City, Mo., read a paper on "Peripheral Iridectomy in Chronic Glaucoma." Discussed by Drs. William Zentmayer, Philadelphia; Harold Bailey, Springfield, Mo.; Meyer Wiener, St. Louis, and Edward J. Curran, Kansas City, Mo.

Drs. Lawrence Post, St. Louis, and William E. Shahan, St. Louis, presented a paper on "Thermaphor Studies in Glaucoma." Discussed by Drs. John O. McReynolds, Dallas, Texas; George S. Derby, Boston, and Lawrence Post, St. Louis.

Dr. Harry H. Stark, El Paso, Texas, read a paper on "Diagnosis of Chronic Intra-Ocular Tuberculosis." Discussed by Drs. William C. Finnoff, Denver; Walter R. Parker, Detroit; Edward Jackson, Denver; Harry S. Gradle,

Chicago; Hiram Woods, Baltimore; George S. Derby, Boston, Harry H. Stark, El Paso, Texas.

Dr. Arthur J. Bedell, Albany, N. Y., read a paper on "Ethylhydrocuprein in Diseases of the Eye." Discussed by Drs. Harry S. Gradle, Chicago; Edward C. Ellett, Memphis, Tenn.; James M. Patton, Omaha; William Zentmayer, Philadelphia; Lewis H. Taylor, Wilkes-Barre, Pa.; Harry H. Stark, El Paso, Texas; Lee M. Francis, Buffalo; William C. Finnoff, Denver; Allen Greenwood, Boston, and Arthur J. Bedell, Albany, N. Y.

Dr. Marcus Feingold, New Orleans, read a paper on "Peripheral Communicating Vessels Between Retina and Choroid, with Remarks on Fold of the Inner Limiting Membrane in Certain Cases of Chorioretinitis." Discussed by Drs. Edward Jackson, Denver; Edward C. Ellett, Memphis, Tenn., and Charles A. Bahn, New Orleans.

FRIDAY, APRIL 30—MORNING

The meeting was called to order at 9:15 by the chairman.

Dr. Allen Greenwood made a verbal report for the Committee on Preparation of Compensation Tables, and asked that this committee be dissolved. It was moved by Dr. C. D. Wescott, Chicago, that the present committee be dissolved and a new committee appointed by the chairman. Motion seconded and carried.

Dr. Edward Jackson, Denver, read the report of the Committee on Standardization of Undergraduate Teaching of Ophthalmology. It was moved by Dr. C. D. Wescott, Chicago, that this report be accepted and the committee discharged, with the thanks of the section. Motion seconded and carried.

Dr. George S. Derby, Boston, read a letter from the Committee on Conferring the Knapp Medal, stating that the committee had decided that it was unable to confer the medal this year, as the papers presented at the last meeting of the section did not reach the required standard. This report was accepted without vote.

Dr. Lucien Howe, Buffalo, made a report for the Committee on the Study of Ocular Muscles. Moved by Dr. Robert H. T. Mann, Texarkana, Ark., that this report be accepted and the committee continued. Motion seconded and carried.

Dr. Lucien Howe, Buffalo, made a report for the Committee on the Prevention of Hereditary Blindness. Moved by Dr. Walter R. Parker, Detroit, that the report be accepted and the committee continued. Motion seconded and carried.

Dr. Albert E. Bulson, Jr., Fort Wayne, Ind., made a report for the Committee for the Study of Local Anesthesia. Moved by Dr. Robert H. T. Mann, Texarkana, Ark., that the report be accepted and the committee continued. Motion seconded and carried.

Dr. Albert E. Bulson, Jr., Fort Wayne, Ind., read the report of the Committee on the Knapp Testimonial. Moved by Dr. C. D. Wescott, Chicago, that the report be accepted and the committee continued. Motion seconded and carried.

Dr. William H. Wilder, Chicago, read a report for the Committee on International Congress of Ophthalmologists. Moved by Dr. C. D. Wescott, Chicago, that the report be accepted and the committee continued. Motion seconded and carried.

Dr. Edward Jackson, Denver, read the report of the Committee on Ophthalmologic Examinations. Moved by Dr. Albert E. Bulson, Jr., Fort Wayne, Ind., that the report be accepted and the committee continued. Motion seconded and carried.

Dr. William C. Posey, Philadelphia, read the report of the Committee on the Ultraviolet and Visible Transmission of Eye-Protective Glasses. Moved by Dr. W. B. Lancaster, Boston, that the report be adopted, and the committee continued, and asked to make a statement showing under what conditions such lenses are wisely prescribed by ophthalmologists; also that this report be printed in the transactions. Motion seconded and carried.

Dr. Henry D. Bruns, New Orleans, offered a resolution asking that this section devise ways and means for the correct diagnosis of follicular trachoma. Moved by Dr. Edward C. Ellett, Memphis, Tenn., that this resolution be referred to a committee of three, to be appointed by the chairman, which committee shall investigate and report at the next session of this section. Motion seconded and carried.

Dr. George S. Derby, Boston, then read the standing rules and regulations governing the section.

Dr. William Zentmayer, Philadelphia, presented the following report for the executive committee:

The executive committee recommends the adoption of the rules as read with the following amendments:

The time allowed for the presentation of a paper before the section shall be limited to ten minutes. The speaker appointed to open the discussion shall be allowed ten minutes, with the exception that the time may be extended by unanimous consent of those present when the speaker is an invited guest of the section. The Executive Committee further recommends:

That our delegate to the House of Delegates be instructed to inform the House that it is the sense of the Executive Committee that the three-session plan should be given a further trial to determine whether or not it should be permanently adopted.

The Executive Committee further recommends that the section inform the Trustees that at the present time the allowance made to the secretary is insufficient to pay the expenses incurred and that they be requested to increase the allowance to meet the present needs of the secretary.

The executive committee recommends for nomination the following officers for this section: chairman, James Bordley, Jr., Baltimore; vice chairman, Marcus Feingold, New Orleans; delegate, Lee M. Francis, Buffalo, and member examining board, Albert E. Bulson, Jr., Fort Wayne, Ind.

Moved by Dr. Nelson M. Black, Milwaukee, that the secretary be instructed to incorporate into the rules of this section such of these rules as are not at present in force. Motion seconded and carried.

Moved by Dr. Henry D. Bruns, New Orleans, that the paragraph of the report relating to the instructions to the delegate to the House be adopted. Motion seconded and carried.

Moved by Dr. William C. Posey, Philadelphia, that the secretary be instructed to cast the unanimous ballot of the section for the officers named in the report. Motion seconded and carried.

Moved by Dr. Albert E. Bulson, Jr., Fort Wayne, Ind., that it is the sense of the Section on Ophthalmology that discussions of papers shall be submitted to the discussants for correction before they are published in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION; also that THE JOURNAL shall print the minutes of the executive session, after they have been submitted to the secretary of the section for revision. Motion seconded and carried.

Moved that Drs. Walter R. Parker, Detroit; Lee M. Francis, Buffalo, and Lewis H. Taylor, Wilkes-Barre, Pa., be made the Committee on Awards. Motion seconded and carried.

Moved by Dr. William Zentmayer, Philadelphia, that a committee be appointed to draw up suitable resolutions relative to the death of Dr. Samuel D. Risley, Philadelphia. Motion seconded and carried. The chairman appointed on this committee: Drs. George E. de Schweinitz, Philadelphia; William Zentmayer, Philadelphia, and G. Oram Ring, Philadelphia.

Executive session adjourned.

Dr. Lucien Howe, Buffalo, read a paper on "The Coefficient of Thermal Conductivity of Eye and Orbit Measured with Cold Applications." Discussed by Drs. Edward Jackson, Denver; Walter B. Lancaster, Boston, and Lucien Howe, Buffalo.

The new chairman, Dr. James Bordley, Jr., presided during the rest of the session.

Dr. William L. Benedict, Rochester, Minn., read a paper on "Early Diagnosis of Pituitary Tumor with Ocular Phenomena." Discussed by Drs. F. Phinizy Calhoun, Atlanta, Ga.; George E. de Schweinitz, Philadelphia; Alfred W. Adson, Rochester, Minn.; Walter R. Parker, Detroit; Allen Greenwood, Boston; George S. Derby, Boston; William Zentmayer, Philadelphia, and William L. Benedict, Rochester, Minn.

Dr. Herbert Moulton, Fort Smith, Ark., read a paper on "Sympathetic Ophthalmia: Report of Four Cases in Which the Condition Was Treated with Large Doses of Sodium Salicylate." Discussed by Drs. James M. Patton, Omaha;

John A. Donovan, Butte, Mont.; E. H. Frederick Frisch, Atlantic City, N. J.; Hugh M. Lokey, Atlanta, Ga., and Herbert Moulton, Fort Smith, Ark.

Drs. Meyer Wiener, St. Louis, and William E. Sauer, St. Louis, presented a paper on "A New Operation for the Relief of Dacryocystitis Through the Nasal Route." Discussed by Drs. William H. Wilder, Chicago; Walter B. Lancaster, Boston; William L. Benedict, Rochester, Minn.; William C. Posey, Philadelphia; Louis D. Green, San Francisco; Earl Whedon, Sheridan, Wyo., and Meyer Wiener, St. Louis.

Dr. John M. Wheeler, New York, read a paper on "Restoration of the Margin and Neighboring Portion of the Eyelid by a Free Graft from the Lower Part of the Eyebrow and the Skin Directly Below It." Discussed by Drs. Nelson M. Black, Milwaukee; William C. Posey, Philadelphia; Gaylord C. Hall, Louisville, Ky., and John M. Wheeler, New York.

The chairman appointed these committees:

Committee to investigate regarding the diagnosis of follicular trachoma: Drs. Henry D. Bruns, New Orleans; E. A. Robin, New Orleans, and Edward C. Ellett, Memphis, Tenn.

Committee on Compensation: Drs. Nelson M. Black, Milwaukee; Harry S. Gradle, Chicago, and Albert C. Snell, Rochester, N. Y.

SECTION ON LARYNGOLOGY, OTOLOGY AND RHINOLOGY

WEDNESDAY, APRIL 28—AFTERNOON

The meeting was called to order at 2:15 by the chairman, Dr. Joseph C. Beck, Chicago.

The chairman announced that in the absence of Dr. Greenfield Sluder, St. Louis, Dr. George M. Coates, Philadelphia, would act as a member of the Executive Committee.

Dr. Joseph C. Beck, Chicago, read the chairman's address, entitled "The Future of Otolaryngology."

It was moved by Dr. William B. Chamberlin, Cleveland, that the presentation of reports as well as papers be limited to fifteen minutes. Seconded and carried.

Dr. Ferris N. Smith, Grand Rapids, Mich., read a paper on "Plastic Surgery: Its Relation to the Otolaryngologist."

Dr. Millard R. Arbuckle, East St. Louis, Ill., read a paper on "Plastic Surgery of the Face." Discussed by Drs. George M. Coates, Philadelphia; George M. Dorrance, Philadelphia; Austin A. Hayden, Chicago; Ferris N. Smith, Grand Rapids, Mich., and Millard F. Arbuckle, East St. Louis, Ill.

Dr. Gordon B. New, Rochester, Minn., read a paper on "Mixed Tumors of the Throat, Mouth and Face." Discussed by Drs. Lee W. Dean, Iowa City; Wendell C. Phillips, New York; John F. Barnhill, Indianapolis; T. E. Carmody, Denver, and Gordon B. New, Rochester, Minn.

Dr. John F. Barnhill, Indianapolis, read a paper on "Thyroid Surgery, Especially as Related to Laryngology." Discussed by Drs. Emil Mayer, New York; Norval H. Pierce, Chicago; Joseph C. Beck, Chicago; T. E. Carmody, Denver, and John F. Barnhill, Indianapolis.

Dr. Robert Sonnenschein, Chicago, read a paper on "The Use and Possible Abuse of Radium in the Treatment of Malignant Tumors of the Nose and Throat." Discussed by Drs. William B. Chamberlin, Cleveland; Cullen F. Welty, San Francisco; Joseph D. Heitger, Louisville, Ky.; G. E. Pfahler, Philadelphia; S. G. Higgins, Milwaukee; Albert F. Tyler, Omaha, and Robert Sonnenschein, Chicago.

Dr. Richmond McKinney, Memphis, Tenn., read a paper on "Misleading Symptoms and Roentgen-Ray Findings in Suspected Mastoid Abscess." Discussed by Drs. Francis P. Emerson, Boston; Cullen F. Welty, San Francisco; G. H. Mundt, Chicago; William B. Chamberlin, Cleveland; E. Lee Myers, St. Louis, and Richmond McKinney, Memphis, Tenn.

THURSDAY, APRIL 29—AFTERNOON

The meeting was called to order at 2:10 by the chairman.

Dr. Joseph D. Heitger, Louisville, Ky., read a paper on "Present Status of Neurotology from the Borderline Standpoint." Discussed by Drs. Harold L. Lillie, Rochester, Minn.; George W. MacKenzie, Philadelphia; Lee W. Dean, Iowa City; Julius Grinker, Chicago, and Joseph D. Heitger, Louisville, Ky.

Dr. Eugene R. Carpenter, Dallas, Texas, read a paper on "Intracranial Lesions Involving the Auditory Vestibular Apparatus." Discussed by Drs. Isaac W. Jones, Los Angeles; Harold I. Lillie, Rochester, Minn.; Tom A. Williams, Washington, D. C.; George W. MacKenzie, Philadelphia; Julius Grinker, Chicago, and Eugene R. Carpenter, Dallas, Texas.

Dr. George W. MacKenzie, Philadelphia, read a paper on "Neurolabyrinthitis Syphilitica." Discussed by Drs. George M. Coates, Philadelphia; Norval H. Pierce, Chicago; Cullen F. Welty, San Francisco; Joseph D. Heitger, Louisville, Ky.; William B. Chamberlin, Cleveland; Harry L. Pollock, Chicago; H. B. Lemere, Omaha; E. Lee Myers, St. Louis, and George W. MacKenzie, Philadelphia.

Dr. Francis P. Emerson, Boston, read a paper on "Clinical Manifestations of the Infection of the Lateral Sinus." Discussed by Drs. Cullen F. Welty, San Francisco; John F. Barnhill, Indianapolis; Lee W. Dean, Iowa City; H. H. Martin, Savannah, Ga.; Leon E. White, Boston, and Francis P. Emerson, Boston.

Dr. Cullen F. Welty, San Francisco, read a paper on "New Method of Closing an Enlarged Tooth Root Opening into the Maxillary Antrum." Discussed by Drs. Joseph A. Stucky, Lexington, Ky.; Joseph C. Beck, Chicago, and Cullen F. Welty, San Francisco.

Dr. William V. Mullin, Colorado Springs, Colo., read a paper on "The Indifference of the Laryngologist Toward Tuberculous Laryngitis and the Tuberculosis Problem." Discussed by Drs. John B. McMurray, Washington, Pa.; T. E. Carmody, Denver; Joseph A. Stucky, Lexington, Ky.; Cullen F. Welty, San Francisco; Carl H. McCaskey, Indianapolis, and William V. Mullin, Colorado Springs, Colo.

Moved by Dr. Leon White, Boston, that this section convene Friday afternoon at 1:30 instead of 2 o'clock, and that exhibition of instruments take place before election of officers. Seconded and carried.

FRIDAY, APRIL 30—AFTERNOON

The meeting was called to order at 1:40 by the chairman.

Dr. Joseph L. Goodwin, Tazewell, Tenn., presented combined forceps and bronchoscope.

Dr. Augustus A. Hayden, Chicago, presented a method of tying knots around a mastoid bandage to keep it smooth and prevent the edges from stretching.

Dr. M. M. Cullom, Nashville, Tenn., presented an adenotome that can be also used as a curet, also a pair of bifocal glasses to be used when examining the nose.

The secretary read the report of the Committee on Caustic Alkalis. It was moved by Dr. Charles W. Richardson, Washington, D. C., that the report be accepted and the committee continued. Seconded and carried.

The secretary read the report of the Committee on Undergraduate and Graduate Teaching of Otolaryngology. It was moved by Dr. Charles W. Richardson, Washington, D. C., that the report be accepted and the committee continued. Seconded and carried.

The following officers were elected: chairman, Ross H. Skillern, Philadelphia; vice chairman, Richmond McKinney, Memphis, Tenn.; secretary, William B. Chamberlin, Cleveland; delegate, John F. Barnhill, Indianapolis.

Dr. Emil Mayer, New York, read the report of the Committee on Necrology. It was moved by Dr. William B. Chamberlin that this report be accepted, that the thanks of the section be extended to Dr. Emil Mayer, New York, for his work in preparing this report, and that the members of the section rise for a moment in honor of the departed members. Seconded and carried.

Dr. Charles W. Richardson, Washington, D. C., read the report of the Committee on the Education of the Deaf Child. It was moved by Dr. Wendell C. Phillips, New York, that the report be accepted. Seconded and carried.

Moved by Dr. Wendell C. Phillips, New York, that the scope of this work be extended to include the deaf child as well as the deaf adult, and that the investigations of this committee be carried out along all lines of deafness. Seconded by Dr. Emil Mayer, New York.

Dr. W. B. Chamberlin, Cleveland, offered an amendment to the effect that the committee be increased from three to five

members, and that the investigation include work along the line of education of the deaf adult. Motion seconded and the amended motion carried.

Dr. Emil Mayer, New York, read a special report on local anesthesia by the Committee on Therapeutic Research.

Moved by Dr. Francis P. Emerson, Boston, that the recommendations of the Committee on Local Anesthesia be adopted; that is, that this section endorse the plan for the investigation of new remedies by members of the American Medical Association, when the Council on Pharmacy has concluded its examinations; also that the chairman appoint a permanent committee of four on the toxic effects of local anesthetics, one member to be the secretary of the section, this committee to report at the next annual meeting. Seconded and carried.

The special report of the Committee on Local Anesthesia was discussed by Dr. Rudolph Matas, New Orleans, and Dr. Carroll W. Allen, New Orleans.

Moved by Dr. S. G. Higgins, Milwaukee, that the discussion of papers be limited to those men whose names appear on the program. Seconded and carried.

The discussion of the report of the Committee on Local Anesthesia was closed by Dr. Emil Mayer, New York.

The newly elected chairman, Dr. Ross H. Skillern, Philadelphia, took the chair.

Dr. Leon E. White, Boston, read a paper on "The Diagnosis and Prognosis of Loss of Vision from Accessory Sinus Disease. Discussed by Drs. S. G. Higgins, Milwaukee, and Leon E. White, Boston.

Dr. Owen Smith, Portland, Maine, read a paper on "Harelip and Cleft Palate." Discussed by Dr. T. E. Carmody, Denver.

Dr. Henry H. Briggs, Asheville, N. C., read a paper on "Relative Value of Transillumination and Roentgenography in the Diagnosis of Disease of the Maxillary and Frontal Sinuses; with Description of an Orbitopalatal Route of Transilluminating the Maxillary Sinus." Discussed by Drs. Joseph C. Beck, Chicago, and H. H. Briggs, Asheville, N. C.

Dr. Robert G. Reaves, Greensboro, S. C., read a paper on "Nerve Blocking for Nasal Surgery." Discussed by Drs. H. H. Martin, Savannah, Ga., and by Robert G. Reaves, Greensboro, S. C.

The chairman announced that the Committee on Local Anesthesia would consist of the old committee with the addition of the secretary of the section.

SECTION ON DISEASES OF CHILDREN

Wednesday, April 28—Morning

The meeting was called to order at 9 o'clock by the chairman, Dr. Fritz B. Talbot, Boston.

Dr. Fritz B. Talbot, Boston, read the chairman's address, entitled "The Future of Pediatrics."

The secretary announced the dinner of the section to be held at the Hotel Grunewald, Thursday evening at 7 o'clock. He also announced that Dr. and Mrs. Laurence R. DeBuys, New Orleans, had invited the section to a tea at their home, Thursday afternoon from 4 to 6.

Dr. John Lovett Morse, Boston, read a paper on "The Treatment of Indigestion in Children." Discussed by Drs. L. W. Hill, Boston; C. G. Grulee, Chicago; L. T. Lewald, New York; I. A. Abt, Chicago, and John L. Morse, Boston.

Dr. Harry M. McClanahan, Omaha, read a paper on "The Treatment of Indigestion in Children from Six to Twelve Years of Age." Discussed by Drs. Laurence R. DeBuys, New Orleans; H. D. Chapin, New York; John Lovett Morse, Boston; Lydia Allen DeVilbiss, Washington, D. C.; G. D. Scott, New York; Fred Moore, Des Moines, Iowa, and Harry M. McClanahan, Omaha.

Dr. C. Hilton Rice, Jr., Montgomery, Ala., read a paper on "The Relation of the Acquired Food Dislikes of Childhood to the Ills of Middle Life." Discussed by Drs. William Walton Butterworth, New Orleans; Fritz B. Talbot, Boston; May G. Wilson, New York; O. M. Gilbert, Boulder, Colo., and C. Hilton Rice, Jr., Montgomery, Ala.

Dr. William A. Mulherin, Augusta, Ga., read a paper on "Three Pertinent Questions on Maternal Feeding." Discussed by Dr. John Lovett Morse, Boston; James D. Love, Jacksonville, Fla.; I. A. Van Zandt, Fort Worth, Texas; A. J. Scott, Jr., Los Angeles; L. H. Roddy, Waco, Texas; William Weston, Jr., Columbia, S. C.; Charles James Bloom, New Orleans, and William A. Mulherin, Augusta, Ga.

Dr. Henry Dwight Chapin, New York, read a paper on "How Pediatric Teaching of Nutrition May Affect the Nation's Welfare." Discussed by Drs. John A. Foote, Washington, D. C.; Lewis W. Hill, Boston, and Henry Dwight Chapin, New York.

Dr. George Dow Scott, New York, read a paper on "The Clinical Value of Vegetable Oils in Certain Abnormal Conditions of Infancy and Childhood." No discussion.

Thursday, April 29—Morning

The meeting was called to order at 9 o'clock by the chairman.

Dr. William Weston, Columbia, S. C., read a paper on "Acrodynia." Discussed by Drs. A. H. Byfield, Iowa City; Joseph Goldberger, Washington, D. C., and William Weston, Columbia, S. C.

Drs. Warren R. Sisson and W. Denis, Boston, presented a paper on "Observations on the Salt Content of Breast Milk." Discussed by Dr. Fritz B. Talbot, Boston.

Dr. Lewis Webb Hill, Boston, read a paper on "Chronic Nephritis in Children." Discussed by Drs. C. F. Wahrer, Fort Madison, Iowa; John Lovett Morse, Boston; G. D. Scott, New York; H. M. McClanahan, Omaha, and Lewis Webb Hill, Boston.

Dr. Edgar J. Huenekens, Minneapolis, presented a paper on "Infantile Spinal Progressive Muscular Atrophy (Werdnig-Hoffmann)." Discussed by Drs. Frank C. Neff, Kansas City, Mo.; John Zahorsky, St. Louis, and Edgar J. Huenekens, Minneapolis.

Dr. Richard S. Eustis, Boston, read a paper on "Newer Ideas of Heart Disease Applied to Pediatrics." Discussed by Drs. George D. Scott, New York; Julius H. Hess, Chicago; A. J. Scott, Jr., Los Angeles; John M. Dodson, Chicago; Isaac A. Abt, Chicago, and Richard S. Eustis, Boston.

Dr. May G. Wilson, New York, read a paper on "Circulatory Reactions in Normal Children after Exercise." Discussed by Drs. Alexander Lambert, New York; Maud Loeber, New Orleans; William St. Lawrence, New York; Laurence R. DeBuys, New Orleans; Fritz B. Talbot, Boston; E. C. Fleischner, San Francisco, and May G. Wilson, New York.

Dr. Henry J. Cartin, Johnstown, Pa., read a paper on "Intubation of the Larynx." Discussed by Drs. Isaac A. Abt, Chicago; L. T. Royster, Norfolk, Va.; A. J. Scott, Jr., Los Angeles; George D. Scott, New York; John Zahorsky, St. Louis; John A. Foote, Washington, D. C.; Howard B. Hamilton, Omaha; Solon G. Wilson, New Orleans, and H. J. Cartin, Johnstown, Pa.

Friday, April 30—Morning

The meeting was called to order at 9 o'clock by the chairman.

The following officers were elected: chairman, Dr. Frank C. Neff, Kansas City, Mo.; vice chairman, Dr. William Weston, Jr., Columbia, S. C.; delegate, Dr. Isaac A. Abt, Chicago.

Dr. Julius P. Sedgwick, Minneapolis, read the subjoined report of the Child Welfare Committee:

Your committee, in submitting its report, desires first to call attention to the resolution adopted at the last annual meeting of the section, wherein its functions are defined:

Resolved, That it is the sense of this meeting that a committee be appointed to consider the question of child welfare more fully during the coming year; that it be instructed to meet with whatever agency it sees fit, submitting its problems to the Council on Health and Public Instruction of the American Medical Association, and to promote the interests of children by bringing the pediatrist of the country into more intimate touch with the movement, by whatever other means may seem expedient.

In June of 1919, after the adjournment of the American Medical Association, a conference was held by your committee with Dr. Anna E. Rude, of the Child Hygiene Division, Children's Bureau, at which

time her attention was called to the attitude of the profession of the country toward the Children's Bureau. A request was made that Miss Julia C. Lathrop of the Children's Bureau should confer with your committee, and representatives of the American Children's Hygiene Association and the American Pediatric Society, in Atlantic City.

This conference was subsequently held, and the two following concurrent criticisms explained to Miss Lathrop: first, that the medical profession was absolutely opposed to the method whereby the state committees for the Children's Year were appointed without any consideration being taken as to the attitude of the medical profession on those appointees; second, that the policy of the Children's Bureau of publishing medical literature under the authorship of lay women was absurd, and conducive to disorganization.

After a plain discussion, it was suggested that the difficulties could be overcome by the appointment to the Child Hygiene Division of the Children's Bureau, of an advisory committee, consisting of one member nominated by the American Medical Association, one member nominated by the American Child Hygiene Association, and one member nominated by the American Pediatric Society.

Inasmuch as the nomination of a member representing the American Medical Association was a function of the Council on Health and Public Instruction, the whole matter was discussed with that council, and the name of Julius H. Hess, suggested by your committee as the representative of the American Medical Association.

Dr. Hess was informed by the Council on Health and Public Instruction, and appointed by Miss Lathrop to this Advisory Committee.

Dr. Julius H. Hess, Chicago, submitted the following report:

Report of the members of the Child Welfare Committee of the Section on Diseases of Children of the American Medical Association, by its nominee to the Advisory Committee to the Division of Child Hygiene of the Children's Bureau:

All of the members of the Advisory Committee, consisting of Richard M. Smith, representing the American Pediatric Society, Dr. Howard C. Carpenter, representing the American Child Hygiene Association, and Dr. Julius H. Hess, representing the American Medical Association, met with Dr. Anna E. Rude, of the Division of Child Hygiene, of the Children's Bureau, in Boston, Oct. 7, 1919. The committee made extensive suggestions for revision of the text of the pamphlet by Dr. Mendenhall on "Infant Feeding." This revised material will probably be submitted to the committee for further suggestions within the next two months. The pamphlet on "Infant Care" by Mrs. Max West has been sent to the members of the committee for advice as to changes in the text, as a preliminary to a meeting of the committee to be held in Chicago, June 3, 1920.

The committee has also suggested the advisability of issuing the pamphlet in the name of the Children's Bureau, with credit for compilation in the preface rather than, as heretofore, on the cover of the pamphlet.

Your committee wishes to express its appreciation for the spirit of cooperation manifested by Dr. Anna E. Rude of the Children's Hygiene Division of the Children's Bureau, toward the Advisory Committee. Only by such cooperation can the best results be achieved.

In view of the tremendous importance of the subject, your section is urged to undertake, through your Child Hygiene Committee, an intensive educational campaign on breast feeding.

Since it seems to be the consensus of opinion of the members of this section that breast feeding should be stressed in every possible way; and inasmuch as there are carried in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION certain advertisements of proprietary infants' foods which are not consistent with this opinion, your committee feels that the matter of their publication should be taken up with the management of THE JOURNAL.

Inasmuch as the various problems in child hygiene require constant attention, your committee further recommends that the chairman-elect of this section appoint a standing committee of five to assume these responsibilities, which committee shall be known as the Child Hygiene Committee on the Section of Diseases of Children of the American Medical Association.

On motion duly made, seconded and unanimously carried, this report was adopted by the section.

Dr. E. C. Fleischner: Mr. Chairman, it has been the custom of the Council on Scientific Assembly of the American Medical Association to hold each year in Chicago a conference with the secretaries of all the sections, in order to have a better understanding of the work of the Scientific Assembly, among the members of the various sections.

The secretary presented the following standing rules to be adopted by the section:

First, no paper shall occupy more than fifteen minutes in its presentation before the section. (Sec. 2, Chap. 11, By-Laws).

"The time allowed for the presentation of a paper before a section shall be limited to fifteen minutes" shall be mandatory, with the exception that the time may be extended by the unanimous consent of those present when the speaker is an invited guest of the section. The section shall not exercise this privilege, to extend the time for the discussion of a paper beyond the time allotted, five minutes, but this time limit shall be mandatory.

Second, with the exception that the reader of the paper may be permitted to close the discussion, a Fellow shall be permitted to take part in the discussion of a paper once and only once.

Third, any Fellow who desires to discuss a paper shall be required to give in writing his name, together with his home and local annual session address to the secretary of the section before he is given the floor. This rule shall be strictly enforced when for the first time in the annual session a Fellow takes part in the discussions of the section.

Fourth, each author shall hand his paper to the secretary of the section after reading. This requirement shall be amplified and emphasized, and shall be construed to require that each author must present to the secretary of the section a finished copy of his paper before he is permitted to present his contribution to the section.

Fifth, each author shall be required to send one synopsis of his paper to each of those listed in the official program to open the discussion of the paper, and these synopses shall be mailed to those assigned to open the discussions, at least ten days before the first day assigned for the meetings of the section.

Sixth, the secretary of the section shall inform himself as to whether or not each member of the Executive Committee of his section expects to be in attendance at each annual session of the Association, and shall transmit to the chairman of the section the information he receives, reporting both who of the Executive Committee of the section plan to be in attendance, and also who will probably not be present.

Seventh, the secretary of the section shall mail a copy of the rules of the section to each Fellow who is assigned to a place on the program of the section.

Eighth, the rules of the section shall be binding on the secretary of the section, who shall have no option, but must enforce them.

Nine, when two or more sections unite for the purpose of a symposium, the officers of the sections united shall select from among their numbers, a chairman, a secretary and an executive committee of three, and the same shall function as the officers of the joint meeting.

On motion duly seconded and carried, the rules were adopted.

It was moved by Dr. Harry M. McClanahan, Omaha, and was duly seconded and carried, that a committee be appointed to wait on Dr. Franklin P. Gegenbach, Denver, and to report back to the section. The chairman appointed as such committee Drs. Harry M. McClanahan, Omaha, and M. L. Turner, Des Moines, Iowa.

Dr. Isaac A. Abt, Chicago, moved that a committee of two be appointed to draw up an appropriate memorial to Dr. Abraham Jacobi, New York, and to present it at the next annual meeting. Seconded and carried. The chairman appointed as such committee Drs. Isaac A. Abt, Chicago, and H. F. Helmholz, Chicago.

Drs. William E. Carter, San Francisco, and Langley Porter, San Francisco, presented a paper on "Observations on Tumors of the Kidney in Children." Discussed by Dr. L. T. LeWald, New York, Sir Humphry Davy Rolleston, London, England, and Dr. W. E. Carter, San Francisco.

Dr. J. Ross Snyder, Birmingham, Ala., read a paper on "The Temporary Teeth Disorders Due to Their Neglect." Discussed by Drs. Julius P. Sedgwick, Minneapolis; Isaac A. Abt, Chicago; W. L. Funkhouser, Atlanta, Ga.; C. F. Wahrer, Fort Madison, Iowa; Laurence R. DeBuys, New Orleans; Fritz B. Talbot, Boston; E. C. Fleischner, San Francisco, and J. Ross Snyder, Birmingham, Ala.

Dr. Turner reported for the committee appointed to call on Dr. F. P. Gegenbach that the Doctor was improving.

Dr. Frederick C. Rodda, Minneapolis, read a paper on "The Coagulation Time of Blood in the New-Born with Special Reference to Cerebral Hemorrhage." Discussed by Drs. Isaac A. Abt, Chicago; John Foote, Washington, D. C.; Howard B. Hamilton, Omaha, and Frederick C. Rodda, Minneapolis.

Dr. Josiah J. Moore, Chicago, read a paper on "The Antiscorbutic Value of Proprietary Baby Foods." Discussed by Dr. Julius H. Hess, Chicago.

Dr. Hugh McCulloch, St. Louis, read a paper on "Studies of the Effect of Diphtheria Toxin on the Heart." Discussed by Drs. Richard S. Eustis, Boston, and Fritz B. Talbot, Boston.

Dr. Thomas D. Parke, Birmingham, Ala., read a paper on "Intramuscular Blood Injections as Nutritional Aids." Discussed by Dr. Fritz B. Talbot, Boston.

Dr. Robert E. Farr, Minneapolis, read a paper on "Local Anesthesia in Infancy and Childhood." Discussed by Drs. Martin B. Tinker, Ithaca, N. Y.; Edgar J. Huenekens, Minneapolis, and Robert E. Farr, Minneapolis.

Dr. William Weston, Columbia, S. C., moved that the thanks of the section be returned to the officers of this section, and to Dr. Laurence R. DeBuys and the other members of the profession in New Orleans, who had contributed so generously toward the success of this meeting. Seconded and carried.

SECTION ON PHARMACOLOGY AND THERAPEUTICS

WEDNESDAY, APRIL 28—MORNING

The meeting was called to order at 9:15 by the chairman, Dr. George W. McCoy, Washington, D. C.

Dr. George W. McCoy read the chairman's address.

Dr. Cary Eggleston, New York, read a paper on "Clinical Observations on the Absorption of Digitalis." Discussed by Drs. Henry A. Christian, Boston; Leonard G. Rowntree, Minneapolis, and Cary Eggleston, New York.

Drs. Frederick M. Allen, J. W. Mitchell and J. W. Sherrill, New York, presented a paper on "The Treatment of Combined Diabetes and Nephritis." Discussed by Drs. George Norris, Philadelphia; Leonard G. Rowntree, Minneapolis, and F. M. Allen, New York.

Dr. Henry A. Christian, Boston, read a paper on "Deficiences in Our Methods of Treatment of Chronic Nephritis." Discussed by Drs. Lewellys F. Barker, Baltimore; George Dock, St. Louis; Nelson W. Janney, Santa Barbara, Calif.; Eugene S. Kilgore, San Francisco, and Henry A. Christian, Boston.

The chairman appointed a nominating committee consisting of Drs. J. T. Halsey, New Orleans, chairman; F. M. Allen, New York, and George B. Roth, Washington, D. C.

In the absence of the other members of the executive committee, the chairman appointed Drs. Leonard G. Rowntree, Minneapolis, and Carl Voegtlin, Washington, D. C., to serve with himself on that committee.

The standard rules of the section were read. It was moved and seconded that the rules be adopted as printed and made effective at once. Carried.

THURSDAY, APRIL 29—AFTERNOON

A joint meeting was held with the Section on Dermatology. For a report of the proceedings, see the minutes of that section.

FRIDAY, APRIL 30—MORNING

The meeting was called to order at 9:05 by the chairman, Dr. George W. McCoy, Washington, D. C.

The following officers were elected: chairman, Leonard G. Rowntree, Minneapolis; vice chairman, Carl Voegtlin, Washington, D. C.; secretary, Cary Eggleston, New York (continued); alternate delegate, Robert A. Hatcher, New York; executive committee, W. A. Bastedo, New York; George W. McCoy, Washington, D. C., and L. G. Rowntree, Minneapolis.

Lewis E. Warren, Chicago, and Robert P. Fishelis, Philadelphia, were elected to Associate Fellowship.

Drs. Leonard G. Rowntree, Albert M. Snell and Frances Ford, Minneapolis, presented a paper on "Factors Affecting the Basal Metabolic Rate." Discussed by Drs. Nelson W. Janney, Santa Barbara, Calif.; H. S. Plummer, Rochester, Minn.; B. C. Lockwood, Detroit, and L. G. Rowntree, Minneapolis.

Drs. Gerardo M. Balboni and Paul D. White, Boston, presented a paper on "Clinical Observations on the Digitalis-Like Action of Squills." Discussed by Drs. J. T. Halsey, New Orleans; Cary Eggleston, New York, and G. M. Balloni, Boston.

Drs. Carl Voegtlin and Homer W. Smith, Washington, D. C., presented a paper on "Quantitative Studies in Chemotherapy." Discussed by Drs. George B. Roth, Gleason C. Lake and Carl Voegtlin, Washington, D. C.

SECTION ON PATHOLOGY AND PHYSIOLOGY

WEDNESDAY, APRIL 28—AFTERNOON

The meeting was called to order at 2:15 by the secretary, Dr. J. J. Moore, Chicago. In the absence of the regular chairman, Dr. Howard T. Karsner, Cleveland, Dr. E. R. Le Count, Chicago, was appointed temporary chairman.

Dr. Benjamin Taylor Terry, Nashville, Tenn., read a paper on "Increasing the Pathologist's Usefulness and Rewards." Discussed by Drs. William C. MacCarty, Rochester, Minn., and B. T. Terry, Nashville, Tenn.

Drs. Joseph Goldberger and George A. Wheeler, Washington, D. C., presented a paper on "Experimental Pellagra in White Male Convicts."

Dr. James W. Babcock, Columbia, S. C., read a paper on "Review of the Recent Reports on Pellagra." These two papers were discussed by Drs. Martin F. Engman, St. Louis; Marcus Haase, Memphis, Tenn.; D. W. Kelly, Winnfield, La.; A. A. Herold, Shreveport, La.; Joseph Goldberger, Washington, D. C., and James Babcock, Columbia, S. C.

Dr. Ludvig Hektoen, Chicago, read a paper on "The Toxic Substances Produced by Hemolytic Streptococci." Discussed by Drs. E. R. Le Count, Chicago; Clyde Brooks, Columbus, Ohio, and Ludvig Hektoen, Chicago.

Drs. Clyde Brooks and Albert M. Bleile, Columbus, Ohio, presented a paper on "Recent Advances in Clinical Blood Pressure Measurement." Discussed by Dr. E. S. Kilgore, San Francisco, and Clyde Brooks, Columbus, Ohio.

Dr. William S. Carter, Galveston, Texas, read a paper on "An Experimental Study of Acidosis Produced by Ether Anesthesia." No discussion.

It was moved, seconded and carried that the following applicants be accepted for associate membership: Thesle T. Job, Oak Park, Ill.; Frank P. McNamara, New Haven, Conn., and James W. Jobling, Nashville, Tenn.

It was moved, seconded and carried that the following foreign guests be admitted to honorary membership: Norman Walker, Edinburgh, Scotland; Col. H. J. Waring, London; Sir Humphry D. Rolleston, London; Dr. E. E. Desmarest, Paris; Dr. Gustave Roussy, Paris; Dr. Jules Voncken, Liége, Belgium, and Dr. Iwaho Tsuchiya, Tokyo, Japan.

It was moved, seconded and carried that the standard rules for the section be adopted as printed.

In the absence of the official executive committee, Drs. D. J. Davis, E. R. Le Count and Ludvig Hektoen, all of Chicago, were asked to serve as a committee.

THURSDAY, APRIL 29—AFTERNOON

The meeting was called to order at 2:10 by the secretary, Dr. J. J. Moore, Chicago. Dr. D. J. Davis, Chicago, was asked to serve as temporary chairman.

Dr. James H. Black, Dallas, Texas, read a paper on "The Development of the Bactericidal Power of Whole Blood and of Antibodies in the Serum." Discussed by Dr. D. J. Davis, Chicago.

Dr. D. J. Davis, Chicago, read a paper on "Some Characteristics of Certain Epidemic Micro-Organisms." No discussion.

Dr. Kenneth M. Lynch, Charleston, S. C., read a paper on "Penetration of the Intestine and Formation of Abdominal Abscess by Endameba Histolytica. No discussion.

Dr. Carleton Dederer, Bay City, Mich., read a paper on "Transplantation of the Kidney and Ovary." Discussed by Drs. V. D. Lespinasse, Chicago; William C. MacCarty, Rochester, Minn.; Clyde Brooks, Columbus, Ohio, and Carleton Dederer, Bay City, Mich.

Dr. William C. MacCarty, Rochester, Minn., read a paper on "A Mathematical Terminology for Neoplasia." Discussed by Drs. D. J. Davis, Chicago; Carleton Dederer, Bay City, Mich., and William C. MacCarty, Rochester, Minn.

Dr. Louis A. Turley, Norman, Okla., read a paper on "Chronic Nephritis with Special Reference to the Interstitial Form." Discussed by Dr. Robert H. Blackman, Shreveport, La.

FRIDAY, APRIL 30—AFTERNOON

The meeting was called to order at 2:10 by the secretary, Dr. J. J. Moore, Chicago. Dr. F. F. Russell, Washington, D. C., was appointed temporary chairman.

The nominating committee, consisting of Drs. A. M. Moody, Chicago, and F. S. Graves, Louisville, Ky., reported the following nominations: Chairman, Dr. E. R. Le Count, Chicago; vice chairman, Dr. William S. Carter, Galveston, Texas; secretary, Dr. J. J. Moore, Chicago, and delegate, Dr. James Ewing, New York. On motion duly made and seconded they were declared elected.

Dr. Ward T. Burdick, Denver, read a paper on "The Wassermann Reaction: Prolonged Incubation in the Icebox Versus a Short Period Over the Water Bath." Discussed by Drs. John A. Kolmer, Philadelphia; C. C. Bass, New Orleans, and Ward Burdick, Denver.

Dr. A. M. Moody, Chicago, read a paper on "Bacterial Vaccines, Their Uses and Abuses." Discussed by Drs. G. W. McCoy, Washington, D. C.; James H. Black, Dallas, Texas; H. J. Nichols, Washington, D. C.; J. J. Moore, Chicago; Herman Spitz, Nashville, Tenn., and A. M. Moody, Chicago.

Dr. F. Stuart Graves, Louisville, Ky., read a paper on "The Value of the Postmortem Wassermann Reaction." Discussed by Drs. A. M. Moody, Chicago; Ward Burdick, Denver; R. G. Owen, Detroit; F. F. Russell, Washington, D. C.; John A. Kolmer, Philadelphia; F. M. Johns, New Orleans, and F. S. Graves, Louisville, Ky.

Dr. John J. Seelman, Milwaukee, read a paper on "Observations on the Quantitative Nature of Complement Fixation." Discussed by Drs. Frank J. Hall, Kansas City, Mo.; Ward Burdick, Denver; F. S. Graves, Louisville, Ky.; W. C. Jones, Birmingham, Ala., and J. J. Seelman, Milwaukee.

Drs. W. Warner Watkins and Clarence N. Boynton, Phoenix, Ariz., presented a paper on "The Complement Fixation Reaction in Tuberculosis." Discussed by Drs. Ward Burdick, Denver; W. H. Harris, New Orleans; F. M. Johns, New Orleans; W. O. Jones, Birmingham, Ala.; Frank J. Hall, Kansas City, Mo., and W. Warner Watkins, Phoenix, Ariz.

SECTION ON NERVOUS AND MENTAL DISEASES

WEDNESDAY, APRIL 28—MORNING

The meeting was called to order by the vice chairman, Dr. Arthur S. Hamilton, Minneapolis.

On motion by Dr. C. R. Woodson, St. Joseph, Mo., carried, Drs. Hugh T. Patrick, Chicago; Karl A. Menninger, Topeka, Kan., and Edward L. Hunt, New York, were appointed as a committee to draft suitable resolutions on the death of Dr. Elmer E. Southard, and report at a subsequent session.

Drs. Ross Moore, Los Angeles; William A. Jones, Minneapolis, and Roy M. Van Wart, New Orleans, were appointed to act on the executive committee.

Dr. Arthur S. Hamilton, Minneapolis, read the chairman's address, entitled "Some Changes in the Nervous System in Pernicious Anemia, Especially Sensory Changes."

Dr. Edmund Jacobson, Chicago, read a paper on "Reduction of Nervous Irritability and Excitement by Progressive Relaxation." Discussed by Drs. Tom A. Williams, Washington, D. C.; Hyman Climenko, New York, and Edmund Jacobson, Chicago.

Dr. Gustave Roussy, professor of medicine, University of Paris, France, was introduced by Dr. Hugh T. Patrick, Chicago. In response to the cordial welcome extended, Professor Roussy expressed his pleasure in being present on this occasion and in meeting with the great American Medical Association, whose name is so well known in France. He expressed pleasure concerning the close association of American and French neurologists which has been brought about through the war, and voiced the desire that the relations of French and American institutions might continue—that the French might come to American colleges and learn of us, and we go to their educational institutions and learn of them, and so cultivate that broad spirit which makes for the best relations between nations.

Dr. Karl A. Menninger, Topeka, Kan., read a paper on "Influenza and Feeblemindedness." Discussed by Drs. Andrew L. Skoog, Kansas City, Mo.; Hyman Climenko, New York; Oscar J. Raeder, Boston; Tom A. Williams, Washington, D. C.; C. F. Neu, Indianapolis, and Karl A. Menninger, Topeka, Kan.

Dr. Sanger Brown, Chicago, read a paper on "Outline of a Scheme for Writing the Natural History of Syphilis." Discussed by Drs. C. R. Woodson, St. Joseph, Mo., and Sanger Brown, Chicago. In concluding his paper, Dr. Brown introduced and moved the adoption of the subjoined preambles and resolutions:

WHEREAS, The deleterious effects of syphilis on the mortality and morbidity of the human race are so prevalent and so severe as to challenge the most serious attention of the medical profession; and

WHEREAS, In the scientific study of any disease, knowledge of its natural history is a matter of cardinal importance; and

WHEREAS, Owing to the protracted course of syphilis, a continuous, complete clinical record of a given case can be secured only through the services of several successive medical observers; and

WHEREAS, It is highly desirable that a sufficient number of completed histories be accumulated and preserved and made easily accessible to students; and

WHEREAS, For the successful accomplishment of the purpose set forth above, the interest and cooperation of the best elements of our profession as represented in the membership of the American Medical Association are necessary; therefore, be it

Resolved, That the Section on Nervous and Mental Diseases of the American Medical Association recognizes the importance of ascertaining the natural history of syphilis and of making the history accessible for the information of students of medicine; and be it further

Resolved, That the Section on Nervous and Mental Diseases of the American Medical Association respectfully requests the trustees of the American Medical Association to appoint a committee from the sections most immediately concerned whose duty it should be to devise practical means and methods of accomplishing the foregoing specified purpose; and be it further

Resolved, That the representatives of the section in the House of Delegates be requested to present these preambles and resolutions to the House of Delegates and to ask its endorsement.

See minutes of the House of Delegates.

Dr. Hugh T. Patrick, Chicago, moved the adoption of the resolutions. Motion seconded by Dr. W. S. Lindsay, Topeka, Kan., and unanimously carried.

The following members were appointed to act as the nominating committee: Drs. George A. Moleen, Denver; Frank R. Fry, St. Louis, and Walter Timme, New York.

Dr. William A. Jones, Minneapolis, read a paper on "Discussion of Therapeutic Agents in Chronic Nervous Diseases." Discussed by Drs. Frank R. Fry, St. Louis; Ross Moore, Los Angeles; C. R. Woodson, St. Joseph, Mo.; Hyman Climenko, New York; W. T. Williamson, Portland, Ore., and William A. Jones, Minneapolis.

Dr. Frank R. Fry, St. Louis, read a paper on "Congenital Facial Paralysis: Two Additional Cases." No discussion.

THURSDAY, APRIL 29—MORNING

The section was called to order by the chairman at 9:30.

Dr. Julius Grinker, Chicago, read a paper on "Experiences with Luminal in Epilepsy." Discussed by Drs. George A. Moleen, Denver; Marvin L. Graves, Galveston, Texas; Andrew L. Skoog, Kansas City, Mo.; David S. Booth, St. Louis; E. Bates Block, Atlanta, Ga.; F. B. Wynn, Indianapolis; Roy M. Van Wart, New Orleans, and Julius Grinker, Chicago.

Dr. Hugh T. Patrick, Chicago, presented the report of the committee appointed to draft resolutions on the death of Dr. Elmer E. Southard, as follows:

WHEREAS, Dr. Elmer E. Southard, who one year ago was elected chairman of the Section on Nervous and Mental Diseases of the American Medical Association and should have presided at this session, has been removed by death: and

WHEREAS, Dr. Southard was a trained pathologist, a gifted neurologist, an able psychiatrist, an author of distinction, a brilliant teacher, a genial companion and a loyal friend; therefore be it

Resolved, That in the death of Dr. Southard the medical profession and especially the departments of neurology and psychiatry have suffered an irreparable loss: and be it further

Resolved, That the members of this section extend to the family of Dr. Southard their profound sympathy.

On motion duly seconded and carried, the foregoing preambles and resolutions were adopted by the section.

Dr. Oscar J. Raeder, Boston, read a paper on "Endocrine Imbalance in the Feebleminded." Discussed by Drs. Tom A. Williams, Washingtong, D. C.; Gustave Roussy, Paris, France; Walter Timme, New York; M. A. Bliss, St. Louis; Andrew L. Skoog, Kansas City; Karl A. Menninger, Topeka, Kan., and Oscar J. Raeder, Boston.

Dr. I. Leon Meyers, Chicago, read a paper on "The Physiologic Significance of the Babinski Toe Response." Discussed by Drs. Andrew L. Skoog, Kansas City; Tom A. Williams,

Washington, D. C.; Gustave Roussy, Paris, France; M. A. Bliss, St. Louis, and I. Leon Meyers, Chicago.

FRIDAY, APRIL 30—MORNING

The meeting was called to order at 9:30 by the chairman.

The following officers were elected for the ensuing year: chairman, Dr. Arthur S. Hamilton, Minneapolis; vice chairman, Dr. Walter Timme, New York; secretary, Dr. Charles W. Hitchcock, Detroit (continued), delegate, Dr. Hugh T. Patrick, Chicago.

Drs. Isador Abrahamson and Hyman Climenko, New York, presented a paper on "Symptomatology of Spinal Cord Tumors with Illustrative Cases." Discussed by Drs. Julius Grinker, Chicago; Alfred W. Adson, Rochester, Minn.; A. L. Skoog, Kansas City, Mo.; Karl A. Menninger, Topeka, Kan.; M. A. Bliss, St. Louis; George A. Moleen, Denver; Tom A. Williams, Washington, D. C., and Hyman Climenko, New York.

Dr. Tom A. Williams, Washington, D. C., read a paper on "The Causes of Emotivity and Their Management." Discussed by Drs. Julius Grinker, Chicago; David S. Booth, St. Louis; Hyman Climenko, New York; Karl A. Menninger, Topeka, Kan.; C. F. Neu, Indianapolis; Ross Moore, Los Angeles; G. H. Benton, Miami, Fla.; Gustave Roussy, Paris, France; George A. Moleen, Denver, and Tom A. Williams, Washington, D. C.

Dr. A. L. Skoog, Kansas City, Mo., read a paper on "Measles: Brain Complications." Discussed by Drs. Karl A. Menninger, Topeka, Kan., and A. L. Skoog, Kansas City.

Dr. E. Bates Block, Atlanta, Ga., read a paper on "The Relation of Worms to Epilepsy." Discussed by Drs. Julius Grinker, Chicago; David S. Booth, St. Louis; Hyman Climenko, New York; Martin L. Graves, Galveston, Texas; Tom A. Williams, Washington, D. C., and E. Bates Block, Atlanta.

Dr. Edward Livingston Hunt, New York, read a paper on "Encephalitis Lethargica." Discussed by Drs. Frank R. Fry, St. Louis; Julius Grinker, Chicago; Tom A. Williams, Washington, D. C.; Ross Moore, Los Angeles; Hyman Climenko, New York; George A. Moleen, Denver; Oscar J. Raeder, Boston; A. L. Skoog, Kansas City, Mo.; Roy M. Van Wart, New Orleans; Albert Woldert, Tyler, Tenn., and David S. Booth, St. Louis.

SECTION ON PREVENTIVE MEDICINE AND PUBLIC HEALTH

WEDNESDAY, APRIL 28—MORNING

The meeting was called to order at 9:35 by the chairman, Dr. James A. Hayne, Columbia, S. C.

Dr. James A. Hayne, Columbia, S. C., read the chairman's address, entitled "The Rights of the Child."

Dr. Erwin A. Peterson, Washington, D. C., read a paper on "What the American Red Cross Can Contribute to the General Health Program." Discussed by Drs. J. W. Schereschewsky, Washington, D. C.; Philip King Brown, San Francisco; John D. McLean, Harrisburg, Pa.; John P. Davin, New York; C. W. Goddard, Austin, Texas; E. Luther Stevens, St. Augustine, Fla., and Erwin A. Peterson, Washington, D. C.

Dr. Frederick L. Hoffman, Newark, N. J., read a paper on "Mortality and Incidence of Leprosy Throughout the World." Discussed by Drs. Isadore Dyer, New Orleans; J. W. Schereschewsky, Washington, D. C.; G. C. Chandler, Shreveport, La.; John P. Davin, New York; Hiram Byrd, University, Miss.; S. W. Welch, Montgomery, Ala.; A. T. McCormack, Louisville, Ky.; V. G. Heiser, New York, and Frederick L. Hoffman, Newark, N. J.

Dr. A. T. McCormack, Louisville, Ky., read the following resolution and moved that it be accepted and presented to the House of Delegates:

WHEREAS, Leprosy is a national menace; therefore, be it

Resolved, That the House of Delegates be requested to ask that the American Public Health Association shall call a national conference to discuss every phase of the problem to the end that the public may be educated to the insidious spread of the disease, the possibility of cure or arrestation in the earliest stage of the disease, and the necessity of segregation.

Motion carried. (See minutes of the House of Delegates.)

Dr. Carroll Fox, Washington, D. C., read a paper on "Minimum Standards of Organization for Municipal Health Departments." Discussed by Drs. G. C. Chandler, Shreveport, La.; Walter H. Brown, Washington, D. C.; A. T. McCormack, Louisville, Ky., and Carroll Fox, Washington, D. C.

Dr. J. A. Watkins, Cincinnati, read a paper on "The Training of Industrial Physicians." Discussed by Drs. J. W. Schereschewsky, Washington, D. C., and Edward Martin, Philadelphia.

The chairman appointed Drs. A. T. McCormack, Louisville, Ky., and John W. Kerr, New York, on the Executive Committee to take the places of Drs. Otto P. Geier, Cincinnati, and W. S. Rankin, Raleigh, N. C.

THURSDAY, APRIL 29—MORNING

Dr. Charles M. Abbott, Alexandria, La., read a paper on "The Carrier Question in Epidemic Meningitis and Diphtheria." Discussed by Drs. L. I. Lobenhoffer, Alexandria, La.; H. J. Nichols, Washington, D. C.; G. W. McCoy, Washington, D. C.; C. A. Earle, Des Plaines, Ill.; A. Parker Hitchins, Indianapolis, and Charles M. Abbott, Alexandria, La.

Dr. Luther A. Riser, Columbia, S. C., read a paper on "Typhoid Reduction in South Carolina: Results in Counties with Health Organization." Discussed by Drs. W. S. Leathers, University, Miss.; J. D. McLean, Harrisburg, Pa.; G. C. Chandler, Shreveport, La.; John A. Ferrell, New York, and Luther A. Riser, Columbia, S. C.

Dr. J. W. Schereschewsky, Washington, D. C., read the following resolution and moved that it be accepted and presented to the House of Delegates:

WHEREAS, The National Tuberculosis Association, through investigations of its Committee on Indigent Migratory Consumptives, covering the last fifteen months, has found:

That there is a large migration of indigent consumptives to the Southwest in search of health;

That out of 1,786 patients, largely indigent or potentially indigent, reported from the Southwest in the last six months, 783, or 41.3 per cent., had been definitely advised to go there by physicians;

That this migration of indigent and potentially indigent consumptives is ill advised in that it causes much needless suffering and loss of life brought on by inadequate care, worry, homesickness and lack of proper food, which are conditions too frequently experienced after arrival; and furthermore,

That the migration of this group is a menace to the public health, both during migration and after arrival, and is a financial drain and social burden to the communities to which the migration goes. Therefore be it

Resolved, That in order to check this unnecessary and undesirable migration, physicians throughout the country be not only requested but urged *not* to advise their tuberculosis patients to migrate to the health resort states, unless such patients have sufficient funds to properly provide for their necessary care and comforts for at least one year.

Dr. Alexander Lambert, New York, presented the following amendment to the foregoing resolution, which amendment was accepted by Dr. J. W. Schereschewsky, Washington, D. C.:

Resolved, That the Section on Preventive Medicine and Public Health hereby requests the House of Delegates to instruct the Council on Health and Public Instruction to investigate and report at the next annual meeting the migration of consumptives from one state to the other throughout the Union, and the number of indigents so foisted on one state by another, and report definite suggestions to prevent this constant undesirable migration.

The resolution, as amended, was duly seconded and carried. (See minutes of the House of Delegates.)

Dr. Lewis A. Conner, New York, read a paper on "Heart Disease as a Public Health Problem." Discussed by Drs. Alexander Lambert, New York; G. C. McKinney, Lake Charles, La.; William H. Mercier, Pittsburgh; John P. Davin, New York; B. A. Ledbetter, New Orleans, and Lewis A. Conner, New York.

Dr. Lunsford D. Fricks, Memphis, Tenn., read a paper on "Eradication of Malaria: A National Health Problem." Discussed by Drs. Graham E. Hensen, Jacksonville, Fla.; A. E. Chace, Texarkana, Ark.; C. C. Bass, New Orleans; W. S. Leathers, University, Miss.; J. W. Schereschewsky, Washington, D. C.; John A. Ferrell, New York; John P. Davin, New York, and Lunsford D. Fricks, Memphis, Tenn.

Dr. John McMullen, Louisville, Ky., read a paper on "Trachoma: A Public Health Problem of the States." Discussed by Dr. Arthur T. McCormack, Louisville, Ky.

Dr. J. Wilkerson Jervey, Greenville, S. C., read a paper on "The Differential Diagnosis of Conjunctival Folliculosis and Trachoma." These two papers were discussed by Drs. Henry Dickson Bruns, New Orleans; Theodore E. Oertel, Augusta, Ga.; James A. Hayne, Columbia, S. C.; Walter H. Brown, Washington, D. C.; S. W. Welch, Montgomery, Ala.; G. Golseth, Jamestown, N. D.; J. G. South, Frankfort, Ky.; John F. Hogan, Baltimore; Hiram Woods, Baltimore; John McMullen, Louisville, Ky., and J. Wilkerson Jervey, Greenville, S. C.

The chairman appointed the following nominating committee: Drs. C. St. Clair Drake, Springfield, Ill.; C. C. Bass, New Orleans, and A. T. McCormack, Louisville, Ky.

FRIDAY, APRIL 30—MORNING

The following officers were elected for the ensuing year: chairman, John D. McLean, Harrisburg, Pa.; vice chairman, C. D. Selby, Toledo, Ohio; secretary (three years), W. S. Leathers, University, Miss., and delegate, James A. Hayne, Columbia, S. C.

Dr. W. A. Sawyer, Rochester, N. Y., read a paper on "Industrial Epidemiology." Discussed by Drs. A. E. Chace, Texarkana, Ark.; John P. Davin, New York; James R. Bean, Birmingham, Ala.; S. W. Welch, Montgomery, Ala., and W. A. Sawyer, Rochester, N. Y.

Dr. A. E. Chace, Texarkana, Ark., read the following resolution and moved that it be accepted and presented to the House of Delegates:

Resolved, That the Section on Preventive Medicine and Public Health condemns the contract entered into by the United States Railroad Administration with railroad employees, whereby physical examination of applicants for employment is prohibited, and that it recommends to the House of Delegates the adoption of some resolution condemning in terms that cannot be mistaken the entering into of a contract with any labor organization prohibiting physical examination.

(Not transmitted to the House of Delegates.)

Dr. E. Luther Stevens, St. Augustine, Fla., presented the following amendment to the foregoing resolution, and moved its adoption:

Resolved, That a committee be appointed to investigate the question raised in the above resolution and report the result of its investigations at the first session of the Section on Preventive Medicine and Public Health at the next annual meeting of the American Medical Association.

The amendment was accepted by Dr. A. E. Chace, Texarkana, Ark., and carried.

Dr. Norman Walker of Edinburgh, Scotland, and Sir Humphry D. Rolleston of the Royal College of Physicians of London, England, who were in attendance at the annual meeting of the American Medical Association, were extended the privileges of the floor of this section.

Dr. Lloyd Noland, Birmingham, Ala., read a paper on "The Work of the Department of Health of the Tennessee Coal, Iron and Railroad Company." Discussed by Drs. S. W. Welch, Montgomery, Ala.; Walter C. Jones, Birmingham, Ala., and Oscar Dowling, New Orleans.

Dr. Grover C. McKinney, Lake Charles, La., read a paper on "The Difficulties of Public Health Administration." Discussed by Drs. G. C. Chandler, Shreveport, La.; James A. Hayne, Columbia, S. C.; H. F. White, Washington, D. C.; T. J. Howells, Salt Lake City; Milton Board, Louisville, Ky.; Mayer A. Newhauser, New Orleans; W. S. Leathers, University, Miss.; W. D. Calvin, Fort Wayne, Ind.; S. W. Welch, Montgomery, Ala.; John P. Davin, New York; Oscar Dowling New Orleans, La., and Grover C. McKinney, Lake Charles, La.

Dr. Florence L. Meredith, New York, read the following resolution and moved it be accepted and presented to the House of Delegates:

WHEREAS, The number of graduates from medical schools in 1919 is reported to be nearly 900 short of the minimum estimated by the Carnegie Foundation as being necessary to carry on adequately the medical work of the country; and

WHEREAS, The growth of public health work calls for an increased number of doctors; and

WHEREAS, Women doctors have proved successful in preventive medicine and public health work; be it

Resolved, That the Section on Preventive Medicine and Public Healtht endorse efforts to enroll women as students in medical schools, and especially recommend to their attention the field of preventive medicine and public health.

After discussion by Drs. Milton Board, Louisville, Ky.; C. C. Bass, New Orleans; W. S. Leathers, University, Miss., and Florence L. Meredith, New York, the motion was carried.

(Not transmitted to the House of Delegates.)

Dr. William Elder, New Orleans, read a paper on "The Necessity for the Reporting of Venereal Disease by Physicians." Discussed by Drs. Oscar Dowling, New Orleans; A. E. Chace, Texarkana, Ark.; W. D. Calvin, Fort Wayne, Ind.; Milton Board, Louisville, Ky.; Hardie R. Hays, North Carrollton, Miss.; H. F. White, Washington, D. C., and William Elder, New Orleans.

SECTION ON DERMATOLOGY AND SYPHILOLOGY

WEDNESDAY, APRIL 28—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman, Dr. Oliver S. Ormsby, Chicago.

Dr. Oliver S. Ormsby, Chicago, read the chairman's address, entitled "A Valuable Method of Employing Arsphenamin in Syphilis."

Dr. William A. Pusey, Chicago, presented the following preambles and resolutions on behalf of Dr. Sanger Brown, Kenilworth, Ill., who has in contemplation an effort to establish a bureau for the standardization of the histories of syphilis so that the end-results may be collated:

WHEREAS, The deleterious effects of syphilis on the mortality and morbidity of the human race are so prevalent and so severe as to challenge the most serious attention of the entire medical profession; and,

WHEREAS, In the scientific study of any disease, knowledge of its natural history is an item of cardinal importance; and

WHEREAS, Owing to the protracted course of syphilis, continuous and complete clinical record of a given case can be secured only through the services of several successive medical observers; and

WHEREAS, It is highly desirable that a sufficient number of completed histories be accumulated and preserved, and made easily accessible to students; and,

WHEREAS, For the successful accomplishment of the purpose set forth above, the interest and cooperation of a considerable number of the best elements of our profession as represented in the membership of the American Medical Association are necessary, therefore be it

Resolved, (1) That the Section on Dermatology and Syphilology recognizes the importance of ascertaining the natural history of syphilis and of making this history accessible and in form serviceable to students of medicine; further

Resolved, (2) That the Section on Dermatology and Syphilology respectfully requests the trustees of the American Medical Association to appoint a committee from the sections most immediately concerned, whose duty it shall be to devise practical means and methods of accomplishing the foregoing specified purpose; and further,

Resolved, (3) That the representatives of this section in the House of Delegates be requested to present these preambles and resolutions to the House of Delegates, and to ask its endorsement.

Dr. Pusey moved that these resolutions be adopted and transmitted to the House of Delegates as the expression of the opinion of those in attendance at this meeting. Seconded by Dr. Richard L. Sutton, Kansas City, Mo., and several others. Carried.

(See minutes of the House of Delegates.)

The chairman appointed a nominating committee consisting of Drs. Howard Morrow, San Francisco; William H. Mook, St. Louis, and Henry R. Varney, Detroit.

The following papers were read as a symposium on "Syphilis":

Dr. B. Barker Beeson, Chicago: "Polyneuritis Plus Dermatitis Exfoliativa Following Neo-Arsphenamin."

Dr. George M. Olson, Minneapolis: "Arsphenamin Dermatitis."

Drs. Harold N. Cole and Sidney Littman, Cleveland: "A Study of the Absorption of Mercury Injections by Means of the Roentgen Ray."

Dr. Paul A. O'Leary, Rochester, Minn.: "The Value of the Provocative Wassermann Test in the Diagnosis of Obscure Syphilis."

These four papers were discussed by Drs. Richard L. Sutton, Kansas City, Mo.; Arthur W. Stillians, Chicago; Augustus Ravogli, Cincinnati; Samuel E. Sweitzer, Minneapolis; William H. Mook, St. Louis; Howard Morrow, San Francisco; Ernest L. McEwen, Chicago; William Allen Pusey, Chicago; F. W. Cregor, Indianapolis; John H. Stokes, Rochester, Minn.; Walter J. Highman, New York; W. D. Calvin, Fort Wayne, Ind.; I. L. McGlasson, San Antonio, Texas; B. Barker Beeson, Chicago, and Harold N. Cole, Cleveland.

Dr. Howard Fox, New York, and D. J. Edgar Fisher, Pittsburg, presented a paper on "Protein Sensitization in Eczema." Discussed by Drs. John H. Stokes, Rochester, Minn.; Walter J. Highman, New York, and Norman Walker, Edinburgh, Scotland.

Dr. Richard L. Sutton, Kansas City, Mo., read a paper on "Infectious Eczematoid Dermatitis." Discussed by Drs. Francis E. Senear, Chicago; Augustus Ravogli, Cincinnati; Everett S. Lain, Oklahoma City; Ernest L. McEwen, Chicago; Harold N. Cole, Cleveland; William A. Quinn, Chicago; J. N. Roussel, New Orleans; William H. Mook, St. Louis; M. J. Farber, St. Joseph, Mo., and Richard L. Sutton, Kansas City, Mo.

Drs. Jerome Kingsbury and Paul E. Bechet, New York, presented a paper entitled "Venipuncture as an Occasional Adjuvant in the Treatment of Certain Diseases of the Skin." Discussed by Drs. John H. Stokes, Rochester, Minn.; William Allen Pusey, Chicago; Augustus Ravogli, Cincinnati; F. W. Cregor, Indianapolis; Howard Fox, New York, and Paul E. Bechet, New York.

Thursday, April 29—Afternoon

A joint meeting was held with the section on Pharmacology and Therapeutics. The meeting was called to order at 2 o'clock by the chairman of the Section on Dermatology and Syphilology, Dr. Oliver S. Ormsby, Chicago.

The following papers were read as a symposium on "Arsphenamin":

Dr. George W. Raiziss, Philadelphia: "The Chemical Composition of Arsphenamin and Neo-Arsphenamin and Its Relation to Toxicity."

Drs. John A. Kolcer and Baldwin Lucke, Philadelphia: "The Pathology of Arsphenamin and Neo-Arsphenamin Intoxication: An Experimental Study."

Dr. George B. Roth, Washington, D. C.: "Some Salient Facts Regarding the Toxicity of Arsphenamin and Neo-Arsphenamin."

Dr. John H. Stokes, Rochester, Minn.: "Therapeutic Applications and Limitations of the Arsphenamins."

Dr. Joseph A. Elliott, Charlotte, N. C.: "Effects of Arsphenamin on Renal Function in Syphilitic Patients."

Drs. Henry J. Nichols and Mathew A. Reasoner, Washington, D. C.: "The Use of Arsphenamin in Nonsyphilitic Diseases."

Dr. Dudley D. Stetson, New York: "Report on the Use of a Permanent Solution of Arsphenamin."

These seven papers were discussed by Drs. William Allen Pusey, Chicago; William H. Guy, Pittsburgh; Richard L. Sutton, Kansas City, Mo.; Augustus Ravogli, Cincinnati; Ernest L. McEwen, Chicago; Charles M Williams, New York; George W. McCoy, Washington, D. C.; Harold N. Cole, Cleveland; Julius Grinker, Chicago; Alec N. Thomson, Brooklyn; J. N. Roussel, New Orleans; Marion H. Foster, Alexandria, La.; Otto Lowy, Newark, N. J.; M. J. Farber, St. Joseph, Mo.; Arthur W. Stillians, Chicago; W. D. Calvin, Fort Wayne, Ind.; Walter J. Highman, New York; Paul E. Bechet, New York; George P. Lingenfelter, Denver; Cary Eggleston, New York; W. T. Watson, Baltimore; George W. Raiziss, Philadelphia; John A. Kolmer, Philadelphia; George B. Roth, Washington, D. C.; John H. Stokes, Rochester, Minn.; Dudley D. Stetson, New York, and Major Henry J. Nichols, Washington, D. C.

Friday, April 30—Afternoon

The meeting was called to order at 2 o'clock by the chairman, Dr. Oliver S. Ormsby, Chicago.

The following officers were elected for the ensuing year: chairman, Dr. Walter J. Highman, New York; vice chairman, Dr. Everett S. Lain, Oklahoma City; secretary, Dr. Harold N. Cole, Cleveland; delegate, Dr. Howard Fox, New York.

The following papers were presented as a symposium on "New Growths":

Dr. Everett S. Lain, Oklahoma City: "A Clinical Study of Epitheliomas of the Lower Lip."

Dr. Charles M. Williams, New York: "Malignant Degeneration of Benign Dermatoses."

Dr. Earl D. Crutchfield, Galveston, Texas: "Malignant Tumors of the Skin."

Dr. Erwin F. Smith, Washington, D. C.: "Production of Tumors in the Absence of Parasites."

Dr. George E. Pfahler, Philadelphia: "The Treatment of Keloid and Hypertrophied Scars by Radiotherapy Alone or Combined with Excision."

These five papers were discussed by Drs. Norman Walker, Edinburgh, Scotland; William C. MacCarty, Rochester, Minn.; John E. Lane, New Haven, Conn.; Augustus Ravogli, Cincinnati; William H. Guy, Pittsburgh; J. H. King, Nashville, Tenn.; Richard L. Sutton, Kansas City, Mo.; Harold N. Cole, Cleveland; Howard Morrow, San Francisco; George E. Pfahler, Philadelphia; Everett S. Lain, Oklahoma City; Charles M. Williams, New York; Earl D. Crutchfield, Galveston, Texas, and Erwin F. Smith, Washington, D. C.

Drs. Samuel E. Sweitzer and Henry E. Michelson, Minneapolis, presented a paper on "Acidosis in Skin Diseases." Discussed by Drs. Richard L. Sutton, Kansas City, Mo.; Augustus Ravogli, Cincinnati, and Samuel E. Sweitzer, Minneapolis.

Dr. Francis E. Senear, Chicago, read a paper on "Lichen Spinulosus and Folliculitis Decalvans: A Clinical Combination." Discussed by Drs. J. H. King, Nashville, Tenn.; F. W. Cregor, Indianapolis; Walter J. Highman, New York; Oliver S. Ormsby, Chicago, and Francis E. Senear, Chicago.

Dr. Ernest L. McEwen, Chicago, read a paper on "The Association of Herpes Zoster and Varicella." Discussed by Drs. Oliver S. Ormsby, Chicago; Everett S. Lain, Oklahoma City; George P. Lingenfelter, Denver; J. H. King, Nashville; Walter J. Highman, New York; Richard L. Sutton, Kansas City, Mo., and Ernest L. McEwen, Chicago.

Dr. Lyle B. Kingery, Ann Arbor, Mich., read a paper on "The Histogenesis of Molluscum Contagiosum." Discussed by Drs. J. H. King, Nashville; Walter J. Highman, New York, and Lyle B. Kingery, Ann Arbor, Mich.

SECTION ON UROLOGY

Wednesday, April 28—Morning

The meeting was called to order at 9:20 by the chairman, Dr. William E. Lower, Cleveland.

Dr. Lower read the chairman's address, entitled "Disposition of the Ureter in Surgical Conditions of the Bladder Involving the Ureteral Orifices."

Dr. Benjamin A. Thomas, Philadelphia, read a paper on "The Treatment of Bladder Tumors with Analysis of Cases," and gave a demonstration of slides and instruments.

Drs. Walter E. Sistrunk and E. Starr Judd, Rochester, Minn., presented a paper on "Results of Surgical Treatment of Tumors of the Bladder."

These two papers were discussed by Drs. B. C. Corbus, Chicago; Victor D. Lespinasse, Chicago; Arthur B. Cecil, Los Angeles; Abraham Hyman, New York; Henry J. Scherck, St. Louis; Arthur H. Curtis, Chicago; James A. Gardner, Buffalo; Herman L. Kretschmer, Chicago; George E. Pfahler, Philadelphia; Albert E. Goldstein, Baltimore; H. W. E. Walther, New Orleans; A. J. Crowell, Charlotte, N. C.; Benjamin A. Thomas, Philadelphia, and Walter E. Sistrunk, Rochester.

Dr. Percy E. McCown, Indianapolis, read a paper on "Papillomatous Epithelioma of Kidney Pelvis." Discussed by Drs. W. F. Braasch, Rochester, Minn.; C. M. Harpster,

Toledo, Ohio; W. E. Stevens, San Francisco; Abraham Hyman, New York; Herman L. Kretschmer, Chicago; Albert E. Goldstein, Baltimore; William E. Lower, Cleveland, and Percy E. McCown, Indianapolis.

The chairman appointed Drs. Harry A. Fowler, Washington, D. C., and Courtney W. Shropshire, Birmingham, to fill the vacancies on the executive committee caused by the absence of Drs. Hugh Cabot, Ann Arbor, Mich., and Edward L. Keyes, New York.

THURSDAY, APRIL 29—MORNING

The meeting was called to order at 9:10 by the chairman.

The chairman appointed the following nominating committee: Drs. James A. Gardner, Buffalo; W. F. Braasch, Rochester, Minn., and Carl L. Wheeler, Lexington, Ky.

Dr. Arthur B. Cecil, Los Angeles, read a paper on "Abdominal Pain in Diseases of the Kidney and Ureters." Discussed by Drs. William E. Stevens, San Francisco; W. F. Braasch, Rochester, Minn.; Harry A. Fowler, Washington, D. C.; Abraham Hyman, New York; Albert E. Goldstein, Baltimore; William E. Lower, Cleveland, and Arthur B. Cecil, Los Angeles.

Drs. Herman L. Kretschmer and Henry F. Helmholz, Chicago, presented a paper on "Studies of Pyelitis in Infancy." Discussed by Drs. W. F. Braasch, Rochester, Minn.; I. L. Van Zandt, Fort Worth, Texas; Marcell Hartwig, Los Angeles; Abraham Hyman, New York; Henry J. Scherck, St. Louis; Arthur B. Cecil, Los Angeles; William E. Stevens, San Francisco; B. C. Willis, Rocky Mount, N. C., and Herman L. Kretschmer, Chicago.

Drs. Abraham Hyman and Edwin Beer, New York, presented a paper on "Nephrectomy: Based on the Record of 250 Cases." Discussed by Dr. Arthur B. Cecil, Los Angeles.

Dr. Albert E. Goldstein, Baltimore, read a paper on "Ureteral Obstruction and Dilatation in the Male." Discussed by Drs. H. W. E. Walther, New Orleans; W. F. Braasch, Rochester, Minn.; Abraham Nelken, New Orleans; James A. Gardner, Buffalo; Herman L. Kretschmer, Chicago; C. M. Harpster, Toledo; Abraham Hyman, New York; A. J. Crowell, Charlotte, N. C., and Albert E. Goldstein, Baltimore.

Dr. William F. Braasch, Rochester, Minn., read a paper on "Occluded Renal Tuberculosis." Discussed by Drs. Joseph Hume, New Orleans; Herman L. Kretschmer, Chicago; Henry McClure Young, St. Louis; A. J. Crowell, Charlotte, N. C.; Harry A. Fowler, Washington, D. C., and W. F. Braasch, Rochester, Minn.

Dr. Ernest M. Watson, Buffalo, read a paper on "Developmental Factors in the Formation of Certain Vesical Diverticula." Discussed by Drs. Victor D. Lespinasse, Chicago; William E. Lower, Cleveland, and Ernest M. Watson, Buffalo.

FRIDAY, APRIL 30—MORNING

The meeting was called to order at 9 o'clock by the chairman.

The following officers were elected for the ensuing year: chairman, Dr. Richard F. O'Neil, Boston; vice chairman, Dr. Joseph Hume, New Orleans; secretary (for three years), Dr. Herman L. Kretschmer, Chicago; executive committee, Dr. Edward L. Keyes, Jr., New York; Dr. William F. Braasch, Rochester, Minn., Dr. William E. Lower, Cleveland; delegate, Dr. E. O. Smith, Cincinnati; alternate, Dr. Henry G. Bugbee, New York.

Dr. James A. Gardner, Buffalo, read a paper on "Contraindications to Prostatectomy." Discussed by Drs. Herman L. Kretschmer, Chicago; Arthur B. Cecil, Los Angeles; E. G. Ballenger, Atlanta; Harry A. Fowler, Washington, D. C.; J. J. Gilbride, Philadelphia; A. J. Crowell, Charlotte, N. C.; William E. Lower, Cleveland; Victor D. Lespinasse, Chicago, and James A. Gardner, Buffalo.

Dr. Harry A. Fowler, Washington, D. C., read a paper on "Ulcer of the Bladder—Hunner Type." Discussed by Drs. Arthur B. Cecil, Los Angeles; Loyd Thompson, Hot Springs, Ark.; James A. Gardner, Buffalo; C. M. Harpster, Toledo, Ohio; H. W. E. Walther, New Orleans, and Harry A. Fowler, Washington, D. C.

Dr. George H. Day, Louisville, read a paper on "Urologic and Venereal Idiosyncrasies in the Negro." Discussed by Drs. Thomas M. Paul, St. Joseph, Mo.; G. E. Johnson, Holly Springs, Miss., and Victor D. Lespinasse, Chicago.

Drs. William E. Stevens and Maurice Heppner, San Francisco, presented a paper on "Gonorrhea of the Lower Genito-Urinary Tract in Women, with Special Reference to the Glands of Bartholin." Discussed by Drs. E. G. Ballenger, Atlanta; Herman L. Kretschmer, Chicago; George H. Day, Louisville; Abraham Nelken, New Orleans; A. J. Crowell, Charlotte, N. C., and William E. Stevens, San Francisco.

Dr. E. G. Ballenger, Atlanta, read a paper on "Orchitis from Mumps: Conservation of the Testes by Incision of the Tunica Albuginea." Discussed by Drs. Victor D. Lespinasse, Chicago, and E. G. Ballenger, Atlanta.

Dr. Victor D. Lespinasse, Chicago, read a paper on "Spermatogenesis in Relation to Childlessness." Discussed by Drs. Albert E. Goldstein, Baltimore; A. J. Crowell, Charlotte, N. C., and Dr. Victor D. Lespinasse, Chicago.

SECTION ON ORTHOPEDIC SURGERY

WEDNESDAY, APRIL 28—AFTERNOON

The section was called to order at 2:15 by the vice chairman, Dr. Roland Hammond, Providence, R. I.

In absence of Dr. Emil S. Geist, Minneapolis, a member of the Executive Committee, Dr. Edward S. Hatch, New Orleans, was appointed by the chairman to fill Dr. Geist's place.

Dr. Frank E. Peckham, Providence, R. I., read a paper on "Orthopedic Conditions Directly Due to Sterilized Food in Infancy." Discussed by Drs. Maurice L. Blatt, Chicago; L. C. Spencer, New Orleans; Albert H. Byfield, Iowa City; Gustave Lippmann, St. Louis; J. D. Griffith, Kansas City, Mo., and Frank E. Peckham, Providence, R. I.

Dr. Leo Eloesser, San Francisco, read a paper on "Operations for Repair of Bone Defects: Results Obtained at Letterman General Hospital." Discussed by Drs. Dean F. Winn, Staten Island, N. Y.; Harry M. Sherman, San Francisco; Edwin W. Ryerson, Chicago; Frederick J. Gaenslen, Milwaukee; H. Winnett Orr, Lincoln, Neb.; Philip Lewin, Chicago; B. G. Chollett, Toledo, Ohio; Paul A. McIlhenny, New Orleans, and Leo Eloesser, San Francisco.

Dr. J. Spencer Davis, Dallas, Texas, and Jacob J. Sybenga, Pella, Iowa, presented a paper on "Results of Bone Graft at U. S. Army Hospital No. 3."

Dr. Albert H. Freiberg, Cincinnati, arose to the point of order that the demonstration was in conflict with one of the rules of the American Medical Association, in that the material presented and pictures shown have appeared in a book published by Dr. Frederick H. Albee. The chairman sustained the objection, but ruled that moving pictures of illustrative cases might be shown, any discussion to be limited to these. The film was then presented and discussed by Drs. Paul B. Magnuson, Chicago; L. C. Spencer, New Orleans; Willis C. Campbell, Memphis, Tenn., and J. Spencer Davis, Dallas, Texas.

The following papers were read as a symposium on "Treatment of Infantile Paralysis":

De Forest P. Willard, Philadelphia: "Transverse Horizontal Section of the Tarsus in Paralytic Calcaneus and Flail Foot."

H. Winnett Orr, Lincoln, Neb.: "Indications for and End-Results of Surgical Operations in Infantile Paralysis."

Frederick J. Gaenslen, Milwaukee: "Sling Suspension Method of Exercises in Infantile Paralysis."

These three papers were discussed by Drs. John D. Ridlon, Chicago; Willis K. West, Oklahoma City; Clarence W. East, Springfield, Ill.; George E. Bennett, Baltimore; Frank R. Ober, Boston; Walter G. Stern, Cleveland; Edwin W. Ryerson, Chicago; Albert H. Freiberg, Cincinnati; O. L. Miller, Atlanta, Ga.; R. W. Billington, Nashville, Tenn.; G. D. Marshall, Kokomo, Ind.; Horace R. Allen, Indianapolis;

DeForest P. Willard, Philadelphia; H. Winnett Orr, Lincoln, Neb., and Frederick J. Gaenslen, Milwaukee.

THURSDAY, APRIL 29—AFTERNOON

The section was called to order by the acting chairman at 2:15.

Dr. Wallace Blanchard, Chicago, read a paper on "Anterior Bow-Legs." Discussed by Drs. Willis C. Campbell, Memphis, Tenn., and Wallace Blanchard, Chicago.

Dr. Roland Hammond, Providence, R. I., read the chairman's address, entitled "Constructive Versus Reconstructive Surgery of the Extremities."

Dr. Robert B. Cofield, Cincinnati, read a paper on "Some of the Difficulties in the Diagnosis of Osteosarcoma." Discussed by Drs. Frederick J. Gaenslen, Milwaukee; Melvin S. Henderson, Rochester, Minn.; Harry E. Mock, Chicago; Edwin W. Ryerson, Chicago; J. D. Griffith, Kansas City, Mo.; Harry M. Sherman, San Francisco; Willis C. Campbell, Memphis, Tenn.; Robert Carothers, Cincinnati, and Robert B. Cofield, Cincinnati.

Dr. Walter G. Stern, Cleveland, read a paper on "Dislocation of the Carpal Semilunar Bone." Discussed by Drs. Edward S. Hatch, New Orleans; T. Turner Thomas, Philadelphia; DeForest P. Willard, Philadelphia; Melvin S. Henderson, Rochester, Minn., and Walter G. Stern, Cleveland.

Dr. T. Turner Thomas, Philadelphia, read a paper on "Recurrent Dislocations and Allied Chronic Conditions of the Shoulder." Discussed by Drs. Melvin S. Henderson, Rochester, Minn.; Alfred C. Wood, Philadelphia; John T. O'Ferrall, New Orleans; C. L. Storey, Detroit, and T. Turner Thomas, Philadelphia.

Dr. Albert H. Freiberg, Cincinnati, read a paper on "The Objective Symptoms of Foot Strain." Discussed by Drs. John L. Porter, Chicago; Paul B. Magnuson, Chicago, and Albert H. Freiberg, Cincinnati.

Dr. Horace R. Allen, Indianapolis, read a paper on "Unstandardized Versus Standardized Splints." Discussed by Drs. H. Winnett Orr, Lincoln, Neb.; Frank R. Ober, Boston; R. W. Billington, Nashville, Tenn.; Edwin W. Ryerson, Chicago; John Ridlon, Chicago; C. L. Storey, Detroit, and Horace R. Allen, Indianapolis.

FRIDAY, APRIL 30—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman.

The following officers were elected: chairman, Dr. Melvin S. Henderson, Rochester, Minn.; vice chairman, Dr. H. Winnett Orr, Lincoln, Neb.; secretary, Dr. Henry Bascom Thomas, Chicago (continued); delegate, Dr. John Ridlon, Chicago.

In order to have three members of the executive committee pass on the paper of Dr. Albert H. Freiberg, who is a member of that committee, the chairman appointed Dr. J. P. Lord, Omaha, to pass on this paper.

Dr. John O. Bower, Philadelphia, read a paper on "Operative Treatment of Peripheral Nerve and Associated Bone Lesions in One Stage." Discussed by Drs. Karl W. Ney, Staten Island, N. Y.; L. C. Spencer, New Orleans; Edwin W. Ryerson, Chicago, and John O. Bower, Philadelphia.

The following papers were read as a symposium on "Restoration of the Disabled."

Dr. Harry E. Mock, Chicago: "Reclamation Service for Workmen Permanently Handicapped in Industry."

Dr. Carroll L. Storey, Detroit: "Progress in the Care of Cripples."

These two papers were discussed by Drs. Alfred H. Freiberg, Cincinnati; John T. O'Ferrall, New Orleans; Frank G. Murphy, Chicago; H. Winnett Orr, Lincoln, Neb.; Clarence W. East, Springfield, Ill.; J. D. Griffith, Kansas City, Mo.; Colby W. Rucker, Washington, D. C.; Paul B. Magnuson, Chicago; J. S. Millard, Akron, Ohio; Walter G. Stern, Cleveland; Harry E. Mock, Chicago, and Carroll L. Storey, Detroit.

Dr. Robert D. Schrock, Omaha, read a paper on "Intra-Articular Fractures." Discussed by Drs. Paul A. McIlhenny, New Orleans; Walter G. Stern, Cleveland; Albert H. Freiberg, Cincinnati; Melvin S. Henderson, Rochester, Minn.; Harry M. Sherman, San Francisco; Horace R. Allen, Indianapolis; Edwin W. Ryerson, Chicago; Willis K. West, Oklahoma City, and Robert D. Schrock, Omaha.

Dr. William L. Estes, Jr., South Bethlehem, Pa., read a paper on "The Occurrence and Causes of Functional Scoliosis in College Men." Discussed by Drs. Edwin W. Ryerson, Chicago; Melvin S. Henderson, Rochester, Minn.; Harry M. Sherman, San Francisco, and William L. Estes, Jr., South Bethlehem, Pa.

On motion, carried, a rising vote of thanks was extended to the chairman for the efficient manner in which the meeting had been conducted. Also unanimous vote of thanks was extended to the orthopedic surgeons of New Orleans for the painstaking way in which the details of social and professional entertainment had been carried out.

SECTION ON GASTRO-ENTEROLOGY AND PROCTOLOGY

WEDNESDAY, APRIL 28—AFTERNOON

The meeting was called to order at 2 p. m. by the chairman, Dr. Frank Smithies, Chicago.

Dr. Frank Smithies, Chicago, read the chairman's address, entitled "The Significance of Etiologic Factors in the Treatment of Peptic Ulcer."

Drs. George Reese Satterlee, New York, and Henry A. Cotton, Trenton, N. J., presented a paper on "Fractional Gastric Analyses." Discussed by Drs. J. Rawson Pennington, Chicago; John J. Gilbride, Philadelphia; W. H. Axtell, Washington, D. C., and George Reese Satterlee, New York.

Dr. J. Rawson Pennington, Chicago, read a paper on "The Differential Diagnosis of Amebiasis, Tuberculosis, Syphilis and Carcinoma, as Manifested in the Rectum and Pelvic Colon." Discussed by Drs. W. H. Stauffer, St. Louis; Sidney K. Simon, New Orleans; Ralph W. Jackson, Fall River, Mass.; John W. Draper, New York; William M. Beach, Pittsburgh; L. J. Hirschman, Detroit, and Frank Smithies, Chicago.

Dr. Edward G. Martin, Detroit, read a paper on "Hemorrhoidectomy: Composite Operation." Discussed by Drs. James A. Duncan, Toledo, Ohio; J. Rawson Pennington, Chicago; John J. Gilbride, Philadelphia, and Edward G. Martin, Detroit.

Dr. James T. Case, Battle Creek, Mich., read a paper on "Diverticula of the Small Intestine Other than Meckel's Diverticulum." Discussed by Drs. L. T. Lewald, New York; L. J. Hirschman, Detroit; A. A. Strauss, Chicago, and James T. Case, Battle Creek, Mich.

Dr. Ernest Clyde Fishbaugh, Los Angeles, read a paper on "Hypotension Headache in Relation to Constipation." Discussed by Drs. Elsworth S. Smith, St. Louis, and Ernest Clyde Fishbaugh, Los Angeles.

Dr. M. Milton Portis, Chicago, read a paper on "Diaphragmatic Hernia Diagnosed During Life." Discussed by Drs. James T. Case, Battle Creek, Mich.; Ernest Clyde Fishbaugh, Los Angeles; W. O. Nisbet, Charlotte, N. C.; F. A. Speik, Los Angeles, and M. Milton Portis, Chicago.

THURSDAY, APRIL 29—AFTERNOON

The chairman announced the appointment of Drs. R. Walter Mills, St. Louis; H. G. Walcott, Dallas, Texas, and J. R. Pennington, Chicago, to act as a nominating committee.

The following papers were read as a symposium on "Gastric and Duodenal Ulcers":

Dr. A. C. Ivy, Chicago: "Further Studies on Gastric and Duodenal Ulcer."

Dr. Elmer L. Eggleston, Battle Creek, Mich.: "Critical Review of Five Hundred Cases of Gastric and Duodenal Ulcer."

Dr. Israel O. Palefski, New York: "Intubation and Visualization of the Duodenum with the Duodenal Tube as a Diagnostic Procedure in Duodenal Ulcer and Periduodenal Adhesions: Summary of Findings of Three Hundred and Sixty-One Established Cases."

Dr. Angelo L. Soresi, New York: "Specialization in the Medical and Surgical Treatment of Ulcer of the Stomach and Duodenum."

These four papers were discussed by Drs. A. J. Ochsner, Chicago; Charles H. Neilson, St. Louis; Sidney K. Simon, New Orleans; J. S. Horsley, Richmond, Va.; Milton M. Portis, Chicago; John J. Gilbride, Philadelphia; J. A. Storck, New Orleans; Alfred A. Strauss, Chicago; J. M. Rector, Columbus, Ohio; A. C. Ivy, Chicago; Elmer L. Eggleston, Battle Creek, Mich.; Israel O. Palefski, New York, and Angelo L. Soresi, New York.

Dr. John W. Draper, New York, read a paper on "What Is Being Done for the Insane by Means of Surgery." Discussed by Drs. A. J. Ochsner, Chicago; Robert T. Morris, New York; Henry A. Cotton, Trenton, N. J.; G. R. Satterlee, New York, and John W. Draper, New York.

FRIDAY, APRIL 30—AFTERNOON

The following officers were elected for the ensuing year: chairman, Louis J. Hirschman, Detroit; vice chairman, H. W. Soper, St. Louis; secretary, Franklin W. White, Boston; delegate, Alois B. Graham, Indianapolis; alternate delegate, Sidney K. Simon, New Orleans.

The chairman announced the appointment of Drs. Anthony Bassler, New York; William M. Beach, Pittsburgh, and Frank Smithies, Chicago, as members of the Executive Committee for the ensuing year.

Dr. William H. Stauffer, St. Louis, read a paper on "Mucous Colitis." Discussed by Drs. Bertha Van Hoosen, Chicago; H. G. Walcott, Dallas, Texas; Louis J. Hirschman, Detroit; J. Rawson Pennington, Chicago; Sidney K. Simon, New Orleans; Ralph W. Jackson, Fall River, Mass.; J. M. Rector, Columbus, Ohio; Frank Smithies, Chicago, and William H. Stauffer, St. Louis.

Dr. J. Russell Verbrycke, Jr., Washington, D. C., read a paper on "Modification of Intestinal Flora." Discussed by Drs. Frank Smithies, Chicago, and J. Russell Verbrycke, Jr., Washington, D. C.

Dr. William S. Newcomet, Philadelphia, read a paper on "Arthritic Changes in the Spine and Their Relation to the Roentgenologic Study of the Gastro-Intestinal Tract." Discussed by Drs. Julius Grinker, Chicago; E. H. Skinner, Kansas City, Mo., and William S. Newcomet, Philadelphia.

Dr. Edward H. Skinner, Kansas City, Mo., read a paper on "The Roentgenology of the Appendix: The Significance of the Opaque Filling in Chronic Appendicitis." Discussed by Drs. R. Walter Mills, St. Louis; Marsh Pitzman, St. Louis; D. F. Jones, Boston; W. H. Stewart, New York; Israel D. Palefski, New York, and Edward H. Skinner, Kansas City, Mo.

REPORT OF THE COMMITTEE ON AWARDS

Your committee recommends the following awards:

To Dr. Edmond Souchon, a gold medal, for admirably prepared anatomic specimens.

To the Medical Department, U. S. Army, a silver medal for an exhibit of pathologic preparations, excellent in appearance and highly instructive.

To Dr. Victor D. Lespinasse, a certificate of merit, for interesting and suggestive experiments on spermatogenesis and sterility.

To Dr. Martin H. Fisher, a certificate of merit for an extensive display of soap preparations in relation to colloid chemistry.

In view of the grave importance of venereal disease and the fundamental need for diffusing information regarding the dangers of these diseases to the individual and to the race, the committee wishes to commend the exhibits presented this year showing methods of sex education and to express the hope that such exhibits may be elaborated and made more prominent features of the Scientific Exhibit in the future.

W. B. CANNON,
H. H. CHRISTIAN,
E. R. LECOUNT.

REGISTRATION AT NEW ORLEANS

The total registration at the New Orleans Session was 3,681. Below are given two summaries, one by sections and one by states:

REGISTRATION BY SECTIONS

Practice of Medicine	1,160
Surgery, General and Abdominal	857
Obstetrics, Gynecology and Abdominal Surgery	230
Ophthalmology	218
Laryngology, Otology and Rhinology	207
Diseases of Children	152
Pharmacology and Therapeutics	25
Pathology and Physiology	62
Stomatology	30
Nervous and Mental Diseases	92
Dermatology and Syphilology	69
Preventive Medicine and Public Health	108
Urology	103
Orthopedic Surgery	66
Gastro-Enterology and Proctology	69
Registrations without specifying any one section	233
Total	3,681

REGISTRATION BY STATES

	Number		Number
Alabama	184	Nevada	2
Arizona	12	New Hampshire	1
Arkansas	94	New Jersey	13
California	59	New Mexico	2
Colorado	33	New York	121
Connecticut	7	North Carolina	50
Delaware	1	North Dakota	9
District of Columbia	57	Ohio	134
Florida	46	Oklahoma	78
Georgia	100	Oregon	8
Idaho	2	Pennsylvania	108
Illinois	264	Rhode Island	8
Indiana	62	South Carolina	33
Iowa	78	South Dakota	6
Kansas	35	Tennessee	149
Kentucky	68	Texas	394
Louisiana	693	Utah	5
Maine	4	Vermont	1
Maryland	15	Virginia	26
Massachusetts	40	Washington	10
Michigan	72	West Virginia	18
Minnesota	76	Wisconsin	56
Mississippi	257	Wyoming	2
Missouri	124	Foreign countries	27
Montana	4		
Nebraska	33	Total	3,681

The Digestibility of Foods.—Two factors largely determine the digestibility and absorption of foods in the process of digestion: The first is the bulk; the second is the cellulose content. The bulkiness of vegetable food interferes with digestion in two ways. The digestive juices have difficulty in penetrating such a mass so that the conversion of the constituents into products capable of absorption is apt to be quite inefficiently carried out, and the large mass has a tendency to hasten the intestinal peristalsis, the contents of the gut are thus pushed forward too rapidly; and even were digestion more complete, the absorption could not keep pace with the food movement. The presence of cellulose is the second great factor in the retardation of digestion and absorption. In the case of meat, the nutritive constituents are held in tubes composed of gelatin which readily digest; in the case of vegetables, the starch is contained in cubical compartments with walls of cellulose. Cellulose is a carbohydrate, belongs to the class of polysaccharids, and is especially characterized by its extraordinary insolubility. From this it can be seen that the presence of cellulose influences digestion and absorption in several ways. It not only has little or no food value of itself, but it prevents the access of digestive juices to the mass of food in the stomach, and it prevents the juices penetrating to the individual starch cells. Further, by increasing the mass to such an extent it has a tendency to stimulate the intestinal movements and hasten the progress of the food.—C. C. Mason, *Bull. Johns Hopkins Hosp.*, March, 1920.

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Contributors, subscribers and readers will find important information on the second advertising page following the reading matter

SATURDAY, MAY 15, 1920

TAKAKI'S WORK IN BERIBERI

The announcement of the death in Tokyo of Baron K. Takaki, former inspector general of the Japanese navy, recalls his classic experiences in eradicating beriberi among the sailors by change in diet. He had long been familiar with the disease among groups of Japanese, and he recalled that some years before he entered the navy of his country in 1872, many deaths from it had been observed by his father. Even at that time the cause of beriberi was attributed by some to food, and the provision box was called the beriberi box.[1]

In his early medical experience in the navy, Takaki encountered a large number of patients suffering and dying from beriberi. In 1875 and later they frequently constituted three fourths of the whole number of persons in the naval hospital. After prolonged studies in Europe, Takaki returned to Japan in 1880 only to find conditions unchanged with respect to a scourge that threatened to destroy the efficiency of the Japanese navy. In 1883 a careful examination of the hygienic conditions of ships, barracks, schools, etc., belonging to the Japanese navy disclosed that they were much alike everywhere, except for the item of food. In this there were great variations in different places. Finding that the rations in some posts contained much carbohydrate with relatively little protein, and being of the opinion that a man requires 20 gm. of nitrogen, that is, 135 gm. of protein, a day, for proper physiologic maintenance, Takaki came to think that beriberi is caused by the disproportion of nitrogenous and non-nitrogenous components of the diet. The former were regarded as insufficient, the latter as excessive in the objectionable rations.

Takaki's proposals to change the old dietary system in which rice, rich in carbohydrate and poor in protein, predominated were regarded as extremely radical, and met great opposition. After investigation of the cruise of the training ship *Ruijo* on which 169 cases of beriberi with twenty-five deaths occurred among 276 men during 272 days, permission was granted to institute a trial of the new ration, including milk and meat, on a cruise over the same route in the *Tsukuba*. In the course of a 287 days' voyage only four cadets and ten men were attacked by beriberi, and on investigation it was found that all of these had refused to eat certain parts of the ration provided, such as condensed milk and meat. When the good report of the experimental voyage of the *Tsukuba* became known, all opposition to the reformed ration was withdrawn, and it at once went into general effect.

The upshot of Takaki's work had been to show that although the sanitary conditions in the Japanese navy were not inferior to those in other navies at the same time, beriberi had been rampant. This disease had not broken out in ships of European nations sent to the Orient, exposed to the same climatic conditions, and performing similar duties. But the Japanese ate rice almost exclusively, omitting the bread and meat furnished to others. The diet reforms promptly produced beneficent effects. At the time referred to there were frequent objections to the validity of Takaki's theory of protein starvation as the explanation of the etiology of beriberi. This is no longer tenable in the light of recent investigations. As Vedder has stated, there cannot be a shadow of a doubt that beriberi was reduced in the Japanese navy as a result of a change of diet.

This change consisted in a reduction of the amount of rice consumed and an increase of meat, fish, vegetables, including beans, and the addition of milk and flour. What Takaki did, however, from the standpoint of present-day knowledge is to reintroduce, into a dietary largely made up of polished rice poor in antineuritic vitamin, articles of food which supply the deficiency. He neither removed a hypothetic infection, as many had contended, nor merely enriched the diet in protein; Takaki improved the physiologic quality of the ration of the navy. His experiences form an interesting chapter in the history of diet in relation to disease.

1. This and other details are quoted from Vedder, E. B.: Beriberi, New York, William Wood & Co., 1913.

GAS CYSTS OF THE ABDOMEN

Gas cysts in the abdomen have long been known to occur in animals, particularly the hog; but it was not until 1876 that Bang published the first description of these lesions in a human being. Since that time sixty-six cases have been described in the literature, and only recently have the anatomic details been developed. The development and course of this condition are such that it may occur more often than is generally supposed. The lesions have a characteristic macroscopic appearance: Gas cysts may occur generally throughout the abdomen, multiple, disseminated, most commonly in the small intestine, mesentery and omentum, varying in size from the head of a pin to a plum, and containing an odorless, nonirritating gas

made up of combinations of hydrogen, carbon, oxygen and nitrogen. Occasionally the cysts are grouped into a mass the size of a fist, causing pressure on the surrounding viscera. Palpation gives a crackling similar to that of an emphysema. The various descriptions of the size, location and character of the cysts are considered by Tuffier and Letulle [1] to be due to the fact that the observers have encountered the disease at different stages.

In the small intestine the cysts may be found in the submucous and subserous layers with a wall of dense fibroid tissue, poor in fixed cells and blood vessels, in which elastic fibers appear, but no smooth muscle. The lumen is bounded by a layer of endothelial and multinucleated giant cells, and a characteristic thick fluid is sometimes present in the dependent part of the cavity. Accompanying changes in the wall of the intestine indicate the presence of a long standing chronic inflammation. In all cases it is noted that the cysts lie in a definite relation to a lymphatic vessel which has been partially or totally obliterated.

It is this relationship of cyst, cicatrix and lymph vessel that has led Letulle,[2] from whose articles much of this information is taken, to the conclusion that the cysts have their origin in obstruction to the flow of lymph by a chronic obliterating lymphangitis which is a part of a rather generalized chronic inflammatory process. The origin of the gas is not so clear. At present there are two views: the one, infectious, attributing the gas to a small liquefying coccus or to *B. coli;* the other, mechanical, a complication of a chronic obliterating lymphangitis with stagnation of lymph and subsequent change to gas under pressure. The details of this transformation are not worked out, and it is far from clear why, as has been frequently observed, there is such a rapid disappearance of the cysts after the abdomen is opened; Kadyan, however, operated on the same patient three times in five months, and noticed each time a new eruption of cysts. Karsner, reporting on the pathology of Sloan's [3] case, suggests that "the condition is a subacute or chronic interstitial emphysema of the gut," the gas entering from without by way of an ulcer and being carried distally by peristaltic action. However, this does not account for the presence of the gas cysts in the peritoneum and omentum.

There is no characteristic symptomatology, the condition being encountered in all cases, thus far, unexpectedly or accidentally. Gastro-intestinal disturbances, such as nausea, vomiting, diarrhea and acute intestinal obstruction, have been produced by the mechanical action of the cysts. Of the instances collected by Lenormant,[4] twenty-one were diagnosed at necropsy and thirty-six at operation, and it is the belief of Moreau [5] that only through the use of the roentgen ray can the condition be identified before operation.

It is interesting to note that frequently this disease is associated with other lesions of the gastro-intestinal tract, particularly ulcer of the stomach. There are, of course, many questions in regard to gas cysts not yet explained, but the condition should be recognized more often in this country. It appears that three cases have been reported.[3]

1. Tuffier, T., and Letulle, Maurice: Sur une maladie caractérisée par des kystes gazeux de l'abdomen, Bull. de l'Acad. de méd. **82**: 5 (July 1) 1919.

2. Letulle, Marice: Les kystes gazeux de l'intestin et du péritoine, Bull. de l'Acad. de méd. **82**: 315 (Nov. 18) 1919; Presse méd., Dec. 20, 1919.

3. Sloan, H. G.: Gas Cysts of Intestine, Surg., Gynec. & Obst. **30**: 339, 1920.

4. Lenormant, C.: Kystes gazeux de l'abdomen, Presse méd. **28**: 104 (Feb. 7) 1920.

5. Moreau: Sur un cas d'hépatoptose par interposition avec kystes gazeux de l'intestin; examen radiologique vérifié par l'intervention, Arch. d'electr. méd. **27**: 393 (Sept.) 1917.

6. Experimental Lobar Pneumonia, editorial, J. A. M. A. **74**: 1168 (April 24) 1920.

7. Blake, F. G., and Cecil, R. L.: Studies on Experimental Pneumonia, I, Production of Pneumococcus Lobar Pneumonia in Monkeys, J. Exper. Med. **31**: 403 (April) 1920; II, Patbology and Pathogenesis of Lobar Pneumonia in Monkeys, ibid., p. 445.

THE MECHANISM OF RECOVERY FROM LOBAR PNEUMONIA

A perusal of the medical literature of only a few years ago in comparison with present-day writings on the subject of pneumonia will give convincing evidence of the marked strides that have been made in the recent study of this important malady. Lately it has been the etiologic classification of the disease types that has been foremost in the consideration of clinicians. This, of course, has involved a better understanding of the bacteriology of pneumonia, on the one hand, and an investigation of corresponding therapeutic or prophylactic measures, on the other. Pneumonia has been produced experimentally in animals by the introduction of pure bacterial cultures into the bronchi. Although much has been learned from such studies, they have not been conclusive in their applicability to the conditions observed in the disease of man.

A review of the present status of studies in experimental pneumonia, recently published in THE JOURNAL,[6] indicates that lobar pneumonia is bronchiogenic in character. Invasion of the blood stream by pneumococci is secondary to the introduction of the micro-organisms into the lower respiratory tract. A true lobar pneumonia cannot be produced by subcutaneous or even intravenous introduction of the pneumococcus into the system, although a septicemia may develop under such circumstances. In their studies of the disease in monkeys, Blake and Cecil [7] have observed pneumococcus septicemia persisting after the pneumonia crisis and resolution; likewise cases of unresolved pneumonia in which the pneumococci had entirely disappeared from the blood yet which resulted in death.

Such experiences have suggested that more than one factor may be involved in the mechanism of recovery from lobar pneumonia. In the escape from the general

infection an immunity mechanism of a humoral sort is undoubtedly involved. The possible rôle of circulating antibodies is admitted. But as the prevention or termination of the general infection does not always coincide with recovery from the local processes with resolution of the pneumonic consolidation, it seems highly probable that the latter may depend in part at least on something other than humoral immunity —than antibodies. Perhaps, as Blake and Cecil propose, the crisis and resolution of the pneumonic process may be due to local biochemical changes in the course of which, as suggested by Lord,[8] the acid death point of the pneumococcus is reached. If so, final recovery from lobar pneumonia may involve a dual mechanism, and future considerations of the pro problem must keep the possible significance of the two factors distinctly in mind. One concerns most directly the local pulmonary lesion; the other is important as well for the secondary general infection by the pneumococcus.

Current Comment

DUST AND PHTHISIS

Dust inhaled is popularly regarded as a source of danger to the organism, particularly by predisposing to pulmonary tuberculosis. Experience has demonstrated, however, that not all dusts are to be put into a common category. If there are no benevolent dusts, some at least seem to be far less deadly than others, although all forms of them enter the lungs. Investigations made in South Africa have demonstrated, for example, that a condition known as pneumonoconiosis results from dust particles setting up cell proliferation which ends in the production of dense connective tissue. The latter occurs first in nodules which may subsequently coalesce, obliterating large portions of air-containing vesicles. Sufferers from this condition are peculiarly liable to pulmonary tuberculosis, as miner's phthisis and potter's rot. Some dusts, notably soot and coal dust, appear, however, to be comparativly harmless. An attempt to explain this has been made by Mavrogordato[9] in a report to the British Medical Research Committee in London. It appears that marked differences appear in the readiness with which different kinds of dust are eliminated from the lung tissue. Some produce a marked initial reaction, with much shedding of epithelium. In these shed cells, coal and shale are promptly removed, so that they do not set up processes which block the lymphatics. On the other hand, flue dusts and silica are taken up by cells which tend to remain in situ and form plaques which appear early and persist. They become the sites of fibrosis. From the current investigations it further appears that dusts, like coal, which produce an initial reaction tend to carry out with them the more inert kinds of particles. The dusts which make most mischief appear to be those tending to accumulate rather than to be promptly eliminated. Corper[10] has found a correlation between these facts and the effect of lamp black and pulverized glass, respectively, on the acceleration of experimental tuberculosis in the guinea-pig. Glass, which resembled the quartz dusts, had a markedly accelerating influence, whereas the carbon particles likewise injected subcutaneously coincident with tubercle bacilli exhibited a retarding effect. Whether this beneficent outcome is due to some inherent antiseptic property introduced with the coal or soot or to a biologic reaction cannot be stated at present. However, the facts help to explain why "phthisis is not as common among coal miners as among the ordinary population in spite of the marked amount of anthracosis developed in the lungs from the inhaled dust."

COUNTING BLOOD PLATELETS

To most physicians the blood platelets are known merely as structural elements present along with the familiar erythrocytes and leukocytes in the blood. Beyond this, the existence of these somewhat irregular particles carries no special significance to most clinicians not specially trained in the methods of hematology. This is doubtless due in large measure to the difficulties that have attended the accurate estimation of the occurrence of the platelets in specimens of blood, as well as to the lack of knowledge which still enshrouds their origin, fate and functions. The content of the other formed elements or corpuscles of the blood is now readily ascertained with considerable exactness, and the significance of high or low "counts" in relation to various pathologic conditions is well understood. It is not surprising, however, that confusion and uncertainty exists in the case of the platelets; for at present the statements as to their normal occurrence in blood show figures varying as much as 300 to 400 per cent., namely, from 200,000 to 800,000 per cubic millimeter of blood. Part of the difficulty thus recorded is attributable to the labile character of these structures. Unless specially conserved, they disintegrate with great readiness in shed blood. The actual counting of the "third corpuscular elements" of the blood has encountered additional obstacles, which need not be recounted here. Lately a new technic, developed by Thomsen[11] for counting the platelets in citrated plasma has been made the subject of special investigation by Gram[12] in Faber's clinic at Copenhagen. The method appears to be more reliable than any other at present in vogue; by it the majority of the determinations show platelet counts between 300,000 and 450,000 per cubic millimeter. Although in normal persons the number rarely falls below 300,000, the more extreme range for seemingly healthy persons may be put at from 200,000 to 500,000 per cubic millimeter of blood. There have been frequent attempts in the past to correlate aberrant platelet counts with hemorrhagic diseases of various types.

8. Lord, F. T.: J. Exper. Med. **30**: 389 (Oct.) 1919.
9. Mavrogardato, A.: Experiments on the Effects of Dust Inhalations, J. Hyg. **17**: 439 (Oct.) 1918.
10. Corper, H. J.: Further Attempts to Reduce the Resistance of the Guinea-Pig to Tuberculosis, Am. Rev. Tuberc. **3**: 605 (Dec.) 1919.
11. Thomsen, O.: Hospitalstidende **62**: 161 (Feb. 5) 1919.
12. Gram, H. C.: On the Platelet Count and Bleeding Time in Diseases of the Blood, Arch. Int. Med. **25**: 325 (March) 1920.

Thus, the platelets have long been assumed to be associated in some way with the clotting of the blood. Gram has observed, in accord with this, that when the platelet count falls below 100,000 per cubic millimeter the "bleeding time," determined by Duke's well known method, tends to be prolonged; that is, the blood clots more slowly than usual. The platelets are diminished in number in pernicious anemia, in most cases of lymphatic leukemia, and in some cases of myeloid leukemia. Normal values are found in hemophilia, and augmented values are found in many cases of simple anemia and some of myeloid leukemia. According to Gram, the counting of the platelets and determination of the bleeding time is of extreme importance as a preoperative measure, especially in cases of aplastic anemia, in which an operation often is performed for explorative purposes, on suspicion of occult cancer.

CALCIUM METABOLISM IN LEPROSY

Destructive processes of various sorts are sequelae of leprous invasion of the body. Among such changes, necrosis resulting in the loss of pieces of bone and atrophy of osseous structures may occur. The consequences are exhibited in the altered mineral metabolism observed in leprosy, as has recently been demonstrated by Underhill, Honeij and Bogert [1] in an unusually elaborate series of examinations on leprous patients at the Yale University School of Medicine. Compared to normal persons under the same dietary conditions, such patients retain calcium in relatively large quantities, whether they are maintained on a calcium-poor or a calcium-rich diet; and the greater the intake of calcium, the greater is the relative retention. In the more advanced stage of the disease, the degree of retention is greater than in the early phase. There is likewise a positive balance in the case of magnesium in the advanced stages of leprosy, although the retention of this element is much less marked than that of the more conspicuous bone-forming calcium. According to Underhill and his colleagues, the retention of calcium is the expression of a metabolic demand—a need induced by the loss of bone-salt in the disease. Hence they suggest that quite likely in dietary conditions in which calcium is not particularly abundant, the lack of this element may be an important factor in the rapidity of the progress of the disease; for this may be greatly retarded, or perhaps even alleviated, if an abundance of calcium is present in the diet.

CHIROPRACTIC—LUX ON SUBLUXATIONS

Members of the medical profession have long been at a loss to know just what "chiropractic" is. They know what "chiropractors" are, but "chiropractic"—that has been a mystery! It remained for the Senate and General Assembly of the State of New Jersey to elucidate. An Act to Regulate the Practice of Chiropractic recently signed by the Governor of New Jersey gives to a palpitating medical world this vital information. Here is the opening paragraph of the act:

> DEFINITION OF CHIROPRACTIC: The term chiropractic when used in this act shall be construed to mean and be the name given to the study and application of a universal philosophy of biology, theology, theosophy, health, disease, death, the science of the cause of disease and art of permitting the restoration of the triune relationships between all attributes necessary to normal composite forms, to harmonious quantities and qualities by placing in juxtaposition the abnormal concrete positions of definite mechanical portions with each other by hand, thus correcting all subluxations of the articulations of the spinal column, for the purpose of permitting the recreation of all normal cyclic currents through nerves that were formerly not permitted to be transmitted, through impingement, but have now assumed their normal size and capacity for conduction as they emanate through intervertebral foramina—the expressions of which were formerly excessive or partially lacking—named disease.

Lucidity itself! The New Jersey legislature said, "Let there be light on Chiropractic"—and, behold, it became the "art of permitting the restoration of the triune relationships between all attributes necessary to normal composite forms, to harmonious quantities and qualities . . ." Simplicity to the *n*th power. Bring on your Einstein theory—the New Jersey solons may oblige with a snappy definition.

ENFORCED TEMPERANCE IN EUROPE

The advocates of prohibition are already beginning to marshal statistics as to the result of the abolition of the liquor traffic on the welfare of the nation. It will not be easy to establish the relation of cause and effect in the various phenomena of change in which benefit or disadvantage may be claimed. The altered social and economic conditions following the war have brought about new conditions of living and standards of conduct the precise effect of which on the people of the United States remains to be clearly ascertained. However, in the matter of restriction of the consumption of alcohol, if not its entire prohibition, this country has not stood entirely alone in recent years. During the war our allies and the enemy country restricted the manufacture of alcoholic beverages; and the neutrals surrounding the Central Empires did likewise. A curtailment has, moreover, followed not only through legal restrictions on sales which confined public drinking to certain hours and places, but also as the direct result of scarcity and high prices which made purchases difficult. This has been particularly true of the strongly alcoholic beverages, like brandy. The benefits of temperance to the thousands of men in the armies can scarcely be debated. An elaborate investigation made by a commission of scientists and clinicians for the German government and published in 1919 [1] affords interesting conclusions for the civilian population of a country accustomed to liberal indulgence in alcoholic drinks. It appears, particularly

1. Underhill, F. P.; Honeij J. A., and Bogert, L. J.: Calcium and Magnesium Metabolism in Certain Diseases, Proc. Nat. Acad. Sc. **6**: 79 (Feb.) 1920.

1. Welchen Einfluss hat der während des Krieges innerhalb der bürgerlichen Bevölkerung verminderte Alkoholgenuss auf die geistige und körperliche Gesundheit des Volkes gehabt? Beratung der erweiterten Wissenschaftlichen Deputation für das Medizinalwesen am 20 September, 1919. im Ministerium für Volkswohlfahrt zu Berlin, Vrtljschr. f. gerichtl. Med. **59**: 1 (Jan.) 1920.

from the report of Professor Partsch, that in Prussia, as a result of restricted drinking, there was an extraordinary decrease of chronic alcoholism and the mental disorders attendant on it. Related bodily illnesses were also diminished. The decrease in psychic maladies was widespread, not being confined to any portion of the empire. The report finds special occasion to note the restoration of former chronic drunkards in many cases to an economically useful career. Contrary to what is alleged by some of the defenders of alcohol in this country—on what basis we do not know—the habitual use of morphin or cocain is not interpreted by the Prussian medical commission as the outcome of restriction in the availability of alcohol. It insists that the desire for strong alcoholic stimulants among the population has by no means become suppressed. Only the excessive cost and the restricted supplies are believed to stand in the way of a return to former habits, now that peacetime conditions are being restored abroad. If temperance enforced by the exigencies of a war has in truth exercised a highly beneficent influence on the nations, the problem of retaining its essential benefits is surely one worthy of consideration in any propaganda for the public health.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

CALIFORNIA

University of Southern California Suspends Medical Teaching.—By a unanimous vote, the trustees of the University of Southern California, on April 13, decided to temporarily suspend the medical department because of inadequate endowment with which to maintain it.

Botulism a Reportable Disease.—Under date of April 9, the secretary of the state board of health issued a bulletin declaring botulism a reportable disease, and requesting physicians to make prompt reports of this disease to the local health officers and asking also that information be sent concerning probable causative food factors.

Personal.—Dr. Albrecht O. Eckardt, Downieville, health officer of Sierra County for several years, has been appointed resident physician for the Claymath Indian Reservation with headquarters near Claymath Falls.——Dr. Frank P. Gray, G. M. Stratton and Dr. Emanuel C. Fleischner of the faculty of the University of California have been given leave of absence for portions of this and next year.

San Francisco Physicians to Fight Medical Law Changes.—At a meeting of the San Francisco County Medical Association, held April 13, plans were made to fight, in the coming general election, the following issues which the organization considers would be letting down the bars to unscientific systems of medicine: an initiative measure to establish an independent board of chiropractic examiners; referendum on the drug law to give osteopaths the right to prescribe drugs; antivivisection legislation, and efforts to lower medical certificate requisites.

DISTRICT OF COLUMBIA

Gift for Howard Medical School.—It is announced that Howard University School of Medicine, Washington, has been promised $250,000 by the general education board, provided the medical school succeeds in raising the rest of a total sum of $500,000.

Medical Society Against Unlicensed Anesthetists.—At a recent largely attended meeting of the Medical Society of the District of Columbia a resolution was adopted after animated debate putting the society on record as in favor of the limitation of the practice of anesthesia to regularly licensed physicians and surgeons and dentists, and graduate nurses in cases of emergency or medical students for purposes of instruction. This action was prompted by the recent substitution in certain of the local hospitals of salaried resident anesthetists for the physician anesthetists connected with the medical staff, the new appointees being nurses specially trained in anesthesia work.

Cornerstone Laid of Medical Society Building.—On May 6 the cornerstone of the new home of the Medical Society of the District of Columbia was laid. The ceremonies were presided over by Dr. Charles W. Richardson, the stone being laid by the officers of the society, the president, Dr. Francis R. Hagner, spreading the mortar. Addresses were made by Dr. Hagner, Dr. Wilfred M. Barton, Dr. Joseph S. Wall and Dr. John B. Nichols. Dr. Tom A. Williams also made a short address in presentation of a handsome donation from a friend whom he had interested in the project. The building is located at 1716-1718 M Street N.W. It is hoped that it will be ready for occupancy in November. When complete, the medical society will possess a handsome, commodious and comfortable home, which will also be a distinct addition to the architectural beauties of Washington.

ILLINOIS

Tuberculosis Clinics.—The second of the series of free tuberculosis clinics will be held at the court house, Edwardsville, May 26, under the auspices of the Madison County Medical Society. Dr. George T. Palmer, Springfield, will be in charge of the clinic.

Sanatorium Opened.—Adams County has recently opened a tuberculosis sanatorium at Quincy with a capacity of twenty-five patients. It is under the charge of Dr. Harry C. Worthington, formerly senior physician to the Cook County Tuberculosis Hospital, Oak Forest.

Tri-City Officers Elected.—The Tri-City Medical Society held its annual meeting, April 15, and elected Dr. Benjamin H. King, president; Dr. Alfred E. Everett, vice president; Dr. Hugo C. H. Schroeder, secretary, and Dr. Frank O. Johnson, treasurer, all of Granite City.

Chicago

Hospital Journal Moves.—The *Modern Hospital* has announced the removal of its editorial and business offices to the Modern Hospital Building, 22-24 East Ontario Street.

Ricketts Prize Awarded.—The Howard Taylor Ricketts Prize of the University of Chicago for 1920 has been awarded to Ivan C. Hall for his work on "Studies in Anaerobiology." This prize is awarded annually on May 3, the anniversary of the death of Dr. Ricketts from typhus fever, while engaged in work on this disease in Mexico City in 1910.

Anthrax Outbreak.—Six cases of anthrax were reported during the first week in May with five deaths. The disease is believed to have been contracted through infected horse hair received from Russia and Argentina, last winter. The Chicago Curled Hair Factory, among the employees of which this disease occurred, was closed by the health department, May 5.

INDIANA

Personal.—Dr. Carleton B. McCulloch, Indianapolis, was nominated for governor on the democratic ticket at the primary election, May 4.——Drs. Charles B. Kern, Lafayette, and John H. Hewitt, Terre Haute, have been reappointed members of the state board of health.——Dr. Obediah H. Garrett, Cadiz, is seriously ill as the result of a cerebral hemorrhage.——Dr. George A. Harrop, Jr., South Bend, has been awarded a traveling fellowship for the study of physiology in Denmark.

Hospital Items.—Shelbyville is to have a new hospital which is estimated to cost $225,000. A site for the building was recently purchased for $11,000. The institution will have accommodation for fifty patients.——A memorial hospital is to be established at Jeffersonville in honor of the soldier dead of Clark County.——Home Hospital, Muncie, is to be transferred to the board of governors, who will operate it as a public health hospital.—The Indiana Manufacturers' Reciprocal Association will establish in Indianapolis a physiotherapy hospital wherein workmen injured in industries in the factories of the association are to be rehabilitated to a degree that will allow them to reenter their fields of

labor.——The county board of Allen County has decided to build an addition to the County Isolation Hospital sufficient to offer at least temporary relief during the present prevalence of scarlet fever in Fort Wayne.

LOUISIANA

Personal.—Dr. Mayer A. Newhauser, Shreveport, has resigned as assistant health officer.——Dr. Sidney L. Williams has resigned as a member of the Shreveport Board of Health.

State Society Election.—At the annual meeting of the Louisiana State Medical Association held in New Orleans, April 27, the following officers were elected: president, Dr. Homer J. Dupuy, Jr., New Orleans; vice presidents, Drs. Beverly W. Smith, Franklin, William H. Harris, New Orleans, and Daniel O. Willis, Leesville; secretary-treasurer, Dr. Paul T. Talbot, New Orleans, and councilors—first district, Dr. Paul Gelpi, Jr., New Orleans; second district, Dr. George S. Bel, New Orleans; third district, Dr. Frank T. Gouaux, Lockport; fourth district, Dr. Joseph E. Knighton, Shreveport, and fifth district, Dr. Thomas E. Wright, Monroe.

MARYLAND

New Officers.—At the annual meeting of the Cecil County Medical Society, Dr. Vernon H. McKnight, North East, was elected president and Dr. Howard Bratton, Elkton, secretary-treasurer.

Health of Schoolchildren in Maryland.—In response to a request from the state and local health and educational authorities, the Public Health Service is conducting a survey and demonstration concerning the health of schoolchildren in Cecil County, Maryland.

Personal.—A portrait of Dr. William H. Welch, president of the University Club of Baltimore, was presented to the club recently at its monthly meeting. A large gathering of club members and friends of Dr. Welch witnessed the presentation. Dr. William S. Baer, chairman of the committee in charge of the presentation, presided.——Dr. Otis M. Linthicum has been elected mayor of Rockville, Md.

Medical Faculty to Convene.—The Medical and Chirurgical Faculty of Maryland will hold its one hundred and twenty-second annual meeting, May 11, 12 and 13, at the faculty building, Baltimore, under the presidency of Dr. John Ruhräh, Baltimore. A session of delegates at Osler Hall will open the program, which includes scientific meetings, clinics at various hospitals and the annual smoker of the organization.

Medical Society at Johns Hopkins.—Members of the William Pepper Medical Society of the Medical Department of the University of Pennsylvania came to Baltimore, May 8, and, conducted by members of the Johns Hopkins Medical Society, visited the School of Hygiene and Public Health, the Johns Hopkins Hospital and the Johns Hopkins University. Addresses by the most prominent physicians connected with the hospital were made both at the School of Hygiene and in the amphitheater of the surgical building, Johns Hopkins Hospital. Luncheon was served on the top floor of the Phipps Psychiatric Clinic, and in the evening an informal smoker was held at the home of Dr. Joseph Colt Bloodgood, Roland Park.

Fort McHenry for Federal Hospital.—The War Department has definitely announced that U. S. General Hospital No. 2, at Fort McHenry, will be turned over to the U. S. Public Health Service for its war risk insurance work, as soon as the hospital buildings are given up by the Medical Corps of the Army. Owing to the great need of caring for the sick and disabled discharged soldiers, the War Department has transferred this post to the Public Health Service for this purpose, and at the same time has informed the special committee appointed by the mayor of Baltimore City, that the post could not be used as a municipal hospital, since by act of Congress, it was stipulated that it should be used only as a public park by Baltimore City.

MICHIGAN

Personal.—Dr. Frederick G. Novy, Ann Arbor, has been elected a corresponding member of the Society of Biology of Paris, and an associate member of the Royal Society of Medical and Natural Sciences, Brussels.

Increase in Smallpox.—During the week, ended May 1, sixty-one new cases of smallpox were reported in Detroit, an increase of twenty-eight over the previous week. Of the cases thus far reported sixty-seven have been among the white population, and thirty-one among the colored population of the city.

MINNESOTA

Southern Minnesota Physicians to Meet.—The midsummer meeting of the Southern Minnesota Medical Association will be held in Fairmont, June 28 and 29. Dr. Walter J. Richardson is chairman of the committee of arrangements.

Clinic Week in Minneapolis.—More than 500 physicians attended the third annual clinic of the Hennepin County Medical Society, April 20 to 23. During those days clinics were conducted in all hospitals in Minneapolis, illustrated lectures were given in the afternoons and special meetings were held in the evenings. Dr. Charles Harrison Frazier, Philadelphia, at the annual banquet, April 20, delivered an address on "Surgery of the Nervous System."

Enrolment in Mayo Foundation.—During the current quarter which began April 1, 151 graduate students have been registered in the Mayo Foundation for Medical Education and Research, Rochester. Each of these students is registered for a period of three years or more. The fellows, 130 in number, are distributed as follows: surgery, 86; internal medicine, 20; otolaryngology and rhinology, 7; urology, 5; ophthalmology, 4; pathology and dermatology, each 2, and chemistry, bacteriology, roentgenology and orthopedics, each 1. Among the scholars who are not candidates for advanced degrees are 10 in surgery; 4, in dental surgery; 2, in orthopedics; and one each in roentgenology, internal medicine, dermatology, urology, and otolaryngology and rhinology.

MISSOURI

Brooklyn Physician in Kansas City.—At the meeting of the Jackson County Medical Society, May 4, Dr. John Osborn Polak, Brooklyn, delivered an address on "Present Day Operative Procedures in Obstetrics," illustrated with lantern slides.

Personal.—Dr. Ersel M. Fessenden has been appointed first house surgeon of the Frisco Hospital, Springfield, succeeding Dr. J. Omar Moore, resigned.——Dr. Roche W. Hogeboom has been appointed assistant consulting surgeon of the Frisco Hospital, Springfield.——Dr. Abraham Sophian, Kansas City, has been presented with a house and grounds valued at $82,000 in appreciation of medical services rendered to the wife of the donor.——Dr. Hasbrouck DeLamater, St. Joseph, has been appointed health officer of Norfolk County, Va.

To Increase Salaries at St. Louis University.—This month the alumni and friends of St. Louis University launch a movement to provide the institution with an endowment fund of $2,000,000 in commemoration of its first century of service in higher learning. The income on one half of the fund sought will be used to increase the salaries of teachers in the schools of medicine, dentistry, commerce and finance and the institute of law. For the provision of a laboratory for the school of medicine, a fund of $250,000 is to be provided; and after these immediate needs have been cared for, a total of $550,000 of the fund will be used to establish new clinics and to erect new buildings for the schools of medicine and dentistry. The St. Louis University opened its first school of medicine in 1836, four years after the institution received its charter. The school has been running with annual deficits for the last five years, the largest being for the school year ended in June, 1919, when the expenditures exceeded the receipts by more than $20,000.

NEW JERSEY

Society to Meet.—The one hundred and fifty-fourth annual meeting of the Medical Society of New Jersey will be held in New Monmouth Hotel at Spring Lake, June 15 to 17, under the presidency of Dr. Gordon K. Dickinson, Jersey City.

Personal.—Dr. William J. Chandler, South Orange, secretary of the Medical Society of New Jersey, who met with a serious accident recently, is now reported to be convalescent.——Dr. Thomas W. Harvey, Orange, after thirty-eight years' service as attending surgeon at the Orange Memorial Hospital, has resigned and has been succeeded by Dr. Douglas A. Cater of East Orange. Dr. Ralph H. Hunt, East Orange, has been appointed attending physician to the hospital.——Dr. M. Charles Mackin, assistant superintendent of the New Jersey Institution for Feebleminded, Skillman, has been appointed superintendent of the Mount Pleasant, Iowa, State Hospital, succeeding Dr. Charles F. Applegate.

NEW YORK

Health Council for Albany.—Representatives of the ten official and volunteer health agencies of Albany and vicinity have organized a health council for the purpose of securing better coordination in health work. Other organizations having health affiliations will be invited to join. Mr. Edward H. Huyck has been elected chairman; Miss Gertrude J. Owen, corresponding secretary, and Mr. Lewis R. Screenley, recording secretary.

Personal.—Dr. Harold W. Lyall, for nine months bacteriologist on the staff of the state laboratory, has accepted the position of bacteriologist of the Mellen Research Laboratories, Tuberculosis League, Pittsburgh, and of associate in the department of bacteriology and pathology in the Medical School of the University of Pennsylvania.——Miss Pearl L. Kendrick, a member of the state laboratory staff, has resigned to accept a position in the laboratory of the state department of health of Michigan.——Dr. Charles A. Howland, Schenectady, for eight and one-half years assistant sanitary engineer of the division of sanitary engineering, has resigned to accept a position in Kansas City.

Mental Clinics.—The scope of the mental clinics conducted by state hospitals in the Psychopathic Institute, under the auspices of the state hospital commission, has been enlarged during the last year to include mental defectives. Physicians as well as psychometric testers for the mentally defective patients have been supplied by the state commission for mental defectives and the various state schools for mental defectives. These mental clinics are held whenever possible in connection with the health center established by the state department of health and in the same location with such other clinics as those for children's diseases, tuberculosis and venereal disease. The seven state departments represented by the committee on joint clinics are working in harmony with the result that extra-institutional treatment in mental and other types of cases is increasing in a very encouraging manner. These clinics are being held at all state hospitals.

New York City

Society for Clinical Study.—The next monthly meeting of the Society for Clinical Study will be held in the reception hall of the New York Diagnostic Clinic, 125 West Twenty-Second Street, on the evening of May 26.

West Side Dispensary Buys Site.—The West Side Dispensary and Hospital has purchased the property adjoining its present building as a site for a lying-in hospital. The property was purchased for $50,000 and will be rebuilt next fall at a cost of between $50,000 and $100,000.

Health Department Night.—At the regular monthly meeting of the Academy of Pathological Science, April 23, the program consisted of papers on public health topics only, presented by officials of the department of health. These included: "Activities of the Board of Health"; "Schick Tests"; "Industrial Medicine"; "Food and Drug Control," and "Narcotic Addiction Medical Treatment."

Federal Government to Buy Quarantine Station.—The House of Representatives has approved the Magee bill providing for the taking over by the federal government of the quarantine station in New York Harbor. The purchase price is $1,395,275, which is the amount settled on in condemnation proceedings. No trouble is anticipated in passing the bill through the Senate.

Grand Jury Acts on Dr. Markoe Assassination.—The grand jury sitting on the death of Dr. Markoe, who was killed in St. George's Church on April 18, suggests that a petty jury at a trial be permitted to find a defendant "guilty but insane." At present the verdict must be worded "not guilty, but insane." It suggests also that the law be amended so that a corps of physicians or neurologists be appointed as the only competent authority to certify to the court on insanity cases.

Personal.—Dr. Royal S. Copeland, health commissioner, will sail, May 8, to represent the city of New York at the Congress of the Royal Institute of Public Health, which opens in Brussels on May 19. In response to an invitation from the institute, he will deliver an address on the prevention of epidemics. He will also make a tour of European ports to study public health conditions.——Dr. John F. Ferguson has been appointed a member of the board of education.——Dr. John J. Kindred, Astoria, has been appointed highway commissioner of Queens, succeeding Mr. George Howland Leavitt.

Memorial to Dr. Jacobi.—The stated meeting of the New York Academy of Medicine of May 6 was held in memory of the late Dr. Abraham Jacobi. This date being the anniversary of Dr. Jacobi's birth was made the occasion for the presentation by his family of a bronze bas-relief of Dr. Jacobi, the one presented to him some years ago by the New York State Medical Society. The presentation was made by Hon. George McAneny, his son-in-law, and was formally accepted by Dr. George David Stewart, president of the academy. In his address Dr. Stewart reviewed the services of Dr. Jacobi to the academy during his sixty years of membership. Dr. George E. Vincent, president of the Rockefeller Foundation, delivered an address on "The Life and Influence of Dr. Jacobi Upon His Time," in which he dwelt on Dr. Jacobi's contributions to the advancement of medical science, and his clear vision of the larger possibilities of the profession.

OREGON

Personal.—Dr. Lloyd W. Brooke, Portland, after work in France and Belgium during the war has been sent to Tirana, Albania, to establish an American Red Cross dispensary.

Public Health Association Organized.—Hood River County is the seventh in the state to organize a public health association. This organization was perfected March 17 at Hood River and officers and district chairmen elected.

Botulism Reportable.—The state board of health has included botulism in its list of communicable diseases and has circularized health officers and physicians, directing attention to the importance of reporting the occurrence of any cases and of giving information regarding the suspected cause.

PENNSYLVANIA

Philadelphia

Meeting of College of Physicians.—The section on general medicine of the College of Physicians of Philadelphia held its stated meeting, April 26, at which cardiac arrhythmias were discussed, the formal presentation of the subject being by Prof. Bernard S. Oppenheimer, assistant professor of clinical medicine in Columbia University.

Personal.—Dr. Charles E. De Medici Sajous has been named in the list of nominations for the Hall of Fame in New York University.——Dr. Lawrence F. Flick has received the Laetare Medal, the highest distinction that can be conferred on a Catholic layman in the United States, awarded annually by the University of Notre Dame, as a tribute to his work in the field of medicine.——Dr. Alexander Hugh F. Barbour, M.D., LL.D., vice president of the Royal College of Physicians, Edinburgh, Scotland, addressed the Obstetrical Society of Philadelphia, May 6, on "Reminiscence and Forecast."——At the stated meeting of the College of Physicians, May 5, Dr. George H. Whipple, professor of research medicine, University of California, and Drs. Francis Peyton Rous and Philip D. McMaster of the Rockefeller Institute, read papers.

Public Health Day.—Wednesday, May 12, 1920, was made public health day for Philadelphia. The following organizations cooperated: the Philadelphia County Medical Society, the College of Physicians, the city departments of public health and public welfare, the board of public education, Children's Playground Association, the Child Federation, City Parks Association, the Civic Club, the City Club, Philadelphia Housing Association and the Pennsylvania Society for the Prevention of Tuberculosis. Short addresses on health and hygiene were made in the public and parochial schools in the morning, and in the evening many community meetings in schoolhouses and recreation centers were addressed by physicians and other qualified speakers interested in the movement. The central and most important event was the joint meeting under the auspices of the county medical society and the associated organizations and departments named above at the Manufacturer's Club.

WEST VIRGINIA

State Society Meeting.—The annual meeting of the West Virginia State Medical Association will be held in Parkersburg, May 18 to 20, under the presidency of Dr. Henry R. Johnson, Fairmont.

Public Health Service Makes Dental Survey.—In cooperation with the state board of health, the Oral Hygiene Unit of the Public Health Service is making a state-wide survey

of dental hygiene problems in West Virginia, with special reference to schoolchildren. The unit is visiting every county seat in the state and making inspections of the mouths of a number of children attending school, demonstrating to the community the extent of the dental needs of the school population, and assisting the local communities in perfecting measures whereby dental services can be provided when such do not now exist. At the same time teachers are being instructed in the principles of dental prophylaxis. Eventually it is hoped to have the proper authorities establish a mobile dental clinic to visit the schools throughout the state.

WISCONSIN

Resignations from Faculty.—It is reported that Drs. Louis M. Warfield, Charles H. Stoddard, Arthur J. Patek, Carl H. Davis and James D. Madison have resigned from the faculty of Marquette University School of Medicine, Milwaukee, on account, it is said, of a difference of opinion on the university's theory that the life of the infant must be saved before that of the mother.

Personal.—Dr. Deno F. O'Connor, Verona, who was attached to the staff of Mercy Hospital, Chicago, and later was on duty with the Semenoff forces in Siberia has been detailed as surgeon to the steamer *President Grant*, by the American Red Cross, to accompany a number of Czecho-Slovaks to Prague.——Dr. Herbert E. Ellsworth has been reappointed health officer of Appleton.

Clinic in Oshkosh.—A tuberculosis clinic was opened at Oshkosh, April 9 and 10, under the auspices of the Wisconsin Antituberculosis Association, under the charge of Drs. Arehm A. Pleyte, Delafield; Robert L. Williams, Statesan, superintendent of the State Tuberculosis Sanatorium, Wales; Dr. William J. Clancy, Wauwatosa, assistant medical director of Muirdale Sanatorium; Dr. Oscar Lotz, Milwaukee, and Dr. J. Gurney Taylor, Milwaukee.

CANADA

Personal.—Dr. Delmer A. Craig, formerly medical superintendent of the Alexandria Sanatorium, London, Ont., and later consultant in diseases of the chest, Military District No. 1, has accepted the position of medical consultant on the staff of the Massachusetts-Halifax Health Commission, with headquarters at Halifax.

Returned Soldiers Under Treatment for Tuberculosis.—According to an announcement in the House of Commons a few days ago, there are 1,715 returned soldiers in Canada undergoing treatment for tuberculosis. Fifteen per cent. of these are considered incurable. The total number of ex-soldiers treated in sanatoriums by provinces are as follows: Ontario, 3,404; Quebec, 1,350; Prince Edward Island and Nova Scotia, 1,126; Manitoba, 687; Saskatchewan, 445; Alberta, 275; British Columbia, 735, and New Brunswick, 272.

GENERAL

Tropical Medicine Society Meeting.—At the annual meeting of the American Society of Tropical Medicine held in New Orleans, April 27, the following officers were elected: president, Dr. John M. Swan, Rochester, N. Y.; vice presidents, Drs. Karl F. Meyer, San Francisco, and Victor G. Heiser, New York; secretary-treasurer, Dr. Sidney K. Simon, New Orleans, and assistant secretary, Dr. Allen J. Smith, Philadelphia.

Gynecologists to Meet.—The annual meeting of the American Gynecological Society will be held in Chicago, May 24 to 26, with headquarters at the Congress Hotel. Three morning sessions and one evening session will be held. The morning sessions of May 24 and 26 and the evening session of May 25 will be held in the Florentine Room of the Congress Hotel, and the morning session of May 25 will be held at the South Shore Country Club. Drs. Thomas W. Eden, London, and Charles Jacob, Brussels, Belgium, will be guests of the society and will read papers. Dr. Thomas J. Watkins is chairman of the committee of arrangements, and the profession of Chicago is cordially invited to be present.

Air Service Surgeons Meet.—At the annual meeting of the Air Service Medical Association of the United States held in New Orleans, April 27, the following officers were elected: president, Col. Albert E. Truby, M. C., U. S. Army, Washington, D. C.; vice presidents, Col. Robert A. Strong, M. R. C., U. S. Army, New Orleans, Col. Louis H. Bauer, M. C., U. S. Army, Mineola, N. Y., Col. J. O. McReynolds, M. R. C., Dallas, Texas, Col. Isaac W. Jones, M. R. C., U. S. Army, Los Angeles, and Major Samuel Mederith Strong, M. C., U. S. Army, Carlstrom Field, Fla., and secretary-treasurer, Col. Nelson Gapen, M. C., U. S. Army (retired), Washington, D. C.

Medical Veterans of World War Meet.—At the annual meeting of the Medical Veterans of the World War held in New Orleans, April 26, the following officers were elected: president, Dr. Frank Billings, Chicago; vice president, Admiral Edward R. Stitt, U. S. Navy; secretary-treasurer, Col. Frederick F. Russell, M. C., U. S. Army, Washington, D. C., and trustees, Drs. Hubert Work, Pueblo, Colo., John M. Dodson, Chicago, George E. Brewer, New York, Joel E. Goldthwait, Boston, James C. Perry, Washington, D. C., and Col. Frank R. Keefer, M. C., U. S. Army, Washington, D. C. The next annual meeting will take place in Boston on the day preceding the meeting of the scientific assembly of the American Medical Association.

FOREIGN

Training School Re-equipped.—Rudolfinerhaus, the oldest and best known training school for nurses in Vienna, founded by Professor Billroth, has been reequipped by the American Red Cross and arrangements have been made whereby nurses can go back to their prewar work.

Token of the Gratitude of France.—The *Journal officiel*, of Paris, published in its issue of Feb. 24, 1920, the names of two Americans to whom had been presented the Médaille de la reconnaissance française, Major Haynes and Major Albert J. Chesley, both connected with the American Red Cross.

Chateau Made Into Sanatorium.—The American Red Cross Commission to Belgium has completed the purchase of the estate of Baron de Naere at Aertrycke near Thourout. The chateau stands on one of the highest points in Flanders, has spacious grounds and will accommodate several hundred patients. Baron Van de Gracht has given 200,000 francs to aid in the equipment of a sanatorium.

Roentgen's Retirement.—At the close of the winter semester this spring Professor Roentgen retired from his chair (experimental physics) at the University of Munich and resigned likewise the charge of the Physikalisches Institut. His discovery of the rays that bear his name was made at Würzburg in 1895. Although not a physician, the profession can almost claim him on account of the way it has appropriated his discovery. He was born March 27, 1845.

Salaries of Public Health Officers.—At the suggestion of the Society of Medical Officers of Health and the British Medical Association, the medical journals of England have decided to reject all advertisements for assistant medical officers of health when the annual salary offered is less than £500, exclusive of traveling expenses. The agreement draws attention to the inadequate remuneration of physicians in the public service, for salaries in many cases have remained unchanged despite the increased cost of living.

Extension of Compulsory Health Insurance in Germany.—The *Deutsche medizinische Wochenschrift* for April 15 brings word that the committee appointed by the government has reported in favor of raising the income limit for compulsory insurance against sickness to 20,000 marks. By means of the new "simplified legislation" system, this became a law April 26. The editorial comment is to the effect that "even in an absolute monarchy, the law-making machine could not turn out anything worse than this new regulation in the so-called 'most democratic republic in the world.' In connection with the compulsory family health insurance and recent enactments in regard to the war disabled, nine-tenths of the total population are thus withdrawn from private medical practice."

Personal.—Prof. A. Calmette of Lille and Paris recently visited Athens to inaugurate there the Pasteur Institute of Greece. He was accompanied by Drs. Abt and Blanc who are to remain in charge of the new institution. Calmette's pioneer research and successful application of antivenins, antiplague serum, and the ophthalmo-tuberculin reaction are well known, and his antituberculosis dispensary at Lille was the mother preventorium. He was appointed to succeed Metchnikoff in the Pasteur Institute at Paris, but on account of the German occupation of Lille was able only recently to enter on his post as subdirector, under Roux.——The Constantinople Medical Society receives an appropriation from the state. At the recent election, the officers chosen were, for president, Dr. Trantas, for secretary, Dr. A. S. Papadopoulo, and for treasurer, Dr. Antonacopoulo.

Government Services

Medical Officers Honored by King

The king of England, on the recommendation of Sir Douglas Haig, made Nov. 7, 1917, has voiced his appreciation of the distinguished service in the field of the following officers of the Medical Corps, U. S. Army: Cols. Christopher C. Collins; George W. Crile, Cleveland; Harvey Cushing, Boston; Mathew A. Delaney; Robert U. Patterson; Harry L. Gilchrist; James D. Fife; Richard H. Harte, Philadelphia, and Lieut.-Col Lucius L. Hopwood.——Miss Julia Stimson, superintendent of nurses, U. S. Army, has also received a like token of appreciation from the king.

Care of Speech and Hearing Defects

The Federal Board for Vocational Education estimates that there are among the injured veterans of the World War between ninety and 100 cases of men whose speech became absolutely unintelligible as the result of mouth or neck wounds, aphasia, or other causes. Of these men 25 per cent. are still in the hospital and 50 per cent. are in training or approved for training. The courses followed are agriculture, auto mechanics, commercial courses and chemistry. There are probably several thousand men throughout the country who became deaf in one ear, or who have suffered slight impairment of hearing in both ears. However, there are only about 200 for whom lip reading is necessary. Therefore, the approximate number of hearing and speech defect cases will be about 300.

Vocational Schools in Hospitals

A vocational school for veterans of the recent war may be established by the Federal Board for Vocational Education in any hospital where there are ex-service men in groups of sufficient numbers to justify the establishment of such a school. With this idea in mind, an officer of the Public Health Service made a survey which took in hospitals in the soldiers' homes at Dayton, Ohio, Marion, Ind., Danville, Ill., and Milwaukee; three Public Health Service hospitals—P. H. S. Hospital No. 30 and the Marine Hospital, both at Chicago, and P. H. S. Hospital, Markleton, Pa.; the private sanatorium at Catawba, Va., and the county hospital, "Healthwin," at South Bend, Ind.

HONORABLE DISCHARGES, MEDICAL CORPS, U. S. ARMY

Note.—In the following list, L. signifies lieutenant; C., captain; M., major; L. C., lieutenant-colonel, and Col., colonel.

CALIFORNIA

Los Angeles — Leonard, W. E. (C.)
San Francisco—Rocho, V. L. (L.)

DISTRICT OF COLUMBIA

Washington—Wyant, J. E. (C.)

FLORIDA

Jacksonville—Turck, R. C. (Col.)

GEORGIA

Bethlehem—Harris, E. R. (C.)
Milledgeville—Caraker, C. T. (M.)
Ocilla—Armour, W. S. (L.)

ILLINOIS

Bush—Deason, F. (C.)
Bushnell—Blackstone, G. R. (L.)
Chicago—Brown, A. K. (C.)
Ferguson, A. H. (L.)
Hagerty, T. W. (L.)
Stobie, R. E. (L.)
Winfield—Levy, E. (L.)

INDIANA

Indianapolis—Wiggins, E. L. (C.)
Kingsbury—Webster, B. (M.)

KANSAS

Elmdale—Johnson, F. T., Jr. (C.)
Garden City—Davison, C. O. (L.)
Leavenworth—Brown, A. L. (C.)
Osawatomie—Weathers, B. (L.)

KENTUCKY

Louisville—Stickley, A. E. (C.)

MARYLAND

Baltimore—Daniels, W. H. (C.)
Hachtel, F. W. (L.)
Owings Mills—Jones, K. B. (M.)

MASSACHUSETTS

Boston—Murphy, J. H. (L.)
Rudman, I. E. (C.)
Worcester—Crofton, G. H. (L.)

MINNESOTA

Vernon Center — Clement, T. G. (C.)

MISSISSIPPI

Houston—Wilson, E. P. (L.)
Jackson—Brewer, M. I. (L.)

MISSOURI

Clayton—Moore, R. D. (C.)
Kansas City—Hirschberg, S. B. (C.)
Weston—Calvert, L. C. (L.)

NEW MEXICO

Santa Fe—Hedding, B. E. (C.)

NEW YORK

Brooklyn—Spiegel, B. E. (C.)
Buffalo—Argus, F. (C.)
Fairport—Ferrier, W. H. (C.)
New York—Bensel, W. (L. C.)

OREGON

Portland—Keeney, H. I. (C.)

PENNSYLVANIA

Philadelphia—Harding, J. C. (L.)
Hendel, I. (L.)
Shenandoah—Mullahey, L. T. (L.)

SOUTH DAKOTA

Yankton—Wood, J. A. (C.)

TENNESSEE

National Soldier's Home—Byrd, E. E. (L.)

TEXAS

Caldwell—McLean, W. J. (L.)
Dalhart—Owens, R. L. (C.)
Palestine—Wilhite, G. W. (C.)
Rush—Barron, W. P. (L.)

VIRGINIA

Union Hall—Sutherland, F. P. (L.)

WASHINGTON

Kent—Gould, A. R. (C.)

WEST VIRGINIA

Cooper—Goodwill J. J, (M.)
White Sulphur Springs—Capito, G. B. (C.)

WISCONSIN

Fond du Lac—Harris, F. M. (L.)

WYOMING

Cheyenne—Snyder, O. K. (C.)

Foreign Letters

BUENOS AIRES

April 3, 1920.

Lethargic Encephalitis

While this disease has been observed in Montevideo, no cases had been reported so far in Argentina. Recently, however, Dr. J. P. Navarro has reported a case (*Semana Médica* **9**:283, 1920) and Dr. Gaspar Teglia three (*Revista Médica del Rosario* **10**:1, 1920).

Typhus Fever

The epidemic of typhus fever has not yet crossed the Andes in spite of the severity it has assumed in Chile (12,068 cases with 3,560 deaths from October to December, 1919). But in the northern part of Argentina, small foci have persisted in some villages of the province of Salta, which are situated in the mountains and have very poor communications. Some new cases have also been observed recently in the district of San Carlos. The national department of public health has decided to remove to La Quiaca the sanitary station, previously installed at Humahuaca.

Plague

For the last few months there have been occurring cases of bubonic plague in practically all of the South American countries, especially in the southern part Brazil, Uruguay and Argentina. The spread of the disease has coincided with the removal of the stored wheat. The national department of public health has increased the number of sanitary commissions, having created another one at Cordova, presided over by Dr. Ricardo Argerich, with three subcommissions under Drs. Pasalacqua, Machado and Pedrazzini, respectively.

National Department of Public Health

Dr. Capurro, president of the national department of public health, has just been elected a member of the House of Representatives, Dr. Teófilo Lecour becoming for the time being acting president. It is to be regretted that this department should be considered a political institution, as this causes constant changes in its personnel.

LONDON

April 23, 1920.

The Control of "Patent Medicines"

The ministry of health has appointed a committee to consider and advise on the legislative and administrative measures to be taken for the control of the quality and authenticity of such therapeutic substances offered for sale as cannot be tested adequately by direct chemical means. The committee includes Dr. H. H. Dale, head of the department of biochemistry and pharmacology under the Medical Research Council, and Dr. C. J. Martin, director of the Lister Institute of Preventive Medicine. In 1912, a select committee of the House of Commons on "patent medicines" was appointed. In its report, issued in 1914, it thus summed up the legal position in regard to "patent medicines": "For all practical purposes, British law is powerless to prevent any

person from procuring any drug, or taking any mixture, whether potent or without any therapeutic activity whatever (so long as it does not contain a scheduled poison), advertising it in any decent terms as a cure for any disease or ailment, recommending it by bogus testimonials and the invented opinions and facsimile signatures of fictitious physicians, and selling it under any name he chooses on the payment of a small stamp duty, for any price he can persuade a credulous public to pay."

The principal recommendations of the committee were: 1. That the administration of the law governing the advertisement and sale of "patent" and secret medicines be combined under one department of the state—the ministry of health when created, and then the Local Government Board. 2. That the manufacturers, proprietors and importers of such medicines be registered. 3. That an exact and complete analysis of every remedy, including medicated wines, with a full statement of the claims made for them, be furnished to the department. 4. That a special court or commission be constituted with power to permit or prohibit in the public interest, or on the ground of noncompliance with the law, the sale and advertisement of any remedy, and that the commission be a judicial authority, such as a metropolitan police magistrate sitting with two assessors, one appointed by the department and the other by some such body as the London chamber of commerce. 5. That the advertisement and sale (except the sale by a physician's order) of medicines purporting to cure the following diseases be prohibited: cancer, consumption, lupus, deafness, diabetes, paralysis, fits, epilepsy, locomotor ataxia, Bright's disease and rupture (without operation or appliance). 6. That all advertisements of remedies for venereal diseases and advertisements likely to suggest that a medicine is an abortifacient be prohibited. 7. That it be a breach of the law to use fictitious testimonials, or to promise to return money paid if a cure is not effected. Nothing was done to carry out these recommendations, for the war began and absorbed all the energies of the government. At last there is a prospect of checking the notorious nostrum evil.

Aeroplanes as Carriers of Disease Germs

In a lecture at the Royal Institution on "The Menace of Man's Dispersal of Insect Pests," Prof. H. Maxwell Lefroy pointed out how insect pests had been carried about the world from one country to another. This menace was going to be worse. In the first place, we were steadily linking up the world by railways, and especially by aeroplanes. Formerly we traveled by sea, and transported insects would die from the effects of a long journey; but the greatest carrier of pest-carrying insects was the aeroplane, which picked up insects, landed in a field, and deposited them, all within a few hours. The aeroplane was truly the disseminator of crop pests. During Dr. Chalmers Mitchell's flying trip through Africa, his aeroplane, while on the ground, had been attacked by white ants. The aeroplane could easily pick up the yellow fever breeding mosquito and bring it to another land within the space of a few hours. The tsetse fly, which engendered the African sleeping sickness, could be taken from West Africa to Brazil in a few hours. Among the insects the most to be dreaded was the chinch-bug, which in 1864 caused a loss of 73 million dollars' worth of wheat.

Proposed Medical Degree for a Bone Setter

Mr. Barker, the bone setter, has a large number of admirers among the public. A petition signed by more than 300 members of Parliament, past and present, has been presented to the Archbishop of Canterbury to exercise an ancient prerogative which empowers him to grant medical degrees in favor of Mr. Barker. The prerogative now, however, is in desuetude. It originated in the control once exercised by the church over the practice of medicine. Some years ago it was last exercised to confer the degree of M.D. on an already qualified physician, in consideration of some philanthropic or charitable work. As reported previously in THE JOURNAL, there was an agitation among members of Parliament to obtain for Mr. Barker an honorary degree from some of the universities in consideration of his services to wounded soldiers. It was unsuccessful, and it does not seem likely that the present attempt will have any better result.

Arsenic in Sugar; Sixty Persons Poisoned

An outbreak of arsenic poisoning, affecting sixty people, has occurred at the village of Haslemere, Surrey. About twenty households were involved, and among the victims were three bottle-fed babies. Suspicions of food poisoning were first aroused when three members of a family were seized with severe vomiting and internal pains after drinking some tea. When it was found that another member of the family, whose tea had not been sweetened, was unaffected, the sugar on the table was removed for examination, and the shop where it was purchased was visited by the local health officer. It was then discovered that a barrel of moist sugar recently arrived had become contaminated with a liquid preparation of some kind largely composed of arsenic. Inquiries led to the discovery that during transit by rail the sugar had come into contact with a leakage from a tin of weed killer, which contained arsenic. So far none of the cases have been fatal.

PARIS

April 15, 1920.

The Supply of Meat and Fish

Free commerce has been restored in the importation of frozen meats, until now a monopoly. A shortage is not to be apprehended, for the world supply of frozen meats has been found amply equal to consumption; in certain countries even, such as England, there is an overabundance. Moreover, there is no shortage of refrigerator ships in France since replenishment has proceeded almost entirely with French boats. Nevertheless, even though freedom of commerce is assured, the price remains under state control, which will prevent speculative attempts to increase the price exorbitantly. In spite of these precautions, consumption of frozen meats has really become less and less advantageous because of the depreciation of the franc. If this low standard continues, it will be necessary to employ the most logical meat substitute—fish. For this, it is necessary to assist the fishing industry, and above all, to help the work of steam trawlers whose yield is greater. The undersecretary of food control is at present engaged on this matter and particularly on a plan to obtain special concessions for coal trawlers. In anticipation of considerable traffic in fish, the railroad companies have also made some important preparations by setting up cold storage depots and by carrying refrigerator cars to preserve and transport the products of the fishing industry.

The Campaign Against Cancer

M. Le Troquer has just introduced a measure in the municipal council tending to assist the campaign against cancer, the ravages of which are increasing incessantly. Whereas in 1910 there were 3,073 cases of cancer, based on the number reported by physicians, in the following year there were 3,619. In the face of this state of affairs, M. Le Troquer thinks it opportune to encourage the use of radium in the treatment of cancer. Unfortunately, in Paris itself the *Assistance publique* is not in a position to give indigents the benefit of such special treatment, for no hospital has any

radium. M. Le Troquer likewise proposes the creation of a scientifically autonomous dispensary attached to the radium institute of the University of Paris, to which shall be entrusted 2.5 grams of radium to be purchased through an appropriation of 2,500,000 francs, which is requested in the measure.

Honor to Dr. Jacques Vaillant

The municipal council of Paris has unanimously expressed its deep regard for Dr. Jacques Vaillant, chief of the radiographic laboratory at the Hôpital Lariboisière, who recently suffered amputation of the left arm because of serious injuries from radiodermatitis.

Congress of Physiology

A congress of physiology will be held in Paris, July 16-20, under presidency of Dr. Charles Richet. Applications and assessments (35 francs) should be sent to M. Lucien Bull, treasurer, Institut Marey, avenue Victor-Hugo, Boulogne-sur-Seine; correspondence should be addressed to Professor Gley, Collège de France, 14 rue Monsieur-le-Prince, Paris.

Decrease in the Birth Rate

The National Alliance for Increasing the Population of France recently published the figures of the fluctuation of the civil population of Prussia in comparison with those of France. From July 1, 1914, to June 30, 1918, exclusive of deaths in the armies, the population of uninvaded France (33,000,000 inhabitants) decreased 973,000; that of Prussia (42,000,000 inhabitants) decreased 313,000 during the same period. With a civil population of 9,000,000 less than Prussia, France suffered a loss three times as great. Taking into consideration the ten invaded departments, for which complete statistics are lacking, but where the birth rate has been very low and the mortality quite high, the decrease in the population of France appears even much more formidable. The great difference between France and Prussia is due entirely to the higher German birth rate, which, although it decreased during the war in the same proportion as that of France, is still much higher than in the latter country.

Physical Exercise in the Army

By an order of M. André Lefèvre, minister of war, sports have been made compulsory in the army. Hereafter all field officers and captains must be qualified to direct the physical exercises of their commands, and all lieutenants and sublieutenants must be able to perform the functions of captain of a football team.

Promotion of Clinical Research

A committee has just been formed under the patronage of M. Paul Deschanel, president of the French republic, and with M. Raymond Poincaré, ex-president of the republic as honorary president, with a view of establishing at Paris a great laboratory of chemical research, under the name of *Institut de la Victoire*. Dr. Emile Roux, director of the Pasteur Institute, Prof. Charles Richet of the Faculty of Medicine, and Professor Bordas of the Collège de France, are among the members of the organization committee.

Committee on Mental Hygiene

The minister of hygiene, assistance and social providence has just instituted a committee on mental hygiene, with instructions to make a technical study of all questions relating to mental hygiene, psychiatry, and applied psychophysiology of the various social activities.

Death of Dr. G. Sarda

Announcement has been made of the death of Dr. G. Sarda, aged 65, professor of medical jurisprudence at the University of Montpellier.

Deaths

John Chalmers DaCosta, Jr. ⊕ M. C., U. S. N. R. F., Philadelphia; Jefferson Medical College, 1893; aged 48; died in St. Timothy's Hospital, April 26, from skull fracture sustained in an automobile accident. He was lieutenant and assistant surgeon, U. S. V., during the Spanish-American War; was well known as a specialist on internal medicine, holding the position of associate professor of medicine in his alma mater; attending physician at Jefferson Hospital, consulting physician to the Northwestern General Hospital and hematologist to the German Hospital. He was a fellow of the American Academy of Medicine, and of the College of Physicians of Philadelphia, and the author of articles and monographs on clinical hematology, surgical hematology and the principles and practice of diagnosis.

John Williams Severin Gouley, Brooklyn; College of Physicians in the City of New York, 1853; University of the City of New York, 1878; aged 87; died at the home of his daughter, April 26, from senile debility. He was visiting surgeon to Bellevue Hospital from 1859 to 1898; consulting surgeon to Bellevue and St. Vincent's hospitals, New York City, and at one time professor of anatomy in the Vermont College, Woodstock, and demonstrator of anatomy in the University of the City of New York. During the Civil War he was attached to the medical staff of the Central Park Military Hospital, and later served with the armies in the field.

Adolph August Hoehling, Medical Director, Rear Admiral, U. S. Navy (retired), Chevy Chase, Md.; University of Pennsylvania, Philadelphia, 1860; aged 81; died, April 25, from arteriosclerosis. He entered the Navy as assistant surgeon, April 4, 1861, was promoted to passed assistant surgeon in 1865, to surgeon in 1867, to medical inspector in 1885, to medical director in. 1893, and to rear admiral on June 29, 1906, the date on which he was retired for disability incident to the service, after thirteen years and five months' sea service.

Louis Nott Lanehart ⊕ Hempstead, L. I., N. Y.; Albany (N. Y.) Medical College, 1883; aged 50; one of the organizers of, and surgeon to, the Nassau Hospital; surgeon to the Babylon, Mercy, and Eastern Long Island hospitals, and consulting surgeon to the Williamsburg Hospital; health officer of Hempstead village and township; died, April 25, from heart disease, after an operation on his throat.

Lunsford Eliga Cox, Greenwood, Ind.; State College of Physicians and Surgeons, Indianapolis, 1907; aged 37; a member of the Indiana State Medical Association; once coroner of Johnson County; who had been under treatment in a sanatorium for nervous diseases in Indianapolis, is said to have committed suicide at that institution, by strangulation, April 26.

John Mitchell Benedict, Woodbury, Conn.; University of the City of New York, 1882; aged 68; a member of the Connecticut Medical Society; visiting physician and surgeon to the Waterbury Hospital; major and surgeon of the Second Infantry, Connecticut National Guard from 1889 to 1895; died, April 23, from angina pectoris.

John Gailey Campbell ⊕ Chicago; Northwestern University Medical School, Chicago, 1896; aged 50; instructor in pediatrics and formerly instructor in physical diagnosis and clinical medicine in his alma mater; medical referee of the Mutual Life Insurance Company of New York; died, May 10, from pneumonia.

David Andrew Conrad ⊕ Santa Barbara, Calif.; University of California, Berkeley and San Francisco, 1893; aged 48; captain, M. C., U. S. Army (emergency); who had been under treatment at the Letterman General Hospital, Presidio of San Francisco; died in Santa Barbara, April 6.

Claren Emmett Pfeifer ⊕ Columbus, Ohio; Ohio Medical University, Columbus, 1904; aged 45; captain, M. R. C., U. S. Army, and discharged April 25, 1918; head of the United States Public Health Service for the central district of Ohio; died in his office, April 23, from diabetes.

Joseph Fraenkel, New York City; University of Vienna, Austria, 1890; aged 52; assistant professor of clinical medicine in Cornell University Medical School, New York City; a fellow of the New York Academy of Medicine; died, April 24, from disease of the stomach.

⊕ Indicates "Fellow" of the American Medical Association.

Ewing Jordan, Philadelphia; University of Pennsylvania, Philadelphia, 1871; aged 73; from 1880 to 1885 first assistant physician to the Pennsylvania State Hospital, Norristown; died at the home of his brother in Philadelphia, April 28.

Julius Scheider, New York City; University of Vienna, Austria, 1872; aged 74; a member of the staff of the German Hospital, New York City, in the department of diseases of children; died, April 26, from heart disease.

Donald Meronan Kelley, Brookston, Ind.; University of Michigan, Ann Arbor, 1881; aged 65; one of the founders and president for several years of the Brookston Canning Company; died, April 16, from arteriosclerosis.

Richard James Plumer Goodwin, Malden, Mass.; Harvard University Medical School, 1865; aged 82; a member of the Massachusetts Medical Society; surgeon of U. S. Volunteers throughout the Civil War; died, April 19.

Arthur Judson Benedict ⊕ Newburgh, N. Y.; University of Buffalo, N. Y., 1876; a specialist in diseases of the ear, nose and throat; died in St. Luke's Hospital, Newburgh, April 17, after an operation for gallstones.

Willis Curtis Cook, Brockport, N. Y.; Toledo (Ohio) Medical College, 1887; aged 88; for forty-two years a practitioner of medicine; died at the home of his granddaughter in Albion, N. Y., April 14.

Arthur Emery Green ⊕ Lansing, Mich.; University of Michigan, Ann Arbor, 1902; aged 44; a specialist in pediatrics; until 1919 a practitioner of Leslie, Mich.; died, April 17, from heart disease.

William Dawson Robinson, East Orange, N. J.; Bellevue Hospital Medical College, 1879; aged 77; a member of the Medical Society of New Jersey; a veteran of the Civil War; died, April 13.

John William Clarke ⊕ Lyndhurst, N. J.; Medico-Chirurgical College of Philadelphia, 1901; aged 52; health officer of Lyndhurst for several years; died, April 12, from cardio-renal disease.

Mary Parker, Waltham, Mass.; Hahnemann Medical College, Chicago, 1910; aged 47; a member of the staff of the Massachusetts Homeopathic Hospital; died, April 8, from carcinoma.

Charles James Helm ⊕ Peru, Ind.; Harvard University Medical School, 1887; aged 57; consulting surgeon at the Wabash Railway Hospital, Peru; died, April 27, from pneumonia.

Wallace Harlow Deane, Springfield, Mass.; Yale University, New Haven, Conn., 1877; aged 66; a member of the Massachusetts Medical Society; died, April 10, from pneumonia.

Valcollon Warsaw Mather, Kansas City, Mo.; Pulte Medical College, Cincinnati, 1883; aged 73; died in the Robinson Sanitarium, Kansas City, April 18, from cerebral hemorrhage.

Reginald Francis Cox, Alexandria, Va.; Tulane University, New Orleans, 1918; aged 29; died at the home of his parents in Alexandria, April 19, from tuberculosis following influenza.

Henry Tupper Drane, Clarksville, Tenn.; Bellevue Hospital Medical College, 1873; aged 70; died at the home of his daughter in Brookhaven, Miss., March 24, from pneumonia.

William R. Todd, Seattle; Rush Medical College, 1879; aged 90; at one time county physician of Eureka County, Nev., and of Clear Creek County, Colo.; died, April 23.

Christian P. Glahn, Palmyra, Mo.; Washington University, St. Louis, 1902; aged 45; health officer of Marion County; died, April 28, from lethargic encephalitis.

Louis Charles Sinclair, Ripley, Ont.; University of Toronto, Ont., 1896; died in the Kincardine (Ont.) General Hospital, March 7, from pneumonia.

Julius A. Goltz ⊕ Chicago; Bennett College of Eclectic Medicine and Surgery, Chicago, 1887; aged 67; died, April 1, from cirrhosis of the liver.

Cyprian R. Wright, Frankton, Ind.; Medical College of Indiana, Indianapolis, 1888; aged 57; died, April 17, from carcinoma of the prostate.

Eldridge Allen Toby, River Falls, Wis.; University of Vermont, Burlington, 1874; aged 72; died, April 23, from cerebral hemorrhage.

Correction.—The notice of the death of Dr. Julius Jerome Goldstein which appeared in THE JOURNAL of May 1, is an error.

Marriages

ERASMUS DARWIN FENNER to Mrs. Sadie Cameron McDonald, both of New Orleans, April 28.

JESSE HENRY ROTH, Kankakee, Ill., to Miss Josephine McAuley of Chicago, recently.

RALPH TOWNSEND TRAVERS to Miss Catherine Davin, both of New York City, May 1.

CYRIL M. SMITH to Miss Ednah Katherine Kolkebeck, both of Brooklyn, Dec. 20, 1919.

GRANT GOULD SPEER to Miss Eunice Amanda Parker, both of Los Angeles, April 28.

WILLIAM W. ALDERDYCE to Mrs Litta Marie Crouse, both of Toledo, April 20.

WILLIAM SIMON CROWLEY to Miss Ethel Roth, both of Chicago, April 28.

Correspondence

TEACHERS IN THE PRECLINICAL SCIENCES

To the Editor:—For several weeks, nearly every number of THE JOURNAL has contained one or more statements by eminent professors in clinical departments in various medical schools, most of them delivered at the recent conference on medical education, damning the preclinical instructors. They state with absolute positiveness that the clinical departments should contain each its own pathologist, its own assistant skilled in physiologic technic, and others in other fields. Any dependence on the preclinical departments is thus to be rendered unnecessary, and the laboratory branches are to be left with even less clinical and hospital connection than at present. This aim appears to be everywhere a part of the plan for full-time clinical departments.

Soon after these addresses, the report of the committee of the National Research Council was published, revealing the really appalling conditions in the preclinical departments—the inferior pay and the lack of young men going into the medical sciences.

Now comes the report of the Council on Medical Education, Dr. A. D. Bevan, chairman, which indicts the preclinical instructors for being "ultrascientific," and states bluntly that only men with the M.D. degree should be allowed in the preclinical chairs, and these instructors must be "able to give students the medical point of view," and should be required "to keep in touch with the art and science of medicine."

Nor is this all. Three of the leading medical schools in the East have vacant chairs of physiology, and it is commonly reported that men fit to fill them are lacking in America, and that the importation of foreigners for one or more of them is under consideration. Such a rumor, even assuming it untrue, is a humiliation and discouragement to American physiologists and to American science in general. It indicates that something is fundamentally wrong.

The situation is: No man of the Ph.D. variety should be allowed in the preclinical chairs. No man of ability with the M.D. degree will in fact strive for them or stay in them, against the immensely greater opportunities and advantages offered now, and to be offered in even richer measures in the future, by the clinical departments. Unless something pretty radical is done and done soon, either these chairs will be filled by men with the Ph.D., or they will be vacant.

Perhaps the instruction in the medical sciences will then be given by the pathologic, physiologic, pharmacologic and other assistants, expert in each branch, who are to be included in the clinical departments. Until the freezing of the source brings about its inevitable result, this solution would have one great advantage to recommend it. It would attract, instead of repelling. Under it the young men giving

this instruction would have before them an open road to a future worth a man's efforts, namely, to become professors of medicine and surgery.

One committee, looking at matters from a standpoint opposite to that of the Council on Medical Education, has even advocated encouraging the development of preclinical instructors of the Ph.D. variety. But to get young men into the medical science through the avenue of the Ph.D. is, under present conditions, a cruel proposition. They get in; they cannot get out, as an M.D. could; and there is then nothing for them to do but to accept the starvation wages, perhaps a half of the pay of men no abler nor more loyal and industrious in the clinical chairs, plus such objurgation for their "lack of a medical standpoint" as the columns of The Journal have lately carried.

I am one of the men who, in spite of the handicap of the Ph.D., have devoted their lives to making what contribution they could to medicine. And I ask: How do Dr. Bevan and the others expect us to get or keep a medical standpoint? What opportunity have we? Suppose a man receives a call to the chair of medicine, and he asks "What will be my relation to the hospital?" The answer is, "Chief of everything in your field, with power and subordinates and money." Suppose, on the contrary, that a man is called to the chair of physiology, and asks the same question; the answer will be, "Nothing whatever." And as like as not there will be added, *sotto voce*, "We don't want you around the hospital; any applications of physiology to diagnosis, treatment or clinical research we will supply in our clinical departments." This is particularly true of the full-time clinical departments, as planned, according to every description thus far published. What would the surgeons say if the department of medicine put in a surgical assistant? Or how would the professor of medicine like to have the department of surgery include an internist in its staff? Yet each of these departments in many places insists on having its own pathologic laboratory with technicians and instructors.

Do not misunderstand. Not a word is here said against the "full-time plan." But if the difference in the status of the clinical and the preclinical instructors is made as glaring as is proposed, there is no question which field of life work the young man of ability will choose, and which he will reject.

We are stigmatized as "off horses," and yet we are not allowed in the team. Doubtless there will be exclamations over this: What can a physiologist do around a hospital? The answer is that he can have charge of the things which physiology has contributed: electrocardiography and sphygmography, basal metabolism, electrodiagnosis, blood analysis, respiratory analyses and tests, etc. The present inadequacy of clinical work regarding the hematorespiratory functions is simply monstrous.

The thing which, even more than low pay, is inhibiting the manufacture of physiologists is the lack of a market in which the product can be sold. To do business on any scale there must be some rapidity of turn over. At present an assistant starts in a physiologic laboratory, and after fifteen or twenty years he may become a professor. Think of a business with a turn over once in fifteen or twenty years! It is more like a cemetery than a career. Pathology and biochemistry have larger markets, in technical positions to be filled outside of schools, than physiology and anatomy; and they are doing correspondingly more business and are more alive.

But suppose that all this were changed, and that the doors of opportunity were open! The regular course of events for every young man fitting himself for the highest grade of clinical work would then begin (after a year in the hospital) with a couple of years spent entirely in a laboratory. He would then be promoted to one of the clinical physiologic instructorships, or some other liaison position, for example, in charge of the electrocardiograph. There, while still part of a laboratory department, he would come into contact with clinical phenomena and apply his laboratory training. He would become more and more interested in clinical medicine and would in a few years pass on into one of the clinical departments, leaving a place for the promotion of another man from the laboratory. There could then be a turn over every two or three years. One man in fifteen or twenty would finally become a professor of some preclinical branch. (There are only a dozen or two good positions of this sort to be filled in each generation in a nation of one hundred million people.) There would then be a group from whom

The difficulty about such liaison arrangements as those here clinical medicine, would be none the worse for their early contact with science beyond the student stage.

It would be a part of this plan also to cut down the required preclinical courses, and to enlarge the electives in junior and senior years in the various branches of clinical physiology and like subjects.

The difficulty about such liason arrangements as those here suggested is that they involve a system of functional organization and cooperation, instead of the system of water tight compartments which now prevails, and which practically every one who has discussed medical education lately seems to assume as a matter of course. They seem unaware of the fact that some of the largest and most ably managed industries in the country have discarded the water tight compartment system, and operate today under what is termed "functional organization." This is true, for example, of all the companies of the Bell Telephone System. There is urgent need that the authorities and donors who today are directing the development of medical education should inform themselves regarding that system, of which the fundamental principle is a real cooperation.

There are many physiologists in America who can say truly that the thing for which we have striven hardest and against the greatest inertia for many years has been the development of our lines of work into the clinical field. As chairman of the Section on Pathology and Physiology of the American Medical Association in 1911, I made the topic of my address "Clinical Physiology—An Opportunity and a Duty." The gentlemen who now attack us might advantageously look this paper up in the files of The Journal and reread, or at least, read it. It can be asserted without fear of successful contradiction, I believe, that in general the professors of physiology in America fulfil the duty described in that paper to the limit of their opportunities. It is the opportunity that is lacking.

Yandell Henderson, Ph.D., New Haven, Conn.
Professor of Physiology, Yale University
School of Medicine.

"BONDS NOT NECESSARY FOR PHYSICIANS"

To the Editor:—My attention has just been directed to your editorial comment under the caption "Bonds Not Necessary for Physicians" (The Journal, April 10, 1920, p. 1029).

I am sure that it was not your intention to direct your criticism against the legal profession as a whole, but your article does to a marked degree refer and reflect on all of the legal profession.

With reference to the specific matter at issue, I wish to state that I not only procured a supply of these blanks, but filled them out and took the acknowledgments in my office and made no charge of any kind or character, and there has never to my knowledge been any charge made in my office to members of the medical profession, for services of this

character. And I know this to be the general rule in our profession.

I was shown one of the circulars to which you refer, and I immediately took the matter up with the Bar Association of St. Louis, who promptly investigated the matter with the result that it was found that the party who had sent out the circulars in question was not a member of the Bar and was not licensed to practice law.

With these facts before you, I feel certain that you will wish to modify your article of April 10, which is a direct reflection on the legal profession as a whole.

S. C. BATES, Springfield, Mo.
Attorney and Counselor at Law.

[COMMENT.—Our comment did not reflect on the legal profession. The criticism was not on the fact that a charge was made for services. The circulars criticized conveyed the impression that a bond was necessary for physicians in order to secure a permit, and that the charge made was for the bond and not for the services. In any event, if physicians need legal assistance it would seem much better to utilize home talent.—ED.]

RAILROADS AS A SOURCE OF INFECTION

To the Editor:—In speaking of the spread of tropical diseases in the United States (THE JOURNAL, Feb. 14, 1920, p. 463), you do not mention what must be a prolific source of spread of any intestinal infections: the absolute lack of control of intestinal discharges of passengers on trains and boats. These discharges are daily scattered along all the routes of travel. Is it not time that some means were sought for a more sanitary way of disposing of them? I have no suggestions to offer, except that the separation of the urine and feces might make it more feasible to destroy the latter instead of sending them forth as a menace to the public health. Surely the Public Health Service, which has done so much in the way of public hygiene, could devise proper means for combating this evil.

R. W. DUNLAP, M.D., Chefoo, China.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

THYROID EXTRACT IN REDUCTION OF WEIGHT

To the Editor:—I have had an inquiry in regard to the use of thyroid extract for persons greatly overweight. I wish you would make some observation in regard to this in Queries and Minor Notes.

J. D. GRAHAM, M.D., Columbus, Kan.

ANSWER.—When given in full dosage for long periods of time, thyroid extract produces anemia, emaciation and muscular weakness, excessive sweating, increased heart rate, etc. It will probably cause loss of weight, and with it faintness, loss of strength and debility. Thyroid extract has been used in some "fat reducers." It is far too dangerous a drug to be self-prescribed. If used at all for the reduction of weight, the patient should be under competent medical observation.

Training for Medical Research.—To qualify a man to be a skilled investigator in bacteriology, in physiology, and in chemistry, many years of special training are necessary. If it be realized that before a man is qualified to undertake an investigation for the prevention and cure of disease—the real object of medical research—he must have a knowledge of symptoms, it will be seen that a training is required which is bound to take a great many years.—J. MacKenzie, *Brit. M. J.* **1**:109 (Jan. 24) 1920.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

CALIFORNIA: San Francisco, June 28-July 1. Sec., Dr. Chas. B. Pinkham, 135 Stockton St., San Francisco.
DELAWARE: Wilmington, June 15-17. Pres. Medical Council, Dr. H. W. Briggs, 1026 Jackson St., Wilmington.
FLORIDA: Eclectic Board, Jacksonville, June 18-19. Sec., Dr. G. A. Munch, 1306 Franklin St., Tampa.
FLORIDA: Regular Board, Jacksonville, June 14-15. Sec., Dr. Wm. M. Rowlett, Citizens Bank Bldg., Tampa.
GEORGIA: Atlanta, June 9-11. Sec., Dr. C. T. Nolan, Marietta.
ILLINOIS: Chicago, June 14-17. Director, Mr. Francis W. Shepardson, Springfield.
IOWA: Iowa City, June 16-18. Sec., Dr. Guilford H. Sumner, Capitol Bldg., Des Moines.
KANSAS: Topeka, June 15-16. Sec., Dr. H. A. Dykes, Lebanon.
KENTUCKY: Louisville, May 17. Sec., Dr. A. T. McCormack, 532 W. Main St., Louisville.
LOUISIANA: New Orleans, June 10-12. Sec., Dr. E. W. Mahler, 141 Elk Place, New Orleans.
MARYLAND: Baltimore, June 15. Sec., Dr. J. McP. Scott, 137 W. Washington St., Hagerstown.
MICHIGAN: Ann Arbor, June 8-10. Sec., Dr. B. D. Harrison, 504 Washington Arcade, Detroit.
MINNESOTA: Minneapolis, June 1-4. Sec., Dr. Thos. McDavitt, 539 Lowry Bldg., St. Paul.
MISSOURI: St. Louis, June 14-16. Sec., Dr. Geo. H. Jones, State House, Jefferson City.
NATIONAL BOARD OF MEDICAL EXAMINERS: Philadelphia, May 19-26. Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia.
NEBRASKA: Lincoln, June 9-11. Sec., Department of Public Welfare, Mr. H. H. Antles, Lincoln.
NEW JERSEY: Trenton, June 15-16. Sec., Dr. Alexander MacAlister, State House, Trenton.
NEW YORK: New York, Albany, Syracuse, Buffalo, May 18-21. Assistant, professional examinations, Mr. Herbert J. Hamilton, Education Bldg., Albany.
NORTH CAROLINA: Raleigh, June 21. Sec., Dr. H. A. Royster, 423 Fayetteville St., Raleigh.
OHIO: Columbus, June 8-11. Sec., Dr. H. M. Platter, State House, Columbus.
RHODE ISLAND: Providence, July 1-2. Sec., Dr. Byron U. Richards, State House, Providence.
SOUTH CAROLINA: Columbia, June 22. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.
TENNESSEE: Memphis, Nashville and Knoxville, June 11-12. Sec., Dr. A. B. DeLoach, 1001 Exchange Bldg., Memphis.
TEXAS: Galveston, June 22-24. Sec., Dr. Thos. J. Crowe, Trust Bldg., Dallas.
VERMONT: Burlington, June 29-July 1. Sec., Dr. W. Scott Nay, Underhill.
VIRGINIA: Richmond, June 22-25. Sec., Dr. J. W. Preston, McBain Bldg., Roanoke.
WISCONSIN: Milwaukee, June 29-July 1. Sec., Dr. John M. Dodd, 220 E. Second St., Ashland.
WYOMING: Cheyenne, June 7-9. Sec., Dr. J. D. Shingle, Cheyenne.

Wyoming February Examination

Dr. J. D. Shingle, secretary of the Wyoming State Board of Medical Examiners, reports the written examination held at Thermopolis, Feb. 2-4, 1920. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Two candidates were examined, who passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Chicago College of Medicine and Surgery		(1918)	87.5
St. Louis University		(1906)	75

South Dakota January Examination

Dr. Park B. Jenkins, secretary of the South Dakota State Board of Health, reports the written examination held at Pierre, Jan. 13-15, 1920. The examination covered 13 subjects and included 105 questions. An average of 75 per cent. was required to pass. Of the 23 candidates examined, 22 passed and 1 failed. Five candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Chicago College of Medicine and Surgery		(1918)	83.2
College of Physicians and Surgeons, Chicago		(1908)	89.2
Northwestern University		(1916)	84.7
Rush Medical College	(1889) 85, (1916) 87.6,	(1919)	88.9
Indiana University		(1908)	89.9
Sioux City College of Medicine		(1906)	79.8
State Univ. of Iowa Coll. of Med.	(1897) 78.1,	(1904)	81
University of Louisville		(1909)	88
Harvard University		(1896)	84.6

Tufts College Medical School	(1915)	78.4
University of Michigan Medical School	(1919)	87.5
Nat'l Univ. of Arts and Sciences	(1915) 82, (1918)	78.2
Washington University	(1919)	81.4
John A. Creighton Medical College	(1911)	84.6
University of Nebraska	(1918)	86.8
University College of Medicine, Richmond	(1907)	81.9
Marquette University	(1913)	83.3
Montreal School of Medicine and Surgery	(1903)	85.2
FAILED		
National Medical University, Chicago	*(1909)	59.2

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Rush Medical College		(1913)	N. Dakota
University of Louisville		(1908)	N. Dakota
University of Minnesota Medical School		(1916), (1919)	Minnesota
University of Bonn, Germany		(1898)	N. Dakota

*Official information on file indicates that this candidate was neither a student nor a graduate of the institution named.

District of Columbia January Examination

Dr. Edgar P. Copeland, secretary of the District of Columbia Board of Medical Examiners, reports the oral and written examination held at Washington, Jan. 13, 1920. The examination covered 16 subjects and included 80 questions. An average of 75 per cent. was required to pass. Eight candidates were examined, all of whom passed. Two candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Arkansas		(1917)	75.5, 75.8
Georgetown University		(1918) 81.6, (1919)	81.8, 86.8
George Washington University		(1919)	80.5
Howard University		(1918) 82.3, (1919)	87.3

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Howard University		(1902)	Virginia
University College of Medicine, Richmond		(1905)	Virginia

Florida March Examination

Dr. George A. Davis, secretary of the Florida Homeopathic Board of Medical Examiners, reports the written examination held at Jacksonville, March 16, 1920. The examination covered 7 subjects and included 70 questions. An average of 75 per cent. was required to pass. Of the six candidates examined, 3 passed and 3 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
State University of Iowa College of Homeo. Medicine		(1911)	82
Cleveland Medical College		(1897)	75
Cleveland University of Medicine and Surgery		(1895)	79
FAILED			
Chicago Homeopathic Medical College		(1904)	69
Homeopathic Medical College of Missouri		(1880)	14
Homeopathic Hospital College, Cleveland		(1886)	67

Book Notices

TEXT-BOOK OF MEAT HYGIENE WITH SPECIAL CONSIDERATION OF ANTEMORTEM AND POSTMORTEM INSPECTION OF FOOD-PRODUCING ANIMALS. By Richard Edelmann, Ph.D., Medical Counsellor. Fourth edition by John R. Mohler, A.M., V.M.D., Chief, United States Bureau of Animal Industry. Cloth. Price $4.75. Pp. 472 with 166 illustrations. Philadelphia: Lea & Febiger, 1919.

When we consider that meat and meat products constitute a large part of the diet of the American people, physicians in this country cannot very well escape the obligation of possessing at least a general knowledge of the subject of meat inspection and meat hygiene in general, just as a modern pediatrician is of necessity interested in and must inform himself on the developments of milk hygiene. It will hardly do to shift all the responsibility in these matters to the shoulders of the veterinary inspectors. There is still some meat and game on the market that is not inspected; and even as regards that which is inspected, with the immense mass of material passing through the hands of the inspectors, it can scarcely be expected that no diseased carcasses and no faulty meat products will be overlooked. Some knowledge of the problems with which meat inspectors have to deal, and more especially of the abnormal conditions and diseases found in food-producing animals, will facilitate the diagnosis of pathologic conditions that arise from the consumption of meat or meat products which were not quite up to standard, but which escaped the watchful eye of the inspector or which deteriorated in quality in the interval that elapsed between the time when the stamp "U. S. Inspected and Passed" was affixed and the date of consumption. The book contains fifteen chapters, of which Chapters VII-XI will prove most interesting, as they cover such topics as the abnormal conditions and diseases of food-producing animals, postmortem changes of meat, the examination of preserved meats, chickens, game, fish, amphibia and crustaceans, and meat poisonings. As many diseases of the human body find their counterpart in animals, a comparative study of this sort will prove helpful; and for that purpose, the present work will furnish valuable aid.

THE NOSE, PARANASAL SINUSES, NASOLACRIMAL PASSAGEWAYS AND OLFACTORY ORGAN IN MAN. A Genetic, Developmental and Anatomico-Physiological Consideration. By J. Parsons Schaeffer, A.M., M.D., Ph.D., Professor of Anatomy of the Jefferson Medical College of Philadelphia. Cloth. Price, $10 net. Pp. 370, with 204 illustrations. Philadelphia: P. Blakiston's Son & Co., 1920.

This study of the embryology, development and anatomy of the human nose, accessory sinuses, olfactory organ, and related structures bears evidence of exhaustive observation and research. Special consideration is given throughout to the important matter of anatomic variations or so-called anomalies. The author first describes the general embryology and development of the special organs under consideration, and carries this through fetal life, infancy and childhood, adding numerous photographs and drawings of specimens and dissections throughout these various stages. In this chapter is also a consideration of congenital defects. The following chapter is devoted to the anatomy of the fully developed nose, wherein the structures are treated as a whole and in correlated groups and in individual detail with excellent illustrations, all combining to convey an illuminating knowledge of the anatomy of the nose itself. Each of the next four chapters is devoted to one of the nasal sinuses, namely, maxillary, frontal, sphenoidal and ethmoidal. Each sinus is described in the fetal, childhood and adult stage, with special consideration of anatomic variations as regards size, shape, location, septums, diverticula, duplication, etc. Mention is made regarding the relation of the sphenoidal sinus to the hypophysis cerebri, optic nerve and commissure, cavernous sinus, and its contained structures. A consideration of the nasolacrimal apparatus is followed by a description of the nasal mucosa with its histologic variations as to location, etc. There is then a chapter devoted to the blood and lymph-vascular systems, and another to the common sensory and sympathetic nerves. The next chapter describes the olfactory apparatus both as to its peripheral organ and central organ or olfactory brain. The final chapter treats of the physiologic functions of the nose. The volume is well written, and the illustrations are excellent.

ON FACIAL NEURALGIA AND ITS TREATMENT, WITH SPECIAL REFERENCE TO THE SURGERY OF THE FIFTH NERVE AND THE GASSERIAN GANGLION. By J. Hutchinson, F.R.C.S., Surgeon to the London Hospital. Cloth. Price, $4. Pp. 216, with illustrations. New York: William Wood & Co., 1919.

This book contains a practical discussion of the symptoms and diagnosis of tic douloureux, as well as of minor forms of neuralgic pains in the face due to demonstrable causes, such as carious teeth, ocular and nasal affections, and syphilis. The surgical anatomy is adequately presented and well illustrated; less must be said of the surgical treatment, which is not brought up to date. In particular, too little consideration is given to the greatly improved methods in gasserian ganglion and sensory root operations, perfected by American surgeons in the last fifteen years, while antiquated British methods are given preference. Considerable space is devoted to alcohol injections, especially to the work of the British imitators, while that of the French originators of the external method is scarcely considered. In spite of these shortcomings, however, this is a readable book, and will be found helpful by those especially interested in the subject.

Medicolegal

Workman's Compensation Before and After Amputation

(Addison v. W. E. Wood Co. et al. (Mich.), 174 N. W. R. 149)

The Supreme Court of Michigan says that the plaintiff suffered an accidental injury while in the employ of the W. E. Wood Company, and was paid compensation for total incapacity at the rate of $10 a week for fifty-four and one-third weeks. His foot was then amputated, and payments at the rate of $10 a week were continued until he had been paid and tendered compensation for 125 weeks, the compensation specified in the workmen's compensation law of Michigan for loss of a foot. It was contended for the defendants that the one injury which the plaintiff sustained resulted in the loss of a foot, entitling him to 125 weeks' compensation for such loss, to be computed from the date of the injury, the exact time when the foot was amputated having no material significance. But the industrial accident board awarded him compensation for total incapacity during the fifty-four and one-third weeks he was disabled without loss of any member, and after the operation continued compensation during 125 weeks more for loss of a foot; and the court affirms the award, concluding that the construction of law by the board as applied to the facts in this case was permissible within the wording, spirit and inferable intent of the law considered in all its provisions. It is within the spirit of the law, and does no violence to the wording of the sections considered, to construe them as authorizing compensation for existing total incapacity resulting from any injury to a member while medical skill is attempting to restore and save it, and until such time as developments have proved amputation necessary, followed by compensation for the loss of such member during the period fixed by the law after such loss becomes an actuality cognizable under the schedule.

Ratification of Employment of Physician

(Baker v. Brown & Hackney, Inc. (Ark.), 215 S. W. R. 578)

The Supreme Court of Arkansas says that the plaintiff, a practicing physician, sued the defendant, a lumber corporation, for $1,110 on account of medical services alleged to have been rendered at the instance of the defendant to one of its employees. The defendant denied that it employed the plaintiff to render medical aid to the employee. It appeared in evidence that the general manager of the defendant's business at the place where the employee that was injured worked was especially authorized by the defendant to employ first aid medical assistance in case of injury to the employees, received while performing their duties. He employed the plaintiff to render medical aid to the employee, who had received a serious injury while engaged in the line of his duty. No limitation or restriction was placed on the plaintiff as to the extent of the employment. The general manager testified: "I told him we wanted him taken the best care of." Immediately after the injury, the general manager wrote a letter to the defendant, informing it of the injury, and possibly his employment of the plaintiff to treat the employee. Shortly thereafter the general manager went to the city where the corporation had its general office, and informed an officer and manager of the corporation that, according to the plaintiff, the employee was in pretty bad shape. The plaintiff continued to render medical services to the employee, except for a short time on account of illness, from January 30 to July 22, making a total of 185 visits. A short time prior to June 19, the plaintiff presented a partial account for services to the defendant, which carried a liability policy on its employees, and, on receipt of the plaintiff's bill for $936, being a partial bill, sent it to an agent of the insurance company, and without replying to the plaintiff. The insurance company declined to pay plaintiff the bill on the ground that, under the terms of the policy, it was not responsible for first aid assistance or medical attention of physicians. When the evidence was concluded, the trial judge instructed the jury that the defendant was liable only for first aid services, in keeping with which instruction the jury was directed to return a verdict for the plaintiff for $24. In reversing the judgment rendered for that amount, and remanding the cause for a new trial, the supreme court says that the plaintiff conceded that the evidence was not sufficient to show general authority in the local general manager to employ physicians generally, but contended that there was sufficient evidence to present the issue of ratification by the defendant of the act of its agent in employing the plaintiff to treat the employee. It is a well-established rule that an employer may ratify the unauthorized acts of his agent by silence and acquiescence. There was no serious denial that the local general manager was the defendant's agent in the management of the lumber business at the place where the accident occurred. It might be, under the evidence recited above, that he exceeded his authority in the employment of the plaintiff to render medical assistance to the injured employee beyond first aid; but the evidence strongly tended to show that the defendant was apprised of the fact and remained silent. Under this state of case, the question of ratification should have been submitted to the jury. It was error to instruct the jury peremptorily to render a verdict for first aid only.

Infection Carried from Toe to Face

(Bethlehem Shipbuilding Corporation, Limited, v. Industrial Accident Commission et al. (Calif.), 185 Pac. R. 179)

The Supreme Court of California, in affirming an award under the workmen's compensation act for the death of one Caffrey, says that on Friday, July 26, 1918, he sustained a contused wound of the great toe of his right foot. He continued at his work Saturday, and also the following Monday. On Monday he had the toe dressed at an emergency hospital. Tuesday, the foot was so painful that after starting to work he returned home and undertook to treat the toe himself. August 1, he complained of a swelling of the face. On the following day, the symptoms of the face became alarming, and he was removed to a hospital, where it was discovered that there was a streptococcic infection of the injured toe. The skin surrounding the toe was in an erysipelatous condition, and there was a development of erysipelas on the face. The facial infection resulted in septicemia, from which he died, August 8. The industrial accident commission found that the germs which caused the facial infection were carried from the toe to the face by external means, and that Caffrey's death was proximately caused by the original injury. The medical testimony on which the commission based its finding that the germs which caused the facial infection were carried from the toe to the face by external means was, in effect, that such a method of transfer was exceedingly common, the transmission of the germs being very readily accomplished; that there was no reason to suppose that the infection had come from another source than the toe, and that, while it was within the realm of possibility for the infection to have come from another source, such a hypothesis was so very much the least probable that it seemed useless to theorize as to such a possibility in the face of facts indicating that the germs certainly must have been carried from the foot. The testimony showed that the experts were not indulging in mere conjecture or speculation. They were given what, on the facts before them, and in the light of medical science, appeared to be the most probable explanation of the event.

Moreover, in the light of medical knowledge properly presented to the commission that such a transfer of a streptococcic infection from a discharging wound as that found to have taken place in Caffrey's case was not only possible but highly probable, the court is of the opinion that the fact that the germs reached the face by external means and not through the system could not, as a matter of law, be said in itself to have broken the chain of causation.

Nor does the court think that Caffrey's conduct was such as to require a finding of negligence on his part. He was, of course, under a duty to use reasonable care to restore himself to health. But if he conducted himself as would a reasonably prudent person in his situation and circumstances, and innocently enhanced the original injury, it was within the province of the commission to find that the

original cause continued to the end and accomplished the final result, and was therefore the proximate cause. He might have had free treatment at the hospital maintained by the corporation for its employees, but he chose instead to remain at home and treat the foot himself with witch hazel and iodin. In the light of subsequent events, this was an unfortunate decision. The court is, however, unable to say as a matter of law that the commission was bound to find that, under all the circumstances appearing at the time, it was a decision so unreasonable and imprudent as to amount to a breach of his duty to use due care to restore himself to health.

Evidence Touching Testamentary Capacity

(In re Swain's Estate (Iowa), 174 N. W. R. 493)

The Supreme Court of Iowa, in affirming a judgment holding invalid a will contested in this case, says that it is true that a man may be a drunkard and yet not necessarily incapable of making a valid will. He may be grossly immoral and filthy, and still not be of unsound mind in the legal sense of the word. He may be quarrelsome, or abusive, or profane, or eccentric, and yet not necessarily incompetent; but when very many of these characteristics are found uniting in a single character, and there is added thereto the testimony of experts that such a showing indicates a loss or decay of mentality, a verdict to that effect by the jury cannot be disregarded. Much of the complaint made by counsel in this case related to the refusal by the trial court to instruct the jury that evidence showing the testator had syphilis, that he frequented houses of prostitution, and indulged in other unclean and filthy practices, was immaterial and should not be considered as having any bearing on the question of his mental soundness. None of these objections were sound. It is true that no one of such acts, practices or habits is, as a matter of law, necessarily inconsistent with the theory of testamentary capacity; but this is not to hold that proof of such facts may not be considered with other facts as tending to show mental unsoundness. Men of sound mind do not, as a rule, so conduct themselves. With the normal man a sense of shame and regard for the decencies of life operate as some restraint on his conduct, and this is especially true with the normal man who has outlived his youthful follies and has left mentality enough to realize that his career is drawing to a close. Moreover, where the validity of a will is being contested, physicians who treated the maker of the will in his lifetime may be examined by the contestants of the will concerning knowledge so acquired by them in their professional capacity, under the Iowa decisions that it is not a violation of professional confidence protected by the Iowa statute.

Society Proceedings

COMING MEETINGS

American Assn. of Genito-Urinary Surgeons, Rochester, Minn., May 31.
American Climatological and Clin. Assn., Philadelphia, June 17-19.
American Gynecological Society, Chicago, May 24-26.
American Laryngological Association, Boston, May 27-29.
American Medico-Psychological Assn., Cleveland, O., June 1-4.
American Ophthalmological Society, Hot Springs, Va., June 15-16.
American Orthopedic Association, Toronto, Ont., June 7-10.
American Otological Society, Boston, May 31-June 1.
American Pediatric Society, Highland Pk., Ill., May 31.
American Psychopathological Assn., Cleveland, O., June 5.
Arkansas Medical Society, Eureka Springs, June 8-9.
Association of American Peroral Endoscopists, Boston, June 1.
Canadian Medical Association, Vancouver, B. C., June 22-25.
Connecticut State Medical Society, New Haven, May 19-20.
Illinois State Medical Society, Rockford, May 18-20.
Massachusetts Medical Society, Boston, June 8-9.
Michigan State Medical Society, Kalamazoo, May 25-27.
Nebraska State Medical Association, Omaha, May 24-26.
Nevada State Medical Association, Lake Tahoe, June 25-26.
North Dakota State Med. Assn., Minot, June 15-16.
Ohio State Medical Association, Toledo, June 1-3.
Oklahoma State Medical Association, Oklahoma City, May 18-20.
Rhode Island Medical Society, Providence, June 3.
Southern Minnesota Medical Assn., Fairmont, Minn., June 28-29.
South Dakota State Medical Association, Sioux Falls, May 18-20.
Western Electro-Therapeutic Association, Kansas City, Mo., May 27-28.
West Virginia State Medical Association, Parkersburg, May 18-20.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

April, 1920, **19**. No. 4

*Infant and Child Mortality, Including Miscarriages and Stillbirths. H. Schwarz, New York City.—p. 249.
*Experimental Work with Sodium Cacodylate on Athreptic Infants. F. S. Clarke and A. Dow, Omaha.—p. 260.
*Prognosis in Operated Cases of Hypertrophic Stenosis of Pylorus. A. Goldbloom and R. C. Spence, New York.—p. 263.
New Method for Determining Coagulation Time of Blood in New-Born. F. C. Rodda, Minneapolis.—p. 269.
Roentgen-Ray Demonstration of Abnormalities of Gastro-Intestinal Tract in Children. C. G. Kerley, New York.
Résumé of Literature on Tuberculosis in Children During 1918 and 1919. M. Michael, Chicago.—p. 287.

Infant and Child Mortality.—The material for Schwarz's paper was taken from the social histories of 10,000 families. In 6,968 families there were 27,711 pregnancies, including miscarriages and stillbirths, an average of 3.9 per family. Of these 27,711 pregnancies, 2,239 were miscarriages and 413 were stillbirths; that is, there were 3.6 live born children to each family. The total number of deaths under 1 year of living births were 3,232. From the first to the eighth year there were 1,081 additional deaths, or a total of 4,313 deaths of living births. Taking all the deaths up to 8 years, including miscarriages and stillbirths, of the 27,711 pregnancies, 6,965 babies, or 25 per cent., died. The miscarriage rate in these families was 80.7 per thousand of all pregnancies and 89.3 per thousand of living births. The infant death rate (up to 1 year of age) in this group of families was 128 per thousand living births. A contrast to this figure is the death rate of 70 per thousand in this same group of families of only those of their children who, during the ten years, were under medical care. This figure, which shows a saving of 58 infants per thousand living births, proves conclusively what supervision, education and care can accomplish. The child death rate (up to 8 years) reached 172 per thousand. In other words, 172 out of every thousand children born alive, died before they reached the age of 8 years. The stillbirth rate per thousand total pregnancies was 14.9, and per thousand living births it was 16.4. The death rate, in early infancy, of children of native born parents, greatly exceeds that of the foreign element. The miscarriage rate is greatest when both parents are native born and least when both parents are foreign born. The literate have more miscarriages than the illiterate. There were 358 literate families with an infant mortality rate of 111 per thousand born, and 133 illiterate families with an infant mortality rate of 172 per thousand born. It does seem that educatioon is a very important factor.

Use of Sodium Cacodylate in Athreptic Infants.—Six athreptic infants were selected by Clarke and Dow for study. A von Pirquet and a blood Wassermann from each infant proved negative. A routine urine examination yielded similar negative results. Eight injections of sodium cacodylate were given in all, at intervals of four days. All injections were given intramuscularly and hypodermically. The youngest infant, 6 months old, received one-quarter grain, as an initial dose; the oldest, 15 months old, three-quarters grain. The dosage was gradually increased till the youngest was receiving three-quarters grain and the oldest 1 grain. The maximum dose at any one time was 1 grain. A blood examination was done on all the infants before the injections were begun. A second examination was done after two injections, and a third after the last injection. The red and white cell count remained nearly uniform throughout, nor was there any marked change in the differential count. There was, however, a striking increase in the hemoglobin in all the children. Three children showed an increase of five points; one child of ten points; one twenty points, and one twenty-five points. One child failed to gain in weight during the injections, but in the month succeeding gained 1 pound, 10 ounces. Three children gained approximately 2 pounds,

and two gained 1⅓ pounds. These gains have been continued since stopping the treatment. They all improved in nutrition and seemed to be more hungry for their food when feeding time arrived. Therefore, the authors conclude that carefully graduated doses of sodium cacodylate, when injected hypodermically into infants, has no toxic influence.

Prognosis in Operative Cases of Hypertrophic Pyloric Stenosis.—Goldbloom and Spence analyze 163 cases in which a Rammstedt operation was performed. One hundred and thirty-one children recovered and thirty-two died, a mortality of 19.63 per cent. It was evident that the operation per se is, perhaps, the least important factor in the mortality. The condition of the baby at the time of operation is the most important factor. Fourteen babies died from collapse from one to three days after operation, and five died from general peritonitis. One child died of bronchopneumonia complicating whooping cough, and one child died from postoperative hemorrhage on the third day after operation. The remaining eleven deaths were from marasmus and occurred in from three to twenty-five days after operation. In all cases, then, except the seven in which death was due to complications, the fatal result can definitely be attributed to a state of inanition existing at the time of operation. The mortality in artificially fed babies is more than three times that for the breast fed babies. In infants weighing 7 pounds or less, the mortality was three and one-half times as great as in those who weighed more than 7 pounds. The mortality increases in direct proportion to the amount of weight lost previous to operation. The mortality for breast fed infants who had vomited less than four weeks and who had lost less than 20 per cent. of their best weight is almost nil. The fatalities which occur are due to accidents usually avoidable when the operation is done by a skilful surgeon.

Bulletin Johns Hopkins Hospital, Baltimore

March, 1920, **31**, No. 349.

*Unrecognized Pathway for Bacterial Invasion of Respiratory Tract. M. C. Winternitz, G. H. Smith and E. S. Robinson, New Haven, Conn.—p. 63.
German Nutrition, 1914-1919. C. C. Mason, U. S. Army.—p. 66.
Pathologic Changes in Gasteropod Liver Produced by Fluke Infection. E. C. Faust, Peking, China.—p. 79.
III. Fate of Influenza Bacilli Introduced into Upper Air Passages. A. L. Bloomfield, Baltimore.—p. 85.
*Muscular Work During Hypnosis. N. C. Nicholson, Baltimore.—p. 89.
The Granules, Vacuoles and Mitochondria in the Sympathetic Nerve-Fibres Cultivated in Vitro. T. Matsumoto, Chiba, Japan.—p. 91.

Infection Route in Respiratory Tract.—The submucosa of the trachea contains a rich plexus of lymphatics, prominent everywhere and devoid of valves. At the bifurcation of the trachea anastomosis occurs with similar plexuses in the bronchi, and this phenomenon is repeated throughout the region of the cartilage-bearing bronchi. At the bifurcation of the trachea, as well as of the bronchi, there is drainage to the lymph glands and anastomosis with periarterial and peribronchial lymphatics. When the lymphatics are injected, the larger portion of the material is diverted at these bifurcations, but continuity of the lymphatic system in the tracheal and bronchial submucosae is demonstrable. Winternitz and his associates found that pneumococci introduced by needle puncture through the skin into the lumen of the trachea or by insufflation, provided the insufflation catheter damages the epithelium of the trachea, spread by way of the lymphatics to the lung. The lymphatics of the submucosa of the trachea, then, afford a direct pathway of infection to the lung. Although this lymphatic system provides a pathway for infection, it may also serve as a protective mechanism against pulmonary infection, for the drainage of the submucosa of the trachea and bronchi is largely diverted as the lung is approached to the protecting regional lymph glands.

Fate of Influenza Bacilli in Respiratory Tract.—Three strains of influenza bacilli introduced by Bloomfield in large amounts into the normal upper air passages disappeared very rapidly within from one to two days. In no case was a carrier state produced. In no case did any local or general pathologic process result from such inoculation. In five instances influenza bacilli isolated later than twenty-four hours after inoculation were shown to be different strains from those introduced. Influenza bacilli were no longer viable after being suspended in saliva for twenty-four hours at 37 C. The rapid disappearance of influenza bacilli from the upper air passages is probably due to the combination of an unfavorable environment with the mechanical flushing processes at work in these regions. Bloomfield is of the opinion that the question of the persistence of influenza bacilli in normal throats cannot be finally settled until we possess accurate methods for differentiating various strains of hemophilic bacteria.

Muscular Work During Hypnosis.—In order to determine the effects of suggestion on muscular efficiency and record the findings objectively, a Mosso ergograph was used by Nicholson as the instrument best adapted to fulfil these requirements. Only those subjects were used who could be placed in the deepest hypnotic sleep—the state characterized by cataleptic rigidity. The records secured show that a very definite increase in muscular efficiency can be obtained by suggestion in the hypnotic state and that suggestions given even while the subject is fully awake influence muscular efficiency to some extent. The increased efficiency during hypnosis shows itself in three ways: (1) By an increase in the actual amount of work done. In fact, during the hypnotic sleep the capacity for work seemed practically endless. (2) By and increase in endurance. (3) By a decrease in fatigue, both subjective and objective. After work in the hypnotic sleep the subjects never complained of any fatigue, nor could questioning elicit any signs of fatigue, whereas after performing a much smaller amount of work in the waking condition they frequently complained of being quite tired and exhausted and always on being questioned stated they were fatigued. The records show the absence of any objective fatigue.

Bulletin of Lying-In Hospital of City of New York

March, 1920, **12**, No. 1

*Chemical Examination of Blood and Urine in Normal Pregnancy and in Toxemia of Pregnancy. J. R. Losee, New York.—p. 38.
Executive Management of a Clinic for Babies. E. L. Coolidge, New York.—p. 57.
*Blood Transfusion in Obstetrics. J. R. Losee, New York.—p. 65.

Chemical Examination of Blood and Urine in Pregnancy.—The twenty-one cases investigated by Losee fall into four groups, normal pregnancy, preeclampsia, eclampsia and pernicious vomiting. In the diagnosis of eclampsia a large amount of albumin in the urine and a normal blood urea are the most significant laboratory findings. Although modern biochemical technic is of great scientific interest and has marked clinical value in some diseases, and, whereas, it has disproved such theories as the acidosis, the amino-acid, and nitrogen retention as a cause of toxemia of pregnancy, it affords little assistance in the daily routine of clinical obstetrics.

Blood Transfusion in Pregnancy.—Losee has performed this operation seventy-eight times on seventy patients suffering from the complications of labor. Sixty-one were done by the syringe cannula method and seventeen by the citrate method. There were fourteen deaths in this series and all but one was undoubtedly due to the disease from which the patient was suffering. The latter, which may or may not have been due to transfusion, occurred early in the series, was an emergency and no preliminary tests were made. There were thirty patients on whom the operation was performed for hemorrhage or hemorrhage and shock, twenty-nine who were suffering from postpartum hemorrhage and localized pelvic sepsis, seven who had either bacteremia, septic thrombophlebitis of the pelvic veins or general peritonitis and four with toxemia of pregnancy of the pernicious vomiting type. Of the thirty patients suffering from acute hemorrhage due either to placenta previa, postpartum hemorrhage, premature separation of the placenta, ruptured ectopic or ruptured uterus thirty-two transfusions were performed and six patients died. There were twenty-nine patients with anemia secondary to postpartum hemorrhage and localized pelvic sepsis on whom thirty transfusions were done. They all completely recovered although some of them seemed critically ill on admission.

Four cases of toxemia of pregnancy of the pernicious vomiting type have been transfused with two deaths but here again it is only a supportive measure.

California State Journal of Medicine, San Francisco

April, 1920, **18**, No. 4

Board and Staff Organization of Hospitals. W. E. Musgrave, San Francisco.—p. 117.
Organization of Metabolism Unit. N. W. Janney, Santa Barbara. —p. 118.

Canadian Medical Association Journal, Toronto

April, 1920, **10**, No. 4

*Obstetrics and the State. K. C. McIlwraith.—p. 305.
Genesis, Classification, Interrelationships and Clinical Diagnosis of Disease. H. B. Anderson.—p. 314.
Headache of Nasal Pharyngeal and Aural Origin. P. G. Goldsmith. —p. 328.
*Fifty-Eight Cases of Delayed Arsenical Poisoning Following Administration of Arsphenamin Preparations. G. S. Strathy; C. H. V. Smith and B. Hannah.—p. 336.
Lessons from War Surgery. J. A. Gunn.—p. 354.
*Primary Sarcoma of Mediastinum, with Postmortem. J. A. Street. —p. 362.
Chronic Diarrhea Associated with an Adenoma of Thyroid Gland. A. H. Gordon and A. T. Bazin.—p. 365.
Submaxillary Salivary Calculus. A. T. Bazin.—p. 366.
Erythema Multiforme Mistaken for Lesions Due to Chemical Poisoning. G. G. Campbell.—p. 368.
Veil Pin in a Bronchus. Removed Through Bronchoscope. R. H. Craig and W. A. Wilkins.—p. 370.

Obstetrics and State.—Many enthusiasts for maternal insurance, according to McIlwraith, carry the idea to extreme lengths, advocating motherhood insurance or practically the state support of the mother. Extremes of this kind seem to lead directly to bolshevism. Among the insurance benefit which the state might assume, in his opinion, would be the provision of sterilized dressings, sheets, etc., for the accouchement, and in some cases for nursing and medical attendance. Then, too, the authorities should be the judges as to whether the patient should be confined at home or in a hospital.

Arsenical Poisoning Following Use of Arsphenamin.—Fifty-eight cases of delayed poisoning following the administration of arsphenamin and mercury were observed by the authors in military hospitals and in private practice. Forty-seven of these showed symptoms referable to the liver, namely: jaundice, decreased digestive power and liver atrophy. Eight of these were fatal and at necropsy showed marked atrophy of the liver. Dermatitis occurred in eight cases. Five were severe with marked exfoliation. Peripheral neuritis was observed in two cases. Albuminuria was present in over 50 per cent. of the cases. Edema was found in two cases. The onset of the symptoms seldom occurred until five weeks after the administration of arsphenamin had ceased. The earliest symptoms of arsphenamin poisoning of the liver were, bile in the urine, albuminuria, loss of appetite and jaundice. Dermatitis with atrophy of the liver occurred in one patient who received arsenic in the form of Fowler's solution, 5 minims, three times daily, for five months.

Primary Sarcoma of Mediastinum.—A woman, aged 34, had sudden onset of pain in the left chest; increasing dulness in the left chest and mediastinum; nonhemorrhagic pleural effusion, left side; heart progressively forced to right; increasing difficulty in breathing; stridor; paralysis of left recurrent laryngeal nerve; increasing weakness of voice; persistent and increasing cough becoming brassy in character; no sputum. Emphysema developed in the right lung. Two positive Wassermanns were apparently unrelated to the principal disease. Roentgen-ray examination showed a dense shadow in the left lung area. This proved to be caused by a mediastinal sarcoma, involving also the left lung, trachea and right primary bronchus.

Georgia Medical Association Journal, Atlanta

March, 1920, **9**, No. 11

*Trichocephaliasis and Appendicitis: Report of Case. L. Hannah, Sandersville.—p. 69.
Acidosis—Alveolar Air-Tension Compared with Urine Acidity. T. D. Walker, Jr., Macon.—p. 71.
Perniciousness of Considering Rest Cure a Pancrea for "Nervous People." W. W. Young.—p. 73.
Fatigue. R. J. Holmes, Wadley.—p. 74.
Use of Radium in Treatment of Epithelioma. C. Swanson, Atlanta. —p. 75.
Significance of Stools in Infancy. M. M. McCord, Rome.—p. 78.
Etiology of Thrombo Angeitis Obliterans. S. J. Sinkoe, Atlanta. —p. 81.

Trichocephalus Infection Following Appendectomy.—In the case cited by Hannah, the symptoms of postoperative abdominal adhesion were simulated by a *Trichocephalus trichiuris* infestation. Discovery of these parasites resulted from examination of the blood smear, with reference to the eosinophilia. Helminthiasis previously had never been suspected, as no gastro-intestinal symptoms were evident. The patient had been operated on for appendicitis, hence it was at first believed that the symptoms were caused by postoperative adhesions.

Illinois Medical Journal, Oak Park, Ill.

April, 1920, **37**, No. 4

*New Skin Suture Material. E. H. Ochsner, Chicago.—p. 229.
War Neuroses and Psychoses: After Care and Treatment. F. P. and F. G. Norbury, Jacksonville.—p. 232.
Doctor and Public Health. C. St. C. Drake, Springfield.—p. 237.
Physician as an Investor. G. F. Lydston, Chicago.—p. 241.
Physicians' Fees. C. A. Buswell, Chicago.—p. 245.
Ophthalmologist and Otologist; Retrospectively and Prospectively Considered. J. S. Clark, Freeport.—p. 248.
Diagnostic Hystotomy. B. G. R. Williams, Paris.—p. 254.
Influence of Carbohydrates and Fats on Nitrogen Equilibrium. A. Kraft, Chicago.—p. 255.
Why Have Both Primary Focal Infection and Subsequent Pulmonary Tuberculous Disease Their Origin Nearly Always in Air Vesicles and Not in Bronchial Tubes? J. Ritter, Chicago.—p. 257.
Surgical Technic in Tonsillectomy. J. Z. Bergeron, Chicago.—p. 261.
Health Insurance from Standpoint of Physician. C. J. Whalen, Chicago.—p. 264.

New Skin Suture Material.—The suture material used by Ochsner is made by treating silk chemically so that the tissue cells cannot penetrate the meshes of the silk. In addition, it renders the silk smoother, a little stiffer with less of a tendency to snarl, in fact, overcomes all of the objections to silk as a coaptation suture without robbing it of any of its desirable qualities. This material is said to overcome all the objections which can be raised against other suture materials.

Journal of Industrial Hygiene, Boston

April, 1920, **1**, No. 12

*Significance and Treatment of Varicose Veins. J. Homans, Boston. —p. 567.
Industrial Dental Clinic from Standpoint of Industrial Surgeon. R. W. Elliott, Cleveland.—p. 575.
Charles Turner Thackrah. A Pioneer in Industrial Hygiene. T. M. Legge, London.—p. 578.
A Lecture on Sex and Venereal Disease Hygiene. E. B. Vedder, U. S. Army.—p. 582.
Twenty Years' Experience of Notification of Industrial Disease. T. M. Legge, London.—p. 590.

Treatment of Varicose Veins.—Forty-eight cases form the basis of Homans' paper on this subject. He points out that operative treatment to be efficient must permanently break the column of blood between the abdominal vessels, which have no valves, and the surface capillaries. If it accomplishes this, it permits the restoration of a considerable amount of surface venous circulation through small veins which have not been distended by the stagnation in the main venous channels. It does away with stagnant blood on the surface—blood which keeps pouring down the distended vessels and increases the work of the still normal deep veins. It thus removes veins which are worse than useless and affords real comfort, but as it does not restore the original surface circulation, it cannot be said to return the patient to an absolutely normal condition. In other words, a perfect surgical result may not make the leg as good as new. At the Peter Bent Brigham Hospital, the so-called Corliss stocking is used with good result as a form of palliative treatment. The so-called "jelly" bandage, which is nothing more than gauze permeated with a paste originally devised by Unna, is also useful.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

March, 1920, **15**, No. 1

*Physiologic Action of Fumes of Iodin. A. B. Luckhardt, F. C. Koch, W. F. Schroeder, and A. H. Weiland, Chicago.—p. 1.
Action of Pilocarpin, Atropin and Epinephrin on Tonus Waves in Terrapin Heart. C. M. Gruber, Colorado.—p. 23.

*Action of Gum Acacia on Circulation. W. M. Bayliss, Condon.—p. 29.
Nonclotting Blood Pressure Apparatus. P. D. Lamson, Baltimore.—p. 75.
*Minimum Concentration of Dichlorethysulphid (Mustard Gas) Effective for Eyes of Man. C. I. Reed, Washington, D. C.—p. 77.
Pressor Compound from Pituitary Gland. A. C. Crawford, San Francisco.—p. 81.

Physiologic Action of Iodin Fumes.—On the basis of the results reported in this study there seems to be no question that the fumes of iodin are absorbed from the skin and by the pulmonary tissue. The negative results reported in man when the fumes and tincture were applied to the skin, are said to find a probable explanation in the fact that the urine and saliva were not collected over a long enough period of time. As a result of fuming the skin with the vapors of iodin the iodin content of the thyroid gland is greatly increased. The increase in iodin is accompanied by a pronounced change in the histologic features of the gland which clearly indicate an absorption of iodin. Iodin fumes when inhaled are absorbed by the respiratory tract; for the excess of iodin appears promptly in the urine and the iodin content of the thyroid gland is invariably increased, accompanied by a corresponding change in the histology of the gland. The indiscreet use of iodin fumes for inhalation leads to respiratory disturbances characterized by a dyspnea due to an inflammatory reaction in the lungs as result of the irritating action of the fumes. When iodin fumes are inhaled in quantities greater than 18 mg. per kilogram body weight, the animal dies within twenty-four hours from acute pulmonary edema. Intratracheal administration of iodin fumes leads to a temporary moderate rise in blood pressure and acceleration in the rate and increase in the amplitude of the respiration. The temporary rise is followed soon after by a more pronounced fall in the arterial pressure from which the animal partially recovers. After maintaining this pressure for a more or less prolonged period of time, the arterial pressure drops quite quickly. It is during this period that the signs and symptoms of acute pulmonary edema become quite marked. The respiration decreases in both rate and amplitude and ceases while the heart in the majority of instances shows a decided vagal inhibition.

The cause of death is an acute and rapidly developing pulmonary edema involving chiefly the basal portions of the lung. The edema supervenes more rapidly in animals having respiratory disease (tracheitis and bronchitis of beginning distemper) than in normal animals. It is clear therefore that the administration of iodin fumes by inhalation is a dangerous procedure. Such administration in persons with pulmonary disease is absolutely contraindicated.

Action of Gum Acacia on Circulation.—It is claimed by Bayliss that a solution of gum acacia of 6 or 7 per cent. in 0.9 per cent. sodium chlorid is capable of effectively replacing lost blood, unless the loss amounts to more than 75 per cent. of the blood volume. Hence its use in hemorrhage from various causes, whether from injury, disease or in operations. It has no chemical or druglike action and can be used in large quantities. It can also be used with benefit when the blood volume is reduced owing to removal of a part from effective circulation by stagnation in the capillaries, as happens in wound shock, traumatic toxemia and probably in similar conditions. In such cases, its primary object is to maintain a normal circulation until the toxic products are eliminated from the blood, while the blood out of circulation is restored to use. Neither gum nor blood has any permanent effect when the blood vessels are deprived of control by the vasomotor centers. Gum acacia does not produce anaphylaxis nor hemolysis. Nor does it agglutinate the blood corpuscles in man, although it does so in vitro in the case of some cats. This latter phenomenon does not appear to occur while the blood is in circulation, and is not followed by hemolysis, even in vitro. The addition of gum acacia to fluids used for perfusion of organs is recommended on account of the relative absence of edema.

Effect of Mustard Gas on the Eyes.—Reed found that concentrations of "mustard gas" of 0.0005 mg. per liter of air (1 part in 10,000,000), will produce visible reactions in less than one hour of exposure of individuals whose cutaneous resistance is relatively high.

Kentucky Medical Journal, Bowling Green

April, 1920, **18**, No. 4

Tuberculous Peritonitis. C. A. Vance, Lexington.—p. 93.
Community Sanitation. I. L. Denton, Fordsville.—p. 97.
Acute Surgical Diseases of Abdomen. J. Y. Welborn, Evansville.—p. 99.
Prophylactic Vaccines Against Influenza and Pneumonia. W. R. Thompson, Mt. Sterling.—p. 102.
Surgery from Standpoint of Average Doctor. T. J. Marshall, Bardwell.—p. 103.
Plaster of Paris in Throat. J. P. Edwards, Middlesboro.—p. 104.
Diagnostic Value of Roentgen Ray in Lung and Mediastinal Disease. V. Blythe, Paducah.—p. 105.
Case for Diagnosis. J. G. Sherrill, Louisville.—p. 106.
Blindness of Obscure Origin; Probably Due to Sinus Disease. S. G. Dabney, Louisville.—p. 107.
Epidemiology of Communicable Diseases and Discussion on Treatment—p. 108.
Syphilitic Aortitis; Case Report. J. R. Morrison, Louisville.—p. 121.
Traumatic Laryngeal Edema; Case Report. I. A. Lederman, Louisville.—p. 122.
Focal Infection in Relation to Bones and Joints. P. C. Layne, Ashland.—p. 122.
Obstruction: Report of Cases. H. Rivers, Paducah.—p. 125.
Diagnostic Significance of Vertigo to General Practitioner. J. D. Heitger, Louisville.—p. 130.
What Can We Do For Inoperable Cancer Patient? A. H. Barkley, Lexington.—p. 131.

Laryngoscope, St. Louis

March, 1920, **30**, No. 3

Decrease of After Nystagmus During Repeated Rotation. C. R. Griffith, Urbana, Ill.—p. 129.
*Two Cases of Gradenigo's Syndrome. J. L. Maybaum, New York.—p. 138.
Cerebellar Abscess Associated with Chronic Suppurative Otitis Media: Operation and Recovery. J. C. Keeler, Philadelphia.—p. 143.
New Method for Closing off Eustachian Tube in Radical Mastoid Operation. A. Kahn, New York.—p. 146.
Brain Abscess as a Complication of Acute Infection of Nasal Accessory Sinuses. L. W. Jessaman, Framingham, Mass.—p. 147.
Tuberculosis of Larynx: Report of Cases. H. Kunz, New York.—p. 150.
Incomplete Mastoid Operation as a Cause of Delayed Healing. F. T. Hill, Waterville, Me.—p. 154.
An Adenoidoscope or Soft Palate Retractor. A. Kahn, New York.—p. 163.
Lupus of Upper Air Passages. R. Webber.—p. 164.

Gradenigo's Syndrome.—This syndrome is characterized by an acute purulent otitis media, with or without mastoid involvement; intense pain in the temporal and parietal regions from involvement of the gasserian ganglion, and paralysis or paresis of the abducens nerve of the same side as the aural lesion. Such a group of symptoms occurring during the course of a middle ear suppuration or of an acute mastoiditis, before or after operation, may occasion considerable apprehension of an intracranial complication. In the cases reported by Maybaum these symptoms presented in more or less characteristic manner. In one case, the complication occurred two weeks after a simple mastoid operation, while the patient was making a satisfactory convalescence. Complete recovery followed without any further surgical intervention. In the second case, there was a history of an acute middle ear suppuration which had completely resolved at the time Maybaum first saw the patient, the syndrome had been present, with lessening severity, for a period of ten days; there was entire absence of signs or symptoms of mastoid involvement. A fulminant type of meningitis developed, from which the patient succumbed the following day.

Michigan State Med. Society Journal, Grand Rapids

April, 1920, **19**, No. 4

Roentgen Ray as Aid in Early Recognition of Postoperative Ileus. J. T. Case, Battle Creek.—p. 151.
Shock, Hemorrhage and Blood Transfusion. R. C. Lockwood, Detroit.—p. 154.
*Acriflavine in Treatment of Venereal Conditions. R. Rosen, Detroit.—p. 161.
Community Hospital. J. G. R. Manwaring, Flint.—p. 165.
Report of Psychologic Division of Michigan Department of Health for April, May and June, 1919. F. A. Foster.—p. 167.
Acidosis: Determination by Means of H-ion Concentration. T. L. Hills, Kalamazoo.—p. 171.

Acriflavine in Venereal Disease.—According to Rosen, acriflavine has not answered the requirements of an ideal gonococcide clinically but it is a valuable addition for the treatment of venereal conditions. It would be an ideal gonococcus prophylactic. In the author's experience, the discharge was controlled in 61.36 per cent. of the chronic cases in from

one to six days' treatment. In 33.74 per cent. the character of the discharge was changed to a mucoid one, while in 4.9 per cent. of the cases it was without effect for twelve treatments. Two negative smears were reported in 60 per cent. of the chronic cases five days after discontinuance of treatment, i. e., no gram-negative diplococci were demonstrated. In 20 per cent. the discharge stopped but did not affect the organisms. In the other 20 per cent. of the cases the result varied, i. e., the first smear was reported negative and the second positive, or vice versa. Severe burning was complained of in 39.9 per cent. of all the cases, and was most intense in the acute cases.

Minnesota Medicine, Minneapolis

April 20, 1920, **3**, No. 4

Rational Treatment of Carcinoma of Uterus. J. W. Little, Minneapolis.—p. 159.
Results of Cholecystectomy. W. A. Dennis, St. Paul.—p. 163.
*Palliative Treatment Versus Radical Treatment of Trifacial Neuralgia. A. W. Adson, Rochester.—p. 169.
*Protein Sensitization in Asthma and Hay Fever. A. H. Sanford, Rochester.—p. 174.
Protein Sensitization in Bronchial Asthma and Hay Fever. C. N. Hensel, St. Paul.—p. 180.
Colloidal Gold and Other Cerebrospinal Fluid Reactions. C. E. Nixon, Minneapolis.—p. 186.
Colloidal Gold Reactions. M. Warwick, Minneapolis.—p. 188.
Prevention and Control of Venereal Diseases. S. Lull, Wanbay, S. D.—p. 191.
Injuries to Skull. O. N. Meland, Warren, Minn.—p. 195.

Palliative Treatment of Trifacial Neuralgia.—Adson reports on 805 alcohol injections in 318 patients in addition to 203 other palliative operations, making a total of 1,008 palliative surgical treatments. Ninety patients have had the radical operation with complete relief, the remaining 228 are still seeking relief by temporary methods. Having personally divided the posterior root in seventy-four cases of trifacial neuralga, he is convinced that the radical operation is indicated in operable cases after one or two alcohol injections, in preference to continuing the palliative procedures indefinitely.

Protein Sensitization in Asthma and Hay-Fever.—A preliminary report is made by Sanford on the work done thus far on protein sensitization in asthma and hay-fever in the Mayo Clinic. Tests have been made on more than 800 patients during the past two years. Of this number, more than 500 were entirely negative in their skin reaction. The reactions of about 100 more were doubtful. The remaining patients, more than 200 in number, had definite skin reactions. Twenty-eight persons reacted positively to some of the animal emanations. The largest number of reactions was to horse dander. One hundred persons reacted to one or several of the proteins derived from foods. The greatest number of reactions was to egg white; eleven patients in all were sensitive to this protein. Twenty-five patients had marked positive reactions to grain. Twenty-eight patients were sensitive to vegetable proteins. This group, on the whole, is negative. Fruits, apparently, have little to do with asthma. In several instances banana gave marked reactions. Twice it was known to be a definite factor in producing asthma. In 365 tests to *Staphylococcus pyogenes-aureus* and *Staphylococcus albus* there was not a single reaction. Of the patients sensitive to ragweed and other fall pollens, fifty-two were definitely positive, thirty-six with hay-fever and sixteen with both hay-fever and asthma. The discussion of the treatment is reserved for a later report.

Oklahoma State Medical Ass'n Journal, Muskogee

February, 1920, **13**, No. 2

*Sporotrichosis. E. S. Lane, Oklahoma City.—p. 41.
Relation of Focal Infections to Skin Diseases. C. H. Ball, Tulsa.—p. 49.
Obstructions to Outlet of Stomach. E. N. McKee, Enid.—p. 59.
Operative and Diagnostic Cystoscopy. B. Lewis, St. Louis.—p. 63.
Importance of Urologic Examination in Cases of Obscure Abdominal Pain and in Bladder and Kidney Infections. J. H. Sanford, Muskogee.—p. 73.

Sporotrichosis.—Lane reports five cases and details the clinical history of this affection. In each case the patient had had contact with a domestic animal. The patient made a rapid recovery in about fifteen days under the treatment given, which consisted of tincture of iodin and roentgen ray locally, with potassium iodid.

Texas State Journal of Medicine, Fort Worth

April, 1920, **15**, No. 12

Congenital Defects and Heredity in Relation to Eye: Special Reference to Retinitis Pigmentosa. L. H. Lanier, Texarkana.—p. 424.
Technic in Cataract Extraction. L. K. Beck, San Antonio.—p. 426.
Senile Cataract Extraction. W. Ralston, Houston.—p. 427.
Direct Vision in Removing Foreign Bodies from Eye and Lung; Transfusion in Hemophilia. D. L. Bettison, Dallas.—p. 429.
Gas Anesthesia. W. W. Boyne, Fort Worth.—p. 431.
Intravenous Solutions: Life-Saving Measure in Infancy and Childhood. H. L. Moore, Dallas.—p. 432.
Woman: Ideal Maker of Nations. E. H. Cary, Dallas.—p. 433.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Indian Journal of Medical Research, Calcutta

Special Number, 1919

Research Work on Cholera. L. Rogers.—p. 1.
"The Next War": Man versus Insects. W. G. Liston.—p. 18.
Results of a Mosquito Survey of Indore City. M. O. T. Iyengar.—p. 26.
*Hydrocyanic Acid Gas as an Insecticide. W. G. Liston.—p. 40.
Beriberi. P. Hehir.—p. 44.
*Anti-Beriberi Vitamin Content and Antiscorbutic Property of Sun-Dried Vegetables. J. A. Shorten and C. Roy.—p. 60.
*Scurvy. P. Hehir.—p. 79.
*Quinin in Treatment of Malaria. J. W. Cornwall.—p. 83.
Treatment of Malaria by Quinin. P. Hehir.—p. 89.
*Results of Treatment at Malarial Convalescent Depot, Dagshai. D. F. Curjel.—p. 101.
Quinin. R. S. Kennedy.—p. 105.
*Simple Method for Detecting Fecal Carriers. W. G. Liston and S. N. Gore.—p. 107.
Enteric Carriers. J. A. Cruickshank and H. M. Lafrenais.—p. 124.
Amebic Dysentery Carrier. W. MacAdam.—p. 135.
Carrier Problem. J. Cunningham.—p. 142.
Rat Problem of India. J. C. G. Kunhardt.—p. 145.
Rat and Plague Conditions in Hutted Camps. J. Taylor.—p. 173.
Rat Problem. W. A. Justice.—p. 179.
Meteorologic Conditions in Mesopotamia Affecting Occurrence of Heatstroke. J. Taylor.—p. 181.
Diagnosis on a Large Scale in Hook Worm Infection. C. Lane.—p. 186.
Is Human Bilharziosis Likely to Spread in India? M. B. Soparkar.—p. 207.
Existence of Distoma Disease in India. N. F. Surveyor.—p. 214.
Prophylaxis of Dracontiasis. D. A. Turkhud.—p. 217.
Small Outbreak of Lobar Pneumonia in Baghdad Due to a Bacillus of Gaertner-Paratyphoid Group. W. MacAdam.—p. 226.
Remarks on Quinin Treatment of Malaria, etc. P. Hehir.—p. 233.
Sodium Morrhuate in Treatment of Tuberculosis. L. Rogers.—p. 236.

Hydrocyanic Acid Gas as Insecticide.—The quantity of chemicals required for 100 cubic feet of space to be treated is one-half ounce each of potassium cyanid and strong sulphuric acid. It is important to note that the potassium cyanid is pure. Under satisfactory conditions, where there is very little loss of gas by leakage from the room and when the room is empty, this will give approximately 110 parts of hydrocyanic acid per hundred thousand parts by volume of mixed gases in the room.

Antiscorbutic Property of Sun Dried Vegetables.—The experiments reported on by Shorten and Roy that three varieties of sun dried vegetables, viz., carrots, onions and cabbages, retain to some extent their antiscorbutic properties; while spinach is entirely lacking in this virtue.

Scurvy.—Hehir reports on the epidemic of scurvy among British troops and natives in Mesopotamia. He also calls attention to the fact that the Lister Institute has been investigating the etiology of scurvy carefully, and has found that germinating grains and pulses of various sorts contained antiscorbutic vitamins after the grain has sprouted.

Quinin in Malaria.—The whole subject of quinin and malaria, in Cornwall's opinion, requires and merits a properly devised and coordinated scientific enquiry, in order to determine whether quinin in harmless doses can act as a reliable prophylactic; if it cannot, then its use should cease; whether a primary attack of malaria due either to *Plasmodium vivax* or to *P. malaria* or to *P. falciparum* can be cured by doses of quinin which, compared with the harmful influence of the parasite, are relatively harmless to the patient; whether any useful purpose is served by dosing a patient with quinin between his relapses; whether any other chemical combination can be found which is able to destroy the parasites of

malaria without at the same time exerting a seriously harmful effect on tissue cells.

Quinin in Malaria Relapse.—Curjel is firmly convinced that some form of quinin appears to be the drug indicated for the treatment of malarial relapse. The exact mode of administration is immaterial, nor does there seem to be any advantage in excessive doses.

Detecting Fecal Carriers.—The method described by Liston and Gore is one which can be used by the general practitioner, provided he secures some ordinary agar slopes, a graduated pipet marked in fiftieths of a cubic centimeter, a feces emulsion tube, two platinum loops, some high titre agglutinating serum and a glass plate with hollows or some watch glasses. A little sterile water or physiologic sodium chlorid solution will also be required, together with an alcohol lamp, some slides, stains and a microscope. The details of the method are given.

Journal of Laryngology, Rhinology and Otology, London

April, 1920, **35**, No. 4

Latent Sphenoidal Sinusitis in Children with Recurrent Adenoids and Appendicitis. P. Watson-Williams.—p. 97.
*Thirteen Cases of Aural Tuberculosis in Infants. D. Guthrie.—p. 99.
*Method of Suturing Pillars of Fauces. T. Guthrie.—p. 102.
Origin of Quick Phasis of Vestibular Nystagmus. A. Rejo.—p. 103.

Tuberculous Otitis Media.—Among seventy-nine cases of chronic suppurative otitis media in which the causal condition was noted, Guthrie found thirteen cases of tuberculous origin. The mode of feeding was noted in eleven cases and in nine of these unboiled milk was used. Hence, it appears probable that the tuberculous infection is primarily implanted in the nasopharynx, whence it is conveyed to the middle ear by way of the eustachian tube.

Suturing Pillars of Fauces.—Guthrie passes a curved slot-eyed needle from behind forward through the posterior pillar, then, if thought necessary, through a thin layer of the tissue lining the tonsil fossa, and finally through the anterior pillar. The suture having been engaged in the slot of the needle, the latter is withdrawn and the suture disengaged and tied.

Lancet, London

April 3, 1920, **1**, No. 5040

*Diagnosis of Disease of Pancreas. A. E. Garrod.—p. 749.
Radiology in Chronic Intestinal Stasis. A. C. Jordan.—p. 756.
*Electrical Stimulation of Nerves at Operation. N. H. M. Burke.—p. 761.
*Fatal Anaphylaxis Following Prophylactic Administration of Antitetanic Serum. F. B. Gurd and E. Emrys-Roberts.—p. 763.
Oxygen and Air Replacement of Fluid in Pleural Cavity. F. G. Chandler.—p. 764.
*Hydropathic Treatment of Malaria. T. Zangger.—p. 766.
*A Large Ureteral Calculus Associated with Pyonephrosis. R. L. Ley.—p. 767.
Rupture of Aortic Aneurysm into Pulmonary Artery. W. E. Peacock.—p. 767.

Diagnosis of Pancreas Disease.—Garrod cites cases to emphasize that in the diagnosis of disease of the pancreas practically every sign, symptom, or test may fail and that the application of physiologic discovery at the bedside needs the cooperation of the laboratory and the ward.

Electrical Stimulation of Nerves at Operation.—In order to avoid needless operation, Burke says it must be remembered that conductivity is conclusive evidence of physiologic continuity of nerve fibers, as also is excitability below the lesion. Improvement in conductivity or in peripheral excitability following immediately after neurolysis is suggestive of only slight compression and possibly chemical nerve-block. Absence of conductivity and of excitability, even after neurolysis, is not conclusive evidence of division, but is probably an indication of fairly severe nerve disturbance.

Anaphylaxis Caused by Antitetanic Serum.—The case report by Gurd and Roberts is that of a healthy man who collapsed following the hypodermic administration of a relatively small dose—5 c.c.—during life identical with those which occur in anaphylactic shock in the dog, and with necropsy findings typical of those which are found in the guinea-pig.

Hydropathic Treatment of Malaria.—Eighteen soldiers had had lengthy consecutive courses of quinin treatment for chronic malaria without results. Zangger discontinued the quinin and gave the patients tepid "half baths." The arms, legs, and chest of a patient lying in a bath half filled with tepid water (82 F.) are rubbed for five minutes in the water then dried, and the patient is put to bed. Ambulant cases can rest for an hour and then return home. These baths were repeated three times a week for from three to four weeks, the average of baths per patient being eight. The malaria came to an abrupt termination within 10 days. During five weeks only five attacks were noted, and all the eighteen cases except one, who had one single slight feverish attack, were free from fever for the year during which they remained under observation.

Large Ureteral Calculus.—The stone in Ley's case was 3 inches in length and 4 inches in circumference. It weighed 2 ounces, 2 drams.

Archives des Mal. du Cœur, etc., Paris

December, 1919, **12**, No. 12

*The Phlebogram in Complete Arrhythmia and in Tricuspid Insufficiency. P. Schrumpf (Geneva).—p. 529.
*Mechanism of Double Crural Sound. C. Pezzi (Pavia).—p. 547.

The Phlebogram in Complete Arrhythmia and in Tricuspid Insufficiency. — Sphygmographic and electrocardiographic researches combined have led Schrumpf to the conclusion that serious cases of insufficiency of the tricuspid valve are nearly always accompanied by complete arrhythmia; most cases of complete arrhythmia, however, are independent of any insufficiency of the tricuspid valve.

The Mechanism of the Double Crural Sound in Aortic Insufficiency.—On the basis of his own independent investigations, Pezzi opposes the view advanced by Traube in 1867 that the double crural sound is a characteristic symptom of aortic insufficiency, and corroborates the opinion of Dagnini that it is a phenomenon of mixed, that is to say, of arterial and venous origin. Pezzi has never found it present in aortic insufficiency that was perfectly compensated. He has observed it only when there was more or less manifest myocardiac insufficiency.

Journal de Médecine de Bordeaux

March 25, 1920, **91**, No. 6

*Hydatid Cysts of the Lung. Creyx.—p. 139.
Brain Monstrosities. G. Jeanneney.—p. 147. Cont'd.
Carbuncle with General Staphylococcus Infection. R. Darget.—p. 152.
Typhoid Bacillus in Fixation Abscess in Typhoid. Damade.—p. 153.
*Chromic Acid in Fusospirillar Infections. W. Dubreuilh.—p. 153.

Clinical Forms of Hydatid Cysts of the Lung. — Creyx remarks that there is scarcely any physical or functional syndrome of the lung that these cysts may not realize. He therefore thinks that a division into differentiated semeiologic types would have value for the physician who is called on to give his opinion in a case of pulmonary echinococcosis that he has had an opportunity to observe only a limited time: namely, the latent type, the pseudotuberculous type, the pseudopleuritic type, the type simulating intrathoracic tumor, and the suppurative type. Creyx gives six case reports in illustration of these various types. This classification would have the effect of inviting the aid of roentgenologic, serologic and hematologic methods in solving the doubtful problems, and thus the clinician would be put on the right track leading up to appropriate and successful therapy.

Chromic Acid in the Treatment of Vincent's Angina and Other Fusospirillar Infections. — Dubreuilh recommends in Vincent's angina and in analogous infections a saturated solution of chromic acid, applied with a firmly twisted cotton swab. The oxidizing power of the chromic acid is such that if the solution is fresh and one does not use the swab at once after moistening it in the solution, it will begin to fume and the cotton will be found to be carbonized. The swab should therefore be barely moistened and not allowed to accumulate superfluous liquid. The ulcerations are rubbed rapidly and vigorously with the swab so as to detach

mechanically the false membranes and to bring the solution in direct contact with the ulcerated surface. The patient should also be allowed to rinse out his mouth at once, but should be cautioned not to swallow any of the saliva mixed with the acid. Occasionally it may be necessary to make a second application about the fourth or fifth day.

Lyon Médical

March 10, 1920, **129**, No. 5

Emergency Treatment of Cranial Traumatism. P. Santy.—p. 201.

Paris Médical

March 13, 1920, **10**, No. 11

*Renal Syndrome with Asystolia. O. Josué and Parturier.—p. 221.
*Trophedema in the Insane. E. Coulonjou and others.—p. 230.

Disturbances in Kidney Functioning with Asystolia.—Josué and Parturier have published a number of articles on what they call the renal syndromes of asystolia, and here explain the mechanism by which oliguria of cardiac origin entails uremia and edema even when the kidneys are sound. The elimination of waste through the kidneys is defective because there is not enough water pumped into the kidneys to rinse out the waste, and the water stagnates and accumulates in the tissues. The symptoms may indicate uremia from serious kidney disease but under digitalis the whole train of symptoms subsides. The Ambard ureosecretory index may be misleading in oliguria from asystolia, as also other tests of kidney functioning. The heart action should be brought back to approximate clinically normal and the oliguria be corrected by other means before the findings of these tests can be accepted as reliable. Albuminuria may be merely the consequence of the venous stasis, and it may disappear as this is corrected by the *polyurie libératrice*. The true figure representing the arterial pressure cannot be estimated during periods of asystolia and oliguria. There may even be asystolic hypertension, paradoxical as this seems. In asystolia, digitalis is always indicated, whatever the condition of the kidneys. But its task should be facilitated by getting rid of the water accumulated by the venous stasis; venesection and a drastic purge are the indispensable prelude to the digitalis. Nothing but milk should be allowed; with extreme oliguria, nothing but water; the amount of fluids should not be over 1.5 liter, and 100 or 150 gm. of lactose can be added. Small doses of digitalis are notoriously inadequate in the renal syndromes of asystolia, and the drug should be kept up until the energy of the heart seems to be permanently reestablished; one of his patients has taken a small dose daily for years. It is not necessary to restrict salt after the heart action has been restored to normal; there is no danger of return of the dropsy in these cases. The asystolia may be latent but still may imprint its stamp on the symptoms from lungs and liver as well as from the kidneys.

Trophedema in the Insane.—The trophedema in the two cases reported accompanied chronic mania; this seems to confirm the endocrine-sympathetic nature of the trophedema. It is possible that the factors responsible for the latter may be involved also in the causation of the mental disease.

Policlinico, Rome

Feb. 23, 1920, **27**, No. 8

*The Blood Platelets. R. Marchesini.—p. 227.
Epidemic Encephalitis. Two Fulminating Cases. E. Beretta.—p. 230; C. Castelli.—p. 231.
No Outdoor Night Work in Malarial Zones. G. Conforti.—p. 234.

The Blood Platelets.—Marchesini has continued his extensive research on the blood platelets, and here reports that the erythrocytes can all be classed in three groups, the stable, the partly stable and unstable, and that the early disintegration of the latter leads to formation of blood platelets out of their débris. The leukocytes serve merely as gathering centers for the débris of the unstable erythrocytes. This unstable group take stains instantaneously. The process of formation of platelets can be watched most instructively on the large erythrocytes of frogs and fowls. The unstable erythrocytes disintegrate more quickly under the influence of an aqueous extract of leeches.

Riforma Medica, Naples

Dec. 13, 1919, **35**, No. 50

*Hepatopexy. R. Mosti.—p. 1090.
Relations Between Influenza and Other Diseases. A. Bertolini.—p. 1100.
Fulguration for Cancroid of the Face. G. Paoletti.—p. 1103.

Operative Correction of Ptosis of the Liver.—Mosti devotes ten pages to a summary of the different methods in vogue for hepatopexy for total downward displacement of the liver, and comments on the disadvantages of all except the Santucci method. He reports the seventh case in which the latter has been applied, and extols the favorable conditions and permanent correction of the hepatoptosis without the slightest injury to the liver. A long curving incision is made from the sternal margin of the rectus abdominis sweeping down to four fingerbreadths below the costal arch and then up a little to the axillary line. The skin-muscle flap is turned back on the chest, and the peritoneum is incised just below the fold of the flap. The liver is then moved up into place and held there while the free lip of the incision in the peritoneum is rolled up on itself to make a kind of cord; this is encircled by three loops of stout silk about 3 or 4 cm. apart. Each silk thread is then passed through the right lobe of the liver, from the bottom to the top, about 2 or 3 cm. from the sharp edge, exactly to correspond to the location of the threads encircling the rolled-up cord of peritoneum. These threads are then drawn up and tied over the costal arch. The liver is thus supported from beneath and suspended from above, without any direct traction on the liver itself. The simple technic is shown in three illustrations. Mosti has found about thirty operative cases of total hepatoptosis on record, with nearly as many different technics as there were cases. He discusses further the clinical picture with sagging liver. In the case reported, the symptoms for a long time were merely from the stomach, but as the ptosis became more pronounced there was continuous and spasmodic pain, probably from traction of the heavy organ on its ligaments and from pressure on the solar plexus.

Rivista Critica di Clinica Medica, Florence

Jan. 5, 1920, **21**, No. 1

*Tactile Vocal Fremitus in Croupous Pneumonia. A. Gallotti.—p. 1.
*Uremia and Ureic Diuresis. Fornaseri.—p. 4.

Jan. 15, 1920, **21**, No. 2

Arsphenamin in Chorea. G. Salvetti.—p. 13.

Vocal Fremitus in Croupous Pneumonia.—Gallotti found the tactile vocal fremitus in fifteen patients with croupous pneumonia diminished during the second stage in 48 per cent. and intense in 17 per cent. In the first and third phases of the disease it was generally exaggerated. It is of autochthonous origin, that is, it occurs without the influence of the chest wall.

Uremia.—Fornaseri reviews the uremia with various acute and chronic diseases, and emphasizes that in treatment the diet should be poor in nitrogen and without salt. In the acute form, water, teas, gruels, stewed fruits and a small amount of milk are advisable. On water alone, the azotemia may increase, from autophagia. On a milk diet, also, the azotemia always notably increases. In chronic cases, cereals, vegetables, fruit and spaghetti may be allowed but only very little milk and meat. To promote elimination of the urea, measures to stimulate diuresis may include subcutaneous injection of artificial serum with 47 per cent. glucose or 0.5 per cent. lactose, injecting 10 gm. of the serum per kilogram of weight when the blood pressure is high, and 15 gm. when it is unduly low. Revulsives to the kidney region, purges and venesection are also useful.

Archivos Españoles de Pediatría, Madrid

January, 1920, **4**, No. 1

*Intradermal Tuberculin Treatment of Pulmonary Tuberculosis in Children. J. García del Diestro and B. Cordero.—p. 5.
*Polycystic Disease of Omentum. V. Juaristi and D. Arraiza.—p. 20.

Intradermal Tuberculin Treatment of Pulmonary Tuberculosis in Children.—García and Cordero relate their expe-

riences with Mantoux' intradermal technic applied in systematic tuberculin treatment of children, in this instalment of their article, analyzing the cases in which no benefit was realized. These cases in which the method failed, proved useful guides for selecting other cases for the method and for the proper doses until highly favorable results could finally be counted on. To begin with, they state that dispensary treatment by subcutaneous injection of tuberculin has too many drawbacks and dangers, but the intradermal technic is free from these to a large extent, while the response to the intradermal injection is an instructive index of the individual tolerance at the moment, often rendering careful analysis of the temperature, weight, etc., unnecessary. The intradermal technic allows a tentative course of tuberculin treatment without danger for the patient, even when it proves ineffectual.

Cystic Disease of the Omentum.—The ruddy boy of 4 seemed healthy except for the enormous distention of the abdomen. A laparotomy revealed a mass of cysts, mostly united, and requiring the removal of the entire gastrocolic omentum. The conditions in the resected mass testified to the fetal origin of the cysts, some inflammation of the omentum during intra-uterine life having prevented the normal fusion of the layers, so that the inflammatory exudation held them apart and entailed the cyst production. Some of the cysts were as large as a fist, others only the size of a nut, and nearly all were joined together. Neither puncture nor the laboratory would have thrown any light on this case, Juaristi and Arraiza remark in conclusion, saying that if physicians would examine the peritoneum for themselves instead of trusting blindly to what is written in books—which copy one from the other—it would be better for all concerned.

Brazil-Medico, Rio de Janeiro

Feb. 7, 1920, **34**, No. 6

*Vomica with Interlobar Pleurisy. Cardoso Fonte.—p. 81.
*Tonsillectomy. C. Rohr.—p. 84.
Examination of Spinal Fluid in Syphilis. G. Moura Costa.—p. 87.

Feb. 14, 1920, **34**, No. 7

Chronic Delirium with Hallucinations. H. Roxo.—p. 97.
Recurring Hemoptysis after Influenza. O. Clark.—p. 100.
Definition of Cenesthesia and Kinesthesia. Vieira de Moraes.—p. 101.

Vomica with Pleurisy.—Cardoso has encountered two cases in which encysted pleurisy led to a vomica, the patient suddenly expelling from the lungs a mass of fetid pus and blood to a total of about 200 gm. This occurred at the eleventh day of the disease, during the night, in one of the cases. This patient was a woman of 40 and there had been scarcely any coughing before. Recurring hemoptysis and purulent expectoration kept up afterward for nearly three months, but recovery was complete by the fourth month. There was nothing to suggest a pulmonary process or syphilis, and the physical signs indicated interlobar pleurisy as well as the intense dyspnea, the hemoptysis and the intensely fetid breath and sputum. In another case the sudden expulsion of fetid pus and subsidence of symptoms was followed a week later by another vomica of about equal intensity soon followed by recovery; there must have been two sacs of pus in this case, he thinks. In still another case subcontinuous fever, cough and fine râles in the right lung suggested tuberculosis, but by the end of a month the extreme fetidity of the breath impelled closer examination, and a zone of dulness was found in the middle of the right half of the chest, at the back, a suspended area of dulness. This pointed to interlobar pleurisy, and puncture followed by thoracotomy led to prompt improvement of the symptoms from the pleura. If benefit is not soon apparent after the vomica, surgical measures should be considered, but the patient first mentioned recovered under symptomatic treatment alone, ergot, emetin, calcium chlorid, etc., with balsamics to promote expectoration. The hemoptyses were often alarming, but the good general condition and the final complete recovery justified the exclusive medical treatment.

Tonsillectomy.—Rohr gives an illustrated description of the technic and after-care, with special reference to the Sluder method.

Gaceta Médica de México, Mexico

January, 1920, **1**, No. 4

*Operation on Nerves. M. Toussaint.—p. 3.
Treatment of Keratoconus. E. F. Montaño.—p. 7.
Influenza in the City of Mexico. J. León Martínez.—p. 11.
*Treatment of Neurosyphilis. A. Brioso Vasconcelos.—p. 15.

Operations on Ulnar and Median Nerves.—Toussaint describes the preferable technic for operations on these nerves as he applied it in a man of 30 whose right arm had been paralyzed since a gunshot wound eight months before. The operation included neurolysis, suture, and isolation of the sutured segment. The man is said to have now, two years later, complete functional use of his arm. The segments were isolated with two free flaps of adipose tissue, and Toussaint expatiates on the advantages of adipose tissue for this purpose and for arresting hemorrhage in operations on the liver, spleen, etc.

Treatment of Neurosyphilis.—Vasconcelos reviews the literature on this subject, and reports seven cases from his own practice in which he gave intraspinal treatment. He urges this direct treatment of syphilitic disease of the central nervous system whenever the spinal fluid gives a positive Wassermann, Pandy, Nonne, Noguchi or Lange reaction, and still more imperatively when several of these reactions are associated, as the patient is then a candidate for tabes or general paresis.

Repertorio de Medicina y Cirugía, Bogota

February, 1920, **11**, No. 5

*Signs of Collective Degeneration in Colombia and Countries Similarly Situated. Miguel Jiménez López.—p. 227.
Hygiene of Milk. G. Arbeláez R.—p. 264. Conc'n.

Collective Degeneration of the Human Race in Colombia.—Jiménez states that Colombia is one of the three countries of the world with the lowest number of marriages (4 per thousand inhabitants), although the number of births was 31 per thousand in 1915. The mortality was 20.9 per thousand. The life expectancy is below the average, he says, and men at 30 have passed their prime, corresponding to the age of 45 in the temperate zones. His remedy is—in addition to hygiene and preventive medicine—to invite immigration on a large scale from peoples with characteristics opposite to those of the Latin races. He specifies in particular Switzerland, Belgium, Holland, Wurtemberg and the Tyrol as the countries where it would be best to seek immigrants.

Semana Médica, Buenos Aires

Dec. 18, 1919, **26**, No. 51

*Latent Tuberculosis in Young Children. J. P. Garrahan.—p. 771.
*Fibromatous Degeneration of the Uterus. C. A. Castaño.—p. 781.
Vaccine Treatment and Prophylaxis of Tuberculosis. F. Gómez Alvarez.—p. 783.
*Amebiasis of the Lung. R. A. Bullrich.—p. 793.
Regional Anesthesia for Operations on the Uterus. E. A. Fox.—p. 797.
Mixed Infection in Tuberculosis. F. Gómez Alvarez.—p. 798.

Dec. 25, 1919, **26**, No. 52

Uni-Ovular Twins. F. A. Deluca and V. Widakowich.—p. 807.
Case of Total Inversion of Viscera. J. Bacigalupo.—p. 812.
The Royer Atomic Theory. Clemence Royer.—p. 818.
Present Status of Local Anesthesia. J. M. Jorge.—p. 829.
Artificial Eyelids and Eye. R. Gil.—p. 837.
Etiologic Factors in Laennec's Cirrhosis. F. Fernández Martínez.—p. 840.

Masked Tuberculosis in Children.—Garrahan relates that a tuberculin test, often applied up to four times, to 1,214 children at Buenos Aires, between 2 and 16, revealed that over 75 per cent. of the older children, between 14 and 16, were probably infected with tubercle bacilli. The children were apparently healthy and all of the poorer classes. Those brought up in asylums or other institutions showed 20 per per cent. less tuberculous than those brought up in families. In infants with tuberculosis, the disease was never found entirely latent. Garrahan's experience thus differs from others' in this respect.

Origin and Treatment of Fibrous Degeneration of the Uterus.—Castaño presents an array of evidence to sustain the assumption that congestion in the uterus, of endocrine or infectious origin, is the initial stage of what progresses

to sclerosis, fibromatosis, parenchymatous metritis, etc.—all these are merely different stages of the one process. It begins with congestion and eventuates in sclerosis. This conception opens new horizons for treatment of all the eight typical uterine affections which hitherto have been regarded as separate entities. Local measures to reduce congestion, radiotherapy and kinesitherapy, with ovarian, thyroid or other glandular extracts to restore the endocrine balance, are the proper treatment for all stages and will benefit all but irreparable lesions. Treatment for syphilis may also be indicated.

Pulmonary Amebiasis.—Bullrich summarizes three other cases on record of nonsuppurating amebiasis in the lung, and describes in detail a case in his own service. The man of 43 had been clinically cured of dysentery with emetin six years before. After nearly three years, there had been a tendency to diarrhea. Then came sudden pain in the shoulder and it progressed, with coughing and sensations of something tearing loose in the lung, with bloody sputum afterward. There was also pain in the lung and liver and some fever, and the stools became dysenteric but no amebas could be found, no tubercle bacilli, and the Wassermann test was negative. Roentgenoscopy showed the apexes clear, but the right lung below cast a shadow, and the diaphragm was immovable. Under emetin, the temperature, stools, lung findings and general condition promptly returned to normal. Bullrich remarks in conclusion that the amebas probably invade the liver first, through the portal system. If they pass beyond the barrier of the liver, the lung is the next barrier they encounter.

Mitteilungen a. d. med. Fak. d. kais. Univ., Tokyo

June 14, 1919, **21**, No. 3. German Edition

*Action of Volatile Substances on Blood Pressure. S. Yamada.—p. 355.
*Antitrypsin in the Blood. S. Tachigara.—p. 437.
*Cord Anomaly in Knee Joint. T. Mayeda.—p. 507.

Action of Volatile Substances on Blood Pressure.—Yamada experimented, mainly on rabbits, with fifteen strong smelling and volatile fluids, including benzine and chloroform, and with fifteen essential oils, two perfumes, and with musk, camphor, phenol and tobacco smoke. They can all be classified according to the effect on the trigeminal or the olfactory nerve or on both combined. The reflex action from their effect in the nose raises the blood pressure but in the trachea depresses it. Simple mechanical or electric stimuli applied to the nasal mucosa seem to have a similar blood pressure-raising action, he relates.

Trypsin and Antitrypsin in the Blood.—Tachigara has been applying quantitative tests for antitrypsin in the blood in the healthy and in a number of pathologic conditions as he describes in detail, and reviews a bibliography of seventy-six titles on the subject.

Cord Anomaly in the Knee Joint.—Mayeda describes what he calls chordae cavi articularis genu and explains as an embryonal malformation of comparatively common occurrence. It is usually overlooked on opening the joint as no one examines the inner wall of the normal knee joint, and the cord bridging the cavity is not seen unless carefully sought for. Opposite conditions prevail in respect to the heart cavity, so that abnormal cords in the heart are readily recognized.

Berliner klinische Wochenschrift, Berlin

Dec. 22, 1919, **56**, No. 51

Clinical Observations on Abdominal Pressure. E. Melchior.—p. 1201.
Hypertonia as a Constitutional Anomaly. F. Munk.—p. 1205.
Pathology of the Sympathetic System in Influenza. E. Riese.—p. 1208.
*Acute Dermatomyositis. Ridder.—p. 1211.
Pharmacology of Digitalis Leaves. G. Joachimoglu.—p. 1212.

Acute Dermatomyositis Simulating Trichinosis.—Ridder calls attention to the diagnostic value of the absence of hyperleukocytosis and of eosinophilia in a case of dermatomyositis, as this was the first definite indication that the case in hand was not trichinosis, which it closely simulated. That the spleen was not enlarged was also atypical. A diagnosis of dermatomyositis once established, treatment consisted of profuse diaphoresis induced by light baths and hot air; inunction of the skin, and administration of stomachics and sedatives, with quinin in small doses. Ridder adds that an exact account of the anatomic findings and the course of the disease is to be given soon in a thesis by Behrendt.

Deutsches Archiv für klinische Medizin, Leipzig

Aug. 15, 1919, **130**, No. 1-2

*Auricle Pulse and Venous Pulse in Man. H. Straub.—p. 1.
Morphologic Examination of the Blood in Diagnosis of Tertian Malaria. V. Schilling.—p. 21; Idem. C. Klieneberger.—p. 131.
Friedmann's Treatment of Pulmonary Tuberculosis. P. Deuel.—p. 27.
*Extrarenal Elimination of Cardiac Edema. A. Heineke.—p. 60.
*Heart Block. A. Eckstein.—p. 95.
*Aleukemic Myelosis. E. Keuper.—p. 118.
*Origin of Hemorrhagic Diatheses. R. Klinger.—p. 127.

Pulsation in the Auricle in Relation to the Venous Pulse.—Straub has been making a systematic study of this subject in a young officer left with a large defect in the chest wall after resection of the sternal ends of several of the right ribs for a suppurating gunshot wound. The bullet had lodged in the wall of the superior vena cava near its entrance in the right auricle. The defect was covered with skin and the action of the heart did not seem to be impaired, but the pulsation of the auricle was distinctly visible and could be compared with the venous pulse, throwing light on the mechanism and interpretation of the latter, as Straub explains.

Extrarenal Elimination of Cardiac Edema.—Heineke tabulates the findings in a number of extremely severe cases of edema from heart disease to demonstrate that instead of depending on the diuresis figures in estimation of the course of the case, the scales should be consulted. The patient's weight is the main criterion of the success of the efforts to reduce the edema. He does not agree with those who maintain that digitalis and strophanthin given for the heart disease are liable to induce contraction of the vessels in the kidneys, thus closing the outlet for the fluid through the kidneys. There may be other causes for the lack of effectual diuresis. The mobilization of the edema fluid by the action of the heart tonic on the circulation, and the consecutive hydremia, promote both the renal and the extrarenal elimination of the water. It is more difficult, however, for the circulation through the complicated system of glomeruli and tubuli to be restored to approximate normal than the circulation through the vessels in the skin. Hence the vessels in the skin may get to work sooner and act more efficiently than the vessels in the kidneys; there is no need to assume any constriction of the renal vessels to explain this delay in their functioning. In the cases of which curves are given, the extreme stasis in the vessels in the kidney was evidently exceptionally difficult to overcome. Heineke remarks in conclusion that he does not know of a single authentic instance on record of constriction of the renal vessels from the action of a heart tonic. His extensive experience, on the other hand, with cases of heart disease has convinced him that too often digitalis is given in inadequate doses and not kept up long enough and, above all, that there is too much dread of the intravenous route. He cites Meyer's successful case in which a digitalis preparation was given daily for a year.

Heart Block.—Eckstein has continued his research on the frog heart and in the clinic, and here states that the results have confirmed that the width of the impulse-conducting tract between the auricle and the ventricle does not modify the transmission of the impulse. The so-called partial heart block is not the result of any narrowing of the tract, but is due to functional modifications of the remaining elements. The power of the impulse is dependent on the number of times in which the elements of the tract can repeat a given process in a given unit of time, that is, the length of the refractory phase. This may differ in different parts of the heart and in the same part at different times. When two parts with a different length of refractory phase meet, irregularity of rhythm is inevitable. Hence allorhythmia is by no means always traceable to the impulse-conducting system, and its cause may be sought elsewhere in the heart. The cause may not be anatomic, as every kind of irregularity can be

induced by purely functional disturbances. The injurious influence causing the functional disturbance may reach the heart through the blood, or through the nerves, or may originate in the heart itself. The neurogenous can be distinguished by their modification under atropin. Over two pages of bibliography on disturbance in atrioventricular coordination are appended.

Aleukemic Myelosis.—Keuper reports three cases of what he calls aleukemic myelosis encountered in the course of four years. In one the condition was chronic, and the previously healthy man of 72 improved under roentgen treatment, the spleen became reduced in size and the patient has felt subjectively fairly well during the nearly three years he has been under observation. The sudden onset in the two other cases suggested an acute infection. The disease developed in the young woman immediately after marriage, beginning with intense headaches. The man of 32 had had some months before a period of lassitude, which suggested that the acute phase was the flaring up of a chronic disease. Both these cases terminated fatally in less than two months. The diagnosis long wavered between aleukemic myelocytosis and sepsis, the clinical picture resembling the latter until puncture of the spleen or bone marrow and examination of an excised lymph gland cleared up the case. Necropsy showed myeloid cells in the spleen and kidneys and leukemic infiltration in the spleen and kidneys in the woman.

Origin of Hemorrhagic Diatheses.—Klinger recalls experiments in which the blood platelets were removed from blood and the blood was then defibrinated and reinjected, but no hemorrhagic tendency was noted thereafter. He also recalls that the platelets normally do not stick together but only acquire this property as they lose their vitality. For these and other reasons he thinks that although hemorrhagic diatheses are usually accompanied by a reduction in the numbers of blood platelets, yet there may be no causal relation between these facts. He presents evidence to sustain the assumption of chemical factors as responsible for the hemorrhagic diatheses. The spaces between the cells forming the capillaries become more permeable under the influence of chemical injury (probably mostly hydrolytic) of the cells bordering these spaces (albumin or lipoid membranes).

Deutsche medizinische Wochenschrift, Berlin

Dec. 18, 1919, **45**, No. 51

Indications with Threatened Dystocia. R. T. von Jaschke.—p. 1401.
*Amount of Blood Expelled at Each Heart Beat. J. Plesch.—p. 1404.
*Lefthandedness. H. Griesbach.—p. 1408.
*Diphtheria of Umbilicus in the Newborn. M. Henkel.—p. 1411.
*Morphin Poisoning and Apparent Death. G. Joachimoglu.—p. 1413.
Friedmann Treatment of Surgical Tuberculosis. Elsner.—p. 1415. Cont'n.
"Hygiene and Social Hygiene:" Reply. W. Hanauer.—p. 1418.
Treatment of Lupus Erythematosus. Axmann.—p. 1419.
Hospital Diet Kitchens. Lenné.—p. 1419.
History of Medicine in the Medical Curriculum. W. Haberling.—p. 1420.

Determination of the Blood-Flow at Each Heart Beat.—Plesch describes his further development of the method of determining the volume of blood discharged during the phases of the human heart cycle by the amount of oxygen given off from the arterial blood. He claims to have perfected the method so that it can be applied to any person, under the most diverse physiologic conditions, during rest and work, and also under pathologic conditions. It can also be used for the testing of pharmacologic effects. The amount of oxygen consumed by the body must first be established, which is easily done by means of a short test of respiratory metabolism. The amount of oxygen held in the blood is then determined, which, Plesch states, can be done by means of a special type of hemoglobinometer just as accurately and with as little trouble and loss of time as a clinical determination of the hemoglobin content of the blood. Then the oxygen content of the blood in the right heart must be ascertained. Analysis of the peripheral venous blood will not suffice for this. For the determination of the oxygen content of the blood of the right heart Plesch has introduced what he calls the "Sackversuch" or rubber bag test. The subject to be examined is required to breathe into and out of a rubber bag apparatus until, in accordance with the Henry-Dalton or the Boyle-Mariotte law, a tension equilibrium is established between the blood and the gas mixture in the bag. Based on an analysis of the air in the bag, a direct estimate of the oxygen content of the blood that flows from the heart through the lungs can be made. A portion of blood is saturated with alveolar air and another portion with the air contained in the bag. The difference in the oxygen content of the two samples of blood shows then the amount of oxygen per 100 c.c. given off or received by the lungs. He describes and compares with his method those devised by others for similar purposes.

Lefthandedness.—Griesbach states that owing to the fact that in lefthanded persons the speech center is located in the right hemisphere of the brain, instead of in the left as in righthanded persons, the custom of compelling them to write with the right hand, which work is for the most part associated with the speech center, causes them to struggle for years in order to transfer the speech center from the right hemisphere to the left. Lefthanded persons are not originally mentally inferior, as Stier maintains, but it is possible for them to become so through the above described attempt at a readjustment of the speech center. The result of their efforts may be that the speech center is not predominantly located on either side, which Griesbach regards as an unfortunate state of affairs, as it interferes with hemisphere differentiation during the process of its development throughout childhood and adolescence. In adults, a change from the right hand to the left, which sometimes becomes necessary through accident, is not marked by any central changes, as their unilateral hemisphere differentiation has become definitely fixed.

Diphtheria of the Umbilicus in the New-Born.—Henkel reports four cases of diphtheria of the umbilicus in the new-born, and states that this localization of the infection is not particularly rare. His experience with the condition has not been extensive but so far he has not found it a severe infection. The important thing is to recognize early the presence of diphtheria bacilli in order that mixed infection may not set in. If not recognized until late, more or less deep tissue injuries are sure to result, which renders the management of the case more difficult. When the diphtherial character of the infection is once recognized, the treatment must be entirely specific. Diphtheria antitoxin was administered in doses of from 500 to 600 units and was applied locally. In one case 4,000 units were administered in all. Powders and ointments are avoided. The infant should never be immersed in a bath until the cord has dropped off and the stump is dry. With this endemic appearance of diphtheria of the umbilicus, the cord and the umbilicus were treated daily with 96 per cent. alcohol. Other disinfectants are contraindicated as the skin of the new-born is so sensitive.

Morphin Poisoning and Apparent Death.—Joachimoglu, in discussing the case of apparent death in Berlin, an account of which appeared recently in THE JOURNAL, p. 837, expresses surprise that although the person when found in the park showed signs of life that were readily noted by laymen, the physician who examined the apparently lifeless body when brought to the hospital should have pronounced death as having ensued from morphin poisoning and should have neglected to make any attempts at resuscitation. In acute poisoning from morphin or other narcotics of the fatty series, Joachimoglu states, absence of respiratory movements, pulse and reflexes are by no means sufficient evidence of death, as was shown long ago by the animal experiments of Boehm, who chloroformed cats and waited until the manometer showed no pulse vibrations and until no heart sounds could be noted with the stethoscope, and then, at various intervals, instituted attempts at resuscitation. Cats were thus resuscitated when the heart had ceased to beat perceptibly for 7, 8, 9 and 19 minutes, and when respiratory movements had completely ceased for 10, 13, 14 and 24 minutes, respectively. As is well known, many persons apparently dead from chloroform poisoning have been resuscitated. The condition of the organism after acute poisoning may be compared to

that following drowning. In view of these facts, Joachimoglu considers it the imperative duty of the attending physician in all such cases to institute artificial breathing and to employ all other therapeutic measures (e. g., atropin in large doses) in an attempt to bring about resuscitation, and that only after long and energetic trials to restore heart and lung activity should the subject be pronounced dead.

Jan. 1, 1920, **46**, No. 1

*Artificial Sterilization of Women. G. Winter.—p. 1.
Pressure in the Venous System. W. Arnoldi.—p. 4.
Heliotherapy in Surgical Tuberculosis. F. Brüning.—p. 5.
Experimental Immunization Against Tuberculosis by Means of Tubercle Bacilli from Cold-Blooded Animals. F. Klopstock.—p. 6.
Behavior of Cerebrospinal Fluid in Experimental Anemia and Vital Staining. W. Baumann.—p. 10.
Recurrent Localized Salvarsan Exanthems. W. Schönfeld.—p. 11.
Sensitization in Roentgenotherapy. R. Lenk.—p. 12.
Precipitation Reactions in Syphilis. E. Meinicke.—p. 13.
Roentgen Picture of Pericarditis with Effusion. Paetsch.—p. 16.
Treatment of Spastic Talipes Equinus. K. Rohde.—p. 16.
Gastro-Enterostomy for Pyloric Ulcer and Stenosis. F. Ehrlich.—p. 17.

Artificial Sterilization of Women.—Winter discusses what he regards as the indications for artificial sterilization. There seems to be an increasing misuse of the operation, which should be checked. Too much attention has been paid to the technic of the operation, to the neglect of the indications therefor. The fundamental idea or justifying basis for sterilization is to ward off the aggravating influence that pregnancy has on the course of certain chronic diseases. It is justifiable only when the life or health of the patient is seriously menaced. In exophthalmic goiter, although in from 6 to 7 per cent. of the cases one can expect serious complications, sterilization is not justifiable because strumectomy during pregnancy will ward off the danger just as well. In diabetes, relapses often result during pregnancy, and clinical experience would indicate that there are some cases of intermittent diabetes that do not subside after pregnancy; in such cases sterilization is justifiable. While tetany is sometimes seriously aggravated by pregnancy and fatalities are recorded, this is so rare that it can not be taken as an indication for sterilization. Dementia praecox is the only psychiatric disease that may necessitate sterilization. In chorea gravidarum, sterilization is strongly indicated if in earlier pregnancies grave and life-endangering symptoms were manifest. In neuritis of the optic nerve sterilization should be performed if after pregnancy the disease does not respond to treatment and atrophic conditions begin to develop; otherwise later pregnancies may lead to permanent blindness. Winter opposes sterilization in hysteria and neurasthenia, which many physicians recommend and carry out on the ground that the patients have been worn out by numerous pregnancies and the ever growing cares of the household. He thinks the husband should bring the desired relief through continence exercised for a time or means to prevent conception. In tuberculosis and in heart disease, sterilization is indicated in the most severe cases, as Winter explains in detail. In some severe complications of chronic nephritis sterilization is recommended. Owing to the fact that the mortality rate from cesarean section has been reduced to 1.5 per cent. (transperitoneal) and to 2.4 per cent. (extraperitoneal), a narrow pelvis is not as strong an indication for sterilization as formerly, but may be such still. Sterilization naturally presupposes consultation between two or more physicians and the consent of both spouses.

Deutsche Zeitschrift für Chirurgie, Leipzig

August, 1919, **151**, No. 1-2

*Plastic Operations on the Skull. R. Gebhardt.—p. 1.
*Tuberculin Tests in Surgical Tuberculosis. E. Duthweiler.—p. 21.
*Ileus During Wartime. H. Reusch.—p. 36.
Diaphragmatic Hernia with Rupture of Stomach. J. Dubs.—p. 60.
Paralytic Ileus from Fermentation. H. Walther.—p. 77.
Operative Correction of Obturator Luxation. A. Szenes.—p. 86.
Isolated Fracture of Coronoid Process of Ulna. F. Bähr.—p. 100.
Isolated Injury of Posterior Crucial Ligament. M. Budde.—p. 110.
*Rupture of Mesentery. J. Dubs.—p. 120.
*Chyle Cysts. V. Hoffmann.—p. 137.

Plastic Operations on the Skull.—Eight cases are described and the advantages of utilizing bone tissue from the vicinity to close the gap are emphasized.

Tuberculin Tests in Surgical Tuberculosis in Children.—Duthweiler analyzes her experience with 8 cases of tuberculous spondylitis, 3 suspects, 7 of a tuberculous process in the knee, 4 in the elbow, 3 of the hip joint and one suspect, and 6 others with tuberculous processes elsewhere. In the 28 cases in which the diagnosis was beyond question, only 6 responded with a positive reaction to the subcutaneous injection of tuberculin, and the focal reaction proved unreliable both when positive and when negative. None of the children seemed to have been injured by the skin Pirquet test done with small doses, and the response to this was constantly positive in the above 28 cases.

Ileus During Wartime.—Reusch reviews the experiences with ileus during the last five years at Würzburg and comments on its increasing prevalence of late years, the number of operative cases having increased from five in 1912 to twenty-nine in 1918.

Rupture of the Mesentery.—Dubs reports two further cases of isolated rupture of the mesentery from abdominal contusion, with fatal outcome in one case. The other patient recovered after resection of the stretch of mesentery involved and the 15 or 20 cm. segment of attached intestine. The other patient had recovered after suture of the tear in the mesentery, and seemed to be well for nine months except for occasional hematuria. Then he developed ileus, and necropsy showed circular stenosis of the stretch of intestine corresponding to the injured portion of the mesentery, and the latter had shriveled to a certain extent. Necropsy also revealed cicatricial changes in one kidney suggesting that the kidney had been ruptured at the same time.

Chyle Cysts.—Hoffmann reports a case of a large chyle cyst, and has found four others in his hospital records. He explains them as cystic lymphangiomas—tumors connected with malformations.

Zentralblatt für Chirurgie, Leipzig

March 13, 1920, **47**, No. 11

*Contracture of Great Toe. Kleinschmidt.—p. 243.
*Regional Anesthesia for Goiter Operations. D. Kulenkampff.—p. 246.
*Wire Versus Nail Extension. K. Ansinn.—p. 249.

Operative Treatment of Contracture of the Flexor Muscle of Great Toe.—Kleinschmidt describes the causes of contractures of this nature. A frequent cause during the war was immobilization of the foot for too long a time following gunshot injuries. In peace times the contracture is not so common. The clinical picture of the condition as seen in ten different cases was as follows: The ankle joint and the other joints of the foot, if they were not directly implicated in the fracture, showed only a moderate degree of stiffness, but the first metatarsophalangeal joint was fixed in a more or less flexed position. Any attempt at dorsal flexion met with stubborn resistance. The Payr operation for this condition consists in removing the sesamoid bones from the joint capsule and correcting adhesions. In five cases their removal relieved the condition and gave rise to no functional disturbances.

Local Anesthesia and the Technic of Goiter Operations.—Kulenkampff endorses Härtel's simplified technic for regional anesthesia in operations on the neck. He and his associates have used it for more than a year in over 100 cases and have yet to note any bad results. Kulenkampff recently has still further simplified it and used this technic in about fifty of the cases. The mastoid process-clavicle line is determined and following this line (the patient's head being turned away), with the palpating finger tips along the posterior border of the sternomastoid, and pressing fairly hard, the transverse processes of the cervical spine are located. A wheal is produced on both sides of the cervical spine at the junction of the upper and middle thirds. A needle 3.5 cm. long is inserted at one of these points and pushed directly downward into the tissues, thus coming in contact at a depth of from 1 to 2 cm. with the transverse process of the third or fourth cervical vertebra. The operator then cautiously goes on past the anterior border of the transverse process and for 0.5 or 1 cm. deeper. If no blood flows out of the needle, the syringe is attached and several drops

of the anesthetic solution are injected; the syringe is then removed and he waits to see whether a clear fluid will flow out of the needle. Often three or four trial injections are necessary before a clear fluid is returned. After securing a positive result, 50 c.c. of a 0.5 per cent. solution are injected without changing the position of the needle. The same procedure is followed on the other side. For the last two syringefuls (of 10 c.c. each) it is well to withdraw the needle partially and inject its contents just beneath the skin. Even large substernal goiters associated with severe dyspnea have not caused the slightest trouble when the above described technic has been employed. The regional anesthesia is as complete as with Härtel's multiple injections.

Wire Versus Nail Extension.—Ansinn prefers wire extension to nail extension for the alleged reason that it performs the same service and is associated with less danger from infection and formation of fistulas.

Zentralblatt für Gynäkologie, Leipzig

March 13, 1920, **44**, No. 11

Critical Observations on the Simplified "Twilight Sleep." C. J. Gauss.—p. 257.
Tardy Results of Perforation of Uterus. K. Frankenstein.—p. 270.

Zentralblatt für innere Medizin, Leipzig

March 13, 1920, **41**, No. 11

*Urobilinuria and Urobilinemia. H. Strauss and L. Hahn.—p. 193.

Urobilinuria and Urobilinemia.—Strauss and Hahn state that as urobilin is a normal ingredient of urine, it is also present in every blood serum, and its presence can be shown provided a sufficiently large amount of blood serum is taken for examination. Since urobilinuria denotes a physiologic condition, this term should not be used to designate an excess of urobilin in the urine; hyperurobilinuria is the proper term for this. The amount of urobilin in the blood varies greatly. It could not be found in normal persons in less than 48 c.c. of serum, so we might speak of a hyperurobilinemia when urobilin is found in a certain minimal quantity of blood serum.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Feb. 21, 1920, **1**, No. 8

*Changes in Pulse and Respiration During Reaction to Mental Processes. J. Bramson.—p. 614. Begun in No. 7, p. 547.
Sign and Treatment of Influenza. H. B. L. Vos.—p. 634.

Influence of Mental Processes on Pulse and Respiration.—Bramson describes an electric contrivance with which the record of the respiration can be compared with the plethysmograph record during and after some slight mental process An unmistakable physiologic response in both directions is evident. Such tests would be useful in psychanalysis if the words on the cards were chosen with care. Bramson's findings confirm Benussi's study of the respiratory symptoms accompanying a lie.

Feb. 28, 1920, **1**, No. 9

*Early Rupture of the Membranes. I. A. Wijsenbeek.—p. 695.
*Rabies. W. Hamburger.—p. 717.
*Protein Therapy. E. H. B. van Lier.—p. 725.

Early Artificial Rupture of the Membranes.—Wijsenbeek compares the experiences at the maternity in Utrecht, where the bag of waters is spared as long as possible, with those at the maternity of Leyden where it is the routine practice to rupture the membranes early. In both series there were a number of cases in which delivery was abnormally prolonged; the rupture in itself does not seem to influence this. But the disadvantages in such cases of the membranes being ruptured is evident.

Prophylactic Treatment of Rabies.—Hamburger comments on the great increase in the number of cases of rabies in France and Belgium during and since the war. In the Netherlands, the burgemeester supplies money for traveling and other expenses so that prophylactic treatment for rabies is within the reach of every one free of charge. But the country has long been free from rabies until recently when a number of patients from the eastern provinces applied for treatment. In comparison with smallpox vaccination, the antirabies treatment has the drawback that it is applied, not to the healthy, but during the incubation of the disease.

Protein Therapy.—Van Lier analyzes the extensive literature of the last few years for and against parenteral injections of milk. He relates that the *Deutsche medizinische Wochenschrift*, No. 20, 1918, had an article by Müller extolling the harmlessness of the injections as he had been making them for two years, and on another page an account by Lubliner of fatal anaphylaxis from this cause, the robust girl dying from anaphylactic shock a few minutes after an injection of milk, eight days after a previous series of injections had been borne without mishap. Oppenheim has also reported a severe anaphylactic reaction after injection of milk the seventh day. The injections should be made with all the precautions of serotherapy, and van Lier suggests that it might be better to use horse serum or other source of protein, adding a little deutero-albumose at need, or some simple solution of albumin, instead of milk.

Acta Medica Scandinavica, Stockholm

Feb. 20, 1920, **52**, No. 6

*Gastric Secretion in Young Children. A. T. B. Jacobsen.—p. 773.
*The Parathyroid Glands. H. Bergstrand.—p. 791. In German.

Gastric Secretion in Young Children.—Jacobsen tabulates the findings after the Ewald test meal in twenty-five children, between 1 and 5 years old, with apparently normal digestive apparatus, and in six children with acute and twenty-four with subacute or chronic gastro-intestinal disturbance. The stool findings are also tabulated. These experiences testify that in children of this age the secretion of hydrochloric acid and of pepsin is not so strong as in adults, even in health. The congo and other reactions are weaker. With gastro-intestinal disturbance, achylia or hypocholia was found in about 75 per cent., but conditions returned to approximate normal as the gastro-intestinal disorders were cured. The stomach seemed to share in the presumed catarrhal condition in the bowels. He has been very successful in treatment with a milk and gruel diet after a few days of raw oatmeal soup following twelve hours of restriction to water during which the child was given 5 gm. of castor oil. Then one-fourth liter milk; a day or two later, one-quarter liter milk gruel; then one-half liter milk, one-quarter liter milk gruel and one-half liter water gruel, after which were allowed rusks, porridge, sweet sago soup, minced fish with melted butter and finally mashed potato, minced meat and tea. He ascribes the rapid benefit to the milk in these acute and chronic cases. Functional tests of the stomach proved to be superfluous, as the course was the same in the cases with and without anomalies in the gastric secretion. The article is in English.

Normal Anatomy of the Parathyroid Glands.—Bergstrand gives six pages of bibliography on the parathyroids and thirteen photomicrographs of the findings in parathyroids from adults, and discusses the minute structure and functions of the different elements. His conclusions differ in certain respects from those generally adopted.

Finska Läkaresällskapets Handlingar, Helsingfors

January-February, 1920, **62**, No. 1-2

*Roentgenotherapy in Gynecology. O. A. Boije.—p. 1.
*Transient Hyperopia in Diabetes. E. Enroth.—p. 28.

Roentgen-Ray Treatment of Uterine Myomas and Hemorrhagic Tendency.—Boije reports that the hemorrhages ceased entirely in 83.7 per cent. of his 49 cases of uterine myomas, and the tumors shriveled in 95.5 per cent. Only one case proved refractory to this treatment and no untoward by-effects were observed in any instance, or in 14 cases of uterine hemorrhages. In 5 of the latter complete amenorrhea was realized, and in the others the hemorrhages were restored to normal proportions. He warns, however, that polypous, submucosa and degenerated or gangrenous myomas are not adapted for radiotherapy. Operative measures also act quicker and more certainly on pain, but it may be wise to reduce the hemorrhagic tendency with radiotherapy and wait for the anemia to improve before attempting the operation.

He emphasizes that if myomas require intervention before 40 or 42, conservative enucleation should be the rule, but radiotherapy very cautiously applied might be advisable for younger women with ordinary menorrhagia and metrorrhagia. Between 40 and 45 it is better not to strive to arrest menstruation entirely. "The main point," he reiterates, "in radiotherapy is the selection of the cases for it. With the proper indications, the outcome is as favorable as with operative measures and with less risk."

Transient Hyperopia in Diabetes.—Enroth describes two cases of diabetes mellitus in a coachman of 48 and a farmer of 34 in which hyperopia up to 3 D developed suddenly in one and more gradually in the latter. It disappeared gradually in the first case by the third month; in the other the manifest hyperopia did not last more than five weeks. Changes in the lens seem to be responsible for the transient hyperopia, as he explains. Experimental glycosuria with examination of the sugar content and the refraction index in the fluids in the eyeball might throw further light on the question. He has encountered three cases of transient hyperopia in diabetes in the course of little more than two years, and has found twenty-seven cases on record in the literature.

Hospitalstidende, Copenhagen

Jan. 28, 1920, **63**, No. 4

*Regulation of Neutrality in Epilepsy. A. Bisgaard and J. Nørvig. —p. 49.

Causation and Treatment of Epilepsy.—Bisgaard and Nørvig have been conducting research on sixteen epileptics in an institution, with comparative research on healthy persons—a total of several thousand investigations of blood and urine. They found a most remarkable increase in the ammonia content of the blood about three hours before an epileptic seizure or an epileptic psychic equivalent. Their charts show, as they say, "actually colossal" fluctuations in the ammonia content at these times. They were able to detect them by control of the ammonia content of the urine; when this began to go up, they examined the blood, and thus happened on the preseizure rise. They applied the van Slyke, Cullen, Folin, Kjeldahl and Hasselbach technics in their study of blood and urine, hydrogen ions, etc. Their discovery of the increase in the ammonia of the blood in the psychic-epileptic status is, they say, the first well defined endogenous toxic substance yet demonstrated in connection with psychoses. The epileptic seizure seems to be a kind of anaphylactic shock or poisoning with albumin waste products. One man weighing 65 kg. had an amount of ammonia in the blood, just before a seizure, corresponding to 32 c.c. of normal solution of ammonia, that is, of a 1.7 per cent. solution. Besides ammonia, other toxic elements may be at work, but they are not able to bring on the seizure until the ammonia reaches a certain concentration in the blood.

Bisgaard and Nørvig conclude their extensive report with arguments to sustain the analogy between tetany and epilepsy, and their possible common etiology from deficiency in the parathyroid glands. The anamnesis of epileptics needs revision and the treatment, instead of being merely with sedatives to reduce reflex action, may advantageously attack the endocrine disturbance presumably responsible. The attempts published to date in this line have not been encourging except with autotransplantation. Possibly the differences between donor and recipient may have interfered with the success of homotransplantation.

Feb. 4, 1920, **63**, No. 5

*The Epidemic of Influenza in Iceland. S. Matthiasson.—p. 65.

Influenza in Iceland.—This report of the epidemic in Iceland states that the strict quarantine enforced restricted the disease to the southern and western parts of the island, and the rest of the population escaped entirely.

Hygiea, Stockholm

March 15, 1920, **82**, No. 5

*Total Gastrectomy. H. Sundberg.—p. 145.
*Origin of Gastric Ulcer. R. Dahl.—p. 159.

Gastrectomy.—In the first of Sundberg's two cases there had been symptoms suggesting cancer of the stomach for several months in the woman of 64, but the glands around were not involved, and the stomach was freely movable. The woman is living in good health to date fifteen months after he resected the whole of the stomach except a small part of the cardia which was sutured to a loop of jejunum brought up through a wide opening made for it in the mesocolon. The loop was carried in a wide curve past the duodenum to which it was fastened. In the second case a still more complete operation was done; the jejunum loop had to be sutured to the esophagus. The condition was good after the operation but the woman of 65 succumbed shortly after to a recurring cerebral hemorrhage.

Origin of Gastric Ulcer.—Dahl presents evidence to show that aberrant cells of intestinal mucosa in the stomach and of stomach mucosa in the duodenum may be the points of lesser resistance which lead to the production of ulcers.

Ugeskrift for Læger, Copenhagen

March 11, 1920, **82**, No. 11

*Polycythemia with Juxtapyloric Ulcer. H. I. Bing.—p. 337.
*Acute Orbital Disease Originating in Nasal Sinus. S. H. Mygind. —p. 342. Conc'n.
Immunity after Influenza. V. F. Møller.—p. 356.
*Radium Treatment of Uterine Cancer at Stockholm. I. Hansen. —p. 357.

Polycythemia with Juxtapyloric Ulcer.—Bing has heard of four cases in Denmark in which polycythemia accompanied duodenal ulcer, but he has been able to find in the literature only one article referring to this subject, Friedmann's report (American) in 1914 of twenty-five cases of a hitherto undescribed form of polycythemia and its possible relation to duodenal ulcer. Bing remarks, to begin with, that Friedmann's assumption that the normal limit for the erythrocyte count is 5 or 5.5 millions, is incorrect; the normal limit is 6 for women and 6.5 for men. He says further that Friedmann's account shows that the ulcers were juxtapyloric rather than strictly duodenal. Friedmann suggests as an explanation that an excess of epinephrin in the blood may explain both the ulcer and the polycythemia, citing Falta's statements that polycythemia developed in animals injected with epinephrin. Bing does not accept this explanation, and thinks abnormal losses of salt may possibly be the decisive factor. He reports a case of juxtapyloric ulcer in a man of 27 in which he found 7 millions erythrocytes in blood from the lobe of the ear and 8.2 millions in blood from the abdominal wall. Examination a week later, however, showed only 4.7 millions. In a woman with extreme retention in the fasting stomach, requiring the use of the stomach tube, he noted that the aspirated fluid contained large amounts of salt, from 2 to 9 gm. in the 300 c.c. of stomach content extracted each day. Salt might also be lost in vomited fluids. The output of urine ranged from 750 to 1,450 c.c.; the specific gravity was sometimes down to 1.003. The food contained usually little salt. The ash in the blood was 8.9 and the erythrocyte figure 7.5 or 7.1 millions; in blood from the skin of the abdomen it was sometimes 8.4 millions. The chlorid content of the urine ranged from 0.31 to 4.09, and of the blood from 3.5 to 4.1, with hemoglobin 128. These and other findings suggest, Bing states, that the excessive losses of salt may have been responsible for a relative polycythemia, restoring the balance in the blood. Perhaps the large amounts of soda which Friedmann's patients had been taking may have modified the chlorid content of the plasma.

Acute Orbital Disease Originating in the Nasal Sinuses.—Mygind reviews in detail the extensive experiences in this line at the Copenhagen eye and ear clinics, and urges the necessity for prompt and ample evacuation of the foci in the orbit and sinus, discussing the indications.

Radium Treatment of Uterine Cancer at Stockholm.—Hansen reports sixty-six patients with uterine cancer treated with radium over five years ago, mostly inoperable cases. About 6 per cent. died from intercurrent disease or have been lost to further investigation, but 27.3 per cent. are known to be living after the five year interval.

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THE FUTURE OF OTOLARYNGOLOGY*

JOSEPH C. BECK, M.D.

CHICAGO

From the title of my address it might be assumed that I have been able by some magic influence to cast my eyes far ahead; that I have the great secret here transcribed, and that I am about to admit you into my confidence. If you will follow me, however, into the future, you will note that I am only judging it by my personal experience and observations, since I entered the practice of medicine exactly twenty-five years ago.

I have found it desirable to make two subdivisions of my subject: (1) development of an otolaryngologist, and (2) cooperation in otolaryngology.

DEVELOPMENT OF THE OTOLARYNGOLOGIST

A review of the history of the development of otolaryngology as a specialty would add considerable to the value of my presentation; but, for lack of time and space, it must be omitted. I wish, however, to say that we are much indebted to the pioneers, who have made it possible for those who followed to develop the branch into a real specialty. Yet, however great has been this development in the last twenty-five years, which many of us should feel it a great privilege to have witnessed, I believe we are at a threshold of even a greater step forward, namely, its recognition as a borderline specialty.

To meet the great demand for specialists, a number of graduate schools have made it possible for men to become operating or treating otolaryngologists, after a very short and inadequate course, and certainly without basic instruction.

Nothing has done more harm to the medical profession and to otolaryngology in America, in particular, than this result of imperfect pedagogics. The by-word "six weeks specialists" has been coined to apply to such practitioners, and the country is riddled with men with such training, doing not only otolaryngologic work, but often ophthalmologic work as well.

Fortunately, there were a fair number of men trained abroad, especially in London, Paris, Vienna and Berlin, who organized societies that set up high standards; and through their influence, many of these prematurely created otolaryngologists sought and secured adequate training. Again, the same societies are at this moment intensely interested in the problems of future development of the American otolaryngologist, and a permanent committee is at work. Having the honor of being one of the members of this committee, and being personally very much interested in the subject, I desire to present a tentative plan for your consideration—a plan which is feasible and can be instituted immediately.

1. There should be organized a board of directors, selected from each of the five national otolaryngologic societies, namely, the American Otological Society; American Laryngological Association; American Laryngological, Rhinological and Otological Society; American Academy of Ophthalmology and Oto-Laryngology, and the Section on Laryngology, Otology and Rhinology of the American Medical Association.

Each society is to send five members, irrespective of having membership in one or more of the constituent societies.

2. This board of directors, having been selected somewhat in reference to geographic location, is to be divided into five sections: (*a*) East; (*b*) Middle West; (*c*) North; (*d*) South, and (*e*) Extreme West.

3. The division into the five sections is made to facilitate the work of the board throughout the year, as the board as a whole meets only once a year, preferably at the annual session of the American Medical Association.

4. The board of directors should have absolute control of the development of the otolaryngologist, acting as advisory both to the institutions of learning or training, and to the student. It should, furthermore, determine the fitness of the applicant for training as well as practice.

5. A student having satisfied the board of directors of his fitness to become an otolaryngologist, and having shown that in his undergraduate studies, as well as during his internship, he has given especial attention to this branch, as, for instance, seminar work or theses, etc., he is referred to a clinician, who will train him for one year. This corresponds to the second year of internship in a hospital.

It is assumed that the clinician has enough work for one or more such men, in order to give them the training and prepare them for the subsequent advanced study and development.

6. This advanced study or training should consist in a systematically carried out curriculum as prescribed by the board of directors.

A schematic schedule is herewith suggested:

1. Anatomy, normal and pathologic, of the nose and nasal accessory sinuses. From 10 to 12 (sixty hours) one month.

Use of wet, dry and microscopic specimens, including illustrations. The actual work for one such month's course may be thus exemplified:

A. Mornings: 1. Embryology and comparative anatomy of the nose and paranasal sinuses. Four hours.

2. Anatomy of the nose and paranasal sinuses from birth to adult life. Four hours.

* Chairman's address, read before the Section on Laryngology, Otology and Rhinology, at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

3. Anatomy of nose and paranasal sinuses in adult life. Eight hours.
4. Gross pathologic anatomy of nasal septum. Two hours.
5. Gross pathologic anatomy of middle and inferior turbinated body. Four hours.
6. Gross pathologic anatomy of the paranasal sinuses. Four hours.
7. Histologic pathologic anatomy of the septum, turbinates and paranasal sinuses.

2. Anatomy, normal and pathologic, of the pharynx, larynx, trachea, bronchi and esophagus. Wet and dry specimens, including microscopic slides and illustrations. From 2 to 4 (sixty hours) one month.

B. Afternoons: 8. Embryology and comparative anatomy of the pharynx, larynx, trachea, bronchi and esophagus. Four hours.
9. Anatomy of pharynx, larynx, trachea, bronchi and esophagus in children. Four hours.
10. Anatomy of pharynx, larynx, trachea, bronchi and esophagus in adults. Four hours.
11. Gross pathologic anatomy of pharynx, larynx, trachea, bronchi and esophagus. Four hours.
12. Histologic pathologic anatomy of pharynx, larynx, trachea, bronchi and esophagus. Four hours.

3. Anatomy, normal and pathologic, of the ear, including the mastoid process. From 10 to 12 (sixty hours) one month.
Use of wet, dry and microscopic specimens and illustrations.
4. Anatomy, normal and pathologic, of the brain ganglions and cranial nerves.
Use of preparations, gross and microscopic; also illustrations. From 2 to 4 (sixty hours) one month.
5. Diagnosis and surgical treatment, on the cadaver, of the nose and the nasal accessory sinuses. From 9 to 12 (eighty hours) one month.
6. Diagnosis and surgical treatment, on the cadaver, of ear, mastoid, brain and nerves. From 2 to 5 (eighty hours) one month.
7. Attendance in ambulatory clinic of ear, nose and throat, observation only. From 9 to 12 (eighty hours) one month.
8. Reports on work in the observation clinic in writing and illustrating with reading and reference to literature. From 2 to 5 (eighty hours) one month.
9. Ambulatory clinic, ear, nose and throat in a clinic service. From 9 to 12 (eighty hours) one month.
10. Report in writing and with illustrations, reading and reference to literature on work in the clinic. From 2 to 4 (sixty hours) one month.
11. Observation on surgical clinic in ear, nose and throat. From 9 to 12 (eighty hours) one month.
12. Report in writing with illustrations, reading and reference to literature of the work observed in the clinic. From 3 to 5 (sixty hours) one month.
13. Observation in major surgical clinic, especially head and neck surgery. From 9 to 12 (eighty hours) one month.
14. Report in writing and illustrations, reading and reference to the literature on work of that clinic. From 2 to 5 (eighty hours) one month.
15. Surgical clinic in ear, nose and throat in active surgical service. From 9 to 12 (eighty hours) one month.
16. Reports in writing with illustrations, reading and reference to literature, on the work performed at the clinic. From 2 to 5 (eighty hours) one month.

The important questions now to be answered are: Where is the student to get this instruction? How are they to be grouped? What financial arrangements will be necessary?

I stated at the outset that the plan was feasible and could be made use of immediately. Let me propose a trite example:

A student applies to the board of directors, let us say, from the Western Section (San Francisco). He will be informed by this board what credentials he must have. The board is in possession of the names of a number of clinicians, who have signified their willingness to take an applicant for a year. If the student has a preference and the preferred clinician is available, appointment is made accordingly. After one year of service with the clinician, he receives a certificate from the clinician signifying the type of work performed, and he again applies to the board for advanced work. He will be informed that he may choose Harvard University, Pennsylvania or any university giving the course. At completion of each particular course he will receive from the instructor a certificate of attendance with grade for the work done. The actual expense of such a training cannot be stated, because it will vary with the necessary traveling, etc.; but so far as the first year of the training with the clinician is concerned, the student should receive the same compensation as an intern at the hospital, namely, board and lodging. The cost of the advanced work should be that which each university will demand. It has been customary for the American universities to make the minimum charge for any instruction.

Having completed the prescribed number of courses satisfactorily, he will return to the annual meeting of the board of directors and receive his properly accredited diploma, and he will be recognized as a thoroughly trained otolaryngologist.

While the courses outlined are perhaps not actually available at this time, and they are not absolutely required for a year, I am sure that arrangements can soon be made for them, and the results will be all we could desire.

The most difficult courses to secure in this country are the practical surgical training on the living; and if I may be permitted, I would suggest that until the clinical material is sufficiently organized for this work, the student may be required to go abroad for this portion of the work. I was authorized to state, by the clinicians of the University of Prague-Czechoslovakia, that any one who has had the preliminary training and is recommended by proper medical authority will be given ample opportunity to work on the living at their clinic. It is also quite likely that other European clinics will be soon ready to receive American physicians.

Being in possession of a proper general introduction from the members of the board of directors, the student now makes a tour of observation for four months. A list of large otolaryngologic clinics should be sent to each student. The length of time he shall spend at each place is left somewhat to the judgment of the student. At the conclusion of each visit he is to make a brief and concise report of what he has seen and heard.

It has been considered that perhaps the outline of what I term advanced training should precede the one year of practical work with the clinician; but after I had discussed the matter with several pedagogues in otolaryngology, it was thought best to do as advised above. The reason for this is that the student, having observed for one year the difficulties actually encountered, will be more eager to learn details. Also the question of appreciating subsequent teachers, when he makes the observation tour, comes into play.

Having completed his training and received his recognition as an otolaryngologist, he has yet a great deal before him toward development. In fact, it never stops and one is continually learning. He will have to decide whether he shall enter the practice independently or in association with one or more men in practice.

Speaking from personal experience, I shall advise everybody to become an associate. I have trained men and women ever since I have been in the practice of otolaryngology, and with few exceptions, these have found places as associates and have been, I believe, success-

ful. Furthermore, every otolaryngologist should join his local and national otolaryngologic society, take part in discussions, and try to do, as often as possible, some accredited work, and thus promote the advance of our specialty and develop into a real otolaryngologist. So far as the otolaryngologist visiting his colleges at home or abroad is concerned, I desire to state that the organization of an international society at the next international congress would be advisable. Membership in such a society would be accorded to any recognized otolaryngologist in his respective country, designated by a membership card. There need be no officers, dues or other expenses connected with such an organization. A member of the society, presenting such a membership card, should be entitled to all the possible professional courtesies, and given every opportunity to learn what his friend and colleague is doing. The idea of such a society would be, no need of special letters, etc., of introduction, nor any hesitancy on the part of the visitor to seek information. Besides, men would aspire to the recognition of an otolaryngologist, and the pretender would be denied rare privileges.

COOPERATION OF THE OTOLARYNGOLOGIST

With the establishment of the various specialists, there has developed such an epidemic of so-called group medicine or team work all over this country, that I have thought wise to call your attention to the possibility of this practice to cause more harm than good when thus applied. That group medicine is one of the greatest factors in benefiting the people and furthering science, there is no question; but the group must be competent. What I am objecting to is the pretension group of so-called specialists combining for commercial reasons and causing a lot of trouble by making false diagnosis, unnecessary and poor operations; therefore, my suggestion and outline of conditions or diseases in which otolaryngologists and the other specialists are simultaneously concerned.

We may divide society grossly into three great classes: (1) the wealthy; (2) the middle class, and (3) the poor. The relative percentage of these classes varies considerably, depending on the location, concentration and character of the district. The medical problems of these classes are by no means solved. However, the wealthy do not suffer, for their pecuniary resources command the necessary skill required. The poor are usually provided for in most communities through the great hospitals, which attract men of the highest medical attainment, who give their services free and without stint.

Those who belong to the middle class are by no means so fortunate. They cannot conscientiously accept the charity which is offered the poor, nor have they the means to secure the service which they desire and which the wealthy receive. They are hence often denied the medical attention in the varied and comprehensive manner required in the practice of modern medicine.

The great factor of this situation is the degree to which medicine has been specialized. While this specialization has been at times greatly overdone and often misapplied, the significant fact still remains that medicine as well as medical practice must be subdivided if any degree of expertness or efficiency is to be achieved.

In addition to otolaryngology, the recognized special branches in the practice of medicine are: (1) general surgery; (2) orthopedic surgery; (3) internal medicine; (4) gynecology; (5) pediatrics; (6) neurology and psychiatry; (7) dermatology; (8) obstetrics; (9) ophthalmology; (10) genito-urinary diseases; (11) clinical laboratory, and (12) dentistry. Naturally, there is a great deal of overlapping in the work of these specialties, and many questions as to the best interests of the patient frequently arise. Furthermore, this condition of things is not always successful in getting the best values—to use a colloquial term—out of the physician's work. A study of these circumstances has convinced me that there is still much to be done before these enforced divisions of medicine can become sufficiently harmonized to be brought into a proper relation with one another.

Among the many relational questions that arise, one of the most difficult is to determine to which of the specialists the patient belongs, with respect to treatment. In other words, when shall a skin and venereal specialist treat a syphilitic nasal or throat case, and vice versa? My answer is, "Whoever knows most about the subject." Surely the skin and venereal specialist should be the man in charge, because no matter how well the local treatment is carried out, the patient will not recover unless his general specific medication is given in the most efficient manner. Yet if that patient has a laryngeal stenosis or a nasal sequestrum, he will require the service of a well-trained rhinologist and laryngologist to help him.

What, then, is the answer? Cooperation. I realize that there are other facts which must be considered, as the ability of a patient to pay the fees of two or more specialists instead of one, and the financial loss to the one who refers. Both these can be overcome. The former can be met by charging only one fee, except perhaps for the initial examination.

Financial loss cannot be considered when the patient's well-being is concerned; however, mutual reference of cases more than compensates for this. Furthermore, the practice of medicine in the future, in furtherance of the interest of humanity, will make the necessary adjustments in this regard to meet this situation.

1. *General Surgery.*—Considered regionally, this may be subdivided into: (*a*) oral and maxillofacial surgery; (*b*) brain surgery; (*c*) neck surgery; (*d*) chest surgery, and (*e*) abdominal surgery. In the first three divisions, otolaryngologists are called on to treat most of the borderline conditions. I have for over fifteen years published articles setting forth the reasons why that should be so, and I have considered that upper and lower jaw diseases, as osteitis, fractures and dislocations and tumors, are properly in the domain of the otolaryngologist. The various plastic reconstructions for congenital conditions, as cleft palate and harelip, or for those due to the loss of substances from disease and injury about the head and neck, are and have been well managed by the otolaryngologist.

Brain surgery is and has been a function of otolaryngologists for a great many years, by reason of the fact that three important surgical conditions follow as complications of suppurative ear and sinus diseases. I refer to septic sinus thrombosis, meningitis and brain abscess. The result of this is that the otolaryngologist performs many brain operations following his diagnosis, and he is correspondingly entitled to undertake the surgical treatment of tumors and other intracranial affections, such as gasserian ganglion

disease, meningocele, hydrocephalus, microcephalus and oxycephalus, as well as other ventricular conditions.

Several neck operations have for some time come under the dominion of the laryngologist, such as tracheotomy, laryngectomy and laryngostomy, as well as jugular vein and carotid artery ligations.

The thyroid gland and other neck tumors, as well as the glands of the neck, are still more or less under the management of the general surgeon; yet there is no special reason for this, as the otolaryngologist is fully prepared to undertake this work.

In chest surgery, the otolaryngologist is much concerned in lung abscesses, especially from the etiologic standpoint. Since tonsillectomies are being performed in increasing numbers, especially in adults under general anesthesia, there have been reported a fair number of lung abscesses. In this particular, however, the general surgeon is better prepared than the laryngologist.

Foreign bodies in the bronchi and lungs entering by way of the upper respiratory tract are responsible for a goodly number of lung abscesses, due usually to failure to diagnose or to remove them by way of bronchoscopy.

In the mediastinum we are concerned in esophageal conditions, such as diverticula, foreign bodies, strictures, abscesses and tumors, all of which are and have been best treated by way of the upper or pharyngeal route, by the laryngologist who is skilled in bronchoscopy and esophagoscopy.

The otolaryngologist comes in to relation with abdominal surgery in connection with the diagnosis and treatment of such conditions as gastric and duodenal ulcers and appendicitis, in which there may be a question of the source of a focal infection. It may even be impossible to determine whether one of these or a tonsil infection is the causal agent. In cases in which there is doubt, the tonsil operation which is attended with far less danger or discomfort should at least have the preference.

2. *Orthopedic Surgery.*—The orthopedic surgeons who recognize focal infection as responsible for many of the joint, muscle and tendon affections find it useful to have their cases analyzed with respect to the probable focus of the affection somewhere in the domain of the otologist and dentist. It is very discouraging, however, to note that orthopedists refer cases of bowlegs, clubfoot, ankylosis, etc., for operation on the tonsils.

3. *Internal Medicine.*—The cooperation of the otolaryngologist and internist is so important that I have found it necessary to have one associated constantly in the diagnosis of chronic septic or focal infection; it requires the most careful attention of the laryngologist and the internist to determine just where the most likely focus of the trouble lies. The disease classified as rheumatism, either arthritic, muscular or neural, is most frequently called into question, and there is no doubt that the proper attention to the infected tonsil, tooth, nasal accessory sinuses or middle ear is frequently followed by relief or cure.

It should not be forgotten that the internist, as well as the pediatrician or the orthopedist, sometimes errs in referring cases to the otolaryngologist for the removal of a septic focus. An instance of this sort was a case of alcoholic neuritis referred to me on the supposition that there was a focal basis in the tonsil. Kidney, heart and the vascular system are very frequently involved from a focal infection, and the best management is through cooperation of internist and otolaryngologist.

Disturbances of the intestinal tracts are so frequently responsible for symptoms referable to the nose, throat and ear that I believe the otolaryngologist frequently treats these conditions by mistake, when they should be under the charge of an internist.

Under the same category may be placed the questions of diet, constipation and conditions resulting from disorders of the gastro-intestinal tract. These are so much in evidence in the daily work of the internist that they are his by superior knowledge and practice. On the other hand, unless the internist is on his guard, he will find himself endeavoring to relieve suppurative ear disease with labyrinthine fistula by attention to the stomach and intestine, the apparent location of the symptoms.

The lower respiratory tract, the bronchi and lungs are so frequently dependent on diseases of the nose and throat, especially the nasal accessory sinuses, that the interest of the patient cannot best be conserved unless both internist and otolaryngologist cooperate. Recurrent tracheobronchitis, asthma and bronchorrhea are most interesting subjects in this connection, particularly asthma, which recent investigations tend to show dependent on sensitization by protein poison due to disturbed action of the glands of internal secretion.

This brings me to the next class of diseases in which the internist and otolaryngologist must cooperate. Although much burdened by speculation, there are no doubt many positive findings that show the importance of the rôle played by the glands of internal secretions. Symptoms referable to the ear, nose and throat are common accompaniments, and it behooves the otolaryngologist to be well informed, so that he may cooperate with the internist in all such disturbances. The internist should understand how readily the rhinologic surgeon can operate on the hypophysis through the nose and sphenoid sinus, which may save the patient's vision and life.

There are no doubt many other conditions in respect to which the internist and the otolaryngologist must cooperate, such as the various anemias and diabetes which produce so many nose, throat and ear manifestations, which need not be particularized. It is easy in this connection for the otolaryngologist to err in the diagnosis. On the other hand, the internist may treat an anemia which is dependent on some nose, throat or ear infection as a chronic sinus or ear suppuration which he may think unimportant.

4. *Gynecology.*—The female genitalia, when diseased, may produce symptoms referable to the nose and throat. All are familiar with the swellings of the erectile or turbinate structures within the nose in cases of malposition, inflammation or fibroids of the uterus. Some laryngologists have been very sucessful in relieving dysmenorrhea by some slight cauterization of the anterior part of the septum nasi. I have called attention to the closer relation in chlorotic girls between infantile uterus and atrophic rhinitis. Grayson and others assert that a hypersensitive condition of the nose occurring during the honeymoon period may result from changes in the female generative organs.

5. *Pediatrics.*—The pediatrician and the otolaryngologist are very often associated, especially in acute

infectious disease, because the nose, throat and ear symptoms are so prominent and complications involving these organs are among the commonest and most serious results of the infections. While all well trained pediatricians recognize this, they hardly give them the attention they deserve. Thus, it is commonly observed that an acute otitis media or acute sinus affection is frequently allowed to extend into a subacute or chronic state without being properly attended. It is my belief that many chronic suppurative and nonsuppurative ear and sinus conditions result from the neglected or undiagnosed cases of sinus and ear infections in childhood.

Great strides have been made in recent years toward the establishment of the diagnosis of sinus disease in children, and for this reason there is less excuse for permitting these processes to continue into adult life, making a cure impossible or difficult.

Pediatricians and otolaryngologists, and even the laity, recognize the importance of the removal of tonsils and adenoid tissue, when diseased, and have been convinced of the remarkable improvement that follows proper removal. It must be admitted that there has been perhaps a bit of overenthusiasm along these lines. I mean that there is a disposition to hold the tonsils accountable before an exhaustive diagnosis of the condition has been made. If the operation does not clear up the condition, both the pediatrician and otolaryngologist may be inclined to hold the tonsillectomy at fault, when in reality a mistake in diagnosis was made.

6. *Neurology and Psychiatry.*—In my practice I see more cases presenting symptoms referable to the nervous system than to any other special branch. I have roughly estimated that 33 per cent. and at times 75 per cent. of all cases under treatment are more or less related to the nervous system. The most pronounced symptom is headache. The analysis of a headache is in my judgment the acme of perfection in diagnosis. The next in frequency is pain about the head and neck. It is often spoken of by the patient as headache. These symptoms are referable to disturbances of the gasserian and sphenopalatine ganglion and their branches.

As already mentioned, intracranial complications of sinus and ear suppurations, as well as brain tumors are very frequently the subject for discussion between the neurologist and the otolaryngologist. But of all the conditions in which the neurologist and the otolaryngologist come into relation, none is so important as disturbances of the organs of equilibrium. The work of Bárány and his followers has been so developed that an actual fusion of the two especial branches has taken place in the formation of what is known as "neurotology."

Neurologists, in the main, have not shown the interest in this work that it merits, whether because they do not take the trouble to study it or because they doubt empirically that it has any value. At any rate, only a few neurologists in the country have coöperated with otologists to the extent that is justified.

There are quite a number of conditions presumably of exclusive concern to the neurologist, as cerebral syphilis, tuberculous meningitis, general paresis, dementia praecox, epilepsy, and the various mental states as mania, melancholia, manic-depressive insanity and hysteria, in which the symptoms of dizziness and vertigo are present and in which the function of the cerebellum, stalk and semicircular canals should be studied.

7. *Dermatology.*—I have already mentioned that cooperation between the otolaryngologist and the skin and venereal disease specialist is essential. Syphilis, of course, is the most common disease in which both branches are concerned. Not until the Wassermann test came into use as a diagnostic measure, was it found how many syphilitic ear, nose and throat conditions there are; and, strange to say, there are still many cases in which there is a presumption of syphilis and in which a competent Wassermann reaction, either of the blood or the spinal fluid, is not made. I shall speak of the competence of the Wassermann test later, when I take up laboratory cooperation. I could spend a long time discussing examples of syphilitic conditions involving the nose, throat and ear, but it will suffice to say that in every possible case it will be well to cooperate with the dermatologist, especially in the general treatment. I find quite a number of otolaryngologists still refusing to employ arsphenamin, because intravenous medication is somewhat more difficult; and when they do employ it, they are not completely successful.

Lupus and epithelioma are frequently found in the regions of the nose and ear; and in this regard they require cooperation of the two specialists. Especially is this true at present when the therapy is mostly carried out by the aid of radium and the roentgen ray.

A very common and most difficult condition to treat is what we call eczema of the external auditory canal. I am confident that an incorrect diagnosis has often been made. I have one such case which I treated for four years as eczema. A dermatologist made the diagnosis of favus and treated it as such with a permanent cure in six weeks. While furunculosis, both of the external ear and vestibule of the nose, is fairly well treated by most otolaryngologists, the general subject of furunculosis is much more exhaustively studied by the dermatologist. The same can be said of the acne which at times involves the external nose and ear. The bacterial side of the question as well as therapy (vaccines) is important, and the dermatologists are much better qualified than the otolaryngologists in this subject at this time.

So many other rare skin lesions are found, also infrequently about the nose and ear, that I wish to lay special emphasis on the importance of cooperating with the dermatologist. On the other hand, I must express my surprise at the dermatologist who is treating frank nose and throat and even ear conditions without the cooperation of an otolaryngologist, just because he has made a Wassermann test and found it positive or even because the patient has other syphilitic lesions. I am sure that local treatment is entirely ignored. The wrong is twofold: first, a syphilitic patient may and does have a nonsyphilitic nose, throat and ear affection; and secondly, many syphilitic nose, throat and ear affections must have local treatment and even operations at times.

8. *Obstetrics.*—Otosclerosis is a condition which should concern the obstetrician, although it is of far less importance than ophthalmia neonatorum. The well known hereditary tendency of this disease, especially when both parents are affected, makes it an impor-

tant factor in the prophylaxis of deafness. Furthermore, during gestation, labor and lactation, deafness is greatly increased in the mother suffering from otosclerosis. I have had several cases of otosclerosis in pregnant women in whom in cooperation with the obstetrician we carried out the systematic treatment of hypodermic injections of epinephrin, the result being, apparently at least, prevention in increase of deafness. It was also hoped that this might prevent the evidence of otosclerosis in the child. I have already discussed this phase of the subject.[1]

The last two epidemics of influenza demonstrated that severe mastoid and sinus complications induced miscarriages in pregnancies of more than three months' duration; however, if pneumonia was present before the miscarriage, the woman usually succumbed.

Another question of great importance is whether or not a nose or throat operation should be performed on a pregnant woman. I feel it best to postpone all operations under the circumstances except those that are urgent. These have not been followed by untoward results in my own experience.

9. *Ophthalmology.*—The cooperation between ophthalmology and otolaryngology has been long established, first, because it has long been the custom of many physicians to associate the two specialties in their practice, and secondly, because the pathologic relation of the nose to the eye has been recognized for many years. During the last two decades, the dependence of many eye affections on the paranasal sinuses has been the subject of much study. While this was formerly fairly limited to the suppurative processes, it has now been extended to include the nonsuppurative conditions which, indeed, have been found of more prolific etiology in this respect than the former. Keratoconjunctivitis, iritis and uveitis are commonly found to be due to focal infections of the tonsils, sinuses, middle ear, mastoid and teeth.

Nystagmus is a symptom that pertains to both the eye and the ear, which makes it necessary to determine the origin. Paralysis of the various extrinsic muscles of the eye may be due and often is due to sinus or temporal bone infections. Likewise muscle imbalance may be due to sinus disease, and it is not uncommon to see a refractive error or latent hyperopia disappear only when the nasal or sinus trouble has been corrected.

10. *Genito-Urinary Diseases.*—Nephritis needs only to be mentioned. As we have considered it under the head of internal medicine, the genito-urinary system need be discussed only from the standpoint of the pelvis of the kidney, bladder and prostate gland. These may be the seat of a chronic septic infection, independent or secondary to a focus of infection in the upper respiratory tract. Some very striking results have been reported from attention to the prostate without treating the tonsil. In my own practice I have had a case of chronic cystitis of long duration promptly recover after tonsillectomy.

11. *Clinical Laboratory.*—This term I use to include radiology, serology, hematology, bacteriology, chemistry and micropathology. The man in charge of such a laboratory should be a physician, preferably an internist, and he should have a corps of technicians, at least two. The relation between the clinical laboratory and otolaryngology has really gone beyond the stage of cooperation, for practically every field of medicine has become dependent on the clinical laboratory for the basic understanding of diagnostic and therapeutic problems.

12. *Dentistry.*—Although dentistry has been a highly specialized branch of medicine which had what it arrogated to itself, the dignity of a profession in itself, it is fast becoming more and more attached to medicine. The mechanical requirements and accomplishments of the last fifty years carried it far away from its parent, medicine, and American dentistry has become famous by reason of the crown and bridge work, porcelain inlays and the like. It appears to be the function of dentistry to preserve the decayed teeth, stumps of roots, etc., and to supply their deficiencies by mechanical subterfuge. A great change, however, has come over the profession, as witnessed by the zealousness with which chronic apical infections are studied and the conspicuously energetic effort which is being manifested to remove every tooth or root which shows any evidence of being the seat of a focal infection.

All this has brought the dentist closer to the otolaryngologist, as these two must decide in the majority of cases just where the focal infection originates. The maxillary sinus has already furnished many points of contact, and it must remain a constant source of study for both from the etiologic and therapeutic standpoints. Impacted and infected wisdom teeth may cause a tonsillitis, generally unilateral, and their influence in peritonsillar abscess is now being made the subject of much study. Tinnitus and even reduction of hearing may depend on infected molars, removal of which causes the symptoms to subside. Orthodontia, which has accomplished much with and without the cooperation of the otolaryngologist, has still to answer a serious question. So far it has been available almost exclusively by the well-to-do. The poor have little chance to profit by its wonderful development.

CONCLUSION

While I advocate that every otolaryngologist should be well informed on all the other special branches of medicine in order to cooperate in diagnosis and treatment, it is only in the capacity of cooperator that he should consider his services and not supplant any other specialist.

2551 North Clark Street.

1. Beck, J. C.: Contribution to the Pathology and Treatment of Otosclerosis, Ann. Otol., Rhinol. & Laryngol. **21**: 203, 1912.

Industrial Sickness Statistics.—In the past not much attention has been given to the need for facts concerning the sickness problems of industrial establishments. Cases of illness have to some extent been recorded, but not in such a way as to permit analysis with respect to sex, age, occupation and other important conditions of physical status and environment of the persons concerned. It may appear to some that sickness records are unnecessary for plants having sanitary work places and no injurious processes or occupational hazards. Such an attitude is unjustifiable without knowledge of the sickness rates prevailing in these establishments. Under excellent conditions of work it is still possible for the frequency and severity rates of illness to be above the normal expectancy as the result of bad housing or other wrong living conditions, in which instance it becomes the duty of the employer to extend his activities beyond the confines of his factory or mine or store and to cooperate with municipal authorities and civic associations to right the injurious conditions responsible for the excessive disability discovered.—*Pub. Health Rep.*, April 9, 1920.

SOME FALLACIES REGARDING NARCOTIC DRUG ADDICTION

S. DANA HUBBARD, M.D.
NEW YORK

In plumbing the depths of narcotic drug addiction one must travel an uncharted course, with guides and landmarks very uncertain and at best most unreliable; but when these are aided and abetted by the unscrupulous and unworthy, as well as the financially interested, all must appreciate that the situation is made more complex and the solution of the problem rendered more difficult, if not actually impossible. Add to this opinions giving color to pathologic processes that do not exist, and confusion worse confounded must occur.

Drug addiction today is a public health problem, as it is a menace to the health, welfare and comfort of the public. The extent of drug addiction is problematic, but it may be indirectly inferred when one estimates the amount of opium and cocain consumed annually in this country.

How much of these narcotics would be ordinarily used by physicians or hospitals in a year? Surely not anywhere near the amount credited as imported annually. Then what becomes of this vast amount of these drugs? It is, of course, used by persons as a "tippling" habit.

CLASSIFICATION OF DRUG USERS

The habitual users of narcotic drugs may be divided into two general classes: (1) Those who suffer from a disease or ailment requiring the use of narcotic drugs, and (2) addicts—dope fiends—drug habitués: those who use narcotic drugs for the comfort these afford and solely by reason of an acquired habit. The Harrison Narcotic law (U. S. Supreme Court, Doremus and Webb cases) says that drugs may not be given to keep the users comfortable by maintaining their customary use.

Class 2 may be divided further:

(*a*) Correctional (underworld type).

(*b*) Mentally defective (the constitutionally inferior person or the individual with feeblemindedness).

(*c*) Social misfits (the person whose maladjustment does not permit him to conform to social customs).

(*d*) Fortuitous (the individual who has had an adequate reason for taking narcotics, but the reason has disappeared and the drug habit is continued because of the physical suffering which unaided deprivation brings).

Many addicts loathe their habit, but physically cannot break from it unaided. A number of addicts, especially those in class subdivision *a*, use the practice of drug indulgence in their jobs. In our experience in drug addiction in New York City we found that those in subdivisions *a* and *b* were mostly heroinists, while the morphinists were in *c* and *d*. The heroinist and morphinist have been thus differentiated by an outspoken physician: The morphinist has guts, while the heroinist has only bowels.

Bad associates and evil environments are the chief causes producing addiction among youthful habitués in this city. Of 7,464 cases observed from April 10, 1919, to Jan. 15, 1920, in the department of health clinic, 3.5 per cent. were morphinists, while 96.5 per cent were heroinists.

MAGNITUDE OF THE DRUG TRAFFIC

How much opium and coca are used annually in this country?

The magnitude of this traffic is indicated by these statistical facts:

For the fiscal year ended June 30, 1918, there were 233,491 registrants as required by the Harrison act. These included: physicians, 125,905; wholesale dealers, 831; dentists, 42,240; manufacturers, 888; veterinarians, 10,399; importers, 76; hospitals, etc., 3,799; educational, 138; retail dealers, 48,196 and miscellaneous, 258.

The average yearly consumption for the period 1910-1915 was 491,043 pounds, which at the price of $40 a pound for opium would make a total value of $18,841,720. The average consumption of coca leaves for the same period was 1,048,250 pounds. At the present retail price of $1 a pound this would represent approximately $20,000,000.

Illegitimate traffic is known to have increased enormously in recent years, and is a serious menace at the present time. It is through this channel that most of the addicts receive their supplies of narcotic drugs. It has been estimated that about 90 per cent. of the amount of opium and cocain entered for consumption is used for other than medical purposes. This may perhaps be an extreme view; yet when the consumption of opium in the United States is compared with that in other countries, we find that the per capita consumption here is from thirteen to seventy-two times as great as in other countries.

CONSUMPTION OF OPIUM IN VARIOUS COUNTRIES

Country	Consumption per Capita, Grains
Austria	½
Italy	1
Germany	2
Portugal	2½
France	3
Holland	3½
United States	36

The amount of cocain which can be produced from the leaves imported is approximately 150,000 ounces—sufficient for two and one-half doses for every person in the country. It is estimated that one fourth is used legitimately; 112,500 ounces of cocain are therefore used illicitly.

When this magnitude is considered carefully and scientifically, and it is known what a demoralizing, debasing effect such practice has, is it not a very serious matter to know that 80 per cent. of the addicts visiting the department of health clinic are young men and women just out of their teens?

The importance of securing more accurate information, particularly satistical, of the extent and growth of traffic in narcotic drugs in the different localities, especially in the large cities, is coming to be more keenly appreciated by all authorities, and in the near future it is hoped that the medical and pharmaceutical professions will be able to furnish data bearing directly on this subject in order to aid both the legal and the public health officials.

METHODS OF CONTROL

The control of the narcotic menace, to be effective, will necessarily not only have to correlate the professions directly interested but also secure the cooperation of all charitable and social agencies in order to work out a program for the effective administration of antinarcotic laws, as well as the rebuilding of those unfortunate persons afflicted with the drug habit.

Our men and women in the shops, factories, offices and homes must be properly protected from this growing evil, and all individuals and organizations should concern themselves regarding the unsatisfactory con-

ditions prevailing, and aid in better enforcement of the statutes regarding narcotic drug addiction.

One of the very first needs is to make compulsory the reporting by physicians and others of addicts (Class 2) in order that these persons may be known and given careful and suitable consideration. Another regulation is that all prescriptions issued for opiates and cocain should be in duplicate, one for the druggist and the other for some central agency (preferably a local department of health), that the practice in this particular may be independently checked and controlled.

CHARACTERISTICS OF ADDICTS

The etiology of narcotic drug addiction is not unusual or complicated. It is a natural sequence of indulgence in narcotics for a more or less variable period. The very susceptible acquire the habit in very short periods of time, some as short as ten days (some girls state that, after having sniffed three or four times, the withdrawal symptoms were marked); but usually it requires a number of such indulgences. Medically considered, it is thought that any one taking repeatedly a drug for a period of from three to five weeks is in grave danger of becoming an addict. When addiction has been established, it is usually impossible for the individual to discontinue the use of the drug without outside assistance.

In the clinic, 7,464 cases were cared for; and while gradual reduction (one-half grain every other day) was the custom, yet it was extremely difficult to hold our patients to schedule. A number openly opposed reduction; and when the amount was cut down about half, they left the clinic, not to return, or to return under a different name to commence again at the maximum dosage (15 grains) and pursue another course of reduction. Many were detected doubling in this manner. Of the total mentioned above, less than 2,000 availed themselves of hospital aid, 23 per cent. being the actual admissions. This demonstrates that they either feared to undertake a cure or else did not want to be cured.

There is no conclusion to be drawn regarding susceptibility as concerns age, sex or marital conditions. The same statement might also be made regarding race, occupation and other similar factors. The chief direct cause appeared to be evil association, in our experience 96.5 per cent. giving this as the cause of the practice.

Addicts have been found engaged in all lines of work. An early analysis disclosed that the skilled and the unskilled were about evenly divided, and this continued in the final analysis to be a fact. It was astonishing to find that 23 per cent. were engaged in transportation; chauffeurs, trainmen, drivers and motormen being the chief occupations given by the patients themselves. The preponderance was in the order given. This fact is considered, especially in New York City, to be a grave menace. In a case recently tried (*U. S. Government* v. *Jacobs-Cardoza*), it was testified by a physician that the chauffeur needed cocain to keep him on his job, or else he would be inattentive and sluggish and be unable to take care of his car in an emergency.

In a study of the occupations as a determining factor in causation, it was demonstrated that when hours were irregular, meals badly served, and stress and irritations frequent, addiction was more common. It was most frequent in those who handled the drugs, physicians, nurses and pharmacists being proportionately the largest indulgers.

The effect of addiction on the character of a person was marked. Some drug addicts appear perfectly normal even to the experienced observer. Some were determined to be addicts with considerable difficulty. In the weak willed and those lacking character and where a drug-jag was apparent, determination was easily made.

The addict is not always a hopeless liar or a moral wreck or a creature sunk in vice and lost to all sense of decency and honor, but was frequently in our experience an upright person except as concerned his affliction or the procuring of the drug of his addiction. Addicts lied about dosage; but when they found that the game was "on the level" they would voluntarily admit deception and tell what they were actually taking.

When it is considered how these creatures were hounded and imposed on by the illicit prescriber and dispenser, as well as how they endeavored to escape police detection and family discovery, it was natural to meet some peculiar situations; but when sanctuary was assured, they calmed down and became friendly and communicative, and in many instances helped the officials to aid them in getting rid of their habit. Most of them when freed are anxious to remain free. I have been assured of this so often by addicts who have been off the drug and whom I have followed up that I make this statement advisedly and with positive assurances that many of our cases are off the drug for good, provided all temptation is removed. There were many instances in our experience in which the victims of this condition were persons of the highest qualities, physically, morally and intellectually, and some held high positions of authority and responsibility. One is a signalman who for twenty-five years has been addicted, yet has not missed a day from work and has never been reported for any company infraction, and, strange to relate, his superior officer was wholly unaware of his misfortune. This man took the cure and returned to his position, and for the last six months has been off the drug.

The correctional class I do not desire to discuss here, as the subject is one which merits special and lengthy consideration. The underworld addict is grossly misunderstood. While drug indulgence has been held accountable for his unmoral character, those whom I have had opportunity to study show degeneracy incident to association and environment, and addiction only as a secondary expedient for stimulating nerve energy and drowning painful reminiscences.

PROGNOSIS AND TREATMENT

The prognosis of narcotic drug addiction depends primarily on two conditions: control of the drug and control of the addict.

Simple, uncomplicated drug addiction is curable. By this I mean that the process of removing the drug and all physical need or craving for it is simple, safe, and can be quickly done—a matter of days only, not weeks, months or years, as some would have us believe.

There is no specific cure; none is needed. Take away the drug and prevent the addict from getting a new supply, and not only will he be cured but he will stay cured.

Addiction is not a mysterious disease, and while, from a purely scientific point of view, it would be

interesting to have more light on the problem of tolerance, there is a very general and complete understanding of drug addiction from the therapeutic standpoint among all who have dealt with it in institutions.

In the vast majority of instances—99 per cent.—excellent results may be obtained by simple abrupt withdrawal, without medication other than catharsis. Some form of mild anesthetic to tide over the first two or three days of suffering, which is mainly psychic in origin, is desirable from a humane point of view. Scopolamin (hyoscin) is ordinarily used for that purpose, but it is stated that belladonna works equally as well.

The clinic has proved in a large number of instances that it is so seldom that one can cure by the method of ambulatory treatment—that treatment in which the drug is given to the patient for self-administration—as practically to stamp such practice as improper. The method should not be permitted. It should be interdicted by law.

CONCLUSIONS

So long as addicts can obtain cheap supplies of drugs without personal risk, very few will apply for hospital curative treatment.

Narcotic drug addiction can be stopped by sufficiently stringent laws, strictly and uniformly enforced.

Public narcotic dispensaries are not desirable or satisfactory in dealing with the problem of drug addiction. This method has been given a careful, thorough and extensive trial in New York City, and we have come to the conclusion that it is unwise to maintain such an institution. The clinic was found to possess all the objectionable features and opportunities of abuse presented by the ambulatory treatment of private physicians prescribing to the addict when at large, except one factor, namely, financial profit to a few physicians performing this character of service (fifty-five out of 8,100 registered in New York City).

Ample provision should be made for hospital or institutional treatment to cover the stage of withdrawal and for the control, care, and moral and mental as well as physical upbuilding of those persons who require it and show the possibility of profiting from such treatment.

Our study and experience indicate very clearly the necessity for general and uniform enforcement of the law—the Harrison Narcotic Law. There will be no panic of addicts seeking medical relief. Prevent the addict from getting his drug, and in very many instances he will cure himself, and if unable to get the drug he will stay cured. Some have stated time and again that rapid withdrawal will be followed by collapse. It is always well to treat all cases under medical supervision, and physicians experienced in this line of medical practice know that a very small dose of the drug (from one-fourth to one-half grain hypodermically) will control all manifestations of withdrawal.

The work of reclaiming narcotic addicts is well worth while. From our recent experience I assert without fear of contradiction that at least of the many undesirables no less than one half can be brought back to useful lives, and that one fourth should be in some special institution (the types classified in *a* and *b*) where, with suitable care and training, many can be made useful citizens instead of merely being impedimenta and parasitic.

Off the drug, and with life made comfortable by suitable guidance the addict, like every normal person, faces his daily problems and can do so; but to stand alone requires after-care until he can feel at home in his new surroundings. This may take several months; but with help, redemption is sure.

The problem of narcotic drug addiction may be summed up in the problems of life, the underlying causes being more personal than social. Treatment is likewise individual and not specific.

The drug addict serves no useful purpose. He is a loss to himself and a menace to society. Addiction begins and ends in the realm of personality.

ANTHRAX: COMPARISON OF SURGICAL AND NONSURGICAL METHODS OF TREATMENT

A REVIEW OF FIFTY-ONE CASES TREATED AT THE MASSACHUSETTS GENERAL HOSPITAL FROM 1888 TO 1918

ALBERT J. SCHOLL, JR., M.D.
LOS ANGELES

Historically, the anthrax bacillus is of much interest. Pasteur's trials and triumphs in anthrax inoculation and immunization are well known. Davaine, working with this bacillus in 1863, and later Koch, opened up a new era in bacteriology when for the first time a micro-organism was definitely proved to have a specific etiologic relation to an infectious disease.

Anthrax is a specific and highly contagious disease, common to man and to most animals, and, according to Osler, geographically and zoologically the most widespread of all the infectious diseases. It is quite prevalent in France, Italy, Russia, China and South America, although in North America cases are rather infrequent, so much so that the occasional small epidemics find physicians undecided as to the course of treatment. Anthrax in man is always derived from some domestic animal or animal product, such as hide, hair or wool. The lesion appears about twenty-four hours after inoculation, and in the early stage resembles an ordinary small furuncle; but very quickly the central portion becomes filled with a bloody serous material. This rapidly changes to a black central necrosis which, on drying, gives the typical small, black eschar, or crust, commonly seen at the time patients come for treatment. This eschar is encircled by a ring of small, pearly vesicles, and surrounding this is a rather extensive brawny edema.

In animals the disease is contracted by the ingestion of forage containing anthrax spores. Flies evidently also play a minor part, as Schuberg [1] succeeded in transferring the infection from a cadaver to living animals by means of the stable fly. He also demonstrated that anthrax organisms remained viable in the stomach of flies for months, while Graham-Smith [1] recovered positive cultures from feces of house flies three years after deposition. The bacillus itself is easily destroyed; but in the presence of oxygen, markedly resistant spores are formed which are not affected by ordinary means of disinfection.

REVIEW OF CASES

The cases of anthrax treated at the Massachusetts General Hospital between 1888 and 1918 are the basis

1. Cited by Mitzman, M. B.: Summary of Experiments in the Transmission of Anthrax by Biting Flies, Bull. 94, Hyg. Lab. U. S. P. H. S., pp. 41-48.

of this study. The interesting contrast of results between the surgical and nonsurgical methods of treatment affords sufficient excuse to add this series to an already overburdened literature. In recent articles on anthrax, surgery and cauterization are frequently advised, but statistical reports are strikingly few.

These cases were not selected as surgical or nonsurgical, according to the condition of the patient. The nonsurgical cases are more recent and were treated conservatively following a suggestion by Dr. J. Homer Wright.

COMPARATIVE RESULTS OBTAINED IN CASES TREATED SURGICALLY AND NONSURGICALLY

	No.	Per Cent.
Total cases	51	
Total deaths	7	13.7
Cases treated surgically	9	
Deaths	4	44
Cases treated nonsurgically	42	
Deaths	3	7

The average duration of the disease in patients that recovered was twenty-three days. Death in the seven fatal cases occurred on an average of four days after the onset of the disease.

In forty-two, or 82.3 per cent., of the cases, the lesion was located on the face or neck. Infections in this region are considered especially dangerous on account of the proximity of vital structures. The loose cellular tissues in this area aid in the spread and extension of the local lesion, and the resulting edema in the neck often gives rise to marked respiratory difficulty.

Thirty-eight infections were in men engaged in handling hides; of these, twenty-three were leather tanners. All of the patients treated were males except one. This was a girl, aged 17, who was employed sorting bristles in a brush factory.

The general symptoms found in this disease, such as nausea and vomiting, restlessness and headache, are often absent and have no constant relation to the extent of the disease. In the majority of cases a rise in temperature of 2 or 3 degrees was noted which generally persisted only for from three to four days. Cases which are ushered in with marked symptoms and a sharp rise in temperature indicate a definite reaction on the part of the patient, and in such cases there was a favorable and rapid termination of the disease. The temperature is often low in grave cases, and in several a subnormal temperature was noticed just before death.

Anthrax is often mistaken for cellulitis or a carbuncle. An early diagnosis of the condition can be made bacteriologically by demonstration of the anthrax bacillus in the lesion. After the crusting over of the lesion, it is necessary to elevate the cutaneous edge and probe between the crust and the skin in order to find suitable material for examination. Of the fifty-one cases of this series, the anthrax bacillus was found in forty-one; in two cases negative results were reported, and in nine no record of the presence of the bacillus was made.

The patients were isolated, and precautions were taken against the spread of the infection. In the majority of cases, there was no discharge, and no case of reinfection was noted. The anthrax bacillus does not form pus. In one case, fifteen days after the onset of the disease, the initial lesion having practically healed, definite swelling and brawny induration indicated pus in the region of the submaxillary gland. Wide excision of this area with a thorough spreading of the tissues failed to reveal any pus.

The first of the four deaths in the Massachusetts General Hospital following surgical procedure in the treatment of anthrax occurred in a man with a lesion of the right cheek. The patient died nine hours after excision of the pustule without having rallied from the operation. In the second case of death, a spreading of the edema was noted directly after operation, which consisted in a wide excision of a lesion in the neck. Seven hours later the patient was pulseless, the temperaure dropped to 97 F., and death occurred shortly after. The third death was also in a case of anthrax of the neck; an elliptic incision 10 by 12 cm. was made down to the deep fascia. This patient showed some improvement; but on the second day after operation, the edema extended, and the patient died on the following day. The fourth death was in the case of a lesion on the arm; a crucial incision was made, but rapid extension of edema followed the operation, and the patient died several days later.

A fifth patient with an infection on the forearm recovered after an amputation at the shoulder joint. The remaining four of the group of nine patients treated surgically had uneventful convalescences following the excision of the lesion.

Patients treated nonsurgically were confined to bed. Whenever the location of the lesion permitted, the infected area was splinted and elevated. A light diet was given, and fluids were forced to the maximum amount.

The infected area in the earlier cases was covered with dry gauze or mercuric chlorid poultices. The cases treated during the last three years cleared up more rapidly, and the patients were more comfortable when no dressings were used, the lesion being exposed to the air.

Anthrax patients were considered potential sources of infection until three consecutive smears taken on alternate days proved them to be otherwise.

Of the three deaths in the nonsurgical cases, the first occurred in a patient with a lesion on the right side of the neck. Edema extended over the face, neck and upper chest wall. The blood gave a positive culture for anthrax. The patient was markedly dyspneic and had practically stopped breathing when a hurried tracheotomy was performed without benefit. The second death also occurred in a case of cervically located lesion. There was marked edema and respiratory difficulty. A tracheotomy was performed through infected tissues without noticeable relief to the obstructed breathing, and the patient died two hours later. The third patient who died among those treated nonsurgically entered the hospital three days after the onset of a lesion of the right cheek. Edema was moderate, and the patient was not considered dangerously ill. On the afternoon of the first day in the hospital, the patient suddenly sat up in bed, complained of a pain in his chest, and died.

The immediate cause of death in anthrax infections is not definitely known. The decidedly toxemic nature of the disease in man indicates the existence of poisons, even though true secretory or endotoxins have not been isolated. Vaughan in summing up the results of his experimental work on anthrax, states that the pathogenicity of a bacterium is not measured by its capability of furnishing a poisonous group, but by its

ability to grow and multiply in the animal body. Hiss and Zinsser state that it is probable that death is brought about by purely mechanical means, such as capillary obstruction.

METHODS OF TREATMENT

Ravenel states that anthrax begins as a local infection, and that the bacilli are localized in and near the lesion. For this reson, he advises immediate destruction of the pustule or focus of infection. Most surgical textbooks advise radical removal as the safest recourse.

Hiss and Zinsser assert that although the bacilli are not demonstrable in the blood until just before death, they invade the blood and lymph streams immediately after inoculation and are conveyed to all the organs. This was demonstrated by inoculations in the tails or ears of guinea-pigs, after which these parts were immediately amputated. The spread of the disease and fatal outcome were not prevented by these measures. The bacilli in the early stages are not able to multiply in the blood, however, at the site of inoculation, and probably in the organs also, they proliferate until the resistance is entirely overcome. At this stage of the disease, when the antagonistic action of the blood has been destroyed, the bacilli may multiply in the circulation and can then be demonstrated in the blood. A positive blood culture was found in only one case of this series.

Becker [2] made a study of blood cultures in forty-one cases. Eleven of the cultures were positive; ten of the patients died. The eleventh was treated intravenously with arsphenamin and recovered. Roos [3] asserts that in animal experimentation he found arsphenamin to have a specific action on the anthrax bacillus, acting directly on the bacteria. Laubenheimer [4] also reports a case with positive blood culture successfully treated with arsphenamin.

Prätorius,[5] whose experience with anthrax has been very extensive, advises against surgical interference, as this opens up the lymphatics and aids in the spread of the disease.

Müller [6] asserts that it is impossible to destroy the disease by excision of the site of inoculation. He carried out a series of experiments similar to those cited by Hiss and Zinsser. In guinea-pigs, he was unable to prevent the spread of the disease by amputation of the inoculated area. He states that treatment should aim to assist the cells about the inoculated area in preventing dissemination of the bacteria. Excision is harmful, as it tends to break down the natural barriers to the local infection and to increase the absorption of the toxic substances around the lesion. In a number of cases in the Massachusetts General Hospital series, operation was so closely followed by extension of the edema, septicemia and death that it was undoubtedly a causative factor. Müller believes in immobilization and elevation of the infected part; he reports thirteen successfully treated cases. Eurich [7] asserts with regard to immobilization that the most severe cases are those in which the lesion occurs in parts of the body in which motion is free and in which the cell tissues are lax. Three of his ten patients who had lesions on the wrist died. There were no deaths among the ten patients with infections on the arm. Eurich insists that absolute rest of the part affected is necessary.

Graef [8] reports 384 cases in which cauterization with potassium hydroxid was performed with only a 5 per cent. mortality. Potassium hydroxid is extremely painful when applied to the skin, and often leaves extensive scarring. Pied [9] drives a blast of hot air on the lesion through a small needle, until the eschar and vesicular area are completely cauterized. He asserts that no anesthetic is necessary, as there is an anesthesia to pain and heat about all anthrax lesions. He advises continuing the cauterization 0.5 cm. beyond the anesthetic area.

Muskett [10] found in laboratory experiments that ipecac readily destroyed the anthrax bacillus. He cites fifty cases successfully treated by applying powdered ipecac to the lesion. Fortineau [11] found an antagonistic action between *Bacillus pyocyaneus* and *Bacillus anthrax*. He treated thirty-two patients by injection of an extract from a culture of *Bacillus pyocyaneus;* one patient died.

A number of recent articles on anthrax mention phenol (carbolic acid) injection. Scharnowski [8] reports fifty cases from Russia, with a 2 per cent. mortality. Regan [12] reports a successful case, and suggests phenol injection at the site of the wound.

Anthrax serum was used in only one of the cases of this series. The temperature, which had remained at 103 F. for five days, dropped immediately after the first injection and remained normal. Sclavo, in 1895, in Italy, and Marchoux, in 1895, in France, reported the use of anthrax serum. The serum has been used extensively in Italy and also recently in France, but only rarely in this country, although it is readily obtainable here. Legge [13] studied a series of cases in Italians treated by Sclavo with serum. In 164 cases there was a mortality of only 6.09 per cent., in contrast to 24 per cent., the rate for all cases treated in Italy over a period of fifteen years.

Pied [9] cites nine cases with a positive blood culture, in seven of which serum treatment was used successfully. Bissell [14] and Graham [15] also report two cases with positive blood culture, successfully treated, serum having been used.

Bowlby and Andrews [16] report a case in which cultures from the vesicles around the lesion yielded abundant anthrax bacilli. Nineteen hours after an injection of serum, cultures similarly taken were negative. Serum, which is evidently not harmful to the patient, generally arrests the extension of the edema,

2. Becker, G.: Die bakteriologische Blutuntersuchung beim Milzbrand des Menschen, Deutsch. Ztschr. f. Chir. **112**: 265-283, 1911.
3. Roos, O.: Ueber die Einwirkung von Salvarsan auf Milzbrandbacillen, Ztschr. f. Immunitätsforsch. u. exper. Therap. **15**: 487-505, 1912.
4. Lauhenheimer and Bettman: Ueber die Wirkung des Salvarsans auf den Milzbrand, Deutsch. med. Wchnschr. **38**: 349-351, 1912.
5. Prätorius, P.: Milzbranddiagnose durch Untersuchung des Liquor zerebrospinalis, St. Petersb. med. Ztschr. **38**: 290, 1913.
6. Müller, K.: Der äussere Milzbrand des Menschen, Deutsch. med. Wchnschr. **20**: 515-535, 1894.
7. Eurich, F.: Anthrax in the Woollen Industry, Proc. Roy. Soc. Med. **6**: 219-240, 1912, Sect. Epidemiol. and State Med.
8. Quoted by Legge, T.: Industrial Anthrax, Brit. M. J. **1**: 589, 1905.
9. Pied, H.: Sur le pustule maligne, Bull. méd., Paris **21**: 1135, 1913.
10. Muskett, E.: On the Specific Treatment of Anthrax and Anthracemia, Lancet **1**: 269, 1888.
11. Fortineau, L.: Traitement du charbon par la pyocyaneine, Presse méd. **20**: 678, 1912.
12. Regan, J. C.: Human Anthrax, Am. J. M. Sc. **157**: 782 (June) 1919.
13. Legge, T.: Industrial Anthrax, Brit. M. J. **1**: 589, 1905.
14. Bissell, J.: Human Anthrax, New York M. J. **106**: 110 (July 21) 1917.
15. Graham, R. R., and Detweiler, H. K.: Anthrax: A Case of B. Anthracis Septicemia with Recovery, J. A. M. A. **70**: 671 (March 9) 1918.
16. Bowlby, A., and Andrews, F.: Anthrax Treated with Sclavo's Serum, Brit. M. J. **1**: 296, 1905.

which is the most troublesome feature of the disease. Krause,[17] in a number of recent articles, reports successful results from the use of normal serum in the treatment of anthrax in man. From 30 to 50 c.c. are injected daily, either subcutaneously or intravenously until the acute symptoms have subsided. Two hundred cases are reported with a 0.5 per cent. mortality. Kolmer,[18] after experimenting with beef serum, concluded that while it contained some antibactericidal properties, they were without demonstrable protective and curative value in experimental anthrax infections in mice and rabbits.

COMMENT

The majority of the methods of treating anthrax described in the literature are conservative. Surgical intervention offers very little. The organism is building up protective barriers and walling off and splinting the infected area. The main contention of those advising surgery is that the lesion is strictly a local one, and excision should be performed before generalization takes place. On the contrary, there is probably a systemic infection from the onset, but in most cases it is not so great that the organism cannot overcome it. The involvement of neighboring lymph glands which is seen in most cases, and the marked edema which, at times, extends as much as 25 cm. beyond the local lesion, argue against a localization of the infection. A wide excision through this edematous area, giving an extensive field for absorption, opening up many new portals of entry is sufficient, in some cases, to overcome completely the resistance of the patient.

SUMMARY

1. The early diagnosis is made bacteriologically by the demonstration of the anthrax bacilli in the wound. Anthrax bacilli were found in 81.2 per cent. of the cases treated at the Massachusetts General Hospital.

2. The general symptoms give no constant indication of the severity of the infection.

3. The mortality in the cases reviewed was 13.7 per cent.

4. Four of nine patients (44 per cent.) treated surgically died; only three (7 per cent.) treated nonsurgically died.

5. Forty-two patients had lesions on the face and neck. Cervical infections are especially dangerous; two of the patients treated nonsurgically died from respiratory difficulty resulting from the associated edema.

6. The patients treated nonsurgically were confined to bed. Their lesions were left absolutely alone and exposed to the air; no special general measures were carried out.

7. In several of the surgical cases a rapid increase in the edema, a steady decline in the patient's general condition, and death several hours later definitely pointed to the operation as the causative factor.

17. Penna, J.; Cuenca, J. B., and Krause, R.: Normal Beef-Serum in Treatment of Anthrax, Prensa méd., Argentina **28**: 297, 1917; ibid. **30**: 455, 1918; abstr. J. A. M. A. **68**: 1589 (May 26) 1917; ibid. **69**: 234 (July 20) 1918.

18. Kolmer, J. A.; Wanner, D., and Koehler, M.: Influence of Normal Beef Serum on the Anthrax bacillus, J. Infect. Dis. **26**: 148 (Feb.) 1920.

Disease and Symptoms.—Disease is made manifest to us only by the symptoms it produces, hence it is imperative that the first step should be to understand the nature and significance of symptoms.—J. MacKenzie, *Brit. M. J.* **1**:105 (Jan. 24) 1920.

SUCCESSFUL TREATMENT OF GIARDIASIS IN MAN WITH NEO-ARSPHENAMIN

E. I. CARR, M.D.
LANSING, MICH.

AND

W. L. CHANDLER, Ph.D.
Research Associate in Entomology, Michigan Agricultural Experiment Station
EAST LANSING, MICH.

The pathogenicity of *Giardia* (*Lamblia*) *intestinalis* is now fairly definitely established; in fact, this flagellate has recently been described as the causative organism of "trench diarrhea," [1] a dysenteric condition which most of the overseas troops experienced and from which a number of the returned soldiers are still suffering.

Several different medicaments have recently been employed in the treatment of this disease; and, while some of these [2] have been found to give temporary relief, no permanent cure has hitherto been effected.

The rôle which salts of heavy metals, notably mercurial and arsenical preparations, play in the treatment of syphilis and some other flagellate diseases is common knowledge; and at least two groups of workers have observed that the cysts of *Giardia muris* disappeared from the feces of infected rats following intravenous injections of heavy doses of arsphenamin. Probably the most noteworthy of these observations are those made by Kofoid and his associates.[1] However, so far as we are aware, no attempt has been made to utilize these substances in the treatment of human diseases caused by intestinal protozoa.

Since neo-arsphenamin is being used with good success against the syphilis flagellate, it occurred to us that intestinal flagellates, and possibly also other intestinal protozoa, might prove to be susceptible to the action of this product; and, moreover, since the oxidation products of neo-arsphenamin are readily excreted by the way of the intestinal tract, intestinal protozoa ought to be more easily reached than the syphilis organism, which is often intracellular. It was, therefore, not surprising when in the course of our investigations we observed that not only the cysts of *Giardia intestinalis* and *Chilomastix mesnili,* but also those of *Endamoeba coli, E. histolytica* and *E. nana,* rapidly disappeared from the stools of man following intravenous injections of neo-arsphenamin, and that the cysts of *Eimeria stiedae* disappeared from the feces of rabbits following intramuscular injections of heavy doses of neo-arsphenamin. Whether or not the results obtained through this treatment are permanent is yet to be determined. A number of cases are under observation, and these will be reported on as soon as a sufficient period of time has elapsed to enable one to draw definite conclusions. In the case here reported, however, a permanent cure appears to have been established.

REPORT OF CASE

History.—W. G. S., aged 25, American, a salesman, formerly a soldier, who came in July, 1919, complained of

1. Kofoid, C. A.; Boeck, W. C.; Minnich, D. E., and Rogers, J. H.: On the Treatment of Giardiasis in Rats with Arsenobenzol, J. Med. Res. **39**: 293-299 (Jan.) 1919.

2. Wenyon, C. M., and O'Connor, F. W.: Human Intestinal Protozoa in the Near East, published for the Wellcome Bureau of Scientific Research by John Bale, Sons & Danielsson, London; reprinted from J. R. A. M. C. **28**: 1-34, 157-187, 346-370, 461-492.

abdominal pain more or less continuous but varying in intensity and interfering greatly with work, together with an intermittent diarrhea. The family history was negative. The personal history was negative as regards the present trouble. June 22, 1918, the patient entered the army. He was detailed to a northern university for study, and on Oct. 16, 1918, he was sent across. He remained in Brest nine days. On the ninth day a distressing diarrhea started, and persisted all night. This was the only serious acute attack that he had, but he continued to have from four to six movements a day for the remaining six months he was abroad. Part of this time the stools were black. He received no treatment. He was discharged, March 11, 1919. The patient experienced a return of abdominal distress in May or June, 1919, when it gradually became worse. He lost twenty-five pounds in four months. Frequent stools varied with the pain, and were watery, containing much mucus and some blood. He had been examined several times and had been variously advised. In one hospital he understood the diagnosis to be duodenal ulcer, and it was with this belief that he came to us for advice and treatment.

Examination.—Conclusions were drawn from physical and roentgen-ray examinations that a gastric or duodenal lesion did not exist and that the irritable intestinal tract must result from a parasitic or reflex cause. The Wassermann test was negative. The urine had a specific gravity of 1.025; it was neutral and clear; Fehling's test was negative; there was a trace of albumin; the sediment was negative. Macroscopically, the stool was unformed, dark brown, almost black, and pasty; it contained some mucus; the patient reported a bloody mucous stool a few days previous to this examination. On microscopic examination a few motile forms of *Endamoeba histolytica* and numerous cysts of *Giardia intestinalis* of the so-called "large race" were found.

TREATMENT

Emetin.—On establishment of the diagnosis of amebic dysentery by the identification of *Endamoeba histolytica*, one-half grain of emetin hydrochlorid was administered hypodermically daily, together with two alcresta ipecac (Eli Lilly Company) tablets by mouth three times a day after meals for fourteen days. Stool examinations were made daily.

Results: *Endamoeba histolytica* disappeared from the stools on the second day and did not reappear. No cysts of this organism were encountered. The character of the stools improved; they were less frequent, less watery, and contained less mucus and no blood that could be detected macroscopically. There was no appreciable decrease in the number of cysts of *Giardia intestinalis*. The abdominal discomforts still persisted.

Sulphur.—In September the patient's stools again became frequent and semifluid. The endamebas were absent from the stools, but the cysts of *Giardia intestinalis* were present in even greater numbers than before. A sulphur treatment was instituted in the hope of controlling this flagellate. Beginning with 15 grains and gradually increasing to 25 grains, sublimed sulphur was administered by mouth three times daily for fourteen days. Stool examinations were made every alternate day.

Results: On the second day the number of cysts was found to be greatly reduced; on the fourth day cysts were detected only after concentration of the stool by centrifugation; on the sixth day the number had greatly increased, while on the eighth day and thereafter the cysts were as abundant as ever. No change in the patient's condition was observed.

Neo-Arsphenamin Treatment (single injection).—In November the patient reported severe abdominal pains, and was able to obtain relief only by wearing a tightly fitting bandage over the point of attack. November 29, 0.6 gm. of neo-arsphenamin was introduced into the blood stream. Stool examinations were made daily for six successive days.

Results: Examination was made of the last part of a stool passed three hours after the treatment; no cysts were found at this examination; however, unfortunately, no examination was made of the first part of the sample passed, nor had a stool examination been made for six days previous to the treatment. The cysts did not reappear in the stools during the six days following the treatment. The patient's condition improved and he was able to remove the bandage.

Neo-Arsphenamin Treatment (three injections).—December 24, the patient reported a recurrence of the abdominal discomfort. An examination of his stool made on this day revealed numerous cysts of *Giardia intestinalis*. These cysts varied greatly in size and shape; some typically shaped cysts were only one-third the usual size, others were larger than normal, while still others were flat on one end. December 24 and 29 and January 2, intravenous injections of 0.6 gm. each were made; and, following the second injection, calomel and castor oil were administered by mouth. Stool examinations were made daily for twelve successive days during and following the period of treatment; and for six successive days once a month thereafter.

Results: The cysts of *Giardia intestinalis* were greatly reduced in number in the first sample collected after the first injection and were entirely absent from the stools on the second day after the first injection, and have not since recurred. The patient's condition has greatly improved; his stools have become normal and his abdominal discomforts have abated.

INCIDENCE OF TUBERCULOSIS IN HUSBAND AND WIFE*

ARNOLD MINNIG, M.D.
DENVER

A great deal has been written on the degree of infectiousness of the tuberculous consort to the well one. The pendulum has swung from one extreme to the other. It is about time we were taking what I consider a sane view of the matter. The question is whether or not there is such a thing as adult infection. If there is such a thing we have in the man and wife the ideal relation, or culture medium, namely, prolonged and intimate contact.

Probably the most radical exponent against the theory of adult infection is Fishberg,[1] who says he has never observed a case of tuberculosis transmitted from one consort to the other. He gives as proof of the impossibility of adult reinfection the fact that the hospital staffs in institutions harboring tuberculosis patients do not suffer from tuberculosis more than others.

In another study, Fishberg[2] has investigated the conditions under which many of the tuberculous live. He examined 170 consumptives, nine of whom were women and 161 men. In the latter group he found that seventy-eight of the wives lived with their tuberculous husbands at home, and of these fifty-one slept in the same room and twenty-three even shared their beds with them. Of the rest, twenty-seven of the tuberculous husbands were inmates in sanatoriums or hospitals for consumptives, and five were away from home, though not in institutions. He also found that during the time of the illness of the affected consorts, forty-eight children were born. Out of this number Fishberg found that in only 3 per cent. of the cases both husband and wife were tuberculous—a rather strong argument against adult infection.

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* From the Denver Municipal Tuberculosis Dispensary.
* Read before the Medical Society of the City and County of Denver, April 6, 1920.

1. Fishberg, Maurice: Traditional Fallacies About Tuberculosis, New York M. J. **104**: 1085 (Dec. 2) 1916.
2. Fishberg, Maurice: The Rarity of Conjugal Tuberculosis, Am. J. M. Sc. **153**: 395 (March) 1917.

Sir Hermann Weber [3] found in "sixty-eight persons, male and female, who with more or less pronounced consumptive taint had married healthy partners, that ten of the partners of these sixty-eight cases became consumptive, or 14.7 per cent. Nine of the tuberculous husbands lost eighteen wives, namely, one lost four, one lost three, four lost two each and three one each."

I. Burney Yeo [4] collected records of 1,055 cases of consumption, which had come under his observation consecutively in the hospital. Of this number, 621 were males and 434 females. Of the males, 306 were married, 297 were single, and eighteen were widowers. Of the eighteen widowers, only two, or about 11 per cent., could state positively that they had lost their wives by consumption. Of the 434 females, 199 were married, 206 were single, and twenty-nine were widows, only five or 17 per cent., were able to state positively that their husbands had died of tuberculosis.

Among 159 couples in which one of the partners was tuberculous, Brehmer [5] found that in nineteen, or 12 per cent., both suffered from the same disease.

Haupt [6] found in 417 cases twenty-two, or 5.2 per cent., in which both partners were affected with tuberculosis.

Cornet [7] found among 594 couples that both partners were tuberculous in 23 per cent. of the instances.

Jacob and Pannwitz,[8] in a collective investigation in several German sanatoriums, found that in 8.57 per cent. of the cases, conjugal tuberculosis was present.

An excellent and exhaustive statistical work on this subject has been published by William Weinberg,[9] who found that among 1,426 husbands of tuberculous wives, 118, or 8.3 per cent., died from this disease. Among 2,506 wives of tuberculous husbands, 112, or 4.5 per cent., succumbed to this disease, or among 3,932 consorts of tuberculous persons 230, or 5.9 per cent., died from tuberculosis. He thus finds that the mortality from phthisis among those who are married to consumptives is about double that observed in the general population, in which it is about 2.7 per cent.

Ludwig Levy [10] investigated 317 married couples who lived in poverty and want. Thirty-four per cent. shared the same bed. Two and eight-tenths per cent. of the disease was due to marital infection.

Ward,[11] in an analysis of 156 cases in which the mate of a tuberculous husband or wife was examined, found the extraordinary number of ninety-one, or 58 per cent., tuberculous. Sixteen were considered suspicious, and forty-nine negative.

Wilson Fox [12] cites a few cases of great interest:

A. A phthisical man married several times, and most of his wives became phthisical.

B. A consumptive man died, having transmitted the disease to his wife, who infected her second husband.

C. A man infected his wife and died. His widow remarried and also died of tuberculosis, as did her second husband, after he had remarried. His widow lived and also married again, and the next husband died of tuberculosis.

D. A woman married two tuberculous husbands in succession and became tuberculous after the death of the second.

E. A consumptive wife died leaving an infected husband, who infected a second wife.

F. A consumptive wife, before dying, infected her husband, who later infected a second wife. This widow afterward infected a second husband.

G. A woman died of tuberculosis. Her husband, not said to have been tuberculous, married three other wives. Of his four wives, the first, second and third died of tuberculosis, but the fourth wife and the husband were apparently free from the disease.

Another convincing study has been made by Crouch [13] of the Modern Woodmen Sanatorium, Colorado Springs. His investigations covered 4,100 cases, all males. Of this number, 2,771 were married, and 233 were widowed. Out of this total of 3,004 cases, 193, or 6.4 per cent., had wives who showed either a history of tuberculosis or who had died of tuberculosis. In the consideration of the widowers, however, he found that 136, or 58.37 per cent., lost their wives from tuberculosis. He concludes that "58.37 per cent. of tuberculosis among 233 widowers is certainly more than a coincidence."

The conclusions of other men who have made a special study of marital tuberculosis with the percentage of contagiousness they have found in their investigations are given herewith: Elsasser,[14] 39 per cent.; Gebser,[15] 5 per cent.; Joussert,[16] 3 per cent.; Thom,[17] 3 per cent., and Turban,[18] 6 per cent.

There is a variation in the statistics of from 3 to 58 per cent. Of course, it is possible that both husband and wife may have tuberculosis when they marry, which contingency has to be taken into consideration.

Levy [10] and Ward [11] have made the interesting observation that when the consort died and the other consort had clinical tuberculosis, often the infection after six months was overcome or the patient was much improved. This occurred in spite of the fact that usually there was the added responsibility of taking care of the children alone. This was true not only in the case of the surviving husband but also in the case of the surviving wife. This would show that the continued massive infection was each day lowering the consort's resistance; but when he was not exposed to the continuous culture of tuberculosis, he improved.

RESULTS OF AUTHOR'S INVESTIGATION

In my investigation, which covered 1,000 successive dispensary cases, I was especially careful to classify none as tuberculous which were in the least doubtful.

I considered that a case was tuberculosis if the bacilli were present, or if there was a history of hemorrhages, a number of attacks of pleurisy, dulness with persistent moisture over the apexes continuing for a year or more, or if the patient died of tuberculosis. In other words, I considered only positive cases of tuberculosis and no suspects. In the series of cases, 502 of the patients were married and 498 were single.

I found that among these 502, there was active tuberculosis in husband and wife in forty-four cases, or 8.7 per cent. Of the forty-four cases, twenty-two of the consorts had died of tuberculosis, or 50 per

3. Weber, Hermann: On the Communication of Consumption from Husband to Wife, Tr. Clin. Soc., London **7**: 144, 1874.
4. Yeo, I. B.: Contagiousness of Consumption, Brit. M. J. **1**: 895, 1888.
5. Brehmer, Herrmann: Die Therapie der chronischen Lungenschwindsucht, Berlin, 1885.
6. Haupt: Deutsch. med. Wchnschr. **11**: 340, 1890.
7. Cornet, George: Tuberculosis, Philadelphia, W. B. Saunders Company, 1904, p. 263.
8. Jacob, Paul, and Pannwitz, Gotthold: Entstehung und Bekämpfung der Lungentuberkulose, Berlin, 1904.
9. Weinberg, William: Lungenschwindsucht bei Ehegatten, Beitr. z. Klin. d. Tuberk. **5**: 365, 1906.
10. Levy, Ludwig: Statistisches über Tuberkulose der Ehegatten, Beitr. z. Klin. d. Tuberk. **32**: 147, 1914.
11. Ward, E.: Conjugal Tuberculosis, Lancet **2**: 606 (Oct. 4) 1919.
12. Fox, Wilson: Diseases of the Lungs, London, 1891, p. 571.
13. Crouch, J. B.: Personal communication to the author.
14. Elsasser: Mitteilungen über die Gefahr der Tuberkulose für Ehe und Familie, Annsberg, Becker's Verlag, 1901.
15. Gebser: Auf der 7. Tuberkulose Versammlung Karlsruhe, 1910.
16. Joussert: Inaug. diss., Paris, 1908.
17. Thom: Tuberkulose Ansteckung unter Eheleuten, Ztschr. f. Tuberk. u. Heilstättenwesen **7**: 12, 1905.
18. Turban: Beiträge zur Kenntniss der Lungen-Tuberkulose, 1899.

cent. Of the twenty-two surviving consorts, seventeen were men and five women. In these twenty-two, tubercle bacilli were present in twelve of the widows or widowers. The period of illness extended from four months to twenty years.

Of course, it is to be borne in mind that my investigation dealt only with the poorer classes. I have not included in the forty-four any cases in which, for instance, there was dulness with suppressed breath sounds or even bronchovesicular breathing at one or both apexes and a vague history of pleurisy or other mild symptoms, but no moisture. No doubt many of these were tuberculosis carriers, yet not clinically open cases of tuberculosis; but no doubt, they were open cases part of the time. Had I considered these, the percentage would be still higher.

That there are these carriers among us is shown by these private cases:

REPORT OF CASES

CASE 1.—A physician, aged 62, widower, weight 190 pounds, who had never been sick except that he had pneumonia at 25, who had been married twice to apparently healthy wives both of whom had died of tuberculosis, finally submitted himself to an examination. He was a well developed man. Over the left apex there was dulness and a few moist crackles after he coughed. There was no history of hemorrhage or expectoration. He suffered a severe attack of influenza in the recent epidemic, but made a good recovery.

CASE 2.—A widow, aged 28, had married at 19 a man who coughed and who had lost a sister of tuberculosis. He weighed 212 pounds at marriage, but lost 50 pounds in four months and died of tuberculosis two years before I saw her. The widow's family history was good. She had never been sick until her first baby was born in 1912 when, because she was catching colds often, she was advised to take what the physician termed a protective course of tuberculin. No doubt, she was having symptoms then. She had been coughing the past year and had lost 20 pounds. Six weeks ago, she was accepted by an old line life insurance company for $10,000 ordinary life insurance. She did not expectorate except when she had a cold, but her sputum had never been examined at that time. She had persistent râles after cough; expiration was prolonged over both apexes, and the whispered voice was exaggerated over the same area. At the right base there was a definite pleuritic rub.

COMPARISON OF FINDINGS

My findings are in accord with those of most investigators. If we take the normal incidence to be 2.7 per cent. among all classes, we do not find anywhere in the literature so low a percentage in the consort of the infected husband or wife.

When I first entered dispensary work, I was rather prejudiced in favor of the theory of the nonexistence of conjugal or adult infection; but after working a number of years among this class of patients, I was impressed not by the rarity of tuberculosis in husband and wife, but by the fact that it was a rather common occurrence and as a result made the foregoing investigation, not of selected cases but of successive cases coming to the dispensary in the year 1918 and the early part of 1919.

CONCLUSIONS

1. I have found the incidence of marital tuberculosis to be 8.76 per cent. When a consort dies, the mate has been infected in 50 per cent. of cases.

2. There is such a thing as adult infection. We should constantly bear this in mind in our advice to the layman.

3. It is evident that when there is a continued massive infection over a period of years, and especially when the consort dies, in these last years patients are especially careless and slovenly, and there is not only a possibility of contagion, but in one out of every two cases active tuberculosis supervenes.

4. My investigation covered only dispensary cases. In private practice the incidence of marital infection is smaller, proving that intelligent prophylaxis is worth while.

846 Metropolitan Building.

CALCULI IN THE SALIVARY DUCTS

REPORT OF FIVE CASES *

SEWARD ERDMAN, M.D.
NEW YORK

Calculi which form in the ducts of the salivary glands or in the glands themselves possess considerable clinical interest by reason of the peculiar train of symptoms, the infrequency of the lesion, and the necessity of a correct diagnosis. Unless the possibility of this condition is always borne in mind, and a careful diagnosis made, there will be numerous instances in which a totally unnecessary operation on the neck will be performed without relief of the symptoms. In one of the cases reported herewith, such a futile operation was performed despite the suggested diagnosis of calculus; and in two of the other cases, surgeons of equal or greater experience than myself were heartily in favor of a dissection of the submaxillary region for supposed lymphadenitis.

If this lesion is borne in mind, a careful history of the symptoms and a visual examination of the mouth of the duct, with a digital exploration of the floor of the mouth and buccal cavity, will in every case point strongly to the diagnosis. The roentgen-ray naturally suggests itself as the best method of diagnosis; but unfortunately it is not, and the results are very disappointing. In any event, the surgeon would first make the tentative diagnosis before a roentgenogram is made, and even its positive findings would only be corroborative evidence. As a matter of fact, the roentgen-ray report is all too often negative, when operation proves the presence of calculus. The explanation frequently given is that the calculus was lacking in material which would cast a shadow, but this is manifestly not so in any of our cases, as the accompanying illustrations show. The true explanation in most cases is that the technic of making pictures far back in the submaxillary and parotid regions is very far from perfect, and the reason that the roentgenogram is reported negative is that the lesion was never reached.

A technic intended to overcome the difficulties of the situation has been suggested by M. Arcelin.[1]

Analyses of many different salivary calculi show that they contain both organic and inorganic matter; the nucleus is usually organic: organic matter, approximately 25 per cent.; calcium phosphate, approximately 60 to 65 per cent.; calcium carbonate, approximately 6 per cent.; with traces of iron, magnesium, etc.[2] They are usually oval or olive shaped if formed in the duct; but round or irregular if formed in the gland. The color is gray or yellowish usually; the consistency variable from hard to soft. The surface is more often

* From the Second Surgical Division, New York Hospital.
1. Arcelin: Lyon méd. **118**: 769, 1912.
2. Prouzerque, R.: Arch. de méd. et pharm. mil. **58**: 125, 1911.

rough than smooth and may be grooved longitudinally. When multiple the stones may be faceted. The average weight of the calculi is from 5 to 20 gm.

REPORT OF CASES

Case 1.—*Salivary calculus; right submaxillary; removal from Wharton's duct by incision in floor of mouth.*

History.—Walter T.,[3] English, aged 31, stable groom, admitted to the Presbyterian Hospital, Sept. 21, 1904, and discharged, Oct. 14, 1904, three weeks before, while eating, had experienced pain in the right side of the "throat," and noticed a "bunching up" or fulness below the angle of the jaw on the right side. Between meals there was no pain and the swelling became smaller, but every attempt to eat solid food caused an attack of pain and swelling.

Examination.—There was a lobulated swelling in the right submaxillary region. In the floor of the mouth there was a rounded, fluctuating swelling opposite the last two molar teeth. No roentgenogram was taken in this case.

Operation and Result.—September 27, under the mistaken diagnosis of suppurative cervical lymphadenitis, a dissection of the right submaxillary region was made by one of the surgeons. No abscess was found; but a portion of the enlarged and inflamed submaxillary salivary gland was excised. There was no relief from symptoms after this operation, and October 10, I inserted a probe into Wharton's duct to a distance of 4 cm., recognized the sharp click of a calculus, and on opening the duct at this point under local anesthesia, removed a calculus, the size of a small cherry pit (Fig. 1). Four years later, the patient was perfectly well and had had no return of any symptoms.

Comment.—A possible etiologic factor in this case was an alcoholic habit with neglect of mouth cleanliness, although there was no pyorrhea. Also as a groom about the stables, the patient had been in the habit of chewing grain and straws, a particle of which may have entered the duct and acted as a foreign body nucleus.

Case 2.—*Salivary calculus; left submaxillary; removed from Wharton's duct through floor of mouth* (Fig. 2).

History.—Paul T., aged about 24, born in the United States, soldier, admitted to the hospital, Dec. 23, 1918, had had no previous attacks of a similar trouble. The present illness began about ten days before with a painful swelling in the left submaxillary region. Both pain and swelling were made worse by chewing food.

Examination.—There was a swelling of the left submaxillary gland; and in the floor of the mouth there were elevation and thickening along the course of the left Wharton's duct, with swelling and redness of the papilla.

Operation and Result.—The floor of the mouth was cocainized, and with some difficulty a whalebone filiform bougie was passed into the duct encountering obstruction at a distance of about 3 cm. The duct was then split open along the probe, and a calculus 1 cm. long was delivered with a small spoon curet. After this there was immediate relief and a rapid subsidence of the swelling of the submaxillary gland. Attempts to roentgenograph this suspected calculus, dental films being used on the floor of the mouth, had been unsuccessful, nor was it definitely palpable with a finger in the mouth.

Case 3.—*Salivary calculus; left submaxillary; removal from Wharton's duct through floor of mouth* (Fig. 3).

History.—E. R. S., aged 42, born in the United States, clerk, referred to me by Dr. McCastline, and treated in the office, had had attacks of severe pain in the "throat" for from five to six years while eating, accompanied by swelling at the angle of the jaw. The pain was described as of a gripping nature, and there was a sharp pricking sensation along the base of the tongue on the left. Occasionally, he obtained relief by squeezing the floor of the mouth and expressing a "little white plug," after which the pain and swelling would subside. His teeth had been very bad for years. He had pyorrhea alveolaris, and at the time of examination many teeth were absent and bridges had been inserted.

Examination.—There was a moderate swelling of the left submaxillary salivary gland, which was quite tender to pressure. In the floor of the mouth, well forward near the sublingual caruncle, there was a red, tender elevation which was distinctly fluctuating; no stone could be felt, however. Procain was injected over this area and an incision opened the distended Wharton's duct, permitting the escape of purulent material and a pyramidal calculus measuring 1.3 cm. in length. There was no opportunity for an attempt at securing a roentgenogram in this case. The relief was great and prompt, and the patient has remained well.

Case 4.—*Salivary calculi (multiple); right submaxillary; removal of two calculi at two operations, from Wharton's duct* (Figs. 4 and 5).

History.—Emil G., Italian, aged 20, carpenter, admitted to the New York Hospital, Oct. 4 and Oct. 30, 1917, had had an attack four years before similar to the present, lasting about three days, but had had no trouble since then until eleven days before admission. While eating he felt pain in the right side of his throat and noticed a swelling below the jaw. This pain and the swelling subsided between meals, but promptly recurred when he ate solid food.

Examination.—There was a moderately enlarged right submaxillary gland. In the floor of the mouth, there was elevation along Wharton's duct; the sublingual caruncle was swollen and reddened, and by pressure over the duct some pus could be expressed.

Operation and Result.—October 4, a whalebone filiform bougie was quite readily passed into Wharton's duct for a distance of 7.5 cm., which must have carried it well back to the gland itself; but while the probe was being passed there was encountered some slight obstruction at a distance of 3 cm. After local anesthesia had been secured, the duct was split open along the probe and a yellowish, laminated calculus was removed measuring 5 by 3 by 3 mm. (Fig. 4).

The patient was readmitted three and one-half weeks later for a recurrence of the same train of symptoms. He stated that after the operation he was relieved for about five days, after which the pains and swelling at meal times recurred. October 30, under local anesthesia, the right Wharton's duct was again incised opposite the last molar tooth and a calculus of the same color and consistency as the first was removed, but it was more than twice as large as the first and measured 1 by 0.5 cm. These two calculi seemed to fit together very well, as if they had originally been parts of one calculus, and yet it is difficult to see how any trauma sufficient to break the calculus could have occurred at the first operation. Four months after operation, the right submaxillary gland was still very slightly larger than the left. The saliva seemed to be discharged in the floor of the mouth at the side of the tongue, where the duct had been split open. One and one-half years after operation, the patient was free from all symptoms.

Case 5.—*Salivary calculi (multiple); right parotid* (Fig 6).

History.—Aaron B., aged 52, Russian storekeeper, admitted to the New York Hospital, April 20, 1916, and discharged, April 29, had been under dental treatment for pyorrhea alveolaris for the last five months; the teeth had been in very bad condition. Four months before admission he first noticed a swelling of the right parotid region which was very painful at times and seemed to vary in size. He had experienced a feeling of dryness in the right side of the mouth. For the last week the swelling and pain had been very much worse and constant, and he could not open his jaws.

Examination.—There was a very marked and tense swelling of the whole right parotid gland. In the buccal surface of the right cheek, the opening of Stenson's duct was found to be pouting and reddened and giving exit to creamy pus on pressure on the cheek. The whole tract of the duct felt indurated, but no definite calculus could be detected. A roentgenogram on a dental film placed inside the cheek showed a suspicious shadow of a small calculus.

Operation and Result.—April 20, a whalebone filiform bougie was passed into the right Stenson's duct and a gritting

3. This case was reported by the author in the Annual Report of the Presbyterian Hospital in the City of New York, 1906.

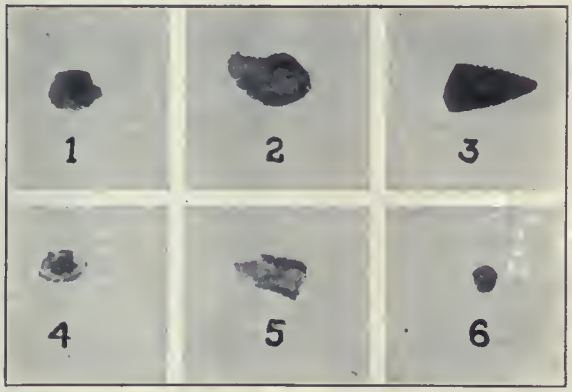
sensation was encountered at 3 cm. Under local anesthesia the duct was split open back to this point, but no calculus could be found. The symptoms persisted, and another effort was made to find the stone, April 24; but at this time there was still so much edema about the duct orifice that no probe could be inserted. April 24, a general anesthetic was given and a horizontal incision was made in the right cheek, exposing the dilated duct, but on palpation no stone could be felt, with the duct directly between the fingers. As it was not deemed wise to open the duct through the cheek, a loop of silk was passed about the duct, and the ends of the loop were pushed into the mouth through the buccal mucous membrane. The external wound was then closed by suture. The buccal surface was then exposed, and with the aid of the traction loop of silk the duct was easily drawn into view and a long incision made into it. A small curet was inserted, but no stone was found.

In this case, as the event showed, the multiple stones had evidently slipped well back into the parotid gland at this time.

On the third day after operation, the patient passed a small soft calculus about 3 by 4 mm., which specimen, unfortunately, was lost. On the sixth day after operation, while eating, he passed a second small and harder calculus about the same size, which is shown in Figure 6. After this there was a remarkably rapid abatement of the swelling, and complete disappearance of all symptoms. The patient remained entirely well during the six months that he was followed.

FREQUENCY OF THE CONDITION

From the various monographs on this subject and collection of case reports, it is fair to conclude that the lesion is rather rare. In 1890, Czygan collected from the literature the reports of about seventy cases. Futterer later raised this number to 160; Roberg[4] reviewed 207 cases; and from my own search of reports, I have found enough to make approximately 300, which will very fairly represent the total of cases reported up to this time. The French seem to have encountered or reported these cases more often than any other people.



Salivary calculi (actual size): 1 to 5 removed from Wharton's duct; 6 removed from Stenson's duct.

SITE OF THE LESION

In about two thirds of all reported cases, the calculus has been found in Wharton's duct or in the submaxillary salivary gland. In about 20 per cent., Stenson's duct or the parotid gland has been the site. Only in a considerably smaller number has the sublingual gland been involved. Certainly they occur very much more frequently in the ducts than in the glands.

ETIOLOGY

They usually occur in middle life; only one case is reported as occurring in infancy. The great preponderance of cases are in the male. As the result of inflammation of the duct, concretions may form about masses of bacteria, or salivary corpuscles, and very rarely about foreign bodies, e. g., bits of tartar. Foreign bodies which have been found occasionally occluding a duct include bristles from a tooth brush, bits of grain, and seeds. The lack of mouth cleanliness, and especially pyorrhea with tartar formation, afford the most likely source of duct irritation and inflammation.

SYMPTOMS

The classical picture of "colique salivaire" of the submaxillary region is that of intermittent swelling of the salivary gland, or of the duct behind the stone, accompanied by sudden severe pain in the floor of the mouth, tongue and side of the throat, all of which occurs during meals or may be excited by the mere sight of food. This tumor persists until there is a sudden discharge of saliva, which in a case reported by M. Reverchon would spout a jet of saliva, occasionally at meals, to a distance of from 30 to 50 cm. In some cases such a history runs back over a period of ten years or more; but in such cases the diagnosis should be very easily made. In many other cases the history is short, of a few months, or a few weeks or even of only a few days.

Cases which apparently start so acutely usually represent the intercurrence of an acute infection of the duct or gland and may be ushered in with acute swelling of the gland, with fever and much local inflammation; and it is here that the diagnosis becomes more difficult.

Pain is always more considerable when the stone is in the duct than when it is embedded in the gland. The general nutrition may suffer markedly because of the dysphagia. Purulent catarrh of the duct and even actual abscess about the duct is not uncommon. The enlargement of the gland due to the salivary stasis is usually of a chronic inflammatory character, resulting in connective tissue formation and atrophy of the gland cells; and only rarely is there actual suppuration in the gland itself, although it may remain permanently enlarged. Discharge of the stone into the mouth as the first symptom has been rarely reported.

DIAGNOSIS

A number of these patients present themselves to dentists believing that the swelling and pain near the jaw are due to the teeth. And, indeed, an alveolar abscess may be suspected. More of the acute cases are likely to be diagnosed as cases of suppurative lymphadenitis, and treated by external incision. In the cases of chronic enlargement of the gland, malignancy may be suggested.

Examination of the floor of the mouth or cheek will usually show some change at the exit of the duct, a purulent discharge or swelling and redness. There may be a visible swelling along the course of the duct, or bimanual palpation may reveal a cystic mass or even the actual presence of the calculus. In my experience with Wharton's duct, the stone is very likely to be found rather far back, about opposite the last molar tooth.

Probing the duct requires some application and perseverance, but may yield the convincing sensation of "gritting" against the stone. I have found that a whalebone filiform bougie is well adapted for this pur-

4. Roberg, O. T.: Sialolithiasis, Ann. Surg. **39**, May, 1904; abstr. J. A. M. A. **42**: 1662 (June 18) 1904.

pose and likely to be more readily obtainable than the very small metal probes which would be necessary.

TREATMENT

After local anesthesia of the vicinity of the duct, one of two methods may be used: First, a probe is inserted and the duct split back as far as may be necessary to deliver the calculus, which may require a spoon curet. Second, a direct incision may be made through the mucous membrane and into the duct at the site of the previously located stone, or into the distended duct behind the stone, or on a probe in the duct.

In the event that the stone has slipped back and cannot be found, the splitting or incision of the duct may permit of its spontaneous delivery within a few days, without further intervention.

Mathews [5] says that one should be on the lookout for multiple stones, which were present in two of the six cases that he reported, and in two of our cases.

Results are very satisfactory if the obstruction is found and removed, and recurrence is very rare unless a bit of calculus has been left in situ. External incisions are seldom if ever indicated, and are to be avoided.

134 East Sixty-Fourth Street.

RHINOPHYMA

A CURE BY A PLASTIC OPERATION WITH A GOOD COSMETIC RESULT

JAMES FRANCIS GRATTAN, M.D.
NEW YORK

Operative removal of rhinophymas has not offered much encouragement to surgeons, judging from the meagerness of the reports on the subject in the literature. The lobular nature of these tumors, with broad bases requiring extensive denudation for removal, and the difficulty of obtaining a satisfactory cosmetic result, without prominent scarring, are factors that have been largely responsible for the discouragement.

My patient was no exception. He had had this disfiguring mass for more than fifteen years. During that time he had consulted surgeons frequently concerning its removal, but none, as he put it, "cared to tackle the job." [1]

As can be seen in the accompanying illustrations, the base of the tumor occupied the lower third of the nose, anteriorly and laterally, while the tumor itself protruded forward and downward. To me it offered hope of removal with a reasonably good cosmetic result. I felt that the man was so disfigured by the tumor that he had little to lose. His confidence was encouraging, so we decided to assume the risk together.

REPORT OF CASE

History.—M. G., man, aged 43, single, dated the initial change in the tip of the nose to his tenth year, when, he said, the end of the nose was severely lacerated by a dog bite. He did not recall whether or not there was infection present at that time. At 11 or 12 years, the patient had facial erysipelas involving the cheeks, eyelids and nose. This attack kept him in bed for two weeks. During his youth he sustained several bad blows and falls involving the nose.

Two and a half years before we saw him he had had a second attack of facial erysipelas. The venereal history presented nothing of interest in relation to the local condition.[2]

Physical Examination.—The patient was of medium build and, aside from the nasal tumor, apparently without lesions, deformities or organic disturbances. There was a globular tumor about 1¼ inches in diameter, almost a perfect sphere, with a base almost as broad as the diameter of the mass, and extending upward on the anterior surface to the junction of the middle and lower thirds of the nose, and laterally to the anterior borders of the alae nasi. Chronic acneform lesions (comedones and sebaceous cysts) dotted the skin over the entire tumor surface and involved the skin of the rest of the nose and the adjacent parts of the cheeks. These lesions are evident in the illustrations. The skin of the tumor was leathery and firmly attached, but of normal color.



Fig. 1.—Lateral aspect of the tumor.

Operation and Results.—One-quarter grain of morphin, with 1/150 grain of atropin, was given forty-five minutes before the operation. The entire face was cleansed with naphtha to remove the excessive sebum, and subsequently wiped with 95 per cent. alcohol, followed by ether. A sterile dressing was applied and left in place until the patient was brought to the table. The skin, including the forehead, nose, cheeks and upper lip, was then painted with 2 per cent. iodin. The surface deposit of iodin was wiped off with 95 per cent. alcohol. Twenty-five per cent. argyrol was dropped in the eyes and nostrils, and the mouth was painted with the same solution. Moist, sterile towels were draped over the

5. Mathews, F. S.: Submaxillary Calculi, Ann. Surg. **63**: 140 (Feb.) 1916.

1. The patient was referred to me by Dr. Daniel O'Leary, of Newburgh, N. Y. Dr. O'Leary and I had intended to operate on this man at Newburgh but owing to Dr. O'Leary's disability, by reason of an infected finger, he sent the patient to New York, fearing that he would change his mind about being operated on.

2. The history of repeated traumas and infection is of value only in the vague sense in which are associated repeated irritation and tumor growth.

surrounding areas, and the patient was instructed to breathe through the piece of sterile gauze placed over the mouth. Two per cent. procain was infiltrated at the alae, columella and across the nose above the tumor.

A U-shaped flap was made above, beginning at each ala and including about one-half inch of the skin on the superior surface of the tumor mass. An inverted U-shaped flap was made on the inferior surface of the nose, including the skin of the entire inferior surface of the tumor. The ends of the two U-shaped incisions were made to meet at each alar crease. The flaps thus outlined were dissected off the tumor with considerabe difficulty, both because of the leathery quality of the skin itself and because of its firm attachment, or rather inclusion in the tumor. The skin flaps having been freed, the tumor was dissected in a wedge-shaped manner from the underlying nasal cartilage. There was considerable fibrous tissue in the tumor and no distinct differentiation between the tumor and nasal structure. The dissection was rather difficult on account of these conditions. Considerable bleeding of both arterial and venous character was encountered. This was controlled by suture-ligatures of fine catgut. The inferior flap proved one-fourth inch too large and was trimmed to fit



Fig. 2.—Anterior aspect of the tumor.

the upper flap. The lower flap was rolled up over the edge of the nose so that the suture line ran directly across the anterior surface of the nose from ala to ala. The upper flap was very difficult to adapt to the new contour, as it had stood out at a right angle to the anterior nasal line during the long period that it had performed the function of covering the upper surface of the tumor. The adaptation was begun by fastening it at its center to the center of the lower flap and then adapting the sides by trimming and scoring the edge, fitting and refitting several times, until the best possible approximation was obtained. In this way a rather well-shaped nose was molded out of very discouraging material. Interrupted sutures of fine silk were used. These were removed on the fourth day. The tension was relieved by sterile adhesive straps. The result one month subsequent to operation is shown in Figures 3 and 4.

The wound healed by primary union and the patient left the hospital on the tenth day. Aside from slight redness and the prominence of the sebaceous gland orifices, the nose had the appearance of a normal organ. The problem of improving the condition of the skin was discussed in consultation with Dr. Fred Wise. Dr. Wise suggested the use of 50 per cent. trichloracetic acid, applied periodically, until the higher prominences of the skin were leveled. The appearance of the nose after the first application of this acid had completed its good work is shown in Figure 3. The whiter, smoother areas represent the portions thus treated. This treatment was repeated until all areas of the nose had been smoothed out, and the



Fig. 3.—Lateral aspect after plastic operation.

result is most satisfactory. Four applications were made in all. Subsequently, exposures of the roentgen ray at three week intervals were given with the idea of further improving the condition of the skin and keeping in abeyance any tendency to recurrence of growth in the tissues treated.



Fig. 4.—Front view after operation.

PATHOLOGY

According to the best dermatologic opinion, rhinophyma is a further developmental stage of acne rosacea. Because of the persistent hyperemia and

irregular periodic aggravations, the vessels become permanently enlarged. A hypernutrition of the skin results. The sebaceous glands hypertrophy first as gelatinous nodules, later becoming fibrous. Acne lesions are sometimes superadded. The markedly hypertrophic forms are due to new connective tissue growth, amounting to a real hyperplasia. Follicular suppuration with new connective tissue formation results in distention of the veins, so that they amount to actual sinuses. In this case the prominent pathologic features were the marked acneform lesions of the surface (comedones and small sebaceous cysts), the excess of fibrous tissue rendering the mass firm and elastic, and the prominence of the blood vessels, particularly the veins.

The result has been most satisfactory to the patient and to me, and there is no reason to believe that the nose will not remain in its present good condition. The illustrations reveal more clearly than any description the complete change in the physical appearance of the face. The condition of the skin has improved greatly since that represented in Figure 3, as a result of the trichloracetic acid treatment.

COMMENT

To me this case demonstrates the desirability of attempting something for the improvement of conditions of this type. It is impossible to estimate the good effect of the result on the patient's mentality and outlook on life, to say nothing of the physical betterment.

24 West Fifty-Ninth Street.

HYPERTRICHOSIS

REPORT OF CASE

ANDREW J. GILMOUR, PH.D., M.D.
Attending Dermatologist, New York City Children's Hospital and Schools; Consulting Dermatologist, Manhattan State Hospital; Consulting Dermatologist, Englewood Hospital
NEW YORK

Hypertrichosis is either an abnormal or an excessive growth of hair. In some cases the hairs may be increased in size; in others, the number of hairs may be increased, or both conditions may be present. This abnormality may either be referable to the location on the patient's body or dependent on the age or sex of the individual. There may be either a racial or a family predisposition to this condition. Brunettes are more prone to hypertrichosis than blondes.

This anomaly is classified as acquired and congenital. The acquired type is generally not an extensive condition; it may be universal or partial—usually the latter. An example of the partial is the growth of a beard on a female subject. The congenital condition is comparatively rare. An example of the universal type was Jo Jo, the dog-faced boy, whose face resembled that of a terrier and whose body was covered with soft hair. The congenital variety is usually of the partial type, and often manifests itself as a hairy pigmented nevus. A favorite location for this is at the lower end of the spine over the sacrum. The case here reported is of the congenital partial type.

It is unusual in that so far as macroscopic examination can determine, the hair is growing from perfectly normal skin, indistinguishable from the adjoining skin where the hair is present.

REPORT OF CASE

M. S., woman, aged 30, housewife, married, Italian, with negative family history, was born with a growth of soft hair a few inches long, situated over the small of the back. This hair gradually increased in length and became coarser, so that it is now similar to the hair of the head, though the texture of this hair is a little softer. The color is the same as that of the head, a dark brown. The hair is growing from a perfectly normal skin; there is no pigmentation; no hypertrophy of the skin or other sign of nevus is present.



Area of hypertrichosis.

For the last eight or ten years the patient has cut off this hair about every twelve months. The hair now present is 8 inches long and has been growing for one year. The growth has never been much longer than at the present time. The area covered by the hair has a diameter of from 4 to 5 inches.

The condition described was accidentally discovered while the patient was being given an intramuscular injection of mercuric salicylate for syphilis. A roentgenogram of the lower end of the spine is negative. The patient is of a highly neurotic type.

133 East Fifty-Seventh Street.

Clinical Notes, Suggestions, and New Instruments

A NEW BLOOD COAGULOMETER*

GEORGE KING, M.D., AND H. A. MURRAY, JR., M.D., NEW YORK

Authorities on blood coagulation, including Howell, Morawitz, Lee and Hurwitz,[1] have asserted that only clotting tests in which the blood is collected by venipuncture can be depended on to give reliable results. Blood taken from a finger prick is unavoidably mixed with more or less tissue fluid, which apparently precipitates the clotting process even in cases in which the power of the blood to form a gel is known to be impaired. Therefore, it seems that if tests made in this way are relied on many hemorrhagic conditions will go undiagnosed. Not long ago there was a "bleeder" in the wards of the Roosevelt Hospital who repeatedly gave a normal clotting time with blood drawn from finger stabs. Although hemophilia was suspected, it was only when venipuncture was resorted to that confirmatory evidence of this disease was obtained.

Last spring in doing some work which involved clotting determinations, we had occasion to study this subject. It was found that in 1911, Solis-Cohen had summarized the results of more than thirty different tests reported in the literature.[2] But because in all of them blood from finger pricks was used, they had to be disregarded and attention directed solely toward procedures calling for venipuncture. We tried the more suitable ones described in various publications and also had the opportunity to interrogate Professor Howell, who

* From the Laboratories of Surgical Research, Columbia University College of Physicians and Surgeons.

1. Howell W. H.: The Condition of the Blood in Hemophilia, Thrombosis and Purpura, Arch. Int. Med. **13**: 76 (Jan.) 1914. Morawitz and Burich: Arch. f. exper. Path. u. Pharmakol. **56**: 115, 1907. Lee, R. I., and White, P. D.: Am. J. M. Sc. **145**: 495, 1913. Hurwitz, S. H.: Am. J. M. Sc. **154**: 689 (Nov.) 1917.

2. Solis-Cohen, Myer: The Coagulation-Time of the Blood as Affected by Various Conditions, Arch. Int. Med. **8**: 684 (Nov.) 1911; ibid **8**: 820 (Dec.) 1911.

admitted the uncertainty of prevailing methods. As an example, he told how on one occasion blood drawn by venipuncture into a hypodermic syringe containing a few drops of physiologic sodium chlorid solution, and then divided equally between two similar test tubes, had clotted ten minutes faster in one test tube than in the other. At the Presbyterian Hospital, New York, the coagulation time of the blood is usually tested by allowing it to drop freely into a paraffin-lined test tube from a Luer needle introduced into the median basilic vein. The instant at which the tube may be completely inverted without dislodging the clot is considered the end-point. Normal figures by this method have been found to vary from four to twenty-seven minutes.

In our own experiments, we were not able to attain conformity of results with any methods examined, no matter how carefully the instructions were followed. The tube pictured in the accompanying illustration was then devised, and has given more consistent findings in our hands than have other procedures. The tests were performed largely on dogs, whose blood is very readily collected by puncture of the external saphenous vein. In more than thirty tests, with one exception, all the samples of blood from animals in apparent good health clotted in between nine and twelve minutes. The average was ten and one-half minutes. Any technic, however, seems to be relatively accurate when employed repeatedly by the same man, particularly when that man has devised the test himself. The sense of proprietorship apparently calls for thoroughness and devotion to detail which finally leads to a technical precision impossible under less stimulating circumstances. To avoid this possible personal element and properly to subject this instrument to trial, tubes were distributed among a few hospitals and tested without any special care or previous experience by various interns and medical students. The tubes were accompanied by these instructions:



Blood coagulometer.

METHOD FOR TESTING COAGULATION TIME OF THE BLOOD

The coagulometer to be used is composed of the following separate parts:

1. Glass tube, length 9 cm., inside diameter 9 mm. (A line to indicate the level taken by 2 c.c. of fluid within the tube is etched on the glass.)
2. One-way stopcock.
3. Luer needle with wire inserted, length 1 inch, gage 20. (These may be purchased from James W. Dougherty, 413 West 59th Street, New York City.)

A. *Preparation of Coagulometer.*—The tube is *thoroughly cleansed* with potassium dichromate cleaning mixture and then rinsed out with water, alcohol and ether in the order named. When it has become absolutely dry its upper wide open end is *plugged with cotton.* (The cleansing is usually done immediately *after* a test, and the tube kept in a glazed envelop or desiccator ready for use. It is important that the inner surface of the tube be smooth and *absolutely clean,* as little specks of dust make a difference in the clotting time.)

After the Luer needle in a test tube has been sterilized in the autoclave, attach it to the stopcock and the latter to the glass tube. Open the petcock. The coagulometer is now ready for use.

B. *Procedure.*—The skin overlying the vein of the patient to be punctured is sterilized with iodin. (One of the veins at the elbow is usually selected, and in that case the arm of the patient is hung over the edge of the bed.)

Put in plain sight a watch with a second hand, and note the time of applying the tourniquet. After thirty seconds, enter the vein from above downward, with the stopcock of the coagulometer open. When blood first appears in the tube, record the time. During the procedure the tube is kept in a vertical position with the lumen of the needle in the direct current of the vein. (It is believed that the ease and speed with which the vein is entered is an indeterminate variable personal error of some consequence. Therefore, if there is difficulty in entering the vessel, the needle should be changed and a second attempt made with another vein.) When the blood has reached the 2 c.c. mark, shut off the flow by turning the stopcock.

Remove the instrument from the vein, separate the needle, and stand the tube with attached stopcock in a rack or vessel for six minutes. (This should be done quickly and evenly. Do not tip, twist or shake the tube.) If the temperature of the room does not lie between 65 and 90 F., the tube should be kept during the test in a water bath whose temperature is maintained at about 75 F.

The coagulation time is the time elapsing to the nearest one-half minute from the instant blood first appears to the moment when the tube may be gently but completely inverted without displacing the clot from its bottom. After six minutes have elapsed, test the tube every minute until the blood shows signs of clotting; then test every one-half minute. After twenty-five minutes, if the blood has not clotted, test every five to ten minutes.

In testing, one should avoid breaking the surface clot by rough handling or extreme tipping. At first the tube need only be tipped to the slightest degree to make the fluidity of the blood clearly apparent. It should not be upset until it is quite evident by holding it in the horizontal position that it will not be disturbed by this maneuver.

After completing the test, the needle and stopcock should be cleared of fibrin threads and other matter by the use of a wire, followed by rinsing in hydrogen peroxid, alcohol and ether in the order named. If the stopcock does not turn easily after the washing, add a drop or two of xylene (xylol).

RESULTS

As was expected, the results obtained from these various sources were not uniform, but under the circumstances they were considered satisfactory. At Roosevelt Hospital, twenty supposedly normal patients were tested. The coagulation time varied from eight and one-half to fifteen minutes. The average was eleven minutes. The time in fourteen cases was between nine and eleven and one-half minutes. In three cases of jaundice the time was eighteen, twenty-two and twenty-eight minutes, respectively. Only a few results were received from the Presbyterian and Bellevue hospitals, but the time in all of these in which the proper technic was observed was between the outside limits (eight and fifteen minutes), and averaged about eleven minutes. The results from all our estimations, animal and human, show that, by this method, ten and one-half minutes may be considered the average time for clotting, with eight and fifteen minutes as the outside limits.

ADVANTAGES

The method here presented seems theoretically to allow for nearly the minimal personal error. It is simple, and practically has given rather consistent findings. The end-point, of course, is indefinite; but until the physicochemical mechanisms involved in blood coagulation are discovered, a completely satisfactory test need hardly be expected.

PREGNANCY IN THE RUDIMENTARY HORN OF A BICORNATE UTERUS

GEORGE L. BRODHEAD, M.D., NEW YORK

DeLee[1] states that pregnancy in the rudimentary horn of a bicornate uterus resembles ectopic gestation very closely, the first case being recorded by Mauriceau and Vassal in 1669, since which time more than 100 cases have been reported. The rudimentary horn may be closed at either end, making pregnancy impossible but accumulation of menses probable. Should the fertilized ovum be inserted in the small horn, there is no hope of reaching the uterus, because the connecting bridge of tissue is usually imperforate. The ovum may grow to term, but the gestation sac usually ruptures in early pregnancy, and severe internal hemorrhage follows.

REPORT OF CASE

History.—A quintigravida, aged 30, had had four normal confinements, the last of a half hour's duration. The present pregnancy had progressed to about the eighth month, the only symptom being occasional pain in the left hypogastrium. On the day of admission to Harlem Hospital, there had been slight pain in the left half of the abdomen at 7 a. m., and the patient complained of slight occasional pains up to the time of her admission at 2:30 p. m. No life had been felt for two days before admission, and the midwife who was called in diagnosed death of the fetus, for which reason the patient was referred to the hospital. At about 3 p. m. she was apparently in good condition, but at 3:15 she was found in shock, pulseless. My associate, Dr. Langrock, who saw the patient first, gave 1,200 c.c. of saline solution intravenously, but the condition of the patient when I arrived a

1. DeLee, J. B.: Principles and Practice of Obstetrics, Ed. 3, Philadelphia, W. B. Saunders Company, 1919.

short time afterward was desperate, and in a few minutes she died. Abdominal palpation revealed a fetus apparently free in the abdominal cavity, and the cervix was soft and closed. A diagnosis of ruptured abdominal pregnancy was made, and a postmortem abdominal section was performed.



Fig. 1.—Anterior view of the uterus, which is seen to the left, with the normal right ovary and tube, and the fetal sac to the right. The membranes can be seen attached to the edge of the placenta, a portion of which is visible on the extreme right. The small slit in the right side of the fetal sac is the point from which Section 2 was taken. The fimbriated extremity of the left tube is seen extending downward and to the left from the fetal sac.

Necropsy.—A large amount of blood, with the child, was found in the abdominal cavity. The child weighed 4⅝ pounds and was dead, though showing no maceration. It was impossible to determine the exact variety of pregnancy without thorough microscopic examination of a number of sections, and this has been done for me by Drs. Strong and Schwarz of the Woman's Hospital.

Diagnosis: Their diagnosis was: uterus bicornis, with rudimentary horn and pregnancy of approximately eight months' duration in this horn (decidua in the uterus, corpus luteum of pregnancy in left ovary).



Fig. 2.—Posterior view of the uterus, which has been incised, and the small pedicle connecting it with the fetal sac. The fimbriated extremity of the left tube is again seen in the lower portion of the illustration, with the ovary just above. The fetal surface of the placenta is to the left of the depression in the middle of the fetal sac, and the umbilical cord is seen attached to the placenta at the upper left angle of the illustration.

Macroscopic Examination: The corpus uteri was asymmetrically developed and measured 10 by 5 by 4 cm. The adnexa of the right side showed no gross changes. On the left side of the uterus there was a pedicle of about 5 cm. length and 1 cm. diameter attached to the side of the uterus at the level of the internal orifice. This pedicle connected a fetal sac of approximately 18 cm. diameter with the uterus. The ovary and fimbrial extremity of the tube of this side (left) were found attached to the fetal sac. The fimbriated extremity was perfectly free. The ovary contained a large, fully developed corpus luteum. The fetus measured 40 cm. in length, and was well preserved. The amnion showed a large lacerated opening through which the fetus with cord escaped into the abdominal cavity.

Microscopic Examination: Section 1, taken from a structure which appeared to be the round ligament, showed a lobulated muscle bundle (round ligament).

Section 2, taken from the fetal sac, showed uterine musculature with a small number of round cells and syncytial wandering cells. It also showed the decidua spongiosa without any fetal elements.

Section 3, taken from the right tube corner, showed muscular ligament tissue.

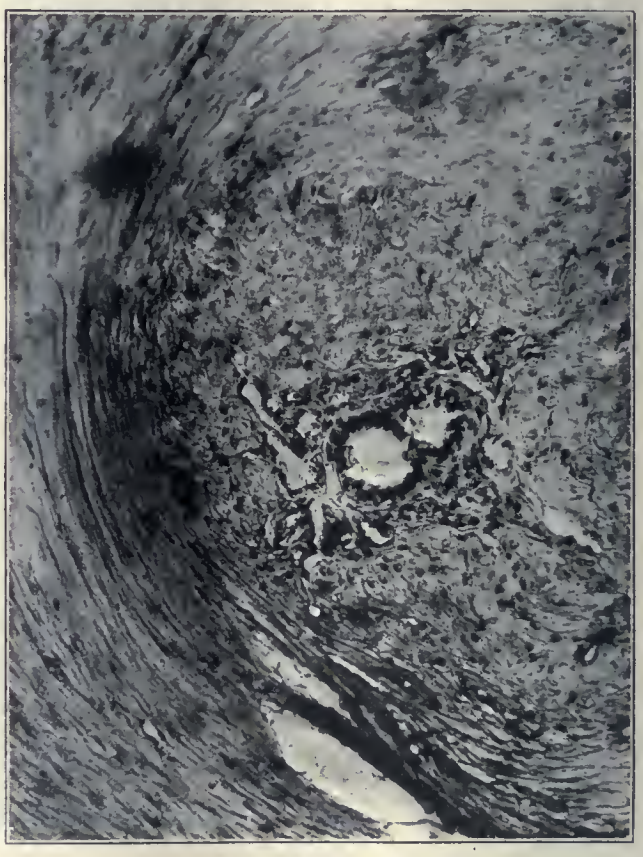


Fig. 3.—Cross-section of rudimentary horn of bicornate uterus (Section 5).

Section 4 showed the fimbriated extremity of the left tube, normal. No tube could be found on the left side.

Section 5, taken from the pedicle dissected out of its cover of broad ligament, showed three strata of smooth musculature, circular and longitudinal, the inner layer showing a marked decidual reaction. The center of this musculature layer contained a narrow circular lumen which was lined with a single row of cylindric epithelial cells.

INTERESTING FEATURES OF CASE

1. The patient had been pregnant four times in the right horn of the uterus before becoming pregnant in the rudimentary left horn.

2. The left ovary contained the corpus luteum of pregnancy and there was a well marked fimbriated extremity of the left tube, but no tube could be discovered.

3. The uterus appeared to be no larger than the usual size before pregnancy, and seemed to have developed chiefly from the right müllerian duct.

50 West Forty-Eighth Street.

FOLDING CHAIR FOR SPINAL PUNCTURE

NORMAN E. WILLIAMSON, M.D., STOCKTON, CALIF.
Pathologist, Stockton State Hospital

The chair that I described recently in THE JOURNAL[1] is not readily portable; and as I had to perform spinal punctures away from the operating room, I devised a folding chair that



Chair for spinal puncture, folded and open.

can be easily taken in the automobile. The inconveniences and dangers of the old method are emphasized when one has become accustomed to using the chair for spinal puncture.

At the right in the accompanying illustration the folding chair is open with half the braces in position; the other braces are set at an angle to show the method of adjustment. The chair weighs 33 pounds.

One point should be emphasized: The angle of flexion of the thighs on the pelvis when the patient is in the chair prevents any forcible movement of the thigh and assists greatly in steadying the patient.

ABDOMINOTHORACIC WOUND WITH EVISCERATION OF SPLENIC FLEXURE

FRASER B. GURD, B.A., M.D., MONTREAL

This report of a soldier who came under my care in June, 1919, is of more than usual interest, both as regards the extensive interference to which his gastro-intestinal tract has been subjected, and as regards the repair of a severe injury of the left diaphragm.

History.—Private A. G. P., aged 37, was wounded, Oct. 2, 1918, by a large shell fragment which tore through the lower portion of the left chest, destroying about 5 inches of both the seventh and eighth ribs in the axillary line. The diaphragm was torn and the splenic flexure protruded through the opening. At the primary operation performed at the clearing station, the loop of splenic flexure was opened and the pleural and peritoneal cavities were closed. This opening in the splenic flexure acted as an artificial anus until November 11, when a laparotomy was performed, the ileum divided and the distal end closed, and the sigmoid divided and proximal end closed. An end-to-end anastomosis between the ileum and the distal portion of the sigmoid was performed, with a view to short-circuiting the artificial anus.

1. Williamson, N. E.: A Chair for Spinal Puncture, J. A. M. A. 74: 602 (Feb. 28) 1920.

November 30, the patient developed acute obstruction. At operation a large pelvic abscess was found with much matting of loops of small intestine. These were separated, and the abscess was drained. A lateral anastomosis between the ileum and the transverse colon was performed, as there was doubt regarding the free passage to the anus, and the small intestine was greatly distended. Convalescence was uneventful. The bowels moved chiefly by rectum.

Condition on Admission.—When the patient entered St. Anne's Military Hospital, June 22, 1919, his general condition as regards nutrition was fair, and his color good. Mentally he was very dull and melancholy. It seemed to be impossible for him to think of anything other than the fecal discharge from his side. With the exception of marked limitation of respiratory effort of the left side of the chest, and diminished breath sounds, examination of the chest was negative. Examination of the abdomen revealed separation of the right rectus muscle at the site of a long laparotomy incision. At this point there was bulging. In the center of the weakened area the muscle was separated 7.5 cm. Over the lower part of the left lower costal area, in the axillary line, there was a large scarred area approximately 16 by 20 cm. in diameter, in the center of which there was an elliptic scar covered by mucous membrane 10 by 7 cm. in size. On examination with the finger it was possible to enter the bowel at two points, the one opening entering the distal portion of the transverse colon, the other the proximal portion of the descending colon. Portions of the seventh and eighth ribs were apparently missing.

The patient was wearing a special corset, both for the support of the abdominal hernia and to retain the dressing over the discharging anus. Approximately one quarter of the fecal discharge escaped into the flank, three quarters being passed normally. The fecal discharge from the side was practically free from odor, and caused no excoriation of the skin.

Despite the fact that the papers accompanying the patient from England advised strongly against further operative interference, it was determined that in view of the intolerable condition in which the patient found himself, his discharge



Fig. 1.—Condition of patient before operation.

from the army in this state without some further attempt to improve his condition should not be accomplished.

Operations and Result.—August 6, an incision was made along the mucocutaneous border encircling the protruding intestine, which was dissected from the underlying tissue. The posterior surface of the intestine was found to be covered by peritoneum with the mesocolon intact. Above, the pleura was fixed to the deep surface of the protruding intes-

tine, and below, the peritoneum was likewise attached. Both pleural and abdominal cavities were opened and packed off. It was found that the mesocolon was replacing the diaphragm, and hence divided the pleural from the peritoneal



Fig. 2.—Condition of patient on discharge.

cavities. The splenic flexure was cut across, and the proximal end closed by a Connell suture and invaginated by a double purse string. The stump of the proximal colon was sutured to the parietal peritoneum. The distal segment of the intestine was pulled well out of the wound and wrapped

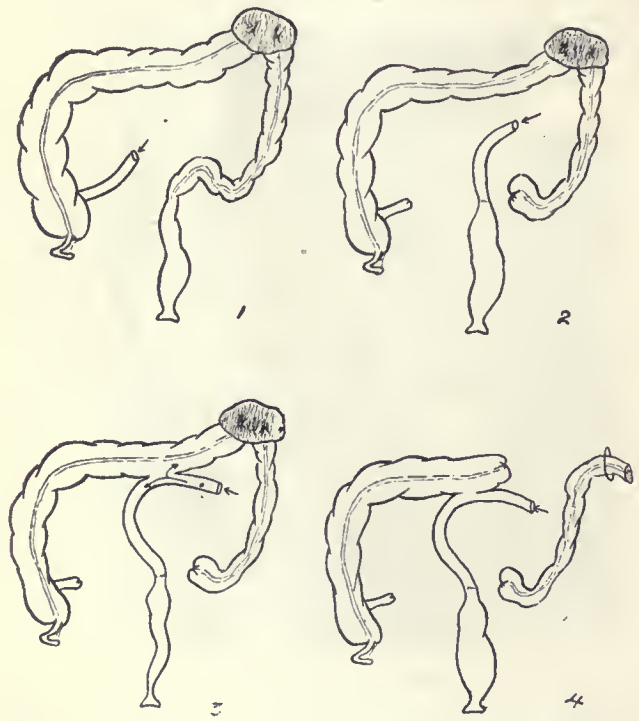


Fig. 3.—Course of intestinal contents after: (1) original wound; (2) first short-circuiting operation; (3) second short-circuiting operation, and (4) closure of artificial anus.

in paraffin gauze. The parietal peritoneum was separated somewhat from below and sutured to the cut edge of the mesocolon. The pleura was sutured to the upper edge of the mesocolon, thus reestablishing the mesocolon as an artificial diaphragm. Poorly nourished scar tissue surrounding the original artificial anus was excised. As a result of this removal of scar, and more particularly as the result of the removal of the bowel from the opening, all sutures were found to be under great tension. In order, if possible, to prevent the breaking down of the wound and the opening of both pleura and peritoneal cavities, double No. 4 chromic catgut was passed above the fifth and below the eighth ribs. The patient was postured so as to bring these ribs into as close contact as possible, and the sutures were pulled tight. Following this procedure, the entrance of air into the pleural cavity was arrested.

A flap of skin and subcutaneous tissue with its pedicle behind was turned down from the upper part of the chest and sutured over the operation area. The corners of the denuded area were sutured to prevent retraction. A small paraffin gauze drain was passed beneath the flap of the skin to the proximal stump of the intestine, and the denuded area was covered with a bismuth iodoform petrolatum paste dressing. The wound was dressed at four day intervals.

The transplanted flap healed by first intention. On the tenth day the sutures were removed. The site from which the flap was removed was found covered with healthy granulations. The general condition of the area operated was found to be very satisfactory.

On the seventh day following operation the patient, who at all times was difficult to control, walked for his midday meal, a distance of half a mile to the Red Cross hut.

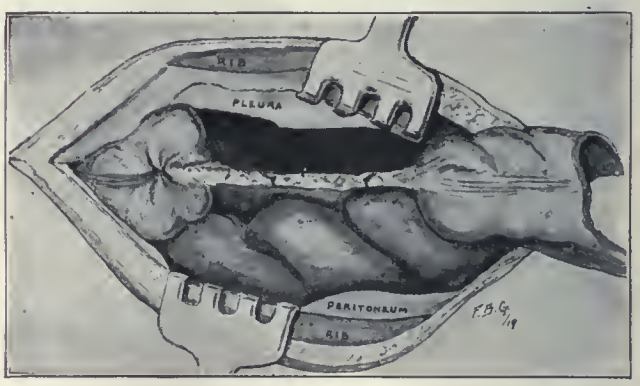


Fig. 4.—Operative field.

August 29, a radical repair of the abdominal hernia was performed. The raw surface of the chest was grafted (Thiersch). The free end of the colon was excised, and the free edges were sutured to the abdominal wall.

September 9, the abdominal sutures were removed. There was a practically complete "take" of the skin graft. After the operation the patient's condition was very satisfactory. By October 15, on which date he went on leave, he had gained 17 pounds, and was bright and mentally alert.

Condition on Discharge.—On discharge from the service, Dec. 1, 1919, he had gained 30 pounds, and will apparently make a useful citizen. A small patch of mucosa representing the upper end of the splenic sigmoid pouch is discharging very little mucus. A roentgenogram demonstrates that no barium enters the ascending or transverse colon. There is marked limitation of respiratory effort on the left side. The patient is free from pain, discomfort or digestive disturbance, and he no longer finds an abdominal support necessary.

115 Stanley Street.

Loss of Health.—The transition from vigor to health, from health to impairment, and from impairment to disease is gradual, almost imperceptible. The loss of vitality does not take place abruptly, suddenly, in ways that stagger and arrest one's attention, but our vital losses, like our financial losses, are in driblets, in pennies, nickels and dimes, and occasionally quarters. And in the one case, as in the other, we do not become alarmed until our surplus is dangerously drawn on.—W. S. Rankin, *Tr. Assn. Life Ins. Presidents*, 1919.

A NEW TONSIL INSTRUMENT

J. G. ROHRIG, M.D., BENNETT, IOWA

The tonsil enucleator is not a snare, nor is it a cutting instrument or a guillotine. It has a dull blade with an oval shaped opening. The ring encircling this opening is an incomplete one having a 5 mm. gap in its lower part, as shown at *A* in Figure 1. This gap is hidden, and the ring a complete one when the blade is in the position shown at *B* in Figure 1. By this gap the enucleator may be hooked over the tonsil forceps while the latter keeps its grasp of the tonsil, as shown in Figure 2. The handles are then pressed until the catch on the lower part of the channel supporting the blade is felt to engage the notch on the lower edge of the blade. The ring is now again a complete one encircling the tonsil forceps, as in Figure 3.

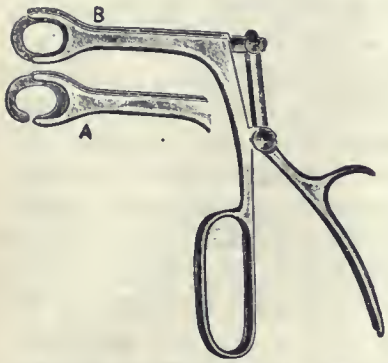


Fig. 1.—Tonsil enucleator: *A*, gap for passing over tonsil forceps; *B*, position when gap is hidden and ring is ready for passing over tonsil.

The tonsil being held by a good grasp of the forceps secured before the dissection of pillars is begun, the enucleator is instantly placed in position, as shown in Figure 3. The ring is passed well down behind the superior lobe of the tonsil while the distal part of the ring is brought well out to include the inferior lobe, or pole. By pressure of the handles the dull blade is moved, and the entire tonsil with its capsule is peeled out with as little injury to blood vessels and tissues as is possible. The distal part of the blade can be passed well outward to include the inferior pole of the tonsil, while a wire loop cannot be passed beyond even a slight obstruction. The first grasp of the tonsil by the tonsil forceps should be sufficiently deep to engage the fibrous trabeculae, which gives a good bite that will not tear out, and no further laceration or grasping of friable superficial tissue is needed. With a good bite, the pillars are dissected, the upper and anterior part of the tonsil with the capsule is loosened, the enucleator is applied and placed to include



Fig. 2.—Tonsil enucleator being hooked over tonsil forceps.



Fig. 3.—Completed ring after tonsil enucleator has been placed over forceps; handles are pressed until it is felt that catch has engaged notch.

the lower pole, and the operation completed without a second grasp. Even after it is constricting the tissues, the enucleator may be instantly removed from the throat, if it is desired to dissect a pillar. The little dissection may be done, and the enucleator replaced instantly. This cannot be done with a wire loop. Not only does the dull blade better follow the irregularities of the capsule than does a sharp edge or a wire loop, but, in addition, the crushing division by the dull blade is followed by less bleeding, and less opportunity for organisms to gain entrance to the circulation, than if division of tissue were by sharp edge or wire.

This method does not require outward pressure in the direction of the angle of the jaw to bring the tonsil into the ring of the instrument, and therefore the surrounding tissues are not traumatized. Trauma to these structures is not desirable, especially if active organisms are present at the time.

A NEW AND EASY METHOD FOR DEMONSTRATING SPIROCHAETA PALLIDA

S. D. COFFIN, A.B., M.D., SEATTLE

A piece of passe-partout or black paper, the size of a quarter, pasted on the bottom of the Abbé condenser of the ordinary microscope will facilitate the making of dark field examinations for *Spirochaeta pallida*. I have employed this method for the last six months, and found it even better than the regular "dark field" attachment sold for the purpose.

A hooded light of 100 watts, about 8 cm. above the work bench, is employed. A piece of black passe-partout binding, the size and shape of a quarter, is pasted on the center of the lower (convex) surface of the Abbé condenser, the top of which should be level with the top of the stage of the microscope. The high (4 mm.) objective is used. The specimen should be thin, and evenly distributed between the coverslip and the slide. Care should be taken to wash the lesion only with cold water. Strict instructions should be given to the patient not to put any medicines, even soap, on it until the diagnosis is made, for even the mildest antiseptics make it impossible to find the spirochetes.



Fig. 1.—Method for demonstrating Spirochaeta pallida: *A*, side view of Abbé condenser; arrow points to black paper; *B*, bottom view.

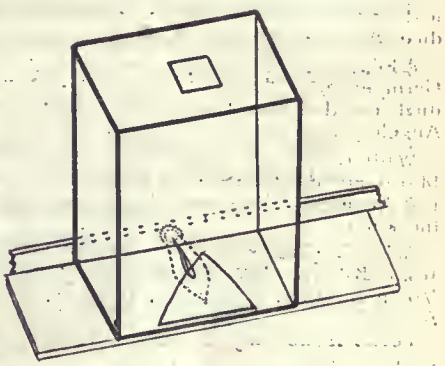


Fig. 2.—Hood for light.

Heavy liquid petrolatum is used between the slide and the upper surface of the condenser. Oil should not be used on the upper surface of the specimen, that is, the high, dry lens should be used.

The light is regulated with the lower shutter of the condenser till the field looks like the clear sky on a moonless night. Two fields will be found; one should rack slowly through the first field to the second, where *Spirochaeta pallida* will be beautifully demonstrated.

201-204 Yale Building.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

ACETYLSALICYLIC ACID (See New and Nonofficial Remedies, 1920, p. 247).

Acetylsalicylic Acid-Heyden.—A brand of acetylsalicylic acid complying with the N. N. R. standards.

Manufactured by the Heyden Chemical Works, Garfield, N. J. No U. S. patent or trademark.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, MAY 22, 1920

It is unnecessary to remind our readers that periodical publishers are at present living under a sword of Damocles. In this instance the sword is "paper shortage." It has been the rule of THE JOURNAL to keep a six to eight weeks' supply of paper on hand in order to be ready for emergency, but, because of freight difficulties, this reserve has gradually dwindled almost to the vanishing point. Somewhere between the paper mills and Chicago there are more than a hundred tons of paper en route to THE JOURNAL. One car was shipped more than six weeks ago and others have since followed at regular intervals. This announcement is made so that our readers may have explained beforehand any contingency which may occur: It may be that THE JOURNAL will be sent out in a thin paper cover; it may be necessary temporarily to reduce the number of pages; there is a bare possibility that some issue may be seriously delayed.

BEE POISON

The mention of animal poisons—so-called zootoxins—is likely first of all to bring to mind the venoms of snakes. This type of highly toxic substances has been extensively investigated, notably by Flexner and Noguchi[1] in this country. The effects produced by venoms are varied and undoubtedly due to a number of distinct components, including hemotoxins (that is, hemolysins and hemagglutinins), neurotoxins, endotheliotoxins and leukocytolysins. Their precise chemical nature has not yet been ascertained. In addition to these harmful products, practical medicine has to deal with the poisons of various insects: scorpions, spiders, centipedes, ants, wasps and bees.[2]

Bee poison is probably encountered most frequently. Fatal intoxication in man as a result of the sting of bees is by no means unknown. The bee poison has awakened the interest of investigators, not merely because its effects need frequently to be counteracted in persons who have been stung, but also because it formerly acquired some reputation as a therapeutic product, with a history of many years' standing. The sting of bees has been recommended in many parts of the world, usually as a suggestion of popular lay therapy, for palliating a great diversity of disease conditions, among which rheumatic disorders stand foremost. Even physicians have not been averse to the trial of treatment with bee poison, and there are records of patients subjected to increasing numbers of "bites" up to a total of fifty, or even a hundred, a day. In such cases the effects have been far more pronounced than mere local manifestations of bee sting.[3]

It is no longer satisfying to the inquisitive worker to designate a harmful substance, such as may be contained in the bite of an insect, by the vague name of toxin. Students now demand some knowledge of the chemical nature of the toxins. Are they protein in nature, so that the possibility of developing antitoxic substances may be reckoned with? Or are they well defined organic or inorganic compounds for which a chemical antidote can be secured? These are the sorts of questions that are likely to be asked nowadays in considering animal poisons. From the standpoint of the investigator, some of the difficulties become evident when it is recalled that the secretion of a honey-bee represents at best 0.0003 or 0.0004 gm. ($\frac{6}{1000}$ grain), two thirds of which is water. The residual substance is known to include a variety of compounds, including considerable protein.

That the poisonous component of the toxic secretion of the bee is not a protein was shown by Langer.[4] This discovery made it highly improbable that an immunity to bee poison can be developed through the usual mode of antibody production, as this type of biologic protective response is usually, if not always, associated with protein antigens. Immunity of some sort undoubtedly does exist, if one may trust the personal testimony of beekeepers. Bee poison is known to be markedly hemolytic; and its potency in producing severe inflammatory reactions, with edema and necrosis, has been demonstrated beyond doubt. These different phenomena are usually associated with potent agencies of quite unlike chemical character.

The latest information contributing to the explanation of the action of the bee poison is the outcome of studies by Flury,[5] who has actually worked with the product from several hundred thousand bees. Langer had believed that the protein-free bee poison was a nonvolatile organic base. Flury regards it as a compound of far greater complexity. A considerable part seems to be lipoid in character. By hydrolysis it has been possible to split off cholin, glycerol, phosphoric acid, palmitic and other fatty acids, an indol deriva-

1. Noguchi, Hideyo: Pub. 111, Carnegie Institution of Washington, 1909. Calmette: Les venins, les animaux et la sérothérapie antivenimense, Paris, Masson & Cie, 1907.
2. Faust, E. S.: Die tierischen Gifte, Brunswick, 1906.
3. Keiter, A.: Rheumatismus und Bienenstichbehandlung, Vienna and Leipzig, 1914.
4. Langer, J.: Ueber das Gift unserer Honighiene, Arch. f. exper. Path. u. Pharmakol. **38**: 381, 1896; Abschwächung und Zerstörung des Bienengiftes, Arch. internat. de Pharmacod. **6**: 181, 1899.
5. Flury, F.: Ueber die chemische Natur des Bienengiftes, Arch. f. exper. Path. u. Pharmakol. **85**: 319 (Jan.) 1920.

tive, presumably tryptophan, and an unidentified non-nitrogenous component. Some of these disintegration products are undoubtedly derived from phosphatids like lecithin. The last mentioned non-nitrogenous fragment is assumed to be the pharmacologically active component of bee poison. It can produce hemolysis, and behaves like the hemolytic saponins. In view of these findings Flury regards the bee poison, in its natural form in the secretion, as a complex of lecithin with basic components, showing resemblances to the protein-free sapotoxins, on the one hand, and to poisons of the cantharidin type, on the other. Snake venoms also include saponin-like poisons which account for their hemolytic properties. The potency of cantharidin as an irritant poison helps to explain the hyperemia and attendant symptoms that bee stings call forth.

THROMBOPLASTIC PRODUCTS

It has long been known that most tissues furnish something that can play a potent part in the coagulation of the blood. In the usual process of clotting which occurs after a hemorrhage and thus represents one of the most effective protective mechanisms of the body, contact with tissues inevitably occurs. The blood itself, as it exists in the circulation, remains fluid under normal conditions because it lacks active thrombin, one of the essential factors in the clotting process. It has often been pointed out that if the plasma could be removed from the blood vessels without coming into contact with tissues and without destruction of any of the formed elements of the blood itself, it would tend to remain fluid as it exists within the vessels. Experimentally, plasma has been secure in this way; it clots promptly on addition of tissue extract.

The possibility of controlling hemorrhage more effectually in some cases by supplying a thromboplastic substance, as the tissue factor has been designated, long since suggested itself. Obviously, such a therapeutic procedure could not be expected to promote a successful outcome unless all the other essential factors —fibrinogen, calcium, etc.—were also present in adequate amount. Attention was directed some time ago to the use of extracts of tissues or certain cells, notably the blood platelets, in the attempt to produce effective hemostatic products. Some of them have already been the subject of patents.

The probability that the active component in tissue extracts is lipoid in nature was suggested by earlier investigators. In 1912, Howell[1] of Johns Hopkins University reached the conclusion that the thromboplastic substance is a phosphatid, which he subsequently identified with cephalin. Following this lead, commercial thromboplastic products have commonly been prepared from brain tissue, a material known to be rich in cephalin.[2] Whether they shall find a permanent place in therapy remains to be seen. Recently, however, Mills[3] of the University of Cincinnati has found lung extracts to be more active as thromboplastic agents than are the extracts of any other tissues tested, kidney coming second, and then heart, brain, spleen, thymus, testes and skin, somewhat in the order named. The remaining tissues were weakly active as compared to lung, some of them showing very slight thromboplastic action. In considering a possible biologic significance of this unlike coagulative action of different tissues, Mills asks whether the marked potency of the lung may not represent a special protection in pulmonary diseases, in which extensive destruction of the tissue occurs. In the case of the kidney, likewise, a peculiarly effective protection against hemorrhage in a vital organ may be postulated. Whether or not lung tissue will offer a better starting point for the preparation of therapeutically available hemostatic extracts remains to be seen. Obviously, if the active principle is identified with certainty, its most advantageous preparation will not necessarily depend on the potency of any particular tissue, but rather on the most available source of the definite chemical compound concerned.

1. Howell, W. H.: Am. J. Physiol. **31**: 1, 1912; The Coagulation of the Blood, Harvey Lectures, 1916-1917, p. 288.

NEW INTESTINAL PARASITES: A PLEA FOR MORE CAREFUL FECAL EXAMINATIONS

The extensive examinations made on soldiers during the war, and previously on many hundreds of civilians as part of the modern attempts to eradicate hookworm infection, have emphasized the paucity of our information regarding the intestinal zooparasites of man. Tapeworms and roundworms have long been recognized; some species are, in fact, not easy to overlook, owing to their conspicuous size and characters. The systematic use of the microscope has, however, revealed unexpected numbers and numerous novelties in the nature of such parasitic invaders.

About a year ago Kofoid and White,[4] working in the army laboratory car *Metchnikoff*, reported that a nematode (roundworm) ovum, apparently undescribed, had been found in 429 cases among approximately 140,000 soldiers examined. This is a characteristic illustration of what careful examination on a large scale may bring to light in clinical diagnosis. The ovum in question possessed a uniqueness in addition to its novelty, for it was said to be the largest ovum of intestinal worms encountered in human stools. Its dimensions averaged 95 by 40 microns, but the size was extraordinarily variable in different specimens. Kofoid and White were unable to identify the species, though they

2. New and Nonofficial Remedies, 1920, pp. 18 ff.
3. Mills, C. A.: The Activity of Lung Extract as Compared to Extracts of Other Tissues, in Inducing Coagulation of the Blood, J. Biol. Chem. **40**: 425 (Dec.) 1919.
4. Kofoid, C. A., and White, A. W.: A New Nematode Infection of Man, J. A. M. A. **72**: 567 (Feb. 22) 1919.

regarded it as related to *Oxyuris vermicularis,* the well known pinworm, seatworm or mawworm.

This record has now been surpassed by the finding of the eggs and specimens of an oxyurid hitherto unreported for man.[5] They came from a child living in the Philippine Islands. The ova are stated by Riley, who identified them at the University of Minnesota, to measure 125 by 40 microns. The worms, though resembling the genus to which the ordinary pinworm belongs, probably are of the species *Syphacia obvelata.*[6] Along with them appeared fragments of the rat tapeworm of man, a cestode likely to be found quite common in the United States. Thus, Frey [7] found this tapeworm not long ago in a third of the inmates of a Southern orphans' home, this incidence being exceeded only by that of hookworm infestation in the same group of 270 children.

These dwarf tapeworms are common to rodents, notably rats and mice. In man they are easily overlooked because of their small size, so that intensive routine examinations, such as hookworm tests require, alone afford a diagnosis. In the Philippine instance just recorded, a rodent tapeworm was found in a case in which the food of the child had evidently been contaminated by rats or mice. It is not improbable that these rodents also may have been responsible for the occurrence of the ova of the newly described species of roundworm. The circumstances related in the foregoing summary indicate the great importance of careful fecal examinations—an essential routine all too often entirely neglected.

"CHRISTIAN SCIENCE" AND SLOPPY THINKING

A New Jersey salesman, who claims to have been a member of the "Christian Science" faith for three years, was recently found guilty of manslaughter because he had permitted his 9-year-old daughter, who was suffering from diphtheria, to die without medical treatment. The little girl was given "treatment"—"absent" and otherwise—by a professional "Christian Science" practitioner. The man was fined $1,000 and costs. The judge, in imposing sentence, is reported to have said:

> In the light of present-day science, which is the result of many years of progressive experiment and demonstration, no one is justified in neglecting the use of such agencies as have been shown to be efficient in the treatment of malignant and contagious diseases, and this is especially true where one is charged with responsibility over the life of another, and particularly of a child of tender years, who has no option but to rely on the common sense and good judgment of its natural protector.

The verdict has brought to light, as such verdicts are likely to do, the loose thinking that characterizes so many of the so-called intellectuals of today. Well-meaning people, who deny that they are followers of Mrs. Eddy, have written to the newspapers denouncing the verdict and declaring that it is little less than a crime that a man should be punished for following the dictates of his conscience. The main point stressed by such people seems to be that as children occasionally die of diphtheria under medical treatment, there is no reason for getting excited when a child dies under "Christian Science" treatment. The argument, of course, is fallacious. The efficacy of the modern scientific medical treatment of diphtheria is not a matter of theory, belief or conscience—it is a matter of fact. Its efficacy is as demonstrable as is the efficacy of the Westinghouse air brake. The parent or guardian who fails to give his child or ward the benefit of modern medical treatment for diphtheria becomes as culpable as a railroad would be if it failed to equip its passenger trains with air brakes. Sometimes, it is true, the air brake fails to avert a fatality; but that is not the fault of the air brake, nor is it any argument for its abolition.

If an adult in his own right mind wishes to be treated by "Christian Science" or any other unscientific methods, there can be no objection, provided the disease from which he is suffering may not, through such treatment, become a menace to the community. Children of tender years, however, should not be sacrificed to the distorted views of those who are supposed to be their protectors.

Religious beliefs should be respected and, in general, they are respected. Where, however, religious beliefs conflict with the general welfare, such beliefs must give way. Presumably, the Mormons were sincere in their belief in polygamy; that particular tenet of their religion, however, had to give way to the more enlightened belief of the rest of the community. The Dukhobors that migrated to Canada were undoubtedly sincere in their belief that they should go nude, and the practice of this belief was undoubtedly less of a menace to the community than are some of the bizarre views held by "Christian Scientists" regarding the cause and treatment of disease. Nevertheless, the Dukhobors had to put on clothes. It is conceivable that we might have transplanted to this country some of the religious beliefs of India, but it is doubtful whether public opinion in the United States would ever look with equanimity on Sutteeism, even though the widows might declare that being burned on the funeral pyres of their deceased husbands was a matter of their own personal belief and was none of the concern of the general public. Only a few weeks ago a man in Chicago shot his son with the avowed intention of killing the boy because he feared the lad was acquiring bad habits and he wished to save the boy's soul. We have not yet noticed any letters of indignation protesting against the man's arrest. Possibly this

5. Riley, W. A.: A Mouse Oxyurid, Syphacia Obvelata, as a Parasite of Man, J. Parasitol. **6**: 89 (Dec.) 1919.
6. Seurat, L. G.: Sur les oxyures des mammifères, Compt. rend. Soc. de biol. **79**: 64, 1916.
7. Frey, J. H.: Helminthiasis at the Texas State Orphans' Home, Texas State J. Med. **11**: 229, 1915.

is because he represents a minority. Should such beliefs ever reach the dignity of a religious cult with money and well-organized publicity machinery behind it, there would doubtless be found many to defend the killing of minors for the purpose of "saving" them.

Current Comment

THE STREPTOCOCCI COMMONLY FOUND IN MILK

Streptococci are associated by the bacteriologically trained mind with inflammation and suppuration and all the dangers that they may entail. Hence, when it was reported that the streptococci that cause garget or mastitis in cattle are found abundantly in the milk of infected cows, it was easy to speculate on the possible ills of mankind that might follow the drinking of raw milk. How to make the indispensable food, milk, safe is an important problem. As we cannot escape the ever-present bacteria of our environment, it is essential that their nature should be recognized. It has been realized for some time that not all micro-organisms are baneful; some are even beneficent. Let it be said clearly, also, that not all streptococci are virulent. For a number of years it has been customary to lay stress on cleanliness of both man and beast in the handling of milk for human consumption. There is no longer any doubt that attention to this factor will greatly reduce the microbial content, the keeping qualities, and in general the wholesomeness of market milk. But it may come as somewhat of a surprise to many that the external, environmental factors related to the cow are by no means always the most menacing to the bacteriologic purity of milk. Man, the carrier of harmful species, is of course a constant source of danger; but the "dirt" that accumulates mechanically about the animal is far less threatening. According to the most recent observations of Jones [1] at the Rockefeller Institute Laboratories at Princeton, neither the fecal nor the skin streptococci of cows have been isolated from unpasteurized bottled milk of good grade with any great frequency, despite the fact that nonhemolytic types of these micro-organisms can be found in the vagina, saliva, skin and feces of the cattle. The principal source of the streptococci in milk, according to Jones, is the cow's udder. Most of the streptococci agree in character with mastitis streptococci, a fact that may now be regarded as definitely established. Although these have been observed in the milk marketed from a large herd during the last two years, diseases traceable to this milk supply have never been reported. Jones therefore believes that this evidence points to the low pathogenicity for man of the streptococci, particularly udder types, derived from the cattle and found in their milk. If this is established, such streptococci may be excluded as the source of severe epidemics of milk-borne sore throat. For this, human agencies must still be held responsible.

1. Jones, F. S.: Source and Significance of Streptococci in Market Milk, J. Exper. Med. 31: 347 (April) 1920.

THE DEADLY MOTOR CAR

In an analysis of the accidents occurring in St. Louis during March, 1920, the National Safety Council indicates that there were eleven fatalities and 187 persons injured in 494 automobile accidents. This, it must be noted, was in one month and in a city of less than a million population. The total number of accidents of all kinds was 791, so that the automobile accidents constituted almost two thirds of the total. The property damage was estimated at $39,500. The causes were not determined in 190 instances; skidding was responsible for ninety-one; careless driving for 205, and careless walking for twenty-seven. Quite a few of the accidents are ascribable to the carelessness of the motorist in giving the signal of his intent to turn, to pass, to stop, to back or to drive out from the curb. A few accidents were due to the glare of undimmed headlights. The great majority of all traffic accidents and fatalities are due to "carelessness." It is a safety aphorism that carelessness can be overcome only by education.

THE ACQUIRED TOLERANCE FOR MORPHIN

The explanations of those forms of idiosyncrasy which consist in failure of a person to react to the ordinary dose of a drug have been both varied and inconclusive. The instance technically designated as acquired tolerance represents a greatly decreased susceptibility to a drug as the dose is repeated. The person becomes readjusted to a new agency, whether it be alcohol, nicotin, arsenic or an opium alkaloid. Thus are drug habits formed. How does an originally sensitive and responsive organism acquire an immunity whereby it may withstand a previously toxic and sometimes ordinarily fatal dose? Apparently in some cases the tissues become adapted to the drug so that it no longer reacts as a foreign substance. Sometimes the intestinal absorption of the compound may decrease with increasing use by oral administration. This explanation has been offered for the acquired tolerance for arsenic, it being reported that frequently when large amounts are becoming tolerated by mouth, much smaller doses given subcutaneously may be toxic. Again, the defenses of the organism may become strengthened, so that a given compound is more readily destroyed by oxidation in the body. In some cases, antitoxic agencies of a chemical nature may actually come into prominence. Whether any of these possible mechanisms explanatory of tolerance are specific for individual drugs, or whether they represent more general biologic responses which might meet a variety of exigencies, is not so clear. It has been reported that the prolonged use of one drug may establish tolerance for others of the same class. Thus, it is said that chronic alcohol drunkards are more resistant than ordinary persons to the action of chloroform. If this is true, the explanation may lie in the fact that the chemically related chloroform and alcohol induce the same changes in the protoplasm. Precisely how tolerance to morphin is acquired is not yet clear. Faust [1] believed that whereas normal persons excrete

1. Faust, E. S.: Ueber die Ursache der Gewöhnung an Morphin, Arch. f. exper. Path. u. Pharmakol. 44: 217.

this alkaloid practically unchanged, showing that it circulates as such in the body, in those having a "habit" for morphin it is partially destroyed. This hypothesis of an increased destruction of the drug in tolerance has not been tenable in the light of subsequent researches.[2] Biberfeld[3] has demonstrated, however, that the tolerance to morphin is quite specific. In animals "immunized" to this narcotic, ordinary doses of a drug even so closely related as is diacetylmorphin (heroin) are unquestionably potent. Furthermore, according to Biberfeld's studies in the Pharmacologic Institute at Breslau, marked tolerance to morphin does not protect against the soporific barbital (veronal), nor against scopolamin or cocain. It has been asserted from time to time that the blood of persons exhibiting high tolerance contains protective, antagonistic or "immune" substances which are developed with the immunity to morphin. Carefully conducted investigations with the serum of tolerant animals have, however, thus far failed to afford any real substantiation of these assertions.

RESPIRATORY DISEASE TRANSMISSION BY INANIMATE OBJECTS

Cumming[4] has suggested, in discussing the transmission of influenza and influenzal pneumonia, that the hands are important factors in the conveyance of germs to healthy persons, and furthermore that hand-to-mouth infection will account for the major part of this transmission. In these studies the methods of washing army mess-kits were particularly concerned, as the wash water served as a means for the contamination of the hands in the groups showing high influenza rates. In a later article,[5] Cumming reports the results of a study of pneumonia in institutions, in some of which eating utensils were washed by hand and in others by machine washers. In the first group the pneumonia rate was much higher than in the second group. Still more recently the same investigator[6] has laid primary emphasis on tableware, particularly spoons, forks and knives, as a means of transmitting tuberculosis. This point of view is confirmed by deaths of guinea-pigs from tuberculosis in 25 per cent. of instances after injections of sediment from water in which spoons used by tuberculous patients had been rinsed after washing. In accepting these findings, however, it should be remembered that in intelligent households silverware is usually both washed and rinsed before being used again. It would be interesting to know the influence of the combination of these operations on freeing spoons from tubercle bacilli. The work of Cumming focuses the attention of sanitarians on other means of conveying germs of respiratory diseases than by droplet infection directly from mouth to mouth. More data are needed to show that these means are really the major ones. It is probably true that the inanimate objects and hands are capable of conveying disease germs as well as are the infectious droplets, and it is possible that too little attention has been given to them.

2. Cloetta, M.: Ueber das Verhalten des Morphins im Organismus und die Ursachen der Angewöhnung an dasselbe, Arch. f. exper. Path. u. Pharmakol. **50**: 453. Rübsamen W.: Arch. f. exper. Path. u. Pharmakol. **59**: 227.

3. Biberfeld, J.: Zur Kenntnis der Morphingewöhnung, II, Ueber die Spezifizität der Morphingewöhnung, Biochem. Ztschr. **77**: 283 (Nov.) 1916.

4. Lynch, C., and Cumming, J. G.: Am. J. Pub. Health **9**: 25 (Jan.) 1919. Cumming, J. G.: Ibid. **9**: 414 (June) 1919.

5. Cumminig, J. G.: Am. J. Pub. Health **9**: 849 (Nov.) 1919.

6. Cumming, J. G.: Can the Tuberculosis Transmission Rate Be Reduced? J. A. M. A. **74**: 1072 (April 17) 1920.

IN THE COURSE OF THE DAY'S WORK

An interesting though not unique case is described in a recent bulletin sent out by the Federal Board for Vocational Education. Among the blinded ex-service men was a negro who seemed to be blind in both eyes. Neither eye could perceive five fingers at any distance. He had faint light perception and there was hope for sight restoration in one eye. The man was about to be assigned to a workshop for the blind when a physician managed to persuade him that he was not blind. The report of the case reads:

> He was suffering from psychoneurosis hysteria giving rise to marked blepharospasm and photophobia and amaurosis. All physical findings negative. Treatment by suggestion completely cleared up all symptoms and I discharged this man cured.

This case is not referred to because it is unique in medicine for, as physicians know, it is not. Had the man regained his sight, however, while under "Christian Science" treatment or while having his vertebrae pushed by a chiropractor, what a to-do would have been made of it. The case would have become a classic in the annals of the cult. As it is, the incident would never have reached the public eye had it not been for the bulletin of the vocational educational board.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

DELAWARE

Child Welfare Activities.—On request of the Delaware Reconstruction Commission, an officer of the United States Public Health Service has been assigned to duty in Wilmington in the office of the director of this commission as medical director of the child hygiene activities. He has under his supervision a number of children's clinics and health centers already established and will advise and assist in the establishment of others. In addition, he will exercise general supervision of medical inspection of schoolchildren about to be undertaken in the state in cooperation with a number of authorized and volunteer agencies.

DISTRICT OF COLUMBIA

Personal.—Dr. Van H. Manning, director of the Bureau of Mines, Department of the Interior, has tendered his resignation, effective June 1. Dr. Manning is leaving the government service to accept the position of director of research with the recently organized American Petroleum Institute. ——Dr. Ross McC. Chapman, for more than four years assistant superintendent of St. Elizabeth's Hospital, Anacostia, has been appointed medical superintendent of the Sheppard and Enoch Pratt Hospital, Towson, Md.

Survey of Delinquents.—On request of the judge of the juvenile court of the District of Columbia, officers have been assigned to the probation office for the purpose of making physical and mental examinations of juvenile delinquents and supplying the court with information relating to the physical and mental status of such delinquents, to be taken

into consideration in arriving at judicial decisions. Each child coming before the court will be subjected to an intensive physical and mental examination. These will be accompanied by careful medical-social follow-up work.

ILLINOIS

Personal.—Dr. Frank P. Norbury, Springfield, has been appointed neuropsychiatrist to the Wabash Railway System. ——Dr. Arthur F. Stotts, Galesburg, was shot by the husband of a patient, May 8, and is under treatment at the Cottage Hospital, Galesburg.

The Venereal Disease Menace.—A special discussion arranged by the Illinois Social Hygiene League was held at the Rockford Theater, Rockford, May 18. Moving pictures of venereal disease treatment were shown, and described by Dr. Alec N. Thomson, Brooklyn; Assistant Surgeon-General Claude C. Pierce, U. S. P. H. S., spoke on "Venereal Disease and the Local Practitioner," Dr. William L. Baum, Chicago, on "Local Phases of the Venereal Disease Menace," and Robert H. Gault, professor of criminology in Northwestern University, and president of the league, detailed the plans of the Illinois Social Hygiene League.

Organized Chiropractors Checked.—A report from the director of registration and education of Illinois states that twenty-five chiropractors have been enjoined by the circuit court of Rock Island County from treating human ailments without state licenses. These twenty-five chiropractors are members of Class "A" of the Universal Chiropractors' Association with headquarters at Davenport, Iowa. The Class "A" members of this association pay a membership fee and quarterly dues. In consideration of the payments, the association pays all fines assessed against them by the courts in Illinois for practicing without licenses. It also pays the fees of attorneys for defending them. When a chiropractor is fined in the courts, he is advised by the officers of the association to continue in his unlawful practice. The circuit court of Rock Island has temporarily enjoined these chiropractors from treating human ailments without licenses and has also enjoined them from carrying out the terms of their unlawful agreement with one another. They are enjoined from contributing to and paying, or paying any part of, the fines and costs and also the expenses and attorney fees that are assessed, or the expenses incurred by any person other than the one prosecuted in an individual case. B. J. Palmer, head of the Palmer School of Chiropractic at Davenport and secretary of the Universal Chiropractors' Association, is enjoined from paying the fines, costs, expenses and attorney fees of Class "A" members in Illinois. Thomas M. Morris and Fred Hartwell of LaCrosse, Wis., attorneys for the association, are enjoined from representing in the Illinois courts any of the members of the Universal Chiropractors' Association. The chiropractors who are enjoined are: Charles J. Brutus, Jesse Newman, Dora K. Yunker and F. W. Linsenmeyer, Champaign, Champaign County; R. E. Davenport, Chicago, Cook County; B. A. Clayton, Mrs. E. E. Clayton and A. H. Morrow, Kewanee, Henry County; Lena M. Warrick and T. L. Warrick, Ottawa, LaSalle County; Mary E. S. Fulleton Tiska and A. W. Tiska, Highland, Madison County; J. C. Underwood, Bloomington, McLean County; Philip H. Griggs, Jacksonville, Morgan County; W. J. Buchanan, Riley E. Bowman, E. T. Henry and S. F. Stewart, Peoria, Peoria County; Emma Calvin, Monticello, Piatt County; H. N. Mettler and Emma S. Rooks, Rock Island, and I. H. Beckholt, East Moline, Rock Island County; R. W. Peerman, Eldorado, Saline County; Elizabeth Goss, Delavan, Tazewell County, and J. L. Hubbard, Minonk, Woodford County. The writ in the injunction proceedings was signed by Attorney-General Brundage, State's Attorney Bell of Rock Island County, and Francis W. Shepardson, director of registration and education. The bill asks that other Class "A" members of the association who have conspired and confederated may be made parties defendant to the bill and bound by the order of the court as soon as their names are ascertained.

Chicago

Personal.—Dr. C. Hubart Lovewell and Elmer E. Simpson were overcome by fumes from a gas heater while attempting to revive patients who had been overcome by gas.—— Dr. Charles Louis Mix has accepted the position as head of the department of medicine of Loyola University School of Medicine.

Medical School Recognized.—A letter from the president of the Bureau of Medical Education and Licensure of Pennsylvania states that on April 21 the bureau voted to include Loyola University School of Medicine on its approved list, not only admitting its graduates to examinations but also receiving them through reciprocity.

INDIANA

Smallpox Epidemic.—An epidemic of smallpox is said to be prevalent in the Calumet region, Gary having forty-five cases and Hammond, fifty-two, several cases being reported also in Whiting, East Chicago and Indiana Harbor.

Vote for County Hospital.—At the recent election in Adams County, held in Decatur, to decide on the proposition to build a new hospital for Adams County to cost $100,000. 1,601 votes were cast in favor of the hospital and 1,347 against it.

Hospital Items.—The physicians of Shelbyville and Shelby County have recently formed the Shelby County Hospital Association. The association has purchased a site in Shelbyville where it proposes to erect a hospital.——Public subscriptions amounting to $105,000 have been received by the committee in charge of buying the Home Hospital at Muncie with a view to transferring it to a board of governors, who will operate it as a public hospital.——The City Hospital at Madison was recently combined with the King's Daughter's Hospital of that place.

IOWA

Personal.—Dr. Dallas L. Scarborough, Grand Junction, fell recently and fractured his hip. He is under treatment in a hospital in Iowa City.

County Society Reorganized.—Fremont County Medical Society which has lain dormant during the World War was reorganized, April 28, at Sydney. Dr. Brownlow B. Miller, Tabor, was elected president; Dr. Ralph S. Lovelady, Sydney, vice president, and Dr. Ambrose E. Wanamaker, Hamburg, secretary.

New State Officers.—At the annual meeting of the Iowa State Medical Society held in Des Moines, May 12 to 14, under the presidency of Dr. William L. Allen, Davenport, the following officers were elected: president, Dr. Donald Macrae, Jr., Council Bluffs; president-elect, Dr. Alanson M. Pond, Dubuque; vice president, Dr. Campbell P. Howard, Iowa City; secretary, Dr. Thomas B. Throckmorton, Des Moines (reelected); treasurer, Dr. Thomas F. Duhigg, Des Moines (reelected), and editor, Dr. David S. Fairchild, Clinton (reelected).

MARYLAND

Hospital to Open.—The Volunteers of America Hospital will be open for inspection, May 24. The hospital will not be ready to receive patients for about thirty days. The institution contains forty beds, and was built and equipped at a cost of $40,000.

Gift to Phipps Clinic.—A gift of $100,000 has been made to the Phipps Psychiatric Clinic, Johns Hopkins Hospital, by Henry Phipps of New York, founder of the clinic. This sum is to be a nucleus of a permanent endowment for the clinic. When the clinic was built, Mr. Phipps provided a maintenance fund for a period of ten years. Seven of the ten have already passed, so that this gift was received with great gratification by the hospital authorities. It will require the interest on $1,200,000 to maintain the hospital on its present basis, according to the hospital authorities, and interest on a fund of $2,000,000 will be needed to make full use of its laboratories and to provide for research work.

MASSACHUSETTS

Hospital Reopened.—St. John's Hospital, Lowell, with its new additions and alterations which have been in course of construction for the last two years at an expense of about $600,000 was formally reopened, May 12.

State Society to Meet.—The one hundred and thirty-ninth annual meeting of the Massachusetts Medical Society will be held, June 8 and 9, at the Boston Medical Library, under the presidency of Dr. Alfred Worcester, Waltham. The Shattuck Lecture will be delivered on the first evening by Asst. Surg.-Gen. Allan J. McLaughlin, U. S. P. H. S., Washington, D. C., on "Influenza"; the annual discourse on Wednesday noon, by Dr. Hugh Cabot, professor of surgery at the University of Michigan, Ann Arbor, on "Health Insurance, State Medicine or What?" The annual dinner will be served at the American House, Boston, on Wednesday afternoon.

Personal.—Dr. Stanley H. Osborn, Boston, epidemiologist of the Massachusetts Department of Public Health, has resigned to accept the directorship in the Bureau of Preventable Diseases in the Connecticut State Department of Health, Hartford.——Dr. McIver Woody, Boston, has been appointed dean of the Medical Department of the University of Tennessee, Memphis.——Dr. John H. Wyman, Quincy, has been reappointed associate medical examiner (coroner) for the Seventh Norfolk District.——Dr. James J. Goodwin, Clinton, has been appointed associate examiner (coroner) for the Fourth Worcester District.——Dr. George L. Tobey, Clinton, has been appointed medical examiner (coroner) for the Fourth Worcester District.——Dr. Randolph C. Hurd, Newburyport, has been appointed associate medical examiner (coroner) for the Third Essex District.——Dr. William T. Sedgwick, Boston, has sailed for England as the first exchange professor of public health. He will serve for a time as a member of the faculties of the universities of Cambridge and Leeds. Dr. Sedgwick has been elected a fellow of the Royal Institute of Public Health.

MICHIGAN

Hospital Commission Appointed.—A hospital commission has been appointed to have charge of the expenditure of $60,000, which has been raised by bond issue for an emergency hospital at Port Huron.

Personal.—Dr. Christopher G. Parnall, medical superintendent and director of the University Hospital, Ann Arbor, has been appointed a member of the Rockefeller Commission for the Study of Nursing Education.

Cooperation of Druggists in Venereal Disease Campaigns.—Much has been accomplished by the Michigan Department of Health in obtaining cooperation of druggists in conducting a venereal disease campaign. The venereal disease law, as passed by the Michigan legislature of 1919, required druggists to report venereal disease prescriptions when marked as such, to the Michigan Department of Health and also to discontinue dispensing medicine to venereal disease patients. During the first six months, 1,100 druggists reported prescriptions; 1,224 physicians wrote prescriptions; of the 1,721 estimated druggists in the state, 63.91 per cent. reported; 14,823 prescriptions were reported, and 10,055 cases of venereal disease were reported by physicians.

MISSOURI

Boylston Prize Awarded.—The Boylston Prize of $300 has been awarded to Stuart Mudd, Samuel B. Grant and Alfred Goldman, fourth year students at Washington University Medical School, St. Louis, for their essay on "The Effect of Chilling on the Membrane of the Throat and Tonsil."

New Hospital at Westplains.—Dr. Robert E. Hogan, Westplains, has completed and opened for service a hospital at Westplains under the name of Christa Hogan Hospital, in memory of his mother. The building is of brick, has twenty-one rooms and is at the service of all reputable practitioners.

Personal.—Dr. Moses B. Harutun, Joplin, has been elected commissioner of health and has appointed Dr. John A. Chenoweth as city physician.——Dr. Kate C. Spain, St. Louis, was severely injured, April 22, by being struck by an automobile while crossing a street.——Dr. Frank N. Wilson, St. Louis, has been appointed one of the American editors of *Heart*.——Dr. Frederick Hagler, St. Louis, has been appointed chief surgeon of the Stevens-Duryea Corporation, Chicopee Falls, Mass.

Public Health Service Conducts Child Welfare Experiment in Missouri.—At the request of the state health authorities, an extensive field investigation and demonstration in child hygiene activities is being made by the public health service. In additon to a staff of health officers from this service, seven women physicians and six women nurses, in addition to a full complement of women field investigators, have been appointed and are in the field. Efforts are being made to provide better supervision of expectant mothers and to provide facilities whereby mothers can secure medical advice and assistance in the care of their babies. In all these activities, the aim is to establish in the Missouri Board of Health a model bureau of child hygiene for dealing with the health of mothers and children. The work is being so planned and conducted that when the present survey and demonstration are completed a permanent organization will be left behind, supported entirely by the communities themselves.

NEW YORK

Dinner to Dr. Mandlebaum.—A dinner was tendered on May 8, at the Hotel Biltmore by the president and former members of the laboratory staff of Mount Sinai Hospital in honor of the twenty-fifth anniversary of Dr. Frederick S. Mandlebaum's appointment as pathologist to the institution. Among the guests were the president and the executive officers of the hospital.

Hearing on Chiropractor Bill.—A hearing on the bill providing for state licensing of chiropractors was held before Governor Smith, May 13. Among those who opposed the bill were Dr. Augustus Downing, deputy state commissioner of education, and Dr. Hermann M. Biggs, state health commissioner, representatives of the state health officers' association, the state charities aid association, the New York City Health Department and the New York Academy of Medicine.

Joint Clinics to Be Held.—The Committee on Joint Mental Clinics is planning to hold a large joint clinic during a six-day period for the purpose of furnishing expert diagnosis in the cases of patients brought to it. The clinic will cover an entire county after a survey has been made by public health nurses. The cases examined will include children's diseases, venereal diseases, tuberculosis, cancer, mental diseases and mental defectives, and although the work will be largely diagnostic, a follow-up system will be organized.

Public Tuberculosis Meeting.—The first public meeting of the New York Tuberculosis Association was held May 18, in the New York Academy of Medicine, when the subject of discussion was "How the New York Tuberculosis Associations Plan to Restore the Consumptive to Industry." Dr. James Alexander Miller presided, and a brief report was made of the accomplishments of the association during its first three months. The topic was discussed under four heads: the plan; occupation in treatment and convalescence; methods of occupational and vocational training, and aftercare and the association's workshop.

Dentists Endorse Health Center Plan.—The New York Dental Society, at its annual meeting, unanimously adopted a resolution approving the provisions of the health center bill endorsed in the last legislature and placing special stress on the great need for proper care of the mouth and teeth of the rural population and for instructions in the disastrous physical results of neglecting to provide such measures. Ninety per cent. of children, 7 years of age, are suffering, it is estimated, from mouth defects requiring correction, and the Life Extension Institute, in 125,000 examinations, found that 14 per cent. of those examined had marked infections of the teeth and gums. The resolution provided for the appointment of a committee of the state dental society to cooperate with all other organizations concerned with or interested in public health, with a view to securing favorable action on the bill at the next session of the legislature.

New York City

Milk and Child Exposition.—The New York City Department of Health announces that it will hold a milk and child exposition in Grand Central Palace beginning on May 17, designed to educate the public as to the value of milk for children.

Campaign Against Cancer.—The American Society for the Control of Cancer held a special meeting at the New York Academy of Medicine, May 13, at which Dr. Harvey Gaylord of Buffalo spoke on the "Less Familiar Problems of Cancer," and Dr. Howard Lilienthal on "Cancer from the Standpoint of the Clinical Surgeon." This meeting was the opening event of the campaign against cancer that is to be carried on in this city during the last week in May, when a number of lay meetings will be held throughout the city. Dr. Frederick T. Van Buren is director of the campaign. Twenty-five physicians have agreed to deliver addresses at meetings during the week.

United Hospital Fund Distributed.—The United Hospital Fund has completed the distribution of $850,000 among the forty-four nonmunicipal hospitals of the city. Of the amount, $400,000 was distributed among nineteen general hospitals in February, after the campaign to secure $1,000,000 had been closed. The remaining $425,000 has been distributed among ten special hospitals, nine women's and children's hospitals and six homes for chronics and convalescents. The daily per capita cost of patients in the forty-six united hospitals in

1914 was $2.02; four years later it was $3.20. In 1911, 39 per cent. of the patients were listed as free patients, while in 1918 only 23 per cent. were free patients.

Personal.—Dr. Louise Pearce of the Rockefeller Institute for Medical Research sailed for England and Belgium en route to the Belgian Congo to study the chemotherapy of African sleeping sickness.——Dr. Royall H. Willis, Sea Gate, retired, formerly assistant director of the bureau of child hygiene of the department of health, was recently presented with a signet ring by the members of the bureau as a token of their appreciation of his courtesy and consideration during his service of over twenty years.——Dr. Otto V. Huffman, Brooklyn, dean of the Long Island College Hospital, has resigned and has been appointed a member of the faculty of internal medicine in the New York Post-Graduate School and Hospital.——Dr. Charles Gordon Heyd has been appointed professor of surgery at the New York Post-Graduate School and Hospital.

OREGON

Cooperates in Mental Hygiene Survey.—The University Extension Department of the University of Oregon, with the approval of the state health officer, invited the United States Public Health Service to cooperate with the university in making a survey of the extent of the delinquency, dependency and feeblemindedness problems of the state from the standpoint of mental hygiene. These investigations were authorized at the last meeting of the state legislature. This survey is made by the communities themselves, under expert direction, and when necessary with the active participation of the expert. Under the constitution, all new legislation involving appropriations must be submitted to the people for a referendum vote; hence the survey now being made may be counted on to constitute an important measure for educating the people in all lines of social hygiene, including mental, physical and child hygiene.

PENNSYLVANIA

Personal.—Dr. John French Kerr, Connellsville, has volunteered his services as a medical missionary in Africa under the Board of Foreign Missions of the United Presbyterian Church.

Compulsory Health Insurance.—At the meeting of the Pittsburgh Public Health Nursing Association, to be held May 27, John B. Andrews, Ph.D., secretary of the American Association of Labor Legislation, will speak on "Compulsory Health Insurance."

Philadelphia

Medical Club to Give Reception.—The Medical Club of Philadelphia has issued invitations to a reception to be given in honor of Dwight W. Morrow; May 28, at the Bellevue-Stratford.

Californian Speaks Before College.—At the stated meeting of the College of Physicians of Philadelphia, May 5, Dr. George H. Whipple, professor of research medicine in the University of California, read a paper entitled "Studies on Blood Regeneration in Anemia."

The Gross Prize.—The Samuel D. Gross prize of the Philadelphia Academy of Surgery for 1920, amounting to $1,500, has been awarded to Dr. Evarts A. Graham of Washington University Medical School, St. Louis, for his essay entitled "Some Fundamental Considerations in the Treatment of Empyema Thoracis."

WISCONSIN

Personal.—Dr. Frank M. McGauley has resigned as city physician and health officer of Fond du Lac, and has been succeeded by Dr. Ned J. Malloy, Fond du Lac.

Hospital Burns.—The Egeland Hospital, Sturgeon Bay, was entirely destroyed by fire recently. Dr. Egeland has secured an option on the Joseph Richmond Building, Sturgeon Bay, and will remodel it for use as a hospital

CANADA

New Salvation Army Hospital.—A new maternity hospital is to be built in Ottawa, Ont., by the Salvation Army at a cost of $125,000. It will be completed and ready for occupation by the end of November.

Academy Election.—Dr. Jabez H. Elliott has been elected president of the Academy of Medicine, Toronto; Dr. Robert T. Noble, vice president; Dr. J. Herbert McConnell, treasurer (reelected), and Dr. Frederick C. Harrison, secretary (reelected).

Personal.—Dr. Frank Gray has arrived in Montreal from England.——Dr. Margaret Parks, St. John, has been appointed medical inspector of New Brunswick under the Dominion Government. She will have charge of inspecting immigrants at the port of St. John.

Hospital Burns.—Fire caused by an overheated furnace destroyed the Essex County Tuberculosis Sanatorium, Union-on-the-Lake, forty miles south of Windsor, April 29. The forty-five patients escaped without injury and were sheltered in neighboring homes pending their removal to the Hotel Dieu, Windsor. The loss is estimated at $100,000.

University News.—Lieut.-Gen. Sir Arthur Currie, inspector-general of the Canadian militia, and commander of the Canadian forces in France, has been given the degree of Doctor of Laws by McGill University, Montreal, and appointed president of that institution in succession to Sir Auckland C. Geddes, Montreal. Before participating in the great war, General Currie was in business in Vancouver. He held no university degree, but had taught school for six years. Not being a university man, the appointment of the general will be watched with interest by educators.

Medical Associations to Meet.—The annual meeting of the Canadian Medical Association will be held in Vancouver, June 22 to 25. The address in medicine will be delivered by Dr. Charles Lyman Greene, St. Paul, and the address in surgery by Dr. Edward Archibald, Montreal, on "Surgical Treatment of Ulcerated Intestinal Tuberculosis as Occurring Chiefly in Pulmonary Tuberculosis."——The annual meeting of the Canadian Public Health Association will be at Vancouver, June 21 to 23, under the presidency of Dr. Henry E. Young, Victoria, B. C.——The fortieth annual meeting of the Ontario Medical Association will be held in Toronto, May 25 to 28.

Health Board Given Additional Power.—The Provincial Board of Health of Ontario by an act of the legislature will be created a "body corporate." This results as an aftermath of the recent smallpox epidemic and the compulsory vaccination complexity. As the courts recently declined to uphold the compulsory vaccination order of the Ontario Board of Health, the officials of the board sought proper legislative authority to enforce the vaccination act should conditions again arise demanding its enforcement. It has been held by these selfsame officials that the Board of Health of Toronto, being a corporate body, had this authority, but failed to exercise it, and left the onus of doing so on the Ontario Board of Health.

Tuberculosis in Canada.—Dr. Charles D. Parfitt, Gravenhurst, before the special committee on pensions in Ottawa, has stated that during the great war 35,684 Canadian soldiers were killed in action in five years, while the number of deaths from tuberculosis in Canada during five years was 42,920. There were 8,508 cases of tuberculosis in the Canadian Expeditionary Forces during five and three-quarters years up to April 30, 1920. In the case of men discharged with the disease apparently arrested, the most critical time was the second year after the discharge when a man becomes less careful. Mortality was heaviest four years after discharge, and approached normal in seven years. He maintained that the maximum pension should be granted temporarily and should be subject to frequent revision as needed.

GENERAL

New Hospital Magazine.—The first copy of *Hospital Progress* has just appeared, this being the official magazine of the Catholic Hospital Association of the United States and Canada.

Public Health Meeting Postponed.—The date of the annual meeting of the American Public Health Association at San Francisco has been changed from August 30 to September 13 to 17. The change was necessitated by the state election which is set for August 30.

Gorgas and Noble Sail for Africa.—Last week Gen. W. C. Gorgas left for England, where he is to receive an honorary degree. He was accompanied by Brig-Gen. Robert E. Noble, who is on a six months' leave of absence. They will proceed to West Africa to study what is alleged to be an outbreak of yellow fever in that district.

Red Cross Scholarships.—Ten scholarships in public health nursing of $1,000 each are being offered by the League of Red Cross Societies to the Red Cross membership of stricken

countries or to nations with inefficient Red Cross organizations. The course of study will be carried out at the Kings College, Woman's Department, University of London, and will begin in October. The traveling expenses to London and return will be provided for holders of the scholarships.

Medical Women Elect Officers.—At the annual meeting of the Medical Women's National Association held in New Orleans, April 26 and 27, the following officers were elected: president, Dr. Mary Elizabeth Bass, New Orleans; vice presidents, Drs. Grace W. Kimball, Poughkeepsie, N. Y., M. Louise Hurrell, Rochester, N. Y., and Helena T. Ratterman, Cincinnati; recording secretary-treasurer, Dr. L. Rose H. Gantt, Spartanburg, S. C., and corresponding secretary, Dr. Isabelle T. Smart, New York.

Baptists to Build Hospitals.—Authority to build a $1,500,000 hospital in New Orleans was unanimously approved by the Southern Baptist Convention held at Washington, D. C. In presenting the report of the committee on hospitals to the convention, Dr. F. S. Groner of Texas declared that Baptists of the South are endeavoring to provide for adequate hospital facilities in various southern states. It is planned to erect Baptist hospitals in other cities. This plan includes one at Louisville, Ky., Lynchburg, Va., and one each in Alabama and North Carolina.

Civil Service Examinations.—The United States Civil Service Commission announces an open competitive examination for positions in the Indian Service; acting assistant surgeon, Public Health Service; surgeon in the coast and geodetic survey, and positions requiring similar qualifications, at salaries varying from $1,000 to $3,000 a year, for which applications will be received at any time. Examinations will be held, July 7 and September 8, for physician, Panama Canal Service, with an entrance salary of $225 a month, with promotion to $340 or more; and June 22, for bacteriologist, St. Elizabeth's Hospital, Washington, D. C., with a salary of $2,500 a year.

Health Program of National Education Association.—At the annual meeting of the National Education Association to be held in Salt Lake City, July 5 to 9, inclusive, the evening session of July 7 is to be devoted to health education. The subject will be discussed by Prof. Thomas D. Wood of Columbia College, New York City; Sallie Lucas Jean, director of child health organization, New York City; E. G. Gowans, state health inspector, Salt Lake City; A. A. Slode, director of health association, Cheyenne, Wyo.; Margaret S. McNaught, commission of elementary education, Sacramento, Calif., and Catherine D. Blake, principal of Public School No. 6, Manhattan, N. Y.

Report on Coal-Tar Products by Alien Property Custodian.—Prior to the World War practically no medicines were manufactured in America from coal-tar products. This is shown in the report of the Alien Property Custodian which contains a chapter on how Germany dominated the American chemical and dyestuff industry. The report says in part:

"In medicinals very little real American manufacture existed. A few of the coal-tar pharmaceutical products were produced by two American houses in St. Louis, the Mallinckrodt Chemical Works and the Monsanto Chemical Works. The enormous dispensing and distributing business of such firms as Parke, Davis & Co., Lilly & Co., and Powers-Weightman-Rosengarten Co. successful and efficient as it was beyond comparison with similar business in any other country, seems to have involved very little real manufacture, and the materials used were largely imported. There seems to have been but little, if any German interests in this branch of the industry, except among small brokers and dealers."

Public Health Service Experiments on Milk Powders.—Since August last, the United States Public Health Service, cooperating with the Boston Baby Hygiene Association, Department of Pediatrics of the Massachusetts General Hospital and Dr. Milton J. Rosenau of the Department of Preventive Medicine in Harvard University, has been engaged in experiments to demonstrate the usability of dry milk powders. The experiments are to continue until the end of the present fiscal year, July 1, at which time a report on the work is to be published. In a preliminary statement it is said that the investigators have established the usability of such milk and that it is "unquestionably beneficial." It is to be utilized particularly for supplying all babies with milk in tropical and semitropical countries.

Nurses Elect Officers.—At the annual meeting of the American Nurses Association held last month in Atlanta, Ga., the following officers were reelected: president, Clara D. Noyes, Washington, D. C.; vice presidents, Susan D. Frances, Philadelphia, and Sarah D. Sly, Birmingham, Mich.; secretary, Katherine DeWitt, Rochester, N. Y., and treasurer, Mrs. C. V. Twiss, New York City.——At the meeting of the National Organization for Public Health Nursing the following officers were elected: Edna Foley, Chicago, president; Elizabeth G. Fox, Washington, D. C., and Jessie Marriner, Montgomery, Ala., vice presidents, and Olive Chapman, Denver, secretary.——The National League for Nursing Education has elected the following officers: president, Anna C. Jamme, San Francisco; vice presidents, Louise M. Powell, Minneapolis, and Ida M. Stewart, New York City; secretary, Alice M. Flash, and treasurer, Bena M. Henderson.

Association of Medical Museums.—The thirteenth annual meeting of the American and Canadian Section of the International Association of Medical Museums was held at Cornell University Medical College, New York City, April 1, under the presidency of Dr. Oskar Klotz, Pittsburgh. The following officers were elected: president, W. M. Late Coplin, Philadelphia; vice presidents, Drs. James Ewing, New York City; Howard T. Karsner, Cleveland, and Harold E. Robertson, Minneapolis; councilors, Drs. Aldred S. Warthin, Ann Arbor, Mich.; Oskar Klotz, Pittsburgh; Robert A. Lambert, New York City; C. S. Silvester, Washington, D. C.; William G. MacCallum, Baltimore, and Lawrence J. Rhea, Montreal; secretary-treasurer, Maude E. S. Abbott, Montreal, reelected, and assistant secretaries, Louis Gross, Montreal, and Harry Goldblatt, Cleveland. The annual exhibition of the society of materials illustrating papers on the program of the association and the Association of Pathologists and Bacteriologists was held at Cornell University April 1 and 2.

Bequests and Donations.—The following bequests and donations have recently been announced:

St. Vincent's Home and Maternity Hospital, Philadelphia, $5,000 by the will of James B. Rodgers.

College of the City of New York, $7,500 for a medical preparatory fellowship; Woman's Hospital, New York City, Hospital in India of the Dutch Reformed Church of New York, each $5,000; St. Luke's Hospital, New York, for a free bed for consumptives, $5,000, and Society of Widows and Orphans of Army Men, $1,000 by the will of Miss Anna M. Sandham.

Biologie Institute, Lyons, France, a donation of 100,000 francs, the interest to be used to permit one student of the University of Lyons to devote his time to laboratory work on communicable diseases, by Mr. Douglas Flattery.

St. Luke's Hospital, Davenport, Ia., $10,000 by the will of Judge Nathaniel French.

Lynchburg, Va., Home and Retreat, a gift of $60,000 by the family of James P. Gilliam as a memorial to Mr. Gilliam.

Industrial Home Association for Destitute Children, Trenton, N. J., $2,000, and Mercer Hospital, Trenton, $1,000, after the death of his wife, by the will of Wesley Creveling.

Toronto Free Hospital for Consumptives, Muskoka Free Hospital for Consumptives and Queen Mary's Hospital for Consumptives, Weston, Ont., each $1,000 by the will of Mrs. Featherstonhaugh, Toronto.

French Hospital, Montreal, $6,000 the result of Tag Day, May 5.

The United States Pharmacopeial Convention.—The Tenth Decennial Pharmacopeial Convention was held in Washington, D. C., May 11 and 12, under the presidency of Dr. Harvey W. Wiley. Dr. Wiley, in his presidential address emphasized the importance of maintaining a judicial frame of mind in compiling the new edition of the Pharmacopeia, and insisted that a conscientious observation must be given to the principle in law which forbids a judge in a court of equity to permit personal advantage to influence the actions of the court. He called attention to the importance of the Pharmacopeia as a book of standards and its value to the public. Dr. Reed Hunt, Boston, was elected president for the next decennium, and Dr. Lyman F. Kebler, Washington, D. C., secretary. The board of trustees elected were Drs. J. H. Beal, Urbana, Ill.; H. M. Whelpley, St. Louis; George H. Simmons, Chicago; S. Solis Cohen, Philadelphia, and Mr. F. J. Wulling, Minneapolis. By mutual consent the new committee on revision is constituted of seventeen physicians and thirty-three pharmacists and chemists. This committee organized by electing E. F. Cook, Philadelphia, chairman, and Charles H. LaWall, Philadelphia, secretary. Dr. H. C. Wood, Jr., Philadelphia, was appointed chairman of the Subcommittee on Scope. This is the committee in which physicians generally have the greatest interest as it has much to do with the selection of the drugs which are described in the Pharmacopeia. It was tentatively decided by the General Committee on Revision that the expression "mil" adopted in the last revision shall be abandoned in the new revision returning to the old expression "cubic centimeter."

International Congress of Surgery.—The Fifth International Congress of Surgery will be formally opened at the Faculté de Médecine, Paris, July 19, at 2 p. m., to be followed

immediately by a discussion on blood transfusion, introduced by Dr. Jeanbrau, Brussels. Tuesday, there will be papers on cardiovascular surgery, by Drs. Tuffier of Paris, Sencert of Strassburg, Alessandrini of Rome and Charles Goodman of New York, and a discussion on surgical hematology, by Drs. A. Depage and Goovaerts of Brussels and Evarts A. Graham, St. Louis. Fractures of the femur will be the topic of discussion at Wednesday's session, to be opened by Drs. Patel of Lyons, Meurice Sinclair of the British Army Medical Corps, and Kellogg Speed, Chicago. The entire session on Thursday will be given over to papers on the treatment of tumors by radium and roentgen rays, by Drs. Régaud of Paris, Neville S. Finzi of London, Giuseppe Mioni of Rome and Robert B. Greenough, Boston. Papers on the prevention and treatment of tetanus by Drs. Donati of Modena, Cummins of London, Sieur of Paris, and Astley P. C. Ashhurst, Philadelphia, will conclude the scientific program on Friday. Clinics will be held in the Paris hospitals on Monday, Wednesday and Friday at 9 a. m., and business meetings are scheduled for Tuesday and Thursday at 10 a. m. In connection with the congress, there will be an international exposition of fracture apparatus, which will not be limited to members of the congress. Applications for space should be made not later than July 15 to Dr. M. Auvray, 50 rue de Pierre Charron, or at the Faculté de Médecine, rue de l'Ecole de Médecine, Paris, and should contain information as to the name, title and address of the exhibitor, the title of the exhibits, the amount of space required, expressed in square meters, and whether the objects are to be exhibited in glass cases or on tables, shelves or walls. Social entertainments will include a reception to the president of the congress, Dr. William W. Keen, Philadelphia, on Tuesday evening, and a banquet on Wednesday evening, both at the Palais du Quai d'Orsay. The American committee of the congress includes Drs. Charles L. Gibson, New York City, Richard H. Harte, Philadelphia, and Lewis L. McArthur, Chicago. Physicians who desire to attend the congress are advised to make steamer reservations at the earliest possible date, as there is every indication that the demand for accommodations will exceed the capacity of available steamers.

FOREIGN

Personal.—Dr. Ernest H. Starling, professor of physiology in the University of London, has gone to India to advise the British government with regard to the formation of a central medical research institute for India and will include in his travels Bombay, the Punjab, Bangalore, Calcutta, Delhi and Pasauli.

New German University.—It has been planned for some time to found a university at Cologne. The necessary formalities were complied with last year, and the new university has recently come into being very quietly. The various colleges and institutes have thus been collected into a state university which offers a chance to relieve the overcrowding of the university at Bonn. The new university starts with 2,000 students and over forty instructors, according to the *Paris médical*. It is rather a resurrection than a new creation, as Cologne was a seat of higher learning centuries ago, and the Akademie für praktische Medizin has been in existence as a municipal institution since 1904.

Physicians' Children in Austria.—Certain members of the profession in Austria have organized a central aid committee which is now collecting data in regard to the children in the families of physicians who would like to send them out of the country for a time. A question-blank has been sent to all physicians in the country, asking them to specify their wishes in the matter and list the eligible children. They must be over 7 and free from psychic and physical disease and enuresis. The committee hopes to get in touch with medical organizations in other countries and be able to place the children in homes elsewhere for a few weeks or months. The address of the committee is the Zentralhilfskomitee der Aerzte Oesterreichs, Vienna I, Börsegasse 1, Austria.

Tribute to Pure Food Champion in the Netherlands.—Dr. P. F. van Hamel Roos, an Amsterdam expert in chemistry, founded in 1884 a monthly devoted to investigation of adulterations in foods, drugs, etc., the *Maandblad tegen Vervalschingen*, and has published it regularly since. It has made him many enemies but also many friends, and a number of his friends arranged to make the April number of his monthly a souvenir issue in honor of his seventieth birthday. It contains a number of articles by leading chemists and physicians, and an interesting account of how the whole issue was planned and published without his knowledge, while he was making up and correcting the proofs of the regular April number, which will appear later as the May issue. Of this *jubileum-nummer* one of the writers says, "This adulteration of the April number of the *Maandblad* is one of the few adulterations which have got past van Hamel Roos undiscovered."

The Profession in the German Empire.—The *Deutsche medizinische Wochenschrift* states that at the last census there were 31,602 physicians in the German empire. The number is now estimated at 40,000 although the extent of the empire has been much reduced, as many physicians have lost their positions in the colonies and other countries and have returned to the fatherland, while the medical officers dismissed from the military service swell the list of medical men and there is almost unprecedented flocking to the medical schools. The employment bureau of the Aerzteverband had 3,163 vacant positions to fill in 1914, but in 1919 there were only 1,614 vacancies. At present there are 4,000 applications on file, some of them waiting for more than a year, without any positions being open to candidates. Our exchange adds "The prospects for the future of the medical profession are consequently the worst that could be imagined."

Australasian Medical Congress.—The eleventh session of the Australasian Medical Congress will be held, after an interval of more than six and one-half years, in Brisbane, Queensland, August 23 to 28, 1920, under the presidency of the Hon. William F. Taylor. The work of the congress has been divided into eleven sections, as follows: medicine, presided over by Dr. Richard R. Stawell, Melbourne; surgery, presided over by Dr. H. S. Newland, Adelaide; obstetrics and gynecology, presided over by Dr. Fourness Barrington, Sydney; pathology and bacteriology, presided over by Dr. William J. Penfold, Melbourne; public health, presided over by Dr. John H. L. Cumpston, Melbourne; ophthalmology, presided over by Dr. A. Leo Kenny, Melbourne; otology, and laryngology, presided over by Dr. Herbert W. J. Marks, Sydney; diseases of children, presided over by Dr. W. F. Litchfield, Sydney; naval and military medicine and surgery, presided over by Col. George W. Barber, Perth; neurology and psychologic medicine, presided over by Dr. Henry C. Maudsley, Melbourne, and dermatology and radiology, presided over by Dr. T. G. Moldsworth, Sydney.

Deaths in Other Countries

Dr. **Blanco Ledesma** of Ciudad Bolivar, Venezuela, a writer on tropical pathology, committed suicide, Oct. 19, 1919.——Dr. **Walter Georgi**, assistant at the Serum Institute at Frankfort on the Main, whose name has been prominent of late in connection with the Sachs-Georgi precipitation test for syphilis. He succumbed to severe influenza, aged 31.——Dr. **F. Knauff**, formerly professor of hygiene and legal medicine at the University of Heidelberg, aged 85.——Dr. **Mariano Alcedán**, a surgeon of Iquique, Chile, until recently when all persons of Peruvian birth were expelled from the city by the Chilean government.——Dr. **H. Hessler**, privatdozent for otology at the University of Halle, aged 69.——Dr. **Moriz Benedikt**, professor of electrotherapy and neuropathology at the University of Vienna, author of numerous works on these specialties, on "second life," brains of criminals, etc., aged 85.——Dr. **C. T. Carvallo**, called the founder of gynecology in Peru, the first incumbent of the chair for gynecology in the University of Lima, founder of the Academia Nacional de Medicina, and one of the founders of the Sociedad Peruana de Cirugia, now being organized.——**Albert J. Chalmers**, M.D., F.R.C.S., D.P.H., organizer and some time professor of physiology and pathology of the Ceylon Medical College, later director of the Wellcome Research Institute at Khartoum, joint author with Dr. Aldo Castellani of a Manual of Tropical Medicine and accredited with much original work in pathology, notably on mycetoma, died, April 6, at Calcutta, aged 50, from infective jaundice.

LATIN AMERICA

Personal.—Drs. Jorge Vargas S. and Rafael Domínguez of Bogotá, Colombia, have been visiting clinics at Rochester, Minn., and Chicago.——Dr. Rodolfo Arce of Panamá is now in New York on his way from France, where he served during the war.——The organized ophthalmologists of Mexico have recently admitted ear and throat men to their society, so the name has been changed to the Sociedad Mexicana de Oftalmología y Oto-rino-laringología. Dr. Rafael Silva has been elected president and Dr. Vélez continues as secretary of the organization.

Government Services

Bill for Tuberculosis Hospital

Provision for the erection of a hospital for tuberculous patients in Colorado is made in a bill introduced by Congressman Timberlake of that state. The land must be donated without charge to the government and provision is made for construction thereon of a complete hospital plant at a cost of $1,500,000. The hospital will be used for the treatment of tuberculous patients who are beneficiaries of the War Risk Insurance Bureau and the Public Health Service.

Health Conditions of the Army

Health conditions among troops in the United States are excellent. The admission and noneffective rates show a slight decline from the unusually low rates of last week. Epidemic diseases are still reported from the camps receiving large numbers of recruits. Camp Grant heads the list with 13 new cases of measles; Fort Oglethorpe, 10; Camp Humphreys, 8, and Camp Pike, 4. There have been reported throughout the various camps a few cases of pneumonia, malaria and one case of scarlet fever. The death rate is considerably lower than last week. There were 10 deaths, 6 of which were caused by communicable diseases, 5 dying of tuberculosis and 1 of pneumonia.

Government Regulates Use of Hot Springs

The government is making complete regulations with reference to the use of hot waters prescribed by physicians at the Hot Springs, Ark., reservation. This is accomplished by a provision in the Sundry Civil Bill which has just passed the House of Representatives and gives the Secretary of the Interior authority to assess and collect reasonable charges from physicians for the exercise of the privilege of prescribing the mineral water at the reservation. The money received from the exercise of this authority will be used in the protection and improvement of the reservation. The purpose of this regulation is to permit only registered physicians to prescribe the waters; to prevent improper charges, and to maintain high medical standards.

Public Health Service Takes Over Army Hospital

The Public Health Service will take over from the War Department the tuberculosis sanatorium at Fort Bayard, N. M.; it will be used for the treatment of discharged and disabled soldiers suffering from tuberculosis. The sanatorium is well fitted for the treatment of such patients by reason of its location and climate and the fact that outdoor life may be followed during a large portion of the year. The sanatorium will provide 1,000 beds. It is the intention of the Public Health Service to take only ambulatory cases of tuberculosis at Fort Bayard. Patients will be admitted only after careful observation to make sure that their condition is suitable for successful treatment at the high altitude of Fort Bayard. In general it is the policy of the Public Health Service not to move patients from their home localities, for experience has shown that such removal often has an unfavorable effect. Patients for this sanatorium will be drawn principally from the Middle West and South.

Appropriation Asked for Public Health Service

Forty million dollars is the amount which will be required by the Public Health Service in the year 1921 for medical, surgical and hospital service and supplies for war risk patients.

Dr. H. S. Cumming, Surgeon-General, has made formal request in a letter to the speaker of the House of Representatives that this amount be made available. In part Dr. Cumming says:

"The present rate of expenditures of the Public Health Service for hospital care and treatment of its beneficiaries is about $2,387,000 per month or $28,644,000 for the year.

"There are at present in government and civilian bospitals about 14,500 patients, and the service is furnishing about 69,500 office treatments and making 45,000 physical examinations per month. It is believed that the number will increase to 20,000 in-patients and that there will also be a corresponding increase in the number of office treatments and physical examinations during the coming year. It is therefore thought that the appropriation for next year should be at least 40 per cent. more than expenditures at the present time."

Psychology of Aviation

Dr. Harry M. Johnson, S. C., U. S. Army, in charge of the Department of Psychology of the Air Service Medical Research Laboratory, reports that during the year research was prosecuted along two distinct lines: an effort to gain a somewhat more intimate acquaintance with the effects of low oxygen on the integrity of response, and an effort to develop more sensitive tests for the detection of general aptitude for aviation work, and of its deterioration in the earlier stages of staleness. Extensive and detailed statistical study of the records of more than 6,000 classification tests for resistance to deprivation of oxygen was made. An attempt was made also to demonstrate the progress of impairment of behavior by the use of an objective record of the speed and accuracy which the subject can maintain in carrying on work of uniform difficulty as the supply of oxygen is being diminished. Researches were also made on the influence of diminished air pressure, simulating an altitude of 20,000 feet, on the time required for selective reaction to a number of combinations of signals visually perceived. A study of associative responses was also begun. It is believed that two forms of test, if sufficiently refined, might prove to be quite valuable in the diagnosis of aviational ability and in exhibiting its impairment. These tests are (*a*) of the ability to control the coordinated activity of certain systems of voluntary muscles and (*b*) of the relative time required for selective reaction to one of three signals presented successively and in irregular sequence under a standard condition of observation and under a condition of observation so difficult as to be trying. The energies of the department were also devoted to the supervision of the psychologic features of the routine tests at laboratories, to the administration of classification tests at the local fields and to cooperation with other departments in the administration of tests in which the department of psychology was not directly interested.

MEDICAL OFFICERS, UNITED STATES NAVY, RELIEVED FROM ACTIVE DUTY

ILLINOIS

Chicago—Fischer, C.
Huber, P. R.
St. David—Mercey, R. J.

NEBRASKA

Omaba—Davis, D. L.

NORTH CAROLINA

Troutmans—Ervin, C. E.

PENNSYLVANIA

Beaver—Purdy, J. E.

Foreign Letters

PARIS

(*From Our Regular Correspondent*)

April 22, 1920.

Living Micro-Organisms in Paper

Dr. Galippe recently presented before the Academy of Sciences a very interesting communication on living micro-organisms in paper and their resistance to heat and the action of time. However little one may know about the processes of manufacture, it is not surprising that paper contains many micro-organisms. But it was generally supposed that these were destroyed in the course of the many operations which are undergone in the stages from pulp to paper. Now, according to the researches of Galippe, this is not the case, and all papers in use harbor living and cultivable micro-organisms. What is more, these organisms offer considerable resistance to heat, since filter paper may be subjected for half an hour to a temperature of 120 C. in an autoclave without the least effect on them. Chemists, therefore, will have to take certain precautions in definite cases. Galippe wondered if these infinitely minute objects which are so resistant to heat were any more sensitive to the action of time. With this in mind, he directed his attention to papers manufactured in the eighteenth and fifteenth centuries, and after repeated examinations, he was able to demonstate the important fact that even in the fibers of these papers are found micro-organisms susceptible to cultivation and endowed with lively motion. In the paper of one incunabulum, Galippe found a bacillus at least morpholog-

ically identical with the tetanus bacillus. Encouraged by these results, he directed his researches to paper from Chinese manuscripts dating back to a very early epoch, certainly some centuries before the invention of printing. There again he found these microscopic beings in the fibers of the paper; planted in a favorable medium, the micro-organisms multiplied and appeared active and full of life. Going still further, Galippe decided to investigate whether living organisms could be found in Egyptian papyri, more than 2,000 years old. It is known that the Egyptians made their papyrus from the epidermis of the sheaths and stems of *Cyperus papyrus*. The strips were joined together, pressed and superposed, and made imputrescible, and thanks to the perfect methods of manufacture, they have been able to resist the destructive action of time, even to the present day.

Galippe was able to study a fragment of papyrus of the Ptolemaic epoch, that is, dating back to about 200 B. C. The structural elements of the papyrus were unchanged and the vegetable cells and fibers of which it was built up were found intact. The cells had not only preserved their form and reciprocal relations, but in some of them were again found perfectly distinguishable micro-organisms. Quite curiously, after three hours' contact with sterile water, these micro-organisms, immobile for centuries, regained their activity and showed themselves endowed with motion. More than that, when placed in a favorable culture medium they multiplied, and their mode of development and the different phases of their evolution could readily be studied.

Administrative Meddling in Medical Affairs

Dr. J. Noir, editor-in-chief of the *Concours médical*, has just published a long protest against the administration's meddling in medical matters. He cites, among other documents, a circular addressed to the principals of the Paris schools for distribution to parents of children having diphtheria. The circular is entitled: "Instructions to Families on the Precautions to Be Taken Against Diphtheria." The first part of the circular, which mentions the dangers and method of transmission of the disease and the necessity for isolation of actual and suspected cases, can readily be approved. Unfortunately, there follows a chapter on the treatment of diphtheria, in which the statement is made that this consists in the disinfection of the throat and nose, the "haunts" of the bacillus, by gargling, irrigating, inhaling or atomizing of medicaments which are capable of destroying the micro-organisms. It is also stated that when there is great danger of contagion or isolation of the children is impossible, it is necessary to give a preventive injection of antidiphtheritic serum not only to the carriers of the bacillus, but also to all who have been exposed to infection. Finally, it is averred that preventive serotherapy in children, if employed by the family physician according to certain rules, is absolutely without danger.

Dr. Noir demands on what authority the author of the circular forces on family physicians disinfection of the nose and throat which is so often an illusory procedure, and on what authority is based the obtrusion of preventive serum injections, when some of the physicians of children's hospitals, and these not the least competent, are opposed to its systematic use, claiming that, during the incubation period, a preventive injection may diminish or even destroy the effect of a therapeutic injection which the attending physician may later be obliged to make. But what seems particularly regrettable in the circular is the underscored statement that preventive serotherapy at the hands of the family physician presents absolutely no danger if certain rules are followed. What are these rules (which have not, however, been specified) which give assurance of safety from anaphylaxis and other accidents that occasionally can assume a grave aspect? In the instructions accompanying the tubes placed on sale by the Pasteur Institute of Paris, one reads on the contrary that any injection of heterogenous serum may cause accidents, immediate or delayed, which sometimes require serious treatment. It is comprehensible that the foregoing circular, through the categorical statement which has been quoted, in case of even slight accident, risks discrediting the physician in the estimation of the family and greatly increases his responsibility.

LONDON

(From Our Regular Correspondent)

April 23, 1920

Village Tuberculosis Settlements

An important deputation has waited on the minister of health to urge the establishment of village settlements in connection with the treatment of discharged tuberculous soldiers. It was pointed out that sanatorium treatment for tuberculosis, even when accompanied by training in a suitable occupation, had been found inadequate as a means of combating the disease. The general experience had been that patients who return from a sanatorium to their homes and former occupations are unable permanently to earn a living or maintain health. The patients should pass through a threefold course: first, of sanatorium treatment; second, of training, and third, of permanent settlement in suitable surroundings. The village settlement should be a natural development of the sanatorium and training colony, and the patient should be in a position to look forward to being able, on completion of his course of treatment and training, to take up his permanent residence in a settlement where, still in close touch with the sanatorium, he could work under conditions that would enable him to maintain his health and have his family or dependents with him. In the settlement the patient and his family would have to be housed, the necessary workshops and other buildings would have to be provided, and—in the case of the civilian—the patient's earnings would have to be supplemented; but the community would gain in the result by the prevention of the spread of infection and the fact that the tuberculous patient would remain a productive worker. As illustrating the results of establishing a village settlement on these lines, it was stated that at the Cambridgeshire Tuberculosis Colony, out of thirty patients who had passed from sanatorium treatment and training into the settlement, not one had died in four years.

Dr. Addison, minister of health, assured the deputation of his good will. There were, however, various difficulties to overcome. The success of a village settlement would depend even more on the personality of the man in charge than on the material provision made. As regards finance, the provision of ten settlements for not less than 200 patients each, as proposed by the Interdepartmental Committee, would, he considered, cost much more than the sum of $5,000,000 suggested by it. Again, as minister of health he could not consider only the case of the ex-soldier; he had to consider also the civilian population, who had no pensions to supplement their earnings. Further, the Cambridgeshire Tuberculosis Colony was managed by a voluntary organization, but in the establishment of further settlements it would be necessary to rely in the main on local authorities. The problem was, therefore, one of much complexity; but a comprehensive scheme, dealing with all the various issues involved, was under discussion.

The Birth Rate

An address on "The Fertility of the Various Social Classes in England and Wales from the Middle of the Nineteenth Century to 1911" was given before the Royal Statistical Society by Dr. T. H. C. Stevenson, superintendent of statistics, General Register Office. He said it seemed likely

that large families promoted high mortality, and that high mortality promoted large families. It was evident that the decline in infant mortality during the present century was closely bound up with the decline in the birth rate. It was therefore all the more discreditable to the last quarter of the nineteenth century that during that period the rate of infant mortality did not decline, although the birth rate was steadily falling. In the deficient fertility of the classes which, having achieved most success in life, were presumably best endowed with the qualifications for its achievement, the nation was confronted with a new and formidable fact. The correspondence in time between the date of the Bradlaugh-Besant movement (1876) and the commencement of the fall in the birth rate in 1877 had always been obvious. The subsequent record of the decline was in fact precisely what might be expected on the supposition that it had been brought about through the neomalthusian views and methods having secured gradually increasing acceptance. After all allowances had been made, the professions, which formed the purest examples of middle-class occupations, were exceedingly infertile. The total fertility of all the professions tabulated, except nonconformist ministers, was underneath the lowest standard, though their very small rate of child mortality caused the clergy of the established church slightly to exceed that standard in regard to effective fertility. The exceptionally low figures for naval and military officers might be due to circumstances in their case rendering the maintenance of a family specially difficult; but the failure of this fine stock to reproduce itself was none the less to be regretted. The most remarkable instance of all was that of persons describing themselves as of "private means." In their case, presumably, the anxieties and difficulties which militated against fertility were at a minimum, but their fertility was also at a minimum. The reason might conceivably be that the more energetic and capable of the class referred to did follow some definite occupation, and that their fertility was higher than that of the inferior remainder of their class. The effect of female occupation in lowering fertility was clearly established. If we attributed to human volition the fall in the nation's fertility, these facts were readily explained; but if we refused to acknowledge this agency, it was necessary to assume the reduction of female fertility by nondomestic work as a law of nature.

VIENNA

(From Our Regular Correspondent)

April 24, 1920.

Present Sociological and Economic Conditions of the General Practitioner

As a result of the war, the general condition of the profession has suffered a severe change, which is felt keenly in all quarters. One of the chief undesirable effects is the enormous increase in the number of graduated physicians. As long as the army in the field required large numbers of physicians for the medical care of the huge numbers of diseased, disabled or otherwise ill soldiers, the study of medicine was much favored and encouraged by the military authorities, and the examinations were so facilitated that the war-doctors, as they were termed, had really only nominal teaching. Naturally, these men try to augment their defective knowledge now in hospitals. Thus it happened that all vacant appointments as junior officers in the hospitals, in the dispensaries and ambulatories are now filled by these doctors. They all also desire to practice. Furthermore, in those parts of the old Austrian empire which now have been allotted to the new or successory states, large numbers of physicians of German nationality had been practicing for years. They all had to leave, because national and racial hatred became too strong against them. All public appointments were, of course, given to physicians of the respective nationality, without paying too much heed to the qualification. Naturally the men who had been maneuvered out of their living fled to Vienna, only to increase there the numbers of insufficiently occupied practitioners. While in 1913 the population was 2,250,000, with nearly 3,000 physicians, now we have more than 4,000 men to minister to the ailments of only 1,860,000 inhabitants (census of Dec. 31, 1919). According to statistics compiled by the Vienna Medical Council for assessment purposes, only 20 per cent. of the total number earn enough to keep up the standard of life they were accustomed to formerly. A little more than 60 per cent. may just manage to make both ends meet by hard endurance; the remaining 20 per cent. have to undergo incredible privations. Hunger, want of proper clothing and of reading matter tend to drive them to pauperism and proletarianism. This is no exaggeration. The conditions are appalling. Many of the middle-aged men have lost their private practice through their five years' absence from home with the army or as prisoners of war. Lately, the public has shrunk back from calling in a physician because the fees have been raised, although they are only doubled or trebled. Still, if a man charges 25 kronen for a call, he gets only what is worth about 12 cents in American money. Only few practitioners can command fees of double that sum. Specialists are somewhat better off. The central medical organization tries to help whenever possible. By uniform action of all those concerned the organization succeeded, after a long struggle, in increasing the rate of payment of the panel or krankenkassen physicians (sickness Insurance clubs). These men get now double payment, in some instances even 60 per cent. more than that, and, besides, part of their rent is paid for them. Their fixed salary reaches from 14,000 to 18,000 kronen a year, specialists getting from 24,000 to 26,000, which represents material help to the individual. In the hospitals also an improvement of the prevailing economic position of physicians has been obtained. Uniform cooperation of the juniors and seniors resulted in the acknowledgment of the rule that every work must have its price. A salary of 900 kronen a month, as well as the right to buy their board for a small sum, has been conceded to the juniors, who hitherto have been unpaid. It must be added, however, that the organization had prepared everything for a medical strike and that in spite of the adverse feeling against such an inhumane weapon, it would have been put into action had this become necessary. The profession is well aware here that its most powerful weapon must not be used except for the most overwhelming necessity. As the government is scheming socialization of the profession, the medical strike will come into question when the problem of "to be or not to be" has to be decided.

An important step to improve conditions has been made by obtaining the system of free choice of physician for a large number of "panel" societies. Various unions of earning people tried to simplify matters for themselves by appointing a special physician for their members. The organization, however, endeavors to let all physicians participate in the possibility by encouraging such unions to adopt the system that permits the patient to call in the man whom he trusts without undue expense to himself, at the same time enabling the physician to be sure of his payment. Thus the civil service men, the postmen and the tramway men have agreed to this system, with fairly satisfactory results to both parties. On the other hand, a serious struggle is going on between the organization and the state as to the upper wage limit of the members of compulsory sickness insurance clubs (krankenkassen). While the physicians want all men earning more than 24,000 kronen a year to be excluded from the panel, the other side wants to fix the limit at 48,000 kronen.

This would mean the end of private practice altogether, for the majority of laborers earn now between 24,000 and 48,000 kronen a year, while the classes hitherto called middle class have dropped out and drift hopelessly into pauperism. A complete shifting of the social strata has taken place, and the members of the profession are victims of this shifting, too. Many physicians had to apply for and accept gifts of charity, which are being tendered them in a most gracious and generous way from all parts of the world, neutral as well as previously enemy. Apart from other help, it must be mentioned how nobly the profession of Holland acted, by inviting several hundred children of Austrian physicians to Holland, where they remained three months and restored their semistarved, anemic bodies and their depressed souls. The average gain of weight was 6 kilograms (13 pounds) per child, and of growth, 5 cm. (2 inches). This shows how urgently the children needed the vitamins owing to the lack of milk, fat and eggs at home. Another noble deed was that of the Norwegian profession, whose members have sent several railway cars full of provisions for the Vienna physicians, containing fish, meat, chocolate, condensed milk, fat and flour. That this gift was gladly accepted proves under what stress large numbers of us are living here; it may be added that the "export" of physicians' children has been organized on a large scale for the summer time. Holland, Norway, Sweden and Switzerland vie with one another in magnanimous help for our profession.

Clinical Courses in the Summer Term

The official catalogue of the medical faculty of the Vienna University announces no less than 448 different classes and courses, given by twenty-one ordinary, 113 extraordinary professors and 152 assistants, and open to all students of the university on payment of the regular fees. It may be explained that ordinary professors are those who have been appointed as regular clinical teachers in a clinic, while the extraordinary professor has no clinic of his own, but is more of a guest at a clinic, but may have a ward under his special care. The fees have been raised now by an order of the board of instruction about six times more than they were before the war, and the postgraduate classes, ten times. This is very much for our students, but a trifle for the American or foreign physician. A private course costing 1,000 kronen costs, at the present rate of exchange, $5; for this sum a quite first class course may be obtained. There will be delivered eight classes on physiology, thirty-five on pathologic anatomy, eighty-one on general pathology, forty-six on surgery, twenty-two on rhinolaryngology, twenty-nine on otology and forty-one on diseases of the skin, besides numerous others. On radiology only twelve classes will be held, but in the near future this branch of our art will be much better cared for, as it is intended to organize a huge central radiologic institute for all the public hospitals of Vienna, so as to insure the services of absolutely competent men for this important branch of medicine. There also the comparatively enormous quantities of radium and its active compounds, which are available in Vienna, will be turned to suitable use, enabling earnest studies to be conducted with them.

Statistics of the Winter Term

In 1919-1920 the winter term of the university lasted from October to March; 4,282 ordinary students and 221 extraordinary studied medicine in Vienna, among them 578 women. The previous term the figures were 3,823, with 557 women and 126 foreign students. The constant increase of medical students is well marked since 1910, and went up by bounds since 1915. The number of physicians has been increasing since 1915 far more rapidly than the increase of population, which has been practically nil for two years.

Deaths

Henry Holbrook Curtis ⊕ New York City; Yale University, New Haven, Conn., 1880; aged 63; a specialist in laryngology and otology; visiting laryngologist to the New York Throat, Nose and Lung Hospital; consulting otologist to the Nassau County Hospital, Long Island, and consulting laryngologist to the Minturn Diphtheria and Scarlet Fever Hospital; a member and once president of the American Laryngological, Rhinological and Otological Society and New York Academy of Medicine, and a member of many foreign otological, laryngological and rhinological societies; died, May 15.

Don DeForest Grout, Waterbury, Vt.; University of Vermont, Burlington, 1872; aged 70; for eleven years superintendent of the Vermont State Hospital for the Insane, Burlington; consulting physician to the Fannie Allen Hospital, Burlington; local surgeon of the Central Vermont Railway; health officer of the town of Waterbury; president of the Vermont State Tuberculosis Commission, and vice president of the Vermont Society for the Prevention of Tuberculosis; a member of the legislature in 1888; died, April 19, from angina pectoris.

Salphronius H. French ⊕ Amsterdam, N. Y.; Albany (N. Y) Medical College, 1859; aged 82; formerly consulting surgeon to the Amsterdam Hospital; surgeon of United States Volunteers during the Civil War; for several years health officer of Amsterdam and president of the Amsterdam City Library; one of the founders and since 1887 president of the Amsterdam Savings Bank; died, April 30, from angina pectoris.

Charles M. Lutterloh, Jonesboro, Ark.; Vanderbilt University, Nashville, Tenn., 1890; aged 57; a member of the Arkansas Medical Society, and president of the Tri-State Medical Association of Tennessee, Arkansas and Mississippi, in 1911; vice president of the American Trust Company, Jonesboro, and president of the Craighead County Board of Health; died, May 3, from heart disease.

Marshall Lebanon Brown, Brooklyn; Dartmouth Medical School, Hanover, N. H., 1867; aged 82; a member of the Massachusetts Medical Society; for three years surgeon of the Sixty-Ninth New Hampshire Volunteer Infantry, during the Civil War; for many years a practitioner of Boston; died at the home of his daughter in Flatbush, L. I., May 5, from heart disease.

William Brown Ewing ⊕ Salt Lake City, Utah; Rush Medical College, 1885; aged 60; secretary of the Utah State Medical Association from 1912 to 1917; a specialist in neuropathy; captain, M. C., U. S. Army, and discharged, Jan. 8, 1919; examiner of the insane for the third district court; died in St. Mark's Hospital, Salt Lake City, April 24, from heart disease.

Frederick Sohon ⊕ Washington, D. C.; Georgetown University, Washington, D. C., 1888; aged 53; captain, M. R. C., U. S. Army; professor of physical diagnosis in his alma mater; a medical officer of three expeditions under the command of the late Commander Peary, U. S. Navy, to the Arctic regions in 1897, 1903 and 1905; died, May 7.

Thomas James McCrory ⊕ Racine, Wis.; Northwestern University Medical School, Chicago, 1905; aged 42; lieutenant, M. C., U. S. Army, and discharged Feb. 21, 1918; who was injured in an automobile accident, May 2, died in St. Mary's Hospital, Racine, from his injuries, May 5.

Alfred Jones, Cornersville, Tenn.; University of Nashville, Tenn., 1858; aged 81; a member of the Tennessee State Medical Association; a Confederate veteran; for two terms a member of the House of Representatives and for three terms a member of the state senate; died, April 16.

George Latham Underwood, Belmont, Mass.; Harvard University Medical School, 1858; a member of the Massachusetts Medical Society; superintendent and resident physician at the State Hospital, Rainsford Island, for several years; died recently.

John Ralph Pattee ⊕ Dover, N. H.; Eclectic Medical Institute, Cincinnati, 1888; aged 59; county physician of Merrimack County, N. H., and chairman of the board of health; died in the Wentworth Hospital, Dover, April 27, from cerebral hemorrhage.

Emile Poirier, Salem, Mass.; Laval University, Quebec, 1881; aged 63; a member of the Massachusetts Medical

⊕ Indicates "Fellow" of the American Medical Association.

Society; one of the commission that had charge of the rebuilding of Salem after its devastation by fire in 1914; died, April 29.

Thomas Davidson Starbuck, Davenport, Iowa; State University of Iowa, Iowa City, 1902; aged 48; a member of the Iowa State Medical Society; died in Mercy Hospital, Davenport, May 11, from septicemia following the extraction of a tooth.

Benjamin Lucky Branch, Collierville, Tenn.; Memphis (Tenn.) Hospital Medical College, 1883; aged 63; a member of the Tennessee State Medical Association; president of the alumni association of his alma mater in 1909; died, April 25.

Robert N. Downs, Philadelphia; University of Pennsylvania, Philadelphia, 1856; aged 90; for many years a member of the consulting staff of the Germantown Hospital; a member of the College of Physicians of Philadelphia; died, May 1.

John William Bush ⊕ Hot Springs, Ark.; University of Tennessee, Nashville, 1906; aged 51; lieutenant, M. R. C., U. S. Army, and discharged Jan. 3, 1919; a specialist in urology; was shot and killed by his brother-in-law, April 27.

George Miller Beard, Horseheads, N. Y.; College of Physicians and Surgeons in the City of New York, 1866; aged 80; a veteran of the Civil War; once a member of the New York General Assembly; died, May 1.

Alfred Kimball Hills, New York City; Hahnemann Medical College, Philadelphia, 1870; aged 79; for many years editor of the *Medical Times* and a member of the New York Academy of Medicine; died, May 2.

William J. Mairs, Newton, Mo.; Louisville (Ky.) Medical College, 1878; aged 65; a member of the Missouri State Medical Association; formerly a member of the state legislature; died, April 6, from carcinoma.

Adolph Zederbaum ⊕ Los Angeles; University of Berlin, Germany, 1883; University of Dorpat, Russia, 1887; aged 71; died on the operating table in Methodist Hospital, Los Angeles, May 1.

William Barber Fellers, Roanoke, Va.; University of Maryland, Baltimore, 1910; aged 35; a member of the Medical Society of Virginia; died, April 23, from carcinoma of the kidney.

Zeba Darling French, Lawrenceville, Ill.; University of Iowa, Keokuk, 1865; aged 82; surgeon of the Third U. S. Volunteer Cavalry (colored), during the Civil War; died, April 27.

Mason Beach Hughes, Bloomsburg, Pa.; Jefferson Medical College, 1869; aged 78; formerly a member of the legislature from Luzerne County; died in a hospital in Philadelphia, May 6.

James Garland Boxley, Louisa, Va.; Medical College of Virginia, Richmond, 1863; aged 77; assistant surgeon in the Confederate Navy during the Civil War; died, April 23.

John Francis Canavan, Bridgeport, Conn.; Eclectic Medical College, Cincinnati, 1913; aged 32; died at the Wallum Lake (R. I.) Sanatorium, April 20, from tuberculosis.

B. S. Hunt, Sidney, Ohio; Pulte Medical College, Cincinnati, 1877; aged 69; president of the American Chemical Company; died, April 24, from cerebral hemorrhage.

William L. McGrew, Warren, Ohio; College of Physicians and Surgeons, Baltimore, 1890; aged 73; also a clergyman of the Methodist Episcopal Church; died, April 21.

Joab Stowell, Jr., North Amherst, Mass.; University of Minnesota, Minneapolis, 1890; aged 57; a member of the Massachusetts Medical Society; died, March 26.

Elizabeth S. Horr, Waterford, Me.; Woman's Medical College of the New York Infirmary for Women and Children, New York City, 1872; aged 87; died, April 8.

John S. Holley, Bellevue, Macon, Ga.; Atlanta (Ga.) Medical College, 1882; aged 63; at one time city health officer of Tyler, Texas; died, April 20, from nephritis.

Edward Louis Miller, Mount Dora, Fla.; University of Maryland, Baltimore, 1884; aged 61; for many years a practitioner of Johnstown, Pa.; died, April 23.

John J. Patterson, Boaz, Ala.; Georgia Eclectic Medical College, Atlanta, 1878; aged 74; died in Etawah County, Ala., March 29, from cerebral hemorrhage.

Harry Gove, St. Andrew's, N. B.; College of Physicians and Surgeons in the City of New York, 1867; aged 74; died, January 28, from chronic gastritis.

William H. Snyder, Hastings, Mich. (license, Michigan, fourteen years of practice, 1900); aged 79; died, April 29.

Jonathan Price, Anna, Ill.; University of Tennessee, Nashville, 1882; aged 72; died, April 23, from septicemia following an infected wound of the foot.

Henry Kelby Gardiner ⊕ Wakefield, R. I.; Dartmouth Medical School, Hanover, N. H., 1882; aged 63; died, April 30, from carcinoma of the liver.

William Allen Barnes, Martinsburg, W. Va.; Hahnemann Medical College, Philadelphia, 1895; aged 54; died, May 1, from pernicious anemia.

Esom G. Farris, St. Cloud, Fla.; Central College of Physicians and Surgeons, Indianapolis, 1883; aged 77; died, February 6, from influenza.

Wade Emmett Simpson, Indianapolis; University of Indianapolis; 1903; aged 42; died in Martinsville, Ind., May 3, from valvular heart disease.

William Henry Harrison Palmer, Napa, Calif.; Willamette University, Portland, Ore., 1889; aged 79; died, April 15, from senile debility.

Samuel Corbus Helmick, Commercial Point, Ohio; Miami Medical College, Cincinnati, 1871; aged 71; died, April 28, from heart disease.

Joel R. Davis, Marion, Ind.; Curtis Physio-Medical Institute, Marion, Ind., 1899; aged 80; died, April 18, from bronchopneumonia.

Luther Alvin Davis ⊕ Wadena, Minn.; University of Minnesota, Minneapolis, 1901; aged 42; died, April 22, from Addison's disease.

Joseph H. Hooper, Dallas, Texas; University of Nashville, Tenn., 1866; aged 79; died in Thorp Springs, Texas, March 28, from senility.

Leidy Shimer Hagerty, Arlington, N. J.; University of the South, Sewanee, Tenn., 1900; aged 44; died, April 21, from heart disease.

Jesse D. Garr, Summitville, Ind.; Eclectic Medical Institute, Cincinnati, 1896; aged 63; died, April 15, from acute gastritis.

Ovila Clement Gelineau, Indian Orchard, Mass.; Baltimore Medical College, 1894; aged 48; died, March 29, from diabetes.

William H. Young, Springdale, Ark.; Kansas City (Mo.) Medical College, 1883; aged 73; a Confederate veteran; died, April 7.

Harwin O. Rockwell, Crown Point, Ind.; Chicago Medical College, 1881; aged 70; died, May 4, from valvular heart disease.

Edwin Llewellyn Chase ⊕ Shrewsbury, Mass.; Baltimore University, 1898; aged 47; died in Smyrna, Me., April 29.

William L. Stone ⊕ Pittsburgh; University of Pennsylvania, Philadelphia, 1880; aged 61; died, April 21.

John William Heacock, Talladega, Ala.; Tulane University, New Orleans, 1867; aged 83; died, April 27.

R. F. Harnesberger, Beckville, Texas; Medical College of Georgia, Augusta, 1884; aged 62; died, April 19.

John Magee, Troy, N. Y.; College of Physicians and Surgeons, Baltimore, 1880; aged 64; died, April 19.

John B. Cunningham, Norwich, Conn.; University of Vermont, Burlington, 1890; aged 52; died, April 1.

William A. Stephens, Cleveland; Western Reserve University, Cleveland, 1887; aged 59; died, April 15.

W. J. Trask, Great Cacapon, W. Va. (license, West Virgina, 1881); aged 62; died about April 23.

James Richards, Omaha; Missouri Medical College, St. Louis, 1890; aged 75; died, April 15.

Marriages

MARCUS BEEKMAN, Natchez, Miss., to Miss Lena M. Triche of Newellton, La., at Natchez, March 27.

NEIL SEWELL MOORE, St. Louis, to Miss Helen Hereford of Springfield, Ill., April 10.

GEORGE MICHAEL FITZGERALD to Miss Eileen Phelan, both of Chicago, recently.

NELSON MILES HOLDEN to Miss M. Alice Stengle, both of Brooklyn, May 3.

JACOB A. KOHN to Miss Jeanette Herma Schultz, both of Chicago, May 6.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

MORE MISBRANDED NOSTRUMS

How the Bureau of Chemistry Is Protecting the Public Against "Patent Medicines" Sold Under False and Fraudulent Claims

Seelye's Ner-Vena.—A quantity of this product, shipped in January, 1917, by the A. B. Seelye Medical Co. of Abilene, Kan., was analyzed by the Bureau of Chemistry, which reported that the preparation was a syrup containing alcohol and vegetable extractives among which were those of juniper, wild cherry, senna, gentian, sassafras, uva ursi (bearberry) and cinchona. "Seelye's Ner-Vena" was sold as a cure for pimples, loss of memory, "tired feeling," locomotor ataxia, bed wetting, female complaints, premature old age, malaria, pericarditis, impaired vision, hysteria, nasal catarrh and several other conditions. Naturally these claims were declared false and fraudulent. In March, 1919, the company pleaded guilty and was fined $10 and costs. — [*Notice of Judgment No. 6766; issued April 20, 1920.*]

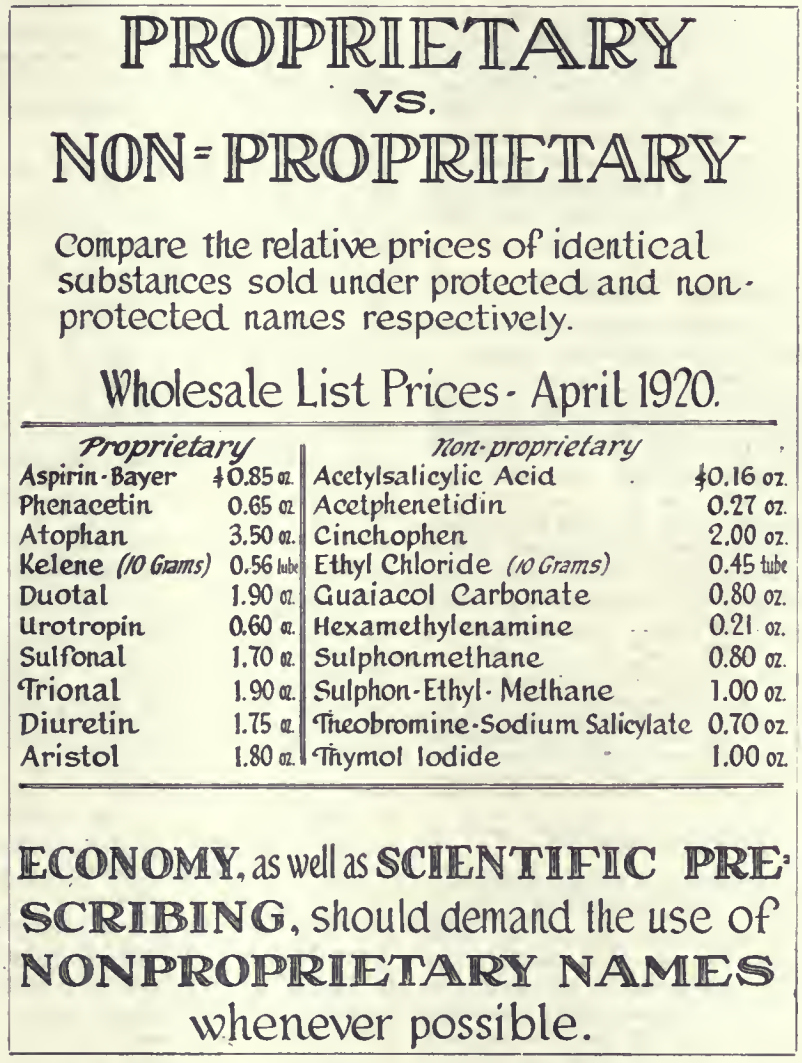
Hill's Rheumatic Pills. — These pills were shipped in June, 1917, by Harriet W. Belden, who traded as the H. W. Belden Co., Minneapolis, Minn. The federal chemists reported that analysis showed the pills to consist of vegetable extracts, including aloes, and 5 per cent. of mineral salts. They contained no salicylates, carbonates, iodids, bromids, alkaloids, ammonia or guaiac. "Hill's Rheumatic Pills" were falsely and fraudulently represented as a cure for rheumatism, neuralgia, gout, erysipelas, eczema, syphilis, pyorrhea, etc. In April, 1919, Harriet W. Belden pleaded guilty and was fined $10.—[*Notice of Judgment No. 6770; issued April 20, 1920.*]

Jenkins' Rheumatism, Gout and Neuralgia Annihilator.—The Parker-Blake Co., Ltd., New Orleans, La., shipped in October, 1917, a quantity of "Jenkins' Rheumatism, Gout and Neuralgia Annihilator." The federal chemists reported that analysis of the product showed that it contained over 46 per cent. alcohol, 1.5 per cent. salicylic acid, resinous plant extract and water. It was sold under the claim that it was a cure for acute and chronic articular rheumatism, muscular rheumatism, internal rheumatism, neuralgia, gout, paralysis and sciatica. These claims were declared false and fraudulent. In June, 1919, the company pleaded guilty and was fined $10. —[*Notice of Judgment No. 6771; issued April 20, 1920.*]

Short Stop.—Henry M. O'Neil of New York City shipped a quantity of "Short Stop" in August, 1917. This, when analyzed by the Bureau of Chemistry, was reported to be a syrup containing licorice and wild cherry extracts, ammonium carbonate, small amounts of an antimony salt, benzoic acid, camphor, oil of anise and traces of an unidentified alkaloid. It was falsely and fraudulently represented as a cure for pneumonia, consumption, bronchitis, colds, hoarseness and all throat and lung troubles. In January, 1919, O'Neil pleaded guilty and was fined $15. — [*Notice of Judgment No. 6777; issued April 20, 1920.*]

Antiseptine. — The Cal-Sino Co., Baltimore, Md., shipped in March, 1918, a quantity of "Antiseptine." The Bureau of Chemistry reported that analysis of "Antiseptine" showed that the stuff was a powder composed essentially, of about 48 per cent. anhydrous zinc sulphate, with about an equal amount of lead acetate, together with a small amount of copper acetate. "Antiseptine" was falsely and fraudulently represented as a cure and specific for fistulas, when in truth and in fact it was not. In October, 1919, the company pleaded guilty to this charge and also to the charge of misbranding a remedy sold for sick horses. It was fined $100 and costs.—[*Notice of Judgment No. 6810; issued April 23, 1920.*]

Cassidy's 4X and P. G. S.—The Schuh Drug Co., Cairo, Ill., shipped in December, 1916, and April, 1917, a quantity of "Cassidy's 4X" and "P. G. S." The federal chemists reported that "Cassidy's 4X" was found to consist essentially of aloes, colocynth, resins and a small amount of some mercury salt, alcohol and water; "P. G. S." was reported to consist of plant extract, including extract from a laxative drug, resin and not more than a trace, if any, of mercury, alcohol and water. Both "Cassidy's 4X" and "P. G. S." were falsely and fraudulently represented as cures for eczema, syphilitic affections, rheumatism, malarial poison and all affections of the skin caused by impure blood and as a relief for kidney and bladder dis-



This is a greatly reduced reproduction of one of numerous posters shown at the New Orleans meeting in the A. M. A. Chemical Laboratory Exhibit. The original measured 22x28 inches. It is reproduced at the request of a large number of physicians who visited the exhibit.

eases. In October, 1918, the Schuh Drug Company pleaded guilty and was fined $25 and costs.—[*Notice of Judgment No. 6841; issued April 23, 1920.*]

Hall's Canker and Diphtheria Remedy.—This product, which was said to have been shipped in August, 1918, by Selena D. Hall, Salt Lake City, Utah, was labeled as "an infallible remedy for diphtheria," a statement which, of course, was false and fraudulent. No claimant appearing for the property, the court entered a judgment of condemnation and forfeiture in December, 1918, and ordered that the product should be destroyed by the United States marshal.—[*Notice of Judgment No. 6836; issued April 23, 1920.*]

Red Cross Pile Cure.—William Davidson Rea, who did business at Minneapolis, Minn., under the name of Rea Bros. & Co., shipped in June, 1917, a quantity of "Red Cross Pile Cure" which was misbranded. These suppositories when analyzed by the Bureau of Chemistry, were found to consist essentially of cocoa butter, tannin, menthol, a lead compound, iodid, sulphate and possibly acetate. It was declared misbranded because the labels falsely and fraudulently represented it as a cure for blind, bleeding, itching and protruding piles, fistula, fissures, ulcers and all inflammation of the rectum and lower bowel. In April, 1919, Rea pleaded guilty and was fined $5.—[*Notice of Judgment No. 6842; issued April 23, 1920.*]

"COTTON PROCESS ETHER"

In the Query and Minor Notes department of The Journal of February 21 some inquiries from physicians relative to "Cotton Process Ether" were answered. In referring to the composition of this product it was stated that the secretary of the Council on Pharmacy and Chemistry had asked the manufacturers, the Du Pont Chemical Works, for information on this point and one paragraph from the firm's reply was quoted. Another paragraph from the same letter was omitted and to this omission the manufacturers took exception, expressing the opinion that by it The Journal led its readers to infer that the concern had "refused to furnish any information whatever" regarding the composition of the ether. The following paragraph, italicized as in the original letter, is the one in question:

"Cotton Process Ether contains no components which do not occur in other anesthesia ethers. Its peculiar properties result from the thorough methods taken to exclude harmful impurities, such as aldehydes, peroxides, traces of acids, carbon monoxide, sulphur compounds, etc., and to include carefully regulated quantities of only such of the usual components as we have found to give distinctly beneficial properties to the ether. We are willing to state that in this class we consider properly prepared ethylene of greatest importance, but we have not announced which of the beneficial components of anesthesia ether we include in our ether, or the amount of such components."

As the quotation shows, the paragraph is informative in a negative rather than in a positive way in that it states what Cotton Process Ether *is not* rather than what it *is*. Since that time, however, the manufacturers have notified The Journal that they have definitely decided to present Cotton Process Ether to the Council on Pharmacy and Chemistry for consideration and that in preparing the data required by the Council will define Cotton Process Ether as follows:

"An improved anesthesia ether consisting of highly refined diethyl oxid ($(C_2H_5)_2O$), plus approximately two volumes of ethylene (C_2H_4), ½ volume of carbon dioxide (CO_2), and 1 per cent. by weight of ethyl alcohol."

Spread of Vincent's Angina to Ear.—Dr. M. Ottoni de Rezende publishes in the *Boletim da Sociedade de Medicina de S. Paulo,* Brazil, a case of gangrenous perichondritis of the ear and otitis media from invasion by fusospirillar infection from the throat. Almost the entire ear and vicinity sloughed off down to the rear wall of the tympanic cavity. The other ear also showed beginning otitis media. Under local treatment with neutral solution of chlorinated soda and Peruvian balsam, and intravenous injection of neo-arsphenamin, the process was arrested and healed, but the child succumbed later to the cachexia and autointoxication.

Correspondence

OBSERVATIONS SUGGESTED BY "SYPHILITIC SCARS OF THE SPIRIT"

To the Editor:—Apropos of Dr. Collins' scholarly and altogether sympathetic case report chronicled in his recent communication (Syphilitic Scars of the Spirit, The Journal, May 1, 1920, p. 1216), one notes an admirable drawing of disease effect on that more elevated, moral entity (soul, spirit) which exists beyond purely mental cerebration. Yet I have wondered in respect to his conclusion of "miscarriage of therapeutic justice and mockery of studied effort" why the soul scar was stressed alone. Deterioration of mental capacity presented a fact the patient, himself, recognized as do many who are more frankly demented. Perhaps comment was so shaped because in the usual summing up of individual mental defect, intellectual capacity is alone emphasized, although moral disintegration, in some degree, is an invariable concomitant.

The case in question offers, too, a thought regarding treatment which I believe holds good today very often and is spoken of here only because, although not the attending but the consulting physician, Dr. Collins' detailed recital of treatment given makes the instance serve well as an example. Thus, it is related that months previous to the first symptom of meningeal irritation the blood serum had shown a ++++ Wassermann reaction. Thereupon this patient received forty intramuscular injections of mercury. Two months previous to his attacks of vertigo, nausea and development of conspicuous mental symptoms, a facial paralysis had supervened. This had improved to some extent, but was still quite noticeable when Dr. Collins first saw the patient. Also, at this time the man looked very ill, was emaciated and pale, and during the examination was bathed in perspiration. The patient at this time weighed 98 pounds, his ordinary weight being 130 pounds. Laboratory tests were corroborative of the diagnosis of basilar meningo-encephalitis, the spinal fluid containing 150 cells per cubic millimeter. Treatment was changed to intravenous and intraspinal injections of arsphenamin, two of each, and daily inunctions of mercury. The serum and spinal fluid became negative, and the cells of the latter dropped to 11 per cubic millimeter. The patient's physical condition improved much, and his mental condition bettered up to a certain point, and thereafter remained stationary. He was given further intravenous injections of arsphenamin. Later in a sanatorium, antisyphilitic treatment with both arsphenamin and mercury was continued for another six weeks. Four months after coming under observation, his attending physician again put him under treatment continuing for about a year. Altogether the patient received about thirty intravenous injections, four intraspinal, and scores of injections and inunctions of mercury.

Repetition of this detail is set down because it brings out the patent fact of somewhat mechanical therapeutic procedure, although the use of the laboratory addressed to serologic conditions exhibits apparent scientific management. First, despite evidence of nonassimilation and reaction to mercury in the single manner initially given, no change of method is made in the face of disease progress shown by cranial nerve involvement and general physical deterioration. When arsphenamin injections are begun, an immediate betterment accrues to a degree and then stops. Nevertheless, thereafter it is arsphenamin, mercury and Wassermann test until arrival of that time which makes further attention appear useless.

Has this procedure, even after turning to arsphenamin for aid, lacked something in the interest of the patient? I think

so, and exactly that coefficient which is now so frequently lost sight of. Good clinicians and therapeutists of an earlier day, without the guidance of the identification of *Spirochaeta pallida*, the Wassermann reaction and the striking benefits of arsphenamin, and therefore more dependent on clinical watchfulness and tardier effects of mercury and iodin, would probably have adopted a less routine method. For the patient whose physical condition was below par, bed rest and full feeding was prescribed when it could be had, but particularly, when therapeutic effect from mercury became stationary "alteratives" were given. In the days of Rush, red clover, stillingia, burdock root, etc., were for a time substituted for actual specific treatment. Twenty-five years ago in clinics such as Neumann's or Kaposi's, Zittmann's decoction was given as interim medication between courses of mercury. Why? In modern vernacular, the handy phrase "to increase resistance" comes as a ready answer. To what? In an older day one would need to have said to the disease itself; today to the pale spirochete. This, however, was not the real thought. These clinicians noted that after "alterative treatment" (and an improved general condition), the system reacted anew to mercury and potassium iodid. Today we may theorize as to cause, saying, perhaps, that we thus reactivate essential organs of internal secretion. They knew nothing of these things, but held strongly to the lessons of experience and acted in accordance with them. The present day practitioner has great advantages over his elders who were without laboratory aids, but it would seem that just because of the diversions arising from the latter the modern sometimes becomes mechanical as to therapeutic concepts and hence, at times, falls short in respect to best treatment continuity.

BERNARD OETTINGER, M.D., Long Beach, Calif.

"POISON IVY, OAK AND SUMAC"

To the Editor:—The editorial in THE JOURNAL, May 1, p. 1258, leads me to put together a few notes on my experience and observations. Poison ivy does not affect me unless there has been an unusual or prolonged exposure. When I first came to northern Indiana and found the swamp sumac or poison tree (*Rhus venenata* or *vernix*) I assumed that I was equally immune to this species of rhus and did not hesitate to break off a small branch for my herbarium—a proceeding I never repeated, for the next day I had a severe dermatitis of the hands, face "and elsewhere." Of course, I tried the remedies given in the books; but it was a week and more until the swelling subsided and another week until I was through shedding.

Once a year at least I go to the tamarack swamps (now almost extinct) to botanize; here the swamp sumac is common. In spite of all effort at prevention or avoidance I am usually poisoned more or less severely. For a long time I found no good remedy, no "cure"—only palliatives.

One year I had an unusually severe attack and then experimented freely. Among other things I applied a dilute solution of liquor formaldehydi to one hand, but this "set the skin afire" and required the soothing application of phenol solution; the cure was worse than the disease. Greatly to my surprise there was a marked improvement the next morning—almost a cure. It then occurred to me to combine phenol with the formaldehyd. The other hand was treated, and with equally good result.

Since then I have used this treatment as a matter of routine. I found that by freely applying a solution on coming out of the swamps there was no eruption, no poisoning at all.

I prepared a solution for dispensing. My usual formula is: liquor formaldehydi, 5 c.c.; saturated aqueous solution of phenol, 10 c.c.; distilled water to make 100 c.c. (To this may be added a drop of methylene blue solution, as blue is a color that leads people to pause about using internally. To disguise the phenol odor, to which some object, a drop of some essential oil may be added).

In dispensing I supply a 4-dram vial with a swab in the cork and with the directions: Apply freely the first time; after that use sparingly every few hours, as needed.

Need it be added that a remedy that is "a power for good" may also be a power for evil? Some patients act on the principle that, if a little is good, more is better. The hardening or tanning effect of formaldehyd must be considered and explained to patients. The earlier the solution is applied, the better the effect.

ROBERT HESSLER, M.D., Logansport, Ind.

To the Editor:—Your editorial of May 1 on "Poison Ivy, Oak and Sumac" was of interest to me, as I was one of the unfortunate ones susceptible to poison ivy, etc. When about 10 years old I had a beautiful dose, covered from head to foot, eyes closed, etc.

A solution of zinc sulphate was used on my eyes that immediately dried off all of the poison ivy vesicles around the eyes. Since practicing medicine I have used it hundreds of times with good results. All irritation or even eruption can be prevented if it is used immediately after exposure. If used within twenty-four hours after exposure or ten hours after the appearance of the vesicles, it will abort the attack. If the case is not seen until the deeper layers of the epidermis are involved, the cure is slower but just as sure. To abort an attack, use 10 grains of zinc sulphate to 1 ounce of water. For later treatment, use half strength.

S. W. IRVING, M.D., New Britain, Conn.

To the Editor:—Relative to "Poison Ivy, Oak and Sumac" I have had splendid results from the use of equal parts of gum camphor, crystal phenol and the plain hydrocarbon oil, thoroughly rubbed in. Generally one application a day for two or three days is sufficient. It is to be understood that it is not to be applied over too extensive an area of skin surface at one time; also, in some cases a little more of the oil could be used, and in other cases less oil would give better results; but in most cases, equal parts of each will do the work.

ALBERT E. STOLER, M.D., Fort Wayne, Ind.

"BOTULISM DUE TO OLIVES"

To the Editor:—With reference to the questions concerning botulism raised in your editorial (THE JOURNAL, May 1, p. 1261), it may be desirable to answer the questions as fully as possible. The strain of *Bacillus botulinus* isolated from the Richmond, Calif., poisoning case was identified by Dr. Dickson as Type A, (too late for inclusion in the paper, p. 1220). The relish concerned in that poisoning case was made from ripe olives. The title of the paper was inclusive of the cases mentioned. The stuffed olives described were ripe olives stuffed. A certain portion of the ripe olives produced are marketed as stuffed olives. Pure culture experiments with *Bacillus botulinus* are accompanied by an objectionable odor. These odors are intensified when other organisms are present, as is usually the case. The doubtful character of odor as a safeguard must be recognized, but it must also be recognized that the physical examination of the can, including evidence of swell, turbidity, disintegration and odor, is the sole dependence of the ordinary consumer to protect himself against spoiled food. The reason for emphasis on the evidences of spoilage in our various publications has been confidence based on our observations that rigorous care in making the examinations required would

have prevented most, if not all, of the poisoning cases with which we have come in contact.

CHARLES THOM, PH.D., Washington, D. C.
Mycologist, Bureau of Chemistry, U. S.
Department of Agriculture.

THERMOREGULATION OF REFRIGERATORS

To the Editor:—Having experienced a great deal of difficulty in the regulation of temperature of an ammonia and brine refrigerator, I wish to give my solution of the problem in the hope that other laboratories may benefit thereby. The thermoregulator installed in our refrigerator proved unsatisfactory and defective. On inquiry it appeared that the difficulty was that compressed air was used to open the valve admitting the chilled brine to the pipes. The compressed air entered the thermoregulator by a very fine port which was constantly becoming plugged by moisture and rusting. Learning this, we simply introduced a wash bottle of sulphuric acid into the air system before it reached the port. Since this wash bottle was installed, our refrigerator has not varied 3 degrees in temperature. We have used this device now for six months and find it entirely satisfactory.

LAWRENCE W. STRONG, M.D., New York.
Pathologist, Woman's Hospital.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

POISONING BY MERCURIC CHLORID DOUCHES

To the Editor:—In THE JOURNAL, May 1, 1920, p. 1227, Dr. P. B. Bland of Philadelphia reported three very interesting cases of mercuric chlorid poisoning from vaginal injections. I am making a study of such cases and would appreciate the courtesy if you could furnish me with additional references from your journal or other journals or any medical works; also cases in which a saturated sponge or other mechanical device, together with mercuric chlorid, have been used. I have found a paragraph in Jewett's Obstetrics, but have not been very successful in finding other articles on the subject.

E. E. BRATTON, M.D., Philadelphia, Pa.

ANSWER.—Following is a list of articles on this subject:

Fitzgibbon, G.: Poisoning from Mercury Tablet Introduced in Vagina, *Lancet*, March 16, 1918; abstr. *Dublin J. M. Sc.*, April, 1918.
Conaway, W. P.: Fatal Case of Mercury Poisoning from Vaginal Absorption, *J. M. Soc. New Jersey*, March, 1917.
Buckman, F.: Case of Mercuric Chlorid Poisoning Due to Vaginal Douches, THE JOURNAL, Feb. 14, 1914, p. 535.
Baux, G., and Roques, E.: Fatal Mercurial Poisoning from Intra-Uterine Injection, *Rev. mens. de gynéc., d'obstét. et de pédiat.*, Jannary, 1912; *Obstétrique*, March 9, 1912, p. 740.
Mabbott, J. M.: Mercuric Chlorid Poisoning, Associated with Secondary Hemorrhage from Vaginal Douche, Given Seven Days After Delivery, THE JOURNAL, Aug. 15, 1911, p. 448.
Lankford, Burnley: A Peculiar Case of Mercurial Poisoning, THE JOURNAL, April 9, 1910, p. 1203.
Shrap, W. H.: The Careless and Criminal Use of the Mercuric Chlorid Tablet, THE JOURNAL, April 30, 1910, p. 1459.
Patek, Arthur J.: Poisoning by Mercuric Chlorid Through Vaginal Douches, THE JOURNAL, June 4, 1910, p. 1867.
Poisoning by Sublimate Tablets, Editorial, THE JOURNAL, June 4, 1910, p. 1877.

DUCTLESS GLAND DISTURBANCES IN U. S. SOLDIERS DURING THE EUROPEAN WAR

To the Editor:—Being interested in material on diseases of the glands of internal secretion in U. S. soldiers in our army camps and at the front during the European war, I should feel much indebted to any physician who served as a medical officer in the army during the war who might be able to supply me with information in regard to this matter, particularly statistical relations, semeiology, the incidence of these diseases in drafted men and in enlisted men who were subsequently on duty, and the measures taken in dealing with such cases. Any help I may receive in this matter will be highly appreciated and acknowledged.

JAMES ROBB CHURCH, M.D.,
Army Medical Museum, Washington, D. C.
Colonel, M. C., U. S. Army; Secretary Treasurer,
Association of Military Surgeons.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARIZONA: Phoenix, July 6-7. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.
CALIFORNIA: San Francisco, June 28-July 1. Sec., Dr. Chas. B. Pinkham, 135 Stockton St., San Francisco.
COLORADO: Denver, July 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.
CONNECTICUT: Hartford, July 6-7. Sec., Regular Board, Dr. Robert L. Rowley, 49 Pearl St., Hartford.
DELAWARE: Wilmington, June 15-17. Pres. Medical Council, Dr. H. W. Briggs, 1026 Jackson St., Wilmington.
FLORIDA: Eclectic Board, Jacksonville, June 18-19. Sec., Dr. G. A. Munch, 1306 Franklin St., Tampa.
FLORIOA: Regular Board, Jacksonville, June 14-15. Sec., Dr. Wm. M. Rowlett, Citizens Bank Bldg., Tampa.
GEORGIA: Atlanta, June 9-11. Sec., Dr. C. T. Nolan, Marietta.
ILLINOIS: Chicago, June 14-17. Director, Mr. Francis W. Shepardson, Springfield.
IOWA: Iowa City, June 16-18. Sec., Dr. Guilford H. Sumner, Capitol Bldg., Des Moines.
KANSAS: Topeka, June 15-16. Sec., Dr. H. A. Dykes, Lebanon.
LOUISIANA: New Orleans, June 10-12. Sec., Dr. E. W. Mahler, 141 Elk Place, New Orleans.
MAINE: Portland, July 6-7. Sec., Dr. Frank W. Searle, 140 Pine St., Portland.
MARYLAND: Baltimore, June 15. Sec., Dr. J. McP. Scott, 137 W. Washington St., Hagerstown.
MICHIGAN: Ann Arbor, June 8-10. Sec., Dr. B. D. Harrison, 504 Washington Arcade, Detroit.
MINNESOTA: Minneapolis, June 1-4. Sec., Dr. Thos. McDavitt, 539 Lowry Bldg., St. Paul.
MISSOURI: St. Louis, June 14-16. Sec., Dr. Geo. H. Jones, State House, Jefferson City.
NEBRASKA: Liucoln, June 9-11. Sec., Department of Public Welfare, Mr. H. H. Antles, Lincoln.
NEW JERSEY: Trenton, June 15-16. Sec., Dr. Alexander MacAlister, State House, Trenton.
NORTH CAROLINA: Raleigh, June 21. Sec., Dr. H. A. Royster, 423 Fayetteville St., Raleigh.
NORTH DAKOTA: Grand Forks, July 6-9. Sec., Dr. Geo. M. Williamson, 860 Belmont Ave., Grand Forks.
OHIO: Columbus, June 8-11. Sec., Dr. H. M. Platter, State House, Columbus.
OREGON: Portland, July 6. Sec., Dr. Urling C. Coe, 1208 Stevens Bldg., Portland.
PENNSYLVANIA: Philadelphia and Pittsburgh, July 6-10. Sec., Dr. Thos. E. Finnegan, State Capitol, Harrisburg.
RHODE ISLAND: Providence, July 1-2. Sec., Dr. Byron U. Richards, State House, Providence.
SOUTH CAROLINA: Columbia, June 22. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.
TENNESSEE: Memphis, Nashville and Knoxville, June 11-12. Sec., Dr. A. B. DeLoach, 1001 Exchange Bldg., Memphis.
TEXAS: Galveston, June 22-24. Sec., Dr. Thos. J. Crowe, Trust Bldg., Dallas.
UTAH: Salt Lake City, July 5-6. Sec., Dr. G. F. Harding, 405 Templeton Bldg., Salt Lake City.
VERMONT: Burlington, June 29-July 1. Sec., Dr. W. Scott Nay, Underhill.
VIRGINIA: Richmond, June 23-25. Sec., Dr. J. W. Preston, McBain Bldg., Roanoke.
WASHINGTON: Seattle, July 6-8. Sec., Dr. Wm. M. O'Shea, 305 Old National Bank Bldg., Spokane.
WISCONSIN: Milwaukee, June 29-July 1. Sec., Dr. John M. Dodd, 220 E. Second St., Ashland.
WYOMING: Cheyenne, June 7-9. Sec., Dr. J. D. Shingle, Cheyenne.

Colorado January Examination

Dr. David A. Strickler, secretary of the Colorado State Board of Medical Examiners, reports the written examination held at Denver, Jan. 6, 1920. The examination covered 8 subjects and included 80 questions. An average of 75 per cent. was required to pass. Of the 13 candidates who took the physician's and surgeon's examination, 5, including 1 osteopath, passed and 7, including 6 osteopaths, failed. Twenty candidates were licensed by reciprocity. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Reliance Medical College	(1910)	83
Kansas City College of Medicine and Surgery	(1917)	75
Jefferson Medical College	(1915)	92
Kyoto Imperial University	(1910)	75
FAILED		
University of West Tennessee	(1918)	40

College	Year Grad.	Reciprocity with
LICENSED BY RECIPROCITY		
Cooper Medical College	(1893)	Oregon
Chicago College of Medicine and Surgery	(1909)	Illinois
Rush Medical College (1910) Iowa, (1912) Nebraska	(1915)	Illinois
University of Kansas	(1917)	Wyoming
Baltimore Medical College	(1910)	Penna.
Harvard University	(1901)	Minnesota
Barnes Medical College	(1899)	Missouri
Homeopathic Medical College of Missouri	(1897)	Missouri
Kansas City Medical College	(1898)	Kansas
Missouri Medical College	(1893)	Illinois
St. Louis University	(1914)	Oklahoma
John A. Creighton Medical College	(1912)	Nebraska

Lincoln Medical College	(1899)	Nebraska
Long Island College Hospital	(1911)	New York
University of the South	(1901)	Texas
University of Tennessee	(1903)	Tennessee
Vanderbilt University	(1914)	Michigan
University of Virginia	(1902)	Dist. Colum.

Minnesota January Examination

Dr. Thomas S. McDavitt, secretary of the Minnesota State Board of Medical Examiners, reports the oral, written and practical examination held at Minneapolis, Jan. 6-8, 1920. The examination covered 15 subjects and included 80 questions. An average of 75 per cent. was required to pass. Of the 6 candidates examined, 5 passed and 1 failed. Fifteen candidates were licensed by reciprocity. Fifteen candidates, including one osteopath, were licensed on Army and Navy credentials, and one candidate was licensed on Red Cross Service. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Rush Medical College		(1919)	90
Harvard University		(1911)	93
University of Minnesota Medical School		(1917) 88, (1918)	86
Columbia University		(1917)	91
	FAILED		
College of Physicians and Surgeons, Chicago		(1897)	58

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Chicago College of Medicine and Surgery		(1913)	N. Dakota
Northwestern University		(1918. 2)	Illinois
Rush Medical College		(1914), (1916), (1919)	Illinois
Kansas Medical College		(1909)	Kansas
Johns Hopkins University		(1915)	Maryland
Detroit College of Medicine and Surgery		(1914)	Michigan
University of Nebraska		(1904) Iowa, (1918)	Nebraska
New York University		(1897)	Dist. Colum.
Pulte Medical College		(1910)	Ohio
University of Oregon		(1915)	Colorado
Memphis Hospital Medical College		(1911)	Tennessee

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Chicago College of Medicine and Surgery		(1916)	U. S. Army
College of Physicians and Surgeons, Chicago		(1910)	U. S. Army
Rush Medical College		(1911) (1912) (1914)	(1916) U. S. Army
University of Illinois		(1911) Red Cross Service (1913)	U. S. Army
		(1916)	U. S. Navy
University of Maryland		(1914), (1915)	U. S. Army
University of Michigan Medical School		(1915)	U. S. Army
Hamline University		(1906)	U. S. Army
St. Louis University		(1909)	U. S. Army
University of Pennsylvania		(1912)	U. S. Army

Oklahoma January Examination

Dr. James M. Byrum, secretary of the Oklahoma State Board of Medical Examiners, reports the written examination held at Oklahoma City, Jan. 13-14, 1920. The examination covered 12 subjects and included 100 questions. An average of 75 per cent. was required to pass. Nine candidates were examined, all of whom passed. Forty candidates, including 3 osteopaths, were licensed by reciprocity. One candidate was licensed on Navy credentials. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Emory University		(1919)	84
College of Physicians and Surgeons, Chicago	(1899) 75	(1912)	88
Loyola University		(1917)	85
University of Illinois		(1917)	87
University of Maryland		(1909)	86
Medico-Chirurgical College of Philadelphia		(1916)	89
University of Texas		(1919, 2)	85

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
College of Physicians and Surgeons, Little Rock		(1910)	Arkansas
Univ. of Ark.	(1907) N. Mexico (1912), (1915),	(1917)	Arkansas
Atlanta Medical College		(1914), (1916)	Georgia
College of Physicians and Surgeons, Chicago		(1906)	Arkansas
Rush Medical College		(1910)	Illinois
University Medical College of Kansas City		(1905)	Missouri
Hospital College of Medicine, Louisville		(1901)	Kansas
Tulane University	(1907) Tenn., (1915) Georgia,	(1917)	Louisiana
Saginaw Valley Medical College		(1903)	Michigan
Barnes Medical College		(1905)	Missouri
Missouri Medical College		(1883. 2)	Arkansas
St. Louis University		(1911)	Missouri
Washington University		(1909), (1915)	Missouri
University of Nebraska		(1917), (1919)	Nebraska
Eclectic Medical College		(1913)	New Mexico
Western Reserve University		(1917)	Ohio
Jefferson Medical College	(1916) Kansas, Mississippi		
University of Pennsylvania		(1915)	Texas
Chattanooga Medical College		(1906)	Tennessee
Memphis Hospital Medical College		(1904)	Arkansas
Vanderbilt University		(1891) Tennessee, (1913)	Georgia
Fort Worth School of Medicine		(1917)	Texas
Meharry Medical College		(1918, 2)	Tennessee
University of Texas		(1898), (1916)	Texas

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
University of Maryland		(1917)	U. S. Navy

Book Notices

BODILY CHANGES IN PAIN, HUNGER, FEAR AND RAGE. An Account of Recent Researches into the Function of Emotional Excitement. By Walter B. Cannon, M.D., C.B., George Higginson Professor of Physiology in Harvard University. Cloth. Price, $3 net. Pp. 311, with illustrations. New York: D. Appleton and Company, 1920.

This little volume, appearing first in 1915, and now reprinted with only slight changes, is a well written, popular account of the investigations that Dr. Cannon and his pupils have made in this field of physiology during the last twenty years. The book is of equal interest to the physiologist, the psychologist and the medical practitioner. Since it was written, our conception of the rôle of epinephrin in normal bodily functions has undergone considerable modifications, owing chiefly to the work of Dr. G. N. Stewart of Cleveland. The final chapter, on "Alternative Satisfactions for the Fighting Emotions," is an attempt to apply physiologic investigations at Harvard to the problems of social control.

AN INTRODUCTION TO GENERAL PHYSIOLOGY, WITH PRACTICAL EXERCISES. By W. M. Bayliss, M.A., D.Sc., F.R.S., Professor of General Physiology in University College, London. Cloth. Price, $2.50 net. Pp. 237. New York: Longmans Green & Co., 1919.

This little volume follows the general plan of the large book on general physiology written by this eminent physiologist a few years ago. It is essentially a new type of elementary textbook of physiology for beginners in this science, in that it deals exclusively with the chemical and physical processes in the organism, with little or no reference to anatomic structure or histologic detail. While the book is purposely elementary, medical men who graduated twenty-five or thirty years ago could peruse the first part of the volume with profit, as it presents the main advances in the application of the laws of chemistry and physics to vital phenomena that have been made during this period.

Medicolegal

Illegal Obtaining and Dispensing of Morphin Sulphate

(Trader v. United States (U. S.), 260 Fed. R. 923)

The United States Circuit Court of Appeals, Third Circuit, in affirming a judgment of conviction of defendant Trader, a physician, of violating the Harrison Narcotic Law, says that, as the defendant was not registered as a dealer in the drug and had not paid the special tax, as required by Section 1 of the act, and as he had dispensed the drug to persons without the written orders required by Section 2, and also, by means of the statutory order forms, had obtained large quantities of the drug, he was unquestionably guilty of the violations charged, unless it appeared, in the one case, that the drug was dispensed or distributed in good faith, in the course of his legitimate professional practice, and in the other case that it was acquired for use therein. The principal error assigned was the refusal of the trial judge to charge the jury, without qualification, that the act "does not limit the amount of morphin sulphate which a physician may prescribe or administer to his patients." He charged that while the law "does not in specific terms" create such a limitation, "it does provide that such drug must be prescribed in the course of his professional practice only." It is true that the act does not in specific terms state how much morphin sulphate may be prescribed or administered by a physician to his patients It does, however, exempt physicians, in the dispensing and distributing of the drugs covered by the act, from the requirements of Section 2 only in such cases as are "in the course of his professional practice only." The regulations promulgated by the commissioner of internal revenue, pursuant to the authority conferred by Section 1 of the act, provide for separate and distinct registration by dealers and physicians. Hence, if the defendant dispensed the drug in question not in the legitimate practice of his profession, he became a dealer in the drug and was required

to register as such. Therefore, whether he was a dealer depended on whether or not he was dispensing the drug in the course of his legitimate practice as a physician. Likewise, the legality of his acts in obtaining the drug by means of the statutory order forms was dependent on whether he acquired it for use "in the legitimate practice of his profession." Manifestly, therefore, so far as the issues in this case were concerned, there was in the act just such a limitation as the trial judge stated. Accordingly, the qualification which he made in the requested instruction was not only proper, but, as it seems to this court, was quite necessary in order that the jury might not be misled and confused. It was next urged that the trial judge was not justified in stating, as he did in his charge, that, while the Harrison act is a revenue measure, "its clear purpose . . . is to restrict the distribution and use of opium and its derivatives to medicinal purposes only." It is assuredly within the discretion of a trial judge, in charging a jury, to state the purpose, as he conceives it, that Congress had in passing any given act. If an erroneous statement of such a purpose may be considered reversible error in any case, the court is entirely clear that, although the Harrison act was passed pursuant to the taxing power of Congress and is clothed in the garb of a revenue act, the judge did not misconceive or misstate the broad underlying purpose which Congress had in passing it, and therefore that no harm was done the defendant by the statement in question.

Illegal Sales of Narcotic Drugs by Physicians

(Oakshette v. United States (U. S.), 260 Fed. R. 830)

The United States Circuit Court of Appeals, Fifth Circuit, in affirming a judgment of conviction of defendant Oakshette of violating the Harrison Narcotic Law, says that the indictments charged sales to have been made by him, not in pursuance of written orders, given by the purchasers, on forms prescribed by the commissioner of internal revenue. The proof showed that he was a physician and had registered with the collector of internal revenue. He was authorized to administer the prohibited drugs, without obtaining a written order, if they were administered "in the course of his professional practice," but not otherwise. The government contended that the drugs administered by him were not administered in good faith, in the course of his professional practice, but to gratify the desire or appetite of the patients or purchasers. He contended that they constituted legitimately medical treatment for his patients. The issue so made was submitted to the jury.

The contention of the defendant was that it was not within the issues presented by the indictments, since they merely charged sales illegal because not in pursuance of written orders. The only prohibitions of the statute are (1) sales by unregistered persons and (2) sales by registered persons not in pursuance of written orders. The defendant could be charged only with having made the one kind or the other. As he had registered, he was not guilty of the first. If, having registered, he made sales or dispensed the drug without obtaining a written order, he was guilty of the second kind, unless because he came within one of the excepted classes. If he administered the drug only in the course of his professional practice, he came within one of the excepted classes, and was not guilty. If, however, he administered the drug not in the course of his professional practice, then he did not bring himself within any of the excepted classes, and so came within the operation of the prohibition of Section 2, against selling or dispensing not in pursuance of a written order, and was properly charged with that offense. As a registered person he could have been charged with no other offense, since the act creates no other out of the act of selling or dispensing by registered persons. It does not make it a separate offense for a physician to administer the drug when it is not done in the course of his professional practice. His doing so merely removes him from the classes exempted from the operation of Section 2, and leaves him subject to the punishment prescribed by Section 2.

Dispensing the drug, though by a physician, if not in the course of his professional practice, is in legal effect a sale; and, being one, can be legally made only in pursuance of an order form; and the offense of doing it without one is necessarily that of selling or dispensing not in pursuance of a written order, in violation of Section 2 of the act.

The defendant complained that the evidence was insufficient to convict him. That there was evidence in the record from which the jury might well have inferred that the defendant administered the drug, not in good faith to cure his patients or alleviate their present suffering, but to satisfy their craving, as addicts, for the drug, was clear from the constant quantities over periods of as much as three months, during which the record showed it was furnished to a number of persons by the defendant. The sufficiency of his explanations as to why he failed to reduce the amounts, especially as to those he testified he was attempting to cure of the drug habit by the method of reduction, was for the jury to determine.

Liability of Physicians—Advising Local Physician

(Thornburg v. Long (N. C.), 101 S. E. R. 99)

The Supreme Court of North Carolina, in affirming a judgment of nonsuit in this action against a physician to recover alleged damages, says that the law governing the liability of a physician to his patient is well settled. While there is an implied contract that the physician or surgeon who undertakes to treat a patient will use all known and resonable means to accomplish the object for which he is called to treat the patient, and that he will attend to the patient carefully and diligently, there is no guaranty that he will cure him, or that he will not commit an error of judgment. The law implies only that he not only possesses, but that he will employ in the treatment of the case, such reasonable skill, care and diligence as are ordinarily exercised in this profession. But a physician or surgeon possessing the requisite qualifications and applying his skill and judgment with ordinary care and diligence to the diagnosis and treatment of a patient is not liable for an honest mistake or error of judgment in making or prescribing the mode of treatment, when there is ground for reasonable doubt as to the practice to be pursued.

The testimony of the plaintiff in this case tended to prove that he began suffering from a swollen arm, and, after being treated for about a week by his local physician and receiving no relief, he was sent by his family physician to the hospital of the defendant for treatment. The plaintiff told the defendant of his great suffering, and asked him to operate on him or give him some relief from his pain. The defendant examined the plaintiff at once, removed his shirt to the waist, found his arm swollen from elbow to neck, examined his back, looked over him, asked him as to his habits, private history relating to women, took blood from him for analysis, put him to bed, called on him next morning to make further examination, gave him some medicine, and told him he could not do anything until he had a report from the analysis of his blood—would not say it was tuberculosis. The defendant took some blood from the plaintiff's arm and sent it away to be tested, and the next day the plaintiff returned to his home to await the further orders of the defendant. In a few days the defendant wrote to the plaintiff's local physician that the plaintiff's blood showed the strongest positive Wassermann test, and that he had a bad case of syphilis, and nothing but heroic treatment would save his life. The plaintiff testified that he was a virtuous man and had never had sexual intercourse with any woman other than his wife, who was a woman above reproach. After he returned from the defendant's hospital, his local physician lanced his arm, and a few days thereafter it was again lanced, by another physician, and he had entirely recovered.

The question was, Did the defendant, under the facts as testified to by the plaintiff, use that skill and diligence which he was required to use, and was there evidence tending to prove the plaintiff's contention of negligence sufficient to be submitted to the jury? There was evidence, sufficient to go to the jury, that the defendant made an erroneous diagnosis when he concluded that the plaintiff suffered from the effects of syphilis, but there was not a scintilla of evidence that he

was incompetent or negligent. On the contrary, the evidence offered on behalf of the defendant indicated that he stood very high in his profession, and that in diagnosing the plaintiff's case he followed recognized and established practice. The fact that the defendant wrote to the plaintiff's local physician that the examination showed evidence of syphilitic poison was no basis for an action. It was the defendant's duty to communicate to him the conclusion he had reached. The communication was wholly privileged. The court thinks the defendant's motion for a nonsuit was properly allowed.

Competency of Evidence as to Insanity

(Davis v. Alderson (Va.), 100 S. E. R. 541)

The Supreme Court of Appeals of Virginia says, in this case wherein plaintiff Alderson sued defendant Davis for the specific performance of a contract by the latter for the purchase of a tract of land, and the defendant's defense was that when the contract was entered into he was temporarily insane, that three physicians were called as witnesses and examined as experts. None of them had seen the defendant at or near the time of the transaction, and they were not called on to testify from personal knowledge; but a question was propounded to them which ended with the inquiry, Would you regard a man in the financial condition of Mr. Davis, making the two trades and purchases above, as a man whose mind was in a proper condition and a man sane at the time or not? Their testimony was not expert testimony at all, but the mere inexpert opinions of these gentlemen, and should have been excluded.

Testimony of lay witnesses as to the sanity or insanity of a person is admissible in evidence when it appears that the witness has had sufficient opportunity, by observation, to form an opinion worth considering; but the opinion of the witness should be preceded by a statement of his opportunity for observation, and of the facts observed. The value of such testimony is dependent very largely on the character of the witness, his opportunities for observation, the facts observed, the interest; bias or prejudice of the witness, his capacity and intelligence in making and relating his observations, and other circumstances which affect the weight to be given to oral testimony generally. Usually such testimony, when general and continuous insanity is not involved, is not esteemed of much value, except so far as the opinion of the witness is justified by the data observed.

Whether the defendant's purchases were wise or foolish, if he had contractual capacity, was immaterial. If courts were permitted to pass on the wisdom or folly of contracts, or if that were a test of sanity or insanity, the business of the country would soon be involved in inextricable confusion. Allusion was made more than once to the fact that the defendant was of the great age of 62 years as affecting, in conjunction with other things, the validity of the contract; but the court will take judicial notice of the fact that men of greater age than that so far retain the confidence of the government in their mental capacity as to be placed in judicial positions where they have to pass on the validity of contracts made under identical circumstances with the case in judgment. Every one is presumed to be sane until the contrary is made to appear by him who alleges it.

The defendant was bound by his contract.

"Insane Delusion" Difficult of Accurate Definition

(Trustees of Epworth Memorial Methodist Church et al. v. Overman et al. (Ky.), 215 S. W. R. 942)

The Court of Appeals of Kentucky, in reversing a judgment that invalidated a will which was contested by the children of the testator on the sole ground that it was executed under an insane delusion as to their feelings and attitude toward him, says that an "insane delusion" that renders one incapable of making a will is difficult of accurate definition. It is much more than bias or prejudice, or any merely incorrect mental attitude. It is rather a wholly irrational state of mind on a particular subject; that is, such a mental state as is supported by no evidence whatever, and therefore purely a product of the imagination. As has been said, insane delusion should be distinguished from prejudice or error, as well as from eccentricity. It differs essentially from some rational belief, not well founded, however perversely the testator may have clung to it. An ill-founded belief, not actually insane, does not destroy testamentary capacity. And where one indulges in an aversion, however harsh, which is the conclusion of a reasoning mind, on evidence no matter how slight or inaccurate, his will cannot be on that account overturned.

Society Proceedings

COMING MEETINGS

American Assn. of Genito-Urinary Surgeons, Rochester, Minn., May 31.
American Climatological and Clin. Assn., Philadelphia, June 17-19.
American Gynecological Society, Chicago, May 24-26.
American Laryngological Association, Boston, May 27-29.
American Medico-Psychological Assn., Cleveland, O., June 1-4.
American Ophthalmological Society, Hot Springs, Va., June 15-16.
American Orthopedic Association, Toronto, Ont., June 7-10.
American Otological Society, Boston, May 31-June 1.
American Pediatric Society, Highland Pk., Ill., May 31.
American Psychopathological Assn., Cleveland, O., June 5.
Arkansas Medical Society, Eureka Springs, June 8-9.
Association of American Peroral Endoscopists, Boston, June 1.
Canadian Medical Association, Vancouver, B. C., June 22-25.
Massachusetts Medical Society, Boston, June 8-9.
Michigan State Medical Society, Kalamazoo, May 25-27.
Montana State Medical Association, Helena, July 14-15.
Nebraska State Medical Association, Omaha, May 24-26.
Nevada State Medical Association, Lake Tahoe, June 25-26.
New Jersey Medical Society, Spring Lake, June 15-17.
North Dakota State Med. Assn., Minot, June 15-16.
Ohio State Medical Association, Toledo, June 1-3.
Rhode Island Medical Society, Providence, June 3.
Southern Minnesota Medical Assn., Fairmont, Minn., June 28-29.
Western Electro-Therapeutic Association, Kansas City, Mo., May 27-28.

MEDICAL ASSOCIATION OF GEORGIA

Seventy-First Annual Session, held at Macon, May 5-7, 1920

The President, DR. E. G. JONES, Atlanta, in the Chair.

Forty-Three Gallbladder Operations

DR. R. M. HARBIN, Rome: In this series of cases there were seven men and thirty-six women. The youngest patient was 26, the oldest 77. The duration of stay in hospital was about the same for cholecystostomy as for cholecystectomy. In five cases, gallstones were unexpectedly discovered. Seventy-eight per cent. of the patients gave histories of devitalized teeth; 53 per cent. had had abscessed teeth; 31 per cent. had had tonsillitis; 50 per cent. had had rheumatism in some form; 15 per cent. had had jaundice, and 50 per cent. had had some form of septicemia.

Breast Tumors, Special Reference to So-called Cystic Mastitis

DR. C. W. ROBERTS, Atlanta: Chronic cystic mastitis bears a definite relationship to cancer of the breast, and must be considered a precancerous lesion. This disease becomes cancerous in one out of five cases observed to their final outcome. So-called cystic mastitis in patients above the age of 35, with suspicious malignant tendencies, should be treated by a radical operation of the Halstead type. In that special class of cases in younger women, unassociated with frank malignant tendencies, and when for individual reasons the patient's future would be more or less blighted by the complete operation, the conservative plan should be adopted. This disease furnishes about one third of breast lesions, discovered on routine examination.

Treatment of Cancer with Radium

DR. C. C. HARROLD, Macon: Radium is only a handmaid to surgery, and there are many cases in which it would be criminal to use radium instead of operating. Radium should not be used in cancer of the breast, except for treating recurrent nodules. It should not be used on the lip instead of doing the radical neck dissection. However, in cancer of

the lip it will do just as well as the old operation of dissecting out the growth from the lip without getting the neck glands, and with nothing like the accompanying deformity and parrot mouth occasionally seen. Radium should be used for the local growth; a few weeks later, after all local growth has been cleaned up, the radical operation on the neck should be performed. The value of radium is unquestioned in the inoperable cases of cancer of the uterus. In the treatment of early cancer of the cervix, there is no primary mortality. The patients are immediately relieved from all their symptoms, and Janeway asserts that unless the disease has already gone out into the parametrium we have a permanent cure.

Medical Aspects of Surgical Cases

Dr. William Howard Lewis, Rome: There are three distinct phases in which the medical mind should be of material advantage to the surgeon: (1) in assisting to establish a diagnosis; (2) in differentiating between and evaluating the relative weights of coexistent medical and surgical conditions in a given case, and (3) in cooperating during the convalescence and ultimate restoration to health.

Mobilization Versus Immobilization

Dr. Theodore Toepel, Atlanta: Splints, usually of plaster of Paris, are necessary in the treatment of most fractures. As soon as possible splints are discarded. Then a mixed treatment is adopted, massage and mobilization being practiced daily after only a brief delay, the splints being applied between times. When a limb is immobilized, not only are no steps taken to restore the circulation, but a condition of total disuse is enforced, which must itself lead to further loss of vitality. Even a healthy bone tends to undergo atrophy, and that so rapidly that the bones of a child's limb which have been placed in plaster are liable to undergo spontaneous fracture after the second month. That external splints fail to restore circulation is also shown clinically by the fact that a leg still shows signs of edema when a plaster splint is removed a month or six weeks after fracture.

Gunshot Wounds of the Chest and Their Treatment

Dr. T. C. Davison, Atlanta: In my series of more than forty cases I was impressed with the frequency of pneumothorax as a complication, and I often found one or more openings in the diaphragm, with hernia of the abdominal viscera. In those cases of chest injuries that were given the so-called expectant treatment, too often at the necropsy it was found that serious complications were present which could be ascertained only by open operation. The indications for operation are: fracture of the ribs; bleeding from the parietal wound; a sucking wound into the pleural cavity; retention of large foreign bodies within the chest; a large hemothorax which cannot be evacuated by aspiration; serious internal hemorrhage, and any wound below the sixth rib on account of possible injury to the diaphragm and abdominal viscera. The operation should be performed as soon as possible after the receipt of the wound, unless the patient is in shock. Contraindications for operation are small, clean, punctured, through-and-through wounds of the upper thorax with the absence of serious symptoms; shock, and pneumothorax of the opposite side.

The Obstetrician's Obligation

Dr. Garnett W. Quillian, Atlanta: The accoucheur owes four obligations to the new-born babe: (1) proper care of the eyes; (2) proper care of the navel; (3) applying only to the male child, circumcision, except in rare cases; (4) an effort to see to it that the child is not robbed of its proper food, its mother's milk.

Utility of Influenza-Pneumonia Vaccine in Pregnancy and Postoperative Conditions

Dr. Marion T. Benson, Atlanta: During the present epidemic I had under observation and treatment forty-five pregnant women, and none of these women died when they received a preventive dose of vaccine. Ten of these women had had influenza in their homes, and found it necessary to render personal care to those who were sick; but all escaped the disease. Five others, who were constantly exposed and had to do nursing, developed mild cases without troublesome complications. Three women miscarried, but did not develop pneumonia or any other complication, and made uneventful recoveries. Three women who did not receive any influenza-pneumonia vaccine before they were infected developed pneumonia and died in an alarmingly short time.

I used Type IV influenza-pneumonia vaccine brought out by General Hospital No. 6.

Early Diagnosis as a Means of Reducing the Death Rate from Cancer

Dr. J. L. Campbell, Atlanta: I have selected a group of cases to show the importance of removing breast tumors during the early or precancerous stage. Fifteen were benign and thirteen were malignant tumors. Of the former patients, all are now well and strong, while only five of the latter are living; one has a recurrence and is being treated with the roentgen ray; three who have passed the five-year period are well, while I have not heard from a sixth in some months. In two of the women the tumors had been present between four and five years; in others, only a few weeks to a month or two. In all cases the principal symptom was a lump; in a few, pain was noticed during the menstrual period. In both the intracystic adenoma and the intracanalicular fibroma there had been a bloodstained discharge from the nipple before the enlargement was noticed. In eight of ten cases the diagnosis was easy, as the clinical picture was complete.

Relief of Menorrhagia and Metrorrhagia by Roentgen-Ray Treatment

Dr. W. A. Cole, Savannah: Roentgen-ray therapy is now considered by many to be the method of choice in all cases of menorrhagia of the menopause in which the presence of carcinoma is definitely excluded either by the history or by a diagnostic currettement, and in those cases not presenting a large, soft myoma which is likely to undergo malignant degeneration later. It is also used in cases of menorrhagia, or metrorrhagia in young women, when there is a small mucous fibroid, when no gross pathologic condition is demonstrable, and in cases presenting a large myoma in which there is a definite surgical risk.

Spinal Anesthesia

Dr. W. L. Cooke, Columbus: Spinal anesthesia may be used with absolute assurance of perfect anesthesia in any operation of any magnitude below the umbilicus. In my hands it has been an absolutely safe procedure. I have used this method of anesthesia in all kinds of operations from a case of simple hemorrhoids to a complete hysterectomy, and from a simple amputation of the leg up to a bone graft for ununited fracture of the femur. I do not know exactly how long the anesthetic effect lasts, but I have performed operations that required anywhere from fifteen minutes up to almost two hours, without the patient's experiencing any pain whatever.

Hypertrophic Stenosis of the Pylorus

Dr. W. Whatley Battey, Jr., Augusta: During the last few months I have operated in three cases of hypertrophic stenosis of the pylorus in infants, aged 3, 5 and 6 weeks, respectively.

I did the Rammstedt operation.

Some Diagnostic Problems of the Chest

Dr. E. C. Thrash, Atlanta: Every physical examination of the chest, when the patient is really sick, should be checked up with the roentgen ray. Our latest two epidemics of influenza have frequently caused two disturbances that have been exceedingly difficult to differentiate from tuberculosis. These are the hemic infections and the endocardiac disturbances without valvular lesions. Both disturbances present practically the same symptoms as tuberculosis, and the fact that the physical signs of tuberculosis are not present does not enable one to rule out the latter disease. A

blood culture will often clear up this problem; but if it is negative, one is still confronted with a problem. A careful study of the roentgenogram and a survey of the past history of the patient will often throw light on these cases.

Local Anesthesia in Abdominal Surgery

DR. L. W. GROVE, Atlanta: I have had no hesitancy in recommending the method in well defined acute conditions or in simple drainage. I would hesitate to advise local anesthesia in obscure inflammatory masses, in which event some form of anoci-association anesthesia, preferably local anesthesia with gas-oxygen, is unquestionably the safest and surest, and is the anesthetic of choice.

Importance of Ureteral Stricture in Abdominal Diagnosis

DR. GEORGE Y. MASSENBURG, Macon: A patient sent to me for operation with a diagnosis of appendicitis had had recurrent attacks of pain in the appendical region for ten months, the attacks lasting from a few hours to several days, with a constant soreness near McBurney's point. She had some nausea with the attacks, but no vomiting. In the more severe attacks, she occasionally had some pain in the right lumbar region, and some bladder irritability. She never passed any blood in the urine. A catheterized specimen of the urine was negative. Roentgen-ray examination revealed a small shadow in the region of the lower end of the ureter. On cystoscopic examination, the bladder appeared normal. An opaque catheter in the right ureter showed the shadow to be a small stone in the ureter. With a wax bulb on the catheter, a stricture was found in the ureter at about the region of the stone. The stricture was dilated with a 4 mm. bulb. The patient had considerable pain for about twenty-four hours, but left the hospital in a few days. One month later the patient was still free from symptoms, but had not passed the calculus. She was dilated a second time, April 10, 1919. She is still free from all symptoms, but has not passed the stone.

SOUTH CAROLINA MEDICAL ASSOCIATION

Seventy-Second Annual Meeting, held in Greenville, S. C., April 20-21, 1920

The President, Dr. E. W. PRESLEY, Clover, in the Chair

Inducing Rapid Growth of Epithelium Over Areas Denuded of Skin by Use of Zinc Oxid Adhesive Plaster Applied Directly to Raw Area

DR. LINDSAY PETERS, Columbia: If the denuded area shows acute inflammation with abundant suppuration, it is dressed daily with dichloramin-T suspended in oil, making a 1 per cent. mixture. When the wound is clean, adhesive plaster is placed immediately on the wound, without the interposition of gauze or other material, the wound being completely covered either with a single piece or with overlapping straps. Dressings should be done daily. No antiseptics are used. The action of the adhesive plaster may be explained by its possible ionic effect, by the production of edema, carrying out the idea of Bier's hyperemia, by the exclusion of air, destroying aerobic bacteria, and by excess of serum bringing a new army of antibodies into play.

New Treatment of Enuresis in Children

DR. WILLIAM R. BARRON, Columbia: In so-called idiopathic enuresis, the treatment consists in emptying the bladder with a catheter under aseptic precautions, and then instilling through the catheter into the bladder 1 ounce of a 3 per cent. argyrol solution, letting some remain in the bladder for from one-half to one hour, when it is voided. This is done every day or every other day, as indicated. The strength of the argyrol is gradually increased until 10 per cent. is borne without irritation. It is not well to use strengths of argyrol that irritate, because they will not be retained and will make the child object to treatments. In boys, instead of inserting a catheter, the argyrol is injected through the urethra with a bulb syringe, washing out the urethra with plain sterile water after the argyrol is forced into the bladder.

Folliculosis Versus Trachoma in Our Schools

DR. J. W. JERVEY, Greenville: In the early stages many cases of trachoma present clinical appearances indistinguishable from follicular conjunctivitis by any diagnostic method, macroscopic or microscopic. In a few weeks or at most a few months, the essential changes characteristic of trachoma will appear if this is the disease; if they do not appear, then we are dealing with something else. No case of trachoma can be cured in the sense that all traces of it can be eliminated. What the mistaken ophthalmologist cures is folliculosis, and the profession and the public should realize this fact. And here the cure is infinitely worse than the disease. Trachoma is no respecter of age, while folliculosis occurs among schoolchildren and is an adenoid hypertrophy. When it exists, one will invariably find in the same child hypertrophied tonsils and nasopharyngeal adenoids, and refractive errors seem practically always to be present in these cases. This condition has been mistaken for trachoma by officials of the United States Public Health Service, and children have been operated on needlessly. It is important to have a well trained ophthalmologist on the state board of health.

Malignant Tumors of Male Breast: Report of Case

DR. GEORGE BENET, Columbia: Benign tumors of the male breast do not seem to differ essentially from those found in the female. My case was one of fibro-adenoma with a malignant degenerative process in a man, aged 18. He complained of a small lump in the left breast of four months' duration, which caused him no inconvenience until after a slight blow on the breast two weeks before coming under observation. The boy was somewhat feminine in appearance, and his muscular development was not that of a boy of 18. There was no glandular involvement.

The Proctoscope in General Diagnosis

DR. F. M. DURHAM, Columbia: All patients suffering from symptoms referable to the rectum that do not yield to ordinary treatment should be given a proctoscopic examination. No surgeon should operate on a patient for hemorrhoids, especially of the bleeding variety, without first giving his patient such an examination. All patients suffering from back, uterine and bladder symptoms, and all cases of intestinal indigestion and autointoxication, which are refractive to treatment and have no definite pathologic lesion, should also undergo proctoscopic examination.

The Incision of Tumors for Diagnosis

DR. KENNETH M. LYNCH, Charleston: The ordinary manipulation of a tumor in the course of examination may be the source of much more stimulation than would be an incision. If we weigh the evidence for and against and the advantages and disadvantages of submitting a specimen for microscopic examination, both to the patient and to the surgeon, I believe microscopic examinations would become of more general practice. The story of no tumor is complete without a microscopic examination, whether preoperative, at operation or postoperative, as the circumstances surrounding each case demand.

Metabolism as an Aid in Diagnosis, Prognosis and Treatment of Hyperthyroidism

DR. STUART MCGUIRE, Richmond, Va.: There has not yet been sufficient experimentation or practical experience with basal metabolism to determine its exact clinical value. Like the thermometer, it promises to be a most valuable agent; but, like the thermometer, its record must be considered together with the patient's clinical symptoms. A patient with hyperthyroidism may have a high metabolic rate and not be as seriously sick as another with a lower rate who has structural changes in the heart, liver or kidneys. The metabolic rate of the patient is a definite index of the degree of hyperthyroidism present, and therefore very valuable in making a diagnosis. The onset of hyperthyroidism is so slow that it is difficult to recognize it in its incipience; and here the metabolic rate will clearly differentiate it from hysteria, neurasthenia, tuberculosis, and other conditions with which it may be confused. Again, in the later stages,

there develop symptoms due to degeneration of the heart, liver or kidneys, and it is difficult to say how much the patient suffers from hyperthyroidism and how much from damage to the vital organs. Here also a determination of the basal metabolism will be of value, not only for diagnosis but for prognosis as well. Usually, a patient's clinical symptoms coincide with his metabolic rate; but sometimes they do not. Patients with high metabolism and moderate tachycardia are more seriously ill than those with moderate metabolic increase and a very rapid heart action. In treating a patient for hyperthyroidism, the estimation of the metabolic rate is of value first to determine the safety of the measure to be employed, and second to ascertain its efficiency.

Autointoxication

Dr. Edward H. Goodman, Philadelphia: I protest against the use of this term and the making of a diagnosis without evidence which at the present moment has not been universally accepted as unquestionable. Not every one who uses the term autointoxication understands by it what he wishes others to understand, and which in the hands of many means so many varied things. The term is a loose one loosely used.

Renal Calculus

Dr. G. T. Tyler, Greenville: This report includes five cases of kidney stone; four patients have been operated on and one patient is still under observation. All were cases of single stone in women: four were in the left kidney and one in the right. Except in one case, all the diagnoses were made and confirmed by differential urinary and roentgen-ray findings. In this case the diagnosis was appendicitis, but was disproved by obtaining a specimen of urine from the right kidney. At the time of the attack, the patient had boils over the buttocks and back; the kidney infection was probably secondary to them. Though I used the wax-tipped catheter, in only one instance was there a scratch noted on it. This was because the stone lay outside of the course of the catheter. Except in one case the stones were all removed by pyelotomy. In one case in which both kidneys were involved, the induction of adequate drainage, together with the injection of silver nitrate and mercurochrome-220 into the kidney pelvis resulted in increasing the phenolsulphonephthalein elimination from both kidneys to 25 per cent. in twenty minutes. In these cases and in three others not cited in detail, I feel that good results have been obtained only by the conservation of the kidney function and by the effort to make the patient a safe risk before undertaking operation.

Medical Certificates of Insanity

Dr. J. W. Babcock, Columbia: I wish to appeal to physicians for greater care in the making out of certificates of insanity. There is an indifference on the part of physicians which is by no means confined to South Carolina, but is common all over the country. The physician who signs a certificate of commitment without making a careful examination and going carefully into the case does a serious injustice to the patient and to himself. It is well to remember that relatives may sometimes allege that a person of whom they wish to get rid is insane when such is not the case.

Hospital Standardization in South Carolina

Dr. J. R. Young, Anderson: Last October, only 198 of our 671 hospitals of 100 or more beds could measure up fully to the minimum standard set by the American Medical Association. One year before that, only eighty-nine could qualify. We provide one hospital bed for every 1,100 of our population, while the average ratio is one bed for 486. The medical profession is responsible for any defects in the quality of hospital service. The rank and file of the profession can help in attaining state-wide improvement of hospitals by measuring the efficiency of the hospital to which they refer their patients by the yardstick of the minimum standard. If physicians will (1) become familiar with the aims of hospital standardization; (2) study closely the progress which the hospital of their choice is making, and (3) lend their full support and cooperation to it, they will aid tremendously this organized effort of hospital improvement.

Significance of Nervousness in Children

Dr. J. F. Munnerlyn, Columbia: It is becoming more and more evident that in children who have certain slight or grave defects in their nervous make-up, something in their development has not gone right. This does not mean that they are intellectually deficient, but that something has gone wrong in the realm of mental functions from which spring desires and motives. There should be some organized plan for the study and control of these early apparently trivial abnormalities. The work of psychiatric clinics in Massachusetts and New York has been most gratifying, and where this phase of health work has been instituted it is considered just as important as that which has to deal with the control of tuberculosis, venereal diseases, etc. Many unfortunate individuals, who are at present steering directly to an inevitable mental breakdown, can be helped to live happy and efficient lives.

Diagnosis of Atypical Malaria

Dr. Francis B. Johnson, Charleston: Pulmonary tuberculosis is probably more often mistaken for malaria, and malaria for tuberculosis in the Southern states, than any other disease, because of the widespread prevalence of both. Not infrequently both exist. The atypical malarial conditions are more usually associated with the chronic infections of the pernicious type, particularly those not characterized by a definite paroxysm. Among conditions that may be ascribed to malaria are found diarrhea, dysentery, various types of neurasthenia, paralysis, ulcerative stomatitis, multiple gangrene, orchitis, and many diseases of the eye—these cases have been proved by the finding of the plasmodium of malaria, and the patients have recovered under quinin treatment.

Use of Mercurochrome in Treatment of Some Urologic Conditions

Dr. T. M. Davis, Greenville: Sixty gonococcal urethritis cases in males have been treated by this drug in 2.5 per cent. strength. The treatments were controlled by frequent examinations of the smears. In almost all cases the discharge had ceased within twenty-four hours, and in all cases by the end of the third day. The average length of time to effect a cure was twenty-six days. In none of the female patients (ninety-five) treated has there been an extension of the disease to the endometrium.

The Capillary Heart

Dr. W. F. R. Phillips, Charleston: In the circulation of the blood, as generally described, the all sufficient kinetic force is the heart. Some recognition, however, is given to auxiliary kinetic factors represented in the contractions of the skeletal and splanchnic muscles and to the suction-pump action of the respiratory mechanism. A great fall in pressure takes place in transition from arteriole to capillary; a lower to a somewhat higher pressure prevails in the veins. It is obvious that other factors than the left ventricle must enter into and complete the systemic circulation. To these factors is applied the name capillary heart. Many experiments in the injection of fluids into arterioles and capillaries have convinced me that there is a maximum point of resistance in the transition from arteriole to capillary, though it cannot definitely be stated whether it is solely resident in the capillary or partly resident there and partly in the surrounding muscular tissue. Certain experiences indicate that the capillaries of different parts and organs are differently endowed with powers of resistance. That living capillaries have the power to contract, even to the extent of completely obliterating their lumen, is a well known fact; but the significance of this property in its relation to the phenomena of circulation does not seem to have attracted the attention that its possibilities seem to attach to it.

Significance and Treatment of Fever During Infancy and Childhood

Dr. J. LaBruce Ward, Columbia: It is only in rare instances that it is advisable to use antipyretics other than hydrotherapy. The physician must be guided by the general condition of the patient, rather than by the disease or the degree of fever.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

American Journal of Roentgenology, New York

March, 1920, **7**, No. 3

*Bony Changes in Feet Following Fracture of Vertebrae. L. Bryan, San Francisco.—p. 125.
Personal Experience in Military Roentgenology Overseas. L. S. Goin, Battle Creek, Mich.—p. 128.
Manufacture of Films and Plates for Use in Roentgenology. M. B. Hodgson, Rochester, N. Y.—p. 131.
Fluoroscopic Examination in Injuries to Head. M. W. Clift, Flint, Mich.—p. 137.
*Diaphragmatic Hernia. A. S. Macmillan, New York.—p. 143.
Roentgen Ray in Cancer of Uterus. H. K. Pancoast, Philadelphia. —p. 146.
Influenzal Pneumonia from a Clinical and Roentgen-Ray Study. J. Karkavy and J. H. Selby, Takoma Park, D. C.—p. 148.

Bone Changes in Feet Following Fracture of Vertebra.—Two cases are reported by Bryan. He says little attention has been given to the fact that fracture of the vertebrae is followed by sensory disturbance in the legs and feet accompanied by bony changes.

Diaphragmatic Hernia.—Among approximately 15,000 cases examined with the roentgen ray at General Hospital No. 1, three cases of diaphragmatic hernia were found. The diagnosis in each case was first made by roentgenographic examination.

Boston Medical and Surgical Journal

April 29, 1920, **182**, No. 18

Relation of Teeth to General Health. C. H. Lawrence, Boston.—p. 443.
*Milk Situation. H. Swift, Concord.—p. 447.
New Clinic: Advance Movement in Child Welfare and Race Regeneration. J. V. Haberman, New York.—p. 450.
Intestinal Obstruction: Report of Cases. E. A. Codman, Boston. —p. 451.

Milk and Tuberculosis.—It appears that the control of human tuberculosis depends to an appreciable extent on a much closer control of bovine tuberculosis. To control this menace, Swift suggests, first, to allow the farmer something nearer the true value for a condemned animal. He would then be a little more willing to help in the fight. Second to start a demand for tuberculosis-free milk. This can be done and ought to be done by education of the physician first, who in his turn will educate his patients. Some farmers have said that they would make tuberculosis-free milk if there was a market for the product and if they could receive a price that would allow them a better margin in which to stand the losses.

May 6, 1920, **182**, No. 19

Product of Urological Clinic. W. C. Quinby, Boston.—p. 469.
Social Service and Clinic. A. C. Reed, San Francisco.—p. 476.
Technic of Lumbar Puncture. L. G. Lowrey, Boston.—p. 479.
*Milk-Borne Epidemic of Typhoid and Value of Widal Reaction in Detecting Typhoid Carriers. E. B. Bigelow and G. L. Berg, Worcester, Mass.—p. 481.
*Use of Blood and Blood Serum in Treatment of Disease. C. K. Johnson, Burlington, Vt.—p. 482.

Milk-Borne Epidemic of Typhoid.—The interesting circumstances in the epidemic studied by Bigelow and Berg were: the small number of persons who developed typhoid among those who may have ingested the organism; that dairymen who are carriers, though excreting typhoid organisms for weeks and months, rarely contaminate the milk; the value of the positive Widal as an aid in the detection of carriers.

Blood and Blood Serum in Therapy.—Special attention is drawn by Johnson to the use of blood in infants with anemia and malnutrition. Infants with jaundice, delayed clotting time and a tendency to hemorrhage may be benefited greatly by the injection of blood. It may also be useful in the treatment of purpura. Hemolytic tests should be made in every case.

Journal of Immunology, Baltimore

January, 1920, **5**, No. 1

*So-Called Neisser-Wechsberg Inhibiting Phenomenon in Bactericidal Immune Sera. Th. Thjøtta, Bergen, Norway.—p. 1.
Relation of Rate of Absorption of Antigen to Production of Immunity. M. W. Cook, Providence, R. I.—p. 39.
*Meningococcidal Activity of Blood. T. Matsunami, Tokyo.—p. 51.

Neisser-Wechsberg Inhibiting Phenomenon.—The work reported on by Thjøtta may be summarized as follows: The inhibiting phenomenon of Neisser and Wechsberg is of a specific nature. It is to be found in active as well as in inactive serum. It develops during the immunization and can be found in a very high degree in dysentery immune serum. In active serum from immunized animals examined without the addition of foreign complement, the phenomenon presents itself as a complete abolition of a normal bactericidal action. The inhibition is due to antibodies that arise during the immunization or during the natural disease. These antibodies are not identical with the agglutinins, the bacteriolysins or the precipitins. They must be considered as specific antibodies, which combine with dissolved antigen to form molecular complexes, that have a marked tendency to absorb complement and to withdraw it from the bactericidal antibodies. The titer of inhibition is directly proportional to the employed dose of complement. With a small dose of the latter, smaller doses of inhibiting antibodies can be demonstrated than with a larger dose of complement. The inhibiting antibodies do not affect the bacteria themselves, nor can they be removed from the serum absorption with an emulsion of the homologous bacilli. They can be demonstrated in serums that lack any bactericidal action.

Meningococcidal Activity of Blood.—It was found by Matsunami that normal rabbit blood and serum may kill virulent normal meningococci in vitro within three hours. The meningococcidal activity in vitro of normal rabbit blood was found to be increased up to a certain limit by the intravenous injection of the living and autolyzed meningococci. After that, further immunization did not appear to increase bactericidal activity, was generally rather irregular and not infrequently even decreased meningococcidal activity of the blood. The more highly immunized rabbit's blood was found sometimes less bactericidal than that of slightly immunized rabbit's blood. The meningococcidal activity of normal rabbit's serum has been found not to be increased by artificial immunization and also to be comparable with that of defibrinated blood of an immune rabbit. The meningococcidal activity in vitro of immune rabbit's blood was found by the pipet method to be distinctly stronger than that of the serum, of defibrinated blood or of blood consisting of blood cells and serum or of citrated blood. It was suspected that at least one factor in explaining the higher meningococcidal activity in vitro of immune rabbit's blood compared with defibrinated blood, citrated blood and serum, lies in the influence of coagulation of the blood, which is permitted in the regular test as described, favoring the phagocytosis of meningococci. Matsunami maintains that a meningococcidal blood test cannot be accepted on the basis of his investigations for the purpose of measuring or determining the artificially induced immunity against meningococci.

Journal of Urology, Baltimore

February, 1920, **4**, No. 1

*Urinary Tract Purpura: A Probable Entity. A. R. Stevens and J. P. Peters, Jr.—p. 1.
*Riedel's Lobe of Liver Complicating Urologic Diagnosis. V. J. O'Conor, Boston.—p. 97.
Device for Holding Ureteral Catheters. C. S. Levy, Baltimore. —p. 107.
Renal Migration of Ureteral Calculus: Case Report. J. H. Neff, University, Va.—p. 111.

Urinary Tract Purpura.—Stevens and Peters report a group of cases that presented as a distinguishing feature a purpuric condition confined, in at least the majority of cases, entirely to the urinary tract. This condition was marked by an acute onset, temperature of an irregular type, general febrile symptoms, frequency of urination, dysuria, gross hematuria, cylindruria and a reduction of the phenolsulphonephthalein excretion. The disease, as far as it could be observed, tended to run a prolonged subacute or chronic course. Occasionally, acute relapses occurred. Pathologic examination of the lesions obtained from the bladder wall by means af a cystoscopic punch revealed submucous hemorrhages unaccom-

panied by any signs of inflammation. Suggestive vascular changes were observed in some specimens. Bacteriologic examination of blood and urine proved negative. Attempts to determine the etiology of this condition or to identify it with any known disease were unsuccessful. The authors believe the condition is sufficiently distinctive to merit consideration as a new disease.

Urologic Diagnosis Complicated by Riedel's Lobe of Liver.—O'Conor has found that Riedel's lobe offers a positive complication to the urologist in making a diagnosis even in carefully studied cases. The occurrence of this condition is sufficiently frequent to be borne in mind when determining the nature of a palpable mass in the right flank or abdomen. In the presence of acute infection in the urinary tract, the occurrence of a linguiform lobulation makes a differentiation very difficult and the apparent indications are for an immediate surgical procedure. The mass in each of O'Conor's two cases could be outlined definitely on palpation and moved slightly on respiration. The notch in the elongation gave the physical signs usually found on palpating the upper pole of a low lying or enlarged kidney. In the cases described, circumstances prevented getting ureteropyelograms on the right side. These would have served to assist in ruling out the supposition that the palpable mass was kidney. In both patients the gallbladder and surrounding structures were normal, contrary to Riedel's original conception of the etiology of the prolongation. In both individuals the structures of the elongation felt and appeared to be normal liver tissue.

Medical Record, New York

April 17, 1920, **97**, No. 16

Gynecologic Patient of General Practitioner. L. Broun, New York.—p. 635.
Balance Between Endocrines and in Each Individual Endocrine. S. W. Bandler, New York.—p. 638.
Simplified and Safer Hysterectomy. H. Crutcher, Joliet, Ill.—p. 647.
Symbolism. H. Laveson, New York.—p. 649.
*Present Status of General Anesthesia from Hospital Viewpoint. S. D. Ehrlich, New York.—p. 651.
*Sarcoma of Round Ligament. G. L. Moench, New York.—p. 652.
Clinical Indications for Enucleation of Faucial Tonsil. M. Quackenbos, New York.—p. 653.

Nurse as an Anesthetist.—Ehrlich maintains that a nurse is not fully competent to administer anesthetics. She may be trained in the mechanical processes of the administration, and may even have had a few months' instruction in physical diagnosis. But this at best can give her only a superficial experience, and does not prepare her to meet the conditions with the matured judgment which comes only with a thorough knowledge of medicine. She is no more qualified to do the work of an anesthetist than a nurse with operating room training and a superficial knowledge of anatomy and the mechanical skill which has enabled her to master the steps necessary to open an abdomen and remove an appendix, for example, would be qualified to do the work of a surgeon. The matured judgment which comes only with a general knowledge of medicine is wanting in each case. The fact that nurses administer anesthetics in a few large clinics is by no means proof that it is a good thing either for the patient or for the institution. Ehrlich believes that a hospital which entrusts work of this nature and importance to a nurse assumes a grave responsibility. Justice to the patient demands that he be served with the utmost skill, not only in the mechanical administration of the anesthetic, but in the ability to cope with any emergency which may arise during the anesthesia. If a nurse finds that she is interested in this work, she should study medicine, and so become thoroughly qualified from every point of view.

Sarcoma of Round Ligament.—In Moench's case the diagnosis was made before operation. The tumor was situated in front of the external inguinal ring. According to Frankl's nomenclature it was, therefore, a preinguinolabial growth. The tumor in toto was about the size of a grapefruit. Microscopic examination showed that the main part of the tumor consisted of a myofibroma whose connective tissue had undergone hyaline degeneration in many places. The clinical course of the case showed the extreme malignancy of the new growth. The woman died eight weeks after the operation, despite the fact that at the time of operation there had been no evidence of sarcoma present, either in the ligamentum rotundum or in the inguinal glands.

April 24, 1920, **97**, No. 17

*Problems of Boarding-Out with an Attempted Solution. H. D. Chapin, New York.—p. 677.
Weakened Foot: Its Measurement and Correction. C. P. Hutchins, Syracuse, N. Y.—p. 681.
Malignant Endocarditis. Edwin Schisler, St. Louis.—p. 690.
Advantages of Home over Institutional Care. M. C. Hill, New York.—p. 692.
*Yeasts from Human Colon. J. M. Lynch and J. W. Draper, New York.—p. 693.
*Manic Depressive Insanity and Raynaud's Disease. E. H. P. Ward, White Plains, N. Y.—p. 694.

Speedwell System for Care of Infants.—In 1902 Chapin developed what is known as the Speedwell system that represents a sustained effort so to regulate and systematize boarding out as to place its good effects at a maximum and its possible bad effects at a minimum. This has been accomplished by developing what may be called a unit system of intensive boarding out. A unit is a neighborhood that has been selected after a survey has been made to learn the general conditions of healthfulness and the number of good homes that may be available in the locality. There is then inaugurated a constant oversight, especially as to diet and hygiene, on the part of a salaried physician and nurse who are thoroughly familiar with this class of cases and competent to deal with them. The children are kept indefinitely, until digestion and assimilation have improved sufficiently to result in a permanent increase in weight and strength. Accordingly, work is continued during the whole year. In each neighborhood foster mothers are trained and they become fairly expert in this work. In comparing the results of institutional care with systematized boarding out, it will be found that both mortality and morbidity are less under the latter plan. Chapin describes a plan in operation which consists of collecting units in the city that are in constant communication with units in the surrounding villages. Thus far the Speedwell has developed three of these units.

Yeasts in Human Colon.—Feces obtained from the rectum of a patient complaining of severe headache and sciatica, and who had had tuberculosis ten years previously, when inoculated into glucose agar, yielded a profuse growth of yeast cells, associated with a diplococcus and extremely few colon bacilli. The patient had never received the yeast treatment. Later, the same organism was isolated, and also what appeared morphologically to be a different type of the same yeast. A saline suspension of a pure agar culture was injected into rats. Those injected intraperitoneally showed, scattered all over the peritoneum, many small and large rounded nodules, translucent, with centrally located whitish spots, very suggestive of a tuberculous lesion. The three rats injected subcutaneously had developed a localized, tumor-like granuloma having a general similarity to the peritoneal lesions, but no metastases were found. Intravenous injection of mice resulted in death from embolism within twenty-four hours. This study is not yet sufficiently advanced to justify any conclusions as to the relation of these yeasts to the pathologic condition. Further laboratory studies are being made.

Manic Depressive Insanity and Raynaud's Disease.—Ward suggests that manic-depressive insanity is a form of Raynaud's disease affecting the frontal region of the brain.

May 1, 1920, **97**, No. 18

*Intestinal Pathology in Functional Psychoses. H. A. Cotton, Trenton, N. J., J. W. Draper, and J. M. Lynch, New York.—p. 719.
Maxillofacial Service at A. R. C. M. Hospital No. 1, A. E. F., France. W. T. Coughlin, St. Louis.—p. 725.
Home Versus Hospital Care of Cases of Influenza. L. E. Holt, New York.—p. 731.
Polycystic Kidney of Atypical Character. L. Broun, New York.—p. 735.
Does Community Responsibility End When Sanatorium Treatment has Been Given? R. C. Kirkwood, Prescott, Ariz.—p. 738.

Intestinal Pathology in Functional Psychoses.—Cotton and his associates have been able to restore 270 patients out of a total of 410. By reexamining the remaining ones they were able to find local foci which had been overlooked and by January, 1920, this number had been reduced to 100. In

other words, 75 per cent. of this group, or 310, when the local foci of infection found in the teeth, tonsils, stomach, and cervix were eliminated, were able to be discharged and returned to their respective homes. The remaining 25 per cent. apparently did not react to the treatment and remained unimproved. The object of the investigation, of which this is a preliminary report, was to search further for possible sources of infection, mainly in the lower intestinal tract. This group suggested terminal ileac and colonic trouble because of frequent "bilious attacks" during youth; habitual constipation, sometimes alternating with diarrhea; intermittent attacks of abdominal pain, and, not infrequently, a history given by the mother of intestinal disturbances beginning in early infancy. From an experience with these cases, the authors were convinced that all patients who showed any tendency toward chronicity, or who did not improve under the routine treatment directed toward the removal of infection in the teeth, tonsils, stomach and cervix, were cases in which a thorough investigation of the lower intestinal tract was indicated with a view to surgical intervention. A detailed report is made showing how many patients recovered, how many were improved and how many were benefited.

Modern Hospital, Chicago

April, 1920, **14**, No. 4

Henry Ford Hospital in Time of War: U. S. Army General Hospital No. 36. A. T. Cooper, U. S. Army.—p. 259.
Henry Ford Hospital in Time of Peace. D. D. Martin, Detroit.—p. 266.
Purpose and Methods of Air Control in Hospitals. E. Huntington, New Haven, Conn.—p. 271.
Training of Hospital Superintendents. S. S. Goldwater, New York.—p. 275.
Gardening as Occupation for Tuberculous. J. I. Pinkney, Wallum Lake, R. I.—p. 277.
Prevention of Infections in Hospitals. D. M. Lewis, New Haven, Conn.—p. 282.
The Doll Eternal. M. H. Barker, Worcester, Mass.—p. 284.
Rural Hospital Organization. J. W. Pettit, Ottawa, Ill.—p. 287.
Hospital Standardization in Woman's Hospital in New York State. G. G. Ward, New York.—p. 289.

New York Medical Journal

April 10, 1920, **111**, No. 15

*Psychopathies and Neuropathies of Cardiovascular Diseases. T. E. Satterthwaite, New York.—p. 617.
What Fears and States of Anxiety Mean to the Gynecologist. S. W. Bandler, New York.—p. 619.
Heart Disease in Adults. L. I. Dublin, New York.—p. 622.
Cardiospasm From Medical Viewpoint. E. A. Aronson, New York.—p. 624.
Hyperchlorhydria. R. H. Rose, New York.—p. 626.
Upper Abdominal Disease. M. Behrend, Philadelphia.—p. 629.
Interest of State in Health of Its Citizens. W. A. Groat, Syracuse, N. Y.—p. 631.
Is Endemic Goiter a Water Borne Disease? J. C. O'Day, Honolulu.—p. 634.

Arrhythmias and Psychopathic States in Cardiovascular Disease.—One hundred histories of cardiovascular patients were analyzed by Satterthwaite to discover the interrelation as to frequency between the arrhythmias and the psychopathic states in cardiovascular diseases. The results were as follows: With arrhythmias, taking them as predominating features in these cardiovascular cases, of the first fifty the following abnormalities were noted in seven: morbid apprehension, one; depression, four; defective mentality, two; total, seven, or 14 per cent. Of the second fifty, depression was noted in three. Total in the 100 cases: Psychopathies in ten. The range was from 6 to 14 per cent. Without arrhythmia: Of the first fifty cases the following abnormalities were noted in ten: morbid apprehension, four; depression, two; neurasthenia, three; hyperexcitability, one. Of the second fifty cases the following abnormalities were noted in ten as follows: depression, six; melancholia, two; hysteria, one; defective mentality, one. Total of arrhythmias without psychopathies, 20 per cent., as against 10 per cent. of arrhythmias with psychopathies. In the same series with respect to tachycardias, 6 per cent. were associated with psychopathies, while in 11 per cent. of the cases there were no psychopathies. Evidently, then, there is no reason to believe that either arrhythmias or tachycardias are etiologic factors of any great moment in the psychopathies. On the other hand, the reports of the Manhattan Hospital for the Insane show that in the psychopathic cases cardiovascular disease was present in about one third of the psychopathic patients.

In Satterthwaite's 100 cases the neuropathies were represented in 33 per cent. Some of them resulted from direct action of the heart or blood vessels, some from reflex causes of varying character. Satterthwaite concludes, however, that arrhythmias are not active factors in causing psychopathies; tachycardias even less so. The incidence of cardiovascular disease in causing psychopathies in general, and in being contributing causes of death in them is from 32 to 35 per cent. On the other hand, senile psychoses may be associated in a similar manner with cardiovascular disease in 77 per cent.; psychoses with cerebral arteriosclerosis in 80 per cent. of the cases. With respect to the incidence of such neuropathies as migraine, anginoid attacks, neuralgias, pareses, or paralyses and tremors, Satterthwaite's figures put it at 33 per cent. Most of such neuropathies, however, are either incidental or accidental associates of the cardiac or vascular diseases.

April 17, 1920, **111**, No. 16

*Dental Infection in Causation of Nervous and Mental Disease. C. K. Mills, Philadelphia.—p. 661.
Present Status of Oral Sepsis in Relation to Medical Diseases. J. M. Anders, Philadelphia.—p. 665.
Dental Therapeutics Based on Clinical and Roentgen Ray Investigations. W. M. Fine, Philadelphia.—p. 668.
*Relation of Focal Infection to Mental Diseases. H. A. Cotton, Trenton, N. J.—p. 672.
Major Surgery of Maxillary Bone Through Oral Orifice. S. L. McCurdy, Pittsburgh.—p. 677.
Survey of Dental Infections. M. Diamond, New York.—p. 687.
Mouth Sepsis. L. R. Cahn, New York.—p. 691.

Dental Infection as Cause of Mental and Nervous Diseases.—Mills states that a score or two of cases have passed through his hands or have come to his knowledge in which important nervous and mental diseases have been attributed to dental infection. In these, with the united support of physicians, roentgenologists and dental surgeons, the teeth in small or large numbers have been removed with results not only unsatisfactory but often so harmful as to impress Mills with the futility, if not the criminality of the procedure. Some of the diseases which came under his observation in connection with the question of dental infection are dementia praecox, manic depressive insanity, epilepsy, neurasthenia, hysteria and psychasthenia. The teeth in these cases were freely sacrificed, without a single result of convincing value.

Focal Infection and Mental Diseases.—Cotton believes that it can be shown by clinical evidence that certain types of mental diseases are caused by toxemia resulting from focal infection and that clearing up these foci of infection results in the recovery of the patient. He claims to have confirmation of this belief from the pathologic and bacteriologic studies made after death, and says he has yet to find a single case with a functional psychosis without accompanying infection. He discusses particularly dental infections, and the influence of unerupted third molars, and cites briefly a number of illustrative cases.

April 24, 1920, **111**, No. 17

*Incidence of Malignancy in Diseases of Gallbladder J. F. Erdmann, New York.—p. 705.
Drainage and Mercury Ion in Cystic Goitre. G. B. Massey, Philadelphia.—p. 707.
Diffuse Vascular Goiters. J. C. O'Day, Honolulu.—p. 708.
Surgery in Chronic Diarrhea and Local Anesthesia in Anorectal Operations. S. G. Gant, New York.—p. 709
Scope and Limitations of Local Anesthesia in Inguinal Hernia Operations. A. S. Morrow, New York.—p. 710.
Industrial Inguinal Hernia. A. E. Seltenings, New York.—p. 713.
Relation of Rectal Disturbances to Other Pelvic Disease. C. J. Drueck, Chicago.—p. 717.
Case of Simple Hypertrophy of Prostate. John F. X. Jones.—p. 720.
Relation of Focal Infection to Mental Diseases. H. A. Cotton, Trenton, N. Y.—p. 721.

May 1, 1920, **111**, No. 18

Obligations of Medicine in Relation to General Education. W. C. Braisted, Washington, D. C.—p. 749.
Lethargic Encephalitis. J. H. W. Rhein, Philadelphia.—p. 758.
Demonstration of Reconstruction Section of Defects of Hearing and Speech. C. W. Richardson, Washington, D. C.—p. 763.
Physiologic Therapy in Influenza. A. C. Geyser, New York.—p. 767.
Aftertreatment of Fractures. W. T. Johnson, Philadelphia.—p. 769.
Relation of Focal Infection to Mental Diseases. H. A. Cotton, Trenton, N. J.—p. 770. Concluded.
Eye in General Practice. G. D. Wolf, New York.—p. 775.

Incidence of Malignant Disease of Gallbladder.—During the first six months of 1918, Erdmann observed nine carcinomatous gallbladders out of sixty-eight operations on the gallbladder. During the second half of 1918, three cases among sixty-three operative cases were noted. The last half of 1917 gave but one malignancy in forty-seven operations on the gallbladder. In thirteen operative cases of general abdominal carcinomatosis, in which the primary focus could not be demonstrated positively the point of greatest involvement was in the neighborhood of the gallbladder. In a total of 1,903 patients operated on, malignant disease of all kinds, excluding the lip epithelioma, was found 285 times. Fifteen of these were of the gallbladder; forty-three of the stomach; sixty-seven of the breast; cecum, twelve; colon and sigmoid, twenty-eight; rectum and recto-sigmoid, twenty-nine; not specifically classified, seventy-nine. This group includes the uterus, kidney, larynx, tongue, liver, thyroid and other organs. The ages of the gallbladder patients varied from 42 to 67. The patients were all females.

Philippine Journal of Science, Manila

November, 1919, **15**, No. 5

Fruit Flies of Genus Dacus Sensu Latiore (Diptera) from Philippine Islands. M. Bezzi.—p. 411.
Melasidae Nouveaux (Coléoptères) Récoltés par C. F. Baker. E. Fleutiaux.—p. 445.
*Abnormalities of Vertebral Artery. M. Canizares.—p. 451.
*Rancidity of Philippine Coconut Oil. G. A. Perkins.—p. 463.
Genus Gordonia in Philippine Islands. I. H. Burkill.—p. 475.
Higher Basidiomycetes from Philippines and Their Hosts. O. A. Reinking.—p. 479.

Abnormalities of Vertebral Artery.—Two of the forty cases examined by Canizares showed abnormalities in origin of the vertebral artery; and fifteen, in point of entrance to the foramen transversarium. The findings confirm those of Bean and Thane with regard to the greater frequency of abnormalities of origin of the vertebral artery on the left side. Cases of unilateral variations in the point of entrance were almost twice as numerous as the bilateral ones.

Causes of Rancidity of Coconut Oil.—Two-year storage tests were made by Perkins on thirty samples of edible coconut oil. The results were in general agreement with the accepted views of rancidity and its causes. The action of light was found to be a powerful, but not necessary, factor in the production of rancidity. Enzymes from the fresh coconut meat had some effect on the keeping qualities of the oil, but sterilization was of doubtful benefit. An oil of low initial acidity remained sweet during two years' exposure to air and light. The measurement of rancidity is discussed briefly.

December, 1919, **15**, No. 6

Cambellosphaera, New Genus of Volvocaceae. W. R. Shaw.—p. 493.
Some Malayan Delphacidae (Homoptera). F. Muir.—p. 521.
Nesting Place of Micropus Subfurcatus in Mindoro. D. C. Worcester.—p. 533.
Method for Labeling Slides Used in Routine Stool Examinations (Use of Paper Clip). F. G. Haughwout.—p. 535.
Additions to Flora of Guam. E. D. Merrill.—p. 539.
Coleoptera Fauna of Philippines. W. Schultze.—p. 545.
*Case of Acute Mania Associated with Plasmodium Vivax Infection. F. G. Haughwout, P. T. Lantin and R. Fernandez.—p. 563.

Plasmodium Vivax Infection in Acute Mania.—In the case cited by Haughwout and his associates, infection with *Plasmodium vivax* was associated with cerebral symptoms and death. Parasites were present in the peripheral circulation in small numbers only, and the temperature of the patient at no time rose higher than 39 C., that point being reached a few hours before death. Prior to that time the temperature did not rise above 38 C., this elevation coming several days after the onset of an acute mania. The patient was one of a series of cases that was being experimentally treated with roentgen rays for splenomegaly of malarial origin. He received only one irradiation, and that eight days before the development of the mental disturbance which ran its course and terminated in death eight days following its onset. At no time did the patient show any indication of injury that it seemed possible to trace to the roentgen rays, and the necropsy failed to reveal any such evidence. Microscopic examinations of the feces revealed an infection with *Ancylostoma duodenale*. The urine was normal. *Plasmodium vivax* was found in the blood later. On the day of the development of the first mental symptoms an unmistakable trophozoite of *Plasmodium vivax* was found in the blood. The number of parasites in the peripheral blood increased somewhat until from four to six could be counted in 100 oil immersion fields. All were characteristic trophozoites of *Plasmodium vivax*. The patient, who had been receiving iron, quinin, and strychnin up to the time his mania developed, was put on intramuscular injections of quinin and urea, but he failed to show the slightest beneficial effects from them, except for the disappearance of the parasites from the peripheral blood. Twenty-four hours before death epinephrin was administered in the hope of forcing the parasites out of the spleen and into the circulation, but without success. The day before death, the differential leukocyte count showed 78 per cent. polymorphonuclear neutrophils, 7 per cent. lymphocytes, 14 per cent. large mononuclear leukocytes, and 1 per cent. eosinophils. The patient gave no history of previous attacks of mania, and the necropsy failed to disclose any evidence of syphilis. No Wassermann test was made.

FOREIGN

Titles marked with an asterisk (*) are abstracted below.

Archives of Radiology and Electrotherapy, London

March, 1920, **24**, No. 10

Malignancy. M. Roberts.—p. 308.
Value of Combined Treatment, with Special Reference to Surgery, Electricity and Roentgen-Rays. F. Hernaman-Johnson.—p. 325.

British Medical Journal, London

March 27, 1920, **1**, No. 3091

Abdominal Emergencies. R. Morison.—p. 425.
*Association of Aortic Endocarditis and Aortitis. J. E. MacIlwaine.—p. 428.
*Treatment of Cerebrospinal Fever by Monotypical Serum. W. T. Munro.—p. 430.
*Association of Lethargy with Influenza Bacillus. W. M. Crofton.—p. 431.
*Appendicitis Without Protective Stiffening of Abdominal Wall. J. D. Malcolm.—p. 432.
Artificial Pneumothorax. D. C. Coley.—p. 432.
Dermatitis Artefacta in the Army. H. Davis.—p. 433.
*Treatment of Gonorrhea in Women. R. S. Foss.—p. 434.
*Cultivation of Actinomyces. M. H. Gordon.—p. 435.
*Case of Malignant Endocarditis. J. A. Nixon.—p. 435.
*Acute Edema of Lungs. H. H. Brown.—p. 435.
Novarsenobillon and Mercury Intravenously. R. Johnson.—p. 436.
Ectopic Ovarian Cyst. J. W. Thomson.—p. 437.

Aortic Endocarditis and Aortitis.—MacIlwaine describes two specimens from two men who both exhibited the classical clinical appearance of aortic regurgitation. The first man died through the rupture of an acute aortic ulcer into the trachea, while the second died after a period of cardiac incompetence which lasted for a considerable time. These two cases occurred in a series of twelve pensioners in hospital who suffered from aortic endocarditis with aortic reflux.

Serotherapy of Cerebrospinal Fever.—Munro used a pooled serum containing 50 per cent. of antibodies to Type 2, and monotypical serum was used after the type was determined. Typing of the cases as they came showed something like 40 per cent. to be Type 1, 42 per cent. to be Type 2, 16 per cent. to be Type 3, and 2 per cent. to be Type 4. To add antibodies of Type 3 and Type 4 to such a pooled serum would reduce its value by from 50 to 82 per cent. of the total cases. Twelve consecutive cases of cerebrospinal fever have come to Munro's notice and no patient has died where it was possible to treat by monotypical serum.

Association of Lethargy and Influenza Bacillus.—Crofton records the histories of four patients treated with pure influenza antigen with good success. For example, in one case, on the chance that the infection might be caused by the influenza bacillus (the case occurred during the epidemic), the patient was given subcutaneously 2½ million pure influenza antigen. The improvement was marked at the end of twelve hours. Thirty-six hours later he was given 5 million, and forty-eight hours later 7½ million. After this he had

complete control of his functions and he was no longer lethargic, although his memory was still defective. He still had difficulty in reading, and his temperature was not quite normal—99 F. He then received 10 million in the morning, forty-eight hours after the last dose; that evening his lethargic symptoms returned in full intensity, although there was no further rise in temperature. His mind did not become normal again in two days. He made a rapid convalescence, but could not read for any length of time or study for some months.

Appendicitis Without Rigidity of Abdominal Muscles.—In two cases seen by Malcolm this sign was absent, and, therefore, he did not regard the cases as being appendicitis. In one case, when the abdomen was opened, the appendix, except about one-half inch at its base, was firmly adherent in a peritoneal pouch behind the cecum. It was removed and recovery was uncomplicated. This patient had her first attack of appendicitis in childhood. The absence of protective contraction of the muscles was due to the position of the appendix and to the fact that a spreading peritonitis was prevented by the adhesions, which had long existed.

Treatment of Gonorrhea in Women.—In these cases Foss makes use of methylene blue as a bactericidal agent, partly for its great affinity for the gonococcus and partly because the anilins are absorbed by mucous membranes and even by squamous epithelium: methylene blue, 1 gm.; glycerin, 25 c.c; water, ad 100 c.c.. In acute and chronic cases the cervix is swabbed with a saturated solution of sodium bicarbonate in order to remove mucus and discharge. A gauze plug, 12 inches square, is dipped for half its length in the solution; this end is packed tightly against the cervix, the rest lightly in the vagina. The plug is removed after twenty-four hours. This is carried out for five days and then for two days dry plugs are used. This rotation is continued as long as the discharge occurs. There are two contraindications for the use of this method: pregnancy and the puerperal state. General treatment is carried out on the usual lines. Urinary antiseptics and gonococcal vaccine are given as indicated.

Cultivation of Actinomyces.—According to Gordon, the actinomyces fungus can readily be cultivated in ordinary nutrient broth to which a few drops of fresh human blood have been added. It is advisable to sow the material in two broths, one of which is covered by a layer of oil 1 cm. deep. After incubation for a few days at 37 C., the actinomyces fungus can be seen growing at the foot of the tube in small white masses like little puffballs. As a rule, growth occurs first in the broth covered with oil, but when other bacteria are present the actinomyces may come up first in the aerobic tube. The practical advantage of getting a growth is that a vaccine can then be prepared. In two cases in which a vaccine of the homologous organism was employed improvement resulted. In the majority of the cases, however, vaccine treatment was not attempted, as secondary infections were present and the disease was too far advanced. Vaccination with a stock actinomyces vaccine is, in Gordon's experience, useless; it seems essential to employ the actual strain infecting the patient.

Acute Edema of Lung.—Brown claims that this condition is allied to angioneurotic edema and is caused by a sudden and temporary dilation of the left ventricle, including the auriculoventricular orifice and consequent acute regurgitation and engorgement of the pulmonary capillaries. It is generally associated with high arterial tension and valvular disease.

April 3, 1920, **1**, No. 3092

Diagnosis of Disease of Pancreas. A. E. Garrod.—p. 459.
Influenza Among the Lapps. A. H. Macklin.—p. 465.
*Analysis of Early Cases of Beriberi. H. H. Hepburn.—p. 466.
Lesson of the War; Suppurative Middle-Ear Disease. H. Smurthwaite. —p. 467.
*Strangulated Umbilical Hernia. C. M. Kennedy.—p. 468.
Herpes Zoster and Chickenpox. A. I. Cooke.—p. 468.
Acute Edema of Lungs. C. Musgrave.—p. 468.

Chronology of Beriberi Symptoms.—Hepburn undertook to analyze the early manifestations of beriberi, with a view of establishing the correct chronological order of the early signs and symptoms. Data were compiled from over 300 examinations of 100 cases. All patients were adult Siamese males, and each one was thoroughly examined at least twice. The first symptom or sign to be noted by the patient was invariably one of the three following: (*a*) edema of feet and legs (50 per cent.); (*b*) numbness or anesthesia of feet (43 per cent.); and (*c*) epigastric fullness and distress (7 per cent.). In every case the edema appeared first in the feet, then in the legs, and then in the hands. Appreciable swelling of the hands was seldom seen in these early cases. Practically all patients complained of more or less general weakness. Several patients stated that swelling of the feet had come and gone before the onset of anesthesia. Cardiac enlargement was found at the first examination in only 15 per cent. of cases. Subsequent enlargement occurred in four additional cases in spite of treatment. The treatment adopted was physical rest, with a diet rich in antiberiberi vitamins, polished rice being rigidly excluded. Further treatment was largely symptomatic. A soft mitral systolic murmur was heard at the first examination in twenty cases. Cardiac arrhythmia was noted in five of these early cases.

Strangulated Umbilical Hernia.—A successful resection of a gangrenous ileum is reported by Kennedy. The patient had an umbilical hernia.

April 10, 1920, **1**, No. 3093

Soldier's Heart and War Neurosis: A Study in Symptomatology. J. Mackenzie.—p. 491.
Prognosis and Treatment of Chronic Nephritis. J. O. Symes.—p. 494.
*Operative Treatment of Ulcerative Colitis. P. Lockhart-Mummery. —p. 497.
*A Familial Form of Acoustic Nerve Tumor. E. Ward.—p. 496.
*Fibroids Complicating Pregnancy; Hysterectomy: Recovery. R. de Stawell.—p. 498.
Case of Cervical Caries Simulating Cerebellar Tumor. R. R. Armstrong.—p. 499.

Treatment of Ulcerative Colitis.—The best treatment of this condition, Lockhart-Mummery says is by frequent washing through with saline solution after an appendicostomy opening has been established. The operation should be performed as soon as a diagnosis has been made and not left as a last resort, although it may sometimes succeed even then. The diagnosis should always be confirmed by sigmoidoscopy.

Acoustic Nerve Tumor.—In the cases cited by Ward, the disease was present in members of three generations. Full details are given.

Fibroids Complicating Pregnancy.—Stawell's patient was 4½ months pregnant. Troublesome vomiting for two days, constipation and sharp abdominal pain led to operation. Subtotal hysterectomy was performed. On section the ordinary appearance of myoma was seen, no "red degeneration" being observed. The patient made an uninterrupted recovery.

Lancet, London

April 10, 1920, **1**, No. 5041

*Abdominal Emergencies in Which Operative Interference is Either Contra-Indicated or Restricted. C. F. M. Saint.—p. 795.
Nose, Throat and Ear Disease Among Aviation Candidates. D. Ranken.—p. 800.
*Delayed Arsenical Poisoning. G. S. Strathy, C. H. V. Smith and B. Hannah.—p. 802.
*After-History of Five Hundred Consecutive Tuberculosis Dispensary Cases. F. G. Collins.—p. 807.
*Unusual Cases of Intestinal Obstruction. J. A. C. Forsyth.—p. 808.
*Combined Aortic and Mitral Regurgitation. W. Gordon.—p. 811.
Plating of Simple Fractures. F. D. Saner.—p. 812.
Extraction of a Sewing Needle from the Heart. Z. Cope.—p. 812.
A Dicephalous Monster. M. Z. Shafel.—p. 814.
A Case of Hypospadias Perinealis. S. Chelliah.—p. 814.
Experimental Medicine and Venereal Diseases. W. F. Snow.—p. 830.

Abdominal Emergencies.—Saint emphasizes that all surgical emergencies should be treated in a properly equipped hospital, and every patient with a more than ordinary abdominal illness should be sent to such a hospital at once for observation and, if necessary, operation.

Delayed Arsenical Poisoning Following Use of Arsphenamin.—Fifty-eight cases of delayed arsenical poisoning following the use of arsphenamin preparations are reported by Strathy and his associates. Eight of these were fatal, being the first of the series to come under observation. The remaining fifty patients made a slow but otherwise

satisfactory convalescence. The greatest number of doses of arsphenamin given in the fatal cases was eleven, the least four. The greatest amount administered, where it was possible to obtain records, was 6.95 gm., the least amount 2.2 gm. The average time of onset of symptoms after the last dose was forty-one days, the longest interval forty-eight days, the shortest eighteen days. The symptoms in every case were similar. The jaundice on onset was rapidly followed by nausea, epigastric pain, stupor, hematemesis, delirium and death. Four of the patients were wildly delirious. In all cases tested the urine contained bile, and in nearly all cases albumin as well. The blood picture was not characteristic. The hemoglobin and red cells were not much reduced. The leukocytes varied in number from 14,000 to 34,000 per cubic millimeter, and the polymorphonuclear leukocytes from 50 to 80 per cent. The greatest number of doses of arsphenamin given in the nonfatal cases was fourteen, the least two. The average time of onset of symptoms was forty-five days, the longest interval 180 days, the shortest three days. Thirty-nine of the patients were admitted for jaundice, eight for dermatitis, two for nephritis, and one for general debility. Jaundice followed dermatitis in one patient, and two other cases of dermatitis were followed by peripheral neuritis. Coated tongue, poor appetite, epigastric distress, abdominal distension, headache, general malaise, and loss of weight were noted throughout the group. Albuminuria was present in twenty-eight cases, bile salts in thirty-five cases, increased urobilin and urobilinogen in sixteen cases, leucin and tyrosin were never found. Jaundice was present in all of the fatal group and thirty-nine of the nonfatal group.

After-History of Tuberculosis Patients.—The points on which Collins lays emphasis are: That pulmonary tuberculosis may be cured if treated in its early stages. It is only the early case that derives any permanent benefit from sanatorium treatment (with rare exceptions); hence the futility of clogging the sanatoriums with the more advanced type of case. Much more strenuous preventive measures should be adopted—e. g., additional suitable open air schools and institutions for very advanced cases. There is a sad lack of suitable institutions for the tuberculous child.

Intestinal Obstruction.—The cases reported by Forsyth are: acute angulation at the hepatic flexure from pericolitis; rupture of the teniae coli of the cecum; polyp of the ileum accompanied by chronic intussusception; acute intestinal obstruction from traction diverticulum of the ileum; strangulation of a loop of ileum by an adherent appendix epiploica of the sigmoid.

Combined Aortic and Mitral Regurgitation.—The most outstanding feature in Gordon's case was its duration—thirty years. Points to which attention is drawn are: the case was uncomplicatedly rheumatic, dating from a single attack of acute rheumatism at 22; the patient was otherwise healthy, with no lung or kidney complications, for the most part her work was free from physical strain; she successfully avoided further rheumatism; the degree of aortic regurgitation was probably slight for a good many years, since "water-hammer" pulse and pulsation in the neck were absent for that time (remembering, however, the influence of coincident mitral regurgitation in modifying the pulse); precordial pain, palpitation and dyspnea on exertion, with occasional faintness, were present almost throughout; so long as eleven years before her death the apex beat, in the erect position, was already in the sixth space, and 1 inch outside the left mammary line.

Medical Journal of Australia, Sydney

Feb. 28, 1920, **1**, No. 9

*Iritis. F. A. Pockley.—p. 185.
Case of Neuromuscular Atrophy of Charcot-Marie-Tooth Type. A. Watkins.—p. 189.
Case of Superacute Pulmonary Edema. H. L. Kesteven.—p. 190.
Case of Purpura Hemorrhagica. E. A. Elliott.—p. 191.
Labor Complicated by Hydrocephalus. E. B. Moore.—p. 191.

Dental Infection as Cause of Iritis.—Pockley claims that in over thirty years' practice as chief of the ophthalmic department of the largest general hospital in Australia and a considerable private practice and, though of late years he has been on the lookout for dental troubles and other focal infections as a cause, and has got advice and treatment in all doubtful cases from dentists and physicians, he has rarely, if ever, met with a case in which he could satisfy himself that the teeth were the cause of iritis. Excluding syphilitic, gonorrheal, tubercular, sympathetic and a few other cases of iritis, for which a probable cause or association can be found, his experience is that most, in fact nearly all the patients showed benefit or cure by the proper use of salicylates combined with appropriate local ocular treatment. Operation may, of course, be required in old standing or recurring cases.

March 6, 1920, **1**, No. 10

Pathology of Influenza in France. S. W. Patterson.—p. 207.
Medical Education. E. A. Falkner.—p. 210.
Mastoid Disease with Cholesteatoma Complicated by a Cerebral Abscess. R. G. Brown.—p. 212.
Irreducible Intussusception in Children: Successful Resection, with Lateral Anastomosis. N. J. Dunlop.—p. 213.

March 13, 1920, **1**, No. 11

Method of Suture. A. C. F. Halford.—p. 229.
Chronic Disease and its Association with Focal Sepsis. S. Pern —p. 229.
Tuberculosis in Animals. J. B. Cleland.—p. 233.
*Case of Malignant (Carcinomatous) Pericarditis. J. B. Cleland and A. Palmer.—p. 233.
Case of Jugular Phlebitis, Sinus Thrombosis, Ulcerative Endocarditis. W. S. Laurie.—p. 234.
Cesarean Section for Contraction Ring. G. A. Hagenauer.—p. 234.

Carcinomatous Pericarditis.—A man, aged 49 years, was found dead in bed. He had had a swelling behind the right angle of his jaw, which had caused him a good deal of pain, but for which he had not consulted any doctor. At the postmortem examination, a hard swelling was noticed in the region of the right parotid gland. It was not further examined. The pericardial sac was distended, with a large quantity of bloodstained fluid, a chronic pericarditis being present. The left lung was adherent throughout. The gastric veins were prominent, the liver had the appearance of nutmeg and the kidneys showed advanced chronic interstitial nephritis. Death was attributed to chronic interstitial nephritis and chronic pericarditis. On macroscopic examination the surface of the heart showed a slight fibrous pericarditis, while in the neighborhood of the auricles were discrete, minute, nodular projections. On section, the pericardial surface of the heart showed here and there narrow, whitish, pencil-like thickenings. When microscopic sections were cut, Cleland and Palmer found among granulation tissue in places an extensive infiltration by deposits of carcinoma cells in a reticulum.

March 20, 1920, **1**, No. 12

*Toxemia in Epilepsy. P. Lalor and G. Haddow.—p. 251.
Treatment of Chorea. G. H. Burnell.—p. 260.
Hospital Standardization.—p. 263.

March 27, 1920, **1**, No. 13

Educational Number.

Relation Between Brain and Liver in Epilepsy.—The records of postmortem examinations of twenty-five cases of epilepsy, as far as the liver, etc., is concerned are given by Lalor and Haddow. The summary of their observations is that the brain-liver ratio is 35:33. The normal ratio was brain to liver, 12:15, so that the conditions are entirely reversed in the epileptic condition. The percentage in which the weights of the brain exceed those of the liver was 80 in the twenty-five cases examined. In 24 per cent. of cases status epilepticus was found and associated with this condition was toughness and congestion, indicating previous chronic irritation and present acute inflammation in 30 per cent. of these cases. There were signs of disease of the gallbladder and possibly of chronic intoxication from this source. In 8 per cent. of cases the mesenteric glands were enlarged, indicating some chronic intestinal toxemia of fairly long duration. In 20 per cent. of cases there was definite trouble in the gallbladder tract. In 40 per cent. of cases there was evidence of chronic hepatic irritation, indicative of a continuous and slow toxin, displayed by fibrosis or toxic or fatty changes. In 8 per cent. of cases there is distinct evidence of a chronic intestinal intoxication, which might in all probability be obviated by treatment.

Bulletin de l'Académie de Médecine, Paris

Feb. 24, 1920, **83**, No. 8

*Experimental Hematology. Normet.—p. 163.
*Quadruple Birth. Pinard.—p. 169.
*Hammer Percussion Locates Painful Points. G. Hayem.—p. 173.
*Sulphur in Cancerous Liver. A. Robin.—p. 178.
The Reflexes in Epidemic Encephalitis. G. Guillain.—p. 197.
First Case of Contagion of Oriental Sore in France. P. Ravaut.—p. 198.

Experimental Hematology.—Normet reports experiments on rabbits and guinea-pigs after injection of sodium citrate; this allows the study of the blood to be continued in vitro. His illustrations demonstrate, he asserts, the course of the evolution of the blood corpuscle, the mononuclear leukocyte being capable of producing directly or indirectly, as he explains, the eosinophils and the erythrocytes. He regards it as the generator of all the blood cells. The budding or gemmation which he describes as the origin of the hematoblasts, shows a process of cell reproduction which was not suspected in metazoa, and which he is now studying in other tissues besides the blood.

Quadruple Birth.—The woman had borne six normal children when in 1915 she gave birth to two boys and two girls at one time, and all are in good health to date. There was no history of twins in either family before.

Percussion Locates Painful Points in the Abdomen.—Hayem strikes with the middle finger, like a hammer, and has found that this locates the tender points with greater precision than mere pressure alone. Lately he has been using special hammers, with a spring, for the purpose. This hammer technic may reveal points of tenderness which escape detection by ordinary palpation and pressure. The pain elicited is usually visceral, and with dyspepsia, it is generally in the liver. With chronic stomach disease, aside from ulcer and cancer, this *martelage* often elicits pain in the liver and intestine.

Sulphur in the Cancerous Liver.—Robin concludes from his long study of sulphur metabolism in malignant disease that there must be some special proteolytic ferment in the organ or part of the organ in which cancer develops which prepares the soil for the malignant disease. Research in this line may throw light on chemotherapy of cancer. The sulphur content was much below normal in the cancer regions in five cancerous livers examined.

Bulletins de la Société Médicale des Hôpitaux, Paris

Feb. 6, 1920, **44**, No. 5

*Acute Encephalitis in Children. J. Comby.—p. 161.
*Neurofibromatosis with Suprarenal Insufficiency. A. Chauffard and P. Brodin.—p. 166.
*Malaria Masquerading as Paroxysmal Tetany. P. Hébert and M. Bloch.—p. 169.
*Azotemia with Pulsus Alternans. C. Esmein and J. Heitz.—p. 173.
*Epidemic Encephalitis. Harvier and others.—p. 179.
Gangrenous Process in Lung; Recovery under Antigangrene Serotherapy. H. Dufour and others.—p. 190.

Acute Encephalitis in Children.—Comby warns that acute encephalitis is frequent in children but is usually mistaken for tuberculous meningitis until lumbar puncture shows the absence of lymphocytosis. In his twenty-five cases published in 1907 the lethargic type was manifest in about a third of the cases. The encephalitis developed secondary to influenza, whooping cough, vaccination, enteritis or gas poisoning in the majority, but in some the disease seemed to be primary. Some of the children died and some recovered completely, but others were left with grave sequelae.

Neurofibromatosis.—Chauffard and Brodin report a case which apparently confirms the connection between Recklinghausen's disease and the suprarenals. Suprarenal treatment was followed by immediate and notable improvement, as in Pic's and Jullien's two cases.

Malarial Attacks Masquerading as Tetany.—Hébert and Bloch report a case in which attacks of tetany every second day were finally explained by finding *Plasmodium vivax* in the blood. With tetany from any cause, they suggest that it might be well to examine for parasites. The attacks in this case resembled the hemoclastic crises from chilling to which Widal and others have called attention in paroxysmal hemoglobinuria.

Azotemia with Pulsus Alternans.—Esmein and Heitz tabulate the details of twenty-five cases of pulsus alternans showing the high urea content of the blood; it ranged from 0.43 to 1.66 gm. per liter. After the intake of meat was restricted, marked improvement followed. These experiences testify to the importance of putting patients with pulsus alternans on a nitrogen-poor diet in addition to heart tonics and diuretics. The subject is timely, they add, as pulsus alternans seems to be increasing in frequency; forty cases have been encountered by them in the last few years. The possibility of syphilis as a causal factor must not be forgotten. In the discussion that followed, Josué suggested that the azotemia in these cases may have been merely relative, depending on oliguria. The alternating pulse is a sign of weakness of the heart, and this in turn may entail oliguria and secondary azotemia even when the kidneys are sound. Heart tonics may transform the whole clinical picture.

Epidemic Encephalitis.—Netter estimates at 500 the recent cases of lethargic encephalitis at Paris. Other speakers commented on the variety of forms the disease is now assuming, even walking cases. Labbé and Hutinel report a case with lymphocytosis and excessive amounts of glucose in the lumbar puncture fluid. Others report series of cases with delirium and hallucinations. Morax and others discuss the ocular symptoms, and Weil describes a case with symptoms indicating involvement of the spinal cord.

Lyon Médical

April 10, 1920, **129**, No. 7

*Tuberculous Rheumatism. L. Duvernay.—p. 298.

Tuberculous Rheumatism.—Duvernay states that while the existence of tuberculous rheumatism is quite generally recognized, there are many erroneous ideas afloat in regard to the nature of the disease and with respect to its treatment. Many seem to think of tuberculous rheumatism as an articular localization of the Koch bacillus, which Duvernay says is not only still unproved but seems to be in contradiction with almost all the facts. It should therefore be emphasized that tuberculous rheumatism (or inflammatory tuberculosis) presents just ordinary lesions, and that there are no evidences of classic tuberculosis. He regards tuberculous rheumatism as not so much a toxic rheumatism as an antitoxic or reactional rheumatism. It seldom appears when the toxic substances are abundant. The tuberculous rheumatic is one who has recovered from tuberculosis, whose organism is defending itself, and in whom the antibodies are very active and very abundant. Since tuberculous rheumatism is not a local tuberculosis but a rheumatism, it should be treated like other forms of rheumatism: warmth, immobilization during the acute stages but mobilization and massage as early as possible to avoid atrophy and ankylosis.

Presse Médicale, Paris

Feb. 25, 1920, **28**, No. 16

*Angina Pectoris. A. Martinet.—p. 153.
*Bismuth Poisoning. C. D. Constantinescu and A. Jonescu.—p. 155.
Ocular Ataxia in Tabes. A. Cantonnet.—p. 156.

Angina Pectoris.—Martinet seeks for and applies treatment for the anatomic elements responsible in aorta, coronaries and myocardium; for the pathologic physiology in the nerves around the aorta, ischemia in the myocardium, and cardiac insufficiency; for the etiologic elements, syphilis, gout, rheumatism, arteriosclerosis, obesity or neuropathies, and, finally, for the provocative elements, such as overexertion, emotional stress, excesses, meteorism or aerophagia. During a severe attack he injects atropin and morphin in one thigh and camphorated oil in the other, and wraps the chest in a compress wrung out of mustard water, 2 handfuls of mustard in 2 liters of very hot water; covers with oiled silk and keeps it on until the skin is bright red (usually from fifteen to thirty minutes); or the arms can be held in very hot water; when there is danger of acute edema of the lung, blood-letting at the elbow. Besides these and other measures described, he lays great stress on tranquilizing the patient. The anguish and fear maintain or start further spasms of the vessels,

and one of the main points in treatment is to reassure the patient, telling him that the gravity of angina pectoris has been much exaggerated, and that many persons subject to it long survive, with ordinary care. When aerophagia is a prominent element, it is easy to convince the patient that the disturbances are not induced or aggravated by muscular exertion, as a rule. A stimulant might be prescribed, to be carried habitually, a few swallows to be taken when symptoms suggest an impending attack. He usually orders for this "gri-gri," as he calls it, a little ammonium acetate in brandy and syrup.

Severe Bismuth Poisoning.—The bismuth had been given in the case reported for roentgen examination with supposed gastric ulcer. The blood showed nitrites but no trace of bismuth, and the symptoms and spectrum indicated that the oxyhemoglobin had been transformed into reduced hemoglobin and what he calls oxy-azotic hemoglobin.

Annali d'Igiene, Rome

December, 1919, **29**, No. 12

*Pathogenesis of Cholera. G. Sanarelli.—p. 797.
*Sterilization of Drinking Water. D. De Blasi.—p. 842.
Agglutinins for Proteus X in the Serum of Typhus Patients. Levi Della Vida.—p. 847.

Pathogenesis of Cholera.—In this first of a series of articles on this subject Sanarelli describes research on animals to study the natural defences of the peritoneum against the cholera vibriones.

Sterilization of Drinking Water.—Among the chemicals investigated by De Blasi he found silver fluorid most effectual, but it required a comparatively strong solution and contact of an hour to completely sterilize the water. The water is rendered limpid afterward by addition of sodium thiosulphate. Cattle and horses drink water containing up to 1:10,000 of the silver fluorid (*tachiolo*) without reluctance or apparent harm, he adds. His research with sodium hypochlorite and certain other chemicals merely confirms what others have published.

Policlinico, Rome

March 1, 1920, **27**, No. 9

Normal Serum in Treatment of Puerperal Infections. O. Cignozzi.—p. 259.
Verbal Blindness from Skull Wound. E. Fossataro.—p. 261.
Epidemic Encephalitis. G. Pansera.—p. 263.
Specific Color Reaction in Urine in Acute Peritonitis. O. Sgambati.—p. 267.

March 15, 1920, **27**, No. 11

*Medical Treatment of Dysenteric Liver Abscess. L. Manini.—p. 323.
Organic and Functional Anesthesia. G. Dragotti.—p. 327.
Donato Rossetti, 1667, a Pioneer in the Study of the Senses. G. Bilancioni.—p. 338.

Medical Treatment of Dysenteric Liver Abscess.—The symptoms indicated amebic dysentery of several months' standing but no amebas could be cultivated from the stools nor from the thick, chocolate colored fluid obtained by simple puncture of the enlarged right lobe of the liver through the sixth interspace on the axillary line. The liver was not tender and the spleen was not enlarged. Under a vigorous course of subcutaneous injections of emetin, the fever and other symptoms promptly subsided to complete clinical recovery, confirming the presumptive diagnosis, and establishing anew the efficacy of medical treatment alone with amebic liver abscess.

March 22, 1920, **27**, No. 12

*Spasm of Walls of Arteries. E. Morelli.—p. 355.
Vaginal Enucleation of Submucosa Uterine Fibroma. C. R. Belgrano.—p. 358.

Arterial Spasm with Hypertension.—Morelli emphasizes that in estimating the arterial blood pressure it is necessary to take into account the sphygmogram as well as measure the systolic and diastolic pressure. Forlanini regarded essential arteriospasm as a morbid entity, the abnormal irritability of the muscular walls of the arteries an expression of pathologic conditions apart from arteriosclerosis. The sphygmogram may vary widely in persons whose blood pressure measurements show the same figures. De Giovanni noted that after palpation of the radial artery the area palpated remained contracted for a time, testifying to the excitability of the artery walls. Zoja has also called attention to the changes in the sphygmogram when the nerves in the arm above are irritated by stroking them across. Their tests were made on persons with normal blood pressure, but Morelli found the response even more pronounced with high pressure. The spasmodic contraction may be in the medium sized arteries or in the terminal arterioles, or in both. The effect is much like that of arteriosclerosis; the contracted artery may feel as hard and rigid as with sclerosis, but differentiation is extremely important as the treatment for one may be injurious in the other. When the medium arteries alone are contracted, the arterioles below and the circulation suffer, and the arterial pressure from extremely high during systole drops to extremely low during diastole. With this tendency to spasm of the arteries, the tonus of the arteries may respond more rapidly and intensely to stimuli of different kinds than has as yet been demonstrated with normal arteries. The spasm may be total or segmentary, and the type may differ as it occurs during systole or diastole, the increase in the diastolic tonus of the artery preventing the stretching of the artery during the diastole. The combination of spasm of the arteriole with spasm of the larger artery throws much extra work on the heart and essentially disturbs the circulation.

Riforma Medica, Naples

Dec. 20, 1919, **35**, No. 51

*Motor Plastic Operations: Cinematization. A. Pellegrini.—p. 1113.
*Pleuritis with Liver Disease. A. Furno.—p. 1122.

Motor Plastic Operations.—Pellegrini here presents the report for 1918 and 1919 of what has been accomplished in Italy in the line of cinematization, cineplastics and cineprosthetic appliances. Among the twenty-one illustrations some show the technic and results of a tunnel made in the place where the shoulder had been enucleated. This tunnel allows a grasp of an instrument and motor control to a certain exent, backed by the strength of the shoulder muscles. The Zerlini artificial hand can be used both with simple motor loops of muscles and alternating loops. Some of the illustrations show a man after amputation of the arm writing with this Zerlini hand, or pouring from a bottle, or holding up a cane-seated chair. The principles and construction of this artificial hand are described and its simplicity emphasized.

Metahepatic Pleurisy.—Furno explains that four fifths of the lymphatics which originate in the liver pass into the pleural cavity above, and line the parietal and visceral sheets of the pleura. These lymphatics are the only ones that enter the pleura from the abdominal cavity, and this readily explains why pleuritis with or without effusion is often an important aid in the diagnosis of liver disease. In none of the other viscera are pathologic conditions accompanied by pleuritis in this way. He relates some cases in which the febrile pleuritis was treated on a mistaken basis for about two years before the causal liver disease was suspected. This mistake is particularly disastrous when the liver disease is of syphilitic origin. Irreparable lesions may become installed as the years pass without proper treatment while attention is focused exclusively on the pleura. Furno knows of six cases at least in which the patients had been sent to a sanatorium for treatment of the supposed tuberculosis. In other cases, operations for gallstones had been done, but on suspicion of a syphilitic origin all recovered promptly under mercury. Pleuritis with chills, fever and night sweats should suggest the liver first of all. The liver is often silent in its pathology, he says, or symptoms from it simulate those from other viscera; right pleuritis may be the first thing to give the clue.

Feb. 21, 1920, **36**, No. 8

Epidemic Encephalitis. A. Chauffard.—p. 197. A. Abbruzzetti.—p. 203. G. Onano.—p. 204.
*Constitutional Anomalies and Syringomyelia. A. Finzi.—p. 199.
*Chilling of the Skin in Relation to Disease of the Respiratory Apparatus. G. Galeotti.—p. 205.

Constitutional Anomalies in Relation to Syringomyelia.—Finzi recalls some cases on record in which four of the five

children in a family or the mother and three children all presented syringomyelia, and states that the twenty-one patients with syringomyelia he has recently examined all presented an unusual number of malformations or other constitutional anomalies. They are so frequent and so universal that a casual coincidence can be excluded. An inherited neuropathic taint is particularly common, and any organ is liable to display the congenital anomalies.

Chilling of the Skin in Relation to Disease of the Respiratory Apparatus.—Galeotti reviews the conflicting theoretical testimony in this line in contrast to the empiric certainty of the pathogenic action on the air passages of chilling of the body. He then describes research by himself, Azzi, Viale and others which demonstrated that the temperature of the expired air does not correspond to the blood temperature, but to the temperature of the skin at the moment. It was found that when the vessels in the skin had become constricted under the influence of cold, the expired air was proportionately cooler, and it grew warmer as the vessels in the skin dilated under the influence of warmth. Their findings can mean only that there is a close nervous connection between the vessels in the skin and the vessels in the air passages. As one system contracts, those in the other contract instantaneously with them, and they dilate in the same way. The temperature of the air in the lungs is determined by the blood in the vessels, and if these vessels contract, the expired air is cooler than when the vessels are dilated. Sudden vasoconstriction in the lungs may favor infection from saprophytes by checking phagocytosis or by the altered metabolism or by the paralytic dilatation which follows the vasoconstriction. The hyperemia in the vessels of the air passages which accompanies hyperemia, from revulsion to the skin, in the vessels of the skin, explains, he says, the benefit from revulsion and fomentations applied to the chest, while the reverse mechanism explains the benefit from ice applied to the skin in arresting hemoptysis. He explains in conclusion that this behavior of the vessels in the air passages seems to be an atavistic functional relic of the primitive thermo-regulating mechanism, analogous to what is observed in dogs.

Deutsches Archiv für klinische Medizin, Leipzig

Sept. 26, 1919, **130**, No. 3-4

*Pituitary Tumors. V. Reichmann.—p. 133.
*Scurvy. R. Bierich.—p. 151.
*Resisting Power of Erythrocytes. J. Bauer and B. Aschner.—p. 172.
*Osteo-Arthropathy (Marie). V. Hoffmann.—p. 201.
*Heart Action During Sleep. F. Klewitz.—p. 212.
*Test Pressure on the Vagus. Margarete Kleemann.—p. 221.
Influence of Great Cardiac Nerve on Shape of the Electrocardiogram in Case of Paroxysmal Tachycardia. Boden.—p. 249.
Pigment Cells in Kidneys and in Urine. J. Weicksel.—p. 260.
Twenty-Four Years of Diphtheria at Bonn. J. L. Noest.—p. 270.

Pituitary Tumors with Unusual Clinical Picture.—Reichmann reports two cases in which the symptoms had suggested exophthalmic goiter, tendency to acromegaly, suprarenal disease, and disease of the genital glands, but necropsy revealed in the woman of 36 an eosinophil adenoma in the pituitary, and in the man of 51 the roentgen findings seem to indicate a similar tumor. The face was red and puffy in both; the exophthalmos was pronounced but the thyroid was not enlarged, and the pulse was slow, with extreme weakness of muscles, emaciation, edema of the legs, slight glycosuria, no albuminuria, and no signs of contracted kidney, but the blood pressure was very high, and there was pronounced osteoporosis of the spine. The symptoms thus indicated excessive functioning of the pituitary and suprarenals, with thyroid deficiency. The curvature of the spine from the osteoporosis was evidently responsible for the severe neuralgiform pains in the back in the woman's case. Tests for epinephrin in her blood were negative, but the blood pressure of 200 mm. mercury pointed to the suprarenals, and as the pains in the back were unbearable, Reichmann yielded to the patient's demand for operative relief, and removed the left suparenal. The woman died nine days later from peritonitis, nearly three years from the first onset of symptoms, which had been edema of the legs, exophthalmos and arrest of menstruation. The latter had never been constantly regular.

Scurvy.—Bierich as chief of the Russian Red Cross central scurvy station was able to compile data in regard to 1,343 cases with necropsy findings in six cases. He says that before the outbreak of the revolution in Russia, fully 98 per cent. of the scurvy patients were promptly cured by the usual antiscurvy diet, but after the onset of the revolution only from 20 to 30 per cent. could be cured although the men's food was much better. There were whole divisions of troops in which 75 per cent. developed scurvy. These and other facts observed testify, he says, that the endogenous factors in the disease are racial and mental; the exogenous are the deficient diet. The injury seems to affect primarily the endothelium of the capillaries, the normal structure of which is reversibly injured by the lack of some nitrogen-containing building-stone indispensable for its specific function. The insufficiency of the blood-producing organs seems to be secondary to this structural damage to the capillaries. Treatment in many of his cases had to include psychotherapy, transfusion of citrated blood and splints, in addition to the usual dietetic measures.

The Range of Resisting Power of the Erythrocytes.—Bauer and Aschner recall that sometimes the concentration of the substance causing the first sign of laking may be very close to the concentration causing total hemolysis. In other cases there may be a wide range between them This "resistance range" is the expression of the biologic difference between erythrocytes which from other standpoints seem to be identical in every respect. They found the widest range in severe anemia, especially the anemia with chronic Bright's disease; the smallest range was in tuberculosis with a mild course, and injections of tuberculin seemed to increase the resisting power of the erythrocytes. They tested with solutions of sodium chlorid ranging from 0.6 per cent. to 0.3 per cent., drawing the blood first into a solution of 0.28 parts potassium oxalate and 0.8 parts sodium chlorid in 100 parts distilled water and centrifuging, then making the suspension of the erythrocytes in 0.9 per cent. sodium chlorid solution. The set of test tubes was compared with a colorimeter scale (hemoglobin solution). The younger erythrocytes were the more resistant. The resistance range varied in the same person at different times in their tests of 100 persons. The findings are tabulated and a theoretical explanation tentatively advanced.

Hypertrophic Pulmonary Osteo-Arthropathy.—In Hoffmann's first case the woman of 40 developed drumstick fingers and thickening of the periosteum of different bones about six months after the clinical cure of uterine cancer under mesothorium treatment. A year after the development of the typical *ostéoarthropathie hypertrophiante pneumique*, pains and ataxia in the legs testified to neuritis. Shadows in the lungs seem to be metastases of the cancer, but they have not progressed during the year the woman has been under observation. In a second case, in a man of 30, the osteo-arthropathy was secondary to bronchiectasia with foci of gangrene. No instance of primary osteo-arthropathy of this Marie type has yet come to necropsy, to Hoffmann's knowledge. He remarks that the relations between the primary form and the secondary toxigenous form are not at all certain.

The Heart Action During Sleep.—Klewitz has been taking electrocardiograms of twenty-five persons during sleep, including a number of healthy subjects, eight with well compensated valvular disease, three with failing compensation and two with tachycardia or bradycardia after influenza. The electrocardiogram in sleep often differed materially from the electrocardiogram of the same subject awake. In the healthy, the heart cycle was lengthened, sometimes up to one tenth. The ventricle systole was prolonged more in proportion than the auricle systole. The differences in heart action during sleep are advantageous for the circulation as a whole. With the different forms of heart disease no regularity in the sleep changes could be detected. In the one case of bradycardia the heart cycle was shortened.

Test Pressure on the Vagus.—Kleemann applied to 127 patients Czermak's test pressure on the vagus, and the response was studied with electrocardiography. In 80 of

150 tests of the right vagus no effect was apparent, as also in 90 of 149 tests of the left vagus As a rule, pronounced modification from the pressure was evident only in cases of heart disease, but the intensity of the response was not proportional to the severity of the latter, and a positive response did not always occur with heart disease. The findings were interesting with partial heart block, namely, its aggravation, and the development of a regular auricle-ventricle rhythm while the rate of sinus conduction was reduced.

Deutsche medizinische Wochenschrift, Berlin

Dec. 25, 1919, **45**, No. 52

Observations on Heart Function and the Effect of Digitalis. S. Loewe.—p. 1433.
Orthopedic Therapy in Foot Deformities with Neural, Progressive Muscular Atrophy. H. Debrunner.—p. 1437.
The Friedmann Tuberculosis Remedy in Tuberculous Bone and Joint Lesions. J. Elsner.—p. 1438. Conc'n.
My Experiences with Silver Salvarsan. Levy-Lenz.—p. 1440.
Protective Sleeve for Obstetrical Use. K. Meyer.—p. 1441.
Reasons Why the Eight Hour Law Is Not Applicable to Hospitals. E. Unger.—p. 1441.
The Place of Philosophy in the Study of Medicine. B. Jung.—p. 1442.

March 18, 1920, **46**, No. 12

*Surgical Treatment of Nephritis. H. Kümmell.—p. 313. Conc'n.
*Antityphoid Vaccination of Civilian Population. J. Basten.—p. 316.
Effect of Food Restrictions on Mortality. M. Hindhede.—p. 318; Reply. Rubner.—p. 320.
Gastric Antiperistalsis. O. Strauss.—p. 321.
*Medicolegal Significance of Vagus Pressure Experiment. Von Teubern.—p. 322.
*Splenic Anemia in Young Children. Aschenheim.—p. 323.
*Treatment of Prolapse of Rectum in Children. P. G. Plenz.—p. 324.
Diphtheria of the Umbilicus in the Newborn. F. Göppert.—p. 324.
Dermatologic Hints for Practitioners. M. Joseph.—p. 325. Conc'n.
Questionnaire on Treatment in Influenza. J. Schwalbe.—p. 326.

Results of Surgical Treatment of Nephritis Under War and Peace Conditions.—Kümmell holds that acute nephritis with abscesses should be treated by means of nephrotomy or decapsulation as soon as the diagnosis has been definitely made, as he has found the results very favorable. The form of chronic nephritis whose predominant symptom is pain in the kidney (mostly unilateral), nephritis dolorosa, is favorably influenced by decapsulation, and the patients remain free from symptoms, able to work and to all appearances perfectly well. In the case of unilateral partial nephritis, if internal treatment fails to give relief, operative intervention should not be postponed too long, lest the diseased area should increase or the other kidney should become involved. Chronic hemorrhagic nephritis, whose predominant symptom is hemorrhage, more or less profuse, usually unilateral, and which often simulates the presence of tumors, reacts most favorably to decapsulation. The hemorrhages almost always cease and seldom reappear. The patients remain free from symptoms for long periods and are able to work.

Compulsory Antityphoid Vaccination of Civilian Population.—Basten has investigated the results of the extensive vaccination of civilians against typhoid undertaken by the British army in December, 1918, during the occupation of German territory. Civilians between the ages of 6 and 45 were compelled in certain districts during a typhoid epidemic to accept vaccination unless there were certain contraindications, such as advanced pregnancy, recent childbirth, advanced tuberculosis, etc. Basten draws these conclusions from his investigations: 1. The vaccination was accomplished without any injury to the health of any age group. 2. No unfavorable influence on pregnancy or on lactation in nursing mothers could be noted. 3. The English vaccine, which contained also paratyphoid A and B strains, did not cause more severe reactions than the German vaccine which contained only typhoid strains. 4. The vaccination checked successfully many cases of typhoid that were in the incubation stage and thus rid the population of the infection. 5. No influence from the vaccination on the typhoid morbidity percentage among the vaccinated as compared with the unvaccinated, during the following six months, could be noted, but the vaccination attenuated the disease in the typhoid patients who were vaccinated. Conclusion 5 would seem to indicate that two injections as given are not sufficient to immunize against the disease, and that three injections are necessary. The experience of the German army has been that three injections are required to establish immunity.

The Medicolegal Significance of the Vagus Pressure Experiment.—Von Teubern states that the Czermak vagus pressure experiment has a certain medicolegal value as it lends support to the view that in persons with a strongly positive vagus response a more or less intensive compression of the throat for even a short space of time, as in choking, attempts to strangle, etc., might be alone sufficient to produce immediate arrest of the heart action.

Splenic Anemia in Young Children.—Aschenheim opposes the tendency to regard splenic anemia as belonging to a subordinate group of the ordinary anemias in infants and young children, and defends the view that it is a clearly defined disease, characterized by a very large spleen, a yellow color of the skin, swelling of the liver, and frequent edemas and hemorrages.

Treatment of Prolapse of the Rectum in Children.—Plenz opposes the use of the subcutaneous wire ring as recommended by Thiersch in the treatment of prolapse of the rectum in children. It produces severe pain during later defecation and, acting as a foreign body, it leads almost invariably to suppuration and the formation of abscesses. He expresses surprise that since Kirschner called attention to the excellent results obtainable with fascia, so little use has been made of the suggestion. Plenz has used the fascia method in place of the wire ring in six cases, and has been well pleased with the results.

Deutsche Zeitschrift für Chirurgie, Leipzig

November, 1919, **151**, No. 5-6

*Autovaccines Against Pyogenic Infection. Läwen and Hesse.—p. 289.
*Wax and Paraffin to Plug Cavities in Bones. O. Wassertrüdinger.—p. 319.
*Arteriovenous Aneurysms. M. zur Verth.—p. 333.
Movements of Knee with Injury of Anterior Crucial Ligament. M. Budde.—p. 343.
*Intravenous Infusion by the Drop Method. M. Friedemann.—p. 352.
*High Sacral Anesthesia. D. Schuster.—p. 393.
Congenital Lumbosacral Scoliosis. M. Budde.—p. 417.

Preventive Vaccination Against Infection.—The experience was with war wounds, but the number of cases (twenty) is too small for definite conclusions. In three of the men the wound became infected. There was no temperature or pulse reaction to the injection of the autovaccine.

Plugging Cavities in Bones.—Roentgenograms are given of seven cases—all war wounds—in which the injected wax or hard paraffin seemed to stimulate the tissues to repair. The foreign substance was expelled as the cavity healed up behind it. In only one of the cases was healing by primary intention realized; the others were suppurating, but they began to expel the foreign substance by the third or fourth week, and the large defect gradually healed up completely, with very little impairment of function. To hasten the healing, in some of the cases the displaced wax was removed.

Arteriovenous Aneurysm.—Zur Verth presents evidence to show the serious damage to the general circulation, liable to result from an arteriovenous aneurysm of large vessels. The heart enlarges and may show signs of weakness, while both heart and vessels are more susceptible to reflex influences.

Intravenous Infusion by the Drop Method.—Friedemann has been applying this method of infusion for seven years, and his experience in several hundreds of cases has proved extremely satisfactory, he says. As the action of epinephrin is fleeting, this continuous drop method is particularly advantageous on this account. He generally uses a 0.9 per cent. solution of sodium chlorid or Ringer's solution, adding epinephrin, glucose or digitalis as may be indicated. A sign that the patient is beginning to get too much fluid is an increased lacrimal secretion or slight edema of the eyelids. On account of the danger of hypostatic pneumonia, he is careful not to infuse too much fluid when there seems to be a predisposition to this. He has never had any case of

embolism with this drop infusion. With menacing hemorrhage, the drop method replaces the losses of blood without abruptly raising the blood pressure. A further special advantage is with exhaustion of all kinds, dehydration of tissues, and as a preliminary to operations on the enfeebled. Since he has been relying on drop infusion he has much widened the limits of operability, patients coming to the table with a fine pulse when other surgeons had declined to operate on account of the weakness and almost imperceptible pulse before. In severe general infections, the combination of drop infusion with venesection has rendered valuable service, as also drop infusion with camphor or epinephrin, with or without venesection, in collapse in pneumonia. He cites typical instances of all these conditions to illustrate the benefit from the drop infusion, as also in the severe headache after intraspinal anesthesia, and in two patients moribund from kidney disease. His extensive bibliography on infusion is all from German writers.

High Sacral Anesthesia.—Schuster analyzes the experiences in 483 cases in which epidural injection of an anesthetic had been applied for major operations of various kinds. The anesthesia was complete in 85.5 per cent. and only 6 per cent. proved refractory. Adding the 155 cases previously published, this gives successful anesthesia in 85.7 per cent. of the total 638 cases. He says that there do not seem to be any absolute contraindications, but particular caution is necessary with severe atherosclerosis, on account of the necessity for raising the pelvis. The special indications for the high sacral or epidural technic are major operations in which inhalation anesthesia is contraindicated and local anesthesia is not practicable. It is applicable for all operations, he says, from the toes to the xiphoid appendix up to the age of 18, and occasionally up to 12 or 13 with 30 c.c. of procain solution. His tabulation includes twenty-three cases of resection of the stomach for cancer; sixteen of cholecystectomy; four of nephrectomy; eight of amputation of the rectum for cancer; one of amputation of the femur, and eleven of resection of the cancerous intestine. The few refractory cases were mostly in the operations on the stomach, intestines or kidneys. There was serious collapse in three extremely feeble patients; one was subject to apoplectiform attacks, which should have warned not to lower the head. The epidural technic in itself was not responsible for the fatality but the lowering of the head entailed fatal cerebral hemorrhage. The two other patients required artificial respiration during the collapse from the epidural injection, done in one case for prostatectomy. The man recovered but succumbed in less than two weeks to his uremia. The other patient had suppurative peritonitis from appendicitis; conditions were so grave that anesthesia of any kind was dangerous. He was brought out of the severe collapse by intravenous infusion of saline plus epinephrin and pituitary, while the measures for artificial respiration were continued. The man died ten hours after conclusion of the operation.

Medizinische Klinik, Berlin

Feb. 15, 1920, **16**, No. 7

Renal Hemorrhages. L. Casper.—p. 169.
*Surgical Treatment of Duodenal Ulcer. E. Heymann.—p. 172.
*Boeck's Sarcoid. G. Stümpke.—p. 178.
*Petechial Exanthem with Pneumococcus Meningitis. F. Hirsch. —p. 181.
*Fatal Case of Gas Phlegmon After Caffein Injection. F. Schranz. —p. 182.
Serologic and Neurologic Early Diagnosis of Syphilis. F. Kobrak. —p. 183.
Leukemia and Pernicious Anemia in East Prussia. S. Silbermann. —p. 183.
Micturition in the Newborn and Young Children. A. Adler.—p. 185.

Surgical Treatment of Duodenal Ulcer.—Heymann states that the surgeon will sometimes make a wrong diagnosis of duodenal ulcer, and on opening the abdominal cavity will not only not find the definitely expected ulcer but not even any pathologic changes characteristic of an ulcer. If no adhesions or thickening of the duodenal wall, nor scars on the serosa are found, he opens the anterior wall of not only the horizontal portion of the duodenum, where the ulcer is usually found, but also of the descending portion where it might possibly be located. The ascending portion is left untouched as no ulcers have been reported as yet in this part. The mucosa is carefully inspected and palpated, and occasionally he introduces a short rectoscope in the peripheral end of the duodenum. If no ulceration is discovered he does not think that a palliative operation such as gastro-enterostomy or Eiselsberg's exclusion of the pylorus, much less resection of the antrum, is indicated, but rather regards the laparotomy as an explorative measure, and merely sutures the duodenum and abdomen. Remarkable benefit may follow the mere exploratory laparotomy. There may, however, be occasions when the removal of the gallbladder or appendix is indicated.

Multiple Benign Sarcoid.—Because of its rarity Stümpke reports a second case of this disease, having reported his first case in 1913. Boeck's sarcoid belongs to the exanthematous forms of tuberculosis of the skin, and was first described by Boeck in 1899. This disease occupies a peculiar position not only on account of its clinical form but also because the methods used to prove its tuberculous nature are so frequently unavailing. That the microscopic picture of Boeck's sarcoid is not absolutely characteristic for the affection, as was asserted by Boeck, has been shown by Lewandowski and others: similar changes occur in other tuberculids, as erythema induratum; also in lupus. The sharply circumscribed foci of epithelioid cells are not found exclusively in Boeck's sarcoid. As regards treatment, we are well nigh powerless. In Stümpke's first case, reported in 1913, he had used tuberculin treatment, whereupon an exacerbation of the lung condition ensued, which resulted in the patient's death. He therefore advises caution in dealing with Boeck's sarcoid, as with all tuberculids. His second case is in a woman of 35, who has been suffering for thirteen years from a stubborn type. The lesions are found mainly on the right and (more recently) on the left cheek, and on the left upper arm. The lymph glands are not involved. All the therapeutic methods tried so far have proved unsuccessful.

Petechial Eruption in Pneumococcus Meningitis.—Hirsch has been unable to find in the literature the description of a single case of petechial exanthem in pneumococcus meningitis, but reports a case in a man of 78. The diagnostic value of hemorrhagic exanthems in connection with the diagnosis of obscure cases of meningitis was learned during the war. Meningitis often appeared in such an atypical form, without the classical symptoms, so that in many cases a definite diagnosis was possible only at necropsy. Many physicians did not know how to interpret the exanthems that were present, and thus, owing to the absence of typical symptoms of epidemic meningitis, they were led to the false diagnosis of typhus fever. In nonepidemic meningitis exanthems are rare. In Hirsch's case the exanthem was entirely different from those occurring in meningococcus meningitis. It was evidently a toxic eruption, and he is dubious whether it was due to the meningitis, which was in the foreground of the clinical picture, or whether it should be laid to the account of the pneumonia.

Fatal Cases of Gas Phlegmon After Caffein Injection.—Schranz adds one more to the growing list of cases in which, following injections of caffein or camphor, a fulminating gas phlegmon developed at the site of the injection and resulted fatally. His case was in a professional nurse of 21. Oct. 21, 1918, she was taken with influenzal pneumonia. The temperature ranged between 38.5 and 39.9 C. (101.3 and 103.8 F.). Owing to the weak heart action she was receiving camphor injections hourly and caffein every four hours. October 25, at 3 p. m., she received (with the same syringe and the same solution as usual) an injection of caffein on the extensor aspect of the left thigh. Half an hour later severe pain set in at the site of the injection. There was a small hemorrhagic spot surrounded by a reddish ring the size of a quarter, painful to the touch. Compresses and immobilization of the limb did not quiet the patient. The pain abated somewhat but did not stop. At 9 p. m. the patient voided about 50 c.c. of urine of a peculiar color, dark brown, with a greenish tinge. It contained albumin and traces of blood. By 10 p. m. the whole thigh, the knee and part of the lower leg were swollen. On palpation the thigh seemed to be full of air bubbles. The color changes of the skin, which became

more and more pronounced, were startling. The thigh was a dirty, yellowish brown, verging at the sides into a bluish red. The thorax, the cheeks and the forehead bore bluish-red spots. The thigh continued to swell during the night, and the abdomen became tympanitic. The general condition of the patient grew worse, death ensuing toward morning. Schranz has been struck by the frequent association of gas phlegmon and influenzal pneumonia, for which he seeks an adequate explanation.

Münchener medizinische Wochenschrift, Munich

March 12, 1920, **67**, No. 11

*The Reticulo-Endothelial Cellular System of the Spleen in Relation to Blood Coagulation. R. Stepban.—p. 309.
Radiating Pains in Shoulder. E. Plate.—p. 313.
Spina Bifida Occulta and Congenital Club-Foot. O. Beck.—p. 316.
A Method for Determination of the Sugar Content of Blood. F. Mezger.—p. 320.
An Adjustable Nasopharyngeal Speculum. Stephan.—p. 321.
Operative Treatment of Varices. H. Flörcken.—p. 322.
Urology for the General Practitioner. Kielleuthner.—p. 322.

Arrest of Hemorrhagic Purpura by Raying the Spleen.—Stephan reports a case of purpura fulminans in a man of 45 in which a refractory hemorrhagic diathesis was successfully combated early in 1919 by means of deep roentgenotherapy applied to the spleen. Investigations that he undertook in connection with this result lead him to state that roentgen radiation applied to the spleen rapidly decreases the coagulation time of the blood in vitro, and increases likewise to a considerable extent the amount of coagulating ferment in the blood serum. Radiation seems to have the same effect on the organism as extensive loss of blood. The essential factor that arrested and cured the hemorrhagic tendency was the increase in the quantity of the coagulating ferment, and this was realized by the action of the roentgen rays on the spleen. He thinks they exert a specific functional stimulus on the elements of the spleen other than the lymph follicles. The blood platelet count does not seem to be modified. The coagulation time was shortened sometimes to one fourth even in normal subjects by raying the spleen; the maximum effect was apparent between the second and fourth hours, and then gradually subsided. His clinical and experimental research has demonstrated, he announces in conclusion, "that stimulating the functioning of the spleen by roentgen radiant energy must be regarded as theoretically a true physiologic method of arresting venous and parenchymatous hemorrhages. In numerous cases it has proved extraordinarily effectual in practice, far surpassing the effect of any medicinal hemostatics."

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

March 6, 1920, **1**, No. 10

*The "Quackery Commission." G. van Rijnherk.—p. 771. Begun in No. 7, p. 529.
*Inguinal Hernia. J. M. van Dam.—p. 776.
*Substances Resembling Epinephrin in the Blood Serum. J. R. F. Rassers.—p. 785.
Influence of Influenza on Birth Rate. J. van Gelderen.—p. 791.
Diphtheria Antitoxin in Malignant Influenza. A. van Balen.—p. 795.

The State Commission Appointed to Study the Methods of Unqualified Practitioners.—This is the fourth and last of van Rijnberk's articles commenting on the medical and the legal commissions appointed by the state to study the ways and results of treatment of the sick by the unqualified, to determine whether and how the barriers to practice should be lowered. The reports of the Kwakzalvers-Commissie were recently mentioned in THE JOURNAL, page 1109.

Inguinal Hernia.—Van Dam concludes his analysis of the different methods in vogue for correction of inguinal hernia by commending, for boys, the torsion-ligature method for the indirect or lateral hernia; for girls and women, the Alexander-Adams. For men, he prefers the Breuner or Ferrari method if the muscles are strong and the canal narrow. If the canal is widely gaping and the muscles are strong, the Bassini or Brenner is preferable, possibly supplemented by a small laparotomy. On the other hand, if the muscles are flabby, or their insertion on Poupart's ligament is unusually high, it is advisable to reenforce the transverse fascia with a flap from the anterior sheath of the rectus, doubling the aponeurosis if it is relaxed. With a direct or medial hernia, both men and women should be treated alike on these principles. The operation should thus conform to the varying conditions presented by individual cases.

Substances Resembling Epinephrin in the Blood Serum.—Rassers made extracts of serum from cattle, sheep, rabbits and guinea-pigs and tested their vasoconstricting action on the surviving intestines of white mice, arteries taken directly from just slaughtered cattle, the uterus of cats, etc. Both crystalloid and colloid elements of the serum seemed to be involved in its vasoconstricting action, and in increasing the tonus of the mouse intestine and rabbit uterus, while they reduced the tonus of the uterus cornu of the nongravid cat.

Acta Medica Scandinavica, Stockholm

March 6, 1920, **53**, No. 1

*Experimental Chronic Pancreatic Diabetes after Partial Pancreatectomy. E. Langfeldt.—p. 1.

Experimental Diabetes After Partial Pancreatectomy.—This entire number of the Acta is devoted to the account of two years of research on the development of glycosuria in dogs of different ages after partial resection of the pancreas. The metabolism was rendered more like that of human beings by feeding the dogs with carbohydrates and no meat. The methods of resection of the pancreas were also varied in different animals, to ascertain whether the removal of different parts of the pancreas has any special significance. Twelve photomicrographs are given of the necropsy findings, and a bibliography of 167 titles is appended. The findings all confirm the preponderant rôle of the pancreas in the origin of all diabetic phenomena. It seems to have a catalytic action. When the sugar content in the blood was more than 0.19 per cent., glycosuria followed, and the duration of the high sugar content was of greater import than higher concentrations for shorter periods. Glycosuria, albuminuria and cataract developed in the dogs analogously to what is observed in human diabetics. The ketonuria was also like that in man, but none of the dogs died in coma. The 192 page article is in English.

March 17, 1920, **53**, No. 2

*Meningococcus Infection Simulating Uremia. A. Wallgren.—p. 193.
*Corynebacteria and Allied Bacteria. H. Bergstrand.—p. 209.

Meningitis with Acute Nephritis.—Wallgren reports a case in which the first symptoms from meningococcus infection were sudden hemorrhagic nephritis in the previously healthy young man. Not until several days later did the typical meningitis symptoms appear. The kidney symptoms, fever and headache were ascribed to uremia until, the fifth day, stiffness of the neck led to lumbar puncture and discovery of the meningococcus. In a second case the young man had had acute nephritis five years before and the weakness, headache, vomiting and somnolency and high blood pressure were ascribed to uremia.. The Kernig sign the third week led to lumbar puncture and the meningococcus was found. After a phase of progressive improvement, death occurred from a focus of softening found in the brain. There was undoubtedly associated uremia, testified by the renal insufficiency, subsultus tendinum noticed, on one occasion, and the necropsy findings. In a third case a boy of 5 presented the same train of symptoms, first the nephritis and a few days or weeks later the meningitis. In Rist's case, purpura was the first manifestation of the meningococcus infection, and the fatal meningitis did not develop until ten weeks later. In the entire group, the clinical picture at first was that of uremia from the unmistakable nephritis, and there was nothing to suggest the imperative necessity for antiserum treatment. The article is in French.

Corynebacterium Found in Case of Leukemia.—Bergstrand found a micro-organism of the corynebacterium group in pure cultures in the lymph glands excised from the elbow and groin of a man of 49 with lymphoid leukemia. In connection with these findings he discusses bacteria in general, emphasizing that bacteria have more changeable forms than has been hitherto realized, and relating his reasons for assuming that bacteria are nearer to the fungi than is usually accepted. The article is in German, and is illustrated.

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THE CHANGE OF TYPE OF DISEASE*

SIR HUMPHRY ROLLESTON, K.C.B., M.D., F.R.C.P.

Emeritus Physician, St. George's Hospital; President, Royal Society of Medicine

LONDON, ENGLAND

Alteration of type of acute disease—a problem which exercised our professional ancestors, notably Sydenham—has recently come under discussion especially in connection with epidemics prevalent during the war, and may therefore serve as the subject for a few remarks. Although the debate rages mainly between the epidemiologists and the bacteriologists, the outcome is of great interest to the clinician.

Sydenham, whose position as an epidemiologist has been defined by Major Greenwood,[1] pointed out that acute diseases showed (1) a long period evolution with a rise, decline and fall, extending over centuries, and (2) seasonal variations with waves measured in months so that their character and their reaction to treatment varied at short intervals, a method successful in one epidemic becoming dangerous in a subsequent outbreak. Though, as Crookshank[2] points out, Ballonius (1574) anticipated him, Sydenham also (3) postulated the theory of epidemic constitutions to the effect that a special influence—telluric or climatic—becomes dominant and impresses some peculiar features on the clinical manifestations of diseases prevalent at the time to the exclusion of other types or symptoms, the amplitude of this wave being measured in years. Greenwood translates the much discussed term epidemic constitution as meaning that the non-specific secondary infections, such as those so plentifully exemplified in measles and influenza, are as important from the point of view of morbidity and mortality as the specific causes of the disease. Sydenham, of course, had no knowledge of the *verae causae* of disease or bacteriology, but with this knowledge Hamer, following the lines of the English Hippocrates, eloquently argues that members of the "catarrhal group of diseases," namely, cerebrospinal fever, acute poliomyelitis, encephalitis lethargica and influenza, are variants of the same morbid process, i. e., diverse manifestations of the same virus, under special conditions; this represents the most extreme divergence of the epidemiologic from the bacteriologic points of view.

That the type of disease changes has been disputed and it has been asserted that the supposed change is in the mental outlook of the observers. Markham,[3] in 1864, vigorously attacked the theory that there was a change in type of disease, and controverted the view that about 1832, after the epidemic of cholera, the type of fever previously sthenic became asthenic so that bleeding was no longer well borne. He in fact suggested that the notion of a change of type of disease was largely invented, years after 1832, to explain the abandonment of bleeding in inflammations and fevers.

At the present time no one doubts that certain diseases have shown changes of type; scarlet fever is universally recognized to have become much milder; Brownlee[4] finds that though there is not any evidence that the amount of scarlet fever (or the infectivity of the causal agent) is less now than in the latter half of the last century, the mortality (or the virulence of the organism) has greatly fallen. Pneumonia is another example of a disease in which the virulence, as shown by the mortality, has increased, and the type of the disease has since the reappearance of influenza in 1889-1890 undergone some change, the disseminated form being common and the frank lobar pneumonia less frequent. The seasonal variation of type was shown in a well-marked degree by the two waves of influenza in the spring and autumn of 1918, the high rate of thoracic complications and of mortality in the second wave being associated with *Streptococcus hemolyticus* and the pneumococcus.

In the Royal Navy the spring wave of influenza was accompanied by 0.4 per cent. of complications and 0.03 per cent. mortality, whereas in the autumn wave the incidence of complications was 6.8 per cent. and of deaths 2.8 per cent.[5]

It would, indeed, be remarkable if diseases always respected the types conveniently accorded them in textbooks, for, as Sir Clifford Allbutt long ago insisted, a disease is not a fixed entity but a reaction of the body to some infection or irritant.

Alterations in the clinical features of diseases usually regarded as typical may be due to several causes. It is obvious that variations may occur, on the one hand, in the causes as regards their virulence and, on the other hand, in the resistance of the patient. A change in the clinical manifestations may therefore be explained on bacteriologic grounds, by the supposition of changes in the soil, or of changes in both these factors. The permutations and combinations thus possible would explain many changes in the character of disease; thus, a highly virulent state of the infective agent acting on a susceptible individual with greatly lowered resistance would tend to produce a fulminating attack, whereas an attenuated virus acting

* Read before the Section on Practice of Medicine at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Greenwood, M.: Proc. Roy. Soc. Med. (Sect. Epidem.) **12**: 55 (July), 1919; Brit. M. J. **2**: 405 (Sept. 27) 1919.
2. Crookshank, F. G.: Proc. Roy. Soc. Med., London (Sect. Epidem.) **13**: 159, 1920.
3. Markham, W. O.: Bleeding and Change in Type of Diseases, the Gulstonean Lectures for 1864, Brit. M. J., 1864; London, Churchill, 1866.
4. Brownlee, J.: Pub. Health, London **28**: 131, 1914-1915.
5. Hill, R.: J. Roy. Sanit. Inst. **40**, 1919.

on an individual with good resistance might fail to produce any effect or cause an abortive illness, thus conferring immunity.

The difficult question arises whether or not bacteriology and changes in the resistance of the race, either comparatively permanent as the result of environment or transient from disease or other factors, will together satisfactorily explain alterations in the clinical type of disease; or whether there is some further and mysterious factor, such as is implied by some epidemiologists, which has yet to be thoroughly elucidated. Though I shrink from expressing a dogmatic opinion, the first explanation seems the more attractive.

BACTERIOLOGIC REASONS FOR CHANGE IN TYPE OF DISEASE

Bacteria may vary in their pathogenicity either as the result of external influences or spontaneously when no such factor is obvious. External conditions, such as temperature and other climatic factors, concentration of their carriers and hosts, and conditions of passage, may influence the vitality and virulence of micro-organisms. It has also been suggested that micro-organisms have cycles of infective activity following periods of rest, and that this cycle explains by its periods of high infectivity the occurrence of epidemics; the influenza virus appears to have a cycle of thirty-three weeks, and the various strains of the infective agent of measles cycles of eighty-seven, ninety-eight and 110 weeks.[6] It would naturally follow, though proof is required, that further variations in the virulence of the germ might alter the character of the clinical manifestations. Then again, the same specific organism may give rise to clinical features of varying character; thus, the influenza bacillus may be associated with symptoms of coryza, meningitis, rheumatic fever, or of typhoid fever; and this variation may be seen in the same epidemic, as in the epidemic in Hertfordshire of protean symptoms due to *M. catarrhalis* reported by Merwyn Gordon and Dunn. These variations may, it is true, be eventually explained in some other manner, namely, by the existence of some additional factor, such as an ultramicroscopic organism or by ultramicroscopic bodies of the nature of enzymes (enzyme theory of disease) associated with the bacteria.[7]

Another bacteriologic explanation for change in the clinical type of disease is naturally attractive. In a disease such as enteric fever, variations in different outbreaks may be due to different strains of the infecting organism; this has been shown by the division of enteric into (*a*) typhoid due to *B. typhosus* and (*b*) paratyphoid A and (*c*) paratyphoid B, both with a lower mortality; and so what might have been regarded as a change of type is really explained by the occurrence of different though allied infections. In cerebrospinal fever the different types of meningococci may be correlated with different clinical types; thus Dopter[8] showed that the predominant infective meningococcus before the European war was Type A (Gordon's Types I and III), and that later it became Type B (Gordon's Types II and IV); and Netter[9] correlated the greater frequency of septicemic cases and lesions such as rashes, arthritis and iridocyclitis with this change to Type B. The differentiation of the types of pneumococci is another example of the influence of different strains or types of an organism in determining different clinical types of a disease previously regarded as due to one organism. The different clinical types of bacillary dysentery due to *B. dysenteriae* Shiga and *B. dysenteriae* Flexner have been well established during the war. This explanation of different clinical types as depending on different strains or types of the infecting organism is so logical that it is tempting to adopt it widely, and perhaps especially for diseases in which the nature of the infecting organism has not yet been established.

The occurrence of secondary infections, such as the pneumococcus and *Streptococcus hemolyticus* in measles and influenza, is a powerful factor in the change of type of disease, and has already been mentioned as an explanation of Sydenham's epidemic constitutions. It may be surmised that the liability to secondary infections may depend either on a previous want of resistance in the patient or on such a virulent primary infection that the patient's resistance is at once broken down.

The influence of prophylactic inoculation in preventing the incidence and modifying the course of smallpox, typhoid and pneumonia (F. S. Lister) are too well known to require elaboration. But attention may be directed to the suggestive work of Vaughan[10] and his collaborators on the question of a nonspecific immunity conveyed by common infections, especially those of the respiratory system, against others by which the severity of the subsequent disease among those, especially town inhabitants, is diminished by a previous infection.

CHANGE IN THE RESISTANCE OF THE PATIENTS

Long ago a change of type of disease—an alteration from the "sthenic" to the "asthenic" form of fevers—was thought to have occurred as the result of the cholera and influenza epidemics of 1832 and 1833 (Watson). And the altered conditions of life entailed by the concentration in cities of persons previously living in country districts has been brought forward to the same effect, though this is rather contrary to Vaughan's contention mentioned above. In our own time influenza has exerted an influence in the form of pneumonia, at any rate to the extent of making the disseminated or bronchopneumonic type commoner.

The varying resistance of the population to disease is concerned with both the periodicity of disease and the character of the epidemics. The epidemics of measles in Great Britain occurring at intervals of from eighty-seven to 110 weeks (Brownlee) are commonly assumed to depend on the accumulation of susceptible children in sufficient numbers, though, as is pointed out above, another factor may be considered. In isolated districts where measles rarely occurs, the introduction of the infection causes a widespread and severe epidemic, as in the classical instances of the Faroe Islands (1781 and 1846), Fiji (1875 and 1907), in the neighboring island of Rotuma in 1911,[11] and in the Shetlands. These examples suggest that the absence of immunity is responsible. On the other hand, the gradual diminution in the severity of at least the outward manifestations of syphilis might be thought to depend to some degree on a general

6. Brownlee, J.: Proc. Roy. Soc. Med. (Sect. Epidem.) **12**: 77 (Aug.) 1919; Lancet **2**: 856 (Nov. 8) 1919.
7. Dixon, J. Gurney: The Transmutation of Bacteria, Cambridge, 1919, p. 153.
8. Dopter: Ann. d'hyg. publ. et. de méd. lég. Series 4 **29**: 144, 1918.
9. Netter, A.: Bull. et mém. Soc. méd. d. hôp. de Paris, Series 3, **41**: 883, 1917.
10. Vaughan, V. C., and Palmer, G. T.: Mil. Surgeon **46**: 1 (Jan.) 1920.
11. Corney: Proc. Roy. Soc. Med., London (Sect. Epidem.) **6**: 120, 1913.

approach to relative immunity; but here the question of treatment comes in, as it does in regard to diphtheria, which has also been thought to have independently become less virulent.[12]

The resistance of individuals and races is obviously influenced by environment, such as overcrowding, overwork, bad food and alcoholism, and thus both the incidence and the severity of the disease—conditions which must be distinguished from each other—become increased. Among the Italian armies during the war a tendency to get manifestations of scurvy in various infections was noted. In his recent Lumleian lectures at the Royal College of Physicians of London, Sir John Rose Bradford expressed his opinion that war nephritis, which has been regarded as a special form, was only acute nephritis occurring on a large scale in young and previously healthy men. It may, however, be difficult to differentiate between the effect of improved hygienic conditions, on the one hand, and of diminution in the virulence of the infecting organism, on the other; thus, the disappearance of typhus from Glasgow and other towns was naturally ascribed to improvement in the living conditions; but Brownlee points out that this disease simultaneously subsided in the West Highlands and Ireland, where no such sanitary alterations occurred, and argues that the virulence of the infecting organism became attenuated.

EXPERIMENTAL STUDY OF THE NASOPHARYNGEAL SECRETIONS FROM INFLUENZA PATIENTS

PRELIMINARY REPORT *

PETER K. OLITSKY, M.D.
AND
FREDERICK L. GATES, M.D.
NEW YORK

This experimental study of the nasopharyngeal secretions from influenza patients was made during the course of one and a half years in three successive periods. The first period coincided with the epidemic wave of 1918-1919. During this period were studied actual cases of acute uncomplicated influenza and persons who had never been affected. The second period embraced the late autumn of 1919, during which influenza did not prevail in New York in epidemic form. During this interepidemic stage, healthy controls were studied. The third period, during the winter of 1920, saw a return of the epidemic. At this time additional cases of the disease were available for investigation.

By proceeding in this manner we hoped to check our results for each period against one another. As the sequel will show, we believe we succeeded in this undertaking, with the consequence that we are enabled to present our findings with perhaps a degree of confidence not otherwise appropriate.

In planning our experiments we had in mind the possible presence, in the nasopharynx of persons suffering from acute epidemic influenza, of some agent the effects of which might be noted in animals.

In considering the criteria of activity of this agent, we thought in the first place of the well known phenomenon in man of leukocytic depression, involving especially the mononuclear cells, during the acute influenzal infection. In the next place, we had in mind changes of a more or less pronounced but possibly transient character, arising in the lungs, which might conceivably predispose to the severe pneumonias that often accompany as a secondary or concurrent infection the influenzal attack.

The materials with which we worked were the saline washings from the nose and throat. We secured these materials from eight cases of influenza within the first thirty-six hours of the disease, and from twelve cases at later stages, namely, either during convalescence or the period of the postinfluenzal pneumonia. In addition, fourteen persons, during the epidemic or interepidemic periods, believed never to have had influenza were washed in the same manner and their washings studied.

Full grown rabbits were used for inoculation, and no rabbit suffering from snuffles or any detectable disease was employed. All animals were subjected to preliminary blood counting, temperature taking and weighing, and any showing variations beyond the average were discarded. These observations were made on three to seven successive days previous to inoculation.

The inoculations were made directly into the lungs by means of the intratracheal catheter; 3 c.c. of material was the usual dose for a 2.5 to 3 kilogram rabbit, and consisted of (*a*) the unfiltered nasopharyngeal washings, (*b*) the filtered washings, (*c*) lung tissue suspensions, filtered and unfiltered, from previously inoculated rabbits, and (*d*) similar lung tissue preserved in sterile 50 per cent. glycerin.

It is desirable, in this place, to state that unfiltered washings were employed in the expectation that they could be purified, or rather deprived of their ordinary bacteria, by successive animal passages. It was believed that if this could be accomplished there might be a better chance of preserving and, possibly, bringing to multiplication some other variety of microorganism, more resistant and virulent perhaps, which would give to the washings from cases of uncomplicated influenza a quality lacking in others. It was, of course, realized that not in every instance could this favorable outcome be looked for. Now and again it was to be expected that a virulent pneumococcus or streptococcus would set up a pneumonia to which the animal would succumb. But if the ordinary bacteria could be suppressed by animal passages in a few instances and something survive which produced definite changes in the structures of the rabbits—in the blood and lungs, for example—the washings from cases of influenza might thus be characterized in a way distinguishing them in effects from the washings of another origin. In this manner the operation of a usual pathogenic agent is to be deduced, although it might not be possible to determine certainly that this agent is the inciting microbic agent of influenza. However, if a certain correspondence in tissue and other effects can be shown to exist between the person suffering from influenza and the rabbit inoculated with materials originally derived from influenza cases and free from all ordinary bacteria, a probability as to the nature of the pathogenic agent is introduced into the calculation which encourages further investigation along the indicated lines.

There were inoculated into the lungs of rabbits the unfiltered nasopharyngeal secretions from five cases

12. Duncan, E.: Change of Type in Disease, Glasgow M. J. **90**: 1, 1916.

* From the Laboratories of the Rockefeller Institute for Medical Research.

during the first epidemic and three during the second, in the first thirty-six hours of the disease; and from eleven cases during the first epidemic and one during the second in the later stages of the affection.

RESULTS OF EXPERIMENTS

The following effects were induced by the materials from seven of the eight fresh cases, but not by any of those from the twelve cases examined after thirty-six hours.

Clinical Effects.—From twenty-four to forty-eight hours after inoculation, fever developed, associated with the ordinary signs of indisposition in a rabbit, such as listlessness and ruffled hair. This was accompanied by conjunctivitis, varying from injection to pronounced catarrhal inflammation. The striking feature, however, was the definite and often marked leukopenia resulting from the depression of the mononuclear cells, as shown in the accompanying chart. If the condition was allowed to run its natural course, these symptoms endured for three days, the animal then returning to normal. If the rabbit was killed — for if the condition remained uncomplicated by ordinary bacterial infection none died— an unusual pathologic picture was revealed.

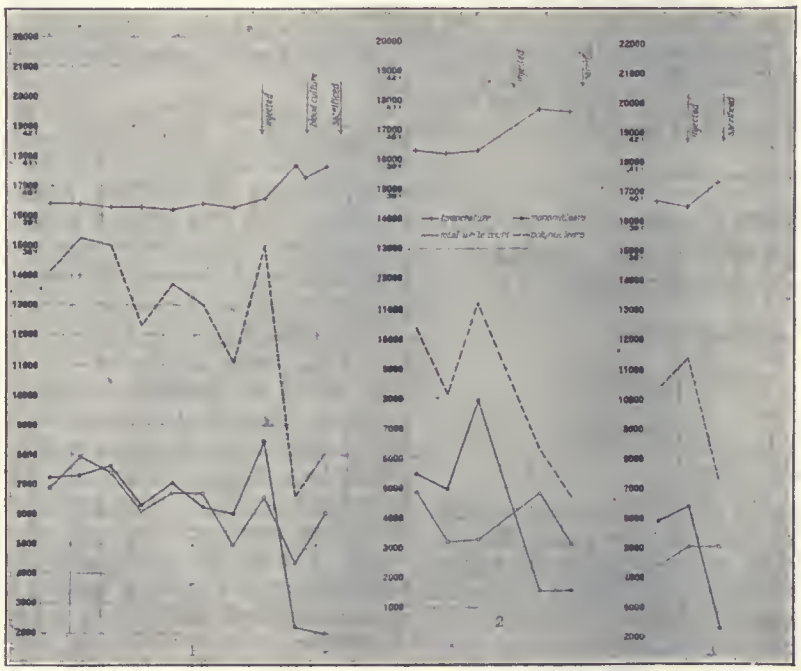


Chart illustrating effect on blood count. To be noted are the rise in temperature and the depression in the total white blood cell count caused by a deficiency of mononuclears. 1, first rabbit passage of the nasopharyngeal washings from a fresh case of uncomplicated influenza; also the normal curve of this animal prior to injection; 2, second rabbit passage; 3, seventh rabbit passage.

Pathologic Effects.—The respiratory organs were affected to the exclusion of all other structures. No pleuritis or exudate in the pleural cavity was evident. The lungs were voluminous and edematous, and had a mottled, hemorrhagic appearance. The hemorrhages on the surface, beneath the pleura, were diffuse or discrete, occupying areas of a few millimeters in extent, or covering a large part of a lobe. In addition, minute petechiae occurred. On section of lungs the cut surface revealed a hemorrhagic edema; it dripped a blood-stained, frothy fluid. The hemorrhages again were either diffuse and large or discrete and small; in the latter instance they were numerous.

Microscopic sections of the lungs were made through various parts, the base, periphery or hilum, and as a rule were carried through the hemorrhagic foci. The hemorrhages were either diffuse, invading large areas of pulmonary structure, or were localized to small areas, or seen as extravasations into the interalveolar and intra-alveolar structures. The edema was pronounced: the alveoli were filled with serum, and there was a serous exudation in the interalveolar strands. The lung structure showed a cellular exudate, comprising polymorphonuclear cells showing usually large eosinophilic granules; large cells of an alveolar type, probably desquamated bronchial epithelium, and in the interalveolar strands, mononuclear cells. Some fibrin was present as well. The bronchi were partly filled with erythrocytes, fragments of degenerated and exfoliated epithelia, and leukocytes. Their walls here and there had lost their epithelial lining, and were hyperemic and thickened. The capillaries were distended with blood.

No ordinary bacteria were seen in impression films of the lung tissue or in sections stained by Gram's or MacCallum's method, or in cultures of the tissue.

If the clinical effects observed continued for forty-eight hours, the animal as a rule was killed, and the affected lung tissue was ground, suspended in saline solution, and injected into the lungs of a new series of rabbits. In this way the clinical and pathologic effects were passed through as many as fifteen successive rabbits.

These effects were obtained only with the nasopharyngeal secretion in seven of eight patients, collected within thirty-six hours after the onset of the first symptoms. Twelve cases of influenza, in which the washings were collected forty-eight hours after onset and in the stage of convalescence or of secondary pneumonia, failed to give the same results.

Control experiments were made by injecting into the lungs of rabbits saline solution, suspensions of normal rabbit lungs, normal rabbit serum, foreign protein, such as human ascitic fluid, bacteria of the ordinary species, including Pfeiffer's bacillus and its poison as prepared by Parker's method, and finally the nasopharyngeal secretions from fourteen persons free from influenza and tested in the epidemic and interepidemic periods. Of the latter, seven suffered from early or later stages of coryza. None of the animals inoculated with the control materials or these secretions showed the same clinical and pathologic action; a few gave a polynucleosis with frank lobar pneumonia; others, a mononucleosis without visible lung involvement, and still others, inconstant effects.

A closer study was then made of the agent causing these phenomena, and it was found that although it was extremely difficulty to secure these results with filtrates obtained directly from the patient's secretions, they could be obtained by first passing the material through a series of rabbits. Then repeated filtration through Berkefeld "V" and "N" candles between rabbit passages did not hinder the development of the typical clinical and pathologic effects,

We determined that the agent was able to resist the action of sterile 50 per cent. glycerin for nine months, but probably not for a much longer period. In one series of experiments glycerinated material free from ordinary bacteria was passed with typical effects through ten successive rabbits.

No case of the uncomplicated effect in the rabbits terminated fatally. By "uncomplicated" we mean that cultures of lung tissue after the sacrifice and of blood during the illness yielded no growth of ordinary bacteria.

But although these effects were produced repeatedly in rabbits with material free from ordinary aerobic bacteria, the latter micro-organisms were encountered occasionally in the course of the experiments.

Those animals in which the inoculation terminated fatally did yield growths of various bacteria from the lung tissue, thus: pneumococcus, Group IV, eleven times; atypical II, three times; *M. catarrhalis,* a gram-negative hemoglobinophilic organism resembling Pfeiffer's bacillus, and *B. pyocyaneus,* each twice; *Streptococcus viridans,* streptothrix, and *B. coli-communis,* each once. Generally the same organism was not found regularly in the consecutive rabbit passages of a series of transmissions. For example, in the filtrate series of Case 17 the fifth passage showed a pneumococcus Group IV, the seventh and eighth *B. pyocyaneus,* and the tenth a gram-negative, hemoglobinophilic micro-organism, resembling Pfeiffer's bacillus. The other passages were free from such bacteria. In three of the seven series of transmissions, the ordinary bacteria in the secretions were suppressed completely, and all the animal passages remained free from them.

The pathologic picture when complicated by these ordinary bacteria showed severe, extensive lobar or bronchopneumonia with fibrinous and exudative pleurites and abscess formation and, as a rule, a rapid decline and death of the animal.

A series of investigations was undertaken in which an effort was made to reproduce the last mentioned conditions experimentally. Rabbits were injected with the influenzal material intratracheally and later with small nonpathogenic doses of the pneumococcus, Pfeiffer's bacillus, and *Streptococcus viridans* intravenously. In these animals the bacteria localized themselves in the lungs, producing extensive lobar pneumonias or bronchopneumonias with pleurites and, as a rule, leading to death. Hence apparently this material obtained from the nasopharyngeal secretions in early influenza diminishes the resistance of the rabbit's pulmonary structures against invasion by these common micro-organisms.

CONCLUSIONS

From the evidence obtained in this study, extending over one and a half years, it would appear that there occurs a specific substance in the nasopharyngeal secretions in cases of epidemic uncomplicated influenza. This substance seems to be present only in the early hours of the disease. It has not been found later than thirty-six hours after the onset, nor in cases of secondary pneumonia, nor in secretions from persons free from the syndrome of influenza either during the epidemic or during nonepidemic periods.

With this substance we have induced a clinical and pathologic condition in rabbits, affecting the blood and pulmonary structures mainly, which could be maintained and carried through at least fifteen successive animals. For this reason, and also because of the dilution between passages and the shortening of the incubation period from rabbit to rabbit, we are led to believe that we are dealing with the actual transmission of a multiplying agent rather than with a passive transference of any original active substance.

This active substance is filtrable, and resists the action of sterile 50 per cent. glycerin for nine months, but probably not for a much longer period.

The manner in which the bacteria of ordinary species, such as the pneumococcus, the Pfeiffer bacillus, *Streptococcus viridans* and others are encountered during the course of the transmission experiments and during the experimental reproduction of the condition described justifies the opinion that these micro-organisms are secondary in effect. The essential effects are produced by a substance wholly unrelated to these bacteria.

The similarity that exists between these effects in rabbits and those occurring in man lays a basis for further investigation on the inciting agent of influenza.

It may be stated here that during the course of these experiments we have seen in cultures, both from the lung tissue of affected rabbits and in the filtered nasopharyngeal washings from cases of influenza, tiny bodies, almost invisible, which decolorize by Gram's method, and which stain generally with difficulty with nuclear dyes. This phase of the subject is still under investigation.

THE BACTERIOLOGY OF THE URINE IN RENAL TUBERCULOSIS *

J. DELLINGER BARNEY, M.D.
AND
EDWARD S. WELLES, M.D.
BOSTON

It has long been generally believed that the urine in tuberculosis of the urinary tract is sterile. On this basis one feels fairly safe in assigning to tuberculosis those cases in which there is a cystitis with pyuria and a negative culture. But in view of our experience in the Genito-Urinary Department at the Massachusetts General Hospital, it has seemed worth while to look into the question with some care.

According to Rafin,[1] it was Melchior who, in 1895, asserted that the urine in urinary tuberculosis was aseptic, a statement which was confirmed by Nogués [2] in 1899. Meanwhile, in 1897, Albarran [3] maintained that tuberculous urine was almost always secondarily infected.

This apparent discrepancy of opinion on the part of competent observers may be explained by the work of subsequent investigators. Sutter,[4] in 1907, studied seventy-eight cases of urinary tuberculosis and obtained positive cultures in nine, of which seven patients had been previously catheterized or otherwise subjected to instrumentation. In the same year Wildbolz [5] found secondary infection in 22 per cent. of his cases, but regarded it as due to previous local treatment. In 1911, Pousson [1] reported twelve secondary infections

* From the Genito-Urinary Department of the Massachusetts General Hospital.
* Read at the twelfth annual meeting of the American Urological Association, New York, March 23, 1920.
1. Rafin: J. d'urol. méd. et chir. 1: 777, 1912.
2. Nogués: Tr. IV Cong. d'urologie.
3. Quoted by Rafin (Footnote 1).
4. Sutter: Ztschr. f. Urol., 1907.
5. Wildbolz, H.: Folia urolog. 1: 401, 1907.

in thirty-two cases. This work was followed in 1912 by that of Rafin,[1] who made 239 bacteriologic examinations of the urine in urinary tuberculosis. The female patients were catheterized, but in the male the urine was voided into a sterile flask after local antisepsis and the passage of the first portion of the urine. Positive cultures were obtained in seventy-one or 29.6 per cent., the staphylococcus being found fifty-eight times, the colon bacillus three times, and streptococci twice. Rafin ascribed his positive findings, as did his predecessors, to the fact that previous instrumentation, improperly carried out, had been performed. None the less it seems clear that the evidence thus far obtained strongly favors the view that tuberculous urine is generally sterile.

In 1918, Spooner[6] made a very careful bacteriologic study of ten tuberculous kidneys freshly removed at operation. While he could demonstrate the tubercle bacillus by one means or another in all, he found evidence of secondary infection in none. Cultures from seven urines of patients suffering from renal tuberculosis were examined. In three instances, catheter specimens of the bladder urine showed organisms other than the tubercle bacillus. In four cases the urine obtained from the ureter on the infected side showed no growth on ordinary culture mediums after forty-eight hours' incubation. Spooner concludes that whereas the urine from a tuberculous kidney, if obtained from the ureter, shows no evidence of mixed infection, the bladder urine is often contaminated by other organisms.

Recent advances in cystoscopic and bacteriologic technic now enable us to study this interesting and important question with more accuracy than has heretofore been possible. Whereas formerly the specimens were generally obtained only from the bladder, often without a catheter, they are now obtained not only from the bladder and by catheter, but from the separate kidneys as well. Furthermore, we have come to place little or no reliance on the culture of a specimen of urine, having found that contaminating organisms from one source or another may and often do vitiate the results. Instead, dependence is now placed largely, if not entirely, on smears of the centrifugalized sediment of the fresh urine, a technic for the perfection of which we must thank our colleague Dr. E. G. Crabtree. By this means we are able to demonstrate not only the tubercle bacillus in the great majority of cases, but also the presence of secondary organisms.

RESULTS OF OBSERVATIONS IN SIXTY-THREE CASES

It has therefore seemed worth while to examine the records of hospital and private cases which have been so studied. We have accordingly collected sixty-three instances, with more or less complete data. In all, the diagnosis has been proved either by finding the tubercle bacillus in the urine, by operation, or at necropsy. The urine from the tuberculous kidney has been centrifugalized, and the sediment stained and examined in all cases from which it could be obtained, that of the healthy side in the great majority. A smear of the bladder urine has been examined in many, chiefly in those cases in which the tuberculous ureter could not be catheterized. In many of these cases, previous instrumentation of one sort or another, performed not always *secundum artem*, had been carried out. It is impossible to say whether or not this has influenced the results, but we firmly believe that while it may have vitiated certain bladder findings, it has had little or no effect on the kidney urines.

Cultures from the bladder were made in thirty cases with fifteen positive results, in ten of which the symptoms dated anywhere from one to ten years. This would suggest either that the antiquity of the disease was a factor, or that during these years secondary infection had been invited by means of the promiscuous and futile local treatment to which many of these patients had been subjected.

Cultures of the right kidney urine were made thirty-one times with seven positive results, and twenty-eight times from the left kidney with six positive results. In these, as in the bladder urines, the colon bacillus was most commonly found. The data as to the duration of symptoms in these particular instances are of no special value. It will be observed, however, that whereas in the bladder urine the cultures were positive in 50 per cent., in the kidney urines positive results were obtained in but 22 per cent., indicating a greater ability of the kidney to remain aseptic than the bladder. This statement is somewhat emasculated by the fact that of the thirteen positive cultures from the kidney, eight were on the healthy side and only five on the tuberculous side. We have previously stated, however, that comparatively little reliance can be placed on the results of cultures, and these data are given only for what they are worth.

Smears of the bladder urine showed secondary infections in twenty-one cases, and as in the cases from which cultures were made, there were more with a duration of years than of months.

Smears from the kidney urines were made in all cases in which it was possible to catheterize the ureter. Secondary organisms were found in only five instances, three times on the right, of which two were on the healthy side; twice on the left, of which one was from the sound kidney.

Combining the results of cultures and smears from the separate kidney urines, it is found that positive results were obtained on the healthy side in eleven cases, and on the tuberculous side in seven: a total of 28.5 per cent. of secondary infection of the kidney urine in sixty-three cases.

While we have found no adequate explanation for the popular belief that tuberculous urine is sterile, it has been suggested, but never demonstrated so far as we know, that this comparative asepsis is due to the excessive acidity of such urine. In our cases the reaction of the bladder urine to litmus was tested in all at least once, often many times. In twenty-eight of the sixty-three the reaction was alkaline either once, several times or on all occasions (twelve cases). In some of these urines, decomposition had doubtless occurred, owing to a too prolonged residence in the laboratory; in others, an accurate chemical test may well have shown that the alkalinity to litmus was in reality chemical acidity. A few observations made by us on fresh tuberculous urine obtained by ureteral catheter have shown a maximum hydrogen ion concentration of 5.3 while some tests made by Henderson and Palmer[7] showed a concentration of only 6.7, and even 7.4. This is a far lower acidity than was found by these observers in a number of other patho-

6. Spooner, L. H.: J. M. Research **39**: 59 (Sept.) 1918.

7. Henderson, L. J., and Palmer, W. W.: J. Biol. Chem. **13**: 393, 1912-1913.

logic conditions. On the other hand, Labbé and Vitry,[8] in 1914, after an elaborate investigation of the comparative total acidity of the urine in tuberculosis and in other conditions, found that this acidity was greatest in the tuberculous cases. It would appear, therefore, that while tuberculous urine is generally acid, it seems never to be excessively so, and may at times be neutral or even alkaline.

That the reaction of tuberculous urine in and of itself is not hostile to the growth of the colon bacillus is shown by our own clinical data (in one kidney large numbers of tubercle and colon bacilli were found in the same smear). We have also found that, after examination, specimens of tuberculous urine which have been left standing in the laboratory often show a profuse growth of organisms from accidental contamination. Furthermore, Shohl and Janney[9] have demonstrated experimentally that the colon bacillus will grow in urine with a fairly wide range of hydrogen ion concentration, the optimum for growth being from 6.0 to 7.0. On the other hand, bacillary growth is inhibited in urine with acidity of from 4.6 to 5.0. As the latter figure shows an acidity but slightly greater than that which we have ourselves obtained, it would suggest that in some instances at least the acidity of the urine is such that while secondary organisms may not be actually killed, their growth is at least inhibited. The few observations that we have made have shown the desirability of further study, and this we hope to take up at some future time. It has been suggested that some endotoxin secreted by the tubercle bacillus may be a factor in the production of asepsis. This may eventually prove to be the case; but we find that the knowledge of such an endotoxin is still meager, and no statement at all has been made as to its possible bactericidal properties.

There is no question that infection of one kidney exerts an inhibitory and depressive influence on its uninfected mate. Albarran long ago made this observation, and it has since been confirmed by many others. Today our more precise methods of measuring kidney output enable us to gage this toxemia before the excision of the diseased kidney, and to demonstrate its elimination after operation. Possibly this depressive effect on the healthy kidney accounts for the fact that its urine is found to contain secondary organisms more often than does that of the tuberculous kidney. This theory by no means, however, furnishes a satisfactory answer, for it does not tell us why the tuberculous kidney, whose resistance was so low at the outset that the tubercle bacillus obtained a foothold and which has been still further depleted by its ravages, should not more often play host to other organisms.

Those who hold to the view that bacteria can pass from bladder to kidney by way of the ureteral lymphatics may offer this as a possible explanation. The blocking of these lymphatics by the early and extensive involvement of the ureter in renal tuberculosis would certainly help in keeping such an organ sterile; and by the same token the unimpaired lymphatics of the healthy kidney would offer an explanation for the more frequent infection of this organ. We believe, however, that organisms reach the kidney through the blood stream in the majority of instances.

8. Labbé, H., and Vitry, G.: Presse méd. **22**: 437, 1914.
9. Shohl, A. T., and Janney, J. H.: J. Urology **1**: 211 (April) 1917.

CONCLUSIONS

1. Cultures of urine are unreliable. Far greater dependence is to be placed on a properly prepared smear of a fresh sediment.

2. Cultures and smears have shown positive results from the bladder urine in 55.3 per cent., and from the kidney urine in 28.6 per cent. The sound kidney has yielded positive findings more often than has its tuberculous mate.

3. Tuberculous bladder urine is generally acid, but may be neutral or alkaline. The kidney urines, so far as studied, have been strongly acid.

4. In general, it may be said that there is as yet no adequate explanation for the comparative asepsis of tuberculous urine. Its usually high acidity is probably an important factor. The greater number of contaminations in the urine from the sound kidney may be due to the toxemia produced by its tuberculous mate; but we can give no reason for the sterility of the latter organ.

5. Our results show conclusively that while a negative smear or culture from the bladder in a case of cystitis and pyuria points strongly to tuberculosis, a positive smear or culture from the bladder, or even from the kidney urine, does not exclude this disease.

99 Commonwealth Avenue.

TESTICLE TRANSPLANTATION

L. L. STANLEY, M.D.
AND
G. DAVID KELKER, M.D.
Resident Physician and Assistant Resident Physician, Respectively, California State Prison
SAN QUENTIN, CALIF.

The term "interstitial gland" was first brought to our attention by articles in the press referring to Serge Voronoff of Paris, who was said to have transplanted these organs from apes to man, with brilliant results.

"Interstitial" cell was the term used in an editorial[1] in THE JOURNAL, in which the work of Steinach on the development of secondary sexual characters was discussed. The editorial concluded that:

> The sum total of the foregoing observations tends to confirm the view, expressed by several authors,[2] that the essential factors for the production of the genital hormones are the "interstitial" cells found in both the testes and ovaries of various animals. The genital glands are thus believed to contain gland cells of two distinct and functionally independent types. These interstitial cells, however, are apparently not universally present. It has been shown that, by means of the roentgen rays, it is possible to destroy the germ cells in either testes or ovaries, so rendering the animals sterile. Whether the interstitial cells, which are not destroyed by these rays, are originators of the unique effects in respect to secondary sexual development and the awakening of mammary activities remains to be determined.

The various reports of Lydston first attracted our attention to the procedure of implanting testes from the dead body to the living. As there are on the average three executions in this prison each year, valuable material for this kind of work became available.

Our first implant was done in August, 1918. Altogether, operations have been performed in eleven cases

1. The Modification of Secondary Sexual Characters, editorial, J. A. M. A. **62**: 618 (Feb. 21) 1914.
2. Starling, E. H.; Human Physiology, 1912, p. 1362.

with human material, and five with testicles removed from young rams. The time elapsing since the use of the animal tissue has been too short to make any deduction as to its value.

In five patients, only one testicle was implanted into the scrotum, while in six others, double transplantation was performed. Results have been apparently as good with the single as with the double graft. One whole testicle of a ram was embedded in the scrotum of each of two patients, but they began to slough in seven and sixteen days, respectively. One came away entirely, while a small part of the other remains after six weeks. In three other cases, only half of a ram's testicle was used, but in all, sloughing began seven days after the operation.

With the human material the implant, denuded of the parietal tunica vaginalis, was in three cases placed in a bed made in the scrotal tissues; in seven, testicles were grafted on the atrophied gland of the recipient; and in one double implantation, one testicle was embedded in the right scrotum, and a denuded surface of the other sewed on a similar section of the gland on the left. It is believed that the engrafting gives better results than the embedding.

These operations were performed for the most part with local procain anesthesia, although spinal anesthesia also was used.

REPORT OF CASES

Case 1.—The first patient operated on, aged 25, rather dull mentally and inactive physically, had had both testicles injured by a kick five years before. A double transplantation from a negro, aged 27, apparently had a beneficial effect on him, in that he became more active, talked more, wrote better letters, comprehended jokes, and had more sexual activity than before. After leaving the prison he was employed in a lumber camp, where the superintendent stated that he was considered better than the average laborer, and that he was quite industrious and performed the required work very satisfactorily. This contrasts markedly with his condition before operation.

Case 2.—A man, aged 50, had atrophied testicles as the result of orchitis following mumps. His sexual ability was greatly impaired, leading to domestic unhappiness and divorce. One testicle taken from a Mexican, aged 27, was implanted in him in February, 1919. Five days afterward he had an erection and continued to have them nightly. He said that his general health and outlook on life were better than they had been for years. Three months after the operation the implant was reduced slightly in size. Six months afterward it became the size of a cherry, and the patient reported that sexual desire was somewhat decreased as compared to what it had been a few weeks after the operation. In November, eight and one-half months after the operation, the patient was induced to allow the implant to be removed. It was submitted to the Department of Pathology of the Medical School of Stanford University, where Dr. W. Ophuls rendered the following report: "Sections show that the testicle is entirely necrotic, the necrosis involving all epithelium and the connective tissues. In the periphery there has been a slight ingrowth of cellular connective tissue through the necrotic capsule. Considerable hematoidin in necrotic mass."

Case 3.—H. K., aged 54, noticed declining sexual activity as well as mental languor, accompanied by testicular atrophy following a traumatic orchitis in 1916. June 20, 1919, a double testicle graft was performed, the material having been taken from a white man, aged 26. On the second and third day after the operation, there was only a tendency toward an erection, but on the fourth day there was a satisfactory one. Every night thereafter there was sexual manifestation, and four weeks afterward he had an ejaculation. No spermatozoa were found on microscopic examination. The man noticed an improvement in his eyesight. This improvement was verified by the visiting oculist of the prison, who examined his eyes several months after the operation, and compared his findings with the patient's glass prescription of several years before. The oculist stated that there was an improvement of 50 per cent. The patient's whole attitude changed for the better. He showed more vitality and aggressiveness. He now moves more quickly, and is jubilant, whereas before he was slow and languid. Recently under erotic stimulation he has had strong erection and orgasm. A recent examination of the grafts reveals them somewhat reduced in size, and the juncture between the graft and the patient's testicle is plainly palpable. The patient has gained 45 pounds, feels fine, has continued sexual desire, and says that his strength is as good now as it was when he was 40 years old.

Case 4.—B., aged 72, unmarried, had never had normal sexual impulses, sexual desire being almost unknown to him during his whole life. He came to prison for lewd and lascivious conduct with a minor child. His health had not been good for the last few years, and he was a frequent inmate of the prison hospital for various complaints attributable to his age. June 20, 1919, a double testicle graft was performed, the donor being an Indian boy, aged 19. The patient had an erection the third night after the operation, the first one that he had experienced for several years, according to his own statement often repeated. His general demeanor changed, and his improvement was noticeable to all with whom he came in contact. His voice became deeper and stronger, and he often gave expression to the good state of his health. This changed condition has persisted, and now after ten months he continues to feel well and vigorous, and to have frequent erections. He has not been ill or in the hospital since the operation, although for six months preceding the graft our records show that he had been in the hospital for two or three days, with some complaint, every month.

In this case there has been some sloughing from both sides of the scrotum, and numerous long strings (tubules) were expressed. Much of the graft, however, was retained. These tubules showed degeneration.

The results of testicle transplantation in the other seven cases have been somewhat similar, except that in two of them little beneficial effect was noted. One of these two experienced some improvement, but nothing so marked as in the others. In the other patient there was a change of voice from a high tenor to a low tenor, reported to us by the choir leader.

COMMENT

It has been our custom to have our patients write reports of their condition each month, and these we have on file. At first it was thought that possibly the operation alone would have the psychologic effect of their writing favorable letters, and expressing themselves as greatly benefited. But we do not think that such, if it were the case, would persist after many months, as it has in these patients. A dissatisfied patient usually does not delay long in letting the operator know about it.

The results of the sheep testes transplantation, so far, are not encouraging, although one man, aged 65, seems to have been benefited. Much of the implant sloughed out.

Judging from our limited number of cases, the transplantation of human testicles has a decidedly beneficial effect on the well-being of the patient. We do not believe that the implant lives, as demonstrated in the second case cited above.

Probably during the process of necrosis, certain bodies are given off into the lymphatics or blood stream which stimulate the patient in some unknown way.

We are unable to determine whether these beneficial effects are due to any action of the interstitial cells of Leydig or any other definite part or parts of the

testicle, although we have certain evidence which seems to show that possibly the interstitial cells have more effect than the seminiferous structures. On microscopic examinations of the testicle to be implanted in Case 11 the epithelial cells of the seminiferous tubules were vacuolated and more or less degenerated. In places the intertubular tissue was dense and cellular. There were small islands of these cells scattered about, which might have been interstitial cells. They were relatively large, with rounded nuclei. The same tissue engrafted into a eunuchoid, aged 43, caused sexual desire to appear, whereas it had not been present before.

The length of time which these beneficial effects last has not been definitely determined by our work. It is probable that it lasts more than a year. All our patients that are benefited are still enjoying this improvement.

We do not make any claim that this procedure will increase longevity. This would be hard to establish, although we feel that any one that enjoys good health and vigor, and takes pleasure in living, will outlive a person with the opposite characteristics.

As sexual manifestations are a good indicator of one's state of health, we believe, judging from these as well as other indications, that beneficial effects may be produced by testicle transplantation.

BETANAPHTHOL POISONING IN THE TREATMENT OF HOOKWORM DISEASE *

WILSON G. SMILLIE, M.D.
SÃO PAULO, BRAZIL

In recent years it has been discovered that betanaphthol is useful in the treatment of hookworm disease. The dose of 0.2 to 0.5 gm., usually recommended for internal medication, has been regarded as only slightly toxic to the patient. Thymol and oil of chenopodium, the other two drugs commonly employed in the treatment of hookworm disease, have always been considered more effective than betanaphthol, but the dosage generally recommended produces toxic symptoms that are both more frequent and more severe than those caused by betanaphthol. Theoretically, betanaphthol should be a valuable addition to the anthelmintic armamentarium, if it can be proved efficacious and nontoxic.

Bayma and Alves [1] have established a new method for treating hookworm disease with betanaphthol, using larger doses than had before been employed. Their patients, treated in a hospital under careful supervision, received a preliminary saline purge and, on the next day, 6 gm. of betanaphthol in divided doses: 1 gm. every fifteen minutes until 6 gm. were taken. A final saline purge was given two hours after the last capsule of betanaphthol, on the last day of treatment. They report 85 per cent. of cures under this method, and no bad results from the large dose.

Gonzaga and Lima,[2] under the direction of Dr. Neiva of the sanitary service of São Paulo, Brazil, have slightly changed the Bayma-Alves treatment, to render it more appropriate for field work on a large scale. In their method the preliminary purge is omitted, 6 gm. of betanaphthol are given (all at one time) early in the morning, and the dose is repeated for three successive days. Throughout treatment the patient receives only a light diet. Two hours after the last dose of betanaphthol, a saline purge is administered.

The report of Gonzaga and Lima is most encouraging. It states, in brief, that betanaphthol, in the heavy dosage which they used, was practically nontoxic, and was almost as efficacious as thymol—much more so than oil of chenopodium. From among 400 heavily infected cases treated by this method, 73.5 per cent. of cures were effected, and no severe toxic symptoms were encountered.

FIELD EXPERIMENTS WITH LARGE DOSES OF BETANAPHTHOL

In view of these interesting developments from betanaphthol treatments, and in order to test the efficacy and toxicity of large doses of this drug in the treatment of hookworm disease, a series of four experiments involving, in all, seventy-nine cases, was undertaken.

Experiment 1, carried on among a representative group of twenty-nine laborers (nineteen adults and ten children) on a coffee fazenda near Ribeirao Preto, São Paulo, Brazil, included nearly equal numbers of males and females. The children were between 6 and 14 years of age. The average hemoglobin of the group was 63.2 per cent. There were no cases of malaria on this fazenda, no palpable spleens among the group, none of the patients had had intermittent fever in at least ten years, and there was no record of malaria having been in the valley for many years. Gonzaga and Lima's field treatment dosage was adopted. For persons from 20 to 50 years old, one dose of 6 gm. of Mallinckrodt's sublimated betanaphthol was given on three successive mornings (with a graduated dose for children), in hard gelatin capsules with a little water. The final dose was followed after two hours by a saline purge. Symptoms produced by treatment were mild and transient; practically no vomiting occurred. A fresh specimen of urine was obtained every morning from each patient; no highly colored, bloody or smoky urine was found. The conclusion from Experiment 1 was that betanaphthol in 18-gm. doses is only slightly toxic.

Experiment 2 was carried out to obtain a larger series of cases. Nineteen adults and eleven children—Brazilians, mulattoes and negroes—on another fazenda were selected. There had been a few cases of malaria on this fazenda, in two years, and the group included two cases of severe anemia. The average hemoglobin was 69 per cent. The drug, dose and method of administration were all the same as in Experiment 1. Except for one case (Case 1), which will be discussed in detail later, no symptoms appeared as a result of treatment. Most of the patients worked in the harvest field throughout their three days of medication.

In Experiment 3, there were ten men, suffering from trachoma or other chronic eye disease, all of them field laborers from coffee fazendas in the interior of the state of São Paulo. The races chiefly represented were Italian and Brazilian. Sixty-seven per cent. was the average hemoglobin of the group, some members of which had suffered previously from malaria. The same method of treatment and the same

* From the Laboratory of Hygiene, Faculty of Medicine and Surgery of São Paulo.

1. Bayma and Alves: Publicações do Serviço Sanitario do Estado de São Paulo, N. S. 1: 65, 1918.

2. Gonzaga and Lima: Publicações do Serviço Sanitario do Estado de São Paulo, N. S. 1: 1, 1918.

dosage of betanaphthol were adopted as in the preceding experiments, but the drug was a Parke, Davis & Co. preparation, already mixed with charcoal, and put up in 0.5-gm. doses in gelatin capsules. Symptoms following treatment were extremely slight and transient. One characteristic was common to all ten cases —increase in the transitional cells. One man (Case 2, to be discussed later) suffered marked destruction of red blood cells, as revealed by blood and urine examinations.

Experiment 4 had as its chief object a careful study of the urine pigment which, Experiment 3 had shown, sometimes turned brown or black on standing. A new group of ten men received exactly the same treatment as that given in Experiment 3. Mallinckrodt's sublimated betanaphthol was used, as in Experiments 1 and 2. The symptoms following treatment, as in Experiment 3, were negligible, except in the case of one man (Case 4), whose history will be discussed later.

HISTORY OF CASES SHOWING BETANAPHTHOL POISONING

Case 1.—As has been said, in Experiment 2 there was practically entire absence of symptoms following treatment, except in one instance: A mulatto, aged 10 years, son of a colonist on a fazenda in the far interior of São Paulo, had had severe malaria, from which he had never really recovered. He had nevertheless been obliged to work all day in the fields. When he came under observation, he was weak, pale and listless; his spleen was two finger breadths below the costal border, was firm and not tender, and his urine proved negative for albumin by the acetic acid test. The developments of this case were so striking, and in such contrast to those of the other cases in Experiment 3, that they are given in detail.

The boy was given 4 gm. of betanaphthol at 7 a. m., March 12, 1919; he had a good deal of nausea and abdominal pain, vomiting twice. During the afternoon he had three large soft bowel movements, and soon felt well enough to play about the yard. At midnight he awoke with severe abdominal pain, nausea and fever. The following morning he complained of intense abdominal pain, and vomited frequently. His abdomen was soft, except in the region of the spleen, where there was muscle spasm. The spleen, which was four finger breaths below the costal border, was very firm and tender. The pulse was slow and regular, and there was no fever. The urine was dark, but contained no fresh blood.

March 14, forty-eight hours after treatment, the condition of the boy was worse. During the night his urine had been red and scanty. A fresh specimen obtained during the morning was dark and smoky, but not blood-red. The albumin test by the acetic-acid method was strongly positive. The vomiting had stopped, but the abdominal pain had become more intense. The upper left quadrant of the abdomen had become exquisitely tender, and the muscles over this region were rigid. The lower border of the spleen could be determined only with difficulty. It was a full hand's breadth below the costal border, and was very firm.

During the next twenty-four hours the boy's condition grew much worse. He was markedly prostrated, with face drawn and pinched. and was evidently in severe pain. Lying constantly on his right side, with legs drawn up to his abdomen, he breathed rapidly in short, shallow, grunting, painful respirations. The upper left quadrant of the abdomen became so tender that he cried out when the skin over it was even touched. The other quadrants of the abdomen were not tender. The liver was not palpable, nor was there any tenderness over it. Because of the tenderness and rigidity in the upper left quadrant the spleen could not be palpated, and even percussion was unsatisfactory, although it was possible to demonstrate the lower point of splenic dulness, well below the umbilicus. The boys' temperature had risen to 39.2 C., the pulse rate was 120, and the respiration rate was 34. The conjunctiva showed jaundice in initial stages. The urine was dark, but not bloody. The albumin test was strongly positive. A rupture of the spleen seemed imminent.

The following day—four days after the treatment—a slight improvement had taken place. There was less abdominal pain and less prostration. The temperature had dropped to 37.5 C., and the respiration to 30; the pulse remained at 120. The respirations were still shallow, but less painful. The whole abdomen was tense, with marked rigidity of the entire upper left quadrant. Palpation of the spleen was impossible, but the upper border to percussion was in the sixth interspace in the anterior axillary line, and the lower pole was below the level of the umbilicus. The icterus had increased slightly. The urine, which contained a trace of albumin, was dark and smoky, but its color had cleared considerably during the preceding twenty-four hours.

From this day (the fourth after treatment) the boy showed rapid improvement—the icterus disappeared, the albumin in the urine cleared away, and the spleen decreased in size. A blood film taken on May 16—four days after the betanaphthol treatment—showed a remarkable picture, the chief characteristic of which was the evidence of marked regeneration of red blood cells. Every third or fourth red blood cell was very large and deeply basophilic. There were two or three normoblasts to every microscopic field (oil immersion), and the nuclei of these normoblasts were of every describable shape. The white blood cells had also increased greatly in number, giving a picture, under the low power of the microscope, of a leukemia. A differential white blood cell count showed the proportions: leukocytes, 64 per cent.; transitionals, 24 per cent.; lymphocytes, 11 per cent.; eosinophils, 1 per cent., and nucleated red cells, 17 to every hundred white blood cells. Only one myeloblast appeared, and no myelocytes were seen. No malarial parasites were encountered.

The tenderness and muscle spasm in the upper left abdominal quadrant disappeared at the end of the seventh day. On the tenth day after treatment the boy was well enough to play about the yard, although his spleen was still three finger breadths below the costal border and was slightly tender. He had lost much weight.

This case could not be followed up with a careful clinical study, for the boy lived in a valley which was many miles from the railroad, and which was accessible only by a mule trail. Thus a careful uranalysis, a count of the red and the white blood cells, and a daily differential cell count, although important and desirable, could not be made. Nevertheless, even with those data that were available, the diagnosis was clear-cut—*acute enlargement of the spleen, following erythrocyte destruction,* caused by the administration of 4 gm. of betanaphthol.

The case showed that, although betanaphthol is usually innocuous, nevertheless under certain conditions it may be very toxic, with tremendous destruction of red blood cells. The question at once arose whether blood destruction might not occur in all cases treated with betanaphthol, although perhaps not in so severe a degree as to show objective symptoms. It is a well established fact that malaria renders the blood cells more fragile in some individuals, and it seemed possible that the previous malaria in this instance might have had some bearing on the patient's reaction to betanaphthol. These were points that could not be studied under field conditions, but required hospital supervision and carefully controlled laboratory experiments. I was able to fulfil these requirements, thanks to the kindness of Dr. A. Pedroso, pathologist of the Santa Casa Hospital of São Paulo, and Dr. Pereira Gomes of the ophthalmologic section. The latter allowed me to treat the hookworm patients of his wards.

Case 2.—In Experiment 3, it will be recalled, the symptoms were negligible in the case of all patients but one. A small, poorly nourished negro, who was in the hospital with a diagnosis of glaucoma, and whose Wassermann reaction was posi-

tive, had had severe malaria two years before, but had suffered no recurrences. The preliminary urine examination was negative, and the blood examination revealed: hemoglobin, 70 per cent.; red cells, 4,900,000; white cells, 5,800; differential count: leukocytes, 70 per cent.; transitionals, 9 per cent.; lymphocytes, 13 per cent.; eosinophils, 8 per cent. The red cells were normal in appearance.

On the second day of treatment, the patient's urine, when freshly passed, was bright red, clear, acid and contained no albumin. It proved negative to a guaiac test, and gave a reduction with Fehling's solution, but not with bismuth. The sediment was negative. The original color of the urinary pigment turned to a much darker shade on standing. The following day (the last day of the treatment) a specimen of freshly passed urine was deep red, with the other characteristics of the previous day unchanged. The same dark red pigment, which did not give a guaiac test, continued to show in the urine for three more days, gradually disappearing, and apparently causing no irritation to the kidneys. One constant characteristic of this pigment—which will be discussed later—was that it turned much darker on standing.

Coincidentally with the urinary changes, a marked difference had occurred in the blood picture. Day by day the red cell count and the hemoglobin index were dropping, until, on May 3—the fourth day after the final dose of betanaphthol—the red cell count had been reduced from 4,900,000 to 2,400,000, and the hemoglobin from 70 per cent. to 51 per cent. The white cell count first increased, then dropped. The differential white cell count showed a marked increase in the transitional cells. Differential white cell count: leukocytes, 64 per cent.; transitionals, 14 per cent.; lymphocytes, 16 per cent.; eosinophils, 6 per cent.

The greatest changes had occurred in the red blood cells. There were large numbers of enormous, irregularly shaped, deeply basophilic red cells, many of them containing large, coarse granules. Nucleated red cells were common—one to every 100 white blood cells. No myeloblasts and no myelocytes were seen. Malarial parasites were not encountered.

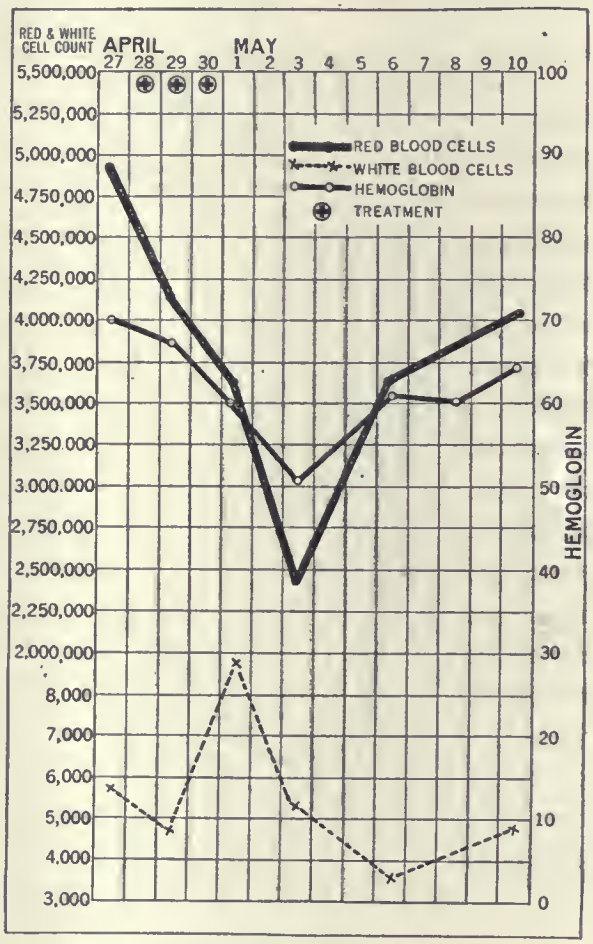


Chart 1.—The blood in Case 2.

Despite this marked destruction of red cells, the patient complained of nothing except thirstiness and a slight weakness. The spleen never became tender, nor was it ever palpable. The blood picture improved rapidly, and had practically resumed its former condition at the end of the fourteenth day, when the patient was discharged from the hospital. Chart 1 illustrates the blood picture as it changed from day to day.

CASE 3.—In Experiment 3, the patient evidenced a blood change corresponding to that in Case 2, although much less severe. The preliminary blood picture showed 67 per cent. hemoglobin, a red cell count of 4,970,000 and a white cell count of 9,900, with transitionals 9 per cent., lymphocytes 17 per cent., and eosinophils 4 per cent. The entire blood picture was: hemoglobin, 67 per cent.; red cells, 4,970,000; white blood cells, 9,900; differential count: leukocytes, 70 per cent.; transitionals, 9 per cent.; lymphocytes, 17 per cent.; eosinophils, 4 per cent. The red cells appeared normal.

May 1, the day following the patient's last dose of betanaphthol, the blood picture was: hemoglobin, 62 per cent.; red blood cells, 3,800,000; white blood cells, 8,000; differential count: leukocytes, 63 per cent.; transitionals, 14 per cent.; lymphocytes, 11 per cent.; eosinophils, 12 per cent.

The red cells occasionally showed very large, irregularly shaped erythrocytes, some of which were stippled, and some deeply basophilic. Three normoblasts were seen. The increase in transitionals—as compared to the condition in the original blood picture—is to be noted. This was a characteristic that was common to all ten cases in Experiment 3.

This day, May 1, proved to be the turning point, for the blood rapidly resumed its normal characteristics, so that eight days after treatment it presented a picture practically identical with the one seen in the preliminary examinations. The urine in this case never contained red pigment, although it turned dark brown on standing. Albumin and guaiac tests in the urine proved negative, but Fehling's solution was reduced during the three days of treatment. The boy had no symptoms whatever during the treatment.

CASE 4.—The one case in Experiment 4 in which symptoms were marked was that of a negro, aged 35, who was in the hospital for a cataract operation. Although he had never fully recovered his strength since a malaria attack six years before, his general condition at the time of examination was good. The urine proved negative, the spleen was not palpable, the red blood cells appeared normal, and no malarial parasites were seen. Chart 2 shows the detailed changes in the red cells, white cells and hemoglobin from the time of first treatment until more than two weeks later.

The patient's condition at the time of preliminary examination was good—urine negative, spleen not palpable, red blood cells normal in appearance, and no parasites to be seen. The hemoglobin was 73 per cent., red blood cells were 4,400,000, white blood cells, 10,800, leukocytes 62 per cent., and eosinophils 11 per cent. May 13, the first medication—6 gm. of Mallinckrodt's betanaphthol—was given, and resulted in some nausea and vomiting. May 14, the patient's condition being normal, the dose was repeated. That same day, the man felt very ill—his symptoms including severe headache—and he continued so all through the night.

The following morning, May 15, he was prostrated; the pulse was weak (96), and the temperature was subnormal (36.8 C., or 98.2 F.). Icterus had begun, and the spleen was readily palpable. The urine was thick, black and viscid, and albumin and guaiac reactions were strongly positive. The blood was thick and viscid, and the red blood cells were badly broken. It will be noted, by reference to the chart, that on this day (May 15) the high point (81 per cent.) was reached by the hemoglobin, and that for the next five days the hemoglobin percentage dropped steadily, until it reached the low point (17 per cent.), May 20. May 16, the patient was worse. The urine was dense, purple and sticky, with a

heavy, gray sediment; vomiting was persistent, the icterus had deepened, the spleen was enlarged, and the abdomen in the region of the gallbladder was very tender. The hemoglobin index and the red cell count were falling rapidly.

May 18, the patient's condition grew desperate, the only encouraging feature being practically entire elimination of destroyed red cells from the blood. Hemoglobin was only 22 per cent. and red cells numbered only 1,500,000. A stool, obtained by enema, was a coal-black mass, sticky and viscid. May 19, the low point was reached by the red blood cells; the icterus had deepened slightly; the gallbladder was still tender; and there was a low grade fever of 38 to 38.5 C. (from 100.4 to 101.3 F.). The blood picture was improving rapidly, however, and the urine was quickly clearing.

From May 20—seven days after the first dose of betanaphthol—a slow, gradual improvement began, as evidenced by clearing of the urine, lessening of the icterus, and decrease in the size of the gallbladder, liver and spleen. By May 22, the hemoglobin had increased to 22 per cent., and the red blood cells to 1,600,000, with the differential proportions unchanged. The spleen was not palpable, and the gallbladder was readily felt but still tender.

May 29—two weeks after the betanaphthol was administered—the patient was improving slowly. There was still nausea, but the icterus had gone, and the urine was negative. The gallbladder was still palpable. A blood picture showed the red cells to appear, generally speaking, entirely normal. The most striking feature was the diminution in the proportion of lymphocytes. They had dropped from 15 per cent. (the original picture) to 7 per cent., having declined steadily throughout the period in question.

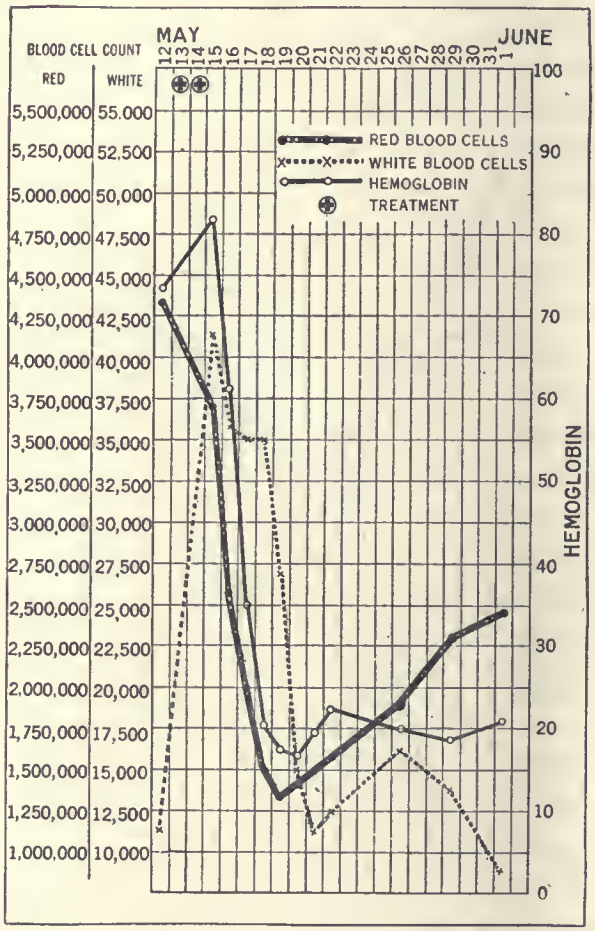


Chart 2.—The blood in Case 4.

CONCLUSIONS

The four experiments prove that betanaphthol in 6-gm. doses, given on three successive days, may produce a severe toxic effect similar to that caused by benzol (benzene, C_6H_6), in that it specifically attacks the red blood cells. In the four cases of betanaphthol poisoning reported, while the symptomatology varied greatly, the essential pathology common to all cases was simply a destruction of red blood cells with, perhaps, in the severe cases a destruction of the blood-forming cells in the bone marrow. It is hard to explain how the betanaphthol destroys the red blood cells, and why seventy-five of the cases which I treated showed no symptoms, while four became victims of the drug's toxic action. Comparison of the cases and of their history previous to the betanaphthol treatment would certainly seem to indicate, first, that the intoxication shown by the poisoned cases was not due to their greater intestinal absorption of the drug; second, that the size of the dose was not proportionate to the degree of intoxication, and third, that the degree of previous anemia in the patient apparently had nothing to do with the toxic effect of the drug. The experiments also showed that the drug had little or no effect on normal kidneys. In certain cases, to be sure, there was much albumin in the urine, with many casts; but this condition was due to the elimination of the waste products from the blood.

Finally, the following definite conclusions concerning the toxic action of betanaphthol were arrived at as a result of the experiments that have been described:

1. Large doses of betanaphthol (18 gm. for adults) used in the treatment of seventy-nine cases of hookworm disease produced very severe toxic symptoms in two cases, and also produced marked changes in the blood cells of two other cases.

2. The toxic action of betanaphthol in these four cases was a destruction of the red blood cells. The drug selected the red blood cells and destroyed them in great numbers, with resultant severe anemia, icterus, enlargement of the spleen and liver, enlargement of the gallbladder and hemoglobinuria. The white blood cells apparently were not destroyed by the drug. The liver, spleen, kidneys and other organs of the body were not affected primarily, but were markedly affected secondarily, because of the anemia, and because of the injurious effects produced by the elimination of large numbers of destroyed red blood cells.

3. The type of cases that are most susceptible to the toxic action of betanaphthol poisoning has not been determined. In all three of the severe cases of poisoning there was a history of recent malaria. It is probable that those cases in which the red blood cells are rendered more fragile by recent malaria are more susceptible to betanaphthol poisoning.

4. Betanaphthol, in 18-gm. doses, is so toxic that it cannot be recommended for general use in the treatment of hookworm disease.[3]

3. In addition to the references already given, these will be found of interest: Salkowski: Ztschr. f. physiol. Chem. **15**, 1891. Bunting: Johns Hopkins Med. Bull. **16**: 222, 1905.

Good Government.—The first essential in good health government is a general and a clear understanding of what should constitute the more important duties in health administration of our three primary divisions of government, to wit, federal, state and county, and how these three divisions should cooperate or be related in the improvement of the public health.—W. S. Rankin, *Tr. Assn. Life Ins. Presidents*, 1919.

A CARDIOVASCULAR RATING AS A MEASURE OF PHYSICAL FATIGUE AND EFFICIENCY*

EDWARD C. SCHNEIDER, PH.D
MIDDLETOWN, CONN.

The need of a measure for physical efficiency whereby degrees of fatigue, physical fitness and health may be determined has been felt alike by the medical profession and instructors in physical education and school hygiene. Of late, the newly awakened interest in industrial efficiency has shown that we lack satisfactory and reliable tests of fatigue. Experience with the aviator during the war also emphasized the need of some easily applied reliable physical efficiency test. Some aviators gradually underwent physical and nervous deterioration, the result of the wear and tear of the air work, or sometimes of dissipation, which made them less reliable in handling the aeroplane and frequently ultimately led to a crash. These aviators at times developed a disinclination to fly, but would not confess it because of the fear of being considered "yellow." To single out such men, the flight surgeon required the aid of a dependable test.

Unquestionably, the most satisfactory test for fatigue and loss in physical fitness would be one that eliminates the "personal equation" of the examiner and the anxiety and dishonesty of the patient. Replies to questions concerning symptoms and habits are often misleading because of a preformed opinion by the examiner or because the patient is incapable of self-analysis and accurate description of his experiences. Furthermore, for personal reasons some men would prefer to mislead the examiner, and the test should not, therefore, demand much cooperation and attention from the patient.

The functional changes of the body brought about by regular physical training give the basis for a number of physical efficiency tests. The attention of trainers and athletes, as well as of physiologists, has naturally been directed to these. A brief review of the conclusions regarding the physiologic changes which occur as a result of improved physical condition will suggest possible tests for degrees of health and fitness.

Certain differences between active and inactive animals throw light on these functional variations. The wild hare, which lives an active life in the open, and the wild rabbit, which lives an inactive life in seclusion and does not venture far from its burrow, have been compared by Dreyer [1] of Oxford University. He found that a wild hare has double the blood volume, 30 per cent. more hemoglobin and three times more heart muscle than a wild rabbit of the same weight. The rate of heart beat of the wild hare is about 68, and of the wild rabbit about 200 per minute. The respiration rate of the hare is between 18 and 20, and of the rabbit about 50 per minute. Furthermore, the meat of the hare is dark, and that of the rabbit light in color. No doubt, similar differences exist between an athlete and a sedentary worker, and there is reason to believe that these functional differences vary to some extent as the health and fitness of the individual person vary.

The cardiovascular changes during altered physical fitness have been studied most, and it is these that are considered in this paper. The tests here discussed should not be confused with functional heart tests. We are concerned with the cardiovascular changes only so far as they give evidence of fatigue and health changes in the body.

THE PULSE RATE AS A CRITERION OF HEALTH

(*a*) *The Postural Rates.*—Cook and Pembrey,[2] while finding considerable variation in the pulse rate of different healthy individuals, showed, however, more frequently a slow rate in men trained for muscular work. From his extensive experience, Meylan [3] concluded that a horizontal posture pulse rate between 40 and 80 and a vertical posture rate between 50 and 90 were favorable health signs. McCurdy,[4] from a study of boys passing through the adolescent changes, decided that the heart rate serves as a fair indication of condition; a high heart rate indicates poor condition, and a heart rate with wide variations between the horizontal and standing positions suggests a poor vascular adjustment.

During repeated periods of training of a single subject, Dawson [5] found that training slowed the resting pulse rate as much as 9 beats per minute and that this especially influenced the noon and afternoon pulse. Thus the form of the diurnal curve was slightly altered. He also found that acute infection caused an increase in the pulse rate, but this was much less pronounced in the trained than in the untrained man. In young men, the normal average pulse rate has been reported to be 78.9 standing, 70.1 sitting and 66.6 lying. The continued practice of some form of exercise, such as rowing, extending over a period of years may progressively lower the rate of heart beat. Thus Michell [6] found the average rate of the athlete's pulse during the first year of training was 69, in the second year, 64.5 and in the third year, 56.8. According to Lindhard,[7] not only is the pulse less frequent, but the output of the heart per minute is slightly larger in the trained than in the untrained man.

All available evidence indicates that with improvement in physical fitness the heart beats less frequently and more efficiently. It follows, therefore, that the pulse rates in the reclining and standing postures may at times give useful hints as to the degree of fitness and health. That the altered physical condition may not be evidenced by pulse rate changes in both of these postural positions was demonstrated by Boney,[8] who found in some tired, listless, depressed and fatigued patients that the pulse rate was normal while lying down but was abnormally rapid on standing; in several the standing rate was as high as 130 or 140 beats per minute.

(*b*) *Pulse Rate Increase on Standing.*—The difference between the pulse rates in the standing and reclining postures has been found to be a useful index of physical fitness. According to Vierordt,[9] the average postural increase is from 12 to 14 beats. Crampton [10] reported that in vigorous subjects the heart rate may not increase on standing, while in wearied subjects it may increase as much as 44 beats per minute. Meylan [3] believes a standing increase of not more than

* From the Medical Research Laboratory, Air Service, Mitchel Field, Long Island, N. Y.

1. Dreyer, cited by Flack, M., and Hill, L.: Text-Book of Physiology, New York, Longmans, Green & Co., 1919, p. 79.
2. Cook and Pembrey: J. Physiol. **45**: 438, 1913.
3. Meylan: Am. Phys. Educ. Rev. **18**: 441, 1913.
4. McCurdy: Am. Phys. Educ. Rev. **15**: 421, 1910.
5. Dawson: Am. J. Physiol. **50**: 443 (Dec.) 1919.
6. Michell, cited by Flack, M., and Hill, L.: Text-Book of Physiology, New York, Longmans, Green & Co., 1919, p. 216.
7. Lindhard: Arch. f. d. ges. Physiol (Pflüger's) **161**: 233, 1915.
8. Boney: Brit. M. J. **2**: 645, 1916.
9. Vierordt: Anatomische, physiologische und physikalische Daten und Tabellen, Jena, G. Fischer, 1906, p. 235.
10. Crampton: Proc. Soc. Exper. Biol. & Med. **12**: 119, 1915.

16 beats is a favorable sign of physical efficiency. Parkinson [11] recently reported that in twenty healthy soldiers an average increase of 10 beats was noted when the recumbent and standing rates were compared. Geigel [12] considers that a variation of more than 30 between lying and standing pulse rates indicates weakened heart function. It is now recognized that in states of debility the postural difference may be as much as from 30 to 50 per minute. A slow horizontal and a slow vertical postural pulse rate with a small difference between the two are usually signs of excellent health.

(*c*) *Exercise Pulse Rate.*—According to Bowen,[13] the rapidity of the pulse during exercise is chiefly determined by (1) the speed of movement; (2) the resistance encountered; (3) the condition of the individual, and (4) age. He [14] also pointed out that pulse rate counts made after exercise are worthless for comparison, unless the count is made at exactly the same period in each case, and the subject is placed in exactly the same position and assumes the same degree of relaxation and repose.

The increase in the pulse rate after a certain amount of work is greater in an untrained than in a trained person. Hartwell and Tweedy,[15] comparing athletic and nonathletic women, found that running up and down stairs accelerated the heart rate an average of 10 beats more in the nonathletic women. Cotton, Rapport and Lewis [16] believe that the average height to which the pulse rate is raised at the cessation of effort may be taken as a gage of the degree of distress produced, and that the amount of distress is determined by the degree of health. Similar conclusions have been reached by many students of the effects of exercise on acceleration of the pulse rate.

(*d*) *The Decline in Pulse Rate After Exertion.*—A widely recognized sign of physical condition is the time required by the pulse rate to return to normal after effort. Flack and Bowdler,[17] from a study of the reactions following stepping on a chair five times in fifteen seconds, conclude that the heart rate in the healthy subject should not increase more than 25 beats and should return to normal within thirty seconds. Meakins and Gunson [18] report that after a climb of twenty-seven steps at a brisk walk, the pulse rate returned to normal within one minute in healthy subjects, while in patients it required as much as five minutes.

It should be emphasized that while the several pulse rate criteria of fitness may all be found in a single person, not one or even any two of them is found to be an absolute test. In forming a judgment as to the physical condition of a man it is best to consider together the postural rates, the increase on standing and after exercise, and the time required for the rate to return to normal after exercise.

THE ARTERIAL BLOOD PRESSURE AS A CRITERION OF CONDITION

(*a*) *The Normal Arterial Pressures.*—Although the arterial pressures have received much attention, the determination of the pressures of a person at rest offers little of value in estimating the physical condition of the young man. Meylan [8] considers systolic pressures for the horizontal posture between 110 and 140, and for the vertical position between 110 and 150 mm. of mercury as favorable signs. Dearborn [19] believes that adequate physical training raises the blood pressure. He obtained an average of 114 in trained and 108 in untrained women. Dawson [5] has recently shown that the effect of training on the resting blood pressure is neither striking nor constant. Bainbridge [20] has written that "the systolic arterial pressure, according to most observers, is not higher during rest in trained than in untrained men."

Opinion as to the value of the diastolic and pulse pressures is not as clearly crystallized as it is regarding the systolic pressure. Hypotension in systolic or diastolic pressure occurs in weak patients.

(*b*) *The Postural Changes in Arterial Pressures.*—The hydrostatic effects of posture and the manner in which the splanchnic vasomotor mechanism compensates for these are well known. Normally, when man changes from the reclining to the standing position, the splanchnic vasomotor tone overcompensates the hydrostatic effects of gravity. In normal subjects the systolic blood pressure is about 10 mm. higher in the standing than in the recumbent posture. Erlanger and Hooker [21] found that on standing there might be either a slight rise or fall in the brachial systolic pressure. According to Hill,[22] any influence which weakens the splanchnic vasomotor mechanism interferes with the compensation. Sewall [23] has shown that individuals in whom there is excessive gravitation of the blood to the limbs and splanchnic area on standing are victims of physical weakness and nervous instability and often suffer from headache, dizziness or tinnitus in the erect posture. That the systolic pressure falls in persons weakened by dissipation, overwork, lack of sleep, or disease was recognized by Crampton in his "blood ptosis test" for physical fitness. Crampton [10] demonstrated that a subject might, when standing, show weakness by a decrease in the systolic pressure or by a large increase in the heart rate. Recently, Sewall [23] has pointed out that a weakened patient on standing may fail to show the systolic drop, but instead may have an inordinate rise in diastolic pressure. He employs this rise in diastolic pressure and low levels of pulse pressure as measures of fitness.

MEANS OF MEASURING PHYSICAL EFFICIENCY

The foregoing observations on the cardiovascular changes that occur with training and with weakness suggest means of measuring fatigue, staleness and weakness. A pulse rate more rapid than the average in the reclining and standing postures, a large acceleration on standing and after exertion, a slow return to normal after exercise, and a systolic pressure that fails to rise but falls when the subject stands, indicate fatigue or weakness.

In 1913 and 1914, three physical efficiency tests were reported that used some or all of these changes. Crampton's [10] "blood ptosis test" is a vasomotor efficiency test that is intended to show the beneficial or depressive effect of various conditions supposed to affect the health. It takes account of the differences between the pulse rates and the systolic pressures in

11. Parkinson: Heart **6**: 317, 1917.
12. Geigel: Deutsch. Arch. f. klin. Med. **99**: 1028, 1906.
13. Bowen: Am. Phys. Educ. Rev. **8**: 8, 1903.
14. Bowen: Am. Phys. Educ. Rev. **8**: 232, 1903.
15. Hartwell and Tweedy: J. Physiol. **46**: 9, 1913.
16. Cotton, Rapport and Lewis: Heart **6**: 269, 1917.
17. Flack and Bowdler: Reports of the Air Medical Investigations Committee, London, No. 2, 1918, p. 12.
18. Meakins and Gunson: Special Report of the Medical Research Committee, London, No. 8, 1918, p. 27; Heart **6**: 284, 1917.
19. Dearborn: Am. Phys. Educ. Rev. **20**: 337, 414, 1915.
20. Bainbridge: Physiology of Muscular Exercise, New York, Longmans, Green & Co., 1919, p. 142.
21. Erlanger and Hooker: Johns Hopkins Hosp. Rep. **12**: 145, 1904.
22. Hill: J. Physiol. **18**: 15, 1895.
23. Sewall: Am. J. M. Sc. **158**: 786, 1919.

the horizontal and vertical postures. The usual range of systolic pressure variation is from + 10 to — 10, and the heart rate increase from 0 to 44. It was determined that a decrease of 1 mm. in systolic pressure was equivalent to an increase in heart rate of approximately 2 beats. By statistically balancing the ranges of systolic pressure and pulse rate and assigning equal percentages to equal ranges, a percentage scale of fitness was established.

Meylan,[3] although not attempting to evaluate, finds that efficiency may be judged by (1) general condition as shown in weight, color of skin and general appearances such as firm, vigorous muscles; (2) pulse rate in the horizontal and vertical positions; (3) systolic blood pressure in the horizontal and vertical positions, and (4) heart reaction after the exercise of hopping 100 feet. Favorable signs were considered to be a horizontal pulse rate between 40 and 80, a vertical rate between 50 and 90, and a standing increase of not more than 16; a horizontal blood pressure between 100 and 140, and a vertical pressure between 110 and 150, with a difference of 10 or more; an exercise increase in pulse rate of less than 100 per cent. and a recovery of more than 80 per cent. in a minute.

Foster's [24] efficiency test made use of the standing pulse rate, the rate immediately after running in a fixed place for exactly fifteen seconds at the rate of 180 steps per minute, and the rate forty-five seconds after the work ceased.

Crampton's test was employed with the aviators at Hazelhurst Field, but was found to be unsatisfactory because of the fact that physical deterioration may be manifest in various ways in the cardiovascular mechanism. The test neglects four of the available factors. A similar criticism may be made of Foster's method. A statistical study of several hundred cases led to the abandonment of both of these methods.

POINT SYSTEM FOR GRADING CARDIOVASCULAR REACTIONS

When it becomes necessary to weigh data from six sets of observations, it is difficult to evaluate them properly and to avoid giving undue weight to a single factor. If it is true, as it seems to be, that weakness may show itself differently in individual cases, then a centering of the attention only on the postural systolic blood pressure changes or on the amount of acceleration of the pulse rate in exercise would result in the overlooking of some cases of weakness. In order to avoid the disposition to stress one or two of the factors that give evidence of physical deterioration, and to recognize equally all six factors, we have used a system of scoring the tests wherein each of the cardiovascular changes is rated according to a scale that evaluates the condition or change. The grading of performance must of necessity be arbitrary and, therefore, is held by some to be objectionable. Nevertheless, as was stated earlier, the "personal equation" of the observer often weighs too heavily where comparisons are made. A mathematical system of grading can in large measure eliminate the personal factor.

The scoring scheme we have used recognizes that fatigue or derangement may be evidenced in the high heart rate during reclining, during standing; in the number of beats the heart rate increases when the standing and reclining postures are compared; in the acceleration in the pulse rate after exercise; in the time taken by the pulse to return to normal, and, lastly, in the rise or fall in the systolic blood pressure on standing. This scheme uses in part a plan proposed by Dr. J. H. McCurdy for rating infantry men in cardiovascular and neuromuscular efficiency. The scores for each of the six items range from + 3 to — 3. A perfect score, the sum of the value given to each of the six items, is 18. The values as assigned appear in Table 1, Parts A, B, C, D, E and F. In using the table for scoring, Parts A and B, also C and D, must always be used together. Thus, if an individual has a pulse rate increase of 15 beats (see Part B) on standing and his reclining rate was 60 (see Part A), he is graded 3 on his standing increase. However, if his reclining rate had been 100, then a standing increase of 15 would have been scored 0.

PROCEDURE IN MAKING OBSERVATIONS

1. The patient reclines for five minutes. (a) The heart rate is then counted for twenty seconds. When two consecutive twenty second counts are the same,

TABLE 1.—POINTS FOR GRADING CARDIOVASCULAR CHANGES

A. Reclining Pulse Rate		B. Pulse Rate Increase on Standing				
Rate	Points	0-10 Beats, Points	11-18 Beats, Points	19-26 Beats, Points	27-34 Beats, Points	35-42 Beats, Points
50- 60	3	3	3	2	1	0
61- 70	3	3	2	1	0	—1
71- 80	2	3	2	0	—1	—2
81- 90	1	2	1	—1	—2	—3
91-100	0	1	0	—2	—3	—3
101-110	—1	0	—1	—3	—3	—3

C. Standing Pulse Rate		D. Pulse Rate Increase Immediately after Exercise				
Rate	Points	0-10 Beats, Points	11-20 Beats, Points	21-30 Beats, Points	31-40 Beats, Points	41-50 Beats, Points
60- 70	3	3	3	2	1	0
71- 80	3	3	2	1	0	0
81- 90	2	3	2	1	0	—1
91-100	1	2	1	0	—1	—2
101-110	1	1	0	—1	—2	—3
111-120	0	1	—1	—2	—3	—3
121-130	0	0	—2	—3	—3	—3
131-140	—1	0	—3	—3	—3	—3

E. Return of Pulse Rate to Standing Normal after Exercise		F. Systolic Pressure, Standing, Compared with Reclining	
Seconds	Points	Change in Mm.	Points
0- 60	3	Rise of 8 or more	3
61- 90	2	Rise of 2-7	2
91-120	1	No rise	1
After 120: 2- 10 beats above normal	0	Fall of 2-5	0
After 120: 11- 30 beats above normal	—1	Fall of 6 or more	—1

this is multiplied by 3 and recorded. The score is noted according to Part A, Table 1. (*b*) The systolic blood pressure is next taken by auscultation; two or three readings are made as a check.

2. (*a*) The patient stands at ease for one or two minutes to allow the pulse to assume a uniform rate. When two consecutive twenty second counts are the same, this is multiplied by 3 and recorded. The score is obtained by use of Part C, Table 1. The difference between the standing and reclining pulse rates is scored then by use of Part B, Table 1. (*b*) The standing systolic pressure is next taken. The difference between this and the reclining systolic pressure is then scored by Part F, Table 1.

3. The patient next steps on a chair about 18 inches high, five times in fifteen seconds timed by a watch. To make this test uniform, he stands with one foot on the chair at the count one; this foot remains on the chair and is not brought to the floor again until after the count five. At each count he brings the other foot on the chair and at the count "down" replaces it on

24. Foster: Am. Phys. Educ. Rev. **19**: 632, 1914.

the floor. This should be timed accurately, so that at the fifteen second mark both feet are on the floor. (*a*) Immediately, while he stands at ease, the pulse rate is counted for fifteen seconds; this is multiplied by 4 and recorded. (*b*) Counting is continued in fifteen second intervals for two minutes, record being made of the counts at 60, 90 and 120 seconds.

The data from *a* will be scored by Part D, Table 1, taking the difference between this exercise pulse rate and the standing rate. The data in *b* are scored according to Part E, Table 1.

This system of scoring men as to physical fitness is now being used by flight surgeons in their work among aviators, and is applied at the Medical Research Laboratory at Mitchel Aviation Field on Long Island.

That there may be value in assembling the circulatory data under such a point system is indicated from an analysis of fifty-four cases of aviators who, when examined by the medical officers of the departments of the laboratory, were found to be ailing and physically below standard. The medical examinations included an overhaul by the internist, neurologist, ophthalmologist, and ear, nose and throat expert. The medical findings include a large variety of conditions, the majority being common to any group of men and in no way characteristic of aviators.

That which was of greatest interest in this analysis was the final efficiency score of each patient. The distribution of the cases is shown in Table 2.

TABLE 2.—EFFICIENCY SCORE IN FIFTY-FOUR CASES

Points	No. of Cases	Per Cent.
0 or less	2	3.7
From 1 to 3	9	16.6
4 to 6	15	27.8
7 to 9	22	40.7
10 to 12	3	5.6
13 to 15	3	5.6
16 to 18	0	0.0
Total	54	100.0

Only six of the fifty-four cases had a score of 10 or better, while 88.8 per cent. had scores ranging between 9 and — 1. These figures seem to indicate that a score of 9 or less is characteristic of physically unfit men.

On the assumption that a score of 9 or less gives indication that the clinician may find something wrong with the patient, we have listed all men among a group of 150 men who had a low score. In this group there were forty-six who scored 9 or less.

The medical examiners working independently, and without the cardiovascular data available to them, recorded abnormal conditions in thirty of the forty-six men. Thus, when working independently, 65.2 per cent. of the group of forty-six with low scores by the cardiovascular efficiency test were found by others to be below standard. Two of the men were unfit because of excessive smoking, and one had recently been on a drunken spree. The neurologist reported five as stale and nervously unbalanced, the internist alone found five unfit, six were tonsil or local infection cases, and the remainder were found wrong by at least two of the medical departments.

This point system of scoring men as to health and physical fitness by the cardiovascular reactions is easily applied. It has the advantage of stimulating men to attempt to improve the score by exercise and proper living. It is suggested that a score of 9 or less gives reason for an overhaul of the patient by a clinician. Aviators with a low score might well be called back for further examination and observation. A poor score suggests a search for a cause. The cause may be disease or unhygienic living.

THE DIAGNOSIS AND PROGNOSIS OF LOSS OF VISION FROM ACCESSORY SINUS DISEASE*

LEON E. WHITE, M.D.
BOSTON

Having for the past three years made a study of blindness originating in the accessory sinuses, I wish to present some of the results, which may be of interest to the profession and possibly of some benefit to humanity. The question has been asked many times what findings warrant operative interference: in other words, how to arrive at a correct diagnosis. This paper is devoted to this phase of the subject, although some space is given to the prognosis.

There are various types of accessory sinus blindness, some of which will recover spontaneously, while others will result in permanent loss of vision unless prompt and proper attention is given. Etiologically they are generally divided as: (1) those due to a direct spreading of the infection to the sheath of the optic nerve; (2) those due to the toxemia from infection in the sinuses, and (3) those due to hyperplasia.

It is usually easy to diagnose the first two types either from inspection or from the roentgenograms, although pus not possible to detect previously is occasionally found on operating. As the nasal and roentgen-ray examinations are frequently negative in the third, the hyperplastic, type, when the middle turbinate is not involved, the diagnosis is much more difficult. The same line of reasoning, however, is equally applicable to all when a definite diagnosis cannot be made.

Hyperplasia has been defined as a rarefying osteitis associated with inflammatory swelling and fibrous thickening of the mucous membrane lining the accessory sinuses. Its pathology has always seemed to me rather obscure. Many specimens have been sent to the laboratory, but nothing of interest has been discovered. Dr. Verhoeff, the pathologist, says that they are more or less traumatized in removal, and when they are decalcified whatever changes may have occurred seem to be destroyed. In one of the last cases, for example, the posterior ethmoid was filled with a thick, gelatinous looking membrane, which I was able to remove entire. It was carefully handled and sent to the laboratory apparently in good condition, and I had high hopes of getting some valuable information; but the report, as usual, was negative. Dr. Sluder sent many of his specimens to Dr. Jonathan Wright, who was able to build up from these and some of his own a fairly consistent explanation of the process taking place in hyperplasia; but even he, at the end of his discussion, said:

> It would probably be difficult to find an adult individual in a temperate or cold climate who does not present an example of this bone change within his nasal chambers which I have a right to call pathological. It is only exceptionally that the symptoms to which it gives rise are sufficient to cause him to seek relief.

* Read before the Section on Laryngology, Otology and Rhinology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

From the foregoing it is readily seen that many of these cases have a condition so elusive as to be difficult of detection either microscopically or macroscopically. In looking into these noses one is disappointed in not finding much, if anything, pathologic. A most careful inspection of the size and position of the middle turbinate should be made, as it will frequently be found to be normal anteriorly but to widen posteriorly. The position of the nasal septum is also of importance in its posterior aspect, as the middle turbinate is frequently wedged between it and the ethmoidal wall. In many of these cases there will be found some slight obstruction to the drainage from the posterior sinuses. The changes are, however, difficult to detect, and negative reports have been given by very good rhinologists even when a markedly pathologic condition was found on operating. It is always a disappointment to the ophthalmologist when pus cannot be found and the roentgenograms are negative. It is difficult to convince some that there is such a thing as hyperplasia; but case after case has demonstrated that pressure sufficient to cause atrophy of the nerve can take place in a nose that on both inspection and roentgen-ray examinations showed practically nothing abnormal.

Toxemia is frequently the cause of blindness, and its origin should be carefully investigated before advising the opening of the sinuses. Teeth, tonsils, accessory sinuses, intestinal autointoxication, alcohol, tobacco, syphilis, etc., must all be considered. An interesting illustration of the necessity of this occurred in the clinic at the infirmary, when I was hurriedly called to examine a nose in a case of recent loss of vision. In questioning the patient it was learned that one of his friends in the furniture business had given him some alcohol with which to rub his chest. The alcohol was found to be of the wood variety, and the vision returned after its discontinuance.

The possibility of the loss of vision being due to pituitary disease must likewise be considered, and careful study made of the plates of that region. I have seen at least a dozen of these cases. Two were malignant. In a third there had been a complete bilateral ethmoid and sphenoid exenteration, which could have been avoided had the plates been inspected. It has been my practice to have each case thoroughly investigated; that is, to have a medical, neurologic, dental, Wassermann and roentgen-ray examination in addition to the ophthalmologic. If these findings are negative and the condition of the eye is unimproved or becoming progressively worse, I advise the immediate removal of the middle turbinate and the opening of the posterior accessory sinuses.

While it is a source of satisfaction to operate on patients with a marked nasal pathologic condition, nevertheless one should realize that unless some definite explanation for the loss of vision can be found elsewhere, its most probable origin is in the sinuses. The diagnosis of accessory sinus disease in cases of practically negative nasal findings is largely made by exclusion.

THE PROGNOSIS

It is well known that cases of blindness from accessory sinus disease recover spontaneously. Four of my patients have told of previous attacks in which the eye was blurry for two or three days and the vision defective, but from which they recovered without treatment. One of them had a second attack a year later and delayed so long before seeking advice, expecting the eye to recover as before, that optic atrophy resulted. Thus it is unfortunate in a sense that these cases tend to recover spontaneously, as permanent injury may result while waiting. This is especially true when there is complete loss of vision.

There are two factors that enter largely into the prognosis: (1) the question of time before the patient seeks relief, and (2) the question of the degree of blindness. As to the question of time, I have endeavored to determine from the cases studied how long an interval could elapse beyond which there would be danger of permanent impairment of vision—in other words, how long one can treat or watch a case before advising operative interference.

The chronological summary shows this.

In the twenty-five cases tabulated, two patients recovered under local treatment, one of four days' duration with vision 20/40, and the other of four months' duration with vision 20/70 (Cases 3 and 20).

Five operations were performed within the first week and normal vision was obtained in all (Cases 2, 9, 9a, 9b and 17).

Of the five patients operated on within two weeks, two recovered with normal vision, two with vision 20/20—but slight pallor of the nerve, and one with a vision of fingers at 6 inches and optic atrophy (Cases 5, 7, 18, 24 and 25).

In the four cases in which the patients were operated on between the second and fourth weeks, normal vision, but with some pallor of the disk, was obtained in one. The others, however, were all improved (Cases 14, 15, 18 and 19).

Four patients were operated on between the first and second months. One recovered with normal vision, another with 20/20—and some pallor of the disk. In the other two there was optic atrophy with no improvement in one and but slight improvement in the other (Cases 4, 6, 8 and 22).

Of the five cases of over two months' duration there was no improvement in two. In the other three the improvement was so slight it was almost negligible (Cases 10, 12, 13, 16 and 21).

From the foregoing summary one can say with some degree of assurance that unless a case shows improvement under treatment before the end of a week, there is danger of permanent loss of vision unless the pressure on the nerve can be relieved. In Case 24 this actually occurred in eleven days, this patient refusing to have anything done until the social service took hold.

In cases of more than two months' duration, little can be expected. It is probable that the progress of the disease can be checked if it is due to some infection in the sinuses.

As to the degree of the loss of vision: In the six cases in which there was complete blindness, two patients, with blindness of eight and ten days' duration, recovered nearly all their vision, but there remained pallor of the nerve. In one case of four weeks' standing, good vision was obtained, but there was some pallor. Two were unimproved, while the third was able only to count fingers at 3 feet (Cases 6, 10, 14, 22, 23 and 24).

Thus, the demand for early operative inference in the cases of total loss of vision is much more imperative than when the loss is but partial. It would seem the wiser course to err here on the side of advising operation too soon, and possibly unnecessarily, than to

risk a patient becoming permanently blind through delay.

The last three cases have not been previously reported, so it may be of interest to give these somewhat in detail:

REPORT OF CASES

Case 23.—N. S., a man, aged 30, referred by Dr. Alexander Quackenboss at the infirmary, Jan. 9, 1920, with a diagnosis of retrobulbar neuritis, right, of seven days' duration, had noticed a slight pain and blurring of the right eye, two weeks previously, following a severe cold. The haziness increased so that at one time he could not even perceive light. On admission he was able to distinguish finger movements in the temporal field at 1 foot. The edges of the right disk were slightly indistinct and the smaller blood vessels rather prominent. The septum was deflected; and while the anterior end of the right middle turbinate was small, the posterior portion was large and obstructive. Roentgenograms and neurologic, physical, dental and Wassermann tests were all

SUMMARY OF INDIVIDUAL FINDINGS

Case	Referred by	Eye	Diagnosis	Duration	Nasal Findings	Roentgen-Ray Report	Vision before Operation	Operation	Vision after Operation	Pathologic Findings	Comment
1.	Dr. H. B. Chandler....	Left	Chronic retrobulbar neuritis	1 year	Pus about sphenoid	Ethmoids obscured	Light perception	None	Unimproved	Pus	
2.	Dr. W. J. Daly.....	Both	Acute retrobulbar neuritis	7 days	Negative	Asymmetry of sphenoid	2/20	Left mid. turb. and sphenoid	Normal	Hyperplasia	
3.	Dr. F. I. Proctor.....	Both	Acute retrobulbar neuritis	3 days	Hypertrophied middle turbinates	Sphenoids hazy	Rt. 20/30 Left 20/40	Local treatment	Normal	Hyperplasia	Removed left middle turb. after vision was normal
4.	Dr. F. H. Verhoeff..... (M. C. E. & E. I.*)	Both	Retrobulbar neuritis with some optic atrophy	6 wks.	Negative	Left sphenoid obscured	Rt. 2/200 Left shadows	Both mid. turbs., post. ethmoids and sphenoids	Rt. fingers 2 ft., Left fingers 3 ft.	Pus and gran. in sphenoid	Optic atrophy
5.	Dr. R. C. Mackenzie.... (M. C. E. & E. I.)	Both	Acute optic neuritis	2 wks.	Negative	Negative	Rt. fingers 1 ft., Left 20/200	Right mid. turb. and sphenoid	Normal	Hyperplasia	Slight pallor of disk
6.	Dr. P. H. Thompson... (M. C. E. & E. I.)	Left	Acute retrobulbar neuritis	6 wks.	Def. septum	Negative	Light perception	Sept., mid. turb. and sphenoid	20/20—	Hyperplasia	Slight pallor of disk
7.	Dr. Alex. Quackenboss (M. C. E. & E. I.)	Both	Optic neuritis	10 days	Hypertrophied middle turbinates	Negative	Rt. nil, Lt. fingers	Both mid. turbs. and sphenoid	Normal	Hyperplasia	Slight pallor of disk
8.	Dr. F. M. Spalding..... (M. C. E. & E. I.)	Both	Optic neuritis	6 wks.	Negative	Negative	Rt. light percep., Lt. fingers 3 ft.	Septum, rt. mid. turb. and sphenoid	Normal	Carious molar; dis. antrum	
9.	Dr. F. H. Verhoeff..... (M. C. E. & E. I.)	Left	Papillitis	6 days	Negative	Negative	20/200	Left mid. turb., post. ethmoids and sphenoid	Normal	Pus and gran.; carious tooth	Exophthalmos
9a.	Dr. F. H. Verhoeff..... (M. C. E. & E. I.)	Right	Papillitis	4 days	Negative	Negative	20/200	Rt. mid. turb. and sphenoid	Normal	Pus and gran.	
9b.	Dr. F. H. Verhoeff..... (M. C. E. & E. I.)	Left	Papillitis	1 wk.	Negative	Negative	20/30	Left antrum	Normal	Pus	
10.	Dr. F. H. Verhoeff..... (M. C. E. & E. I.)	Right	Neuroretinitis and choroiditis	3 mos.	Negative	Negative	Nil	Rt. mid. turb., ethmoid and sphenoid	No improvement	Pus and gran.	Headaches relieved
11.	Dr. W. J. Daly.....	Left	Axial neuritis	8 mos.	Polypoid tissue	Erosion in sella turcica, etc.	20/200	None	.....	Round cell sarcoma	Death from streptococcus meningitis
12.	Dr. F. E. Cheney.....	Left	Chronic optic neuritis	4 mos.	Def. septum; pus	Ethmoids and sphenoids hazy	14/20	Left mid. turb., post. ethmoids and sphenoid	16/20	Pus in sphenoid	
13.	Dr. P. H. Thompson... (M. C. E. & E. I.)	Both	Chronic optic neuritis	4 mos.	Def. septum; hyper. mid. turbs.	Negative	20/200	Both mid. turbs., post. ethmoids and sphenoids	20/100	Pus	
14.	Dr. F. M. Spalding..... (M. C. E. & E. I.)	Both	Neuroretinitis	4 wks.	Def. septum; hyper. mid. turbs.	Negative	Nil	Both mid. turbs. and post. ethmoids	Fingers 20 ft.	Pus	Child of 5 years
15.	Dr. Alex. Quackenboss (M. C. E. & E. I.)	Left	Papillitis	1 mo.	Hyper. left mid. turb. and pus	Ethmoids obscured	Lt. fingers 1 ft., Rt. 20/40	Left mid. turb., post. ethmoids and sphenoid	Lt. fingers 2 ft., Rt. 20/20	Pus in sphenoid under pressure	Question of malingering
16.	Dr. E. T. Easton.....	Right	Retrobulbar neuritis with some optic atrophy	2 yrs.	Def. septum; hyper. mid. turb.	Negative	20/200	Rt. mid. turb., post. ethmoid and sphenoid	20/100	Hyperplasia	Progress of optic atrophy checked
17.	Dr. Henry Hawkins....	Both	Papillitis	7 days	Hyper. mid. turb.	Negative	20/30 Rt. 20/100 Lt.	Left mid. turb., post. ethmoids and sphenoid	Normal	Hyperplasia	
18.	Dr. Alex. Quackenboss	Left	Acute retrobulbar neuritis	4 wks.	Def. septum; hyper. mid. turb.	Negative	20/100	Left mid. turb., post. ethmoids and sphenoid	Normal	Hyperplasia	Slight pallor of disk
19.	Dr. C. F. Worthen.....	Right	Acute optic neuritis	3 wks.	Marked hyper. mid. turb.	Negative	Fingers 3 ft.	Rt. mid. turb., post. ethmoids and sphenoid	20/70	Cystic mid. turb.	
20.	Dr. C. F. Worthen.....	Both	Chronic retrobulbar neuritis	4 mos.	Hypertrophic rhinitis	Negative	Rt. 20/100 Lt. 20/70	Local treatment	Nearly normal	Hyperplasia	
21.	Dr. P. H. Thompson...	Both	Chronic retrobulbar neuritis	9 mos. left 3 mos. rt.	Hypertrophy, both mid. turbs.	Negative	Lt. fingers 4 ft., Rt. 20/70	Both mid. turbs., post. ethmoids and sphenoid	20/200 Rt. Fingers 4 ft. left	Hyperplasia	Atypical multiple sclerosis
22.	Dr. G. S. Derby..... (M. C. E. & E. I.)	Right	Acute retrobulbar neuritis	7 wks.	Hyper. mid. turb.	Negative	Nil	Rt. mid. turb., post. ethmoids and sphenoid	Unimproved	Hyperplasia	Optic atrophy
23.	Dr. Alex. Quackenboss (M. C. E. & E. I.)	Right	Acute retrobulbar neuritis	8 days	Def. septum; hyper. mid. turb.	Negative	Nil	Sept., mid. turb., post. ethmoids and sphenoid	20/20—	Hyperplasia	Slight pallor of disk
24.	Dr. S. J. McDonald.... (M. C. E. & E. I.)	Right	Acute retrobulbar neuritis with some optic atrophy	11 days	Hyper. mid. turb.	Negative	Nil	Rt. mid. turb., post. ethmoids and sphenoid	Fingers 6 inches	Membranous sac in ethmoids	Partial optic atrophy
25.	Dr. W. N. Souter..... (M. C. E. & E. I.)	Left	Acute retrobulbar neuritis	9 days	Hyper. mid. turb.	Negative	Light perception	Left mid. turb., post. ethmoids and sphenoid	Normal	Pus in ethmoid	

* Massachusetts Charitable Eye and Ear Infirmary.

negative. Two days later the septum was resected, the right middle turbinate removed, and the right posterior ethmoids and sphenoid opened. The posterior ethmoid was unusually large, and located directly in front of the sphenoid, so that when opened at a depth of 3½ inches it was mistaken for that sinus. A small opening, however, was discovered near the septum, which led into a cell one-half inch deep, which proved to be a rather small sphenoid. The vision did not improve as rapidly as usual, and on the patient's discharge at the end of a week, fingers could be distinguished only at 5 feet. A severe cold was contracted on the way home, and for a day the vision became nil. Under hot irrigations the patient gradually improved. In two months, vision was 20/20 —, with some pallor of the disk.

CASE 24.—Mrs. B. M. T., aged 40, referred by Dr. S. J. McDonald at the infirmary, Jan. 19, 1920, with a diagnosis of retrobulbar neuritis, right, of three days' duration, had complete loss of vision. The pupil did not react to light. The blood vessels were rather small, the disk, pale. The right middle turbinate was somewhat obstructive posteriorly. Examination otherwise was negative. The roentgen-ray, Wassermann, medical and neurologic examinations were negative. An immediate operation was advised, but the consent of the patient could not be obtained, so that it was not until January 27, eleven days after the onset of the trouble, that she permitted me to operate. The middle turbinate, which proved to be much larger than it appeared, was removed, and the posterior ethmoids and sphenoid opened. In one of the posterior ethmoids there was a thick membranous sac, mention of which has previously been made. The patient was discharged four days later, with vision unimproved. Ophthalmologic examination revealed: "No light perception; pupil reacted slightly to light; motion normal; very slight pain on pressure over eye; disk more hazy and indistinct than in other eye, and the physiologic cupping absent, with a higher color to disk; blood vessels about the same in the two eyes." Five weeks after operation, examination revealed a well developed optic atrophy. The patient was, however, able to see fingers at 6 inches. This case is one in which the patient would probably have been benefited had she consented to an earlier operation.

CASE 25.—Mrs. J. M. P., aged 27, referred by Dr. W. N. Souter at the infirmary, Jan. 26, 1920, with a diagnosis of retrobulbar neuritis, right, of six days' duration, had had a blurring in the same eye some months previously, which had cleared up without treatment. Following a slight cold, large objects seemed in a thick haze. In six days there was barely light perception. Dr. Derby examined the fundus and reported "outline of disk somewhat blurred. Not as much physiologic excavation in left eye; vessels about the same size; fogginess of disk and higher color. Vision, right, 20/20. Question of light perception, left." Physical, dental, neurologic, roentgen-ray and Wassermann tests were all negative. The nasal examination was practically negative except that the posterior portion of the left middle turbinate seemed somewhat enlarged. January 29, nine days after the onset of the trouble, the middle turbinate was removed and the posterior ethmoids and sphenoid were opened. A small amount of pus was found in one of the posterior ethmoids, and the tissue was somewhat thickened. In two days the patient could count fingers at 6 inches. Vision improved rapidly so that in two weeks it was 20/30, and at the end of a month was normal.

GENERAL SUMMARY

Of the twenty-five cases here reviewed, operation was not performed in three (Cases 1, 11 and 20). In the first, the eye remained permanently blind. In the second, the patient died from a sarcoma; and in the third, the vision was improving when first seen and recovered under local treatment. In a fourth (Case 3) a hypertrophied middle turbinate was removed some time after the vision had returned.

Of the twenty-two operative cases there was improvement in all but three (Cases 10, 21 and 22). In one the eye had been practically blind some months. In another of five weeks' duration there was slight improvement at first, but pressure had continued so long that optic atrophy resulted. The third case was one of multiple sclerosis.

Normal vision was obtained in nine cases (Cases 2, 3, 5, 7, 8, 9, 17, 18 and 25).

There was marked improvement in four (Cases 6, 14, 19 and 23), but some optic atrophy.

There was only slight improvement in six (Cases 4, 12, 13, 15, 16 and 24), this being due to the chronic nature of the disease and the delay in operating.

In three there appeared to be a direct extension of the infection (Cases 11, 14 and 15).

The toxemia from pus found in eight cases seemed the chief factor (Cases 1, 4, 8, 9, 10, 12, 13 and 25).

Hyperplasia appeared the predominating lesion in fourteen (Cases 2, 3, 5, 6, 7, 16, 17, 18, 19, 20, 21, 22, 23 and 24).

In six, the nasal examination was considered negative (Cases 2, 4, 5, 7, 9 and 10).

In seven, roentgen-ray examination was positive (Cases 1, 2, 3, 4, 11, 12 and 15). Negative plates, let me add, by no means contraindicate an operation. This is especially so in hyperplasia, as only two of the fourteen cases showed any roentgen-ray findings.

The middle turbinate was removed in all the cases in which operation was performed, and the sphenoid opened in all but one (Case 3).

The posterior ethmoids are at present opened as a matter of routine. Unless suspected of infection, the other accessory sinuses are not disturbed. The complete ethmoid exenteration does not in most cases seem necessary.

The accompanying table summarizes the individual findings in the cases studied.

390 Commonwealth Avenue.

ABSTRACT OF DISCUSSION

DR. S. G. HIGGINS, Milwaukee: Be very sure of your diagnosis before you undertake an accessory sinus operation. I might possibly differ some with the essayist as to his technic in removing all of the middle turbinate, but something can still be learned as to the best technic in ethmoidal surgery. We have not the ideal operation as I understand it. We ought not to operate so frequently that the internist who refers our sinus cases has a larger series of negative results than he has positive results. As rhinologists we ought to require from the ophthalmologist a complete history which may aid us in making a diagnosis before we operate. If other things seem to be failing, operation is clearly indicated, and if you get a negative result it is to be hoped that no harm has been done.

DR. LEON E. WHITE, Boston: These cases were all rather extreme, and were referred by competent ophthalmologists after having been thoroughly investigated, as they felt that unless relief could be given at once, the eyes would be lost. I do not believe in operating on any patient that shows a tendency to improve; but it is very important to operate before it is too late. In the case I reported, of eleven days' duration, the woman declared there was nothing the matter with her nose. The eye men felt, as there were no other findings, that the trouble was probably in the accessory sinuses. There was a cyst in one of the posterior ethmoids and distinct pathologic conditions that were not evident on inspection. I want to emphasize the point that these cases cannot go too long, that we cannot waste too much time in investigating them. Dr. Stark made a good point in the discussion which he had prepared. In speaking of those cases which recover spontaneously, he said that when there

was a pressure sufficient to cause these symptoms there was probably some condition in the nose that needed attention; even though the patient recovers it is advisable to investigate thoroughly the condition, and if anything is found, it should be taken care of in order to prevent later complications, especially multiple sclerosis. An illustration of this occurred the day I left Boston.

NERVE BLOCKING FOR NASAL SURGERY *

ROBERT G. REAVES, M.D.
GREENSBORO, N. C.

My object in this article is to give a brief description of nerve blocking by procain, as used in twenty-nine nasal operations, with complete anesthesia in all except two cases.

In order to produce anesthesia in either nasal chamber, one needs to inject only two points; namely, the exit of the nasal nerve from the orbit, and the region of Meckel's ganglion. In view of this fact, it will be of advantage to give a brief review of the anatomy concerned, according to Gray:

> Meckel's (sphenopalatine) ganglion is deeply placed in the sphenopalatine fossa, close to the sphenopalatine foramen . . . and is situated just below the superior maxillary nerve. . . . Its sensory root is derived from the superior maxillary nerve. . . . Its motor root is derived from the facial nerve through the large superficial petrosal nerve, and its sympathetic, from the carotid plexus through the large deep petrosal nerve. These two nerves join together to form a single nerve—the vidian.
>
> *Branches of Distribution of the Sphenopalatine Ganglion.*—These are divisible into four groups: . . . ascending, which pass to the orbit; descending, to the palate; internal, to the nose; and posterior branches, to the nasopharynx. . . . The descending or palatine branches . . . are three in number, anterior, middle and posterior. The anterior palatine nerve . . . gives off inferior nasal branches, which enter the nose through openings in the palate bone and ramify over the turbinated bone and middle and inferior meatuses. . . . The internal branches are distributed to the septum and outer wall of the nasal fossae. They are the superior nasal and the nasopalatine. The superior nasal branches, four or five in number, enter the back part of the nasal fossa by the sphenopalatine foramen. They supply the mucous membrane covering the superior and middle turbinated processes, and that lining the posterior ethmoidal cells, a few being prolonged to the upper and back part of the septum. The nasopalatine nerve also enters the nasal fossa through the sphenopalatine foramen; it passes inward across the roof of the nose, below the orifice of the sphenoidal sinus, to reach the septum, and then runs obliquely downward and forward along the lower part of the septum, to the anterior palatine foramen, lying between the periosteum and mucous membrane. It descends to the roof of the mouth through the anterior palatine canal.
>
> The nasal nerve enters the orbit by way of the sphenoidal fissure between the two heads of the external rectus, and passes obliquely inward across the optic nerve beneath the superior rectus and superior oblique muscles, to the inner wall of the orbit. Here it passes through the anterior ethmoidal foramen, and, entering the cavity of the cranium, traverses a shallow groove on the front of the cribriform plate of the ethmoid bone, and passes down through a slit by the side of the crista galli into the nose, where it divides into two branches, an internal and an external branch. The internal branch supplies the mucous membrane near the fore part of the septum of the nose. The external branch descends in a groove on the inner surface of the nasal bone and supplies a few filaments to the mucous membrane covering the fore part of the outer wall of the nares as far as the inferior turbinate process; it then leaves the cavity of the nose, between the lower border of the nasal bone and the upper lateral cartilage of the nose, and, passing down beneath the compressor nasi, supplies the integument of the ala and the tip of the nose, joining the facial nerve.

PROCEDURE OF INJECTIONS

A. *Nasal Nerve.*—1. Instil a few drops of 4 per cent. cocain into the conjunctival sac to prevent pain on inserting the needle.

2. Lift the upper lid upward and inward by placing the thumb at the inner and upper margin of the orbit and direct the patient to look outward. Insert the needle through the plica semilunaris just below the upper lacrimal puncta, directing it slightly inward and upward, at an angle of about 30 degrees. The needle will soon strike the os planum, and on moving the point of the needle up and down, when inserted about 2 cm. (¾ inch) in depth; it will engage in a groove the anterior end of which terminates in the anterior ethmoidal foramen. Here the nasal nerve leaves the orbit. Inject about 1 c.c. of 1 per cent. solution of procain.

B. *Meckel's Ganglion.*—1. Brush the hard palate with a solution of cocain along the root of the molars.

2. Place the index finger on the hamular process of the internal pterygoid plate and bring it forward until a depression, the lower end of the posterior palatine canal, is palpated.

3. Place the needle at an angle of about 45 degrees with the upper teeth and along the second molar about ⅛ inch from its root. This brings the needle near the canal, which it usually enters after three or four attempts. Pass the needle upward about 2.75 to 3.5 cm. (1 to 1¼ inches), when the point will be near Meckel's ganglion. Inject from 1 to 1.5 c.c. of 1 per cent. solution of procain.

The injection of the nasal nerve is a very easy procedure. One can readily tell by careful manipulation when the needle is engaged in the groove near the anterior ethmoidal foramen. The injection of the Meckel's ganglion is a little more difficult, as one has to locate the canal, but usually this is not hard to do. If the needle be placed a little too far back, it may pierce the soft palate, in which case the fluid may run down the nasopharynx. If it be placed forward, it may puncture a vessel on the hard palate and cause a little bleeding. The second molar is an excellent guide for the site of injection, if one remembers that the canal is close to the margin of the hard palate. I had considerable difficulty in one case, as I took the first for the second molar. The patient finally remarked: "My wisdom tooth was pulled." From this information I soon located the canal.

Force was not used in passing the needle through the canal, as the needle passes rather easily when properly manipulated.

The Luer's glass syringe (1.5 c.c.) was used and found very satisfactory. Straight needles 1½ inches long, ranging in gage from 23 to 25, are very satisfactory for injecting Meckel's ganglion. They should be of good quality, and have neither a sharp nor blunt end, but rather a bevel point. A bevel point is easily obtained by filing off the sharp end of the ordinary needles. Any small needle about 1 inch long does well for the injecting of the nasal nerve.

* Read before the Section on Laryngology, Otology and Rhinology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

The following objections have been considered in regard to the foregoing injections: (*a*) Danger of carrying infection into the orbit. (*b*) Puncture of the roof of the orbit by undue force. (*c*) Injury to blood vessels in the posterior palatine canal. (*d*) Carrying infection into the region of Meckel's ganglion.

So far none of these objections have been encountered. Normally the conjunctival sac contains very few bacteria. If deemed advisable, one may use 4 per cent. protargol, as an antiseptic for the conjunctival sac. One could puncture the roof of the orbit with the needle, but such force is to be considered poor manipulation on the part of the operator. Chances of injuring the vessels in the posterior palatine canal seem small, as the needle with a bevel point is being passed parallel to the vessels. Even if the fluid is injected directly into the vessel, the amount is not sufficient to give any alarming toxic symptoms. If one is afraid of infection, alcohol may be rubbed over the site of injection.

Four of the patients had a little edema and discoloration of eyelids, which passed off in a day or so. A few had paralysis of the internal rectus, which passed off after the effect of the procain wore off.

Sterile solutions of procain, varying in strength from 1 per cent. to 2 per cent., were used. One per cent. gave good anesthesia within about five minutes, and lasted thirty minutes or longer. Less than 2 grains were used in all but one case, in which 4 grains were used. In the majority of cases "Novocain and L-Suprarenin Tablets 'A,'" made by Farbwerke-Hoecht Company, New York, were used. Each tablet contains novocain 0.125 gm., and l-suprarenin, 0.000125 gm. (which equals about 2 minims of 1 : 1,000 epinephrin). L-suprarenin is a synthetic preparation made by the above named firm. In other cases, procain to which sterile epinephrin was added in proportion of from 6 to 10 minims to 10 c.c. of 1 per cent. solution was used. When epinephrin was added to procain the two were mixed (usually in the syringe) in the foregoing proportion, and injected almost immediately. If mixed and allowed to stand for a while, the procain loses a large part of its anesthetic power. At first no precaution was taken as to whether the physiologic sodium chlorid solution, the solvent, was alkaline or acid. After failing to get proper anesthesia in two cases, I wrote the company which made the tablets "A" and was informed by them that if the solvent was alkaline, it would destroy the anesthetic property of the procain. After this the solvent was tested to be sure it was neutral or only slightly acid, and there was no more trouble in getting proper anesthesia. In order to obtain as little bleeding as possible, it is advisable to pack the nasal chamber with about equal parts of 5 per cent. cocain and epinephrin.

A semiupright position was used for the patients, and was found excellent both for the patient and the the operator. It relaxes the patient and enables him to be comfortable. This position is objected to by some operators, but there is only one answer and that is: "I must see the field of operation before I operate in the posterior ethmoidal region."

Twenty-two of the twenty-nine operations were performed at the Massachusetts Charitable Eye and Ear Infirmary, Boston, during the summer and fall of 1917. They were of all varieties—ethmoid, sphenoid, intranasal frontal, intranasal antrum, submucous resection and turbinectomy. I was more impressed with the anesthesia for sinus than for septal work, as good anesthesia of the septum is obtained by packing. The war interfered with this work, and very little has been done since 1917.

This article is offered more as a preliminary report, rather than a report of work completed. I hope to make a report later on, as to just which part of the nose is anesthesized by injecting Meckel's ganglion, and which part by injecting the nasal nerve separately.

ABSTRACT OF DISCUSSION

DR. H. H. MARTIN, Savannah, Ga.: Some time ago when Sluder first advocated the injection of Meckel's ganglion, I was visiting with Dr. Reaves and his brother, and they had for a year or more been injecting Meckel's ganglion through the posterior palatine canal. It is easily as effective as injecting through the nose, but in my hands it has not been done so easily. I prefer the Sluder method, that is, a long needle inserted through the posterior end of the middle turbinate, getting it in the right position, and giving it a slight tap with a hammer. Dr. Reaves' idea of injecting the exit of the nasal nerve is entirely new to me. I had not heard of it before, but in his hands it certainly seems perfectly practical. I do not see why it should not be used in a great many cases. Personally, however, I do not believe in injecting local anesthetics when you can apply them topically. The topical application is much safer, as a rule. However, a weak solution of procain injected into Meckel's ganglion will certainly produce an anesthesia of every ramification of that organ. Many men with whom I have been in correspondence inject the ganglion first, and then by placing a cotton pledget covered with cocain paste high up between the septum and the lateral wall of the nose anesthesia is produced. Sluder applies a strong solution of cocain directly over the sphenopalatine foramen.

DR. ROBERT G. REAVES, Greensboro, N. C.: This is simply my observation. In regard to the Sluder method, I have only tried it a few times, but I never was certain whether I was going into the cranial cavity or not. I was afraid. This way, with a needle one and one half-inches long, you would have to have a very small patient before you got into the cranial cavity.

EFFECTS PRODUCED ON BLOOD PICTURE BY OXYGEN INFLATION OF PERITONEAL CAVITY*

CHARLES GOODMAN, M.D.
Clinical Professor of Surgery, University and Bellevue Hospital Medical College; Surgeon, Beth Israel and Montefiore Hospitals
NEW YORK

Our attention has been directed of late to roentgenograms of the abdominal organs in which the outlines were brought out by the use of oxygen inflation of the peritoneum. Last fall I decided to make use of this technic, and began by making several peritoneal inflations in my service at the Beth Israel Hospital. Credit for the original idea of the use of oxygen as an aid in roentgen-ray diagnosis of the abdomen must be given to Kelling. His views were published in 1902. The method received little or scant attention until Jacobaeus took it up eight years later, and he was followed by several others. Stewart and Stein again discussed the procedure. They state that if the peritoneum is distended with oxygen, the gas will be absorbed within twenty-four hours. This is contrary to my observations. Dr. Charles Gottlieb and I have

* Read before the Eastern Medical Society of New York, March 12, 1920.

observed that, while much of the gas may be absorbed within twenty-four hours, the presence of some of it can be demonstrated with the roentgen ray for two weeks after the injection. Before introducing the oxygen into the peritoneal cavity, I decided to observe what effect 1,000 or 2,000 c.c. of oxygen would produce on the blood picture of the subject when introduced into the closed cavity of the peritoneum. I had observed in five patients at the Beth Israel Hospital in whom the peritoneal cavities were inflated with 1 or 2 liters of oxygen that the number of erythrocytes was increased from 80,000 to several hundred thousand after the oxygen inflation. The oxygen was introduced into the peritoneal cavity through a cannula passed through the abdominal wall. I found that the injection of more than 1 or 2 liters caused unnecessary discomfort to the patient. Our first case was a postoperative empyema.

TABLE 1.—RESULTS OF INFLATIONS

Cases	Red Blood Cells: Before Injection of Oxygen	Red Blood Cells: 24 Hours After Inflation	Net Increase in Red Blood Cells
1. Postoperative empyema	4,000,000	4,080,000	80,000
2. Tumor of kidney	3,960,000	4,800,000	840 000
3. Suspected ulcer of stomach	4,000,000	5,600,000	1,600,000
4. Subphrenic abscess	3,680,000	4,160,000	480,000
5. Pelvic tumor	5,730,000	6,260,000	530,000

RESULTS OF FURTHER INVESTIGATIONS

As the results were so gratifying, I followed these observations with similar ones on some of the chronic invalids of the Montefiore Hospital. About 1,000 c.c. of oxygen were injected into the peritoneal cavity in two cases of splenomegaly and in a case of inoperable carcinoma of the stomach. The two cases of splenomegaly gave positive Wassermann reaction. The results of these inflations are shown in Table 2.

TABLE 2.—RESULTS OF INFLATIONS IN CHRONIC INVALIDS

Cases	Red Blood Cells: Before Injection of Oxygen	Red Blood Cells: 24 Hours After Inflation	Net Increase in Red Blood Cells
1. Splenomegaly	3,920,000	6,200,000	2,280,000
2. Splenomegaly	4,400,000	6,000,000	1,600,000
3. Inoperable carcinoma	6,280,000	6,600,000	320,000

EFFECT IN PERNICIOUS ANEMIA

We also observed results in a case of the fatal form of pernicious anemia. The patient's red blood cell count was only 480,000, and the count made twenty-four hours after the peritoneal cavity had been inflated showed a net increase of 1,680,000, or a total of 2,160,000. I have not been able to find similar reports by others.

POSSIBLE MECHANICAL EFFECT

I believe that the results of our observations may be due to the mechanical effect of the pressure of the gas on the larger abdominal venous trunks. Some support to this contention is given by the results obtained several weeks ago by Dr. Max Kahn, who performed some animal experiments for me in the laboratory of the Beth Israel Hospital. Pneumoperitoneum produced in six rabbits inflated with oxygen showed in each of the six rabbits injected a net increase of from 200,000 to 900,000 red blood cells. He then inflated the peritoneal cavity of three rabbits with nitrogen gas, and the results were similar. The blood taken from these rabbits showed an increase in the red blood cell count of 200,000, 300,000 and 500,000, respectively.

THERAPEUTIC SIGNIFICANCE

I am not prepared at this time to make any statement as to the value of this procedure as a therapeutic measure. I have no direct evidence that oxygen introduced into the closed peritoneal cavity has any direct stimulating effect on the hematopoietic organs and therefore I am not prepared to suggest that the method might be utilized in the treatment of anemia. On the other hand, my observations lead me to believe that the gas acts as a splint by giving support and pressure to the larger venous trunks of the abdomen and thus might be utilized in the treatment of shock.

CONCLUSION

As far as I have gone, I have concluded that oxygen injected into the peritoneal cavity is followed by an appreciable increase in the number of red blood cells in the peripheral circulation, which is demonstrated by the blood count. Further experiments will be undertaken with a view to determine definitely the value of this measure.

969 Madison Avenue.

Clinical Notes, Suggestions, and New Instruments

BILATERAL EMPYEMA; STAPHYLOCOCCUS PYEMIA*

ROGER DURHAM, M.D., BROOKLYN

Surgeon, Greenpoint and Kings Park Hospitals, Assistant Surgeon, Methodist Episcopal Hospital

This rather unusual case presents many interesting and difficult problems arising in the course of an infection. Beginning as influenza, the infection ran a most profoundly severe and toxic course because of the presence of *Staphylococcus aureus* involving both middle ears, both parotid glands, both lungs, both pleurae and numerous other points of infection, and it terminated with a destructive inflammation of the crest of the right ilium. The disease processes encountered were influenza, bilateral otitis media, mastoiditis, bilateral septic parotitis, bilateral bronchopneumonia, bilateral pleurisy, bilateral empyema, pyemia, pressure necrosis, trophic neuritis, and osteomyelitis of the ilium. The patient, though recovery was many times despaired of, safely weathered these attacks for a period of six months or more, the heart never failing, the renal organs remaining undamaged, the gastrointestinal tract continuing to function, and final recovery being attained.

REPORT OF CASE

A boy, aged 14 years, became sick, March 1, 1919, and was referred to me by Dr. Hartwig Kandt, who directed the medical treatment of the case. The only facts pertinent to the disease are those of his present illness. The onset was sudden, with general body pains, chilly sensations, congestion of the nasopharynx, and prostration, pointing to the diagnosis of influenza. At the outset the type of toxemia was seen to be most severe, with a temperature range up to 105, pulse rate up to 140, and respirations of between 35 and 50. Blood pressure was subnormal, with a systolic reading of 100, and diastolic of from 50 to 60. Cough was present with mucus expectoration, several early attacks of epistaxis, sharp pain in the left chest, and increasing delirium.

The organism responsible for the sequence of pathologic conditions that followed was *Staphylococcus aureus*, and on the fifth day of the disease it was recovered from the sputum

* Read before the Medical Society of the County of Kings, Jan. 20, 1920.

in great preponderance. The leukocyte count was low, being 7,400, with 70 per cent. polymorphonuclears; the urine was normal except for a trace of albumin. On the eighth day a slight discharge was noted from the right ear, and both drums were later incised, the culture from the discharge showing in each case *Staphylococcus aureus*. Four days later a swelling was noted over the right parotid, which was painful, tender and red. Meanwhile signs of consolidation of the left lung had developed, and the condition of the patient was that of a tremendously severe type of toxemia. The following day the opposite parotid became tender and swollen, and an area of infection was noted on the outer aspect of the left arm. Delirium was constant, the patient was restless and talkative, urination was frequent and incontinent, and both ears discharged profusely.

On the sixteenth day of the disease, aspiration of the left chest gave 30 ounces of a clear serum, culture from which showed *Staphylococcus aureus*. The right parotid was also incised at this time, revealing a burrowing infection of the gland with extensive necrosis, the same organism being recovered in the culture. Next day the left parotid was incised, and a similar condition found, due to the same organism. On the eighteenth day the infection of the left arm was likewise opened and the same organism recovered. Blood cultures taken at this time and a week later were, however, sterile. The white cell count had increased to 44,000 and the polymorphonuclears to 92 per cent.

During this period, the second and third weeks of the disease, the condition of the patient continued to be most critical, with a temperature range of 102 to 104, a pulse rate of 110 to 120, respirations of 30 to 40, active delirium, involuntary urination, etc. But the intake of fluid was ample, the urine output being 45 or more ounces a day, with no evidence of a failing heart, and blood pressure near the normal.

On the twenty-fourth day, fluid aspirated from the left chest had the appearance of creamy pus, and the patient was removed to the hospital for the necessary thoracotomy. Under 2 per cent. procain, 2 inches of the left ninth rib, in the posterior axillary line, were resected, 16 ounces of pus evacuated, and drainage maintained by means of two large rubber tubes. The parotids, still discharging from several pockets, were more widely incised, and Dakin's tubes inserted. Hemanalysis revealed 4,496,000 red cells, 75 per cent. hemoglobin, 25,000 leukocytes, and 69 per cent. polymorphonuclears. The Wassermann test was negative, and the spinal fluid presented a normal count and sterile culture. The reaction to this operative procedure was not alarming, the primary rise of temperature to 105 and over being followed on the third day by a general fall to between 101 and 102, with no improvement in the mental condition, etc.

About this time the opposite lung became involved, progressing to complete consolidation of the entire lower lobe by the thirty-fourth day of the disease, accompanied by embarrassed respirations of from 60 to 70; but the patient's mind was clearer. The blood picture was less favorable, because of rather rapid type of hemolysis, showing 3,216,000 red cells, and 55 per cent. hemoglobin on the thirty-first day, and 2,936,000 red cells and 50 per cent. hemoglobin two days later. The increasing anemia was plainly apparent to the eye, all the wounds appearing pale and sluggish with profuse discharges, and showing a tendency to spread. Moreover, three areas of pressure necrosis had developed over the sacrum and the posterior spines of the ilium, as well as a spot of dry gangrene on the glans penis. The mastoid processes were very tender, and the overlying skin edematous. It was quite evident that the patient was losing ground, and the outlook appeared gloomy.

He had begun to yield to the added infection due to the involvement of the opposite lung, and the progressing pyemia. At this critical moment resort was had to blood transfusion, 1,010 c.c. being given after the Miller method. Next day the red cell count had jumped to 4,450,000, and the hemoglobin to 68 per cent., and with this the mind was clearer, the skin pink, the heart sounds good, the lungs unchanged. The change in the appearance of all the wounds was most noticeable, showing active, pink and healthy granulations, and a marked lessening of the discharge.

Flatness of the right lower lobe persisted, and on the thirty-seventh day 1,050 c.c. of cloudy fluid were withdrawn, culture from which yielded the staphylococcus. Favorable signs were the nearly healed parotid wounds, the improved condition of all bed sores, and a clearer condition of the mind.

The problem now was the procedure to be adopted for the treatment of the second empyema, in the presence of the opposite unexpanded lung with its unhealed thoracotomy wound. The dangers of a second thoracotomy at this time were obviously too great to be undertaken. The use of a suction apparatus, such as the Phillips, was out of the question, because of the other surgical conditions present, and also the unreliability that it had shown in my experience with it. Therefore, to maintain the capacity of the new cavity at a minimum and prevent lung compression, and at the same time to evacuate the pus accumulation and allow for the formation of lung adhesions, repeated and frequent aspirations of the pleural cavity were resorted to, by means of a Chapman water pump attached to a nearby faucet. In this way from 75 to 175 c.c. of pus were aspirated at intervals of from two to four days. During these days three more abscesses were incised and the staphylococcus recovered each time. Also an area of dry gangrene appeared over the left heel, and foot drop due to trophic neuritis was noted.

An effort to sterilize the fluid in the right chest was made by the use of 2 per cent. solution of formaldehyd in glycerin injected into the cavity after each aspiration; but the only result apparent was a change in the character of the discharge from a thick pus to a thin, reddish fluid. The culture still showed the causative organism.

Meanwhile the ear drums healed, the mastoids had cleared, and the parotids were nearly well. The management of the condition was maintained as described for more than three weeks, and some improvement was manifest in the general condition of the patient; but about the sixtieth day of disease a downward trend was noted. The patient was more irrational, having restless nights, and taking less nourishment. The temperature assumed the septic type. The cavity of the left chest measured at this time only 6 ounces. The red cell count showed a fall of one-third million, and the hemoglobin dropped from 78 to 65 and down to 60 per cent. in a few days. The leukocytes increased from 22,000 to 38,000, and the red cell count was slightly above 3,000,000. The temperature showed a sharp afternoon rise to 103, and the pulse and respiratory rates revealed an upward trend. A further abscess of the left sacral region was opened and the staphylococcus obtained.

It now became apparent that improvement had ceased in the general condition of the patient, and, on the contrary, there was a general retrogression, accompanied by a rather rapid degree of hemolysis. Further delay in undertaking the second thoracotomy seemed inadvisable, and on the sixty-sixth day of disease, following a blood transfusion of 436 c.c., the eighth right rib was resected, and about 200 c.c. of pus evacuated. This cavity was treated after the third day by the Dakin technic (as had been done in the case of the opposite chest). There was practically no unfavorable reaction to this procedure, and improvement promptly began. During the period of the following ten days the temperature, pulse and respiratory rate decreased measurably, the red blood cells increased one-half million, the leukocytosis decreased, the mind became clear at all times, and the patient began to evidence interest in events.

Progress continued favorable, the left chest healing on the one hundred and tenth day and the right on the one hundred and eighteenth, and the patient returned to his home on the one hundred and twenty-ninth day of his disease, where the rate of progress was maintained, and all wounds went on to complete healing.

At this time, four and one-half months from the onset, complaint was made of pain and tenderness over the crest of the right ilium, and all evidences of a localized osteomyelitis appeared. The patient was again removed to the hospital, and about 3 inches of the crest of the ilium to a depth of one-half inch was found to be necrosed, and was excised. The recovery from this operation was prompt. All

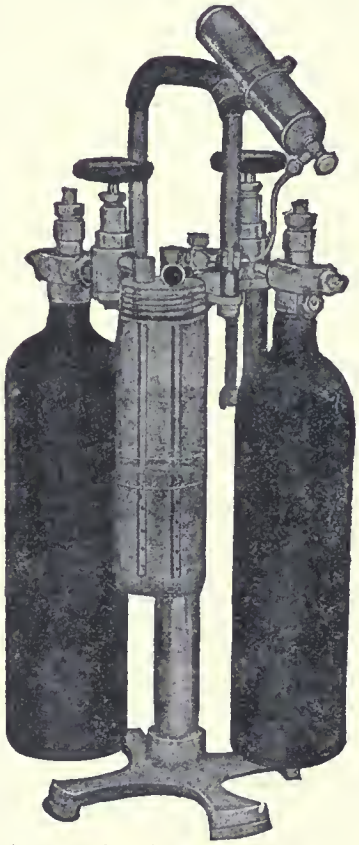
the wounds had healed by seven and one-half months, the foot drop had practically cleared, and the patient was restored to complete health.

322 Park Place.

AN APPARATUS FOR THE USE OF ETHYL CHLORID WITH OTHER AGENTS

A. F. ERDMANN, M.D., BROOKLYN
Lecturer on Anesthesia, Long Island College Hospital

In 1903, Hewitt[1] suggested that ethyl chlorid might be combined with nitrous oxid gas for surgical anesthesia. He states that this combination is useful only for induction or for very short periods. His method of employment was somewhat uncomfortable, for it necessitated the use of one hand to manipulate or hold the container. He recognized the value of the method, and his reasons are as good now as then, and his success can be easily duplicated.



Apparatus for ethyl chlorid with other agents.

The apparatus herewith illustrated obviates all the older difficulties, and because of its other parts makes it feasible to use ethyl chlorid with, before or after another anesthetic, or alone as the anesthetist chooses. Those who are familiar with the original apparatus will quickly notice that the change consists merely in providing an attachment to hold the Gebauer tube on the handle, and in utilizing the opening intended for the manometer to receive the tube from the ethyl chlorid container. Furthermore, one is now enabled to exhibit any number of combinations of agents by simply using a double reservoir tube holding both ether and chloroform; or the quadruple form, adding anesthol and any other agent desired.

I am enjoying my modification particularly in the case of patients the contour of whose face makes it difficult to apply a mask air-tight; in nose and throat operations and in gas-oxygen anesthesias when I would otherwise use " a little ether," and in that type of patients who do not quickly succumb to gas alone. I would suggest its availability, however, not only for the short case to which Hewitt limited himself, but also for any length of time and for any operation.

458 Ninth Street.

DOUBLE TUBAL PREGNANCY: ONE TWINS*

J. H. CARSTENS, M.D., DETROIT

Tubal pregnancy is not so rare as it formerly was supposed to be, but double tubal pregnancy is quite rare, and comparatively few cases have been recorded. Quite a few cases have been reported of a simultaneous tubal and normal pregnancy. Having had a case of a double tubal pregnancy, and one of these twins, I certainly thought that it ought to be put on record, as I have not been able to find a report of any case in a hasty glance through the literature.

REPORT OF CASE

Mrs. W. N., aged 23, married seven months, with a good family history, and no sickness herself except some of the diseases of childhood, had always menstruated regularly, with slight spasmodic pain. The last normal menstruation occurred, Oct. 25, 1919. November 23, she had some pains, cramps as she called them, and a slight showing. These continued, sometimes quite severe for an hour or two, and then not noticeable for the balance of the day. She consulted me to find out whether or not she was pregnant. She was a healthy looking woman, with a nice pink complexion. On examination, I could map out the uterus easily, apparently slightly enlarged, with soft cervix. To the right was a well marked swelling, not hard or fluctuating. On the left side, I could not detect anything abnormal.

This was evidently an extra-uterine pregnancy, and I urged a prompt operation; but it took several days before I could get her to the hospital. December 5, I operated, and found the uterus in the normal place, and the right tube enlarged very much and empty, so that the thumb could easily enter to the junction with the uterus. The culdesac was a mass of blood, coagulated and of various colors, showing that it had been deposited there on various days. There was comparatively little: I should say 3 or 4 ounces. No attention was paid to it then. The tube was removed, but an effort was made to keep it patulous by sewing the mucous membrane to the serous covering. The culdesac was now carefully cleansed. On looking at the left side, I found the tube absolutely closed, very dark and about 2½ inches long, and 1½ inches in diameter, evidently another tubal pregnancy. This was carefully removed, and also an effort made to keep the tube patulous by stitching the mucous membrane to the serous covering at the horn of the uterus. The abdomen was closed with plain sterilized catgut, and the woman made an uneventful recovery.

On opening up the left tube, we found two small fetuses about three-fourths inch long. I should judge that the right tube must have been a pregnancy of six weeks, and the left one, containing the two, of about three weeks.

NITROBENZENE POISONING WITH CYANOSIS

REPORT OF CASE

FRANK G. SANDERS, M.D., FORT WORTH, TEXAS

Several cases of methemoglobinemia due to some poisonous substance in shoe dye have been reported in the literature recently.[1] In the cases occurring at Camp Joseph E. Johnson and Camp Jackson, the cyanosis and symptoms of poisoning were found to be due to nitrobenzene, a constituent of the shoe dye used. In the former camp the cases occurred among recently commissioned officers who had had their puttees and shoes dyed and had worn them immediately. Recovery in these cases was prompt, taking place generally within twenty-four hours.

On the evening of Feb. 7, 1920, at about 6:30, a well dressed young man was brought into the Johnson and Beall Hospital. He was a railroad employee and had been in excellent health until the present afternoon. He had spent the afternoon at the theater and had gone to the interurban station to take the 6 o'clock car. The last thing he remembered was looking at his watch and noting that it was 3 minutes to 6. The person who brought him in stated that he had driven up to the mail box about 6 o'clock and had found the patient leaning over the package box apparently unconscious. He had brought the man directly to the hospital.

The patient was of good physique. He was conscious, but seemed confused, and said that he was dizzy and that his chest was full of something. He was markedly cyanosed

1. Hewitt, F. W.: Tr. Brit. Dental Assn., 1903.

* Read before the Detroit Surgical Society, April 9, 1920.

1. Stifel, R. E.: Methemoglobinemia Due to Poison by Shoe Dye, J. A. M. A. 72: 395 (Feb. 8) 1919; Report of a Case of Cyanosis at Camp Jackson, S. C., Due to Poisoning from Shoe Dye, ibid. 72: 592 (Feb. 22) 1919.

and gave the appearance of being intoxicated. The skin was cool and moist, the temperature normal. The heart and lungs were negative, as was the abdomen. During the examination a very decided odor of nitrobenzene became apparent, and this odor was traced to his shoes. Further questioning revealed the fact that the patient had had his shoes dyed immediately before going to the theater, and that he had sat in that poorly ventilated place all the afternoon breathing the fumes from his shoes. The shoes were very tight also, and direct absorption might have been a factor. The patient denied having a drink of any kind or any unusual food.

The man's shoes were removed and he was placed by the open window. Within an hour he was able to go home, with some assistance. He was advised to keep his shoes away from him and to stay by the open window. By the evening of the next day, his cyanosis had disappeared along with the subjective symptoms, and the patient was able to return to his work apparently none the worse for his experience.

GANGRENE OF LEG FROM THROMBOSIS OF POPLITEAL ARTERY FOLLOWING CORRECTION OF DEFORMITY *

JOHN JOSEPH NUTT, M.D., NEW YORK

This case is reported as bearing on the danger to which the popliteal vessels are exposed by forcible correction of deformities at the knee. Calot speaks of such an accident as "scarcely conceivable in spite of what is said in certain books. I have never observed it in my practice." Tubby says: "Others prefer sudden or complete reduction, although it must not be forgotten that such a procedure is accompanied by grave risks; these are rupture of the popliteal artery, which has occurred . . ."

REPORT OF CASE

W. B., aged 8 years, admitted to the State Hospital for Crippled and Deformed Children, Aug. 27, 1919, with a diagnosis of tuberculous disease of the knee, which had not been normal since the child was 2 years of age. Twice, for indefinite periods, the child had been in hospitals and some sort of operation had been done, as scars were present on the posterior surface. From the indefinite history, I assume that these operations were simply opening of abscesses. Discharging sinuses were said to have been present at different times.

The right knee was flexed, the thigh and leg much atrophied; the patient walked with a crutch, bearing no weight on the leg; there was no redness and no heat, the joint being immovable and in flexion of 135 degrees. Roentgenograms revealed that there had been an extensive rarefying osteitis, especially of the tuberosities of the tibia, followed apparently by a laying down of lime salts. The diagnosis from the examination was: arrested tuberculous disease of the knee.

September 14, the patient was placed under an anesthetic. Attempts made to straighten the knee were futile, no movement being possible. The knee was then opened and a resection performed. The tibia showed marked signs of previous activity of the infection, but fairly healthy bone was easily reached. The slice from the condyles exposed normal bone. Reduction of deformity was now accomplished but not without considerable force to overcome resistance in the posterior tissues. Plaster of Paris was applied from the toes to the groin. There was no complaint from the patient nor any signs of temperature until the sixth day, when the temperature shot up to 104, the pulse became correspondingly rapid, and discoloration of the toes appeared. Circulation in the toes had been examined twice daily and found to be excellent each time, so there is no question that it did not appear until the sixth day. The plaster of Paris was immediately removed, but gangrene extended up the leg and soon reached the junction of the upper and middle third, where it seemed to be arrested. The condition of the patient was so markedly septic that amputation was decided on.

October 1, this was performed at the junction of the middle and lower third of the femur. The femoral artery did not bleed and was found to be plugged. This part of the thrombus extended about one-half inch upward from the point of division. The recovery of the patient was satisfactory in every way. Careful dissection of the popliteal artery with slides of sections, by Dr. Alexander Frazer, showed the existence of the thrombus originating at the beginning of the posterior tibial artery and extending upward, as pointed out above, to the point of amputation. Dr. Fraser considers it without doubt thrombus of septic origin, and not traumatic. As the wound, from the day of resection, at no time showed signs of infection, I believe the infection must have arisen from an old nidus, which was aroused to activity by the traumatism at the time of operation. If this is correct, we may consider this case an evidence of the danger of forcibly overcoming a deformity when scar tissue is present; but it should not be considered as one of thrombosis arising from a traumatic injury to the vessel's walls from the correction of the deformity.

853 Seventh Avenue.

* Read before the Section on Orthopaedic Surgery, Academy of Medicine, Jan. 23, 1920.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

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Gilliland Laboratories, Ambler, Pa.

Streptococcus Vaccine.—Made from hemolytic streptococci, 50 per cent., viridans (green-producing) streptococci, 40 per cent., and non-hemolytic streptococci, 10 per cent. (a number of strains of each type are included), and suspended in physiological solution of sodium chloride; three cresols, 0.25 per cent. is used as a preservative. Marketed in packages of four syringes containing, respectively, 125, 250, 500 and 1,000 million killed bacteria; in packages of four 1 Cc. ampules containing, respectively, 125, 250, 500 and 1,000 million killed bacteria; also in vials of 5, 10 or 20 Cc. containing 1,000 million killed streptococci per Cc.

Dichloramine-T-Abbott (See New and Nonofficial Remedies, 1920, p. 139).

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Tablets Dichloramine-T-Abbott, 4.6 grains.—Each tablet contains dichloramine-T-Abbott 4.6 grains.

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Dosage.—Solution Arsphenamine-Lowy is supplied in ampules of 80 c.c. and 120 c.c. These ampules should not be used after the date stamped on the label of each package or if the degree of coloration of the solution is greater than that of a control tube which accompanies the package.

Prepared by the Lowy Laboratory, Inc., Newark, N. J. U. S. patent and trademark applied for. Licensed for interstate sale by the U. S. Treasury Department under the "act to regulate the sale of viruses, serums, toxins and analogous products" as conforming to the regulations for the control, sale and manufacture of arsphenamine, issued June 30, 1919.

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Solution Arsphenamine-Lowy is prepared by dissolving arsphenamine (using the particular brand desired by the purchaser) in fresh, distilled water, carefully neutralizing with sodium hydroxide solution and sealing in ampules under a partial vacuum, the concentration being adjusted so that 100 Cc. of solution represents 0.5 Gm. of arsphenamine.

Solution Arsphenamine-Lowy is a clear yellow liquid which, depending on the brand of arsphenamine used, varies from a canary yellow to a greenish yellow.

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SATURDAY, MAY 29, 1920

PELLAGRA

The etiology of pellagra has attracted the consideration of a number of investigators who have been able to study it on an unusually large scale and with exceptional facilities. In this country the zeist theory, which related pellagra in some way to the dietary use of maize and maize products, has been finally abandoned. An exclusive diet of corn is unquestionably inadequate; and corn damaged by microbiotic changes may well be harmful at times to persons ingesting it. But no adequate review of the actual incidence of pellagra, as it has occurred in different places and among different peoples, will any longer justify the assumption that the pathogenesis of the disease is concerned primarily with a corn factor. Pellagra may occur without the use of corn.

Epidemiologic studies showing peculiar localized occurrences of pellagra have fostered the natural conclusion that infection takes a part in its appearance. In a noteworthy contribution published in 1914, Goldberger [1] of the U. S. Public Health Service presented striking facts antagonistic to the theory of a pellagra infection but favorable to the long alleged relationship between diet and the disease. He pointed out that in some institutions, among the inmates of which pellagra was either epidemic or had long been endemic, the nurses and attendants, drawn from the class economically identical with that most affected in the population at large, appeared uniformly to be immune, although living in the same environment and under the same conditions as did the inmates, and many of them also in frequent and intimate contact with cases of the disease. Neither contact nor insect transmission seemed capable of explaining this remarkable exemption of one of the two classes of residents. The suggestion was made that the explanation was to be found in a difference in the diet of the two groups; for it was observed that although the nurses and attendants appeared to receive exactly the same food as did the inmates, there was, nevertheless, a difference in the diet of the two groups, in that the nurses and attendants, being in a favorable position to choose from what was provided, selected the best for themselves. They were also free to supplement the institution diet in any manner they pleased.

Since 1914, the study of the pellagra problem has been vigorously prosecuted by the U. S. Public Health Service. The continued investigations conducted by Goldberger and his co-workers [2] have not altered the original suggestion that pellagra can be eliminated by attention to the dietary factor. The trend of the latest evidence [3] is to show that basically the diets of the nonpellagrous and of the pellagrous households (of comparable economic status) in the communities and at the season studied are much the same, the only outstanding difference being a more liberal supply of the foods of the animal protein group in the diet of the nonpellagrous households. The difference between these diets seems to be one of degree, not of kind.

In practical experience, then, the preventive value of milk and of fresh meat seems to have been demonstrated. We are now assured by the latest government report that the total fuel supply—the calories of the diet—is not an essential factor in the production of pellagra. It is admitted that the total intake of protein in pellagrous households is apparently somewhat smaller than is the case in the nonpellagrous homes, but the minimum of safety is not believed to be reached in the region investigated. There is no overconsumption of carbohydrates, on which some stress has been placed in certain quarters. Goldberger therefore believes that meat and milk function advantageously by improving the quality of the protein in diets that have only a "narrow margin of safety." A deficiency of some essential amino-acid or acids is thereby prevented. This is in harmony with the recent report of a committee of inquiry regarding the prevalence of pellagra among Turkish prisoners of war in Egypt, which denies evidence of special infection in pellagra and ascribes it to a deficiency in protein, as gaged by its biologic value.

Goldberger's review admits, further, that the diets of the pellagrous households have a smaller average supply of the recognized vitamins than do those of the nonpellagrous, the disparity in supply being particularly marked with respect to the fat-soluble A factor. Furthermore, the mineral make-up of the diets of the nonpellagrous households will tend to be superior to that of the pellagrous households, or, at least, it is less likely to be deficient either as a whole or in any

1. Goldberger, Joseph: The Etiology of Pellagra, Pub. Health Rep. **29**: 1683, 1914.

2. Goldberger, Joseph: Pellagra—Causation and a Method of Prevention, J. A. M. A. **66**: 471 (Feb. 12) 1916. Goldberger, Joseph; Waring, C. H., and Willets, D. G.: The Prevention of Pellagra, Pub. Health Rep. **30**: 3117, 1915. Goldberger, Joseph, and Wheeler, G. A.: Experimental Pellagra in the Human Subject, ibid. **30**: 3336, 1915; The Experimental Production of Pellagra in the Human Subject by Means of Diet, Bull. 121, Hyg. Lab., U. S. P. H. S., February, 1920. Goldberger, Joseph; Wheeler, G. A., and Sydenstricker, Edgar: A Study of the Diet of Nonpellagrous and of Pellagrous Households, J. A. M. A. **71**: 944 (Sept. 21) 1918.

3. Goldberger, Joseph; Wheeler, G. A., and Sydenstricker, Edgar: A Study of the Relation of Diet to Pellagra Incidence in Seven Textile-Mill Communities of South Carolina in 1916, Pub. Health Rep. **35**: 648 (March 19) 1920.

of its elements. There is considerable evidence that a lack of the so-called water-soluble or antineuritic vitamin is not the foremost dietary defect in the genesis of pellagra, if, indeed, it is of any significance whatever. Milk, and to a lesser degree meat, may remedy the inorganic deficiency, if any exists. It is not irrational to suspect a possible concurrence of conditions facilitating dietary deficiencies of more than one sort. As stated in *Public Health Reports,* the somewhat lower plane of supply, both of potential energy and of protein, in the diets of the pellagrous households, though apparently not an essential factor, may, nevertheless, be contributory by favoring the occurrence of a deficiency in intake of some one or more of the essential dietary factors, particularly with diets having only a narrow margin of safety.

Further research is almost certain to discover more specifically the precise shortcomings in the food supply which are responsible for pellagrous symptoms. In the affected regions of the South, however, it seems clear that an increase in the availability of milk—perhaps by increasing cow ownership, as Goldberger and his colleagues propose—and of fresh meat by all-year-round meat markets at present represents the important practical measure to prevent and control pellagra.

THE FUMES OF IODIN

One of the important factors connected with therapeutics as a science is the method of administration of medicinal substances. Drugs may be given by mouth, by hypodermic or intravenous injection, by inhalation, by inunction or, less frequently, by the use of other entrances into the body. In choosing a method, the physical characters of the substance to be administered and the immediate effects of the substance on the body tissues with which it may come in contact must be especially taken into consideration.

These factors apply particularly in the case of substances like iodin, arsenic, mercury or the biologic products in which the mode of administration radically modifies the action. For some time manufacturers have urged substitutes for tincture of iodin, claiming that their substitutes were free from the undesirable properties of the tincture, and, at the same time, possessed special virtues which the tincture could not possess. More recently, attention has been directed to the administration of iodin in the form of vapor. The diffusing and penetrating powers of gases have particularly attracted the attention of therapeutists, since by this method drugs may be applied to rather inaccessible portions of the body, such as the lining of the lungs, the throat and the mucous membranes of the genito-urinary tract. Furthermore, it has been asserted that iodin in the form of fumes has increased combining powers, and is thus far more potent in effect than iodin administered by any other route. There do not seem to have been any adequate scientific investigations of the subject, however, until the recently published results of Luckhardt and his collaborators [1] at the University of Chicago. In their experiments, both on man and on animals, accurately determined quantities of iodin were vaporized in a special device, and the fumes applied to the skin. At the same time, the tincture was applied to the skin of other persons as a control. Iodin was also applied to the skin of dogs with hyperplastic thyroid glands, and the effects on the gland, before and after administration, studied. Dogs were also used to determine whether iodin fumes were absorbed from the lungs. As a result of these investigations, which are reported in great detail, it was found that iodin, when deposited on the skin in the form of fumes, is absorbed. More iodin was recovered from the urine, following the application of the tincture, than was recovered following the use of the fumes. This result is explained by the authors on the ground that probably more iodin was actually applied, and that the iodin so deposited was held in combination with the protein during the process of coagulation of the latter by the alcohol of the tincture, leading to a state of continuous absorption. It is probable, furthermore, that the iodin deposited on the skin in the form of fumes is revaporized to some extent by the heat of the body.

Most important were the effects of iodin administered intratracheally in the form of fumes. Iodin given in this way seems to be rapidly and completely absorbed; but it was found that the administration of the fumes of iodin by inhalation through the respiratory passages, even in small quantities, is fraught with great danger. Such administration induces dyspnea; and when it is given in large quantities, acute and fatal pulmonary edema ensues within twenty-four hours. When respiratory disorders are present at the time of administration, the fatal edema supervenes very quickly. Thus far, no device designed to deliver fumes controls the dosage.

It is interesting to consider, as do the authors, the fact that the fumes of iodin have the same effect as those of two other halogens, bromin and chlorin. The results of these experiments with iodin fumes on the dog, as shown by necropsy findings, are practically identical with those reported by military surgeons as found in soldiers gassed with chlorin during the war.

The results of these researches are additional evidence as to how scientific research may confirm or deny conclusions based on empiric therapeutic observations. The work may well serve as a model for similar experiments, now being made, on the therapeutic use, intravenously, of such substances as nonspecific proteins or organic preparations of toxic drugs. The patient should at least have the chance that is afforded him by preliminary experiments, scientifically performed on animals in the research laboratory.

1. Luckhardt, A. B.; Koch, F. C.; Schroeder, W. F., and Weiland, A. H.: The Physiological Action of Fumes of Iodin, J. Pharmacol. & Exper. Therap. **15**: 1 (March) 1920.

FACTORS IN AVERTING BACTERIAL INVASION THROUGH THE UPPER AIR PASSAGES

The upper air passages, including the mouth and nose, form an important portal of entry for micro-organisms into the body. The protection of the body against the dangerous invaders is varied in type. The blood may contain components which have a germicidal character or render innocuous the toxic products of bacterial growths. Long before the bacteria have an opportunity to reach the circulation, however, they may be inhibited in growth or destroyed. Thus, as we have pointed out,[1] the nasal mucosa may sometimes function to prevent infection from the virus of poliomyelitis. In the dissemination of the hemolytic streptococci which are so commonly present in the throat and tonsils, they may find their way into the alimentary canal; indeed, there is reason to suppose that they are constantly passing beyond the pharynx in large numbers. Yet so long as a potent gastric secretion is available, this type of micro-organism fails to pass beyond the stomach.[2]

As an illustration of the opposition offered by the mouth and its secretion to the free development of certain micro-organisms that have found entrance orally into the body, investigations by Bloomfield[3] at the Johns Hopkins Hospital may be cited. He swabbed *Sarcina lutea,* a species nonparasitic and nonpathogenic for human beings, in large amounts on the tongue or nasal septum, or introduced it into the tonsillar crypts. Within a short time, usually from one to two hours, the micro-organisms could no longer be recovered there. Bloomfield introduced such large numbers of *Sarcina,* in proportions vastly greater than would be brought in by any natural mode of infection, that their rapid disappearance attests the remarkable efficiency of the mechanism present in the upper air passages for disposing of at least the particular organism mentioned. His analysis of the possible factors active in effecting this disposal indicated that the reaction of mouth secretions, mechanical action and other mouth bacteria play little if any part, but that the saliva and mouth secretions exert a prompt and marked bactericidal effect.

That different bacteria may be disposed of in quite unlike manner is further indicated by Bloomfield's latest studies of the fate of *B. coli* and *Staphylococcus albus.* In contrast with *Sarcina,* these are parasitic in human beings; and though usually nonpathogenic, they may at times produce disease. When they were swabbed on the tongue or nasal septum they usually disappeared within twenty-four hours; but when they were introduced into tonsillar crypts they could still be recovered after somewhat longer intervals. In no case was a permanent carrier state set up. In explanation of the disappearance of *B. coli* and *Staphylococcus albus,* it seems unlikely that the mouth secretions play the part of the destructive or inhibitive agent. Since, however, inert particles placed in the upper air passages also disappeared at about the same speed as the bacteria, it is probable that mechanical influences are here involved; that is, "the organisms probably disappear because they are mechanically removed more rapidly than they multiply."

Evidently, then, protection must no longer be thought of as constant or uniform in character. Different species or types of micro-organisms may be disposed of in quite unlike ways in the upper air passages. The mouth secretions, the normal mechanical flushing processes in the mouth, nose and lacrimal passages, the unexplained potencies of the mucosa, the gastric juice, have all been demonstrated to take part in certain cases. What other mechanisms, if any, may aid in removing invading bacteria remains to be seen.

1. Protection Against Poliomyelitis, editorial, J. A. M. A. **74**: 952 (April 3) 1920.
2. Alimentary Protection Against Hemolytic Streptococci, editorial, J. A. M. A. **74**: 1260 (May 1) 1920.
3. Bloomfield, A. L.: Bull. Johns Hopkins Hosp. **30**: 317 (Nov.) 1919; The Fate of Bacteria Introduced into the Upper Air Passages, Am. Rev. Tuberc. **3**: 553 (Nov.) 1919.

FACTS AND FICTIONS REGARDING TUBERCULOSIS

Now and then the public press stirs up the people to the possible menace to health which some of our habits may entail. If the warnings are justified on the basis of evidence, they must be welcomed. At the present time the public is particularly receptive to the lessons of science. The war demonstrated that science is a potent factor in life and in the world's work. The scientist must therefore be on his guard lest fiction creep in where facts are wanted; in other words, in order to retain a respectful hearing he must seek to prevent unfounded statements and half-baked theories from gaining recognition.

Recently the danger of kissing has been heralded anew in connection with tuberculosis. Although Richard Cabot[1] has warned the layman that osculation might well be dispensed with, the practice has not yet been abandoned. Hence it may be worth while to refer to the latest bacteriologic facts established by convincing methods.[2] Patients with tubercle bacilli in the sputum and saliva kissed sterile Petri dishes at different times in the day. Viable tubercle bacilli were demonstrated to be present at certain times in the day, though by no means always. Soon after coughing, the danger of transmission by kissing seems to be particularly marked. The possibility of transference of the micro-organism of tuberculosis to eating utensils, and thence if not cleansed to a second person, has likewise been borne out. On the other hand, the studies of the experts at the Trudeau Sanatorium[2] suggest

1. Cabot, R. C.: What Men Live By, Boston, Houghton Mifflin Company, 1914.
2. Brown, Lawrason; Petroff, S. A., and Pesquero, Gilberto: Etiological Studies in Tuberculosis, Am. Rev. Tuberc. **3**: 621 (Dec.) 1919.

that the danger of the dust of rooms in a health resort has not yet been conclusively proved, and their experiments tend to belittle it. The same thing is true of the danger of eating utensils properly cleaned, of sanatorium telephone receivers, of door knobs handled by patients, and similar possibilities. Undue prejudice against the tuberculous would be a misfortune.

To the problem of laboratory diagnosis and prognosis of tuberculosis the Trudeau laboratories have also lately made contributions.[3] It is pointed out that the number of tubercle bacilli present in a specimen as judged by the rough methods of examination usually employed does not give any definite information regarding pathologic activity that their mere presence does not afford. The same thing is true of such morphologic features as short bacilli, even in clumps. Much's granules and the presence of tubercle bacilli within certain cells in the sputum are likewise regarded as of no especial importance for the determination of pathologic activity, though elastic fibers in the sputum always are. Tubercle bacilli in the stools of adults have at least the same significance in respect to pathologic activity as when they occur in the urine. Of doubtful or negative value are various urine tests, namely, the diazo, urochromogen or methylene blue reactions. The mere figures of red and white blood cells are likewise without import.

Current Comment

THE MACROPHAGES IN BRAIN REPAIR

The rôle of the phagocytic cells that have of late been designated as macrophages, in some of the processes involving the repair and regeneration of injured bone, has recently been referred to in THE JOURNAL.[4] By the preliminary use of so-called vital stains such as trypan blue and other azo dyes of the benzidin series—pigmentary substances which these phagocytic cells engulf and store with avidity—the location of the macrophages in various parts of the organism has become easier. Thus, Macklin[5] found the dye-containing cells abundant in tissues immediately surrounding bone fractures. He concluded that "their mobilization in this region was for the purpose of assisting in the removal of the waste material, the result of the injury." This type of response in damaged and inflamed tissues is not dependent on the presence of bacteria. The attraction of cells with potent phagocytic power is not due to the chemotropism of microorganisms. It occurs in aseptic tissues and in widely different parts of the body. Thus, what is true in the case of bone repair has been duplicated in instances of brain traumatism in recent researches of the Macklins.[6] When lesions occur in the cerebral nervous substances the defunct tissue is rapidly absorbed, and this is accomplished by a temporary cellular mechanism, made up of young blood vessels, phagocytes and connective tissue—in fact, a granulation tissue. Fully developed macrophages soon begin their activity, and remain in such healing lesions for long periods. The dye-stained phagocytes may ingest considerable lipoid material in the injured spots, and sometimes entire blood corpuscles are engulfed. According to Macklin, the macrophages seem to multiply by mitosis at the site of injury rather than to be transformed out of lymphocytes. They are apparently also recruited in part from the neuroglia, for hypertrophied neuroglia cells containing dye granules and other material may be found in the area of inflammation. Some also arise from the endothelium of the blood vessels; for endothelial cells in the injured region may become enlarged and filled with foreign material. They then behave like the other macrophages. Whether it is at the border of an infected abscess or in the midst of an aseptic area of defect, the function of the macrophages apparently is to ingest and transfer the products of tissue disintegration. Improved histologic technic has brought these beneficent scavengers into new and deserved prominence.

ORIGIN OF THE ACETONE SUBSTANCES IN THE BODY

The so-called acetone substances—acetone, acetoacetic acid and beta-oxybutyric acid—are excreted by the organism under conditions in which the metabolism, for some reason, is more or less deranged. That they are not derived in this way directly from sugar is made probable by the fact that the acetone substances are most likely to make their appearance when there is carbohydrate starvation; and the output may be checked in certain cases by carbohydrate administration. On the other hand, there is evidence for the belief that the acetone substances may be derived from both fats and proteins. In the case of the latter it is their amino-acid derivatives that are concerned in the ketogenesis. Not all of the amino-acids, however, are capable of contributing to an increased output of acetone substances under the determining conditions. Some of the amino-acids that are able to yield sugar in the organism doubtless may actually have an antiketogenic power. Current ideas as to the seat of formation of the acetone substances, which the clinician has come to look for so commonly in routine diagnostic procedures, have been derived from studies on surviving organs. Perfusion of these with blood containing various ketogenic substances in solution has shown that the liver may act as a place of formation.[7] As experiments on the perfused muscles, kidneys and lungs, respectively, yielded negative results,

3. Brown, Lawrason; Heise, F. H.; Petroff, S. A., and Sampson, H. L.: A Preliminary Study of Clinical Activity, Am. Rev. Tuberc. **3**: 612 (Dec.) 1919.

4. Some Factors in Bone Repair, editorial, **74**: 604 (Feb. 28) 1920.

5. Macklin, C. C.: Bone-Repair in the Rat Vitally Stained with Trypan Blue, Anat. Rec. **14**: 43, 1918; The Development and Function of Macrophages in the Repair of Experimental Bone Wounds in Rats Vitally Stained with Trypan Blue, Publication 272, Carnegie Institution of Washington, Contributions to Embryology, No. 27, p. 1, 1919.

6. Macklin, C. C., and Macklin, M. T.: Study of Brain Repair in the Rat by the Use of Trypan Blue, Arch. Neurol. and Psychiat. **3**: 353 (April) 1920.

7. Embden and Kalberlah: Ueber die Acetonbildung in der Leber, I, Hofmeister Beitr. **8**: 121, 1906. Embden, Salomon and Schmidt: Ueber Acetonbildung in der Leber, Hofmeister Beitr. **8**, 1906. Magnus-Levy: Die Acetonkörper, Ergebn. d. inn. Med. **1**: 352, 1908.

attention has become more directly focused on the liver as the chief organ involved in the perverted metabolism exhibiting ketogenesis. It has been known for some time, in corroboration of the presumable importance of the liver in this function, that the output of acetone substances is lower in dogs bearing an Eck fistula than in normal animals of the same species. This surgical device shunts the portal blood directly into the venous circulation without first passing through the liver, the blood supply of the latter being limited to that of the hepatic artery.[8] Kertess[9] has verified this, particularly under conditions favorable to the exhibition of ketogenesis under the usual circumstances. When, however, a reversed Eck fistula operation was done whereby the blood supply of the vena cava was entirely sent through the liver before it returned to the heart for redistribution, acetonuria was greatly augmented. Hence, the dependence of the intensity of the output of acetone substances on the degree of participation of the liver in the circulation of acetone precursors—of the amino-acid leucin in the experiments of Kertess[9]—places this organ in the forefront of importance as the seat of ketogenesis more emphatically than ever.

THE SHORT AND CATCHY PROPRIETARY NAME

A laborer went to a Brooklyn physician for treatment and was given three prescriptions. One of the prescriptions, according to the *Food and Drug Bulletin* of the Department of Health, City of New York, called for "Laxol," the word being written on a piece of blank paper without directions. The drug clerk misread the prescription and dispensed an "original" bottle of "Lysol" which bore the usual poison label with skull and cross bones. The man drank the entire three ounces of Lysol and died half an hour later. The case is now in the hands of the District Attorney, the drug clerk being held under $10,000 bail. "Laxol," as our readers know, is castor oil sweetened with saccharin and flavored with peppermint. There is no excuse for prescribing the product. The official Aromatic Castor Oil (Ol. Ricin. Arom.) of the National Formulary would answer every purpose served by the proprietary preparation.

A RECIPE FOR OLD AGE

In the memoirs of Baron de Grimm, written between the years 1753 and 1790, appears an account of the death of a member of the French Academy, a physician of eminence, one John J. de Mairen, at the age of 93. "He had arrived at this great age," say the memoirs, "without any infirmity, and preserved his good looks, his activity, as well as the entire use of his faculties to the last moment of his life." Until his last illness he scarcely missed going out a single day; he lived in the best society, dined out almost every day, and passed the afternoon in making visits and the evening among his books. "He was exactly the kind of a person to live to a great age," says de Grimm; "his head was well formed, he had great equanimity of temper, great moderation in his passions, or rather he was destitute of passions; he had sensibility enough to engage the regard of those with whom he associated, and to contract those ties of intimacy which were sufficient for him, which have not indeed the charms of friendship, but which do not draw after them the same obligations. He had not warmth of heart enough to feel the necessity of an attachment which rules despotically; of a friend who disposes of us at pleasure, who forms the happiness or the misery of our lives: he had much prudence and foresight, paid great attention to himself, and was very methodical in whatever he did." Is this a text on geriatrics?

8. Fischler and Kossow: Vorläufige Mitteilung über den Ort der Acetonkörperbildung, Deutsch. Arch. f. klin. Med. **111**: 479, 1913. Kossow: Leber und Acetonkörperbildung, ibid. **112**: 539, 1913.

9. Kertess, E.: Zur Frage des Entstehungsortes und der Entstehungsart der Acetonkörper, Ztschr. f. physiol. Chem. **106**: 258 (July) 1919.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ILLINOIS

Personal.—Dr. Arthur F. Stotts, Galesburg, who was shot, May 8, is reported to be improving slowly.——Dr. Elmer L. Crouch, Jacksonville, has become medical director of the Sanatorium for Nervous and Mental Diseases at Stamford, Conn.

Secretaries' Conference.—The annual meeting of the Secretaries' Conference was held in Rockford, May 18, and Dr. Henry A. Chapin, Jacksonville, was elected president; Dr. Lee O. Frech, White Hall, vice president, and Dr. Thomas D. Doan, Scottsville, secretary (reelected).

Hospital Notes.—The Moultrie County Red Cross and Tuberculosis Association have accepted the offer by W. A. Steele of a cottage in Sullivan to be used for a county hospital.——A site for the McDonough County Tuberculosis Sanitarium has been purchased at Bushnell, the consideration being $2,000. Ground has been broken for a new nurses' home, which is being erected at a cost of $125,000. The plan calls for a three-story brick building which is to be thoroughly modern.

Public Health Nursing Experiment.—The Illinois State Tuberculosis Association and Chicago School of Civics are cooperating in an interesting nursing experiment. Fourteen nurses from the class of public health nursing have been assigned for the month of May to make an extensive health and sickness survey in fourteen counties of the state. By this plan it is hoped to develop a knowledge of the tuberculosis situation and to induce the counties to support permanent public health nurses.

State Chapter of World War Medical Veterans Organized.—More than 100 medical officers who had served during the World War assembled in Rockford, May 19, at the call of Dr. John M. Dodson, Chicago, and organized the Illinois Chapter of the Medical Veterans of the World War, electing Dr. Joseph R. Hollowbush, Rock Island, as vice president for Illinois of the national organization and chairman of the state chapter; Dr. Wilbur H. Gilmore, Mount Vernon, secretary-treasurer, and Drs. Malcolm L. Harris, Chicago, and Samuel M. Wylie, Paxton, councilors.

State Medical Society Meeting.—The seventieth annual meeting of the Illinois State Medical Society was held in Rockford, May 18 to 20, under the presidency of Dr. James W. Van Derslice, Oak Park. On the second day, the president delivered his annual address; Dr. George W. Crile, Cleveland, the oration on surgery, entitled "Surgery of the Gallbladder and Ducts," and Dr. William Engelbach, St. Louis, the oration on medicine, entitled "Disease of the Pituitary Gland." Both of the orations were illustrated by stereopticon views. The following officers were elected: president, Dr. William F. Grinstead, Cairo; president-elect,

Dr. Charles E. Humiston, Chicago; secretary, Dr. Wilbur H. Gilmore, Mount Vernon (reelected); treasurer, Dr. Andrew J. Markley, Belvidere (reelected). Springfield was selected as the place for the next meeting.

Chicago

Joint Meeting.—May 26, the Chicago Medical Society and Chicago Ophthalmological Society held a joint meeting at which Dr. Dwight C. Orcutt read a paper on "The Importance of Early Treatment for Strabismus," and Dr. Richard J. Twinen, one on "Preventable Blindness," illustrated by lantern slides.

Personal.—Dr. Wesley Hamilton Peck, formerly president of the ophthalmologic section of the Illinois State Medical Society, was presented with a silver loving cup at the Rockford meeting, May 19, as an appreciation of his efforts in behalf of the section. Dr. Willis O. Nance made the presentation address.——William Gardner Cottrell, Ph.D., was awarded the tenth William Gibbs Medal at a dinner tendered by the Chicago Section of the American Chemical Society at the City Club, April 21.

INDIANA

New Hospital.—The Northwestern Indiana conference of the Christian church plans to build a hospital on the banks of the Tippecanoe River near Ora. The proposed institution will be maintained by the proceeds from a large endowment fund.

Fraudulent Eye Specialists.—The state board of health has received information from people living in Charlestown, that two men giving their names as Dr. Harper and Dr. Van Camp are touring the country representing themselves as agents of the state board of health, and as eye specialists and carry instruments for testing the eyes of patients, whom they secure in the name of the state board of health. It is said that their practice is for the most part on the eyes of children. According to Dr. John N. Hurty, secretary of the state board of health, neither of the men is a representative of the state board and a warning is issued against them.

IOWA

Personal.—Dr. Peter G. Grimm, Spirit Lake, has been appointed local surgeon of the Chicago, Milwaukee and St. Paul Railway.——Dr. Jeannette F. Throckmorton, Mason City, sailed for Europe, May 1.

Health Center Organized.—On May 12, Sioux City Health Center was formally organized and the building was open for inspection. The principal address was given by Dr. Herman M. Adler, Chicago, state criminologist of Illinois, and the opening day was known as Florence Nightingale Day.

Medical Women Elect Officers.—At the annual meeting of the State Society of Iowa Medical Women, held May 11, Dr. Lena A. Beach, Rockwell City, was elected president; Dr. Jennie M. Coleman, Des Moines, vice president; Dr. Mary K. Heard, Iowa City, secretary, and Dr. Eleanor M. Hutchinson, Des Moines, treasurer.

KANSAS

State Board Appointments.—Drs. William M. Earnest, Washington; Charles H. Ewing, Larned, and Clay E. Coburn, Kansas City, have been appointed to succeed themselves as members of the state board of health, for a period of three years.

State Medical Society Meeting.—The fifty-fourth annual meeting of the Kansas Medical Society was held in Hutchinson, under the presidency of Dr. Elmer E. Liggett, Oswego. Topeka was chosen as the place of next meeting and the following officers were elected: president, Dr. Clemens Klippel, Hutchinson; vice presidents, Drs. John R. Scott, Ottawa (reelected), Jacob L. Everhardy, Leavenworth, and Herbert Randles, White City; secretary, Dr. John F. Hassig, Kansas City (reelected); treasurer, Dr. Lewis H. Munn, Topeka (reelected).

MARYLAND

Gift to Johns Hopkins.—Instead of $2,000,000, the Johns Hopkins University will receive $5,541,401, under the terms of the will of the late Capt. Joseph Raphael de Lamar of New York. According to the terms of the will, the residuary estate is to be divided equally among the medical schools of Harvard, Columbia and Johns Hopkins universities, for the advancement of preventive medicine and the study of dietetics.

State Medical Association's New Officers.—At the annual meeting of the Medical and Chirurgical Faculty of Maryland, held in Baltimore, May 11, 12 and 13, the following officers were elected: Dr. William S. Gardner, Baltimore, president; Drs. James H. Mason Knox, Jr., Baltimore, Arthur H. Hawkins, Cumberland, and Charles F. Davidson, Easton, vice presidents; Dr. Joseph Albert Chatard, Baltimore, secretary, and Dr. Charles E. Brack, Jr., Baltimore, treasurer.

Japanese Physicians Visit Baltimore.—The first of a large contingent of Japanese physicians, professors and students who are leaving shortly for Europe to begin their studies of European methods arrived in Baltimore recently. They are Dr. T. Hayao, assistant professor of medicine, Imperial University of Tokyo; Dr. B. Kure, a graduate of Columbia University, New York; Prof. B. Senju of Tokyo; Dr. C. Ookuni of Osaka, a graduate of Philadelphia and Boston dental colleges, and Dr. Shimade of Tokyo.

Praise for School for Blind.—The Red Cross Institute for the Blind at Evergreen, Baltimore, is the most advanced school for the war blind that has been established by any allied country, in the opinion of Capt. George Delvaux, head of Queen Elizabeth's Institute for the War Blind in Belgium. Captain Delvaux, who is studying methods at Evergreen, has visited schools for civilian and war blind in Italy, France and England. He came to Evergreen at the suggestion of Queen Elizabeth to whom he is directly responsible for the administration of the school for the blind established by her several months ago.

Final Transfer of Soldiers at Fort McHenry Hospital.—The transfer of 219 patients from U. S. Army General Hospital No. 2, Fort McHenry, to the Walter Reed General Hospital at Washington, May 18, marked the closing days of the fort as a United States Army hospital. The detachment, consisting of thirty-one "litter patients" and 188 "sitting patients," were taken to Washington, D. C., on a special hospital train. The patients transferred included twenty-six officers, 191 enlisted men and two civilians, and represented 177 surgical and forty-two medical cases. The U. S. Public Health Service will take over the fort, May 31.

Personal.—Dr. Henry R. Carter, assistant surgeon-general, U. S. P. H. S., has returned to Baltimore after spending two and one-half months with the Rockefeller Foundation party fighting yellow fever in the Piura district of northern Peru. He hopes to return to Peru within a month, if his health permit, to take charge of the work, succeeding Gen. William C. Gorgas, adviser in sanitation for Peru, who has been called to South Africa.——Dr. Robert M. Lewis recently flew from Baltimore to Cambridge, Md., in a hydroplane in response to a request to hurry to the Cambridge Hospital where many surgical cases had accumulated. The trip consumed fifty-five minutes, while by boat it would have taken four hours.——Surg. James A. Nydegger, U. S. P. H. S., on duty at Baltimore has been transferred to Quebec for duty, and after a thirty-day leave of absence, will assume his new duties. Senior Surg. Thomas R. Payne will come to Baltimore to take charge of the hospital and other public health matters in this city.

MASSACHUSETTS

Healer Sentenced to Imprisonment.—"Prof." Fred Laplante, Worcester, on May 3, is said to have been sentenced to the house of correction for a term of six months on three charges of larceny, all three sentences to run concurrently. Three other charges alleging practice of medicine without a certificate or registration were placed on file.

Qualification Vaccination of All Schoolchildren.—The Somerville Medical Society has placed itself on record as advocating without qualification vaccination of all schoolchildren as a protection to the community against the ravages of smallpox, and as expressing its condemnation of Senator Joseph O. Knox, Somerville, who allowed his personal feelings to influence him on public measures, as a betrayer of public trust. The bill extending the law regarding the vaccination of children of public schools to children who attend private schools was defeated. Senator Knox is said to have been active in the defeat of this bill and also in the support of a bill to repeal the existing laws regarding vaccination.

Personal.—Dr. Robert B. Greenough, Boston, has accepted the chairmanship of the New England Committee on the Control of Cancer, and has already taken steps to effect a district organization.——William J. Brickley, Boston, has

been appointed medical examiner (coroner) for Sussex County succeeding Dr. Oscar Richardson, Boston, resigned. ——Dr. Theobald Smith has been given the M. Douglas Flattery medal and $500 in gold by the Harvard corporation. The reason of the award is given as follows: "Theobald Smith, working on Texas fever in cattle, demonstrated for the first time that the micro-organism of an infectious disease could be transmitted through the agency of an invertebrate host."——Dr. Milton J. Rosenau has been elected to the Charles Wilder professorship in preventive medicine and hygiene, founded by Charles Wilder and Miss T. E. Wilder, Cambridge.

Report of Communicable Diseases.—The department of public health has sent an appeal to the physicians of the state calling attention to the fact that a few physicians have failed conspicuously to fulfil their obligations regarding the reporting of communicable disease. For this reason the division of registration in medicine of the department of civil service and registration and the department of public health are cooperating in the following manner: Names of physicians who do not report cases of diseases dangerous to the public health to their local boards of health shall be furnished to the department of public health. The department of public health will present to the division of registration in medicine of the department of civil service and registration these names with the proper evidence of neglect to report such diseases. Where it is positively known that the physicians persistently neglect and refuse to report such diseases, a hearing will be granted by the division of registration in medicine of the department of civil service and registration to the offending physician, giving him the opportunity to show why his license to practice medicine should not be suspended.

MICHIGAN

Society Organized.—At the meeting of the physicians of the medical societies of Antrim, Charlevoix, Emmet, Grand Traverse, Leelanau and Wexford counties held in Charlevoix, the Northwestern Michigan Medical Society was organized with the following officers: president, Dr. Robert B. Armstrong, Charlevoix; vice president, Dr. George W. Fralick, Maple City, and secretary-treasurer, Dr. Buell H. Van Leuven, Petoskey. Arrangements were made to hold a clinic in Petoskey in September and another at Cadillac later in the year.

MISSISSIPPI

Personal.—Dr. Theodore P. Barnes has been elected superintendent of the state colony for feebleminded.——Dr. Hiram Byrd, director of the department of hygiene of the University of Mississippi, has resigned to accept the position of director of the department of hygiene of the University of Alabama. ——Dr. Francis M. Sheppard, Richton, has been appointed assistant superintendent of the Mississippi State Charity Hospital, Jackson.

New State Officers.—At the thirty-third annual meeting of the Mississippi State Medical Association held in Jackson, May 11 and 12, under the presidency of Dr. Felix J. Underwood, Aberdeen, Laurel was chosen as the next place of meeting, and the following officers were elected: president, Dr. John W. Barksdale, Winona; vice presidents, Drs. Horace H. Kinney, Okolona, William A. Johns, Corinth, and Lawrence B. Hudson, Hattiesburg; Dr. Thomas M. Dye, Clarksdale, secretary (reelected), and Dr. James M. Buchanan, Meridian, treasurer (reelected). The annual address was delivered by Dr. Seale Harris, Birmingham, Ala., on "Food Poisoning."

MISSOURI

Health Officers to Meet.—The week from June 14 to 19, inclusive, has been designated as public health week, and at this time the first formal conference of health officers ever held in the state will convene under the auspices of the University of Missouri School of Medicine and the state board of health.

New Officers.—At the annual meeting of the Southeastern Missouri Medical Association held in Farmington, Dr. Warren C. Patton, Cape Girardeau, was elected president; Dr. John A. Van Amburgh, Burfordville, vice president; Dr. Elam J. Nienstedt, Blodgett, recording secretary; Dr. William S. Hutton, Fornfelt, corresponding secretary, and Dr. William R. Goodykoontz, Caledonia, treasurer.

Occupational Therapy School.—A school for occupational therapy has been opened in the City Hospital at St. Louis under the direction of the Missouri Association for Occupational Therapy. A large room has been assigned for the workshop, fitted up with work benches and work tables some of which are specially designed for patients in wheel chairs. Miss Cora Ault is superintendent of occupational therapy for the hospital, and with two assistants teaches handicrafts to the patients. Similar schools have been in operation for some time in the City Sanatorium and the Barnes Hospital.

NEW JERSEY

"Christian Scientist" Fined.—Andrew Walker, a "Christian scientist" of Bloomfield, is said to have been convicted of manslaughter in connection with the death from diphtheria of his 9 year old daughter and sentenced, on May 10, to pay a fine of $1,000. Walker failed to summon a physician and had the child treated by three Christian science practitioners.

Progressive Legislation.—During the present session of the New Jersey legislature, four bills of interest to physicians have been considered. Two of these providing for delaying the issuance of marriage licenses to sufferers from venereal disease have already been passed unanimously by both houses. The other two deal with the reporting by physicians of syphilis and gonorrhea and are drawn to provide state laws conforming to federal recommendations on the subject.

NEW YORK

New Public Health Centers.—Public health centers, including tuberculosis, venereal disease and dental clinics, and a child welfare station have been established at Olean, Geneva and Fredonia.

Bill for Purchase of Radium.—There is at present before the New York State Legislature a bill known as "a bill appropriating $250,000 for the state institute for the study of malignant disease, for the purchase and use of radium," introduced by Senator Gibbs and Assemblyman Seelbach on behalf of Dr. Harvey R. Gaylord, director of the state institute, Buffalo.

Amendment of Law Governing Employment of Town Physicians.—The law relating to the employment of town physicians has been amended by an act of legislature so that a town may now combine with an adjoining town in the employment of a town physician who may reside in either of the two places. The amended law strikes out the clause limiting residence within a radius of 8 miles of the town boundary, and also the one limiting the salary to $1,000 per annum.

Governor Urged to Veto Chiropractic Bill.—The board of managers of the state charities aid association has passed resolutions urging the governor to withhold his approval of the bill recently passed by the legislature to "define and regulate the practice of chiropractic" on the ground that approval of the bill would constitute a real and serious danger to the health of the people of the state by giving public recognition and official license to persons claiming to be able "to locate and adjust by hands misplaced or displaced vertebrae of the human spine for the purpose of relieving the nerve pressure caused thereby." This recognition and license, it is held, would be interpreted by large numbers of people as being equivalent to the giving of authority to practice medicine.

Endorsement of Health Center Plan by Dental Society.—The New York State Dental Society, at its recent meeting in Albany, unanimously adopted a resolution approving the provisions of the health center bill which was introduced into the last legislature by Senator Sage and Assemblyman Machold. The resolutions lay particular stress on the great need for provision for proper care of the mouth and teeth of the rural population, and for instruction in the disastrous physical results of neglect to provide such measures. These resolutions provide for the appointment of a committee from the State Dental Association for the purpose of cooperating with other organizations concerned with or interested in the public health of the state, with a view of securing favorable action on the health center bill at the next session of the legislature.

Typhoid Death Rate Decreases.—During 1919, the typhoid fever death rate in this state decreased to the lowest figure yet recorded, namely, 3.3 per hundred thousand. In 1906, the rate was 19 per hundred thousand. In commenting on these figures, a recent bulletin of the New York State Department of Health compares the condition of the water supplies of the state in 1906 with that of the present time. In 1906, there were about 400 public water supplies which served a population of about 6,100,000. Nearly fifty of these sup-

plies received some purification and served a population of about 700,000. In 1919, there were 510 public water supplies serving a total population of about 8,700,000. Of these water supplies 125 were purified either by filtration, chlorination or both, and served a population of approximately 7,000,000. In other words, the number of people receiving pure water increased 1,000 per cent. during this period.

Intensive Course in Syphilis. — Two intensive courses in syphilis under the auspices of the Rochester Health Bureau will be held in the state hospital and the general hospitals and dispensaries, June 14 to 19 and June 21 to 26, inclusive. They will be in charge of Dr. George W. Goler, health officer of Rochester. The courses include: first, the history and municipal control of syphilis, and second, clinical lectures and demonstrations of, and participation in darkfield work with the living treponema; the technic of Wassermann tests and reactions; the preparation of arsphenamin, technic of its administration in the arm, femoral, jugular and scalp veins, and the superior longitudinal sinus; methods of giving mercury; spinal punctures, and cytology and chemistry of spinal fluid. The course will be free. Each course is limited to fifteen students, and applications must be sent in to the Health Bureau, Chestnut and James Streets, Rochester, for the first course before June 12, and for the second course, before June 19.

New York City

Endowment Fund Increased.—The president of the New York Post-Graduate Medical School and Hospital announces that up to May 20, $1,264,801.57 had been subscribed toward the $2,000,000 endowment fund of the institution.

Flatbush Society Election.—At the annual meeting of the Flatbush Medical Society held in Brooklyn, May 12, Dr. Harold A. Morris was elected president; Dr. Richard M. Mills, vice president; Dr. William F. C. Steinbugler, secretary, and Dr. George A. Merrill, treasurer.

Fund in Memory of Dr. Cragin.—The trustees of Columbia University announce that former patients of the late Dr. Edwin B. Cragin have raised a fund of $3,500 in his memory to be used in social service work at the Sloane Hospital for Women. They also announce a scholarship in the College of Physicians and Surgeons through a gift of $6,000, by Wallis S. Turner in memory of his father, Charles W. Turner.

New Officers. — At the annual meeting of the Women's Medical Association of New York City, held May 19, under the presidency of Dr. Emily Dunning Barringer, the following officers were elected: president, Dr. Ethel D. Brown; vice presidents, Drs. Eleanor Parry and Mary Alice Asserson; corresponding secretary, Dr. Isabel Taylor MacMillan (reelected); recording secretary, Dr. Frances Cohen, and treasurer, Dr. Allis E. Hascall (reelected).

Reeducation of Hospital Patients.—An effort to reeducate a group of women who remain for a considerable time in hospital wards because of venereal disease is being carried on at the Kingston Avenue Hospital, Brooklyn. The New York City Visiting Committee in cooperation with Mrs. Wilcox of the board of education and Miss Marshall of the Manhattan School Board has sent a well-trained teacher to these women. A similar class has been carried on at the city hospital with excellent results.

Personal.—Dr. William T. Doran has received $15,000 in settlement of a bequest of $25,000 under the will of Margaret A. Howard, which was contested by other heirs.—— Dr. Adolphus Monae-Lesser has received a bequest of $80,000 under the will of Joseph Auditore. It is reported that the will will be contested.——Dr. John M. Wheeler was elected secretary of the board of surgeons of the New York Eye and Ear Infirmary, May 18.——Dr. Harry Feldman, Brooklyn, has been appointed assistant to the chief surgeon of the Greenpoint Hospital.——Dr. Israel S. Wechsler has been appointed adjunct in neurology in Mount Sinai Hospital, New York City.——Dr. John A. Ferguson, Brooklyn, has been appointed a member of the board of education of New York City.

First Aid to the Industrial Worker.—The Bureau of Public Health Education of the Department of Health in the City of New York has issued Keep Well Leaflet No. 19, entitled "First Aid to the Industrial Worker," prepared by Dr. Samuel Dana Hubbard, superintendent of the division of industrial hygiene. About 350,000 industrial injuries are reported each year in New York state, the majority of which are in New York City, and in about 15 per cent. of these, infections have increased the serious nature of the injury. This percentage would have been reduced materially by proper application of first aid. The leaflet first considers why overhauling the human machine is necessary, gives rules for the avoidance of accidents, suggestions for first aid, information for the employer, and then devotes sixteen pages to concise and well-considered instructions to laymen for first-aid treatment of common injuries and disorders, advising the laymen what to do and what not to do.

OKLAHOMA

New Hospital. — The Southern Baptist Convention has under construction a new fifty-bed hospital at Cushing. This hospital will care for a large district in the oil field section of the state.

Personal. — Dr. Finis W. Ewing, Muskogee, has been appointed superintendent of health for Muskogee and Muskogee County.——Dr. Virgil Berry, Okmulgee, announces his retirement after more than thirty years of practice.

Medical Society Notes.—An organization known as the Oil Field Medical Association has recently been organized in Oklahoma, its membership includes all the active medical men of Cushing, Yale, Oilton, Quay, Shamrock and Drumright. Dr. William J. Neal, Drumright, is president, and Dr. J. Walter Hough, Jr., Cushing, secretary-treasurer.—— At the meeting of the Logan County Medical Society held in Guthrie, April 22, Dr. Pauline Q. Barker was elected president.——At the annual meeting of the Quay County Medical Association held in Parker City, Dr. James C. Hawkins, Blackwell, was elected president, and Dr. William A. T. Robertson, Ponca City, vice president.

PENNSYLVANIA

Commission to Revise State Laws Named.—On the commission to revise and codify the laws relative to the insane and the feebleminded were named Judge Isaac Johnson, Media, chairman of the state board of public charities; Dr. Theodore Diller, Pittsburgh, Drs. Owen Copp and Charles H. Frazier, Philadelphia, and C. Herr, Harrisburg.

Barber Shop Inspection.—Medical inspection of barber shops in the central part of the city was started, May 19, under the direction of the health department and the survey is to extend to barber shops all over the city. After inspections are completed, Dr. Furbush, director of public health and charities, will issue certificates to each barber shop found in a sanitary condition. A centralized medical clinic where all barber journeymen will be examined is one of the chief things for the future, according to Dr. Furbush. While there is no ordinance to supervise the work there are enough health laws to compel barber shops to clean up. The inspection was started through the request of proprietors of large barber shops who desired a certificate for their places.

Personal.—Dr. Iden M. Porster, Greensberg, has resigned as a member of the state board of health.——Dr. Joseph J. Meyer, Johnstown, has been appointed chief of the genitourinary dispensary at Johnstown.——Dr. Patrick H. Weeks, Warren, has been appointed physician to the Northern Indiana Penitentiary, Michigan City.——Dr. Hugh J. Coll, Connellsville, has been elected local surgeon of the Baltimore and Ohio Railway, succeeding Dr. Elliott B. Edie, resigned.——Dr. Frank D. Glenn, Erie, who was a member of the Montour County Medical Society in 1912, has returned to the State Hospital for the Insane at Danville, as a member of the staff.——Dr. G. Roberta Fleagle, Hanover, will soon leave for Colgan, China, as a medical missionary under the Methodist board. She will have charge of hospital work, paying particular attention to diseases of women and children, and will be the only woman physician among 125,000 Chinese people.——Dr. Roland Jessop, York, assistant county medical director of York County, has resigned.

WEST VIRGINIA

Personal.—Dr. Frank Lemoyne Hupp, Wheeling, has accepted the chairmanship of the West Virginia Cancer Committee and has appointed the following division chairmen: Drs. John E. Cannady, Charleston division; Wade H. St. Clair, Bluefield division; Chester R. Ogden, Clarksburg division; William W. Golden, Elkins division; Carter S. Fleming, Fairmount division; J. Ross Hunter, Huntington division; Charles S. Hoffman, Keyser division; John N. Simpson, Morgantown division; J. Howard Anderson, Marytown division, and Mary V. McCune Rossa, Martinsburg division.

WISCONSIN

Hospital Enlarged.—Plans are completed which will double the size of the Deaconess Hospital, Green Bay. A new unit is to be built which will give the hospital a capacity of 120 beds.——Dr. Daniel W. Lynch has reopened his hospital at West Bend which he closed when he went into military service.

Resign from Medical Faculty.—Ten members are reported to have resigned from the faculty of the Marquette University School of Medicine on account of a disagreement between them and the president of Marquette University over several ethical questions, one of which is that of sacrificing an unborn infant when necessary to save the life of the mother. Those who have resigned are:

Drs. Louis M. Warfield, Professor of Clinical Medicine; John L. Yates, Professor of Clinical Surgery; Emerson A. Fletcher, Director and Professor of Genito-Urinary Surgery; Carl Henry Davis, Associate Professor of Obstetrics and Gynecology; Chester M. Echols, Associate Professor of Obstetrics and Gynecology; Frederick J. Gaenslen, Director and Associate Professor of Orthopedic Surgery; James D. Madison, Associate Professor of Medicine; Arthur J. Patek, Associate Professor of Medicine; Arthur W. Rogers, Associate Professor of Neurology; Charles H. Stoddard, Associate Professor of Medicine.

CANADA

Personal.—Sir Adam Beck was elected president of the London Health Association, April 10, after a ninth term.—— Dr. Ira De La Matter, Mono Road Station, Ont., was presented with the Royal Humane Society Medal at the reception of the returned soldiers of the County of Hastings. Dr. De La Matter saved two persons from drowning in the Trent Canal.——Dr. Edgar C. Barnes, assistant superintendent of the Homewood Sanitarium, Guelph, has been appointed medical superintendent of the Hospital for Mental Diseases, Selkirk, Manitoba.

GENERAL

Thoracic Surgeons Hold Meeting.—At the third annual meeting of the American Association of Thoracic Surgeons held in New Orleans, May 1, Dr. Rudolph Matas, New Orleans, was elected president; Dr. Walton Martin, New York City, vice president, and Dr. Nathan W. Green, New York City, secretary-treasurer.

American Physicians' Association Election.—At the annual meeting of the Association of American Physicians held in Atlantic City, N. J., May 4 and 5, Dr. William S. Thayer, Baltimore, was elected president; Dr. Herbert C. Moffitt, San Francisco, vice president; Dr. Thomas McCrae, Philadelphia, secretary; Dr. Thomas R. Boggs, Baltimore, recorder, and Dr. Joseph A. Capps, Chicago, treasurer.

Coming Meetings.—The thirty-seventh annual meeting of the American Climatological and Clinical Association will be held in Philadelphia, June 17 to 19, under the presidency of Dr. Lawrason Brown, Saranac Lake, N. Y., with headquarters at the Bellevue-Stratford Hotel.——The thirty-second annual meeting of the American Pediatric Society will be held at the Moraine Hotel, Highland Park, Ill., May 31 to June 2, under the presidency of Dr. Thomas S. Southworth, New York City.

Conference of Health Authorities.—The eighteenth annual conference of state and territorial health authorities was held in Washington, D. C., on May 26 and 27. This conference was called at the instance of Dr. Hugh Cumming, Surgeon-General of the Public Health Service. A program for the two days' conference included discussions on "Rural Sanitation," "Public Health Administration," "Endemic Index and Communicable Disease Control," "Better Morbidity Reports," "Initiation of a Nation-Wide Health Campaign," "Coordination of Effort and Promotion of Efficiency in Field of Sanitary Engineering," "Framing of a National and State Policy for the Production of Clean Milk in Adequate Quantities," "Migration of Tuberculous Persons," "Provisions for Lepers," "Child Hygiene," and "Malaria."

Home Economics Association.—The thirteenth annual meeting of the American Home Economics Association will be held at Colorado Springs, Colo., June 24 to 29, inclusive, with headquarters at the Antlers Hotel, under the presidency of Edna N. White of Detroit. The science section, which is naturally of most interest to physicians, holds its sessions on June 28, when papers will be presented by Mrs. Agnes Fay Morgan of the University of California, on "The Contribution of European Experience on Low Diets to Our Teaching of Dietetics," and by Helen R. Thompson of the Kansas Agricultural College, on "Effect on Young of Alternate Periods of Suppression of Growth and Refeeding: Experimental Data on Albino Mouse," and by Major David Klein, Chicago, on "Scientific Preparation of Gland Extracts and Their Use in Feeding in Cases of Malnutrition."

Senate Committee Restore Appropriation to Combat Venereal Diseases.—Fears entertained by physicians and social workers that the national government's campaign against venereal diseases would be stopped because of lack of funds will be allayed by the action of the Senate Committee on Appropriations. This committee has restored to the Sundry Civil Bill appropriations amounting to $785,000 which were heretofore stricken out of that bill on the floor of the House of Representatives. Within the past week Senators have received hundreds of telegrams and letters from mayors of cities, church federations, officials of the Y. M. C. A. and city health authorities approving of the splendid work accomplished by the Bureau of Venereal Diseases of the national government and asserting that it would be a national calamity if this salutary work were not continued.

Anesthetists Meet.—At the annual meeting of the American Association of Anesthetists held in New Orleans, last month, resolutions were adopted that the association place itself on record as unalterably opposed to the employment of lay anesthetists, nurse anesthetists, who have not been graduated from recognized medical and dental colleges and have not been licensed to practice medicine or dentistry; and agree to inaugurate and prosecute legislation to protect the medical and dental professions and the public from such inadequately educated and trained anesthetists whenever such action is necessary and pledged its cooperation with the government in securing specialists in several branches of medicine in the medical department of the Navy and the medical department of the Army. The following officers were elected: president, Dr. Joseph E. Lumbard, New York City; vice presidents, Drs. Frank L. Richardson, Boston, and Eleanor C. Seymour, Los Angeles, and secretary-treasurer, Dr. F. Hoeffer McMechan, Avon Lake, Ohio.

Bequests and Donations.—The following bequests and donations have recently been announced:

Cambridge, Mass., Hospital, a bequest of $70,000 by the will of Mrs. James A. Wollson.

Children's Home Society, Jackson, Miss., for the erection of an annex for housing children having contagious or communicable diseases, a donation of $10,000, by Mrs. S. W. Johnson.

Home for Incurables, Philadelphia, $10,000, Methodist Hospital, $5,000 and Frankfort Hospital, $500, by the will of Mary Anne Elliott.

Episcopal Hospital, Philadelphia, $500, by the will of Florence W. Holbrook.

Lankenau Hospital, Philadelphia, $5,000, by the will of Gustav A. Schwartz.

St. Vincent's Home, Maternity Hospital, Philadelphia, and one other institution, $4,000, by the will of Michael Corrigan.

Children's Home, York, Pa., York Hospital and Tressler's Home, York, each $1,000, and Society to Protect Children and Aged Persons, $500, by the will of Miss Amanda Smyser, York, Pa.

Servants' Relief and Incurable Cancer, New York City, $1,000, by the will of Ann Hogan.

For a new hospital at Denison University, Newark, Ohio, a donation of $25,000, by Mrs. F. C. Whistler, Hillsboro.

Association for Research in Nervous and Mental Diseases.—On the initiative of the New York Neurological Society, an association has been organized to foster research in neuropsychiatric diseases. Meetings are to be held yearly. At each meeting only one subject will be discussed. The meetings will be conducted by a commission whose members will act as an investigating body on the presentations and theses submitted at each annual meeting; and at the conclusion of the meeting the commission will prepare and publish such material as it deems fit. Subjects will be given out from one to three years in advance of the meeting. The commission has decided on New York for the first meeting late in December, 1920. The subject for discussion is "The Acute Nonsuppurative Infections of the Nervous System." Each member is to pay a fee of $5 yearly to the secretary-treasurer of his local neurologic society, who will transmit all funds to the secretary-treasurer of the research association, Dr. Foster Kennedy. The neurologic societies of Baltimore, Boston, Brooklyn, Chicago, New York City, Philadelphia, Pittsburgh, San Francisco and Washington, D. C., have thus far been extended invitations to membership. The chairman of the organization committee is Dr. Walter Timme, New York City; Dr. Frederick Tilney, New York City, is chairman of the committee on arrangements for the first annual meeting.

FOREIGN

Physicians Wanted for the Dutch Colonies.—A German exchange quotes the *Nederlandsch Staatscourant* of Jan. 1, 1920, to the effect that positions are open to fifteen foreign

physicians in the Netherlands colonial medical service and fifteen more are to be open later. The contract calls for three or five years' service, with salary of 3,000 and 5,000 gulden and free transportation to and from the Dutch East Indies. Applicants must state whether they wish the shorter or longer contract or will serve in combating the plague, and enclose credentials. Address Departement van Kolonien.

British Medical Association Meeting.—The eighty-eighth meeting of the British Medical Association will be held at Cambridge, from June 29 to July 2, under the presidency of Sir Clifford Allbutt, who will deliver the president's address, Tuesday evening, June 29. The scientific and clinical work will be divided into twelve sections, and sessions will be held Wednesday, Thursday and Friday. The scientific discussions are scheduled for the morning sessions, while the afternoons will be taken up by clinical and laboratory demonstrations. A popular lecture by Dr. G. S. Graham-Smith on the evening of July 2 will mark the close of the meeting.

Professor Pawlow—Part of a letter from the Russian physiologist, Prof. J. P. Pawlow, of Petrograd, dated August, 1919, was republished in *Science* March 5, 1920. The letter was alleged to be an appeal to his friends in Kieff to send him some provisions as he was starving. The quoted sentence was: "Instead of science, I am busy peeling potatoes." This appeal has been copied the world around, but protests have also been published, expressing doubts as to its authenticity, as the two statements conflict. If he has potatoes to pare, he cannot be starving. It is also pointed that owing to the scarcity of servants, many professors now are engaged at times in peeling potatoes. No further news has been received direct from Petrograd regarding the matter.

Congress of Physiology.—A Congress of Physiology will be held at Paris, July 16-20, under the presidency of Prof. Charles Richet, and physiologists of allied and neutral countries are invited to attend. Titles and abstracts of papers to be read before the congress should be in the hands of the secretary not later than June 1. The abstracts should not exceed twenty-five lines. Information is also requested whether animal demonstrations or lantern slides will be used to illustrate the papers, and what animals and apparatus will be required. In connection with the congress, there will be an exhibition of laboratory apparatus and instruments. The fees for affiliation (35 francs) should be sent to M. Lucien Bull, at the office of the congress, Sorbonne, 1 rue Victor Cousin, Paris V.

Repeal of Extension of Health Insurance in Germany.—THE JOURNAL mentioned recently, page 1411, the new law whereby benefits of state health insurance were extended to all persons with incomes up to 20,000 marks. The *Deutsche medizinische Wochenschrift* now brings word that the National Assembly has yielded to the influence brought to bear by the profession, and has repealed this law, reducing the income limit to the old figure 12,000 marks. "By the vigorous and concerted action of the medical men of the country," the editorial states, "the profession has won an extraordinary victory. With amazing promptness the government submitted a new bill to the assembly; it was adopted and goes into effect May 3. The profession can see from this what can be accomplished by purposeful action, and that it is impossible for physicians' just demands to be ignored. It is to be hoped that they will proceed henceforth in this same united manner when it is a question of their vital interests."

Victory for the United Profession in Spain.—The health officers in Spain, the *médicos titulares,* have always been in the pay of the local municipal authorities, and this has led to numerous abuses. In many towns the local authorities have put off paying the *titulares* until they are years in arrears, and the health officials have suffered from actual want. A concerted movement has been on foot for some months to have the officially appointed health officers, prison physicians and veterinarians paid by the state, like the post-office employees. This has finally been secured, both houses having voted favorably on it after two all-night sessions of discussion. The victory was won at last by a single vote, the *Siglo Médico* relates. Cortezo, director of the *Siglo Médico,* was the leader of the forces in the senate. In an editorial commenting on the victory the appeal is made anew for "all physicians, health officers and others, high and low, to make their influence felt in the elections, refusing their support to every candidate, whatever his politics, who will not promise to aid and promote the wishes of the medical profession and sanitary reforms. Legislators who will work for the betterment of the race are good, whatever their political beliefs. . . . Health is the first thing; living comes before theorizing."

Deaths in the Profession in Other Countries

Dr. **C. Esmein** of Paris, on the editorial staff of the *Archives des maladies du cœur,* aged 38.——Dr. **A. Lapuente** of Buenos Aires.——Dr. J. Veranes of Madrid.——Dr. **Herculano Penna** Jr. of Floriano, Dr. **B. dos Anjos** of Bahia, and Dr. **Climerio de Oliveira,** professor of gynecology in the medical school at Bahia, all of Brazil.——Dr. **Alejandro García Aragón** of Turrialba, Costa Rica, a graduate of Yale, aged 48.——Dr. **G. T. Chalybaeus** of Dresden, aged 82.——Dr. **J. H. Spiegelberg** of the Ebenhausen Sanatorium for children, near Munich.——Dr. **W. Merkel,** Hofrat, of Nuremberg, aged 87.——Dr. **Rauzier,** professor of clinical medicine at the University of Montpellier, one of the founders of the Société neurologique and author of numerous works, including a treatise on the pathology of the elderly, aged 58.

LATIN AMERICA

New Home of the S. Paulo Medical Society.—The Sociedade de Medicina e Cirurgia of S. Paulo, Brazil, recently celebrated its twenty-fifth anniversary and at the same time took possession of its new home, rua do Carmo, 6.

Antirabies Institute in Nicaragua.—The *Brazil Medico* states that an antirabies institute was recently organized at Managa in Nicaragua. It is said to have been made possible by the generosity of the late president of Mexico, and is to be called by his name, Carranza Institute.

Chair of Physiology in Paraguay.—The medical faculty of the University of Paraguay at Asunción asked the minister of foreign affairs of Brazil to select an incumbent for the chair of physiology for a term of three years. He referred the matter to the Rio de Janeiro medical faculty, and they submitted the names of four candidates. The one selected, Dr. Roquette Pinto, has been livre docente of physiology at Rio for some time.

CORRECTION

Section on Laryngology.—In the minutes of the Section of Laryngology, Otology and Rhinology of April 30, which appeared in THE JOURNAL of May 15, page 1393, it is said, "Dr. Joseph L. Goodwin, Tazewell, Tenn., presented combined forceps and bronchoscope." This is an error, as this instrument was presented by Dr. A. Ellis Goodloe of Chattanooga, Tenn.

Government Services

Appropriation for History of War Approved in Senate

The efforts in behalf of a medical and surgical history of the World War now promise to be successful. The Senate Committee on Appropriations has made provision for the publication of such history by the insertion of an amendment in the Sundry Civil Bill that $75,000 be expended for this purpose. It is generally understood that the Senate will adopt this amendment which was approved by formal resolutions of the American Medical Association at its annual session in New Orleans this year. Surg.-Gen. M. W. Ireland made a special appeal to the Senate Committee in behalf of this appropriation.

Health Conditions of the Army

Health conditions among the troops in the United States continue excellent. The admission and noneffective rates, while showing a slight increase over last week, are still unusually low; and only a few cases of communicable diseases are reported from the various camps and stations, but nowhere have they assumed epidemic proportions. There were thirty-eight cases of measles reported against fifty-one the preceding week. The Western Department reports six admissions for diphtheria and Brooks Field, Texas, reports eight diphtheria carriers. Camp Taylor and the Western Department each report two new cases of pneumonia, and Camps Dix, Grant, Sherman and Fort Logan each report one. The death rate for disease, 1.5, is the lowest since September, 1917. There were only four deaths from disease, one each from pneumonia, empyema, cardiac dilatation, and surgical shock. Excellent health conditions prevail among the American Forces in Germany. There was but one death among these forces, the cause of which is not given.

Foreign Letters

LONDON

(*From Our Regular Correspondent*)

May 1, 1920.

Criticisms of American Universities

At a meeting of the Royal Colonial Institute, Sir A. E. Shipley read a paper on "Universities in Canada and the United States." He pointed out that Canada was better provided in proportion to population with universities and seats of education than these islands. London, with its population of 8,000,000, was content with one university, while Canada, with not much more than half that number of persons, had a larger number of universities than the United Kingdom. The cost of university training in Canada was considerably less than in the United Kingdom. Unlike the American universities, the Canadian had retained the British system of honors. In Toronto and McGill, the training in medicine was abreast of the best on the European continent. In the universities of the United States, the number of students was amazing. In the discussion that followed, Sir George Parkin said that in the American universities education was given on a democratic scale to great crowds, while Cambridge tried to educate men individually. One of the greatest results of the Rhodes scholarship would be that American students would be taught to realize that no teaching could be more efficient and inspiring than the individual system. Sir Gilbert Parker said that the mass method of teaching was wrong, and that the individual system of the English universities was by far the best.

The Place of Public Opinion in Preventive Medicine

Lecturing on this subject, Sir George Newman, chief medical officer of the ministry of health, said that we now knew that the causes of disease were not something arbitrary, capricious, occult or accidental, but an effect of causes in large and increasing measure controllable. For the first time public and personal health were purchasable. The problem could be stated in a word. The English people were suffering from impaired physique. Ten years of medical inspection in elementary schools had shown that no fewer than 1,000,000 children were so defective that they could not derive reasonable benefit from their schooling. The returns for 1914-1916 disclosed that more than half the insured persons in England and Wales received medical treatment every year and that there were upward of 14,000,000 weeks of sickness a year, most of which was due to preventable disease. In the year following Nov. 1, 1917, there were 2,425,184 examinations of recruits. Of this number only 36 per cent. were found to be of full normal health and strength, and 40 per cent. presented marked physical disabilities. The coming of the ministry of health meant a new sort of attack on the strongholds of disease. It meant increased intervention by the state, improved organization, central and local, and a bolder policy. But a factor in reform in some ways more important than all these was an educated community. We should never win through to a high physical standard until the great mass of the people were educated sufficiently to be able to choose the way of health. The dietary of the great mass of workers consisted of bread, beer, tea, pickles, canned meat, a bit of bacon and a piece of cheese. Appetizing cookery, freshly prepared food, healthy conditions and sound digestion were often absent. The reason was not poverty, but lack of knowledge. Sir George Newman emphasized the value of games and recreation. The nation ought to have available a complete scheme of educational and recreative gymnastics to train body and brain, combined with games, swimming, field sports and tennis. Invalidism, diseases and premature death were due to a relatively small number of morbid conditions, of which a large proportion were preventable. Thus, four principal diseases—pulmonary tuberculosis, influenza, poliomyelitis and cerebrospinal fever—were now known to be conveyed from person to person by inhalation of the causal microbe. Protection could be secured only by safeguarding one person from another on the individual scale. A clean mouth, clear breathing passages, abstinence from spitting, sneezing, coughing or shouting or breathing at other people would go a long way toward prevention. Other groups of maladies, such as dyspepsia, septic wounds and disease contracted by infection, could be considerably lessened by dissemination of simple knowledge as to their causation. The prevalence of venereal disease was a stain on our civilization. A further purpose of enlightened public opinion in regard to preventive medicine was that the assent of the community might be won for sanitary reform and its consent secured for sanitary government, imperial and local. Mere legislation would prove abortive if not supported by intelligent public opinion. The admirable work of the voluntary health societies could hardly be overestimated, and such a campaign as the national health week was particularly valuable.

The Medical Examination of Aeronauts

The air ministry has issued a schedule for the medical examination of civilian pilots, navigators and engineers. The candidate must be at least 19 years of age, of good heredity in respect to nervous stability, and free from any disease, injury or abnormality likely to interfere with efficiency. In addition to the general medical examination there are special flying tests. Among these is one for "expiratory force," as shown by readings on a U tube manometer. When the expiratory force is under 80 mm. of mercury, the subject will probably be incapable of sustained effort in routine aerial work. The special mental tests, such as the reaction time tests, to which the Italians and others have paid special attention, have not been adopted to any large extent, because we feel that a history of aptitude for various sports requiring eye is of equal value, as compared with a somewhat elaborate experiment on a special occasion under circumstances frequently trying to the applicant.

The Leper Problem

An important congress, summoned by the mission to lepers, of missionaries and physicians has been held at Calcutta under government auspices. The conference recognized that leprosy is a slowly contagious disease, in which the nasal discharge is frequently infectious before the stage of ulceration is reached; that, though the disease is not hereditary, children are peculiarly susceptible to infection, and that segregation is the most effective measure for reducing the prevalence of the disease. It was recommended that voluntary segregation should be encouraged except in the case of pauper lepers, in respect to whom compulsory powers should be obtained and settlements established. In view of the considerable fecundity of lepers, especially of females, separation of the sexes was advised. When this was not practicable, married lepers should be allowed to live together only on the understanding that any children born to them should be taken away at the earliest possible age. A bill has been introduced into the imperial legislative council following closely these recommendations.

Class Fertility

The declining birth rate seems to be an inexhaustible topic, always presenting new phases for discussion. At the Statistical Society, Dr. T. H. C. Stevenson, superintendent of statistics in the general register office, read a paper on the

fertility of the various social classes from the middle of the nineteenth century to 1911, based on information obtained in the last census as to the duration of marriages and the number of children born and surviving. He pointed out that in considering the differences in fertility between the various sections of the population it was necessary to bear in mind the differences in their child mortality. Taking the population as a whole, large families implied high, and small families low child mortality. It was possible, therefore, that the small families of the middle classes were in part due to the low mortality of their children, as well as the latter to the smallness of their families. In a typical case—wives married at 20 to 25 whose marriages had lasted from fifteen to twenty years—child mortality rose from 102 per thousand born in one-child families to 339 in twelve-child families and 407 in those of more than twelve children. This was due to the rapidity of births implied as well as to their number. At the same time, high fertility did not necessarily involve high mortality. Agricultural laborers were 37 per cent. more fertile than textile workers, but the mortality of their children was 35 per cent. less. The census figures not only showed that fertility increases downward in the social scale, but also suggested that this difference is of comparatively recent origin—in other words, that the defective fertility of the classes which are presumably the most successful and efficient is a new fact, the consequences of which are not yet apparent and will have to be faced. Comparatively little class variation in fertility is observed in marriages contracted before 1861. More recent marriages have been subject to the influences, whatever they may be, that have led to the fall in the birth rate from 1877 onward. Their fertility has rapidly declined, and at the same time the class variation has greatly increased, which suggests that artificial restraint is the main cause of the decline. This is confirmed by several other facts. The decline began in higher social strata and spread gradually downward; occupied mothers show a very low fertility, and infertility increases in the higher classes with increase of marriage duration up to twenty-five years. The comparatively low infant mortality in the less fertile classes goes very little way toward compensating for their low fertility. The least fertile classes are those that marry late in life. The fertility of occupied wives was found to be considerably lower than that of wives whose husbands had the same occupation. Thus, the fertility of male teachers was 70 per cent. of the average of all classes, but that of female teachers was only 52 per cent.

Osler's Will

Sir William Osler left an estate of the gross value of $80,000 with a net personalty of $58,000. He left his medical and scientific library (as cataloged) to the McGill University, Montreal, and all other property to his wife. At her death or earlier, if she should wish it, his residence, 13 Norham Gardens, Oxford, is to be given to the dean, canons and governing body of Christ Church as the residence of the regius professor of medicine.

The American Hospital in London

The plans for the American Hospital in London, already described in THE JOURNAL, are considerably advanced. Mr. Taft has accepted the office of president in America. Lord Reading is president in England, with Lord Bryce as vice president. American residents in London have formed themselves into a committee, which includes many prominent names, and steps are being taken to incorporate the institution according to the laws of the state of New York. It is hoped to open a temporary building this autumn. The hospital is intended to become the principal research center in Europe for American graduates. British physicians are in sympathy with the work, the committee including several eminent names, such as Sir Arbuthnot Lane, Sir Humphry Rolleston and Sir Bland-Sutton. There is also a committee in the United States which includes Drs. W. J. and C. H. Mayo, George W. Crile, A. J. Ochsner and Franklin Martin. The two medical committees will work together. In July the authorities of the hospital will entertain Dr. C. H. Mayo at dinner.

PARIS

(From Our Regular Correspondent)

April 29, 1920.

A Substitute for Bismuth Subnitrate

Since the war it has become difficult to procure a suitable quality of bismuth subnitrate. Moreover, all of the salts of bismuth have increased in price to such an extent that their use has become prohibitive to a large class of patients. This state of affairs has led to a search for an efficient substitute. Some years ago, after several regrettable cases of poisoning from bismuth subnitrate, it was proposed to substitute the subcarbonate. This suggestion had no regard for the question of economy, for bismuth subcarbonate is as costly as the subnitrate. It is therefore interesting to call attention to a recent communication before the Academy of Medicine, by Doctor Georges Hayem, formerly professor of clinical medicine at the Faculté de Médecine de Paris. He suggests that in place of bismuth subnitrate, there be employed kaolin, a white clay used in the manufacture of crockery and porcelain. Kaolin, an amorphous powder composed of silica and oxids of aluminum, iron and magnesium is almost insoluble in water and organic fluids. Hayem first employed it in 1915 as a substitute for bismuth subnitrate in a case of gastric ulcer. Favorable results were obtained and he extended its use to all conditions for which he had usually prescribed bismuth subnitrate, especially for the relief of gastralgia. If thoroughly cleansed, kaolin has no pronounced taste, and it can be employed mixed with water without a corrective. Still, to avoid loathing or a disagreeable sensation of taste, the kaolin may be made aromatic by adding to each 40 gm. one drop of essence of anise or six drops of essence of mint. It should be noted that Prof. J. Stumpf of Würzburg once recommended finely powdered kaolin for the treatment of acute and chronic intestinal infections, especially cholera. According to him, the remedy acts in a purely mechanical fashion by encompassing the microorganisms in some way and preventing their further multiplication.

Mouth Washes and the Tax on Pharmaceutic Specialties

By an act of Dec. 30, 1916, a tax was imposed on pharmaceutic specialties for which curative and prophylactic properties are claimed. This means that the tax in question does not apply to toilet preparations, such as mouth washes. But this is, however, not true if the manufacturer or merchant attributes therapeutic or prophylactic virtues to the mouth wash. Thus a perfumer was prosecuted in the court at Riom for selling a bottle of proprietary mouth wash without the tax stamp. The court had acquitted the merchant on the basis that as the product was a mouth wash, it came under the class of toilet specialties and not of pharmaceutic specialties. The representative of the bureau of indirect taxes carried the case to the court of appeals on the ground that the bottle was wrapped in a circular which announced that the mouth wash was a remedy for caries and toothache, whereupon the court ruled that the merchant had violated the law of 1916 by advertising the product as a therapeutic substance.

Honorable Distinction to the Faculty of Medicine of Nancy

The French government has recently directed public attention to the noble conduct of the personnel of the faculty of

medicine of Nancy (the teaching personnel, nurses and employees) who, for the entire duration of hostilities, at a short distance from the front, successfully continued its work with the limited resources left after military mobilization, united by a common spirit of solidarity for teaching as well as for the care of military and civil victims in the hospitals under its charge. Despite the repeated dangers to which Nancy was exposed, especially in 1918, at a time when by order of the government all universities should have been closed, the medical school remained open because of its obligations to the hospitals, thereby setting an example of constant energy, of cool courage and of the modest performance of daily duty.

The Evolution of Pathology and Medicine

In a series of books, "Les sciences d'aujourd'hui," under publication by Masson et Cie, there is a very interesting work on medicine by Prof. H. Roger, dean of the Paris medical faculty. The introductory paragraph contains a very accurate definition of medicine: "a science in its methods of study, an art in its applications." Both phases are the subjects of instructive discussion, touching on all that which might be called the philosophy of medicine and which may well merit the attention of all physicians.

Because of their originality, several chapters are worthy of special mention: those dealing with the evolution of pathology and with the evolution of medical science.

In his study of the evolution of pathology, Roger shows that certain diseases tend to decrease in frequency and to become confined to certain regions; it may be hoped that they will disappear entirely before long. Leprosy furnishes the most striking example: in the thirteenth century, there were 19,000 leprosariums in Europe, 2,000 in France alone. Today, leprosy is localized to a few countries, while in France only sporadic cases are found near Marseilles and Nice. On the other hand, there are diseases which appeared at a certain epoch and which do not seem destined to disappear so soon. The eruptive fevers, for instance, originated in the sixth century, and cerebrospinal meningitis was unknown until the nineteenth century. Devastating epidemics were preceded by cosmic disturbances, by great variations in temperature and pressure or by earthquakes. Virchow once hoped that a thorough study of these various causes would lead to reliable prediction of the imminence of epidemics, analogous to meteorologic forecasts. But what is even more interesting is the influence of social conditions on the change in pathology. Thus, industrial progress has greatly increased poisonings from adulteration; by extending its fields of activity, industry has also increased the varieties of occupational poisoning, although various prophylactic measures have succeeded in reestablishing the equilibrium by reducing the frequency of these accidents.

Proceeding from the point that the social condition of a country influences the morbid reactions and has a special effect on psychopathic manifestations, Roger wonders what influence the war will exercise on the insanities. It is probable, he says, that a profound change will be effected: the war has wiped out our old utopias and has developed the sense of realities. Men will no longer be solicitous for position and honor but they will pursue pleasure and riches with much greater brutality. The present agitations and the new difficulties of existence will certainly have their effect on us and they will lead to another evolution of the psychopathies.

On the other hand, after tracing the historic evolution of science, Roger arrives at the conclusion that this has profoundly modified the traditional methods of medicine. In times past, diagnosis was based on very simple methods of examination, and therapeutics consisted of pharmaceutic prescriptions; today certain delicate diagnoses require complex procedures and explorations which demand special installations. Roger forecasts, therefore, that sooner of later diagnostic establishments will be organized where persons with chronic diseases, overworked and even well subjects will stay for several days, and on a case history card will be recorded the functional condition of each organ. It will also be easy to give such advice on diet and hygiene as is advisable and to point out prophylactic measures necessary to avoid menacing danger.

Exchange of Professors

Exchange of professors with foreign universities, for a long time practiced by the Faculté des lettres de Paris is gradually extending to the other faculties. Thus the council of the University of Paris has recently approved a course in the law school by M. André Mercier, dean of the faculty of Geneva. On this point the *Gazette des hôpitaux* says that there is every reason to hope that the medical faculty, under the active impulsion of the dean, Professor Roger, will soon enter into exchange relations with English and American universities.

Faculty Appointments

Doctor André Broca, agrégé, has been appointed professor of medical physics of the Paris medical faculty, succeeding Professor Weiss, recently appointed dean of the medical faculty of Strasbourg.

Student Welfare

The University Society for Student Welfare recently held a meeting at the Sorbonne under the presidency of M. Appel, rector of the University of Paris. The society is designed to give material and moral support to all students who may feel in need thereof. Various lines of activity have been proposed: the establishment of numerous student centers (foyers); the organization of a service of information, intelligence and medical assistance; the consolidation of extant associations and houses for students, and similar measures.

Consulting Medical Commission of the Aviation Service

There has recently been appointed by the undersecretary of the state for aviation a consulting medical commission, with instructions to publish a scientific program of research for the medical section of the technical service of aviation, to assure the necessary scientific authority to medical measures submitted for the approval of the undersecretary of state, and in a general way to decide all related questions such as the testing of physical fitness or the treatment of aviators. The commission under the presidency of Dr. Georges Guillain, includes Drs. Pierre Duval, André Broca, Camus, Crouzon and others.

Marriages

John Ignatius Wiseman, Baltimore, to Dr. Katherine Isabel Tate Slattery Fricka of Boston, April 24.

Guy Mannering Owsley, Thorntown, Ind., to Miss Charlotte M. Smith of Columbus, Ind., April 6.

Hilmar George Martin, Milwaukee, to Miss Grace A. Waring of Washington, D. C., April 27.

Thomas Dugan Baxter, Chilton, Texas, to Miss Eunice Lotridge of Nashville, Tenn., April 14.

Harry Jay Pittock to Miss Maude Mae Burgoon, both of Hastings, Neb., May 12.

Walter L. Drewry to Miss Esse C. Morris, both of El Paso, Texas, April 18.

Charles Klaus Stulik to Miss Zdenka Spatney, both of Chicago, May 10.

Daniel Leonard Golann to Miss Ethel Block, both of Brooklyn, May 8.

Deaths

Lindon Bulkley Cady, New York City; Columbia University, College of Physicians and Surgeons, New York City, 1914; aged 31; a member of the Medical Society of the State of New York; assistant surgeon, U. S. N. R. F., and relieved from active duty April 10, 1919; clinical assistant in the New York Skin and Cancer Hospital; died in St. Luke's Hospital, New York City, May 13, two days after a surgical operation.

Edward Sealy, Newark, N. J.; Bellevue Hospital College, 1884; aged 71; a member of the Medical Society of New Jersey; attending physician to the Home for the Friendless, Newark; attending surgeon, throat department, New York Eye and Ear Infirmary, and senior surgeon to the Hospital for Women and Children, Newark; died in that institution, May 11, from cerebral hemorrhage.

Charles Lee King ⊕ Pasadena, Calif.; Chicago Medical College, 1880; aged 66; once secretary of the Los Angeles County Medical Society, and president of the Pasadena Branch of the Los Angeles County Medical Society; for three years medical superintendent of the Alma (Mich.) Sanitarium; president of the Pasadena Y. M. C. A. from 1915 to 1918; died, May 5.

Arthur Ellison Midgley ⊕ Whitewater, Wis.; University of Illinois, Chicago, 1904; aged 41; lieutenant-colonel, M. C., U. S. Army, and discharged Sept. 23, 1919; cited for bravery by his divisional commander and General Pershing, April 19, 1918; died, May 20, from the effects of a gunshot wound of the heart, self-inflicted, it is believed, with suicidal intent.

James Lindsey Porteous ⊕ Yonkers, N. Y.; L.R.C.P. and S. (Edin.), 1867; M.R.C.P. (Edin.) 1878; F.R.C.S. (Edin.), 1879; consulting surgeon to St. Joseph's Hospital; a fellow of the New York Academy of Medicine, and formerly vice president of the Westchester County Medical Society; aged 78; died, May 13.

Rudolph R. Seidel, Bedford, Ohio; Western Reserve University, Cleveland, Ohio, 1893; aged 52; a member of the Ohio State Medical Association; who was struck by an interurban car in Bedford, April 21, suffering a fracture of the skull; died in St. Alexis Hospital, Cleveland, May 5.

William Joseph Dismuke ⊕ Ocilla, Ga.; University of Georgia, Augusta, 1901; aged 48; a member of the Georgia Surgeons Club; local surgeon for the Seaboard Air Line, and general surgeon for the Ocilla Southern Railroad; died, May 13, following an operation for appendiceal abscess.

Archibald Haas, Chicago; Bennett Medical College, Chicago, 1882; College of Physicians and Surgeons, Chicago, 1886; aged 70; died, May 22, from the effects of a gunshot wound, self-inflicted, it is believed, with suicidal intent, while despondent on account of ill health.

Charles Edwin Boddiger ⊕ Chicago; College of Physicians and Surgeons, Chicago, 1893; aged 52; captain, M. R. C., U. S. Army, and discharged Dec. 14, 1918; who was operated on for glioma of the brain, March 10, died in Wesley Memorial Hospital, Chicago, May 22.

Thomas Henry Landor ⊕ Canton, Ohio; McGill University, Montreal, 1884; aged 57; contract surgeon, and captain and assistant surgeon, U. S. V., from 1898 to 1908, with service in the Philippine Islands; died, May 6, from hypertrophy of the liver, and gastric ulcer.

Waldemar F. Lungerhausen, Mount Clemens, Mich.; University of Pennsylvania, Philadelphia, 1897; aged 42; a member of the Michigan State Medical Society and president of the Macomb County Medical Society; died, May 1, from cerebral hemorrhage.

William Addison Elrod, Albertville, Ala.; University of the South, Sewanee, Tenn., 1900; aged 50; a member of the Medical Association of the State of Alabama; died in Gadsden (Ala.) General Hospital, May 7, a week after a surgical operation.

Francis C. Maloney, Avilla, Ind.; Charity Hospital Medical College, Cleveland, 1866; aged 75; a member of the Indiana State Medical Association; died in Sacred Heart Hospital, Garrett, Ind., May 4, a few days after a surgical operation.

Jacob Prinzing ⊕ Nampa, Idaho; University of Minnesota College of Medicine, Minneapolis, 1901; aged 44; lieutenant, M. R. C., U. S. Army, with service at Camp Lewis, Wash., and discharged Jan. 23, 1919; died, May 7, from acute peritonitis following an operation for gastric ulcer.

Persis White, Winnetka, Ill.; Northwestern University Woman's Medical School, Chicago, 1894; for eight years resident physician at the North Shore Health Resort, Winnetka; died, May 20, in St. Mary's Hospital, Rochester, Minn.

Dewitt C. Joyner, Memphis, Tenn. (license, Arkansas); aged 71; a practitioner since 1861, and for more than half a century a practitioner of Mississippi County, Ark.; surgeon in the Confederate service during the Civil War; died, May 5.

Charles Milo Holcomb, Seattle; Jefferson Medical College, 1887; aged 60; a member of the Washington State Medical Association; died in the Seattle General Hospital, May 3, two days after a surgical operation.

Harvey Gilbert, Bay City, Mich.; New York Homeopathic Medical College, New York City, 1874; aged 73; at one time coroner of Bay County and health officer of Bay City; died, May 2, from cerebral hemorrhage.

Alzine M. Castlebury, Williamsport, Pa.; Woman's Medical College of Pennsylvania, Philadelphia, 1892; a member of the Medical Society of the State of Pennsylvania, aged 61; died, April 24, from rheumatism.

Warren Randall Gilman ⊕ Worcester, Mass.; Harvard University Medical School, 1888; aged 58; for many years a member of the staff of the Worcester City and Worcester Memorial hospitals; died, May 2.

Alwin Hugo Schwab ⊕ Brooklyn; College of Physicians and Surgeons in the City of New York, 1890; aged 52; while making a professional call, May 15; died from heart disease in the home of the patient.

William Allen Stallworth, Beatrice, Ala.; Medical College of Alabama, Mobile, 1893; aged 52; a member of the Medical Association of the State of Alabama; died, April 3, from carcinoma of the throat.

Malin Burdett Shaw, Eden Center, N. Y.; University of Buffalo, 1866; Bellevue Hospital Medical College, 1874; aged 80; health physician of the town of Eden; died, May 2, from organic heart disease.

James B. Shaw, Sheridan, Ark.; University of Nashville, Tenn., 1882; aged 72; a member of the Arkansas Medical Society; president of the Grant County Medical Society in 1913; died, March 23.

Valentine Winters Anderson, Dayton, Ohio; Louisville (Ky.) National Medical College, 1900; Michigan College of Medicine and Surgery, Detroit, 1904; died, May 10, from cerebral hemorrhage.

John William Voss, Beverly, Mass.; University of Pennsylvania, Philadelphia, 1894; aged 53; captain, M. R. C., U. S. Army, and discharged Dec. 11, 1918; died, May 10, from heart disease.

Charles F. Cushing, Elyria, Ohio; Western Homeopathic College, Cleveland, 1861; aged 90; for many years a member of the staff of Elyria Memorial Hospital; died, May 3, from pneumonia.

Harl L. Gee, Mount Vernon, Ill.; Washington University, St. Louis, 1898; aged 45; a member of the Illinois State Medical Society; died, April 26, from pulmonary tuberculosis.

W. E. Newcombe, North Vancouver, B. C.; McGill University, Montreal, 1901; acting medical health officer of Vancouver; died, March 9, from pneumonia following influenza.

James Edward Earle Nelles, Oak Park, Ill.; University of Illinois, Chicago, 1907; aged 35; who served with the Canadian Army Medical Corps in England; died, March 12.

Herbert Harris, North Syracuse, N. Y.; Chicago Medical College, 1866; aged 80; for many years a practitioner of Hinsdale, Mich., and Skaneateles, N. Y.; died, May 1.

William H. Wells, Buckingham, Ill.; University of Louisville, Ky., 1883; aged 66; a member of the Illinois State Medical Society; died, April 30, from chronic bronchitis.

Horace M. White, Philadelphia; Jefferson Medical College, 1861; aged 82; a practitioner of dentistry since 1869; died, May 4, from septicemia following a carbuncle.

James B. Patterson, Rockford, Ill.; Jefferson Medical College, 1862; aged 80; who fell March 2, fracturing his hip, died from senile myocarditis, April 2.

Thomas G. McPherson, Beaver Falls, Pa.; Western Homeopathic College, Cleveland, 1864; aged 82; died, May 9.

Frank C. Seeley, Algona, Iowa; University of Michigan, Ann Arbor, 1874; aged 73; died, April 27.

⊕ Indicates "Fellow" of the American Medical Association.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

HOSTETTER'S BITTERS

"Hostetter's Celebrated Stomach Bitters" contains 25 per cent. alcohol. So far as is shown by a careful investigation made by the A. M. A. Chemical Laboratory, the amount of this nostrum that can be taken is limited only by the individual's capacity for alcohol! The label, as the law requires, declares the presence of 25 per cent. alcohol; that is, "Hostetter's Bitters" is one half the strength of "straight" whisky. The recommended daily dose is six tablespoonfuls (3 ounces). This means that a person taking Hostetter's Bitters—strictly according to directions—gets as much alcohol daily as would be obtained from nearly two bottles of beer (alcohol strength 3½ per cent. by volume) or from 1½ ounces of "straight" whisky.

The alcohol content of Hostetter's Bitters seems to have been a variable quantity. As long ago as 1878 the question of the beverage use of this nostrum in Alaska was under consideration by the Internal Revenue Department. A letter from the Commissioner of Internal Revenue at that time stated that Hostetter's Bitters was sometimes sold by the glass by retail liquor dealers and also sold "by the drink" in saloons in Sitka. In January, 1883, the Treasury Department notified the Collector of Customs at Sitka that, in its opinion, Hostetter's Bitters "should be excluded from Alaska under the executive order of Feb. 4, 1870, forbidding the importation of distilled spirits into that territory."



Miniature reproduction of one of the educational posters prepared by the Propaganda Department of THE JOURNAL. In the originals, which measure 22 by 28 inches, the bottles and glass are reproduced natural size.

In THE JOURNAL of Sept. 8, 1883, there was published in full a long communication from the Office of Internal Revenue addressed to the manufacturers of Hostetter's Bitters, in a reply to their question as to whether or not it was necessary for the retailers of the "Bitters" to take out a special license for its sale. The Internal Revenue officials declared that a chemist in the Department of Agriculture had analyzed Hostetter's Bitters and had reported finding 32 per cent. alcohol—whether by weight or volume was not stated—64 per cent. water and 4 per cent. of extracts. The chemist reported further that the stuff was "flavored with various essential oils, as oil of anise, coriander, etc., and contains some vegetable bitters, such as gentian, cinchona, etc." The chemist very naturally declared that Hostetter's Bitters contained much more alcohol than was necessary to hold the other ingredients in solution. Commenting on this analysis, the Commissioner of Internal Revenue said:

"Containing, as it does, no deleterious drugs and only 4 per cent. of anything like a drug, I should probably be entirely justified in deciding outright that one who sells it for any purpose is a retail liquor dealer. . . ."

The Commissioner admitted, however, that the case was complicated by the fact that for many years the government had "classified the preparation as a proprietary medicine and collected stamp tax upon it." As a result, the Commissioner said that he would not decide at that time whether in the abstract Hostetter's Bitters was a medicine or not. For, said he:

"Should I hold it to be a medicine, I should probably do violence to an almost irresistible tendency of the mind to conclude that no genuine medicine needs so much whisky and so few drugs in it, unless under very unusual circumstances. On the other hand, should I decide that it is no medicine at all, I would be confronted by a ten-years' *quasi* recognition by this office to the contrary, as well as by the practice of many people who use it as such."

The upshot of this case was that the Commissioner decided to "let the use give character to it"; when the stuff was, apparently, sold as a *bona fide* medicine no action would be taken; when it was sold to be drunk as an intoxicating beverage the seller would be taxed accordingly. The Commissioner's letter closed with the statement:

"This seems to me to be the true rule, and an article containing so little that is even nominally medicinal as yours does ought and will be subject to very close scrutiny as to its use."

In 1906, the state chemists of North Dakota reported that their analysis showed Hostetter's Bitters to contain 43 per cent. of alcohol by volume, with only 4½ per cent. of total solids, and the chemists reported that the principal portion of the total solids was sugar.

In 1907, after the Food and Drugs Act went into force, and the amount of alcohol had to be declared on the label, Hostetter's Bitters for a time contained 39 per cent. alcohol, the label reading in part:

"Averaging thirty-nine per cent. of alcohol by volume in finished product, being only sufficient to hold in solution the extracted medicinal properties of barks, roots, herbs and seeds contained therein."

Later, the amount of alcohol was reduced to 25 per cent. and the labels were changed to read, as they read today:

"Averaging twenty-five per cent. of alcohol by volume in finished product, being only sufficient to hold in solution the extracted medicinal properties of barks, roots, herbs and seeds contained therein."

In 1914, the state chemists of Connecticut analyzed the nostrum and reported finding nearly 25 per cent. of alcohol, a small amount of quinin and about 4½ per cent. of solids "all but 0.8 per cent. of which is sugar."

The kind and quantities of drugs (other than alcohol) in Hostetter's Bitters have, so far as we know, never been divulged, to the consumers at least, by the manufacturers. Formulas purporting to represent the composition of this nostrum had variously given, as some of the ingredients, gentian root, blessed thistle, cinchona bark, calamus root, colombo root, orange peel, rhubarb, cinnamon and cloves.

In April, 1920, the A. M. A. Chemical Laboratory completed an analysis of Hostetter's Bitters. The complete details of analysis will, as usual, be published in the Annual Reports of the Laboratory. The essential part of the report follows:

LABORATORY REPORT

"The specimen of Hostetter's Stomach Bitters examined was a pale amber-colored liquid having a bitter taste, a neutral reaction and an odor resembling a mixture of anise and orange flavors. The label declared the presence of 25 per cent. of alcohol but gave no further information concerning the composition of the preparation. The prepara-tion

is described, among other things, as 'a corrective and mild cathartic.' Alcohol was determined and 24.72 per cent. by volume was found. On evaporation the preparation gave 4.8 gm. of residue per 100 c.c. of which about 80 per cent. was cane sugar. The ash amounted to about 0.045 gm. per 100 c.c. The small percentage of ash excluded the presence in medicinal quantities of such purgative salts as magnesium citrate, magnesium sulphate and potassium sodium tartrate. Extraction of the faintly acidified solution with ether gave 0.023 gm. of ether extract per 100 c.c. This residue was of a pale greenish color and had a bitter taste suggestive of gentian. No active medicinal substances could be identified in this residue.

"The ether extract from 100 c.c. of the preparation was mixed with milk sugar and swallowed by a healthy man without producing any symptoms. This demonstrated the absence of appreciable amounts of podophyllum, scammony and jalap.

"Iodids, bromids, heavy metals, emodin-bearing (laxative) drugs, and phenolphthalein were absent. Traces of tannin were found. A mixture of alkaloids was present in which quinin and cinchonidin were identified. This, together with the occurrence of tannin, suggested the probable presence in Hostetter's Stomach Bitters of extractives from cinchona. The total alkaloids amounted to 0.167 gm. per 100 c.c. or about ¾ grain per fluid ounce. With the exceptions of the alcohol and the cinchona alkaloids no other physiologically active ingredient was found.

"Six fluid ounces of the preparation (6 doses) were dealcoholized, the solution evaporated, the residue mixed with milk sugar, the mixture placed in capsules and the capsules swallowed at one dose by a healthy man. No effects were noted.

"From the results of the examination it is evident that alcohol is by far the most active ingredient in Hostetter's Stomach Bitters. The preparation is probably a hydro-alcoholic extract of small quantities of cinchona and possibly small amounts of other relatively inactive drugs. The analysis failed to reveal the presence of any drugs in quantities which would prevent the preparation being used as a beverage."

It is obvious from the analysis just given that, as stated at the outset of this article, the use of Hostetter's Bitters as a beverage is, apparently, limited only by the individual's tolerance for alcohol. One point is worth attention: Hostetter's Stomach Bitters has for a good many years been recommended for malaria among numerous other conditions. The A. M. A. chemists found small quantities of quinin and cinchonidin present. In order to get a daily dose of quinin equal to 15 grains, the minimum amount the Pharmacopeia recommends as an antimalarial, it would be necessary to take nearly twenty ounces of Hostetter's Bitters daily. This would necessitate swallowing an amount of alcohol equivalent to about 10 ounces daily of "straight" whisky.

Many of our readers will remember THE JOURNAL'S reference to an episode that occurred three years ago. The Baltimore *Sun* of Feb. 24, 1917, carried a news item from Danville, Va., to the effect that the police in that town had had to deal with a large number of "drunks" each of whom admitted that he became intoxicated on "a certain proprietary medicine which contains 25 per cent. alcohol." A telegram from THE JOURNAL to the Chief of Police of Danville asking for the name of the proprietary medicine in question, brought the laconic reply "Hostetter's Bitters."

During the recent past several nostrums of the alcohol type have markedly modified their formulas. "Vinol," which used to contain 18 per cent. alcohol, now contains 10 per cent. "Manola," which used to contain 18 per cent., now contains 15 per cent.; "Peruna," which long contained 20 per cent. alcohol, now contains 12. "Wine of Cardui," which also for years contained what the manufacturers declared was the irreducible minimum of 20 per cent., now contains 10. "Warner's Safe Cure," put out by a concern that used to be what was practically a subsidiary company to a distilling concern, for years had 15.5 per cent. alcohol; it is now nonalcoholic. The motives that brought about these changes are unimportant; the facts are the vital elements. Whether some of these manufacturers have received hints from the Internal Revenue Department, whether the increased cost of alcohol or whether both have been responsible for the modifications, we do not know.

Whatever may have been the cause, or causes, of the changes in the case of the products just mentioned, they do not seem to have operated in the case of Hostetter's Bitters. To this fact we respectfully direct the attention of the Internal Revenue Department.

Correspondence

INDICATIONS FOR OPENING THE DRUM IN ACUTE MIDDLE EAR INFECTIONS

To the Editor:—In the main, I am in agreement with the views set forth by Dr. L. E. La Fétra in his article on "Acute Middle Ear Infection in Children" (THE JOURNAL, May 1, 1920, p. 1222). But I must question his judgment regarding the indications for incision of the membrana tympani. Dr. La Fétra states that when the temperature is high, pain acute and the bulging marked, he deems it best to incise the drum. Further, he says that the infrequency of mastoid involvement and other complications, and the very satisfactory results of conservative treatment are his justification for awaiting further indications than those of the day of onset. Again, he states that if tenderness elicited by pressure on the tragus increases, if there is tenderness of the tip of the mastoid and the temperature remains high after twenty-four hours and the bulging persists, incision is necessary.

The incision of the drum—especially in a young child—is indicated, according to my experience, which is not a small one both in public and in private practice, if there is bulging, notwithstanding the absence of pain or abnormal temperature. There is another indication besides the danger of the involvement of the mastoid, etc., for freeing the exudate from the drum cavity when the drum is bulging, namely, the preservation of the hearing function. I have seen rosy-cheeked children who were cheerful, took their food, were playful and slept well, with the drum cavity full of pus. In some cases the disease was discovered in the routine of a general examination, because the child did not thrive.

To leave ears alone because of the absence of pain and abnormal temperature is to invite disaster, especially in measles and scarlet fever. The hearing function has been destroyed without the presence of pain or abnormal temperature; chronic suppuration of the middle ear has followed without pain or fever, or both. The tympanic structures in a child are soon destroyed. Owing to the exceedingly thin covering of the inner wall of the tympanum with periosteum, the lower portion of the promontory especially is very poorly protected. I have frequently heard the statement from intelligent general practitioners that as there was no pain or high temperature there was no occasion for examining the ears. I have seen mastoids destroyed without pain in the adult. In tuberculous subjects, young or old, there is little or no pain. In infection with *Streptococcus mucosus,* pain may be absent, with little or no rise of temperature.

In some cases the process is fulminating, so that no time should be lost in evacuating the tympanic contents. In other words, it is absolutely impossible to tell what is going to happen to a bulging drum. Furthermore, it is only the well-to-do who can afford to have unremitting attention paid to their condition, or those in a hospital; and if the intern or the attending physician is too busy to watch these patients carefully, valuable time may be lost. Therefore, while patients with bulging drums may recover by conservative treatment, the end-result may not also be good, for this exudate may cause adhesions, and if it involves the region of the round and oval windows, serious impairment of hearing may ensue. I have tried conservatism, but I feel that prompt action has given more satisfactory results than the

awaiting of the prolongation of the symptoms. The drum may rupture spontaneously, and this is to be avoided, as a sloughed opening is not as desirable as an incised one, although the spontaneous opening may be widened. One must consider that before the opening is sloughed open, damage is being done to the interior of the tympanum.

EDWARD L. MEIERHOF, M.D., New York.

PRIORITY IN SUGGESTING TRANSILLUMINATION FOR FOREIGN BODIES

To the Editor:—In THE JOURNAL, Sept. 6, 1919, p. 766, there was published a clinical note on "The Removal of Foreign Bodies from the Tissues by the Use of Transillumination," by A. G. Bettman, M.D., Portland, Ore. The method is not new. I described it in the *Medical Record,* Nov. 4, 1911, under the heading: "Transillumination in Locating Foreign Bodies in the Extremities."

MORRIS H. KAHN, M.D., New York.

REVERSAL OF THE LYMPH CIRCULATION IN SURGICAL DRAINAGE

To the Editor:—Exception has been taken by several writers to the expression "reversal of the lymph circulation" used in my article on "Surgical Drainage from a Biologic Point of View" (THE JOURNAL, Jan. 17, 1920, p. 159). The term was used to describe what appears to be the chief biologic process by which drainage acts beneficially in solid soft tissue and in endothelial cavities.

The words "reversal of the lymph circulation" may not have been happily chosen, but I know no other phrase that would be quite as satisfactory. I fully appreciate the impossibility of any real reversal of blood circulation, and in other communications I have attempted to demonstrate that a vein and its contributing branches would not function as an artery when an arterial current is turned into the vein (Horsley and Whitehead: THE JOURNAL, March 13, 1915, p. 873; Horsley: *Annals of Surgery,* March, 1916, p. 277). It was at one time, however, rather generally held that the blood circulation could be reversed in this manner.

The phrase "reversal of the lymph circulation" is not intended to mean reversal in the physiologic sense, that is, change in the direction of the lymph current within its normal channels. Surgical drainage is not a physiologic but a pathologic process. Lymph or serum is continually poured around an offending foreign body until the foreign body is removed. This lymph comes partly from the injured lymph channels and lymph spaces in the tissues and partly through the uninjured walls of the lymph channels, which become more permeable with the hyperemia that is present when surgical drainage is necessary.

These are facts that are largely self evident. The moot point is whether this process can be called reversal of the lymph circulation. This phrase was used because it seems to me that the current of lymph or serum continually poured out to the surface of the skin for days or weeks constitutes in a sense a circulation of lymph. This current, if it rises to the surface of the body and appears on the skin or mucous membrane, is not in the direction of any known normal lymph current and probably is a reversal, or at least a deflection, of the direction of the adjoining normal lymph currents. Then, too, this phrase seems to emphasize a phenomenon that many surgeons apparently ignore. The phrase "outpouring of lymph" occurred to me, but this suggests an almost instantaneous process, or at least one that covers a very short space of time.

It may also be objected that "lymph" is used in rather a loose sense. I have employed it as indicating the thin, clear fluid that is found in the lymph channels and spaces of the body and that infiltrates the tissues in edema. In order to describe the phenomena of surgical drainage, it appears to be necessary to use the words lymph or serum to indicate such fluids.

J. SHELTON HORSLEY, M.D., Richmond, Va.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

DECOLORIZATION OF HAINES' SOLUTION—DIFFERENTIATION OF PUS CELLS FROM LEUKOCYTES IN URINE

To the Editor:—1. Will you kindly tell me what it is in the urine that takes all of the blue color out of a Haines test solution—that is, makes it clear like water Two weeks ago the urine of a woman was heavily loaded with sugar. Under diet there is now no sugar, but 10 drops in a dram of Haines' solution takes out all the color, as stated.

2. In a report sent out by an insurance company to its policy holders on the microscopic examination of urine, there are two blank spaces. One space is for leukocytes, and the other for pus cells. The report may read "leukocytes none," "pus cells few." I wish you would tell me how the different kinds of white cells can be made out in a urinary examination?

JAMES L. TRACY, M.D., Toledo, Ohio.

ANSWER.—1. In the use of Haines' or other copper test solutions, the presence of sugar is denoted by the formation of a yellow or reddish precipitate of cuprous oxid. The extent of the precipitate is partly dependent on the amount of sugar in the urine used. In some cases, in which the sugar is low in amount, only slight precipitation is evident; but some precipitation of the cuprous oxid should be noted in the presence of sugar. Mere decolorization of the copper solution is in no way indicative of the presence of sugar. This decolorization is observed with urines showing an excess of creatinin, uric acid, conjugated glycuronates, and certain preservatives. However, if these substances are present in large amounts, typical precipitation of the cuprous oxid may occur. A direct answer, therefore, to the first question would be that the decolorization of the Haines' solution was due to excess of creatinin, or uric acid, or to conjugated glycuronates if the patient has been taking some drug which is excreted in the urine as a conjugated glycuronate.

2. Concerning the differentiation of pus cells from leukocytes in a urinary sediment, it is to be said that this rests largely on the number and appearance of the cells in question. Practically every specimen of urine shows occasional scattered white cells, but these are not to be dignified by the term "pus cells" unless present in appreciable numbers, many of which are grouped in clumps. The true leukocytes show, when stained, a well-defined nucleus and granulations, while the pus cell exhibits an irregular, granular, degenerated nucleus owing to the lysis that is occurring in the cell. As a rule, a few cells in the sediment are reported as leukocytes rather than as pus cells, being given the latter name only when present in number. As the usual pus cell corresponds to the polymorphonuclear leukocyte, staining methods must be resorted to in order to bring out the character of the nucleus and the granular bodies, both of which characteristics are not clearly shown in pus cells, as stated above. In the usual run of urinary examinations this procedure is not followed, as the number and grouping of the white cells is ordinarily sufficient to permit a diagnosis.

STERILIZATION OF CYSTOSCOPES AND URETERAL CATHETERS

To the Editor:—Kindly send formula for the sterilization of cystoscopes and ureteral catheters.

A. H. WINKEL, Three Forks, Mont.

ANSWER.—Although instruments composed entirely of metal, or of both metal and glass, or of soft rubber can be sterilized without injury by boiling for from one to three minutes in water or better a 2 per cent. solution of sodium carbonate to prevent tarnishing, preference, in the case of cystoscopes is given to immersing the instrument before use in 5 per cent. phenol solution for from ten to fifteen minutes. Formaldehyd gas is also used but unless whatever is exposed to its action is left in the open for a little while before use, irritation is likely to result with unpleasant consequences to the patient; therefore, the phenol solution is given preference. Ureteral catheters may be boiled unless made of woven fabric in which case they, too, should be immersed in the phenol solution.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA: Montgomery, July 13. Chairman, Dr. S. W. Welch, Montgomery.
ARIZONA: Phoenix, July 6-7. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.
CALIFORNIA: San Francisco, June 28-July 1. Sec., Dr. Chas. B. Pinkham, 135 Stockton St., San Francisco.
COLORADO: Denver, July 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.
CONNECTICUT: Hartford, July 6-7. Sec., Regular Board, Dr. Robert L. Rowley, 49 Pearl St., Hartford.
CONNECTICUT: New Haven, July 13. Sec. Eclectic Board, Dr. James Edwin Hair, 730 State St., Bridgeport. Sec. Homeo. Board, Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.
DELAWARE: Wilmington, June 15-17. Pres. Medical Council, Dr. H. W. Briggs, 1026 Jackson St., Wilmington.
DISTRICT OF COLUMBIA: Washington, July 13-15. Sec., Dr. Edgar P. Copeland, The Rockingham, Washington.
FLORIDA: Eclectic Board, Jacksonville, June 18-19. Sec., Dr. G. A. Munch, 1306 Franklin St., Tampa.
FLORIDA: Regular Board, Jacksonville, June 14-15. Sec., Dr. Wm. M. Rowlett, Citizens Bank Bldg., Tampa.
GEORGIA: Atlanta, June 9-11. Sec., Dr. C. T. Nolan, Marietta.
ILLINOIS: Chicago, June 14-17. Director, Mr. Francis W. Shepardson, Springfield.
IOWA: Iowa City, June 16-18. Sec., Dr. Guilford H. Sumner, Capitol Bldg., Des Moines.
KANSAS: Topeka, June 15-16. Sec., Dr. H. A. Dykes, Lebanon.
LOUISIANA: New Orleans, June 10-12. Sec., Dr. E. W. Mahler, 141 Elk Place, New Orleans.
MAINE: Portland, July 6-7. Sec., Dr. Frank W. Searle, 140 Pine St., Portland.
MARYLAND: Baltimore, June 15. Sec., Dr. J. McP. Scott, 137 W. Washington St., Hagerstown.
MICHIGAN: Ann Arbor, June 8-10. Sec., Dr. B. D. Harrison, 504 Washington Arcade, Detroit.
MINNESOTA: Minneapolis, June 1-4. Sec., Dr. Thos. McDavitt, 539 Lowry Bldg., St. Paul.
MISSOURI: St. Louis, June 14-16. Sec., Dr. Geo. H. Jones, State House, Jefferson City.
NEBRASKA: Lincoln, June 9-11. Sec., Department of Public Welfare, Mr. H. H. Antles, Lincoln.
NEW JERSEY: Trenton, June 15-16. Sec., Dr. Alexander MacAlister, State House, Trenton.
NEW MEXICO: Santa Fe, July 12-13. Sec., Dr. R. E. McBride, Las Cruces.
NORTH CAROLINA: Raleigh, June 21. Sec., Dr. H. A. Royster, 423 Fayetteville St., Raleigh.
NORTH DAKOTA: Grand Forks, July 6-9. Sec., Dr. Geo. M. Williamson, 860 Belmont Ave., Grand Forks.
OHIO: Columbus, June 8-11. Sec., Dr. H. M. Platter, State House, Columbus.
OKLAHOMA: Oklahoma City, July 13-14. Sec., Dr. James M. Byrum, Mammoth Bldg., Shawnee.
OREGON: Portland, July 6. Sec., Dr. Urling C. Coe, 1208 Stevens Bldg., Portland.
PENNSYLVANIA: Philadelphia and Pittsburgh, July 6-10. Sec., Dr. Thos. E. Finnegan, State Capitol, Harrisburg.
RHODE ISLAND: Providence, July 1-2. Sec., Dr. Byron U. Richards, State House, Providence.
SOUTH CAROLINA: Columbia, June 22. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.
SOUTH DAKOTA: Deadwood, July 13. Sec., Dr. Park B. Jenkins, Wanbay.
TENNESSEE: Memphis, Nashville and Knoxville, June 11-12. Sec., Dr. A. B. DeLoach, 1001 Exchange Bldg., Memphis.
TEXAS: Galveston, June 22-24. Sec., Dr. Thos. J. Crowe, Trust Bldg., Dallas.
UTAH: Salt Lake City, July 5-6. Sec., Dr. G. F. Harding, 405 Templeton Bldg., Salt Lake City.
VERMONT: Burlington, June 29-July 1. Sec., Dr. W. Scott Nay, Underhill.
VIRGINIA: Richmond, June 22-25. Sec., Dr. J. W. Preston, McBain Bldg., Roanoke.
WASHINGTON: Seattle, July 6-8. Sec., Dr. Wm. M. O'Shea, 305 Old National Bank Bldg., Spokane.
WEST VIRGINIA: Charleston, July 13. Sec., Dr. S. L. Jepson, Masonic Bldg., Charleston.
WISCONSIN: Milwaukee, June 29-July 1. Sec., Dr. John M. Dodd, 220 E. Second St., Ashland.
WYOMING: Cheyenne, June 7-9. Sec., Dr. J. D. Shingle, Cheyenne.

COOPERATION OF MEDICAL AND NURSING ORGANIZATIONS FOR THE SOLUTION OF NURSING PROBLEMS

The American Conference on Hospital Service at its meeting in Chicago, March 2, 1920, appointed a committee of seven, each representing a medical or nurse organization, to investigate causes of the shortage of nurses and to offer constructive criticism of present methods of training nurses. Physicians and nurses are asked to give the committee the benefit of their answers or opinions on any or all of the following questions:

(1) What is your opinion of the value of the three-year course for nurses connected with hospitals; the two-year course for nurses connected with hospitals; the high school prenursing courses; the Red Cross extension courses; short courses and correspondence nursing courses?

(2) Are the principles laid down in the nursing education in these courses right or wrong? If right, why does not present nursing education adequately meet the nursing need? If wrong, how should the training of nurses be made right?

(3) What use are the graduates of these various schools making of their training?

(4) What misuse are the graduates of these schools making of their training?

(5) What, if any, is the nurse wastage during training?

(6) What, if any, is the nurse wastage after finishing the course?

(7) What are some of the reasons for the shortage of nurses today?

(8) What suggestions can be made as to changes in the training which will make it efficient and yet not lower the nursing standard?

Replies should be sent to Louise M. Powell, Supt. School of Nursing, University Hospitals, Minneapolis, Minnesota. The answers will be classified and made a part of the committee's report to the American Conference on Hospital Service at its meeting in Montreal in October.

Wisconsin January Examination

Dr. John M. Dodd, secretary, Wisconsin State Board of Medical Examiners, reports the oral, written and practical examination held at Madison, Jan. 14-16, 1920. The examination covered 14 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 14 candidates examined, 13 passed and 1 failed. Six candidates, including 1 osteopath, were licensed by reciprocity. Twelve candidates were licensed by virtue of a commission in the Medical Corps. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Chicago College of Medicine and Surgery		(1916)	84
Northwestern University		(1918)	85
Rush Medical College		(1919)	83, 83
Harvard University		(1818)	88
Columbia University		(1918)	86
University of Pennsylvania		(1918) 80, (1919) 84,	88, 89
University of Vermont		(1888)	88
University of Vienna		(1910)	80.6
University of Wurzburg		(1909)	85
	FAILED		
Chicago College of Medicine and Surgery		*(1916)	76.5

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Rush Medical College		(1915)	Iowa
Jefferson Medical College		(1918)	Penna.
Meharry Medical College		(1918)	Tennessee
McGill University		(1903)	N. Dakota
University of Christiania		(1902)	N. Dakota

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Yale University		(1908)	U. S. Army
Rush Medical College		(1896), (1907)	U. S. Army
Northwestern University		(1905), (1910), (1915)	U. S. Army
University of Illinois		(1916)	U. S. Navy
Johns Hopkins University		(1917)	U. S. Army
National University of Arts and Sciences		(1913)	U. S. Army
University of Pennsylvania		(1911), (1917, 2)	U. S. Army

* Fell below 60 in one branch.

New Hampshire March Examination

Dr. Charles Duncan, secretary of the New Hampshire State Medical Board, reports the written examination held at Concord, March 11-12, 1920. The examination covered 8 subjects and included 80 questions. An average of 75 per cent. was required to pass. One candidate was examined and passed. Ten candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Columbia University		(1917)	80.6

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Hahnemann Med. Coll. and Hosp., Chicago		(1896)	Mass.
University of Kansas School of Medicine		(1918)	Kansas
Bowdoin Medical School		(1919)	Maine
Harvard University		(1895)	Mass.
Tufts College Medical School		(1911), (1914)	Mass.
Syracuse University		(1918)	New York
Jefferson Medical College		(1917)	Penna.
Woman's Medical College of Pennsylvania		(1901)	Penna.
University of Vermont		(1911)	Vermont

Book Notices

Practical Orthodontia. By Martin Dewey, D.D.S., M.D. Fourth edition. Cloth. Price, $5.50. Pp. 532, with illustrations. St. Louis: C. V. Mosby Company, 1919.

The first edition of this work appeared in 1914. The present—the fourth edition—presents a revision and considerable enlargement of the third edition. The additions consist largely in the description of additional forms of appliances and their use. The work is avowedly devoted to the idea of multiplicity of forms of appliances, rather than to the idea of standardization and the mastery of the most efficient instrument. The attempt is made to describe all forms of appliances and their application, with critical analysis of their applicability. The book will be of special interest to the general practitioner who is doing some work in this field.

Manual of Surgery (Rose and Carless) for Students and Practitioners. By Albert Carless, C.B.E., M.B., M.S. Colonel (Temp.), A. M. S. Tenth edition. Cloth. Price, $8. Pp. 1558. New York: William Wood & Co., 1920.

Five years have elapsed since the appearance of the ninth edition of this book. As with most standard textbooks now being issued, extensive revisions have been made, based on developments of the surgery of the war. Carless points out that the problem of determining the ultimate value in civilian work of the many methods introduced as war time emergencies has not been an easy one. There can be little question that some of these methods will pass away. He has thought best, however, to include in the present edition virtually all methods recently introduced. This, the author points out, has somewhat enlarged the size of the book, and thereby its price. The ninth edition contained 1,408 pages, while the tenth edition contains 1,558 and includes a large roentgenographic supplement. The book has however changed somewhat in form, the ninth edition having a page 9 by 6, the tenth edition, 8⅜ by 5⅝. New work has been added in three chief directions: treatment of infected wounds; compound fractures, and in making good the defects of war wounds.

Physical Reconstruction and Orthopedics. By Harry Eaton Stewart, M.D., Captain, Medical Corps, U. S. Army, Division of Orthopedics. Cloth. Price, $3.75. Pp. 275, with 64 illustrations. New York: Paul B. Hoeber, 1920.

This is a condensed manual with numerous well chosen illustrations designed to give expression to the author's ideas on these related subjects as developed from his experience in the gymnasium and in reconstruction work in the army. It tends naturally to the emphasis of massage, exercise and other forms of physiotherapy, and will be the more acceptable to those engaged in these and similar lines of work. Considerably more than half of the volume is devoted to orthopedics, briefly reviewing the usual orthopedic subjects and including fractures and dislocations of the long bones. A little more than one-half page is devoted to club-foot, and less than one-half page to congenital dislocation of the hip. Included in the congenital defects are rickets and coxa vara. From the orthopedic standpoint it is difficult to find just the yearning vacancy this volume will fill, as in its briefness it can only suggest treatment which no trained man needs and no untrained man can safely follow.

Précis de riochemie. Par E. Lamhling, Professeur à la Faculté de Médecine de l'Université de Lille. Second edition. Paper, Price, 15 francs net. Pp. 708. Paris: Masson et Cie, 1919.

This edition of Lambling's Biochemistry has been entirely rewritten, and has been brought fairly well up to date. The new discussions include, among other points, a rather complete outline of the colloidal state and its influence on physiologic processes; chemical specificity of the tissues; formation of biliary calculi; the comparative alimentary value of proteins and the special nutritive rôle of the amino-acids; glycolysis; the metabolism of fats; the physiologic acidity of the urine; the importance of vitamins, and nitrogen metabolism during growth. The subject-matter of the text is written in a clear and concise style; and the discussions, although somewhat limited, are, nevertheless, adequate for the purpose. While little is presented that is not found in our own American textbooks on this subject, this work of Lambling should be found of value as collateral reading, especially for those who wish to obtain a working reading knowledge of French, as well as a concise discussion of the many points involved in the subject of biochemistry.

The Model T Ford Car, Truck and Tractor Conversion Sets; also Fordson Farm Tractor and F. A. Lighting and Starting System Construction, Operation and Repair. The Most Complete, Practical Treatise Explaining the Operating Principles of all Parts of the Ford Automobile, with Instructions for Driving, Maintenance and Repairing; also Complete Instructions on Fordson Tractor. By Victor W. Pagé, M.S.A.E. Cloth. Price, $1.50. Pp. 410, with 153 illustrations. New York: The Norman W. Henley Publishing Company, 1920.

This is a book for Ford owners: not for Packard, Winton, Pierce-Arrow or Marmon owners, but solely for Ford owners. Just why the flivver should have a book devoted entirely to it we do not know. Is it possible that it is because Hunka Tin is of more importance than all other motor cars? Or is it because it needs more attention than others? We hesitate to say. Be that as it may, here is a book of more than 400 pages devoted to practical information regarding this "universal car," and it should prove of practical value to those of us who are fortunate enough to own one.

Medicolegal

Implication from Collection of Hospital Fees

(Courchesne v. Brown (Texas), 216 S. W. R. 674)

The Court of Civil Appeals of Texas, in reversing, for insufficiency of proof, a judgment that was rendered in favor of plaintiff Brown, who sued to recover hospital expenses incurred by him after an attack of appendicitis while he was in defendant Courchesne's employ and had had $1 a month deducted from his wages as "hospital fees," says that the court found no case which it considered directly in point in which the issues presented here were discussed. In the cases examined, a hospital had already been furnished and was in use at the time of the collection of the hospital fees. Here the defendant had no hospital, and no custom was shown of his having furnished hospital service. The fund collected must be considered a trust fund. No method was shown for executing the trust, and the defendant was charged with the duty of administering it in such manner as would best accomplish the end for which it was accumulated; that is, to provide for the care of the sick employees who should come within the terms of the trust. Evidently the extent of the duty the defendant assumed in collecting the fund was to administer it properly. If the defendant had a hospital, the implication arising from the collection of the fees would be service at the hospital; but, having no hospital, the court thinks it would not necessarily be implied that he would furnish one. It was a matter of allegation and proof. The court thinks that if the defendant was liable for hospital service in the absence of a hospital of his own, or custom of having furnished hospital service, it would be necessary to allege and to prove that the defendant, as trustee, had on hand an unexpended portion of the trust fund which the plaintiff was entitled to have administered by the defendant in the discharge of the hospital services rendered. The defendant assumed no personal liability to the plaintiff beyond that of a proper and faithful administration of the trust fund. While the court thinks that the evidence was rather meager and unsatisfactory as to the purpose for which the funds were collected, beyond that it was for hospital fees, the court thinks that the evidence was sufficient to go to the jury on that issue. "Hospital fees" might mean that it was to provide a hospital, and it might mean that it was to be administered only in case of sickness. The court thinks, however, that, in the absence of a hospital owned or

subscribed to by the defendant, or custom to furnish hospital service, the evidence was wholly insufficient to raise the presumption that hospital service in a hospital not owned by the defendant was implied, or to justify a personal judgment against the defendant to supply hospital service. The burden was on the plaintiff, under the evidence and facts shown, not only to allege and show collection of fees, but the purpose and extent of the purpose for which the fees were collected as a present hospital fund to be used in case of sickness. It would necessarily follow that it must also be alleged and shown that the defendant had on hand a sufficient amount of the trust funds to which the plaintiff was entitled to pay the items of the account; otherwise the defendant would have nothing to administer, no duty to perform as trustee.

Irresistible Impulse Alone Not Defense to Crime

(State v. Carrigan (N. J.), 108 Atl. R. 315)

The Supreme Court of New Jersey, in affirming a conviction of murder in the first degree, holds that the trial judge did not err in refusing to charge the jury that if they found that there existed in the defendant's mind an irresistible impulse to take the life of the deceased, and the shooting took place under the influence of such an impulse, the defendant could not be convicted of murder in the first degree. The court says that the fundamental proposition embodied in the instruction was that an act done under an irresistible impulse cannot as a matter of law be wilful, deliberate and premeditated, within the meaning of the New Jersey statute defining murder in the first degree. The proposition is untenable. Conceding for the moment that the law recognizes the existence of an impulse which is irresistible as an element to be considered in determining the grade of a criminal homicide, the question in every case in which that element exists is whether the act was wilful, deliberate and premeditated, notwithstanding that its perpetration was the result of such impulse; and that question is clearly one of fact to be settled by the jury, for it involves the mental operations of the defendant, and they are not to be resolved by the arbitrary application of legal rules, but by a consideration of the facts and circumstances of the case which throw light thereon. The court thinks, also, that the requested instruction was properly refused on a broader ground. The court considers to be unsound the suggestion that the law recognizes a form of insanity in which the faculties are so affected that the person suffering from it, although he perceives and appreciates the moral quality of his acts, is unable to control them, and is urged by some mysterious pressure, which he cannot resist, to their commission. It may be that such a mental condition is recognized by medical or scientific authority; but the doctrine that a criminal act may be excused or mitigated on the notion of an irresistible impulse to commit it, when the offender has the mental capacity to appreciate his legal and moral duty in respect to it, has no place in the law.

State Antinarcotic Law Not in Conflict with Federal Act

(State ex rel. Whipple v. Martinson, Sheriff (Minn.), 174 N. W. R. 823)

The Supreme Court of Minnesota holds, in this habeas corpus case, that Chapter 260 of the laws of that state of 1915, restricting the manufacture, sale and dispensing of certain habit-forming narcotic drugs, as involved in the case of *State* v. *Whipple*, 173 N. W. R. 801, recently decided, does not conflict with the act of Congress known as the Harrison Narcotic Law, and that the judgment of conviction therein, of a violation of this chapter by Whipple, a physician, was not unlawful as violative of the paramount legislative power of the federal Congress or otherwise. The court says that, conceding, without considering or deciding the point, which it thinks of doubtful merit, that the right of legislation on the subject in hand is paramount in the federal Congress, and that the state statute is void so far as it conflicts with the act of Congress, the court is unable after careful examination and comparison of the two statutes to discover any conflict in the respect claimed.

Society Proceedings

COMING MEETINGS

American Assn. of Genito-Urinary Surgeons, Rochester, Minn., May 31.
American Climatological and Clin. Assn., Philadelphia, June 17-19.
American Medico-Psychological Assn., Cleveland, O., June 1-4.
American Ophthalmological Society, Hot Springs, Va., June 15-16.
American Orthopedic Association, Toronto, Ont., June 7-10.
American Otological Society, Boston, May 31-June 1.
American Pediatric Society, Highland Pk., Ill., May 31.
American Psychopathological Assn., Cleveland, O., June 5.
Arkansas Medical Society, Eureka Springs, June 8-9.
Association of American Peroral Endoscopists, Boston, June 1.
Canadian Medical Association, Vancouver, B. C., June 22-25.
Idaho State Medical Association, Coeur d'Alene, June 10-11.
Maine Medical Association, Augusta, June 29-30.
Massachusetts Medical Society, Boston, June 8-9.
Montana State Medical Association, Helena, July 14-15.
Nevada State Medical Association, Lake Tahoe, June 25-26.
New Jersey Medical Society, Spring Lake, June 15-17.
North Dakota State Med. Assn., Minot, June 15-16.
Ohio State Medical Association, Toledo, June 1-3.
Rhode Island Medical Society, Providence, June 3.
Southern Minnesota Medical Assn., Fairmont, Minn., June 28-29.

AMERICAN ASSOCIATION OF ANESTHETISTS

Eighth Annual Meeting, held at New Orleans, April 26-27, 1920

DR. ALBERT H. MILLER, Providence, R. I., in the Chair.

Some Anesthetic Relations

DR. A. H. MILLER, Providence, R. I.: The degree of danger attending the use of anesthetics is still unknown. The more postoperative deaths are studied the more evident it becomes that a considerable number may be traced directly or indirectly to the effects of anesthesia. The teaching of the science and practice of anesthesia in the medical schools and clinical hospitals has been neglected. In hospitals the preoperative examination of patients, the choice and the administration of anesthetics are all generally neglected. In many clinics only one agent and one method of administration is available and must be used regardless of the nature of the operation or the condition of the patient. In the larger institutions the present conditions may be remedied through the appointment of full-time, resident anesthetists. They should supervise the preliminary examination of the patients, consult with the surgical staff in regard to the choice of anesthetic agents and methods of administration, supervise difficult cases, instruct juniors in practical anesthesia and be responsible for the condition of anesthetic apparatus. While the anesthetists are trying to foster the literature of anesthesia, the larger medical and surgical journals are ignoring the subject. To remedy existing conditions it would seem advisable to encourage joint sessions of anesthetic societies with surgical associations with programs devoted to symposiums on pertinent subjects of common interest. A committee on statistics should be appointed to collect all available data and encourage private reports on fatalities. There should also be committees on instruction in medical schools and the standardization of anesthetic methods in hospitals.

Accidents During Anesthesia

DR. R. M. WATERS, Sioux City, Iowa: Anesthetic mortality is much higher than usually supposed. Recently, Dr. Stewart, of Cincinnati, compiled statistics of 10,700 operations for removal of tonsils and adenoids and found that twenty deaths had occurred in the series. The five deaths occurring under anesthesia in my own experience have taught me that every possible precaution must be taken in cases in which complicating disease has affected the heart muscle. Such patients under ordinary methods of anesthesia are apt to die unexpectedly. Patients may die of intense fear, and worry about and dread of the anesthetic may delay digestion so that vomiting under anesthesia may cause death

by the inspiration of vomitus into the trachea. In one instance a piece of meat lodged in the glottic entrance and caused death. The possibility of respiratory obstruction from inhaled vomitus is increased in the semireclining position and diminished in the forward inclined sitting posture or in the horizontal position with the head low. Obviously also more fatalities are bound to occur from accidents under anesthesia in emergency than in properly prepared patients.

Anesthesia in Experimental Surgery

F. C. MANN, M.D., Rochester, Minn.: Ether is the best anesthetic for use in most laboratory work. The reactions of the various species of experimental animals seem to be more uniform to ether than to any other general anesthetic. We have found the McGrath method of auto-inhalation, induced by preliminary etherization in an air-tight cabinet, very satisfactory for all purposes. The ether container may be the simple can with regulatory valves or more complicated devices such as the Adson-Little insufflation machine or the Connell anesthetometer. Smaller species of animals such as the guinea-pig, rabbit and cat are best anesthetized by the old-fashioned cone method, following preliminary etherization in a bell-jar. The goat is very susceptible to excessive salivary secretion under ether and unless given preliminary morphin-atropin and carefully anesthetized by intubation may drown in its own secretion.

Induction of Anesthesia and Analgesia by Oral Administration of Various Drugs

DR. A. FICKLEN, New Orleans: The problem of dressing extensive wounds has always presented difficulties to the surgeons on account of the pain inflicted on the patient. I use the following formula: Chloroform, 5 c.c., ether and liquid petrolatum, each 20 c.c. Recently I have found oral analgesia serviceable in the dressing of painful wounds, setting of fractures, skin grafting and other painful procedures in hospital practice. I have also collected seven cases in which the ether-chloroform-petrolatum mixture was used in obstetrics. The patients showed varying degrees of analgesia and light anesthesia. The mixture did not seem to diminish the contractions of the uterus even when the patients were asleep. Apparently there were no ill effects on the child. In one case tests showed the analgesia sufficient for repairing lacerations. Syrup of yerba santa, in 1 dram doses, helps to disguise the burning taste of the mixture to a certain extent.

Experimental Studies on Effects of Anesthetics in Shock

DR. MCKEEN CATTELL, Cambridge, Mass.: In the normal animal, ether, rapidly administered, causes a moderate fall in blood pressure, followed immediately by a recovery, so that by the time a degree of anesthetization is reached sufficient to cause a disappearance of the eye reflex, the pressure is normal. In shock the animal becomes very sensitive to ether, the same degree of anesthesia produced under exactly similar conditions resulting in a marked drop in blood pressure. An increased sensitiveness to ether is brought about by any circumstances which tend to depress the general condition of the animal, such as low blood pressure, hemorrhage, severe operation or the injection of acid into the circulation. In a shocked animal, sensitive to ether, nitrous oxid and oxygen may be given in the most favorable proportions so as to produce the same degree of anesthesia produced by ether without causing a fall in blood pressure. Experiments on the heart volume in intact cats and on contractions of the isolated turtle heart, together with deductions from blood pressure show that ether from the very beginning of its administration results in a depression of the heart and a decrease in its output, which is sufficient to account for the fall in pressure in both the normal and the shocked animal. Large doses of epinephrin injected intravenously in shocked animals usually results in the disappearance of the sensitiveness to ether for a period of an hour or more. The evidence indicates that epinephrin acts on the heart in a manner which antagonizes the effects of ether. Pituitary extract does not influence the pressure drop produced by ether in the shocked animal. Determinations of leg volume with a plethysmograph, perfusion experiments and results obtained from the injection of ether directly into the circulation, together with the form of the blood pressure curves, indicate that ether causes a contraction of the peripheral vessels in the normal animal. This constriction is caused by (a) a direct stimulation of the vasomotor center and (*b*) by a reflex to the fall in pressure resulting from depression of the heart. In shock no evidence of a vasoconstriction produced by ether was obtained, and pressor effects from asphyxia or sensory nerve stimulation become less or are entirely absent. The cause of the greater depressing influence of ether on the blood pressure in shock is a disturbance of the vasomotor system. The usual compensatory constriction no longer occurs to offset the decreased output of the heart, so that there is no recovery of the blood pressure during the inhalation of ether, but instead the pressure continues to fall.

Advances in Pure Nitrous Oxid-Oxygen Anesthesia

DR. E. I. MCKESSON, Toledo, Ohio: Primary saturation of the patient with nitrous oxid fails in some cases to produce sufficient relaxation for certain operations. Nitrous oxid produces muscular relaxation when it is sufficiently concentrated in the tissues and associated with enough oxygen to prevent anoxemic rigidity. High concentration of this gas in the tissue is required to displace the nonanesthetic diluting gases. Secondary saturation, following momentary deoxygenation, intensifies nitrous oxid anesthesia and produces sufficient relaxation for any operation. Secondary saturation is readily lost by subsequent errors in the mixture administered, leaks of air into the apparatus or the patients' air passages and probably by absorption of air through the abdominal cavity and skin requiring occasional resaturation in some cases. Its successful and safe employment depends on an apparatus capable of inflating the lungs with oxygen should the patient be crowded, intentionally or accidentally into spastic apnea. It depends also on an accurate interpretation of the signs of anesthesia, but disregarding the presence or absence of cyanosis as an anesthetic sign. Secondary saturation is not followed by postanesthetic sequels which are detrimental or which may be attributed to its use. It is safer for the patient than an ether sequence or combined gas-oxygen-ether and convalescence is better when even the small amount of combined ether is avoided.

Open Method of Nitrous Oxid-Oxygen Anesthesia

DR. JAMES T. GWATHMEY, New York: This method is offered as a substitute for the open-drop or any other method of etherization and also as an aid in anesthetizing certain patients to whom the closed method seems a burden. A mask twice the size of the usual drop-ether mask is used and is sufficiently large to hold a full inspiration of an adult. The mask is covered with several layers of gauze and scented with essence of orange or oil of bitter orange peel. The anesthetic is started with three holes of nitrous oxid and one of oxygen and in from 10 to 15 seconds the anesthetic valve is turned just enough to have the gases barely bubble through and from this on it is very gradually increased until there is a slight bead on top of the liquid. In one minute or one minute and a half the patient will be unconscious but not anesthetized. The technic from this on will vary with the substance that is to be used in connection with the gas-oxygen. Toward the close of the operation the patient is oxygenated for a short time before leaving the table.

Relaxants in Nitrous Oxid-Oxygen Anesthesia

DR. ANSEL M. CAINE, New Orleans: Nitrous oxid-oxygen would be the anesthetic of choice in all hazardous risks were it possible to secure adequate relaxation. Proper manipulation of the oxygen supply, slight positive pressure, warming the gases and preliminary medication as well as concomitant local analgesia all help in securing the desired degree of relaxation. In a certain number of cases, however, the addition of ether, chloroform or other anesthetic will be required. I have found chloroform a safe, efficient and pleasant adjunct to gas-oxygen anesthesia for relaxation.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

February, 1920, **159**, No. 2

Epidemic Acute and Subacute Nonsuppurative Inflammations of Nervous System Prevalent in United States in 1918-1919: Encephalitis; Encephalomyelitis; Polyneuritis; and Meningo-Encephalo-Myelo-Neuritis. L. F. Barker, E. S. Cross and S. V. Irwin, Baltimore. p. 157.

Spinal Cord Tumors; Surgical Treatment. C. A. Elsberg, New York. —p. 194.

*Brachial Birth Palsy: Pseudoparalysis of Shoulder Joint Origin. T. T. Thomas, Philadelphia.—p. 207.

Sixth Nerve Paralysis of Otitic Origin: Gradenigo's Syndrome. Report of Two Cases. E. H. White, Montreal.—p. 227.

*Unusual Syphilitic Manifestation Resembling Juxta-Articular Nodules. H. Goodman, New York, and W. J. Young, Louisville.—p. 231.

*Congenital Absence of One Lung. C. S. Levy, Baltimore.—p. 237.

*Secondary Meningitis Treated by Intraspinous Administration of Autogenous Serum. Report of Case. T. M. Sanders, New York. —p. 246.

Colloidal Gold Reaction with Cerebrospinal Fluid. E. Kellert, Albany. —p. 257.

*Preparation of Stable Vitamin Product and Its Value in Nutrition. H. E. Dubin and M. J. Lewi, New York.—p. 264.

Brachial Birth Palsy.—Thomas maintains that obstetric or brachial birth palsy represents only one phase of a much larger shoulder joint problem. Almost, if not all, shoulder joint injuries are associated with a brachial paralysis, palsy or weakness of varying degree and duration. Very rarely will an actual nerve rupture be associated with the paralysis. Thomas doubts that sufficient traction on the head at birth to rupture the brachial plexus has ever been applied in a successful delivery.

Multiple Gummas of Tendons.—A case of multiple and symmetrical gummas of the tendons is described by Goodman and Young which clinically closely resemble the tumors of juxta-articular nodules. The suggestive history, positive Wassermann, and histology of one of the lesions puts the diagnosis of multiple syphilitic gummas of the tendons on a sound basis.

Congenital Absence of One Lung.—Twenty-one cases of congenital absence of one lung are reported in the literature. There are, in addition to these reports, four cases in the literature where a possible rudimentary lung has been found covering an imperfectly developed primary bronchus. An additional case is recorded by Levy, one of congenital absence of one lung in a patient who was treated for the urinary incontinence of tabes dorsalis. The patient was 49 years old. This is the first case of congenital absence of one lung in almost 6,000 necropsies performed in the pathologic department of the Johns Hopkins Hospital.

Autogenous Serum in Meningitis.—Sanders recommends the use of autogenous serum injected into the subarachnoid space in cases of secondary meningitis when there is no efficient specific immune serum.

Stable Vitamin Product.—Dubin and Lewi prepared a stable vitamin product, designated, "V." An analysis shows the chief components to be calcium, expressed as calcium oxid, 10 per cent.; phosphorus, 15 per cent.; nitrogen, 3.5 per cent.; fat, 2.5 per cent.; iron, 0.3 per cent.; silicates 5.6 per cent.; moisture, 10 per cent. The remainder goes to make up the rest of the phytin molecule—the main constituent of the product—which is a double calcium and magnesium compound of inosite phosphoric acid. Owing to the method of preparation and to the results of experiments with normal and polyneuritic pigeons, normal and scorbutic guinea-pigs and finally with children presenting evidence of malnutrition, marasmus and rickets—a marked acceleration in the rate of growth having been obtained, particularly in the children—it is established that the product contains antineuritic, antiscorbutic and antirachitic vitamins. It is felt by the authors that until such time as the vitamins shall have been isolated and their chemical composition determined, their vitamin preparation is an admirable substitute and may be used with confidence in such a manner as described by Voegtlin. It is not intended as a substitute for any method of treatment nor is it meant to be used in infant feeding only. Rather is it intended to be a valuable aid whenever its use is indicated. At the same time, it should not be lost sight of that the diet must contain sufficient protein, fats, carbohydrates and mineral salts and that the caloric value must be adequate for the needs of the individual.

American Journal of Syphilis, St. Louis

April, 1920, **4**, No. 2

*Syphilis of Central Nervous System. G. O. Scott and G. H. J. Pearson. C. A. M. C.—p. 201.

Medical and Social Care of Syphilis at Washington University Dispensary. R. S. Weiss and A. H. Conrad, St. Louis.—p. 253.

Standardization of Wassermann Reaction. Comparative Study of Complement Fixation in Syphilis with Antihuman, Antichicken and Antisheep Hemolytic Systems. J. A. Kolmer, T. Matsunami and A. Rule, Philadelphia.—p. 278.

*Wassermann Control in Treatment of Syphilis. J. C. Sargent, Milwaukee.—p. 286.

*Wassermann Reaction as Therapeutic Index for Syphilis. B. Oettinger, Long Beach, Calif.—p. 297.

Colloidal Mastic Test on Cerebrospinal Fluid. C. D. Camp, Ann Arbor.—p. 301.

Syphilitic and Tuberculous Joints. P. W. Roberts, New York.—p. 309.

*Lymphsarcoma and Syphilis. O. Berghausen, Cincinnati.—p. 317.

*Syphilis of Prostate. L. Thompson, Hot Springs, Ark.—p. 323.

*Syphilis in Pregnancy and Labor. E. L. Cornell and A. W. Stillians, Chicago.—p. 342.

Ocular Syphilis and Its Treatment: Report of Cases. W. J. Young, Louisville.—p. 346.

Standardization in Treatment of Syphilis. B. C. Corbus, Chicago. —p. 353.

Intraspinal Injections in Neurosyphilis.—This paper is based on an analysis of 210 cases of neurosyphilis and many important points are discussed and illustrated by reports of cases. One of the points emphasized by Scott and Pearson is that intraspinal injections are not only of use in the treatment of neurosyphilis but are also an aid to diagnosis. The introduction of a small dose of arsphenamized serum into the spinal canal sets up a reaction analogous to the Herxheimer reaction in that, if syphilitic infection is present, the liberated toxins from the destroyed *Spirochaeta pallida* increase the inflammatory reaction and so cause the positivity of the fluid to increase. By this reaction, if a case is suspected from clinical indications to be neurosyphilis but is serologically negative, an injection of a small dose of arsphenamized serum may render the fluid positive.

Wassermann Control in Treatment of Syphilis.—Sargent's experience with inherited syphilis treated by both arsphenamin and mercury has been limited to about a dozen cases. It has been sufficient, however, to warrant the conclusion that it is worth while attempting to cure them. From these few cases it has seemed that they react to treatment in about the same way as do adults with acquired syphilis of many years' duration. In Sargent's opinion the Wassermann offers an excellent control in the treatment of syphilis, but only, however, when taken in consideration with the physical findings and with the past history of the patient, including the amount of his treatment. Wassermann positive primary syphilis cannot be cured by a few injections of arsphenamin and a few months of mercury, but when treated intensively and over a long period, offers an excellent prognosis. There seem good grounds for the belief that many cases of secondary and tertiary syphilis, even of years' duration, when treated intensively both with arsenic and mercury for one, two or three years can be rendered Wassermann negative and apparently cured. In at least some cases of early tabes it is possible to render both the blood and spinal fluid negative to the various clinical tests.

Id.—Enough time has elapsed since the introduction of the Wassermann reaction and comparison of its readings with associated clinical aspects, Oettinger says, to prove that this test is not a reliable guide for treatment.

Lymphosarcoma and Syphilis.—Two cases of association of these two diseases are reported by Berghausen. In the first case, the general enlargement of the lymph glands was marked, but the marked enlargement of the spleen and abdominal lymph glands made the clinical diagnosis of lymphosarcoma rather easy. In the second patient the enlargement of the peripheral glands was so marked, involv-

ing chiefly the glands of the neck at first, that the probable diagnosis of Hodgkin's disease was made. In both instances there was no question as to coexistence of syphilis; the patients admitted specific infection and the blood Wassermann reaction was strongly positive to different antigens. Antispecific treatment was only of temporary benefit, proving of some value in the second patient, causing a decrease in the size of the glands of the neck but not preventing the gradual invasion of the entire lymphatic system.

Syphilis of Prostate.—Only twenty-four cases purporting to be syphilis of the prostate have been recorded in the literature, and of these only twelve, or 50 per cent., are accepted as authentic. Thompson adds one case in which the diagnosis is said to be indisputable.

Syphilis in Pregnancy.—Of sixty-nine pregnant women tested by Cornell and Stillians for syphilis, two gave a strongly positive and one a slightly positive reaction. Eighteen out of the sixty-nine cases gave a history of abortion or stillbirth aside from one case which was syphilitic. This is a percentage of 26. Of the three syphilitics, one had aborted.

Archives of Internal Medicine, Chicago

April 15, 1920, **25**, No. 4

*Studies on Arthritis in Army Based on Four Hundred Cases. IV. Relation of Creatin Metabolism to Arthritis. R. Pemberton, Philadelphia, and T. E. Buckman, Boston.—p. 335.
*Id. V. Roentgen-Ray Evidences, Clinical Considerations, Treatment, Summary, Conclusions and Clinical Abstracts of Cases Studied. R. Pemberton, Philadelphia.—p. 351.
*Research on Blood Sugar in Depancreatized Dogs. B. J. Delatour, New York.—p. 405.
*Prognostic Value of Cholesterinemia in Chronic Nephritis. Final Report. E. Henes, Milwaukee.—p. 411.
*Unusual Mechanisms of Auricular Pacemaker. P. D. White, Boston.—p. 420.
*Fetid Spirillar Bronchitis and Pulmonary Gangrene. P. Nolf, Brussels, Belgium.—p. 429.

Relation of Creatinin Metabolism to Arthritis.—Determinations of the creatin, creatinin and nonprotein nitrogen of the blood and urine of forty cases of arthritis and nine normal controls are presented by Pemberton and Buckman. About one half of the cases of arthritis showed an abnormally high value for blood creatin. A certain number of patients showed a decline in blood creatin simultaneous with clinical improvement. Only three of the cases showed creatinuria. Only two cases showed an abnormal elevation of nonprotein nitrogen of the blood. Figures are presented which suggest that a considerable amount of creatin is occluded in the precipitation of the proteins of whole blood and plasma.

Restricted Carbohydrate Diet in Arthritis.—The value of the treatment of these arthritis patients by a restricted carbohydrate diet finds additional support in the studies on blood sugar, revealing a difficulty in the utilization of carbohydrate. It seems clear that success following this measure depends on catering to a weakened function of which the lowered sugar tolerance is one evidence. Treatment along this line has undoubted application in appropriate cases of chronic arthritis. Pemberton urges that the several measures of value in arthritis should be combined in their application more frequently. The tendency to focus on one measure often results in failure where the subsequent coincident use of several measures results in benefit.

Hyperglycemia Following Removal of Pancreas.—Complete removal of the pancreas in Delatour's dogs produced a permanent hyperglycemia, and any part of the pancreas left in the animal after operation later manifested itself by a fall in blood sugar. Epinephrin administered by intravenous injection in normal dogs increased the blood sugar. With the pancreas removed, epinephrin produced very little, if any, change in the blood sugar. Under this condition, as a possible explanation, sugar is passing freely into the circulation unburnt, and therefore the epinephrin can have very little further effect in increasing the blood sugar by inhibiting sugar metabolism. Delatour regards it as reasonable to believe that the pancreas produces some substances which favor the metabolism of the sugars in the tissues, as sugar injected intravenously is not handled as readily in the depancreatized animal as in the normal dog.

Rôle of Lipoids in Blood.—It is Henes' belief that the lipoids of the blood play a rôle analogous to an antitoxin, and are intimately associated in immunologic processes. The lipoids seem to act as a protection to the animal organism, and are known to counteract certain poisonous substances. Recent literature abounds in substantiation of the belief that cholesterol plays some protective rôle in the animal organism. The prognostic value of the measure of cholesterinemia in chronic nephritis becomes of greater interest and importance because of these facts.

Unusual Mechanism of Auricular Pacemaker.—Three clinical examples of unusual mechanism of the auricular pacemaker are reported by White: (1) Paroxysmal tachycardia arising in or very near the sino-auricular node and not showing an absolutely abrupt onset or offset. (2) Migration of the pacemaker in the sino-auricular node, two foci alternating action in one case. (3) Sudden halving of the auricular rate (sino-auricular block) after exercise.

Spirillar Bronchitis.—It would appear from Nolf's study of eleven cases that spirillar bronchopneumonia is a malady of temperate climes, and that it has probably been confounded up to the present time with pulmonary gangrene consecutive to acute or chronic affections of the respiratory tract. Its micro-organism is probably a common inhabitant of the upper respiratory passages, particularly of the mouth and pharynx.

Boston Medical and Surgical Journal

April 22, 1920, **182**, No. 17

Helen Homans. F. A. Washburn, Boston.—p. 417.
Intestinal Obstruction: Report of Cases. E. A. Codman, Boston.—p. 420.
Supporting Pelvic Floor to Prevent and Overcome Uterine Prolapse. D. W. G. Wilcox, Boston.—p. 425.
Loss of Both Eyes from Exophthalmos of Hyperthyroidism. F. H. Lahey, Boston.—p. 427.
Résumé of Literature of Infantile Scurvy During 1918 and 1919. J. L. Morse, Boston.—p. 428.

May 13, 1920, **182**, No. 20

Disturbances Caused by Proteins. J. A. Turnbull, Boston.—p. 493.
Use and Abuse of Mechanical Supports in Orthopedic Conditions. H. W. Marshall, Boston.—p. 497.
Report of Urologic Cases. W. C. Quinby, Boston.—p. 502.

Journal of Infectious Diseases, Chicago

March, 1920, **26**, No. 3

*Statistics of 1918 Epidemic of Influenza in Connecticut, with a Consideration of the Factors which Influenced the Prevalence of this Disease in Various Communities. C. E. A. Winslow and J. F. Rogers, New Haven, Conn.—p. 185.
Bacterium Anatum, N. S., Etiologic Factor in Widespread Disease of Young Ducklings Known in Some Places as 'Keel.' L. F. Rettger and M. M. Scoville, New Haven, Conn.—p. 217.
*Grouping of Influenza Bacillus by Specific Agglutination. J. C. Small and G. K. Dickson, St. Louis.—p. 230.
*Chemotherapeutics of Chaulmoogric Acid Series and Other Fatty Acids in Leprosy and Tuberculosis. E. L. Walker and M. A. Sweeny, San Francisco.—p. 238.
*Experimental Streptococcus Empyema. Attempts at Prevention and Therapy by Means of Vaccines and Serum. F. P. Gay and R. L. Stone, Berkeley, Calif.—p. 265.

Influenza Epidemic.—A study of the census statistics for the larger cities of the United States as a whole, made by Winslow and Rogers, showed a very definite relation between the severity of the 1918 epidemic and both the pneumonia death rate and the total death rate for the sixteen years preceding. The relationship is, in general, a geographic one, the Eastern and Southern cities showing high death rates, the Middle Western and Western cities showing low death rates in each case. In the Eastern section the results are attributed to unfavorable economic conditions associated with industrial life and the presence of certain foreign race stocks always characterized by a high death rate.

Grouping of Influenza Bacillus.—Four groups have been identified by Small and Dickson and 70 per cent. of the strains studied fall into two groups. They maintain that the hemophilic organisms (*B. influenzae*) can be grouped by immunologic methods.

Antiseptic and Bactericidal Actions of Chaulmoogra Oil.—This report is concerned exclusively with a study of the antiseptic and bactericidal actions of chaulmoogra oil and is constitutents, the identification of the specificity of its bac-

tericidal action for acid-fact bacilli, and an investigation of the presence or absence of this bactericidal substance in cod liver and other oils. Walker and Sweeney state that chaulmoogra oil contains bactericidal substances that are about one hundred times more active than phenol. They are the fatty acids of the chaulmoogric series, chaulmoogric and hydnocarpic acids, and possibly lower isomers of this series. The bactericidal activity is specific for the acid-fast group of bacteria only. The fatty acids of cod liver oil do not possess the specific activity of the chaulmoogric oil series. The authors' experiments do not support the claim of Rogers for sodium morrhuate in the specific therapy of tuberculosis but their findings do supply a scientific basis for the use of chaulmoogra oil and its products in leprosy.

Experimental Streptococcus Empyema.—According to the results obtained by Gay and Stone, experimental streptococcus empyema in rabbits may be prevented by previous immunization with killed, followed by living, cultures of the same strain of streptococcus, but only when repeated vaccinations have been practiced and in a total amount which would seem to preclude the practicability of such a preventive inoculation in human beings, provided the conditions are similar. Attempted vaccine therapy of the localized symptoms has given consistently negative results.

April, 1920, **26**, No. 4

*Streptolysin. P. H. DeKruif and P. M. Ireland, Ann Arbor, Mich. —p. 285.
Influence of Thorium X on Antibody Formation. L. Hektoen and H. J. Corper, Chicago.—p. 330.
*Bacillus of Colon-Typhoid Group Isolated from Case of Furunculosis. W. W. Oliver and A. F. Schwab, Brooklyn.—p. 336.
Paratyphoid Bacilli Recently Isolated from Animals. R. B. Spray, Lafayette, Ind.—p. 340.
Intracellular Protozoan Parasite of Ducts of Salivary Glands of Guinea-Pig. L. Jackson, Chicago.—p. 347.
Causes for Variation in Determinations of Disinfecting Values. B. Fantus and F. Rumry, Chicago.—p. 351.
Chemotherapeutic Studies with Ethylhydrocuprein and Mercurophen in Experimental Pneumococcus Meningitis in Rabbits. J. A. Kolmer and G. Idsumi, Philadelphia.—p. 355.

Streptolysin.—Hemolysin production in serum broth by beta hemolytic streptococcus was studied by de Kruif and Ireland. The data gleaned have been used in the synthesis of a new blood agar plate.

Colon-Typhoid Group Bacillus in Furunculosis.—From a pure culture of this organism, Oliver and Schwab made an autogenous vaccine. Following the initial injection of minim (about one-half billion bacilli per cubic centimeter) the patient exhibited marked local and general reaction. As a result of this treatment, the patient was free from boils for almost two years. In the opinion of the authors this suggests a relationship of the bacillus to the disease. The organism and its life history are described in detail.

Medical Record, New York

May 8, 1920, **97**, No. 19

Poisonous Sumachs; Rhus Poisoning; Remedies. W. L. Macatee, Washington, D. C.—p. 771.
Poise or Tranquillity a Necessary Condition of Economic Repair. J. M. Taylor, Philadelphia.—p. 780.
Rôle of Neurones. J. H. Dowd, Buffalo.—p. 784.
*Hyperchlorhydria; Frequent Causes of Defective Appetite in Children. J. H. Kerley, New York.—p. 786.
Philosophy of Human Sympathy. J. C. Bateson, Scranton.—p. 787.
Compulsion Neuroses (Obsessions, Doubts and Phobias). H. Laveson, New York.—p. 790.

Hyperchlorhydria Causing Poor Appetite.—Kerley maintains that a common cause of defective appetite in children of the runabout age, or older, is hyperchlorhydria, with the resulting symptoms of variable desire for food, indefinite abdominal pains, flatulency, and acid eructations. The treatment consists of giving alkalies to neutralize the excess of acids, of substituting an easily digestible, nonirritative diet, and of giving due attention to general hygienic measures.

May 15, 1920, **97**, No. 20

Lethargic Encephalitis. E. L. Hunt, New York.—p. 815.
Prevention of Respiratory Diseases in Infancy and Early Childhood. J. Sobel, New York.—p. 817.
*Skin as an Index to Health. M. Scholtz, Los Angeles.—p. 824.
Treatment of Splanchnic Relaxation by Electrical Currents. W. Martin, Atlantic City, N. J.—p. 828.
*Acute Intussusception; Report of Case Relieved by Enema. S. K. Levy, New York.—p. 831.
*Case of Delayed Postoperative Hemorrhage Following Tonsil and Adenoid Removal. E. V. Hubbard, New York.—p. 832.

Skin as Index to Health.—Scholtz points out that in many conditions the skin lesion is merely a manifestation of a general disease, therefore the closest cooperation between internist and dermatologist is both essential and of value. Such cooperation would help the dermatologist as much as the clinician, because in the absence of thorough systemic examination many patients receive only symptomatic relief.

Acute Intussusception.—Levy pleads for less haste in adopting radical methods in these cases, especially when they are seen early. In the case reported, he gave an enema of 1 quart of sterile water very slowly with relief of the intussusception. He advises not to elevate the container more than 6 feet.

Delayed Postoperative Hemorrhage After Tonsillectomy.—The tenth night after operation, Hubbard's patient had a profuse hemorrhage from the mouth, her condition prior to that time having been wholly satisfactory.

Neurological Bulletin, New York

October, 1919, **2**, No. 10

General Consideration of Cranial Nerves. H. A. Riley, New York. —p. 361.
Case of Epidemic Polioencephalitis with Ticlike Movements. G. C. Andrews, New York.—p. 370.
Marie's Heredo-Cerebellar Ataxia: Report of Case. M. Osnato, New York.—p. 372.
Limitations of Tinel's Sign in Peripheral Nerve Injuries. B. Stookey, New York.—p. 380.
Case of Progressive Spinal Muscular Atrophy. R. A. Gerber, New York.—p. 385.

New Jersey Medical Society Journal, Orange

April, 1920, **17**, No. 4

Common Diseases of Rectum. D. B. Pfeiffer, Philadelphia.—p. 109.
Conservative and Reconstructive War Surgery. R. E. Soule, Newark.—p. 112.
Importance and Use of Biologic Products in Public Health Work. J. F. Anderson, New Brunswick.—p. 117.
Clinical Résumé of Influenza in Recent Epidemic. F. C. Horsford, Newark.—p. 121.
Is He a Malingerer? A. C. Ruoff, West Hoboken.—p. 124.

New Orleans Medical and Surgical Journal

April, 1920, **72**, No. 10

Experience with Shock and Hemorrhage. S. C. Jamieson, New Orleans.—p. 584.
Suggestions in Physical Diagnosis. O. W. Berhea, New Orleans. —p. 591.
Specimen of Tubal Pregnancy. F. L. King, New Orleans.—p. 594.
Spinal Analgesia. S. P. Delaup, New Orleans.—p. 595.

New York Medical Journal

May 8, 1920, **111**, No. 19

Acidosis: Its Mechanism, Recognition, and Clinical Manifestations. G. M. Piersol, Philadelphia.—p. 793.
Drugless Therapy of Diabetes. H. S. Stark, New York.—p. 800.
Limitation of Starvation in Diabetes Mellitus. T. W. Edgar, New York.—p. 803.
Advantages of Class Instruction in Treatment of Diabetes. N. W. Janney, Santa Barbara, Calif.—p. 806.
History of Diabetes Mellitus. P. Horowitz, New York.—p. 807.
Case of Diabetes Insipidus. T. G. Schnabel and A. H. Gerhard, Philadelphia.—p. 812.
Diabetes in Association with Toxic Goiter. J. C. O'Day, Honolulu. —p. 815.
Obligations of Medicine in Relation to General Education. W. C. Braisted, Washington, D. C.—p. 817.

May 15, 1920, **111**, No. 20

Influenza as Pulmonary Necrotic Alveolitis Involving Endocrines. C. E. DeM. Sajous, Philadelphia.—p. 837.
*Experiments with Transmitting Influenza Through Fleas. C. Engelhreth, Copenhagen.—p. 846.
*Acute Indigestion. B. Robinson, New York.—p. 848.
Gastric Disturbances in Appendicular Inflammation. S. Floersheim, Los Angeles.—p. 849.
Outbreak of Diphtheria in Small City. I. W. Brewer, Watertown, N. Y.—p. 849.
Group Diagnosis. J. Gutman, Brooklyn.—p. 851.
Relation of Neurologist to Group Diagnosis. C. Rosenheck, New York.—p. 855.
Heredity. L. D. McEvoy, New York.—p. 858.
Medical Opportunities for Women in Japan. C. F. Furness, Poughkeepsie, N. Y.—p. 860.

Transmitting Influenza Through Fleas.—Engelbreth conducted experiments on human beings. Fleas were allowed to bite persons suffering from undoubted influenza, and some with a complicating pneumonia, and, then, these fleas were placed on the skin of normal persons. In one half of the fourteen experiments made the result was negative. The author suggests that, perhaps, the fleas used had not been infected or that the infection in them had run out. Infected fleas died much more quickly than uninfected fleas. In the positive cases, the symptoms were those of a mild influenza, such as occurs for the most part in epidemics of this disease, and without complications, except in one case in which pneumonia developed.

Acute Indigestion.—The cases of death from "acute indigestion" reported by the lay press Robinson says are really not such at all. The cause of death in these cases is primarily an overstrained, weakened heart, already diseased, or a cerebral hemorrhage, a weakened circulation with diseased arteries causing stasis in the vessels of the brain. He regards the use of strophanthus, a hypodermic tablet placed under the tongue, as the best treatment in these cases.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Brain, London

January, 1920, **42**, No. 4

Suggestion and Suggestibility. E. Prideaux.—p. 291.
*Lethargic Encephalitis; Sequels and Morbid Anatomy. E. F. Buzzard and J. G. Greenfield.—p. 305.
*Local Paralysis Following Superficial Injuries not Involving Nerve Trunks: Traumatic "Ascending Neuritis" and 'Reflex Paralysis." F. M. R. Walshe.—p. 339.

Lethargic Encephalitis.—In the opinion of Buzzard and Greenfield there is no reason to suppose that lethargic encephalitis is a new disease; endemic cases occur from time to time. Cases of patients suffering from symptoms of acute or subacute cerebral disease have been diagnosed as cerebral hemorrhage, and in others a diagnosis has never been properly established. A detailed report is given of twenty cases, and the pathologic findings in five fatal cases are described. The histologic appearances of the brains examined were very varying. But there were certain features common to all cases in the early stages. They are: (1) vascular congestion; (2) evidence of toxic degeneration of the nerve cells and neuronophagy; (3) proliferation of the mesoblastic cells of the vessel walls, and infiltration of the nervous tissue with these cells; (4) small celled infiltration of the Vichow-Robin space and (5) glial proliferation. They are given in the order in which they occur most constantly.

Traumatic Ascending Paralysis.—Four cases are analyzed by Walshe. They show that a trivial injury, not necessarily a wound and not involving a nerve trunk, may produce marked paresis, or paralysis, with wasting of muscles and diminution of their faradic excitability, impairment of the corresponding tendon jerk, subjective and objective sensory changes and vasomotor disturbances. These signs have a definite anatomic topography and correspond to the innervation of a peripheral nerve. The character of the symptoms is that of a localized neuritis (mononeuritis). Though in every instance progressive, there was evidence of continued upward extension in only one case. In every instance, the injury was within the territory innervated by the affected nerve, though not involving its trunk. In two cases the cutaneous endings of the nerve had been directly injured. In one it overlaid these, while in one case it involved both deep and cutaneous afferent endings. Sepsis does not appear to have been an essential factor. It is clear that in these cases there is an organic disturbance of structures anatomically related. They approximate in type to the conditions known as "ascending neuritis," rather than to the muscular reflex affection of acute arthritis and allied lesions. Walshe suggests that a small proportion of Babinski's cases of "reflex nervous disorders" may have been of the same nature.

British Medical Journal, London

March 20, 1920, **1**, No. 3090

Elements of Psychoneuroses. H. Head.—p. 389.
Nature, Prevention and Treatment of Heat Hyperpyrexia. W. H. Willcox.—p. 392.
Id. L. Hill.—p. 397.
*Dietetic Treatment of Diabetes Mellitus. R. T. Williamson.—p. 399.
*Nephritis: Abdominal Hemorrhage: Death. J. E. Blomfield.—p. 400.
Case of Acute Yellow Atrophy of Liver. E. C. Whitehead.—p. 400.
Tuberculous Cow. J. E. Scales.—p. 400.

Dietetic Treatment of Diabetes Mellitus.—In cases uncomplicated by "acidosis" and certain other secondary affections, when the ordinary restriction of carbohydrates in the diet fails promptly to check the glycosuria, Williamson advises complete rest, and for seven days a diet composed of a mixture of casein, cream and water, given every two hours, from 8 a. m. to 10 p. m., without any soiled food. In many cases this diet promptly checked the glycosuria when other treatment had failed. At the end of the seven days a change is gradually made to a suitable solid diet, the amount of carbohydrates which the patient could tolerate being carefully noted. During the war period, in place of casein and cream solution, Williamson often used a diet composed chiefly of eggs and milk, given every two hours for seven days, or a diet chiefly of suitable vegetables and jelly. Both of these are more palatable, and are often useful, but not so frequently successful as the casein and cream solution. At the end of the war period, the casein obtainable was very often unsatisfactory in taste and odor, and Williamson has recently employed, with great success in many cases a mixture and course of treatment, which can be easily carried out. The mixture is a useful substitute for the casein and cream solution. If "acidosis" and other serious complications can be excluded, and if an ordinary diabetic diet, with restriction of carbohydrates, fails to check the glycosuria promptly, then the patient is advised to rest on the sofa for seven days (or for a shorter period) and to make a mixture of eggs, cream and water, prepared as follows: Three eggs are beaten up with 3 ounces of cream and a little water. More water is then added gradually until the mixture measures 4 pints. Of this mixture the patient takes half a pint every two hours, from 8 a. m. to 10 p. m. In addition, he takes coffee or tea at 8 a. m. and 4 p. m., and also beef tea (warm), half a pint at 12 noon, 6 p. m. and 10 p. m. No bread, no meat, and no other foods are taken during this period. In many cases the glycosuria is promptly checked in from four to seven days. This diet is not continued longer than seven days, and is then slowly changed to a solid diet containing only a small amount of carbohydrate food, the amount of bread and other carbohydrates which can be tolerated being carefully noted.

Nephritis with Abdominal Hemorrhage.—A woman presented symptoms which led Blomfield to make a diagnosis of influenza. Her main complaint was pain in the lumbar region. She improved somewhat under treatment but this back pain continued. The urine contained blood and albumin. The temperature was slightly elevated above the normal. Suddenly she had a "collapse" and died. At the necropsy the peritoneal cavity was found filled with blood and blood clots for which no source could be discovered. The heart was hypertrophied and the walls of the left ventricle were much thickened. At the right edge of the liver was a mass the size of the palm of the hand, resembling a blood clot. There was blood behind the peritoneum near the right kidney and petechial spots on the mesentery. There was also blood tracking up behind the peritoneum and into the thorax. Blomfield believes that this was a case of acute nephritis grafted on a chronic condition which caused a hemorrhagic diathesis.

Lancet, London

April 17, 1920, **1**, No. 5042

Ambulatory Treatment of Fracture of Limbs: Tuberculous and Arthritic Disease of Joints. C. A. Hoefftcke.—p. 28.
Higher Fungi in Relation to Human Pathology. Aldo Castellani.—p. 29.
"Heart" Cases in Egyptian Expeditionary Force. A. L. Krogh, W. T. Ritchie and E. H. White.—p. 852.
Accessory Food Factors (Vitamins) in Feeding of Infants. Edward Mellanby.—p. 856.

Relation of Lipochrome Pigments to Fat-Soluble Accessory Food Factor. O. Rosenheim and J. C. Drummond.—p. 862.
*Treatment of Bilharzia Disease with Tartar Emetic in South Africa. F. G. Cawston.—p. 865.
*Blood Transfusion Before Operation in Severe Secondary Anemias. Herbert Williamson.—p. 867.
Medical Problems of Life Assurance. T. D. Lister.—p. 892.

Tartar Emetic in Bilharziasis.—The experience Cawston has gained from watching a series of cases shows that the scalding and vesical pain that these patients complain of may be expected to disappear after the second or third intravenous injection. The patient will probably remark on the disappearance of the blood from the urine within a week or ten days, though hematuria may be prolonged where there is a tendency to papillomatous growths. Degenerating maricidia may be seen within the shells of the eggs shortly after the dose administered has reached a full grain. Blackened eggs may appear after a total of 1¼ grain has been given. Free swimming, dying maricidia are not uncommon in undiluted urine at the end of the two weeks' treatment. A cloudy condition of the urine due to phosphates is common during the second or third week, and readily responds to treatment. The disease is usually cured when the urine has been free from living eggs for a fortnight or three weeks. The presence of many dead eggs and blood cells indicates that further treatment is required. The absence of living eggs for a month indicates that the female parasites are all dead. If the parasites are going to cause mischief again, they are unlikely to take more than a fortnight to three weeks to recover after the treatment has ceased.

Blood Transfusion in Secondary Anemia.—A case of anemia caused by a uterine fibromyoma in which blood transfusion was resorted to, is reported by Williamson. He says that in the future he will do this before operating for fibromyoma so as to diminish the risk of the operation, lessen the liability to thrombosis, and shorten the period of convalescence. He proposes also, when the patient is very anemic, to adopt this procedure in cases of carcinoma of the cervix before performing Wertheim's operation. He suggests further that blood transfusion should be performed before delivery in cases of severe antepartum hemorrhage.

Tubercle, London

November, 1919, **1**, No. 2

*Effect of Occupation on Incidence of Pulmonary Tuberculosis. E. L. Collis.—p. 49.
Prognosis in Tuberculosis. F. Kraus.—p. 56.
*Case of Pneumothorax. N. Robertson.—p. 64.

Effect of Occupation on Tuberculosis Incidence.—Collis maintains that the evidence he adduces proves that there is a type of phthisis which causes death in middle age—that time of life when the effect of occupation has had time to make its impress on the human organism; and that industrial life in some way directly promotes its incidence.

Pneumothorax.—The case reported by Robertson is interesting and unusual because the commencement of the disappearance of pneumothorax signs on the right side was coincident with the appearance of air in the subcutaneous tissues on the left side. Simultaneously the pressure symptoms subsided and the temperature fell. The tissues on the left side were quite definitely crepitant to touch exactly as in a case of surgical emphysema.

December, 1919, **1**, No. 3

*Syphilis and Tuberculosis. A. Mirande.—p. 105.
Pneumothorax Treatment of Pulmonary Tuberculosis. C. Riviere.—p. 114.
Treatment of Laryngeal Tuberculosis with Spiess's Gold Solution (ethylene-diamin-cantharidin-auricyanid). E. G. Glover.—p. 126.

Syphilis and Tuberculosis.—The following statements indicate Mirande's agreement with Sergent's results: Syphilis and tuberculosis are very intimately connected. Syphilis provides a soil for tubercle bacillus. If the organism overcomes the initial effects of the association, and if treatment is commenced, the tuberculosis lesion exhibits a tendency to assume a fibrous nature. Mercury, far from being nocive, is the remedy for syphilotuberculosis.

Archives de Médecine des Enfants, Paris

April, 1920, **23**, No. 4

Significance of Eruptions in Children's Diseases. Jourdanet.—p. 201.
Hereditary Syphilis and Dystrophies. Hutinel and Stévenin.—p. 205.
Congenital and Hysteric High Shoulder. A. Trèves.—p. 238.
Adhesion of Tip of Tongue in Cleft Palate. J. A. Phélip.—p. 243.

Bulletin de l'Académie de Médecine, Paris

March 2, 1920, **83**, No. 9

*Hyperglycorachia in Epidemic Encephalitis. C. Dopter.—p. 203.
*Syphilis and Epidemic Encephalitis. E. Jeanselme.—p. 210.
Remote Consequences of Epidemic Encephalitis. H. Claude.—p. 215.
Chronic Dyspepsia in the Gassed. M. Loeper.—p. 217.

Sugar in Cerebrospinal Fluid in Epidemic Encephalitis.—Dopter found 0.85 gm. per liter of the fluid in a young man with symptoms suggesting tuberculous or syphilitic meningitis. This hyperglycorachia, as he calls it, differentiated the case as epidemic encephalitis as the fluid was limpid and the Wassermann test negative. This excessive sugar content is not constant, but it is an aid in differentiation when found.

Syphilis or Epidemic Encephalitis.—Jeanselme comments on the difficulty of distinguishing between these diseases when the encephalitis develops in a syphilitic. Each is liable to entail dissociated paralysis of the cranial nerves, the Argyll Robertson sign, convulsions and apoplectiform coma. He describes an instructive case of the combination.

March 16, 1920, **83**, No. 11

*Lethargic Encephalitis. Laubie.—p. 246. G. Marinesco (Bucharest).—p. 248.
*Index of Renal Excretion of Chlorid and Water. A. Pruche.—p. 256.
Sequelae of Appendicectomy. Enriquez.—p. 258.
*School Inspection During Epidemics. L. Azoulay.—p. 262.
*Prophylaxis of Typhus. P. F. Armand-Delille.—p. 265.

Antitetanus Serum in Treatment of Lethargic Encephalitis.—There was prompt improvement in Laubie's two cases and in Coquet's case of severe epidemic encephalitis, with stiffness of the neck and contractures, after intraspinal or subcutaneous injection of antitetanus serum. The injection was made the fourth day in one case, and, in all, the symptoms subsided in thirty-six to forty-eight hours afterward.

Index of Renal Excretion of Water and Chlorids.—Pruche gives a formula for determination of what he call the *coefficient hydrochlorurée*. It is determined by comparing the concentration of chlorids in the urine with the dry residue obtained by evaporation of the blood serum.

Management of School Inspection During Epidemics.—Azoulay suggests having separate quarters, where the classes can be held in case of an epidemic, for the children from homes where there is a case of the epidemic disease, when, on account of quarantine measures, as many as ten or fifteen children have to be excluded from attending school. Children who have recovered from the epidemic disease should also attend this separate school for the contagious, until they can present a certificate from some physician to the effect that danger from them is past. He advises offering a premium for the declaration by physician or layman of an acute contagious disease, verified by a third party. Printed circulars should be distributed to parents, and be placarded, dealing with the disease, its prophylaxis and the necessity for collaborating with the public health authorities.

Prophylaxis of Typhus.—Armand-Delille explains that lice are unable to proliferate when for a third at least of each twenty-four hours they are deprived of the warmth of the body. It takes twelve days for the louse to mature, hence if the clothes are ironed on the inside with a hot iron once a week for four or five weeks, this will interrupt the evolution of the different generations as they develop and none will reach the reproduction period. They thus all die off in time although the hot iron does not kill them all, but it destroys enough of the lice and nits for the purpose, even with a single weekly ironing, especially along the seams. He warns further that when different shifts of workmen occupy the same beds, so that they are more or less continually in use, this breeds vermin rapidly, while letting the bedding grow cold for several hours checks the development and reproduction of lice.

Bulletin Médical, Paris

March 20, 1920, **34**, No. 17

*Aphasia and Apraxia. Laignel-Lavastine.—p. 277.
March 27, 1920, **34**. No. 18. Bacteriotherapy Number
*Vaccines in Therapeutics. L. Girard.—p. 297; in Typhoid. H. Méry.—p. 301; in Typhoid. L. Fournier and A. Schwartz.—p. 303; in Dermatology. A. Mauté.—p. 310; in Epidemic Meningitis. L. Girard.—p. 313.

Aphasia and Apraxia.—Laignel-Lavastine summarizes our present knowledge of this subject, and emphasizes the necessity for eight forms of tests, tests for spontaneous speech, for repeated words, reading aloud, spontaneous writing, writing from a copy and writing from dictation, study of comprehension of spoken words, and study of comprehension of printed words. With apraxia the simple reflex and expressive movements must be studied as well as the descriptive and other movements, as he enumerates in detail.

Vaccines in Therapeutics.—Girard describes the technic for the preparation of vaccines, the indications for them in general, and the diseases for which they have been used to date. Méry reviews the experiences with vaccine in prophylaxis and treatment of typhoid, injected subcutaneously, and Fournier and Schwartz describe their experiences with the same given by the mouth. They report a favorable action from this buccal vaccinotherapy in nearly every case, the prompter and more decided, the earlier in the disease this treatment was begun. The fever rapidly subsided and the course of the disease was notably shortened in the favorable cases. They had only eight deaths among their 150 typhoid patients given this treatment, and in this small group of fatal cases the fatal outcome was due to acute myocarditis, perforation of the bowel the second day, acute appendicitis or complicating influenzal pneumonia. The vaccine they use contains about 0.25 gm. of the desiccated bodies of the bacteria from twenty-four hour cultures of typhoid and paratyphoid bacilli.

Mauté reviews his personal experience with vaccine therapy in skin diseases, declaring that his results have been so interesting that they should inspire every physician to try this method in prophylaxis and in treatment. He prefers autovaccines for their infinitely less toxicity, the absence of local reaction, and the painlessness of the injection, and the fact that recurrences are much less frequent. He refers to Danysz' success with an emulsion of germs from the patient's stools, administered by the mouth and subcutaneously, and states that indirect immunity can be realized with ordinary saprophytes in typhoid and in rebellious eczema and pruritus. He has found further that intravenous injection of a staphylococcus vaccine, 20 millions on alternate days for a series of six injections, has a manifest influence on rebellious acne, and yet acne is not a staphylococcus disease. He theorizes to explain its action, and remarks that, in any event, the fact is worth remembering in treatment of such a rebellious affection as acne.

He has also utilized in treatment of erysipelas a water-soluble substance derived from the stools by precipitation with alcohol, after separating out the albumins with heat in an acid solution; it has a pronounced regulating action on the peripheral circulation. The therapeutic rôle of microbian injections, he continues, is thus becoming more and more extensive, and susceptible of numerous clinical applications hitherto undreamed of. He adds that staphylococcus vaccines seem to be the only efficient ones in dermatology; his experience with streptococcus vaccines has been disappointing, especially in recurring erysipelas. The staphylococcus vaccine can be used not only in furunculosis and carbuncle but also for folliculitis and sycosis. When it is important to act quickly, he does not hesitate to inject the vaccine by the vein. He begins with 10 millions; gives 15 millions the next day, and the third day 20 millions, repeating this last dose two days later. After a parse of three days he begins anew, but only with the preventive doses this time. With these doses, he says, the intravenous injection of the staphylococcus vaccine does not cause any general reaction. For the subcutaneous injection he uses doses of from 250 to 500 millions.

Bulletins de la Société Médicale des Hôpitaux, Paris

Feb. 13, 1920, **44**, No. 6

Lethargic Encephalitis. M. Labbé and others.—pp. 194, 198, 199, 207, 209.
*Suprarenal Insufficiency in Relapsing Fever. Monziols and Collignon. —p. 214.
*Plague at Constantinople. Idem.—p. 215.

Acute Suprarenal Insufficiency After Arsenic Treatment of Relapsing Fever.—Monziols and Collignon explain the acute suprarenal insufficiency, sometimes observed after injection of neo-arsphenamin in treatment of relapsing fever, as due to the sudden flooding of the organism with the toxic products liberated by the sudden destruction of the spirochetes. The suprarenals are unable to keep up with their task in these circumstances, and acute suprarenal insufficiency is soon manifest. All trouble from this source could be averted, they found, if epinephrin was injected with the neo-arsphenamin. This tided the patient along without harm until his suprarenals could cope with the conditions.

Plague in Constantinople.—Monziols and Collignon review their experiences with forty-four cases of plague at Constantinople in the last quarter of 1919. The mortality was 40 per cent. The bacillus was found in the blood only in 16 per cent. of the twenty-five examined, and it had disappeared from the blood by the sixth to the twelfth day.

Paris Médical

March 6, 1920, **10**, No. 10

*Dermatology and Syphilis in 1920. G. Milian.—p. 181.
Continuous Suppurative Acrodermatitis. E. Bodin.—p. 185.
*Generalized Xanthoma. L. Spillmann and Watrin.—p. 193.
*Urticaria. A. Louste.—p. 198.
Malaria as Factor in Malignant Syphilis. Lacapère and Decrop. —p. 203.
Eczema as a Tuberculid. G. Milian.—p. 206.
Influence of Inadequate Treatment on Appearance of Meningeal Syphilis. M. Pinard.—p. 211.

Dermatology and Syphilis in 1920.—Milian regards as established that there are different kinds of *Spirochaeta pallida*, so that the old term "parasyphilis" for tabes and general paresis is correct. The difference between tabes, general paresis and syphilis in general is analogous to the difference between typhoid and paratyphoid. He comments on Hutinel's recent report of cases of latent inherited syphilis roused to active evolution by some intercurrent acute infectious disease. Lesions may flare up in bone, skin or elsewhere, and the syphilitic nature be overlooked unless the physician is on the alert to recognize the unusual aspect of the intercurrent disease under these circumstances.

Generalized Xanthoma.—Two colored plates show the histologic findings in a case of generalized papulous xanthoma in a boy of 9. His entire body was scattered with small polygonal tumors, yellowish or brown, for which no cause could be discovered. They persisted practically unmodified for nearly five years. Then the child died from privations during the German occupation of his town.

Anaphylaxis.—Louste is inclined to accept the physical theory of anaphylaxis rather than Richet's chemical or Friedländer's biologic theory. The physical theory ascribes the anaphylactic shock to processes of precipitation and absorption between colloids. This would explain the similarity of the phenomena observed, regardless of the etiology. It is possible that the chemical theory supplements the physical theory by assuming a chemical action as predisposing to the physical changes. Treatment should aim not only to ward off the cause but at the same time to train the subject to be less susceptible to the cause. A small preliminary dose or injection of peptone or similar substance adapts the organism so that the anaphylactic shock is warded off. Intolerance to quinin can thus be cultivated away by a small preliminary dose before the therapeutic dose of the drug. Sicard has found that the therapeutic dose of an antiserum can be safely injected into the arm when the circulation is completely shut off. In a few minutes the circulation can be restored by removal of the constricting band, this brief delay being sufficient to ward off danger of anaphylaxis from the antiserum. Pagniez has cured patients of intolerance for albumin in the food by having them take 0.5 gm. of peptone regularly before the meal. It is a simple matter

by this means to confer lasting immunity on the patient and relieve him of his annoying or dangerous idiosyncrasy.

Presse Médicale, Paris

April 7, 1920, **28**, No. 20

*Lethargic Encephalitis. A. Netter.—p. 193.
*Typhus. Legry, Courcoux and J. Lermoyez.—p. 195.

Epidemic Encephalitis.—This is an address delivered by Netter in the Sarre district where the disease is appearing.

Typhus.—A few mild cases of typhus having appeared in a group of foreign workmen in Paris, Legry and his co-workers warn all to be on the alert for such cases, and they describe the early clinical picture: the sudden onset, extreme prostration, high fever, headache and congested catarrhal conjunctivae.

April 10, 1920, **28**, No. 21

*Hygiene and Its Perspectives. L. Bernard.—p. 201.
Intravenous Injections of Hypertonic Glucose Solution. L. Cheinisse. —p. 206.

Hygiene and Its Perspectives.—This is Bernard's inaugural address on assuming the chair of hygiene at Paris.

April 14, 1920, **28**, No. 22

*Myoclonic Encephalitis. J. A. Sicard.—p. 213.
The General Reactions of Bone Tissue in Bone Disease. Nathan. —p. 214.

Myoclonic Encephalitis.—Sicard has encountered in less than three months five cases of what he calls myoclonic encephalitis, and says that it must rank beside lethargic encephalitis. General lassitude and intense lancinating pains with mild fever may keep up for a week or ten days; then comes a week or so of the muscular jerkings and twitchings but there is no contracture, no spasms, no chorea nor athetosis, only actual myoclonia. During this stage the neuralgic pains subside and there is no somnolency nor ocular symptoms. Toward the third week there may be a tendency to delirium but the reflexes and the pupils keep normal. The whole course of the disease is from four to eight weeks. In the terminal stage the delirium is constant but the other symptoms subside, and the patient falls into coma and dies or the delirium subsides and he recovers. The disease does not seem to have a destructive action on the nervous system but rather to fasten on it momentarily and impress it, and then pass off. Although the symptoms seem so grave yet they are transient, and if the patient recovers no permanent damage seems to result.

Progrès Médical, Paris

March 20, 1920, **35**, No. 12

*The Omentum from the Surgical Standpoint. A. Aimes.—p. 125.
*Catheterization of the Ureter for Anuria. L. Thévenot.—p. 129.
*Vein Urethroplastics. Legueu.—p. 130.
The Diplogenesis versus the Blastomere Theory in Relation to Double Monsters and Dermoid Cysts. E. Chauvin.—p. 132.

Surgical Importance of the Omentum.—Aimes discusses the protection afforded by the omentum in wounds and at operations, and its usefulness as a plastic material, reviewing the literature on the subject. He also analyzes several hundreds of cases of omentopexy on record, remarking in conclusion that this latter operation has some favorable cases to its credit, but on the whole has not fulfilled its promise. It has a high operative and postoperative mortality, and in cases of cirrhosis benefits only the one symptom, the ascites, and not always this.

Catheterization of the Ureter in Anuria from Concretions.—Thévenot knows of thirty-eight cases on record besides the two he here describes in which catheterization of the ureter put an end to the anuria either by pushing the calculus back into the kidney or by arresting a reflex spasm or by both mechanisms. If saline, glycerin or oil is injected through the catheter, this may induce reflex action causing the expulsion of the calculus. In some of the cases in the literature the anuria recurred later but was conquered in the same way by catheterizing anew. If there is no sign of uremia, this catheterization might be tried up to the fifth day of the anuria, but after this, or with uremia, nephrotomy should be done at once.

Vein Urethroplastics.—Legueu does not agree with those who think that there are too many drawbacks to using a vein to reconstruct the urethra. He reports a fairly successful case and states that in the twenty-three cases on record, an autograft was used in eighteen. The best results were realized with terminal urethroplastics, as this gives only one zone of stenosis. Diversion of the urine is an indispensable preliminary. Even more indispensable, he says, is the retention in the vein graft of its blood content. The segment of vein is tied at each end and the blood thus imprisoned serves to nourish the graft until it "takes." This gives it strength to resist the retraction of the skin in the tunnel made for it. He has traced the process in experiments on dogs.

Schweizerische medizinische Wochenschrift, Basel

March 25, 1920, **50**, No. 13

*The Internal Secretion of the Ovaries and Functional Uterine Hemorrhage. H. Meyer-Ruegg.—p. 241.
*Ambulant Treatment of Fractured Humerus. H. Iselin.—p. 248.
Epidemic Encephalitis at Zurich. H. W. Maier.—p. 249. Conc'n.

The Ovaries and Functional Hemorrhage from the Uterus.—Meyer-Ruegg presents the various theories in vogue on this subject, his own conviction being that functional uterine hemorrhage is not due primarily to the ovaries. "The nervous system or constitutional causes may be primarily involved, or the structure of the uterus. But removing the ovaries or devitalizing them with the roentgen rays breaks up the chain of processes which eventuate in menstruation, and this breaking of the chain occurs at a point where all the wires cross, that is, in the follicular apparatus. We are thus able to arrest menstruation entirely, but it is beyond our power to regulate it."

Fracture of the Humerus.—Iselin comments on the new light thrown on fracture of the humerus below the tuberosity by roentgenography from the axilla. This has shown that the sagittal displacement is usually much greater than would be suspected when examined from other planes. Ordinary extension does not suffice; it requires not only horizontal, sagittal extension but also diagonal adduction in the horizontal plane to correct the fracture. He gives illustrations of the roentgen findings and of the device with which he corrects the displacement while the patient is allowed to be up and about. The arm is held horizontal, the hand on the other shoulder, the entire arm resting on a thick upholstered cotton pad worn around the trunk, extending from the axillae to the waist, with a broad strap passing over the arm and over the hand on the other shoulder. This answered its purpose admirably in a number of cases as he describes.

Anales de la Facultad de Medicina, Lima

January-February, 1920, **3**, No. 13

Case of Lethargic Encephalitis. E. Odriozola.—p. 5.
*American Trypanosomiasis in Peru. E. Escomel.—p. 14.
Essential Epilepsy. C. A. Bambarén.—p. 18. To be cont'd.
The Pharmacists of Early Peru. H. Valdizán.—p. 42.
Sudden Death at Lima. F. Quesada.—p. 49. Cont'n.
Normal and Pathologic Speech. L. D. Espejo.—p. 61. Cont'n.
Infant Mortality at Lima in 1918. R. Eyzaguirre.—p. 72.

American Trypanosomiasis in Peru.—Escomel found *Schizotrypanum cruzi* in the blood of a man of 40 from the part of Peru that borders on Brazil, and publishes it as the first case of Chagas' disease to be recorded in Peru. The symptoms were a certain degree of general edema, extreme prostration, and tendency to somnolency, but the man related that he had long been subject to "marsh fever," and his complexion was the greenish-yellowish pallor common to the dwellers in the tropical zone of the center of South America.

Crónica Médica, Lima

February, 1920, **37**, No. 680

Nature of the Elemental Process of the Function. H. F. Delgado. —p. 45.
*The Pathologic Importance of the Proteins in the Urine. J. Lanfranco.—p. 59.
*Frambesia in Peru. Buenaventura Burga.—p. 72.

The Proteins in the Urine.—Lanfranco agrees with those who think there are not so many varieties of protein in the

urine as some allege. On the other hand, he declares, normal urine in the kidney is absolutely free from proteins of any kind. Among the proteinurias for which the liver is responsible, he lists the albuminuria of puberty, cyclic albuminuria, the albuminuria of the newly born, and alimentary albuminuria. There is also the proteinuria of endocrine or of cardiac origin and of chronic infections. In the latter the multiplicity of the lesions deprives the albuminuria of any exact diagnostic or prognostic value in respect to the kidneys.

Frambesia in Peru.—Yaws or frambesia is called *cuchipe* in Peru; it is usually mild and disappears without leaving a trace, but recurrence has been known. Two cases are described, and the discovery of *Treponema pertenue* in the lesions suggests that the disease might appropriately be called Castellani's treponemosis.

Revista Médica, Puebla, México

April, 1920, **2**, No. 3

The Civil Authorities and Professional Secrecy. F. L. Casián.—p. 49.
Composition and Nutritive Value of Foods and Beverages of Native Mexicans. M. Ibañez.—p. 56. Cont'n.
Rupture of Body of Uterus. A. López Hermosa.—p. 65. Cont'n.

Archiv für Verdauungs-Krankheiten, Berlin

1920, **26**, No. 1-2

*Obliteration of Hemorrhoids. I. Boas.—p. 1.
*Duodenal Tube Reveals Occult Hemorrhage. F. Seidl.—p. 19.
*Harmless (Renal) Diabetes. O. J. Wynhausen and M. Elzas.—p. 33.
*Percussion with Gastro-Intestinal Disease. R. Uhlmann.—p. 53.
Syphilitic Tumor of the Stomach. G. Haas.—p. 68.
*Effect on Gastric Secretion of Organ Extracts. F. Boenheim.—p. 74.
Roentgen-Ray Study of the Cecum Region. W. Bauermeister.—p. 121.

Obliteration of Hemorrhoids.—Boas' method of obliterating hemorrhoids by injection of alcohol into the nodules was described in The Journal, Feb. 14, 1920, page 497. He here gives minute directions for the procedure and emphasizes the fine results he has obtained in his fifty cases to date. The vacuum glass he uses to draw the hemorrhoids out from the anus fits over the entire anus region, and he applies the vacuum suction sometimes for as long as thirty minutes, to be sure that all the nodules have been sucked out. Even when the hemorrhoids protrude so that suction is not necessary, he usually applies it to make sure that no nodules will escape treatment. If there is much tendency to bleed, he gives three or four rectal injections of a 5 per cent. solution of calcium chlorid the day before.

When returned to the bowel after injection of the alcohol, the nodules shrivel and heal by a kind of thrombophlebitis process in three or four weeks and the mucosa finally feels quite normal. The whole process in the rectum is scarcely noticed by the patient, and requires no after-care as is necessary when the injected piles heal outside the anus. He rubs the extra-anal mucosa with petrolatum and is careful not to allow this mucosa to be pushed inside, as it may become irritated by escaping alcohol and possibly ulcerate. If any nodule protrudes anew after defecation it may be necessary to inject it anew with alcohol or allow it to heal outside the anus. In four of his fifty cases this treatment was applied on account of recurrence after excision some years before. The healing was complete in more than 50 per cent. of his cases in one or two weeks, including 25 per cent. healed in from four to eight days. With this technic the sphincter is left intact, and the results were as satisfactory in the severest as in the mildest cases, while the certainty and the permanence of the cure surpass, he reiterates, even what can be realized with the knife.

Duodenal Tube Reveals Occult Bleeding.—Seidl uses a soft duodenal tube to obtain contents from the cardial and pylorus regions of the stomach and from the duodenum, to detect occult hemorrhage and locate approximately the source of the bleeding. In some cases of certain ulcer in stomach or duodenum the tube findings were positive when no trace of blood could be found in the stools on three examinations, at intervals, or else bleeding hemorrhoids rendered the findings unreliable. He gives the details of twenty-six of his total seventy cases thus examined, showing the instructive findings as the patient lies on his left side, with the tube introduced for 50 cm. or on the right side, tube 90 cm., or the tube is carried down into the duodenum. The findings were constantly negative in patients showing no symptoms of an ulcer. The stomach and duodenal contents thus obtained can be used for other analysis, and repeated tests of this kind will distinguish ulcer from cancer, show the progress under treatment and the indications for operative measures. After gastro-enterostomy for ulcer, the ulcer did not heal unless a systematic dietetic treatment of the ulcer was enforced thereafter. The soft duodenal sound does not cause erosions which might obscure the findings.

Harmless Diabetes.—Wynhausen and Elzas prefer this term to "renal diabetes," the term usually employed to express glycosuria with normal sugar content of the blood and very slight if any of the usual symptoms of diabetes. This diabetes innocens, as they call it, is not rare as they have records of over thirty cases in a comparatively brief period, and they analyze most of them here. The disturbances are so slight that no one seeks medical aid for them, and the discovery of the glycosuria is usually accidental. It can be classed as belonging to this harmless group when the sugar content of the blood keeps normal before and after the test breakfast or does not go above 1.5 or 1.7 per thousand. They recognize four groups, all with normal blood sugar content, but classified according to the amount of glycosuria after the alimentary test. The harmless character persists in three of the groups, but in the fourth, in which there is slight glycosuria fasting but it runs up high after the alimentary test, symptoms suggesting true diabetes develop in time. The experiences related suggest further that it is possible for the sugar content of the blood to be above normal, and yet the glycosuria persists in this harmless type, showing no tendency to progress.

Tenderness on Percussion in Diagnosis of Gastro-Intestinal Disease.—Uhlmann insists that the sensitiveness to tapping is far more instructive than mere tenderness in the differentiation of inflammatory from nervous-functional processes, for localization of a pathologic focus and control of its progress or subsidence, for discovery of a localized painful point, and for estimation of irritation of the peritoneum. He gives examples of each of these and describes the zone of extra tenderness that usually encircles the point most sensitive to the percussion hammer. The sensitive zone is so clearly outlined by the patient on repeated examination that the method is actually objective.

Effect on Gastric Secretion of Extracts of Endocrine Glands.—Boenheim devotes nearly fifty pages to the account of his tentative treatment in this line, in 154 separate experiences. The findings are tabulated for comparison. A marked regulating influence on gastric hyperacidity was evident from thyroid and pituitary treatment, and on subacidity and anacidity from pancreas extract. Thymus and thyroid extract have a similar but less pronounced action. With normal acidity, he found that thymus and pituitary increased while thyroid and ovarian treatment reduced the acidity; after a test breakfast digestion of albumin was checked. He says that these endocrine extracts, injected subcutaneously, seem to have a potent action on gastric secretion, transforming it, probably by their effect on the nervous mechanism of the stomach. Some of his conclusions conflict with generally accepted views, but the results obtained justify, he says, continuing research in this line both experimentally and in the clinic, as the secretory functioning of the stomach can thus be modified at will by organ extracts, and the effect lasts long after the treatment has been suspended. His series of climacteric neuroses confirms that excessive ovarian functioning checks gastric secretion, while insufficient ovarian functioning entails a tendency to hyperacidity.

Deutsches Archiv für klinische Medizin, Leipzig

Oct. 24, 1919, **130**, No. 5-6

*Atypical Chronic Anemia. F. Herzog.—p. 285.
*Atypical Hemolytic Jaundice. K. Beckmann.—p. 301.
*Polycythemia. G. Herrnheiser.—p. 315.
*Origin of Albuminuria. Recka Mandelbaum.—p. 331.
*Acute Yellow Atrophy of the Liver. W. Weigeldt.—p. 342.
*Influence of Muscular Work on Sugar Content of the Blood. O. Brösamlen and H. Sterkel.—p. 358.

Atypical Chronic Anemia.—Herzog describes two cases of chronic anemia, in men of 23 and 34, for which no cause could be discovered during life or at necropsy. The younger man died suddenly, during an apparent remission, from pulmonary edema. The blood picture was that of secondary anemia; there was no gastric achylia while the iron reaction in the organs excluded Biermer's pernicious anemia. The other man's anemia was of seven years' standing with various remissions, and intestinal hemorrhages for a time but the anemia had preceded them. There was no very active regeneration of blood, but the abnormality was too slight and of too long duration to be classed as aplastic anemia. The findings in the tongue resembled those of true pernicious anemia, but the lack of gastric achylia and the recent benefit from blood transfusion seemed to exclude this. The patient is still under observation.

Atypical Hemolytic Jaundice. — Beckmann reports the minute details of two cases of supposed hemolytic jaundice in which there were no signs of extra susceptibility of the blood corpuscles to hemolysis. But it proved possible by applying provocative measures to the spleen—as in malaria—to render the erythrocytes abnormally susceptible. In two other cases in which the erythrocytes were found already exceptionally fragile, these provocative measures failed to induce any appreciable modification. In one case of hemolytic jaundice, clinically normal conditions were restored after splenectomy except for slight anisocytosis and slightly abnormal susceptibility of the erythrocytes. He adds that no traces of any special hemolytic substances could be discovered. The provocative measures aimed to reduce the resisting powers of the organism in general, or of the spleen alone, and thus exaggerate the destruction of the blood. The spleen was lightly massaged and then douched with alternately hot and cold water, and the region was then exposed daily to the mercury quartz lamp from front and rear for periods increasing from five to sixty minutes in the course of the week, the provocative measures concluding with a single roentgen exposure of three quarters of the full dose. The patients were men of 37 and 34, and the child of the younger man showed a similar tendency to anemia and slight jaundice with enlargement of the spleen. The provocative measures induced prolonged extra susceptibility of the erythrocytes; it was evident six months afterward in the man reexamined. The stools were normally colored in both and there was urobilinuria, and the extra susceptibility of the erythrocytes coincided with increased numbers of erythrocytes but mainly of the microcyte type. Microcytosis seems to be typical of hemolytic jaundice, and suggests some causal connection. Removal of the spleen may cure the tendency completely and is usually followed by marked benefit, even in the familial form although it may not be lasting here. In one such case the spleen weighed 2½ pounds and the erythrocyte susceptibility index dropped from 0.66 to 0.52, very close to the normal range.

Polycythemia.—Herrnheiser argues that not only increased production of erythrocytes but reduction in their normal destruction are involved in the production of true polycythemia rubra, and there may be various causes for this. In a case described with the metabolic findings nothing to indicate primary irritation of the bone marrow could be discovered. In such cases, he adds, special attention should be paid to detection of constitutional anomalies, to the cholesterin metabolism and to the behavior of the frequent orthostatic albuminuria. The patient in his case was a robust agricultural worker of 18 who complained of agonizing headaches, fatigue and dizziness. He ascribed the symptoms to a sunstroke the summer before. The spleen was not enlarged and the blood pressure was within normal range, but there was pronounced orthostatic albuminuria, and the choleserin content of the serum was below normal. No relief was obtained from a single lumbar puncture. Venesection seemed to benefit more than raying the long bones, but as spontaneous remissions are sometimes observed, Herrnheiser does not regard this as conclusive.

Origin of Albuminuria. — Mandelbaum comments on the general assumption that while the diseased kidney may not permit urea, salt or even water to pass, yet it will let the big albumin molecule filter through without interference. Clinical examination of sixty-two patients with various forms of kidney and bladder disease and a series of experiments on rabbits have demonstrated that this view is incorrect. The inflamed kidney epithelium does not allow the passage of serum albumin. Hence it follows that the albumin found in the urine does not come from the blood but must be secreted by the renal epithelium itself, an active, vital function or a reaction of the epithelium cells. Conditions here are the same as with meningitis; normally there are only traces of albumin in the cerebrospinal fluid, but when the meninges are inflamed then the albumin content rises. All the tests showed that filtering ascites fluid, pleural effusions, blood serum and similar fluids through a delicate animal membrane, such as the rabbit and cat intestine, the albumin content of the filtrate was about the same as that of the original fluid, and the proportion of albumin to globulin persisted unmodified, but when the membrane was hardened or otherwise rendered less permeable, the globulin was arrested first; with increasing impermeability none of the albumin passed into the filtrate or dialysate. Applying these findings to conditions in the kidney, either the proportion of globulin and albumin should be the same in the urine as in the blood, or the albumin should predominate. But this is not the case with diseased kidneys. A relative preponderance of globulin has been found in the urine in simply congested kidneys and in orthostatic albuminuria. This conflicts most decidedly with the assumption that the albumin merely filters through from the blood.

Acute Yellow Atrophy of the Liver.—Weigeldt reports the discovery of vacuolar inclusions in about 50 per cent. of the neutrophil polymorphonuclear leukocytes in a case of acute yellow atrophy of the liver in a man of 27. The number of erythrocytes and the hemoglobin percentage are usually above normal in this disease, and the neutrophils are above the usual figures, with displacement of the blood picture to the left. But these findings have no differential significance as they are common to phosphorus poisoning, infectious and other forms of jaundice. If these vacuolar cell inclusions are confirmed by others, this will aid materially in the diagnosis. The article is illustrated. Weigeldt has not been able to find any record of such intracellular findings in the accessible literature.

Influence of Muscular Exertion on Sugar Content of the Blood.—Brösamlen and Sterkel found a marked reduction in the sugar content of the blood in ten healthy persons after physical exertion leading to rapid fatigue. The maximum reduction was reached in from one and a half to four hours after the exertion. Corresponding tests in four diabetics were followed by a pronounced rise in the sugar content, beginning at once after the exertion and keeping up for several hours. The curve is not regular but shows slight rises and falls. The findings on the whole confirm that diabetes is essentially a pathologic excessive glycogenolysis. There did not seem to be any connection between the intensity of the reaction and the severity of the diabetes, in his cases, and in two of the tests a slight reduction of the blood sugar content was found. The findings are apt to be misleading unless series of tests are made, and it does not seem to be possible to modify the exertion-sugar curve by dieting or changing the mode of life.

Deutsche medizinische Wochenschrift, Berlin

March 25, 1920, **46**, No. 13

*Partial Immunity, with Depression of Virulence. Morgenroth and others.—p. 337.
Tonsils as Portal of Entry for Infections. J. Citron.—p. 340.
Diagnostic Value of Agglutination Reactions with Various Micro-Organisms Present in Typhus Fever. E. Weil.—p 343.
Origin of Acute Leukemia. H. Lüdke.—p. 345.
Psychophysical Methods in Psychiatry. O. Löwenstein.—p. 348.
Critical View of Public Disinfection System. M. Neisser.—p. 351.
Reconstruction of Thumb. P. Manasse.—p. 352.
Dermatitis from Imitation Leather Sweathands. Siebert.—p. 355; Idem. J. Stangenberg.—p. 355.
Decline in Birth Rate and Loss of Life in England and France During the War. F. Prinzing.—p. 355.
Management of Epistaxis. G. Finder.—p. 356.

Partial Immunity, with Depression of Virulence.—Morgenroth, Biberstein and Schnitzer have been experimenting with superinfection, or superposed infection, as this field of investigation has thus far resisted any attempts to harmonize its findings with the prevailing theories in regard to immunity, and as experimental studies in this field seemed to promise good results. They started with the commonly accepted theory that the infected organism acquires an immunity against superinfection, and against a like, superposed infection, but they became interested in the investigations of Landsteiner and Finger, who maintain that the organism infected with syphilis is by no means immune to a new syphilitic infection, as has been commonly supposed. Their experiments demonstrated that mice with an experimental, chronic streptococcus infection, streptococci being found in the blood and in the organs, possess immunity toward a superinfection with streptococci, as is shown by the fact that when given a streptococcus dose, such as will kill normal animals within twenty-four hours, they show no change in their behavior. They are immune not only toward the strain of streptococcus with which they were primarily infected but also against foreign strains of streptococcus. However, this immunity is not absolute but relative, for it is broken down by a strain of especially high virulence, in which case the infection runs an acutely fatal course, as in the controls. This partial immunity does not lie in the fact that the superinfection does not "take"; on the contrary, the streptococci used for the superinfection appear in the blood and organs, and by the aid of especially "marked" strains could be shown to remain present for some time. The partial immunity consists, therefore, merely in a depression of the virulence of the infection. This immunity was developed in from six to twenty-four hours after the experimental infection. It does not seem to have anything to do with anaphylaxis, but presents a new kind of immunity. They theorize that the passing of an acute infection into a chronic phase is conditioned by the development of this "depression immunity." The latter is not the result of the chronic infection, but every infection that is not rapidly fatal has its course determined by the depression immunity. Each phase of the infection is the result of the antagonism between the causal germ and the degree of depression immunity at the moment. This assumption throws light on natural immunity and all other forms of immunity which do not fit into the picture of immunity from antibody production. They suggest in conclusion that certain hormones which normally regulate the growth of the cells may be the factors in this depression immunity.

Münchener medizinische Wochenschrift, Munich

Dec. 19, 1919, **66**, No. 51

*The Vessels in Syphilis and Nicotin Poisoning. R. Beneke.—p. 1463.
Iodin Ions in Treatment of Erysipelas. K. F. Beck.—p. 1467.
Year of Industrial Service and Physical Training. Weitz.—p. 1472.
Need of Interest in Athletics in Schools and Universities. Pfister.—p. 1472.
Sanitary Procedures in Southern Bavaria in 1919. G. Mayer.—p. 1473.
Use of Pyoktanin in Internal Medicine. G. Blank.—p. 1474.
Intravenous Injection of Opaque Fluids. W. Heyl.—p. 1475.
Measurements in Deep Roentgenotherapy. H. Chaoul.—p. 1475.
Utilization of Surplus Human Milk. R. T. von Jaschke.—p. 1477.
Wound Diphtheria. A. Weinert.—p. 1477.
Blood Findings in Typhus Fever. F. Schiff.—p. 1478.

Vascular Changes in Syphilis and Nicotin Poisoning.—Beneke reports three cases of nicotin poisoning that presented peculiar vessel symptoms: vascular dilatation, degeneration of the media, marked fatty degeneration of the intima, with relatively slight sclerosis; the coronary arteries and other branches of the aorta were especially implicated. Beneke regards it as significant that a predominating nicotin poisoning could cause such severe arterial changes. He thinks in view of these findings, and the fact that smoking is so widespread, the assumption that nicotin poisoning may be the primary cause of many cases of grave arterial changes, or at least a strong contributory factor, appears to be well founded. The three men were 42, 44 and 48 years old, and had been addicted to smoking many strong cigars or cigarettes. No abuse of alcohol was known and there was nothing to suggest syphilis or other infection. Two had succumbed to coronary failure.

Wiener klinische Wochenschrift, Vienna

Jan. 1, 1920, **33**, No. 1

Colloidal Gold Reaction in the Cerebrospinal Fluid in Syphilis. Kyrle, Brandt and Mras.—p. 1.
Accentuation of the Effect of Quinin by Means of Fluorescent Substances. S. Rusznyák.—p. 6.
Combined Quinin and Methylene Blue Therapy in Malaria. Reitler.—p. 9.
Radiotherapy in Carcinoma of the Larynx. G. Alexander.—p. 12.
Mesenteric and Retroperitoneal Suppurations in the Differential Diagnosis of Appendicitis. W. Goldschmidt.—p. 14.
*Thermopenetration in the Treatment of Chilblains. R. Grünbaum.—p. 16.

Thermopenetration in Treatment of Chilblains.—Grünbaum has tried the mercury vapor lamp repeatedly in the treatment of chilblains, as it has been so warmly recommended of late, but he has not found it essentially superior to other methods. For the past year he has therefore been trying another method and is enthusiastic over the results. In treating for other diseases, he discovered accidentally that chilblains improved rapidly following thermopenetration and soon disappeared entirely. He therefore began to use thermopenetration as the routine treatment for chilblains and he is convinced that it is far superior to all the other usual forms of treatment. He is inclined to think it will prove efficacious in severe frostbite, but has not had an opportunity to try it out yet.

Zentralblatt für Chirurgie, Leipzig

March 20, 1920, **47**, No. 12

Instrumental Method of Tying Knots in Ligatures and Sutures. V. D. Varela (Buenos Aires).—p. 266.
Large Loose Body Found in Hydrocele of the Testis. E. Glass.—p. 267.
Antagonistic Action of Pituitary and Epinephrin on the Intestines. B. Zondek.—p. 270.

March 27, 1920, **47**, No. 13

*Carcinoma Dose in Radiotherapy. J. C. Lehmann.—p. 290.
*Postoperative Tetany and Parathyroid Grafts. E. Borchers.—p. 293.
*Extraperitoneal Abdominal Incision for Nephrectomy. K. Hofmann.—p. 297.

Carcinoma Dosage in Radiotherapy.—Lehmann assumes that nowadays almost every surgeon gives his patients with carcinoma of the breast prophylactic raying, following an operation. He states that he and his associates in the surgical clinic at Rostock have been using this method for the last seven years with the result that the freedom from recurrences for a period of three years has decidedly increased, being formerly 33 and now 47.5 per cent. of the cases coming to operation. He finds that in cachectic patients carcinomas are not at all sensitive to roentgen rays, whereas in the aged, carcinomas are often of slow growth and in that case easier to check with roentgen rays. Chancroid of the lip requires much more than 100 per cent. of the erythema dose, and radium therapy will usually prove more efficacious than roentgenotherapy. While no doubt progress is being made in the technic of roentgenotherapy as applied to carcinoma of the breast, Lehmann does not think it is wise to be overjubilant for fear of bringing the method into discredit.

Postoperative Tetany and Transplantation of Parathyroid Glands.—Borchers adds two more cases to the list of those in which parathyroid grafts have been successful in the treatment of postoperative tetany. It is unfortunate that ten years ago many surgeons, on the basis of animal experimentation, reached the conclusion that the transplantation of parathyroid glands from one person to another in treatment of tetany was useless. Their skeptical attitude was not justified, for even at that time excellent clinical results had been secured which Borchers is inclined to regard as more important than theoretical premises deduced from animal experimentation. Many authors had shown by animal experiments that the transplanted glands would not preserve their structure and function, but in man the glands, as can now be shown by a whole series of cases extending over several years, do preserve their structure and function, or at least a structure and function that protects. From this the important conclusion may be derived that animals behave functionally different from humans. That there are some failures still is only to be expected, but to date parathyroid grafting is the only treatment of chronic postoperative tetany that offers any chance for success.

The Extraperitoneal Abdominal Incision in Nephrectomy.—Hofmann denies that there is no essential difference between the extraperitoneal abdominal incision as recommended by him and paraperitoneal nephrectomy. He defends his method of an anterior longitudinal incision along the border of the rectus abdominis, or between the recti abdominis or even directly in the linea alba, analogous to Saenger's transperitoneal procedure, for the reason that thus the hilum of the kidney is brought into the center of the field of operation. The method is adapted to nephrectomy for any cause.

Zentralblatt für Gynäkologie, Leipzig

March 20, 1920, **44**, No. 12

Blood Transfusion. E. Bumm.—p. 286.
Effect on Lactation of Injection of Own Milk in Puerperas. F. Kirstein.—p. 292.

March 27, 1920, **44**, No. 13

*Exact Localization of the Focus of Infection in Roentgen Treatment of Carcinoma of the Uterus. H. Borell.—p. 313.
Treatment of Rectal Ulcers After Mesothorium-Raying of Cancer of the Uterus. W. Kolde.—p. 319.
Blood Transfusion in Obstetric Cases. P. Esch.—p. 321.
Protection for Hereditary Syphilitics. M. Schwab.—p. 323.

Exact Localization of the Center of the Cancer in Roentgen Treatment.—Borell states that most roentgenologists (himself included) are not in possession of all the special instruments for determining the exact distance and localization of the focus from the surface of the body which it is so necessary to know in order to decide what dosage to use and in order to adjust the tube so that the central rays will fall on the center of the focus of infection. These exceedingly important points do not seem to be given by all the careful attention that they deserve. He describes a method that is available to all and which he has found very helpful in the absence of the more delicate measuring instruments, such as the iontoquantimeter, etc. It is adapted from the principle of roentgenologic localization of foreign bodies at any depth. A roentgenogram is made of the patient in a position which is exactly noted by a definite system that is described in detail, and then the tube is moved 6.5 cm. horizontally to one side, and another exposure is made on the same plate. This double exposure furnishes the basis for the localization of the foreign body, or in the present instance, of the center of the cancer, by two homologous points in the foreign body shadows. By means of Fürstenau's bathometer, which is provided with three different scales, the vertical distance of the foreign body, or of the site of the infection, is then quickly determined. Borell has been using the method for several months, and states that he has noted unusually good results in the regression of carcinomas by reason of the more exact technic that this method made possible.

Zentralblatt für innere Medizin, Leipzig

March 20, 1920, **41**, No. 12

Epidemic Encephalitis. R. Jaksch.—p. 210.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Feb. 14, 1920, **1**, No. 7

*Anomalies in Head and Neck of Femur. J. H. Zaaijer.—p. 533.
*Pulse and Respiration Reactions to Emotions and Mental Processes. J. Bramson.—p. 547. Conc'n in No. 8, p. 614.
Systematized Public Health Service for Small Cities. Muskens.—p. 562.
*Radiotherapy for Mammary Cancer. W. H. Jolles.—p. 567.

Anomalies in Head and Neck of Femur.—Zaaijer refers to the dystrophy of the head or neck of the femur in the young such as has been described by Legg, Calvé and Perthes. It occurs usually between 5 and 10, with an extreme range of 3½ to 12. Before the publications of the above writers (1910) such cases would have been labeled tuberculous coxitis and treated accordingly. This mistake is still made, Zaaijer says, by those not familiar with the literature of the last ten years on this osteodystrophy of the hip joint. If there is pain, the joint must be relieved from weight-bearing, with correction of excessive adduction if required, but otherwise the child can be left unmolested. The final outcome may be perfect functioning or a condition like that with severe deforming arthritis. Usually, however, the final condition is between these extremes, with very little disturbances. The head may assume a valgus position, with the neck in a varus position. It is important to keep the child under supervision and correct in time any tendency to excessive varus deformity.

In 1914 a compilation of fifty-five such cases was published, all but eleven in boys, and in 66 per cent. of the cases there was a history of trauma of the hip joint, and this was probable in all. The injury at the junction of the epiphysis had evidently interfered with the nutrition of the head and neck. Zaaijer reports further the case of a girl of 12 who had tripped and fallen, and the neck and head had become entirely detached from the shaft of the left femur, complete epiphysiolysis. The dislocation was corrected and the parts healed in place in a plaster cast. About a year and a half later, a similar epiphysiolysis occurred on the other side. This healed likewise in a cast and, except for slight stiffness, the gait is now normal. Köhler has also published a case of bilateral femur-epiphysiolysis; it occurred while jumping rope. With the Osgood-Schlatter disease of the tuberosity of the tibia, these three form a group in which there may be occasionally pain but there is no inflammation, and the clinical manifestations are insignificant in comparison to the often gross anatomic lesions. The Osgood-Schlatter epiphysitis of the tibia occurs at 14 or 15, and juvenile epiphysiolysis from 14 to 18. He explains how the growth at these ages predisposes to these anomalies. The question of complete bed rest should be considered; it might ward off further deformity if applied during the first phase of the Perthes' disease, and it is certainly beneficial in the Osgood-Schlatter epiphysitis of the tibia. But it is a difficult matter to enforce for children who feel perfectly well and have no pain. With actual fracture and dislocation at the epiphyseal line, more or less strict bed rest for several months has to be enforced in some cases.

Influence of Mental Processes on Pulse and Respiration.—Summarized on page 1431.

Radiotherapy of Mammary Cancer.—Jolles applied both the roentgen and radium rays in the inoperable case described, and reports it as a clinical cure under radiotherapy for nearly three years to date.

April 17, 1920, **1**, No. 16

*Quantitative Technic for Sachs-Georgi Test. S. T. Bok.—p. 1328.
Ultimate Outcome After Tonsillectomy. H. Burger.—p. 1339.
*Acetone in Spinal Fluid from Standpoint of Functions of the Choroid Plexus. J. Koopman.—p. 1346.
Present Status of Vitamin Question. B. M. van Driel.—p. 1350.

Quantitative Technic for Precipitation Test for Syphilis.—Bok explains that the Sachs-Georgi reaction is like the first phase of the Wassermann reaction only much more intense. This precipitation of colloids is merely a chemical process, and can thus be studied and afford a deeper insight into the nature of syphilis than the tests which superpose two biologic processes. He describes a modification of the technic which allows quantitative classification of the findings, saying that the original qualitative technic is absolutely unreliable. The nonspecific reactions which occur only with 0.1 or 0.2 can be disregarded; with syphilis the index is higher than this. The test is more sensitive than the Wassermann and is simpler and takes less time. A normal beef heart provides a sensitive reagent for the test, and the cerebrospinal fluid is used undiluted in a set of five test tubes.

Acetone in the Spinal Fluid.—Koopman reports that 10 or 15 c.c. of acetone injected subcutaneously or by the vein did not pass into the cerebrospinal fluid, while inhaled chloroform was constantly found in it. His tests were made on six rabbits. In a fatal case of hemorrhage in the suprarenal, he found 12 mg. of acetone per liter in the spinal fluid, and occasionally in epileptics, he detected acetone in the spinal fluid. The intrameningeal pressure of the fluid was always abnormally high in the cases of diabetic coma he has examined. With severe acidosis, but no coma, he has never found the spinal fluid normal when the pressure was high, but in three cases he witnessed the prompt rise in the pressure when the fluid contained acetone and sometimes diacetic acid, and the pressure was normal when first examined. This suggests that the acetone irritates the choroid plexus and whips it up to secrete more of the cerebrospinal fluid. The same

may occur with urea, chlorids and albumin, and this has suggested the question whether the choroid plexus functioning may not be compared to that of the kidney, and whether it may not function vicariously for the kidneys to a certain extent in some conditions. He adds that this theoretical assumption justifies tests of the permeability of the choroid plexus along the lines of the functional kidney tests, and also anatomic study of the choroid plexus in cases of death from uremia or diabetic coma.

Hospitalstidende, Copenhagen

Feb. 25, 1920, **63**, No. 8

*Is the Lasègue Symptom from the Nerves or the Muscles? J. Helweg. —p. 113. Begun in No. 7, p. 97.

The Lasègue Sign in Sciatica.—Helweg presents an array of arguments to prove that the pain with the Lasègue sign is from the muscles, not from the nerves. He insists that the sciatic nerve is not responsible for the pain experienced when the extended leg is lifted passively from the plane of the bed, the knee still extended, and declares that he does not know of a single instance on record of lesions having been found in the sciatic nerve of persons who had suffered from sciatica during life. He also recalls that the sciatic nerve is accessible to direct pressure only in the popliteal space, where the popliteal nerves can be palpated. In his examination of 300 patients with sciatica, he never found the popliteal nerves more sensitive to pressure on the side of the sciatica than on the sound side. Tenderness along the course of the sciatic nerve may be due to the superposed muscles, but there is no evidence to date that it is due to the sciatic nerve itself.

March 3, 1920, **63**, No. 9

*General Arc Light Treatment of Laryngeal Tuberculosis. N. R. Blegvad.—p. 129. Begun in No. 6, p. 81.

Phototherapy of Laryngeal Tuberculosis.—Blegvad here describes his success in 52 cases of laryngeal tuberculosis in which treatment was with general exposures to the carbon arc light. Each case is reported in detail, with illustration of the findings before and after in a number. The patient reclines, undressed, under the light from four powerful (20 amperes) arc lights, four patients at a time sharing the light bath. From fifteen minutes at first, the exposures are lengthened in a week to an hour and were never given longer than this. Among the 74 patients thus treated, the laryngeal tuberculosis healed completely in 17. In 16 the tuberculous process continued its course unaffected. Most of the patients had concomitant pulmonary tuberculosis, and in an advanced stage in some. The ulcerative processes in the larynx promptly subsided under the phototherapy, sometimes supplemented with local measures, especially the galvanocautery applied deep in the lesion, according to Grünwald's method. The course of treatment lasted from two to four, six or more months; some of the patients took two courses with several months' interval.

Hygiea, Stockholm

March 31, 1920, **82**, No. 6

Parenteral Injections of Milk in Treatment of Infectious Diseases. I. Bratt.—p. 177.

Norsk Magazin for Lægevidenskaben, Christiania

April, 1920, **81**, No. 4

*Volvulus of Sigmoid Flexure. R. Ingebrigtsen.—p. 329.
*Retrograde Incarceration of Inguinal Hernia. C. Mamen.—p. 340.
*Active Movements in Treatment of Purulent Arthritis. O. Usland. p. 358.
*Case of Vagitus Uterinus. K. Gjersøe.—p. 367.
Strychnin to Ward Off Collapse with General Anesthesia and Acute Infectious Disease. F. Frick.—p. 369.
*Diabetes and Influenza. K. Motzfeldt.—p. 372.
*Methyl Alcohol Poisoning and Blindness. J. F. Harboe.—p. 379.

Volvulus of Sigmoid Flexure.—Summarized May 1, 1920, p. 1287, when published elsewhere.

Retrograde Incarceration of Inguinal Hernia.—Mamen compares a case which he reports in detail with the 62 cases of Pólya's international compilation; the ages ranged from 7 to 76. The 2 cases in which no operation was attempted terminated fatally the third and fourth days. The intestine in the hernia forms a W, the center loop usually projecting back into the abdominal cavity. The intestine was considered reducible in 31 of the cases, but 4 in this group died. In 3 of the cases there were three loops of intestine involved. The hernia in these cases is usually very large and of long standing. In some of the cases the abdominal wall protruded above the hernia, and a palpable tender tumor was evident in some, as in Mamen's own case. If more than one loop is found in a hernia, further investigation is imperative.

Treatment of Joint Lesions.—Usland has been converted to Willems' method of early active exercise of the suppurating joint by his success in the case of a boy of 10 with a purulent process in the knee which had been cut by a fall on a broken bottle. The immobilizing bandage and the catgut sutures were removed on account of the streptococcus infectious process, nine days after the accident, and active movements of the knee were made every hour. The temperature dropped at once with the active movements. The boy was able to flex his knee to 90 degrees without pain by the second day, and to 180 degrees the sixth day, and was up and about in less than two months. By the end of the two months the skin had healed completely and the knee was so flexible that the boy could touch his nates with his heel. The ideal drainage of the joint under the influence of the active movements seems to be the main element in the favorable outcome, as also the remarkable absence of pain in comparison to the pain in an immobilized joint.

Vagitus Uterinus.—Gjersøe reports that during forcible delivery of a primipara, when the hand was introduced into the uterus a cry was heard from the interior of the uterus, clearly audible to the nurse and the two assistants, and it was repeated several times in the course of ten minutes. Extraction finally succeeded, with forceps, and mother and child are doing well. Fully twenty minutes elapsed between the first vagitus uterinus and the extraction, but the child was not especially asphyxiated and no attempt at resuscitation was required, the child screaming at once. The entering hand had evidently introduced air into the uterus. The cry testifies that a child can be born with air in its lungs, but this can scarcely occur without artificial measures to aid delivery.

Diabetes and Influenza.—Motzfeldt remarks that Joslin in his compilation of 1,000 cases of diabetes was not able to trace it to an infectious disease in more than 36 cases. During the influenza epidemic of the nineties, several reported instances of diabetes following influenza, but in the recent epidemic he knows of only 2 published cases of the kind, and in these it was merely the exacerbation of latent diabetes. He here relates 4 cases in which the first symptoms developed directly after an attack of influenza, and in one of the cases, there was pain in the tender pancreas. The patients were 14, 15, 20 and 35 years of age, and the diabetes was mild; reexamination from ten to eighteen months later showed tolerance for 150, 300 or 500 gm. bread, and in some, alimentary glycosuria.

Methyl Alcohol Intoxication and Blindness.—Harboe reports a case in which the man was under observation for a week before the cause of the disturbances was discovered, the man denying drinking liquor. The bottle from which he had imbibed was finally found and still contained some of the "spirit" which proved to be pure methyl alcohol. He could count fingers at half a meter with the right eye and with the left detect screening of the light at the same distance. The visual field was much restricted. Nine charts of the fields are reproduced showing the gradual improvement, but by the end of four months there was still some paresis of accommodation. There were no signs of the usual retrobulbar neuritis at first, but some atrophy of the optic nerve finally became evident. Treatment is usually with lavage of the stomach and enemas with measures to induce diaphoresis. In conclusion, Harboe cites the literature on poisoning by wood alcohol, and mentions Kafka's report in 1919 of eleven cases of retrobulbar neuritis in which exclusion of all other causes seemed to point to this.

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OFFICIAL METHODS OF CONTROL OF REMEDIAL AGENTS FOR HUMAN USE*

G. W. McCOY, M.D.
Director, Hygienic Laboratory
WASHINGTON, D. C.

Control of remedial agents by the government rests on the interstate commerce clause of the constitution, under which the Food and Drugs Act is enforced by the Bureau of Chemistry of the Department of Agriculture, and the law governing the sale of serums, viruses, toxins and analogous products which is enforced by the Public Health Service of the Treasury Department. Control is also exercised over all drugs, serums, etc., that are imported.

This preliminary statement is made to clarify the situation with respect to some notorious frauds, which well-meaning persons have rightly felt ought to be suppressed but which on further investigation were found not to be the subject of interstate traffic. The suppression of these logically rests with local authorities, state or municipal.

THE FOOD AND DRUGS ACT

With respect to domestic preparations, the Food and Drugs Act, in its bearing on remedial agents, is chiefly a measure designed to secure truthful names and statements. This control is necessarily divided into that which is intended to apply to preparations designed primarily for the use of the laity direct, and that which is applicable to medicines ordinarily prescribed by physicians. I need not tell this section that there is much overlapping of these groups.

This law is designed to secure truthful names and truthful statements; but if one stops to consider what that means, one will see that in doing this the federal Food and Drugs Act insures to the purchaser, physician or layman, an honest product. It means that when the druggist orders from the wholesale dealer a fluidextract, this law tends to insure that he will get the United States Pharmacopeia preparation. If a bottle of tablets is labeled "Aspirin, 5 grains," this law provides punishment for the shipper of the package in interstate commerce if the tablets do not contain 5 grains of acetylsalicylic acid. As an example, last year many shipments of alleged castor oil capsules, although labeled to be castor oil, contained from 50 to 70 per cent. of cottonseed oil, and were made the subject of official action. The federal Food and Drugs Act protects and makes respected the confidence that the patient naturally gives to his physician and to his druggist.

In connection with the enforcement of this law, the courts generally take a broad view of the intent of the act, and in spite of the delays incident to any legal procedure, eventually it is usually possible to secure conviction. Even if the actual wording of an advertisement is cleverly presented and possibly literally truthful, if the impression conveyed to the purchaser is not one that is justified by the composition of the preparation, the law may be invoked.

In the case of "patent medicines," the law requires that the label or package shall not contain any statements of therapeutic or curative effect that are false and fraudulent. The use of the words "cure" or "remedy" is not forbidden; but they must be used only for medicines that actually are cures or remedies for the conditions named on the label. The placing on the label of the names of diseases is taken to imply that the medicine contained in the package is in itself a treatment for the diseases or conditions named.

The requirements with respect to labeling have resulted in the use of the words "cure" and "remedy" becoming comparatively rare, and such expressions as "will often relieve" "will frequently tend to overcome," "will aid nature to restore," "may sometimes be used with benefit," "some cases will yield to the treatment," and similar expressions, are becoming popular. Obviously, a purchaser who wishes to use a proprietary medicine, and uses it in the face of no stronger assertions than these, is within his rights in following the dictates of his own judgment. In this connection, it is remarkable how vague and noncommittal advertisements may be in medical journals and yet succeed in impressing medical men. Not long ago there appeared a rather widely circulated advertisement of a biologic product, which, when carefully read, made no definite statement or claim beyond the one that the preparation "is indicated" in certain diseases, yet physicians interested in truthful advertising were generally inclined to consider that the advertisement was unwarranted and unreasonably optimistic. When we consider how loosely the word "indicated" is used in connection with medicinal preparations, we are scarcely in position to take exception to such statements as this.

An officer of the Public Health Service, detailed to the Bureau of Chemistry at the request of the Secretary of Agriculture, and assisted by two other officers from the Public Health Service, has charge of the administration of the drug side of the Food and Drugs Act, except for the matter of raw or crude drugs.

* Chairman's address, read before the Section on Pharmacology and Therapeutics at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

MISLEADING STATEMENTS IN TEXTBOOKS

It may come as something of a surprise to the members of the section to learn that perhaps the most effective bar to the control of proprietary medicines is the existence in textbooks of therapeutics and of medicine of loose and even misleading statements as to the value of remedies. It is when the manufacturer seeks to justify the placing of names of diseases on his label that we are confronted with misleading quotations from textbooks.

The searching of medical literature for quotations to support claims of proprietary remedies has become something of a specialty, and attorneys tell me that it is possible to secure quotations from highly respectable authorities referring to almost any drug that is put into a proprietary remedy. I recently appeared as a witness opposing the claims of a proprietary remedy in which oil of eucalyptus was the agent asserted to be of value in the treatment of tuberculosis of the lungs and other pulmonary diseases, and, quite in accordance with expectations, the attorneys for the manufacturers of the preparation were able to quote statements from a number of reputable textbooks on therapeutics and materia medica which went a long way toward justifying the contention that the advertising was based on substantial medical evidence.

CONTROL OVER DRUGS AND BIOLOGIC PREPARATIONS

With respect to agents called drugs in the ordinary sense and designed primarily for use by physicians, the rulings under the Food and Drugs Act have been that the government should not interfere with the privilege of a physician to use any agent he sees fit to employ, differing in this respect from the control exercised over biologic products.

With respect to the control over "serums, viruses, toxins and analogous products," to quote the wording of the law of July 1, 1902, the situation is somewhat different. The wording of the law clearly indicates that it was the intention of Congress to restrict the use of preparations coming under this law to such as had therapeutic or prophylactic activity; in other words, it was intended to prevent the practice of deception, even on the physician, as well as to guarantee safety. At first sight it might seem that the administrative officer's functions were reasonably clear and simple; but really we find that the determination of therapeutic or prophylactic value is a matter of much difficulty frequently—at times, indeed, it is impossible.

Perhaps an example or two will clarify this. A few years ago there was a rather general acceptance among bacteriologists of a small anaerobic gram-positive organism as the cause of typhus fever, and soon after the apparent demonstration of the etiologic relation of this organism to typhus an application was filed for a license for antityphus vaccine made from the organism in question. No evidence was presented to prove the worth of the vaccine, but it was insisted by its proponents that it must be of value, being made from what was conceived to be the cause of typhus fever. It was felt that the importance of the subject demanded an attempt to ascertain the facts in an experimental way, before authorizing the use of the vaccine. Without going into the details of experiments that took many months to complete, it was conclusively shown that the vaccine was quite without the slightest effect in the prevention of experimental typhus under rigidly controlled conditions, and on this evidence a license was denied.

Another class of biologic preparations, for which licenses are constantly being sought, are alleged remedies for tuberculosis; here again the attitude has been that evidence of usefulness satisfactory to an impartial investigator must be secured before a license will be recommended. Thus far, in each case in which tests have been made, it has been found that the alleged tuberculosis remedy has been without value, and licenses were therefore refused.

When it is possible to secure experimental evidence within a reasonable time, this is insisted on. The most difficult cases, however, are those in which it is impossible to secure evidence from laboratory experiments. Let us take, for example, the respiratory infections, particularly the rather ill-defined group including "grip," "colds" and "influenza." It is not possible to submit the bacterial vaccines that are claimed to be of therapeutic or prophylactic value to the crucial tests of controlled laboratory experiments. To secure the data by controlled clinical experiments, save in most exceptional cases, is impossible. What shall the administrative officer do? He may feel that these vaccines are worthless, but he cannot prove it, and, on the contrary, he is confronted by a mass of uncontrolled clinical data which indicate the usefulness of the agent. As a result, in order to avoid the possibility of doing harm by depriving people of an agent which it is barely possible may be of value, he recommends the granting of a license, though he may be reasonably certain that the preparation is not of value, though probably harmless.

It is inevitable that the marks on a package indicating that a preparation is made under government license will be construed by some as a guarantee of efficiency. To obviate this as far as possible, it is required that a statement to the effect that there is "No U. S. Standard of Potency" shall appear on packages of products that are without potency standards. I am glad to say that potency standards are provided for nearly all really useful products, the conspicuous exception being smallpox vaccine.

It is a pleasure to record here the cooperation and the ready acquiescence to administrative decisions on the part of the great majority of manufacturers of serums and similar products. They have withdrawn preparations which we have considered, but could not prove, to be worthless, and have refrained from pressing applications for license for preparations that fell into the same class.

There are certain biologic preparations for which tests and standards are not sufficiently accurate to enable different workers always to get approximately identical results. The best example of this is antipneumococcic serum. In the cases of this, of antimeningococcic serum and of one or two other preparations, the manufacturer is required to make tests that are prescribed, and, if the preparation proves satisfactory, to send samples of the serum together with a copy of the record of his tests to the Hygienic Laboratory, where the tests are repeated and the preparations are finally passed for sale, or rejected, on the basis of the official tests.

The same method, i. e., the testing of each batch of the product, is applied to arsphenamin and neoarsphenamin, which have been held by the law officers of the government to come under the provisions of the same law that is applicable to serums, viruses, toxins and analogous products.

The testing of preparations in this manner naturally throws a heavy burden of routine work on the controlling laboratory; but every proposal to discontinue this form of safeguarding of preparations is met by objections from so many sources that I suspect we shall have to consider it a fixed part of the routine work of the laboratory charged with the supervision of these products. This has the great disadvantage of taking time and effort from purely research work. Of course, there should be ample resources to carry on the essential routine without curtailing research features; but funds are inadequate to permit this.

The regulations at present require the proper descriptive designations of the product in addition to the trade name. Thus, tubercle vaccine must be marked "Bacterial Vaccine Made from Tubercle Bacillus," and influenza prophylactic must be marked "Bacterial Vaccine Made from the Influenza Bacillus" and such other organisms as may be present in the product.

Within the past year the wide latitude heretofore allowed manufacturers in the dating of preparations with respect to the duration of potency has been replaced by fixed maximum dating requirements.

It is a pleasure to state that the United States is far in advance of older countries in respect to the control of medicinal agents. I well recall the amazement with which a distinguished English physician learned that we would not recommend license, for example, for antipoliomyelitis serum, anti-influenza serum, and various cures for tuberculosis. England is practically without restrictions, and, as the distinguished physician remarked, "American law is the only protection that England has against useless or fraudulent preparations of American origin," the basis of this being the fact that our law applies to materials for export as well as to those for domestic consumption.

There is a very marked difference between the methods employed by the two arms of the government concerned in drug control. Under the Food and Drugs Act, examinations are made of products found in interstate commerce; and if they fail to comply with the required standards or are falsely labeled, appropriate legal action is taken, either by prosecution of the shipper or by the seizure of the shipment. On the other hand, under the law controlling the serums, viruses, vaccines, etc., the aim is to see that no impure or worthless product shall be allowed to enter interstate commerce. This aim is accomplished by a system of licensing manufacturers for various products. No license is granted to any firm until the licensing authority is satisfied that the personnel and equipment of the firm are both qualitatively and quantitatively sufficient to give all reasonable assurance that the products for which license is sought shall be satisfactory in regard to purity and potency.

In addition to the assurance afforded by the licensing system, there is supervision of finished products through the procuring of samples in the open market and the testing of these.

In addition to the activities that have been described, which cover the major fields of federal drug control, we have the prevention of exploitation of obvious frauds through the mails, which is the function of the Post Office Department, and the supervision over liquors and narcotic drugs, which is exercised by the Internal Revenue Bureau of the Treasury Department; but I need not discuss these at this time.

SIGNIFICANCE OF ETIOLOGIC FACTORS IN THE TREATMENT OF PEPTIC ULCER*

FRANK SMITHIES, M.D.

Associate Professor of Medicine, University of Illinois College of Medicine; Gastro-Enterologist, Augustana Hospital; Medical Consultant, U. S. Marine Hospital

CHICAGO

My aim in this report is to stimulate serious scrutiny of methods in vogue in the management of peptic ulcer. That such inquiry is needed is proved by recalling that, although much useful knowledge has accrued to physicians from recent clinical, operative, chemical, experimental and pathologic studies, yet, apart from various surgical procedures, little essential has been contributed to the actual, practical treatment of the affection since the time of Celsus.[1] In various languages, from the period of that clinical patriarch, have similar directions been given for the cure of ulcus ventriculi: "Remove or neutralize the acid which causes (sic) the ulcer, and nature will do the remainder."

It would seem to be a painful commentary on the acuteness of the modern physician to say that he has learned nothing from the clinical observations (and mistakes) of such assiduous workers as Littré (1704), Baillie (1793), Abercrombie (1832), Cruveilhier (1835), Rokitansky (1839), Günzburg (1852), Virchow (1853), Mueller[2] (from Mueller, the empiric, clinical term "corrosive action" of gastric juice has descended), Panum (1862), Pavy,[3] Axel Key,[4] Ziemssen,[5] Schleip,[6] Leube,[7] Riegel,[8] Wilson Fox,[9] von Noorden (1890), Stockton (1893), Fenwick (1893), Koch,[10] Einhorn,[11] Leube and Mikulicz (1897), Hemmeter (1902), Ewald,[12] Dieulafoy (1902), Sellards,[13] S. Möller,[14] Westphal and Katsch,[15] Rosenow,[16] Mayo,[17] Bolton,[18] Spencer, Meyer, Rehfuss and Hawk,[19] Cannon,[20] Carlson,[21] and others.

As a possible excuse, it may be adduced that the older clinicians have neglected to put into practice the

* Chairman's address, read before the Section on Gastro-Enterology and Proctology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Celsus, A. C.: De Medicina Lib. IV, Cap. 5, "Adhibendi lenes et glutinosi sed citra satietatem; omnia acria atque acida removendi; vino utendum, sed neque proefrigido neque nimis calido."
2. Mueller, L.: Das corrosive Geschwür in Magen und Darmkanal, Erlangen, 1860.
3. Pavy: Guy's Hosp. Rep. Series 3, **13**: 494, 1877.
4. Key, Axel: "Om det corrosiva magsårets, etc., Hygiea, cited in Gurlt-Virchow's Jahresbericht, 1871.
5. Ziemssen, H.: Ueber die Behandlung des Magengeschwürs, Volkmann's klinische Vorträge, No. 15, 1871.
6. Schleip, P.: Zur Behandlung mit der Magenpumpe, Arch. f. klin. Med. **13**: 453, 1874.
7. Leube, H., in Von Ziemssen's Handbuch der speziellen Pathologie und Therapie, **7**: 192, 1876.
8. Riegel, F.: Ztschr. f. klin. Med. **2**: 12, 1886.
9. Fox, Wilson: The Diseases of the Stomach, London, 1872.
10. Koch, R.: Ueber das Carcinoma Ventriculi ex Ulcere, Petersburg med. Wchnschr. **43**: 160, 1893.
11. Einhorn, Max: Ein klinischer Beitrag zur Kenntniss und Behandlung der Erosionen des Magens, Berl. klin. Wchnschr. **20**: 21, 1895.
12. Ewald, C. A.: Diseases of the Stomach, New York, D. Appleton & Co., 1902.
13. Sellards, A. W.: Ulceration of the Stomach and Necrosis of Salivary Glands Resulting from Experimental Injection of Bile Salts, Arch. Int. Med. **4**: 502 (Nov.) 1909.
14. Möller, S.: Die Pathogenese des Ulcus Ventriculi mit besonderer Berücksichtigung der neueren experimentellen Ergebnisse, Ergebn. d. inn. Med. u. Kinderh. **7**: 520, 1911.
15. Westphal, K., and Katsch, G.: Das neurotische Ulcus Duodeni. Mitt. a. d. Grenzgeb. d. Med. u. Chir. **26**: 391, 1913.
16. Rosenow, E. C.: The Production of Ulcer of the Stomach by Injection of Streptococci, J. A. M. A. **61**: 1947 (Nov. 29) 1913.
17. Mayo, W. J.: Gastric Ulcer, J. A. M. A. **65**: 1069 (Sept. 25) 1915.
18. Bolton, C.: Ulcer of the Stomach, London, 1913.
19. Spencer, W. H.; Meyer, G. P.; Rehfuss, M. E., and Hawk, P. B.: Am. J. Physiol. **39**: 459 (Feb. 16) 1916.
20. Cannon, W.: The Mechanical Factors of Digestion, London, 1911.
21. Carlson, A. J.: The Control of Hunger in Health and Disease, Chicago, University of Chicago Press, 1916.

facts developed respecting gastric physiology during the past decade, and that the knowledge accumulated by the modern group of clinical-experimental workers has not yet been "driven home" or become sufficiently available to general practitioners or the laity. Further, the healthy skepticism respecting experimental and clinical data, common to properly trained physicians, has prevented such physicians from glibly and boldly sending forth unqualified statements regarding actual causes of peptic ulcer and definite numbers of cases in which cure has been effected. The modern clinician holds a broader etiologic view of peptic ulcer than it is possible to inherit from study of ancient writings. He demands definite clinical proof that peptic ulcer exists before he institutes "ulcer regimen," and, should such regimen be carried out, he is properly cautious in his interpretation of his "cures." To him, relief of symptoms does not mean "cure," as it is common knowledge that of uncomplicated peptic ulcers (i. e., nonhemorrhagic, nonperforating, nondeforming or stenosing), 84 per cent. exhibit that peculiar, characteristic "periodicity" which, to the careless or the ignorant, indicates "cure." Along with Mayo, Crispin and others, I have frequently pointed out that without so-called "ulcer symptoms," and in stomachs whose secretion is acid-pepsin free, peptic ulcers are often found to be histologically unhealed, and may be the sites of most serious complications.

Until a few years ago, the treatment of peptic ulcer, particularly by nonsurgical procedures, was based mainly on the conception that peptic ulcers are caused, or if they have already formed, are aggravated, by the so-called "corrosive action" of acid gastric juice. This conception of the etiology of peptic ulcer has been so persistently emphasized by clinicians that it has obtained a widespread acceptance among practitioners in general. It thus follows that the medical mind almost universally, and frequently automatically, connects peptic ulcer with "corrosion," particularly "acid corrosion." With such conception of the origin of peptic ulcer, the therapeutic corollary that "acid corrosion, being the cause of peptic ulcer, indicates simply counteraction of acidity by alkali; prevention of corrosion follows and, hence, ulcer cure results" has required but mild cerebral activity in order to admit of its acceptance as a regimen of treatment in ulcer patients. With so simple an explanation of the etiology of a widely prevalent and grave ailment, it is not to be wondered, therefore, that among general practitioners (and, indeed, among clinicians who are more favorably located with respect to scientific investigation) the assumption that acid gastric juice is necessary for, and vital in, the production of peptic ulcer; that commonly in ulcer, acid is above "normal" titration values, and neutralization of this "hyperacidity" leads to cure of ulcer, has had a vogue not warranted by experimental, laboratory or clinical facts.

It is not necessary to point out to an audience of this character and experience that experimental investigations have failed almost uniformly in attempts at producing peptic ulcer by the introduction of acid of high titration values into the stomach. These observations have been made by investigators of such standing as Pawlow, Carlson, Ivy, Smith and others. If the gastric mucosa has been previously undamaged, and if the stomach is bile free, there may be introduced into the viscus free hydrochloric acid, other inorganic acids or organic acids of a strength greater than ten times that of the acid titration values found in gastric ulcer stomachs or, in stomachs of persons free from gastric complaint or a pathologic condition, without peptic ulcer resulting. It has also been emphasized by Carlson that in persons who are affected with proved gastric ulcers, hydrochloric acid of five times as high titration value as that of the so-called "normal" gastric juice may be introduced into the stomach without discomfort clinically, without retardation in healing of the ulcer, or without the production of new ulcers. It has also been shown by numerous clinicians who have studied ulcer patients during the period of quiescence of their "ulcer symptoms" that, in such cases, the acid values of the gastric juice are frequently much higher than are those in the so-called "normal" gastric juice, or are greater than the values reported when the patients were experiencing dyspepsia, clinically. Such observations respecting increases in gastric juice acid values are especially liable to be recorded in the cases of those ulcer patients who have been treated by the continuous, "rule of thumb" and century old "alkalization" regimen, in which event, provided the careless and uncontrolled exhibition of great amounts of alkaline drugs has not caused complete mucoid and permanent degeneration of the acid-secreting cells of the stomach mucosa, the end-result is a delayed, and commonly increased, production of acid gastric juice. Without any painstaking research, clinical reports are available in which peptic ulcers have appeared and have progressed steadily to the point of exhausting hemorrhage or fatal perforation, while gastric juice acidity has been constantly below the so-called "normal," or even has been entirely absent. It is difficult to surmise how, in this type of patient, peptic ulcer could have been caused or its progress could have been accelerated as a consequence of so-called "corrosive action" of gastric juice.

From the histologic standpoint, so-called "corrosive effects" are most readily shown in that type of extensive, chronic peptic ulcer which is undergoing "malignant transition." In this class of case, the local changes in the gastric mucosa in every way represent the irritation effects one might theoretically ascribe to "acid corrosion"; and yet the gastric juice from such patients when analyzed quite regularly exhibits low, or an absence of, free hydrochloric acid. In the true peptic ulcer ("round ulcer" of Cruveilhier, not the accidental, self-healing "mucous erosion"), such irritation reactions about the ulcer, as might be expected of "corrosion" (and, indeed, are present when the gastric mucous membrane is traumatized to the point of true corrosion by acids, experimentally), are entirely absent. It has further been proved by an army of investigators, notably Rehfuss and Hawk, that the acid values in individuals gastrically well fluctuate in wider ranges than they do in patients with proved peptic ulcer, and in instances when, theoretically, it is carelessly assumed that the acid caused the ulcer or prevented its healing. It is common clinical knowledge that less than forty-eight hours after surgical or other trauma to the stomach wall (resection of ulcer locally, resection of portion of the stomach, gastro-enterostomy, etc.), acid values of the gastric juice begin to increase; and (with the possible exception of the gastro-enterostomized patient), within six months after extensive, local

gastric traumas, the acid values in the stomach are within or above the "normal" values. However, usually patients do not experience return of their peptic ulcers, establishment of ulcer at the site of surgical trauma or crops of new ulcers, consequent on "acid (or acid-pepsin) corrosion."

Etiologically, with respect to ulcer, it is an important observation that, following operations on the stomach, although the acid and peptic values of the gastric juice are steadily rising, healing and regeneration of the mucous membrane are not interfered with. To those who have had any sort of surgical experience, it is not necessary to mention that, should the patient die from an ailment not connected with the operative field, following extensive gastric resection, it will be seen that union has taken place in all layers of the stomach wall, that a new mucous membrane has formed, and that very slight local evidences of surgical trauma are to be noted. Such healing may occur in so short a time as a few weeks. Thus, it is proved that in man (not a "laboratory animal"), extensive loss of epithelium may be rapidly compensated for by the development of a new mucosa, even though the surgical area being repaired is more or less constantly bathed in that acid gastric juice which, empirically and purely theoretically, is commonly assumed to possess "corrosive" qualities toward injury or partly devitalized gastric epithelium. These observations are of greater value than are data shown by experiments in ulcer production, because not only is one dealing with problems in human physiology and histology, but he has at hand observations of patients who exhibit those constitutional faults that have already permitted demonstrable, local gastric defects.

Knowledge of normal gastric physiology and histology should teach that such rapid and gross gastric repair as cited is not anything remarkable. From shortly after birth, the gastric lining is accustomed to resist injury and to make proper repair in the presence of a secretion rich in free hydrochloric acid and pepsin. Such secretion is the normal habitat of the mucosa of the stomach, just as in the mouth, pharynx and upper esophagus the normal habitat in which epithelium functionates is alkaline. Certainly, it ought not to be expected that when, artificially, the reaction of the secretion in which gastric epithelium has to live and functionate is changed from acid to alkaline, the condition is rendered more favorable to function or to repair after injury. It is a well known fact that, if the secretion of the mouth and the upper esophagus is changed from alkaline to acid, epithelial cells have great difficulty in maintaining proper protection and function—indeed, such change in reaction is not infrequently followed by visible, local evidences of destruction ("pyorrhea," erosions about the teeth and on the tongue, and erosive, bleeding, superficial or deep ulcerations in the pharynx or in the esophagus). When peptic ulcer exists, it is, therefore, a matter of serious question whether the introduction into the stomach of sufficient alkali to neutralize hydrochloric acid is not injurious rather than beneficial: the ulcer apparently heals in spite of excess alkali. The injurious effects of "continuous alkalization" would doubtless be more evident were it not the custom of such clinicians as practice this empiric form of therapy to make frequent gastric lavage a routine phase of their regimen. In this way, much of the excess alkali is washed from the stomach, with consequent relief to the gastric cells, which have been caused to overfunction in their attempt to neutralize excess alkali and to restore an intragastric habitat normal, chemically. Hamburger [22] has shown, however, that the exhibition of alkaline salts, e. g., sodium chlorid, etc., has (provided their concentration is sufficiently high) the power of limiting peptic activity. Hamburger's experiments are worthy of consideration, even though they may be few in number and performed chiefly in vitro. On the "pepsin inhibition" basis, Hamburger partly explains away the significance of so-called "corrosive acid action" with respect to production or aggravation of ulcer. Apparently, he assumes that if pepsin is rendered inert by the exhibition of alkali, then acid-pepsin combination, with supposed consequent "corrosion" or "digestion" of injured gastric mucosa is, in certain circumstances, limited. Hamburger's experiments, however, do not explain why, after surgical or other traumas of the stomach, when acid-peptic values soon become practically normal, repair of extensive damage goes on without interruption, and a normal mucous membrane is formed, or, at least, a mucous membrane results which is capable of protecting the deeper layers of the stomach wall, even though it may not maintain complete preoperative, secretory function.

Clinically, our own laboratory investigations in 2,168 definitely proved and not "clinically surmised" cases of peptic ulcer have revealed these facts: Of this number, fifty-six patients, 2.6 per cent., had gastric contents containing no free hydrochloric acid; 499 patients, 23 per cent., had free hydrochloric acid values below 30; 890 patients, 41 per cent., had free hydrochloric acid values within the normal range (40 to 50, Töpfer scale) and in 723 patients, 33.4 per cent., the free hydrochloric acid values were greater than the so-called "normal." The significance of these figures with respect to acidity in definitely proved ulcers adds further emphasis to the observations of Rehfuss and Hawk. These investigations show that in no form of gastric disease can the acid values be considered as indicating the causative factor of the disease, or that such acid variations are consequent on that disease; that, in health, the range of acid values in gastric juice is wider than is that of any of the values which formerly were supposed to be indicative of, or consequent on, gastric malfunction. Both low and high gastric titration values may be returned irrespective of gastric symptomatology. Even when fractionally estimated, the variations in gastric acidity, in both health and disease, can be regarded as incidents in gastric function. Frequently, they are only of ephemeral significance. Numerous observations made on the same subject, or numerous examinations of patients known to be affected with similar diseases, show widely varying differences in gastric juice acid values. These fluctuations, quite commonly, are irrespective of symptoms and the clinical and histologic course of the disease. Doubtless, they furnish only useful hints respecting the ability of stomachs to accommodate themselves to transient upsets or to abnormal functional demands of long duration.

About ten years ago, I became convinced that any treatment of "peptic ulcer" based on a fluctuating

22. Hamburger, W. W.: The Inactivation of Pepsin by Sodium Chlorid, Arch. Int. Med. **16**: 356 (Sept.) 1915.

gastric chemistry was (as Leube, Rokitanski, Riegel and others had shown, more than a half century ago) little more than guesswork, was unscientific, was not justified by any known published records and might, in fact, prove harmful to patients. My experience with abundant material has since confirmed my early opinion. Difficult as it sometimes is to discover the precise etiologic factors interplaying in ulcer patients, still, I am convinced that careful search for such factors will commonly disclose information which is useful and of great service in the establishment of an intelligent therapeutic regimen. In other words, search for etiologic factors in peptic ulcer indicates careful analysis of the individual patient, and signifies that the major part of the treatment is to be directed toward the individual patient who has the ulcer, with consequently a minor degree of treatment to the ulcer, which forms a small part of the patient's entire make-up. Such a regimen of treatment is not often a rosy therapeutic pathway. It means that masses of people cannot be moved about and worked on by inexperienced interns, nurses or assistants; it means that routine prescriptions for pills and powders are useless, and it means that so-called "diets" cannot be dubbed "first week," "second week," etc., ad infinitum, till the patient breaks away from his gastronomic chains, commits an "indiscretion in diet," "relapses," and comes back again to his powders, pump and pap.

ETIOLOGIC-THERAPEUTIC CLASSIFICATION OF FIVE HUNDRED AND TWENTY-TWO CASES OF PROVED GASTRIC ULCER

Group	No. of Cases	Per Cent.
1. Infections (chronic and acute)	173	33.1
2. Arteriosclerotic (with vascular hypertension, 56 cases; without vascular hypertension, 21 cases)	77	14.7
3. Visceral hypertonia (vagus or splanchnic hyperfunction)	68	13.0
4. Chronic anemia (so-called "chlorotic")	61	11.3
5. Syphilitic	41	7.8
6. Visceral hypotonia (vagus or splanchnic hypofunction)	27	5.2
7. Postoperative	27	5.2
8. Industrial intoxication (occupational poisonings)	22	4.2
9. Metabolic dysfunction (thyroid, suprarenal, pituitary, etc.)	18	3.4
10. Traumatic (abdominal injury from blows, falls, etc.; intragastrically, foreign bodies)	8	1.5

ANALYSIS OF FIVE HUNDRED AND TWENTY-TWO CASES

With the purpose of further emphasizing the necessity for considering clinically the significance of etiologic factors in the treatment of peptic ulcer, and with the object of demonstrating the need of strict individualization in any ulcer regimen, I have carefully analyzed 522 gastric ulcers. These ulcers were proved actually to exist by objective data, namely, from surgical, roentgen-ray and pathologic studies. I do not consider it worth your time or my effort to make an inquiry, purporting to be scientific, into any group of ailments diagnosed "peptic ulcer" on only clinical history, physical examinations or testmeal evidence. The unreliability of data of such type is shown by the observations made in our clinic that only 53 per cent. of patients with gastric ailments who come to us with a diagnosis of "ulcer" prove to be affected with that disease when subjected to thorough clinical study. The remaining 47 per cent. of patients were affected with lesions of the gallbladder or the appendix, simple gastritis, carcinoma, syphilis, cardiorenal upsets, tuberculosis, alcoholism, occupational intoxications and forms of neurologic hyperfunction, i. e., vagus hypertonia.

The results of our studies enable me to present an ulcer classification based on what I consider valuable facts, etiologically, in ulcer causation, and to offer such grouping as a guide to intelligent, therapeutic management of peptic ulcer. It is granted that my classification is not complete: indeed, its first revision may come from me. However, my grouping carries essential pointings, therapeutically, and it gets away from the ancient, unproved and prevalent conception of peptic ulcer's being a local, gastric disease caused by so-called "acid corrosion." It also emphasizes the fact that gastric ulcer is rarely a disease due primarily to a gastric upset, but that the gastric lesion is only the local, accidental manifestation of a systemic disturbance, initiated by a great variety of agents.

There is not now sufficient time to submit details respecting the data entering into cases making up these groupings; such consideration is reserved for later reports. To the seriously inclined student of peptic ulcer and its clinical management, the classifications which I have given will, I feel sure, prove of value and will furnish significant hints respecting amplification of the individual groups and of the classification as a whole. To such practitioners as have not the opportunity or the inclination for extended inquiry into the therapeutics of gastric ulcer, my remarks and my classification of 522 proved ulcers will, I hope, result in a critical scrutiny of reports respecting the "cure" of ulcer by measures which have as their object the altering of intragastric chemistry only by medicines or diets, or of measures which purpose to alter a constitutional or metabolic fault by surgical removal of ulcer or a great part of the stomach. Local treatment of such gastric anomaly can give promise of permanent success only when coordinated with therapeutic measures tending to restore to normal the systemic disturbance of which the gastric defect is but a part.

1002 North Dearborn Street.

SURGERY OF THE THYROID*

JOHN F. BARNHILL, M.D.
INDIANAPOLIS

The most plausible theory of the causation of goiter is that it results from infection. Recently, many observers have believed that the infection is in part autogenous. In this connection much attention has been directed to the focal centers of infection in the adenoid, teeth and tonsils. While no direct pathway of travel for such infection from the throat to the thyroid has been proved, it has been assumed on clinical grounds that some such pathway exists. Many physicians contend, therefore, that thyroid disease may arise in the throat, and be perpetuated from this source. A clinical study of many goiter cases in connection with infection foci of the throat and mouth furnishes abundant evidence in support of this theory.

The intimate relationship between the larynx, trachea and thyroid gland is common anatomic knowledge. In health the gland lies on the upper trachea, often

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extends over the cricoid and thyroid cartilages, and is closely bound to them by connective tissue. The recurrent laryngeal nerves are closely associated, and the normal blood and nerve supplies have much in common.

In disease of the thyroid this intimacy of the enlarged gland to the upper air tract is usually much increased, resulting in a multiplicity of symptoms, chiefly respiratory disturbances. Thus an aberrant goiter at the root of the tongue or within the trachea causes distressing dyspnea; a circular goiter may constrict the trachea even to a fatal degree: nodular goiters may compress the adjoining air tract sufficiently to cause difficult or dangerous respiration. Large colloidal or cystic goiters result in varying degrees of respiratory obstruction, and by backward extension may interfere with the function of the recurrent laryngeal nerves, with the result of vocal disturbances varying from slight hoarseness to complete aphonia. Great thyroid enlargement also stretches the pretracheal muscles, and ends in their atrophy and final loss of function, which no doubt adds to the loss of vocal power and normal respiration. To the foregoing symptoms other almost innumerable ones may be added, most common among which are asthma, dysphagia, globus hystericus, great apprehension and neurasthenia. Indeed, many cases, especially of nontoxic goiter, produce more symptoms referred to the throat than elsewhere, and nearly all goiter subjects present some symptoms that are referred solely to the throat.

In view of this relationship of laryngology to disease of the thyroid body, and of the fact that the growth of laryngology has been in the direction of cure by surgical methods, the assumption to surgery of the thyroid on the part of the laryngologist may seem most natural, and perhaps may ultimately prove helpful.

ESSENTIAL POINTS IN DIAGNOSIS

Satisfactory results in surgery have always borne, and no doubt will continue more and more to bear, an inseparable relationship to diagnosis. Successful surgery of the thyroid must be bound, especially in certain types of thyroid, with the most accurate diagnosis possible of the actual condition present in the given case.

Modern operative technic, coupled with surgical training and skill, have reduced the mortality of goiter surgery almost to nothing; yet the mere fact that goiter operations may be performed in great numbers with almost no mortality does not necessarily mean that all patients who have been operated on have fully recovered health or have attained a satisfactory degree of improvement, or any improvement at all. Any discussion, therefore, that may lead to a better preoperative knowledge is still desirable.

Plummer classifies goiters into nontoxic, toxic-non-exophthalmic, exophthalmic and malignant. Nontoxic goiters are very plentiful and usually easy of diagnosis, and the relationship of diagnosis to the successful surgery of this type has comparatively slight importance. Many nontoxic goiters are undoubtedly not cases for surgery, especially if moderate in size and symptomless, as is frequently the case. When large colloid or cystic they may continue apparently harmless, although not infrequently pressure symptoms on the trachea and larynx may develop that give great anxiety to both patient and friends. The latter cases may furnish complex problems of diagnosis, not, to be sure, as to the presence of a goiter, but certainly as to the safety of operating, depending on the amount of damage to the trachea and larynx, and to the circulatory and nervous system.

According to Plummer, already quoted, about 1 per cent. of all goiters at some time become malignant. The essential point to determine in cases of suspected malignancy of the thyroid is whether or not the disease is still confined within the glandular capsule; for if extracapsular thyroid malignancy has already taken place, operation would ultimately, if not immediately, fail to cure. I know of no present plan to determine with certainty the presence of malignancy in its earliest, and therefore the period of its intracapsular confinement.

It is not, however, with the foregoing classes of goiter that the chief concern in diagnosis is felt by the surgeon. Both thyrotoxic and exophthalmic goiters present preoperative problems that have not been solved with entire satisfaction. In the first place, there are undoubtedly plenty of cases that have well marked, exceedingly dangerous and troublesome thyrotoxicosis with no enlargement, or but slight enlargement of the thyroid gland. This fact needs repetition and emphasis. These cases are accompanied by pronounced nervous symptoms, tachycardia and loss of weight, and even to the casual observer the patients seem seriously ill; but since they may not have the one symptom of goiter that we most expect, namely, an enlarged thyroid, the origin of the disease may be, and indeed often is, overlooked. Such cases are sometimes diagnosed hysteria, neurasthenia, heart disease or nervous prostation. The patients are given nervines, tonics, rest, diet or change to seashore or mountain, usually with only temporary relief and most often with complete failure. The surgeon in such cases often needs the help of the thoroughly trained modern diagnostician. Together, a diagnosis will be made. Together, it will be determined whether or not the case is purely medical, wholly surgical, or both medical and surgical; and, if operation is indicated, the choice of time can best be determined.

The classical symptoms of thyrotoxicoses have long been known. It is only recently, however, that attempts have been made more definitely to interpret some of these for the benefit of surgery. For instance, it is an old observation that these patients lose weight. It has been the belief that if the rate of weight loss could be measured with accuracy, the information thus gained would show the severity of the toxic state at any given time, and thus not only be helpful to a diagnosis of the fact that the thyroid is the seat of the disease, but also furnish a reliable guide as to when, and when not, to operate. I refer to the metabolic theory as applied to thyrotoxicoses. When accurately carried out, it is stated that early and borderline cases of toxic thyroid states may be accurately diagnosed, and that indexes of safety and of proper time of operation are thereby furnished with an almost invariable certainty.

The value of metabolic tests is based on the fact, already established, that in all cases of thyrotoxic goiter, body waste is going on to excess, the degree of excess being in proportion to the severity of the toxic state of the patient. That is to say, if the goiter is mild, it will be found that the metabolic rate is low; whereas in severe types, especially during crises, the

metabolic rate may rise to twice the normal. Metabolic measurement becomes, therefore, according to its advocates, of first importance in diagnosis, especially in that class of cases that exhibit well marked symptoms of toxemia, but in which the goiter appears, from every objective method of testing its size, to be but little or not at all enlarged.

In borderline cases, McCaskey also employs the alimentary hyperglycemic test, and believes he has proved it of great value. This test is based on the fact that in normal, fasting patients, 100 gm. of glucose taken shows its peak of glucose in the blood before one hour, whereas in the toxic goitrous cases the crest of the hyperglycemia after an equal ingestion of glucose is not reached under an hour and, according to McCaskey, may continue to rise to the end of the second hour. Laboratory tests, when perfected, as they undoubtedly will be, will simplify the goiter problem, and will add much to operative safety, satisfactory as this at present is, of thyroid surgery.

Surgery of the thyroid assumes that all proposed surgical patients have been tested by every known and useful method of examination; that the type of case is accurately determined, and that the degree of toxicity is ascertained by laboratory methods, or is assumed to be some definite amount, the assumption without laboratory aid being based, of course, on the surgeon's operative experience. It is further assumed that all cases belonging to the purely medical group have been entirely eliminated from surgical consideration. When the patient is thus properly classified and differentiated, the surgeon has before him a much simplified and a much safer problem. His task is then one largely related to the anatomy of the neck and the execution of a modern surgical technic pertaining to a major operation.

IMPORTANT FACTORS IN THYROIDECTOMY

Any description of modern thyroidectomy is unnecessary here. Certain points and principles of the operation necessary to its successful performance will, however, always be proper subjects for discussion. My comparatively small experience leads to the belief that the following points are of greatest importance. One item conducive to success in thyroid surgery is psychic. No other factor helps better to withstand the operation than does full confidence of the patient in the surgeon. Such confidence establishes and maintains a tranquility of the greatly weakened nerve energy and circulatory power that is entirely essential to successful surgery in the severely thyrotoxic.

1. *Selection of Time for Operation.*—When once the definite diagnosis of surgical goiter has been made, the operation should be performed at the earliest period of safety. When is this period? In all nontoxic goiters, unless some other disease is present, which of itself would contraindicate any surgical procedure, the goiter may be removed when the patient is ready and is surgically prepared. In toxic and exophthalmic cases the patient's vitality may have been so wrecked by the toxic state that long preparation is essential before operation may be performed with safety. The time must in these cases depend, therefore, much on repeated physical and laboratory examination and, to some extent at least, on that surgical judgment which large experience alone makes reasonably reliable. Rest, both mental and physical, to overcome the increased metabolism is essential. Rest is often difficult to secure. Rest in bed at home with the family obligations all about is not always helpful rest. Even in the hospital attempted rest fails in many instances, the patient grows peevish, and the toxic state becomes worse. In such cases if the metabolic rate can be reduced to one-third above normal, and the pulse rate below 120, probably the safest time for operation has arrived. Many of these patients feel that a prolonged period of preparation is of itself injurious to them, and they sometimes appeal for early surgical relief. Under such circumstances, operation, either ligation or thyroidectomy, is, I believe, usually advisable at that time.

2. *The Anesthetic.*—Experienced goiter operators hold different views concerning the best and safest anesthetic for thyroidectomy. In the Kocher clinic, where the number of patients is large, a local anesthetic is advocated and used. The elder Kocher believed this plan safest and was influenced somewhat because he believed that by its use he could best protect the recurrent laryngeal nerve. I have seen him perform many goiter operations under local anesthesia. The patient walked both in and out of the operating room. He was requested to use the voice during that part of the operative procedure when the nerve was approached, in order to inform the operator whether or not the recurrent nerve was injured, or was likely to be injured. Most of the patients whose operations I witnessed complained considerably of pain, especially when the goiter was luxated or dragged on. It has not been proved that the anxiety and pain experienced during this operation under local anesthesia do not cause as great harm to the patient as does the general anesthesia, if not even greater harm.

Crile probably has been the leading advocate of nitrous oxid and oxygen anesthesia. He has had many satisfied followers. When administered by an expert, this form of anesthesia has much to commend it. One operator has said that it is probably not safer than ether, but is certainly saner than ether. The Mayos are prominent among those who use ether almost exclusively. Aside from the unpleasant inhalation of ether at the beginning, and the almost certain nausea during recovery from it, ether is to me the ideal anesthetic in goiter surgery. It seems safest. It predisposes less to venous oozing, and it may be trusted to less experienced hands. One conclusion is evident, namely, that any one of the three methods may be safe and satisfactory, as evidenced by the large number of cases in which it has been used by its chief advocate. Much depends on the experience of the user. One may reasonably assume that the experience and training of the anesthetist counts for more in the safety and wisdom of the one or the other plan, than does the anesthetic itself.

3. *Minimum Loss of Blood.*—A great factor of safety lies in limitation of the loss of blood to the minimum. There is no disagreement among operators on this point, but its importance justifies repeated emphasis. Not much blood can be lost with safety, since the patient already is anemic, and therefore the drain of an amount that would be harmless in other classes of surgery would prove fatal here. Fortunately, with rare exception, limitation to a small loss is possible. With the patient properly prepared, in a modern hospital, with abundant light, proper assistance and adequate instrumentation, the question of loss of blood becomes one largely of surgical mechanics. It

seems not a little strange now that only a few years ago death from hemorrhage, and frequent, severe and dangerous hemorrhages, following thyroid surgery, appear to have been the expectation in all operations for goiter. It is evident why the mortality was then high. The splendid mortality of the present is no doubt largely due to the almost bloodless operation.

4. *Removal of Capsule.*—Argument, so far as I know, is at an end concerning the best and safest plan of conserving the function of the parathyroids and the recurrent laryngeal nerve. Safety to these structures depends on leaving that portion of the posterior glandular capsule which overlies the nerve and the parathyroid bodies. This is represented by the lower two thirds of the posterior portion of the capsule. I am convinced by my own experience that it is entirely possible, in some cases at least, to strip from the posterior capsule the parathyroids and thus remove the entire capsule. This is best done by working from the upper pole downward, and using a piece of gauze to do the stripping, always, of course keeping directly against the smooth, shiny glandular capsule and noting at all times that nothing is left on the capsule. The recurrent laryngeal nerve is by the same procedure insured from injury. I do not advocate the plan of entire capsular removal because the parathyroid bodies are sometimes embedded in the capsule, or even lie completely within the gland, and in such cases would of course be endangered or removed by the removal of the capsule. I simply make the point that I believe it may be safe.

5. *The Question of Ligation.*—When should ligation be done? How often is it necessary? Ligations are indicated only when the actual removal of a necessary amount of the thyroid gland is known to be hazardous. Since this extra hazard occurs in only two classes of goiter, the highly vascular and the severely thyrotoxic, it is evident that ligations are justified only when one of these conditions is present, and in the latter class only in case the metabolic rate is high, great exhaustion is present, tachycardia and arrhythmia marked and, in general, a state of collapse is imminent. In the highly vascular case, ligation greatly limits the amount of hemorrhage if operation is later attempted and often is of itself a sufficient method of cure. Kocher, though not the first to employ ligation in the cure of goiter, was the first to employ the plan extensively, and in properly diagnosed and carefully classified cases. Kocher pointed out the uselessness and even danger in ligations for the cure of cystic and colloidal goiter. In such cases, cutting off the blood supply to an already crippled gland, it is evident, may so lessen the production of thyroxin as to promptly result in myxedema. In milder thyrotoxic cases, while the surgical risk is yet good, ligation is helpful, but cannot be considered the best procedure, since thyroidectomy gives more permanent and curative results. Ligation is undoubtedly a most valuable, though a more or less temporary measure in dealing with the shattered thyrotoxic case, for it may be done when the greater operation of resection would prove fatal. Ligation of both upper poles after the plan of Stamm and Jacobson is rapid and safe, and the results are often astonishingly good. It is a common observation that after proper ligation the pulse rate falls, tachycardia subsides, sleep is induced, appetite improves, and altogether the vitality, which had reached the danger point, is revived. In severe exophthalmic goiter, Plummer estimates that ligation reduces the metabolic rate about fifteen points in the succeeding eighteen days, which, of course, greatly lessens the hazard of the final thyroidectomy.

Improvement following ligation does not usually continue to the point of final cure. After a varying time the blood and nerve supply to the gland, which was partially cut off by ligation, is more or less restored, and then the former hypertoxic state sets in again. Before this period arrives complete thyroidectomy should be done provided it is reasonably safe.

Many opinions have been expressed as to which thyroid vessels should be ligated. In my few cases I have ligated only the upper poles, the ligation requiring only a few minutes under a local anesthetic, and being painless and shockless. To ligate the lower thyroid vessels is nearly as difficult as the resection of the gland, and hence the complete operation should be chosen rather than inferior ligation. With the improved technic of today, and with proper preparation of the patient for operation, the use of ligation becomes increasingly limited.

6. *Extent of Removal.*—One of the most important questions the surgeon must settle as he proceeds with the thyroid operation is, How much of the diseased glandular stricture should be removed? On this decision either cure or disaster may depend. One writer says that a portion as large as a hen's egg should be left. Another thinks a remnant as large as a walnut should be left. A third believes that since the normal thyroid gland weighs from 20 to 30 gm., this amount is sufficient to leave. Still others say that one fifth or even one tenth of the whole should be left. So many opinions give the impression, which is probably correct, that nobody knows exactly how much to leave, for it must be true that each case is different, and therefore an amount which would be more than should be left in one case might, if taken as a standard for another, result in hypothyroidism. If the gland is cystic or colloidal, and much of the normal secreting structure is impaired, the removal of so much as nine tenths would probably be hazardous. In hyperplastic, thyrotoxic or exophthalmic goiter it is conceivable that four fifths or even nine tenths of the gland might safely be removed. Like many other problems in surgery, the question of how much to remove is one that must be settled during the operation, after the gland is exposed and when the extent of its pathologic condition may be more or less accurately determined. On this point the question is one that must be determined by the surgeon's own judgment and experience. It is neither easy nor safe to follow those who say leave a stated proportion, for it is evident that to do so, to estimate such an amount with any degree of accuracy during the operation, could not be done. Another factor also enters into the question, namely, the degree of lost function in the gland resulting solely from the greatly lessened blood supply incident to the thyroidectomy. One upper and one lower pole is almost certainly ligated, and not infrequently both upper poles are blocked. To underestimate the future effect of these ligations, and therefore to remove a maximum portion of the thyroid, just as though the portion removed constituted the entire change in the secretive power of the gland, might end in disaster. It would seem wise, therefore, certainly safer always to err on the side of leaving too much rather than too little of the gland.

Of course this advice, if followed, will sometimes result in the necessity of secondary operation; but if so secondary operation may be justified on the ground that it is possible to cure hyperthyroidism, whereas hypothyroidism as a result of excessive surgical zeal is not amenable to surgery.

7. Lobectomy Versus Translobular Resection.—Another point, although more of esthetic interest than of surgical value, relates to the question as to whether the operation should consist of a lobectomy, partial lobectomy, or of a translobular resection. Of course the question largely settles itself in cases in which only one lobe is involved. Some years ago, operators almost invariably performed a more or less complete lobectomy even though the opposite lobe also was enlarged, though to a less extent. Gradually the tendency has been to perform an operation that will leave the neck symmetrical, and it is obvious this cannot be done unless surgical consideration is given to all the lobes. Lobectomy has its advantages. It can be more quickly done. Less loss of blood attends lobectomy, and less oozing of blood and serum follows during the first few days. Since either lobectomy or translobular resection is equally safe if preformed with an equal degree of skill, and since the curative result is exactly the same, the foregoing points in favor of lobectomy are not good argument for its performance; for whatever the final result as to cure of the patient may be, if the patient's neck remains deformed, disappointment to the patient and to friends is certain to follow.

PERSONAL EXPERIENCE

My personal operative experience is based on 150 cases. Compared with that of others, this small number would not justify a report were it not that my observations are made somewhat from the point of view of the laryngologist rather than from that of the general or abdominal surgeon.

I have had no death that was in any way connected with the thyroid operation; one death occurred more than three months afterward, and was due to recurrence of the hyperthyroidism. The patient, a woman, aged about 30 years, had in extreme degree the symptoms of hyperthyroidism with enlargement of the right lobe of the thyroid. After resection of this lobe she was greatly improved and returned home in two weeks. Unfortunately, her whole family was of that class which feels the imperative necessity of constant bedside presence, and of visible expression of apprehension. Attending physicians were of the belief that this attitude of the family was largely responsible for the fatal result.

The lack of mortality in my cases is perhaps in part due to the fact that 80 per cent. of all my cases have been nontoxic goiter, and of these nearly all the earlier patients had enlargement only of the central lobe. These patients were nearly always in good health except for pressure symptoms and nervousness. Such cases are good surgical risks, and hence if thyroidectomy is performed according to the principles of modern surgery, the percentage of recovery should be near 100.

My first thyroid operation was in February, 1890. The patient was 16 years old, and was in perfect health except for a choking sensation due to the presence of a pretracheal tumor as large as a pullet's egg, which on removal proved to be an enlargement of the thyroid isthmus. At that period solutions of mercuric chlorid were used in all operations, and were freely used in the removal of this goiter. I recall that much bleeding was encountered and that mild infection followed, even though accepted antiseptic precautions were employed. The operation was performed outside a hospital. A good recovery took place, but with more scar than follows present procedures.

In August, 1896, I examined a Miss ———, of Centerville, Ind., who complained of difficult respiration and sensations of choking. There was no external tumor, but when the tongue was depressed deeply a large bluish mass could be seen above the epiglottis. The woman was 40 years of age, and I suspected malignancy of an enlarged lingual tonsil. After several examinations covering a period of two or three weeks, there seeming no evidence of malignancy, I succeeded in passing a large wire loop over the growth and in removing it gradually by snare. It was larger than an English walnut, thickly traversed by veins, and slightly lobulated, though smooth. It proved to be thyroid tissue, evidently an aberrant thyroid. The distressing symptoms were relieved, and there was no evidence of return several months later, after which time no further information was received.

Three cases were for large abscessed thyroids. Two of these were in women recently confined, in which the breaking down of the gland was so extensive and advanced that the diagnosis could be made by the history of the cases and palpation of the tumor. My third case was that of a man about 35 years of age, a railroad fireman, who had carried a large goiter, which evidently was a simple hypertrophy, for many years. He had had what he stated was influenza in the fall of 1918, and, he alleged that the disease settled in his neck, causing him to remain in bed many weeks. When first examined by me there seemed an enormous, hard, bilobular goiter present, accompanied by fever, pain and stiffness of the neck. Abscess seemed almost certainly present. At operation both lobes were so thoroughly hollowed out by the suppurative process as to give ground for the thought that hypothyroidism might result, although until now no such symptom has developed.

In three instances, cartilaginous formations were encountered during the glandular resection. Under the finger one of these felt cylindric and corrugated. Had it not been for the fact that the object lay far external to the median line, and that the trachea could be outlined in its normal position, it could easily have been mistaken for the windpipe.

Only one patient has had any degree of vocal impairment. This was in the nature of a slightly "changed" voice, as she expressed it. On examination of the vocal cords, perfect movement was present and therefore no injury to the recurrent nerve had occurred. The vocal difficulty was due, no doubt, to the stiffness and temporarily impaired mobility of the accessory muscles of the larynx that were severed at operation. I have not seen this patient for a long time, and presume she now has no complaint.

One postoperative hemorrhage occurred. The patient, a man, aged 38, with large bilobular enlargement, was operated on at 2 p. m. by translobular resection, and the wound closed over a dry field. At 1 a. m. next day, the nurse reported that hemorrhage was taking place. The gauze dressings were wet, and blood had trickled into the bed. The neck was ballooned to an enormous size. The wound was immediately opened in the operating room, under strict asepsis. No anesthetic of any kind was used. The sutures of fascia and muscle had all pulled apart, and several ounces of blood clot filled the cavity. This blood clot was scooped out with the hands and inspection made for active bleeding points, but none were found, the entire wound being dry. The sutures were reinserted, morphin and proctoclysis were given, and an uneventful recovery followed. A general oozing evidently caused the trouble.

Four cases were partially substernal. No special difficulty occurred in operating in three of these, but the fourth, a man, aged 65, and stoutly built, presented numerous points of interest and danger. The thyroid was large, bilobular and of long standing. Gradually the left lobe had encroached on the trachea and larynx until at the time of operation the larynx lay under the angle of the jaw on the right side. Respiration was labored, and, when the patient sat quietly, could be heard 20 feet away. As a result, both heart and lungs were greatly impaired, and although he seemed resigned to a possible unfavorable outcome, there was harmful apprehension concerning it. In lifting the large substernal mass of goiter from its bed there were a few moments of anxiety because of intensely labored breathing, and several times it was felt wise

to drop back the substernal portion and allow the patient more air until such time as it might be wholly withdrawn and removed. The trachea was torn in one place. The rings on one side were partly absorbed and weakened, and this part of the trachea was finally supported by suturing to the pretrachial fascia and muscles. Some blood found its way into the trachea, giving rise to cough and bloody expectoration during the succeeding few days. Complete recovery occurred, the patient being better now after two years than at any time for a score of years preceding.

My remaining patients were thyrotoxic or exophthalmic, and included almost every degree of severity. I have felt that the safety of these, as shown by their survival of the operation, was due in great measure to trustworthy diagnosis and adequate preoperative preparation.

In only three cases was ligation necessary. Preoperative preparation in these failed, all thyrotoxic symptoms continuing throughout a prolonged period of rest and medication. One of these patients was in bed for three months, yet the pulse rate continued 130 when she was absolutely quiet, and would rise to 150 on slight movement. She was greatly emaciated, slept almost not at all, sweat profusely, and presented altogether a condition quite unfavorable to complete thyroidectomy. The two upper poles were ligated at the same operation under local anesthesia, with almost no disturbance to the patient. Appetite and sleep improved and the pulse rate fell as low as 68 within a week, remained below 90 for two weeks when it began to rise, and in eighteen days was 100. Complete thyroidectomy was safely performed at this time, and was followed by uneventful recovery. Within three months this patient was following an almost normal life. The other two ligations were satisfactory, but the results were not so striking.

RELATIONSHIP OF DISEASED TONSILS TO GOITER

Much interest has been shown by many operators in the relationship of diseased tonsils to goiter. Shurley, Tinker and others have written on the subject and believe that diseased tonsils are an important causative factor in most cases. In the last six years I have made accurate note as to the presence of diseased tonsils in all goiter cases. More than 90 per cent. of all cases that I have examined have had clearly evident disease of the tonsils, and judging them from the most modern point of view as to what constitutes a diseased tonsil, I think practically all may rightly have been classed as having foci of infection in the tonsil. In more than 50 per cent. of my cases of goiter in which operation was performed during this period, the tonsils were removed before the thyroidectomy, sometimes as long as a year previously, in the hope that the goiter operation might thus be avoided. It seems certainly true that after the thyroid is once diseased the removal of the tonsils has little appreciable beneficial effect on the thyroid disease. Indeed, I have seen the thyroid rapidly enlarge and the thyrotoxic symptoms increase after the performance of a most complete tonsillectomy. These observations do not, however, form a good argument against the possibility that the diseased tonsil may have been the original focus from which the thyroid received its infection. Indeed, the frequent presence of infected tonsils in thyroid cases points almost certainly to a connection between the two diseases; but the point I wish to make is that clinical experience seems to justify the belief that when the thyroid is once diseased, from whatever source, the removal of the tonsils has but little effect on the future course of the thyroid ailment, but does, of course, improve the physical condition of the patient, and that tonsillectomy is, therefore, to be recommended as a preoperative measure of great value.

FINAL RESULTS

A correct statement of the percentage of final cure in my series of thyroidectomies cannot be made. I have been in correspondence with, or have seen most of the patients months or years after the thyroidectomy. I know of no dissatisfied patient after two years. It is not unusual for thyrotoxic patients to expect a too rapid cure, and to resume early a mode of life that is prohibitive of complete cure. These usually learn from experience their limitations; and when they finally accept them, recovery takes place. Many toxic goiter patients find it necessary for economic reasons to return to some occupation at an early date. Such patients are often mothers with small children, and these feel the necessity of resuming household cares at once. Strangely enough, these mothers often recover under most trying environment. Of course, all nontoxic goiters are well as soon as recovery from the operation takes place. Exceptions must be made for those cases in which pressure has set up respiratory difficulties, and especially when the trachea has been severely damaged.

ABSTRACT OF DISCUSSION

DR. EMIL MAYER, New York: I wish Dr. Barnhill would tell us whether he omitted to read that part of the paper in which the differential diagnosis of the condition was made. The reason I ask is that quite recently I saw a patient who had been advised by a prominent surgeon to have an operation performed on her thyroid. She had no pressure symptoms, no tachycardia, nothing that would indicate the effect of a diseased thyroid, except a swelling of the neck. She was a young woman, and was naturally averse to having an operation performed that would leave a scar. To my mind she had no thyroid and required no thyroid operation, because it was simply a bronchocele. How frequently that occurs, perhaps, the essayist will be able to inform us. In this instance the patient made a very good recovery. The hypodermic needle evacuated fluid, and a few injections of iodin resulted in a cure with disappearance of swelling and no scar tissue.

DR. NORVAL H. PIERCE, Chicago: May I ask the essayist to tell us what constitutes a diseased tonsil?

DR. JOSEPH C. BECK, Chicago: I am somewhat disappointed in Dr. Barnhill's paper. While I hoped that he would say that he operated on the thyroid, my thought was that he would bring out the importance of the laryngologist's connection with surgery, particularly where he is indispensable, as when the patient has tracheal collapse from a large thyroid or when there is present a substernal or a subclavicular thyroid which makes operation practically impossible for the general surgeon. There is nothing better than to have the laryngologist see the patient before anesthesia is induced or before the operation is undertaken under local anesthesia, and with a tracheal catheter or a bronchoscope do an intubation before the operation is begun. You have all, perhaps, witnessed the dilemma in which the general surgeon finds himself when he attempts to operate in a case of substernal or subclavicular tumor. It is only for a short period of time, but long enough to put the patient in jeopardy. Another thing I hoped the doctor would bring out was the question of operating on the larynx and trachea in the presence of a large thyroid. We want men to take up borderline surgery. If we are claiming to do other operations on the neck we should know the anatomy, and if there is a condition of laryngeal and tracheal disturbance from the thyroid and it must be removed, it is a question of whether you wish to do it or not.

DR. THOMAS E. CARMODY, Denver: I have a patient who has a patent thyroglossal duct. Every time he has an attack of influenza he gets an infection of this duct with swelling of the thyroid. Recently, during one of these attacks, I succeeded in getting some of the pus from the duct. One of

our pathologists, after taking a culture, injected it into a rabbit. The rabbit was dead in forty-eight hours, and a very much enlarged thyroid gland was found.

Dr. John F. Barnhill, Indianapolis: In answer to Dr. Mayer as to the differential diagnosis, I state in the paper that every possible means is used to differentiate these cases and to classify them so that by no possibility could any case that is not a surgical goiter reach the surgeon. I have received aid in difficult cases from the internist who is skilled in every feature of diagnosis, and thus have more certainly avoided overlooking any point in diagnosis that should not be overlooked. Some of these borderline cases are exceedingly difficult to diagnose. Dr. Pierce asked if I could tell when a tonsil is diseased. I would answer briefly: if we find the patient has an occasional sore throat, or a continuous sore throat, be the tonsil large or small, if we are able to express infective material from the crypts of such tonsils, if the tonsils are hypertrophied and appear sore, if there is a history of general aching, muscular soreness and stiff joints, if, in addition, the patient has pains in the neck, shoulders and back, then I think we may assume that the tonsils are diseased, and are a menace to health. If I understand Dr. Beck, he expects the laryngologist to stand by during thyroid operations performed by an abdominal surgeon, and to meet emergencies that may arise. It seems to me that since the laryngologist knows what these emergencies are likely to be, and has the apparatus for meeting them, that he, if properly trained surgically, should be equally competent to perform the thyroidectomy. During my earliest work I kept a tracheotomy set at hand that I might use, if necessary, but no occasion has ever arisen for using it, even in the substernal cases of goiter. A tracheotomy, when necessary in patients with thyroid enlargement, would be done exactly as a tracheotomy in any other case would be done. The trachea is cut down on, the isthmus of the thyroid is divided and retracted without difficulty, while, of course, all vessels are ligated as one proceeds. The enlarged thyroid would not add to the danger of the operation.

HEART DISEASE AS A PUBLIC HEALTH PROBLEM *

LEWIS A. CONNER, M.D.
NEW YORK

In presenting a plea for a wider recognition of the public health aspects of heart disease it is well to begin with an attempt to visualize, in some degree at least, the size of the problem involved. This is not altogether an easy matter, for it is obvious that neither statistics illustrating the incidence of the disease nor those showing the mortality from such disease will give a complete idea as to the importance and size of the problem. The economic aspects of the subject are clearly related to the degree of disability that the disease entails and the length of time that such disability is likely to exist. Accurate information on the latter points is not available, and I shall not dwell on this aspect of the subject now further than to remind you of the familiar facts that in patients suffering from disease of the heart a certain degree of physical disability often exists for a good many years, and that before death finally occurs there is usually a period of complete disability and dependence on others, which may extend from several months to several years.

If we turn now to the question of the incidence of heart disease and its mortality, we find at hand statistics that will enable us to form a fairly accurate judgment concerning the size of the problem. The figures of the local draft boards during the war show that among the men of the country of military age the rejections for organic disease of the heart amounted to 30.74 per thousand. Of the men accepted by the local boards and subsequently examined at the camps by army surgeons, the rejections for heart disease averaged 11.56 per thousand. This brings the total rate of rejections for heart disease up to 42.3 per thousand, or 4.25 per cent. In other words, among 5,000,000 men of military age, more than 200,000 were disqualified for service because of heart defects. It is doubtless true that in these examinations a good many men with organically sound hearts were included among those rejected; but the error is offset, in part at least, by the fact that many men with the milder forms of disease of the heart were accepted for military service. In considering these figures it should be remembered that they fail to include two very important types of heart disease—that due to syphilis and that due to degenerative changes—which are only rarely seen in men of military age. Statistics from civil life are not easy to obtain. Almost the only ones available are those of results of the examination of applicants for life insurance policies, and these vary considerably in the different companies depending on the caution or liberality exercised in the acceptance of applicants with what seem to be minor heart defects. In one of the large and carefully managed companies, during the period from 1915 to 1918, the rate of rejection for heart defects was 24.4 per thousand, in spite of the fact that persons with the more obvious forms of heart disease are not likely to apply for insurance.

DEATHS IN THE U. S. REGISTRATION AREA DURING 1917

	All Ages		Ages 40 and Over		
	Number	Per Cent. of All Causes	Number	Per Cent. of All Causes	Per Cent. of All Ages
All causes	1,066,711	100.0	566,323	100.0	55.0
Pulmonary tuberculosis	93,290	8.7	35,151	6.0	37.7
Cancer	61,429	5.8	55,929	9.5	91.0
Cerebral hemorrhage and apoplexy	62,417	5.9	59,822	10.2	95.8
Lobar pneumonia	74,577	7.0	43,236	7.4	58.0
Kidney disease	82,657	7.7	70,725	12.1	85.6
Heart disease	128,719	12.1	110,426	18.8	85.8

A report of the Department of Health of New York City, covering over 250,000 examinations made by school medical inspectors during the year 1918, revealed an incidence of heart defects among schoolchildren of 1.6 per cent. This would indicate that among the schoolchildren of New York there must be approximately 20,000 with evidences of some cardiac disorder.

When we turn to mortality statistics for information concerning the size and importance of the heart disease problem, we find some very interesting comparative figures. The accompanying table is taken from a recent instructive statistical paper on this subject by Mr. Frederick L Hoffman, vice president and statistician of the Prudential Insurance Company of America. From this table it is seen that diseases of the heart were responsible for almost one eighth of the deaths of all ages and for almost one fifth of the deaths in persons of 40 years of age and over.

These various figures, then, give us some idea of the numerical size of the heart disease problem in the different age periods and show the affection to be one of the more common of the chronic diseases, even during childhood. They do not, however, necessarily prove that affections of the heart should be singled out

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from many other common diseases as deserving of special attention from the standpoint of the public health. Indeed, the movement, which is now gathering headway, for the improvement and coordination of existing agencies for the relief of sufferers from heart disease and for arousing interest and cooperation in the problems of prevention has come into existence not so much because of the frequency of cardiac disease as because of the conviction that our present methods of dealing with the problem involve enormous economic waste and immeasurable suffering, much of which is unnecessary and preventable.

AGENCIES IN NEW YORK

It may be of some interest to review briefly the history of this movement so far as it concerns New York City. The initiative came from a small group of social service workers and hospital physicians who were much impressed by the lamentable need of facilities for the proper after-care of cardiac patients who had been discharged from the hospitals after more or less complete reestablishment of their heart compensation. In many instances the direct cause of the breakdown had been the laborious character of the work engaged in; and the two essentials for the preservation of their regained health—prolonged convalescent care and an opportunity to secure work of a less exacting sort—were nowhere to be had. The first tentative effort to remedy these conditions came in the establishment in 1911 of an outpatient heart clinic in Bellevue Hospital under the charge of Dr. Hubert V. Guile, and the success which attended this modest undertaking has been due to Dr. Guile's enthusiasm and perseverance and to the sound principles on which the clinic was based. It was held in the evening in order to secure the attendance of working patients. It included periodic examinations of all enrolled patients, no matter how well they might feel, and, perhaps most important of all, it had the services of an intelligent social service worker whose duties included the visiting of the patient in his home, the education of the patient and his family, the improvement of home conditions, and often the securing of some lighter or more suitable form of work. The results of the clinic in saving heart cripples from periods of decompensation and in enabling them to continue as wage earners have been surprisingly successful, and it has served as a model for the large number of dispensary heart classes that have since been opened.

In the following year (1912), an effort to solve this urgent problem was made along quite different lines by the formulation of plans which led to the incorporation of the Trade School for Cardiac Convalescents. This had for its object the maintenance of a country convalescent home, in which laboring men with crippled hearts could be given protracted convalescent care under favorable conditions and careful supervision, and at the same time could be taught a more suitable and less exacting trade. This arrangement, which was frankly an experiment, yielded much useful and interesting information. It showed that, under favorable conditions and supervision, such heart cripples could perform fairly laborious work for the greater part of the day, not only without injury, but apparently with actual benefit to their damaged hearts. Although this proved to be an expensive method of dealing with the problem, it served as a valuable object lesson to the larger convalescent homes, and was instrumental in opening the doors of these to a class of patients which up to that time had been looked on as unsuitable for such institutions.

In the meantime, interest in the problem of the heart cases had been growing steadily, so that in 1915 the time seemed ripe for the formation of an organization which should deal in a comprehensive way with the various problems related not only to the care and relief of heart patients but to the even more important matter of prevention. The result was the incorporation of the Association for the Prevention and Relief of Heart Disease. The objects of this association, as defined in its first statement, were: to gather information on heart disease; to develop and apply measures that will prevent such disease; to seek and provide occupations suitable for heart disease patients; to promote the establishment of special dispensary classes for such patients; to extend the opportunities for adequate care of cardiac convalescents; to urge the provision of permanent institutional care for such cardiac patients as are hopelessly incapacitated for self support, and to encourage the establishment of associations with similar objects in other cities.

In the furtherance of these objects, a central office was opened and an executive secretary secured. It was felt that the first and most promising field of activity was the encouragement of the opening of special cardiac classes in the dispensaries throughout the city, modeled after that of Bellevue Hospital. The response on the part of dispensary physicians was prompt and cordial; the difficulty in most cases lay only in the securing of funds for the employment of a social service worker, without whose services, it was realized, the classes could not hope to operate successfully. In spite of this difficulty, our entry into the war found New York City with twenty or more of these cardiac dispensary classes in successful operation. For the period of the war it was found necessary to suspend the activities of the association; but a considerable number of the cardiac classes continued to function, in spite of the great dearth of physicians. The work of the association was resumed last autumn, and has rapidly gained momentum. Its accomplishments up to the present may be thus outlined:

1. The encouragement of the formation of special cardiac dispensary classes. At present twenty-seven such classes are in operation, in which some 3,000 heart patients are registered. Most of these classes are designed especially to care for working men, and for that reason are held in the evening. There are, however, among them eight classes devoted to the care of children with heart diseases.

In order to bring together the physicians engaged in the dispensary care of heart patients, there has been formed, under the auspices of the parent organization, an association of cardiac clinics, in which the special problems of these clinics are considered. As a result of these conferences, some progress has been made in standardizing the work of the clinics; that is, the classification of patients with respect to their degree of disability, the types suitable for treatment in convalescent homes, methods of treatment, etc.

2. The increasing of facilities for the care of suitable heart patients in convalescent homes.

Up to the time interest was aroused in the welfare of the cardiac patients, convalescent homes, almost without exception, discriminated against this class of convalescents. The much more liberal policy which has since been adopted by most of these institutions has been due largely to the example set by the trustees

of the Burke Foundation at their splendid convalescent home at White Plains. Here, under the wise and far-sighted policy of the director, Dr. Frederick Brush, convalescent heart patients, both adults and children, have been accepted in steadily increasing numbers, and have had the advantage of a protracted stay and of suitable occupational therapy. In all, more than 2,000 such patients have been cared for by this institution during the last six years, and the results in properly selected cases have been most gratifying. At present the convalescent hospital maintained by St. John's Guild is arranging to provide for 150 children with heart disease, and the doors of various other similar institutions have been opened to this class of patients.

3. The arousing of greater interest in the welfare of schoolchildren with heart disorders. It is recognized that the proper medical examination and supervision of children during school age offer exceptional opportunities, not only for the shielding of crippled hearts from further damage, but also for the prevention of the type of heart disease prevalent at that time of life. The association has given its active support to various efforts directed toward these ends, such as more frequent and complete physical examinations of schoolchildren, with special attention to diseased tonsils and teeth and to adenoids; greater protection in the schools for the heart cripples, and education of the parents, the teacher and the family physician as to the importance of tonsillitis, slight rheumatic and "growing pains," and as to the need of greater care during convalescence from the acute infectious diseases, etc.

The question of the desirability of the segregation of cardiac children in special classes in the schools is being given careful study. Through the cooperation of the board of education, this experiment is being carried out in several of the schools, under supervision by certain of the dispensary heart clinics; but it is yet too early to know whether or not the plan is deserving of general application.

4. The accomplishment of a good deal individually by the social service workers in the various dispensary heart classes, in the matter of providing heart cripples with more suitable occupation. During the last two or three years, however, a great part of this burden has been taken over by the Employment Bureau for the Handicapped, maintained by the Hospital Social Service Association. In this extremely difficult field of practical philanthropy this bureau has achieved notable success, partly no doubt because of the unusual demand for labor of all sorts, but chiefly because of the exceptional degree of intelligence, perseverance and tact displayed in the carrying on of the work.

PREVENTION OF HEART DISEASE

Progress in that phase of the problem which relates to the *prevention* of heart disease has, naturally, been slowest and least appreciable. This subject is so extensive and so many sided that a discussion of it cannot be included in this short paper. It seems evident, however, that efforts in this direction must follow the three lines which correspond to the three great causes of heart disease; namely, the prevention of rheumatic infection and its complications, the prevention of syphilis and its late effects, and the postponement of the degenerative changes incident to the later years of life. That the task is beset with difficulties does not justify us in failing to undertake it; rather its difficulties, as well as its size and its importance, call on us the more loudly for a determined and sustained attack on it. Such an attack obviously demands concerted action on the part of investigators, clinicians and various public health organizations. It would seem as though the coordination of these various agencies could best be accomplished through a national organization formed on the lines of the Association for the Prevention and Relief of Heart Disease in New York City. There are signs in many parts of the country of an awakening of public interest in the heart disease problem. Special heart clinics are already in operation in Boston, Chicago and other cities, and the formation of a national organization dedicated to this object would seem to be the next logical step. The history of every national organization of similar character has shown the enormous gain in momentum that results from such coordination of effort and unity of purpose.

121 East Sixty-Second Street.

ABSTRACT OF DISCUSSION

Dr. Alexander Lambert, New York: In the prevention of heart disease neither sanitation nor inoculation will answer. It is a question of personal hygiene and education, and the disease when once acquired handicaps permanently. The great cause of heart disease up to the age of 30 is sepsis or rheumatism. Seventy-six per cent. of rheumatic children under 10 years of age have affected hearts. Of 500 cases of rheumatism in all ages studied in Bellevue Hospital a few years ago, 56 per cent. showed some form of chronic heart disease. After 30 years of age, another great cause of heart disease is syphilis, and syphilis injures the heart and arteries not in the late secondaries, as is generally believed, but often in the early secondaries. Such a syphilitic usually breaks down at about 45. After 50 years it is the degenerative process producing atheroma which causes most of the cardiac diseases. The form of heart disease which injures most is that chronic condition around the auriculoventricular valve, closing slowly but surely, forming mitral stenosis. Although this begins in the early years of life it usually cripples the patient between 33 and 38 years of age. What is the best thing to do with these people? Dr. Guile, who founded the cardiac clinic in Bellevue Hospital, taught his cardiac patients three things: to avoid alcohol, tobacco and stairs. It is not a question of the valves involved, but of the myocardium. Each man must learn to gage the ability of his heart to withstand certain exertions and to learn the limitations of his exertion. It is the duty of the clinician to find out when and under what conditions these morbid processes begin and what can be done for them during the living hours of the patient. In Bellevue Hospital the total number of rheumatics since 1914 has continually diminished and there has been practically an even diminution in the total admitted of all ages. Since 1914, also, the dental clinics have been struggling with the teeth and the children's clinics with tonsils. Since 1914, a diminution is shown of the ratio of cases admitted between 20 and 30 years of age compared with the total number of cases coming into the hospital. So that for these years both the total number and the ratio to total number have diminished; hence attention to both tonsils and teeth has helped. I found that 65 per cent. of rheumatics showed bad teeth and 35 per cent. showed bad tonsils. Bad teeth seemed more to blame than bad tonsils for all ages. The syphilitic cardiacs predominate over the septic types in the hospital today; previously the rheumatic cardiacs formed the majority. The prevention of sepsis, syphilis and arterial degeneration is what must be taught to improve public health in relation to heart disease.

Dr. G. C. McKinney, Lake Charles, La.: Dr. Conner mentioned that 1.6 per cent. of schoolchildren in New York City have heart lesions, and Dr. Lambert drew attention to the teeth and tonsils. I would like to call attention to the fact that Dr. Lambert said "bad tonsils" and not "hypertrophied

tonsils," because a tonsil may be very bad although not larger than a peanut. This expression "hypertrophied tonsils" should be dropped from the medical nomenclature. It means nothing whatever.

DR. WILLIAM H. MERCUR, Pittsburgh: The one special feature of Dr. Conner's work which always impressed me as most valuable and practical he did not especially emphasize. He devised and carried out a plan by means of which suitable occupations can be taught to hospital patients who are suffering from advanced cardiac lesions; patients whose compensation constantly breaks down whenever their former occupations are resumed. Those of us who are constantly seeing such patients must have observed with what regularity they return time and time again, either for hospital or private care, and always with greater frequency, until finally they can no longer work. A very large proportion of these patients, if taken early, and proper facilities given them, can be educated to earn their living in other ways, by carefully selecting more suitable occupations for them, in which their physical exertion is not out of proportion to their reserve cardiac strength. Such patients can thus have their life and usefulness prolonged for years and incidentally save our hospitals hours and hours of time. Few cities in this country have developed this idea to the extent New York has, and its success is chiefly due to the consistent efforts which Dr. Conner has made, not only to inaugurate this work but to see that his patients receive this necessary training. Those interested in carrying out this excellent idea in other cities would do well when they are in New York to look up the Sharon Work Shop, 84 Lexington Avenue, where this instruction is given.

DR. JOHN P. DAVIN, New York: We have a form of tenement house in New York that should be put out of commission, and that is the five story "walk-up." I am sorry that that tenement house was put up under the auspices of the Tenement House Commission. It was put up with the intention of doing away with the evils of the old tenement house. But there is nothing more conducive to heart disease in children who have tonsil trouble, than living on the fifth floor of a New York apartment building.

DR. B. A. LEDBETTER, New Orleans: One of the most important points to bring out in regard to this question of heart disease is the fact that the medical profession as a whole knows so little about it. Of all the organs in our body the heart is less understood than any other. I can look back on an experience of twenty-five years in examining a great number of people for insurance companies, and finding loud murmurs. Guided by my textbooks I felt sure that a person with such loud murmurs would be dead in a few years, yet some of those people are just as well now as they were then. The most serious heart diseases are unaccompanied by murmurs. On the other hand, a great number of murmurs are absolutely harmless. So long as the muscle is good the heart will work all right. It depends on the reserve that heart has, and it is by that that you must judge the case. At the necropsy, the valves in a great many of the cases are absolutely perfect. Do not think that because a man has a heart murmur you must lay him up. At the same time, however, we must not forget that with all these cases of heart disease, even mitral insufficiency, which is the least harmful of all heart diseases, the death rate is double that of the ordinary run of people. So that even in the mild cases you have to watch the patient. In those cases, we must find out what that heart can do. Then let the patient go ahead and do these things. He is going to die of something else. The same thing applies to schoolchildren. Many children come to us with heart murmurs. We cannot tell the damage done to that heart by listening to the murmur. Study the child. Do not stop that child from playing simply because it has a heart murmur. That child will stop himself if there is any serious damage to the heart.

DR. LEWIS A. CONNER, New York: I am entirely in sympathy with most of the sentiments of Dr. Ledbetter. We have to be very careful in protecting people with heart disease, but we have to be just as careful to protect healthy people from the stigma of heart disease. Quite as much damage can be done in one direction as in the other, and success can come only from a better knowledge of the significance of heart murmurs. Only a very small percentage of them are really indicative of organic damage. I should like to emphasize the importance of the special heart dispensary classes in the management of heart patients who have had a breakdown and have been discharged from the hospital with their compensation more or less completely reestablished. It has been shown conclusively that such outpatient supervision can do much to prevent subsequent breakdowns and can save such patients from repeated visits to the hospital ward. But, while much can be done to save the already damaged heart from periods of decompensation, the great problem is that of the prevention of heart disease. There are three distinct types of damage: that due to rheumatic infection in early life, the syphilitic lesions of middle life and the degenerative types of trouble which are seen chiefly in the later years of life. The opportunities in this field of prevention are very great, indeed, if we can but get cooperation between the laboratory workers, the clinicians and the various public health organizations.

OUTLINE OF A SCHEME FOR WRITING THE NATURAL HISTORY OF SYPHILIS *

SANGER BROWN, M.D.
CHICAGO

Of the diseases that affect the human race, syphilis is certainly among the most formidable; and while within the last decade or two, owing to the brilliant development of laboratory craft, our conceptions of the malady have been materially extended and clarified, no corresponding progress has been demonstrated in the matter of prevention and cure.

About fifty years ago, before the natural history of pneumonia had been established, the scientific programs of medical society meetings, and the pages of medical journals presented a liberal display of papers extolling the specific virtues of various remedies in the treatment of that disease. When its natural history was understood, however, it immediately became obvious that nearly all the advocated measures of treatment had been more or less harmful and, indeed, in not a few instances had directly contributed to a fatal result. While the revelation of its natural history has not so far led to the discoverey of a cure for pneumonia, it certainly cleared the field for action and has mitigated much suffering and saved many lives. If the natural history of syphilis were known, advantages might be expected similar to those referred to in regard to pneumonia.

In the treatment of any disease, the practitioner's ability to assess correctly the value of the remedies employed must depend on his knowledge of its natural history. It is recognition of the importance of this maxim that has prompted me to propose a plan for writing the natural history of syphilis; for so far this has not been satisfactorily accomplished, nor at the present time is there anywhere evidence of a movement in this direction.

Two outstanding obstacles bar the way when the task of ascertaining the natural history of syphilis is contemplated: One of these is created by the social and moral stigmas with which, according to popular verdict, syphilis stamps its victims. The other owes

* Read before the Section on Nervous and Mental Diseases at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

its existence to the protracted duration of the disease. Without my attempting either to state or to discuss the different views entertained at present regarding the course and curability of syphilis, probably all will agree that, in order to obtain the most accurate possible knowledge of the natural history of the disease, critical observations should cover the entire lifetime of a great number of patients, from birth when possible, but in any event beginning with the primary infection.

That the necessary histories can be secured and profitably studied only by an earnest and sustained coordinated effort of our profession may appear more obvious if some of the conditions incidental to the work are briefly stated.

NECESSITY FOR COOPERATION

In a considerable proportion of cases, a syphilitic patient, whether treated or not, regains his usual health within a period of two or three months of his primary infection, and even though during this period adequate clinical notes had been made, in many instances and for various reasons the physician is afforded no further opportunity of amplifying his record. Not until twenty years later perhaps, when symptoms of tabes or paresis appear, is the medical history resumed. Assuming that the clinical notations cover the remainder of the patient's life, including a necropsy, and that the professional services throughout were of the highest order, then so far as supplying a valuable contribution to the study of the natural history of syphilis is concerned, the commendable efforts of the several physicians connected with the case are largely wasted, because for a considerable period the patient would not have been under medical observation at all, and because it would rarely happen that the notes covering the period of initial infection would be available to the physician in charge during the final stages. Incomplete histories would be of only limited value for the purpose in view. In order to carry the proposed investigation to successful accomplishment many hundreds, perhaps thousands, of complete histories must be available for competent analysis. Manifestly these can be accumulated only by some sufficient scheme of cooperation.

For the purpose of enlisting and maintaining the interest and cooperation of the patient, appropriate propaganda should be prepared. This should appeal to his altruism; should convince him that his own interests would be best conserved by continuing for the remainder of his life under close medical supervision; should assure him that his acquiescence would in no way compromise his rights of professional privacy, and should make it clear that thenceforward without incurring any additional financial obligation he would receive the highest grade of medical service anywhere obtainable.

While many patients for various reasons would undoubtedly decline the terms submitted, it does not seem improbable that a sufficient number might accept and adhere to them to meet the requirements of the proposed investigation.

Conceding that it is important to obtain the specified histories; that a sufficient number of physicians might be induced to volunteer their services for the work incident to their production, and that the necessary cooperation of patients could be secured, practical plans for the successful prosecution of the project present themselves for consideration.

PROPOSED COMMITTEE AND ITS FUNCTIONS

The investigation of a subject like this one, which challenges the serious concern not only of the nation but also of the whole human race, and which for its successful prosecution requires the coordinated effort of a large number of well qualified physicians, should obviously be conducted under the auspices of the American Medical Association, our strongest, most representative and most authoritative medical organization. The appointment of a standing committee for this purpose would in my opinion constitute a legitimate expansion of the activities of the Association.

Assuming that a committee had been formed as suggested and was prepared to proceed with the work, meetings would have to be held to determine its scope, and methods to be adopted in carrying it forward. A campaign might be conducted to enlist the interest both of the laity and of the profession. Appropriate papers might be prepared and presented where they would be most effective. The services of both the lay and the medical press might be sought. The profession might be canvassed for volunteers who would be willing to contribute their services to the actual work of taking histories according to the prescribed methods. A manual setting forth the most approved and serviceable information on the subject of syphilis might be compiled for the instruction and guidance of workers.

In anticipation of flagging interest, the committee might see to it that close relations with the volunteers were maintained so that timely assistance and encouragement could be given. This would involve considerable correspondence and possibly quite numerous personal interviews, lectures and demonstrations. In the event of interruption of the relations between an observer and a patient, a method should be devised to secure continuation of the clinical record. Provisions would have to be made for analyzing, classifying and filing the histories, which would require both medical and clerical service.

The foregoing outline of the duties which would be required of the proposed committee demonstrates that, from the first, funds would be needed, and that it would be idle to attempt to carry the work to a successful issue without the assurance that ample funds were available.

CARRYING OUT OF THE PLAN

For the purpose of contributing to a more definite understanding of the proposed plan, let it be assumed that all desired conditions had been met. Then in some populous center, a constituent society of the American Medical Association, in which to initiate and develop methods for taking, collecting and filing the specified histories, should be selected. Those willing to participate actively in the work would have to organize; and from the first, to insure progress, the organization would require the services of a qualified paid executive. It is quite possible that the advisability might become apparent, as the work proceeded, of providing hospital accommodations for a limited number of patients presenting symptoms demanding special facilities for their satisfactory observation. As experience ripened, units might of course be multiplied as desired. Several units would naturally suggest the necessity of a central bureau from which all authority must emanate and to which a report of all activities must be submitted as the central committee might direct.

The scheme certainly sets a formidable task. It offers neither individual fame nor pecuniary reward; and while some beneficial results, especially from the

educational side, might be expected in the first decade, fifty years would probably be required for completion of the investigation, so that few if any of the earliest workers could hope to witness the full results to which their efforts had contributed. A strong spirit of altruism, high courage and energy are demanded for the initiation and prosecution of the subject. Hesitancy, criticism, and excuses are only natural under the circumstances; and yet, from the clinical side, unless we accept present methods of study and practice as final, a critical survey of the situation discloses no satisfactory alternative.

It may be stated here that a large standing army, providing its permanence could be secured, presents some exceptionally favorable conditions for study along the lines suggested. Some valuable results of work done in the Austrian army have already been published. But at best the range of military practice, under ordinary conditions, is not comprehensive enough to meet all the requirements of the proposed investigation; and furthermore, it does not include the highly important educational features to which reference has been made.

QUESTIONS THAT WOULD BE ANSWERED

In my opinion, from the clinical side the submitted scheme more than any other promises to shed needed light on such questions as:

1. What are the immediate and remote effects of various methods of treatment?
2. What proportion of syphilitics develop paresis or tabes?
3. Does any method of treatment influence liability to paresis or tabes?
4. In what proportion of cases does the Wassermann test remain positive in spite of all methods of treatment?
5. What are the various relations between cerebrospinal fluid and blood Wassermann findings? From a study of these can liability to paresis or tabes be predicated?
6. Can the wife of a syphilitic patient who is symptom free but has a positive Wassermann test acquire a positive Wassermann test from her husband without ever manifesting any symptoms of infection? And if so is she immune from further reinfection? And what is her liability to paresis and tabes? Similar questions would, of course, apply to the children of syphilitics.

This list of questions is intended to be merely illustrative; the investigation should undoubtedly cover the whole range of syphilitic pathology, and if the suggested committee be appointed, this should be duly recognized in its membership.

I respectfully submit that none of these or similar questions can be answered satisfactorily until the natural history of syphilis has been written.

PROPOSED RESOLUTIONS

I submit the following preambles and resolutions for your consideration:

WHEREAS, The deleterious effects of syphilis on the mortality and morbidity of the human race are so prevalent and so severe as to challenge the most serious attention of the entire medical profession; and,

WHEREAS, In the scientific study of any disease, knowledge of its natural history is an item of cardinal importance; and,

WHEREAS, Owing to the protracted course of syphilis, a continuous and complete clinical record of a given case can be secured only through the services of several successive medical observers; and,

WHEREAS, It is highly desirable that a sufficient number of completed histories be accumulated and preserved, and made easily accessible to students; and,

WHEREAS, For the successful accomplishment of the purpose set forth above, the interest and cooperation of a considerable number of the best elements of our profession as represented in the membership of the American Medical Association are necessary; therefore be it,

Resolved, (1) That the Section on Nervous and Mental Diseases of the American Medical Association recognizes the importance of ascertaining the natural history of syphilis and of making this history accessible and in form serviceable to students of medicine; further,

Resolved, (2) That the Section on Nervous and Mental Diseases of the American Medical Association respectfully requests the trustees of the American Medical Association to appoint a committee from the sections most immediately concerned, whose duty it shall be to devise practical means and methods of accomplishing the foregoing specified purpose; and further,

Resolved, (3) That the representatives of this section in the House of Delegates be requested to present these preambles and resolutions to the House of Delegates, and to ask its endorsement.

59 East Madison Street.

ABSTRACT OF DISCUSSION

DR. HUGH T. PATRICK, Chicago: No one could question the wisdom of this matter if it could be carried out. We all agree that it is something devoutly to be wished for. The difficulties lie in the details of carrying out the plan, but if they can be worked out by a committee so as to be made practical, as indicated by Dr. Brown, we have reason to believe that the necessary funds can be procured. Papers have been read to show that the incidence of tabes and paresis has no relation whatever to the previous treatment for syphilis; that tabes and paresis occur just as frequently in patients who have previously received good treatment for syphilis as in those who have not; and papers have been published to prove just the contrary.

DR. W. S. LINDSAY, Topeka, Kan.: Twenty years ago I treated a young man who had syphilis with the old-time salvarsan. About ten years ago several Wassermann tests were made, but the results were negative. He came to me for certification for marriage. On the basis of these negative reports, I signed his certificate. He has continued to have negative Wassermanns, but the woman he married, whom I knew in childhood, as I had known him, had a stillborn child and after that a positive Wassermann. She has had a second stillborn child and continues to have a positive Wassermann in spite of arsphenamin treatment.

DR. CHARLES D. HUMES, Indianapolis: I have been confused with the utter lack of knowledge regarding the date of infection, the amount of treatment that has been given, the nature of the after-care, if any, the character of the medical treatment, and the medical status of the patient immediately preceding the neurologic break. If those factors could be eliminated it would be a tremendous help to us and no doubt save many patients from the serious after-effects of syphilis. But until we can remove all the elements of human frailty and commercialism, it is very difficult to get patients to return to the office for so-called free consultation.

DR. C. R. WOODSON, St. Joseph, Mo.: I am heartily in favor of the resolutions that have been presented. The carrying and resisting capacity of men varies greatly, and it is hard to tell who will or who will not have paresis or tabes. I believe that paresis is less frequently found in those who have had thorough treatment than in those who have not had such treatment, but more particularly in those who have all "plus" habits, rather than in those who have excellent habits. A pathologist of some experience has expressed the belief that paresis was extremely rare, and perhaps never existed in those men who have never dissipated. I do not remember having observed this but if so it is in line with my belief of the effect of the "plus" habits.

DR. SANGER BROWN, Chicago: This paper was not intended to bring up any discussion on the course of syphilis but simply to outline a plan which might enable us to secure reliable data to work with when we wish to establish the value of any particular method of treatment that might be employed in the disease. Before the natural history of pneumonia was understood, a considerable part of the programs of medical meetings was taken up with papers extolling the specific virtues of certain remedies in the treatment of that disease. In the past few years the programs of medical meetings have shown a similar display in regard to syphilis. After the natural history of pneumonia was demonstrated and understood, the papers ceased, and it was understood that the extolled specific remedies had been, for the most part, meddlesome and harmful and in some cases directly contributory to a fatal result. It is quite possible that when the natural history of syphilis is understood, similar results may be noted.

RADIUM TREATMENT OF CANCER OF THE ESOPHAGUS UNDER ROENTGEN-RAY CONTROL *

R. WALTER MILLS, M.D.
AND
JOHN S. KIMBROUGH M.D.
ST. LOUIS

Cancer of the esophagus is one of the most distressing diseases. The inability to swallow adequate amounts of food and water, the regurgitation, strangling and sternal oppression, and the appallingly rapid loss of weight and strength characterize a disease that is truly terrible. To meet the appeals of the patient, who is abject in his willingness to undergo any sort of treatment, the physician has nothing to offer. The situation is uniquely hopeless from a radical standpoint, saving possibly the efforts of a few heroic surgeons whose specialized skill is usually not available or applicable. Palliative treatment is distressing and unsatisfactory. It is an added humiliation that cancer of the esophagus probably gives the earliest symptoms, is readily possible of at least as early diagnosis as any internal carcinoma, and that metastases occur late. It is obviously advisable to present any feature of a treatment that offers a prospect of relief, or with the greatest caution a possibility in its ultimate development of a cure of the disease. It is with this feeling that we report a few cases treated with radium under roentgen-ray control, emphasizing that the series is small and that the cases have been under observation at the longest only eighteen months.



Fig. 1.—Carcinoma of the esophagus with extensive filling defect and dilated proximal esophagus. Roentgenogram taken during an act of deglutition, just before introduction of radium carrier, showing the extent and degree of involvement of the esophagus. Compare with Figures 2, 3 and 4 of same patient with same treatment.

There is as yet very little literature on the treatment of cancer of the esophagus by radium. The method seems to have been first used independently by Einhorn and Exner. Exner [1] reports three cases treated by the application of 60 mg. of radium, mounted on a bougie, to the region of the stricture for periods of twenty or thirty minutes on a number of successive or alternate days. In 1904, Einhorn [2] reported nine cases of esophageal cancer treated by radium. Later, seven additional cases were reviewed.[3] Special applicators of the bougie type were employed. Still later, Einhorn [4] reviewed a series of seven cases of cancer of the stomach treated by radium, two of which involved the cardia and presumably the abdominal esophagus since they are referred to as esophageal lesions. A larger amount of radium, 70 mg., left in situ as long as six hours was employed. The matter of filtration is not emphasized. Results were palliatively beneficial. A formal report of a considerable series of cases is that of Janeway, Barringer and Failla [5] from their work at the New York Memorial Hospital. These authors report twenty-two cases of cancer of the esophagus treated by radium. On account of their experience with the use of radium in other conditions, their report is comprehensive as to the demands and difficulties of the method applied to cancer of the esophagus. A. E. Hayward Pinch [6] reports one case of cancer of the esophagus treated by radium, and mentions another. Great improvement resulted in the case reviewed, gastrostomy being averted. Death from metastases occurred a year later without recurrence of dysphagia. The patient was "twice treated with a powerful emanation tube for fifteen hours." Chevalier Jackson [7] goes at some length into the technic of radium therapy in cancer of the esophagus as to principles of filtration and especially the employment of esophagoscopy in the emplacement of the radium. He mentions Mr. Walter G. Howarth as obtaining excellent results through the employment of 100 mg. of radium left in situ for periods of eight hours on two or three occasions within a few days. Dr. C. W. Hanford [8] has treated two cases of esophageal cancer with radium. One of the patients died from rupture of the esophagus. The second patient was materially benefited, but was lost track of after the second treatment.

The highly beneficial and probably at times curative effects of radium in certain carcinomas, notably in cancer of the cervix uteri, is an established fact. Abbe [9] reports a case of this disease in which

* Read before the Mississippi Valley Medical Association, Louisville, Ky., Oct. 23, 1919.

* Owing to lack of space, this article is abbreviated by the omission of several case reports. The complete article appears in the reprints, a copy of which may be obtained on application to the authors.

1. Exner, A.: Ueber die Behandlung von Oesophagus-Karzinomen mit Radiumstrahlen, Wien. klin. Wchnschr. **17**: 96 (Jan.) 1904.

2. Einhorn, Max: Observations on Radium, Med. Rec. **66**: 164 (July 30) 1904.

3. Einhorn, Max: Radium Treatment of Cancer of the Esophagus, J. A. M. A. **45**: 8 (July 1) 1905.

4. Einhorn, Max: On the Value of Radium Treatment in Cancer of the Digestive Tract, Med. Rec. **80**: 609 (Sept. 23) 1911.

5. Janeway, Barringer and Failla: Radium Therapy in Cancer, First Report, 1915, New York, Paul B. Hoeber, 1917, p. 156.

6. Pinch, A. E. Hayward: A Report of the Work Carried Out at the Radium Institute, London, from Jan. 1, 1917, to Dec. 31, 1917, Radium **2**: 49 (July) 1918.

7. Jackson, Chevalier: Peroral Endoscopy and Laryngeal Surgery, St. Louis, the Laryngoscope Company, 1915, p. 452.

8. Hanford, C. W.: Personal communication to the authors.

9. Abbe, Robert: The Present Estimate of the Value of Radium in Surgery, Med. Rec. **86**: 279 (Aug. 15) 1914.

the patient is alive and well nine years after treatment.[10] At first sight it would seem that radium should be equally effective in the treatment of cancer of the esophagus. The treatment of cancer of the esophagus, however, is a more difficult matter. The problem resolves itself into a question of the effective irradiation of the lesion without harm to contiguous normal tissue or stimulation of any portion of the growth, and is naturally connected with the matter of dosage and the mechanics of application.

The beneficial action of radium on malignant tissue is due to its selective retrogressive action on the cancer cell when used in a dosage still not harmful to normal tissue. When one is attempting to utilize this principle in the practical therapeutic use of radium, certain difficulties are encountered. First, what may be termed the coefficient of tolerance of normal as compared to pathologic tissue is not as great as would be ideal, and second, the devitalizing action of radium on malignant tissue rapidly decreases with its distance from such tissue. This decrease is approximately as the square of the distance. The thickness of a malignant tumor not being known, it follows that it is desirable to use as strong a dose as will be tolerated by surrounding normal tissue incidentally exposed to its action. In cancer of the uterus, conditions are maximally favorable, as it is possible on account of anatomic conditions to irradiate, in the center of a mass, the cancer-infiltrated uterus. Even if normal uterine tissue is injured, surrounding structures and reactions are such that protection is developed. The beneficial results of radium treatment in uterine carcinoma are due to the fact that under such conditions large dosage can be used. To cite another instance of effective radium therapeutics in which other conditions make possible other technical procedures, in superficial carcinoma, as of the lip, relatively large doses of radium can be utilized through centralization of application and protection of normal surrounding tissues by filters. The problem offered by carcinoma of the esophagus is quite different from that of other malignant conditions in which favorable results have been obtained. We have to do with a tumor whose exact thickness is unknown and usually not uniform. Not only is there no surrounding tissue of a protective nature, but instead, the thin-walled esophagus is in contact with vital structures whose devitalization may lead to ulceration and perforation. The situation of cancer of the esophagus renders exact centralization of application and protective procedures mechanically difficult.



Fig. 2.—The radium-bearing capsule is shown just canalizing the upper reaches of the cancerous stricture.

There is as yet no accepted criterion as to the amount of irradiation that the normal esophagus will tolerate. While this would at first thought suggest a safely minimum dose, it must be recalled that if benefit is to be derived the dose must be large enough to be definitely active throughout the entire tumor, because smaller doses, while favorably affecting immediately contiguous malignant tissue, may reach more distant portions of the growth so weakened as to be stimulating rather than inhibiting. If there is to be a prospect of a cure of the disease, it would seem dependent on a considerable dose being employed. The situation as regards cancer of the esophagus is not one that indicates temporizing. The disease, saving possibly a rare surgical cure, is fatal, and its course is attended by suffering and a distressing lessening of morale. If in any condition a treatment embodying an element of risk is justifiable, it is so in this instance. It would seem that the maximum dose compatible with a fair degree of safety must be conceded as the primary requisite. The problem secondarily is one of precise application and protection. Regarding the first difficulty, it is hoped that this presentation may offer aid; of the second, it less definitely suggests possible help.

Requisites to the successful emplacement and continuous application of radium in cancer of the esophagus are: (1) a knowledge of the location and physical peculiarities of the tumor and the resulting stricture, especially as to location, extent, direction, and the degree of stenosis; (2) a means of effective and nontraumatizing canalization of the cancerous stricture; (3) a mechanical means of maintaining the radium in direct application with the tumor; (4) a ready means of frequent observation as to the position of the radium during the period of treatment, and (5) a careful selection as to dose, filtration, and frequency of treatment guided by such experience as we have and the individual peculiarities of the case.

Esophagoscopy has heretofore been utilized by some to accomplish certain of these ends. Esophagoscopy plus careful measurement will ascertain the location of the proximal portion of the tumor. Sounding by olive tip bougies or gastrostomy will serve to locate its probable distal boundary and give a general idea of the luminal inequalities of the stricture and determine its degree. Esophagoscopy can through recovery of

10. The patient still remained well in October, 1919, ten years after the initial treatment (personal communication to the authors).

tissue establish the diagnosis, though not admirably according to present surgical teaching. Esophagoscopy might serve to map out the topography of the stricture in certain unusual instances in which it was not so great but that it could be canalized by the esophagoscope. It will also serve as a means of emplacing radium, at least within the upper reaches of the cancerous stricture. Esophagoscopy can best determine tissue reaction after a radium treatment. The procedure has as its disadvantages those natural to such an instrumentation. In most instances it cannot give a definite knowledge of tumor topography but only of the proximal end of the stricture. It furnishes no means of ascertaining the permanence of location of the radium after it is initially placed without frequent instrumentation, and then no clue as to its location and relation to the tumor when it is necessary to place it below the initial stricture, as is frequently the case.

The roentgen ray has advantages over esophagoscopy for certain of the purposes in question, and may be successfully utilized to serve ends impossible by it, especially in that it furnishes means of frequent and convenient observation as to the location of the radium in any level of the stricture during the entire treatment. The foregoing is a very important matter, as it has been found that the radium terminal almost invariably sooner or later slips into lower portions of the stricture or beyond it, less frequently above into the dilated esophagus. Again, the use of fluoroscopy during the emplacement of the radium capsule is an effective means of aiding in the canalization of the cancerous stricture visualized by the patient's having just previously swallowed a small amount of bismuth in suspension.[11] It is frequently an advantage to bend the wire carrier slightly at its attachment to the radium capsule so that the terminal is deflected at a slight angle. Torsion on the oral end of the wire applicator, and the placing of the patient at different angles will make it possible to guide the terminal directly into the stricture. In certain cases of marked cancerous stenosis, the tip of the radium terminal may be made to engage within the proximal portion of the stricture; but further progress is prevented by the degree of narrowing. In such instance, under careful fluoroscopic control the tip may be left engaged in the stricture, the walls of the esophagus above being protected by the distention of the esophagus proximal to the stricture by a bismuth mixture. It will usually be found on later observations that, owing to the continuous gentle pressure exerted by the spring of the wire applicator, the radium gradually canalizes the lower levels of the stricture. In case the stricture is not visualized at any time, it may be made apparent by the simple expedient of having the patient swallow a teaspoonful or two of bismuth medium alongside the wire applicator.

It is difficult to understand how any approximation of the radium to the body of the tumor can be effected by other than some sort of visually controlled method; a matter that is fundamental and the importance of which is becoming more and more recognized. In many cases the strictured lumen is devious, and opens from the proximally dilated esophagus to one side. It is remarkable what aid can be obtained by fluoroscopy. A threatened false passage is strikingly indicated. The cause of failure to canalize any portion of the stricture is shown to be usually due to impingement of the terminal against the wall of the stricture on account of an abrupt curve rather than to a local narrowing. Plates taken and developed between efforts at introduction and as a record of emplacement at any given time are helpful.

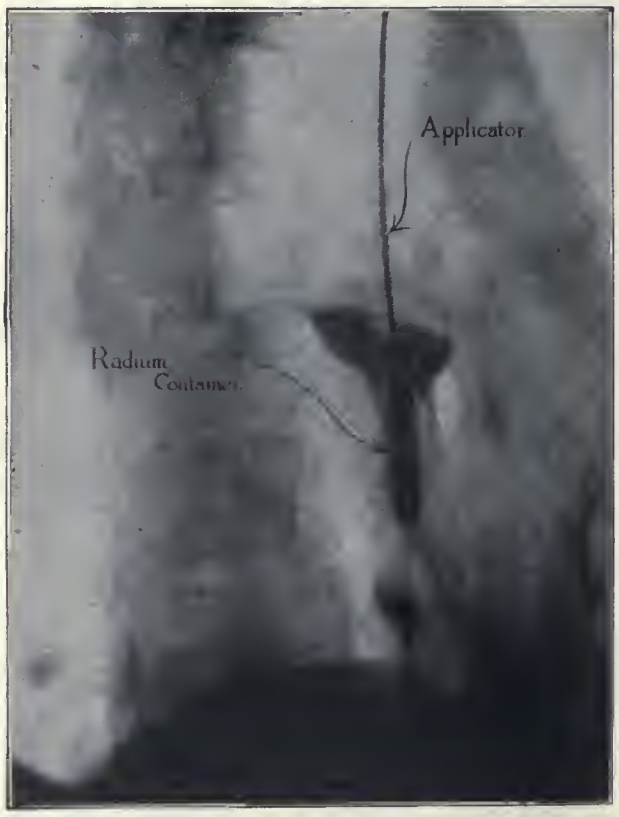


Fig. 3.—The radium capsule is shown as left in situ during the first half of the six-hour treatment. Note that the normal esophagus above the cancerous stricture is protected by the distention of the dilated esophagus. The capsule is left in this position for three hours, and then further introduced to treat the lower half of the lesion, as shown in Figure 4, for the remaining three hours.

While less appealing, the roentgen-ray diagnosis of cancer of the esophagus in expert hands, taken in conjunction with the clinical history, will probably attain as high a percentage of accuracies as can be realized by esophagoscopy. Occasionally the roentgen ray serves to visualize the actual shadow of the esophageal tumor silhouetted between those of the heart and the spine. If a technic can be evolved that will do this with any constancy and especially in other than the diagonal poses, it will be of great advantage, as the actual extent and various thicknesses of the mass can be determined and the radium not only more effectively placed but a basis established for control of tissue-protective unilateral filtration, this with the view of using larger dosage when conditions make it desirable. Most hopeful in this regard is a technic developed along the same lines as in gallbladder work, namely, strong fixation of the patient, the use of small diaphragms, extreme care as to the suspension of respiration, and a careful technic of exposure adapted to the individual patient. Fast screens are best used to obtain speed in exposure necessitated on account of transmitted movement from the heart's impulse. The roentgen ray also serves as a means of determining the results of treatment, so far as the degree of stric-

11. Bismuth in small amounts gives a slightly heavier shadow than does barium.

ture and to some extent of the change in the tumor is concerned. The roentgen-ray control of irradiation of cancer of the esophagus has all the unique advantages and gives the peculiar satisfaction and surety that is characteristic of the use of the roentgen ray elsewhere. As an aside, the roentgen-ray method of control may be used in other esophageal instrumentations, such as the divulsion of strictures with opaque bougies and as one of us (Mills) has used it for some two years in the treatment of cardiospasm with a special bismuth-containing lead-mounted dilator. The dilatation of cardiospasm under roentgenoscopic control is a revelation.[12] In comparing esophagoscopy and the roentgen ray for the control of the treatment under discussion, it is not implied that either alone should be relied on if advantages possessed by either method are unique for certain purposes. Both should be used according to the indications.

SUMMARY OF TECHNIC

An initial roentgen-ray study of the position and physical peculiarities of the tumor is made by both screen and plate, a simple mixture of bismuth subcarbonate in water being used as a means of visualization, and, when the stricture is not great, bismuth suspended in artificial buttermilk. If plates are taken an instant[13] after the patient is told to swallow a mouthful of the barium-containing substance previously held in the mouth while in pose, the stricture and distal esophagus will usually be visualized. If the stricture is of high grade, the act of swallowing tends to force through it bismuth previously swallowed and retained above the stricture. When the stricture is less marked, the fact that the contrast substance does not pass through the cardia as rapidly as usual, possibly through inhibition in the conductivity of the nervous impulses governing peristalsis, is a help in visualizing the lower esophagus.

The patient is given a preliminary injection of morphin and atropin one-half hour before the radium treatment is begun, the dose obviously as indicated. It is impossible to overestimate the value of this procedure in quieting the patient and making the endurance of a six-hour application possible without undue suffering. Many patients sleep through most of the treatment. Occasionally, in marked strictures, a spoonful of olive oil one-half hour before treatment is helpful in relaxing secondary spasm. Preliminary bouginage is occasionally useful. The radium enclosed in a container composed of German silver 0.5 mm. in thickness and further filtered with 0.5 mm. of brass and a thickness of rubber is mounted as a terminal on a slightly springy drawn silver wire encased in a rubber tube. It is introduced after the manner of an ordinary esophageal sound. A wire applicator has been used by others. In certain cases in which the abdominal esophagus was involved, the radium with its filters was encased in the end of a rather small stomach tube, as it was sometimes found that the wire carrier could not readily and safely take the rather abrupt curve of this portion of the esophagus. The wire applicator or stomach tube bearer is anchored by means of a bridle bandage about the patient's head (Fig. 5). The radium is left in situ for six hours at each initial treatment. Cases were treated on from one to seven occasions. The frequency and number of treatments and the length of other than the initial treatment was occasionally varied somewhat to meet individual indications; also as much as thought advisable in an effort to determine the most effective procedure. Nearly all our work has been done with 50 mg. of radium element. It is probable that the use of radium emanation not available to us would have advantages over the element on account of the more advantageous form of applicator that it would permit. Our greatest difficulty has been due to the thickness, length and rigidity of the radium-containing receptacle with its filters, which precluded satisfactory introduction in certain marked and irregular strictures.



Fig. 4.—The radium capsule is here shown in the lower half of the cancerous stricture, where it is left in place during the second three hours of the treatment. Were esophagoscopy alone used, such an emplacement would be impossible of observation.

The immediate results of the treatment were in most instances beneficial, sometimes strikingly so as to the relief of the dysphagia. No case treated failed of improvement in this regard. The improvement in several was almost immediate, within twenty-four hours, possibly owing in part to a bouginage action of the radium capsule. A gain in weight occurred in most cases. Curiously, the results of treatment are not reflected by a reduction in the local esophageal deformity and stenosis commensurable with the functional improvement—possibly owing to loss of local distensi-

12. Fluoroscopic control of cardiospasm dilatation shows that it is difficult to cause the dilator to straddle the site of spasm, and still more difficult to cause it to remain in place during the divulsion. It also shows that the best way to accomplish this is to introduce the dilator beyond the hiatus œsophagi, to distend it very slightly, and then pull it into the area of the stricture and, while holding it in place with considerable traction, inflate still more. The roentgen ray also strikingly shows that the standard dilator is much greater in diameter than is necessary. The spastic area is never dilated to anything like the full diameter of the dilator at the time pain is elicited. Judging by those divulsions that have been done under fluoroscopic observation, it is difficult to understand how full dilatation of the spastic area could be accomplished without danger of rupture of the esophagus. When full dilatation is accomplished, the dilator is probably either above or below the seat of spasm. The moderate distention referred to above is entirely adequate to accomplish the most beneficial results.

13. This time varies somewhat according to conditions in the individual case, but is usually about three seconds.

bility. In several cases there was a return in a degree of the dysphagia, usually relieved by another treatment. The reestablished dysphagia in some instances seemed of the nature of intermittent spasm. The late return



Fig. 5.—Method of fixation of the radium carrier by means of a bridle bandage.

of the dysphagia may be due in some cases to secondary contractures. It may be mentioned that radium burns result in dense scar. Perhaps, with added knowledge, late careful dilatation by bougies might be beneficial; we have not attempted it.

The propriety of reporting and reviewing a small series of cases under observation only a short time may justly be questioned. On the other hand, we feel that this is advisable under the circumstances. If workers delay reporting cases until several years have passed and final conclusion as to the value of the method is reached, valuable time will, indeed, be lost. We can at least profit by one another's disasters, which are usually prompt. The matter of dosage, too, can be helpfully influenced if cases showing immediate beneficial results are reported. Again, carcinoma of the esophagus is relatively rare. If we delay until any considerable series of radium-treated cases is accumulated, the development of the method will be prolonged. A presentation of cases, even with definite limitations, will help develop an interest in the method and serve as an incentive to earlier diagnosis which is, after all, the prime requisite on which our hopes are built.

Our own tentative results may be thus summarized: Eleven cases were treated. No case was treated which might be considered a cure, though one patient is alive and in good shape eighteen months after the first treatment without evidence of metastasis. The esophagoscope shows no appearance suggesting present carcinoma. Others have been under observation less than a year. No case treated could be considered early, and most of them were frankly advanced. There was but one case in which there was evidence of metastases, and in that instance there was involvement of the stomach as well as the abdominal esophagus. Five patients have died, one possibly of perforation resulting from the treatment. In six cases the dysphagia has been strikingly improved. In four additional cases the improvement in swallowing has been definite, though intermittent. Seven cases were improved as to general condition. In certain of these generally improved cases the result was so striking as to indicate that the treatment is strongly advisable even when there is no possibility of a cure. There seems no question but that life is prolonged by the treatment. The patients are usually enabled to continue their work. Not the least of the benefits is the improvement in morale. The work, instead of being gruesome, is made gratifying by the pitiful appreciation of the patients.

A mention of the results of others in the treatment of cancer of the esophagus by radium is fitting, though these instances are few. In Exner's cases, favorable results were considered indicated by decrease in the degree of stenosis as determined by bouginage. In Einhorn's series, the majority of cases were palliatively improved, and decrease in the local lesion was considered indicated in certain instances by increased distance of the stricture from the incisors. Janeway, Barringer and Failla may be thus quoted: "The series of cases reported by no means justifies a gloomy outlook. Cases too late for a cure by radium can receive palliative relief." But one patient was sufficiently benefited to encourage belief in complete retrogression (this case had been under observation a little more than a year). Five cases were definitely improved. One patient who improved had an advanced lesion at the time treatment was begun. Fifteen patients were not improved; the authors felt on account of the advanced state of the lesion and the too frequent treatments. Pinch reports a case of epithelioma of the esophagus treated by radium. The patient lived one year, dying from metastases. As far as the local condition was concerned, the treatment was eminently satisfactory: "infinitely better than could have been obtained by gastrostomy." Chevalier Jackson mentions having treated cases of cancer of the esophagus by radium and states that he has seen marked favorable effects in inoperable cases, but so far no cures. He prefers to wait several years before passing judgment. He speaks of the help-



Fig. 6.—Distention of the normal esophagus during the swallowing of one large mouthful of contrast substance. The plate is taken during an act of deglutition with a very short exposure. Note how any small defect must be evident if present.

fulness of surgery in the condition, and of having seen no case amenable to operative treatment in which he would consider the use of radium justified. He mentions Mr. Walter G. Howarth as obtaining excellent results by the method. Hanford obtained material benefit in one of the two cases treated by him.



Fig. 7.—How the esophagus distal to a quite marked stricture is filled during the act of swallowing. The defect in this instance is that of a fairly early carcinoma. Note how sharply its limitations are shown. The shadow of the tumor itself is also apparent.

The question of the treatment of cancer of the esophagus by radium versus surgical treatment should be mentioned. If the lesion is definitely early and favorably situated and the rare surgical experience available, surgery may be the method of choice. Actually, such a combination will rarely occur. Possibly as the importance of early diagnosis becomes more appreciated and the surgery of the lesion is developed, operative treatment will be more frequent.

As to palliative treatment, the indications are that radium therapy is the best that has yet been suggested; at least, patients may live to die of less agonizing consequences than result from esophageal stenosis. From a consideration of all factors, the possibility of the ultimate cure of certain cases of cancer of the esophagus by radium must be held a possibility.

The method just described would undoubtedly be more effective if patients could be secured in an early stage of the disease, rather than, as in our cases, when the condition was advanced and even desperate. It is sad that it must almost seem a part of the classical anamnesis of cancer of the esophagus and stomach to have the patient relate that he was at first seen by one or more physicians who gave him medicine without an examination. Cancer of the esophagus can be diagnosed in a few seconds by the roentgen ray. It seems amenable to radium therapy in the same way as does cancer of the mouth, which it histologically resembles. If the cooperation of the profession can be secured and the importance of early diagnosis realized by them, it will be a great advantage.

CONCLUSIONS

The method of treating cancer of the esophagus by radium is hopeful. The most encouraging feature in the small series of cases treated is the relief of the dysphagia. The roentgen ray gives valuable help through establishing a knowledge of the peculiarities of the individual lesion, as an aid in the emplacement of the radium and in the control of its localization. Its use suggests other possibilities as to its employment, not only in the treatment of cancer of the esophagus by radium, but also in other esophageal instrumentations.

REPORT OF CASES

CASE 2.—Mr. L. C. B., alive eighteen months after the first treatment, was in fairly good condition when first seen; he was 20 pounds underweight. The case was moderately advanced; he had been sick six months. The lesion was moderately limited, affecting the lower esophagus, with moderate stenosis. Marked improvement followed the treatments, especially the third at five months. The weight increased from 121 pounds to 130 pounds in thirteen months, yet there was only moderate improvement in the dysphagia. The fourteenth, fifteenth and sixteenth months were bad on account of intermittent dysphagia, symptomatically suggestive of cardiospasm, though the roentgen-ray findings were against such. During the sixteenth month, there was a sudden improvement in swallowing, there being practically no difficulty. The patient takes a general diet, including such articles as turkey, cranberries, sardines, and pork tenderloin. Roentgen ray reveals definite improvement in esophageal canalization, though still a narrow area. Esophagoscopy reveals local narrowing with semilunar-like horizontal bands only in the strictured area. The patient is holding his weight at 113 pounds and is working as a porter. Four radium treatments were given, two the first five days, the third after five months, and the fourth in the fifteenth month. The treatments were well tolerated. This case may be classified as highly successful, with palliative if not curative result. The lesion is demonstrably improved, as visualized by roentgen ray. The dysphagia has greatly improved. The result has been so good as to make diagnosis questionable, though there was no other



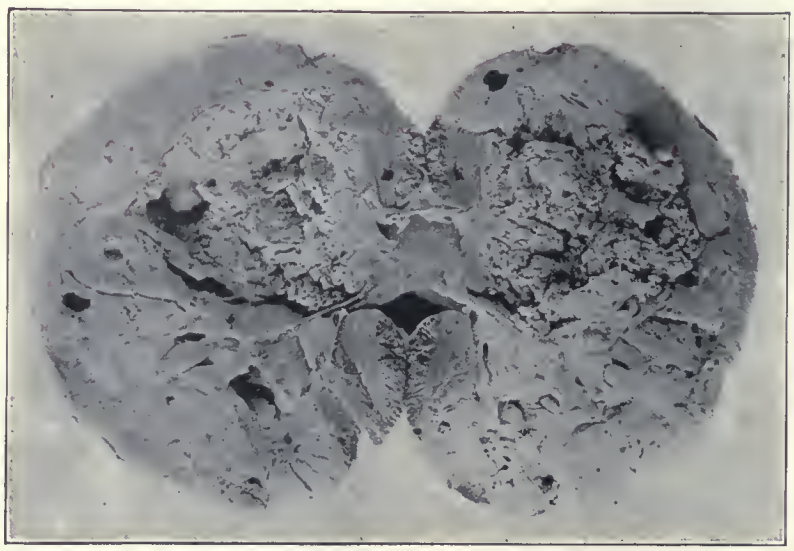
Fig. 8.—Shadow of the cancer itself asymmetrically surrounding the defective portion of the esophagus and probably extending below on its anterior wall.

reason to suspect other than carcinoma. The Wassermann test was three times negative. There was no previous history of dysphagia or esophageal traumatism.

CASE 3.—Mr. P. M. died suddenly four months after the first treatment and four weeks after the last treatment,

apparently in profound shock; he was cyanotic, etc.; the trouble began with a chill; he was able to take nourishment. Otherwise, there was nothing to suggest perforation; he had definitely improved, and was at work. When first seen he was in fair shape, but was 20 pounds underweight. There was a moderately early lesion at the juncture of the second and lower thirds of the esophagus, with moderately marked stenosis. Four radium treatments were given, with only slight temporary improvement in the dysphagia, yet the patient's general condition definitetly improved. At the end of six weeks, his condition was worse. His weight diminished from 124½ pounds to 112 pounds. Bougie dilatation was necessary before the emplacement of radium. Three additional radium treatments were followed by marked improvement in dysphagia, with the patient regaining weight to 125 pounds and apparently in good shape. He worked as a laborer to the end. The treatments were well tolerated. This case may be classified as having a moderately successful palliative result, the symptomatic improvement being greater than roentgen-ray findings indicated. This patient's death was possibly due to perforation.

CASE 7.—Mr. C. H. is now alive, six months after the first treatment. His general condition when first seen was fairly good. It was a moderately advanced case. He had been sick four weeks, and was 25 pounds underweight. There was a fairly extensive lesion at the juncture of the upper and middle thirds of the esophagus. There was a moderately marked stenosis. The patient's general condition immediately improved markedly. He gained 10 pounds during the first month. There was a marked improvement in dysphagia for two months. During the third month there was a slight recurrence of dysphagia, though he was able to eat rice, carrots and cabbage. He lost 4 pounds in the third month, though he still weighed 6 pounds more than when first treated. The weight loss was possibly due to inability to obtain suitable diet. He was not working regularly, but was able to do light work. Two radium treatments over a period of three days were given, the first irradiating the upper half of the stricture, the second the lower half; a third radium treatment at three months and a fourth at five months after the initial treatments were given. At present there is rather more dysphagia than after the initial treatment, probably because it has never been possible to canalize the lower zones of the stricture on account of an unusual curve. At present he is able to eat a semisolid diet, oat meal, milk toast, rice, etc. The treatments were well tolerated. The patient's general condition is fairly good. This case may be classified as having a definitely successful palliative result. Roentgenoscopy indicates improvement in the lesion, especially as to canalizability, though there is still definite evidence of stricture.



Papillary epithelioma of the renal pelvis.

CASE 8.—Mr. L. J. C., who is still alive, six months after the first treatment, was in fair condition when first seen. There was quite a limited lesion involving the abdominal esophagus. Probably this was a fairly early case, the patient being sick only two months, with a 40 pound weight loss. There was only slight stenosis. There was a marked improvement in his general condition. He gained 12 pounds in the first three months. There is absolutely no dysphagia at present. He is working steadily, though he was not able to before receiving treatment. Two treatments were given, the second at three months. The radium was encased in the terminal end of a stomach tube (on account of the curve of the abdominal esophagus). There was no difficulty in retention in situ. The treatments were well tolerated. The general result may be classified as good. There is practically entire relief of dysphagia. The condition suggests a possibility of ultimate cure. The roentgen ray reveals structural improvement in the lesion and good canalization of the involved esophagus. It is a question as to whether he should not have been more vigorously treated initially or subsequently.

Wall Building.

TUMORS OF THE RENAL PELVIS

WILLIAM E. STEVENS, M.D.
SAN FRANCISCO

Papillomas, although not uncommon in the bladder, are seldom found in the pelvis of the kidney, and comparatively few cases have been reported in the literature. The case that I present is unique in that the tumor of the pelvis was apparently secondary to the bladder growth; at any rate, no symptoms of renal involvement occurred for more than one and a half years after the appearance and destruction of the bladder papilloma. I have not been able to find a similar case recorded in the literature. Occurring primarily in the pelvis of the kidney, the grafts are supposed to be carried by the urine to the lower portion of the urinary tract, such as the ureter and bladder. In my case the late involvement of the pelvis is more difficult of explanation. Possibly extension occurred through the lymphatics. Of interest also is the fact that in cases previously reported this condition has been found only in patients under 60 years of age, and it has usually been multiple.

REPORT OF CASE

M. S., a man, aged 70, unmarried, bartender, had suffered from slight pain in the right lumbar region during the last year. He had noticed blood in the urine for the last twenty-four hours. His father died of "prostate gland trouble" at 70, his mother of diabetes at 73, a brother of pulmonary tuberculosis at 40, and his other brother of "rheumatism," at 56. He had measles when a child, gonorrhea in 1871 and in 1904, a genital sore in 1907, and dysentery in 1899. In 1913 he noticed blood in the urine, and was troubled with frequent urination. Cystoscopy at this time revealed a pedunculated papilloma to the left of the left ureteral orifice. The symptoms disappeared following removal of the tumor with snare and cautery. Nineteen months later, January, 1915, he was in the hospital for two weeks because of severe pain in the right kidney region. His urine contained a trace of albumin, many hyaline, granular and cellular casts and some pus, but no blood cells at the time. Catheterization of the ureters revealed a few pus cells in the urine of the right kidney. The symp-

toms disappeared following rest in bed. Three years later, April, 1918, he entered the hospital because of blood in the urine. Examination of the urine at this time disclosed many blood cells, a trace of albumin and a few pus cells, but no casts. Cystoscopy revealed an inflamed bladder mucosa and somewhat bloody fluid escaping from the right ureteral orifice. Comparative functional kidney tests were negative. The urine was free from blood at the end of a week, and the patient left the hospital. Six months later he reentered, stating that he had suffered from slight pain in the right lumbar region for the last year and that he had noticed blood in the urine for the last twenty-four hours. Cystoscopy again revealed bloody fluid escaping from the right ureteral orifice. The bladder mucosa was normal. Functional kidney tests gave diminished values on the right side. The wax-tipped catheter showed no evidence of calculi. Pyelography demonstrated a right kidney pelvis somewhat elongated laterally and the ureter entering the pelvis at a right angle. A diagnosis of tumor of the kidney was made, and operation was advised and accepted. A large papilloma the size of a walnut was found when the pelvis was opened. No evidence of ureteral involvement was present.

COMMENT

As in vesical growths, two types of papilloma of the renal pelvis are recognized, the benign, which is usually pedunculated, and the malignant, which is usually sessile. The former has the characteristic tendency to assume the latter type.

Etiology.—Several theories have been advanced to explain the etiology of these tumors. The fact that stone has occurred as a complication in 15 per cent. of the cases reported has led to the belief that the traumatism associated with this condition is often responsible for the epithelial proliferation. Morogna, quoted by Judd, believes that they are due to aberrant ectodermal inclusions during the period of development, the growth of which has been excited by some inflammatory process.

Symptoms.—Unless because of the position or size of the tumor obstruction is present, the symptoms most commonly noted are hematuria, intermittent in character, and some frequency of urination. In the presence of obstruction, pain is a prominent symptom.

Diagnosis.—If a history of vesical papilloma is present, pelvic tumors should be easier of diagnosis in the early stage than tumors of the parenchyma. Cystoscopy often reveals blood ejected from the corresponding ureteral orifice, and pyelography will disclose a deformity of the renal pelvis. If obstruction exists in addition to pain, hematonephrosis will often be found, and a diminution in the size of the kidney following the emptying of the pelvis will be observed.

Differential Diagnosis.—Roentgenography and the wax-tipped catheter are of value in excluding calculi. The absence of tubercle bacilli and pus cells from the urine, together with a negative roentgenogram, exclude tuberculosis, and the pyelogram demonstrates a normal pelvic outline in the renal varix, so-called essential hematuria and nephritis. The intermittent character of the bleeding serves to differentiate pelvic tumors from those of the parenchyma of the kidney, as in the latter, bleeding is usually continuous. The history of bladder and especially ureteral papilloma justifies a strong suspicion of pelvic involvement.

Treatment.—Because of the frequency of recurrences and the tendency of the benign type toward malignancy, nephrectomy is indicated in every case of papilloma of the pelvis of the kidney. As the ureters are involved in the majority of cases, ureterectomy is also advisable.

Shreve Building.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

CELLUFLOUR.—Cellulose Flour-D. C. L.—Commercially pure cellulose in the form of flour.

Actions and Uses.—Celluflour is used as a means of filling out reduced diets as in the Allen treatment for diabetics. It is a nonnutritive food substitute used to give bulk to foods, thus serving to satisfy hunger without furnishing nourishment.

Dosage.—Celluflour, after admixture with bran, baking powder, eggs, "India gum," or liquid petrolatum in varying proportions may be used for the preparation of imitation bread, muffins, cookies, griddle cakes, pie-crust, etc. These preparations may be seasoned with salt, spices or saccharin.

Manufactured by the Dietetic Cellulose Laboratory, Chicago. No U. S. patent. U. S. trademark applied for.

Purified and bleached wood pulp, straw pulp or cotton fibre is further treated to facilitate grinding to flour.

Celluflour is white to grayish white in color; odorless and tasteless.

DIAPROTEIN PREPARED CASEIN FLOUR.—Casein to which has been added 4 per cent. of a leavening mixture composed of sodium bicarbonate, monocalcium phosphate and sodium aluminum sulphate.

Actions and Uses.—This flour is employed in cases such as diabetes, etc., in which carbohydrates are contraindicated.

Dosage.—Diaprotein prepared Casein Flour is said to be adapted for the preparation of bread, cake, muffins, biscuits, etc.

Manufactured by the Diaprotein Company, Chicago. No U. S. patent. U. S. trademark applied for.

BENZOCAINE (See New and Nonofficial Remedies, 1920, p. 33).

Anesthesin-Abbott.—A brand of benzocaine complying with the N. N. R. standards.

Manufactured by the Abbott Laboratories, Chicago. No U. S. patent or trademark.

Instruction in the History of Medicine at Medical Schools.—Haberlin (*Deutsch. med. Wchnschr.*, Dec. 18, 1919) recommends that courses in the history of medicine be established in all medical schools and that students should be required to take at least one full semester course. No one can be an investigator in the true sense of the word in the field of any science who does not inform himself as to what has been accomplished in his field of study before his own advent on the scene. In our own times, those empirics who trust to luck and have no regular plan of investigation that they follow are all too well known. Only through a knowledge of history can we form a certain judgment in regard to the many doctrines and therapeutic methods that spring up only to disappear again soon. As Vetter emphasized: "History alone encourages us to enter on a doubtful experiment, comforts us if we fail, warns us of the results of error, which so often, committed by a single person, is expiated and cursed by millions of people. The history of error is, then, the teacher of truth trained in the school of misfortune." The history of medicine, as of any science, brings before our eyes the struggles and strivings of thousands and thousands of human beings who have sought to discover the laws of almighty Nature and to use their thus acquired knowledge for the welfare and blessing of suffering humanity. It leads the student away from the realistic employments of the medical profession as found at the bedside of patients, in the laboratory and at the dissecting table; lifts his mind to that which is ideal and humanitarian, and fills his heart with noble enthusiasm for the dignity of his calling and the welfare of humanity.

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SATURDAY, JUNE 5, 1920

THE CHEMOTHERAPY OF CHAULMOOGRA OIL

Although many innovations have been attempted in the empiric treatment of leprosy, the use of chaulmoogra oil seems to have survived that of almost all the other "herbaceous remedies." This product is at present extensively employed and seems to produce amelioration in the majority of lepers to whom it has been administered persistently. With this record of therapeutic promise it was natural to expect a greater refinement of the crude oil which would perhaps result in isolation of the "active principle," or at any rate furnish a product more easily administered for remedial purposes by other than oral channels. Various fatty acids or mixtures have been separated from chaulmoogra oil within the last thirty years and administered by mouth to lepers, with indifferent success. In 1916 and subsequently, Sir Leonard Rogers [1] in India first attempted the therapeutic use of some of the fatty acids of chaulmoogra oil in subcutaneous and intravenous medication, employing them in the form of their sodium salts as soluble soaps.

Last year, considerable interest was awakened by the significant contribution of Holman and Dean [2] on this subject. They fractioned chaulmoogra oil by saponification; but instead of employing the undesirable soaps, they prepared the liquid ethyl esters of the fatty acids obtained from the oil. These esters are superior for subcutaneous administration. They have caused reactions in leprous lesions with subsequent improvement; and several of the patients treated with the new products have become bacteriologically negative so that they could be paroled from segregation. Here, then, is the promise of progress, despite the fact that many new remedies have been hailed vociferously for the treatment of leprosy, only to be relegated after a brief trial to the list of forgotten medicaments.

What is the scientific explanation for the efficacy of chaulmoogra oil and its derivatives? Is the now demonstrated therapeutic action direct and bactericidal to the micro-organisms of leprosy, like that of arsphenamin on the spirochetes of syphilis, or does it act in some indirect and physiologic way to promote immunity? To these questions Walker and Sweeney [3] have addressed themselves. Their investigations have demonstrated that chaulmoogra oil contains bactericidal substances that are about one hundred times more active than is phenol. The antiseptic potencies are attributable to the fatty acids of the chaulmoogric series, chaulmoogric and hydnocarpic acids, and possibly lower isomers of the series. The bactericidal action is specific for the acid-fast group of bacteria, to which the causative organism of leprosy belongs, the products being inactive against all other micro-organisms studied. It may be urged against the probability of the bactericidal property of chaulmoogra derivatives, as an explanation of therapeutic results, that their limits of potency in vitro are far below those of the therapeutic intravenous dosage in leprosy in which the drug may be calculated to exist in a dilution of 1:500,000 or greater of body weight instead of 1:100,000 found necessary in the laboratory. However, so long as the precise behavior of the fatty acids in the body is not known and the possibility of their concentration in the environment of the parasites cannot be denied, the factor of dosage need not offer a stumbling block to the hypothesis of chemotherapy offered. The drug may be stored in the tissues and thus ultimately reach a concentration essential for bactericidal action. This may explain the long time required for effective therapeusis. Or, again, the chaulmoogra products, even when present in suboptimal concentration, may inhibit or damage the lepra bacillus to a degree that renders it subject to the natural immunity responses of the host. For the present it does not seem necessary to invoke the hypothesis of special physiologic responses provoked by the introduction of the drugs.

Tuberculosis also involves the presence of acid-fast bacteria in its lesions. Hence it has been proposed to attempt for this disease a therapy similar to that of leprosy. The bactericidal action of the chaulmoogric acids against all members of the acid-fast group of bacilli, together with the clinical results obtained from their use in leprosy, as Walker and Sweeney point out, have furnished theoretical grounds for the application of the same products to the therapy of tuberculosis. The California bacteriologists have ascertained [3] that the fatty acids of cod liver oil, the salts of which constitute the so-called "sodium morrhuate," do not possess the special bactericidal activity

1. Rogers, Leonard: Preliminary Note on the Use of Gynocardates Orally and Subcutaneously in Leprosy, Lancet **1**: 288 (Feb. 5) 1916; Leprosy Cases Treated by Sodium Gynocardate and Chaulmoogra Intravenously, ibid. **2**: 682 (Nov. 3) 1917; Two Years' Experience of Sodium Gynocardate and Chaulmoograte Subcutaneously and Intravenously in the Treatment of Leprosy, Indian J. M. Res. **5**: 277 (Oct.) 1917; Brit. M. J. **1**: 147 (Feb. 8) 1919.

2. Holman, H. T., and Dean, A. L.: Chaulmoogra Oil in the Treatment of Leprosy, I, Chaulmoogra Oil Mixtures; II, Fatty Acids of Chaulmoogra Oil, J. Cutan. Dis. **37**: 367 (June) 1919.

3. Walker, E. L., and Sweeney, M. A.: The Chemotherapeutics of the Chaulmoogric Acid Series and Other Fatty Acids in Leprosy and Tuberculosis, I, Bactericidal Action; Active Principle; Specificity, J. Infect. Dis. **26**: 238 (March) 1920.

of the corresponding chaulmoogric compounds, and hence cannot lay claim to a similar advantage which has been ascribed to them in the therapy of tuberculosis. The actual chemotherapeutic value of the chaulmoogric acid compounds in the treatment of infections due to the acid-fast group of bacilli, notably tuberculosis, remains to be proved by experiments on animals and then by clinical trial. It seems wise, however, to repeat the warning of Walker and Sweeney that the clinical tests of chaulmoograte in tuberculosis should await the experimental investigations now in progress; for, as they remind us, the indiscriminate use of such drugs may arouse false hopes and be not without danger to the patients.

MORTALITY CLASSIFIED FROM A NEW STANDPOINT

One of the important advantages of well classified statistics of human mortality lies in the help they may afford toward the formulation of correct hygienic precepts. For example, a large amount of data collected in this country has been interpreted to signify that "the increase in the death rate with advancing years is not in accordance with a natural law, but the result of various factors susceptible of important modification." It is, indeed, highly imperative to establish such a contention on an incontrovertible basis. Thus, if we admit that many chronic diseases which figure prominently in middle life as causes of death are due to environmental factors, to improper living, mental and physical strain, dietary errors, and infections, a campaign of correction is eminently justified. If, on the other hand, hereditary and racial factors, the migrations of races and other essentially uncontrollable influences enter into the problem, it may be far less promising to attempt to avert conditions that are inherent and inavertible rather than acquired and remediable.

Raymond Pearl,[1] of the Department of Biometry and Vital Statistics at the Johns Hopkins University, has recently made an attempt to estimate the importance of some of the biologic factors that enter into mortality. Instead of classifying deaths according to special pathologic causations, such as bacterial infections, metabolic upsets and mechanical disturbances, he has arranged a large number of mortality statistics on the basis of organologic breakdown. In his own words, "the underlying idea of this rearrangement of the causes of death is to put all those lethal entities together which bring about death because of the functional organic breakdown of the same general organ system. The cause of this functional breakdown may be anything whatever in the range of pathology."

When figures showing the relative importance of ten different organ systems in human mortality were arranged for the United States registration area, for England and Wales, and for São Paulo, Brazil, the relative order of importance of the parts of the organism that first cease to function and cause death was essentially the same in the three cases. Pearl's data show that in the United States, during the period investigated, more deaths resulted from the breakdown of the respiratory system than from the failure of any other organ system of the body. The same thing is true of England and Wales. In São Paulo the alimentary tract takes first position, with the respiratory system a rather close second. The tremendous death rate in São Paulo chargeable to the alimentary tract is chiefly due to the relatively enormous number of deaths of infants under 2 from diarrhea and enteritis. Nothing approaching such a rate for this category as São Paulo shows is known in this country or in England. Pearl points out that in all three localities studied, the respiratory system and the alimentary tract together account for rather more than half of all the deaths biologically classifiable. These are the two organ systems which, while physically internal, come in contact directly at their surfaces with environmental entities (water, food and air) with all their bacterial contamination.

The alimentary canal and the lungs are, in truth, only invaginated surfaces of the body. Along with the skin, they must share the attack of environmental invaders; but the skin, having special protective layers, is naturally more resistant than the mucosa of the other surfaces mentioned. When the protective resistance of these external surfaces of the body fails, the blood and the circulatory system become invaded; hence they stand next in the order of importance in functional breakdown. The complex nervous system is responsible for more deaths than is the excretory system to which the kidneys belong.

Arrangement of the organologically classifiable death rates under the primary germ layers (ectoderm, mesoderm and endoderm), from which the organs concerned develop embryologically, shows that more than half of all biologically classifiable deaths result from a breakdown and failure further to function of organs arising from the endoderm in their embryologic development, while only 8 to 13 per cent. can be regarded as a result of breakdown of organ systems arising from the ectoderm. The remaining 30 to 35 per cent. of the mortality results from failure of mesodermic organs. The fact that mortality grouped in classes that rest on such a biologic basis is, according to Pearl, strikingly similar in such widely dissimilar environments as the United States, England and southern Brazil, is significant. It raises the question as to whether, after all, environment is the predominant factor in human mortality. It is too early to speculate on the hygienic significance of this tentative evidence. It is interesting to note, however, that efforts to improve the public health have of late been directed against affections involving the most prominent groups of organs, the respiratory system

1. Pearl, Raymond: On the Embryological Basis of Human Mortality, Proc. Nat. Acad. Sc. 5: 593 (Dec.) 1919.

and the alimentary tract, for which failure of function is a cause of death. In the first of these groups, in which phthisis, lobar pneumonia and bronchitis belong, substantial progress has already been made.

CHARACTERISTICS OF BENCE-JONES PROTEIN

Although many years have elapsed since Bence-Jones first described the appearance of what was long assumed to be an albumose in the urine in certain pathologic cases, the nature of the nitrogenous compound thus excreted has by no means yet been clearly elucidated. The designation "albumose" was due to the peculiar reactions of the substance which seemed to distinguish it from the proteins usually found in pathologic urine. Thus, the Bence-Jones substance is precipitated by salt and heat, much as are coagulable proteins; but frequently it will redissolve when the temperature is further raised, and will reprecipitate on cooling. In view of this, at one time the opinion was ventured that the Bence-Jones "albumose" represented a product of the partial degradation of tissue or blood proteins which is excreted like any proteose.

Subsequent studies in various cases, usually exhibiting multiple myelomas, have made the designation "albumose" untenable and have placed the substance in a class with other simple native proteins. Hence the designation "myelopathic albumosuria" has given way to Bence-Jones proteinuria. Proteoses are toxic when they are introduced to any extent into the blood stream. Taylor [1] and his associates at the University of Pennsylvania Medical School have injected the isolated Bence-Jones protein directly into the circulation of animals without provoking untoward symptoms. Furthermore, the blood of such injected animals clotted normally, which is not the case when true proteoses are introduced.

Even more convincing with respect to the independent identity of the Bence-Jones protein is the fact that, like other individual proteins, it has specific anaphylactic potencies. The Philadelphia investigators first showed this conclusively with protein isolated from the urine of their patient. Recently, Abderhalden [2] of Halle has actually separated Bence-Jones protein, with characteristic behavior toward heat, from the blood of a person who excreted such a substance into the urine. This blood protein was specific in its anaphylactic reactions. Animals sensitized with it responded with the characteristic "shock" only when the same protein was injected; not to other serum proteins. These facts speak further against the alleged proteose nature of the Bence-Jones substance, for proteoses, as a rule, are not specific antigens in anaphylactic tests.

1. Taylor, A. E., and Miller, C. W.: Studies in Bence-Jones Proteinuria, J. Biol. Chem. **25**: 281 (June) 1916. Taylor, A. E.; Miller, C. W., and Sweet, J. E.: Studies in Bence-Jones Proteinuria, II, ibid. **29**: 425 (April) 1917.

2. Abderhalden, E.: Ein Fall von Bence-Jonesscher Albuminurie, Ztschr. f. physiol. Chem. **106**: 130 (July) 1919.

Whence in the body is this *sui generis* protein, circulating in the blood along with the common plasma proteins and passing the kidney filter when the latter do not pass, derived? There is apparently nothing essentially "foreign" about it, as animals seem to retain and catabolize Bence-Jones protein injected into them in considerable quantity. We can go no further today than summarize the probabilities in the words of recent investigators.[1] The Bence-Jones protein is of endogenous origin and more or less independent of the food intake. It might either be derived from the tumor cells of the myeloma, or be produced through an interrupted or aberrant synthesis of some normal body protein. The biologic indications of close relationship to the normal blood proteins, and the enormous quantities produced would seem to favor the second alternative. The question remains obscure. It is interesting to note that Abderhalden's latest patient showed myeloma-like tumors of the bones at necropsy.

Current Comment

THE AMERICAN MEDICAL DIRECTORY: COOPERATION DESIRED

In 1905, after careful consideration, the Board of Trustees recommended, and the House of Delegates of the American Medical Association approved, the publication of a medical directory, in the belief that such publication would be in the interest of the medical profession. Since that time six editions of the Directory have been issued, and though this has been done at a financial loss, the undertaking has been generally regarded with satisfaction as one of the altruistic enterprises of the Association. At the present time the Seventh Edition is in course of compilation, but under most extreme difficulties. While the price of paper has doubled since the last edition was published, and the labor wage has more than doubled in the last five years, thus enormously increasing the expense, the difficulties to which we refer are not financial. To obtain and classify the data requires a large number of skilled clerical workers. And right here is our difficulty: skilled clerical workers are almost unobtainable at any price, and, in fact, it is impossible to get sufficient ordinary clerical help. This difficulty can be overcome, in part at least, if physicians who receive circulars from our Directory department will promptly respond to the request for data concerning themselves. In most instances this means simply filling out the blanks clearly and returning them. Further aid will be rendered if physicians who have moved during the last two years, or whose names are not correctly listed in the Directory will send corrections at once. We make no apology for this appeal for cooperation because the Directory belongs to the members of the medical profession; it is their Directory. If they cooperate in the manner requested, the difficulties under which the new edition is being issued will be largely removed.

"CHRISTIAN SCIENCE" AND THE MATERIAL PRESS AGENT

The letter from the "Christian Science Committee on Publication" which appears in the Correspondence department of this issue is further evidence of the smooth functioning of the publicity department of the late Mrs. Eddy's organization. Let there appear anywhere a published item that may seem, either directly or remotely, to refer unfavorably to "Christian Science" and forthwith the editor receives a letter from the local "Committee on Publication" supplemented, possibly, with a flood of letters from members of the cult. Woe to the newspaper man who exposes, be it ever so gently, the fallacies of "Science" which is miscalled "Christian." One can but admire the well-oiled publicity machinery of the "Christian Science" organization. Its upkeep must be heavy but it hits on all cylinders. If the medical profession maintained a publicity department that cost a hundredth part of the "Christian Science" press agency, hands would be raised in holy horror and from the house-tops would come the cry: The very foundations of our civil liberties are threatened. Whatever the "Christian Scientists" believe about the immateriality of disease—and just what they do believe is not clear—they are obviously of a mind when it comes to maintaining a material publicity department with material funds.

SPECULATIVE SCIENCE AND ENDOCRINOLOGY

The human body contains a certain number of bones and a certain number of muscles, but nobody knows how many glands. The function of the bones is fairly well understood; the purpose of the muscles is easily comprehended from their structure and action; but our knowledge of the function of all but a few of the glands is in the theory stage. If some one were to suggest that the function of the muscles is to control the will, there would be no lack of evidence to prove that the function of the will is to control the muscles; but when a speculative philosopher arises to remark that the interstitial cells of this or that tissue secrete a hormone whose function it is to govern the duration of life, thousands are ready to give him credence. It is this state of affairs which has called forth the following, which we quote from an editorial in a recent issue of the *British Medical Journal:*

"The speculative philosopher is always with us, and during the last few years has found his chief medical field of activity in the ductless glands and their secretions. Here he has been extremely busy, with the result that the number of such 'glands' has grown almost equal to the number of different tissues in the body; while the number of internal secretions and hormones postulated has become no less enormous. Indeed, it may be said, not unfairly, that with many writers who deal with the subject the only proof of the existence of a hormone nowadays required is that it should seem to be demanded by theory."

There is danger that the great accomplishments in medicine of the last two decades have left the medical mind in too receptive a mood. Some physicians, we fear, are accepting theories on plausibility rather than on evidence. Such a condition is dangerous, because in such soil the pretender and quasiscientist thrive. "Prove all things; hold fast that which is good" should be the scientific attitude.

PUBLICITY—WITH RESERVATIONS

During the last few years municipal, state and federal departments, whose function it is to protect the public health, have done valuable service by issuing bulletins, periodically, giving information of interest and value to the public. The Department of Health of the City of New York publishes monthly a *Food and Drug Bulletin* which, as the name denotes, deals with the activities of the department in protecting the citizens of New York from fraud in foods and drugs. The information these bulletins contain is interesting and instructive. But it does not go far enough. While describing various cases of fraud or adulteration in food and drugs that occur monthly, the *Bulletin* does not give the names of the offending individuals or firms. We read in a recent issue, for example, that some "well-known biscuit manufacturers" of New York City complained that the 105,000 packages of crackers and biscuits that the Navy Stores were selling to the highest bidder "were moldy, musty, rancid and unfit for human food." Investigation proved that the complaint was without foundation and was "undoubtedly malicious or interested." Why not give the name of the "well-known biscuit manufacturers" who attempted to interfere with the sale of these goods? We read, too, that "a soda water manufacturer in the Bronx" was convicted and fined for using dirty sugar syrup; that in a "cocoanut factory in the Borough of Brooklyn" inspectors found floor sweepings of shredded cocoanut being "reconditioned" and toasted to be put on the market as "Toasted Cocoanut"; that inspectors seized 2,590 pounds of wormy almonds which were being shelled and salted in a nut factory for the market; that the "owners of a large candy factory" were convicted and fined for having 4,000 pounds of unwholesome condensed milk in their possession, intended for use in the manufacture of caramels; that a corporation manufacturing "an inferior grade of compound catsup," having corn-meal as its principal ingredient, was convicted of having 2,150 pounds of unwholesome corn-meal in its manufacturing room; that the owner of a candy factory was fined for having in his possession a quantity of unwholesome prunes and apricots; that a "large baking company" was fined for using wormy raisins in its cakes and another "baking firm" was also fined for using wormy flour in breadstuffs. Then there was the grocer who was fined for offering 7,000 pounds of unsound groceries for sale, and the "large cereal manufacturer" who was fined for packing unclean and contaminated cereals for human consumption. All of these cases are of vital interest to the citizens of New York City and they show that the health department of that city is doing good work. We believe, however, that the greatest deterrent to offenses of this kind is full publicity. To give the public the facts and to avoid casting suspicion on the innocent, the *Bulletin* should publish the names and

addresses of the guilty parties. The fines in such cases are, as a rule, absurdly inadequate, and disproportionate to the profits that may be made by sophistication.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Pasadena Hospital Assured.—The recent campaign for the fund to build a new and greater hospital in Pasadena is reported to have resulted in bona fide subscriptions of more than $500,000.

New State Officers.—At the annual meeting of the Medical Society of the State of California held in Santa Barbara, May 11 to 13, under the presidency of Dr. Henry A. L. Ryfkogel, San Francisco, Coronado was selected as the next place of meeting, May 10 to 12, 1921, and the following officers were elected: president, Dr. John C. Yates, Coronado; president-elect, Dr. John H. Graves, San Francisco; vice presidents, Drs. William Duffield, Los Angeles, and Joseph H. Catton, San Francisco; secretary, Dr. Saxton T. Pope, San Francisco (reelected).

COLORADO

Postgraduate Lectures.—The lecture teams of the postgraduate lecture course, arranged by the Colorado State Medical Society, attended the monthly meetings of county societies at Canon City, La Junta, Trinidad and Colorado Springs, May 4. This course of lectures, which has been continued through the winter, promises to become very popular. It will be readjusted somewhat and the personnel of the teams changed in some instances, before another year.

Honor to Dr. Work.—The Pueblo County Medical Society gave a banquet at the Minnequa Club, Pueblo, May 7, at which about fifty were present, to Dr. Hubert Work, in honor of his election as president of the American Medical Association. Dr. Herbert A. Black presided as toastmaster and a number of addresses were made. The guest of honor in his response said that his election was a graduation from a course of training which began in the county society and led up through the state society and the national association, and the distinction shown to him was made possible because of the loyalty of the members of his county society.

Congress of Ophthalmology and Oto-Laryngology. — The Colorado Congress of Ophthalmology and Oto-Laryngology will be held in the County Society Assembly Hall, Metropolitan Building, Denver, July 23 and 24, under the auspices of the Colorado Ophthalmological and Colorado Oto-Laryngological societies. Arrangements will be in the charge of a joint committee consisting of Drs. Edward Jackson, Denver; Melville Black, Denver; James J. Pattee, Pueblo; Thomas E. Carmody, Denver; Robert Levy, Denver; William H. Crisp, Denver; Edward R. Neeper, Colorado Springs, and Harry L. Baum, Denver. All ethical practitioners of these specialties are invited to be present.

CONNECTICUT

Health Board for Yale.—The health and sanitary safety of undergraduates of Yale University are hereafter to be guarded by a university board of health patterned after those of great cities. Dr. James C. Greenway, New Haven, will be chairman of the board and will have a staff consisting of physicians and sanitary inspectors. The board of health will make health regulations for the control of students and will undertake personal supervision of their health.

New State Officers.—At the annual meeting of the Connecticut State Medical Society held in New Haven, May 19 and 20, it was decided to hold the meeting for 1921 at Hartford, May 18 and 19, and the following officers were elected: president, Dr. George Blumer, New Haven; vice presidents, Drs. William H. Judson, Danielson, and William H. Donaldson, Fairfield; secretary, Dr. Charles W. Comfort, Jr., New Haven; treasurer, Dr. Phineas H. Ingalls, Hartford; delegates to the American Medical Association, Drs. John E. Lane, New Haven, and Walter R. Steiner, Hartford, and alternates, Drs. Charles J. Bartlett, New Haven, and Frank K. Hallock, Cromwell.

GEORGIA

Medical College Buildings Remodeled.—The buildings of the Atlanta Medical College, opposite Grady Hospital, are to be remodeled at the cost of $33,360, and when completed will be used as part of the hospital. The trustees of Emory University have offered the buildings to the city, rent free, on condition that students from the medical school of the university be allowed to hold their clinics in the hospital.

ILLINOIS

Medical Society Organized. — Physicians of Moultrie County met in Bethany, April 13 and organized the Moultrie County Medical Society, electing Dr. William P. Davidson, Sullivan, president; Dr. Richard W. Denney, Bethany, vice president, and Dr. Samuel L. Stevens, Dalton City, secretary-treasurer.

Illegal Practitioner Fined.—W. F. Hughey, a magnetic healer at Pana, was arrested by the Department of Registration and Education of the State of Illinois for violating the provisions of the Medical Practice Act and was fined $50 and costs. The court also compelled Hughey to return a fee of $42.50 which he had collected the day he was fined from a woman in Pana.

New Sanatorium Building Needed. — The burning of the main building of the Edward Sanatorium, Naperville, crippled the work of the institution and of the Chicago Tuberculosis Institute very materially. The building which was burned housed the bed cases and furnished the examining rooms, laboratories, roentgen-ray rooms, treatment rooms and administration offices of the sanatorium, and was the important center for the cottages.

KENTUCKY

Trachoma Bureau Established.—Kentucky has established a bureau of trachoma and blindness as a part of the state board of health with an appropriation of $7,500.

All-Time Health Service Provided.—Muhlenberg County has availed itself of the services of an all-time health officer. The cost of this work will be $10,000 a year, of which $5,000 is furnished by the federal and state health departments, and $5,000 by the county.

Honor to Dr. McCormack.—At the ninth annual conference of school, city and county health officers and public health nurses, tribute was paid to Dr. Joseph N. McCormack, Bowling Green, who had served forty years with the state board of health. It was decided that a committee be appointed to arrange for the painting of a portrait of Dr. McCormack to be presented to the health officer with the stipulation that it hang for all time in the executive offices of the state board of health. Dr. Arthur H. Keller, Paris, was made chairman of the committee.

MARYLAND

Anniversary of Association.—The twenty-third anniversary of the Baltimore County Medical Association was celebrated by a banquet held at the Hotel Rennert, Baltimore, May 26. Dr. Junius W. Stephenson of Cornell University was the principal speaker and Dr. John W. Harrison, president of the association, Middleriver, was toastmaster. The other officers of the association are: vice president, Dr. Henry A. Naylor, Pikesville, and secretary-treasurer, Dr. George S. M. Kieffer, Baltimore.

Demonstration to Show Nutritive Value of Milk.—Eight organizations in cooperation with the Women's Civic League of Baltimore gave a demonstration at Osler Hall, May 26, to impress on the public the nutritive value of milk. The National Dairy Council, the United States Department of Agriculture, the state college of agriculture, the city board of health, the public instruction committee of the Medical and Chirurgical faculty, the Johns Hopkins School of Hygiene, the Maryland State Dairymen's Association and the Junior League all were represented. Dr. Mary Sherwood, Dr. William Travis Howard, Jr., Dr. Marion B. Hopkins, Dr. Henry Barton Jacobs and Dr. James H. Mason Knox, Jr., spoke while moving pictures were shown. In the afternoon, Dr. Elmer V. McCollum opened the session, and Dr. William H. Welch, President Munn of the National Dairy Council and Dr. Albert F. Woods, president of the State College of Agriculture, also spoke.

MASSACHUSETTS

Personal.—Dr. William J. Brickley, Boston, has been appointed associate medical examiner (coroner) for Suffolk County, succeeding Dr. Oscar Richardson, resigned.

Advanced Course in Medical Science.—Recognizing the great need for competent specialists in medical science, Harvard Medical School has established a new course leading to the degree of Doctor of Medical Sciences. The first two years of work of this course is substantially identical to that of the regular students, and this work is followed with two years' concentration work in one of the laboratory departments.

MICHIGAN

Hospital Association to Meet.—The annual meeting of the Michigan Hospital Association will be held in Wayne County Medical Building, Detroit, June 8 and 9, under the presidency of Dr. Warren L. Babcock, Grace Hospital, Detroit.

MINNESOTA

Hospital Association to Meet.—The annual meeting of the Minnesota Hospital Association will be held in Duluth the first week in September under the presidency of Dr. Louis B. Baldwin, University of Minnesota Hospital, Minneapolis.

Federation of Public Health Agencies.—A federation of all volunteer public health agencies of Hennepin County was recently incorporated in Minneapolis as the Hennepin County Public Health Association. Each organization will carry on its own particular phase of public health activities and retain its individuality, but the work of all the organizations will be under the supervision of the administration board of the federation, on which each member organization as well as the Minneapolis Health Department is represented. Among the special projects planned are public education, the cure and prevention of cancer, the establishment of free nutritional and dental clinics, the promotion of open-air schools, education in dental hygiene and the establishment of a health center.

MISSOURI

Medical Veterans Organize Society.—The medical and dental officers of St. Joseph who served in the World War held a meeting, May 17, at which they organized with the name "Medical and Dental Veterans of the World War," and elected Dr. William L. Kenney, president.

Personal.—Dr. Leon Paul Forgrave has been elected vice president of the St. Joseph Board of Health, succeeding Dr. Louis J. Dandurant, St. Joseph, resigned.——Dr. Hasbrouck De Lamater, city health officer of St. Joseph, has resigned and has been reappointed director of hygiene in the public schools.

Southwest Missouri Physicians Hold Meeting.—At the annual meeting of the Southwest Missouri Medical Society, held in Springfield, May 21, the following officers were elected: president, Dr. Edward C. Wittwer, Mountain Grove; vice presidents, Drs. Otto C. Horst, Springfield, and Charles H. Orr, Ash Grove; recording secretary, Dr. Edwin F. James, Springfield; corresponding secretary, Dr. Joseph W. Love, Springfield, and treasurer, Dr. Lee Cox, Springfield. The association adopted resolutions in memory of Dr. Herbert Staples Hill, Springfield, for many years secretary of the society.

NEBRASKA

Report of Health Bureau.—The consolidated report of the bureau of public health, November, 1919, shows a total of 380 Wassermann tests on blood and spinal fluid for 1919 under the state venereal law providing for free blood and spinal fluid examinations. More than 190 ampules of arsphenamin were distributed and more than 5,000 cases of venereal diseases were reported by physicians.

New State Officers.—The fifty-second annual meeting of the Nebraska State Medical Association was held in Omaha, May 24 to 26, under the presidency of Dr. H. Winnett Orr, Lincoln. Dr. Miles S. Moore, Gothenburg, was made president-elect; Drs. Ernest A. Creighton, Red Cloud, and Wesley L. Curtis, Lincoln, were elected vice presidents; Dr. Roy D. Bryson, Callaway, was elected councilor for the ninth district; Dr. Norman T. Johnston, Upland, councilor for the tenth district; Dr. Hugh E. Mantor, Sidney, was reelected councilor for eleventh district, and Dr. Alfred J. Stewart, Mitchell, was reelected councilor for the twelfth district; Dr. Joseph M. Aikin, Omaha, was reelected a delegate to the American Medical Association, and Dr. Willson O. Bridges, Omaha, was elected alternate. The next annual session will be held in Lincoln. One of the features of the meeting was the address by Dr. James L. Greene, Hot Springs, Ark., at the banquet, May 25, on "The Treatment of Neural Syphilis."

NEW JERSEY

Child Hygiene Conference.—The first conference on child hygiene of statewide character, called by the department of health, is to be held by the New Jersey Bureau of Child Hygiene at Asbury Park, June 12 to 14. The New Jersey legislature has granted the largest appropriation ever made by a state for this purpose—$150,000.

NEW YORK

Chiropractic Bill Vetoed.—It is reported that Governor Smith of New York has vetoed the bill recently passed by the New York legislature providing for a separate board of chiropractors.

Amendment to Labor Law.—An amendment to the labor law, passed by the legislature at its last session, provides that after July 1, 1920, children employed in mercantile establishments shall be subject to physical examinations of the same kind required in the case of children working in factories. These examinations are to be made by medical inspectors on the staff of the state industrial commission.

New York Hopes to Deport Alien Insane.—It is estimated that about 800 alien insane who are being cared for by the institutions of this state will be deported with the 6,000 alien insane in this country whom the United States Bureau of Immigration is planning to send back to Europe. The sending back to their home countries of these patients will greatly relieve the congestion in the institutions for the insane in this state.

Removal of Prohibition Restriction.—The Medical Society of the County of Rensselaer at its last meeting adopted a resolution that representatives in Congress be requested to introduce a bill to amend Section 7 of the National Prohibition Act to the end that the restrictions contained therein as to the amount of spirituous liquor, beer or light wine that may be prescribed for the use of any patient may be removed or modified, and appointing a committee with instructions to confer with medical societies of the state and throughout the United States to secure concerted action and to provide for ways and means to bring to the attention of Congress the desirability of the proposed amendment.

New York City

Personal.—Dr. Simon Flexner of the Rockefeller institute has been elected an associate member of the French Society of Tropical Pathology.

Hospital Drive Extended.—The campaign to raise $2,000,000 for the New York Post-Graduate Medical School and Hospital will be continued through the summer. Among the recent gifts were $10,000 from Mrs. E. H. Harriman, $1,000 from Mrs. J. Henry Watson, $1,000 from the employees of the Brooklyn Rapid Transit Company and $500 from the Allis-Chalmers Manufacturing Company. The fund on May 28 totaled $1,277,176.57.

Health Organization of America Offers Fellowship.—This organization offers one year in Teachers College, Columbia University (September, 1920, to June, 1921) for the study of modern health education in the elementary schools, to be awarded for the best graded plan and outline for interesting children in the establishment of health habits. Details will be furnished on application to the Child Health Organization of America, 156 Fifth Avenue, New York City.

Health Department Tests Accuracy of Thermometers.—The sanitary bureau of the department of health has made a survey of a number of clinical thermometer manufactories in and out of the city and has submitted reports. To demonstrate to physicians and nurses the utter worthlessness of some of the thermometers on which they have been depending, 156 clinical thermometers taken from physicians and nurses were tested. Of these, eighty-four, or 54 per cent., were found defective, while seventy-two, or 46 per cent., were found acceptable. No repeated reading could be made, and all tests necessary to determine the accuracy of the thermometers were not carried out in full; hence it is probable that some of the thermometers passed would prove defective if subjected to all the tests which are necessary to determine a good thermometer. In view of the results

of these tests, an appropriate amendment to the sanitary code and regulations to govern the selling, holding or keeping for sale of clinical thermometers in this city is under consideration by the department of health.

NORTH CAROLINA

Hospital Association Elects Officers.—At the annual meeting of the North Carolina Hospital Association, Dr. James M. Parrott, Kinston, was elected president, and Dr. John Q. Myers, Charlotte, secretary and treasurer.

Public Health Work for State Society.—A special committee appointed at the recent meeting of the state medical society has made its report urging that a permanent committee be named to prepare a plan for public health administration.

Personal.—Dr. Andrew J. Crowell, Charlotte, has been appointed a member of the state board of health, succeeding Dr. Edward C. Register, deceased.——Dr. Dan E. Sevier, Asheville, has been elected a member of the state board of medical examiners for nurses, succeeding Dr. Thompson Frazier, term expired.——Dr. Margery J. Lord, Asheville, has been appointed a missionary to the Presbyterian board and assigned to duty as a medical missionary in the Belgian Congo, West Africa.

OHIO

Cabot in Fremont.—Dr. Hugh Cabot of the University of Michigan spoke before the Toledo Academy of Medicine, May 14, on "Appendicitis."

State Public Health Organization.—A new association was organized at Columbus, May 12, known as the Ohio Public Health Association and the following officers were elected: president, Dr. Chester B. Bliss, Sandusky; vice presidents, Dr. Lucian G. Locke, Portsmouth, and Mrs. W. C. Marshall, Selma; secretary, Dr. Robert G. Patterson, Columbus, and treasurer, Mr. Theodore S. Hunter, Columbus.

Personal.—Dr. Kell M. Ellsworth, Dayton, was found in his home, May 19, suffering from a knife wound of the throat, and is under treatment in the Miami Valley Hospital.——Dr. Elwood Miller, Springfield, has been elected superintendent of the District Tuberculosis Hospital in that city, succeeding Dr. Rush R. Richison, who resigned to accept the position of health officer of Springfield and Clark County.——Dr. Dallas K. Jones, Wooster, has been appointed health commissioner of Wayne County.

Academy Activities.—On May 14, Dr. Charles Claude Guthrie, professor of physiology and pharmacy of the University of Pittsburgh School of Medicine, made a report before the one hundred and second regular meeting of the experimental medicine section of the Cleveland Academy of Medicine on "Experimental Studies on the Heart with Particular Reference to Fundamental Properties of Heart Tissue and Their Power on the Interpretation of Surgical Functional Disorders."——At the regular meeting, May 28, Dr. Thomas W. Salmon, New York City, medical director of the National Committee for Mental Hygiene, spoke on "What a Psychiatric Clinic Can Do for Cleveland." In his remarks, he stated that Cleveland has approximately 8,000 insane and feebleminded in need of hospital care, and that it has no provisions for the care of these persons. He recommends that the state provide 2,000 more hospital beds for the insane; a hospital for the feebleminded with a capacity of 2,000; 200 beds at the city hospital for handling the nervous cases; three mental clinics at the Lakeside and city hospitals and a location near the public square.

Illegal Practitioners Convicted.—The Ohio State Medical Board reports that five persons were convicted of practicing medicine in that state without licenses: Helen Platz, Cleveland, previously convicted of illegal practice of medicine, rearrested and after hearing in Euclid Township on May 10 was bound over to the grand jury.——A. B. Foster (unlicensed), Cleveland, arrested and convicted of illegal practice of medicine on May 11. It being the second offense, he was given a jury trial before Judge Terrell and a sentence of $500 and six months in the workhouse was imposed.——"Dr." Clarmax Gillum (unlicensed), Cleveland, convicted in the Municipal Court of Cleveland and fined $100 and costs and told to leave the city.——Mrs. Erato Zacharatos, Canton, pleaded guilty in the Probate Court of Canton, on May 13, to practicing medicine without a license and was fined $25 and costs.——Mike Boldis, Akron, arrested on May 13 for illegal practice of medicine, pleaded guilty before Judge O'Neil in the Municipal Court of Akron and was fined $100 and costs.——Dr. R. M. Sproul, Lima, charged with furnishing 70 grains of chloral hydrate to an alleged drug addict, is said to have pleaded guilty and to have been fined $100, May 7. The defendant stated that he had been practicing without a license since 1902 and was ignorant of the fact that a state license was required.

OKLAHOMA

New Hospital Association Officers.—The annual meeting of the Oklahoma State Hospital Association was held in Oklahoma City, May 19, and the following officers were elected: president, Dr. Fred S. Clinton, Oklahoma Hospital, Tulsa; vice presidents, Drs. John A. Hatchett, El Reno Sanitarium, El Reno, and Arthur S. Risser, Blackwell Hospital, Blackwell; executive secretary, Mr. Paul H. Fessler, University Hospital, Oklahoma City; treasurer, Dr. John H. White, Muskogee Baptist Hospital, Muskogee; delegate to the American Hospital Association, Dr. Charles L. Reeder, Tulsa Hospital, Tulsa, and alternate, Dr. George A. Boyle, Enid Hospital, Enid.

PENNSYLVANIA

Health Code to Protect Water Supply.—Private corporations, acting in a public or quasi public capacity, are directly affected by a new sanitary code which the advisory board of the state health department has adopted. The new sanitary code, drafted by Chief Engineer Charles A. Emerson, Jr., of the state health department, is included in a complete revision of the orders and regulations of the advisory board.

Philadelphia

Jefferson Commencement.—The ninety-fifth annual commencement of Jefferson Medical College was held at the Academy of Music at noon Saturday, June 5. Admiral William C. Braisted, Surgeon-General, U. S. Navy, delivered the valedictory address, his subject being "Joseph and Benjamin or Scientific Opportunities and Civic Obligations." There were 165 in the graduating class.

Memorial Tablet.—In the front hall of the Jefferson Medical College, a bronze memorial tablet was erected by the class of 1919, bearing the following inscription:

The Jefferson Medical College. The Class of 1919 has erected this tablet to Commemorate the Military Service of 1,187 Commissioned Officers of the Medical Corps of the Army and Navy, 431 Enlisted Men of the Students' Army Training Corps and an Unknown Additional Number of Other Graduates and Undergraduates of the Jefferson Medical College who, in the World War, Served their Country's Cause on Every Field, to their Own Credit and the Added Glory of their Alma Mater.

Personal.—Dr. E. B. Krumbhaar, Flourtown, has been appointed director of the pathologic laboratory of the Philadelphia General Hospital and clinical pathologist in the Bureau of Hospitals.——Dr. J. E. Burnett Buckenham has resigned as superintendent of the Municipal Hospital for Contagious Diseases.——Dr. Edgar Fahs Smith, retiring provost of the University of Pennsylvania, was a guest of honor at a dinner given by nearly 500 members of the faculty of the University of Pennsylvania at Weightman Hall, May 26.

TENNESSEE

Personal.—Dr. Willis S. Alexander was elected mayor of Ridgley, May 5.——Dr. Stanton H. Barrett has resigned as city director of health at Chattanooga.——Dr. Edward B. Wise, Chattanooga, has been appointed city physician of Chattanooga.

Charter Asked for Health Clinics.—Application has been filed for a charter for the Knoxville Health and Welfare Association. The future home of the association is to be in the McClung Building and will be ready for occupancy July 1, and will house the children's free clinic, the state antituberculosis clinic, the American Red Cross general clinic and the United States Public Health Service.

VIRGINIA

Children's Hospital.—The Dooley Hospital, Richmond, recently constructed at a cost of $55,000 and to be devoted exclusively to children, has recently been opened. It has a capacity of forty-two patients.

Appropriation for Health Work.—The Board of Supervisors of Henry County have voted an appropriation of $5,000 to place the county in line for a year's cooperative health campaign with the state board of health on the county unit plan.

Tuberculosis Clinics.—The series of clinics held in Prince Edward County, by the Virginia Tuberculosis Association,

were crowded to their capacity. Dr. Dean B. Cole, Richmond, medical director of the association, and his assistants examined 255 persons who applied, of whom 166 were white and sixty-nine colored. Of the total number examined, 200 gave negative results.

To Guard Health of State Prisoners.—The board of directors of the penitentiary, Richmond, passed resolutions, May 4, looking to the improvement of conditions in the medical systems of the state prisons. These provided that the president of the board of directors of the penitentiary draw up, for adoption by the board of medical examiners, forms to be used by the surgeons of the penitentiary and state farm in examining convicts on admission and on release, and directed the surgeons to make a thorough examination of every person now at these institutions and hereafter, within forty-eight hours after admission, to make a similar examination of every prisoner at these institutions, and furthermore to make a similar examination of every prisoner before release and to record the findings in detail on the forms furnished by the board.

CANADA

University News.—Queen's Medical College, Kingston, Ont., is preparing for a forward movement. All salaries have been increased and six new professors added. The general hospital is to be enlarged. It is now thought that it will not be necessary to remove to Ottawa which was a live question a few months ago. About a million dollars is now in sight for improving the general hospital.

Personal.—Dr. H. C. Cruickshank, who served twelve months overseas and was wounded, has been appointed director of laboratories, medical department of health, Toronto. ——Dr. Dowell Young of Cornell University has been appointed professor of biology in Dalhousie University, Halifax, in place of Prof. C. Moore, resigned.——Dr. J. W. Ross is Canadian Government Commissioner in China.——Dr. Joseph Edwards Midgley, formerly of St. Thomas and St. Mary's, Ont., but recently of Brooklyn, has returned to Canada and will probably practice in Toronto.——Dr. Samuel H. McCoy, formerly of St. Catherines, Ont., and Toronto, after returning from overseas, is at present in Ottawa, where he is working on the Canadian medical history of the war.

Ontario Medical Association.—The annual meeting of the Ontario Medical Association was held in Toronto, May 25 to 29. Work was commenced by the board of general purposes having a conference, and as this is composed of representatives from the city and county societies it is now considered an important body. Some of their recommendations were: that special classes should be established by school boards for the training of mentally defective; that there should be stringent immigration laws to prohibit the bringing in of mental defectives, legislation to prevent their marriage, and better education of medical students on the subject of psychiatry; a recommendation that the number of government liquor dispensaries in Ontario should be increased (now seven in Ontario) and that these stores should be kept open Saturday afternoons and Sundays. President Frederick W. Marlow, Toronto, regretted the lack of attendance at medical meetings. He said that there should be some law to compel medical men to take either graduate courses from time to time, or to compel their attendance at the medical meeting. There was something wrong in a system that allowed a man to graduate and then go along as he wished for many years whether he studied or not. He emphasized the need of more hospital accommodations as well as more nurses. That he did not mention the need of more physicians suggests that there are now enough and to spare. Dr. Nelson W. Percy, Chicago, associate professor of clinical surgery, University of Illinois, read a paper on the transfusion of blood which should be carried out after careful selection of the donor. He dealt with its use in pernicious anemia. Dr. Edward C. Rosenow, Mayo Clinic, Rochester, Minn., delivered an illustrated address on experiments in influenza, which was much appreciated. Dr. Charles W. Service, Chengtu, West China, addressed the meeting on the medical needs of China, particularly on insanitary conditions which were the greatest problem in health matters there. There was widespread disease due to neglect, poverty and ignorance which ran the death rate to 40 to 50 per thousand in adults and from 50 to 70 per thousand in children. He appealed particularly for interest in the West China Medical School. Higher fees for insurance examinations was a live topic of discussion. In the various sections the papers were listened to with keen appreciation and elicited much discussion. The following officers were elected: president, Dr. James Huerner Mullin, Hamilton; vice presidents, Drs. Frank J. Farley, Trenton, and Frederick Arnold Clarkson, Toronto; secretary-treasurer, Dr. Thomas C. Routley, Toronto.

GENERAL

Mary Putnam Jacobi Fellowship.—The Mary Putnam Jacobi Fellowship for 1920-1921 has been awarded to Dr. Sophie Getzowa of the University of Berne, Switzerland.

American Association for Advancement of Science.—The 1922 meeting of the American Association for the Advancement of Science and Affiliated and Associated Societies will be held in Toronto, Ont., during the Christmas holidays of 1921, under the auspices of the city of Toronto, University of Toronto and Royal Canadian Institute.

Gastro-Enterologists Elect Officers.—At the annual meeting of the American Gastro-Enterological Society held in Atlantic City, May 3 and 4, the following officers were elected: Dr. Joseph Sailer, Philadelphia, president; Drs. Allen A. Jones, Buffalo, and James C. Johnson, Atlanta, Ga., vice presidents; Dr. Frank Smithies, Chicago, secretary (reelected); Dr. Horace W. Soper, St. Louis, recorder, and Dr. Clement R. Jones, Pittsburgh, treasurer.

Surgeons Elect Officers.—At the forty-first annual meeting of the American Surgical Association held in St. Louis, May 3 to 5, under the presidency of Dr. George E. Brewer, New York City, the following officers were elected: president, Dr. John B. Roberts, Philadelphia; vice presidents, Drs. Harvey G. Mudd, St. Louis, and James F. Mitchell, Washington, D. C.; secretary, Dr. John H. Gibbon, Philadelphia (reelected); treasurer, Dr. Charles H. Peck, New York City, and recorder, Dr. John H. Jopson, Philadelphia (reelected).

Conference of State and Territorial Health Officers with the Surgeon-General of the U. S. Public Health Service.—At the annual conference of state health officers with the U. S. Public Health Service, held in Washington, D. C., May 26 and 27, it was recommended that the Conference adopt the Standard Railway Code outlined through its committee. The following resolution was added:

Resolved, That any laws concerning the sanitation of public conveyances and public railway stations should contain a clause penalizing the public for befouling such conveyances and such stations, for we recognize that unclean and befouled public conveyances and stations are made so by dirty people and they should be penalized for their filth.

Relative to the bill H. R. 10925 S. 3250 (known as the Sheppard-Towner Bill) making provision for promoting the care of maternity and infancy in the several states, and the new federal and state health agencies known as "A Federal Board of Maternal and Infant Hygiene" and "State Boards of Maternal and Infant Hygiene," thereby created, it was stated that the establishment of new or competing health organizations, federal or state, weakens the efforts of the existing legally constituted health agencies. It was therefore

Resolved, That it is the sense of the Eighteenth Annual Conference of the State and Territorial Health Authorities with the United States Public Health Service that the objects of the Sheppard-Towner bill for the public protection of infant and maternal life be strongly endorsed; and,

Resolved further, That it is the sense of this conference that the Federal administration of this act should be under the supervision and control of the Public Health Service, and in states, of the state health authorities; and that the sections of said bill relating to administration be changed to accord with these suggestions; and,

Resolved further, That this resolution be laid before the committees on education and labor of the House and Senate by a special committee representing this conference.

A resolution on rural health work was introduced by the statement that over 53 per cent. of the population of the United States is rural, and the food supply for our whole nation is dependent on production in the rural districts. Physical defectiveness and preventable diseases have been found by extensive careful studies to be as prevalent in our rural as in our urban population and only about 3 per cent. of our rural population is served by local whole-time health departments approaching adequacy. The application of the principle of federal aid extension to rural health promotion appears entirely logical, consistent with the theory and established practices of our system of government and is urgently needed at this time. A resolution was adopted endorsing the principles of legislation contemplated by the Lever Rural Health Bill introduced in the Sixty-Sixth Congress and agreeing to advocate such principles with a view to bringing about a nation-wide popular demand on the Congress of the United States for such legislation.

LATIN AMERICA

Nicaraguan Asylum for Paupers and Feebleminded.—There was opened recently, at Managua, an asylum for paupers and dements.

Plague in Mexico.—It is stated from Mexico that there have occurred several cases of bubonic plague in the port of Vera Cruz, and President Wilson has offered to send hospital ships, physicians, nurses and medical supplies immediately.

New Medical Posts in Cuba.—The department of public instruction of Cuba has ordered the appointment of assistants to three chairs in the medical school, namely, medical pathology, practical pharmacology and therapeutics applied to stomatology.

School of Odontology in Uruguay.—There has been established in Uruguay a school of odontology connected with the faculty of medicine. The preparatory studies will be the same required for entrance to the school of medicine. The course in odontology will last four years.

Personal.—Dr. Henrique da Rocha-Lima has returned to Rio de Janeiro from Germany, where for several years he has been privat-docent for tropical diseases at the Institute for Ship and Tropical Diseases at Hamburg.——Dr. Henrique Molina has been appointed rector of the University of Chile. He has recently spent two years in research in this country. His published works include "Philosophia americana" and a refutation of Bergson's theories.

Plague in Brazil.—The *Brazil Medico* states that the local authorities of the state of Rio Grande do Sul have informed the central government that there is no need for outside help to combat the plague as no new cases have been reported for more than a month in the seven stations along the railroad where sporadic cases had developed, a total of nineteen in all. The contagion was traced to a cargo of grain at Uruguayana and here there were forty cases, but no new cases for a few weeks have been discovered, and the disease nowhere assumed epidemic form. The Rockefeller Foundation is organizing a hookworm campaign in that state in cooperation with the local health authorities.

FOREIGN

Gift for Bacteriologic Research.—Our French exchanges relate that "Mr. M. Douglas Flattery, an American philanthropist, has presented the Institute of Bacteriology at Lyons with 100,000 francs for an annual scholarship for a student who will specialize in laboratory work on the bacteriology of infectious diseases."

Suspension of Ophthalmologic Journal.—It is announced that the *Zentralblatt für Augenheilkunde,* founded and edited by Prof. J. Hirschberg for forty-three years, is to suspend publication. Michel's (formerly Nagel's) *Jahresberichte über die Leistungen und Fortschritte im Gebiete der Ophthalmologie* is also to stop publication with 1920. The back numbers from 1914 are to be made up to the current year.

Suspension of the "Archives de Médecine Expérimentale."—The Archives founded by Charcot for recording research in experimental medicine and pathologic anatomy now announces that with the close of the twenty-eighth volume it suspends publication. Its swan song is an article by Garnier and Reilly on the anatomic findings in various organs with acute yellow atrophy of the liver; Catsaras' study of metastasis by retrograde lymphatic routes; an account of experimental research by Achard, Leblanc and Binet on the blood changes during carbon oxychlorid poisoning, and of Achard and Gaillard's experimental research on various flours.

Deaths in the Profession in Other Countries

Sir **Henry Burdett,** London, founder and editor of the *Hospital* and *Nursing Mirror,* author of Burdett's "Hospitals and Charities," the "Hospitals and Asylums of the World," "Official Nursing Directory" and many other works on hospitals, medical sociology, and fiscal matters, aged 73, died recently.——Dr. **A. Pasteur** of Geneva, aged 90.——Dr. **Sarda,** professor of forensic medicine at the University of Montpellier, aged 66.——Dr. **Julio Palma,** professor of histology at Bahia, Brazil, until retired.——Dr. **J. O. de Azevedo** of the chair of medical chemistry in the same faculty. He was also deputy from the province.——Dr. **G. Marchetti** of Brescia, Italy, succumbed to smallpox contracted professionally.——Dr. **A. Ceradini,** director of the Laboratorio Micrografico Municipale of Milan and president of the Reale Societá di Igiene.——Dr. **F. Camaggio,** instructor in surgical anatomy at the University of Naples.——Dr. **R. Livi,** instructor in anthropology at the University of Rome.

Government Services

Banquet to Admiral Barber

The officers on duty and the patient officers at the naval hospital, Fort Lyon, Colo., gave a banquet, April 29, to Rear Admiral George H. Barber, M. C., U. S. Navy, on his retirement from command of the hospital.

Honorary Degrees to Admirals Braisted and Stitt

Rear Admiral William C. Braisted, Surgeon-General, U S. Navy, dclivered the principal address at the ninety-fifth commencement exercises of Jefferson Medical College, June 5. The college conferred the honorary degree of LL.D. on Admiral Braisted, and the honorary degree of D.Sc. on Rear Admiral Edward R. Stitt, M. C., U. S. Navy, head of the naval medical school.

French Surgeons Honored

General Tuffier, chief surgeon of the French Army, who was delegated to represent the French government at the American Surgical Congress in St. Louis, was the guest of honor at a luncheon given by Dr. James F. Mitchell at the Metropolitan Club, Washington, May 8, at which Major-General Merritte W. Ireland, Surgeon-General, U. S. Army; Rear Admiral William C. Braisted, Surgeon-General, U. S. Navy, and Colonels Mathew A. Delaney and William H. Moncrief, M. C., U. S. Army, Dr. Livingston Farrand, director of the American Red Cross, and Dr. John M. T. Finney of Johns Hopkins University were also present.

Health Conditions of the Army

The incidence of communicable diseases is slightly lower than last week, although the admission and noneffective rates are about the same. There were only twenty-five new cases of measles reported from all stations during the week; one new case of scarlet fever reported from Camp Taylor, and one from the Western Department. Camp Dix reports one new case of diphtheria and Brooks Field, Texas, reports the admission of five diphtheria carriers. The Southern Department reports twelve admissions for malaria, seven of which were at Brownsville. Camp Upton is the only large camp reporting a case of pneumonia. The death rate for disease, 4.3, is considerably higher than last week although but fourteen deaths from disease were reported. Tuberculosis was reported as the cause of six deaths and pneumonia of two.

New Legislation for Army Medical Corps

Surgeon-General Ireland states that 1,000 additional medical officers will be required in the Army, under the provisions of the Army Reorganization Bill which has just been agreed to in conference by the Senate and House committees. This new legislation provides for a commissioned personnel in the Medical Corps numbering 1,820. The Army has, at the present time, only about 800 medical officers.

This new Army legislation has been drafted with the view of attracting medical men of the highest character and qualifications to the Army, and offering unusual inducements to them after they have entered.

Physicians who are now in the Medical Reserve Corps and who served during the World War can reenter the Regular Army up to the age of 58 years.

No person below the age of 48 can be appointed in the grade of colonel, or below the age of 45 in the grade of lieutenant-colonel, or below the age of 36 in the grade of major. Appointments in the grade of first lieutenant shall be made from the Medical Reserve Officers between the ages of 23 and 32; and in the grade of second lieutenant from enlisted men of the Medical Department between the same ages, who have had at least two years' service.

The bill provides that hereafter an officer in the Medical Corps shall be promoted to the grade of captain after three years' service, to the grade of major after twelve years' service, to the grade of lieutenant-colonel after twenty years' service and to the grade of colonel after twenty-six years' service.

The new legislation gives to the commissioned officers of the Medical Corps permission to attend technical, professional

and educational institutions and hospitals for special training at government expense. Such privilege has never been heretofore accorded medical officers, although it has been granted by legislation to the engineers, artillery and other corps of the Army. The bill permits 2 per cent. of medical officers to have the privilege of this special training at educational institutions and hospitals each year. Heretofore medical officers who desired to undertake special study or investigation of the latest development of medical science were given leave of absence for a few months each year, and the cost of tuition at educational institutions was paid by the individual officer.

Surgeon-General Ireland looks on this provision of the new legislation with much approval and is confident that it will be of practical benefit to medical officers.

The bill also provides special inducements to the enlisted men in the medical department by providing that the Medical Administrative Corps shall be composed of men from the enlisted service who may become commissioned officers in the grades of captain and first lieutenant after five years' enlisted service.

The bill authorizes the Secretary of War to maintain military training camps during fixed periods each year. It is the intention of the Surgeon-General to utilize the services of officers in the Medical Reserve Corps at these training camps, where theoretical and practical instruction may be imparted to such officers along military lines.

In this way, medical reserve officers will have special training in the event a national emergency should require their call to the regular service.

It is likely that this Army bill will go to the President for signature early in June.

MEDICAL OFFICERS, UNITED STATES NAVY, RELIEVED FROM ACTIVE DUTY

COLORADO

Denver—Lingenfelter, G. P.

PENNSYLVANIA

Philadelphia—Target, J. D.
Pittsburgh—Rafferty, D. G.

TENNESSEE

Lebanon—Bryan, N. A.

TEXAS

Sequin—Anderson, R. B.

VERMONT

East Calais—Dwinell, F. P.

Foreign Letters

PARIS

(From Our Regular Correspondent)

May 6, 1920.

Infanticide and Professional Secrecy

A midwife was prosecuted in the court of correction at Vesoul because of her failure to give prescribed notice to the civil authorities of the birth of an infant. The midwife had been called by telegraph, but arrived on the scene twelve hours after delivery of the child. The young mother confessed that she had strangled the newborn infant, and the midwife consequently confined her efforts to delivery of the placenta. This fact was used in her legal argument that she had not "attended the delivery of the child." The French laws impose on the physician, midwife or any other attendant at a confinement, the duty of reporting the birth of a child, in absence of the father, but the judicial penalty is not applicable unless the defendant has attended the birth. The court did not concur in the opinion of the midwife, but decided that any person who assists at the various phases of confinement, especially delivery of the child and the placenta, must be considered an attendant at childbirth. The midwife also raised the further objection that she could not legally make the notification because she would thereby have revealed the infanticide. Having learned of this crime through confession of the patient and in the exercise of professional duty, she was held to professional secrecy which would have been violated by giving notice of the birth. The court, not agreeing with the view, held that the scruple of not denouncing the patient was inadmissible for the reason that the obligation of birth notification rested on physicians and midwives with the same severity as on all other attendants, even though such notification might lead to discovery of a crime. The midwife was therefore sentenced to pay a fine.

Prophylaxis of Diphtheria

The prevention of diphtheria was the subject of discussion at the last meeting of the Société de Pédiatrie. A committee appointed to make a study of the question has expressed regret that present sanitary legislation does not place effective weapons at the disposal of the health officers. The report led to an interesting discussion, in the course of which Dr. J. Comby remarked that in spite of serotherapy, diphtheria was still responsible for a considerable mortality in Europe and elsewhere. For some years no progress has been made in serotherapy and Comby thinks that by preventive measures should be sought the success not hitherto attained by serotherapy. On the other hand, disinfection is difficult and vexatious.

Dr. Louis Martin claimed that Comby showed himself a decided pessimist in his evaluation of serotherapy; before the days of antitoxin, there were 1,432 deaths per annum from diphtheria, whereas the present rate is 331. Curves plotted for five-year periods will show a steady decline, and, notable fact, in those countries with the most favorable rates, Holland and Belgium, the serum is distributed gratis.

Dr. Apert called attention to the great danger encountered by always treating the same diseases in the same wards; particularly resistant strains of micro-organisms are thus developed, an observation which was confirmed by Barbier.

Fees of Attending Physicians at Duels

Can a physician legally claim a fee for attendance on a principal in a duel? This question was submitted to a Paris justice of the peace by Dr. Logeais, who was called to attend one of the principals in a duel several months ago. The justice replied in the negative, for since the duel was an illegal act, it could not be made the basis of a legal action.

Laënnec Institute

A committee which was formed several months ago for a study of the best means of commemorating the centenary of the inventor of auscultation has decided on the creation of a Laënnec institute for the study, prevention and treatment of tuberculosis. Its principal activities will be the establishment of laboratories, dispensaries and sanatoriums, the organization of campaigns in France and abroad, and similar endeavors. The statutes of the institute have recently been adopted by the constituent general assembly which at the same time appointed the administrative council, the bureau of which consists of Professor Letulle, president, and Professors Gley, Calmette, Vaquez and Dr. Sergent, vice presidents.

The Income Tax and the Birth Rate

The Conseil supérieur de la Natalité has recommended to parliament that the exemption from income tax be fixed at 4,500 francs for unmarried, and at double that figure for married persons. It is also asked that the exemption prescribed for each child in a family be doubled for the fifth and each succeeding child.

A National Institute of Hygiene

At the last session of the council of the University of Paris approval was given to an arrangement between M. J.-L. Bréton, minister of hygiene, and Professor Roger, dean of the medical faculty, acting on behalf of the minister of public instruction. The agreement promises creation by the minister of hygiene of a national institute designed for the instruction of students in all matters pertaining to hygiene,

for the training of specialists in hygiene and of nonmedical technicians, and finally for the development by every possible means of scientific research as applied to hygiene.

LONDON

(From Our Regular Correspondent)

May 10, 1920.

Physiology of the White Man in the Tropics

The Australian Institute of Tropical Medicine is studying the effect of exercise under the influence of humidity and high temperature of nature. Previous experiments of this kind have been made only under artificial conditions. The problem was to ascertain whether the white man in the tropics reacts in a similar manner to heat exposure, at rest and at exercise, as in a temperate climate. In other words, does life in the tropics bring about a new adjustment (acclimatization)? It was found that slow exercise greatly increased the metabolism for a short period, but that a point was reached after which the rate of increase was much smaller. On walking 2 miles, the body temperature rose considerably (from 2 to 3 degrees), the blood pressure increased from 10 to 20 mm. of mercury, and the pulse rate from 20 to 37. This took place during the first half of the walk. But after the second half of the walk the temperature and pulse showed a much slighter increase, and the blood pressure even decreased. The decrease was probably brought about by dilatation of the superficial veins, which withdrew blood from the arterial system. Vigorous exercise for a short period—two or three minutes—increased the metabolism enormously, but the organism soon returned to normal, and the rectal temperature was not affected to any extent. Much greater increase of temperature was brought about by exercise than in a temperate climate because the high temperature and the humidity of the tropics interfered with the cooling mechanism. The experiments showed that it was impossible to continue heavy manual labor under tropical conditions for the same time as in a temperate region without raising the body temperature to a dangerous degree.

Shell Shock and Court-Martials for Cowardice

In the House of Lords an important debate took place on this subject. Lord Southborough called attention to the different types of hysteria and traumatic neurosis, commonly called shell shock, from which many soldiers suffered during the war; referred to the death penalty inflicted on men for cowardice, and moved that inquiry should be made into the expert knowledge derived by army medical authorities with the object of recording for use in time to come the experience of the war and advising whether some scientific method of dealing with such cases could not be devised. He said that it was now recognized that shell shock cases were examples of varying types of hysteria and traumatic neurosis. It was not confined to the untrained soldier, but was common in seasoned soldiers marked out for bravery. With regard to cases of dereliction of duty followed by court-martial and sometimes the death penalty, the evidence given in these cases should be examined in secret and the question considered whether some other course should not have been taken with regard to some of the men. Lord Horne, as an experienced general officer, supported the motion. From his personal knowledge he could say that if in the early days of the war there might have been cases of injustice, he confidently asserted that if there was a shadow of doubt or any suspicion that the crime committed had been caused by any form of hysteria, the result of shell shock, the sentence would not be confirmed until the accused had been under the observation of the medical authorities.

Viscount Peel, undersecretary for war, replying for the government, said that no doubt in former wars there were cases of shell shock, but they were not recognized as such. He was unable to say whether during the late war cases of injustice occurred; but immense trouble was taken at court-martial and in the subsequent proceedings that no one should be condemned to death unless for the gravest, most serious reasons and unless all morbid causes had been eliminated. When a soldier in his defense or in mitigation of punishment urged a substantial plea on mental grounds, medical witnesses were called, the court-martial was adjourned, and a medical board was held. At the adjourned meeting one or more members of the board were called as witnesses to give evidence as to the effects observed. A mental specialist was always included in the board. If there was the slightest ground for further inquiry, headquarters ordered a medical board to examine and report before any action was taken to confirm the death sentence. No sentence of death was carried out until confirmed by the commander-in-chief, who invariably consulted the judge advocate-general. Eighty-nine per cent. of the death sentences pronounced were commuted by the commander-in-chief. The total number carried out during the war was exceedingly small. Most of them were accounted for by cowardice (eighteen cases) and desertion (266 cases). The view of the government was that great advantage might be obtained by such an inquiry as was suggested. Many of the nervous and mental conditions encountered were entirely new to the medical officers. The motion was agreed to.

Struggle Between the Government and the Profession in Tasmania

The case of Victor Richard Ratten, a physician who obtained admission to the medical register of Tasmania by means of a diploma stated to have been granted by a defunct American medical school, has been previously discussed in The Journal. He incurred professional odium by remaining in government employment on the staff of a hospital on terms which the Tasmanian branch of the British Medical Association declared to be unacceptable to the profession. An inquiry into his credentials was then begun by the medical council. It was evidently regarded by the government as simply a move in the struggle between itself and the profession, for an act has been passed which deprives the council of the power to remove from the medical register physicians who have committed offenses or have obtained registration by fraud. The council can apply to the supreme court or to a judge for this purpose. The *Medical Journal of Australia* accuses the government of passing this act with a view to the particular case of Ratten. The medical council had been instructed by the Premier to investigate his case, but the act prevents the council from pursuing the inquiry beyond the limits prescribed by the government. The act also strikes at the profession in another way. Certain physicians have disregarded the resolutions of their colleagues by continuing to treat well-to-do persons in charitable institutions. The result was that their colleagues refused to meet them in consultation. The act provides that if any registered physician without reasonable excuse (the proof of such reasonable excuse being on him) refuses to consult with or render professional assistance in consultation to any other registered physician seeking such advice or assistance, he shall be guilty of an offense for which the penalty is not less than $250 or more than $1,000. It is expressly stated that "the expression 'reasonable excuse' shall not include any resolution or by-law or any agreement of any company, association or body of persons." Further, the act states that "any person, association, company or body of persons who, directly or indirectly, prevents or endeavors to prevent or aid in prevent-

ing in any way whatsoever any physician or nurse, or other person applying for appointment, accepting or holding any appointment in any state-aided hospital or charitable institution, shall be guilty of an offense for which the penalty is not less than $125 or more than $1,000. The Tasmanian branch of the British Medical Association is thus liable to be fined for an act which it is constantly doing. A result is that its official organ, the *Medical Journal of Australia,* has had to remove from its pages a notice requesting physicians to communicate with the honorary secretary of the branch before applying for certain government appointments. The *Journal* adds, however, that this will not help the government, for there is not a physician in the commonwealth who is not fully aware of the facts. Similar notices with regard to appointment appear in every number of the *British Medical Journal.* But in England there has always been more regard for the liberty of the subject than in countries supposed to be more democratic.

The Influenza Epidemic

From sixty-six deaths in the last week of January the deaths from influenza increased steadily in the large towns of this country till the week ending March 27, when they reached 392. Since that date there has been a gradual falling off to the present figure of 306.

RIO DE JANEIRO

(From Our Regular Correspondent)

May 1, 1920.

Influenza

In the months of January and February there was a slight increase in the cases of influenza, most of which were mild, and therefore did not influence the death rate.

The severe quarantine measures taken by the board of health compelling steamships to remain in Rio de Janeiro Harbor, for ten or more days without being allowed to disembark passengers or unload, caused great disappointment among business men. The Royal Mail Steamship Company even threatened to suspend traffic between European and Brazilian ports. Prof. Azevedo Sodré wrote strongly against these obsolete measures. After discussion, Dr. Chagas agreed finally to change this quarantine prophylaxis to sanitary observation of passengers.

New Medical Journal

A new medical journal, *Folha Medica,* has been founded. Its editors are Profs. Aloysio de Castro, Bruno Lobo, Silva Santos, Ernani Pinto, Roquette Pinto and Francisco Lafayette, and Drs. Aben Athar and Octavio de Freitas, and it will be published bimonthly.

Newly Appointed Alienists for the Insane Asylum

Dr. Rocha Vaz, recently appointed professor in the Medical School, has been replaced as alienist of the asylum by Dr. Ernani Lopes. Dr. F. Esposel has taken the place of the late Dr. Sá Ferreira.

Brazilian Physicians for the League of Nations

Drs. Afranio Peixoto and Belisario Penna have been appointed Brazilian representatives on the section of international hygiene of the League of Nations.

Hospital for Venereal Diseases

The late Candido Gaffrée, a well known millionaire, has left $100,000 for the foundation of a hospital for the treatment of venereal diseases. His heirs have decided to establish stations in different parts of the city for this purpose. They also intend to open an institute for the application of radium and later a laboratory for medical research along the lines of the Rockefeller Institute. Dr. Gilberto Costa has been named to be director of the venereal hospital.

Paraguay Invites Brazilian Professor

The government of Paraguay asked Dr. Aloysio de Castro, director of the Medical School of Rio de Janeiro, to choose a competent professor to occupy the chair of physiology in the Faculty of Asuncion. He chose first Dr. Alvaro Osorio de Almeida, who could not accept the call, and then Drs. Mauricio de Medeiros, Chagas Leite and Roquette Pinto, but none of them accepted. The invitation is still open.

Examinations for the Chair of Chemistry in the Medical School

Drs. Nascimento Silva, Nascimento Bittencourt, Alfredo de Andrade and Pecegueiro do Amaral have been designated by the medical faculty to examine the thesis of Drs. Del Vecchio and Barros Terra, applicants to the position left vacant by the death of Dr. Diogenes Sampaio.

Portuguese Donation for the Centennial

The Portuguese colony of Rio de Janeiro has decided to build a large hospital which will be given to the city of Rio de Janeiro in September, 1922. The board of directors and the technical staff will be Brazilians of Portuguese descent.

Schistosoma Mansoni and Schistosomiasis Observed in Brazil

Dr. Adolpho Lutz has published an interesting paper on this subject, in which he discusses schistosomiasis in Africa and other continents, especially in America; recent observations in the north of Brazil; a description of the genus *Schistosoma* and differential characters of *Schistosoma mansoni;* characteristics of the eggs found in the feces; the embryo or miracidium inside the ripe egg; ecdysis and free life of the embryo or miracidium; penetrations of the miracidia in mollusks; development of sporocysts of the first and second generation; description of the cercariae; conditions under which the cercariae leave the snail; penetration of the cercariae; evolution of *Schistosoma* in mammalia; symptomatology of schistosomiasis; complications and secondary affections: pathologic anatomy; prognosis; therapeutics; prophylaxis, and the danger of bathing in stagnant waters. He concludes that schistosomiasis in Brazil is usually not severe, and that the proportion of unobserved cases is rather large.

Marriages

JOHN FRANCIS CORBY, Major, M. C., U. S. Army, to Miss Helen Horsman Wilcox, both of New York City, May 22.

HAL MCCLUNEY DAVISON, Atlanta, Ga., to Miss Alexivena Natasha Becklimesheff, at Vladivostok, Siberia, May 31.

WILLIAM TECUMSEH ELAM, St. Joseph, Mo., to Miss Eleanor Carlson of St. Louis, early in May.

ALLEN ROGERS BARROW, Newtonville, Mass., to Miss Mary Warren of Brookline, Mass., April 22.

ALBERT GRIFFITH MILLER to Miss Katherine E. Frutchey, both of Philadelphia, February 10.

JEFFREY NEESE ELDER, Hopewell, Va., to Miss Myrle Fagg of Christiansburg, Va., March 9.

JAMES NEWBEGIN WORCESTER to Miss Gertrude Fullerton, both of New York City, May 19.

SIMON STEIN LEOPOLD to Miss Loraine Livingston, both of Philadelphia, February 18.

DANIEL D. TALLEY, JR., to Miss Anne Hays Myers, both of Richmond, Va., April 29.

F. A. WHITE to Mrs. F. F. Brown of Wapanucka, Okla., at Durant, February 27.

Deaths

Stanton Abeles Friedberg ⊕ Chicago; Rush Medical College, 1897; aged 44; died in the Presbyterian Hospital, May 27, following an operation for mastoiditis. He was assistant professor of laryngology and otology in his alma mater, and attending laryngologist to the Presbyterian and Durand hospitals; a member of the American Laryngological, Rhinological and Otological Society, and secretary-treasurer of the Chicago Society of Medical History. During the war he served eighteen months at home and in France as major, M. C., U. S. Army, receiving his discharge April 29, 1919. He was well known for his work in bronchoscopy and for research on bacteria carriers.

James Adrian Goggans, Alexander City, Ala.; University of the City of New York, 1877; aged 66; a member of the Medical Association of the State of Alabama; a pioneer surgeon of Central Alabama; formerly president of the Tri-State Medical Society of Alabama, Georgia and Tennessee, and vice president of the Southern Surgical and Gynecological Association; health officer of Tallapoosa County since 1871; died at the home of his brother, April 25, from carcinoma of the cecum.

Henry Lawrence Orth, Harrisburg, Pa.; University of Pennsylvania, Philadelphia, 1866; aged 77; a member and once president of the Medical Society of the State of Pennsylvania; formerly local surgeon of the Pennsylvania, Northern Central and Pittsburgh and Lake Erie railroads; superintendent of the Pennsylvania State Lunatic Hospital, Harrisburg, for twenty-seven years; a medical cadet in the Civil War; died, May 18.

William Hadley Slacer, Buffalo; University of Buffalo, 1873; aged 75; for many years chief of the medical staff of the Sisters' Charity Hospital, and physician to the Edward Street Orphan Asylum; local surgeon of the Michigan Central Railroad, and medical director of the Protective Life Assurance Society of Buffalo; died, May 16, as the result of injuries received several months before in a street car accident.

Emil Anderson Lynwood ⊕ Chicago; Dearborn Medical College, Chicago, 1907; aged 44; captain, M. C., U. S. Army, with service overseas and discharged June 30, 1919; a patient in the United States Public Health Service Hospital, Forty-Seventh Street and Drexel Boulevard, Chicago; died in that institution, May 27, from diabetes.

Max Carl Breuer ⊕ Buffalo; University of Breslau, Germany, 1890; aged 55; gynecologist to the Memorial Hospital, and consulting gynecologist to the Deaconess Hospital, Buffalo; died in the latter institution, May 19, from septicemia due to a wound received while performing an operation.

Ellen Broadway Smith ⊕ Salem, N. J.; Woman's Medical College of Pennsylvania, Philadelphia, 1892; aged 54; while crossing the street to her office, May 13, was struck by an automobile, sustaining a fracture of the skull and other injuries from which she died a few minutes later.

James Henry Spencer, Tacoma, Wash.; University of Louisville, Ky., 1889; aged 58; for several years physician in the U. S. Indian Service at Ashland, Wis.; a specialist in diseases of the eye, ear, nose and throat; died at Santa Cruz, Calif., May 13, from chronic interstitial nephritis.

James Landon Taylor, Highland Park, Mich.; Medical College of Ohio, Cincinnati, 1872; aged 80; for many years a practitioner of Wheelersburg, Ohio; was struck by a street car while crossing a street in Detroit, May 3, and died in the Receiving Hospital, Detroit, May 6.

William Hampton Blythe ⊕ Mt. Pleasant, Texas; Vanderbilt University, Nashville, 1886; aged 67; for more than twenty years secretary of the Titus County Medical Society and local surgeon of the Cotton Belt system; died, May 6, from senile debility.

Joseph Wiley McClendon, Dadeville, Ala.; Jefferson Medical College, 1888; aged 53; a member of the Medical Association of the State of Alabama; local surgeon of the Central of Georgia Railroad; died in Baltimore, May 13, from arteriosclerosis.

Mary Miller, Philadelphia; New York Medical College and Hospital for Women, Homeopathic, New York City, 1878; aged 82; died in the Home for Indigent Widows and Single Women, Philadelphia, May 11, from cerebral hemorrhage.

Robert Steinfeld Willard, Ardmore, Okla.; University of Nashville, Tenn., 1899; aged 44; a member of the Oklahoma State Medical Association; formerly health officer of Ardmore; died in Lakeland, Fla., March 1, from influenza.

George Howard Cantwell, New York City; Jefferson Medical College, 1884; aged 62; for twelve years a surgeon for the Panama Steamship Company; died in Bellevue Hospital, May 19, from the effects of an overdose of morphin.

Joseph Davis Bennett, Safety Harbor, Fla.; St. Louis Medical College, 1867; aged 73; a Confederate Veteran; once vice president of the Florida Medical Association; died at Del Oro Grove, Safety Harbor, Fla., March 28.

William Ashburn Swearingen, Carothersville, Mo.; Barnes Medical College, St. Louis, 1900; aged 47; a member of the Missouri State Medical Association; also a druggist; died at Dawson Springs, Ky., May 4, from nephritis.

William Martin Johnson, Peckham, Okla.; University Medical College, Arkansas, Mo., 1890; aged 65; a member of the Oklahoma State Medical Association; died in Oklahoma City, February 13, after a surgical operation.

Albert Dell Swartz, Indianapolis; Indiana University, Bloomington and Indianapolis, 1908; aged 53; formerly superintendent of the Florence Crittenden Home; died in the Methodist Hospital, Indianapolis, May 17.

George D. Bradford ⊕ Homer, N. Y.; University of Buffalo, 1875; aged 67; physician to the Cortland County and Homer Hospital; died in a hospital in Syracuse, N. Y., April 24, after a surgical operation.

Francesco Goglia, Elmira, N. Y.; University of Naples, Italy, 1902; aged 57; also a graduate in law; who was struck by an automobile, May 2; died from his injuries in St. Joseph's Hospital, Elmira, May 27.

Charles Baxter Wiseman, Henrietta, N. C.; College of Physicians and Surgeons, Baltimore, 1902; aged 51; a member of the Medical Society of the State of North Carolina; died, May 7.

Donald McPhail, Randolph, Va.; Medical College of Virginia, Richmond, 1878; aged 65; a member of the Medical Society of Virginia; died in a hospital in Richmond, March 11.

Corresta T. Canfield, Pittsburg, Kan.; Homeopathic Hospital College, Cleveland, 1872; aged 87; died at the home of her daughter in Pittsburg, May 1, following an attack of influenza.

Cassius Herschell Ice, Mannington, W. Va.; University of Maryland, Baltimore, 1891; a member of the West Virginia State Medical Association; died, March 21, from heart disease.

Herbert H. Gipson, Oklahoma City; Washington University, St. Louis, 1907; aged 40; a member of the Oklahoma State Medical Association; died, February 11, from influenza.

Silas T. Burch, Alex, Okla.; University of Tennessee, Nashville, 1884; St. Louis College of Physicians and Surgeons, 1898; aged 66; died, April 23, from acute indigestion.

Caroline Mary Smith, Milford, Conn.; New York Medical College and Hospital for Women, Homeopathic, New York City, 1895; aged 80; died, May 12, from heart disease.

George Albert Ross ⊕ Fort Wayne, Ind.; Pulte Medical College, Cincinnati, 1879; aged 63; died in the Lutheran Hospital, Fort Wayne, May 13, from gallstone disease.

Theodore W. Helming, Indianapolis; Medical College of Indiana, Indianapolis, 1887; aged 55; a member of the Indiana State Medical Association; died, April 19.

Frank Edward Barrett, Wendell, Idaho; University of Kansas, Lawrence and Rosedale, 1912; aged 44; died at the home of his parents in Wendell, April 28.

John Franklin Hicks, Bristol, Tenn.; New Orleans School of Medicine, 1866; aged 91; for several terms a member of the Bristol city council; died, April 21.

John H. Barker, Bellevue, Ky.; Medical College of Ohio, Cincinnati, 1877; aged 67; a member of the Kentucky State Medical Association; died, April 20.

George F. E. Wilharm, Crafton, Pa. (license, Allegheny County, Pa., 1881); aged 67; a practitioner for forty years; died, May 11, from pneumonia.

R. H. Wilson, Sour Lake, Texas; Gate City Medical College, Texarkana, Texas, 1907; aged 61; died in a sanatorium in Houston, Texas, April 30.

⊕ Indicates "Fellow" of the American Medical Association.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

SYRUP LEPTINOL (FORMERLY SYRUP BALSAMEA)

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report on "Syrup Leptinol" (formerly "Syrup Balsamea"). The product is inadmissible to "New and Nonofficial Remedies," first, because the manufacturers fail to give the profession information regarding either the amount of the potent ingredient or the method of determining its identity and uniformity; second, because of the unwarranted recommendation for its use in such infectious diseases as pneumonia and epidemic influenza and for lack of satisfactory supporting evidence of its alleged therapeutic efficacy in other diseases and, third, because the recommendations for its use appearing on and in the trade package constitute an indirect advertisement to the public.

W. A. PUCKNER, Secretary.

Syrup Leptinol is sold by the Balsamea Co. of San Francisco. It was first introduced as Syrup Balsamea. In recent advertising, Syrup Leptinol is also referred to simply as "Leptinol."

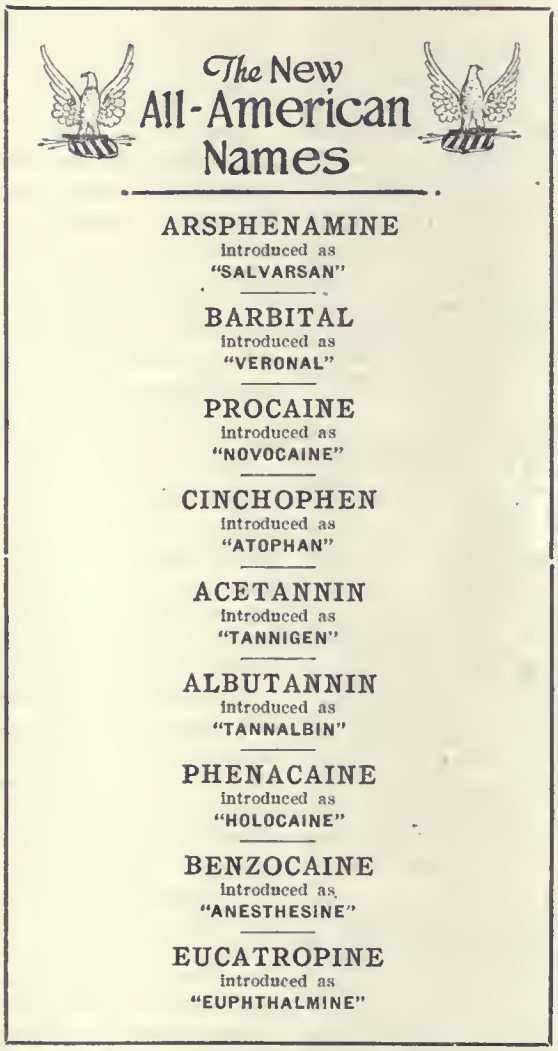
According to the statements of the Balsamea Co. Syrup Leptinol is prepared from the root of a species of Leptotaenia (a plant belonging to the parsnip family) which grows in Nevada and which has heretofore not been used in medicine. The manufacturer states that the botanists who have been consulted have been unable to agree on the botanical classification of the plant. The dried root of this unclassified species of Leptotaenia is extracted with alcohol and from the extract so obtained the syrup is made, but no information has been furnished to show how the alcohol-soluble material is incorporated in the syrup. Further, the manufacturer has not announced tests whereby the identity and uniformity of the finished preparation may be determined.

A booklet contains the following:

"The species of Leptotaenia from which LEPTINOL is produced was first used in medicine by Dr. E. T. Krebs, who, after thorough laboratory investigation and clinical application over a period of several months, which resulted in the perfecting of LEPTINOL, prescribed the preparation for Influenza during the epidemic of that disease in 1918 with remarkably good results. Since this first use, LEPTINOL has been exhaustively tested by clinicians in private practice and in hospitals in the treatment of Pneumonia, Influenza, Bronchitis, etc., and has been universally endorsed."

In a circular letter it is asserted that the use of "Leptinol" during the "influenza epidemic" of 1918-1919 "demonstrated its almost specific action in respiratory affections"; that "during this epidemic it proved to be five times as efficacious as any other treatment in pneumonia . . ."; and that "it is now as firmly fixed in the mind of many doctors for respiratory diseases as quinine is for malaria and the salicylates for rheumatism."

In the booklet it is further stated that the therapeutic action of the preparation is primarily that of a "stimulating expectorant" and secondarily as a "sedative expectorant"; that "its antiseptic action in the respiratory tract is prompt"; that it "is an effectual cardiac tonic where the tone of the heart muscle is impaired by fever"; that "in acute pulmonary conditions it effectively improves the respiratory action and allays cerebral irritation due to fever and toxins"; that it acts "as a vital stimulant and nerve sedative"; that "it stimulates the excretion of acid by the skin and in fever it has a strongly diaphoretic and antipyretic action without depressing the circulation or the central nervous system"; that it is "mildly diuretic" and "slightly augments the biliary flow" and that "it increases the gastric and intestinal secretions and allays intestinal fermentation."



Reduced facsimile of one of the cards exhibited by the A. M. A. Chemical Laboratory at the New Orleans meeting.

No evidence has been presented to the Council which shows that Syrup Leptinol has the actions ascribed to it. The reports of clinical trial[1] are little more than chance observations and lack all control.

The Council finds Syrup Leptinol (formerly Syrup Balsamea) inadmissible to New and Nonofficial Remedies because: (1) the information in regard to composition does not state the amount of potent ingredient, nor permit the determination of its identity and uniformity; (2) the recommendation for its use in such infectious diseases as pneumonia and epidemic influenza is unwarranted and its claimed therapeutic efficacy in other diseases is without satisfactory supporting evidence; and (3) the recommendations for its use which appear on the label and the circular wrapped with the trade package constitute an indirect advertisement to the public.

The Council accepts the explanation of the manufacturer that he has been unable to obtain a satisfactory classification of the plant from which Syrup Leptinol is made. It would be undesirable to exclude from therapeutic use a valuable drug simply because its botanical character has not been determined or because an exhaustive chemical examination had so far not been made. However, in the absence of such information the manufacturer should give full information with regard to the preparation or standardization of his remedy and the therapeutic claims made for it should be accompanied by indisputable, thoroughly controlled clinical evidence. In the case of Syrup Leptinol, there is no satisfactory evidence available showing that the preparation has any value in the treatment of epidemic influenza, pneumonia, whooping cough, etc. While it is probable that a balsamic syrup, such as Syrup Leptinol, has palliative properties in coughs, such action does not at all justify the claim that it is useful in the contagious diseases for which it is proposed.

1. Among these reports is one from a mining hospital. The Council discusses this in its original report (a copy of which may be had on application) but the discussion is omitted here for lack of space.

The Council cannot recognize a syrup presenting an unknown plant in uncertain proportions which is recommended in a variety of dangerous contagious diseases in which it ultimately may be harmful, even though in early stages of these diseases, it may serve to allay some of the milder symptoms.

Concerning the composition of the plant from which Syrup Leptinol is prepared, the Balsamea Company states that it contains "Alkaloids, acids, glucosides, volatile and fixed oils, gum and resins." This information is valueless since no information is given concerning the character, amounts or pharmacologic action of the ingredients. Further, it is unreliable as far as the presence of alkaloids is concerned since the A. M. A. Chemical Laboratory has been unable to find any alkaloids in the specimen of the crude drug furnished by the manufacturers.

In accordance with its regular procedure, the Council submitted the preceding statement to the manufacturer.

In reply the Balsamea Company stated that it is more than ever of the belief that Syrup Leptinol is deserving of recognition by the Council, basing this opinion on further clinical experience with it in the treatment of influenza.

The manufacturer stated that the use of the words "Leptinol" and "Syrup Leptinol" interchangeably was due to an oversight and promised to limit the use of the word "Leptinol" to an alcoholic extract of the plant.

Concerning the method of preparation of this alcoholic extract and the amount used in the preparation of Syrup Leptinol the Balsamea Company replied as follows:

"The alcoholic extract of the Leptotaenia, which we have termed 'Leptinol' is a preparation of definite and uniform strength, as determined by two methods: (a) the gravity test using the U. S. Hydrometer Scale for spirits, by which Leptinol registers 52 degrees at 60 degrees F., and (b) by gentle evaporation of the alcohol content and the measuring of the active constituents, which measures twenty-five per cent. by weight.

"The alcoholic extract 'Leptinol' is glycerinated in a machine, using one part of the alcoholic concentration to four parts of glycerin. This is then added to eleven parts of a heavy syrup, containing 7½ pounds of sugar to the gallon of syrup, and thoroughly mixed in an agitating machine. Leptinol is the sole active ingredient of Syrup Leptinol. Syrup Leptinol is a preparation of uniform strength. It is far more uniform in strength than most of the syrups of the U. S. P. made from fluid extracts which are made from crude drugs which are not uniform in strength."

This claim cannot be allowed as meeting the conflict with Rule 1. It is well known that plants vary in their composition at different times of the year; under different conditions of cultivation and growth; and under varying other conditions; hence the claim that alcoholic extracts of equal specific gravity insure uniformity of composition in active principles must be considered entirely illogical, especially since the exact nature of the active principles, if any be present, is unknown. If these are known their nature should be stated and tests for their identity be given. If they are unknown it is manifestly misleading to state that the preparation is of uniform strength.

It is evident that the Council cannot approve of the use of a preparation of unknown composition without satisfactory evidence of its value, especially when it is recommended in a variety of serious infectious diseases such as influenza and pneumonia. The mere fact that a small number of patients who have received the drug recover is no evidence of its curative value, and until carefully controlled clinical tests of the preparation are made, it is not entitled to the consideration of physicians.

Every Physician a Health Officer.—Hasty conditions of work, failure to employ laboratory means of diagnosis or to utilize available consultation facilities (especially in tuberculosis), and lack of training of medical practitioners in preventive medicine, are among the obstacles to further control of disease. There will not be complete success until means are discovered for enlisting every medical practitioner as a medical officer of health in the circle of his private or public practice, and for securing his services not only in the early and prompt detection of disease, but also in the systematic supervision during health of the families under his care, and in advising them as to habits or methods of life which are inimical to health.—Arthur Newsholme, *Commonhealth,* November-December, 1919.

Correspondence

THE DISCOVERY OF THE ANESTHETIC PROPERTIES OF COCAIN

To the Editor:—While preparing the report of the Committee on Local Anesthesia at the request of the Committee on Therapeutic Research of the American Medical Association and the Section on Laryngology, Otology and Rhinology for the New Orleans meeting, I had an interview with Dr. Carl Koller, who gave me some interesting history relative to the discovery of the anesthetic properties of cocain. I asked him to write out the facts. This he has done; and as a historical contribution to this most important therapeutic advance, I feel that it merits publicity.

EMIL MAYER, M.D., New York.
Chairman, Committee on Local Anesthesia.

Up to the year 1884, the only method of local anesthesia known was the Richardson ether spray, which acted by freezing, and which was used for opening abscesses and similar operations of short duration. The immediate cause for my approaching the question of local anesthesia was the unsuitability of general narcosis in the case of eye operations. For not only is the cooperation of the patient in these greatly desirable, but the sequels of general narcosis—vomiting and retching—are frequently such as to constitute grave danger to the operated eye; this was especially the case at the time mentioned, when narcosis was not so skilfully administered as it is now. My teacher Arlt in his operative courses used to dwell on this subject. Eye operations used to be performed without any anesthetic whatever. Searching for a local anesthetic, I had for about a year tried various substances for their anesthetic effect on the eye, performing many experiments on animals. Thus I tried chloral, bromid and morphin. Having no success, I had for the time given up these experiments, which, however, prepared me to grasp a local anesthetic whenever I should encounter one.

About that time my friend Sigmund Freud, the same man who later achieved fame as the author of psychanalysis, asked me to help him with experiments on the physiologic effects of cocain, when taken internally. We used to take some of the drug, of which only a very small quantity was in existence, and make various tests as to its effects on muscular strength, fatigue and the like. I noticed the peculiar benumbing effect on the tongue, a fact which was well known and which was noted in the textbooks on pharmacology and toxicology (Niemann, who isolated the alkaloid from the coca leaves mentioned it as far back as 1860), but the evident and important consequences of which had not been drawn. Like a flash it occurred to me that this was the local anesthetic for which I had been looking. I went at once to Stricker's laboratory of experimental pathology and tried it first on the eye of a frog, then on a guinea-pig, afterward on myself and then on patients. It is not correct, as said at the time, that I had discovered this important fact by accident, a drop coming by chance in my eye. If such had happened I would not have known that the eye was bereft of sensibility. I made the first publication relative to this subject, Sept. 15, 1884, at the meeting of the German Ophthalmological Society at Heidelberg; I was not present at this meeting; Dr. Brettauer of Trieste read a short communication for me and showed the experiments. Later I read a more elaborate paper before the Society of Physicians at Vienna. From the beginning I was aware that the new anesthetic had a wide application in other branches of medicine and surgery. Owing to my direct suggestion it was

tried in the field of laryngology and rhinology by Jellinek, who at that time was assistant to Schroetter in Vienna. The knowledge of the new remedy spread quickly, and before long it was in general use in all the specialties and in general surgery. CARL KOLLER, M.D., New York.

"'CHRISTIAN SCIENCE' AND SLOPPY THINKING"

To the Editor:—The editorial in THE JOURNAL of May 22, headed "'Christian Science' and Sloppy Thinking," was quite characteristic of the attitude of those who believe that material medicine is the only hope of mankind for the healing of disease. The claim that material medicine is a science, and the practice of it is scientific, brings a smile because all people are not credulous. The majority of people are quite aware of the fallibility of medical diagnosis of disease and the consequent failure of medicine to heal. Many people have been victims of mistaken diagnosis and are awake to the effort being made to make unlawful the treatment of all disease, except by doctors of medicine. They are also awake to the fact that an attempt to confer such a monopoly on that method of treatment is forbidden by our Constitution.

A prominent clergyman, managing editor of a well-known religious publication, was frank enough to say: "The reason why Christian Science is in the world is because the evangelical churches failed to preach and practice Christian healing as taught and demanded by Christ Jesus." An additional reason why Christian Science is in the world today, reinstating primitive Christianity and its correlative, the lost element of healing, is because of the failure of materia medica to be the healer of disease that it claims to be. The greater number of people in the world who call themselves Christian Scientists are so because of the failure of medicine to heal them. The writer is one of them.

The assertion that if the father in Newark, New Jersey, had called a physician his daughter would not have died of diphtheria, is a marked exhibition of medical assumption. The statistics supplied by the health departments successfully dispute this claim, for by far the greatest number of those who died of that disease had the care of a physician. A news item in the New York *World,* June 12, 1916, said: "A special inquiry by the Department of Health shows that the discovery and widespread use of diphtheria antitoxin since 1907, has not materially reduced either the prevalence of the disease or the percentage of deaths, particularly the last five years."

The world objects to polygamy because it views it as immoral, and the attempt to draw a parallel between it and Christian healing, is farfetched and is a direct affront to a large body of law abiding citizens. To draw such a parallel surprisingly rejects the healing work of the Master, who said (John 5:36): "The same works that I do, bear witness of me, that the Father hath sent me." The healing work of the Great Physician was scoffed at and rejected as the repetition of that work is being rejected today, and yet Jesus taught plainly (John 14:12), "He that believeth on me, the works that I do shall he do also." There is today no greater safeguard to the health and morals of the people than that which is based on the teaching of Christian Science and which is manifested through the practice of it, and this in the face of all statements to the contrary.

The admonition of "a Pharisee, named Gamaliel, a doctor of the law," is as much to the point now as it was the day it was uttered (Acts 5:38-39) "And now I say unto you, Refrain from these men, and let them alone: for if this counsel or this work be of men it will come to nought: But if it be of God, ye cannot overthrow it; lest haply ye be found even to fight against God."

Objection was made to "a religious cult with money and well organized publicity machinery behind it." What words, omitting the word "religious" could more accurately define and describe the status and activities of the allopath medical organization than the ones quoted? Why, then, the self-righteousness of the medical men? If the word "cult" is intended to refer to Christian Science, then it is proper to explain that the reason it is organized and active is because it is compelled to be so in order to defend the Constitutional right of its followers.

I shall appreciate the courtesy of your printing this letter, without comment, in the next issue of THE JOURNAL.

LEE WHITE, Chicago.
Christian Science Committee on Publication
for the State of Illinois.

[COMMENT.—Mr. White's letter justifies the caption of the editorial to which he objects; his arguments prove that the indictment "sloppy thinking" was amply justified.

Mr. White says: "The assertion that if the father in Newark, N. J., had called a physician, his daughter would not have died of diphtheria, is a marked exhibition of medical assumption." It certainly would be! But no such assertion was made. Where the father erred was in not giving the child the benefit of the best help that modern knowledge has to offer. Had the 9-year-old girl been buried beneath a load of bricks, even Mr. White would have suggested, we believe, that before giving the injured child "Christian Science" treatment—"absent" or "present"—the bricks should be removed. What Mr. White fails to realize is that a Klebs-Loeffler bacillus is just as material an object as a brick. It does material damage, it is true, not by its material weight, but by the equally material toxins it produces. It would be just as irrational to read Mrs. Eddy's "Scientific Statement of Being" to a child while bricks were permitted to remain on her mangled body as it is to read the same thing to a child whose system is being overwhelmed with toxins that can, at a certain stage at least, be neutralized. It is readily admitted that removing the bricks might not save the child's life, but such action would be the first thing to do.

Mr. White holds that the medical treatment of diphtheria is unsuccessful because "by far the greatest number of those who died of that disease had the care of a physician." More sloppy thinking! With equal accuracy—and sophistry—it could be said that practically all who die of diphtheria die while under "the care of a physician." By the same logic Mr. White could prove that a bed is the most dangerous place on earth because most people die in it. His argument is similar to that put out by other drugless cults who claim to have lost no patients during the influenza epidemic. The fact that these gentry cannot sign death certificates, and the further fact that even people who profess to rely on "Science and Health" usually call in a physician when their illness reaches a critical stage, are utterly ignored.

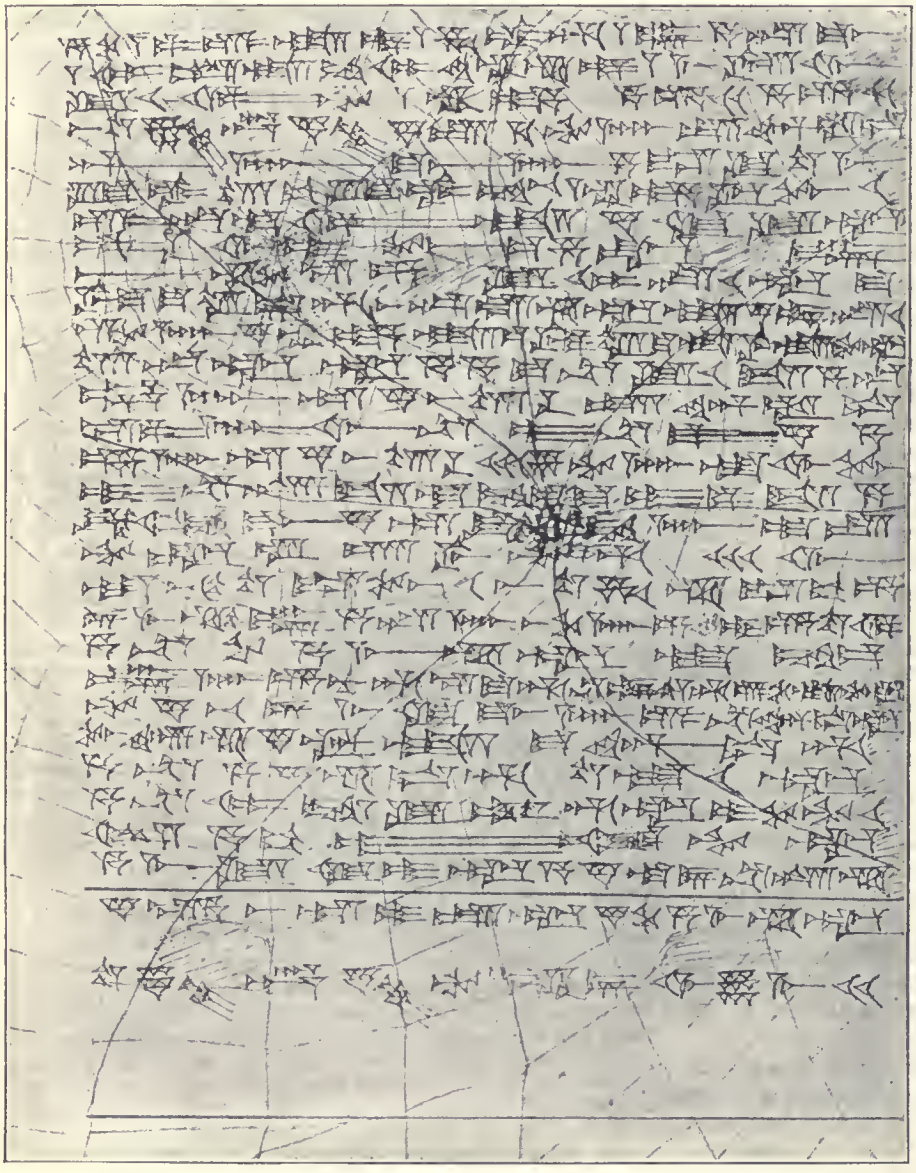
Mr. White objects to THE JOURNAL'S parallelism between the religious belief of the Mormons in polygamy and the religious belief of the Christian Scientists in the immateriality of disease. He says that the world objects to polygamy because it views it as immoral. True; and if the rank and file of the people were as well grounded in scientific knowledge and methods of thought as they should be, the world would view some of the bizarre conceptions of the Christian Scientists as immoral.

Finally, why does Mr. White ask us to print his letter "without comment"? Is it because he realizes the weakness of his cause, or is it, perchance, another exhibition of the growing intolerance of criticism of the organization he represents? It may or may not be true that this cult can exercise sufficient influence to close the pages of newspapers against criticism of their organization, and it may or may not be influential enough to bring about the discharge of newspaper men who happen to incur their displeasure. It does not, however, control the medical press.—ED.]

Miscellany

A UNIQUE BIRTHDAY TESTIMONIAL TO DR. WELCH

This facsimile reproduction is a message in cuneiform characters to Dr. William H. Welch on his seventieth birthday. The author is Paul Haupt, who, since 1883, has been Spence professor of Semitic languages and director of the Oriental Seminary of Johns Hopkins University. The original was written on antique, clay-colored paper, the third sheet bearing a key to pronunciation, and the fourth sheet a translation into English.



CUNEIFORM WRITING

The peculiar characters, called cuneiform writing, were first used in Mesopotamia, it is believed, about 4000 B. C. The Assyro-Babylonian, which grew from this, contained over 700 characters, partly alphabetic and partly syllabic. It is read from left to right. The characters were usually cut with a stylus in soft clay or stone, this governing their shape. The arrow heads are presumably due to the first impression of the point in the clay. Especially interesting to physicians is the Code of Hammurabi, who reigned in Babylon about 2250 B. C. Here occur such words as *asu*, physician; *asakku*, disease, and *marsu*, sickness. This code defined the legal status of physician and contained the first fee bill.

TRANSLATION

Message of Paul, the Son of Haupt, to the great Physician.
William Henry, the son of Welch:
A hearty, hearty greeting to my lord!
On the eighth day of the fourth month when thou wast born 70 years ago,
May the great gods decree length of days,
Health of mind and body for my lord.
May they let thee eat the plant of life
Whose name is A gray-haired man became young;
May they let thee bathe in the fountain
Which removes all uncleanness from thy body.
May they guard the life of my lord, and keep thee whole!
May thy heart ever be of good cheer!
The gates of the city in which thou wast born
Lift up their head;
The people of the city in which thou hast lived for 36 years
Look up to thee and rejoice.
Thou art a great monument of the Monumental City,
The founder of the new Temple of Health,
A great helper in the great war.
Thou has brought to America
The wisdom of the physicians in the countries across the sea.
Mighty kings have bestowed glorious insignia on thee,
Great seats of learning have honored thee,
Numerous bands of scholars have chosen thee as their leader,
They listen to thy wise counsel,
They love thee like a father.
We shall not look upon thy like again.
Written in the city of Ithaca in the land of America
On the seventh day of the fourth month in the year of our Lord 1920.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA: Montgomery, July 13. Chairman, Dr. S. W. Welch, Montgomery.

ARIZONA: Phoenix, July 6-7. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.

CALIFORNIA: San Francisco, June 28-July 1. Sec., Dr. Chas. B. Pinkham, 135 Stockton St., San Francisco.

COLORADO: Denver, July 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

CONNECTICUT: Hartford, July 6-7. Sec., Regular Board, Dr. Robert L. Rowley, 49 Pearl St., Hartford.

CONNECTICUT: New Haven, July 13. Sec. Eclectic Board, Dr. James Edwin Hair, 730 State St., Bridgeport. Sec. Homeo. Board, Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

DELAWARE: Wilmington, June 15-17. Pres. Medical Council, Dr. H. W. Briggs, 1026 Jackson St., Wilmington.

DISTRICT OF COLUMBIA: Washington, July 13-15. Sec., Dr. Edgar P. Copeland, The Rockingham, Washington.

FLORIDA: Eclectic Board, Jacksonville, June 18-19. Sec., Dr. G. A. Munch, 1306 Franklin St., Tampa.

FLORIDA: Regular Board. Jacksonville, June 14-15. Sec., Dr. Wm. M. Rowlett, Citizens Bank Bldg., Tampa.

GEORGIA: Atlanta, June 9-11. Sec., Dr. C. T. Nolan, Marietta.

ILLINOIS: Chicago, June 14-17. Director, Mr. Francis W. Shepardson, Springfield.

IOWA: Iowa City, June 16-18. Sec., Dr. Guilford H. Sumner, Capitol Bldg., Des Moines.

KANSAS: Topeka, June 15-16. Sec., Dr. H. A. Dykes, Lebanon.

LOUISIANA: New Orleans, June 10-12. Sec., Dr. E. W. Mahler, 141 Elk Place, New Orleans.

MAINE: Portland, July 6-7. Sec., Dr. Frank W. Searle, 140 Pine St., Portland.

MARYLAND: Baltimore, June 15. Sec., Dr. J. McP. Scott, 137 W. Washington St., Hagerstown.

MICHIGAN: Ann Arbor, June 8-10. Sec., Dr. B. D. Harrison, 504 Washington Arcade, Detroit.

MISSOURI: St. Louis, June 14-16. Sec., Dr. Geo. H. Jones, State House, Jefferson City.

NEBRASKA: Lincoln, June 9-11. Sec., Department of Public Welfare, Mr. H. H. Antles, Lincoln.

NEW JERSEY: Trenton, June 15-16. Sec., Dr. Alexander MacAlister, State House, Trenton.

NEW MEXICO: Santa Fe, July 12-13. Sec., Dr. R. E. McBride, Las Cruces.

NORTH CAROLINA: Raleigh, June 21. Sec., Dr. H. A. Royster, 423 Fayetteville St., Raleigh.

NORTH DAKOTA: Grand Forks, July 6-9. Sec., Dr. Geo. M. Williamson, 860 Belmont Ave., Grand Forks.

OHIO: Columbus, June 8-11. Sec., Dr. H. M. Platter, State House, Columbus.

OKLAHOMA: Oklahoma City, July 13-14. Sec., Dr. James M. Byrum, Mammoth Bldg., Shawnee.

OREGON: Portland, July 6. Sec., Dr. Urling C. Coe, 1208 Stevens Bldg., Portland.

PENNSYLVANIA: Philadelphia and Pittsburgh, July 6-10. Sec., Dr. Thos. E. Finnegan, State Capitol, Harrisburg.

RHODE ISLAND: Providence, July 1-2. Sec., Dr. Byron U. Richards, State House, Providence.

SOUTH CAROLINA: Columbia, June 22. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

SOUTH DAKOTA: Deadwood, July 13. Sec., Dr. Park B. Jenkins, Waubay.

TENNESSEE: Memphis, Nashville and Knoxville, June 11-12. Sec., Dr. A. B. DeLoach, 1001 Exchange Bldg., Memphis.

TEXAS: Galveston, June 22-24. Sec., Dr. Thos. J. Crowe, Trust Bldg., Dallas.

UTAH: Salt Lake City, July 5-6. Sec., Dr. G. F. Harding, 405 Templeton Bldg., Salt Lake City.

VERMONT: Burlington, June 29-July 1. Sec., Dr. W. Scott Nay, Underhill.

VIRGINIA: Richmond, June 22-25. Sec., Dr. J. W. Preston, McBain Bldg., Roanoke.

WASHINGTON: Seattle, July 6-8. Sec., Dr. Wm. M. O'Shea, 305 Old National Bank Bldg., Spokane.

WEST VIRGINIA: Charleston, July 13. Sec., Dr. S. L. Jepson, Masonic Bldg., Charleston.

WISCONSIN: Milwaukee, June 29-July 1. Sec., Dr. John M. Dodd, 220 E. Second St., Ashland.

WYOMING: Cheyenne, June 7-9. Sec., Dr. J. D. Shingle, Cheyenne.

Connecticut March Examination

Dr. Robert L. Rowley, secretary of the Connecticut Medical Examining Board, reports the written examination held at Hartford, March 9-10, 1920. The examination covered 7 subjects and included 70 questions. An average of 75 per cent. was required to pass. Of the 28 candidates examined, 21 passed and 7 failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Yale University	(1918) 90.6, (1919)	88.3
Bennett Medical College	(1914)	81.9
Bowdoin Medical School	(1919)	86.2
Johns Hopkins University	(1916) 81.9, (1919)	85.6
University of Maryland	(1918)	76.1
Harvard University	(1902) 79.4, (1903) 84.9, (1919)	87.9
Tufts College Medical School	(1919)	77.5
Albany Medical College	(1898) 75.2, (1917)	85.4
Columbia University	(1904) 86.1, (1918) 89.6, (1919)	80.7
Fordham University	(1917) 79, (1918)	77.3
Jefferson Medical College	(1915) 84.6, (1919)	75
Vanderbilt University	(1915)	78
FAILED		
Bennett Medical College	(1914)	66.8
Chicago College of Medicine and Surgery	(1914)	66.3
Boston University	(1919)	69.9
Tufts College Medical School	(1919)	71.8
Woman's Medical College of Pennsylvania	(1915)	74
Meharry Medical College	(1913)	69
Medical College of Virginia	(1917)	66.4

Massachusetts March Examination

Dr. Walter P. Bowers, secretary of the Massachusetts Board of Registration in Medicine, reports the oral, written and practical examination held at Boston, March 9-11, 1920. The examination covered 13 subjects and included 70 questions. An average of 75 per cent. was required to pass. Of the 29 candidates examined, 20 passed and 9, including 1 osteopath, failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Georgetown University	(1910)	75.2
University of Georgia	(1913)	83.2
Chicago Hospital College of Medicine	(1919)	76.4
Bowdoin Medical School	(1915)	75
Harvard University	(1914) 82.6, 86.2, (1918) 84.6, (1919) 83.7, (1920) 79.3, 82.2, 82.5	
Tufts College Medical School	(1914) 79, (1917) 77.1, (1919)	78.5
St. Louis University	(1916)	82.7
Washington University	(1910)	85.7
Columbia University	(1901)	77.4
University of Vermont	(1915)	87.1
Medical College of Virginia	(1917)	78.6
University of Toronto	(1913)	80
FAILED		
Baltimore Medical College	(1902)	67.1
Middlesex College of Med. and Surg.	(1919) 67.1, 70.6, 71.9, 73.2, (1920) 71.4	
Montreal School of Med. and Surg.	(1901) 64.6, (1919)	69.5

Rhode Island January Examination

Dr. Byron U. Richards, secretary of the Rhode Island State Board of Health, reports the written and practical examination held at Providence, Jan. 8-9, 1920. The examination covered 7 subjects and included 70 questions. An average of 80 per cent. was required to pass. Two candidates were examined and passed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
University of Maryland	(1917)	88.5
Vanderbilt University	(1912)	88.7

Book Notices

PASTEUR: THE HISTORY OF A MIND. By Emile Duclaux, Professor at the Sorbonne. Translated by Erwin F. Smith and Florence Hedges, Pathologists of the U. S. Department of Agriculture. Paper. Price, $5, net. Pp. 363, with illustrations. Philadelphia: W. B. Saunders Company, 1920.

Emile Duclaux, at the age of 19, entered the normal school in Paris, and came under the teachings of Louis Pasteur, under whose influence he remained until the death of the latter. "If Pasteur be an incomparable genius," says Dr. Erwin Smith, "Duclaux, at least, is his Boswell; but he is more than a mere Boswell, tagging around after a great man. He is, himself, a great man."

Duclaux's book, which is now presented in English for the first time, is more than a biography. There already exist excellent biographies of Pasteur; it is doubtful if biographic literature anywhere surpasses the life of Pasteur by his nephew, Paul Valery Radot. The present work is rather the history of Pasteur's influence on the development of the science of bacteriology and immunity. "I have desired, in the ensemble, as well as in the particulars," says Duclaux, "to give a genesis of his discoveries, believing that he has nothing to lose by this analysis, and that we have to gain." The book explains the origin of Pasteur's discoveries; their gradual development; the effect of discoveries made by others on Pasteur's work; famous controversies which arose on theoretical questions, etc. It is enlivened by scraps of con-

versation and with quotations from Pasteur's writings. It is illustrated with excellent reproductions of various photographs of Pasteur, and has an interesting appendix of brief biographic notices relative to various persons mentioned in the book.

As explained in the introduction, which includes an excellent brief biography of Duclaux, Dr. Erwin Smith began the translation, but eventually about two thirds of the translation from the French was made by Miss Florence Hedges. The whole was then worked over into its present English shape. This fact is mentioned, because the translation bears the marks of considerable unevenness. As pointed out by Tytler, in his famous Essay on the Principles of Translation, it is necessary, in order to produce an excellent piece of work, that the translator have equal facility with the two languages with which he works. That this facility was not always utilized is apparent from many sentences which appear in the latter part of the translation that are more French in their construction than English. Some examples follow:

> Such being the case, what one has the right to ask is why these ideas did not attract the attention of contemporaries to a greater extent.
>
> To make this idea acceptable to the illustrious practitioners, his colleagues in the Academy of Medicine, that they were responsible for the accidents which occurred to their patients, and that when there was a case of death by purulent infection in their service, or even merely a case of operative fever it was their fault, was a task that Pasteur had not ventured to assume, and yet one which he accomplished; because the new was certain to destroy the old, because it was only necessary to leave to itself the idea lodged in this Note in order to see it invade and overthrow everything.

However, these considerations will not weigh greatly against this book with any interested in the life of the great master, and in an appreciation of what his accomplishments have done for medical science. Duclaux's book presents these facts intimately and from the scientific point of view.

THE HYSTERIA OF LADY MACBETH. By Isador H. Coriat, M.D. Boards. Price, $1.25. Pp. 94. New York: Moffat, Yard & Co., 1912.

According to the author, Lady Macbeth is a typical case of hysteria. "She is not a criminal type or an ambitious woman, but the victim of a pathological mental dissociation, arising upon an unstable, day-dreaming basis, and is due [sic] to the emotional shock of her past experiences." It has become quite the thing with the Freudians to take the beautiful imaginary conceptions of the great artists, writers and dramatists and psychanalyze them into expressions of the libido; this Freud himself has done for Leonardo Da Vinci, Ernest Jones for Hamlet, and Mordell for virtually all of the great poets and writers. Hamlet, we are informed, is a case of the Oedipus complex, and now, Lady Macbeth, because of her somnambulism, is transferred to the group of neurotics. The analyses are invariably clever, but sometimes rather banal. We are informed, for example, that in the words "Out damned spot! Out I say." the mechanism is that of an unconscious and automatic outburst. This is the very apotheosis of erudition. When Shakespeare's doctor later states of Lady Macbeth, "This disease is beyond my practice," he expresses, says Coriat, the doubt of the medical profession toward these psychoneurotic symptoms until the advent of modern psychopathology. It would seem that we must add to the many encomiums already conferred on the world's greatest dramatist the highest achievement of all: He was the first great Freudian!

THE NATURAL HISTORY OF THE CHILD. A Book for All Sorts and Conditions of Men, Women and Children. By Dr. Courtney Dunn. Cloth. Price, $2 net. Pp., 316. New York: John Lane Company, 1920.

Strictly speaking, this is not a medical book, but rather an anthology of childhood collected from ancient and rare books, obscure pamphlets and papers. The material has been selected with excellent taste and with an intimate knowledge of the child. There are fourteen chapters, and they cover every phase of the child's life. Numerous quotations of a poetic and humorous character, and much of the folk lore and superstition attached to childhood are included. The book will be of interest to every one who is interested in or loves children—and who will admit that he is not?

Medicolegal

Definition of "Accident"—Rupture of Aorta

(E. Baggot Co. v. Industrial Commission et al. (Ill.), 125 N. E. R. 254)

The Supreme Court of Illinois says that the word "accident" is not a technical legal term with a clearly defined meaning, and no legal definition has ever been given which has been found both exact and comprehensive as applied to all circumstances. Anything that happens without design is commonly called an "accident," and, at least in the popular acceptation of the word, any event which is unforeseen and not expected by the person to whom it happens is included in the term. The words "accident" and "accidental injury," as used in the workmen's compensation act of Illinois, were meant to include every injury suffered in the course of employment for which there was an existing right of action at the time the act was passed; also to extend the liability of the employer to make compensation for injuries for which he was not previously liable and to limit such compensation. If an injury can be traced to a definite time, place and cause, and the injury occurs in the course of the employment, the injury is accidental within the meaning of the act, and the obligation to provide and pay compensation arises.

In this case a part of the employee's work consisted in turning one handle of a windlass in a hand derrick used in raising material to an upper story of a building, his last load weighing between 250 and 300 pounds. Nothing unusual happened while the work of lifting this last load was in progress. The work was heavy, but it was the same kind of work that the two men engaged in it had been doing for a couple of days. But after this load was landed this employee was seen to be spitting blood. About twelve days later he died. A necropsy disclosed a large longitudinal tear and several smaller transverse tears in the walls of the aorta. The court thinks that all the characteristics of an accident were present. The occurrence was sudden, unexpected, and undesigned by the workman. The circumstances were clearly such that the industrial commission was justified in finding that the hemorrhage was due to blood pressure intensified by vigorous muscular exertion. Relating the hemorrhage to physical exertion, rupture of the aorta by force from within was as distinctly traumatic as if the canal had been severed by violent application of a sharp instrument from without.

Druggists Changing Directions—Physician as Unfriendly Witness

(Marx v. Schultz et al. (Mich.), 175 N. W. R. 182)

The Supreme Court of Michigan, in reversing a judgment directed for the defendants and in ordering a new trial, says that the action was brought to recover damages suffered by the plaintiff on account of the death of his wife, alleged to have been caused through the negligence of the defendants, or of some of them. A physician, who was treating Mrs. Marx, had written a prescription for Fowler's solution of arsenic, directing the taking of three drops of it in water after meals, three times daily, which prescription had been sent to a drug store, the property of some of the defendants. There it had been filled, and the medicine delivered at the Marx home. The bottle bore an ordinary label, on which was the name of the physician, followed by the directions: "Teaspoonful in water after meals three times daily, 11-30-15." There was nothing to indicate the poisonous nature of the liquid. One teaspoonful was taken. The death of the patient occurred between nine and ten weeks later.

The physician's diagnosis corresponded to that of the county physician, who stated that the necropsy which he made was the basis for his opinion that she had died of chronic Bright's disease of from one to ten years' standing.

To a physician of twenty-five years' practice, who was a graduate of the University of Michigan and who stated that he had made a study of the effect of arsenic on the human body, was submitted a hypothetic question, which recited the

giving of the prescription, Nov. 30, 1915, for a skin rash, with directions to take three drops after each meal, which directions were by mistake changed at the defendants' drug store to read "one teaspoonful after meals"; that one teaspoonful was given to Mrs. Marx, according to those directions, and immediately thereafter she appeared to be in great pain, suffered inward convulsions, threw herself from one side to the other of the bed, and continually tried to vomit; that her whole body became greatly swollen, and her mouth and tongue so increased in size that she could hardly talk; that after Nov. 30, 1915, large ulcers came in her mouth and nose, her eyes were swollen, and liquid appeared therein, her appetite was poor, and she complained at times of pains about her heart and an irritable condition of her bowels, the movement of which was frequent, the substance passed being bloody and yellow; that she was delirious off and on from the time she received the overdose, and the general conditions named continued down to the time of her death, Feb. 7, 1916.

The witness, in answer to the question whether, in his opinion, such conditions would be caused by the overdose of Fowler's solution of arsenic which Mrs. Marx received, and would the overdose be the proximate cause of her death, answered: "Those symptoms are caused by an excessive dose of arsenic and probably would result in her death." The court is of the opinion that this testimony was sufficient to warrant the drawing of an inference favorable to the plaintiff sufficient to present the disputed question of fact—which should have been presented to the jury—as to the cause of the death of the plaintiff's wife. As to whether the testimony of the defendant's witnesses outweighed that of the plaintiff was a question for the jury to determine in the first instance.

Some question was also made by the plaintiff's counsel of the undue limitation by the trial court of the examination of the attending physician, who wrote the prescription, whom the plaintiff was practically required to call. An attempt was made to show certain incidents between the plaintiff and the physician, in order to make it appear that the physician had become adverse and unfriendly to the plaintiff's cause. The court is of the opinion that the judge should have been more liberal in allowing a showing of this character to be made, in view of the fact that the physician, being the attending physician, it was almost obligatory on the plaintiff's counsel to put him on the stand in order to make out his case.

Unlawful Practice of Medicine

(Black v. State (Texas), 216 S. W. R. 181)

The Court of Criminal Appeals of Texas, in affirming a judgment of conviction of defendant Black of unlawfully practicing medicine, for which he was fined $250 and sentenced to one day in jail, says that it was entirely undisputed that he had and maintained offices where he treated any and all persons who might apply to him for various and sundry disorders and diseases, for compensation; and that he had not registered with the district clerk of the county, as required by the provisions of Chapter 6, Title 12, of Vernon's Penal Code. That act, passed by the legislature in 1907, makes it unlawful for any one to practice medicine on human beings in Texas, without registering with the district clerk in the manner and form provided by said act. By the terms of Article 755 of said chapter, what is meant by "practicing medicine," within the proscription of said statute, is defined. Subdivision 2 of that article is: "(2) Or who shall treat, or offer to treat, any disease or disorder, mental or physical, or any physical deformity or injury, by any system or method or to effect cures thereof, and charge therefor, directly or indirectly, money or other compensation." This act has been held constitutional both by this court and by the Supreme Court of the United States. It has been held to apply to a masseur; also to an osteopath; also to one who claimed to cure by means of laying on of hands and prayer—and this wholly regardless of whether such persons claimed to be physicians and practitioners of medicine or not.

Society Proceedings

COMING MEETINGS

American Climatological and Clin. Assn., Philadelphia, June 17-19.
American Ophthalmological Society, Hot Springs, Va., June 15-16.
American Orthopedic Association, Toronto, Ont., June 7-10.
American Psychopathological Assn., Cleveland, O., June 5.
Arkansas Medical Society, Eureka Springs, June 8-9.
Canadian Medical Association, Vancouver, B. C., June 22-25.
Idaho State Medical Association, Coeur d'Alene, June 10-11.
Maine Medical Association, Augusta, June 29-30.
Massachusetts Medical Society, Boston, June 8-9.
Montana State Medical Association, Helena, July 14-15.
Nevada State Medical Association, Lake Tahoe, June 25-26.
New Jersey Medical Society, Spring Lake, June 15-17.
North Dakota State Med. Assn., Minot, June 15-16.
Southern Minnesota Medical Assn., Fairmont, Minn., June 28-29.

AMERICAN SOCIETY FOR CLINICAL INVESTIGATION

Annual Meeting, held in Atlantic City, N. J., May 3, 1920

The Senior Councilor, DR. ERNEST E. IRONS, Chicago, in the Chair

The Mouth as an Environment for Bacterial Growth

DR. ARTHUR L. BLOOMFIELD, Baltimore: The following organisms were introduced into the various parts of the upper air passages: *Sarcina lutea, B. coli, Staphylococcus albus, B. influenzae,* Friedländer bacillus and *Streptococcus hemolyticus.* A loopful of twenty-four hour growth on solid medium was placed on the tongue and the nasal septum, or introduced into a tonsil crypt, and cultures were made at various intervals to determine the rate of disappearance. The general result of these experiments was that the bacteria disappeared rapidly, as a rule in less than twenty-four hours. In no case was disease produced. The explanation for the rapid disappearance of the organisms was found to be the mechanical flushing action of the mouth secretions, in some cases assisted by the destructive effect of the saliva. The free surfaces of the normal mucous membranes of the upper air passages do not furnish an environment in which foreign organisms can colonize, and special circumstances are required before they take hold locally and produce disease.

DISCUSSION

DR. ALFRED F. HESS, New York: Some years ago I attempted to ascertain whether bacteria are carried from mouth to mouth in children of a hospital ward. In order to determine this I swabbed the throats of several children with fresh cultures of *Bacillus prodigiosus,* with the object of ascertaining whether this pigmented bacillus would be carried to the mouths of the other children. Although large amounts were used on the tongue and on the cheeks, it was found that it disappeared entirely within about forty-eight hours, and that it could not be found in the mouths of the other children. The experiment, therefore, was negative. It substantiated, however, the experience of Dr. Bloomfield.

DR. RUSSELL L. CECIL, New York: Dr. Bloomfield's experiments have an interesting bearing on some experiments which we have recently carried out on the effect of injecting virulent influenza bacilli into the nose and throat of healthy volunteers. If a virulent culture is used, symptoms usually appear in six or eight hours. The changes most commonly noted were headaches, rhinitis, sore throat, tracheitis, leukopenia and general malaise. None of the subjects had any fever.

Effect of Therapeutic Doses of Digitalis on the Contraction of Heart Muscles

DRS. ALFRED E. COHN and ROBERT L. LEVY, New York: That digitalis causes alterations in the heart resulting in changes in the form of the electrocardiogram is now well known. No evidence has been presented, however, to show that the amount of digitalis required—30 per cent. of a lethal dose—is beneficial, except in cases of fibrillation of the auricles in which block of auricular impulses, mainly through stimulation of the vagus nerves, takes place. A beneficial action must be based on the ability of the drug to increase the

volume output of the heart, and it must be able to do this in therapeutic doses, that is to say, in doses that influence the T wave of the electrocardiogram or reduce the rate in auricular fibrillation. We have accordingly injected this amount into the veins of dogs, eleven of which received the tincture of digitalis, and nineteen of which received g-strophanthin; and into cats, five of which received g-strophanthin, and nine tincture of digitalis. Alterations in volume output were studied in curves obtained by the use of the Roy and Adami myocardiograph. The curves represent longitudinal linear alterations in the form of ventricles, and under the conditions of cardiac contraction may represent changes in volume of the cavities and consequently of volume output.

The significant results concern the effect of these two drugs on the T wave and on the degree of contraction. The degree of contraction changed in the greater number of the thirty dogs that were studied; the T wave in more than half. In cats the T wave usually changed, the degree of contraction decreased in more than half. The effect on contraction differed, therefore, in cats and dogs. In seven dogs and thirteen cats the record of the blood pressure in the femoral artery was added to the other records. Except in one dog and four cats, the blood pressure usually rose. With tincture of digitalis a significant fall of pressure often preceded a rise.

Anesthesia and operative procedures, it was thought, might disturb the electrocardiogram. Experiments were therefore made on dogs in which electrocardiograms and blood pressure records were taken without an anesthetic and without operation. The electrocardiograms were taken in the usual way. The blood pressure curves were obtained in dogs previously prepared by a method described by Van Leersum. By this method a long stretch of one carotid artery was enclosed in a stretch of skin included between two parallel incisions. The tube containing the artery lay free of the neck, and was surrounded by a small rubber cuff. Water transmission to a mercury manometer permitted the taking of records. Minimum and maximum oscillations after the manner of Erlanger indicated systolic and diastolic pressures. It has been found in the few experiments that have so far been performed that T wave changes occurred uniformly and that the blood pressure usually rose, the increase varying from 20 to 66 mm. of mercury.

With doses of therapeutic range, equal to 30 per cent. of the calculated lethal dose, digitalis and strophanthin (1) increased the contractile function of the cardiac muscle, and by so doing increased the volume output. This effect supplies a firm basis for the statement that these drugs may exercise a beneficial action. (2) At the same time, the T wave is usually altered, and (3) there is a transient elevation of blood pressure.

Certain Differences in the Action of Strophanthin and Digitalis in Patients

Drs. Alfred E. Cohn and Robert L. Levy, New York: It is highly desirable to have for use in clinical medicine a safe, effective preparation of the digitalis series for intravenous use. The drug chosen was crystalline strophanthin, as it is a pure substance having definite chemical and physical properties. The crystalline substance employed was isolated from seeds of *Strophanthus gratus*, chemically identified, and biologically standardized by the cat method of Hatcher. The average cat unit was found to be 0.104 mg. per kilogram. For use in the clinic the crystals were dissolved in fiftieth molar phosphate solution with p_H 7.0, and autoclaved in hard glass ampules. In this manner alterations in reaction of the solution were prevented, and biologic potency was preserved. Equivalent amounts, in terms of cat units, of strophanthin by vein and of digipuratum by mouth were administered to patients. In this way a series of comparable observations both in the same and in different individuals was obtained. The strophanthin effects could then be viewed with reference to known and fairly constant digitalis standards. While the treatments were being given, electrodes leading to the string galvanometer were kept constantly in place, and curves were made at intervals of fifteen minutes during the first three hours, and then at half-hour intervals for the second three hours. Another electrocardiogram was usually made the same evening and once daily thereafter until the curve had resumed the form seen in the control. Strophanthin was given usually in two doses at an interval of one hour—the first of from 0.4 to 0.5 mg., the second of from 0.3 to 0.5 mg. Digitalis was administered in comparable doses from 0.7 to 1.0 gm. and at the same intervals in the same patient on different occasions. The giving of relatively large doses, as recommended by Eggleston, has been found feasible. Rarely has it been necessary in auricular fibrillation to give more than 1 gm. (10 cat units) to produce the desired effects.

No serious untoward effects were observed after strophanthin. The onset of abnormal rhythm, namely, ventricular premature beats and ventricular ectopic tachycardia, occurred in 52 per cent. of fibrillators and in 12.5 per cent. of the cases with normal rhythm. Such toxic effects occurred always within twenty minutes of the injection of the dose causing them, and disappeared within eight hours. Nausea and vomiting were noted in 10 per cent. of cases. Comparable doses of digitalis by mouth caused undesirable effects in a much smaller percentage of observations.

We would conclude: First, that crystalline strophanthin, dissolved in fiftieth molar standard phosphate solution and sealed in hard glass ampules, may be kept for at least six months without loss of biologic potency, and secondly, that comparison in patients of the effects of comparable doses of strophanthin by vein and digitalis by mouth showed that: (*a*) the action of strophanthin is more rapid and is of shorter duration; (*b*) the T wave of the electrocardiogram is less frequently altered by strophanthin than by digitalis, and (*c*) toxic effects, though not of serious import, followed more often after the injection of strophanthin than after the administration of digitalis.

The Effect of Foreign Protein Therapy in Lobar Pneumonia

Joseph L. Miller, M.D., Chicago: Fifteen consecutive patients with lobar pneumonia entering Cook County Hospital were treated by a single intravenous injection of typhoid vaccine. The dosage used was 30 millions, the minimum amount required to give a chill. All reacted by a rise in temperature and a leukocytosis. In nine patients the vaccine did not modify the course of the disease. In six, the patient was detoxicated following the injections. The pulse, temperature and respiration returned to normal, the cough and pleural pain subsided, and the patient stated that he felt much better. In three of the six cases the improvement was temporary, as after the lapse of from twelve to twenty-four hours the symptoms returned with unmodified severity. In three cases the detoxication was permanent; however, the patients had a moderate temperature for from three to four days, to the time at which the crisis would normally appear. They were, however, entirely free from evidence of intoxication. There was no relation between the severity of the chill, the temperature reaction and degree of increased leukocytosis, and the beneficial results of the vaccine.

Distribution of Carbon Dioxid Between Cells and Plasma

Drs. J. H. Means and L. W. Smith, Boston: The manner in which carbon dioxid is transported from tissues to lungs by blood has recently been the subject of considerable discussion. We have undertaken a study of the distribution of carbon dioxid between cells and plasma. Samples of blood were drawn from the arm vein or artery under oil, and analysis made of the carbon dioxid content, both of the whole blood and, after centrifugation, of the plasma, by the method and with the apparatus of Yandell Henderson. At the same time the proportion of cells to plasma in each sample was determined by hematocrit observations, and the relative amounts of carbon dioxid in the cells and plasma calculated therefrom. In a series of ten normal venous bloods, the total carbon dioxid varied from 50 to 60 per cent. by volume, the average being 55.2 per cent. by volume. The plasma of a unit of the same bloods contained from 31.1 to 40.8 per cent. by volume, the average being 35.3 per cent. by volume, while the cells contained from 17.2 to 24.9 per cent. by volume, the average being 20.1 per cent. by volume. In

four normal subjects, samples of arterial and venous blood were drawn within a few minutes of each other. The average amount of carbon dioxid in the plasma of a unit of the four arterial bloods was 35.3 per cent. by volume, and of the four venous bloods, 35.8 per cent. by volume. In the cells of a unit of the four arterial bloods, there was an average of 14.2 per cent. by volume of carbon dioxid, and in the cells of the four venous bloods an average of 21.5 per cent. by volume. In other words, the amount of carbon dioxid in the plasma of arterial and venous blood is identical, whereas, when blood is aerated in the lungs, an average of 7.3 per cent. by volume of carbon dioxid is lost from the cells. The transport of carbon dioxid, therefore, is accomplished by the cells, not by the plasma of the blood. In the venous bloods from nine patients with severe anemia, the average amount of carbon dioxid in the plasma of a unit of blood was 52.4 per cent. by volume, and in the cells, 5.8 per cent. by volume. The average total carbon dioxid of these bloods was 58.3 per cent. by volume. Therefore, in anemia the total amount of carbon dioxid in the blood is essentially normal; but in its distribution between cells and plasma, there is relatively less in the cells and more in the plasma than in normal bloods. This, however, is merely because of the smaller relative volume of cells in anemia. The average actual concentration of carbon dioxid in the cells of our fourteen normal venous bloods was identical with that of the bloods of our nine patients with anemia.

DISCUSSION

DR. FRANKLIN C. MCLEAN, New York: The results reported are apparently in confirmation of the considerations recently developed by L. J. Henderson, who has shown that the dissociation constant of oxyhemoglobin, as an acid, is about nine times that of reduced hemoglobin. Consequently, in passing through the tissues, and in losing oxygen, the concentration of hydrogen ions in the red cells tends to decrease. The equilibrium between the cells and plasma is maintained, in part at least, by the migration of carbonic acid from the plasma to the cells. It is not necessary, therefore, to assume from the observations here presented that a direct combination of hemoglobin and carbon dioxid is responsible for the increase in carbonate content of the cells.

DR. JAMES HOWARD MEANS, Boston: As far as we could discover, the carbon dioxid carrying power of the cells in anemia is identical with that of normal cells. The smaller amount of carbon dioxid carried by the cells in anemia is due to the smaller proportion of cells in a unit of blood. It is highly probable that the cells carry the carbon dioxid because of the increase in the acidity of hemoglobin when it takes up oxygen, with a resulting decomposition of bicarbonate and liberation of carbon dioxid, according to the formula of L. J. Henderson.

The Constancy of the Volume of the Blood Plasma in Disease

DRS. A. V. BOCK and G. R. MINOT, Boston: The vital red method of Keith, Rowntree and Geraghty was used to estimate the blood plasma volume in five normal and twenty-five abnormal individuals. The total blood volume was then calculated from hematocrit determinations. The pathologic conditions studied include extremes in content of total corpuscles, a wide range of total blood volumes, and cases with and without edema. The results indicate a remarkable constancy of plasma volume in disease comparable to that known to exist in the normal, namely, about 50 c.c. per kilogram of body weight. In conditions with edema and anasarca, it has been found that the blood plasma per kilogram of body weight is the same as in the absence of edema. After hemorrhage, dilution of the plasma volume tends to occur rapidly until the normal plasma level is reached, after which it remains fixed in amount. Previous figures concerning the blood volume in pernicious anemia and chlorosis, usually quoted in the literature, are too great. Variations in the total blood volume in disease are due chiefly to differences in total content of corpuscles. For example, a case of polycythemia vera, with a total of 75 trillion red cells in the body, was found to have essentially the same plasma volume in relation to the body weight as a case of pernicious anemia with a total of three trillion red cells. Certain exceptions to the proposition of a fixed plasma volume do exist, such as in hemorrhage and shock, edema of the lungs, after excessive sweating, in severe diarrhea, and probably as a result of changes in altitude. Emphasis has been placed on the importance of a proper tissue fluid reserve in order to keep the plasma volume at a physiologic level. There is a possible source of error in blood volume determinations that depend on dilutions of whole blood, or primarily on corpuscle content of the blood. Methods that determine the plasma volume directly seem to offer more accurate results than those demanding the use of whole blood.

The margin of error of the vital red method is such as to result in variations in duplicate determinations up to 10 per cent. The colorimetric reading, necessary for the determination of the plasma volume, may be difficult owing to a difference in color of the solutions. This difference is usually attributed to hemolysis, but spectroscopic examination of many specimens has failed to verify such an explanation. Cases of hypertension are likely to have plasma volumes on the lower limit of normal, as Dr. Rowntree suggests. As to the relation of blood volume to body surface, the formula of Dreyer as applied to man, $B.V. = \frac{B.W.^{0.72}}{0.67}$, gives a figure for the total blood volume greater than has been reported by any other method.

A Further Study of the Carotinoid Pigments in Human Blood and Tissues

DRS. ALFRED F. HESS and VICTOR C. MYERS, New York: Not only carotin is frequently present in human blood, but sometimes also xanthophyll, a carotinoid pigment of different solubility. These substances vary greatly in amount, but are found in the blood of most adults in such quantities as to discolor the plasma, but not the skin. As might be expected, they are present to a greater degree in the blood of adults than in that of infants, who are on a milk diet. Carotin has been found in the colostrum, and a trace of it has been noted in the plasma of a new-born infant. However, the blood of the mother may contain a considerable amount of this pigment and yet the blood of her new-born infant be free of it, showing that the pigment does not pass through the placenta.

These pigments do not discolor the sclera unless they are present in very large amounts, the antithesis of what obtains in relation to the bile. This is probably due to the fact that the bile injures the endothelium of the vessels and thereby leads to their permeability. Carotin seems to have a slight photodynamic effect, causing a mild desquamation of the skin where it is exposed to the light.

DISCUSSION

DR. ALFRED F. HESS, New York: I am unable to state in reply, to the questions asked, whether or not there is any relationship between freckles and the carotinoid pigments. It is, however, quite possible, especially in view of the photodynamic quality of the pigment. This entire question has a clinical point of view. Some patients who are diagnosed as having liver trouble and some metabolic disturbance are undoubtedly suffering from carotinoid pigmentation of the skin. Recently I saw a child who came under this category, and had been treated with calomel for a considerable period, in view of the fact that its liver was slightly large and its color slightly yellow. When the carotinoid food was removed from the diet, its skin became white.

High Protein Diets and Arteriosclerosis in Rabbits

DRS. L. H. NEWBURGH and THEODORE L. SQUIER, Ann Arbor, Mich.: In the studies dealing with the effect of high protein diets on the kidneys of rabbits, it was noted that the animals which ate such diets for a number of months showed at necropsy widespread arteriosclerosis of the aorta. It was further noted that the extent of the vascular disease was roughly proportional to the duration of the high protein feeding. In another group of animals fed a diet made of a mixture of dried powdered beef and bread flour in the proportion of 1:2, the notes dealing with the condition of the

aorta show that the aortas of two rabbits that lived on this diet four weeks and six weeks each presented a tiny patch of arteriosclerosis. Four animals that ate the diet for from three months to seven months possessed aortas that showed very many irregular slightly raised, partly ulcerated plaques and streaks, extending from the aortic valves to a short distance below the diaphragm.

The two obvious sources of error in assuming that the vascular lesions observed bear a casual relationship to the diet are, first, that arteriosclerosis may be a lesion of very frequent occurrence in laboratory rabbits; and second, that arteriosclerosis may be common in old rabbits and that the experimental rabbits in which the arteriosclerosis was found were old and would accordingly be expected to show a high incidence of the vascular disease. As a control for the first possible source of error we examined fifty-nine rabbits used in the laboratory for other purposes. The aortas of all of these rabbits, with two exceptions, were normal. In the aorta of each of these two rabbits we found a single very small sclerotic patch. The second possible source of error will not account for the vascular lesions found in the group of animals that ate the meat mixture, as these rabbits were not senile. The oldest was not older than 14 months when killed.

The microscopic appearance of the vescular lesions made it clear that we were dealing with true arteriosclerosis analogous to that which is commonly found in the human being. The proportionality existing between the length of the high protein feeding and the amount of vascular injury serves further to emphasize the view that the arteriosclerosis observed in rabbits that lived on high protein diets was directly or indirectly caused by these diets.

The Basal Metabolic Rate Before and After Surgical Treatment in Adenoma of the Thyroid With and Without Hyperthyroidism and in Exophthalmic Goiter

DR. WALTER M. BOOTHBY, Rochester, Minn: According to Plummer's classification there are two separate and distinct types of hyperthyroidism, each due to a different pathologic change in the thyroid gland: In the one type, the hyperthyroidism associated with the clinical syndrome of true exophthalmic goiter is always accompanied by diffuse hypertrophy and hyperplasia of the thyroid gland; in the other type the hyperthyroidism, not associated with this typical diffuse hypertrophy and hyperplasia, but with the occurrence of adenoma in the gland, is due to the adenoma, and the resulting syndrome is distinguishable from that occurring in true exophthalmic goiter.

The syndrome associated with the hyperthyroidism from adenoma of the thyroid is considered by Plummer as a distinct clinical entity and may be defined as a disease associated with adenoma, characterized by an increased basal metabolic rate excited by an excess of the normal thyroid hormone in the tissues. At about middle age the adenomatous tissue gradually begins to furnish an excessive amount of the apparently normal thyroid hormone (thyroxin-Kendall) and this produces the increased metabolic rate and intoxication clinically evidenced by nervousness, tremor, tachycardia, loss in strength and weight, and a tendency to hypertension, and in the later stages myocardial disintegration. The underlying cause or stimulus that activates the thyroid to adenomatous growth and oversecretion is not known.

Detailed metabolic rate and blood pressure studies are reported on seventy-five cases of adenoma with hyperthyroidism in which the average basal metabolic rate before treatment was + 35 per cent. and after operation + 7 per cent. Similar studies of 201 cases before treatment are also given in which the average basal metabolic rate was + 28 per cent. In contrast, the average basal metabolic rate in 167 cases of adenoma without clinical evidence of hyperthyroidism was + 2 per cent.; eighteen with an average basal metabolic rate before operation of — 4 per cent. remained virtually unchanged, — 8 per cent. as a result of thyroidectomy.

Three groups of exophthalmic goiter cases of varying degree of severity were studied. In thirty-six cases of the severest type the average metabolic rate before treatment was + 66 per cent; these patients were subjected to rest in bed and two ligations at an interval of a week or more; and within ten days after the second ligation the basal metabolic rate was + 50 per cent. These patients after three months' rest at home returned to the clinic and were found to have a basal metabolic rate of + 42 per cent., with corresponding clinical improvement; within two weeks after thyroidectomy these patients were reading + 19 per cent. In a second group, comprising fifty-two moderately severe cases, subjected to a single ligation and thyroidectomy from one to two weeks later, the basal metabolic rate before treatment was + 52 per cent.; in twenty-two of these cases the basal metabolic rate ten days after the preliminary ligation was + 41 per cent.; within two weeks after thyroidectomy the basal metabolic rate in the entire group had fallen to + 15 per cent. In fifty-two cases of mild exophthalmic goiter in which a primary thyroidectomy was performed, the average basal metabolic rate before treatment was + 36 per cent., and two weeks after operation was + 8 per cent.

DISCUSSION

DR. JAMES HOWARD MEANS, Boston: I agree that the importance of the metabolism determination in thyroid disease is about the same as the determination of the temperature in febrile diseases. It is proper now to say a word of warning in this matter. We could doubtless treat typhoid fever fairly intelligently without basal metabolism determinations. Nevertheless, if we recognize that the metabolic rate does not tell us everything about one case of exophthalmic goiter, we shall be very glad to have the accurate information of the degree of his hyperthyroidism that the metabolic rate gives us. Thus, if we keep in mind the limitations of this highly technical procedure, we shall find it exceedingly valuable in accurately following in a quantitative way the progress of the disease. In any given patient the pulse curve and metabolic curve are essentially parallel. Plotting from the same base line, we find that some patients have a relatively greater rise in pulse rate than in metabolism and vice versa.

Biologic Study of Hemolytic Streptococci from Throats of Patients Suffering from Scarlet Fever

DRS. A. R. DOCHEZ and WALTER P. BLISS, Baltimore: Utilizing the technic for streptococcus agglutination recommended by Dochez, Avery and Lancefield (*J. Exper. Med.* **30**:179 [Sept.] 1919), a series of twenty-five strains of *Streptococcus hemolyticus,* isolated from the throats of patients suffering from scarlet fever, were tested against Dochez and Avery's five type antistreptococcic serums of nonscarlatinal origin, namely, Types S 3, S 23, S 32, S 60 and S 84, and against four antistreptococcic serums made from strains isolated from patients with scarlet fever (Dochez and Avery's Type S 273, and the author's strains 23, 24 and 25). Twenty, or 80 per cent., of the twenty-five strains studied were agglutinated by all four antistreptococcic serums of scarlatinal origin, in most instances in as high dilution as the homologous organism, which averaged from 1:160 to 1:640. None of these strains of scarlatinal origin were agglutinated by the five antistreptococcic serums derived from strains of nonscarlatinal origin, except in the case of Serum Type S 84, a rabbit serum which showed a tendency to nonspecific agglutination of streptococci and agglutinated six of the twenty-five strains. On the other hand, only three of seventeen strains of nonscarlatinal origin isolated from throat cultures in tonsillitis, pus from abscesses, and blood cultures were agglutinated by these antistreptococcic serums of scarlatinal origin, and according to the history of these three cases they may have been either atypical scarlatinas or scarlatinal contacts.

From this study, therefore, it would appear that a great majority (80 per cent.) of strains of *S. hemolyticus* isolated from the throats of patients with scarlet fever belong to a specific biologic type as determined by the reaction of agglutination. It is possible that the heterogeneous strains found may be accidental dwellers in the throat, and that a more careful selection of colonies may reveal a still higher proportion of unit type organisms.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Review of Tuberculosis, Baltimore

April, 1920. **4**, No. 2

*Influenza and Tuberculosis. J. B. Anderson, Jr., and A. Peters, Jr., Loomis, N. Y.—p. 71.
*Use of Sodium Gynocardate "A" in Pulmonary Tuberculosis. M. Biesenthal, Chicago.—p. 84.
*Secondary Invaders of Tuberculous Lungs. J. N. Hayes, Pittsburgh. —p. 84.
Experimental Study of Action of Ultraviolet Light on Intradermic Tuberculin Reaction. E. Mayer, Saranac Lake, N. Y.—p. 100.
Classification to Facilitate Selection of Patients for Work in Tuberculosis Sanatorium. W. T. Cannon, New York.—p. 112.
Ideals in Treatment of Tuberculosis. S. A. Knopf, New York.—p. 118.

Influenza and Tuberculosis.—Anderson and Peters supplement a previous communication on epidemic influenza among patients and employees of the Loomis Sanatorium, with a further analysis of the histories of patients who had influenza before entering the sanatorium and a record of the incidence and fatality of this disease among former patients. They also give a critical review of recent literature on the subject. Of 1,227 traced former patients, seventy contracted influenza and sixteen died of the disease. Of 199 new patients admitted between Nov. 1, 1918, and Nov. 1, 1919, forty-two gave a definite history of influenza. Of these forty-two, eighteen knew they had tuberculosis prior to their influenza, while twenty-six gave a history of previous symptoms that were presumably tuberculous. In twelve cases the onset of tuberculosis was definitely postinfluenzal. The authors conclude that tuberculosis does not confer an immunity to influenza; that influenza is not less severe among the tuberculous; that among their own patients the case fatality was higher than among the general population; that among a certain number of individuals influenza marks the inception of pulmonary tuberculosis, and that to ignore and deny the possibility of pulmonary tuberculosis as a sequel is to defer unduly diagnosis and early treatment.

Sodium Gynocardate "A" in Treatment of Pulmonary Tuberculosis.—Sodium gynocardate "A" is a salt of chaulmoogra oil. It has recently been suggested as a possible remedy for tuberculosis. Biesenthal has employed it in treating ten patients. Not a single patient showed any improvement of signs or symptoms and there were no sputum changes from positive to negative. In two cases acute reactions followed the injections.

Other Bacteria in Tuberculous Human Lungs.—Hayes reports the bacteriologic findings from the study of the lungs of fifty-two tuberculous patients. A number of concomitant micro-organisms, *Streptococcus hemolyticus* and *S. viridans*, *Staphylococcus albus* and *S. aureus*, pneumococcus, *Micrococcus catarrhalis*, Pfeiffer bacillus, etc., were encountered. *Streptococcus hemolyticus* was found in a large percentage of the throats and washed sputums examined. It was also found at necropsy in the caseous areas and cavities of the same patient's lungs.

Annals of Surgery, Philadelphia

April, 1920, **71**, No. 4

*Treatment of Arteriovenous Aneurysms by Intrasaccular Method of Suture (Endo-Aneurysmorrhaphy); Special Reference to Transvenous Route. R. Matas, New Orleans.—p. 403.
*Arteriovenous Fistula; Analysis of 447 Cases. C. L. Callander, Baltimore.—p. 428.
Treatment of Malignant Tumors of Thymus Gland by Radium; Report of Nine Cases. H. H. Janeway, New York.—p. 460.
Malignant Disease of Lungs; Early Recognition and Progressive Development, as Studied by Roentgen Rays; Treatment. G. E. Pfahler, Philadelphia.—p. 472.
Circumscribed Panmural Ulcerative Cystitis. F. E. Keene, Philadelphia.—p. 479.
*Hypospadias; Operation of Bucknall. J. W. Churchman, New York. —p. 486.
Projectile Fractures of Long Bones. K. Speed, Chicago.—p. 493.
*Form of Splint Available in Treatment of Fractures of Neck of Femur. H. C. Masland, Philadelphia.—p. 501.
Anhydrous Cocain Spinal Anesthesia. J. R. Wells, Philadelphia.—p. 504.

Endo-Aneurysmorrhaphy.—Matas details personal experiences which illustrate the practical application of the intrasaccular method of suture which he devised and advocated for the cure of arterial aneurysms (endoaneurysmorrhaphy), and found equally advantageous in its cure of the most frequent types of the bivascular or arteriovenous aneurysms.

Arteriovenous Fistula.—The cases analyzed by Callander are taken from the literature. Although the name of the reporter is given in each instance, the bibliographic reference is otherwise incomplete.

Operation for Hypospadias.—Churchman reports a case of penoscrotal hypospadias cured by the operation of Bucknall. He also reviews all the operative procedure employed for these cases.

Splint for Fracture of Neck of Femur.—Masland's splint is made from bale strap iron bent to conform to the line of the trunk and the limb.

Boston Medical and Surgical Journal

May 20, 1920, **182**, No. 21

Doctors in Uniform. H. W. Dana, Boston.—p. 521.
Urologic Cases. W. C. Quinby, Boston.—p. 525.
Fat Transplantation After Excision of Cicatricial Contraction of Lower Jaw. W. R. Morrison, Boston.—p. 529.
*Case of Apparent Paradoxical Respiratory Arrhythmia of Heart. P. D. White, Boston.—p. 531.

Paradoxical Respiratory Arrhythmia of Heart.—A case is reported by White showing a decrease in ventricular pulse rate with inspiration and exercise instead of the normal increase. The apparent paradox was caused by the production of heart block by increase of auricular rate plus depressed auriculoventricular conduction.

Bulletin Johns Hopkins Hospital, Baltimore

April, 1920, **31**, No. 350

Venous Thrombosis, Pulmonary Infarction and Embolism Following Gynecologic Operations. H. H. Hampton and L. R. Wharton, Baltimore.—p. 95.
*Fate of Bacteria Introduced into Upper Air Passages. Reaction of Saliva. A. L. Bloomfield and J. G. Huck, Baltimore.—p. 118.
*Pyelitis, Ureteritis and Cystitis Cystica. V. C. Jacobson, Madison, Wis.—p. 122.
*Apparatus for Measuring the New-Born. A. H. Schultz, Washington, D. C.—p. 131.
Unusual Case of Tuberculous Salpingitis. J. P. Greenberg, Baltimore —p. 132.

Reaction of Saliva.—Study of freshly expectorated saliva from normal people made by Bloomfield and Huck shows that the reaction tested by the colorimetric comparison method may vary within considerable limits—6.0 to 7.3—although 80 per cent. of the specimens fell within the range of 6.6 to 7.1. The reaction varied in different individuals and in the same individual at various times apparently without any definite or constant relation to the time of day or to the ingestion of food or fluid. It was temporarily altered by mouth washes such as Dobell's solution, but only for a short time (thirty minutes). Internal administration of acid and alkali did not seem to influence the reaction of the saliva in any definite manner. Observations on a group of patients suffering from a variety of diseases showed no constant relation between the reaction of the saliva and any particular disease, although the variations covered a slightly wider range (p_H 5.8 to p_H 7.5) than was found in the case of the normal group.

Pyelitis, Ureteritis and Cystitis Cystica.—The condition described by Jacobson is a cystic inflammation of the pelvis, ureters and bladder. It occurs in persons of either sex, in 95 per cent. of cases in senile, arteriosclerotic individuals from whom a history of previous urinary inflammation or other disturbance can be obtained. Three typical cases are reported in detail, all in aged men, two of whom had a history of prostatic trouble and the third bilateral pelvic calculi. In one a double ureter was present. In view of the large number of cell "nests" of von Brunn in the ureter and bladder of senile individuals and the high incidence of urinary tract infections in the aged, Jacobson believes that cystic inflammation of these organs is relatively common in this class of patients.

Measuring the New-Born.—The apparatus designed by Schultz consists in principle of a horizontal board on which the baby is placed on its back, of one perpendicular board firmly attached to one end of the horizontal or base board, which has to be touched by the top of the head of the baby, and another (sliding) perpendicular board which can be brought into contact with the buttocks for the measuring of the sitting height or with the soles of the feet for measuring the standing height. The distance between these two perpendicular boards constitutes the required measurement and is read off from a scale attached to the horizontal board. The movable vertical board is mounted on a brass saddle, which slides on the horizontal board and holds the perpendicular board at right angles to the main axis of the base board. On each of the two lateral edges of the base board a brass strip is inlaid and one of these is ruled in millimeters from 200 to 650, zero being at the end of the base board where it meets the firm perpendicular board. The range of ruling is sufficient for measuring from the sitting height of a fetus at the end of the sixth month to the standing height of an exceptionally large new-born. The brass saddle rests with its lateral portions on the two brass strips; the center of the saddle is slightly raised to reduce friction to let only metal ride on metal. A small area on the edge of the saddle over the ruled brass strip, on a plane with the movable perpendicular board, is tapered to a knifelike edge to allow accurate reading of the scale.

Endocrinology, Los Angeles

January-March, 1920, **4**, No. 1

*Interrelation of Thyroid and Hypophysis in Growth and Development of Frog Larvae. E. R. Hoskins and M. M. Hoskins, Minneapolis.—p. 1.

Pituitrin Test. M. Ascoli and A. Fagiuoli, Catania, Italy.—p. 33.

Plea for Systematic Research Work in Anatomy, Normal and Morbid, of Endocrine System. J. A. Hammar, Upsala, Sweden.—p. 37.

*Epinephrin in Asthma. Case of Chronic Adrenalism. G. H. Hoxie and H. T. Morris, Kansas City, Mo.—p. 47.

*Influence of Thyroid Feeding on Physiologic Action of Pancreas. H. Hoshimoto, Tokio, Japan.—p. 56.

*Thyroid Diabetes. G. L. Rohdenburg, New York.—p. 63.

*Basal Metabolic Rate in Exophthalmic Goiter (1917 Cases); Description of Technic Used at Mayo Clinic. I. Sandiford, Rochester, Minn.—p. 71.

Structure of Thyroid and Its Qualitative Variations. V. M. Buscaine, Florence, Italy, and G. Vercellini, St. Paul.—p. 88.

Relation of Thyroid and Hypophysis to Growth and Development.—The Hoskinses found that a preparation of the anterior lobe of beef hypophysis, which contains some form of iodin, 1:200,000 of fresh substance, when administered to normal frog larvae will bring about a precocious metamorphosis, resulting in the production of frogs the size of which varies with the size of the larvae at the beginning of the experiment. Such frogs have little vitality. If permitted to remain exposed to the air they die and dry down almost flat, losing their shape and there remains but a very small percentage of the original volume. When the pituitary preparation was administered to thyroidless larvae which would otherwise have remained in the larval form more or less indefinitely, a beginning of metamorphosis occurred within twenty-four hours; it progressed somewhat more slowly than in the other experiments; but it ultimately became nearly complete by the time the animals were either killed or died spontaneously. The authors regard the results obtained as due to a stimulation of natural general metabolic processes, either directly or indirectly, but the exact nature of this action is not known. The effect is both progressive, as seen especially in the skeletal and cutaneous development, and retrogressive, as seen especially in the digestive tract and tail. It is very doubtful that the action of the anterior pituitary substance is due merely to its iodin content, although such may be the case. Other tissues with traces of iodin will not produce the same effect as the pituitary. It is quite possible that the initial stimulation in hypophysis feeding is exerted on the calcium and phosphorus metabolism as is indicated by skeletal changes in these experiments, although intestinal transformation also begins very early.

Chronic Epinephrinism.—The history is recorded by Hoxie and Morris of a case of six years' duration in which the patient had taken approximatey 7 c.c. of epinephrin daily, for the most part with a hypodermic needle. She had occasionally used morphin and chloroform. Sudden death occurred. Aside from a collapsed right lung and a beginning aortic sclerosis, the chief postmortem findings were congestion of the abdominal viscera, similar to that found in animals dead from epinephrin administration.

Effect of Feeding Thyroid on Pancreas.—Feeding dry-thyroid in dosage of 0.5 to 0.1 gm. to rats resulted in a marked decrease of the diastatic activity of the pancreas varying from 40 to 92 per cent. This was accomplished by a diminution of the acidophil granules of the pancreas cells. Large doses of thyroid were more effective than small, but the effects in different animals were variable. The diastase content of the intestinal juice was also decreased in some cases by the thyroid. In such positive cases the appetite was markedly depressed and the feces were soft; in extreme cases they contained considerable quantities of fat. Thyroid feeding frequently resulted also in marked enlargement of the pancreas. In such cases the pancreatic diastase was often decreased even when the amount of food consumed and the intestinal diastase were augmented. Hoshimoto stated that the decrease cannot be ascribed to general metabolic perturbation since it frequently antedated any evidence of such. It is rather ascribed to stimulation of diastase discharge from the pancreas.

Thyroid Diabetes.—Rohdenburg cites a family in which glycosuria was increased in intensity after oral administration of either thyroid gland or suprarenal. One member of this family was cured of his glycosuria after a partial thyroidectomy. Another patient who had previously had a portion of his thyroid removed for exophthalmic goiter developed glycosuria several years later. The glycosuria in this case also disappeared after extirpation of more of the thyroid gland.

Metabolism in Exophthalmic Goiter.—In 182 cases of exophthalmic goiter before any treatment was instituted the average metabolic rate was plus 51 per cent., with an average pulse rate of 115. In thirteen patients whose average metabolic rate, as outpatients, was plus 59 per cent., with an average pulse rate of 115, the average metabolic rate fell to plus 46 per cent., and the average pulse rate to 108 as a result of approximately one week's complete rest in bed. In five patients whose average metabolic rate, determined within two to five days after they entered the hospital, was plus 59 per cent., and the pulse 118, after a further rest in bed of approximately one week's duration there was a definite improvement in their condition, as shown by a fall in the metabolic rate to an average of plus 48 per cent. and pulse to 104. The effect of a single ligation was studied in sixteen cases. The basal metabolic rate taken after the patient had had several days' rest in bed and within five days before the first ligation was plus 54 per cent. and pulse 116. One week after the single ligation the average metabolic rate had decreased to plus 44 per cent. and the pulse to 112. The effect of the second ligation is likewise a general improvement in the patient's condition as evidenced by a decrease in the metabolic rate. In twenty-two patients there was an average decrease in the basal metabolic rate from plus 46 to plus 39 per cent., and in the pulse from 115 to 107 with a gain in weight from 46.4 to 54.5 kilograms in the determinations made a few days after the second ligation as compared with the data obtained after three months' rest at home and just previous to thyroidectomy. A definite improvement from thyroidectomy in those patients who had had two ligations and a three months' rest was shown two weeks following operation by a decrease in the basal metabolic rate from plus 39 to plus 16 per cent., and in the pulse rate from 107 to 89. In another group of nineteen patients with exophthalmic goiter in whom the preliminary basal metabolic rate varied between plus 13 and plus 50 per cent., giving an average of plus 31 per cent. with an average pulse of 104, and in whom primary thyroidectomy was done without any other preliminary treatment, except for a short rest in bed, the basal metabolic rate fell, about two weeks after operation, to plus 5 per cent. and the pulse to 48.

Journal of Bacteriology, Baltimore

March, 1920, **5**, No. 2

Some Bacteriologic Aspects of Dehydration. S. C. Prescott, Boston.—p. 109.
Report of Committee on Descriptive Chart for 1919. H. J. Conn, H. A. Harding, L. J. Klingler, W. D. Frost, M. J. Prucha and H. N. Atkins.—p. 127.
Classification of White and Orange Staphylococci. C. E. A. Winslow, W. Rothenberg and E. I. Parsons, New York.—p. 145.
Spectrophotometric Study of "Salt Effects" of Phosphates on Color of Phenolsulphonephthalein Salts and Some Biologic Applications. C. L. Brightman, M. R. Meachem and S. F. Acree, Syracuse.—p. 169.
*Modification of Loeffler's Flagella Stain. I. V. Shunk, North Carolina State College.—p. 181.
Bouillon Cubes as Substitute for Beef Extract or Meat in Nutrient Medium. Z. N. Wyant, East Lansing, Mich.—p. 189.

Modified Loeffler's Flagella Stain.—The modification of Loeffler's method proposed by Shunk differs from previous modifications chiefly in the use of a solution of anilin oil in alcohol (1:4) in connection with the ferric-chlorid tannic acid mordant which was Bunge's modification. By using one drop of this solution with about eight drops of the ferric tannate solution, applied together on the coverglass, all necessity of heating the mordant or the stain is obviated. The stain recommended is a special methylene blue made by adding an alcoholic solution of anilin oil (1:4) to Loeffler's methylene blue in the ratio of 1:10. The chief advantages of the process are said to be (1) its simplicity, (2) the use of solutions that keep well, (3) the use of all solutions at room temperatures, and (4) the high percentage of successful attempts, even in the hands of inexperienced students.

Journal of Urology, Baltimore

April, 1920, **4**, No. 2

*Physiologic and Pharmacologic Studies of Prostate Gland. 1. Effect of Prostate Feeding on Growth and Development of Tadpoles. D. I. Macht, Baltimore.—p. 115.
*Case of Congenital Stenosis of Both Ureteral Orifices. I. M. Wason, New Haven, Conn.—p. 123.
*Case of Lymphoblastoma (Lymphosarcoma) of Prostate. W. C. Quinby, Boston.—p. 137.
Liberation of Formaldehyd from and Decomposition of Anhydromethylenecitric Acid and Its Excretion in Urine, with Comments on "Citarin" and "Helmitol." P. J. Hanzlik, Cleveland.—p. 145.
Diagnosis of Chancroid and Effect of Prophylaxis on Its Incidence in A. E. F. J. E. Moore, Baltimore.—p. 169.
*Antiseptic Properties of Normal Dog Urine as Influenced by Diet. R. F. Hain, Baltimore.—p. 177.
Gun-Shot Wounds of Urethra. J. A. C. Colston, Baltimore.—p. 185.
*Epithelial Hyperplasia in Congenital Cystic Kidneys. C. A. McKinlay, New Haven, Conn.—p. 195.

Effect of Feeding Prostate.—The effect of feeding desiccated prostatic substance from various animals on the growth and development of a number of species of tadpoles was studied by Macht. It was found that prostate feeding tends to stimulate both the growth and metamorphosis of the larvae of the frog, toad and salamander. These observations speak in favor of an internal secretion of the prostate gland.

Congenital Stenosis of Ureteral Orifices.—Wason reports the case of a poorly nourished boy, 7 months of age, who was admitted to the hospital on account of diarrhea. Physical examination was negative. At necropsy there was found double hydronephrosis with dilated tortuous ureters which ended in cystic dilatations in the small vesical cavity. Grossly, the ureteral orifices were not visible; by serial section they were found to be stenotic and to measure from ⅛ to ⅙ mm. in diameter. In addition there was present a valve extending from the lower end of the verumontanum to the right urethral wall.

Lymphosarcoma of Prostate.—The early clinical picture in Quinby's case was essentially that of an acute infection, and this condition overshadowed the tumor growth which locally was of insignificant size and was interpreted only with difficulty on cystoscopic examination. Following this insidious origin, the early course and general malignancy was so great that death occurred four months after onset of symptoms. Three other cases of lymphosarcoma are recorded in the literature.

Influence of Diet on Antiseptic Properties of Urine.—Hain found that the antiseptic property of normal, drug-free dog urine toward *B. coli* can be controlled by regulating the diet and the quantity of water ingested. If a definite quantity of liver per kilogram of body weight per day, representing a food high in protein, be fed, the bactericidal property of dog urine is inversely proportional to the quantity of water ingested. If a constant quantity of water be given daily, the germicidal property of dog urine toward *B. coli* varies distinctly with the quantity of animal food high in protein, as liver, ingested. The urine of dogs fed on bread and milk is not germicidal toward *B. coli* or *Staphylococcus albus*. Dog urine has selective germicidal action on *B. coli* when the animals are fed on animal food high in protein, since many specimens from these dogs are fatal to *B. coli* but innocuous to *Staphylococcus albus*.

Epithelial Hyperplasia of Congenital Cystic Kidney.—A case of congenital cystic kidney is reported by McKinlay in which death occurred at the end of the third decade from arteriosclerosis and cerebral hemorrhage. Epithelial hyperplasia of the convoluted tubules with giant cell formation, dilatation of the tubules, papillomatous infoldings, and bud-like sprouts characterized the histologic picture. The epithelial changes were not unlike the pictures that have been described for compensatory hyperplasia in the kidney. It is suggested that the changes in the epithelium and the tubules themselves are expressions of compensatory effort on the part of an organ whose functional capacity has been reduced by primary cystic change.

Medical Record, New York

May 22, 1920, **97**, No. 21

Evaluation of Recent Investigations Concerning Water Metabolism of Body in Relation to Digestive Disturbances and Functions of Blood. J. C. Hemmeter, Baltimore.—p. 857.
*Splenomegalic Hemolytic Jaundice; Case of Congenital Type. C. L. McVey, Oakland, Calif.—p. 864.
Prophylaxis and Treatment of Gallstone Disease. S. Weiss, New York.—p. 869.
Humped, Hooked and Bulbous Noses; Etiology and Treatment. W. W. Carter, New York.—p. 872.
Remarkable Vitality in Larva of an Insect—Alaus Oculatus. R. W. Shufeldt, Washington, D. C.—p. 874.

Congenital Splenomegalic Hemolytic Jaundice.—McVey's patient was aged 18, a female, with a wholly negative family history. Her disease was discovered in the course of a routine examination made on all entrants at the University of California. Her only symptom was lassitude. The principal blood findings were: hemoglobin, 55 per cent.; erythrocytes, 2,400,000; leukocytes, 8,900; poikylocytosis and anisocytosis; increased fragility of red cells.

Nebraska State Medical Journal, Norfolk

April, 1920, **5**, No. 4

Surgical Diagnosis; Appendicitis and Gallbladder Disease. A. D. Munger, Lincoln.—p. 93.
Diagnosis of Prostatic Hypertrophy. E. G. Davis, Omaha.—p. 100.
*Duodenal Ulcer in Child. G. W. Covey, Lincoln.—p. 104.
Examination of Large Bodies of Men for Tuberculosis. W. N. Anderson, Omaha.—p. 106.
Legitimate Rôle of Diagnostic Laboratory. H. E. Eggers, Omaha.—p. 109.

Duodenal Ulcer in Child.—Covey's patient was only 4 years old. The symptoms were typical. The diagnosis was confirmed by roentgen-ray examination.

New York Medical Journal

May 22, 1920, **111**, No. 21

Theory of Pneuma in Homer. J. Wright, Pleasantville, N. Y.—p. 881.
Re-Education of Hemiplegics and Their Physiotherapeutic Treatment. P. Kouindjy, Paris.—p. 884.
Osler: Comments and Cullings. H. S. Anders, Philadelphia.—p. 887.
*Etiology of Neurotic Symptoms in Child of Eight. A. Stern, New York.—p. 889.
Stammering. E. Tompkins, Pasadena, Calif.—p. 900.
Venereal Problems in Navy. J. A. McGlinn, Philadelphia.—p. 896.
Group Study from Viewpoint of Internist. O. S. Wightman, New York.—p. 899.
Unity of Action of Nerves, Circulation and Respiration. P. A. Kane, Chicago.—p. 904.

Neurotic Symptoms in a Child.—When Stern first saw his patient, he suffered from a tic involving the facial muscles, the head, the right arm and the right leg. These symptoms

dated back to the age of 6. He suffered also from fear, manifested mainly in his attitude toward his boy companions and his father. The first symptom which the patient showed was a cackling or crowing sound emitted on all occasions. This continued more or less intermittently for about eighteen months and was then augmented by the development of grunting or growling sounds which then supplanted to a great extent the former symptom. Blepharospasm and facial grimaces appeared, with the tic mentioned above. Stern presents his findings on psychanalysis of this patient and concludes that it was a psychoneurosis.

Northwest Medicine, Seattle

April, 1920, **19**, No. 4

Technic of Whole Blood Transfusions; Value in Association with Surgical Procedures in Treatment of Pernicious and Other Severe Anemias. N. M. Percy, Chicago.—p. 87.
*Partial Splenectomy In Treatment of Hemolytic Anemias. Experimental Study. W. C. Speidel, E. Hoff and D. H. Nickson, Seattle.—p. 94.
Treatment of Syphilis in A. E. F. J. G. Strohm, Portland.—p. 97.
Diagnostic Significance of Disturbances of Sensation from a Neurologic Standpoint. G. E. Price, Spokane.—p. 98.
Morphin Treatment of Eclampsia. D. L. Martin, San Francisco.—p. 101.

Partial Splenectomy.—Work on the dog has convinced the authors that partial splenectomy is a comparatively simple operation in the dog, that hemorrhage is readily controllable and healing occurs by primary intention. A partial splenectomy done in five cases was accompanied by a distinct polycythemia.

West Virginia Medical Journal, Huntington

April, 1920, **14**, No. 10

Tumors of Breast from Standpoint of Surgeon with Limited Equipment. J. Schwinn, Wheeling.—p. 361.
*Effect of Achondroplasia on Menstruation, Report of Two Cases. J. L. Miller, Thomas.—p. 366.
Prostatectomy. T. K. Oates, Martinsburg.—p. 368.
Pellagra. O. T. Hines, Huntington.—p. 369.
Pulmonary Tuberculosis. C. R. Woolwine. Davy.—p. 372.
Extra-Uterine Pregnancy, Report of Forty-Seven Cases. C. F. Hicks, Welch.—p. 376.

Effect of Achondroplasia on Menstruation.—The characteristics common to Miller's cases were: both patients presented the typical appearance of achrondroplasia; both had mothers slightly under the normal female stature, but perfectly normal in every other way; both were members of large families, their brothers and sisters being normal; no history of other dwarfs in either family, and no evidence of thyroid trouble in either patient or any member of their respective families. One patient, aged 26 years, began menstruating at the age of 2 weeks and continued regularly at twenty-eight day intervals until the age of 24 when she went into the menopause with characteristic nervous and physical phenomena of this condition in the normal female. Pubic hair appeared at about 5 or 6 years of age and at the same time the facial appearance became that of a mature adult. The second patient, aged 25 years, had no indication of the menstrual flow until 21, though for several months preceding the flow there was a sort of general malaise for a few days at from four to six week intervals. Development of the breasts, and pubic and axillary hair appeared about the twelfth or fifteenth year.

Wisconsin Medical Journal, Milwaukee

April, 1920, **18**, No. 2

Need of Complete Medical Course at State University. C. R. Bardeen, Madison.—p. 449.
Effort Syndrome Among Drafted Men at Recruit Depot. L. M. Warfield, Milwaukee.—p. 453.
Incidence of Heart Lesions in Military Service. O. E. Lademan, Milwaukee.—p. 456.
*Suggestions for Treatment of Fracture of Radius and Ulna at Middle Third. C. H. Lemon, Milwaukee.—p. 465.

Treatment of Fracture of Radius and Ulna at Middle Third.—Lemon treats all these fractures, without exception, in a supine position with the palm of the hand up so that a plane passed horizontally through the arm and hand would divide the arm and hand into anatomically correct position of an anterior and posterior surface. In 90 per cent. of the cases he has found plaster of Paris to be the most efficient dressing. The cast is doubly reinforced at the point of fracture and overcorrected, that is, slightly bowed in the direction of extension to the thickness of the plaster, over the site of the fracture. Plaster of Paris should not be used in the treatment of these cases as a primary dressing. It will lead to disaster. For the first four or five days during which the swelling will reach its height, ordinary coaptation splints may be used, the point opposite the fracture being doubly padded to produce overcorrection, and for this primary it is not necessary in my experience to use a splint which extends beyond the elbow joint, but at the end of five days, when the swelling is absolutely under control and when it has usually begun to recede, to treat these cases with a splint or any form of apparatus which does not extend above the elbow joint up the arm to at least one third of its length, Lemon says is to be guilty of gross error.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

April 24, 1920, **1**, No. 3095

*New Views on Pathology, Diagnosis and Treatment of Gastric and Duodenal Ulcer. A. F. Hurst.—p. 559.
*Surprises in Diagnosis. E. L. Spriggs.—p. 563.
*Results of Peptone Treatment of Asthma. A. G. Auld.—p. 567.
*Myoclonic Form of Epidemic Encephalitis. P. Boveri.—p. 570.

Gastric and Duodenal Ulcer.—Hurst is convinced that there is one type of stomach in which a gastric ulcer will develop and another type which is likely to lead to ulceration of the duodenum, if the necessary exciting causes are present, but the latter will not give rise to ulceration at all in an individual with the average normal type of stomach. He believes also that the association of chronic appendicitis with both acute and chronic gastric and duodenal ulcer is too common to be a coincidence, and the greatly diminished tendency to relapse, especially of acute ulcers, following removal of the appendix without interfering with the ulcer, shows that the appendicitis is the primary condition. It probably leads to ulceration in much the same way as the first of the two channels described in connection with dental infection. He is convinced that the tendency to develop a duodenal ulcer is increased by excessive smoking; the nicotin apparently acts through the autonomic nervous system, and increases the hypertonus and hypersecretion of the stomach.

Value of History in Diagnosis.—The diagnoses made in 500 cases are analyzed by Spriggs with reference to their correctness. By means of the history, symptoms, signs, and general condition of the individual patient, an accurate diagnosis was made in 40 per cent. of 500 patients. In over half of the series of 500 cases the preliminary clinical diagnosis was modified or changed after routine investigations had been made.

Peptone Treatment of Asthma.—This treatment has been instructive in respect of the grouping of asthmatic cases. Two main groups occur which show no tendency to pass into each other. One group comprises such as quickly respond to the treatment, and the effect is more or less lasting, the recurrences being infrequent and milder in character. The other group is resistant, and is subdivisible into such as are totally resistant and those in which, by careful immunization, the disease may be largely overcome. Cases of each group are reported in illustration of the treatment and its results.

Myoclonic Epidemic Encephalitis.—Two cases of epidemic encephalitis are reported by Boveri in which the symptoms were not lethargy, but excitement, delirium and myoclonic contractions.

May 1, 1920, **1**, No. 3096

*Bronchiectasis. A. J. Jex-Blake.—p. 591.
Epidemiology of Phthisis. W. Gordon.—p. 594.
*Antimony Intravenously in Filariasis. L. Rogers.—p. 596.
Cycloplegia in Routine Refraction Work. N. B. Harman.—p. 598.
Treatment of Malaria. W. S. Dawson.—p. 600.
Case of Tuberculous Meningitis with Complete Recovery. H. Barber.—p. 601.

Bronchiectasis.—Among 29,700 patients admitted to the Brompton Hospital during the last twenty years a clinical diagnosis of bronchiectasis was made in 567, or 1.9 per cent. Jex-Blake is of the opinion, however, that bronchiectasis was present in fully 5 per cent. of the patients admitted. The primary disorder from which it resulted in 105 fatal cases so far as could be judged from the histories and postmortem examinations was: chronic bronchitis, 41 cases; pleurisy or pneumonia, 27 cases; bronchial obstruction by a new growth, 27 cases; by foreign body, 6 cases; by aortic aneurysm, 3 cases; by syphilitic stenosis, 1 case. The most interesting of the complications of bronchiectasis is intracranial abscess, fifteen instances of which occurred in 108 fatal cases of the disease. The abscesses were cerebral in nine instances, cerebellar in three, both in two, and in one case meningitis and ependymitis were present, but no intracranial abscess was located. The abscess was single in nine patients, multiple in six, and in one instance from twenty to thirty abscesses were present throughout the brain. In addition two cases of secondary intracranial new growth were recorded in this series: one patient had a primary new growth at the root of the left lung, with secondary deposits in the pancreas and brain; the other a primary endothelioma of a pulmonary alveolus compressing the left bronchus, with secondary growth in the brain. Apart from these intracranial complications, the common complications of bronchiectasis are inhalation or aspiration bronchopneumonia, empyema, gangrene and abscess of the lung, and old or recent pulmonary tuberculosis. The most frequent causes of death were: bronchopneumonia, 34 cases; exhaustion, 34 cases; exhaustion and asphyxia, 8 cases; intracranial abscess, 15 cases. The pathogenesis, symptoms, diagnosis and treatment are discussed in detail.

Antimony in Filariasis.—The results recorded by Rogers appear to indicate that intravenous injections of soluble antimony salts have a definite effect in greatly reducing or causing the disappearance of the filarial embryos from the peripheral blood, presumably as a result of the destruction of the adult filaria, as the effect may last in some cases in an increasing degree for several months after cessation of the treatment. Moreover, clinically favorable results have been obtained in a few cases of filarial fever and elephantiasis. Rogers cautions, however, that as a rather long course of intravenous injections of a highly toxic drug is required to produce this effect, the new method of treatment requires care in its use, and much further experience will be necessary before its precise value can be decided.

Bulletin of Naval Medical Association of Japan, Tokyo

February, 1920, No. 27

*Typhoid and Paratyphoid Triple Lipovaccine or T, A, B-Lipovaccine. K. Ujiie.—p. 1.
*Therapeutic Effect of Lemongress Oil on Skin Diseases Caused by Animal Parasites. S. Takasugi.—p. 2.
*Case of Erytbrocytosis. T. Kanematsu.—p. 3.

Triple Typhoid and Paratyphoid Vaccine.—Ujiie has prepared a triple lipovaccine of typhoid and paratyphoid A and B bacilli by mixing their agar culture first with lanolin and, then, when the mixing was complete, with liquid paraffin. Compared with normal vaccine the lanolin paraffin vaccine has stronger local reaction and lower toxicity. The protecting power for guinea-pigs, protecting substance and agglutinin in the blood serum of inoculated rabbits appear later than in the normal vaccine, but their level is higher and their existence longer. In comparison with the sweet oil vaccine it has the disadvantage of having stronger local reaction and higher toxicity. It has, however, the advantage of being prepared more easily and of being superior as to protecting power for guinea-pigs, and in agglutinin and protecting substance in the serum of inoculated rabbits, while there is no substantial difference between these two vaccines in their capacity for producing complement binding substance.

Lemongrass Oil a Parasiticide.—According to Takasugi, lemongrass oil has a specific beneficial effect on skin diseases caused by animal parasites. Among volatile vegetable oils lemongrass oil has the most toxic effect on insects. The principal toxic ingredient against insects in lemongrass oil appears to be citronella. No insects intoxicated by volatile vegetable oils beyond a certain limit can survive.

Erythrocytosis.—The number of the red blood corpuscles in Kanematsu's case was always greater than 8.2 millions, with many corpuscles slightly deformed and a hemoglobin index of about 0.65.

Japan Medical World, Tokyo

March 13, 1920, **10**, No. 11

Influence of Starvation on Cerebral Cortex. S. Okazaki.—p. 225.
Changes in Thymus that Occur in Infectious Diseases. K. Takeuchi.—p. 226.

March 20, 1920, **10**, No. 12

Toxin and Antitoxin of B. Influenza. Y. Watanabe.—p. 245.
Treatment of Laryngeal Tuberculosis with Autogenous Serum. U. Yoshii.—p. 245.
Serology of Semen. F. Ishiwara.—p. 245.
Anthropology of Civilized Man. Arthur Macdonald.—p. 246.

March 27, 1920, **10**, No. 13

Changes in Thymus in Infections Diseases. K. Takeuchi.—p. 265.

Lancet, London

April 24, 1920, **1**, No. 17

*Higher Fungi in Relation to Human Pathology. A. Castellani.—p. 895.
Maternity and Child Welfare Work. H. C. Cameron.—p. 901.
*Treatment of Syphilis by Antisyphilitic Serum of Query. J. Dobriansky and T. Thompson.—p. 903.
*Recurring Sarcoma of Ileum. W. H. Battle.—p. 905.
Infantile Diarrhea and Vomiting. G. D. Sherwood.—p. 906.
*Heart-Block: Twenty Cases. J. Strickland Goodall.—p. 909.
Congenital and Hereditary Defects in Recruits. J. S. Manson.—p. 909.
Three Cases of Rupture of Spleen. C. M. Plumptre.—p. 911.
Congenital Malformation of Large Intestine. H. H. Gellert.—p. 911.

Intestinal Fungi in Man.—The so-called intestinal mycoses, discussed by Castellani are: (1) thrush; (2) bronchomycoses; (3) tonsillomycoses; (4) certain mycoses of the nervous system and organs of special sense; (5) certain mycoses of the urogenital system.

Query Serum in Treatment of Syphilis.—Query serum is prepared by inoculating monkeys with the filtered cultures of the organism of syphilis on bouillon. When the serum of the monkeys gives a strong positive Wassermann reaction, the animals are bled and the serum is collected and preserved in ampoules. The authors report three cases treated with Query's serum after complete failure of the recognized methods of treatment to give relief from symptoms. The relief of symptoms was marked. The cases were: (1) gummatous ulcers of the leg of long standing with hyperkeratosis and deafness; (2) tabes dorsalis with pronounced ataxic symptoms; (3) tabes dorsalis with intractable lightning pains.

Recurring Sarcoma of Ileum.—Battle's patient, a girl, aged 8, had two attacks of intussusception. At operation no tumor was found, nor did the sarcoma develop at the site of either of the attacks of intussusception. In the second attack a thickening was found, of an inflammatory character, at the apex of the intussusception, but when operation was performed five and one-half months later the growth had not increased but diminished in size. The tumor encircled the small bowel, but did not quite occlude its lumen. The mesenteric glands were enlarged over a large area. The portion of gut affected by the growth was excised and the incision carried into the mesentery so as to remove as many glands as possible, and an end-to-end anastomosis was carried out. The glands were much too numerous for a complete operation. The liver was normal. The growth was a round cell sarcoma. Coley's fluid was used for three months. There was some reaction. Another operation was done in 1916. As a resection of the growth involved division of the bowel close to the ileocecal valve, it was thought best to close both ends and join the lower end to the ileum by lateral anastomosis to the lower part of the cecum. Many glands were scattered about the mesentery The patient was first seen in December, 1913. In March, 1920, there was no evidence of recurrence. The patient had grown considerably and enjoys good health.

Heart Block.—The main points brought out by Goodall are: (1) the relative infrequency of a rheumatic or syphilitic history; (2) the almost invariable association of the condition with mitral regurgitation; (3) the tending to sudden death on gastric distension or exertion; (4) the occurrence of Stokes-Adams "fits" when the heart block is complete; (5) the frequency of pain as a symptom; (6) the possibility of the condition being transmitted from mother to child; (7) the ability of some patients to work or even to stand severe operations.

May 1, 1920, **1**, No. 18

*Higher Fungi in Relation to Human Pathology. A. Castellani.—p. 943.
*Pellagra Outbreak in Egypt. 1 Pellagra Among Ottoman Prisoners of War. A. D. Bigland.—p. 947.
*Intracardiac Pressure as a Standard in Cardiotherapy. I. Harris.—p. 954.
*Two Cases of Intramedullary Tumor of Spinal Cord; Operation. A. Feiling.—p. 957.
Novocain Anesthesia: Disadvantages from Surgical Standpoint. G. H. C. St. G. Griffiths.—p. 960.

Treatment of Tenia Imbricata Infestation.—The best routine treatment employed by Castellani for this disease is resorcin dissolved in compound tincture of benzoin (resorcin, 2 drams; compound tincture of benzoin, 1 dram). It is interesting to note that resorcin in ointment or in alcoholic solution has practically no action, and that compound tincture of benzoin alone has also practically no action, but when the resorcin is dissolved in the tincture good results are obtained.

Etiology of Pellagra.—Bigland claims that there is some evidence to show that pellagra is a syndrome which occurs most often in the underfed, using the expression in its scientific sense, and sometimes in the well fed. This syndrome may vary in character, according as the food deficiency is from without or from within. Just as perilobular cirrhosis of the liver may occur in those who have drunk spirits to excess and in those who have never had a drop of alcohol in their lives, due, as it is supposed, to some derangement of the intestine, so may pellagra occur in the underfed and in the well fed for a similar reason. In the treatment of these patients Bigland has used to good effects Fowler's solution in increasing doses, epinephrin and a liberal increase in diet.

Intracardiac Pressure and Heart Failure.—Harris points out that two factors are concerned in the production of heart failure: the condition of the heart muscle and the intracardiac pressure. A moderate intracardiac pressure acting on a damaged heart might suffice to produce heart failure. An abnormally high intracardiac pressure acting on a healthy muscle should, theoretically at any rate, also be able to induce heart failure. To remedy such an abnormal condition either of two courses is open: decrease the intracardiac pressure or strengthen the heart muscle. Heart failure must be divided into two distinct types, with a characteristic group of symptoms for each. One type is commonly met with in young people with a moderate degree of hypertrophy of the left ventricle, the arterial blood pressure, which is never unduly high with these patients, becoming lowered along with failing compensation; the heart is dilated and the pulse frequency high. The most striking feature of this type of heart failure is the normal condition of the arteries and the peripheral circulatory apparatus in general. The other type of heart failure is common in patients who show either pronounced hypertrophy of the left ventricle or sclerosis of the heart muscle with a high arterial blood pressure. The most striking feature in this form of failing heart is the sclerosis of the arteries and the general pathologic condition of the peripheral circulatory apparatus. Digitalis is indicated in cases which show the first type of heart failure. The dose can be regulated by taking as a guide the state of the intracardiac pressure. In the second type of heart failure digitalis is not indicated. In the first type of heart failure the ideal treatment is one which lowers the intracardiac pressure and at the same time leaves the arterial pressure unaltered. Caffein seems to have all the properties required. Unfortunately, many patients cannot take caffein for any length of time on account of the nervous excitability which this drug induces. Atropin, by increasing the pulse frequency, diminishes considerably the intracardiac pressure. It is a good plan to treat the patient alternately with caffein and atropin. As soon as the pulse rate is considerably increased the intracardiac pressure falls proportionately. Small doses of digitalis are useful now, the drug to be continued till there is evidence of a considerable rise in intracardiac pressure.

Tumors of Spinal Cord.—The tumor in one of Feiling's cases was a psammoma of eight years' duration, the tumor in the second case was a glioma with symptoms of acute onset. The clinical course of each case is discussed in detail.

Medical Journal of South Africa, Johannesburg

February, 1920, **15**, No. 7

*Case of Diffuse Endothelioma of Pia-Arachnoid. J. H. H. Pirie.—p. 157.
Case of Lipodystrophia Progressiva. L. Leipoldt.—p. 161.
Case of Muscular Tremor (War Neurosis) Cured by Hypnotism after Three Years. H. Goodman.—p. 164.

Endothelioma of Pia-Arachnoid.—A correct diagnosis was made in Pirie's case, and appropriate palliative operative measures were followed. The diagnosis was tumor in the region of the cerebellopotine angle, probably on the left side. A decompression operation was performed. The lateral ventricles were drained at the same time. The patient survived the operation for a few days. There was a diffuse meningitis-like thickening of the pia-arachnoid due to an infiltration by endothelial cells. These were also found to have densely infiltrated several of the nerve roots, while columns of them could be traced from the pia into the brain substance, particularly the cerebellum and pons.

Tubercle, London

January, 1920, **1**, No. 4

Tuberculosis Problem in Life Assurance. O. May.—p. 161.
Probability Diagnosis of Phthisis. D. M. Barcroft.—p. 171.
Diagnosis of Pulmonary Lesions in War Time. T. Campbell.—p. 173.

February, 1920, **1**, No. 5

Treatment of Pulmonary Tuberculosis by Surgical Intervention. H. M. Davies.—p. 209.
*Dispensary Treatment of Phthisis. What It May Achieve. H. A. Ellis.—p. 219.

Dispensary Treatment of Phthisis.—From a four years' study of tuberculosis in a county of about 125,000 people, Ellis concludes: (1) The dispensary system, properly carried out, should be the main first line of defense against tuberculosis, as being both essentially efficient and economic. (2) Sanatoriums for early cases are both valuable and necessary as a direct aid to dispensary treatment. (3) The whole question of the theories of advanced tuberculosis should be reconsidered. (4) An effort should be made to find out how much acute pulmonary tuberculosis exists (an almost incurable condition, killing usually within twelve months of first symptoms). (5) The reason for the failure of early notification should be investigated. (6) The present form of statistics should be revised; as at present published they are useless for comparison purposes.

March, 1920, **1**, No. **6**

Etiology of Silicosis. E. L. Middleton.—p. 257.
*Relation Between Valvular Disease of Heart and Pulmonary Tuberculosis. G. T. Calthrop.—p. 263.

Relation Between Valvular Disease and Pulmonary Tuberculosis.—Calthrop has worked through the records of 1,097 postmortem examinations made at the City of London Hospital for diseases of the chest between 1889 and 1919. These represent cases of pulmonary tuberculosis and valvular disease of the heart. These 1,097 cases showed tuberculosis of the lungs or valvular disease of the heart or both; 713 showed tuberculosis only; 355 showed valvular disease only; twenty-nine showed both. The preceding histories had been as follows: rheumatic fever, five cases; rheumatic, scarlet and typhoid fevers, one case each; histories not definite for classification, twenty-one cases. The cardiac lesions were distributed as follows: mitral lesions, fifteen cases; mitral and aortic lesions, nine cases; aortic lesions only, nine cases.

Bulletin de l'Académie de Médecine, Paris

March 23, 1920, 83, No. 12

*Work of the American Red Cross in France. M. Letulle.—p. 272.
*Influence of Calcium on Glycosuria. A. G. Phocas (Athens).—p. 284.
Reproductive Forms in Man of the Spirochete of Relapsing Fever. Ardin-Delteil and Derrieu.—p. 286.

Work of the American Red Cross in France.—Letulle gives a detailed account of the work accomplished by the American Red Cross in France since the United States' entry into the war. The vote expressing grateful appreciation by the Académie was mentioned in the Paris Letter, page 1339.

Influence of Calcium on Glycosuria.—Phocas ascribes to restoration of the normal balance between the sodium ions and the calcium ions the subsidence of the glycosuria on a strict milk diet. This, and the disappearance of the glycosuria, in experimental glycosuria, after injection of calcium chlorid, and other experiences of the kind, suggest that calcium salts might be preferable to sodium bicarbonate in treatment of diabetes. The nine cases he reports here seem to sustain this view. He chose lime water for the purpose, theorizing that any excess of calcium would aid in oxidation processes, instead of checking them as seems inevitable with the carbon in sodium bicarbonate.

March 30, 1920, 83, No. 13

*Treatment of Lethargic Encephalitis. A. Netter.—p. 303.
*Starvation of Pigeons Fed with Hulled Rice. A. Lumière.—p. 310.
*Syphilis of the Heart. C. Oddo and C. Mattei.—p. 313.
Case of "Automatic" Sculpture. Laignel-Lavastine and Vinchon.—p. 317.
Prophylaxis of Tuberculosis among Children in Rennes District. Follet.—p. 319.

Treatment of Epidemic Encephalitis.—Netter comments on the analogy between this disease and epidemic poliomyelitis, although they are separate entities. Treatment along the same lines is indicated for both, that is, intraspinal injection of convalescents' serum for its specific, and hexamethylenamin for its general bactericidal action, with a fixation abscess to reenforce the natural defensive forces. However, he says, the time has not come yet for intraspinal serotherapy as the presence in the blood of antibodies neutralizing the virus has not yet been demonstrated with the encephalitis, as it has been demonstrated for poliomyelitis. Another reason is that the virus is in the nerve centers only for a brief period in poliomyelitis, while this may keep up for three months in the epidemic encephalitis, and we do not know how early it appears in the blood in the latter. He gives the hexamethylenamin by the mouth in fractioned doses in treatment of all meningitic conditions and poliomyelitis, and commends it for epidemic encephalitis although not absolutely certain of its efficacy as yet. He knows of a case in which arsphenamin treatment was tried with disastrous effect. On the other hand, jaborandi or pilocarpin seems to aid by promoting elimination of the virus through the saliva as in rabies; in 4 of his 72 cases the salivary glands were swollen, and exaggerated salivation was manifest in a number of others. He gives epinephrin with the jaborandi to counteract its depressing effect. In the 27 patients treated with injection of 1 c.c. of turpentine, an abscess developed in 19 and all these recovered except one pregnant woman. In 13 of the cases the condition was so grave that hope had been abandoned. In 14 of the 19 cases reacting with abscess production, the encephalitis was of the myoclonia type. In 25 grave cases in which no attempt had been made to induce the fixation abscess, more than 50 per cent. died. Hippocrates noted that those who escaped the "lethargus" were generally those who had developed a suppurative process, and when Fochier applied the turpentine abscess as a therapeutic measure, he explained its efficacy by its attracting the virus to the spot. Netter ascribes it to a stimulating action on the organs which provide the natural means of defense; myelocytes appear in the blood, demonstrating the participation of the bone marrow. It is probably, he remarks, by a similar mechanism that vaccines, serums and nucleinates exert their action. Another patient with extremely grave epidemic encephalitis recovered after the development of a spontaneous deep abscess in the buttock.

Rôle of Vitamins in Nutrition.—Lumière concludes from the death of pigeons fed on polished rice that they starve to death from lack of appetite, and that this is the result of stagnation of the ingested rice from lack of secretions to aid in digesting it and passing it along in the alimentary canal. The digestive and mucus glands seem to require for their physiologic functioning the stimulns from substances in the hulls of rice. The vitamins, consequently, seem to serve as stimulants for the external secretions. This conception of the rôle of the vitamins throws light on many obscure phenomena.

Syphilitic Pericarditis.—Oddo and Mattei describe a case of sudden pericarditis and asystolia in a man of 54 in the second stage of syphilis. The condition improved under neoarsphenamin, but the four injections in a little more than a month may have been a factor in the fatal pulmonary edema which developed then, about three months after the first heart symptoms. It is safer to restrict treatment to mercury in these cases.

Bulletin Médical, Paris

April 3, 1920, 34, No. 19

*Surgical Scarlet Fever. Hutinel.—p. 323.

Surgical Scarlet Fever.—Hutinel relates that there have been 139 cases of scarlet fever in the surgical wards of the Children's Hospital at Paris in the last few years. It retards the healing of the operative wound or burn and almost invariably entails suppuration and a serious general condition. In several of the twelve cases of severe burns, the injury had resulted from mustard plasters applied to chest and back. One child had cast off the mortified tissues from such a burn when scarlet fever developed and the granulations became necrotic. The results are especially disastrous when the scarlet fever develops after an operation for harelip or cleft palate; the tissues become necrotic, and the operation not only is a total failure but conditions are so modified that it is more difficult to attempt it again later. Closed lesions, like fractures or tuberculous processes, escape this evil influence from the scarlet fever; it seems to be only the open lesions that suppurate. His description of the dire influence of scarlet fever as a complication of an operation suggests that no pains should be spared to ward it off. This could be accomplished by isolating the child for six or seven days before attempting a plastic operation, and continuing the isolation afterward until the wound has healed. After this has occurred the danger from intercurrent scarlet fever is materially less.

Bulletins de la Société Médicale des Hôpitaux, Paris

Feb. 20, 1920, 44, No. 7

Lethargic Encephalitis. Courcoux and others.—pp. 223, 230, 232, 237, 244, 246, 260, 262.
Jaundice after Arsphenamin Treatment is Due to Syphilis of the Liver. G. Milian.—p. 226.
Encephalomalacia with Leukocytosis in the Spinal Fluid, Simulating Lethargic Encephalitis. E. Baudouin and P. Lantuéjoul.—p. 241.
*Isolated Paralysis of Serratus Magnus. Villaret and others.—p. 248.
Malarial Hemiplegia. P. Descomps and Quercy.—p. 255.
Paralytic Reaction of Small Arteries in Serum Sickness. G. Etienne and G. Richard.—p. 257.
*Epidemic Hiccup. H. Dufour.—p. 263.

Isolated Paralysis of the Serratus Magnus.—The case reported by Villaret and his co-workers, they say, is the forty-second to be recorded. In their case the paralysis followed difficult labor in which the woman kept pulling on the head of the bed with her hands.

Epidemic Hiccup.—Dufour ascribes the persisting hiccup with fever to the prevailing epidemic of encephalitis. He knows of eight cases of the kind, and in one case the phase of hiccup was followed by myoclonia and other symptoms of epidemic encephalitis with stupor and death. In the other cases the hiccup subsided in from one to four days either spontaneously or under various measures, such as sedatives, to check the tendency to spasms, or repeated lavage of the stomach.

Feb. 27, 1920, **44**, No. 8

Alternating Scoliosis with Sciatica. Ducamp and Carrieu.—p. 265.
Epidemic Encephalitis. H. Claude. and others.—pp. 267, 269, 275, 279.
*Pseudomalarial Gonococcemic Fever. M. Bloch and P. Hébert.—p. 277.
Isolated Congenital Dextrocardia. Laubry and Esmein.—p. 281.
*Induced Typhoid Abscesses. F. Rathery and Bonnard.—p. 285.

Gonococcemia Simulating Meningococcemia.—Bloch and Hébert report a case of febrile gonococcemia of the pseudomalarial type with arthralgia and eruption which simulated the clinical picture of meningococcemia but showed no response to antimeningococcus serotherapy. A vaccine was then prepared with the diplococcus cultivated from the blood, and immediate improvement in the above symptoms followed its subcutaneous injection. The vaccine, however, had no effect on the urethritis and epididymitis of the chronic gonorrhea.

Induced Typhoid Abscess.—In one of the two cases reported the abscess developed three weeks after an appendicectomy at the site of the incision during the course of typhoid. In the other case the abscess developed at the points where turpentine had been injected in typhoid to induce a fixation abscess, twenty-seven days before, but there had been no reaction at the time. The patients were girls of about 16. In the discussion that followed this report, Widal mentioned cases of typhoid abscesses developing at the points where caffein or saline had been injected during typhoid, and related that a Paris physician had recently been summoned to court because two of his patients developed abscesses at the points where camphorated oil had been injected by a trained nurse. Netter testified on his behalf that abscesses are liable to develop notwithstanding scrupulous antisepsis.

Grèce Médicale, Athens

July-October, 1919, **21**, Nos. 8-10

*Tuberculosis in Greece, 1899-1914. P. J. Rondopoulos.—p. 41.
*Traumatic Insufficiency of Aortic Valves. S. Livieratos.—p. 53.
The Leukocytosis in Typhus. G. J. Stefanopoulo.—p. 61.

Tuberculosis in Greece.—Rondopoulos cites official statistics which show a total death rate from tuberculosis during the last sixteen years in the twelve largest towns of Greece of 3.21 per thousand inhabitants. This is one seventh of the total mortality, and it has been increasing in the last few years. He ascribes this to the return of tuberculous emigrants, especially from America.

Traumatic Valvular Disease.—Livieratos reviews the literature on this subject and reports two cases in which previously healthy men of 42 and 38 after a physical effort or contusion developed symptoms of aortic insufficiency. In the younger man the traumatism was insignificant, merely stooping to pick up a pen. He perceived at once a strange sound, starting in the epigastrium and spreading, as he said, to the left ear, but there was no sense of oppression, no pain and no dyspnea or tachycardia until several months later. The aortic insufficiency became very pronounced by the end of the tenth month, completely incapacitating him. In this case the murmur was the first and for a time the only symptom of the lesion of the aortic valves. Livieratos compares these cases with those on record, including Hektoen's case.

Journal de Médecine de Bordeaux

April 10, 1920, **91**, No. 7

Necropsy of a Violator of a Young Girl. Pitres and Landc.—p. 167.
Acute, Diffuse, Epidemic Encephalomyelitis. Creyx.—p. 171.
*Scrofulous Keratitis of Vascular Type. Bonnefon.—p. 173.

Vascular Keratitis.—Bonnefon recalls that normally the cornea is a tissue entirely deprived of blood vessels. If blood vessels occur under pathologic conditions they may be either part of a process of attack or of defense. Scrofulous keratitis differs from phlyctenular keratitis in that the initial nodules, the phlyctenules, are absent, but instead an early vascularization indicates that the cornea is the seat of a pathologic process. This vascularization, associated with local and general symptoms of scrofula, will furnish the diagnosis. The affection left to itself progresses rapidly, with various alternations in the intensity of the painful symptoms. It ends in sclerosis if the vascularization is not arrested. This can be readily brought about, Bonnefon finds, by means of the galvanocautery.

Médecine, Paris

March, 1920, **1**, No. 6

*Present Status of the Pathology of the Circulatory Apparatus, Blood and Kidneys. P. Ribierre.—p. 325.
*Third Heart Sound. C. Lian.—p. 333.
*Functional Valvular Insufficiency. C. Esmein.—p. 336.
*Clinical Value of Viscosimetry of the Blood. O. Josué.—p. 341.
*Angina Pectoris. L. Gallavardin.—p. 344.
*Intermittent Claudication. J. Heitz.—p. 348.
*Sphygmomanometry. Mougcot and R. Giroux.—p. 350.
*Familial Hemophilia. P. E. Weil.—p. 354.
Diagnosis of Aleukemic Lymphadenia. P. Harvier.—p. 359.
*Renal Infection of Intestinal Origin. A. Lemierre.—p. 361.
The Prognosis in Acute Nephritis. P. Merklen.—p. 365.
*Uremia in Chronic Nephritis. Pasteur-Vallery-Radot.—p. 368.
Medical Indications for Blood Transfusion. Ribadeau-Dumas.—p. 373.
Treatment of Grave Forms of Cardiac Insufficiency. Leconte.—p. 375.
*Extrasystolic Arrhythmia. E. Donzelot.—p. 379.
*Paroxysmal Tachycardia. E. Donzelot.—p. 379.
*Paroxysmal Hemoglobinuria. L. Giroux.—p. 381.

Pathology of the Cardiovascular System and of the Kidneys.—Ribierre expatiates on the necessity for giving our patients the advantages of the newer methods of exploration, and urges group acquisition of apparatus for electrocardiography, orthodiagraphy, etc. He remarks parenthetically that in all Paris there are only two public hospitals now equipped for electrocardiography, and these owe it to the private initiative of their chief of the service. He suggests that medical societies might acquire equipment of the kind in smaller centers, accessible to the general practitioner, and appeals to the profession at large to plan to continue in some way the special laboratories and special centers which the medical department of the French army organized during the war, and which proved of such inestimable advantage. The information to be derived from the Ambard ureosecretory index is also extremely valuable, but it requires such accuracy that the findings are reliable only when entrusted to experts, another argument in favor of the diffusion of special laboratories.

Among the recent works on the pathology of the kidneys, Widal and his followers attribute all permanently high arterial blood pressure to kidney lesions. But Ribierre protests against this as too sweeping, or at least premature. High blood pressure in the forties does not always yield proof of a renal origin, not even at necropsy in cases of fatal meningeal hemorrhage. A suprarenal origin has not been demonstrated as yet, and the cases of supposed acute war nephritis sometimes proved free from any kidney lesion of appreciable kind. Such facts testify that we have much to learn yet in regard to the pathology of the kidneys.

The Third Sound of the Heart.—Lian warns that the third sound of the heart is a physiologic phenomenon, and must not be confused with the abnormal second sound with mitral stenosis.

Functional Valvular Insufficiency.—Esmein remarks that the auriculoventricular valves are more liable to become insufficient from dilatation of the ventricles than the other heart valves. Although this insufficiency theoretically would seem to aggravate the insufficiency of the heart, in reality it does not have this effect but rather lightens the work of the heart, throwing more of the task on parts less used. With extreme dilatation of the heart, digitalis may fail, and nothing but exceptionally active heart stimulants, such as ouabain will answer. He advocates giving it by the vein, saying that this should be the routine procedure with functional insufficiency developing suddenly, when digitalis is sure to fail. There is no relief here except from venesection and ouabain.

Viscosimetry of the Blood.—Josué explains that the findings are unreliable unless the blood has first been rendered incoagulable.

Angina Pectoris.—Gallavardin states that there were only 7 women among his 100 cases of angina pectoris, and only 2 of the total series were in hospital patients. About 4 per cent. of the patients were under 40, and 29 per cent. over 6. There was no reason to suspect syphilis in 63 per cent. In addition to the classic measures, he advises moderate and repeated doses of neo-arsphenamin or mercury or iodid by the

rectum on the faintest suspicion of syphilis, adding that digitalis may render useful service when symptoms of insufficiency of the left ventricle complicate the clinical picture, or theobromin, when there is renal insufficiency.

Intermittent Claudication.—Heitz expatiates on the importance of the Pachon oscillometer in estimation of intermittent claudication, and gives interpretations of its findings.

Sphygmomanometry.—Mougeot and Giroux reiterate that only repeated and prolonged records of the maximal and minimal blood pressures are instructive. A single record may prove entirely misleading.

Hemophilia.—Weil remarks that whereas formerly only 11 per cent. of the young with hemophilia lived to the age of 21, the prognosis has been transformed in late years by serum treatment. In his own practice during the last fifteen years he has not lost one of his more than fifty bleeder patients. The tendency to hemophilia is clinically and sometimes anatomically corrected by subcutaneous injection every two months of 20 c.c. of animal or human blood serum. The serum has pronounced local action, arresting hemophiliac hemorrhage when gauze impregnated with serum is pressed on the bleeding wound, first cleaned of clots, etc. Transfusion of blood is likewise useful, but as the procedure has to be repeated so often, the serum should be given the preference. Nolf has reported success with repeated subcutaneous injection of 5 or 10 c.c. of a 5 per cent. solution of peptone. Weil adds in conclusion that thyroid, ovarian and suprarenal treatment, calcium chlorid and gelatin are ineffectual in familial hemophilia and should be abandoned, and he theorizes that it must be regarded as a congenital functional malformation of the elements in which the blood and the vessels originate.

Nephritis of Intestinal Origin.—Lemierre urges examination of the intestines as the first step in kidney disease of obscure origin. It is useless to treat the kidney and leave the focus in the bowel unmolested. As a rule, suppurative processes in the kidney and bladder heal quickly unless the bowel focus maintains or keeps starting them anew. If disturbances persist, concretions must be suspected. In any event, intestinal foci are peculiarly liable to breed suppuration in an already damaged kidney, so that the intestines should be supervised with special care in cases of renal lithiasis, hypertrophied prostate or stenosis of the urethra. An operation for chronic appendicitis or recurring obstruction may cure kidney lesions that had long resisted direct treatment.

The Prognosis with Chronic Nephritis.—Vallery-Radot insists that determination of the urea content of the blood should be the routine practice in examining a patient with chronic kidney disease. When this is found repeatedly to be over 1 gm. per liter, the end is not far off, within two years at most. A single test is not decisive. A patient with extreme edema and apparently doomed to a speedy death will recover and throw off the edema if the urea in the blood is below 0.5 gm. per liter, while another nephritic whose condition may seem quite satisfactory is in the terminal phase if the urea content of the blood keeps permanently above 1 gm.

Extrasystolic Arrhythmia.—Donzelot declares that hygiene rather than drugs is required for pure extrasystolic arrhythmia without visceral taint. Graduated exercise, regulation of the diet and avoidance of stimulants are all that is required; repose does actual harm. But when the extrasystolic arrhythmia occurs in persons with an already damaged heart, digitalis is indicated. With arteriosclerosis, measures to aid in elimination of waste are in order, possibly supplemented with heart tonics.

Paroxysmal Tachycardia.—Donzelot strives to remove the cause, giving ovarian or thyroid treatment as indicated, or treating goiter and stimulating the emunctories. To arrest an attack, the main point is to stimulate the pneumogastric nerve. This can be attempted by deep breathing in reclining, swallowing a big cachet, taking an emetic, compressing the vagus in the neck or compressing the eyeballs. Complete repose and a milk-vegetable diet will aid. Sedatives seldom display any efficacy. In the protracted attacks, almost all that can be done is to watch over the heart and give heart stimulants at the first sign of weakening. If the attack has lasted several days, it is better to give digitalis without waiting for signs of weakening. When called late in the attack, injection of ouabain by the vein should be considered, not over 0.25 mg., doubling the dose the next and the following day at need.

Paroxysmal Hemoglobinuria.—Giroux agrees with those who think that paroxysmal hemoglobinuria is a kind of auto-anaphylaxis. The success of reinjecting the patient with his own serum seems to sustain this assumption. These injections do no harm, and have most effectually warded off return of the attacks. Specific treatment for syphilis has proved effectual in other cases. The only indications in the attack itself are to keep the patient warm in bed.

Paris Médical

March 20, 1920, **10**, No. 12

Present Status of Lethargic Encepbalitis. P. Blum.—p. 237.
*Sporotrichosis of the Genital Organs. A. Brainos.—p. 247.
*Fibrous Tumors of the Palm. R. Ducastaing.—p. 248.

Unrecognized Sporotrichosis of the Genital Organs.—Brainos reports two cases because of the unusual localization of the disease in the genitals. The first patient was admitted to the service in October, 1918, with the diagnosis "syphilitic chancre of the penis." He presented on the body of the penis, in the dorsal region, an ulcerous wound about the size of a dime, which was not indurated at the base; no inguinal adenitis. The Bordet-Wassermann reaction was negative; nevertheless, treatment as for syphilis was tried, but without success. The ulcer took on a phagedenic appearance and the patient was much discouraged. Brainos suspected the presence of sporotrichosis, and bacteriologic examination of the pus confirmed his suspicions. Potassium iodid, following the Gougerot method, changed the clinical picture remarkably within a few hours. At the end of a month the ulcers had healed over completely. After a two weeks' interval there was a recurrence of the sporotrichosis in the same region, which was quickly checked by potassium iodid. As a matter of precaution the patient was given treatment for two weeks at a time for three months. He remained in the hospital until April 8, 1919, up to which time there had been no further recurrence. Brainos remarks that if in giving antisyphilitic treatment he had happened to add potassium iodid, a cure would have doubtless been effected, and the false diagnosis of syphilitic gumma would have been confirmed. Therefore, he recommends that when a physician institutes tentative antisyphilitic treatment for a local lesion, the specific nature of which has not been confirmed bacteriologically or clinically, he should avoid using potassium iodid with mercury or arsenical remedies.

Fibrous Tumors of the Palm of the Hand.—Ducastaing reports three cases in which fibrous nodules had developed insidiously without any known trauma, either of an accidental or industrial nature. There was no frank history of tuberculosis, but there was of arthritis, which bordered on the type of tuberculous rheumatism. The numerous newly formed vessels were the seat of an endovascular inflammation of the type described by Poncet. The centers of the tumors were infiltrated with hemoglobin granules. All the intermediary stages of the slow development could be seen at one time.

Presse Médicale, Paris

April 3, 1920, **28**, No. 19

*Clinical Shock. F. Widal, P. Abrami and E. Brissaud.—p. 181.

Hemoclasis in Clinical Shock.—Widal and his co-workers in this long study of certain phenomena in shock explain the nature of the numerous and widely diverse clinical manifestations—from the accidents of anaphylactic order, the disturbances from parenteral injection of colloidal and crystalloid substances, and the spontaneous syndromes of infectious order, such as certain attacks of high fever, to the humoral derangements, as in paroxysmal hemoglobinuria—all are traceable to a single mechanism, the same process

of destruction of colloids, a colloidoclasis. In this new field of colloidoclasis we may soon discover many other instances of phenomena due to upset of the colloidal balance. Perhaps certain symptoms hitherto ascribed to intoxication may be the expression of a sudden loss of colloidal balance True intoxication acts by a chemical process; it alters the molecules and may destroy them, but shock, they reiterate, is merely an upset of the physical balance between colloidal structures. The most convincing testimony of this, they say, is the one phenomenon common to all the above manifestations of shock, namely, the sudden destruction or dissolution of erythrocytes, the *crise hémoclasique*. When we see an attack of asthma, of urticaria, of hemoglobinuria, we can always find the paroxysm of hemoclasis if we seek for it. The direct disturbances from it are so slight that they escape attention, but it is another instance of the importance of this occult symptomatology, inaccessible to our ordinary means of investigation. The natural or acquired susceptibility of certain groups of cells will determine the organic localization of the colloidoclasis. This links colloidoclasis with idiosyncrasies. Crystalloid substances do not seem to be able to induce shock unless they get into the blood suddenly and in large amounts (arsphenamin, sodium chlorid and bicarbonate), and the shock can be warded off by preliminary injection of a minute dose of the same. The phenomena in paroxysmal hemoglobinuria from chilling show that this is an auto-anaphylaxis from the cold, without the intervention of any foreign colloidal or crystalloid substance.

Progrès Médical, Paris

March 13, 1920, **35**, No. 11

Chronic Dyspepsia in the Gassed. M. Loeper.—p. 113.
Contracture of the Fingers. G. Giraud.—p. 113.
*Treatment of Burns. Roziés.—p. 118.

March 27, 1920, **35**, No. 13

Inaugural Lecture: Forensic Psychiatry. Laignel-Lavastine.—p. 137.
Alimentary Poisons. M. Loeper.—p. 140.

April 3, 1920, **35**, No. 14

Heart Disease in Soldiers and as Entitling to Pension. E. Pallasse.—p. 149.
Therapeutic Pneumothorax. H. Paillard.—p. 152.
The Plague at Avignon in 1720. P. Raymond.—p. 153.

Burns.—Roziés remarks on the good results in severe burns from normal horse serum, the hot air jet, and phototherapy, but the film method has won most adherents. The paraffin or wax mixture is within the reach of everyone. He has had good results also with a waxed tulle which does not stick to the tissues. It is dipped in a mixture of petrolatum, wax, castor oil and balsam of Peru, with a melting point at 30 C. Bernhard published as long ago as 1904 his success in treating extensive burns with heliotherapy, and Aimes reported in 1913 the excellent results from it in a recent burn and in an old case in which the extensive burn of the third degree was healing only sluggishly, but it healed over smoothly under thirty-five sunbaths by the regular heliotherapy technic.

Revue de Chirurgie, Paris

November-Decemher, 1919, **38**, No. 11-12

*Tuberculous Ovarian Cysts. E. Forgue and E. Chauvin.—p. 881.
*Mastoiditis and Suboccipital Pott's Disease. G. Portmann.—p. 916.
Conc'n.
Complications of Knee Sprain. Thévenet.—p. 942.

Tuberculous Ovarian Cysts.—Forgue and Chauvin were able to collect from the literature only thirty-five cases, the oldest case being that of Spencer Wells, reported in 1863. Many cases reported as such cannot be definitely so regarded as there was no histologic control, or the localization of the process was not sufficiently fixed. Tuberculous ovarian cysts are found in three forms: (1) tubo-ovarian with tuberculosis of the common cavity; (2) external, superficial tuberculosis associated most frequently with peritoneal tuberculosis, and (3) deep tuberculosis. This form of tuberculosis is practically never primary but develops following another focus of infection, found in the majority of cases in the peritoneum or tube.

Mastoiditis and Suboccipital Pott's Disease.—Portmann states that since the treatment of mastoiditis and of Pott's disease are so widely different, diagnostic errors in this field are exceedingly serious and result in dire consequences to the patient. He discusses in detail the more important symptoms of the two diseases which aid in establishing a diagnosis. If there is no cervical abscess, the pains in suboccipital Pott's disease are accentuated by the various movements of the head, in mastoiditis by pressure in the region of the antrum. In Pott's disease there are no morphologic changes of the mastoid region, as with mastoiditis; in the former there is early and marked stiffness of the head and neck; in mastoiditis if this exists at all it is not pronounced; in Pott's disease there are no ear symptoms, as in mastoiditis. In Pott's disease the general condition is rather bad, and often there are infectious lesions of other organs. In the presence of a cervical abscess, the pain in the region of the abscess is slight in Pott's disease, but severe in meningitis; in the former the abscess is regular, not inflamed, without peripheral edema; in mastoiditis the abscess is not sharply defined, has peripheral infiltration and inflammatory reaction. In Pott's disease puncture of the abscess releases a thin serous, lumpy pus which may contain tubercle bacilli; in mastoiditis the pus will be phlegmonous, thick and of uniform consistency, with no evidence of tuberculosis. Fistulas if present will in Pott's disease show purplish disconnected borders, with occasional fungosities, and will emit a pus not uniform in consistency; in mastoiditis the borders will be regular, red and will emit a phlegmonous pus. Roentgenoscopy will disclose lesions of the cervical vertebrae in Pott's disease, but none in mastoiditis; in the former a probe introduced in the fistulous tract will point toward the cervical column, in mastoiditis toward the mastoid.

Revue Médicale de la Suisse Romande, Geneva

April, 1920, **40**, No. 4

Chorea. Comte.—p. 197.
Fat, Cartilage and Bone Grafts in Surgical Repair. C. Julliard.—p. 211.
Multiple Tumors; Four Cases. A. Jentzer.—p. 236.
Case of Congenital Myatonia. T. Reh.—p. 247.

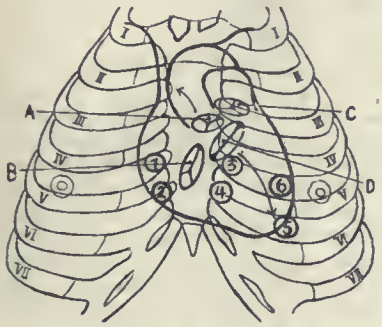
Schweizerische medizinische Wochenschrift, Basel

April 1, 1920, **50**, No. 14

*Direct Resuscitation of the Heart. K. Henschen.—p. 261.
Influenza and Tuberculosis. F. Deiss.—p. 268.
Lethargic Encephalitis. W. Kauffmann Ernst.—p. 270.

Resuscitation of the Heart.—Henschen relates that he is one of the few who have succeeded in permanently resuscitating the heart, after complete arrest, by direct injection of a stimulant into the heart. Van den Velden revived the heart in 13 of his 45 cases; Hesse in 4 of his 6, and Volkmann and Heilmann in 14 of 17. But in these groups the revived heart action gradually subsided anew in from twenty minutes to ten hours at most. Henschen reviews the history of efforts in this line, simple injection of a stimulant into the pericardium, ventricle or right auricle, with or without infusion of a fluid to give the heart enough to pump on, and with or without preceding release of blood from the heart to reduce the tension, a central venesection, as it were. The infusion can be made only in the left ventricle, and Fick says that the ventricle can hold only from 50 to 75 gm. Zuntz places the limit at 60 gm. Henschen gives several illustrations showing the danger zones to be avoided, especially the wall separating the auricles from the ventricles, the zone of the His-Tawara bundle, the upper third of the anterior longitudinal groove, the base of the heart near the mouth of the vena cava (region of the sino-auricular system), and the lower half of the atrioventricular boundary zone. He describes in detail four cases in which he has applied these resuscitation measures, once after collapse of the heart from hemorrhage from a gastric ulcer. He injected 1 c.c. of epinephrin and 0.5 c.c. of a pituitary preparation into the left ventricle a few minutes after the heart had stopped beating. The heart and pulse began to beat strongly again at once but gradually dropped again as spontaneous

respiration could not be induced during forty-five minutes of artificial respiration. In another case the intracardial injection was made by mistake in the anterior interventricular vein, instead of in the ventricle itself, and the striking benefit lasted only for fifteen minutes. His third case was a bullet wound of the heart, and the heart was revived to strong and regular action by the injection of 1 c.c. of 1:1,000 epinephrin and half this amount of the pituitary preparation. The young man was convalescing smoothly when fulminant pericarditis proved fatal the second day. The one permanently successful case was a man of 32 who was rendered unconscious by a beer keg falling on his chest and upper abdomen. It was impossible to tell whether the condition was from intense pleuroperitoneal traumatic shock or from internal hemorrhage. The heart stopped beating during the exploratory laparotomy, and massage failed to revive it. Then 1.5 c.c. of the epinephrin solution was injected in the pericardium through the fourth left interspace, inside of the mammillary line, at a depth of about 2 cm. At once the flabby, pulseless heart grew taut and began to beat strongly and regularly, and signs of life became apparent. Then 700 c.c. of physiologic saline with 10 drops of epinephrin and 5 drops of the pituitary were infused in the arm and recovery was soon complete.



1-2, Puncture to relieve right auricle. 3-4. Puncture to relieve right ventricle. 5-6. Points for infusion of left ventricle. A, aortic valve; B, tricuspid valve; C, pulmonary valve; D, bicuspid valve.

Policlinico, Rome

March 8, 1920, **27**, No. 10

Cerebrospinal Fluid in Pertussis. G. Genoese.—p. 291.
The Various Tests of Pancreas Functioning. A. Gasbarrini.—p. 296.
Mixed Sarcoma in Popliteal Space. A. Poggiolini—p. 300.

February, 1920, **27**, Medical Section No. 2

Influenza: Etiology and Pathogenesis. F. Micheli.—p. 45.
*Atypical Meningococcus Meningitis. A. Bolaffi.—p. 74.
Elimination of Chlorids in Febrile Diseases. G. Marcialis.—p. 86. To be cont'd.

Atypical Meningococcus Infection.—Bolaffi has encountered cases of meningococcus meningitis with an onset simulating measles; others in which the lumbar puncture fluid showed merely lymphocytosis and the disease progressed with extreme cachexia. One little girl died the sixty-seventh day, the child looking like a little mummy. The case teaches the importance of repeating puncture of the spinal cavity at different points to reveal meningococci; everything seemed to point to tuberculous meningitis until too late for serotherapy to be effectual. The meningococcus nature should be suspected when days of apyrexia are interrupted by periods of high fever and there is rapid loss of weight. The search for tubercle bacilli or meningococci in the spinal fluid should be kept up, and the centrifugate sown on culture mediums favorable for the meningococcus. The ophthalmoscope may reveal tubercles on the choroid. When the meningococcus meningitis has passed into a chronic phase, it is almost certain to be mistaken for tuberculous meningitis. In one soldier the meningococcus induced acute fatal septicemia and purpura, but necropsy failed to reveal any signs of meningitis. In other cases the onset suggested typhoid until, about the tenth day, purpura developed. The much enlarged spleen in such cases may be due to unsuspected malaria. In another case rheumatic polyneuritis was diagnosed from the symptoms until the end of the second week. Deafness from the first was finally explained by the discovery of the meningococcus. In another case intense pain in one ear and pains in the limbs, with slight fever, were the only symptoms, for three days. One child had presented merely slight fever and extremely slight pain when the head was bent; otherwise she seemed entirely well, and Bolaffi did not venture to inject the antiserum on these findings alone, but eight hours later other symptoms cleared up the diagnosis. Investigation of the mode of onset is usually most instructive for the differential diagnosis.

February, 1920, **27**, Surgical Section No. 2

*Intra-Abdominal Use of Ether. G. Fantozzi.—p. 41. Conc'n.
Postoperative Dilatation of the Stomach in Diaphragmatic Hernia. G. A. Pietri.—p. 56.
Surgery of the Descending Colon. M. Fasano.—p. 61.
Firearm Wounds of the Bladder. L. Frassi.—p. 70. To be cont'd.

Intra-Abdominal Use of Ether.—THE JOURNAL mentioned April 17, p. 1132, Fantozzi's denunciation of the current methods of using ether in abdominal operations, as it has an intensely hemolytic action and adhesions are more than likely to develop between surfaces laved with it. His extensive and clinical research has apparently demonstrated, however, that all the desired benefits from it can be realized, with none of the drawbacks, if used merely for moistening gauze, etc., to sponge out the abdominal cavity and in tamponing. He describes thirteen cases to show the advantages of this.

Riforma Medica, Naples

Feb. 28, 1920, **36**, No. 9

Inaugural Lecture in Surgery Course. G. Tusini.—p. 221.
Epidemic Encephalitis. P. Boveri.—p. 228.
*The Brain and the Genetic Function. V. Desogus.—p. 233.

The Brain and the Genetic Function.—Desogus compares with Ceni's experimental findings Forster's recent study of the ovaries in 100 insane women and Todde's study of the testicles in 200 insane men and in thirty others who had been killed accidentally or had died from acute disease. All the data testify to a close connection between mental disease or trauma of the brain and the condition and functioning of the sexual organs. Mjöen's recent research on the relations between alcohol and generation has convinced him that the deleterious influence of alcohol on the organs of reproduction is not direct but through the superior nerve centers. Todde has emphasized the pronounced difference in the testicles of the insane and those of the noninsane dying from a similar cause, such as tuberculosis. Stieve reported in 1918 the extreme involution evident in the ovaries of hens kept in close captivity, in comparison to other hens. He ascribed this to the psychic influence of the confinement. None of the other internal organs showed appreciable change during the captivity. Ceni's conclusions from his more than thirteen years of experimental research and clinical observation are to the effect that the biologic processes which constitute the phenomenon of procreation are under the control of nervous influences which are more and more complicated the higher in the animal scale. In the lower vertebrates the spinal cord alone is involved, while in the higher vertebrates the spinal cord controls merely the trophic processes and loses more and more of the control, which is assumed by certain brain centers. These brain centers function under the direct stimulus of psychic forces which, by their insufficiency or by their excess, may entail degeneration and hence sterility. An excess of psychic stimuli may excite or depress according to the individual reaction.

Rivista di Clinica Pediatrica, Florence

February, 1920, **18**, No. 2

*Extract of Bran in Infant Feeding. Fernandes Figueira (Rio de Janeiro).—p. 65.
*Azurophilia in the Blood in Measles. A. F. Canelli.—p. 82.
*Treatment of Meningococcus Meningitis. I. Malvani.—p. 88.

Extract of Bran in Infant Feeding.—Fernandes discusses the literature on deficiency disturbances, describing much experimental research and clinical experience of his own. Everything seems to indicate, he remarks in conclusion, that the continuous preponderance of any bacterial flora is injurious for an infant, even with breast feeding, kept up for more than a year without anything else being given. By the end of the twelve-month a deficiency in mineral reserves becomes apparent. The addition merely of a vege-

table soup or a little starch works surprising changes in the infant. He gives precipitated calcium phosphate in certain dyspeptic conditions from intolerance for carbohydrates, and this phosphate, as well as casein of which it is a constituent, produce excellent effects. Even when the diet seems admirable, it is indispensable to vary the food from time to time to stimulate and modify the mechanism of assimilation. This is the explanation of the benefit from the extract of bran. Large amounts, up to 5 or 6 gm. daily, cause diarrhea. But with only 2 or 3 gm. the infant's stools keep normal and it increases promptly in weight. This increase in weight does not keep up, however, if the extract of bran is continued. If it is dropped for two or three weeks and then resumed, the weight shows another rapid gain. It seems to interrupt the exclusive predominance of a certain bacterial flora.

Azurophilia in the Blood in Measles.—Canelli examined the blood of 60 infants and young children and 5 soldiers, all with measles, and in 33 persons with other diseases, seeking for cells containing azurophil granulations. This is not a specific finding with measles, as it is found in pneumonia, scarlet fever, etc., but the azurophilia is so frequent in measles and so pronounced, that it may well serve as an aid in the differential diagnosis. The azurophilia reaches its height with the eruption phase. Azurophilia is exceptional under other conditions, as Canelli noted in examining blood specimens from 5,200 soldiers with malaria and 10,000 other malarial subjects.

Treatment of Meningococcus Meningitis in Children.—Malvani relates that success beyond all anticipations has been realized at the children's clinic at Florence in treatment of meningococcus meningitis with a vaccine to supplement serotherapy. Its value was most evident in the grave cases that dragged along without tendency to spontaneous healing under serotherapy. By the vaccine treatment the infection was attenuated to a degree which permitted the natural defensive forces to gain the upper hand. The meningococcus changes its biologic behavior in different epidemics so that it is important to use the local strains in preparing the antiserum, and as many different ones as possible. Capogrossi's success in two grave cases with intraspinal autoserotherapy justifies this technic when fear of anaphylaxis prevents the use of other serums. In infants the meningitic process is peculiarly liable to become walled off by obstruction of the communication between the skull and the spinal cavity. When only a small amount of fluid can be obtained by lumbar puncture, while the symptoms keep serious, it is a simple matter to puncture the ventricle through the anterior fontanel. For older children it is necessary to trephine.

Gaceta Médica de Mexico

February-March, 1920, **55**, No. 5

Pityriasis Rubra Pilaris in Boy. J. González Urueña.—p. 87.
Indications for Induced Sterility. M. S. Iglesias.—p. 89.
Gullstrand's Work in Optics. A. Chacon.—p. 94.
Case of Exfoliative Marginal Glossitis. R. E. Cicero.—p. 99.
Albee's Operation for Pott's Disease. R. Rojas Loa.—p. 106.
*Vertigo and Syncope in Relation to the Nervous System. A. A. Loaeza.—p. 111.
Demonstration of Spirochetes in Syphilis. J. Arroyo.—p. 116.
*Morphin in Obstetrics. F. Bulman.—p. 122.
*Perforation of the Retina. J. de Jesús González.—p. 126.
Hygiene of the Home. J. E. Monjarás.—p. 133.

Vertigo and Syncope in Relation to the Nervous System.—Loaeza reports a puzzling case of repeated and alarming syncopes in a man of 80 which he finally differentiated by exclusion as hysteric syncopes, and cured by suggestion. He contrasts the clinical picture with syncope and severe vertigo of central or peripheral origin.

Morphin in Obstetrics.—Bulman emphasizes the dangers from the use of morphin in obstetric cases, especially the danger for the child. In the discussion that followed his remarks, Montaño told of being called to a case in which the physician had given an intraspinal injection of cocain to relieve the labor pains, and the woman succumbed to hemorrhage from inertia of the uterus.

Perforation of the Retina.—De Jesús gives an illustrated description of the findings in the retina which had apparently been perforated at the fovea centralis from a contusion in childhood. Since then the visual acuity of that eye had been less. The pear-shaped foramen is the size of two thirds of the papilla, but the vessels in the retina seem to be normal. He compares this case with the seventy-nine others he has found in the records, with a history of known trauma in 81.8 per cent. It is the second case published in Mexico.

Siglo Médico, Madrid

Jan. 31, 1920, **67**, No. 3451

*Alcoholism and General Paresis. J. Sanchis Banús.—p. 65.
*Diabetes Insipidus. J. Madinaveitia.—p. 71.

Alcoholism and General Paresis.—Sanchis reiterates that the symptoms of chronic alcoholism may simulate absolutely the clinical picture of general paresis, and both alcohol and syphilis are frequently found in the antecedents of each. He gives the details of two cases in which only lumbar puncture gave the clue, confirming in one case the assumption of general paresis from the comparatively few hallucinations, and the delirium of the megalomania type. In the other case, as the alcoholic psychopathy subsided, the mind became clear. The wealth of hallucinations also testified to the alcoholic origin.

Diabetes Insipidus.—Madinaveitia comments on Marañon's recent statements as to the share of the pituitary in the production of diabetes insipidus, and the fact that pituitary disease is not always accompanied by diabetes insipidus. There is some reason to believe that the pituitary tumor may compress the center regulating osmosis, while the lack of the normal pituitary hormone may further contribute to upset the osmotic balance.

Deutsche medizinische Wochenschrift, Berlin

Jan. 8, 1920, **46**, No. 2

Further Communications on Silver Salvarsan. W. Kolle.—p. 33.
*Trichophytosis in Man. F. Blumenthal and A. von Haupt.—p. 37.
Radiotherapy in Surgical Tuberculosis. O. Strauss.—p. 39.
Friedmann Treatment of Children with Surgical Tuberculosis. L. and O. Bossert.—p. 41.
Effect of the War on Eye Diseases. L. Pick.—p. 44.
Case of Osteomalacia and Tetany from Undernutrition. Sauer.—p. 45.
Preserving Blood for Later Examination. H. Langer.—p. 47.
Pneumonia Mortality by Age Groups. Hatziwassiliu.—p. 48.
Systematized Care of Lupus Patients. O. Salomon.—p. 49.

Immunization Processes in Trichophytosis in Man.—Blumenthal and von Haupt state that in deep trichophytosis, in the majority of cases, antibodies may be shown to be present in the blood serum, while in superficial trichophytosis, this is the exception. In general, the quantity of antibodies is directly proportional to the severity of the clinical phenomena. Part of the therapeutic effect of trichophytin injections is doubtless due to stimulation of the production of antibodies. The allergic reaction takes place also in cases of nonparasitic sycosis and with tuberculous glands. A strict cell immunity, which would presuppose that trichophytosis occupied a special position among infectious diseases cannot be established. Their conclusions are based on study of thirteen cases of ringworm and ninety-one of deep trichophytosis.

Medizinische Klinik, Berlin

Feb. 22, 1920, **16**, No. 8

*Comparative Pathology of Melanotic Tumors. O. Lubarsch.—p. 195.
Different Forms of Salvarsan Treatment of Syphilis. F. Pinkus.—p. 199.
*Treatment of Empyema. Moszkowicz.—p. 201.
Plastic Induration of the Penis plus Dupuytren's Contraction. H. Martenstein.—p. 205.
Factitious Fever from Tapping the Thermometer. F. Hammes.—p. 207.

Comparative Pathology of Melanotic Tumors.—Lubarsch recalls that comparative histology shows that the melanotic pigment occurs in two different kinds of cells, namely, in the epidermis cells of the skin and in epithelial cells, especially of the organs of sense, and also in the chromatophores, found in the connective tissue and among the epithelial cells. As for the origin and character of the pigment, chemical investigations have shown more and more clearly that the

formation of the pigment is connected with the decomposition of albumin. The high sulphur content of melanin is an indication of such origin. As for the starting points of melanotic tumors, Lubarsch is inclined to the view that melanocytoblastomas arise primarily only where melanocytes and melanoblasts occur normally or at points to which such cells have been carried by some abnormal developmental process. In the last thirteen years melanotic tumors formed 0.89 per cent. of the 2,274 malignant tumors found in 18,113 cadavers. In Folger's statistics, they formed 42.88 per cent. of the 527 cancers found in 175,745 horses and 0.35 per cent. of the 865 cancers found in 143,309 dogs.

Physical Factors in Treatment of Empyema.—Moszkowicz discusses the advantages and disadvantages of Bülau siphon drainage, rib resection, and the Revilliod suction treatment in empyema, and then recommends what he calls the combined suction and lavage treatment. He has used the method for many years and states that it gave good results during the last influenza epidemic. Of twenty-one patients operated on in this manner he lost four, but necropsy revealed complications such as multiple abscesses, pericarditis and diffuse involvement of both lungs. Under local anesthesia he resects in the posterior axillary line about 2 cm. of the sixth rib and then inserts two drains, instead of one, in an opening in the pleura just barely large enough to receive them. The first drain just enters the pleural cavity, the second goes in a little deeper. Both drains are embedded liquid-tight in the latissimus dorsi by means of catgut sutures, and the skin is sutured tight around them. The ends of the tubes (50 to 60 cm. long) rest in glass receptacles containing a solution of salicylic acid. As very little air has penetrated the thorax, siphon drainage begins at once. The shock is minimal, and after most of the pus has thus drained out, the patient breathes easier. One bottle is then filled with warm physiologic sodium chlorid solution and is raised to a plane from 10 to 20 cm. above the thorax. The fluid from this enters the wound and flows off, mixed with pus, through the other drain. It is Moszkowicz's experience that the warm lavage is agreeable to the patients, and breathing becomes easier. There are some contraindications for lavage such as the existence of a communication between the pleura and the bronchi. Moszkowicz emphasizes the importance of breathing exercises in order to restore the lung to its normal condition, and for this purpose has found the hints contained in Hofbauer's "Summ- und Fächerübungen," *Deutsche medizinische Wochenschrift*, 1916, p. 125, of great value. He also stresses that the presence of pus as shown by the exploratory puncture may not be an absolute indication of a "free" empyema requiring an operation. The condition may be due to interlobar empyema or an abscess which will require intervention at an entirely different site. As a last word, too great attention cannot be given to after-treatment, especially from the standpoint of intrathoracic pressure.

Feb. 29, 1920, **16**, No. 9

Relations between Disease of Eye and Nose. Stenger.—p. 221.
Nephritis without Albuminuria. W. Schemensky.—p. 226.
Intravenous Calcium Therapy in Tuberculosis of the Lung. H. Maendl.—p. 228.
Silver Salvarsan. H. Boas and A. Kissmeyer.—p. 232.
Linser Method of Combined Salvarsan and Mercury Treatment. W. Löwenstein.—p. 233.
*Case of Barbital Poisoning. Moszeik.—p. 233.
Significance of the Pericardium for the Mechanism of the Heart's Action; the Effect of Pericarditis Obliterans. H. Picard.—p. 234.

March 7, 1920, **16**, No. 10

Nature of Inflammation, Cloudy Swelling and Fatty Degeneration. Hansemann.—p. 247.
The Significance of Trembling. S. Erben.—p. 254.
Blood Examinations and Their Results in Influenza. Arneth.—p. 255.
Angioneurosis Following Scorpion Sting. H. Ziemann.—p. 257.
Clinical Aspects of Phleboliths. E. Fabian.—p. 258.
Water Supply in Relation to Typhoid. T. Messerschmidt.—p. 259.
Hydronephrosis with Profuse Bleeding; Blood Transfusion. H. Flörcken.—p. 260.
Retention of Urine in Childbed; Simulation of Tumor. Fuhrmann.—p. 261.

Case of Barbital Poisoning.—Moszeik reports that, July 22, a nurse, aged 25, was admitted to the hospital in stupor. Circumstances indicated barbital poisoning. Following stomach lavage the patient was given coffee to drink and caffein subcutaneously. She then slept for forty-eight hours continuously, during which period she did not react to external irritants. July 25, she opened her eyes when her name was called, but closed them again at once and fell asleep. July 26, she noticed for the first time that some one was standing at her bedside. Recovery was now rapid, though a certain lassitude persisted for some time, and the muscles of the lower extremities seemed fatigued. The patient had taken 7 gm. of barbital with suicidal intent. The drug had taken effect within five minutes, the patient stated. There was no nausea and no vomiting. Menstruation, begun on the 22d, was not affected.

Münchener medizinische Wochenschrift, Munich

Jan. 2, 1920, **67**, No. 1

Roentgenotherapy in Cancer of the Uterus as Practiced at Freiburg. E. Opitz and W. Friedrich.—p. 1.
Cardiac Arrhythmias. K. Grassmann.—p. 5. Cont'n.
*Provocative Method in Urethral Gonorrhea. E. F. Müller.—p. 9.
*Tumors in Chemical Workers. Oppenheimer. p. 12.
Ethyl Chlorid Anesthesia and Narcosis in General. W. Kausch. p. 14.
Gonococcus Tests. F. W. Oelze.—p. 15.
Subcutaneous Rupture of Biceps Brachii Muscle. H. Blencke.—p. 17.
Strong Hot Solutions of Potassium Permanganate in Staphylococcus Infections. E. Neusser.—p. 17.

A Nonspecific Provocative Method in Urethral Gonorrhea.—Müller recommends the use of a nonspecific method of provocation in the diagnosis of etiologically uncertain affections of the lower urinary passages and in chronic disease of the genital organs in man. He uses an albumin (from milk) solution as described in detail in *Medizinische Klinik*, 1918, p. 688. The method of injection is as follows: The extensor aspect of the forearm is cleansed with benzine; a fold of the skin is gently raised, and the injection is made parallel with the surface in such a manner that the tip of the syringe keeps within the epidermis. From 0.2 to 0.3 c.c. of the albumin solution is injected, whereupon a white wheal arises. Two such wheals suffice for a single treatment. If no wheal appears it is a sign that the injection was subcutaneous instead of intracutaneous, and the injection should therefore be repeated. After such intracutaneous injections, moderate increases in the blood leukocytes appear but with no difference between cured gonorrhea and a still active infection. In about six hours a slight itching sensation occurs in the urethra; following which there is a marked increase in the discharge. If the discharge is examined for two days successively, the gonococcus can be almost certainly isolated if gonorrhea is still present. This judgment is based on experience with over 1,500 cases in the Hamburg Marine Hospital. Of the patients who gave a negative test by this method less than 1 per cent. were shown later by other methods to be infected. Müller finds the above described method much superior to the usual provocative methods by which specific antigens are introduced into the organism, for it does away with the otherwise inevitable injury to the already diseased mucosa.

Tumors of the Urinary Apparatus in Chemical Workers.—These tumors, Oppenheimer states, deserve especial attention for several reasons, not so much on account of their severity and relative frequency, but because the manner and the process of their development can be studied with the same degree of certainty as if they were produced experimentally. In the present state of our knowledge we are unable to detect any difference histologically and clinically between industrial tumors so-called, and those that arise under ordinary conditions. Therefore, any deductions that can be made in regard to industrial tumors are probably applicable, to a certain extent at least, to tumors in general. From 1910 to 1919 twenty tumors of the urogenital apparatus were studied. These tumors were all plainly traceable to the action of chemical agents. Certain substances (benzidin, anilin and anilin dyes, etc.) produce tumors of the urinary passages, more especially of the bladder. The process of development extended over a long period of years. The interval between the beginning of the harmful occupation and the first appearance of symptoms ranged from nine and

a half to twenty-eight years. After a change of occupation tumors developed in two cases ten and seventeen years later, proving that though the external cause was removed the disease had continued to develop. A long latent stage precedes the appearance of the first local or general symptoms. Different substances may produce tumors of the same type, and the same substance may produce tumors of different types. Duration and intensity of the exposure to the injurious substance could not be shown to have any influence on the process of development; nor did duration and intensity affect the type of tumor, as far as could be discovered. The prognosis for the carcinomas acquired in chemical industries is unfavorable, and for the papillomas at least dubious.

Wiener klinische Wochenschrift, Vienna

April 1, 1920, **33**, No. 14

Cerebrospinal Fluid in Latent Syphilis. J. Kyrle.—p. 283. Cont'n.
Lethargic Encephalitis. G. Stiefler.—p. 286; W. Spät.—p. 289.
*Thrombosis of the Longitudinal Sinus in Influenza. B. Szigeti.—p. 291.

Thrombosis of the Longitudinal Sinus in Influenza.—On account of its rarity, Szigeti reports a case of this kind in an adult. The patient was admitted, Feb. 8, 1920. The disease took a stormy course and the patient died, Feb. 12, 1920. An acute delirium set in soon after admission. As the disease progressed there were epileptiform attacks, during one of which the patient succumbed. A diagnosis of influenzal pneumonia was made, although the physical signs were slight and there was no expectoration, for during this influenza epidemic severe anatomic lung changes were often associated with quite insignificant objective phenomena. The thrombosis was not suspected from the clinical evidence but was revealed at necropsy. In a search through the literature Szigeti found only one similar case, that of Leichtenstern, who, however, was not absolutely convinced that influenza was present in his case.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

March 13, 1920, **1**, No. 11

Foreign Terms in Medical Literature. G. van Rijnberk.—p. 877.
*Hydrocyanic Acid for Extermination of Vermin, Insects, etc. C. Lubsen, R. H. Saltet and L. K. Wolff.—p. 881.
The Typhus Epidemic at Rotterdam, 1918. P. H. Kramer.—p. 888.
Percussion and Auscultation Findings with Enlarged Glands at the Hilus of the Lung. W. M. Naessens.—p. 894.
Spirochete Findings in General Paresis. G. P. Frets.—p. 897.

Hydrocyanic Acid in Extermination of Vermin.—Lubsen, Saltet and Wolff state that their extensive experimental and practical experience confirms the extreme efficacy of hydrocyanic acid in extermination of rats, insects, moths, mites, etc., while it does not affect clothing or metals or foods, except milk and other fluids. It can be used to kill destructive insects in tobacco, flour and other foodstuffs. They found that the gas masks used by the British army are effectual in protecting against this gas; only after as much as 20 l. had been passed through the mask, some of it failed to be retained by the chemicals in the mask. The Netherlands and the German gas masks are no protection against HCN. They recommend using the gas in the evening and leaving the room shut up over night, airing it out in the morning. When this is not practicable, the gas can be used early in the day and the room be ready to use again at night, but mattresses, etc., must be aired and beaten out of doors to get rid of the gas. They advise letting the wind blow through the adjoining rooms or flats while the gas is being applied, thus interposing a zone of safety between the gas filled rooms and the inhabited rooms beyond. Two persons should be supplied with masks so that in case of accident one can care for the other. Nothing has been found to date effectual in combating the poisoning from the gas beyond artificial respiration and stimulants. Injection of sodium thiosulphate, which has been theoretically advocated, would require doses beyond what could be used in man. In their experiments the only living thing that resisted the action of the gas was the weevil. This seemed to be able to hold its breath and could thus resist high concentrations of the gas. But there are other effectual means of combating this.

Ugeskrift for Læger, Copenhagen

March 25, 1920, **82**, No. 13

*Urobilinuria with Cholelithiasis. S. Hansen.—p. 415.
*Stenosis of Lacrimal Passages. N. R. Blegvad.—p. 423.
Necessity for Systematic Neurologic Examination of Syphilitics. C. Rasch and H. J. Schou.—p. 428.

Urobilinuria with Cholelithiasis.—Hansen found urobilinuria in 80 per cent. of fifty persons with cholelithiasis and in 100 per cent. of the thirty-three examined during gallstone colic, while the findings were negative in 71 per cent. of 175 control cases. The mere presence of gallstones is not enough to induce urobilinuria, but the latter is constant during an attack of gallstone colic if the common bile duct is permeable. If the gallstone has obstructed the common bile duct so that no bile is able to pass into the bowel, then bile pigment may be found in the urine, but no urobilin. In some of the cases which seemed to be gallstone colic, but no urobilin was found in the urine, the reliability of this test was confirmed by the operation which disclosed duodenal ulcer, cancer of the liver or other lesion but no gallstones. Of course urobilinuria is not a specific reaction to cholelithiasis, but it is proving, in connection with other findings, a very valuable aid in the diagnosis and in the estimation of the course of the case with gallstones. He theorizes to explain why gallstone colic is accompanied by this abnormal elimination of urobilin in the urine, ascribing it to relative insufficiency, a flooding of the liver with urobilin. One of his charts shows urobilinuria of 1:40, then 1:80 the first and second days of the attack, and then a gradual decline the four following days to zero. If the urine had not been tested till the fourth or fifth day the urobilinuria would have escaped detection. His tests showed further that fever in itself does not induce urobilinuria. His improved technic for estimation of the urobilin content of the urine was described in The Journal, March 23, 1918, p. 896. He says it is far more sensitive than the Schlesinger reaction. The latter is positive when the response is within normal range.

Operative Treatment of Disease of the Lacrimal Apparatus.—Blegvad lauds West's operation for dacryocystorhinostomy, but has modified the original technic by using an electric motor to cut away the bone and median wall of the lacrimal sac. This much simplifies the West operation, and proved very successful in his seventeen cases.

April 1, 1920, **82**, No. 14

*Celsus' Kerion: Deep Trichophytosis. C. Rasch.—p. 443.
Manometer for the Spinal Fluid. N. R. Christoffersen.—p. 449.
The "Twilight Sleep" in Obstetrics. A. G. Lauritzen.—p. 454.
Tapeworm. H. R. Magnus.—p. 462.

Celsus' Kerion.—Rasch comments on the rapid cure of deep trichophytosis which is in such contrast to the prolonged course of the more superficial forms. He ascribes it to the complete transformation of the organism in the former, leading to the production of antibodies. In his 109 cases in a recent seven years there were 2 cases in children in which the trichophytosis of the scalp and body was accompanied by an eruption apparently identical with that of scarlet fever. These 2 cases formed about 4 per cent. of his 51 cases of Celsus' kerion. In some other cases the kerion was followed by what seemed to be erythema nodosum. He treated the kerion only with compresses with boiled water, changed four or six times a day, and was impressed with the absence of staphylococcus secondary infections. There seemed to be a temporary immunity to staphylococci. Under this compress treatment the trichophytosis disappeared in the course of from three to six weeks; the localizations elsewhere vanished at the same time, and no new lesions developed. This not only confirms the production of antibodies which clear the system of the causal agent, but it suggests the possibility of utilizing this curative potency of Celsus' kerion in treatment of other forms of trichophytosis which resist all measures for months and years (*T. violaceum*, for instance). Inoculation with kerion might transform conditions and clear the system of the whole. Sabouraud suggested ten years ago that kerion might vaccinate against tinea, but Rasch does not know that this suggestion has ever been applied in practice. He regards it as rational and justified to give it a trial in an appropriate case.

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DEFICIENCIES IN OUR METHODS FOR THE TREATMENT OF CHRONIC NEPHRITIS

NEED FOR INVESTIGATION *

HENRY A. CHRISTIAN, M.D.

BOSTON

In considering the best methods for the treatment of chronic nephritis (Bright's disease) we labor under the disadvantage of dealing with a disease regarding which there are many gaps in our knowledge. Of its etiology we know surprisingly little in any exact sense, though the view is receiving increasing support that many of the cases have their primal cause in an infection of bacterial nature, most frequently of the streptococcus group. Even granted, however, that organisms of the streptococcus group originate the renal disturbance, we are not helped much in the matter of treatment, because, in case of the known nonrenal streptococcus lesions, we are able to treat only by elimination or drainage of a focus of infection, and can do little, if anything, toward counteracting the toxic substances that are produced and distributed to the body organs. If actually resulting from an infection, the chronic renal lesion presents itself months or years afterward, too late to be helped much by removal of the focus of infection even if still present. In other words, in the earlier, easily treated stages of the infection, the infection may pass unrecognized; or, what happens more frequently, there is nothing to indicate the beginning of a lesion in the kidney which slowly and gradually will develop into a recognizable nephritis. In the later stages when the renal lesion is easily recognized, the focus is no longer existent, or if present, its removal can change but little the renal damage already done. I have been very much struck, in my own experience, with the relatively few cases of chronic nephritis that seem to have been a direct sequence to a demonstrated infection or infectious disease; most of these have belonged to a rather distinctive group of cases, progressing rapidly to a fatal issue and perhaps better thought of as subacute than chronic nephritis. In these none of the methods of treatment seem to have had the slightest effect on the course of the disease; that is to say, knowledge of a close association with an infection, so far, in this group, has not shown the way to a successful treatment.

As to the actual type of lesion developing in the kidney, we know very little while the disease is progressing. Clinical classification cannot be accurately correlated with structural classification, and there are so many gaps in our knowledge of the pathologic lesion in the kidney, particularly in regard to its histogenesis and its effect on function, that a structural consideration of renal lesions helps but little in treatment. During life, anatomic diagnosis in any narrow sense is almost impossible and even when successfully made helps but little in treatment.

In many of the patients with chronic nephritis there are coincident vascular lesions, in the main of degenerative nature; but of these we know as little as of the renal disturbances, so that their presence merely handicaps us all the more in applying a rational treatment.

In recent years, much attention has been given to the study of renal function in nephritis, and we have learned may facts in regard to it. The question naturally arises: How much has this newer knowledge of renal function aided us toward a more satisfactory method of treating these patients?

Except for the removal of recognized foci of infection and as prompt and efficient treatment as is possible of all acute infections, we at present can do practically nothing for the prevention of nephritis. Preventive treatment in a practical sense is almost nil for chronic nephritis, and will remain so until we learn more of the etiology and particularly of the factors that influence the progressive development of renal lesions.

THE AIMS IN THE TREATMENT OF CHRONIC NEPHRITIS

As we treat the chronic nephritic today, we aim (1) to stay the progress of the lesion; (2) to remove edema if present to an annoying degree, and (3) to prevent the formation and combat the effects of toxic substances, the result of the presence of the renal lesion. Let us briefly take stock of these methods and the knowledge on which they are founded.

1. *To Stay the Progress of the Lesion.*—With this in view we make two points of attack: (*a*) We remove foci of infection and guard against repetition of infections, and (*b*) we attempt to give the renal tissue as much of a chance as possible for recuperation by reducing its work, largely by limitations of diet.

(*a*) As already intimated, frequently we discover no focus of infection; and when we find one its removal usually accomplishes little, for the damage to the kidney has been done and we do not know how to increase renal repair. Yet it remains rational to seek for and remove, so far as is possible, foci of infection when found; we must not, however, promise the patient any striking result from such treatment, though occasionally great improvement may result. To guard against repetitions of infection, we urge the avoidance of exposure to contagious diseases and the reduction of contacts with infection. For a better

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resistance we urge the best possible hygiene, but these are all very general directions in very general terms; they are easy to state in a general way but difficult to carry out.

(*b*) To decrease renal work we limit diet. The kidney is an excretory organ concerned in the elimination from the body of water, salts, and nitrogenous and other substances; some well understood, others, such as various toxic substances believed to be eliminated by the kidneys, little understood. We assume that by limiting the intake of food and fluid we decrease the work of the kidney and give the kidney physiologic rest and so opportunity for repair. The tendency today is to decrease fluid intake, especially water. What is the basis for this? We have evidence that water excretion causes renal work, and to an injured kidney an increased fluid intake can lead to a decreased output of urine. When edema is present, we can see it increase as fluid intake increases. We also know that there is a limit to the reduction of water intake below which it is injurious to go because of the concentration of other substances to be excreted which is incident to great water restriction. Very likely, too, a much decreased fluid intake will cause injury to renal cells. Consequently, it seems reasonable to assume that there is an optimum mean of water intake. Do we really know this mean? I think not, except in the sense of the effect of fluid limitations over rather short periods; and even here, knowledge is imperfect. There has been surprisingly little critical study of the effects of different water intakes, especially over long periods of time. What we need to know is the comparative effect of a water intake at a level of 1,000, 1,500, 2,000, 2,500, etc., c.c. for weeks and months in comparable cases. Until these observations have been made, much of the value of a prescribed water intake in influencing the course of nephritis must remain guesswork. Again, we are by no means sure that increased water intake is harmful in all types of nephritis. Just what has been said of water applies to food constituents. Salt intake, protein intake, the problem of an adequate diet in the newer sense, all need to be studied over prolonged periods. If we find that nitrogen elimination is decreased and there is nitrogen increase in the blood in the form of urea, uric acid, etc., we decrease protein intake, often with prompt improvement; but this condition of evident disturbance in nitrogen metabolism really comes late in nephritis. We need to know the optimum protein intake for the early stages, if we are to help matters. War conditions have shown that prolonged reduction of protein intake with a probable imbalance in amino-acid constituents is harmful. Excessive protein intake in the later stages is often observed to be harmful. Between these two extremes there are great gaps in our knowledge at present, and what the optimum intake over a long period of time should be with a mildly damaged kidney, we need to know.

So for salts, of which sodium chlorid almost alone has been studied and that only over relatively short periods of time. I want to impress on you that as to water, salt and protein intake, which we reduce with the idea of affording the kidney rest, and this seems to be sound in principle, we lack the knowledge as to what amount of each in combination is best for the developing nephritis in the sense of reducing renal work without causing other damage, and so affording a physiologic rest that will give the kidney the best opportunity to repair its damage. This information apparently can be obtained by a thorough, careful study of a large group of patients, followed over a period of not less than five years, to whom we apply a considerable number of the methods of studying renal function at present available; and this surely should be done to give us a better basis for the dieting of patients with nephritis.

Apart from the various constituents of food, should the calory value of the intake in the nephritic be reduced to a level that will cause a loss of body weight, or should body weight remain in equilibrium? In diabetes, evidence seems to favor a lowered level of body weight. In the latter stages of both diabetes and nephritis there is a marked loss in body weight which cannot be made up by an increased calory intake. As to whether a lower level of body weight in the earlier stages of nephritis would be beneficial, we do not know. Careful observation here is almost lacking.

Muscle exertion increases substances to be eliminated by the kidney. Excessive muscular effort appears to lead to renal irritation. Too little exercise lowers the general efficiency of the body. We need to advise our patients with early nephritis in regard to exercise, yet we have few data on which to base our advice. Still, data would be obtainable if an adequate investigation of the effects of varying sorts and degrees of exercise repeated daily for a period of time should be undertaken.

2. *To Remove Edema.*—For this purpose we restrict salt and fluid intake and increase elimination. If we are to deal satisfactorily with edema we should know why the edema is produced. In some patients, apparently few in number, sodium chlorid retention in the body seems to be a very important causative factor in the edema. If salt retention is due to defective renal elimination, in such cases restriction in the salt intake frequently leads to disappearance of the edema. Whether or not this occurs seems to depend on whether, with a lowered intake, there is some excess excretion representing sodium chlorid taken from body stores. In ratio to this excess excretion, accumulated water leaves the body and edema decreases. With the reduction in salt intake, fluid intake too should be reduced to facilitate loss of fluid from the body. To reduce fluid and salt intake is evidently a rational procedure for patients with edema when we have evidence of faulty elimination of one or both. Unfortunately, however, in some cases water and salt excretion by the kidney is at such a low level that we are unable so to reduce intake as to bring about an elimination in excess of intake, and therefore our restrictive measures are ineffective. Fixation of salt and water by body tissues may play a part in causing edema. In many patients with edema we find a very poor salt elimination, and usually a decrease in fluid elimination. So far as can be detected, there is no considerable increase in salt and water in the vascular area as determined by analysis of the blood. In some of these patients a large part of the ingested salt, not excreted by the kidney, is found in such accumulations of fluid as ascites. We know that protoplasm contains both salt and water. Are these amounts, under certain conditions, increased in some way, more of these substances being incorporated or fixed in body cells? This is a phase of the subject, a biophysical one, about which we have little knowledge at present. There is much evidence that edema is by no means a simple question of salt and water retention

by reason of fault in the kidney. Certain edemas in which there is no evidence of renal lesion are proof of this. Anyhow, in actual practice, salt reduction and fluid restriction often fail to decrease the edema of chronic nephritis.

Another view has been expressed that in the edematous nephritic, blood proteins, mainly albumin, are decreased, and this decreases osmotic pressure to be exerted on the filtration membrane of the glomerulus and so increases water retention. To correct this, protein-rich feeding with high carbohydrate intake is advised. In my own trials such treatment has been ineffectual, and several observers fail to find evidence of decreased blood proteins. It would seem for both reasons that this is a factor in the edema in few cases. Usually protein-low feeding is advised on the basis of the principle of securing physiologic rest already referred to.

Another view of the causation of edema attributes it to swelling of colloids on account of increased acidity and variations in salt content. Alkalis are given on this basis; in my hands this treatment has been ineffectual and seems to be harmful.

Other theories as to the causation of edema do not lend themselves to therapeutic application. The entire question of the causation of edema needs thorough study; little is really known about it.

Failing to influence the edema by means planned to change conditions leading to its formation, we are forced to rely on increasing fluid elimination while restricting fluid intake. Naturally, the attempt is made to increase renal elimination by prodding the kidney to do more work; that is, diuretics are used. In edema of nephritis they are almost invariably ineffectual, and often are harmful. In circulatory edema they strikingly increase the excretion of urine, and in mixed circulatory and renal edema they may help. In my own experience I have never seen effective diuresis from a diuretic when the basis of the edema was a renal lesion. They may be tried cautiously, because one cannot be sure of the absence in a given case of a circulatory element in the edema responsive to diuretics, and perhaps there are cases with renal edema which may respond to a diuretic.

Fluid elimination can be brought about through skin and intestine, and sweating and catharsis will increase elimination of water. Unfortunately, they are processes that cannot be repeated very frequently (more than daily); they are debilitating at best, and progress by means of them is rather slow, even when it is obtained.

Mechanical removal of fluid can be carried out, and it always gives temporary relief; rarely is it of permanent help.

3. *To Prevent the Formaton of Toxic Products and to Combat Their Effects.*—What causes uremia we do not know. It is a purely hypothetic toxic substance whose formation we seek to prevent or whose elimination we try to bring about. High protein feeding directly or indirectly frequently seems to precipitate toxic manifestations. Conversely low protein feeding should retard or prevent the formation of these toxic substances. We have evidence that it so works; therefore this type of nephritic (usually the nonedematous type), with reason, has a restricted protein diet prescribed. If these toxic substances are formed, we know of no way of neutralizing them; we can only seek to eliminate them. This we attempt by diuresis if possible, by catharsis and by diaphoresis; the last two are the most effective means. With these we combine an increased fluid intake. Mechanical removal by bleeding is the promptest and most effectual means at hand. With bleeding, transfusion of normal blood is indicated in the anemic or when repeated bleeding is required.

In this review of the treatment of nephritis I have stressed the gaps in our knowledge with the idea of emphasizing the importance of further investigation of the problem of nephritis. Methods of treatment that we use are largely empiric; to recognize this fact is more conducive to investigation than if we assumed that treatment was on a rational basis. Notwithstanding the many deficiencies in our knowledge, we are able to do much to improve the condition of the nephritic, and probably we can retard the progress of the lesion which we cannot cure.

SUMMARY

Deficiencies in knowledge as to the etiology and pathology of chronic nephritis and associated vascular lesions handicap our treatment. Treatment is largely symptomatic and based on such knowledge as we possess of renal function. Preventive treatment is very unsatisfactory. In treating chronic nephritis we aim: (1) to stay the progress of the lesion; (2) to remove edema, and (3) to prevent the formation and combat the effects of toxic substances. To stay the progress, we seek to prevent infections, and by dietary restrictions to decrease renal work and so afford physiologic rest and opportunity for repair. The latter seems a rational procedure, but we need much knowledge for a basis of determining the optimum for a prolonged intake of water, salt and protein. To remove edema, we restrict salt and fluid intake and increase elimination; but we know very little as to the cause of edema, and hence are handicapped in treatment. Increased elimination by diuretics rarely succeeds when a renal lesion causes edema. Elimination by sweating and catharsis is slow, but may succeed. Mechanical removal is effectual, but temporary. To prevent toxic manifestations, we reduce protein intake; to combat them, we increase elimination by diuresis, diaphoresis, catharsis and bleeding. Bleeding is the promptest and most effectual method of elimination of toxic substances.

Peter Bent Brigham Hospital.

ABSTRACT OF DISCUSSION

DR. LEWELLYS F. BARKER, Baltimore: Dr. Christian distinguishes three main types: acute nephritis, the less acute or subchronic form with edema, and the chronic forms that go on for a long time without edema, though they sometimes develop a terminal edema from circulatory lesions. These groups correspond closely to the three generally described as acute diffuse nephritis, subacute or subchronic glomerular renal disease, and hypertension renal disease without edema, known as interstitial nephritis and as the arteriosclerotic kidney. I do not use the term interstitial nephritis unless confronted with an inflammatory condition. Ordinarily, I prefer the term nephropathy. The etiology of these diseases is not clear. Acute nephritis and acute inflammations are doubtless often toxic in origin and very often streptococci are responsible, especially for the subacute or subchronic glomerular tubular forms with dropsy and with edema. The cause of most chronic forms without edema is hypertension. We know less about these forms as far as etiology is concerned. Probably when we know the etiology of hypertension and of arteriosclerosis, we will be more familiar with the etiology of the chronic types. Obesity, hyperthyroidism and slight

infections occurring over and over again may be responsible. As to therapy: In focal diseases without any loss of renal tension, the therapy is simple, but in diffuse lesions with disturbance of the water output, with changes in or near the cardia, disturbance of the nitrogen output and the toxemia that seems to be associated with nitrogen retention, therapy is not so simple. Once nephritis in chronic form has occurred it is impossible to remove it. In the acute forms complete recovery sometimes occurs. Chronic renal disease with hypertension may go on for ten or twenty years and death finally occurs from uremia or myocardial insufficiency. As to the methods of protecting the kidney: The two principles followed are protection of the kidney and support of the heart and circulation. Protection of the kidney is most important in the first two groups and support of the heart is most important in the third group. The three dietetic regimens used are, first, water and milk, or a milk regimen; second, the chlorid-free regimen, and third, the nitrogen-free regimen. In any case of renal deficiency often only water, a wineglassful every hour, will do good. The patient will suffer no harm by going without food for a few days. Often uremia and marked Cheyne-Stokes breathing will disappear under water regimen. Then give equal parts of water and milk, and finally, milk, but warning against a long continuance of such a regimen. To keep patients on nothing but milk for months is a mistake, since milk alone cannot support the patient properly. There is not enough iron in milk, and it is well to give iron in some form, such as Basham's mixture.

The indication for the chlorin-poor method is water retention with dropsy. In some cases this diet does get rid of the edema, but do not give a chlorin-free diet for too long a period. Give a chlorin-poor rather than a chlorin-free diet. Milk is not chlorin-free, but a pure vegetable diet is more nearly so. Chlorin-poor diet is so unpalatable that patients use pepper and mustard to flavor it. These substances are sometimes irritating to the kidney, and following large intakes of mustard many patients have developed gastric ulcer and hematemesis. The reduction of nitrogenous substances produces good results in the early stages but cannot be continued too long. It is important to keep the intestinal tract freely open by salines and to keep the skin moist. At the same time, avoid prolonged catharsis. Venesection is the quickest way of relieving uremia; often the withdrawal of from 300 to 600 c.c. of blood without any other measures will prove of value.

Some diuretics, such as theobromin sodium salicylate and theocin, may injure the kidney cells. I never give theobromin sodium salicylate for more than three days at a time or theocin for more than two days. The effects of these drugs are much more marked in the edemas due to myocardial insufficiency than to renal insufficiency. Squill also has some effect, but aside from theobromin sodium salicylate and theocin, diuretics do very little good. Support of the heart is important in the subacute cases with edema. Rest in bed with digitalis or strophanthus, reduction of the fluid intake to 500 c.c., five small meals, and laxatives, are the things that restore the heart muscle and circulation through the kidney. Prophylaxis is what we should preach. If we keep every patient with an acute tonsillitis in bed until the throat is well, if we take care of every acute infection by rest in bed, if we get rid of abscessed teeth and other focal infections before damage is done, if we keep patients from being 40 or 50 pounds overweight, if patients will have their family doctor examine them while they are well rather than wait until they are ill, we will accomplish more of what we desire.

Dr. George Dock, St. Louis: I do not think any advance has been made in our knowledge of kidney disease by trying to substitute the term nephropathy for nephritis. Some of the most typical cases of acute kidney disease are degenerative rather than inflammatory, hence the suffix "itis" cannot be limited to inflammatory processes. Nephritis can be translated "kidney trouble" rather than kidney inflammation. But kidney trouble is the same as nephropathy or nephrosis, and so nephritis is as accurate as any other term so far proposed. At the time the early classifications of kidney disease were made, function was practically unknown. We have learned much about kidney function, but we have not translated kidney function into pathologic anatomy. There is much to learn. Dr. W. H. Olmsted has been working on a novel method, and with promising results. It consists, briefly, in letting the patient starve over night, examining the urine in concentrated form for the most important chemical constituents, then letting the patient drink large quantities of water (several liters), and then making a new series of chemical tests. I agree with Dr. Barker as to the preventive treatment of chronic nephritis. Osler called attention to the advantage of finding a small amount of albumin in the urine because the patient can be told that he has nephritis and his life be regulated so as not to be cut as short by the disease as it would be if he had no treatment. Often patients are given a bad prognosis because they have chronic Bright's disease and they live accordingly. Important points in practice are: Put the patient on a low calory diet early. A milk diet is fairly safe. Eggs are also good food in nephritic cases. Calcium, iron, bread and vegetables should be included in the diet. I prefer a salt free diet, because so many people do better with little salt. Some patients do better with red meat; some do better without meat, especially chronic cases of low grade without serious cardiac degeneration. I agree entirely with what has been said about diuretics. Exercise is important for these patients but it must be exercise suited to their condition. Chronic nephritis patients must be taught how to live.

Dr. Nelson W. Janney, Santa Barbara, Calif.: There is still an overgreat tendency to overemphasize protein restriction in nephritics. One reason for this is the many laboratory investigations dealing with proteins, protein production, blood urea, etc., which has emphasized, perhaps too greatly, this phase of treatment. I have become accustomed to see nephritics in not a particularly favorable condition so far as the dietetic side of the treatment is concerned because of the low protein intake for a long period. Those patients are frequently rather weak and obese because the average man will make up promptly in fats and carbohydrates for what he is prevented from taking in the way of protein food. Obesity must be avoided in nephritis. The obese nephritic is usually weak and neurasthenic. Some of these patients are taking as low as 30 or 40 gm. of protein over long periods and really suffering protein starvation. Cutting down the fats and increasing the proteins help considerably. As regards the minimum protein requirement, Sherman allows 0.737 kg. of body weight. Many of these patients are given one fourth of that amount over long periods. When our knowledge of thyroid function increases, many patients with latent nephritis will be cured by treating the hypothyroidism. As in the treatment of diabetes we need a standardized dietary chart to record all data as to tests, etc. The correlation of treatment and the time period could then be worked out, in a much more satisfactory condition.

Dr. Eugene S. Kilgore, San Francisco: So long as we remain ignorant of the etiology of chronic nephritis it will be necessary to keep under suspicion a number of chemical substances used as medicines and food preservatives. Experience in investigating the effects on the kidneys of certain food preservatives has convinced me that such investigations as were possible heretofore are not decisive even if they fail to show kidney damage. It is possible that such substances may be injurious only when they have been administered over a very long time or only when in conjunction with an infectious or other agent. Still more suspicion must be attached to substances known to produce definite signs of kidney irritation. I refer particularly to the salicylates, which Hanzlik and his associates have shown to be followed quite regularly by the appearance of blood in the urine whenever the drug is given in full therapeutic doses. According to present evidence, salicylates seem to be more likely to injure the kidneys than to effect a cure. They are necessary for the relief of certain kinds of pain, but they should be used much less frequently than at present. For any other purpose than the relief of symptoms the legitimacy of their use is highly questionable.

DR. HENRY A. CHRISTIAN, Boston: I am heartily in accord with everything that has been said. I am a skeptic but not a pessimist. I have my doubts but I am not without hope. I expect to see great advances in this field. What we really need is not so many studies over a short period of time of such chronic conditions as nephritis, but studies over a long period of time. We cannot find out much about a disease that probably takes from five to twenty-five years from its inception to its end by studying it for a few days or a few weeks. We cannot find out very much about the methods of treatment unless we observe carefully the effect of remedial agents over a long period of time. What we need is combined study, because no one clinic is physically able to carry out such studies. An effort is being made through the National Research Council to carry out such a plan. That means finding the money because we have plenty of good people to carry out the work and to conduct such combined investigation over, let us say, a minimum period of five years. In regard to classification: study of a condition should be followed by simplicity rather than complexity. I sometimes take more liberties with classification than others, probably because I was trained as a pathologist who dealt with minute classifications. I think in dividing the disease clinically into acute nephritis, chronic nephritis with edema and chronic nephritis without edema, probably with the addition of a group of subacute nephritis, we have gone as far as we should in classification at present. A more satisfactory classification can come only from a more complete knowledge of nephritis clinically, etiologically and pathologically.

ARTERIAL HYPERTENSION ASSOCIATED WITH ENDOCRINE DYSCRASIA *

WILLIAM ENGELBACH, M.D.
ST. LOUIS

The purport of this paper is to offer additional evidence to the recent literature in which attempts have been made to associate a certain selected group of cases of arterial hypertension with disturbed internal secretions. In doing this the burden of proof is, first, to establish the existence of positive endocrine states in these cases; and, second, definitely to exclude the presence of a possible vasculorenal or other lesion as the cause of the arterial hypertension. With a few exceptions, the negative diagnosis of cardiovasculorenal lesions in the cases here reported was based on the absence of present-day clinical manifestations and the course of the disease. The diagnoses of different endocrine dyscrasias were based on clinical evidence considered sufficient for the demonstration of positive endocrine disease, plus the exclusion of other possible diseases as a cause for the symptomatology. The personal observations here reported were deduced from an analysis of 500 uncomplicated endocrine diseases, in which accurate blood pressure records and other determinations worthy of report had been made. Of these 500 patients, forty-six had a systolic pressure of 160 or above. This surprisingly high number, almost 10 per cent., was considered of sufficient clinical importance to be worthy of attention, and serves as the pretext for this paper. In a considerable number of these cases, the abnormal blood pressure had been diagnosed as being due to "neurosis," or to lesions of the renal or vascular system. Contrary to the unfavorable prognosis based on renal or vascular disease, many of these patients had lived a considerable number of years, completely disregarding their high blood pressure or other serious lesions held responsible for this sign. The treatment which had been prescribed, definitely indicated, no doubt, by the foregoing diagnosis, if in any way effective, had only served to add materially to the affliction of these patients.

In order to avoid early misconception regarding the possible relationship of endocrine states to arterial hypertension, it should be stated that there is no intention to disconnect arterial hypertension from the already well-established groups of arteriorenal lesions. The scope of this paper covers an entirely different division of cases, perhaps a small percentage of the entire number of arterial hypertonias, the clinical studies of which suggest an entirely different cause for the high blood pressure. Granted that this premise is correct, then the prognosis and treatment in these cases must, of necessity, be radically different from those that are accepted in arterial hypertension.

RELATIONSHIP OF ARTERIAL HYPOTENSION TO ENDOCRINE DISEASE

Since Addison first described epinephrin insufficiency in 1855, there has been a tendency to relate different blood pressure states to abnormal activities of the endocrine glands. The gradual decrease in blood pressure in complete insufficiency of the suprarenal glands not only attracted the attention of physiologists and clinicians (Vaquez and Aubertin,[1] Schur and Wiesel,[2] Ehrmann, Schlayer,[3] Fränkel,[4] Aschoff and Cohn,[5] Oberndorfer,[6] Stewart,[7] Ingier and Schmorl,[8] Janeway and Park[9]) to this relationship, but the trend of experimentation has been along the line of attempting to connect arterial diseases and those substances of the internal secretions which are known to influence markedly the unstriped muscle contractions producing constriction of these vessels. Allbutt[10] has described and proved the involutionary or decrescent type of arteriosclerosis in which the arterial tension gradually decreases, adding to the clinical groups of arteriosclerosis an entirely different syndrome from that in which hypertension is associated with sclerotic changes of the vascular system.

For many years the secretion from the thyroid gland has been thought to be an antagonistic hormone to epinephrin in its effect on vasoconstriction. For instance, it is thought that thyroid secretion neutralizes the effect of epinephrin on the general muscular tonus, and particularly on the vasomotor constriction of the vascular system. Mikulicz, in his description of senility, gave, as a probable cause, the early atrophy and decreased secretion of the thyroid gland and consequent withdrawal of the vasodilator neutralizing effect of this secretion on the vascular system, allowing the epinephrin secretion to exert its pressor effect uninfluenced. Many other authorities (Weber, Lorand, Ewald, Rolleston and Williams[11]) suggested insufficiency of the thyroid secretion as a possible cause for

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1. Vaquez and Aubertin: Bull. et mém. Soc. méd. d. hôp. de Paris **22**: 705, 1905.
2. Schur and Wiesel: Wien. klin. Wchnschr., 1907, p. 1202.
3. Schlayer: Deutsch. med. Wchnschr., 1907, p. 1897.
4. Fränkel: Arch. f. exper. Path. u. Pharmakol. **60**, 1909.
5. Aschoff and Cohn: Verhandl. d. deutsch. path. Gesellsch., 1908, p. 131.
6. Oberndorfer: Verhandl. d. deutsch. path. Gesellsch., 1909, p. 273.
7. Stewart: J. Exper. M. **14**: 377, 1911; ibid. **15**: 547, 1912.
8. Ingier, Alexandra, and Schmorl, G.: Deutsch. Arch. f. klin. Med. **104**: 125, 1911.
9. Janeway, T. C., and Park, E. A.: J. Exper. M. **16**: 541, 1912.
10. Allhutt, T. C.: Diseases of the Arteries, Including Angina Pectoris, London, Macmillan & Co. **1**; **2**: 81, 1915.
11. Weber, Lorand, Ewald, Rolleston and Williams in Allbutt, T. C.: Diseases of the Arteries **1**: 230, 1915.

the so-called senile, involutionary or decrescent type (Allbutt) of arteriosclerosis associated with hypotension. On the other hand, Victor Horsley,[12] Rolleston,[13] and others have denied such relationship. Allbutt, in his exhaustive specialized observation on this particular type of arteriosclerosis, reports negative effects on the hypotension from thyroid therapy.

It has been generally recognized, clinically, that arteriosclerosis is a rather common accompaniment of cretinism, as well as of gout and other so-called metabolic diseases. On the other hand, the changes of the blood pressure in different cases of myxedema cannot be attributed solely to the lack of thyroid substance. If this were true, the pressure would rise in all cases, whereas it is only in a comparatively small percentage of cases that abnormal arterial tension, either increased or decreased, has been noted. Spiethoff,[14] Maire,[15] and Treves[16] found a variable blood pressure compared to the thyroid activity and other symptomatology of hyperthyroidism. Changes in the blood pressure during the climacteric have been assigned by Wilson[17] to the fact that the internal secretion from the ovary has a marked vasodilator effect on the arteries, and that consequently its absence during the menopause is a factor in the rise of the blood pressure in this peculiar group of cases. Nevertheless, the hypertension in these cases must be due to causes other than the disturbed secretion of the ovaries, otherwise, it would occur in a larger percentage of cases. The chromaffin secretion is supposed to influence the sympathetic, and not the autonomic nervous system. Other explanations (Gaskell, Cushny, Dixon and Harvey[18]) for the peculiar localized vasoconstriction effect on the vascular system have been attributed to the different amounts of epinephrin contained in the blood in different arteries of the body. Stewart[7] has proved that none of the theories mentioned above has been substantiated convincingly enough to give them consideration.

THE PATHOGENESIS OF ARTERIAL HYPERTENSION

Despite the prodigious amount of work since Traube[19] expounded his mechanical theory of renal vasoconstriction as the cause of increased blood pressure in 1856, the genesis of arterial hypertension has remained unsolved. It would not be pertinent at this time to attempt to classify the various theories assigned to this interesting sign. Suffice it to say that a great many theories have been advanced which propound other than actual organic or structural changes in the arteriorenal system as the causative factor for the high blood pressure. Those well-known structural lesions of the cardiovasculorenal system, so commonly associated with high blood pressure will be omitted from this discussion; they will be placed in a different group from those which I shall describe. The type of arterial hypertension under consideration is supposed to be entirely dissociated from vasculorenal lesions, or if such lesions, as late changes, are present, the hypertension, it is assumed, antedates them by many years. It is presumable that when such high blood pressure exists for a period of years, arteriosclerosis results as an effect (but is not the cause), and that terminal changes such as cerebral hemorrhage and cardiac insufficiency (but never uremia) may be the end-result in these cases. Considerable controversy obtained in the early literature about just such cases of arterial hypertension, and these terms were assigned by various authors to these arterial hypertonias: (1) "prealbuminuric stage of Bright's disease" (Mahomed,[20] 1879); (2) "latent sclerosis" (von Basch); (3) "presclerosis" (Huchard, 1893); (4) "essential hypertension" (Krehl,[21] and Mosenthal and Hamman[22]); (5) "hyperpiesia" (Allbutt, 1894); (6) "angiosclerosis" (Thoma); (7) "pure hypertension" (Josué and Block[23]); (8) "neurotic hypertension" (Bradford, 1898); (9) "primary cardiovascular hypertension" (Janeway,[24] 1906); (10) "benign hypertension" (Vohlhardt and Fahr), and (11) "functional hypertension" (Martinet,[25] 1912). Just what relation the diseases of the ductless glands bear to the types of hypertension just enumerated cannot be determined. It is probable, however, that a better knowledge of the diagnosis of internal secretion may reflect considerable light on the etiology of these so-called nonvasculorenal types. Should this occur, it may help to explain why a great many of the exogenous causes, such as mental strain, heredity, intoxications and infections, which have such a marked effect on the secretions of the ductless glands, have been given so constantly as etiologic factors for arterial hypertension.

It may also help to explain why obesity and other metabolic states are so frequently associated with arterial hypertension. While it is true that as yet no convincing proof has been offered, either by histopathology or physiologic chemistry, for the direct association of arterial hypertonia with endocrine dyscrasias, there is, nevertheless, increasing clinical evidence that arterial hypertension does exist in positive endocrine cases in which there is no definite manifestation of either vascular or renal disease.

INCIDENCE OF NONVASCULORENAL ARTERIAL HYPERTENSION

Janeway, after setting aside all doubtful cases, found among 130 patients with blood pressure of over 200 that no renal disorder could be detected in seventeen cases, or 13 per cent. He called these cases "primary cardiovascular hypertensions." In 100 cases of arterial hypertension studied very exhaustively by Rappleye,[26] in forty-five cases, or almost 50 per cent., there was practically negative urine, blood urea, blood nitrogen, and phenolsulphonephthalein output. In 100 cases reported by Schneider,[27] seventeen were classified as "benign" or "essential hypertension," on this basis: (1) normal vessels; (2) retention of concentrating power of the urine (Mosenthal's test); (3) normal urine, with the exception of an occasional hyaline cast and a trace of albumin; (4) phenolsulphonephthalein output normal or slightly below normal, and (5) normal blood urea and creatinin. He states, however, that, if these cases were observed long enough, from 10 to 20 per cent. would later be classed with the

12. Horsley in Allbutt: Diseases of the Arteries **1**: 230, 1915.
13. Rolleston: Clin. J., June 21, 1905; Lancet, Sept. 28, 1907.
14. Spiethoff: Zentralbl. f. inn. Med. **23**: 849, 1902.
15. Maire: Thèse de Paris, 1883.
16. Treves: Riv. iconog. d. sez. nerv. d. Policlin. gen. di Torino **1**: 2, 1897.
17. Wilson, S. A. K.: Brit. M. J. **1**: 1261 (June 14) 1913.
18. Gaskell, Cushny, Dixon and Harvey, in Allbutt: Diseases of the Arteries **1**: 228, 1915.
19. Traube: Gesammelte Beiträge **3**: 164, 235; Allbutt, T. C.: Diseases of the Arteries **1**: 7, 1915.
20. Mahomed: Guy's Hosp. Rep., 1879.
21. Krehl: Deutsch. med. Wchnschr., 1905, p. 1872.
22. Mosenthal, H. O., and Hamman: Pennsylvania M. J. **22**: 287 (Feb.) 1919.
23. Josué, O., and Block, L.: Arch. d. mal. du cœur **1**: 162 (March) 1908.
24. Janeway: Am. J. M. Sc., May, 1906.
25. Martinet: Pression artérielle et viscosité sanguine, Presse méd. **19**: 915, 1911.
26. Rappleye, W. C.: Boston M. & S. J. **179**: 441 (Oct. 3) 1918.
27. Schneider, J. P.: Journal-Lancet **38**: 247 (May 1) 1918.

malignant or nephritic groups. Of these 100 cases, 5 per cent. were grouped with the type due to endocrine dyscrasias; 3 per cent. to exophthalmic goiter; and 2 per cent. to the climacterium. An analysis of this report, based on 500 endocrine cases, demonstrates that forty-six, or nearly 10 per cent., were associated with high blood pressure. Furthermore, in a general consideration of all the cases of arterial hypertension personally observed, comparatively few have been found independent of the vasculorenal lesions which could not be classified in this group.

RECENT LITERATURE ASSOCIATING ARTERIAL HYPERTENSION WITH ENDOCRINE DYSCRASIA

During the last year there have been three papers (Riesman,[28] Hopkins,[29] and Gutmann[30]) referable to increased hypertension associated with the menopause. Spiethoff, from an analysis of twenty cases of exophthalmic goiter, found a variable blood pressure dissociated from the general symptomatology. With these exceptions, there has been comparatively little literature extant referable to any number of endocrine states or cases associated with high blood pressure. Isolated cases of endocrine diseases have been reported, in which high blood pressure has been noted. Gibson[31] suggested the idea of an association of arteriosclerosis with pituitary disorder, and reported a number of cases in which there was arterial hypertension. Riesman[28] noted, besides the relation of arterial hypertension to the climacteric, its presence in both pituitarism and thyroidism. Hopkins,[29] in two exhaustive papers, has fully described this relationship of arterial hypertonia to the menopause. Plummer has noted its incidence in thyroidism.

In the forty-six cases here reported, it will be noted that high blood pressure was found associated with disturbed activity of various ductless glands, occurring in both sexes and in ages other than that of the menopause. The largest percentage of cases was grouped with those in which occurred polyglandular insufficiency, involving the thyroid and the pituitary gland. It was found associated, however, in cases in which apparently but one endocrine gland was involved.

ABSTRACTS OF ILLUSTRATIVE CASES

CASE 1 (General 1259).—*Diagnosis: Polyglandular insufficiency (hypoituitarism and hypothyroidism).* Blood pressure (before treatment), 200 mm.; (after treatment), 160/95 mm.

History.—Mrs. E. S., aged 38, referred by Dr. F. H. Lamb, Davenport, Iowa, complained of marked fatigability; dyspnea on effort; nervousness, emotionalism, and headaches, of six years' duration. The onset of these symptoms had been gradual, with attacks of weakness, increasing fatigability, nervousness, emotionalism and headaches. One year after the onset, she suffered from attacks of very marked abdominal distention or bloating, associated with belching and constipation. During the entire course of the symptoms she had gained 85 pounds in weight, 25 pounds within the last eight months. There had also been irregular periods of polyphagia, polyuria and polydipsia. The hands and feet had been swollen and stiff intermittently during the last few years. She had suffered from somnolence, a marked complaint during the day, and insomnia at night. She had had measles and mumps during childhood, and bronchitis at the age of 16. Other findings were negative, except the menstrual. She had matured at 11½ years, since when the menses had been irregular, of three days' duration and the flow had been scanty. During the last two years, the flow had increased in amount and had been associated with slight dysmenorrhea. The patient's mother had died at the age of 76. She had been very obese, drowsy and somnolent for years. The cause of her death was unknown. One sister was very obese; four others were living and well. One brother was very obese, and had been relieved by thyroid treatment. One brother had very high blood pressure.

Examination.—The measurements were: from the symphysis to the soles of the feet, 32 inches (81 cm.); from the symphysis to the vertex, 34 inches (86 cm.), and the span was 70 inches (178 cm.). She was a large woman, weighing 207¾ pounds, with a tendency to the girdle type of obesity. There was considerable fulness through the thighs, and padding about the hypogastrium and over the mons. There was some enlargement of the legs and arms, with evidence of subdermal thickening. The skin was dry, and there was a fine desquamation. There was a slight growth of hair on the legs, but no abnormal distribution about other portions of the body. The hands were of the thyropituitary type: the fingers were tapering, the lunular markings were faintly visible, and there was definite puffing of the backs of the fingers and hands. The feet were of the same character. The color of the body was good and of the face, very good. The systolic blood pressure before treatment was 200 mm. of mercury; and after treatment, 160/95 mm. Regional examination was negative, except for evidence of an endocrine heart. A systolic murmur was heard over the pulmonic area, which disappeared on inspiration. The aortic second sound was slightly accentuated. Palpable arteries were not sclerosed. Single catheterized and twenty-four hour specimens of urine were negative. The phenolsulphonephthalein test gave a total of 85 per cent. Blood analysis revealed: hemoglobin, 110 per cent.; white blood cells, 12,600; red blood cells, 5,670,000. A smear and Wassermann reaction were negative. Nonprotein nitrogen was 25 mg. Sugar tolerance was normal. Blood sugar (after fifteen hours' fasting) was 0.130 (normal, from 0.10 to 0.120); one hour after 162 gm. glucose, 0.219 (normal, 0.180); two hours after 162 gm. glucose, 0.099 (normal, from 0.10 to 0.150). Basal metabolism (Benedict's) had decreased 10 per cent.

CASE 2 (General 1150).—*Diagnosis: Polyglandular insufficiency, hypopituitarism and hypothyroidism (pituitary hibernation). (Achylia and spastic colon.)* Blood pressure, 198/140 mm.

History.—Mr. C. W. M., aged 58, complained of marked somnolence (he was unable to remain awake unless actively engaged in some physical procedure); nocturnal insomnia and attacks of dyspnea, attacks of gastric disturbances, distention, fulness and pressure in the epigastrium; gradual gain of weight to 255 pounds, and high blood pressure, from 205 to 220 mm., of five years' duration. Somnolence had been gradual during the last few years, the patient being unable to keep awake while reading or talking. The onset of obesity was gradual; a few years before there had been a gain of 10 pounds within five weeks. High blood pressure, recording over 200 mm., had been first noted five years before, at the age of 53. He had suffered from nocturnal insomnia and dyspnea during the last year, and had had to assume the semireclining position for sleep. Dyspnea was present usually in the early morning hours. He had suffered an attack of renal colic several years before. He had had influenza one year before, and an operation on the nose, under a local anesthetic. The tonsils had been removed thirty years before. He had suffered from migraine during the ages of 16 and 17, but not since that age. He was a mild user of tobacco, and an inordinate eater. One sister had nephritis and his mother had migraine.

Examination.—The patient weighed 255 pounds. The lower measurement was 36 inches (91.5 cm.) and the upper measurement, 37 inches (94 cm.); the span was 76 inches (193 cm.). There was an osseous development of probable preadolescent anterior lobe hyperpituitarism. There was considerable obesity, but no extreme broadening through the hips. The abdomen was prominent; there was some bulging in the flanks, and a very slight padding about the mons.

28. Riesman, David: Hypertension in Women, J. A. M. A. **73**: 330 (Aug. 2) 1919.
29. Hopkins, A. H.: Treatment of Climacteric Hypertension, New York M. J. **110**: 930 (Dec. 6) 1919; Am. J. M. Sc. **157**: 826 (June) 1919.
30. Gutmann, B.: J. M. S. New Jersey **15**: 122 (April) 1918.
31. Gibson: Address on Medicine, Liverpool, 1912.

There was a slight abnormal distribution of hair on the upper abdomen; none on the chest, and a slight growth on the legs and arms. There was no edema, very slight pitting on pressure and no marked subdermal thickening. There were a few indifferent scars and pigmentations about the shins. The hands were of the pituitary type: the palms were broad, the fingers fairly long and tapering, and the lunular markings faintly visible. The feet were of the same general character. The skin was somewhat dry, showing very fine desquamation. The hands and feet were warm. The color of the body was good, the face was florid, and there was a slight general sallowness. There was no muscular atrophy, no abnormality of gait or station, and no cyanosis or dyspnea. The pulse was moderately slow, regular, with a quick rise and fall, equal and symmetrical. There was no pistol-shot sign in the forearm, nor Quincke sign visible in the finger nails. The blood pressure was 198/140 mm. There was a systolic murmur in the pulmonic area, which disappeared on deep inspiration. The second aortic sound was accentuated. The palpable arteries were easily compressed and not thickened or tortuous. The roentgen ray revealed a normal sella turcica (12 by 13 mm.). Stereoscopic examination of the chest revealed fulness over the right auricle and a normal aortic shadow. There were suggestive shadows of calculi in the left kidney. Fluoroscopic examination of the chest revealed aorta, heart, diaphragm, stomach and colon normal. Blood examination revealed: hemoglobin, 76 per cent.; red blood cells, 4,460,000; white blood cells, 8,400; differential count and stained smear, normal; Wassermann reaction, negative. Examination of stomach contents disclosed free hydrochloric acid, negative; otherwise normal. There was a trace of albumin in the urine. The phenolsulphonephthalein test gave a total of 38 per cent. Blood sugar (after fifteen hours' fast) was 0.120; one hour after 194 gm. glucose, 0.246; two hours after 194 gm. glucose, 0.180. The basal metabolism decreased 25 per cent. (Benedict's). Electrocardiographic examination revealed an absence of preponderance of the left ventricle.

Treatment and Results.—The patient was placed on thyropituitary substitution treatment (and hydrochloric acid and essence of pepsin for the achylia). The result of the therapy during two months' observation was complete relief of the gastric disturbances, somnolence, nocturnal insomnia and dyspnea, and reduction of the blood pressure to 154 mm. and of the weight to 220 pounds.

CASE 3. (General 1260).—*Diagnosis: Hyperpituitarism and hyperthyroidism.* Blood pressure, 220/135 mm.

History.—Mr. H. S., aged 45, referred by Dr. J. E. Jost, Jefferson City, Mo., complained of attacks of headache, vertigo, weakness, nervousness, insomnia and loss of memory; high blood pressure, above 200 mm.; loss of weight, amounting to 40 pounds during eighteen months, and marked attacks of dyspnea. The high blood pressure had been present for six years. The onset was gradual, with a mild sensation of fulness in the head, and vertigo, eight years before. Two years following this, high blood pressure was noted at examination, the systolic pressure being 190, and failing to react to dietetic, medicinal, electric or hydrotherapeutic treatment. Following the onset of the disturbance, there were terrific attacks of headache, with extreme vertigo, throbbing sensations and memory defect. There was loss of hearing in the left ear during the third year of the disease. Attacks of abdominal distention had been present during the last eighteen months, for which the patient frequently took repeated enemas, without relief. Following the onset of this disturbance, he began to lose weight, which loss had totaled 40 pounds during the last year and a half. He had suffered from no infectious diseases, no operations and no injuries. He did not use tea or coffee, he chewed tobacco, seldom smoked, used alcohol moderately, and had discontinued its use for the last seven years. The family history was negative.

Examination.—The measurements were: from the symphysis to the soles of the feet, 35¼ inches (89.5 cm.); from the symphysis to the vertex, 32½ inches (82.5 cm.); the span was 72 inches (183 cm.). The general development was good; there was some loss of weight but no marked evidence of emaciation. There was an osteochondroma on the inner aspect of the left leg, just below the knee. There was a marked growth of hair on the legs, with abnormal distribution on the upper abdomen, chest and forearms. There was a slight pallor of the body, but the color of the face was very good. The hands were long; the fingers were not tapering; the lunular markings were visible, and there was slight cyanosis of the nails. There was no edema or dyspnea, and no abnormality of gait or station. The thyroid was not enlarged. The systolic murmur in the anterior axillary line was not modified by respiration. There was marked accentuation of the second tone at the base. The systolic murmur heard at the base was transmitted upward, along the right side to the carotid, on the left side as high as the clavicle, and disappeared entirely on deep inspiration. There was marked accentuation of both second tones, and no tortuosity, motile pulsation or sclerosis of the superficial vessels. The blood pressure was 220/135 mm. There was a trace of albumin in the urine. The phenolsulphonephthalein test gave a total of 52 per cent. Blood examination revealed: hemoglobin, 110 per cent.; red blood cells, 5,910,000; white blood cells, 6,800. A stained smear and differential count were normal; the Wassermann reaction was negative. Blood sugar (after fifteen hours' fasting) was 0.116; one hour after 115.3 gm. glucose, 0.148; two hours after 115.3 gm. glucose, 0.132. The nonprotein nitrogen content was 25 mg. Fluoroscopic examination revealed normal head, neck, chest, heart, mediastinum and diaphragm. Electrocardiographic examination disclosed absence of left ventricular preponderance. Basal metabolism had increased 4 per cent.

CASE 4 (General 1197).—*Diagnosis: Menopause (hypothyroidism and hypo-ovarianism).* Blood pressure, 220/130 mm.

History.—Mrs. S. B. C., aged 53, complained of a throbbing sensation in the head, tinnitus; dyspnea on exertion; nervousness and insomnia; abdominal distention and constipation; of four years' duration, from the time of the menopause (age 49); blood pressure, 210 mm. The onset had been gradual, with nervousness, insomnia, a throbbing sensation in the head, and headaches. Soon afterward an abdominal syndrome began, consisting of distention, constipation, a sensation of gurgling, and diffuse tenderness. There were no localized or focal symptoms or complexes resembling appendicitis or gallbladder or renal disease. During the course of the patient's disease, she was in bed three times with attacks of so-called sciatica, which were limited to the hip, never occurring along the course of the sciatic, and never being associated with temperature or localized tenderness. Arterial hypertension was first noted two years before, since which time it has fluctuated during twenty-four hour intervals, from 210 to 150 mm. She had had measles, mumps, whooping cough and chickenpox. She had undergone two operations: a perineorrhaphy and amputation of the breast for benign tumor. The menstrual history was normal, with the exception of a scanty flow and a menopause which occurred at the late age of 49. The family history was negative.

Examination.—The measurements were: from the symphysis to the soles of the feet, 34 inches (86.25 cm.); from the symphysis to the vertex, 32½ inches (82.5 cm.); the span was 67½ inches (171.5 cm.). The patient was a large woman, but well built and without abnormal obesity. There was slight fulness through the hips (not abnormal); no fulness over the hypogastrium or mons; very slight growth of hair on the lower extremities, and no abnormal distribution on the upper extremities. There was an erythematous blush on the base of the neck and upper chest. The hands were long and fairly slender; the fingers inclined to taper, and the lunular markings were visible. There was no edema, cyanosis or dyspnea, and no abnormality of gait or station. The color of the body and face was good. The thyroid was normal. There was a diffuse impulse over the precordia, accentuated by nervousness. The apex beat was heard in fourth interspace, at about the midclavicular line, forceful but not heaving. There was no palpable thrill or diastolic shock. Borders, apex beat, midsternal line. The first tone at the apex was loud and booming, followed by a short

systolic murmur, which disappeared on inspiration (cardiorespiratory). The same murmur was heard in the pulmonic area, and a similar murmur in the aortic region, which disappeared on inspiration. The aortic second sound was accentuated and sharpened. The pulse was moderately rapid, of fair volume and tension, regular, equal and symmetrical. The peripheral vessels were free from mobile pulsations, not tortuous, nodular or sclerosed. The blood pressure was 220/130 mm. Single and twenty-four hour specimens of urine were normal. The phenolsulphonephthalein test gave a total of 60 per cent. Blood examination revealed: hemoglobin, 104 per cent.; white blood cells, 7,200; red blood cells, 5,140,000. A stained smear was normal; the Wassermann reaction was negative. Nonprotein nitrogen was 23 mg. Blood sugar (after fifteen hours' fasting) was 0.090; one hour after 111 gm. glucose, 0.159, and two hours after 111 gm. glucose, 0.111. Basal metabolism decreased 18 per cent. Fluoroscopic examination of the head, neck, lungs, thoracic vessels, mediastinum and diaphragm was normal; there was very slight left ventricular hypertrophy. Electrocardiographic examination revealed a slight left ventricular preponderance.

Treatment and Results.—Under one week's treatment, consisting of thyroid and corpus luteum substitution, the blood pressure dropped to 144, and remained below 150 for three weeks.

CLASSIFICATION OF CASES

1. Pituitary gland	5
(a) Hypopituitarism	4
Simple hypopituitarism	1
Pituitary headache	1
Eunuchoid gigantism	2
(b) Hyperpituitarism	1
Pituitary glycosuria	1
2. Thyroid gland	12
(a) Hypothyroidism	8
(b) Hyperthyroidism	4
3. Ovaries	15
(a) Menopause	11
Associated with hypothyroidism	4
Associated with hyperthyroidism	3
Associated with hypopituitarism	2
Associated with eunuchoidism	1
Associated with migraine (pituitary?)	1
(b) Gonad	4
Eunuchoidism	1
Early castrate	1
Late castrate (with hypothyroidism)	2
4. Polyglandular	14
(a) Pituitary and thyroid	12
Simple pituitary and thyroid insufficiency	9
Associated with pituitary headache	1
Associated with hibernation	1
Hypersecretion of pituitary and thyroid	1
(b) Thyroid and gonad insufficiency	1
(c) Pituitary, thyroid and gonad insufficiency	1
Total	46

ANALYSIS OF PERSONAL OBSERVATIONS

In an analysis of more than 500 endocrine cases observed during the last four years, it was found that forty-six, or about 10 per cent., had a blood pressure above 160. Those cases in which a diagnosis of nephritis or arteriosclerosis was suspected were excluded. Of the forty-six, the highest percentage of arterial hypertension was found among the pluriglandular dyscrasias. Fourteen of the forty-six, or 30 per cent., were classified as having more than one gland involved, with none so sufficiently dominating the picture or initiating its course that it might be considered the primary secretory disturbance, with the other glands classed as secondary. Combinations of the pituitary and thyroid hyposecretions were present in twelve cases, or about 26 per cent., of the hypertensive cases. The next highest percentage, eleven cases, or one fourth of the entire number, occurred at the menopause. In cases in which there were glandular disturbances apparent in this group, they were merely considered as a part of the climacteric. For instance, in four there was evidence of hypothyroidism; in three, hyperthyroidism, and in two, hypopituitarism. Of the primary gonad insufficiencies, there were four cases, or 9 per cent.; one in a eunuchoid person, two in a late, and one in an early castrate. The next in frequency was the thyroid group, with eight cases, or 17 per cent., classified as pure hypothyroids, and four, or 8 per cent., as hyperthyroids. The pituitary group ranged lowest in number, five cases, or 11 per cent., being classified as simple dyscrasias of this gland. Of this number, four were hypopituitarism and one hyperpituitarism. One of these was a case of pituitary hibernation, one a case of pituitary headache (both reacted to substitution pituitary treatment), one a hypophysial glycosuria, and two eunuchoid giants.

DIAGNOSIS

The diagnosis of this type of arterial hypertension is necessarily difficult and perhaps many times questionable. The important diagnostic objectives are the exclusion of the following organic lesions: (1) renal disease; (2) cardiovascular disease; (3) subacute or chronic infections (focal and general) and intoxications (syphilis, lead poisoning, gout, etc.); (4) other conditions producing arterial hypertension (increased viscosity of the blood in plethoric individuals, obesity, diabetes, migraine, organic nervous diseases, pregnancy, eclampsia, premenstrual arterial hypertension, and intermittent or paroxysmal hypertension).

1. The first essential is to exclude, if possible, all varieties of renal disease. Dependence has been placed on complete and prolonged observation of the case, including repeated urine analyses, concentration power of the kidney (Mosenthal renal test), the phenolsuphonephthalein functional test, blood retention products (total nonprotein nitrogen, urea, creatinin and uric acid), retinal changes, and cardiovascular signs ordinarily associated with renal disease, such as cor renale, left ventricular preponderance (electrocardiogram), and accentuation of the second aortic tone. The variability of the blood pressure has been an important differential sign. Marked vacillation of from 40 to 60 mm. of pressure in twelve hours, or a rapid reduction of the pressure of more than 60 mm. by treatment, has been considered not due to renal disease. For instance, in Case 4, reported in this article, the systolic pressure, according to the history, had varied from 210 to 150, and quickly fell from 220 to 134 after three days of a treatment that allowed the patient a regimen of moderate exercise, a liberal diet, and freedom from eliminants and vasodilators. On such non-nephritic treatment, the pressure remained below 150 for the following two weeks.

2. The exclusion of arteriosclerosis is another very difficult problem. It is well known that there is frequent sclerosis of the visceral arteries, with absence of all signs of sclerosis of the superficial or palpable vessels. A history of a previous disease that might have produced either arteriosclerotic degeneration or renal lesion, or a thickening, nodulation, tortuosity or pulsating mobility of the superficial vessels is, of course, significant. Changes in the conjunctival and retinal vessels, or changes in the arch of the aorta or the left ventricle of the heart (demonstrated by roentgenologic examination) must also be sought. The clinical symptoms that are frequently associated with visceral sclerosis, sclerotic dementia and angina pectoris, abdominis and cruris are valuable diagnostic aids.

3. Besides the foregoing negative evidence for vasculorenal disease, there should also be negative evi-

dence for focal or general infections, which frequently have a very decided effect on arterial tension. This also pertains to subacute or chronic intoxications and other metabolic diseases, such as plumbism and gout.

4. The fourth group of conditions which must be borne in mind borders very closely on the type of arterial hypertension that has been under discussion as being associated with endocrinous states; possibly some of these should really belong to the group described. Bac,[32] in a recent publication, has renewed the interest in the viscosity of the blood as a possible cause for arterial hypertension in plethoric or obese persons. The intermittent or paroxysmal hypertensions present in migraine, pregnancy, eclampsia and the premenstrual state, or in other so-called functional, neurotic or emotional arterial hypertensions, would probably either fall within this class of arterial hypertensions, or be disqualified entirely, because not persisting for sufficient time to be classified as a definite syndrome. Their differentiation depends on repeated blood pressure observations during the same day, or for a number of consecutive days. In fact, a single blood pressure reading is unreliable, and needs many confirmations. In the great majority of the cases that I have observed, the initial blood pressure reading was usually entirely disregarded, on account of being from 20 to 40 mm. higher than the average procured by making daily examinations. At the same time, the daily variation and the susceptibility of the patient to temporary impressions must, of course, be given consideration in making the final average estimation of the blood pressure.

It must be acknowledged that even after the most searching observations, all clinical evidence sufficient to differentiate and exclude renal and vascular lesions may be lacking, and yet a positive renal or arterial lesion be present. This fact must be borne in mind in each individual case; otherwise, the diagnosis in these cases is subject to a certain percentage of error.

Besides the foregoing negative evidence, there must be present in each of these cases a sufficient history and a definite syndrome of demonstrable endocrine disturbance to account completely for the symptomatology.

PROGNOSIS

The prognosis in these cases is very much more favorable than in those in which there is high arterial tension due to definite vasculorenal lesions. Their course is much longer and less beset with disturbing symptoms than other types of arterial hypertonia. It is true that many of them develop arterial disease, sooner or later; possibly others develop renal disease. The termination of these cases is rarely that accompanying any of the nephropathic diseases, such as uremia. If the arterial tension is not reduced or reducible, many cases terminate from cerebral hemorrhage or cardiac incompetence. For this reason, the term "benign or functional hypertension" is a misnomer, since the high blood pressure is certainly one in which the indications for treatment are just as urgent as in those due to other causes.

TREATMENT

The treatment depends entirely on the treatment of internal secretory dyscrasia, with which this abnormal hypertonus is associated. The general indications for treatment are merely those of correcting, if possible, the disturbed internal secretory balance. If this can be accomplished, in the majority of the cases the blood pressure will be very much reduced, and frequently return to and remain within normal limits. It can readily be understood that the treatment for these cases is entirely different from that directed toward nephritic or arteriosclerotic hypertension.

The low protein and salt-free diet, as ordinarily recommended for these conditions, has no basis in the majority of cases. Increased elimination, ordinarily applied to the nephritic cases, is also frequently contraindicated. It has been noted, in some of these cases, that the drugs which appear to be absolutely contraindicated in other types of arterial hypertension, on account of their vasoconstriction effects, are really applicable and effective agents. For instance, pituitary extract (hypophysial posterior lobe extract) has been demonstrated actually to reduce the blood pressure in pituitary hibernation, probably on account of its effect on the carbohydrate or fat metabolism, which is the basic fault or cause of the arterial hypertension in these cases. Epinephrin, on account of its hormone effect on the gonads, might also be indicated in the menopause or gonad types. In the hypersecretory cases, such as hyperthyroidism and hyperpituitarism, surgery might even play a rôle in an attempt to relieve the high blood pressure. This is an instance in which arterial hypertension itself would not be a contraindication to a surgical operation, provided the diagnosis is sufficiently clear to prove that the increased secretion from these glands is its sole cause.

923-934 University Club Building.

32. Bac, A. A.: Internat. Clinics Series 29, 1: 116, 1919.

ABSTRACT OF DISCUSSION

Dr. Francis M. Pottenger, Monrovia, Calif.: We have studied the cause of disease, and the results of disease, but we have neglected to study how the cause operates to produce the effect. Nerve control and internal secretions are two factors through which stimuli operate to produce results. A symptom is a resultant of all stimuli. Consequently, it is difficult to say that any one produces this result. We must learn how to analyze conditions and then determine the results. We must bear in mind also the psychical condition. Nearly all neurotics are merely psychics. Stimuli are discharged either through the nervous system or through the endocrine system and upset balance. The result may be a hyperarterial tension or a hypoarterial tension. These are the conditions that must be studied.

Dr. Gustave Roussy, Paris, France: (Dr. W. S. Thayer, Baltimore, translated the substance of Dr. Roussy's remarks.) Dr. Roussy refers to the observations made some years ago by Josué, who provoked a disease of the vessels, an arteriosclerosis, in rabbits by treatment with the suprarenals. The frequency of suprarenal changes in hypertension in arteriosclerosis was also studied by Mendel and others, who pointed out particularly the changes in the cortical part of the suprarenals. Vaquez demanded further whether this were, perhaps, after all not the primary element in many of these instances of hypertension, clinical hypertension, and anatomic arteriosclerosis.

Dr. Roussy studied with Dr. Clunet, about 1,000 cases, carefully, anatomically. In 200 cases, a systemic examination was made of the glands of internal secretion, and in many instances definite changes were made out, very commonly in the suprarenals and particularly in the cortical substance; sometimes there was a hyperplasia of the pituitary body, especially of the chromophil cells or eosinophils, while the chromophil cells were increased. Also sometimes changes in the thyroid were present; hyperplastic changes were found in the parathyroids. In some instances well marked arteriosclerosis and hyperplasia of the suprarenals were also noted. Dr. Roussy pointed out that there are other

instances of arteriosclerosis in which changes in the glands of internal secretion are not to be made out. One should study and consider not only the anatomic conditions, but the interpretation of those conditions. In some cases of arteriosclerosis the suprarenals are affected; in others, they are not. The coincidence of the arteriosclerosis and the lesions of glands of internal secretion may be interpreted in the sense that the arteriosclerosis is purely secondary to the hyperplastic changes in the glands of internal secretion. It may be, on the other hand, that the converse is true, that the changes in the glands of internal secretion may be secondary to the changes in the vessels; or lastly, they both may be the result of some other condition of which we are as yet not cognizant. At this moment the explanations are hypothetic. It is a very important matter for further study.

DR. C. J. FISHMAN, Oklahoma City: Clinically, we occasionally see a type of case in which we may say that the endocrine system is affected, namely, in cases of high blood pressure, with a mild degree of glycosuria. We must remember that glycosuria may be produced by injections of suprarenal, and that this substance also produces an increased blood pressure. That is one basis for conclusion. Another basis is that clinically these cases of high blood pressure, with a mild degree of glycosuria, when treated by the reduction of the carbohydrates, return to normal, the blood pressure is reduced and the glycosuria disappears. I have seen three such cases and I believe that increased suprarenalism may be responsible for the high blood pressure and the glycosuria.

DR. F. M. ALLEN, New York: According to present evidence diabetes is not a disturbance of the suprarenal system. The glycosuria is not due to suprarenal stimulation. The vascular changes produced by epinephrin injections in rabbits are probably not a true reproduction of human arteriosclerosis. Many other agencies will produce such changes in the rabbit, which is a very susceptible animal.

Dr. Roussy failed to mention the important contribution of French authors to this subject, beginning in 1903. They established a relation of the chlorids not only to edema but also to high blood pressure. Salt restriction is the most effective means for the control of hypertension, and it has fallen into disuse and disbelief largely because of faulty application. It is seldom enough to tell patients to avoid salt, for most of them, even when conscientiously trying, will still get several grams daily, which will suffice to keep up the pressure in most cases. Before calling any case a failure, it is necessary, first, to give a genuinely salt-poor diet, containing less than 0.5 gm. of sodium chlorid daily; second, to make such a diet appetizing, so that the patient will eat it; and third, to control the treatment by blood and urine analyses to prove the efficiency of the chlorid restriction. Most such patients need treatment in an institution, to be treated and instructed as thoroughly as are diabetics, in order to obtain the best results. In this way some high pressures are brought to normal; some are altered very little or not at all; but the great majority of patients obtain some degree of relief. Cases of hypertension coming on about the menopause seem generally to be of the high chlorid type, and yield to salt restriction. Suitable tests may reveal the beginnings of some such cases long before the menopause, and study of the salt economy may prove important in relation to etiology and prophylaxis. A patient may have more than one disease, neither one dependent on the other. A woman had hypertension and myxedema. Her hypertension responded to salt withdrawal, and her myxedema to thyroid extract. Apparently the two conditions were independent. Many cases of combined metabolic disorders may perhaps be of this type My longest observation of successful control of hypertension by salt restriction was fifteen months. Wherever good results have been obtained they have been permanent.

DR. W. S. THAYER, Baltimore: The actual physiologic cause of hypertension in most cases is by no means clear. Spasm of the peripheral vessels or extensive thickening of the small peripheral arteries is followed by hypertension, and that is all we know about it. The occurrence of associations is an important point to bear in mind. It will be very interesting to know the effect of treatment in the cases of hypertension, which Dr. Engelbach believes are due to disease of the glands of internal secretion, and how long such cases have been observed. Dr. Allen's observations with regard to the effect of salt-free diet are very interesting.

DR. WILLIAM ENGELBACH, St. Louis: Dr. Roussy referred to the relationship of the histopathologic changes of the suprarenal, the nervous system and other glands to the clinical syndrome of endocrine disorders. One must acknowledge that no such relationship has yet been established, owing, possibly, to difference of opinion among pathologists regarding the pathology of this disease. There exists a great deal of controversy among the French, who have contributed so much on the subject of internal secretions, that no positive deductions can be drawn from their work on the pathologic changes present in these diseases. Dr. Fishman's reference to arterial hypertension with epinephrin diseases does not correspond with my observations. In the great majority of cases there was a combination of glandular disorders, i. e., a pluriglandular syndrome. I can confirm Dr. Allen's statement that chlorid retention is responsible for a certain percentage of arterial hypertension but not for all high blood pressure cases. My position is much the same as his with relation to endocrine disorders being responsible for a small percentage of the cases of arterial hypertension; not, however, to the exclusion of many other well known causes. In the series of endocrine cases reported, we obtained good results with glandular therapy, without denying the patient a generous diet containing plenty of salt and allowing active exercise.

GOUT: A CLINICAL STUDY OF ONE HUNDRED AND SIXTEEN CASES*

CHARLES SPENCER WILLIAMSON, M.S., M.D.
Professor and Head of the Department of Medicine, University of Illinois College of Medicine
CHICAGO

The analysis of the present series of cases was undertaken because of my conviction that few diseases that are capable of being easily and accurately diagnosed are so often overlooked, or rather misinterpreted, as gout. Among well trained men gout is still too often a curiosity, rather than a clinical entity to be encountered and recognized. With the desire of centering the attention on this fact, the present study was undertaken.

Our series consists of 116 cases, which includes the material of the Cook County Hospital for approximately six years. At the very outset it may be remarked that a perusal of the histories leaves no doubt that the diagnosis of gout was made only when the clinical picture was such as practically to compel that diagnosis. I am well aware that in some quarters the diagnosis of this disease is made very lightly, notably at some health resorts; but the reverse is the case in this series. All were clear-cut cases about which, once the diagnosis had been thought of, there could be but little difference of opinion among experienced clinicians. My own belief is that a very considerable number of cases in the hospital go begging for a diagnosis. This is particularly true when patients are sent by mistake to the surgical wards. I have carefully checked the diagnoses as made at the examining room when the patients were admitted to the hospital. In general these diagnoses are exceedingly good, and it is remarkable at times with what

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acumen the house physicians detect really difficult cases; yet of our 116 patients, only twenty-nine were admitted as having gout or even suspected gout, despite the fact that sixty-five of them had the diagnosis written on their ears in unmistakable characters.

The conclusion is to my mind inevitable: Our younger clinicians are not on the lookout for gout, and as a result many cases are escaping us. Nor is it only the mistake of the inexperienced, for I can recall one patient who returned to the hospital on five different occasions at intervals of perhaps a year, before the correct and really very obvious diagnosis was made. Another patient was operated on in a surgical ward for an "infected hand" and the finger amputated, and the mistake never discovered until his next visit to the hospital a long time afterward. Still another patient left the hospital rather than be operated on for a "bunion," which a later stay in a medical ward showed to be an ordinary gouty toe. Indeed, this mistake was repeatedly made. Still a third patient had a knee opened and scraped, and several years later a finger operated on, with the diagnosis of infectious arthritis.

Our series labors under one disadvantage in that our patients came from the poorer classes who seek admission to a public hospital. It can, therefore, give no information as to the relative frequency of gout in the poor and in the well-to-do classes, since ours were largely cases of the so-called "proletarian gout."

It is rather remarkable that only five of 116 entered the hospital in their first attack, the great majority of our patients having been admitted many years afterward. This is quite in line with what is seen in our hospital in other similar diseases, the patients rarely seeking relief until the disease has been of considerable duration. As the early attacks of gout generally last only a short time, followed by a long period of well-being, the patient puts off seeking hospital aid. Over and over again we find that on asking the patient, who on admission has six or eight joints involved, whether he has ever had anything like this before, we receive a negative answer. A direct question elicits the fact that he had a painful swelling in the great toe five years before, which he has not in any way connected with his present trouble. Further questioning elicits the fact that he has had repeated attacks of so-called "rheumatism." It is surprising how rarely the patient recognizes the identity of the toe infection with the subsequent enlargement of the larger joints.

RESULTS OF OBSERVATIONS

Incidence.—Futcher gives the incidence of gout for Johns Hopkins as 0.29, and states that this is just two-thirds that of St. Bartholomew's in London, which would be 0.435. In our hospital the ratio of admissions from gout to the total admissions to the medical service is 0.399, which approximates very nearly that of the London hospital.

Etiology.—The influence of sex is by far the most striking fact observed in that only one case occurred in a woman, an incidence of less than 1 per cent. The influence of age is best seen by arranging the cases in decades, it being understood, of course, that this refers to the age at first attack. From 0 to 10, no cases; from 10 to 20, no cases; from 20 to 30, 15 per cent.; from 30 to 40, 37 per cent.; from 40 to 50, 29 per cent.; from 50 to 60, 18 per cent.; from 60 to 70, 1 per cent. The average age at time of first attack was 38 years. The interesting fact elicited is that 15 per cent. of our patients developed their first attack before their thirtieth year. This is rather opposed to the idea that gout is exceedingly rare before 30 or 35.

Nativity.—America leads with 47 per cent.; then come Ireland with 17 per cent.; Germany, 13 per cent.; Scandinavia, 7 per cent.; Austria-Hungary, 6 per cent.; Italy, Russia, France and Canada, each 2 per cent., and Belgium and England, each 1 per cent. In the population of a hospital, the cosmopolitan character of which is surpassed by few, it is rather noteworthy that not a single case appeared in a Pole, despite a very large number of Polish patients. The influence of race is shown in the fact that all of our patients, except two, were white.

Seasonal Influence.—This is quite pronounced. Of 126 attacks occurring in our 116 cases, we find the incidence as follows: January, 9; February, 6; March, 14; April, 20; May, 16; June, 11; July, 9; August, 3; September, 5; October, 8; November, 12; December, 13. Grouping these by seasons, we find that the spring months easily lead with fifty cases (40 per cent.); the winter months next with twenty-eight (22 per cent.); the fall next with twenty-five (20 per cent.), and the summer last with twenty-three cases (18 per cent.). It is exceedingly difficult to form an accurate idea in regard to the reasons for this predominance of the cases in the spring months. In some years it is much more striking than in others. I have not been able to trace any relationship between weather conditions and the frequency of attacks. A month of atrocious weather will go by without a case, followed by a week of beautiful balmy weather which may bring in four or five cases. There is, moreover, no uniformity in regard to an individual case. One patient had his attacks invariably in November, another invariably in autumn and winter, while another patient had seven different attacks in seven different months. Several patients noted that their attacks were ushered in by cold, damp weather, particularly if they got wet. In one patient the first attack was brought on by prolonged wading while on a fishing trip.

Heredity.—In our series only twelve gave any history of joint conditions in the family, and in several of these the condition was probably not gout. While it is undoubtedly true that patients in a charity hospital are less likely to have accurate information in regard to this point, especially if they are foreigners, than would private patients, it is my belief that these figures are substantially correct. In all the cases in which I have questioned the patient on this point, heredity was an insignificant factor.

Occupation.—The occupations were analyzed particularly with reference to the influence of lead poisoning. In only eleven instances (9.4 per cent.) was the occupation such that the patient had to deal more or less with lead. In none of the cases did lead seem to have been an actually demonstrable etiologic factor; that is to say, in none of them was there an outspoken plumbism present, as evidenced by colic, lead line on the gums, etc. The great majority of the occupations were those requiring hard manual labor.

Alcohol.—On the other hand, the influence of alcohol was very striking. Only four patients stated that they drank no alcohol or in negligible quantities. In nine cases the patient consumed a small amount of alcohol daily; forty-one others declared themselves to be moderate drinkers, while the remainder were heavy drinkers, some to great excess. No difference could be noted in those who consumed only beer and those who

drank whisky by itself or in addition to beer. The latter condition of affairs was the common one.

Trauma.—The influence of trauma has been much discussed, but in our series we were not able to determine that it was of influence in even a single case. I myself have seen several cases in private practice in which the patient stated that the attack was occasionally ushered in by stubbing the toe or by stepping down from a wagon or something of this sort. A closer analysis of these statements leads me to believe that the patient has confused cause and effect. By this I mean that in most instances the patient's attention is drawn to his toe because it is already inflamed, rather than the reverse.

Syphilis.—The incidence of syphilis is not so frequent as might have been expected among patients of this character, as it occurred in slightly less than 15 per cent. of the ninety-one cases in which it was specifically mentioned. A comparison of the ages at which they had the initial lesion with the age at the first attack of gout shows that in 4 per cent. the gout antedated the syphilis, leaving 11 per cent. of cases in which syphilis might conceivably have been an etiologic factor. The average duration of the syphilis at the time of the first attack of gout was sixteen years. In only one of these cases was there found any clinical evidence of the existence of syphilis, such as aortitis, tabes or skin rashes.

Overeating.—It is worthy of note that in a class of patients in whom want and privation might be reasonably supposed to play an important rôle, we find no evidences of this in our series. In 101 instances in which the condition is specifically noted, we find ninety-two patients noted as well nourished, and in most instances well built. Eight were fairly well nourished and only one poorly nourished. These figures are all the more striking in view of the statement made in many of the histories that the patient had lost considerable weight just before entrance to the hospital. We are to interpret these findings, therefore, as showing very decisively that the big, well-developed, portly individual is the one who develops gout, and this, too, in a population which is normally none too well nourished. The fact must not be lost sight of that the influence of alcohol may here be of moment, in that when we read that a man has been accustomed to drink a quart of whisky or twenty or thirty glasses of beer daily, the food value contained in these drinks is very considerable.

Nephritis.—The theoretical importance of nephritis in connection with gout is of course very great, and all the more so in view of the importance of recognizing a renal gout. Of our 116 cases, fifty-two (45 per cent.) showed albuminuria. In only seven instances was a nephritis thought to be of sufficient importance to make it part of the diagnosis, and in no instance was it ever recorded as a primary diagnosis, nor had any of the patients been in the hospital previously for a nephritis. In twenty-two instances the coexistence of albuminuria with a blood pressure definitely, but not greatly, above the normal for the patient's age made the beginning of a contracted kidney at least possible, perhaps probable. It would seem clear from our figures that in spite of the many cases of albuminuria there were relatively few cases of true nephritis.

Clinical History.—First Attack: In five instances the patient entered the hospital with his first attack of the disease. In only one were there any prodromal symptoms, these consisting of chilly sensations and cough. The onset in all was acute, with intense pain in the affected joint, which was in the great toe in three cases and the instep in two. The pain is described in all as intense, and in one so great that the patient "rolled around in agony." The joints were moderately swollen in all of them, and red and hot. The fever is noteworthy in that the average was only 100.3 F. One of these patients is in the hospital at the time of writing, and it is remarkable how much inflammatory change exists in the toe and how intense is the suffering as compared with the trifling rise in temperature. One patient had been ill for four weeks before admission, and in addition to this spent twenty days in the hospital, which is the best evidence of the severity of the attack. The remaining four patients averaged three days' sickness before entering the hospital, and remained in the hospital on an average of two weeks. One of these patients had outspoken nephritic symptoms with beginning broken compensation with this, his first attack of gout, and this case we have reckoned as our only case of probably true renal gout. In only one of these first attacks were any other joints than those of the foot involved. In this particular patient both knees were attacked. The remarkable feature of these first attacks is their uniformity, each case being almost a replica of the others.

Subsequent Attacks: The same uniformity exists in those patients who came in for second or subsequent attacks. These patients, 111 in all, form the entire series, with the exception of the five just discussed.

As there is generally a lapse of some years between the first and subsequent attacks, it was not always possible to determine with certainty in what joint the disease began. As a matter of fact, the average time that had elapsed between the first attack and the entrance of the patient into the hospital was ten years, since the average age at entrance was 48 years, and that of the onset of the disease 38 years. In 88 per cent. of our cases in which the joint first affected could be definitely determined, this was in the great toe, and it is noteworthy that the right toe was involved a little more than four times as frequently as the left. The small toes were involved by themselves once, the ankle and instep five times, the left thumb once, and the left knee once. It is equally striking that in those cases in which the disease began in some other joint than the great toe, it showed a strong tendency to attack that member later on. In our series this was the case to such an extent that 95 per cent. of our patients had the big toe involved sooner or later, leaving only 5 per cent. that had never had the big toe involved.

The great majority of the patients developed the attacks at night and with great suddenness. A few noticed the pain and swelling coming on in the daytime, and we note that when this is the case it comes on during the day in subsequent attacks.

Four cases were definitely polyarticular in their first attack. Because of the difficulty in the diagnosis of these cases, I shall give them a little more in detail. In the first case, both ankles, both big toes, the left knee and the index finger of the left hand were simultaneously involved; in the second, the hands and feet were affected; the third was unfortunate enough to have the right foot and instep, the right knee, the right hand, the left shoulder and the left foot simultaneously involved; the fourth showed swelling, redness and pain of the right ankle, right knee, left knee and the little and middle fingers of the right hand, and the middle

finger on the left hand. In all of these, tophi were subsequently found in the ears, and in two of them, sodium biurate crystals in the joint fluid.

These cases which are polyarticular from the very beginning should be sharply differentiated from the ordinary case, which begins in the toe and perhaps remains limited to the toe, or to the toe and instep for several attacks, and then, as these become more numerous, the number of joints involved becomes greater, and this to such an extent that 106 of the 116 cases became definitely polyarticular in the further course of the disease. The hospital physician who, for the most part, sees the case only after many attacks, is thus confronted with a picture of six or eight joints simultaneously involved. This fact probably accounts for the many times the disease is diagnosed as acute articular rheumatism. It is remarkable how little elevation of temperature is usually present, the average maximum of our series being 100.3. This we regard as of the highest diagnostic significance, since there are few clinical pictures in which a half dozen joints are greatly swollen and reddened which exhibit so little fever.

As compared with the descriptions given by most authors, the majority of our cases seem of unusual severity. The average length of attacks was twenty-nine days, some covering several months.

Tophi were present in sixty-six instances (56 per cent.). They were present in the ears sixty-five times, and in only one case were tophi found elsewhere without the ears being simultaneously affected. This case was in the great toe, producing a bunion-like deformity. In fourteen instances there were tophi in the ears and in other portions of the body as well. Such other locations were the fingers, toes, knuckles, thumb, elbows and the thyroid cartilage. Bursae were found four separate times, three times over the olecranon and once over the acromion.

The blood findings in our cases were quite uniform. A moderate leukocytosis occurred in most of the cases. The highest count that we have recorded is 19,800; the average count is 10,500. The average differential count was: polymorphonuclear neutrophils, 74 per cent.; lymphocytes, 14 per cent.; large mononuclears and transitionals, 11 per cent.; eosinophils, 1 per cent. The blood pressure, as would be expected from what has been said in regard to nephritis, was somewhat higher than normal, and averaged 147 systolic.

One frequently sees the statement that after an attack of gout the patient generally feels better than before. While this may be true in certain cases, we could not determine that it was true in any considerable number of our series.

The Roentgen Findings.—In forty-two of our cases, careful roentgen-ray studies were made of the joints involved. Fourteen of these cases were reported by the roentgenologist as either showing definite gouty changes or else changes that were consistent with gout. All of the other twenty-eight cases were returned with the statement that the joint changes indicated hypertrophic ostearthritis, or else showed arthritic changes of an indefinite character. Of the fourteen cases recognized by the roentgen ray as gout, thirteen showed tophi in the ears, and the fourteenth patient had a gout of fifteen years' standing. Of the twenty-eight cases in which the roentgen findings were not characteristic of gout, twenty-one showed tophi in the ears. Now it is very evident that all of these cases were far advanced, and the conclusion, therefore, seems inevitable that even in the most skilled hands, the roentgen ray is of very little service from a diagnostic standpoint. Long before the roentgen-ray findings are sufficiently definite to warrant a conclusion, the diagnosis can be made by the usual clinical means. Conversely, the roentgen ray in nearly two thirds of all the cases submitted to it not only failed to assist in the diagnosis, but tended, if anything, to lead one to arrive at wrong conclusions. We may not, therefore, give the roentgen findings a very high place in the diagnosis of gout, since the changes are not sufficiently characteristic to enable the differentiation to be made between it and kindred joint affections.

Association with Other Diseases.—The two classical diseases of metabolism associated with gout are, of course, obesity and diabetes. We have already noted under the etiology that the great majority of our cases were well nourished. In addition to this we find eleven instances in which the patient was spoken of as directly obese, and in a few instances the obesity attained considerable proportions. This was particularly true among the heavy beer drinkers. On the other hand, not a single case in all the series showed sugar in the urine at any time.

The abarticular forms of gout were almost nil in this series. One patient died of angina pectoris while in the hospital. A severe sore throat preceded the onset in five cases, and this further increased the resemblance to acute rheumatic fever.

CONCLUSIONS

The frequency of gout under our conditions is much greater than is commonly thought. Errors in diagnosis are relatively numerous, owing, not to the inherent difficulty in the recognition of the disease, but to the erroneous assumption of its great rarity in this country.

25 East Washington Street.

ABSTRACT OF DISCUSSION

Dr. Walter L. Bierring, Des Moines, Iowa: Analyzing the report given in this excellent paper, one wonders that there are not local conditions or other influences which may explain this apparent increase in the number of cases. The cases are attributed largely to the incidence of good nutrition, or apparently good nutrition. Yet in many communities in which that obtains there is no gout, so that there must be something in the mode of life in a large city, of the class of patients that come to a large charity hospital to account for the greater frequency of these cases in the hospitals of the larger cities. With the clinical symptoms usually so well marked it is rather strange that the condition should be overlooked. An explanation may be found in the fact that we have been greatly interested in focal infections as causes of arthritis and have overlooked entirely, in a way, those cases of arthritis which were not due to infection. Furthermore, it occurs in single joints in many instances, and recurs frequently in the same joint; therefore, these patients are referred to the surgical service and the surgeon, not being on the lookout for tophi, overlooks the condition. Little evidence of infection, low fever and the involvement usually of single points, ought to make the diagnosis comparatively easy. The roentgen ray is practically a negative factor in the recognition of gout. Whenever there are distinct joint changes, the case most likely is one of arthritis deformans. We must rely on the appearance of tophi, and unless tophi are present we will always be in some doubt as to the existence of gout.

Sir Humphry Rolleston, London, England: In London there seems to be no doubt that gout is commoner in people

who are brought in contact with lead than in other people. In other industrial centers where lead poisoning is common, such as Newcastle on Tyne, gout is rare. The importance of lead gout was insisted on by the late Sir A. B. Garrod. It is generally believed that the connection between lead and gout depends to a certain extent on whether the patient takes beer or not. Trauma may act in two ways, by predisposing to the attack in the big toe joint, and also by once determining an attack. Thus, after an undoubted injury, such as the falling of a box on the foot, a gouty patient may in a day or two have an acute attack of gout in that joint, and other joints may suffer in that attack. In connection with the diagnosis between arthritis deformans and gout, the two may be combined, as was shown at the Cambridge experimental hospital. Lastly, to refer to a rather dangerous subject, that of abarticular gout: There is a distinct tendency to regard almost any manifestation occurring in a gouty person as gout; for example, gouty bronchitis, the gout going to the stomach, and even cerebral gout; and the diagnosis of gout and goutiness may easily be much abused. I would suggest, however, that the question of abarticular gout should be taken seriously into consideration. Gout is recognized as a disturbance of protein metabolism, and the manifestations of anaphylaxis are now well known; gouty patients are extremely susceptible to various articles of diet; in other words, a gouty person may present symptoms analogous to those of anaphylaxis. Therefore, gouty manifestations, although they are entirely different from frank articular gout, may be due to the same change of metabolism as occurs in gout, and from a practical point of view may react to the treatment proper for gout. Not very long ago I saw a man with high blood pressure and the subject of gout, in an attack of what appeared to be undoubted hemiplegia due to cerebral hemorrhage. For some hours he was extremely ill. Then an acute swelling of the big toe joint came on, and the symptoms rapidly improved. I agree with Dr. Williamson as to the association of pharyngitis with gout; a gouty person may very easily, as a result of some indiscretion, get an attack of pharyngitis, or sore throat, which is relieved by antigout remedies.

DR. ALEXANDER LAMBERT, New York: Gout is not of infrequent occurrence in the eastern area of the United States. I have noticed that these patients have an English or Irish ancestry more often than not. A remarkable fact brought out by Dr. Rolleston is the peculiar idiosyncrasies of gouty people, appearing in different members in the same families. I have known a man who could not touch white wines, while his brother could not touch red, and still another member of the family could not touch any alcohol. In other members of the family an attack was brought on by coffee. Food idiosyncrasy has much to do with the production of gout. A peculiarity of a gouty joint is that the point of maximum intensity of pain is on the side of the joint, not on the top, and less frequently on the bottom. The point of greatest tenderness is almost invariably on the side. Chronic gout is a disturbance of protein metabolism. One of the best remedies is iodin or the iodids, which stimulate the thyroid. the dry skin, the chipping nails and the dry hair are manifestations of hypothyroidism. I believe the thyroid has more to do with gout than any other gland. The patients whom I have treated on the basis of thyroid deficiency have done better than those whom I treated on any other basis.

DR. CHARLES SPENCER WILLIAMSON, Chicago: Any arthritis which involves the great toe, either as the first joint or simultaneously with some other joint, should be regarded as highly suspicious of gout. Garrod's observation was not only thoroughly sound, but, if anything, fell short of the truth. An important diagnostic feature is the relatively slight fever, at times none at all, taken in connection with the great acuity of the local symptoms. This is not a new point, of course, but I do not think that it has found its way into the general clinical consciousness of the medical profession. When you are called to a patient, especially if a middle aged man, and find him with both knees, an elbow or two, and at the same time the great toe greatly swollen, with a temperature of, perhaps, 99 F., do not forget to think of gout before anything else. By the time the case has reached this stage tophi are generally present in the ears, but they must be looked for with real care, as the diagnosis may depend on a little nodule in the ear scarcely as large as a small pinhead. I was very glad to hear Dr. Lambert bring out the point about the pain on the side of the toe. Less than ten days ago I called the attention of one of my interns to that point, but as far as I know it is new, and I was not sufficiently assured of the accuracy of my observation to be sure that it was of diagnostic importance. I have noticed half a dozen times that the pain is almost entirely on the side. I did not quite have the courage to bring that out. Let us rid ourselves of the idea that gout is a disease of extraordinary rarity in this country, since the incidence in general hospital practice is not much less than in a London hospital of the same general type.

A CLINICAL STUDY OF THE END-RESULTS OF SOME FOCAL INFECTIONS *

BRYCE W. FONTAINE, M.D.
MEMPHIS, TENN.

In a casual survey of the literature on focal infections, one is impressed with the fact that only recently has the subject been studied from the standpoint of its bearing on systemic disease.

Until the last decade there were few notable contributions. In 1819, Rush reported the cure of a case of rheumatism by the extraction of a tooth. William Hunter, in 1899, recorded his studies of what he termed "oral sepsis." Later, the dentists Price, Broomell and Chayes in their articles cautioned against careless dentistry and neglected oral sepsis, suggesting the probability of systemic disease ensuing. Goadby's article in 1912 claimed the direct relationship of some joint conditions to focal infection.

It remained, however, for Frank Billings and his co-workers, especially Rosenow and Davis, to bring the subject prominently before the medical profession. Too much cannot be said in praise of their work, and the credit for the present knowledge of the subject must be given to them. Since the first paper by Billings appeared in 1912, tremendous enthusiasm has been manifested in this subject, many articles and one monograph appearing within the short space of eight years.

Despite this splendid work, there exists in many sources some doubt as to the part focal infections play in the production of diseases, and many are questioning whether or not any real relationship exists. A warning is sounded lest we, in our zealous efforts to eradicate suspected foci, sacrifice useful organs, such as the teeth and tonsils. I realize that in many instances the pendulum has swung too far, and that some practitioners are likely to remove sound teeth or tonsils without justification. If the cases are carefully studied from every angle, and all other possible etiologic factors eliminated, the prompt relief obtained by radical measures should convince the most skeptical that it is not due to accident, coincidence, or to any effect on the mind.

In this confused state of evidence, it may be of interest to hear the clinical experience of one observer, and note the end-results obtained in approximately 100 cases selected from a private and consultation practice, during a period of two years.

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The relation of the focus of infection to the symptoms in question has depended on: (1) the absence of any other demonstrable cause for the symptom; (2) the failure to cure the symptom by all other methods of treatment, and (3) prompt and continued relief, with no return of the symptom, on the cure or eradication of the focus of infection.

In this study, conclusions have been arrived at largely through the cooperation of a group of nose, throat and dental specialists. Great reliance has been placed on roentgenograms of the diseased structures.

SOURCES OF INFECTION

The teeth have been the most common source of infection, and all varieties of dental conditions, from pyorrhea to unerupted twenty-one year molars, have been encountered. The most common lesions were either apical abscesses or granulomas at one or more roots of devitalized teeth. The diagnosis was confirmed by plates of the whole upper and lower jaws, including all devitalized teeth. Not only should infected teeth be removed, but the cavities left should be thoroughly curetted.

The tonsils were next in importance as a seat of infection. The small fibrous, or submerged, tonsils were quite as frequently involved as those visibly infected and greatly hypertrophied. Complete enucleation with the capsule was usually necessary for permanent relief.

The sinuses were least in importance in this series. The maxillary sinus was most frequently implicated, because of its close proximity to the throat and nose. Transillumination and roentgenograms were employed to reveal existing trouble.

There has been no experience with foci of infection in other parts of the body. Billings, however, reports them in almost every conceivable location.

SYMPTOMS FOR WHICH RELIEF WAS SOUGHT

Pain occurring in 42 per cent. of the cases was the symptom for which relief was most frequently sought, the location usually being in the muscles of the neck, back, chest or limbs. In a few cases it occurred along the course of some nerve, frequently branches of the brachial plexus or the sciatic nerve. Its character varied from ordinary discomfort to intense agony, requiring morphin for alleviation. The painful area was not affected by changes in temperature, nor was it often associated with tenderness. It was not accompanied by fatigue, or other neurotic symptoms one might expect in neurasthenia. Conditions about the teeth most frequently produced these symptoms, though some cases were due to diseased tonsils or sinuses.

Case 1.—E. A. S., a white man, aged 50, had constant pains in the right back, side and hypochondriac region, at times severe enough to require morphin. A diagnosis of gallstones had been made, and operation advised. A physical examination of the chest and abdomen was negative. The gastric contents, urine and blood were normal. The Wassermann reaction of the blood serum was negative. Only temporary relief was obtained by the usual methods of treatment. Examination of the teeth disclosed two apical abscesses. Removal of the teeth afforded immediate relief, with no recurrence of pain.

Case 2.—H. C. N., a white man, aged 35, had pain in both shoulders, causing discomfort, rather than acute suffering. It was not especially related to the joints or nerves, but affected the muscles about both shoulders. There was no tenderness. It was not affected by changes in weather. Physical examination of the heart, lungs and abdomen was negative. The urine and blood were normal. The Wassermann reaction of the blood serum was negative. Examination of the throat revealed infected tonsils. The patient was always relieved for weeks at a time, by massage and squeezing out of crypts by a throat specialist. Ordinary methods afforded no relief. Tonsillectomy was finally performed, giving immediate relief, with no recurrence of pain. The patient made a gain of 12 pounds.

Fever, occurring in 18 per cent. of the cases, was second in importance as a symptom. The fever, seldom over 101 F., was not often accompanied by chills, though in a few cases night sweats occurred. These cases were usually ambulatory, resembling, and most frequently confused with, the fever of incipient tuberculosis. The foci were about equally distributed between the teeth and the tonsils.

Case 3.—H. R. W., a white man, aged 44, had had fever for four weeks, with some malaise, an occasional night sweat and a slight loss of weight. His highest temperature was 99.8 or 100, usually in the afternoon. The patient was not ill enough to go to bed. He had been at his office almost every day. Physical examination of heart, lungs and abdomen was negative. The differential blood count was normal. There were no plasmodia. On three occasions the Widal test was negative with typhoid and paratyphoid bacilli. The Wassermann reaction of the blood serum was negative. There was slight tenderness about the first lower molar on the right side, which was devitalized and crowned a few years ago. A roentgenogram revealed an apical abscess. Removal of the tooth was followed by prompt and permanent subsidence of temperature, with a gain in weight to normal.

Chronic headache as a result of focal infection has long been suspected by throat and oral surgeons. Often in their experience the removal of infected tonsils has relieved the patient of headache of long standing. In this series, chronic headache has occurred in 4 per cent. of the cases, each depending on tonsillar infection. In every case a prompt and permanent cure has followed tonsillectomy.

Case 4.—Mrs. W. V., aged 28, white, complained of headache, which had occurred rather frequently for the last two years. It did not occur at any regular time, nor was it related to the menstrual period. The patient had had no previous illness. She had had many examinations, with negative findings and no benefit. The last physician who made an examination suggested glasses, but they caused no improvement. Physical examination of heart, lungs, abdomen and pelvis was negative. Neurologic examination was also negative. The urine, blood and gastric contents were normal. The Wassermann reaction of the blood serum was negative. An oral surgeon reported that all sinuses were negative, but the tonsils were hypertrophied, showing evidences of infection in the crypts. Tonsillectomy gave prompt relief.

General debility with loss of weight and strength, resulting from focal infection, has occurred in about 10 per cent. of the cases.

This syndrome, as a rule, occurred in middle-aged adults, without any other apparent basis, and in most instances was accompanied by obvious diseases of the teeth. No cases have occurred with infection elsewhere. In many cases it was necessary to remove all the teeth in order to get rid of the severe oral infection, all ordinary methods of treatment having utterly failed. Removal of the teeth and treatment of the gums, when promptly and effectively done, was followed by marked improvement in the general condition, with a gain in weight and strength.

Severe secondary anemia occurred in 4 per cent. of the cases. In no case, despite the ordinary methods of treatment, such as rest, feeding and the continued use

of iron and arsenic, was there any perceptible improvement until the removal of the focus of infection. The cases were equally distributed between the tonsils and the teeth. In no instance did the blood present the morphologic appearance of pernicious anemia. There was usually a moderate reduction of the hemoglobin and in the number of erythrocytes, with normal differential and leukocyte counts.

CASE 5.—Mrs. N. O. E., aged 26, white, complained of weakness and indigestion, beginning more than a year before. Physical examination of the heart, lungs, abdomen and pelvis was negative. The Wassermann reaction of the blood serum was negative. The urine was negative. The gastric contents after an Ewald test meal showed free hydrochloric acid 5, total acidity 16. Blood examination revealed: leukocytes, 7,300; erythrocytes, 3,800,500; hemoglobin, 65 per cent. Differential count revealed: polymorphonuclears, 63 per cent.; transitionals, 1; lymphocytes, 29; large mononuclears, 5; eosinophils, 2. Red cells were slightly irregular in size. No normoblasts were seen. There were no plasmodia. Examination of the throat by an oral surgeon showed the tonsils to be hypertrophied and infected. Tonsillectomy resulted in an almost immediate gain of 12 pounds. Four months later the blood was normal.

The relationship of focal infections to albuminuria and nephritis has been proved and referred to by several observers, prominent among whom are Ophuls, Klotz, LeCount and Jackson. In this series there were six cases apparently dependent on this cause. In a majority the focus of infection was in the tonsils, though in two, it was about the teeth. In every instance, after tonsillectomy or removal of the oral infection, there was a progressive improvement, with a disappearance of albumin and casts from the urine.

CASE 6.—Mrs. W. L. S., aged 32, white, complained of aching, loss of weight, and pain in the back and shoulders. Physical examination of the heart, lungs and abdomen was negative. The blood was negative. The systolic blood pressure was 110, the diastolic, 80. The urine showed a moderate trace of albumin, with numerous hyaline and granular casts. After a Mosenthal test meal for renal function, the urine showed a total output of 1,240 c.c., a normal variation in the specific gravity of day specimens. The specific gravity was inversely proportional to the volume of the specimens. There was diuresis after the first two meals; after the third meal, it was very slight. The night urine was small in volume, with high specific gravity. There was adequate salt elimination, and adequate nitrogen concentration in the night specimen. There was moderate fluid retention, and slight nitrogen retention. The salt concentration was low. The phenolsulphonephthalein output at the end of two hours was 30. The tonsils were small and fibrous, showing pus in the crypts. Treatment by dieting and rest for some months resulted in no improvement. Tonsillectomy eight months ago gave immediate relief from pain, with a gain of 20 pounds. The urine three weeks ago was absolutely normal.

The association of achylia gastrica with focal infections has been referred to by several observers, cases being reported by Beck and others. Every gastroenterologist has witnessed the improvement in many cases of this character, following the cure of oral sepsis. In this series there were six cases, all proved by the fractional method of analysis to be true achylias. In each there seemed to be considerable infection in the mouth, but in no other location. In some of the cases the extent of the infection necessitated the extraction of all the teeth. Without exception, improvement followed the cure of the oral sepsis. Free hydrochloric acid reappeared to some extent in every case, and in a few it finally reached the normal level.

CASE 7.—Mrs. E. T., aged 38, white, complained of loss of weight and strength, discomfort in the abdomen, gas and constipation. Physical examination of the heart, lungs and abdomen was negative. The blood and urine were negative. The Wassermann reaction of the blood serum was negative. The gastric contents by fractional analysis showed a total acidity of 12 at the end of one and one-half hours. There was no free hydrochloric acid throughout the test, which was carried on for two and one-half hours. There was no occult blood or lactic acid. Roentgenographic examination of the stomach, after a barium meal, was negative, except for hypermotility, the stomach being empty at the end of three and one-half hours. The patient had previously had several attacks of tonsillitis. The tonsils were recognized to be hypertrophied and infected. Under dieting and free hydrochloric acid, along with a modified rest cure, there was only slight improvement. Tonsillectomy was performed eight months ago, with immediate improvement in the patient's general condition, with a gain in weight and strength, and improvement in stomach symptoms. The last analysis of gastric contents, one month ago, showed free hydrochloric acid 12, and a total acidity of 20.

Vascular hypertension of moderate degree, indicated by a systolic pressure of from 150 to 170, occurred in 6 per cent. of the patients, all middle-aged persons, principally women. In these cases the condition was apparently not due to nephritis, because of the negative urine findings. There may, however, have been some chance of error, if we consider as a clinical entity the hypertension of the climacteric so well described by Reisman, and probably due to some endocrine dysfunction. In every case the hypertension seemed to resist all ordinary therapeutic measures, such as dieting, rest and vasodilators. Without exception, the infection was about the teeth, and on its cure there was a prompt reduction in the blood pressure, though it rarely reached normal.

While the report of the foregoing cases does not comprise all in which there has been a direct relationship or dependence on focal infection, others have occurred with rarity, and time forbids mentioning them.

Finally, a word must be said about joint conditions. No acute joint cases are tabulated in this series. There have been perhaps eight cases of chronic arthritis, usually of the type of arthritis deformans, with definite deformity and disability of many joints. An unsuccessful attempt was made to benefit these patients by curing foci of infection existing in the teeth, tonsils or sinuses.

CONCLUSION

While this report is necessarily brief, I hope it is sufficiently convincing to prove that often such conditions as pain, fever and headache are directly traceable to focal infections, and that the most effective measure for relief is complete eradication, or a cure.

Central Bank Building.

ABSTRACT OF DISCUSSION

DR. FRANK BILLINGS, Chicago: Focal infection as a cause of disease has come to stay. But, like every other principle in medicine, it has its limitations. Many of those who accept it have not thought of just what the term means. A focus of infection differs from a focal infection. A focus of infection may give rise to focal infection, or it may give rise to intoxication of the body. What is meant by infection? Infection means the invasion of the body by micro-organisms that have the power of reproduction in the host, of producing reactions within the tissues of the host, and the reaction producing abnormal phenomena, which we term clinical manifestations of disease. Focal infection means the invasion of the body

from a focus of pathogenic organisms, and these organisms have the power of reproduction or of multiplication within the host. Much of the fallacy and failure in the treatment or management of the patients who suffer from what may be proved to be focal infection is due to the fact that the surgeon or physician in charge removes a focus, which may be the right one, and then neglects any further management of his patient. And, if what I have just said is true, then the removal of the focus has not disturbed the organisms already in the tissues of the body. If you have removed the true focus, you have simply prevented the invasion of the tissues by additional organisms from the primary focus. Focal infection is usually an invasion by pathogenic agents of the tissues through the blood stream. They lodge in the tissues, they produce reactions, dependent on their character and on their virulence. They remain there if the defenses of the host are not sufficient to kill them or at least to drive them from the body. And unless, in the treatment of chronic infectious arthritis, for instance, that fact is borne in mind, the removal of the focus will usually not greatly benefit the patient, or at any rate not the majority of patients. Therefore, what is your duty? Our duty is to build up the resistance of the host against the invaders already there by all of the known means of support of the patient from the beginning of treatment. Can we use anything specific? The use of antigens in the form of dead bacteria, injected subcutaneously, in my experience, is not justified. I have used them all, controlling the work with all the knowledge we have, using the autogenous, the nonautogenous, the activated and the nonactivated. The controls got along just as well as those that had the vaccines given them them carefully. May one use some other specific? It is not uncommon now to read that a foreign protein antigen, injected intravenously, will restore the protective powers of the body, and drive out the pathogenic invaders. Apparently, many men have had success. But immunologists are not able to tell us much if anything of the modus operandi. It produces serious reactions, and we are using it in a haphazard way. The conscientious man is taking the health, and possibly the life, of the individual in his hands when he uses these substances. I do not say, do not use them, but I believe that we should approach that part of the treatment with judgment and discretion.

Dr. Joseph H. Pratt, Boston: The subject of focal infections in its present day conception is very complex. There is much need of careful clinical study. Dr. Fontaine took a conservative position. A defect in most of the papers on this subject is that they give only the immediate results of removing foci of infection, but Dr. Fontaine has followed his cases for from one to two years, and the results are striking. I wish every physician in my section of the country could have heard the words just spoken by Dr. Billings, because the idea of focal infection, especially abscesses about the teeth, as a cause of chronic disease has spread like wildfire. At the present time many physicians, if they have an obscure case, simply advise the patient to go to a dentist and have the dead teeth removed. When this is done the patients are often turned adrift. Even living teeth may be extracted. The treament in cases of psychoneuroses may consist simply in the extraction of teeth or of a tonsillectomy. Last summer I saw a woman with a mild neurasthenia, without a symptom of chronic infection, who was sent by her physician to an oral surgeon, who according to the patient's statement was the leading authority in the state. Fifteen teeth were extracted. I saw the roentgenograms later and only eight of the fourteen teeth were dead! Her symptoms became more marked after the teeth were removed. Many of the chronic cases that drift from physician to physician are patients suffering from psychoneuroses, and while it is proper, of course, to treat the teeth if they are in bad condition, it is a mistake to consider that in these cases the discovery and removal of infected teeth constitutes proper diagnosis and treatment. If an infection has become generalized, removal of the local focus will not result in cure. In a rare case of recurrent thrombophlebitis under my observation for several years there was chronic antral suppuration. Treatment of the empyema was followed by improvement for about one year; then new thrombi formed. Careful examination has revealed no focus of infection outside of the inflamed veins, but every few months he has an attack of phlebitis with fever. Support from pathologists and immunologists is needed in solving the clinical problems connected with focal infection.

Dr. Frank B. Wynn, Indianapolis: In the olden days men were very prone in obscure cases to hide behind the liver; and a little later they found recourse in malaria to cover their sins of ignorance; and I wish to join with Dr. Pratt in emphasizing still further the point he made, namely, that the sin which we are very apt to commit at this time in regard to this matter of focal infection is that in cases with obscure symptoms we will hastily put the blame on the tonsils or on the teeth, without due clinical investigation of that case. It behooves us not to be content with looking at the tonsils or the teeth, but to search the body for other foci of infection. One other point is there which I wish to make, namely, that, granting the importance of a focus of infection, from which there is fed into the system the infectious material that gives rise in one case to rheumatic symptoms, in another to neuritis or to a neurosis, let us beware of the manner in which we proceed to correct that focus of infection. A patient had pain in the back, with tenderness, which was designated by her physician as lumbago. She unquestionably had bad teeth. On the advice of her physician they were extracted. In twenty-four hours following the removal of her teeth, she had severe pain throughout the whole extent of her spinal column, which rapidly developed into a typical spondylitis deformans. Undoubtedly, many of you have discovered bad tonsils, associated with the development of a chronic nephritis. You have removed the tonsils as the focus of infection, only to find that following the operation there has been an extreme aggravation of the symptoms, and in a few cases very disastrous results.

Dr. W. S. Thayer, Baltimore: In dealing with many obscure conditions, looking for and properly treating a focus of infection, which may be a contributory cause of the trouble, we sometimes forget that our responsibility goes considerably beyond the point of finding a focus which may possibly be the seat from which the infection which has caused the trouble has come, and of considering its proper treatment. The attempt to treat these foci of infection properly has made common surgical operations which were not so common years ago; and it has brought into use certain specialties of surgical procedure which were not common years ago, surgical procedures of a very delicate character, which only the best trained man is capable of carrying out. I know many men whom I would be glad to have take out my appendix, if it were necessary. I know very few men who I would be willing to have take out an adherent tonsil or interfere with ethmoid disease. The proper treatment of ethmoid disease, and of gravely infected tonsils is often a serious matter. Those are very delicate procedures, which should only be done by very well trained surgeons. And there are relatively very few well trained surgeons in these special branches. It is our duty to consider very carefully to whom our patients are sent, and, furthermore, to follow them up afterward. The common treatment of the teeth in individuals whose trouble is supposed to depend on infection there is barbarous in the extreme. The reckless manner in which teeth are extracted today is a scandal to the medical profession. The very commonest infection in the mouth is probably gingivitis and pyorrhea alveolaris, which is not properly treated in the vast majority of cases. Very few dentists pay proper attention to pyorrhea alveolaris, and it is the duty of the physician to find one who does. I often do not know what to do when I have to refer a patient to some one for the treatment of such a condition. Dead teeth are opened and extracted on suspicion, simply because they are dead. Such a procedure is shameful. The extraction of a dead tooth, because it is dead, is unpardonable.

Often apical necroses are found in teeth, and those teeth are instantly extracted. In many instances that is an entirely wrong procedure. An apical necrosis does not at the moment often mean a very grave infection. Very often it is easy to

treat the condition without extracting the teeth. A sufficiently free opening, with curetting, and amputation of the root, done by a skilful man, will save many teeth which are today sacrificed recklessly. When we send a patient to a dentist to have his teeth extracted, it is not only necessary to see that he is properly cured, but it is unfortunately necessary very often to watch the patient to see that he himself treats the cavities properly. I know dentists of the highest reputation in their communities who extract a tooth, curet well the socket and then dismiss the patient; and I have on more than one occasion met such a patient several years later, and found that he had suppurating cavities, the necrosis still continuing, well closed in, simply because the cavity had not been properly treated.

DR. LEON L. SOLOMON, Louisville, Ky.: It were well for us, in searching for the primary focus of infection, to search the lower part of the gastro-intestinal tract, more particularly the lower part of the colon, the sigmoid and the rectum for a secondary, as well as for the primary focus. It has been my observation that the colon, the sigmoid and the rectum often contain an old focus of infection which is responsible for the means of ingress into the body of infecting organisms.

DR. CARLETON DEDERER, Bay City, Mich.: This subject is in the experimental stage. However, I want to place the weight of my influence on the side of the enthusiast rather than on the side of the conservative. My method of treating surgical patients consists in making a general rigid physical examination first. In all cases in which a major operation, such as a cholecystectomy, is done, I always, if the patient consents, eliminate the minor foci in the teeth and in the tonsils, if they appear to show infection, before I remove the other foci of infection.

DR. BRYCE W. FONTAINE, Memphis, Tenn.: The diagnosis of focal infection is made reluctantly, not until every other means of arriving at the cause in these cases has been exhausted, and then only with the cooperation of other men, who are conservative and especially skilled in their several lines. These end-results have been carried over two years, and during this time there has not been a return in one of the cases reported.

Clinically Trained versus Laboratory Trained Observers.—Many valuable signs are only perceptible to the trained eye or the trained ear or the trained finger. Still more valuable signs are only revealed by the sensations experienced by the patient. To interpret these requires a training that can only be acquired by many years of patient observation, during which the mind is stored by the experiences of the past, by methods which are peculiar to medicine. These methods can never be acquired by a laboratory trained observer, and it is because of this that men trained in the laboratory fail as clinical investigators, however distinguished they may be as physiologists, chemists, or bacteriologists.—J. MacKenzie, *Brit. M. J.* **1**:109 (Jan. 24) 1920.

VIRULENCE OF DIPHTHERIA BACILLI FROM DIPHTHERIA PATIENTS AND FROM CARRIERS

THE RESULTS OF FIVE HUNDRED AND FORTY-EIGHT TESTS *

AUGUSTUS B. WADSWORTH, M.D.
ALBANY, N. Y.

During the last four years we have found it necessary to test the virulence of cultures that have been obtained from convalescent and from contact carriers, and also those from a group of persons who have been classified as noncontact carriers. We have found these virulence tests helpful in distinguishing the nonvirulent from the virulent diphtheria bacilli, and thus have been able to authorize the release of patients when virulent diphtheria bacilli are no longer present in the secretions.

When the laboratory first undertook to make these tests, health officers and physicians were eager to send cultures in the hope of securing the release of their patients or carriers from quarantine. In fact, they chose to send cultures to the laboratory for virulence tests rather than to undertake the strenuous task of getting the patients to rid themselves of the cultures by mouth-cleansing and other general measures of personal hygiene, all of which are either generally disregarded or are not very carefully carried out.

TESTS OF VIRULENCE OF B. DIPHTHERIAE FROM CONVALESCENTS AND FROM CONTACT AND NONCONTACT CARRIERS

	Duration Less Than 3 Months			Duration More Than 3 Months			Duration Not Known			Total		
Tests Made Prior to 1916:	No. Tests	No. Vir.	Per Cent. Vir.	No. Tests	No. Vir.	Per Cent. Vir.	No. Tests	No. Vir.	Per Cent. Vir.	No. Tests	No. Vir.	Per Cent. Vir.
Convalescent carriers	159	144	90.0	2	2	100.0	...	..	....	161	146	90.6
Contact carriers	20	16	80.0	..	..	....	...	..	....	20	16	80.0
Noncontact carriers*	32	3	10.0	1	0	....	...	..	....	33	3	8.3
Total number of tests prior to 1916	211	163	77.2	3	2	....	...	..	....	214	165	77.1
Tests Made from January, 1916, to April, 1919:												
Convalescent carriers	147	136	92.5	28	25	89.2	44	30	68.1	219	191	87.2
Contact carriers	35	28	80.0	9	8	88.8	51	33	64.7	95	69	72.6
Noncontact carriers†	12	10	83.3	2	1	50.0	6	4	66.6	20	15	75.0
Total number of tests, 1916-1919	194	174	89.6	39	34	87.1	101	67	66.3	334	275	82.0
Combined total	405	337	83.2	42	36	85.7	...	..	....	548	440	80.4

* These noncontact carriers were carefully classified as carriers when there was no diphtheria.
† These noncontact carriers could not be so accurately classified.

VALUE OF ROUTINE VIRULENCE TESTS

At first, the task of making these virulence tests was an arduous one. Nevertheless, tests were made during a period of two years with 250 strains of the diphtheria bacillus. To determine the value of these routine virulence tests, Dr. W. E. Youland, of the laboratory staff, tabulated the results. He found that 90 per cent. of the strains of *B. diphtheriae* that were isolated from cases of clinical diphtheria, from the day of onset to and including one year after onset, were virulent for guinea-pigs. Eighty per cent. of the strains isolated from a smaller series of healthy contact carriers who acquired the bacilli during epidemics were virulent,[1] while only 10 per cent. of the strains isolated from noncontact carriers were virulent. The noncontact

* Read before the New York State Medical Society, Syracuse, N. Y., May 8, 1919.
* From the Division of Laboratories and Research, New York State Department of Health.
1. Diphtheria Carriers, New York State Department of Health.

carriers of this series were persons in state institutions or schools where there were no cases of diphtheria, who, nevertheless, carried diphtheria bacilli in their secretions. Ninety per cent. of the cultures that were obtained from convalescent patients during the first three months after the onset of the disease and from contact carriers were virulent. It was thus possible to discontinue a large part of the work, namely, the examination of convalescent and contact carriers during the first three months after the onset of the disease.

But physicians and health officers, who are deeply concerned for the release of their patients, have very naturally been impatient at this delay. In order to avoid making any unnecessary hardship for these carriers, it has been customary to make examinations whenever the health officer thought there were special reasons why he should have such a test made and stated his reasons clearly. Thus a considerable number of virulence tests have been made since the previous tabulation, and it is thought that it might be of interest to record the results of these examinations.

The tabulation of this series includes 334 virulence tests that have been made from January, 1916, to April, 1919. The classification of noncontact carriers is nondescript and not as reliable as that in the previous study of noncontact carriers on account of the fact that it was impossible to get complete and reliable information from all the physicians who sent these cultures to the laboratory. The results of this tabulation are presented in the accompanying table. The results obtained in the tabulation of the first series are included for the purpose of comparison.

When the results obtained with cultures from convalescent carriers in whom the duration of infection is less than three months are examined, it is found that of 147 strains of *B. diphtheriae,* 136, or 92.5 per cent., are virulent. This agrees closely with the results obtained in the first series, in which 90 per cent. of the strains were virulent. In the same period, from healthy contact carriers, twenty-eight strains of diphtheria bacilli out of thirty-five strains tested, or 80 per cent., were virulent; 80 per cent. was also obtained for these contact carriers in the first series.

The percentage of virulent diphtheria bacilli from convalescent carriers of more than three months' duration, 89.2 per cent., agrees closely with 92.5 per cent., obtained in cases of less than three months' duration. The number of examinations made on contact carriers in this period, nine, is too small to be of any significance.

CONDITIONS AFFECTING STATISTICAL VALUE OF RESULTS

The number of cases, 101, in which the duration of the disease was not stated on the information blank renders the results of these examinations for virulence unavailable for statistical study. Similarly, the results obtained for noncontact carriers are of little value since the information describing the cases as noncontact was often unreliable.

In both series, 398 cultures from convalescent and contact carriers in which the duration of the infection is known were studied. Three hundred and fifty-seven, or 89.7 per cent., of these were virulent. When the total number of tests for virulence (548) are examined without attempt to classify the cases on which the tests were made, it is found that 440, or 80.4 per cent., are virulent.

CONCLUSION

It is evident that *B. diphtheriae* from persons who have had diphtheria or from those who through contact become "carriers" retains its virulence for several months. Changes in virulence or changes in species or strains of the diphtheria organisms take place so slowly in the throat that the three months' period required before making these virulence tests is, after all, a lenient ruling and a satisfactory one if, in special instances in which carriers are definitely known to be noncontact carriers, a virulence test is made without delay.

ABNORMAL LACTATION

A CAREFUL STUDY OF THE LITERATURE, WITH THE REPORT OF A CASE *

M. J. SEIFERT, M.D.
Attending Surgeon, St. Mary's Hospital
CHICAGO

Lactation, the coping stone of motherhood, is a function sometimes impossible, often intentionally or ignorantly neglected, and in many instances practiced to excess.

In women of high social standing, the last mentioned condition is practically unknown. Investigations show that among women of the poorer classes, and particularly among the tribes and races of ignorant and uncivilized peoples, prolonged lactation is common. This is much to be regretted, as it tends to produce depletion of the mother with symptoms of "tabes lactealis," and poorly nourished babies.

TIME

Normally, nine months is considered the proper period for a mother to nurse her child. Under prolonged lactation would come cases in which maternal nursing, wholly or partially, has been indulged in longer than twelve months.

When lactation exceeds a period of two years, it is, however, permissible to speak of it as "abnormal mammary secretion," as the child, obviously at this time, has become independent of the milk supply of the mother; yet it is an altogether common occurrence to see lactation intentionally prolonged indefinitely, sometimes exceeding forty years (Cazeaux [1]). In the ethnographic work by Ploss [2] we find that this unnatural custom is found among all the races of the globe. Gellhorn,[3] in his travels in Siam, reports that he has repeatedly seen a boy of 6 or 7 interrupt his play, or put his palm-leaf cigaret behind his ear, and return to his mother's breast and take a sip of refreshment. Among the poorer classes this habit is often induced by economic reasons, but sometimes, also, as a matter of convenience, since it pacifies the child with the least disturbance to the mother. Then, the popular belief that lactation prevents conception is also a potent factor in producing this custom. Jacobi, many years ago, stated that "lactation and pregnancy are incompatible," but this statement is far from being universally accepted.

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* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Cited by Noel: Echo méd. de Cévennes, 1901, p. 207.
2. Ploss and Bartels: Das Weib in der Natur und Völkerkunde, Ed. 6, Leipzig, 1899.
3. Gellhorn: Medizinische Reise-Erinnerungen an Siam, Deutsch. med. Wchnschr. **25**, No. 9, 1899.

LACTATION AND CONCEPTION

Weinberg [4] states that conception occurred during the first six months after childbirth in only 1.2 per cent. of 513 nonmenstruating women nursing their children, and in 59.5 per cent. in 615 who were not nursing.

Fordyce [5] reports that out of 645 cases, 22 per cent. were cases of prolonged lactation. The same author [6] states that overlapping pregnancy and lactation occurs in 24 per cent. of mothers, and may, obviously, exist for some time without being suspected. Only too often in such cases, it is found that after the birth of the child the mother is quite unable to nurse satisfactorily for any length of time, as the milk is usually poor in quality and insufficient in quantity.

Fordyce [7] conducted an observation on 100 mothers who had given birth to 405 children (twins in five cases); of these, 376 infants survived at least two months. In 259 (69 per cent.), the children were nursed at the breast for at least two months, and therefore in these 259 cases there was a possibility of pregnancy or menstruation coexisting with lactation. In these cases the duration of lactation averaged ten months. In six cases the condition as to menstruation was not ascertained. Of the 253 remaining cases of lactation in which this point was determined, in 60 per cent., there was complete amenorrhea, while in 40 per cent. menstruation occurred.

From every point of view, prolonged lactation is unsatisfactory. The risks are real, and the compensating advantages only illusionary.

I am emphatic in the belief that along with the constant reiteration of the command for maternal nursing there is the very important obligation of advising a strictly limited lactation. While my personal figures are comparatively small, my findings concur with those of other observers, and lead to the deductions that:

1. The concurrence of pregnancy and lactation is comparatively common.
2. Conception is rare within the first six months of lactation, and uncommon before the eighth month.
3. When pregnancy and lactation overlap, both the fetus and the mother are likely to suffer.

EFFECT ON BABIES

Fordyce [7] studied 300 children with regard to rickets and prolonged lactation, and found that rickets was more common among children who were breast fed for over eight months than among other children. This he attributed to the natural variations in the composition of mother's milk, not only in different individuals, but in the same individual at different times.

While no one questions that, where practicable, maternal nursing, when properly regulated, is the best and only method of procedure for the good of both mother and child, one must, however, not lose sight of the evil consequences of overlapping pregnancy and lactation, and prolonged lactation. Such conditions foreshadow a diminished value of the milk in future lactations, and consequently form a serious handicap in the natural nutrition of later infants.

CAUSE OF PELVIC INFLAMMATION

Fordyce also reports that prolonged lactation is a cause of pelvic inflammations.

Walsh,[8] who made an extensive study of prolonged lactation, states that the deleterious effects of this practice are more noticeable in women physically below par, and that they suffer from serious disturbances—circulatory, digestive and nervous; that the endometrium, as well as the muscular structures, partake of the general debility; that they suffer metrorrhagia from relaxation of the capillaries, and, that leukorrhea usually accompanies their other symptoms.

Lawson Tait asserts that prolonged lactation is the cause of a large number of cases of subinvolution of the uterus; and, further, that "in the majority of cases, one might almost say that in ninety-nine out of every 100 cases, chronic endometritis is accompanied by, and is indirectly due to, subinvolution of the uterus, following labor or miscarriage."

Skene mentions this as predisposing to endometritis, and reports a case of a woman who nursed her child for eighteen months and who, in consequence, suffered from cervical endometritis.

Thomas also mentions it as a cause of chronic cervical endometritis.

Marion Sims [8] says that metrorrhagia may result from superlactation, but that such cases are not common and usually not obstinate. He mentions eight cases of metrorrhagia due to this cause. The period of suckling varied from sixteen to twenty-four months.

Johnston [9] reports the occurrence of mammary secretion, accompanied by certain rational signs of pregnancy, in two nonpregnant women. One of these patients had retroflexion of the uterus. When this was corrected the secretion of milk ceased.

Stewart [10] reports the case of a woman who was secreting milk from her right breast six years and four months after delivery. The child was not nursed on account of insufficient secretion and too short nipples. A plastic operation, and one for retroflexion, had been performed after confinement. The pelvic organs were otherwise normal. The breasts were small and had enlarged milk ducts.

Grünbaum [11] cites two cases of hysterectomy with ovariotomy in women of child-bearing age, one being a multipara. These women had secretions of milk following the operation for from eleven to seventeen days. He reviewed twenty-one cases of similar nature.

Dassier [12] noticed in climacteric women, secretion of milk following mastitis.

These cases lead to the very interesting question of the activity of the breast due to pathologic conditions. Tumors of the breast may be left out of consideration. We are here merely concerned with affections of the genital sphere.

Gellhorn has observed in the University Clinic, Bern, fourteen cases of mammary secretion in sterile women who exhibited uterine fibroids. He also found colostrum in the mammae in twenty-five out of forty-four cases of fibroids. He believes that the alteration of the blood by the uterine tumor causes the mammary symptoms. Irritation of the uterus by a strong galvanic current failed in his hands to cause milk secretion. He excludes reflex through the nervous system.

None of these authors endeavor to explain why the uterus is thus affected.

Sinclair [8] offers this explanation: During pregnancy, the breasts are undergoing a change to prepare them for the purpose of lactation. Immediately after

4. Weinberg: Ztschr. f. Geburtsh. u. Gynäk. 1903.
5. Fordyce, A. D.: Brit. J. Child. Dis. **3**: 302-304, 1906.
6. Fordyce, A. D.: Lancet, Jan. 27, 1906.
7. Fordyce, A. D.: Lancet **84**: 221, 1906.
8. Virginia Med. Month. **18**: 1001-1007, 1891-1892.
9. Johnston, G. W.: Am. J. Obst. **21**: 830, 1888.
10. Stewart, D. H., cited by Jacobius: Arch. f. Kinderh. **48**: 1-160.
11. Grünbaum, D.: Milchsekretion nach Kastration, Deutsch. med. Wchnschr. **33**, No. 26, 1907; abstr. J. A. M. A. **49**: 976 (Sept. 14) 1907.
12. Dassier, cited by Noel: Echo méd. de Cévennes, 1901, p. 207.

delivery, there is an acceleration of this process, which is generally completed in from three to four days. Stimulation of the breasts by nursing at this time exerts a powerful influence in causing contraction of the uterus. Then, if lactation is gradually stopped, reevolution of the sexual functions becomes gradually complete; but if lactation has been carried to excess, it is natural to expect that it has exerted a greater than normal influence on the sexual organs. And when lactation is suddenly stopped, it is reasonable to suppose that the final stage of evolution will be more rapid than usual and attended by some unusual phenomenon. But this does not explain why the uterus suffers in prolonged lactation. Besides the uterus, other organs are affected.

Microscopic researches have shown that in all forms of true secretion, the active agents are cells which have the power of selecting from the blood the requisite materials; these cells, developed in the interior of the organ, become distended, burst or liquefy, and yield their contents to the excretory ducts.

In the mammary glands, as in other glandular structures, according to Goodsir,[13] the inner surfaces of the ultimate milk follicles are covered by a layer of epithelial cells, the true agent in the process of secretion. As soon as one set of cells has emptied its contents, the cells die and are replaced by a new set of cells from the nuclei of the germinal cells of the follicles.

Bird[13] obtained evidence that this alteration commences in the blood, and goes on during pregnancy as a preparation for lactation. The evidence is through the presence of kyestein (which is nearly related to casein) in the urine during pregnancy, indicating the conversion of albumin into casein of the blood, and preventing its accumulation in this fluid before it is secreted by the mammae by this curious substance in the urine.

If these results are true, it does not seem so very strange that the secretion of milk cells should be permanent, under favorable circumstances, which cannot at present be specified, any more than that the secretion of the urine or bile, once commenced, should be permanent. The secretion of milk, abnormally continuous in the foregoing case, may be only a transfer of the office of freeing the system of nitrogen by the usual agents, the kidneys, to the unusual one, the mammae, which remove it by casein instead of by urea, from idiosyncrasy, the former being permanently formed in the blood.

Channing[13] reports two cases of prolonged lactation lasting four and eight years; but the secretion of urine was not studied in them.

Coale[13] deemed the analysis of the urine desirable and important, in such cases.

NEW-BORN

Billroth[14] states that in a tolerably large number of cases of such tumors, he has never witnessed a coincidence with abnormal milk secretion. The occasional occurrence of milk secretion of the new-born of either sex is sufficiently known, but satisfactory explanation has not yet been given.

Steifensand[15] was the first to call attention to the fact that, in the new-born, all glands exhibit pronounced activity.

Basch[16] ascribes the phenomena to the welling up of the secretion to the surface, thereby loosening the hornified epithelium which clogs the orifices of the milk ducts.

Bumm[17] says that the skin of the new-born is very sensitive and responds to the influence of air and light by reddening and exfoliation of the uppermost layers of the epidermis. This irritation is also the cause of the mammary secretion.

Longridge[18] finds that in large children with an abundance of subcutaneous fat, the breasts are normally well developed irrespective of sex, and on pressure often secrete a fluid indistinguishable from milk.

Starling[19] and Lane-Claypon state that there is a chemical factor in the body of the fetus, analogous to the one acting on the mother's breasts.

Halbau[20] concludes from his researches that pregnancy produces local phenomena in the fetus, which are identical with, though not so intense as, those in the organism of the mother. In a later study he attributes the causation of this mammary hypertrophy to an internal secretion of the placenta. He is of the opinion that the etiology of mammary secretion has nothing to do with the fetus, but is due to the internal secretion of the ovary; in pregnancy the function of the ovary is temporarily assumed by the placenta. In exceptional instances, lacteal secretion takes the place of menstruation.

CAUSE OF EYE AND BRAIN DISORDERS

Some report resultant eye and brain disorders. McKenzie[8] was the first British writer to call attention to the effect of prolonged lactation on diseases of the eye. He described a case of retinitis due to this cause. It is usually bilateral.

Taylor[8] stated that the injury may extend from a slight impairment of vision to a total loss of sight.

The brain is also seriously affected, and epilepsy is known to have developed. Luke[8] mentions two cases of insanity as a result. Similar cases are also cited by Hewitt and Ashwell.[8] Morton[21] reports twenty-two cases showing inflammation of the brain and its membranes occurring in children in consequence of prolonged lactation.

Duval[22] speaks of nonpuerperal mammary secretion and gives as causes: (1) menstruation; (2) tumors of the breasts; (3) affections of the utero-ovarian apparatus; (4) mechanical or psychic stimuli independent of any material modification of the organ, and (5) cases occurring after the menopause.

Spark[23] reports a serious case of galactorrhea with emaciation, anorexia, disturbed digestion, etc. It took four months to stop it. Abscesses had occurred in two successive confinements. Previous to the third confinement, extract of belladonna and glycerin were applied to the breasts every third night for a week. Milk appeared slightly for a day or two at the end of the week, and then discontinued.

Jacobius[24] was able to revive nursing in from three to twenty-six days after it was discontinued, by using

13. Am. J. Med. Sc., N. S. **23**: 110-112, 1852.
14. Billroth: Diseases of the Female Mammary Glands, in Cycl. Obst. & Gynec. **9**: 44, 1887.
15. Steifensand, cited by Knapp in F. von Winckel's Handbuch der Geburtshülfe, 1904, II, Part 1, p. 163, 1845.
16. Basch. Beiträge zur Kenntniss des menschlichen Milchapparates, Arch. f. Gynäk. **40**, No. 1.
17. Bumm: Grundriss zum Studium der Geburtshülfe, Ed. 2, 1903, p. 271.
18. Longridge: J. Obst. & Gynec. Brit. Emp., March, 1908, p. 165.
19. Starling, E. H.: The Chemical Control of the Body, J. A. M. A. **50**: 835 (March 14) 1908.
20. Halbau: Ztschr. f. Geburtsh. u. Gynäk. **3**: 191, 1904.
21. Morton: London M. & Phys. J., 1888-1889.
22. Duval: Cited by Johnston (Footnote 9).
23. Spark, J. S.: Brit. M. J. **2**: 653, 1878.
24. Jacobius: Arch. f. Kinderh. **48**: 1-160.

a rubber nipple attached to a rubber tube, which the mother sucked. This was effective treatment with many patients that never nursed a child, not even during the puerperium.

CASES OF PROLONGED LACTATION

Mention will be made of some interesting cases:

Mrs. E. B., aged 31, born in Chicago, with unimportant family history, gave birth to a child eleven years ago, and had an extra-uterine pregnancy of five and one-half months' duration, three years ago. Both breasts have secreted rich, creamy milk since the birth of the child eleven years ago. (For complete report, with unique surgical complications of this case, see: Seifert, M. J.: Ectopic Gestation, *Internat. Clin.* Series 30, 2, 1920.)

Arnheim [25] reported a case of a woman of twenty-six who had been confined four years before, and since then had had a profuse mammary secretion that resisted all known methods of treatment.

Kneeland [13] reported a case in a woman of 35, who gave birth to a child five years before. She nursed it until it was 2 years old, when it died of chronic hydrocephalus. Her husband died when the child was 2 years old. Milk secretion was very profuse, and although not pregnant again, she secreted milk in abundance five years after the birth of the child.

Walsh [8] reported a case in a colored woman of 23; her first child was 5½ years old, whom she had nursed for two years. Her breasts had not been dry since, and she had been accustomed to milk herself two or three times daily. Three years before, she had an abscess of the breast, and a year later, miscarriage followed by dysmenorrhea. Her breasts were large and filled with milk, which could be expressed on the slightest pressure. Belladonna, turpentine and strapping were tried, but milk continued to secrete in spite of treatment.

Nikolski [26] reports a case of a woman of 31, delivered of a child five years before, who lived but a short time. She continued to secrete milk to date.

Edelberg [27] reports a case in a widow of 27 who married at 18, and had never menstruated. She had irregular menstruation after marriage. Four years later she became pregnant, menstruation ceased, and she was later delivered of a healthy child. There was no menstruation for eleven months, whereupon it again became irregular. No further pregnancy occurred, but there was copious secretion of milk six years after the birth of the child. The patient lacked in sex sense. No gynecologic examination could be obtained.

Clarke [28] reports a case of a mother who nursed her child for five years and two months. She menstruated only twice during this period. On a physician's advice the child was weaned, and the milk secretion soon stopped.

Cheinisse [29] cites a case of latent lactation, with anemia and debility, two years after the weaning of the child. Milk was secreted, but expressed only on pressure.

Beltz [30] reports a case of latent lactation four years after the child was weaned. The secretion increased at menstrual periods, but was obtained only on pressure.

Dr. Ellittson cites a case of a woman who secreted milk after miscarrying at seven months; then, another, who had never been pregnant. He also cites a case of a young woman who suffered from dysmenorrhea as a result of ovarian trouble. She had never been pregnant, but had mammary secretion of milk.

EXTRAORDINARILY PROLONGED CASES

There are several cases on record of extraordinarily prolonged lactation.

Kamneff [31] reports a case of thirty-two years' duration. Cazeaux [1] describes the case of a woman in whom an abundance of milk was secreted for forty-seven years.

Siegart [32] quotes cases of five grandmothers who had borne from nine to seventeen children of their own and nursed each one for two years, as well as suckled their grandchildren—one of these for more than twenty-two years, and twelve of the children for 280 months. In spite of unfavorable social and economic conditions, there was not a case of rickets among them, and only one of these children died in early infancy.

Landau [33] quotes Billroth regarding a woman, aged 82, whose breasts were functionating. The same author removed the ovaries in a woman, aged 29, who later on developed milk in her breasts without pregnancy. He also cites a case of a woman, aged 24, whose milk in one breast was sweet, and in the other salty. The child refused nursing. Chemical analysis was not obtained.

VIRGINS

The occurrence of copious lacteal secretion in the virgin was noticed and discussed by the illustrious father of medicine. His observations have since been periodically added to by records of new cases, in all ages down to our own.

The American physiologist Dunglison emphasized the fact that very active and copious lactation may be present without previous impregnation, "for it has been witnessed in the unquestionable virgin, in the superannuated female, and even in the male sex."

Knott [34] cites three cases of nurse girls who were entrusted with the care of infants for the night. In order to quiet the babies, they allowed them to play with their breasts and suckle their nipples. Increased sense of fulness and warmth was followed in a few days by copious secretion of milk. It promptly yielded to simple treatment of belladonna externally and internally. Another case of a girl of 8 who suckled her infant brother for a month was recorded by the French obstetrician Baudelocque.

LeRoy [35] mentions an African Jewess, with a history of marked nervousness in the family, but no stigmas, who menstruated at 10 and developed secretion of milk in considerable quantity. At 23 she developed symptoms of mania and was placed in an institution in Paris. The breasts were well developed, but the nipples absent, so that in this case the secretion could not be attributed to a stimulation, from the suction of nipples. There was extreme erotism in her talk, and she was proud of her anomalous function.

Noel [36] mentions the case of a young married woman who had never had sexual intercourse. She was called

25. Arnheim: Transactions of the Medical Society of Hamburg, Deutsch. med. Wchnschr., 1908, p. 445.
26. Nikolski: Russk. Vrach **20**: 178, 1899.
27. Edelberg, F.: Russk. Vrach. **21**: 57, 1900.
28. Clarke, H. R.: Brit. M. J. **1**: 1143, 1902.
29. Cheinisse, L.: Semaine méd. **24**, No. 28, 1904.
30. Beltz: Bull. Soc. méd. Rheims, 1876.
31. Kamneff: Russk. Vrach **20**: 450, 1899.
32. Siegart, F.: München. med. Wchnschr. 1903, p. 1349.
33. Landau, T.: Deutsch. med. Wchnschr. **16**: 745-747, 1890.
34. Knott, John: Am. Med., N. S. **2**: 373-378, 1907.
35. LeRoy, R.: Trihune méd., N. S. **63**: 7, 1910.
36. Noel: Echo méd. de Cévennes, 1901, p. 207.

on to care for an infant 6 months old. To quiet it, she took it to her breasts, and secretion soon followed.

Blum [37] reports the case of a girl, aged 17, with two developed mammae in their normal places, who had in the region of the mons veneris a third mamma, the size of a goose egg, with seven nipples. Four of these secreted regularly a copious amount of colostrum before and during the first day of menstruation. The two normal mammae did not secrete at all.

VIRGIN ANIMALS

These references are also corroborated by animal breeders. Virgin sheep, dogs and rabbits have occasionally been found to secrete milk.

Harvey [38] states that overfed female dogs which admit the dog without fecundation following steal away the whelps of another female dog, tend and lick them, and fight fiercely for them. Others have milk and colostrum in their teats, and are subject to diseases of those that have whelped.

Noel [36] cites the case of an ape confined in a cage, an unquestionable virgo intactu, which developed secretion of milk in her teats by occasionally rubbing them. It lasted nine months, and reappeared at intervals. This author also cites several instances in which women were able to nurse after an interval of four months.

PHANTOM PREGNANCIES AND VICARIOUS MENSTRUATION

Gellhorn [3] cites several cases of phantom pregnancy with mammary secretions. These were due, either to the desire or the fear of pregnancy, and in one case to the sight of milk secretion.

Pusch and Courty [39] collected twenty-six instances in which there was vicarious menstrution.

Landau [33] and Gautier [40] report a similar case; the latter, that of a virgin.

SUPERANNUATED FEMALES

Turning our attention to the superannuated female, Dr. Gordon Smith refers to a manuscript by Sir Hans Sloane containing the record of a woman of 68 who had borne a child more than twenty years before, and who had nursed all her grandchildren, one after the other.

Professor Hall of the University of Maryland reports the case of a widow, aged 50, whom he had witnessed nursing her grandchildren, although she had not borne a child of her own for twenty years. In this case the child was put to the breast to quiet it, in the process of weaning.

Dr. Francis of New York narrated a case of a woman who for fourteen years after the birth of her child secreted milk in great abundance.

Dr. Kennedy of Ashby de la Zouch has described the case of a woman who menstruated during lactation, suckled children through the full course of forty-seven years, and in her eighty-first year had a moderate but regular supply of milk, rich and sweet, and not differing from that secreted by young, healthy mothers.

Stack [41] tells of a woman of 64 who had not borne a child in sixteen years, but nursed her grandchildren, one after the other.

37. Blum: München. med. Wchnschr., May 21, 1907, No. 9.
38. Harvey, cited by Edgar: Practice of Obstetrics, 1903, p. 484.
39. Pusch and Courty, cited by Henning: Zentralbl. f. Gynäk., 1908, No. 18, p. 601.
40. Gautier: Lyon méd., 1903, p. 199.
41. Stack: Phil. Tr. cited by Knott (Footnote 34).

LACTATION IN THE MALE

Finally, I will mention the still more anomalous phenomenon of lactation in the male.

Knott [34] tells of Professor Hall exhibiting to his obstetric class in 1827 a colored man, aged 55, who had large, soft, well formed mammae, rather more conical than those of a female, and projecting fully 7 inches from the chest, with perfect and large nipples. The glandular structure was in every respect like that of a female. This man officiated as wet nurse for his mistress, and when the milk was no longer required, great difficulty was experienced in arresting the secretion. His genital organs were fully developed.

There has been cited [42] the case of a man about 70, who was left a widower with an infant, aged 2 months. He took the baby to his breast and soon secreted enough milk to rear him. His breasts were large—larger than those of some women.

Knott [43] cites the case of a Chippewa Indian, who also was left a widower with a young infant. He cared for him as a mother would, his breasts began to secrete milk, and he raised the child.

Dorland states that it is not at all uncommon among the men of the lower classes of Siam to nurse the babies, either altogether or alternately with the mothers.

Cases of male domestic animals have been cited [42] whose breasts secrete milk in abundance.

SUMMARY AND CONCLUSION

We have seen, in the foregoing, that lacteal secretion not only occurs during pregnancy and the puerperium, but also may appear in the new-born, in the growing child, in the adult virgin, in the old woman, and in the male.

It may be prolonged indefinitely after childbirth, and may be associated with certain pathologic conditions in the genital sphere, as well as after hysterectomy and ovariotomy.

Aside from the intense scientific interest in the etiology of lacteal secretion, which is still obscure, there is also considerable practical importance attached to abnormal activity of the mammary glands, and a thorough knowledge of the atypical functions of these organs is indispensable to the expert in medicolegal practice.

The inference is: Most mothers could nurse their babies if, instead of shirking, heeding false advice, or taking galactagogues, they would stimulate their breasts by normal methods.

30 North Michigan Avenue.

ABSTRACT OF DISCUSSION

Dr. William Koehlmann, New Orleans: Dr. Seifert has collected all the literature and at the same time brings out some points on the practical facts of lactation. He has shown that the secretion of milk takes place not only during pregnancy, but under other conditions. We have all seen a woman who either wishes or is afraid to be pregnant and yet secretes colostrum, if not milk. During inflammatory conditions of the uterus, milk secretion may not be very frequent. I operated on a woman five years ago following infection of childbirth. She had to be operated on again last fall because of infection. Immediately after recovery she was secreting milk and did so for about two weeks. From the medicolegal aspect this is important. It could be brought up that a woman was pregnant because of the presence of

42. Phil. Tr., cited by Knott (Footnote 34).
43. Knott, cited in Dr. Richardson's Journal.

milk in her breast. I wish to emphasize two points: first, the hypersecretion of milk, and, second, protective secretion of milk. Hypersecretion of milk is to be spoken of if the secretion exceeds two pints a day. Ordinarily, a woman secretes half a pint a day. Of course, there are women who secrete a great deal of milk and can nurse several babies, especially twins. Unfortunately, many women who have a chronic disease, like tuberculosis, are inclined to secrete a great deal of milk. To let her continue to secrete milk without attempt to stop it would interfere with the health of the woman, and milk of that kind is no doubt unhealthful and may be followed by complications of the digestive organs of the child. There seems to be a decrease of mothers who are able to nurse their children. Unfortunately, there is little we can do to stimulate the secretion. The only thing we can do is to regulate the general health and to try to increase the secretion of milk. We should try to increase the flow of milk because the child will do much better when nursed by the mother than to be fed by artificial means.

PROLAPSE OF THE FEMALE URETHRA*

RICHARD R. SMITH, M.D.
GRAND RAPIDS, MICH.

My object in presenting this paper is to call attention to the condition designated by its title, to describe it and to offer a simple means for its correction. I hardly need say that so-called bladder symptoms are among the most annoying of all the discomforts that

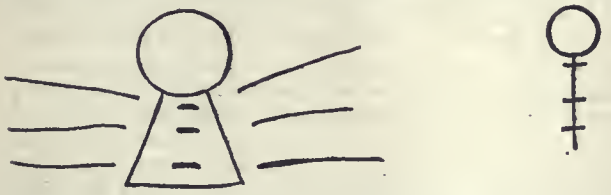


Fig. 1.—Diagram of operation on meatus itself. This is done for the purpose of narrowing a dilated orifice and restoring normal protection to the urethral mucous membrane.

arise from childbirth injuries. We have recognized that they are due directly, though perhaps not entirely, to the loss of integrity of structures anterior to the vagina which have intimately to do with the support of the bladder and the urethra. In general these injuries are more important than the prolapse of the posterior wall and rectocele which follow the separation or tearing of the levators. But far more consideration has been given to the perineum and its repair than to the defects in these anterior structures. It would be difficult to understand why the condition to be described has not received earlier attention, and even today is so commonly overlooked, if we did not realize that cystocele and its associated lesions have only recently received the attention they deserve.

When a woman comes to us complaining of frequent and perhaps painful urination, together with more or less constant discomfort in the region of the bladder, or of other symptoms associated with the act of micturition, we systematically examine the bladder and upper urinary passages for a cause of the trouble, which we think of largely in terms of infection. At the same time we look for mechanical defects. If we find a cystocele we are likely to consider this the extent of the mechanical trouble and offer its surgical correction as a means of relief.

* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

In making such an examination we note and consider the extent of the cystocele, the position and condition of the uterus, and the integrity of the perineum and posterior vaginal wall. We are likely, however, not to inspect thoroughly and examine the meatus urinarius. With the patient on her back and relaxed,

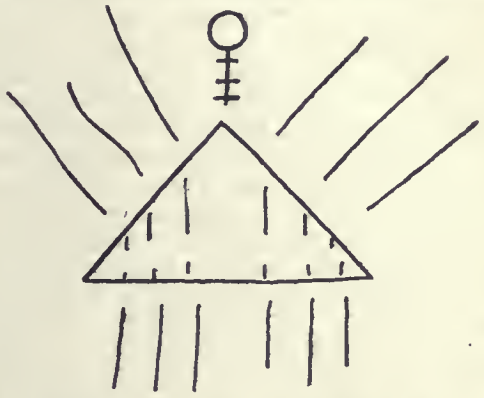


Fig. 2.—Denudation and suturing of anterior vaginal wall above meatus. After obtaining a good hold on the forward edge of the mucous membrane, a rather deep bite is taken into the firm tissue beneath the pubic bone, care being taken, of course, to avoid the urethra. When tied, the meatus is drawn upward and its normal protected position restored.

the meatus and anterior vaginal wall close to it protrude but little, if any, whatever the condition present, and are likely to be regarded as quite normal. Ask the woman to strain, however, and if there has been an injury at this point the meatus and the anterior vaginal wall back of it bulge forward and roll upward, bringing them into marked prominence.

Close observation will not infrequently disclose an edema of these structures. Most important is the condition of the meatus itself. The mucosa at the lower end of the urethra is seen to roll slightly out of the meatus, exposing to view a bit of the tender lining of the canal. The meatus may be found to be larger than usual, its two small lips torn or stretched and offering a very imperfect covering for the sensitive membrane within. The mucosa is not infrequently the seat of a so-called caruncle, which is sometimes exquisitely sensitive, though frequently very little so.

Imagine, now, the patient up and about, or straining to evacuate the bowel or bladder. We must, of course, have the protrusion produced many times a day. Ask the patient whether there is tenderness at this point and whether she has discomfort there. The answer will frequently be "yes." She will tell you that her clothing often irritates her and that bathing the parts or any roughness produces the same results. It occasionally happens that close questioning will reveal the fact that practically all her symptoms are those just mentioned. At other times they are but a part, though an important part, of the urinary symptoms of which she complains. Frequent urination has many causes. The usual ones lie perhaps in the urinary passages above the meatus,



Fig. 3.—Lines of incision used when other operations are performed requiring the usual longitudinal incision in the anterior vaginal wall.

but I have occasionally seen it produced by this condition alone. It is well to question, when painful urination is complained of, as to its nature. The passage of urine over a swollen, irritated meatus produces burning and discomfort at this point.

In considering the correction of cystocele, with or without a prolapse of the uterus, I would urge that the condition of the urethra be observed, and if it is prolapsed, that this condition be corrected at the same time, or, if the latter condition alone exists, that the slight operation necessary to its correction be offered the patient. The operation will vary somewhat according to the circumstances. Let us assume first that the prolapse of the urethra exists alone. First we will remove the caruncle or protruding mucosa. This should be done with greatest delicacy, because the tissue is extremely soft and bleeds freely. A very fine stitch or two on a fine needle is occasionally, but not always, necessary. More important is the closure of the meatus to its normal dimensions, and this is done by making a small denudation (Fig. 1), removing a bit of the circumference of the meatus and denuding a little of the surface beneath it as in the diagram. The placing of the fine chromicized sutures will vary according to the individual case, but there is little difficulty in this part of the operation. There follows a large triangular denudation of the anterior vaginal wall that protrudes (Fig. 2), the base of which is placed as high as the under edge of the pubic bone, or slightly higher, so that when it is closed by sutures the meatus is drawn back to a normal position. The stitches, which must, of course, avoid the urethra, are inserted deep enough to obtain a good hold of the firm tissue close to the pubic bone. I commonly employ chromicized catgut.

If an ordinary cystocele operation is performed, the usual median incision along the anterior vaginal wall should continue well forward, and should then be broken by a transverse one, which forms the base of the triangle described above, the operation being completed in the same way (Fig. 3). When an interposition operation is performed, I would urge bringing the fundus close to the pubis and stitching it rather firmly there, the retaining stitch being placed directly on top of the fundus. This, I believe, will prevent a protrusion afterward of the anterior wall at this point and, if combined with a correction of a previously existing protrusion of the meatus and anterior wall, will do away with and prevent the occurrence of this disagreeable result; at least, I have had no trouble since I have been more particular about doing it this way.

I am aware that many gynecologists have recognized the condition that is the subject of this paper and have adopted similar means of correcting it. I am sure, however, that the practice has not been universally followed and has not been sufficiently emphasized.

ABSTRACT OF DISCUSSION

Dr. S. M. D. Clark, New Orleans: Murette's article shed new light on the true pathology of this incontinence of urine. The walls of the urethra are parallel normally. In childbirth the structures that support the posterior vaginal wall are damaged in such a way as to cause a prolapse, a sagging, and instead of having parallel urethral walls a bottle formation results. That is the basis of the whole trouble. By reestablishing the parallelism of the urethral walls, which Dr. Smith's procedure does in the large majority of cases, the incontinence is overcome. Murette's procedure, which we have adopted in our clinic, does that very effectually.

Dr. F. F. Lawrence, Columbus, Ohio: Before a prolapse of the urethra can occur, as described by the essayist, there must be a descent of the uterus, together with the formation of the cystocele. A cystocele or urethral prolapse cannot develop so long as the uterus lies in its normal axis. The first thing that must occur is the dropping downward and forward of the cervix, thus relaxing and permitting pouching of the anterior vaginal wall with the development of cystocele. Any operation which shortens the anterior vaginal wall tends to draw the cervix forward, and must fail in its object because it favors the descent of the uterus. I very much doubt if any of us have ever seen a cystocele when the patient had a good perineum to support and hold the cervix in its proper position. Hence, the first and most important thing to do is to rebuild the perineum, and this must be done in a manner to get a wide infolding of the deep pelvic fascia and perineal muscles at its upper point, so as to hold the cervix back in its normal position. Then with the anterior colporrhaphy performed in such manner that the suture line is in the long axis of the vagina, we will get results. Any operation which produces a crosswise cicatrix will shorten the vagina, tending to pull the cervix forward and widen it, favoring the development of cystocele.

Dr. Arthur H. Curtis, Chicago: A great number of patients complain of symptoms and on routine examination we fail to recognize the pathology. It is necessary in such instances to examine the patient in the standing position. In the recumbent posture, even when the patient strains, we will often overlook a relaxed urethra and cystocele and even a prolapse of the uterus. When the patient is standing these lesions are almost invariably evident and easily diagnosed. As to urethral caruncle: the more common form is that in which there is a moderate prolapse of the urethra with the development of redundant granulations on this prolapsed tissue. About one year and a half ago I noted that there was usually a cystocele in conjunction with the caruncle. Since then I have failed to observe a single caruncle in which there was not a urethrocele or cystocele. I have since performed all caruncle operations with removal of the caruncle, combined with slight reparative operations on the prolapsed urethra and cystocele. In none of these instances have I seen a recurrence. Therefore, I believe it would be a good plan in cases where we find a caruncle to look carefully for the causative urethrocele or cystocele.

Dr. Richard R. Smith, Grand Rapids, Mich.: I did not mention incontinence as one of the symptoms for which this operation should be done, nor did I mention cystocele, with which this prolapse of the urethra is so often associated. That is a subject quite in itself. This operation is not intended to correct the cystocele. The standing of the patient during examination is a very important point. Snipping off the caruncle almost invariably leads to recurrence. It is necessary to protect the mucous membrane at the lower end of the urethra.

What Is Diabetes?—All our present knowledge and particularly the recent experimental work of Allen show that the underlying deficiency is a failure of the internal secretion of the pancreas, with consequent inability to convert sugar from the crystalline to the colloid form, in which form it must be present before it can be utilized by the body cell. Such failure on the part of the internal secretion of the pancreas may or may not be related to gross disease; it seems reasonably certain that nervous disturbance may disturb the equilibrium normally maintained between the organs of the endocrine system, and undoubtedly nervous disorder frequently upsets the balance of a diabetic. There is reason to believe that the white races generally are overtaxing the pancreatic function; the present day enormous consumption of carbohydrate, and particularly of sugar, is a new thing for the race. In America the consumption of sugar per head has risen from 4,990 grams per head in 1810 to 40,700 grams per head in 1916; perhaps a sugar famine would not be an unmixed evil.—J. F. Wilkinson, *Med J. Australia,* Feb. 14, 1920.

TYPHOID REDUCTION IN SOUTH CAROLINA

COMPARATIVE RESULTS IN COUNTIES WITH AND WITHOUT HEALTH ORGANIZATIONS *

L. A. RISER, M.D.
Director, County Health Work, South Carolina State Board of Health
COLUMBIA, S. C.

The vital statistics department was organized in South Carolina in 1915, and we have no accurate records of deaths from typhoid previous to that year. In this paper I will attempt to show how typhoid fever has decreased, and what methods are being used to effect this decrease. The decrease has been gradual

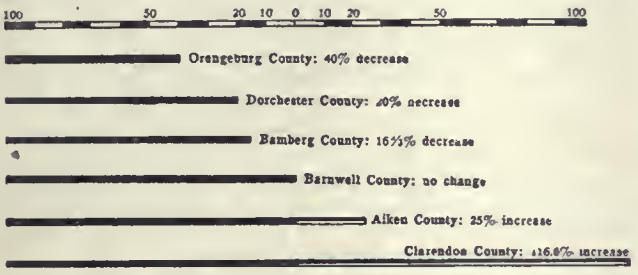


Fig. 1.—Increase and decrease in incidence of typhoid, 1917-1919: Orangeburg has had a county health department for three years. It has an area of 960 square miles and has made the same appropriations each year as Darlington with 600 square miles. Other counties compared have had no city or county health organizations.

since 1915, with the exception of 1918, during which year the army camps brought more than a hundred thousand people to the state. This does not refer to soldiers, but to workmen and camp followers who were not under army restrictions, and we credit to this fact the increase in 1918, as the cities in which these camps were constructed showed very large increases, some of them doubling their number of deaths of the preceding year.

ORGANIZATION

In 1917 the first county health unit was formed in South Carolina. This organization was perfected in Orangeburg County, one of the largest and most prosperous counties in the state. The unit consisted of a physician as director, with a corps of inspectors and carpenters. Greenwood County also took up the work during the year.

TYPE OF WORK

The ultimate object of the health unit was to stamp out typhoid fever and other intestinal diseases. The type of work was both educational and constructive. The physician gave lantern slide lectures in each school district on various health subjects, but stressed intestinal diseases spread by bad sanitation. The inspectors made a survey of the district, visiting each home and securing data as to living conditions of the family and sanitary surroundings of the home. Wherever possible the inspector persuaded the householder to put in a sanitary privy; if the inspector failed, then the physician made a personal visit to the home. The carpenters assisted in the construction of the privies. Specimens of feces were collected and examined for intestinal parasites, and when the patients were found infected they were given free treatment. By circulars, posters, personal letters, exhibits, school contests, public lectures, newspaper publicity and personal interviews the importance of sanitation was constantly kept before the public

GROWTH AND PROGRESS OF COUNTY ORGANIZATIONS

In 1918 four full-time county health organizations were perfected, in 1919 six and in 1920 seven. In 1918 medical inspection of rural schools was made a part of the work, and public health nurses were added to the county units. Darlington County is probably the only county in the South in which every rural schoolchild, white or colored, has received a medical examination and a follow-up visit from a nurse.

Each organization is now designated as a county health department, and the physician has by legislation been made the county health officer, and his duties are prescribed. Counties which in 1917 appropriated $2,000 for this work are now appropriating $5,000, and in addition cars are furnished the nurses by local organizations. Our state appropriation for 1917 was $7,000 for county health work; for 1920 we have been given $27,000, a portion of which will be used for a traveling moving picture unit.

DIFFICULTIES ENCOUNTERED

In 1917 comparatively few sanitary privies were built—pioneer work is always difficult. The war with all its effects, the shortage of labor and material, the physical unrest, the breaking up of departments by the volunteering of men (every county director but one, as well as the state director, having volunteered and entered service) crippled the work for a time. The present high prices and low salaries are keeping up the difficulties, but with it all we have something to show for our work.

RESULTS OF WORK

Each county in which we have worked two years has shown a decided decrease in typhoid; the first year an increase is usually shown, owing, perhaps, to better reporting. We have selected this disease as a type of intestinal disease and have selected Darlington and

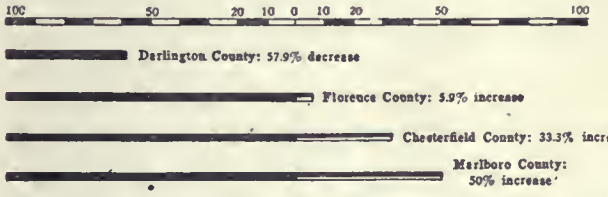


Fig. 2.—Increase and decrease in incidence of typhoid, 1917-1919: Darlington has had a county health department two years. Florence has had a city but no county health department. Chesterfield and Marlboro have had neither city nor county health departments.

Orangeburg counties for comparative results with surrounding counties having no health organizations, as these counties have had no campaigns of giving free typhoid inoculations. We are giving results from each county touching Darlington where no work has been done, and each touching Orangeburg where no work has been done, with the exception of two black counties. These two counties with a large black population give poor reports, as so many of the negroes are unattended by physicians and "fever" is given as a cause of death. Mr. C. W. Miller, our vital statistician, who helped me to get up these statistics, thought the statistics of these two counties unreliable.

* Read before the Section on Preventive Medicine and Public Health at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

It will be noticed (Chart 2) that each county touching and compared with Darlington shows an increase, while Darlington shows a decrease in typhoid—Darlington shows a decrease of 57.9 per cent. from 1917 to 1919.

Orangeburg shows a decrease of 40 per cent. (Chart 1). This is one of the largest and most populous counties in South Carolina, and it would naturally take longer for results to show. The state at large has gradually decreased its typhoid death rate, as illustrated in Chart 3, from 35.2 per hundred thousand in 1915 to 21.7 per hundred thousand in 1919.

CONCLUSIONS

The reduction of typhoid fever is largely a matter of education. The building of privies alone will not check typhoid entirely, but will reduce it. We have purposely held no campaigns of free inoculations of antityphoid serum in Darlington and Orangeburg counties, and the results shown are due to educational work and privy building alone, and not to inoculations. If this disease can be so materially reduced by education, it would seem that all other diseases of which the cause is known could be reduced in a similar way.

A county health organization is necessary, as one physician or nurse without assistance is not adequate for the supervision of the health conditions of a whole county.

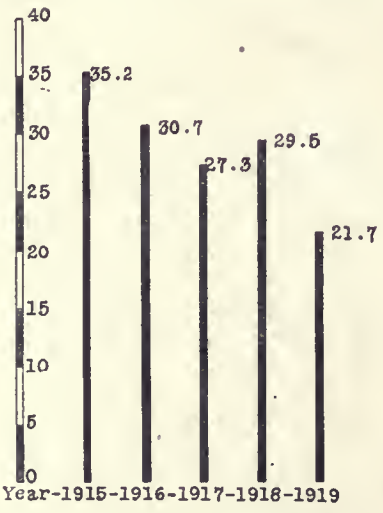


Fig. 3.—Death rate per hundred thousand.

ABSTRACT OF DISCUSSION

DR. W. S. LEATHERS, Jackson, Miss.: In Mississippi we have organizations at work in different counties, and the results we have obtained are along the same lines which have been indicated by Dr. Riser. In one county in the state we had about 230 typhoid cases a year. This county was leading the state in typhoid. In that county we organized one of these units and conducted what we termed an intensive health campaign. We built about 2,000 privies, visited every home in the county, obtained the name of every man, woman and child we could find and tried in every possible way to get in touch with the people, and to determine the conditions which existed in the county. We instituted measures which we thought were necessary for the prevention of intestinal diseases. This intensive campaign was conducted in 1917. In 1918 there were fifty cases of typhoid and eight deaths. That is an example of what may be accomplished in every county in every state in the South; in fact, that may be done wherever typhoid exists. In 1914 there were approximately 6,066 cases of typhoid in the state. In 1919 there were 3,660 cases of typhoid. We have been able to get 90 per cent. of the doctors of the state to report their morbidity statistics for a period of six years. We assume that there are errors in these reports, but the errors are uniform, in all probability, for the same doctors have been making the reports. The decrease in figures is unmistakably very significant, and we can draw from these figures a very definite conclusion so far as reduction of typhoid fever is concerned. The education of the people is basic. One of the most effective measures is personal demonstration. We ought to go into the various communities and work with the people, and show them by practical demonstration what to do. We can demonstrate in a community how to build a privy and get people to build privies by demonstration methods, and illustrate that by such methods we will get very definite results in the reduction of typhoid fever. The time is rapidly approaching when typhoid fever will be a relatively rare disease.

DR. JOHN D. MCLEAN, Philadelphia: It has been stated that the incidence of typhoid fever indicates the health of a state or of a community. If that be so, the report we received in Pennsylvania last week, would indicate that Pennsylvania is becoming a very healthy state indeed. We have found that the greatest number of epidemics have been caused by carrying the disease from one person to other persons through the water and through the milk. If that be true, then the lessening of typhoid fever must be effected through supplying pure drinking water and pure milk. Pennsylvania, therefore, has determined, as far as it possibly can be done, to control the water supply of the state. We have also determined that the people shall drink good milk, clean milk. To bring this about we have, with other measures, drawn two model health ordinances. One provides how an organized community can get pure water to drink, and the other provides how this community can get pure milk to drink. We ask those responsible for the laws and for the expenditure of the finances in these communities to pass these ordinances. We hope to secure pure water and pure milk. Educate the public to the need for these things so that they will tell those responsible for the expenditure of their money that they must install a filter plant or they must install a pasteurizing plant for milk.

How is that done? Choose from among the existing agencies one, the Red Cross, the Emergency Aid, the Y. M. C. A., the Y. W. C. A., whatever it may be in that particular community, and create an advisory board to tell the councillors that they represent public opinion, and ask them to spend the money. In Pennsylvania we investigate every case of typhoid and take measures to prevent a spread of the disease and in that way we have lessened the number of cases.

DR. G. C. CHANDLER, Shreveport, La.: The sources of these diseases are the excretions of human beings, and in getting rid of these excretions and the germs they contain you will have a healthy city and save many lives. One of the best means of suppressing typhoid fever is to take milk samples, and wherever you find water in the milk, fine the milkman the limit. By doing that you will stop the spread of typhoid fever from milk. Typhoid fever can be stamped out easily if you know the source of the disease. Shreveport, up to 1918, used filtered bayou water for its water supply. In 1911, when they had about the lowest number of deaths from typhoid fever, there were 104 deaths among the residents of Shreveport from fevers, diarrhea and dysentery. There were only about 25,000 people there then, and that was about the lowest death rate we had.

DR. JOHN A. FERRELL, New York City: The public health work in South Carolina is a demonstration which carries conviction to the people and to their legislative representatives. There is uniformity of opinion that to succeed in public health work we must first educate the public. There is some difference of opinion as to the best method for conducting the educational program. The opinion is held by some enthusiasts that if you lecture to the people and distribute literature among them they will readily accept what you have to say, do what you tell them to do, and vote the money required for the work. To these enthusiasts the control of disease is a very simple undertaking. Once you have the knowledge as to the cause of the disease and its mode of spread, all you have to do is to tell the people about it, these optimists believe, and the job is done. Health officers of extended experience have learned that the people can be interested in control measures, that they are open minded, but that they have had unsound advice on many occasions. They are ready to be shown in terms that are simple and understandable, and when convinced that the proposed program has merit from a business standpoint and will yield a satisfactory return on the investment you may depend on them to give support to their leaders in public health. This method of developing public health work has been followed in a number of states, particu-

larly in the South. South Carolina, for example, in the year 1908 had less than $10,000 state appropriation for health work. The appropriation voted by the legislature which recently adjourned approximates $155,000 a year, exclusive of the appropriation for tuberculosis work. The growth in a number of other southern states has likewise been phenomenal. Dr. Riser recently reported that the South Carolina legislature actually appropriated more money for the health program than was requested by the executive officers of the state board of health. That the people in these states have been convinced that public health work is worth while is evidenced by the growth in the state appropriations for eleven southern states from about a quarter of a million dollars in 1910 to more than two million dollars at present. Ten years ago a full time health officer in these states was the exception. Now, they are numerous and, in the near future, I believe, will be the rule. The state's funds are being generously supplemented by towns and counties for the purpose of establishing local departments of health work in cooperation with the state board of health. These developments should be a source of keen gratification to the public health officers who have had the wisdom and ability to give the people a large value for their investments in public health.

DR. LUTHER A. RISER, Columbia, S. C.: The figures I gave here are not figures of typhoid fever cases, but of typhoid fever deaths. Dr. Leathers spoke of the necessity for demonstrations. I consider demonstrations as part of this educational work; it is all educational, but the demonstration is just a type of the educational work. Dr. Chandler spoke of the reduction of typhoid fever as being an indication of the reduction of other diseases of that type. It is also an indication of the reduction of all types of diseases, because in these counties you will find a reduction of tuberculosis just as well as you will of typhoid fever and intestinal diseases, and the death rate has also decreased in those counties more than it has in those counties where no educational work of this type has been done.

THE TRAINING OF INDUSTRIAL PHYSICIANS *

J. A. WATKINS, A.B., M.D.
Director, Industrial Medicine Division, Department of Industrial Medicine and Public Health, University of Cincinnati College of Medicine; Medical Director, Lunkenheimer Company
CINCINNATI

It took the medical profession quite a while to realize that the possession of a sound medical education did not, per se, qualify a man adequately to carry on the duties of a health officer. The profession has likewise been somewhat slow to recognize that the acquisition of sound surgical technic or skilled diagnostic ability does not qualify a man to carry on the duties of an industrial physician. Just as public health work led to the requirement of specialized training, so with the development of industrial medicine has come the realization that herein lies a specialty in medical science that requires of the physician special theoretical and practical training, which has in the past ordinarily been outside the sphere of medical education. Moreover, it is just becoming apparent that the profession has in a measure failed to grasp an opportunity for the extension of its influence and the utilization of medical knowledge and experience toward the prevention of disability and the shortening of the disability period, the profession's duty to society.

The need for special training of physicians engaged in industrial work has been recognized by the profession none too soon nor too widely. Modern industrial management has been quick to distinguish between the physician trained in industrial medicine and the physician catering to industrial practice.

Urban health officers have long seen in the work of the industrial physician valuable and much needed assistance in constructive health work, for such can be prosecuted intensively among industrial personnel as it can in no other group.

Civic bodies, social workers, large industrial corporations and community organizations have seen that the old-time plant physician did not render to industrial personnel the maximum service that could justly be expected of medical science.

With the realization by these several groups of society of the need for specialized training of medical men, several of our colleges have offered such training facilities.

PRESENT FACILITIES FOR TRAINING [1]

There are thirty-one medical colleges or universities offering training facilities or instruction in industrial medicine or related subjects. Of these there are two schools offering courses in this subject, leading to certification on satisfactory completion; ten schools offer a limited amount of work in the curriculums leading to the degree of Doctor of Medicine; four universities offer some instruction in vocational hygiene during the course leading to one of four degrees in public health, the requirements of which are not standardized, while fifteen schools offering postgraduate public health instruction include limited instruction in industrial medicine or related subjects.

Thus we see that there are, first, inadequate opportunities in the United States for the physician to receive either theoretical or well directed, practical instruction in industrial medicine, and secondly, that such courses of instruction as are offered show a marked lack of uniformity in conduct and standardization both of requirements for entrance and completion (certification).

It is hoped that the profession will interest itself sufficiently in this exceedingly important function of medicine to stimulate a more general inauguration of industrial medical training facilities in our medical schools, with a standardization of requirements for completion and some uniformity in type of courses of instruction.

In anticipating such action on the part of our schools, it is essential that a clear and complete understanding as to the basic requirements of an industrial physician be fully discussed, toward the end that the necessary facilities for the training of such specialists be provided. It is a discussion of this subject that I have been asked to open.

On attaining the degree of Doctor of Medicine, the future industrial physician should look forward to assuredly one year, and preferably two years of postgraduate general medical experience before he assumes the study of industrial medicine. One year of this time, at least, should be spent in internship. The experience to be gained in outpatient clinics, in dispensary work, on emergency service and admitting wards in general hospitals will be found of value. Such postgraduate experience should be supplemented, if possible, by work in night clinics, industrial clinics, industrial health centers, public health agencies and

* Read before the Section on Preventive Medicine and Public Health at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. I am indebted to Mr. Royal Meeker of the Bureau of Labor Statistics for the information and data here given.

municipal dispensaries. It is in such places that he will study, if he is thoughtful, not only the sick individual, but the sick as a group. Such experience, supplemented by some general private practice, is invaluable. If not socially minded, he will acquire a social point of view, and he will see at first hand the medical, social and economic problems confronting society and awaiting the assistance that the medical profession has in its power to grant.

SPECIALIZED TRAINING

The completion of this instruction and experience, if taken advantage of, should afford a good groundwork for entering industrial medical training. This is postgraduate work. It should be given in an A-1 college, either in a special department or in a division of the department of preventive medicine.

HYGIENIC TRAINING

Hygienic instruction will fall naturally into two classes, medical and engineering.

The first should cover the subject of vocational hygiene in its entirety. The student should be taught to recognize occupational affections, not only direct, specific occupational diseases, but the indirect effect of occupation on the physiology of man, though masked by subsequent acute intercurrent pathologic conditions. Among these none is more important than that of industrial fatigue. In this subject the basic physiologic facts should be acquired, but he should not allow himself to become too academic, realizing that industry is essentially practical. The student of industrial medical science should here acquire a knowledge of personal hygiene in all its aspects and learn to impart this knowledge to industrial workers in a manner which is characterized essentially by clarity and brevity, so that large groups badly in need of benefits to be derived from this information can thus profit.

Foremost in personal hygiene is dental prophylaxis. Though this specialty in industrial medicine will be handled by the dental profession, yet it should not be introduced in industry without a medical department, and should be a part of such organization. The industrial physician should possess sufficient information on the subject to apply profitably the specialized knowledge of the oral hygienist or dentist.

The student at this time should acquire an extensive knowledge of medical supervisory systems. The experience and knowledge of those engaged in this type of work both in military organizations, public schools, insurance companies, industries and other organizations should be carefully acquired. He will at this time learn what is meant by, the purpose of, and the limitations of the physical examination in industry. The distinction between physical examination and medical inspection should be clear, with the scope and function of each definitely outlined. He should understand the inauguration and conduct of follow-up systems, and should profit by the knowledge and experience of those engaged in the organization and conduct of visiting nurse systems.

The industrial medical student can also profitably learn of those who have specialized in the subject of recreation and athletics for groups, and be prepared to institute such activities among industrial workers where indicated, in a manner which is consistent with the type of industry, the character of the work performed, and with other circumstances.

Engineering hygienic instruction is ordinarily outside the scope of training of the medical man. Many of these subjects are very broad and have given rise to specialists among engineers. The industrial physician, however, should have a sound knowledge of the subject, for on him will fall the duty of acquiring the desired conditions, even if he himself is not capable of carrying them out in detail. I refer to such as heating and ventilating systems and the problems of illumination, particularly artificial illumination. Elementary engineering principles of exhaust and supply systems should be well understood, and a thorough knowledge of the mechanical principles involved in the design, construction and operation of drinking water systems should be obtained. A study of the engineering phases of housing is of great value. He should acquire knowledge of the various sanitary equipment, such as toilet and wash-up facilities; baths, lockers; water supply and sewage disposal systems; and industrial waste disposal methods, also the specifications, outlay and conduct of restaurant or cafeteria systems; and he should be able to discuss with specialists in these various fields the basic problems presenting themselves, and so act as the adviser to the industrial management on these problems.

INDUSTRIAL CONSIDERATIONS

It should be immediately recognized by the profession that a physician cannot be successful if he has in his possession only a purely academic knowledge of the various phases of industrial medical work. The position of the physician in industry is unusual in the experience of the profession. He must first learn that his success in this field and the respect that he commands will result, not ex officio by reason of the fact that he possesses the title of doctor, but by the quality and type of his work. Unless he can apply his academic knowledge in a practical manner in full coordination with other branches of the industrial management, he will not receive the consideration, either executive or otherwise, that he should. He must learn that his leadership depends on his ability sufficiently to convince his associates of the soundness of his views and activities. This type of leadership is at the other extreme, however, of that which attempts leadership through the dignity of the title doctor. He must learn that many activities which are theoretically sound are not practical. He must learn, in other words, that there is a compromise between practical industrial medicine and theoretical hygiene, and unless he can with this realization apply theoretical medicine only so far as it is practical, or so far as he can make it of practical value, he will be unsuccessful. He must learn, too, that the respect that he commands from the industrial workers will depend solely on the quality of his work and on his personality.

I know of no other place than in an industrial plant where the medical graduate, essentially an individualistic practitioner, can acquire all this experience and knowledge. It is my opinion, therefore, that the industrial medical training should be partly theoretical and partly practical—that the theory be given in the classroom and that the practical be given in industrial plants. At least one half of the period of training should be spent actually in the plant, associated with the various departments with which the industrial medical work is so closely associated. He should understand the basic principles of employment man-

agement and personnel relations. He should become familiar with training and apprenticeship systems, with the view of there applying preventive medical work. He should know of the organization and conduct of continuation or skilled schools, and if he is thoughtful he will immediately see an opportunity for the practical application of medical supervisory work. He should understand trade tests and their relation to mental tests and psychology. He should understand job analyses, time study and shift systems, and their relation to his academic knowledge of fatigue. He should learn of accident prevention and safety-first organization and activities and consider their intimate relation to first aid medical work; physical examination, mentality, acuity of vision and such hygienic subjects as illumination, of which he has academic knowledge. He should acquire the necessary knowledge to analyze and thoroughly understand and deduct information from various labor force statistics, such as absenteeism, turnover, rates of pay as related to cost of living, housing, food—and hence health.

SOCIAL AND ECONOMIC ASPECTS

The student should understand the various systems of education of large groups and the basic problems presenting themselves in Americanization activities. He should know state insurance, group insurance, liability insurance and such actuary problems as present themselves in the mutual benefit associations and the pension plans. He should become acquainted with, understand, and enter into the local social and economic problems as such affect the industrial workers with whom he is concerned.

He should, in brief, have a sound medical education; ample practical experience in medical relief; a well rounded knowledge of preventive medicine; a thorough knowledge of vocational hygiene; an understanding of our present day social problems, and be able in the light of this knowledge to apply intensively to groups and in a practical manner the best that the medical profession has to offer to society.

ABSTRACT OF DISCUSSION

DR. J. W. SCHERESCHEWSKY, Washington, D. C.: The industrial physician has it in his power to influence enormously the health of a considerable portion of the community in which he is located. Many industrial communities have defective sanitary conditions which make the question of public health a problem of great difficulty. But industries are beginning to recognize more and more the dividends from keeping their men 100 per cent. well all the time. Not only is that good business, not only is it of value locally, but it is reflected in national prosperity and national productivity. The prosperity of the country, of the state or of the city rests on the productivity and activity of its man power, and the ability of its man power to produce rests on health. We must recognize this new group of industrial physicians who are endeavoring to carry on this type of work as powerful agents in the development of public health. I am sorry that the establishment of departments of industrial hygiene has been neglected in our municipalities. I know of only one city, among the first class cities, that has created such a department. The general tendency has been to leave industries pretty much to themselves, and any definite scheme of correlating the work of preservation of health in industrial plants and that of the city health department is very slow in being developed. The industrial physician forms the link by which the city health departments may be coupled with the industries. If they can be linked up they will be able together to make great progress in a general health movement. The industrial physician will form the means by which industrial corporations themselves may be made to take an active interest in the sanitation of their own communities. The general attitude on the part of industrial units is pretty much as follows: We never mix in local politics because we want to be free from the suspicion of being connected with politics in order to advance our own purposes. As a matter of fact, that is a very short-sighted policy for industrial corporations to take, because most of them are large taxpayers, and they are more intimately concerned than anybody else in the health of the community. Therefore, the training of industrial physicians is one of great importance. Our great universities are giving their students an opportunity of entering a profession which gives a man a high degree of professional qualification, and places him in the situation of being able to influence for good the lives and health of a large number of our fellow citizens.

DR. EDWARD MARTIN, Philadelphia: The keynote of these most valuable papers and discussions today has been cooperation. We feel in Pennsylvania that the public health service means well, but its pull is not always with us, and sometimes it gives us little surprises. Public health service people are scattered around our state doing even they do not know what. No harm is done, as a rule, but we would like to work with the public health service, and we find it difficult sometimes to do so. The Red Cross is giving us splendid help and cooperation. Without it we could do little.

PARAPLEGIC MULTIPLE SCLEROSIS

ARCHIBALD CHURCH, M.D.
CHICAGO

When multiple insular sclerosis manifests itself by the classical signs of nystagmus, intention tremor and scanning speech, the diagnosis is self asserting. Such cases are extremely rare, and this triad of symptoms frequently is never fully developed or appears only after the lapse of years. Many cases persist clinically as optic atrophy, spastic paraplegia, primary lateral sclerosis, or vague organic and functional nervous maladies for long periods of time before the actual pathologic diagnosis and clinical differentiation are made. The frequent association of this condition with neurasthenia and as frequently with hysteria has long been recognized, but the organic process is too often overlooked under the protean subjective mask of the psychoneuroses.

A generation back, multiple sclerosis was considered an absolute rarity in this country, largely because only the classical picture was recognized. In some of its larvate and unusual forms it now furnishes a common clinical finding. On the point of possible increasing frequency of this disease I recently sent out a questionnaire to a limited number of American neurologists. All agree that they are seeing more cases than formerly, but all agree that they now recognize the formes frustes and aberrant types with a readiness that is somewhat of a recent acquisition. This is my own feeling in the matter, but I am convinced that the rank and file of the profession are not alive to the easy recognition of this dreadful disease. In the last three years in my private practice I find notes of thirty-two cases, in addition to which I might add an indefinite number seen in hospital practice. This group may perhaps be compared with the statistics of Uhthoff, who was able to collect 100 instances in all the hospitals and clinics of Berlin in six years. But that was a decade ago, and only the advanced cases apparently were listed. Some recent observations tending to establish the etiology of the disease on a nonsyphilitic spiro-

chetal basis make one hesitate to deny the possibility or even the probability of an increasing incidence.

Considering that the lesions of multiple sclerosis are extremely widespread in the brain and spinal cord, without symmetry or systematization, it is quite surprising that the original clinical conception should have prevailed so completely and persisted so long. In many cases, symptomatically at least, the brain seems quite exempt; in others the cord is not materially disturbed; but in all, sooner or later both are implicated.

A number of clinical types may be encountered: first, the generalized classical form, which is infrequent, except as a terminal phase of the fractional forms; second, the cerebellar type, a rare early manifestation of the disease which tends to become full fledged rather rapidly; third, the optic atrophy type, which I believe is not uncommon and which only slowly eventuates into the generalized condition; fourth, the paraplegic or lateral sclerotic type, which appears to be the most common of all and which very slowly takes on the features of upper level and cerebral involvement, and fifth, a very rare monoplegic type.

I have no intention of drawing hard and fast lines, for they are far from justified in a disease the lesions of which are as diffuse and as uncertain as a shotgun pattern. However beginning, all types tend to eventuate in the fuller picture of the old description, and case records show the remarkable variations presented by cases at various times. To this observation must be added the tendency of the disease to advance in waves or crops and to recede often to a marked, but never, I believe, to an absolute degree. These clinical fluctuations are pregnant sources of false hope, and are particularly trying to the judicial mind attempting an evaluation of therapeutic effort.

While I desire to call immediate attention to the paraplegic and spastic form, it must be said that some degree of spasticity is the rule in all cases. This clinical type commonly begins with a weakness or clumsiness in one leg or foot. Patients not rarely describe a flapping of the foot in walking, or their friends call their attention to an irregularity in gait. This may improve or seem quite to recede after being present for weeks or months. Not infrequently it leads to stumbling or rather severe falls, and I have had patients who gained a reputation for falling in an unexpected and, to them, unusual fashion, for several years before other disability led to definite investigation.

Contrary to early descriptions, sensory disturbances both subjective and objective in character are not at all infrequent in this type of multiple sclerosis. Complaints of heaviness, numbness, coldness, and very rarely of more painful paresthesias have been encountered. I have actually demonstrated objectively a certain degree of coldness in one leg as compared with the other in two patients who complained of it, and suppose it must have depended on local circulatory disturbance, though no vascular inequalities could be demonstrated by manometer or detected by palpation.

Hypesthesia and girdling sensations of segment level distribution of very definite and persistent character have more than once given rise, in conjunction with other paraplegic features, to a diagnosis of pressure on the cord. Elsberg operated on one such patient, expecting to find a cord tumor, and I have had the same experience. Needless to say, the upper level symptoms were absent at the time, but in my case gradually developed to a complete and illuminating degree.

Among the signs of the disease, when affecting mainly or only the lower extremities, are the pathologic reflexes—ankle clonus, Babinski's toe sign, intensified knee jerks, and last and most important of all, one-sided, partial or complete abolition of the umbilical reflex. The complete superficial abdominal reflex has been present in only one of my cases, and it may later disappear. With the absence of superficial abdominal reflexes, the deeper muscular reactions brought out by the percussion hammer are retained and often apparently increased, in parallel with other muscle and tendon responses.

An interesting and instructive observation is furnished by the lack of uniformity with which the reflexes are modified on the two sides. I have seen the abdominal reflex abolished on one side only, and in one case obtained from one lower quadrant of the abdominal area alone. I have seen ankle clonus on both sides disappear first on one side and, after a year, gradually on the other; but a Babinski once established seems to be persistent. Some patients give no toe movements of any kind from plantar stimulation, a feature emphasized years ago by Buzzard, who thought he saw in it a warning against a too ready diagnosis of hysteria.

The sphincter control in the late stages is not rarely weakened, and actual incontinence may occur. The gait shows all modifications of spastic, paraparetic and incoordinate conditions. Ready fatigue after a short walk, quickly yielding to a few minutes' rest, reminds one of intermittent claudication, but of course lacks the arterial factor.

To the lower level symptoms of the paraplegic type there are commonly added some of the cephalic manifestations of cerebral participation. Squints, double vision, marginal optic atrophy, irregularities of the visual field, cerebellar symptoms, intention tremor, speech defects, and even mental peculiarities, are some or all, in slight or marked degree, sooner or later observed.

The condition, therefore, as in all other manifestations of multiple sclerosis, becomes progressively worse, and complete disability the ultima. Fortunately, the patients suffer little, aside from the growing feebleness and helplessness, to which they progressively adjust themselves, and the disease does not in itself appear to be fatal.

The treatment of multiple sclerosis is a frequent source of disappointment. The iodids, mercury and arsenic have at times had strong supporters. Nonne and other European clinicians have given importance to Merck's fibrolysin, which I have tried very faithfully without in the end being able to share their favorable point of view. I am hopeful that a new era of therapeutic success may be shortly attained if the spirochetal origin of the disease is firmly determined and effective spirocheticidal remedies are discovered.

The contention of spirochetal origin started three years ago with Kuhn and Steiner[1] who, after injecting guinea-pigs and rabbits with the blood and serum of patients suffering from multiple sclerosis, found the spirochetes in some of the rabbits. These animals had presented motor symptoms suggestive of the human clinical manifestations. The spirochetes did not resemble those of syphilis, but rather the organism

1. Kuhn and Steiner: Med. Klin. **13**: 1007, 1917.

found in hemorrhagic icterus. They were spiral, often with a refracting terminal point, variable in form, and either extremity sometimes provided with a hairlike process. In 1918, Siemerling [2] found several similar spirochetes in the brain of a multiple sclerosis patient two hours after death. The next year Marinesco [3] was able by intracerebral inoculations of spinal fluid from a patient to induce significant symptoms in guinea-pigs, and recovered spirochetes of the Kuhn-Steiner type from fluid taken from the fourth ventricle.

I have had several spinal fluids carefully searched for spirochetes without success, but have not yet repeated the animal experiments.

When we recall the difficulty of eradicating the syphilitic organism when seated in the parenchymatous nervous structures, a chill is given to enthusiastic expectations in regard to the manageability of this form of spirochete, even if it should be proved the essential cause of multiple sclerosis.

I have treated several cases with intensive courses of mercury, arsphenamin, neo-arsphenamin and the various iodids without being able to report any modification of the clinical course of the disease. As in syphilis, we must perhaps hope for better therapeutic agents.

1117 Marshall Field Annex.

THE TOXICITY OF NITROBENZENE

WITH REPORT OF A FATAL CASE

WILLIAM M. DONOVAN, M.D.
Instructor in Clinical Medicine, University of Wisconsin Medical School
MADISON, WIS.

Recently in THE JOURNAL there appeared three articles on the subject of acute nitrobenzene poisoning. The first, by Stifel,[1] referred to sixteen cases of nitrobenzene poisoning among army officers at Jacksonville, Fla., caused by a shoe dye. All men had recently worn freshly dyed shoes or puttees. The chief symptoms were marked cyanosis, headache, vertigo and tinnitus. Complete recovery occurred within from twelve to twenty-four hours in all cases. The second paper, by Scott and Hanzlik,[2] records some cases of nitrobenzene poisoning, with much the same symptoms as in the first article, due to the imbibition of "denatured" alcohol; here, too, no fatalities occurred. As a result of their observations and those of Stifel, these authors express the opinion that "this 'denaturizing' agent is relatively harmless." More recently, Sanders [3] reported a case of nitrobenzene poisoning with cyanosis, a rapid recovery being made.

That nitrobenzene may be quite toxic for man has been attested by many German writers, and by Cushny,[4] who states that it may cause "a grayish-blue cyanotic color of the skin and visible mucous membranes, often with nausea, vomiting, great muscular weakness, marked dyspnea, delirium and some convulsive movements of the face and jaws, less frequently of the whole body. Total unconsciousness and coma are followed by arrest of the respiration." According to Cushny, the symptoms are due mainly to blood changes (deformation and destruction of red cells; formation of methemoglobin and nitrobenzene hemoglobin) and to a central nervous action—stimulation followed by depression.

Fatal cases are not unknown, among which may be mentioned that reported by Blythe (quoted by Stifel) of a man who died following the accidental spilling of nitrobenzene on his clothing.

As may be surmised, most cases of acute poisoning from this substance, as recorded in the literature, were due to its absorption through the skin or pulmonary alveoli (inhalation), as in Blythe's case of fatal poisoning. In Scott and Hanzlik's cases it took place presumably from the gastro-intestinal tract, which, it may be argued, had some mitigating influence on its fatal toxic properties.

REPORT OF CASE

The case reported herewith resulted fatally, and was apparently uncomplicated nitrobenzene poisoning in which the poison was swallowed.

In 1917, a middle-aged white man was brought by patrol into the receiving ward of the University Hospital, Philadelphia, in coma. A striking feature was the marked ashen-gray cyanosis, which was more intense than that usually seen. There was a very strong odor of nitrobenzene (shoe polish) about the patient, especially in his mouth. Respirations were about ten a minute. Gastric lavage yielded a fluid of similar odor in which nitrobenzene was detected by chemical means. In spite of vigorous stimulation and the use of the pulmotor with attached oxygen tank, the patient died about forty-five minutes after entering the hospital. He did not regain consciousness. Death was apparently respiratory—the breathing becoming less and less frequent. No spectroscopic examination of the blood for methamoglobin or nitrobenzenehemoglobin was made. It was never learned in what medium the poison was taken.

COMMENT

The details of this case are necessarily meager because of its emergency character—the patient not having been "admitted" and therefore no history written. The facts are simply culled from memory. It is possible that some other poison was taken simultaneously. I simply wish to report it as a possible case of uncomplicated nitrobenzene poisoning with fatality, in which the substance was apparently swallowed.

CONCLUSION

Nitrobenzene may be more toxic than is indicated by Scott and Hanzlik.

University Infirmary.

2. Siemerling: Berl. klin. Wchnschr., 1919, p. 273.
3. Marinesco, G.: Rev. neurol. **34**: 481 (June) 1919.

1. Stifel, R. E.: Methemoglobinemia Due to Poisoning by Shoe-Dye, J. A. M. A. **72**: 395 (Feb. 8) 1919.
2. Scott, R. W., and Hanzlik, J. P.: Poisoning by Alcohol "Denatured" with Nitrobenzene, J. A. M. A. **74**: 1000 (April 10) 1920.
3. Sanders, F. G.: Nitrobenzene Poisoning with Cyanosis, J. A. M. A. **74**: 1518 (May 29) 1920
4. Cushny, A. R.: A Text-Book of Pharmacology and Therapeutics, Edition 5, Philadelphia, Lea & Febiger, 1910.

The Study of Surgical Diseases.—There can be little question that the diseases spoken of as surgical (because operative technic is employed in treating them) are of such great importance and the technic of their therapy has become so specialized, that one or more clinics of the department should be devoted to the study of these diseases. This does not mean, however, that the methods employed in studying these diseases differ from those used in studying any other group of diseases. Exophthalmic goiter is the same disease whether we treat it by removal of the thyroid or by rest and drugs. Whether we call the professor who studies especially those diseases in which the chief therapeutic procedures are operative, a professor of surgery or a professor of medicine, is unimportant so far as the principle is concerned. His methods should be those of the professor of medicine, and the surgical clinic should be exactly like the medical clinic with the addition of facilities for employing complicated operative procedures.—Rufus Cole, *Science*, April 2, 1920.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JUNE 12, 1920

CARDINAL FACTORS IN PULMONARY EDEMA

The menace of the poisonous war gases is no longer with us. Perhaps the suffering and deaths which these frightful agencies of destruction caused will not have been entirely in vain if the experience gained in the extensive study of war gas poisoning can be utilized with advantage in the relief of disease among mankind. The consensus among the investigators who concerned themselves with the pathology of the acute effects of the commonest war gases is that the prominent feature is a typical pulmonary edema. This is also a distressing symptom encountered in every-day clinical experience; hence whatever new may be learned about it has more than merely war-time application.

In a lecture before the Harvey Society last year, Underhill [1] directed attention to the circulatory conditions attending the formation of the pulmonary edema due to lethal war gases. An early period of blood dilution is followed by an interval during which the blood rapidly becomes concentrated to a point far beyond the normal value, and remains near this level for some time. Eyster showed that at this stage the heart may be markedly decreased in size, a result which would presumably tend toward decreased efficiency of this organ and lead to an inadequate circulation. The striking loss of fluid from the blood by transfusion into the tissue spaces and into the air passages of the lung may lead to reduction in blood volume, hemoglobin concentration and decrease in heart size to somewhat extreme degree, as has lately been reemphasized by Meek and Eyster [2] of the University of Wisconsin. They agree with Underhill that death ultimately results from decreased oxygenation of the pulmonary blood and from oxygen starvation of the tissues due to decreased blood volume, the latter probably being the more important.

Impaired respiratory function of the blood owing to deficiency in corpuscles and oxygen-carrying hemoglobin is emphasized daily in medical practice. The possibility of an impairment with the same outcome but due to decrease of the circulating medium as a whole has not been so generally recognized. Underhill has proposed that as a fundamental principle in the therapeutics of such edemas the blood concentration should be diminished or prevented, if possible. This may be accomplished experimentally by infusion of sodium chlorid solution, by intraperitoneal injections of the latter, and even by oral administration of water. The lack of oxygen due to a reduced circulation further impaired by the increased viscosity of the concentrated blood can be remedied in part by administration of oxygen. This is, of course, a palliative, as it cannot reduce the edema or restore alveolar epithelium if the latter has been damaged. It may serve, however, to help avert tissue asphyxiation until the fundamental defect of decreased blood volume can be remedied. It will be interesting and important to learn in what conditions this more recently recognized blood concentration occurs in pulmonary edema during times of peace. The possibilities of therapy suggested for the alleviation of suffering from the edema due to war gases can then perhaps find application.

1. Underhill, F. P.: The Pathology and Experimental Treatment of Poisoning with the Lethal War Gases, Arch. Int. Med. **23**: 753 (June) 1919.

2. Meek, W. J., and Eyster, J. A. E.: Experiments on the Pathological Physiology of Acute Phosgene Poisoning, Am. J. Physiol. **51**: 303 (March) 1920.

THE SPHINCTER OF THE COMMON BILE DUCT

The opening of the common bile duct into the duodenum is ordinarily closed by a sphincter. On this account the bile, which is formed more or less continuously by the liver, discharges into the bowel only at periods when the muscle closing the orifice of the duct is relaxed or inhibited. In the intervals between the periodic passage of bile into the intestine, the fluid secreted is stored away in a quiescent gallbladder. Meltzer [1] has compared the mechanism of the gallbladder with that of the urinary bladder. In the latter the collection and evacuation of the urine is controlled by the antagonistic activities of two muscles of the bladder. During the accumulation of urine in the bladder, the detrusor muscle is relaxed and the sphincter is tonically contracted; whereas during micturition, the reverse takes place: the detrusor contracts and simultaneously the tonus of the sphincter at the neck of the bladder becomes inhibited. Comparably, according to Meltzer, the muscle fibers of the gallbladder and those about the papilla of Vater are antagonists. During the absence of flow into the bowel, the muscle fibers in the papilla are contracted and those of the gallbladder are inhibited; during the discharge, the gallbladder contracts and Oddi's muscle is relaxed; the bile has then no other way out but into the duodenum.

If this conception of the functions of the bile-storing organ leading to periodic discharge of bile into the

1. Meltzer, S. J.: The Disturbance of the Law of Contrary Innervation as a Pathogenetic Factor in the Diseases of the Bile Ducts and the Gallbladder, Am. J. M. Sc. **153**: 469 (April) 1917.

duodenum is correct, it is obvious that failure of appropriate action in any part or disturbance in the nice correlations involved may lead to pathologic consequences. The occurrence of stasis through imperfect behavior of the sphincter closing the common bile duct is at once suggested; and the mention of stagnation of the bile at once calls to mind secondary complications that may ultimately lead to mechanical obstruction in biliary flow.

In view of these considerations, it is surprising that so little attention has been paid to the physiology of the sphincter which Oddi [2] described, in 1887, as occurring at the termination of the common duct. Until recently, many clinicians have actually declined to attach any importance to the muscular structure to which we have referred. As recently as 1900 Naunyn,[3] a recognized expert in the field of biliary pathology, regarded it as worth while to emphasize the significance of the choledochoduodenal sphincter in connection with the filling of the gallbladder, and the possible dangers of an exaggerated tonus in the musculature. Recently, Mann [4] of the Mayo Clinic has shown, what might perhaps be suspected from physiologic reasoning, that the tonus of the sphincter at the duodenal end of the common bile duct is decidedly more vigorous in species that have a gallbladder than in animals that normally lack this organ. In the latter species, the sphincter would not withstand pressure of more than slight intensity at the most. While anatomic studies have shown that a sphincter is present in each species lacking a gallbladder, the sphincter does not seem to function appreciably. Obviously, when there is lack of a gallbladder for storage of bile, stasis produced by a resistant sphincter might soon induce serious difficulties.

A study which Reach [5] of Vienna has lately published shows anew that the sphincter of the common bile duct can be influenced reflexly in various ways. According to him, filling the stomach tends to maintain a closed duct orifice; as the stomach empties, the sphincter relaxes and the bile is discharged. Whatever inhibits this sphincter and empties the bile passages must reduce the pressure in the gallbladder, a fact of importance when it is desired to facilitate the healing of fistulous openings in this organ. According to Reach, drugs also can act on the tonicity of the sphincter; some, like papaverin and scopolamin, inhibiting, while others, such as morphin, are able to stimulate the muscle to close the orifice. These tentative pharmacologic findings deserve to be elaborated to the point at which their possible application in human therapy can be ascertained; for occasional instances undoubtedly arise in which failure of relaxation of the sphincter of the common duct, particularly during contraction of the gallbladder, needs to be counteracted.

2. Oddi: Arch. ital. de biol. **8**, 1887.
3. Naunyn, B.: Die heutige Lehre der Cholelithiasis, Therap. d. Gegenw., 1900, No. 9.
4. Mann, F. C.: A Study of the Tonicity of the Sphincter at the Duodenal End of the Common Bile Duct, J. Lab. & Clin. Med. **5**: 107 (Nov.) 1919.
5. Reach, F.: Der Schliessmuskel des Ductus choledochus in funktioneller Beziehung, Arch. f. exper. Path. u. Pharmakol. **85**: 178 (Nov.) 1919.

THE RÔLE OF LYMPHATICS IN PNEUMONIC INFECTION OF THE LUNGS

In a recent issue,[1] evidence for the bronchiogenic character of the lobar pneumonia produced experimentally in monkeys by Blake and Cecil was reviewed. It is apparent from their studies that the respiratory tract, rather than bacterial invasion of the blood, is the primary factor in the genesis of the disease so closely related to the comparable malady in man. When the lining mucosa of the trachea is damaged and the protective mechanism of the respiratory tract is impaired, a portal of entry for micro-organisms associated with pneumonia is obviously afforded. This is undoubtedly what happens as a consequence of the inhalation of pulmonary irritating gases, as has been pointed out by Winternitz.[2]

Blake and Cecil [3] produced their experimental results by intratracheal inoculation of the animals through needle puncture. They apparently assumed that no damage was produced by this procedure; hence the pneumonia seems to have started despite an unharmed and normally adequately protective mucosa. Winternitz, Smith and Robinson [4] of the Yale School of Medicine have pointed out, however, that in such inoculations the needle, though sterile on entry, is unquestionably infected when it is withdrawn, and consequently a possible path of infection to the lung may be found elsewhere than through the lumen of the trachea.

In harmony with this assumption, the submucosa of the trachea and bronchi has been demonstrated by the New Haven investigators to furnish a pathway of infection to the lung. It contains a rich plexus of lymphatics prominent everywhere and devoid of valves. There is a continuity throughout this lymphatic system so that bacteria which once find their way into it can easily spread. Although it thus affords a direct pathway of infection to the lung, Winternitz and his colleagues allege that it may also serve as a protective mechanism against pulmonary infection; for the drainage of the submucosa of the trachea and bronchi is largely diverted as the lung is approached to the protecting regional lymph nodes.

The spread of infection through lymphatic channels is probably more common than has been appreciated by most clinicians. The investigations of recent years

1. Experimental Lobar Pneumonia, editorial, J. A. M. A. **74**: 1168 (April 24) 1920.
2. Winternitz, M. C.: Experimental Studies on the Lesions Produced by Poisonous Gases, New Haven, Yale University Press, 1919.
3. Blake, F. G., and Cecil, R. L.: Studies on Experimental Pneumonia, I, Production of Pneumococcus Lobar Pneumonia in Monkeys, J. Exper. Med. **31**: 403 (April) 1920; II, Pathology and Pathogenesis of Lobar Pneumonia in Monkeys, ibid., p. 445.
4. Winternitz, M. C.; Smith, G. H., and Robinson, E. S.: An Unrecognized Pathway for Bacterial Invasion of the Respiratory Tract, Bull. Johns Hopkins Hosp. **31**: 63 (March) 1920.

have shown that progressive pyelonephritis is by no means always, if indeed it is commonly, dependent on direct transference of the micro-organism backward along the urinary channels from the distal parts of the latter first invaded. The little recognized lymphatics of the urinary organs may serve in this case as the paths of bacterial advance independent of the urine in the ureters. A further analogy is seen in the streptococcus lymphangitis of the finger which sometimes follows a needle puncture.

FACTORS AFFECTING THE CONSERVATION OF PROTEIN IN THE BODY

Soon after the signing of the armistice, when the first reports of the food stringency and the resulting malnutrition of the population of the Central Empires reached this country, the statements were looked on by many as a continuation of propaganda intended to secure amelioration of peace terms. Subsequent investigations have, however, furnished a verification of the threatening conditions that still exist abroad. Thus, in a recent issue of THE JOURNAL,[1] an experienced observer wrote that of 4,500 medical men in Vienna at least 90 per cent. are working on half rations, and many are actually on the point of starvation. Major Mason[2] of the Sanitary Corps, U. S. Army, reviewing the situation, remarks that "for the first time in history the world at large faces a universal food shortage. Heretofore scarcity of food has been only local, the famines of India and Ireland being well-known examples, and in these cases it was always possible for other countries to get food to the lands of shortage. Today there seems reason to believe that in the whole world there is not all the food which could be consumed by all the people."

The undernourishment that has ensued abroad involves not only reduction of fat but also a loss of protein from the body. Restoration of adequate nutritive conditions will require renewal of the store of protein, that foodstuff which the war stringency has made the scarcest of all. Recently it has been asserted[3] that the mineral metabolism of the body plays an important part in the intensity of the protein destruction, the contention being that potential acidity of the diet tends to increase, whereas a preponderance of base-forming food tends to curtail the protein breakdown.

If this assertion should prove true, its bearing on the nutrition of those restricted to minimal intakes of protein is obvious. Careful consideration of the acid-base relationships of the diet would then be desirable to assure a maximum conservation of bodily tissues when the supply of protein is below the optimum. A reinvestigation of the question by Jansen[4] in Friedrich Müller's clinic in Munich disposes of the assertion. He has found that even the addition of inorganic acid to a diet of low protein value does not alter the output of nitrogen in the urine. The fecal output may be slightly augmented, owing to the action of acid in provoking alimentary secretions; but, broadly speaking, under usual dietary conditions the acid or basic potentialities of the food are without practical significance in the maintenance of protein equilibrium. The partition of nitrogen in the urine, as indicated by greater or less participation of ammonia in its output, may be altered; not, however, the total metabolism. In times of stress, therefore, protein is best conserved by the liberal ingestion of carbohydrates, not by a readjustment of the acid-base balance of the diet. And this is what the classic students of nutrition have long taught.

1. Wilbur, R. L.: Conditions in Vienna, Correspondence, J. A. M. A. **74**: 967 (April 3) 1920.
2. Mason, C. C.: German Nutrition, 1914-1919, Bull. Johns Hopkins Hosp. **31**: 66 (March) 1920.
3. Berg, R.: Die Nähr- und Genussmittel, Dresden, 1913; Die Bewertung der Säureverteilung im Harn. München. med. Wchnschr., 1914, No. 23. Röse, C., and Berg, R.: Ueber die Abhängigkeit des Eiweissbedarfs vom Mineralstoffwechsel, ibid., 1918, No. 37.
4. Jansen, W. H.: Zur Frage der Abhängigkeit des Eiweisstoffwechsels vom Säuren-Basengehalt der Nahrung, Ztschr. f. klin. Med. **88**: 221, 1919.

Current Comment

ARCHIVES OF SURGERY

For a number of years the proposal to publish a high-class journal devoted to surgery has been before the Board of Trustees of the American Medical Association. The final decision to publish such a journal has been delayed from time to time, partly because of the war, and partly because some believed there was no real need for a surgical journal. But criticism has been advanced that American surgery is not developing symmetrically, that the technical side —operative surgery—has been highly developed at the expense of the investigative and philosophical sides, and that there is a real need for a journal to represent these phases of surgery as a science. The Board of Trustees finally decided to publish such a journal, and the action of the Trustees was approved by the House of Delegates at the New Orleans meeting. At the outset it will be issued bimonthly. Papers dealing with experimental work will be accepted and space allowed for protocols which have a direct bearing on, or an explanatory relation to, the problem considered. Articles will be welcomed which deal with clinical research in the hope of stimulating more careful and closer clinical examination. The value of laboratory methods has been rightly emphasized, but unfortunately in many instances to such an extent that the ability and desire to make close clinical observations have been lessened or lost. The value of monographic publication cannot be denied, and whenever a monograph is of sufficient value an entire number, if necessary, will be given to it. In a word, this new journal —*Archives of Surgery*— will be devoted to the advancement of American surgery, in the same way as the other special journals published by the American Medical Association are devoted to the advancement of the specialties they represent: Internal

Medicine, Diseases of Children, Neurology and Psychiatry, and Dermatology and Syphilology. The personnel of the editorial board consists of Dr. Hugh Cabot, professor of surgery, University of Michigan, Ann Arbor; Dr. Thomas Cullen, professor of gynecology, Johns Hopkins University, Baltimore, Maryland; Dr. William Darrach, professor of surgery, Columbia University College of Physicians and Surgeons, New York City; Dr. Evarts A. Graham, professor of surgery, Washington University, St. Louis, Missouri; Dr. Dean D. Lewis, professor of surgery, Rush Medical College, Chicago, and Dr. W. J. Mayo, the Mayo Clinic, Rochester, Minn. The positions in American surgery of the group of men who have accepted the responsibility for the editorial standard of the new journal will indicate its scientific scope and character. Coming from the press of the American Medical Association it is unnecessary to say that it will be, mechanically and typographically, equal to any similar publication in any language. This will especially apply to the illustrations: drawings, photomicrographs, half-tones, in color or in black and white, will be liberally used. The first number will appear, July 1.[1]

STOMACH GASES AND AEROPHAGY

The occurrence of gases in abnormal quantities in the gastro-intestinal tract is familiar through the frequent clinical observation of meteorism and tympanites. Most of the available analyses of intestinal gases indicate that nitrogen, methane, hydrogen and carbon dioxid may be present, while hydrogen sulphid and oxygen are sometimes added to the list. It has generally been assumed that the nitrogen and oxygen represent residual parts of atmospheric air swallowed with food; carbon dioxid may be derived from the blood, whereas the other gases mentioned are products of fermentative changes induced by micro-organisms always present in the alimentary canal. In aerophagy, or the increased swallowing of air, sometimes occurring as a nervous performance in hysterical persons, part of the gases may be eructated again, though frequently some of the air passes farther into the bowel. The clinician regards the presence of the gases in the intestine as an undesirable symptom that needs therapeutic attention whenever the local accumulations cannot escape properly and tend to produce distention. Aside from this aspect of the subject, little consideration has been given to the occurrence of gases in the stomach.[2] By studying the content of carbon dioxid in the stomach gases of air-swallowing infants, Ylppö[3] came to the conclusion that the carbon dioxid at least was derived by diffusion from the blood. Further investigations on adults have demonstrated that various gases, whether represented by atmospheric air, pure oxygen or carbon dioxid, when introduced even in considerable volume into the stomach, soon come into equilibrium with the blood gases as represented in the alveolar air. Thus, at the end of an hour the percentage of carbon dioxid and of oxygen in the stomach gases and alveolar air are usually almost identical. When air has been introduced into the stomach, flatulence will result because of the residual nitrogen. This is not the case when carbon dioxid is introduced; and with oxygen it happens only when the intake is very large—more than 1,000 c.c. As the gases have thus been shown to behave toward the alimentary wall in accord with physical laws of diffusion, it has been estimated that not negligible amounts of oxygen might be introduced into the body by way of the gastro-intestinal tract under circumstances in which pulmonary respiration is severely impaired by disease. At best, however, the total quantity would represent only a small fraction of the day's need of the indispensable element.

1. See announcement, advertising page 10, this issue.

2. A few data will be found in: Hoppe-Seyler: Zur Kenntnis der Magengärung mit besonderer Berücksichtigung der Magengase, Deutsch. Arch. f. klin. Med. **50**: 83, 1892. Leo: Ueber den gasförmigen Mageninhalt bei Kindern im Säuglingsalter, Ztschr. f. klin. Med. **41**: 108, 1900. Loening: Das Verhalten der Kohlensäure im Magen, Ztschr. f. klin. Med. **56**: 26, 1905. Quest: Untersuchungen über Darmgase bei Säuglingen mit Tympanites, Jahrb. f. Kinderh. **59**: 293, 1904.

3. Ylppö, A.: Ueber Magenatmung beim Menschen, Biochem. Ztschr. **78**: 273 (Jan.) 1917.

A PEDIATRICIAN OF THE SECOND CENTURY

According to a recent publication,[1] during the reign of Trajan, between 110 and 130 A. D., Rome was the home of the greatest obstetrician and pediatrician of antiquity—Soranus of Ephesus. At the eleventh International Congress in Rome, 1895, I. V. Troitski, writing in Russian, compared in parallel columns the practices of Soranus with the teachings of authorities of his own time. The survey of what Soranus knew is again an appeal for the study of medical history, for if we exclude innovations resulting from our knowledge of antiseptics, the practical advice which he gave might well serve for modern use. His instructions as to breast nursing and the care of the wetnurse are delightfully worded. "The essential mental qualities of a good nurse," he says, "are patience, common sense, good nature or gentleness and neatness." These essential qualities have not changed. Again, "Feeding at irregular intervals and often during the day, and especially during the night, may be the cause of sickness in the infant." Every pediatrician will confirm this view. His suggestions as to the causes of crying, and how to differentiate between the various causes, appear much the same as those in our modern "baby books." None of the earlier writers on medical subjects so well appreciated, as did Soranus, the importance of feeding in the care of the infant. He made one suggestion typical of the customs of his time, namely, that wetnurses be employed rather than having the mother nurse her own infant. This advice was based on the theory that the mother might be physically unable, after parturition, to nurse the infant, and no doubt also on the fact that mothers, in his time, were notoriously dissipated. Parenthetically, it may be remarked that Soranus seems to have had a wealthy clientele.

1. Foote, J. A.: An Infant Hygiene Campaign of the Second Century, Tr. Am. Child Hygiene Soc., 1919, p. 129.

Dust and Health.—Dust from abrasive materials does not render a worker unconscious or cause him visible distress, but it accomplishes its harmful effects without unduly alarming or exciting any one.—P. M. Holmes, *Pub. Health Rep.*

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ILLINOIS

Personal.—Dr. Milton Jacobs of the staff of the Elgin State Hospital and who has also had charge of the examination of subnormal children of Elgin schools has resigned and will enter general practice in Elgin.——Dr. Arthur F. Stotts, Galesburg, who has been under treatment in a hospital since May 8, has returned home much improved.

Chicago

Surgeons Elect Officers.—At the annual meeting of the Chicago Surgical Society, June 4, Dr. William Fuller was elected president; Dr. Vernon David, vice president; Dr. Frederick G. Dyas, secretary, and Dr. Charles F. Sawyer, treasurer.

Legion Post Dinner.—Chicago Medical Post No. 216, American Legion, announces an informal round-up dinner to be given June 23, at 6:30 p. m., in the gold room of the Congress Hotel, at which Dr. Joseph B. Miller will officiate as toastmaster.

Physicians Ask Health Plan.—The Chicago Community Trust is asked to undertake a city plan of health to include all phases of public health and provision for the care of the sick and physically disabled by resolutions adopted at the meeting of physicians and health workers at the Chicago Club, May 28. Among those who spoke on this occasion were Drs. James B. Herrick, Edwin W. Ryerson, Harry E. Mock, E. O. Jordan, Joseph B. DeLee and John Ritter.

KENTUCKY

Alumni Clinic.—At the week of clinics held in honor of the alumni of the medical department of the University of Louisville, from May 31 to June 5, there were 285 members registered, and 376 attended the banquet the evening prior to the commencement exercises, at which a class of twenty-nine received diplomas. On the first evening, a joint meeting of the Jefferson County Medical Society and the alumni association was held, at which Dr. Frank B. Wynn, Indianapolis, delivered an address on "The Respiratory Sequelae of Influenza, a Clinico-Pathologic Discussion."

MARYLAND

Memorial at Fort McHenry.—Impressive Memorial Day exercises at Fort McHenry were held at the base of the old flag staff in the south fort on May 31. The ceremony closed with the lowering of the colors and the sounding of "taps." In addition to being a tribute to the soldier dead, the "taps" also sounded the passing of U. S. Army General Hospital No. 2, whose official existence ceased on that day. Dr. Thomas R. Payne, Corbett, will be superintendent under the new régime. Major James E. Baylis, M. C., U. S. Army, will continue as commanding officer.

Health Conference.—At the invitation of Dr. John S. Fulton, head of the state department of health, health officers throughout the state met at the Medical and Chirurgical Faculty Building, Baltimore, for a two-day convention, June 7 and 8. Dr. William H. Welch; Dr. Hugh H. Young; Miss Nellie F. Oxley, division director of public health nursing, Potomac division of the Red Cross; Dr. Paul B. Johnson, director of the department of health service, Potomac division of the Red Cross; Dr. William A. Bridges, medical representative, Maryland Tuberculosis Association; Dr. John M. T. Finney; Prof. Edward F. Webb and William J. Holloway, state superintendent of rural schools, were among the speakers.

Personal.—A portrait of Dr. William H. Welch, president of the University Club of Baltimore, was presented to the club at its last monthly meeting.——Dr. John M. T. Finney, Johns Hopkins University, was decorated with the insignia of an officer of the French Legion of Honor on behalf of the French government by the French military attaché in Washington, D. C., June 3. The decoration was given in recognition of Dr. Finney's ministrations to French soldiers in American hospitals overseas during the war.——Surg.Gen. Hugh S. Cumming, U. S. Public Health Service, was recently in Baltimore, accompanied by Drs. Claude H. Lavinder, William G. Stimpson and Richard H. Creel; and later with the mayor, Drs. John M. T. Finney, C. Hampson Jones, city health officer, and Winford H. Smith, superintendent of the Johns Hopkins Hospital, visited Fort McHenry to make a survey of the hospital facilities. The city authorities want a portion of the equipment at the fort for municipal hospital purposes, temporarily, if it cannot be arranged as a permanent thing, and the survey was made with this in view.

MASSACHUSETTS

Centenary of Medical Missions.—The centenary of the founding of medical missions was celebrated, May 9, at the all-student rally held in the new Old South Church, Boston, when President Ellen W. Pendleton of Wellesly College, Cyril Haas, Frances J. Heath, Cora J. Patton and Mrs. Henry W. Peabody told the story of medical missions from the time, in 1819, when Rev. John Scudder and his wife sailed from America to begin their work in Ceylon.

Personal.—Dr. Benjamin White has been appointed director of the division of biologic laboratories of the Massachusetts State Department of Health, succeeding Dr. Milton J. Rosenau. Dr. White has also been appointed lecturer in immunology in the Massachusetts College of Pharmacy, and assistant in the department of preventive medicine and hygiene at Harvard University Medical School.——Dr. Lawson G. Lowrey, chief medical officer of the Boston Psychopathic Hospital for two years, has been appointed assistant professor in the psychopathic department of the University of Iowa, Iowa City.

MISSOURI

Eye, Ear, Nose and Throat Section Organized.—An eye, ear, nose and throat section of the Buchanan County Medical Society was organized at St. Joseph, March 10. Dr. Pierre I. Leonard was elected chairman, and William L. Kenney, secretary of the section.

Personal.—Dr. and Mrs. Clinton B. Ellis, Kansas City, have sailed for Europe.——Dr. James W. Bruton, Ozark, has been appointed deputy health commissioner for Christian County.——Dr. L. Paul Forgrave, St. Joseph, has been elected a member of the board of health of St. Joseph.

NEW JERSEY

Illegal Practitioners Fined.—A report states that John W. Glover of Bridgeton, who claimed to be a practitioner of the exanthematic method of cure of all chronic diseases, pleaded guilty to the charge of practicing medicine without a license and was fined $200.———Paul Schmidt of Newark was also found guilty of practicing medicine without a license and paid a fine of $200.

NEW YORK

Personal.—Dr. Clarence E. Cobb, Alfred, has been appointed superintendent of the Steuben County Tuberculosis Hospital, succeeding Dr. Elliott I. Dorn, Cassadaga.——Dr. Manna Mary Rohn, health officer of the Lake George Health District, is carrying on a complete sanitary survey of the shores of Lake George.

New Publication.—The state department of health began in March the publication of a monthly periodical known as the *Monthly Vital Statistics Review*, which is edited by Dr. Otto I. Eichel, director of the division of vital statistics of the board. The periodical is an attempt at a much more elaborate presentation of current official vital statistics than has heretofore been tried in this country. It presents a comment on the trend of vitality in the state, with tables showing influenza and pneumonia deaths, and death rates; deaths from all causes; general death rates given by months compared with previous years; infant mortality from 1913 to 1920; deaths of infants under 1 year of age; deaths and death rates from pulmonary tuberculosis, 1913-1920, and abstracts from the Weekly Health Index of the United States Bureau of Census.

New York City

Personal.—Dr. Simon Flexner, director of the Rockefeller Institute for Medical Research, will represent the United States at the first formal meeting of the medical advisory board of the League of Red Cross Societies at Geneva, July 5.

New Brooklyn Hospital Dedicated.—The Brownsville and East New York Hospital, located at East Ninety-Eighth Street and Rockaway Park, which was erected and equipped

at a cost of about $325,000, has been dedicated and is ready to receive patients.

Sanitary Code Affecting Drugs Amended.—Subdivision 2 of Section 116 of the Sanitary Code has been amended so that any drug is regarded as adulterated "if its strength or purity falls below, or its strength is in excess of, the professed standard under which it is sold."

Physician Fined.—Dr. Arthur H. Stern, Manhattan, arrested in a raid, July 19, 1919, by revenue agents, charged with violation of the Harrison antidrug act, is said to have pleaded guilty before Judge Angus M. Hand, May 26, and to have been fined $5,000, and committed to the custody of the United States marshal for one day.

Registration of Patent and Proprietary Medicines.—Owing to enforcement of Section 117 of the Sanitary Code, the Division of Patent and Proprietary Medicines of the Bureau of Food and Drugs of the New York City Department of Health, has recently had a large number of patent and proprietary preparations submitted for registration, and a number of preparations have been withdrawn from sale, as the claims made for them were exaggerated and false and the accompanying statements misleading. During the influenza epidemic, pharmaceutical manufacturers took advantage of the anxious state of the public and advertised various products for the prevention and cure of the disease. These advertisements in the daily papers and elsewhere were ordered discontinued under pain of prosecution by the health department, and the orders have been promptly obeyed.

Bulletin of the New York Association for Medical Education.—This organization, incorporated under the laws of New York State in August, 1919, for the purpose of expanding medical education for students and graduates of medicine has issued its first bulletin, which consists of a report of the subcommittee on ophthalmology and oto-laryngology, of which Dr. James F. McKernon is chairman, and Drs. Arnold Knapp, Cornelius G. Coakley and Frederick Whiting are members. This report formulates the requirements necessary to educate and train physicians who desire to become specialists in the department of ophthalmology, rhinolaryngology and otology. All the details of a standard course in this department and also of graduate courses of instruction are outlined and are now available. Those interested in these courses can obtain further information at the headquarters of the association, 17 West Forty-Third Street, New York.

NORTH CAROLINA

Hospital to Be Built.—The Crowell Urological Clinic, Charlotte, has purchased a lot adjoining the Charlotte Sanatorium on which to build an office and hospital building. The hospital portion of the building will be divided into the urologic and dermatologic departments of the sanatorium.

OHIO

Illegal Practitioner Fined.—A report from Ohio states that on May 21 George Gueth, Sidney, pleaded guilty to practicing medicine without a license and was fined $25 and costs.

Health Commissioners Elect Officers.—At the meeting of health commissioners of the state held in Columbus, May 12 to 14, the following officers were elected to serve on the commission to enforce milk and dairy regulations for all cities and counties throughout the state: president, Dr. William T. Peters, Cincinnati; vice presidents, Drs. John A. Kappelman, Canton, Oral J. Tatje, Portsmouth, and Harley J. Powell, Bowling Green, and secretary-treasurer, Dr. Rush R. Richison, Springfield.

PENNSYLVANIA

Philadelphia

Personal.—Dr. William W. Keen has been elected an honorary fellow of the Royal Society of Medicine, London, and of the American Surgical Association.——Dr. Edward T. Reichert, professor of physiology in the Medical School of the University of Pennsylvania, has retired from active service.——Dr. and Mrs. James A. Irwin sailed for France, June 12.

University Graduate School Budget.—Trustees of the University of Pennsylvania have decided to take steps, further to equip and advance the work of the university graduate school of medicine. At the last meeting of the board of trustees, a budget of $158,097.37 was approved to meet such expenses as are not provided in the regular income of the graduate school of medicine.

Phipps Institute to Continue.—Dr. Charles J. Hatfield, executive director of the Henry Phipp Institute, announced on May 29 that the result of the recent drive for funds made by that institution is such as to assure the continuation of the institution until July 1, 1921. This is made possible by the liberality of the family of Henry Phipps who have made available the interest on the $500,000 recently promised by them for the endowment fund. The sum of money contributed in Philadelphia is approximately $45,000 to date.

Jefferson Alumni Banquet.—The annual banquet of the alumni association of Jefferson Medical College was held in the ballroom of the Bellevue-Stratford Hotel, June 4, with 300 present. Dr. S. Solis Cohen, president of the association, presided, and addresses were made by the following men: Dr. Albert E. Austin of Connecticut; Drs. F. X. Dercum, Franklin Spencer Edmonds, William Potter, president of the board of trustees; J. K. Weaver of Norristown of the class of 1867, the oldest graduate present, and Dr. Hobart A. Hare.

Symposium on Hygiene and Physical Training Teaching.—At the stated meeting of the College of Physicians of Philadelphia a symposium was held on the teaching of personal hygiene and physical training in our public schools, colleges and universities. Dr. Edward Martin, commissioner of health of Pennsylvania, Harrisburg, opened the symposium on the teaching of personal hygiene in the public schools of Pennsylvania, and Dr. R. Tait McKenzie, professor of physical education in the University of Pennsylvania, spoke on "The Importance of Teaching Personal Hygiene and Physical Education in our Colleges and Universities."

SOUTH CAROLINA

New State Officers.—At the annual meeting of the South Carolina Medical Association, held in Greenville, the following officers were elected: president, Dr. Washington P. Timmerman, Batesburg; vice presidents, Drs. Miles J. Walker, York, William A. Boyd, Columbia, and William W. Fennell, Rock Hill, and secretary, Dr. Edgar A. Hines, Seneca (reelected).

Personal.—Dr. George T. Swandale has resigned as a member of the Greenville Board of Health and has been succeeded by Dr. Charles W. Gentry.——Dr. Jean B. Laborde, Columbia, has been elected city physician, succeeding Dr. Clarence E. Smith, elected city health officer of Greenville.——Dr. T. W. Smith has been elected a member of the board of health of Newberry, succeeding Dr. James K. Gilder, deceased.

Tuberculosis Association Meeting.—At the annual meeting of the South Carolina Tuberculosis Association, in Columbia, April 30, under the presidency of Dr. Reed Smith, Columbia, the following officers were elected: president, J. Nelson Frierson, Columbia; vice presidents, Drs. Richard M. Pollitzer, Charleston, and Ernest Cooper, Columbia; secretary, Dr. Reed Smith, Columbia, and treasurer, A. S. Manning, Columbia (reelected).

New Medical Board.—The governor has reappointed the following as the state board of medical examiners under the new act passed in the last session of the general assembly: first district, Dr. Joseph T. Taylor, Adams Run; second district, Dr. Josiah S. Matthews, Denmark; third district, Dr. Frank M. Lander, Williamston; fourth district, Dr. Baxter M. Haynes, Spartanburg; fifth district, Dr. Joseph R. Miller, Rock Hill; sixth district, Dr. George B. Edwards, Darlington; seventh district, Dr. Julius H. Taylor, Columbia, and state at large, Dr. A. Earle Boozer, Columbia.

SOUTH DAKOTA

Guilty of Manslaughter.—The jury considering the case of manslaughter against Dr. Oscar H. Clark, Newell, charged with the death of Alice Leuth, following an illegal operation, is said to have returned a verdict of guilty, May 17.

Clinic Building Ready.—The new Sioux Falls Medical and Surgical Clinic building, Eleventh and Minnesota Avenue, is expected to be ready for occupancy this month. The building which has been constructed at a cost of about $100,000, is two stories in height and will be occupied by eight physicians of Sioux Falls.

State Society Meeting.—The South Dakota State Medical Association held its thirty-ninth annual session in Sioux Falls, May 18 to 20, under the presidency of Dr. Robert D. Alway, Aberdeen, and the following officers were elected:

president, Dr. Harry T. Kenney, Pierre; vice presidents, Drs. George S. Adams, Yankton, and Gilbert G. Cottam, Sioux Falls; secretary-treasurer, Dr. Frederick A. Spafford, Flandreau (reelected); delegate to the American Medical Association, Dr. Robert D. Alway, Aberdeen, and alternate, Dr. Theodore F. Riggs, Pierre. Aberdeen was selected as the next place of meeting.

TEXAS

Personal.—Dr. Douglas Largen, San Antonio, has been appointed assistant state health officer and has been placed in charge of the division of venereal diseases.——Dr. J. Q. Durham, Memphis, was seized with cerebral hemorrhage while driving his car, April 25, and is still seriously ill.——Dr. H. H. Terry and Julian Murchison have been appointed assistant city health officers of Fort Worth.

New Officers of State Society.—In addition to the officers of the State Medical Association of Texas, published in THE JOURNAL, May 8, page 1335, the following officers were elected: vice president, Dr. Willis J. Pollard, Kaufman; secretary, board of trustees, Dr. W. R. Thompson, Fort Worth (reelected); councilors, second district, Dr. Preston C. Coleman, Colorado (reelected); eighth district, Dr. Oscar S. McMullen, Victoria (reelected); seventh district, Dr. Joe C. Gilbert, Austin; ninth district, Dr. William B. Thorning, Houston, and tenth district, Dr. Murff F. Bledsor, Port Arthur (reelected); delegates to the American Medical Association, Drs. John M. O'Farrell, Richmond, Edward H. Cary, Dallas, and Holman Taylor, Fort Worth, and alternates, Drs. Murff F. Bledsoe, Port Arthur, and Robert W. Knox, Houston.

WASHINGTON

Presented Forged Credentials.—A report from the state board of medical examiners recently stated that a Dr. Francis J. Koler was licensed on credentials showing that he graduated from the University of Minnesota, June 5, 1915, and that he had been licensed in Minnesota in the same year. These statements were not verified by official data at the headquarters of the American Medical Association and a letter from Dean Lyon of the University of Minnesota Medical School stated positively that no such person had ever graduated from that institution. Statements to this effect were at once forwarded to the Washington board. It is now reported that on May 28, Mr. Koler admitted that his diploma and the reciprocity blanks, together with seals of the university and state of Minnesota, had been forged. He agreed to return the license thus fraudulently obtained. He then left for parts unknown. Other licensing boards will do well to be on the lookout for Mr. Koler.

GENERAL

General Gorgas Honored.—The knight commandership of the Order of St. Michael and St. George was recently conferred on Gen. W. C. Gorgas by King George of England. Dr. Gorgas is en route to make studies of yellow fever on the west coast of Africa.

Limit Liquor Prescription Issue.—In an effort to defeat the indiscriminate sale of liquor on physicians' prescriptions, Commissioner Williams of the Bureau of Internal Revenue, issued a ruling, May 28, limiting the number of prescriptions for physicians to 100 for each three months, excepting with "good cause."

Sanitarians Hold Meeting.—At the annual meeting of the Southern Sanitary Association, held in Charlotte, May 25, Spartanburg, S. C., was selected as the next place of meeting and the following officers were elected: president, Dr. Andrew J. Warren, Charlotte, N. C.; vice presidents, Dr. C. C. Hudson, Richmond, Va., and Mrs. Ruth A. Dodd, Columbia, S. C., and secretary-treasurer, Dr. E. C. Smith, Columbia, S. C.

Virginia and District Meeting.—At the annual meeting of the Medical Society of Northern Virginia and District of Columbia held in Alexandria, Va., May 19, Dr. George Tully Vaughan, Washington, D. C., was elected president; Dr. Arthur Hooe, vice president; Dr. William H. Davis, Washington, D. C., recording secretary; Dr. Joseph D. Rogers, Washington, D. C., corresponding secretary, and Dr. Robert S. Lamb, Washington, D. C., treasurer.

Grants for Research.—The committee on grants of the American Association for the Advancement of Science has made a grant of $100 to Prof. Theodore Hough of the University of Virginia, Charlottesville, in support of his studies with Dr. J. A. Wardell on blood changes after severe hemorrhages, and of $150 to Prof. Carl J. Wiggers of Western Reserve University, Cleveland, in support of his investigations of the cardiac function by optical registration.

American Pediatric Society Elects.—The American Pediatric Society, at its thirty-second annual meeting held in Highland Park, Ill., May 31 to June 2, elected the following officers: president, Dr. John Howland, Baltimore; vice president, Dr. Charles A. Fife, Philadelphia; secretary, Dr. Howard Childs Carpenter, Philadelphia; treasurer, Dr. Charles Hunter Dunn, Boston, and recorder and editor, Dr. Oscar M. Schloss, New York City.

Fellowships Offered.—Four fellowships of $1,200 each have been offered by Julius Rosenwald of Chicago to negro graduates for advanced medical studies. The fellowships thus far announced are Drs. George W. James, Jr., Howard University, 1918; Theodore K. Lawless, Northwestern University Medical School, 1919; W. S. Quinland, Meharry Medical College, 1919, Harvard Medical School, 1919-1920, and Carrie D. Sutton, Howard University, 1920.——A $1,000 fellowship is offered by the Child Health Organization of America, New York City, for the best plan and outline for interesting children in the establishment of health habits.

Using the Automobile Emblem.—Hon. S. S. Horn, mayor of Easton, Pa., has addressed a letter to the members of the medical profession of that city urging them to mark their cars with the Caduceus so as to permit traffic officers to recognize physicians' cars. The mayor recognizes that many times a physician's car should be granted certain privileges which are not permitted except for fire apparatus and ambulances. Mr. Horn knows that it is impossible for a traffic officer to recognize every physician or know their cars. Consequently, he feels it would be of great advantage to have an emblem which will mark physicians' cars. He suggests the use of the automobile emblem provided by the American Medical Association for marking the cars of all legally qualified practitioners of medicine.



Warning Against Untried Medicaments.—The U. S. Public Health Service has issued a bureau circular regarding the use of arsenic preparations in the treatment of syphilis, in which it invites attention to the extensive exploitation through advertisements in professional journals and elsewhere, of various arsenic preparations which are not related to the arsphenamin group but which are sold with unwarranted claims as to their value in the treatment of syphilis. In the opinion of the bureau, the subcutaneous, intramuscular or intravenous use of arsenic in the treatment of syphilis should be confined to the arsphenamin group, as these agents are now of established value and are produced under the regulations of the Public Health Service. These agents are now manufactured by the following licensed firms: Dermatological Research Laboratories, 1720 Lombard Street, Philadelphia; H. A. Metz Laboratories, 122 Hudson Street, New York City; Diarsenol Company, Inc., Buffalo; Takamine Laboratory, Clifton, N. J., and the Lowy Laboratory, Newark, N. J. Provision is made for the experimental use of any preparation under conditions which will make the results of the experiment available to others than the physician immediately concerned.

Research Council Election.—The National Research Council, a cooperative organization of leading scientific and technical men of the country for the promotion of scientific research and the application and dissemination of scientific knowledge for the benefit of the national welfare, has elected the following officers for the year beginning July 1: chairman, H. A. Bumstead, professor of physics and director of the Sloane physical laboratory, Yale University; vice chairmen, C. D. Walcott, president of the National Academy of Sciences and secretary of the Smithsonian Institution; Gano Dunn, president of the J. G. White Engineering Corporation, New York, and R. A. Millikan, professor of physics, University of Chicago; permanent secretary, Vernon Kellogg, professor of biology, Stanford University, and treasurer, F. L. Ransome, treasurer of the National Academy of Sciences. The council was organized in 1916 under the auspices of the National Academy of Sciences to mobilize the scientific resources of America for work on war problems, and reorganized in 1918 by an executive order of the President on a permanent peace-time basis. Although cooperating with various government scientific bureaus it is not controlled or supported by the government. It has recently received an endowment of $5,000,000 from the Carnegie Corporation, part of which is to be expended for the erection of a suitable building in Washington, D. C., for the joint use of the coun-

cil and the National Academy of Sciences. Other gifts have been made to it for the carrying out of specific scientific researches under its direction.

Status of Sheppard-Towner Maternity Bill.—A distinct step toward the passage of the Sheppard-Towner Maternity and Infancy Bill has been accomplished by the favorable report on this measure which has just been made to the Senate from the Committee on Public Health and National Quarantine. The bill provides for cooperation on the part of the national government with the several states in the care of maternity and infancy cases and provides for studies, investigations and reports thereon. It sets aside $480,000 each year, of which $10,000 is to be paid annually to each state for carrying out the provisions of the act. It creates the Federal Board of Maternal and Infant Hygiene for the purpose of administration of the law. This board shall consist of the Secretary of Labor, the chief of the Children's Bureau, the Surgeon-General of the Public Health Service and the commissioner of education. The bill appropriates the sum of $2,000,000 for the next fiscal year in carrying on this cooperation work among the states and proposes appropriations for each succeeding year to 1925 in the sum of $3,600,000. Before any state can secure the benefits of these appropriations, the legislature of such state is required to authorize the creation of a state board of mental and infant hygiene which will cooperate with the federal board. It is also provided that the cooperative work in promoting the care of maternity and infancy shall consist of instruction in the hygiene of maternity and infancy through public health nurses, consultation centers, and other suitable methods, and the provision of medical and nursing care for mothers and infants at home or at a hospital when necessary, especially in remote areas; and this work shall be carried on in such manner as may be mutually agreed on by the federal board and any state receiving the benefits of this act. The report of the committee in support of the bill was made by Senator France of Maryland. It says in part:

The testimony brought out that it is safer to be a mother in 14 important foreign countries than here in our own country. In 1918 23,000 mothers died from causes connected with childbirth and nearly a quarter of a million babies died under 1 year of age. Most of these deaths are preventable. It was further brought out that the protection of the child must begin with the protection of the mother. Care during pregnancy and confinement and instruction in the hygiene of maternity, infancy, and childhood must be made available for all mothers through such agencies as prenatal clinics, maternity hospitals, maternity care in the home, children's health centers, and systems of public health nursing adequate to reach every mother and child.

This neglect of maternity and infancy leads not only to thousands of preventable deaths but to lowered vitality and permanent impairment of health and efficiency for thousands of women and infants who survive. The Children's Bureau's studies in rural areas in six different States have revealed:

1. High maternal mortality rates, above the average for the United States as a whole.

2. The fact that 80 per cent. of the mothers had received no advice or trained care during pregnancy.

3. Many mothers had no trained attendants of any kind at confinement.

4. Inaccessibility and often entire lack of hospitals, doctors, and nurses.

5. Practically no organized effort to meet the need for instruction in prenatal and infant hygiene and for trained care during pregnancy and confinement.

6. An almost prohibitive cost for providing adequate care at confinement in scattered and isolated rural districts. The very districts where advice and supervision during pregnancy and better help at confinement are most needed are the ones least able to obtain it without financial aid.

Of more than 22,000 city babies studied by the Children's Bureau and representing every type of home in seven cities more than three-fifths were born into families where the fathers' earnings were below the amount which was at that time the minimum for providing the bare necessities of existence. Only 1 in 10 was in a family where the father's earnings reached a fair minimum for comfort.

The problem is not local or sectional, but nation-wide, and federal action, therefore, is urgently needed. This bill offers a practicable method of cooperation between the federal government and the states. Such a method is already successfully operating in promoting agricultural work, vocational education, and the building of good roads.

Testimony on file from governors of 33 states and mayors of many large cities indicates that the states are ready and eager to avail themselves of the provisions of this bill.

Medical experts testified that with the most ordinary nursing care given to mothers and the services of a nurse who will supervise and instruct the pregnant woman, the death rate in the first month of life can be reduced one-half or two-thirds. It has frequently been found that among babies of supervised women there is a death rate not exceeding 18 or 19 per cent., as contrasted with 40 per cent. of the babies of the women of the same class who are unsupervised.

Such care bears results immediately and almost with mathematical certainty, and there can be no question whatever that the women in rural communities should no longer bear the onus of having to consider themselves outcasts, as it were, and not be able to avail themselves of the same kind of treatment that is at the service of certain city mothers.

Statistics have shown in New York City that, beginning five years after the commencement of work to reduce infant mortality, the effect was felt and the death rate under 5 years of age has been progressively lowered so that now the reduction in infant mortality is greater and the sickness rate is lower than it has ever been under 1 year of age. In other words, these children are not only saved to be alive at the end of the first year but are protected from physical defects, ill health, underdevelopment, and general physical deterioration in later life.

This bill equalizes the opportunities of mothers everywhere to receive suitable instruction in child hygiene in terms which they can understand, and provides for their care by those who are suitably trained. It also provides for methods of cooperation between various Government departments which have been dealing with certain phases of child welfare.

The representatives of Democratic and Republican women, and the League of Women Voters testified to the need of impressing upon lawmakers and politicians that the government has a responsibility for the care of mothers and babies. The greatest duty of government, the real purpose for which it exists, is to promote the general welfare.

Heretofore Congress has appropriated large sums for hogs and cattle. It is not because men think more of hogs and cattle than they do of babies that they vote $47,000,000 for them and nothing for the little ones, but because they have been thinking of the father's end of the problem. They have not seen that there was another side to the problem that was just as much the public business, namely, right conditions surrounding mothers and babies at home. Mothers will always think of the baby first. They are made that way; that is why it is a good thing for women to be in politics at this particular stage of the world's history, when conservation of life is so important.

There is no difference of opinion among the women as to the necessity for this measure. Furthermore, they have great confidence in the administrative feature of this bill, which provides that it shall have as its administrative officer the Chief of the Children's Bureau. They feel strongly that this is a woman's question and they heartily approve of the legislation which proposes to give the administrative function of the bill to a woman, who is the Chief of the Children's Bureau and who has already done so much for the children of the Nation.

Other speakers testified that the death rates of babies within the United States vary from those which are exceedingly unfavorable, according to the care available for mother and child. Rural isolation, civic neglect, low income, ignorance, are among the chief accompaniments of high infant mortality in the United States.

Plainly, it is for the public interest that young life and maternal life should be conserved. But in order to give an approximately fair chance for life for every child born, it is impossible to rely solely upon local funds and initiative, otherwise the figures would not show the present extreme variations in localities of varying resources.

This bill recognizes that the family is the social unit, and that upon its physical, mental, and moral adequacy depends national progress. Family well-being involves many services, among them those of teacher, physician, nurse, and social economist.

The ground for this work is already broken in two-thirds of the states at least, the seed is already planted in the hearts of the executives, and only the stimulus of federal action is needed to make the work flourish.

It can not be ignored that the rising thought throughout the world recognizes that all life is precious, that life which is creating life is doubly precious, and that the mothers and infants must be protected.

This committee believes that Congress should take prompt action on this measure. It has been said that the 23,000 mothers who died from causes connected with childbirth in 1918 and the 250,000 infants comprised a total casualty list that is as large as our total casualty list during the war.

Congress should not be passive in the face of this great loss, not only economic but social and moral as well. We believe that the United States should be pulled up from its present ignominious position as a squanderer of mothers and babies.

CANADA

Personal.—Dr. Richard J. Harding, McGill University, has been appointed professor of chemical pathology in the University of Toronto by the board of governors of the university.——Dr. Daniel Murray has been reelected mayor of Campbellton, N. B.——Dr. William G. Anglin, Kingston, has been appointed surgeon to the provincial penitentiary, Portsmouth.

Alumnae Meet.—The annual meeting of the Women Medical Alumnae of Queens Medical College was held in Toronto, and the following officers were elected: honorary president, Dr. Augusta Stowe Bullen; president, Dr. Katherine Woodhouse; vice presidents, Drs. Isabella Smith Wood, Annie Saeveth Higbee, Grand Prairie, Alta., and Dorothea A. Orr, Toronto; secretary, Dr. Edna Robertson, and treasurer, Dr. Edna M. G. Guest, Toronto.

LATIN AMERICA

Children's Outing Station in Argentina.—The Buenos Aires municipal authorities have opened a vacation colony for the sickly children of the city.

Government Sanatoriums in Santo Domingo.—The government of Santo Domingo has begun the necessary steps for the construction of a number of sanatoriums in different parts of the country.

Public Health Appropriation in Paraguay.—The appropriation for public health purposes, granted by the last congress of Paraguay, amounts to 600,000 pesos, including the funds for the new services for the control of leprosy, hookworm, plague, tetanus neonatorum, etc.

Bubonic Plague in Mexico.—It is reported that all traffic by rail or steamship to Vera Cruz, with the exception of that over the railway to Jalapa, has been ordered suspended on account of the presence of bubonic plague in Vera Cruz. Major A. R. Goodman, M. C., U. S. Army, attached to the American embassy at Mexico, announced, June 5, that the situation is not so serious as the reports state and that the Mexican medical authorities are handling the situation efficiently and taking every precaution to prevent the plague from spreading to other parts of the country. According to the latest reports from Vera Cruz the number of cases of bubonic plague so far discovered in that city is twelve, several persons having already died. No new cases have occurred lately. The authorities have accepted the offer of the United States government to send a sanitary detachment to assist in combating the disease. It is reported that the outbreak is now under control.

FOREIGN

Donations from Norway to Vienna Physicians.—Dr. R. Nadwig arrived recently in Vienna convoying six freight cars loaded with edibles of a value estimated at 5,000,000 crowns, for Vienna physicians and their families, donated by the physicians of Norway.

Nurses Get Florence Nightingale Medals.—Fifteen nurses representing fifteen countries have been awarded the Florence Nightingale medal for heroism on the battlefield by the Geneva Red Cross. Among those who received the decoration were six American, eight British and eight French nurses.

Personal.—Prof. Sadao Yoshida of Osaka Medical College, Japan, who has been spending his sabbatical year in research work at the parasitologic laboratory of the University of Illinois, has been awarded the Katsurada prize and medal of honor established by the Japanese government to be given periodically to some distinguished workers on tropical diseases.

Portrait of Sir Clifford Allbutt.—The catalogue of the exhibition of the Royal Academy this year includes a portrait of Sir Clifford Allbutt, painted by Sir William Orpen and presented to Sir Clifford by the medical profession. The picture bears the inscription: "Sir Clifford Allbutt, K.C.B., M.D., F.R.S., regius professor of physics in the University of Cambridge, President of the British Medical Association, presented to him by his Profession in 1920."

Typhus in Poland.—Dr. Rupert Blue, formerly Surgeon-General, U. S. Public Health Service, who is in Europe investigating health conditions, has cabled Washington, D. C., for five additional surgeons to be sent to northern ports to inspect all third class passengers for America in view of the prevalence of typhus fever and cholera in Poland. It is required that all third class passengers be bathed and disinfected and held for twelve days at the port of embarkation.

Belgian Society of Psychiatry.—The Société de médecine mentale de Belgique will hold a jubilee congress in celebration of its fiftieth anniversary in Ghent, September 25-26. Dr. Ley, professor of psychiatry at the University of Brussels, is president of the congress, and Dr. Hovrey, Lierneux, Belgium, is secretary. Representative delegates from related societies of the United States will be accorded a warm welcome.

Abolishing Penalties for Abortion.—The small canton of Basel-Stadt, the most northern point in Switzerland, has been debating for some time the question of striking induced abortion from the list of criminal acts. The council finally voted in favor of this against the protests of the medical profession, but was soon obliged to rescind its action, the agitation against the measure compelling the rejection of the bill at a second reading.

Tuberculosis Conference of the Northland.—The Nordiska Föreningen mot tuberkulos is to meet at Stockholm the last week in June. One session is to be devoted to convalescents' colonies and occupation, and treatment of laryngeal tuberculosis. Tuberculosis specialists from Denmark, Finland, Iceland, Norway and Sweden are expected. The conference has been called by the Svenska Nationalföreningen mot tuberkulos, whose address is Birger Jarlsgatan 22, Stockholm.

Tenth Scandinavian Congress of Internal Medicine.—The occurrence and treatment of visceral syphilis has been appointed as the main topic for discussion at this gathering of Scandinavian internists at Helsingfors in July, 1921. The address on syphilis of the central nervous system is to be by Dr. Hanssen of Bergen, the discussion to be opened by Professor Hagelstam of Helsingfors. Syphilis of the abdominal and chest organs is to be presented by Professor Jacobaeus of Stockholm, and the discussion to be opened by Professor Tallqvist of Helsingfors.

Rate of Exchange with Germany.—Some of our German exchanges publish week by week the current rate of exchange to be adopted by the physicians at watering places in charging foreigners for their services. The rate given by the *Medizinische Klinik* for May 9, just received, is as follows: "141 marks for Americans; 130 marks for Argentinians; 51 marks for Belgians; 96 marks for Danes or Norwegians; 119 marks for the English; 46 marks for the French; 129 marks for Netherlanders; 32 marks for Finlanders; 34 marks for Italians; 117 marks for patients from Sweden; 134 marks for patients from Switzerland and 126 marks for those from Spain."

Epidemics of Smallpox.—Glasgow has experienced a considerable epidemic of smallpox, and there is a fear that it will spread to other parts of Scotland. The situation was particularly alarming because of the fact that approximately 40 per cent. of the children under 14 years are unvaccinated. Of fifteen unvaccinated children who contracted the disease, five succumbed; and of the first seven deaths reported from the disease, only one was of an unvaccinated person. Two sources of origin have been traced: a ship from India and a ship from Egypt. An epidemic was prevailing in Calcutta early in the year, 396 deaths from smallpox being recorded in the two weeks ending January 31.

Appeal for Lebanon Hospital.—The Lebanon Hospital for Mental Diseases, Asfuriyeh, Syria, through its American committee, has issued an appeal for subscriptions to a fund of $60,000 for necessary equipment and reconstruction. This hospital, the only asylum for the insane between Constantinople and Cairo, is maintained by voluntary contributions from American, British, Dutch and Swiss benefactors and is administered by an executive committee of members of the staff of the Protestant Syrian College at Beyrout. Accommodations are provided for 150 patients, and admission is granted to any needy mental patient, irrespective of creed, race or nationality. Communications should be addressed to Mr. Robert B. Haines, Jr., secretary, 119 South Fourth Street, Philadelphia.

Tokens of the Gratitude of France.—The *Presse médicale* of May 19 gives a list of persons to whom the French government has recently awarded the Médaille de la Reconnaissance Française. Among them are ten American physicians and surgeons who are cited for having volunteered to care for the sick and wounded and lavished their services with the greatest skill and devotion. The list includes Drs. P. Keating, Wawa, Pa.; C. Mack, Boston; H. Feiss, neurologist; Major E. Johnstone, Honolulu; John Miller; C. Powers, Denver; P. Petree, Germanton, N. C.; Hunter Scarlett, Philadelphia, and T. Beebe, Boston and Miss Ida Shields, Arlington, N. J., whose medical services to the refugees were highly appreciated. The list includes further Dr. Louis MacNulty of Lima, Peru, "who served as assistant and often acting chief of Hospital 38, with zeal and skill."

Deaths in Other Countries

Dr. **J. B. Miranda,** for thirty-four years professor of pharmacy at the University of Santiago, Chile, author of works on the treatment of cholera, etc.——Dr. **R. Livi,** professor of anthropology at the University of Rome, the chief authority on anthropologic statistics in Italy, and inspector general of the army medical service in the Florence district during the war, aged 64.——Dr. **G. B. Locatelli** of Brescia, Italy, prominent in the fight against pellagra, alcoholism and venereal disease. Not long before his death he had presented the Associazione dei Dermosifilografi Italiani with 20,000 lire to found the Locatelli prize for work in this line.——Dr. **F. Schrakamp,** professor of social hygiene and medical legislation at the Akademie für praktische Medizin at Düsseldorf, aged 60.

Government Services

Work on Medical and Surgical History of the War

The initial steps for the preparation of the medical and surgical history of the World War will at once be taken by Surgeon-General of the Army, M. W. Ireland. As finally passed by Congress, the first appropriation for this work was reduced to $50,000, but provision is made that the total cost of this history will not exceed $150,000. As it will require at least two years to complete this work it is the understanding that Congress will provide additional money to carry on this important undertaking from time to time.

Examination for Medical Officers

In accordance with the provision of the recent Act of Congress on reorganization of the Army, including the Medical Department, an examination will be held July 7 for those who served as officers in the Medical Department during the World War. The age limit will be 58 years. All grades are open to appointment of those qualifying physically, morally and professionally after examination. Those who have already applied will be authorized by the War Department to appear before the nearest examining board. Applications from others must be received not later than June 23. Information is available at every military station and recruiting station, or it may be obtained by writing directly to the Surgeon-General's Office.

Hospitals for Public Health Service

The policy of the government for the construction of hospitals and care of former service men is outlined in the bill reported to the House of Representatives by Congressman Langley of Kentucky, chairman of the Committee on Public Buildings and Grounds. The bill provides for the construction of five hospitals, of which three shall be for the treatment of neuropsychiatric patients. One of these hospitals will be located in the central Atlantic Coast states, one in the region of the Great Lakes, and one in the north Pacific Coast states. Two shall be for the treatment of tuberculosis patients, one of which shall be located in the Rocky Mountain States and one in southern California. This bill has been prepared by the Committee on Public Buildings and Grounds after consultation with the Surgeon-General of Public Health Service, director of War Risk Insurance and other officials and is expected to meet all hospital requirements of the immediate future in behalf of soldiers of the World War. The bill authorizes the expenditure of $10,000,000 for the construction of these various hospitals. It permits the remodeling or extension of existing plants and equipment owned by the government.

HONORABLE DISCHARGES, MEDICAL CORPS, U. S. ARMY

NOTE.—In the following list L. signifies lieutenant; C., captain; M., major; L. C., lieutenant colonel, and Col., colonel.

ALABAMA
Troy—Rhodes, G. A. (C.)

ARKANSAS
Arkadelphia — Townsend, C. K. (L.)

CALIFORNIA
Los Angeles—Carling, J. (C.)
Fahy, J. E. (C.)
Magee, C. L. (M.)
Turner, K. B. (M.)
San Francisco — Degnan, J. P. (L.)
Tranter, C. L. (C.)
San Rafael—Stone, W. J. (C.)
Walnut Grove—Wilson, E. E. (C.)

COLORADO
Colorado Springs—Sharp, G. L. (L.)

CONNECTICUT
Ansonia—Conklin, C. S. (L.)

DELAWARE
Dover—McKelway, G. I. (M.)

FLORIDA
St. Petersburg — Axline, M. H. (M.)

GEORGIA
Augusta—Butler, J. H. (M.)
Lang, N. H. (C.)

ILLINOIS
Aledo—Baldwin, A. K. (L.)
Chicago—Dale, G. L. (M.)
O'Grady, G. E. (L.)
Jacksonville—Stacy, G. H. (C.)
Mount Vernon—Suttle, O. A. (M.)

INDIANA
Columbia City—Pence, B. F. (C.)
Indianapolis — Glendening, J. L. (L.)
Jones, C. H. (C.)

IOWA
Council Bluffs—Konigmacher, A. H. (C.)
Sumner—Wuttke, E. E. (L.)

KANSAS
Mayfield—Clark, E. F. (L.)

KENTUCKY
Calhoun—Moore, P. D. (L.)
Hopkinsville — Durham, W. W. (C.)
Louisville—Hill, D. L. (C.)

LOUISIANA
New Orleans—Starns, C. E. (L.)

MARYLAND
Baltimore—Murray, J. G., Jr. (C.)

MASSACHUSETTS
Boston—Parker, C. C. (L.)
Schnack, A. G. C. (L.)
Brockton—Dunham, H. B. (L.)
Framingham — Partington, C. B. (L.)

MICHIGAN
Detroit—Anderson, F. C. (L.)
Grand Rapids—Dingman, H. W. (C.)

MINNESOTA
Albert Lea—McCreight, G. M. (L.)
Minneapolis—Stone, H. W. (L.)

MISSISSIPPI
Natchez—Podesta, A. J. (C.)

MISSOURI
Mineola—Wyatt, D. (C.)
St. Louis—Lee, E. J., Jr. (C.)

NEVADA
Carson City—Circe, W. J. (M.)

NEW HAMPSHIRE
Rumney—Drew, J. A. (M.)

NEW JERSEY
Bridgeton — Charlesworth, I. E. (M.)
Colonia—Tomassene, R. A. (C.)
Jersey City—Frundt, O. C. (C.)
Raritan—Nixon, W. L. (L.)

NEW YORK
Brooklyn — McCullough, W. A. (L.)
Stone, A. (L.)
Elmhurst—Baker, A. T. (M.)
New York—Mayer, J. M. (L.)
Sanford, W. H. (M.)
Sharp, H. (C.)
Vetter, P. J., Jr. (L.)
Syracuse—Brennan, A. W. (C.)

NORTH CAROLINA
Asheville—Costello, M. J. (C.)
Newton—McCorkle, M. L. (L.)

NORTH DAKOTA
Munich—Lindner, E. R. (M.)

OHIO
Cleveland—Steel, J. M. (M.)
Hudson—Herrick, H. J. (C.)
Marble Cliff—Miller, S. H. (L.)
Springfield—Mahoney, T. W. (L.)
Zanesville—Allen, S. L. (L.)

PENNSYLVANIA
Philadelphia—Mayer, J. P. (L.)
Wayne—Truxal, C. W., Jr. (C.)

TENNESSEE
Cordova—Hooper, E. L. (C.)
Knoxville—Allan, H. W. (L.)
Nashville—Brewer, F. B. (C.)

TEXAS
Fort Worth—Pember, C. H. (C.)
Kilgore—Hamilton, E. H. (C.)
San Antonio—Nesbit, W. E. (L.)
Tracy—Lyon, W. H. (C.)
Wortham—Seely, M. S. (C.)

VIRGINIA
Ammon—Hamner, J. L. (L.)
Jetersville—Styers, R. J. (C.)
Richmond—Mercer, W. N. (C.)

WASHINGTON
Seattle—Birchfield, G. I. (C.)
Spokane—Ridpath, P. C. (L.)

WEST VIRGINIA
Beverly—Barlow, C. A. (M.)
Carbon—Ashby, J. W. (C.)

Foreign Letters

BUENOS AIRES

(From Our Regular Correspondent)

April 27, 1920.

Food Adulteration

The whole city has been much exercised over the results of an investigation being carried out by the municipal authorities in regard to adulterated or spoiled foodstuffs now being sold in the open market. It was ascertained through factory inspections that a number of biscuit and breadstuff firms and confectioneries were using spoiled eggs in their products. There were seized from storage large quantities of decomposed preserves, cheese, etc., it being found that they were sold after being treated so as to make them tolerable. In other well known factories there were kept spoiled meats and fish, which it was intended to treat in the same way. The popular indignation at these facts reached its height when four persons died as a result of eating some spoiled food, and an attempt was made to break into the house where the food had been prepared. The investigation is being continued.

Murder of a Student in the School of Medicine of La Plata

The signs of academic disintegration, since the students have obtained virtually the right of appointing the governing boards, found serious expression recently at La Plata. For several reasons which have changed every once in a while, the students of the University of La Plata have been on a strike for some time. A large number, however, being in disagreement with this move, requested to be allowed to

take the examinations. On examination day the examining board was assaulted by the strikers, some shots were fired, and a first-year student, David Viera, aged 20, who was taking the examination, was killed. The dean of the school of medicine, Professor Belou, has resigned his position, and it looks as if the school would be closed.

School of Medicine of Rosario

The government has just opened a school of medicine at Rosario, having placed in charge Dr. Agudo Avila. In view of the importance of that city, it seems assured that the school will become very important. It will be located next to the Hospital Centenario, the funds for the building having been provided by public subscription.

Antimalaria Campaign

The summer campaign against malaria carried out by the national department of public health in Catamarca, Tucumán, Salta and Jujuy is coming to an end. During the campaign 192 kg. of quinin has been distributed, 1,500 kg. of oil was employed, and 1,400 mosquito nets were given away to poor people. The result in some places seems to have been good.

Anthrax Cases

There has been a decided increase in the number of cases of anthrax among workmen, which may be considered as industrial accidents. In 1910, fifteen cases were observed, while in 1918, there were 226 and last year, 113 cases and 18 deaths. The department of labor has recommended to the government that measures be taken to protect the workers liable to contract this disease.

LONDON

(From Our Regular Correspondent)

May 15, 1920.

The Electric Sterilization of Milk

The Medical Research Committee has published a report on this subject by Professor Beattie of Liverpool and Mr. Lewis, lecturer on bacteriology of Liverpool. An independent trial of the matter was also made at Birmingham by Professor Leith. The experimenters agree in supporting the value of the proposed electrical method of sterilization. The Birmingham workers found that the electrical method showed a close parallelism to the old method of sterilization by heat, and are inclined to think that the current kills the bacteria by virtue of the heat which it generates. They were led to believe that in the electrical method the current raises the temperature of the milk more quickly; and since it passes through every part of the milk, the heat which it generates reaches every part of the milk at the same moment—an advantage over the simpler thermal method. The sterilizing power of the two methods is similar, though the electrical is quicker in action. Leith summarized his report by saying that "both the thermal and electrical methods have a high practical value and deserve consideration in any endeavor made to improve milk supplies. The thermal is simpler and cheaper, the electrical quicker in action." Leith suggested further that both methods could be made more efficient by grafting on them the practice of pasteurizing by two treatment applications, with rapid cooling of the milk after each, and that even with a single application the milk would store better if rapidly cooled after treatment. In the opinion of the Medical Research Committee, the experiments at Birmingham, though they entirely support the practical results obtained by Beattie and Lewis at Liverpool, were not complete enough on their bacteriologic side to settle finally the question whether the electrical current in this method has a direct bactericidal action or whether it acts purely as a thermal agent. Sir Oliver Lodge, who superintended the electrical arrangements, was strongly of opinion that its action was purely thermal.

Pellagra in Egypt During the War

The controversy that exists as to the etiology of pellagra renders important the report of a committee appointed to examine the situation created in 1918 by the presence in Egypt of a large number of prisoners of war suffering from pellagra. It was found to be a deficiency disease due to insufficient assimilation of protein, and characterized by erythema and pigmentation of the exposed parts of the body, on the back of the hands first, a fortnight later the nose, later on the feet, these discolored patches being dry and not sweating even under pilocarpin. Profound disturbance of nutrition with early wasting of the muscles of the shoulder girdle, and progressively increasing fall in blood pressure follow. Loss of appetite is a very early symptom, and there is defective secretion of hydrochloric acid in the gastric juice. Herewith there is impairment of digestion, both gastric and pancreatic, malassimilation of protein and fat, and an increased bacterial growth in the intestine, with intermittent diarrhea leading to further loss of food ingested, but incompletely absorbed. Also the enhanced destruction of protein gives very foul-smelling stools and indican appears in the urine in increasing quantities; apathy comes on, perhaps melancholia, and the patient dies. The disease picture suggests suprarenal inadequacy, and, in fact, in the recorded cases the suprarenals averaged 15 gm. lighter in the pellagra cases than in the controls. There is no evidence of specific bacterial or protozoal infection. Death is due to some intercurrent infection —pneumonia, dysentery, tuberculosis or malaria accounted for 91 per cent. of deaths. The disease occurred in Turkish camps, not in the camps of Germans alongside, where there was money to buy extra food. Spot maps showed that there was no infection from place or person.

The important question was how this disease was to be prevented. Eighty-eight per cent. of the cases arose among newly captured Turkish prisoners, who before capture for months had available only two thirds of their normal ration, and had suffered "from long continued undernutrition," as their German general had reported the year before. Further, the protein of their diet came mostly from wheat, barley or maize, very little from meat. Now Hopkins and Willcocks, in 1907, showed that the chief protein of maize cannot keep rats alive, as it does not contain enough tryptophan, an amino-acid of the aromatic series; in 1913, Sandwith suggested that want of tryptophan might help to cause pellagra. The committee had the help of Prof. W. H. Wilson, of the Cairo School of Medicine, who has long been working at the different nutritional values of the proteins, which seem in part to depend on their individual amino-acids. For the making of epinephrin a benzene nucleus is essential. For the production of this the human organism depends on the hydrolysis of special proteins in the food supply, and even then the yield of tryptophan in this process may be broken up by an overwhelming bacterial flora in the duodenum. Every diet scale considers how much protein is necessary for the man of 70 kg., which is agreed to be 40 gm. daily. But that means grams absorbed, and for normal persons must be increased by one tenth; but experiment proved that for Turkish prisoners it required to be increased by one half, so that, even if they had received full rations, the Turks would have been underfed. But, further, they were fed on the wrong proteins. Wilson had calculated the "biologic value of the proteins" (B. V. P.) of various foodstuffs, and had found that, to replace 30 gm. of meat as protein supply in a man's diet, 34 gm. of rice-protein were necessary, 50 of beans, 76 of bread, and 102 of maize. Maize-eating people, therefore,

suffer from pellagra because it has the lowest biologic value of the proteins of all the cereals, and if damaged or decayed it is all the less nutritious and pellagra arises more quickly. Vegetable proteins are not so easily assimilated as those in meat, and, further, the beans for the prisoners were not at first well cooked. These difficulties were all adjusted, but it was found that men might escape pellagra on a particular diet while resting, but succumbed as soon as they worked hard; so the diet for heavy labor, though showing already sufficient calory value and vitamin content, had to be increased; then the pellagra ceased.

A Medical Centenarian

Dr. J. S. S. Logie of Kirkwall has celebrated his one hundredth birthday. He is the doyen of the British medical profession, having taken his degree at Edinburgh in 1842. He is also the oldest elder of the Church of Scotland.

PARIS

(From Our Regular Correspondent)

May 13, 1920

Supplement to the Pharmacopeia

Since the publication of the 1908 edition of the French Pharmacopeia, a number of remedies have come into current use in therapeutics, and it therefore became necessary to inscribe these in the pharmacopeia. Nevertheless, in the supplement which has recently appeared, one searches in vain for mention of colloidal silver, emetin, bismuth carbonate and other substances. The omission is explained by the following fact: The committee of revision, nominated April 10, 1910, was on the point of issuing the supplement in its present form in August, 1914, when the war interrupted the work. Reorganized in November, 1918, the committee desired that no further delay occur in the printing, and it confined its work simply to such corrections as did not entail considerable changes.

The supplement is in two parts: The first (Addenda) contains the new articles to be inserted in the body of the Pharmacopeia; the second (Mutanda) comprises additions, corrections, modifications and deletions applying to a certain number of articles. Among the new substances are noticed veronal, stovain, novocain and antidysenteric and antimeningococcic serums. As for the modifications, these relate mainly to standards of purity required of certain substances. The committee has decided, in effect, that traces of impurities which are nearly inevitable in the industrial preparation of certain products are permissible whenever these do not result in attenuation, however slight, of the therapeutic activity of the drug. It is interesting to note a change in the maximum dose of sulphonal and trional, which has been fixed at 1 gm., instead of 2 gm.

Death of Glénard

Dr. Frantz Glénard, national correspondent of the Académie de Médecine since 1896, died recently at the age of 72. We owe to him much of our knowledge of visceroptosis (often called Glénard's disease) and the introduction and adoption in France of the treatment of typhoid fever by cold baths.

Franco-American Scientific Cooperation

Mention was made in a preceding letter (THE JOURNAL, Jan. 31, 1920, p. 338) of the cooperative spirit manifest in the scientific relations of France and the United States. Along the same line, it is interesting to note the reciprocal advancement of the scientific works and ideas of the two countries. Thus, Dr. J. Darier recently presented before the Académie de Médecine a translation of his *Précis de dermatologie* by Prof. Sigmund Pollitzer, New York, in the preface of which the translator pays homage to the French school of dermatology and in particular to the Hôpital Saint-Louis. On the other hand, Dr. A. G. Guillaume has just published a monograph on the great sympathetic system with special reference to its biologic reactions (Le sympathique et les systèmes associés). The author has made extensive use of the facts revealed by the works of British and American investigators (Gaskell, Higier, Head, Sir Edward A. Schafer, Pottenger, Barker and others). I think it should also be remarked that the publication of the *Archives of Neurology and Psychiatry* was announced in the last number of the *Revue neurologique* in flattering terms.

American Gift to Bacteriologic Institute

An American philanthropist, M. Douglas Flattery, has recently donated to the Institut bactériologique de Lyon the sum of 100,000 francs, the interest of which shall serve as an annual grant to a student of the University of Lyons for the pursuit of laboratory studies of infectious diseases.

Foreign Students—For or Against

At the ninth Congrès des étudiants, which recently met at Bordeaux, the following resolution was adopted: That free enrolment be granted to necessitous students by increasing the charges to foreign students. This was undoubtedly fostered by the fear of competition with foreigners who might settle in France after completing their studies. Not the least regrettable feature is the fact that the students should be capable of thinking of such a restrictive measure at the risk of prejudicing French influence abroad. An exactly contrary view seems to be maintained in official circles; in fact, a recent decree sets forth the credits which will be accepted to exempt foreign students from the school requirements. Students who might seek such exemption will simply have to prove that they have an adequate knowledge of the French language.

Printing of Graduation Dissertations

Two deputies, M. de Menthon and M. Ducos, have called the attention of the minister of public instruction to the great expense entailed by the compulsory printing of university dissertations. They inquired whether twelve typewritten copies would not serve the same purpose as the obligatory printing of 110 copies. The minister replied that printing the dissertation should be continued if for no other purpose than to serve as exchange with the principal foreign universities. This exchange should hardly be abolished, as it is one of the best methods of scientific propaganda.

Marriages

ARTHUR JUSTIN G. HENDERSON, Kiester, Minn., to Miss Hazel Olson of Estherville, Iowa, May 18.

JOHN FRANCIS BENNETT, Burlington, Wis., to Miss Florence Elizabeth Mauer of Milwaukee, May 31.

LLOYD JAMES BLAKEMAN, Chicago, to Miss Louise M. Pabst of Blue Island, Ill., recently.

RALPH WENDELL MITCHELL to Mrs. Margaret MacKenzie, both of New York City, June 2.

EUGÈNE ALEXANDER MOULTON to Miss Margery Lagerquist, both of Chicago, recently.

CLINTON B. ELLIS, Kansas City, Mo., to Miss Lillian St. Clair of Chicago, May 1.

LENA AUGUSTA GERALDSON to Mr. Frederick H. Miller, both of Napa, Calif., May 24.

MORRIS L. WEINSTEIN to Miss Marion H. Liebshutz, both of Chicago, June 1.

IDA RUTH GOROV, Chicago, to William W. Policoff of Philadelphia, May 30.

HARRY LEON STEELE to Miss Mary Stuart Osgood, both of Detroit, June 2.

Deaths

William Pollock Crumbacker, Independence, Iowa; Medical College of Ohio, Cincinnati, 1882; aged 62; a member of the Iowa State Medical Society; superintendent of the Independence State Hospital since 1902; assistant physician of the Athens (Ohio) State Hospital from 1884 to 1889; and superintendent of the institution from 1890 to 1892; superintendent of the West Virginia Hospital for the Insane, Weston, from 1893 to 1897; a member of the American Medico-Psychological Association; and contributor of numerous articles to the literature of hospital management and neuropathology; died, May 14, from pneumonia.

William St. George Elliott, Pasadena, Calif.; University of the City of New York, 1863; aged 81; a graduate in dentistry from the Philadelphia Dental College in 1870; formerly professor of operative dentistry in the National Dental College, London, England; acting assistant surgeon, U. S. Army, and assistant surgeon of Volunteers during the Civil War; dental surgeon to St. Mary's Hospital, New York City; died, May 23.

George Lafayette Loope, Seattle; College of Physicians and Surgeons, Chicago, 1886; aged 73; formerly surgeon to the Gogebic Hospital and to the Wisconsin Central and Northwestern systems at Bessemer, Mich.; a veteran of the Civil War, and during the World War on duty with the U. S. Shipping Board; at one time a member of the Michigan State Board of Health; died, May 11.

Francis Xavier Straessley, Pittsburgh; Western Pennsylvania Medical College, Pittsburgh, 1894; aged 60; also a graduate pharmacist; a member of the Medical Society of the State of Pennsylvania; a member of the common council of Allegheny and later of Pittsburgh, and a member of the staff of St. John's Hospital, Pittsburgh; died in St. Francis Hospital, Pittsburgh, May 24.

Clarence Miles Godding ⊕ Providence, R. I.; Harvard University Medical School, 1883; aged 62; surgeon to the outpatient department of the Rhode Island Hospital; visiting physician and surgeon at the Providence Lying-In Hospital, and attending physician to the Dexter Asylum; died at the home of his daughter in Providence, May 28.

James Buckley Tweedle ⊕ Weatherly, Pa.; College of Physicians and Surgeons in the City of New York, 1865; aged 83; health officer of Carbon County; local surgeon of the Lehigh Valley Railroad; once secretary of Carbon County Medical Society; surgeon of U. S. Volunteers during the Civil War; died at his home, May 21.

Otto Edward Forster, St. Louis; St. Louis Medical College, 1881; aged 61; a member of the Missouri State Medical Association; once president of the St. Louis Board of Health, and police commissioner; a specialist in diseases of the ear, nose and throat; died in Barnes Hospital, St. Louis, May 17, from heart disease.

Edward Cranch ⊕ Erie, Pa.; Georgetown University, Washington, D. C., 1873; New York Homeopathic Medical College, New York City, 1875; aged 68; president of the Erie County Medical Society in 1919; consulting physician to Hamot Hospital, Erie; died, May 20, from aneurism of the aorta.

Ernest Eldred Wells, Stillwater, Minn.; Chicago Medical College, 1898; aged 49; a member of the Minnesota State Medical Association; formerly coroner of Washington County, and for the last year county physician; once an alderman of Stillwater; died, May 17, from pneumonia.

Amos F. Green, West Jefferson, Ohio; Starling Medical College, Columbus, Ohio, 1894; aged 60; a member of the Ohio State Medical Association; formerly mayor of West Jefferson, and coroner of Madison County; died, May 21, from acute nephritis.

Louis Henry Mayer ⊕ Johnstown, Pa.; Jefferson Medical College, 1887; aged 58; a member of the staff of the Conemaugh Valley Memorial Hospital; president of the Cambria County Medical Society in 1896; died, May 22, from heart disease.

George E. Pettey ⊕ Memphis, Tenn.; Memphis (Tenn.) Hospital Medical College, 1888; aged 63; a specialist in internal medicine; while crossing a street in Memphis, May 20, was struck by a street car and died while being taken to the hospital.

⊕ Indicates "Fellow" of the American Medical Association.

William C. Bundy, Modesto, Calif.; College of Physicians and Surgeons, Chicago, 1885; aged 74; for many years a practitioner of Aurelia, Iowa; died at the home of his daughter in Primghar, Iowa, May 12, from cerebral hemorrhage.

William C. Bell, Detroit; Detroit Homeopathic College, 1911; aged 33; a member of the Michigan State Medical Society; assistant surgeon to the police department of Detroit since 1917; died, May 19, from pneumonia.

Hanford Charles Keith, Losantville, Ind.; University of the City of New York, 1882; aged 62; a member of the Council of Physicians and Surgeons of New Brunswick in 1882; died recently from heart disease.

Frank Rufus Searles, New York City; Long Island College Hospital, Brooklyn, 1892; Columbia University College of Physicians and Surgeons, New York City, 1899; aged 72; died, May 5.

George LeRoy Menzie, Oneida, N. Y.; College of Physicians and Surgeons in the City of New York, 1866; aged 77; surgeon of U. S. Volunteers during the Civil War, died, May 12.

John Miller, Netcong, N. J.; University of the City of New York, 1886; aged 57; a member of the Medical Society of New Jersey; died, May 7, from myocarditis.

Edgar Albert Tobey ⊕ Youngstown, Ohio; Western Pennsylvania Medical School, Pittsburgh, 1904; aged 45; died in Los Angeles, March 25, from uremia.

Robert Graves ⊕ Chicago; Northwestern University Medical School, 1893; aged 50; died in Wesley Hospital, Chicago, April 5, from pneumonia.

George Milton Warren, Warren, Ont.; Victoria University, Coburg, Ont., 1870; aged 72; died at the home of his brother in Toronto, April 8.

Lon S. Keith, Benzien, Mont.; Eclectic Medical Institute, Cincinnati, 1887; aged 62; died, April 29, from pneumonia following influenza.

George M. Hoehn, Mount Airy, Cincinnati; Medical College of Ohio, Cincinnati, 1885; aged 67; died, April 21, from arthritis deformans.

Cotesworth Pinckney Smith ⊕ Arkansas City, Ark.; University of Louisville, Ky., 1873; aged 76; died, February 2, from heart disease.

Charles W. Barker, Baltimore; University of Maryland, Baltimore, 1885; died at the home of his daughter in Baltimore, May 9.

Francis Joseph Todd, Oakland, Calif.; University of Michigan, Ann Arbor, 1883; aged 59; died, April 27, from cerebral hemorrhage.

Edward M. Goodwin, Toledo, Ohio; Albany (N. Y.) Medical College, 1863; aged 77; died, March 18, from heart disease.

John B. Wilson, Scott, Ohio; Fort Wayne (Ind.) College of Medicine, 1889; aged 61; died, May 7, from valvular heart disease.

Cary Hamilton Wilkinson, Galveston, Texas; Jefferson Medical College, 1869; aged 75; died, February 3, from uremia.

William M. Kerr, Savannah, Mo.; Miami Medical College, Cincinnati, 1868; aged 80; a veteran of the Civil War; died, May 4.

Archimedes Rose, Vernal, Utah; Jefferson Medical College, 1879; aged 64; died, April 12, from valvular heart disease.

Hampton Pinckney Whatley, Mineral Wells, Texas; Barnes Medical College, St. Louis, 1904; aged 48; died, April 22.

David C. Fouts, Conrad, Mont. (license, Indiana 1900); aged 75; formerly of New Salisbury, Ind.; died, April 12.

Carl Elias Roser, Lansing, Mich.; University of Michigan, Ann Arbor, 1920; died, April 27, from pneumonia.

Henry Taylor Jones, Almyra, Ark.; Long Island College Hospital, Brooklyn, 1878; aged 71; died, May 2.

Harvey Bacharach, San Diego, Calif.; Illinois Medical College, Chicago, 1899; aged 54; died, May 3.

Malcolm G. Violet, Waterford, Wis.; Hahnemann Medical College, Chicago, 1886; died, February 27.

William G. Hepworth, Steveston, B. C.; McGill University, Montreal, 1894; aged 52; died recently.

George H. Scott, Long Beach, Calif.; Jefferson Medical College, 1857; aged 90; died, May 9.

Shelby Lay, Everton, Ark.; University of Arkansas, Little Rock, 1898; aged 68; died, April 23.

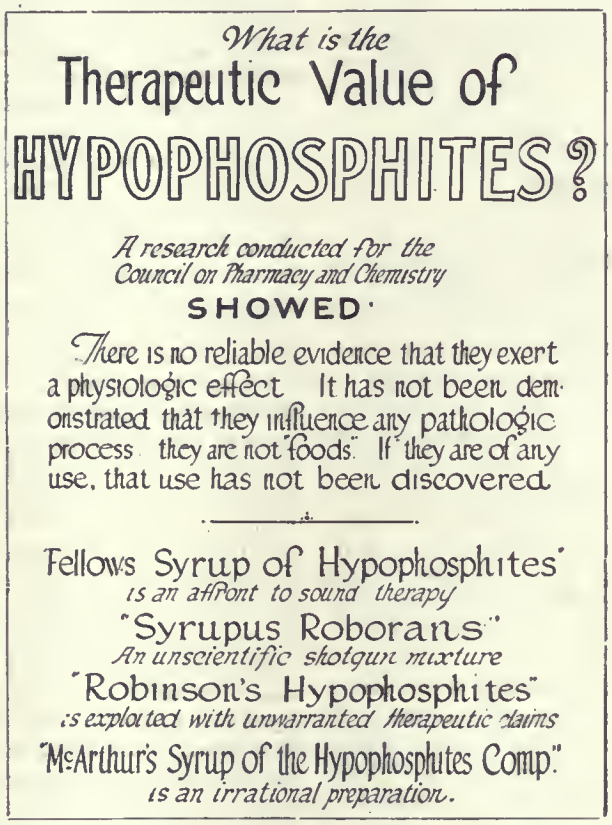
The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

MORE MISBRANDED NOSTRUMS

Sealeaf Emulsion.—A shipment of this preparation, which the label described as "A Chocolate Cod Liver Oil," was made by the Sealeaf Emulsion Co., New York City, in September, 1917, in violation of the federal Food and Drugs Act. The Bureau of Chemistry analyzed the product and reported that it consisted essentially of cod liver oil with malt extract, chocolate, alcohol, aromatics and water. It was falsely and fraudulently represented as a cure for pulmonary diseases, coughs, colds and general debility; as a blood purifier and as a protection against lung trouble, rheumatism, weak kidneys, and all organic diseases; as a cure for asthma, bronchitis, and catarrhal affections and as a preventive and remedy for diabetes, malaria, gastritis, etc. In December, 1918, the company pleaded guilty and was fined $50.—[*Notice of Judgment No. 6851; issued May 4, 1920.*]

Green Mountain Herb Tea, Sabine's Indian Vegetable Tea and Sabine's Indian Vegetable Cough Balsam.—Herman C. Lemke and Mary Sabine did business in Milwaukee, Wis., under the trade name A. J. Lemke Medicine Co. In September, 1917, this concern shipped quantities of "Green Mountain Herb Tea," "Sabine's Indian Vegetable Tea" and "Sabine's Indian Vegetable Cough Balsam." The Bureau of Chemistry analyzed these preparations and reported that the "Green Mountain Herb Tea" and the "Indian Vegetable Tea" consisted essentially of senna, fennel, elder flowers, anise, triticum, sassafras, American saffron, coriander, licorice root, butternut bark, buckthorn and Epsom salt. The "Indian Vegetable Cough Balsam" was found by the same chemists to consist essentially of alcohol, chloroform, tar, resins, sugar and traces of alkaloids, the whole flavored with aromatics. "Green Mountain Herb Tea" was falsely and fraudulently represented as a cure for indigestion, liver complaint, kidney complaint and diseases to which women and children are subject. It was also alleged to be a blood purifier, to prevent malarial disorders, to make new rich red blood and to strengthen and invigorate. "Indian Vegetable Tea" was falsely and fraudulently represented as a cure for sick and nervous headaches and indigestion, all scaly eruptions of the skin, pimples, scrofula, salt rheum, tetter, and the different diseases of delicate females and young children, as well as being good for some other things. The "Indian Vegetable Cough Balsam" was falsely and fraudulently represented as a cure for incipient consumption, whooping cough, all throat and lung complaints, bronchitis, coughs, colds, hoarseness, etc. In February, 1919, Herman C. Lemke pleaded guilty and was fined $300. A *nolle prosequi* was entered as to Mary Sabine.—[*Notice of Judgment No. 6857; issued May 5, 1920.*]



This is a greatly reduced reproduction of one of numerous educational posters shown at the New Orleans meeting in the exhibit of the Council on Pharmacy and Chemistry. The hypophosphites were introduced into medicine in '58 by Churchill, who advanced the theory, long since discarded, that the so-called tuberculous diathesis was due to a phosphorus deficiency. It is now known that little phosphorus, if any, is assimilated from hypophosphites—far less than from phosphorus compounds of ordinary food. Due to the power of advertising, many physicians still prescribe hypophosphite combination, although there is neither scientific basis, nor clinical evidence to warrant such prescribing.

Bovinina.—The Bovinine Co., New York City, shipped in July, 1917, to Porto Rico, a quantity of "Bovinina" that was misbranded. The Bureau of Chemistry reported that analyses showed that the product was apparently a meat extract. It was falsely and fraudulently represented as a cure for anemia, nervous prostration, neuralgia, asthma, alcoholism, heart disease, diseases of children, St. Vitus' dance, catarrh of the bladder, menstrual disorders, diabetes, chronic gastritis, consumption and a few other things. It was further declared misbranded because the label did not declare the quantity or proportions of the alcohol it contained. In December, 1918, the Bovinine Co. pleaded guilty and was fined $50.—[*Notice of Judgment No. 6854; issued May 4, 1920.*]

Fruit-a-Tives.—In October, 1918, the United States attorney for the District of Massachusetts, acting on a report of the Secretary of Agriculture, filed a libel of information asking for the seizure and condemnation of 84 dozen packages of Fruit-a-tives that had been shipped by Fruita-tives Limited, Ogdensburg, N. Y. The Bureau of Chemistry reported that analysis of a sample showed that it contained essentially extracts of aloes, nux vomica (strychnin) and cinchona bark (quinin). The nostrum was declared misbranded because the label and cartons conveyed the impression that the laxative properties of Fruit-a-tives were due to the presence of fruit or fruit extracts when in fact the laxative properties were due to aloes and nux vomica. Furthermore, the preparation was falsely and fraudulently represented as a remedy, treatment or cure for indigestion, kidney irritation, skin diseases, headaches, backaches, sleeplessness, pelvic pains, nervous depression, catarrh, etc. In November, 1919, the claimant, having filed an answer and a sufficient bond for the release of the product, judgment of condemnation and forfeiture was entered and the product was delivered to the claimant.—[*Notice of Judgment No. 6884; issued May 4, 1920.*]

Anticalculina Ebrey.—This preparation was being sold in July, 1917, in Porto Rico by the Ebrey Chemical Works of Humacao, Porto Rico. The Bureau of Chemistry reported that analysis showed the preparation to consist essentially of alcohol (28.8 per cent. by volume) colchicin, ammonium salts, vegetable extractives and water. The preparation was falsely and fraudulently represented as having the power of dissolving calculi, both renal and biliary, and to be a cure for diseases of the liver, kidneys and bladder, Bright's disease, diabetes, rheumatism, jaundice, dropsy and other conditions. It was further declared misbranded because the

amount of alcohol present was not correctly stated on the label and it was falsely branded as to the country in which it was manufactured, being produced in Porto Rico but labeled as coming from the United States. The Ebrey Chemical Works in March, 1919, entered a plea of *nolo contendere* and was fined $50 and costs.—[*Notice of Judgment No. 6900; issued May 4, 1920.*]

McDowell Ginseng Bitters.—Douglas E. McDowell, who traded as the McDowell Ginseng Garden, Joplin, Mo., shipped in November, 1917, a quantity of "McDowell Ginseng Bitters." Analysis of a sample by the Bureau of Chemistry showed that the product was a slightly acid solution of plant extract containing small quantities of glycerin and a zinc salt. The preparation was falsely and fraudulently represented as an effective cure for all stomach troubles except cancer; for all intestinal disorders, constipation, cholera infantum, acute dysentery, congestion of the liver, all female disorders and also as a general sexual tonic for men and women. In June, 1919, McDowell pleaded guilty and was fined $20 and costs.—[*Notice of Judgment No. 6897; issued May 4, 1920.*]

Correspondence

LUNCHEON GLIMPSES OF SIR WILLIAM OSLER DURING THE WORLD WAR

To the Editor:—It was my good fortune to come in rather close contact with Sir William Osler in 1915 during the World War. He was consultant to one of the hospitals in South Devonshire, England, where I was working, and during his visits to this section, which would sometimes last a week, he would have luncheon with us every day after his ward rounds. These luncheons were a delight, as Dr. Osler's conversation was always sparkling and brilliant and full of humor. It became my custom to jot down in my diary much of what he said. In picking it up the other evening I found his remarks highly entertaining, and it occurred to me that perhaps the readers of The Journal would find them equally so.

Dr. Osler returned after a month's absence. As he made his visit through the hospitals he generated everywhere a spirit of warm friendship. He shook hands with all the physicians and nurses as he came to them, not overlooking the probationers. To those across the ward he waved a friendly greeting. One of the nurses asked him to let her take his photograph, and he grasped the arms of two of the physicians, saying: "Well, but I must have the boys with me." A few moments afterward the nurse, watching her opportunity, snapped him by himself. When he heard the click of the camera he looked up in surprise and exclaimed, smiling: "Oh! you thief."

As he met the secretary of the hospital, a very quiet and demure English woman, he asked her if she were being treated as well as she deserved. She blushed and replied that she thought she was. Whereupon Sir William added: "Well, if you are not, just let me know and I shall see that your treatment reaches that standard."

I showed him eight patients with gunshot wounds of the chest and he examined them carefully and dictated a note on each and then remarked to me: "Turn them over to Dr. Rest and Father Time, and with the assistance of the nurses and the culinary department they will soon come around."

He became very much interested in an aneurysmal varix of the popliteal which gave a pistol shot sound in both femoral arteries. When we went to lunch he soon had himself surrounded by every book in our library which contained any matter on aneurysms.

All of us were waiting in the drawing room for lunch. Dr. Osler was sitting on the corner of a table clicking his heels together with the buoyancy of a schoolboy, when the lunch bell sounded. But no one moved for a moment, and then Dr. Osler quickly remarked to Lady Osler and Mrs. Herbert Hoover: "Why, these boys get up at 6 o'clock (he must have surmised that we got up at 8 o'clock!) and I know they are hungry. Let's go in to lunch."

With us this day was a professor of sociology of a Western university and his wife, who were spending a year abroad studying social conditions. The Carnegie fund for university professors was mentioned. Dr. Osler said: "It is a splendid thing and in many instances a life saver to the professors' wives. They (the wives) have a most trying profession," he added, "looking after us, for the best of us are a poor lot—simply treading on the fame of our predecessors, throwing dust in the students' eyes, but fortunately some of them find us out." One lady replied, "Why, Dr. Osler, I think you deserve all you receive. I have heard of Dr. Osler's book on medicine for so many years that I expected to meet an old man." Dr. Osler laughed and said: "Oh, that was my father. He was a fine old man!"

Dr. Osler then continued: "That reminds me of a time when two other doctors and I were sent on a committee down on the eastern shore of Maryland to investigate a matter. When we reached the small town where we were going, I was introduced to the doctor of the community, a splendid type of the old school, and as he gave my hand a cordial shake, he asked hesitatingly showing surprise that I did not have silver locks: 'Well, are you the Dr. Osler of Baltimore who has written that great book on medicine?' As quick as a flash I replied, 'Oh my, no, that was my father! 'Well, I thought so,' he added; 'Now, you give the old man my regards and tell him that I certainly like the way he presented the subject of infections diseases, especially pneumonia and malaria.' 'I shall surely do that,' I said, 'and I know father will be very gratified.' As we remained here several days we thought we would have to tell the old doctor the truth, but we didn't.

"One day on this same trip, we had just finished lunch and were in the office of the hotel, when some one rushed in and asked very excitedly if Dr. Osler were there and if he would come down to the shore, for a lady had fallen off the pier and she might be drowning. I immediately said that I did not know much about resuscitating drowned people, that was out of my line, but that one of the doctors with me was the Hopkins specialist in this branch. This doctor was hurried to the scene and the fat woman who had ventured out too far on the pier and had slipped into the water was soon quite restored. The Baltimore papers gave an account of the incident the next morning, declaring that the woman's life was saved because of the prompt action of this doctor, a specialist in resuscitating drowning people, who happened to be near the scene. The fat woman has never forgotten the doctor's heroic deed and always sends him on her birthday a grateful letter accompanied by a personal photograph. By this time he surely has a sufficiently large collection to start a photographic gallery."

During the meal something was mentioned about the English not eating hot bread, and Dr. Osler replied: "That is the reason most doctors in England are poor. Why, I used to make my living in Baltimore," he continued, "from the people who eat hot bread, just as the doctors in Boston make their living from people who eat pie. One time I had my secretary, a very intelligent woman and a hot-bread eater, of course, compile the histories of the patients who had come to my office for one year, and you would be surprised at the large percentage in whom hot bread was the cause of their trouble."

Then, just to make a deeper impression on his hearers and with a twinkle in his eye, he said, "I believe it came to 68.5 per cent."

The professor of sociology, a very able but decidedly underdeveloped and undernourished man, said he had been to see five specialists on account of stomach trouble. (I afterward learned that all five of the specialists had told him that his trouble was neurasthenia.) When the professor left, Dr. Osler remarked: "That man is a very smart fellow; but it was too bad that he couldn't have chosen his parents, for he has too much brain for his body."

Coming out from lunch we sat around smoking, and some one mentioned what the Rockefeller relief fund for the Belgians had accomplished. Dr. Osler remarked that it was rather peculiar how Mr. Rockefeller first became interested in Johns Hopkins. He said: "At dinner one evening in Baltimore, Mr. Gilman, president of Johns Hopkins, and Mr. Gates, Mr. Rockefeller's right hand man, were sitting side by side, and Mr. Gates remarked that not long ago he picked up, by chance, a book on medicine by a man named Osler, and, looking through it, he became so interested in it that he purchased a copy and enjoyed intensely reading the section on infectious diseases. Not long afterward he told Mr. Rockefeller how engrossed he had become in this book and that he wished to present him with a copy, which he did. Soon afterward, Mr. Rockefeller told Mr. Gates that he was surprised to know that medicine was such a wonderfully progressive science and to learn what good work this man Osler was doing in Baltimore. Mr. Gilman was naturally much interested in Mr. Gates' story, and when he had finished he said: 'Now, Mr. Gates, if you would sit down tomorrow and write Dr. Osler what you have told me, I am sure he would feel very gratified.' Accordingly, in a few days I received a letter from Mr. Gates to the effect of the foregoing. After reading it, I handed it to Mrs. Osler, saying: 'Please put this letter in the safe. There may come a time when it will prove of service.'"

Dr. Osler went on to say: "A few years later when the Baltimore fire occurred and subjected the Hopkins Medical School to such a loss, I asked Mrs. Osler to look up the letter from Rockefeller's man. The letter was readily found and I wrote immediately to Mr. Gates, saying: 'You are doubtless aware of the awful fire which has visited Baltimore and of the loss which Hopkins has sustained. Several years ago you wrote me a very interesting letter, and it just occurred to me that probably you could interest Mr. Rockefeller in considering our unfortunate position at this time.'

"A few days later I received a telegram saying: 'Our Mr. Murphy will be with you tomorrow.' And 'tomorrow' 'our Mr. Murphy' came and spent several days in making an accurate estimate of the Hopkins loss. In the evening we had him at the Maryland Club and showed him that we were pretty good fellows!

"After Mr. Murphy's departure, several weeks expired. They seemed like months. We heard nothing, and our hopes had waned considerably, when I received a letter from John D., Jr., saying: 'My father has carefully considered your losses, which total $430,000.67, and he wishes to know whether you would prefer to have a check or securities for the amount of $500,000.' I immediately took my letter of good news around to the treasurer, and Mr. Rockefeller was informed that we would be pleased to receive a check for the $500,000."

It was misting and cool, one day. Several of us were standing around the fire-place waiting for the lunch bell to sound. Just then Dr. Osler came in, bareheaded and without an overcoat. Lady Osler looked at him and exclaimed in astonishment: "Why, Sir William, what do you mean by running around here in the rain, bareheaded and without an overcoat?" Sir William, who was just getting over a severe cold, evidently could find no plausible explanation for his carelessness, and replied, with a smile: "Well—ah—well, what's a little rain!" Mrs. Osler smilingly said: "Oh, you are getting quite smart. I think it is time I was taking you back this afternoon to Oxford, although I believe you would really rather stay here." Dr. Osler acquiesced: "After I have been around those antiques at Oxford for a while I don't know what I should do now and then unless I came down here with the boys."

EDGAR L. GILCREEST, M.D., San Francisco.
University of California.

"THE IMMEDIATE STERILIZATION AND CLOSURE OF CHRONIC INFECTED WOUNDS"

To the Editor:—In his article on the use of zinc chlorid in the sterilization of chronic infected wounds (THE JOURNAL, May 8, 1920, p. 1301), Dr. Babcock has treated altogether too briefly the danger in the use of this method, and has not sufficiently emphasized the caustic properties of a saturated solution of zinc chlorid on the walls of blood vessels. It is a powerful caustic reagent, capable of deep penetration, producing an eschar; and if brought in contact with a large artery or vein, as the femoral vessels, may cause a sudden profuse secondary hemorrhage which can be controlled only by ligation. This fact was repeatedly noted among the cases of chronic osteomyelitis of the femur in which operation by this method was performed at Fort McPherson, particularly when the solution was injected under pressure with a syringe.

In August, 1919, this method of introducing zinc chlorid throughout the fistulous tract was practically abandoned for this very reason. I believe it is a mistake to recommend the method to one who does not realize the danger, without making due emphasis on what one may expect. As has been borne out by experience, the patient after operation must be kept under most careful observation even as long as ten days, since instances of severe hemorrhage have occurred many days after operation, attributed by the pathologist to an erosion of the wall of a large vessel due to zinc chlorid.

Another point to be borne in mind is the toxicity of zinc chlorid, as a fraction of a drop injected into the ear vein of a rabbit has resulted in instant death to the animal.

It has occurred to me to write this letter because of the fact that shortly after the publication of this article I saw a case of a chronic osteomyelitis of the head and neck of the femur, and the attending surgeon proposed the injection of zinc chlorid into the sinus according to the method described by Dr. Babcock. The sinus was in the femoral region in very close proximity to the femoral vessels just below Poupart's ligament, and the proposed injection of zinc chlorid under pressure into this sinus would be attended with grave danger of a severe hemorrhage.

CLARENCE H. HYMAN, M.D., Cleveland.

"GAS CYSTS OF THE ABDOMEN"

To the Editor:—Apropos of an editorial entitled "Gas Cysts of the Abdomen" (THE JOURNAL, May 15, 1920, p. 1404), I reported such a case in THE JOURNAL, Dec. 19, 1919, under the title of "Emphysema of the Cecum." This case also was overlooked by Sloan (*Surg., Gynec. & Obst.* **30**:389 [April] 1920) who is referred to in your editorial. His case appears to be the fourth reported in the United States. The first was

by Finney (The Journal, Oct. 17, 1908, p. 1291), said to be the nineteenth in the literature. The second was by Tunure, *Ann. Surg.* **57**:811, 1913, the third by myself and the fourth by Sloan, with excellent remarks on pathology by Karsner. The title, "Diffuse Emphysema of the Intestinal Wall," which is used by Nitch and Shattuck (Proc. Royal Soc., Pathological Section, February, 1920), seems best to describe the condition in all its phases.

E. D. Twyman, M.D., Kansas City, Mo.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

RECKLINGHAUSEN'S DISEASE WITH SUPRARENAL INSUFFICIENCY

To the Editor:—In The Journal, May 22, 1920, is an abstract of an article on the treatment of Recklinghausen's disease with suprarenal extract by Chauffard and Brodin. Would it be possible to inform me how this treatment was carried out, whether 1:1,000 epinephrin was used, and if so whether by mouth or intravenously. I have a case diagnosed as neurofibromatosis in my service and would like to try the suprarenal treatment if I knew more about it.

Arthur J. Attridge, M.D., Providence, R. I.

Answer.—The only description of the treatment is that "suprarenal opotherapy was given for a few days in the form of suprarenal tablets (*comprimés surrénaux*). The general condition improved, the blood pressure rose from 15 to 17 (Pachon) and kept at this level on suppression of the treatment." The assumption of suprarenal insufficiency was based on the diffuse bronzing (*mélanodermie*); the symmetrical pigmentary patches; the rather symmetrical arrangement of the forty cutaneous or subcutaneous fibromas; the low blood pressure in the apparently vigorous man of 32, and the presence of a large glandular process in the neck, of four years' standing, apparently a tuberculous adenopathy. Chauffard reported in 1896 a case of pigmentary fibromatosis in which both suprarenals were the seat of malignant disease, and Bourcy has since reported a similar case. Oddo and Jullien noted pigmentation of the mucous membranes in three cases of Recklinghausen's disease, and in three cases on record, as in the case here reported, suprarenal treatment was followed by immediate and notable improvement (Pic and Jullien). The writers conclude with the remark that "the fibromatous process may invade the suprarenals, and thus is explained part at least of the symptomatology of Recklinghausen's disease."

ACETYLSALICYLIC ACID AND "ASPIRIN BAYER"

To the Editor:—Is the acid acetylsalicylic, advertised by some manufacturers at cheap prices, identical with aspirin, and can it be relied on as an efficient substitute?

C. E. W.

Answer.—The following products have been tested and found satisfactory by the Laboratory of the Council on Pharmacy and Chemistry of the American Medical Association, and the products are described in New and Nonofficial Remedies:

"Acetylsalicylic Acid, Heyden," Heyden Chemical Works.
"Acetylsalicylic Acid, M. C. W.," Mallinckrodt Chemical Works.
"Acetylsalicylic Acid, Merck," Merck & Co.
"Acetylsalicylic Acid (Aspirin) Monsanto," Monsanto Chemical Works.
"Acetylsalicylic Acid-P. W. R.," Powers-Weightman-Rosengarten Company.
"Acetylsalicylic Acid-Squibb," Squibb and Sons.
"Aspirin-L and F." Lehn and Fink.

An examination made in the laboratory two years ago showed that the market supply of acetylsalicylic acid at that time was of equal quality with the German-made "Aspirin Bayer." The inquirer will be interested to learn that the "Aspirin Bayer" now made in America, and exploited with misleading claims in advertising issued by "The Bayer Company," is actually controlled by the Sterling Products Company, which sells "patent medicines," such as cascarets, danderine, etc.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

Alabama: Montgomery, July 13. Chairman, Dr. S. W. Welch, Montgomery.
Arizona: Phoenix, July 6-7. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.
California: San Francisco, June 28-July 1. Sec., Dr. Chas. B. Pinkham, 135 Stockton St., San Francisco.
Colorado: Denver, July 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.
Connecticut: Hartford, July 13-14. Sec., Regular Board, Dr. Robert L. Rowley, 49 Pearl St., Hartford.
Connecticut: New Haven, July 13. Sec. Eclectic Board, Dr. James Edwin Hair, 730 State St., Bridgeport. Sec. Homeo. Board, Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.
Delaware: Wilmington, June 15-17. Pres. Medical Council, Dr. H. W. Briggs, 1026 Jackson St., Wilmington.
District of Columbia: Washington, July 13-15. Sec., Dr. Edgar P. Copeland, The Rockingham, Washington.
Florida: Eclectic Board, Jacksonville, June 18-19. Sec., Dr. G. A. Munch, 1306 Franklin St., Tampa.
Florida: Regular Board, Jacksonville, June 14-15. Sec., Dr. Wm. M. Rowlett, Citizens Bank Bldg., Tampa.
Illinois: Chicago, June 14-17. Director, Mr. Francis W. Shepardson, Springfield.
Indiana: Indianapolis, July 13-15. Sec., Dr. Wm. T. Gott, Crawfordsville.
Iowa: Iowa City, June 16-18. Sec., Dr. Guilford H. Sumner, Capitol Bldg., Des Moines.
Kansas: Topeka, June 15-16. Sec., Dr. H. A. Dykes, Lebanon.
Maine: Portland, July 6-7. Sec., Dr. Frank W. Searle, 140 Pine St., Portland.
Maryland: Baltimore, June 15. Sec., Dr. J. McP. Scott, 137 W. Washington St., Hagerstown.
Missouri: St. Louis, June 14-16. Sec., Dr. Geo. H. Jones, State House, Jefferson City.
New Jersey: Trenton, June 15-16. Sec., Dr. Alexander MacAlister, State House, Trenton.
New Mexico: Santa Fe, July 12-13. Sec., Dr. R. E. McBride, Las Cruces.
North Carolina: Raleigh, June 21. Sec., Dr. H. A. Royster, 423 Fayetteville St., Raleigh.
North Dakota: Grand Forks, July 6-9. Sec., Dr. Geo. M. Williamson, 860 Belmont Ave., Grand Forks.
Oklahoma: Oklahoma City, July 13-14. Sec., Dr. James M. Byrum, Mammoth Bldg., Shawnee.
Oregon: Portland, July 6. Sec., Dr. Urling C. Coe, 1208 Stevens Bldg., Portland.
Pennsylvania: Philadelphia and Pittsburgh, July 6-10. Sec., Dr. Thos. E. Finnegan, State Capitol, Harrisburg.
Rhode Island: Providence, July 1-2. Sec., Dr. Byron U. Richards, State House, Providence.
South Carolina: Columbia, June 22. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.
South Dakota: Deadwood, July 13. Sec., Dr. Park B. Jenkins, Wauhay.
Texas: Galveston, June 22-24. Sec., Dr. Thos. J. Crowe, Trust Bldg., Dallas.
Utah: Salt Lake City, July 5-6. Sec., Dr. G. F. Harding, 405 Templeton Bldg., Salt Lake City.
Vermont: Burlington, June 29-July 1. Sec., Dr. W. Scott Nay, Underhill.
Virginia: Richmond, June 22-25. Sec., Dr. J. W. Preston, McBain Bldg., Roanoke.
Washington: Seattle, July 6-8. Sec., Dr. Wm. M. O'Shea, 305 Old National Bank Bldg., Spokane.
West Virginia: Charleston, July 13. Sec., Dr. S. L. Jepson, Masonic Bldg., Charleston.
Wisconsin: Milwaukee, June 29-July 1. Sec., Dr. John M. Dodd, 220 E. Second St., Ashland.

Utah January and April Examinations

Dr. G. F. Harding, secretary of the Utah State Board of Medical Examiners, reports the written examination held at Salt Lake City, Jan. 5-6, 1920. The examination covered 19 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 2 candidates examined, 1 passed and 1 failed. Three candidates were licensed by reciprocity. The following colleges were represented:

College	Year Grad.	Number Licensed
PASSED		
John A. Creighton Medical College	(1919)	1
FAILED		
St. Louis College of Phys. and Surgeons	(1918)	1

College	Year Grad.	Reciprocity with
LICENSED BY RECIPROCITY		
Northwestern University	(1916)	Illinois
Columbia University	(1918)	New York
Jefferson Medical College	(1873)	Colorado

Dr. Harding also reports the written examination held at Salt Lake City, April 5-6, 1920. Two candidates were examined and passed. Six candidates were licensed by reciprocity. The following colleges were represented:

College	Year Grad.	Number Licensed
PASSED		
University of Illinois	(1920)	1
Jefferson Medical College	(1919)	1

College	Year Grad.	Reciprocity with
LICENSED BY RECIPROCITY		
Rush Medical College	(1919), (1920)	Illinois
Kentucky School of Medicine	(1906)	Nevada
Tulane University	(1904)	Texas
Columbia University	(1918)	New York
University of Pennsylvania	(1912)	Penna.

Connecticut March Examination

Dr. Edwin C. M. Hall, secretary, Connecticut Homeopathic Medical Examining Board, reports the written examination, held at New Haven, March 9, 1920. The examination covered 7 subjects and included 70 questions. An average of 75 per cent. was required to pass. Two candidates were examined and passed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
University of Minnesota Coll. of Homeo. Med.	(1905)	86
New York Homeo. Med. Coll. and Flower Hospital	(1919)	92

Maine March Examination

Dr. Frank W. Searle, secretary of the Maine State Board of Registration in Medicine, reports the written examination held at Portland, March 9-10, 1920. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the three candidates examined, 2 passed and 1 failed. One candidate was licensed by reciprocity. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Harvard University	(1918)	83
McGill University	(1918)	85
FAILED		
Montreal School of Medicine and Surgery	*(1919)	77

College	Year Grad.	Reciprocity with
LICENSED BY RECIPROCITY		
Woman's Medical College, New York City	(1890)	New Hamp.

*Fell below 60 per cent. in anatomy.

Book Notices

SYPHILIS: A TREATISE ON ETIOLOGY, PATHOLOGY, DIAGNOSIS, PROGNOSIS, PROPHYLAXIS AND TREATMENT. By Henry H. Hazen, A.B., M.D., Professor of Dermatology and Syphilology, Medical Department of Georgetown University. Cloth. Price, $6. Pp. 647, with 160 illustrations. St. Louis: C. V. Moshy Company, 1919.

The need of "a small book covering the whole field of syphilis in an authoritative way" is stated in the preface. The author and his collaborators are to be congratulated on their success in meeting this need. Dr. Reasoner writes on infection and immunity, Dr. H. A. Fowler on the male genito-urinary tract, Dr. John Dunlop on the bones, joints, muscles, tendons and bursae, Dr. John Lind on the central nervous system, with contributions by Dr. John Hough, Dr. Virginius Dabney on the eye, Dr. L. H. Greene on the ear, Dr. Craig on the Wassermann reaction, Dr. Schamberg on the toxicology and therapeutic testing of arsphenamin, and Dr. Walter van Sweringen on roentgenography in the diagnosis of syphilis. The author also acknowledges his indebtedness to Dr. Edward Hiram Reede in the chapter on affections of the endocrine glands. The material is necessarily presented in brief form. No space is wasted, however, and the excellent bibliography supplies those who would study any part of the subject more extensively. Some important subjects have been given scant attention. Secondary papules on the palms and soles, for intance, certainly deserve more than passing notice. Criteria of cure and differentiation between the various spirochetes might well have been accorded more space. The index, too, could well be made more extensive. Differential diagnosis on the whole is well presented, more thoroughly than in many of the standard books. This makes it a valuable work for the general practitioner. Especially worthy of mention is the discussion of prognosis, treated by Dr. Hazen with common sense and moderation, avoiding the extremes of pessimism and of optimism. The discussion by Craig of the interpretation of the results of the Wassermann reaction is also to be commended as a sensible presentation of facts which, if applied to the work of the laboratory and the estimation of its value by the clinician, would clear up a great deal of the misunderstanding and false interpretation of that important test. The book presents a great mass of invaluable information in a readable form. It is well printed on good paper, and the illustrations are good.

MANUAL OF OBSTETRICS. By Edward P. Davis, A.M., M.D., F.A.C.S., Professor of Obstetrics in the Jefferson Medical College, Philadelphia. Second edition. Cloth. Price, $3 net. Pp. 478, with 163 illustrations. Philadelphia: W. B. Saunders Company, 1919.

This is a concise manual of modern obstetrics. In it Davis has covered the subject in a thorough and logical manner, and has brought the subject matter of this second edition well up to date. It can be recommended as a handbook for students and as a reference book for nurses who specialize in obstetric nursing. The print is large and easy to read, the illustrations numerous and clear, and the publication carefully done. One of the few mistakes in proof-reading occurs on page 95 under the caption of the physiology of pregnancy, where Davis says: "If the patient is not well nourished during pregnancy the alkalinity of the blood increases." He doubtless means "decreases." In discussing the diagnosis of pregnancy he states that "the eyes must be noted for signs of exophthalmic goiter," thus giving the impression that the latter condition is a usual accompaniment of pregnancy, whereas it is one of the rare complications. Again, under diagnosis of pregnancy by the roentgen ray, he is vague as to just when in pregnancy the roentgen ray will show the fetal skeleton, and he fails to mention its value near term in recognizing multiple pregnancy. Occasionally a statement is found which is more confusing than helpful, such as: "The presence or absence and the degree of leukocytosis should indicate the power of the patient's resistance and the possibility of infection and suppuration." This quotation, taken from the diagnosis of broad ligament pregnancy, does not in any sense contribute to the diagnosis of the condition under discussion. For the most part, Davis' treatment is based on sound principles and good judgment; however, such advice as : (*a*) the use of from 1 to 1.5 c.c. of pituitary extract in inertia (p. 222); (*b*) the use of a sharp spoon curet for interruption of pregnancy (treatment of toxemia of pregnancy); (*c*) the application of forceps to the breech (forceps), and (*d*) instructing nurses to give intracervical douches in postpartum hemorrhage, is risky if not actually dangerous advice. Still one more statement requires revision, which appears in the description of the technic of the Braxton Hicks version: "The operator observes antiseptic precautions; and if he is accustomed to work with rubber gloves he should use them." There is no *if* in the obstetrics of today!

ORTHOPEDIC AND RECONSTRUCTION SURGERY, INDUSTRIAL AND CIVILIAN. By Fred H. Albee, A.B., M.D., F.A.C.S., Professor and Director of Department of Orthopedic Surgery, New York Post-Graduate Medical School. Cloth. Price, $11 net. Pp. 1138, with 804 illustrations. Philadelphia: W. B. Saunders Company, 1919.

This book is extensive in its scope, including the ordinary field of orthopedic surgery, with military and much of general surgery of the extremities as a text. It lacks balance in that topics are unevenly discussed. Those in which the author is especially interested and previously contributed, as tuberculosis, are generally given in great detail with much argument in favor of his methods, while others, as osteomyelitis, are incomplete. It is essentially a treatise on therapy, and a commendable feature is that operative methods receive much more attention than is given in other books on orthopedic surgery. The accounts of the author's extensive experience, especially in the field of bone transplanation, are of great importance. Aside from bone repair, the pathology is not well given. Too much space is devoted to arguments in favor of the author's methods and in establishing his priority for various operative procedures. A valuable bibliography is attached to each chapter.

Medicolegal

Liability for False Representations as to Disease

(Manweiler et al. v. Truman (Ind.), 125 N. E. R. 412)

The Appellate Court of Indiana, Division No. 2, affirms a judgment for $100 damages in favor of plaintiff Truman in this action brought to recover for alleged false representations made to her by the defendants with regard to the nature of the disease with which one of them was suffering. The court says that the plaintiff alleged in her complaint that the defendants came to her home and represented to her that defendant Manweiler was sick with lung fever, and that they had no place where he could be taken care of, and requested her to take him into her house and care for him until he was well enough to be moved; that he was so sick that he could not be taken to a hospital; that he was not ill with a contagious disease; that she told them that she could not take him or care for him if he was sick with a contagious disease; that she relied on the defendants' statement that he was not sick with a contagious disease, and took him into her house; that a short time thereafter she learned that he was so ill with diphtheria that he could not be moved; and that in order to save his life she nursed and cared for him. It was also alleged that when the defendants made these representations to the plaintiff they knew of Manweiler's true condition, and by reason of their false statements caused her to take him into her home. The defendants contended that there was no evidence of intent or design on their part to perpetrate a fraud on the plaintiff; that whatever statements were made by them were made in good faith and based on the statement of a reputable physician. But the question as to whether the defendants falsely represented that Manweiler was sick with lung fever when they knew he was suffering with diphtheria, or whether they acted in good faith with the plaintiff was a question of fact for the jury, and the latter found specifically that the defendants, at the time they took Manweiler to the home of the plaintiff, knew he was suffering with a contagious disease, and that they then knowingly perpetrated a fraud on her. This court cannot set its judgment on the weight of the evidence against that of the jury and the trial judge, and say that there was reversible error on the ground that the verdict was not sustained by sufficient evidence.

Insufficient Evidence of Malpractice—Improper Reference to Insurance Company

(Sherwood v. Babcock (Mich.), 175 N. W. R. 470)

The Supreme Court of Michigan reverses a judgment for $1,000 damages that was rendered against the defendant for alleged malpractice, and orders that in its stead a judgment be entered for the defendant, notwithstanding that the verdict of the jury was against him. The court says that, in April, the defendant was called to the home of the plaintiff to treat a grandchild of the latter named Edwin Sen, who died on May 16. The case was diagnosed by the defendant as one of pneumonia, but meningitis developed, which was the immediate cause of death. Then a child of the plaintiff, named Irene, became ill, and died on May 30, the cause of her death being reported as typhoid fever. Also, two younger children were taken ill, after Irene, and their illness was diagnosed as typhoid fever, for which they were treated, and from which they recovered, although soon after the death of Irene the defendant was discharged, and another physician was called to take charge of them. The defendant consulted with another physician twice, and with two other physicians once, during the attendance on the family. Three claims of negligence were alleged: (1) Failure of the defendant to segregate the other children from Edwin Sen when he was taken ill; (2) failure to report the illness of Edwin Sen to the health board; (3) and not treating the children for cerebrospinal meningitis. When the other physician was called to take charge of the younger children they were canvalescing. The defendant complained that, in spite of the fact that there was no medical testimony supporting the allegations in the plaintiff's declaration, and that all the medical testimony was in direct contradiction of those claims, the case was submitted to the jury and the verdict rendered and judgment entered for the plaintiff. The trial judge seemed to have submitted the case to the jury on the theory that it had a right to gather from the symptoms given by the plaintiff and his wife, which they observed during the illness of the children, coupled with the statement of the second physician that he treated the patients as though they were suffering from meningeal infection, whether or not Edwin Sen had cerebrospinal meningitis, and whether or not the other children were suffering from the same disease. But, from a careful reading of the record, the supreme court is impressed with the fact that the verdict and judgment entered were contrary to the great weight of the evidence in the case. It is impressed with the contention that a judgment should have been entered in favor of the defendant notwithstanding the verdict of the jury, and that error was committed in overruling a motion therefor. A careful reading of the testimony of the second physician showed that it fell far short of furnishing evidence that any of the children had cerebrospinal meningitis. He used the words "possibility," "suspect" and "perhaps." The testimony was too problematic and speculative to warrant the submission of the question to the jury. It gave the jury an opportunity to speculate, and the evidence failed to make a case of malpractice.

The court is also impressed with the contention that it was prejudicial error for counsel for the plaintiff to say, in his argument of the case to the jury, "It is for you, gentlemen, to say whether Dr. Babcock or the insurance company, whose very able attorney is here today. . . ." This language was not only improper, but was reprehensible, and was used without any provocation, there not being a word of testimony in the case with reference to an insurance company.

Rules Relative to Insanity as a Defense to Crime

(Thomson v. State (Fla.), 83 So. R. 291)

The Supreme Court of Florida, in reversing a conviction of murder on the ground that the evidence raised a reasonable doubt as to the defendant's sanity at the time of the homicide, says that when the defense of insanity is relied on, the rule in force in the state of Florida is that if the evidence introduced tends to rebut the presumption of sanity on the part of the accused, and the jury entertains a reasonable doubt, after due consideration of all the evidence as to his sanity, it is their duty to acquit.

The statutory definition of murder, "the unlawful killing of a human being, when perpetrated from a premeditated design to effect the death of the person killed," includes the element of a rational agency, and it devolves on the state to show this as well as any other element of the crime. The law, however, presumes that all men are sane, and, in the absence of evidence indicating a contrary state of mind, both court and jury are justified in acting on this presumption; and when the evidence establishes the criminal act, and indicates nothing as to the mental capacity of the accused to commit the deed, a conviction is not only authorized, but should be had. If, however, there arises from the evidence coming from any quarter a reasonable doubt as to the sanity of the accused, the presumption of law is overcome, and he is entitled to an acquittal, unless the state meets and overcomes this reasonable doubt arising in his favor.

When insanity of a permanent type, or of a continuing nature, or possessed of the characteristics of an habitual or confirmed disorder of the mind, as distinguished from temporary or spasmodic mania, or disorders of mind produced by the violence of disease, is shown to have existed a short time prior to the commission of an act, it is presumed to continue up to the time of the commission of the act, unless this presumption is overcome by competent testimony.

When insanity of the defendant is a real issue in a criminal prosecution, the court should charge the jury that, if the defendant is acquitted on the ground of insanity, the jury should so state in the verdict in order that appropriate action may be taken by the court under Section 3992 of the General Statutes of 1906.

Society Proceedings

COMING MEETINGS

American Climatological and Clin. Assn., Philadelphia, June 17-19.
American Ophthalmological Society, Hot Springs, Va., June 15-16.
Canadian Medical Association, Vancouver, B. C., June 22-25.
Maine Medical Association, Augusta, June 29-30.
Montana State Medical Association, Helena, July 14-15.
Nevada State Medical Association, Lake Tahoe, June 25-26.
New Jersey Medical Society, Spring Lake, June 15-17.
North Dakota State Med. Assn., Minot, June 15-16.
Southern Minnesota Medical Assn., Fairmont, Minn., June 28-29.

AMERICAN SOCIETY FOR CLINICAL INVESTIGATION

Annual Meeting, held in Atlantic City, N. J., May 3, 1920

(Continued from page 1600)

Certain Phases of the Histamin Problem

DRS. KARL K. KOESSLER and MILTON T. HANKS, Chicago: Perfectly fresh total glands of steers were used. It was found that there is no histamin present in the hypophysis. A typical peptone shock was obtained by the injection of a histamin free peptone; hence peptone shock and histamin shock are not identical. It was found that Witte's peptone—100 gm.—contains the equivalent of 0.00335 gm. of histamin dichlorid.

Basal Metabolism from Birth to Puberty

DR. FRITZ B. TALBOT, Boston: The great interest in basal metabolism is evidenced by the increasing number of reports of the basal metabolism of pathologic conditions. In the past there has been no standard for comparison of infants and children other than the scattered observations of Rubner, Du Bois, Murlin, Howland and a few others. The basal metabolism of normal infants and children has been studied by Benedict and myself during a period of eight years, ending in June, 1919. In this series of investigations were included more than a hundred normal male children and seventy normal female children. In many cases the metabolism of the same child was obtained at different ages. Curves of the total metabolism for twenty-four hours as referred to age and weight, to the metabolism per kilogram referred to both age and weight, and to the metabolism per square meter of body surface referred to both age and weight, may be taken as standards to which may be applied observations on pathologic conditions.

Relation of Sputum Bacteria to Asthma

DR. FRANCIS M. RACKEMANN, Boston: Asthma is a syndrome that may be divided according to its cause into two groups, extrinsic and intrinsic. We are here concerned with those cases of intrinsic asthma in which a focus of bacterial infection in the bronchi is assumed to be the cause. The method of study has been to make intradermal tests with pure vaccines made from organisms isolated on blood agar plates from the patient's sputum, and to institute treatment on the basis of these tests. An early positive skin test was found in one-half hour to consist of an urticarial wheal surrounded by erythema, but late positive tests were found in twenty-four hours to resemble an inflammation. One hundred and twenty-nine organisms were isolated from thirty-nine patients. They included nonhemolytic streptococci, 60 per cent.; hemolytic streptococci, 13 per cent, and staphylococci, 8 per cent. The pneumococcus was found only three times. Twenty-five of this group of thirty-nine patients gave a positive test to one or more vaccines. There were twenty positive tests to an autogenous vaccine and fifteen positives to a heterologous vaccine. In addition to this original group, seventeen patients were tested with only heterologous vaccines, and nine reacted positively. Thus, in the whole group of fifty-six patients, thirty-four, or 67 per cent., gave a positive skin test.

Taking the two groups together, 358 individual intradermal injections were made; 19.5 per cent. of these were classed as positives, which figure includes 7.5 per cent. early positive, 7.2 per cent. late positive, and in addition 4.8 per cent. positive both early and late. With reference to the individual organisms, and considering only those tested on at least five patients, a total of 283 tests were made with thirty-two different vaccines. Fourteen of these thirty-two organisms gave no test at all, and of the four that did give more than two positives, one was a hemolytic streptococcus with three positives, and two were *Staphylococcus albus* with four each. One, a gram negative bacillus, was irritating in that ten positives were obtained in eighteen tests. Treatment with small doses of pure vaccines given at seven-day intervals was carried out in twenty-six patients with results that were in very close accord with the presence or absence of a positive skin test. Of the sixteen patients who were treated with the organism to which they gave a positive test, fourteen were treated successfully. In ten instances this treatment was with an autogenous vaccine. However, ten other patients were treated in the face of a negative test, but with no success at all. The organisms used in treatment, whether successful or unsuccessful, included representatives of each variety found, but were mostly nonhemolytic. These results indicate that the treatment of intrinsic asthma with vaccines is specific.

DISCUSSION

DR. KARL K. KOESSLER, Chicago: Several years ago Dr. Moody and I reported on the results of a bacteriologic study of the aerobic and anaerobic micro-organisms isolated from the bronchial expectoration of patients suffering from bronchial asthma. We emphasized that in the treatment of this disorder by means of bacterial autogenous vaccines, it is essential for obtaining the best therapeutic results to incorporate in the vaccine the anaerobic organisms, together with the common aerobic (streptococci, pneumococci, pneumobacilli, *Micrococcus catarrhalis,* staphylococci, etc.), for the anaerobic bacteria and cocci often show a stronger proteolytic power than the aerobic ones, an activity of fundamental bearing in the production of the bacterial type of asthma. The invasion of the bronchial structure by micro-organisms might produce bronchospasm in a variety of ways. Destruction of the protecting layer of the ciliated epithelium, with losses of substance or minute ulcer formation involving the submucosa, exposes the contracting mechanisms to thermal as well as chemical influences (comparable to similar mechanism underlying pylorospasm and angiospasm). Toxic material formed by micro-organisms in the bronchial structure itself can thus be easily absorbed. But also through the blood and lymph way, toxic substances of the type of histamin can be absorbed even from distant foci of infection, associated invariably with protein destruction, substances which produce a marked spastic contraction of the smooth muscle fiber system of the bronchial structure. We thus believe that a large number of cases of bronchial asthma are the result of amin formation and amin absorption, and belong to a group of disorders for which we might use the term "aminosis."

Further Studies on Active Immunization Against Pneumococcus Pneumonia in Monkeys

DR. RUSSELL L. CECIL, New York: Small doses of pneumococcus Type I saline vaccine, administered subcutaneously, do not confer complete immunity against a subsequent pneumococcus Type I pneumonia, although they do modify favorably the course of the disease. Three large subcutaneous injections of vaccine (20, 40 and 60 billion, respectively) given at intervals of one week cause very little reaction in the monkey, and are sufficient to prevent infection altogether. Small doses of pneumococcus vaccine will also produce an adequate immunity, if given intravenously. Small doses of living virulent sensitized pneumococci, when injected subcutaneously, may give rise to a temporary pneumococcus bacteremia, from which the monkey recovers. Monkeys vaccinated with the sensitized culture of pneumococcus failed to develop pneumonia when injected intratracheally with living virulent pneumococci. At necropsy, however, two of the monkeys in this series showed small multiple abscesses in the lungs. These experiments afford a rational basis for prophylactic vaccination against pneumonia in man. It is true

that the dose of vaccine employed in these experiments was larger than that which is usually administered to man; but on the other hand, it must be emphasized that the monkeys received five or six hundred virulent pneumococci directly into the trachea, while in the case of man, pneumonia is probably induced by a much smaller number of microorganisms.

Effect of Salicylates on Formation of Immune Bodies

DR. HOMER F. SWIFT, New York: The known action of salicylates is as an antipyretic and an analgesic in concentrations that can be safely administered. In strong concentrations it is also antiseptic; but in the concentrations in which it is present in the body, it is considered as having no antiseptic action. Whether it exerts an antibacterial action in the body in therapeutic concentrations is as yet not established. In addition to the above mentioned actions which are exerted in many diseases, in rheumatic fever it has apparently a true antiphlogistic action, as shown by the rapid recession of the various signs of acute inflammation about the affected joints, following its administration in sufficient doses, as well as by the arresting of the spread of the affection to other joints. It is evident, however, that the course of the general infection is not shortened, nor are the cardiac complications prevented by the drug. Consequently, it seemed of interest to determine the exact influence of salicylates on the development of immunity. The averages of several animals showed that the group that received salicylates had a lower antibody formation than the untreated controls. The difference was more marked in those experiments in which the antigen was given in small amounts with a correspondingly low concentration of antibodies in the entire group. The same general result was found with all three types of antibodies studied. An effort was then made to determine the mechanism of this depression in the formation of antibodies. The salicyl-treated animals showed no greater loss in weight or appetite, nor more marked depression in the condition of the salicyl-treated animals than in the controls. When the bacteria were given in the living state, the febrile response was as great in the salicyl-treated animals as in the controls. The effect of exposure of antigen to solutions of sodium salicylate in vitro and subsequent injection of the salicylated bacteria or red blood cells pointed to the depression's being due to a direct action of the salicyl on the antigen. In two series of experiments, untreated controls showed the highest antibody curve; the next highest was shown by the animals that received salicylates by mouth and antigen intravenously, and the lowest by the animals that were immunized with salicylated antigen. Marjorie Cook has lately shown that the formation of antibody is dependent on the rate of absorption of the antigen. Reasoning by analogy of effect, it is suggested that the depression of antibody formation may be due to a decreased rate of absorption of the antigen in salicyl-treated animals. It is also suggested that the antiphlogistic effect may be due to a depression of the irritative properties of the etiologic agent in rheumatic fever.

"Acute Dilatation of the Heart," So-Called, Occurring During or Following Surgical Operations; Its Mechanism and Management

DR. SAMUEL A. LEVINE, Boston: Sudden cardiac upsets were observed in nine surgical patients at the Peter Bent Brigham Hospital. The condition was called acute dilatation of the heart in some cases, and might well have been similarly diagnosed in the others had not the true nature of the disorder been discovered. "Acute dilatation of the heart" has been used as a medical waste-basket; whenever possible (as happened in all of the cases taken up here) a more definite and well understood name should be given to the condition. The upsets all occurred suddenly and unexpectedly; three while the patients were under ether anesthesia (one before the actual operation had started, one during the operation and one just after it had been completed), and the other six during surgical convalescence, from one to nine day after the operation. The attacks varied in severity from being entirely unobserved by the patient to complete collapse, with cessation of breathing, cyanosis and danger of impending death. The duration of the attacks was from several minutes to several days. How long those attacks that were deliberately arrested by medical procedures would have lasted it is difficult to tell. Electrocardiograms of six of the patients were taken during the upset, and the clinical course of the other three left no doubt as to the diagnosis. Three were found to be due to paroxysmal auricular tachycardia, four to paroxysmal auricular fibrillation, and two to paroxysmal auricular flutter. All but two were transient in nature. The three cases of paroxysmal auricular tachycardia occurred while the patients were under ether anesthesia, and in each instance the attack ended either by direct vagal pressure over the carotid artery or by ocular pressure. One of them went into collapse on the operating table, stopped breathing, the heart rate suddenly jumped to 216, and the life of the patient seemed to be in imminent danger. Left vagal pressure brought the attack suddenly to an end. The proper administration of digitalis controlled the heart's action in the cases of paroxysmal auricular fibrillation and flutter.

In reviewing these nine cases, no constant etiologic factor could be found. It seems impossible to predict what type of surgical patient will have a paroxysmal cardiac upset, and very likely some of these patients would have had similar paroxysms at some future date even if they had not been subjected to operations. Roentgen-ray studies of the size of the heart could not be made during these attacks, but others in the medical wards have had roentgenograms taken during and after similar attacks without showing any appreciable dilatation, except in a very rare instance. It is important to appreciate that "acute dilatation of the heart" is a medical diagnosis which rests on very insecure ground, and that wherever possible, careful observations of the mechanism of the heart beat should be made, in the hope of accurately describing the condition and instituting the proper treatment.

The Enzymes of Pneumococcus

DRS. O. T. AVERY and G. E. CULLEN, New York: In the study of the enzymes of pneumococcus, use has been made of the fact that pneumococci rapidly undergo solution in the presence of bile. By dissolving the organisms in bile and testing the cell-free solution on suitable substrates, enzymes are readily demonstrable. These enzymes possess the power of actively hydrolyzing peptones to simpler peptids and amino acids; of converting carbohydrates into simpler products, and of splitting esters into fatty acids. In demonstrating carbohydrate cleavage, however, bile was found to inhibit completely the hydrolysis of sucrose and starch, so that a different method of preparing the enzyme solution was necessary. For this purpose it was found that the organisms suspended in tenth molar phosphate solution of p_H 6.2 undergo disintegration quickly with the release of intracellular substances capable of actively hydrolyzing carbohydrates. By the methods described it is possible to prepare enzyme solutions which are sterile and by bacteriologic technic to maintain sterility throughout the experiment, without the use of antiseptics.

Evidence is presented that these enzymes exist preformed within the bacterial cell and are therefore of the type known as endo-enzymes. The proteolytic enzymes exhibit greatest activity in the further hydrolysis of the intermediate products of protein digestion, such as peptones. From 30 to 40 per cent. of the available peptid-nitrogen in peptone substrates is split to amino nitrogen. This fact, together with the observation that the zone of its optimal activity is p_H 7.8, indicates that this enzyme is erepsin-like in character. The curve of its activity rapidly falls with increasing acidity, until at a p_H of 4.5 complete inhibition results. The proteolytic enzyme is sensitive to heat; an exposure of ten minutes at 100 C. destroys its activity. Dissolved in ox-bile, the enzyme retains about 40 per cent. of its activity over a period of six weeks.

By similar methods the fact has been established that within the pneumococcus cell there exists a remarkably active lipase; the acid formed by its action on 2 per cent. tributyrin representing a normality of about twentieth normal butyric acid. The maximum activity of the intracellular lipase occurs at a reaction of p_H 7.8, and progressively decreases with increasing acidity of the substrate. The optimal reaction corresponds closely with that of the endopeptonase, and

both coincide with the optimum hydrogen ion concentration for growth of pneumococcus. It has been found that loss of virulence is not associated with a corresponding loss of either erepsin or lipase activity.

In germ-free filtrates of broth cultures of pneumococcus, enzymes are found free in solution only when growth has progressed to the phase in which cell disintegration begins and liberation of the intracellular substances into the culture medium occurs. During the early stages of growth of pneumococcus when, under optimal cultural conditions, organisms are multiplying at their maximum rate, and little or no cell death is occurring, enzymes cannot be detected in culture filtrates.

The inhibiting action of bile on the activity of the carbohydrates, splitting enzymes of pneumococcus is overcome by effecting cytolysis of the bacterial cells in phosphate solution at p_H 6.2. Alternate freezing and thawing of the bacterial suspension greatly facilitates rupture of the cell membrane and liberation of the intracellular substances. In this manner it has been demonstrated that there exist intracellular enzymes capable of converting sucrose into monosaccharids (invertase), of splitting starch through the dextrin to reducing sugars (amylase), and of hydrolyzing inulin (inulinase). The zone of hydrogen ion concentration in which these enzymes are active bears a striking correlation to the biologic activity of the living cell.

In addition, certain other active intracellular enzymes are present in solutions of pneumococcus bodies. These, in brief, are in the nature of bacteriolytic enzymes capable of causing complete and rapid dissolution of heat-killed bacteria.

Effect of Experimental Lesions of Branches of Bundle of His on Form of the Electrocardiogram

DRS. FRANK N. WILSON and GEORGE R. HERRMANN, St. Louis: In a dog attempt was made to cut the left branch of the bundle of His by thrusting a small tenotomy knife through the wall of the left ventricle and pressing the cutting edge against the septum. The characteristic ventricular complexes of left bundle-branch block appeared at once and were recorded. They persisted only a few minutes, however, giving place to complexes of the normal type. Right bundle-branch block was then produced by thrusting the knife through the wall of the right ventricle and pressing on the septum with the noncutting edge. Characteristic ventricular complexes appeared at once and persisted for about one and one-half hours. At the end of this time, complexes of normal type again returned. The dog was killed, the heart was opened, and drawings were made of the branches of the bundle of His and the lesions produced. From a comparison of the lesions produced with the electrocardiograms recorded, we confirmed the belief that lesions of the two chief branches of the bundle of His are accompanied by characteristic electrocardiograms. Lesions of the subdivisions of these branches did not in our experiments produce more than minor changes in the form of the electrocardiogram.

Virulence of Streptococci and Hemolysin Production.

DRS. WARFIELD T. LONGCOPE, F. A. STEVENS and J. W. S. BRADY, New York: The relation between virulence and hemolysin production has been a subject for much controversy because uniform methods have not been used by different workers. The fact that the concentration of hemolysin varies during the growth of a broth culture of streptococcus has been recognized but not applied to the estimation of the minimum hemolytic unit. To determine the point at which the concentration is greatest, hourly hemolysin tests must be made. All other factors except the invasive power of the organism must be constant. The estimation of virulence cannot be based entirely on clinical evidence because of the variations in individuals and in the conditions under which infection takes place.

Strains of beta type streptococcus, from blood cultures or empyeme exudates, *Streptococcus pyogenes* on sugar fermentation (Holman), were passed through mice until the virulence was increased from twenty to thirty times. Equal numbers of living bacteria, in the virulent and avirulent forms of the same strain, were then seeded in flasks of 20 per cent. horse serum broth. At seeding, all factors in the two flasks were similar in every respect. Curves of growth and hemolysin were made, and it was found that in tests with a 5 per cent. suspension of mouse cells in physiologic sodium chlorid solution, both the virulent and avirulent strains produced equal, maximum hemolysin concentrations. Under these conditions, virulence does not influence streptolysin concentration.

Methyl Alcohol Poisoning

DRS. WALTER W. PALMER and GEORGE A. HARROP, JR., Baltimore: In a case of acute methyl alcohol poisoning, it was found that the patient was suffering from a severe acidosis, associated with a marked rise in the excretion of organic acids in the urine, two of which, lactic and formic, were recovered in considerable amounts. We have undertaken further study of this condition experimentally, using dogs. The dosage of methyl alcohol by mouth which will terminate fatally in a day or two if untreated can be determined fairly closely, and is about 12 c.c. per kilogram. On the other hand, such acute death has occurred in but one instance (an animal in bad condition, suffering from severe mange), in which the dosage has not exceeded 10 c.c. per kilogram.

An acidosis has been produced by the administration by stomach tube of amounts of methyl alcohol in excess of 6 c.c. per kilogram. The serum bicarbonate content has ranged between 35 and 20 per cent. by volume. Outspoken dyspnea is not regularly produced—in fact, in the fatal cases death appears to be from respiratory paralysis, the respirations gradually lessening in number. In one animal, observed during two hours before death, the visible respirations did not exceed two or three a minute. The acidosis appears in from twelve to thirty-six hours after the injection of the alcohol, and is associated with a marked rise in the urinary ammonia and in the excretion of organic acids, the amount for twenty-four hours rising from the normal of about 20 c.c. of tenth normal acid per kilogram to from 100 to 150 c.c. per kilogram. As is well known from the work of Pohl, there is a great increase in the excretion of formic acid, which begins, however, somewhat after the first rise in the curve of organic acid excretion. The excretion of formic acid has not accounted for more than 60 per cent. of the total increased organic acid excretion, and in two completed experiments it averages from 20 to 50 per cent. of the latter. The increase in acetone bodies is not much more than can be accounted for by starvation.

We have studied the excretion of methyl alcohol into the stomach. It appears after intravenous injections and was recovered immediately after an injection of as small an amount as 2 c.c. per kilogram. When given by mouth, it has been possible even after twenty-four hours to recover by repeated lavage as much as 10 per cent. of the amount administered. There is no doubt that an active secretion of methyl alcohol into the stomach does occur, and that repeated and thorough lavage over a period of several days is urgently indicated. Small amounts have been recovered as late as the seventh day. Besides removing appreciable quantities of the alcohol, there is less tendency in dogs thus treated to have gastric hemorrhage and bloody diarrhea.

The mechanism of methyl alcohol poisoning is quite unknown except for several isolated facts: It is distributed in approximately equal concentration throughout the body; it is catabolized very slowly with the formation and excretion of formic acid, and it is itself excreted by the lungs and in the urine. Methyl alcohol is known to be less acutely toxic than ethyl alcohol. It therefore seems likely that some other intermediary oxidation product may play a rôle. Such a product is formic aldehyd. We have found traces of formic aldehyl in the blood serum, urine, spinal fluid and aqueous humor of dogs poisoned with methyl alcohol. It is present, it is true, in very small quantities, but the effect of its constant formation in the body over a period of days has not been studied. We do not believe the effect of the injection of doses small enough to be tolerated—and they have to be very small—is a phenomenon comparable with this continuous production over a period of days. Investigation of the part played by this substance and quantitative studies of its formation and excretion are contemplated.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

April, 1920, **159**, No. 4

*Carcinoma of Duodenum. J. B. Deaver and I. S. Ravdin, Philadelphia.—p. 469.
Nutrition and Public Health with Special Reference to Vitamins. J. F. McClendon, Minneapolis.—p. 477.
*Cure of Hookworm Infection. J. L. Kantor, New York.—p. 497.
*Treatment of Catarrhal Jaundice by a Rational Direct and Effective Method. B. B. V. Lyon, Philadelphia.—p. 503.
Occurrence of Hypochlorhydria in Gallbladder Disease. R. C. Fravel, Richmond, Va.—p. 512.
*Treatment of Hypertension. E. Moschcowitz, New York.—p. 517.
*Medical Treatment of Aortic (Thoracic) Aneurysm. W. W. G. Maclachlan, Pittsburgh.—p. 525.
*Significance of Yellow Spinal Fluid. C. H. Nammack, New York.—p. 540.
*Occurrence of Glycosuria in Mushroom Poisoning; Report of Cases. M. E. Alexander, Waterbury, Conn.—p. 543.
*Pulmonary Complications of Paratyphoid Fever; Report of Four Cases. T. Klein and R. G. Torrey, Philadelphia.—p. 548.
*Case of Purpura During Serum Disease. H. E. Meleney, New York.—p. 555.
Prognostic Factors in Pneumonia During Influenza Epidemic. J. H. Smith, Richmond, Va.—p. 561.
*Treatment of Acute Gonorrhea in Females. F. B. Block, Philadelphia.—p. 572.
Sugar Mobilization Based on 228 Human Cases. G. L. Rohdenburg, A. Bernhard, and O. Krehbiel, New York.—p. 577.
*Germicidal Value of Potassium Mercuric Iodid. D. Macfarlan.—p. 586.

Primary Carcinoma of Duodenum.—In the case cited by Deaver and Ravdin the tumor was situated at the terminal end of the second portion of the duodenum. There was no obstruction of the common bile duct, nor evidence of obstruction of the pancreatic ducts, nor other evidence of metastasis. It is believed that this was a case of primary duodenal carcinoma, although the history was very similar to that of ulcer. The rapid loss of weight and the rather short duration of the disease (seven months) on the other hand, would point to primary carcinoma. Carcinoma of the duodenum is found in 0.033 per cent. of hospital necropsies.

Cure of Hookworm Infection.—This paper is based on 231 cases, all of which were observed twenty-nine days or over (up to 228 days in one instance), and no case is reported as a cure that did not show an average of from ten to fifteen consecutive negative stools during a period of four weeks after treatment. The five-stool method of examination was resorted to in each instance. The usual mouth treatment was not very encouraging in its results. Much more efficient results can be obtained by the method of intra-intestinal tube treatment, owing to the fact that the full, concentrated dose of vermifuge is delivered precisely at the point of infection. Instead of 34 per cent. of cures, as in the case of a first mouth treatment, fully 80 per cent. are cured by a first tube treatment. Only one repetition is necessary for the relief of the great majority of infections.

Direct Treatment of Catarrhal Jaundice.—The treatment used by Lyon was as follows: All patients, whether with bronchial conditions or otherwise, were cautioned repeatedly against the swallowing of saliva; noses were sprayed with Dobell's solution; throats gargled with strong potassium permanganate solution, 1 grain to the ounce. A sterile duodenal tube was passed to the stomach in the fasting morning state, the residuum withdrawn for analysis and microscopy, with a sterile individual syringe for each patient. The stomach was washed with water, followed by liquor antisepticus alkalinus (in the hyperacid cases) or hydrochloric acid solutions (in the subacid cases), then water again until the washings were clear. Then 250 c.c. of solution, one day, of potassium permanganate (starting with 1 to 15,000 and increasing to 1 to 8,000 and the next day a solution of silver nitrate (1 to 20,000 to 1 to 10,000) was introduced into the stomach, allowed to remain there three to five minutes, and as much as possible syringed out. The patient was then given a glass of water to drink, turned on the right side and by slow swallowing the tube was allowed to enter the duodenum. When this was reached (in from fifteen to forty-five minutes) the duodenal contents were aspirated for study. In all these cases the duodenum was at first found to be bile-free. After the duodenal contents had been aspirated for study Lyon introduces through the tube 50 to 100 c.c. of 25 per cent. saturated solution of magnesium sulphate and bathes or douches the duodenal mucosa. This is again followed by aspiration.

Treatment of Hypertension.—The diet which Moschcowitz orders for these patients is, in many respects, similar to that of a case of diabetes of fair tolerance. The diet consists principally of fruit, coffee or tea (without sugar), meat, green vegetables, salad, cheese and a limited quantity of bread. In other respects the quantity is not limited. Moschcowitz believes in graduatel exercise. The ideal form of exercise for patients with hypertension is golf. If a sport cannot be undertaken, walking provides an excellent means of exercise. If for one reason or another even walking is not possible, systematic brisk massage will serve up to a certain point as a tolerable substitute for exercise. The patient's improvement may be decided, not by a decrease in systolic pressure but by a decrease in diastolic pressure and consequent rise in pulse pressure. Attempts to reduce the blood pressure by direct methods are futile. Drugs reduce blood pressure, but their effect is evanescent and no permanent gain is ever derived. The use of digitalis, nitrites, iodids, caffein and chloral hydrate in selected cases is discussed.

Antisyphilitic Treatment of Aortic Aneurysm.—Three cases of aneurysm of the thoracic aorta of syphilitic origin are reported by Maclachlan. Two were of massive size. Special emphasis is placed on the value of medicinal treatment of these cases. Iodids, mercury and arsphenamin in addition to the usual hygienic measures yielded excellent results in these cases.

Significance of Xanthochromia.—In acute or subacute conditions, Nammack says, the presence of yellow spinal fluid strongly suggests the probable diagnosis of tuberculous meningitis or poliomyelitis.

Mushroom Poisoning.—The five cases reported by Alexander occurred in one family. A mild nephritis and a renal glycosuria were the persistent and predominating features.

Pulmonary Form of Paratyphoid Fever.—Four of six cases of paratyphoid fever studied by Klein and Torrey have been associated with severe pulmonary disturbances. There seems to be a definite pulmonary form of paratyphoid fever which may be easily mistaken for any of the acute respiratory infections. The pulmonary symptoms and findings often precede any intestinal manifestations. Of the pulmonary complications, bronchopneumonia is the most alarming. The bacilli are found in the sputum. The bacilli have also been isolated from the purulent discharges of a chronic purulent otitis media, caused by other infections previous to the paratyphoid disease and from the secretions of pyorrhea alveolaris.

Purpura from Serum Disease.—The case of purpura reported by Meleney occurred during the course of serum disease following the use of antipneumococcus I horse serum in pneumonia. The elements of blood coagulation were normal, and it is therefore probable that the purpura was due to the presence of a toxin associated with the attempt of the body to eliminate the foreign protein. The evidence points to the capillary walls as the site of the lesion.

Treatment of Gonorrhea in Women.—Santal oil, in 10 minim doses, three times daily, and a urinary sedative containing 5 minims of tincture of hyoscyamus and 10 grains of sodium bromid to 1 dram of the liquor of potassium citrate, every three hours, are used by Block in the treatment of the acute urethritis of gonorrhea. A 15 per cent. solution of silver nucleinate or a 5 per cent. solution of silver nitrate, is applied to the entire length of the urethra. In the presence of a gonorrheal discharge from the cervix, hot douches of 1:8,000 potassium permanganate solution are taken four or five times daily. As soon as the discharge is well under control, which ordinarily occurs in about two weeks, local treatments to the cervical canal are given. In applying any medicated solution to the cervical canal one of the most

important points that must be observed is that the canal should be cleansed thoroughly and dried in order that the medicament may come into actual content with the infecting organisms which lie in the cervical glands. Block wipes away the major portion of the discharge and then thoroughly sprays the cervix with an alkaline solution, in order to dissolve the mucus. The cervix is again dried and then an applicator soaked in an alkaline solution (liquor antisepticus alkalinus) is passed into the canal as far as the internal os and moved to and fro, after which a dry cotton swab is passed into the canal and thin discharge removed. This process is repeated several times until all of the mucus is removed and the canal is left clean and dry. A 10 or 12.5 per cent. solution of silver nitrate is vigorously applied to the canal as far as the internal os, and immediately afterward tincture of iodin is similarly applied. Following this application the cervix and culdesac are thoroughly dried and the speculum withdrawn. Only in very exceptional cases is a tampon inserted.

Bactericidal Value of Potassium Mercuric Iodid.—The experiments reported on by Macfarlan show that potassium mercuric iodid is a powerful germicide exhibiting marked bactericidal efficiency in high dilutions. Organic matter diminishes its potency to a relatively slight degree. These facts, taken in consideration with its great solubility, its freedom from irritant action and its comparatively low toxicity in the solutions efficacious for germicidal purposes, would seem to recommend this double salt of the iodids of potassium and mercury as the most desirable of the inorganic germicides.

American Journal of Physiology, Baltimore

April 1, 1920, **51**, No. 3

*Effect of Subcutaneous Injection of Chlorid on Heat Production, Blood Pressure and Pulse Rate in Man. I. Sandiford, Rochester, Minn.—p. 407.
*Apparent Influence of Diet of Carbohydrates on Pancreas Remnant of Partially Pancreatectomized Dogs. V. W. Jensen and A. J. Carlson, Chicago.—p. 423.
Comparative Performance of Muscles Subjected to Rhythmic and Arrhythmic Stimulation. H. A. Bulger and P. G. Stiles, Boston.—p. 430.
*Renal Activity and Acid-Base Equilibrium. T. Nagayama, San Francisco.—p. 434.
Urea Excreting Activity of Kidney and Phosphate Excretion. T. Nagayama, San Francisco.—p. 449.
Gastrin Studies: Response of Stomach Mucosa of Various Animals to Gastrin Bodies. R. W. Keeton, F. C. Koch and A. B. Luckhardt. Chicago.—p. 454.
Gastrin Studies: Response of Stomach Mucosa to Food and Gastrin Bodies as Influenced by Atropin. R. W. Keeton, A. B. Luckhardt and F. C. Koch, Chicago.—p. 469.
Relation of Spinal Cord to Spontaneous Liberation of Epinephrin from Adrenals, and Action of Strychnin After Cervical Cord Section. G. N. Stewart and J. M. Rogoff, Cleveland.—p. 484.
Relation of Catalase to Heart Activity. R. J. Seymour, Columbus, Ohio.—p. 525.
Effect of Vitamin Deficiency on Various Species of Animals. Production of Xerophthalmia in Rabbit. V. E. Nelson and A. R. Lamb, Ames, Iowa.—p. 530.
Flashing Interval of Fireflies — Its Temperature Coefficient — An Explanation of Synchronous Flashing. C. D. and A. H. Snyder, Baltimore.—p. 538.
Effect of Diminished Oxygen Rate of Nerve Conduction in Cassippea. A. G. Mayor, Washington, D. C.—p. 543.
Alkali Reserve of Blood Plasma, Spinal Fluid and Lymph. J. B. Collip and P. L. Backus., Edmonton, Canada.—p. 551.
Effect of Prolonged Hyperpnea on Carbon Dioxid Combining Power of Plasma, Carbon Dioxid Tension of Alveolar Air and Excretion of Acid and Basic Phosphate and Ammonia by Kidney. J. B. Collip and P. L. Backus, Edmonton, Canada.—p. 568.
Is The Luminescence of Cypridina an Oxidation E. Newton Harvey, Princeton, N. J.—p. 520.
*Physiologic Response to Pituitary Administration. F. S. Hammett, C. A. Patten and N. Suitsu, Philadelphia.—p. 588.

Effect of Subcutaneous Injection of Epinephrin.—Forty-six experiments are reported by Sandiford on the effect of the subcutaneous injection of epinephrin chlorid on the metabolic rate, pulse rate, and blood pressure of patients suffering from various disorders of the ductless glands. A supplementary series of twenty-seven experiments is added in which a study was made of the effect of the epinephrin injection on the pulse rate, and blood pressure (the basal metabolic rate being known). Epinephrin chlorid (0.5 c.c. of 1:1,000) injected subcutaneously invariably causes an increase in the metabolic rate. This increase is usually accompanied by an increase in the ventilation rate, respiration rate, number of heart beats each minute, volume of each beat, greater utilization of the blood carrying power and peripheral dilatation with an increased systolic and decreased diastolic blood pressure. No relationship was found between the intensity of the epinephrin reaction and the degree of hyperthyroidism and hypothyroidism. Attention is directed to the similarity of the metabolic rate curve following the injection of adrenalin to that found by Lusk from a carbohydrate plethora and to the possibility that the increased heat production is due to an excess of carbohydrate metabolites. It is suggested that in addition there may be a direct stimulation of celular combustion.

Effect of Feeding Carbohydrates on Pancreas.—In general, Jensen and Carlson's results support the view that a liberal carbohydrate diet tends to change diabetes levis into diabetes gravis, after partial pancreatectomy in dogs. But their experiments do not constitute a clear demonstration of this thesis, in fact they are not much more conclusive than the experiments reported earlier by Thiroloix, and by Allen.

Renal Activity and Acid Base Equilibrium.—The urea excreting activity of the kidney under strain was measured by Nagayama after the administration of a mixture of acid and alkaline phosphate of neutral reaction, and also after the administration of an amount of acid phosphate containing the same amount of phosphorus. A distinct decrease in function was observed after acid phosphate. Since the only essential difference in the conditions of these experiments lay in the fact that after the neutral phosphate mixture the acid base equilibrium remained unchanged, whereas after acid phosphate there was a shift toward the acid side, it is concluded that the decrease in the alkalinity of the plasma induced by an increase in the amount of acid phosphate within the body, decreases the urea excreting activity of the kidney. The administration of an amount of alkaline phosphate containing an amount of phosphorus equivalent to that given in the experiments with neutral and acid phosphates, only slightly increased the alkalinity of the plasma and had no appreciable effect on renal function. The administration of amounts of sodium bicarbonate which markedly increased in alkalinity of the plasma was accompanied by a slight decrease in the urea excreting activity of the kidney. Nagayama claims that the urea excreting activity of the kidney measured during the strain is put on the excretory capacity by the simultaneous administration of a neutral mixture of acid and alkaline phosphate.

Physiologic Response to Pituitary Ingestion.—In four out of six individuals, studied by the authors, the ingestion of the pituitary substance caused an increase in the uric acid concentration of the blood. This is interpreted as being probably due to a decreased kidney permeability brought about by the administration of the drug.

Archives of Dermatology and Syphilology, Chicago

May, 1920, **38**, No. 5

*Pathology of Congenital Syphilis. J. F. Fraser, New York.—p. 491.
Case of Myiasis Dermatosa. W. H. Mook, St. Louis.—p. 515.
*Purpura Annularis Telangiectodes (Majocchi's Disease). L. Weiss, New York.—p. 520.
Visceral Syphilis; Syphilis of Stomach. U. J. Wile, Ann Arbor, Mich.—p. 543.
Practical Method of Roentgen-Ray Dosage without Aid of Radiometer. W. D. Witherbee and J. Remer, New York.—p. 558.
Acrodermatitis Chronica Atrophicans; Report of Case. M. Scholtz, Los Angeles.—p. 565.

Congenital Syphilis.—The case reported by Fraser is one more to be added to those of apparently nonsyphilitic and immune mothers bearing children that have been proved syphilitic. From a review of antenatal pathology and embryology and the morphologic evidence in this case it would appear that infection takes place only after the fetal organs have been formed—a fact which excludes the theory of germinal transmission unless a practically unsupported theory of "larval inactivity" of the infecting organism is assumed. From the facts reviewed the most plausible explanation of the 5 per cent. residue of nonsyphilitic and immune mothers of syphilitic children is that these mothers have a mild, low grade form of syphilis.

Purpura Annularis Telangiectodes.—The cases reported by Weiss present the following deviations from the cases reported by other observers: There is very intensive, dark brown pigmentation over the middle of the legs, with whitish achromia in the center. There are almost numberless discrete lesions, with the yellowish discoloration in the area of the fading spots, which discoloration is not due to pigment deposit, but to a degeneration of the connective and elastic tissues. The evolution and the involution of the lesions and all their stages are observable simultaneously (coexistence of lesions). A slight raising above the level of the skin is present, independently of the keratotic follicles. The coil glands show evidence of a cloudy swelling and some degeneration, while the follicles are not involved. Lesions appear at the site of a biopsy, which lesions in every respect are similar to the original ones. This fact shows almost to a certainty a vasomotor trophic influence on the peripheral vessels.

Archives of Internal Medicine, Chicago

May 15, 1920, **25**, No. 5

*Experimental Pellagra in White Male Convicts. J. Goldberger and G. A. Wheeler, Washington, D. C.—p. 451.
Experimental Pulmonary Edema; Summary of the Literature. B. H. Schlomovitz, Madison.—p. 472.
Investigation of Size of Heart in Soldiers by Teleroentgen Method. A. E. Cohn, New York.—p. 499.
Teleroentgen Measurements of Hearts of Normal Soldiers. B. Smith, Los Angeles.—p. 522.
Teleroentgen Estimations of Heart Size in Cases of Effort Syndrome. B. Smith, Los Angeles.—p. 532.
Purulent Typhoid Meningitis: Report of Case. E. A. Baumgartner and H. H. Olson, Halstead, Kan.—p. 537.
*Changes in Form of Initial Ventricular Complex in Isolated Derivations of Human Electrocardiogram. F. A. Willius, Rochester, Minn.—p. 550.
*Influence of Roentgen Ray on Progress of Tuberculosis. J. A. Weinberg, Omaha.—p. 565.

Experimental Pellagra.—Goldberger and Wheeler report briefly the results of an experiment carried out at the Rankin Farm of the Mississippi Penitentiary to test the possibility of producing pellagra in previously healthy men by feeding a monotonous, principally cereal, diet. They believe that the conclusion seems warranted that pellagra developed as the result of the diet.

Electrocardiogram Studies.—The study made by Willius comprises 747 cases and covers a period of five and one-half years. The cases were divided into two major groups, cases (550) with Q R S complexes definitely notched, and cases (197) with slurring or localized thickening of the ascending or descending limb, or both. Both groups were subdivided according to derivation occurrence.

Influence of Roentgen Ray on Tuberculosis.—Weinberg attempted to hasten the progress of infection in guinea-pigs following tuberculous inoculation by exposing the animals to massive doses of the roentgen ray. In the first and second series of guinea-pigs there was no apparent difference in time of appearance of the tuberculous lesions in the roentgenized animals and the controls. In the third series, there was a difference of a few days in the time of death, the average time of death occurring two days earlier in the roentgenized animals than in the controls. This series received two roentgeon-ray exposures. The fourth series showed the same difference in time of death between the roentgenized and the control animals, as was observed in the third series. The leukocytes of the blood stream are markedly reduced in number by exposure to the roentgen ray. The reduction is proportionate to the length of exposure with a given current and voltage. The lymphocyes are most markedly affected.

Arkansas Medical Society Journal, Little Rock

April, 1920, **16**, No. 11

Some Factors in Malaria Control. H. Thibault, Scott.—p. 210.
Treatment of Syphilis. S. P. Bond, Little Rock.—p. 213.
*Voluntary Acceleration of Pulse Rate. Report of Case. C. H. Cargile, Bentonville.—p. 214.

Voluntary Acceleration of Pulse Rate.—Cargile cites the case of a woman, aged 42, who possessed the rare power of voluntarily accelerating her pulse rate to an unusual degree. She does not know how she does it, except by intense desire and mental concentration. The acceleration begins very promptly and sometimes cannot be maintained long, because it is very fatiguing. In thirty seconds the rate is increased over forty-five beats, and two minutes after the command it is about 168 beats per minute, instead of eighty-two.

California State Journal of Medicine, San Francisco

May, 1920, **18**, No. 5

Surgical Pathology of Seminal Vesicles. J. R. Diilon and F. E. Blaisdell, San Francisco.—p. 149.
Treatment of One Hundred and Thirty-Four Cases of Chronic Prostatitis. L. P. Player and C. P. Mathe, San Francisco.—p. 152.
Contracture of Bladder Neck and Other Obstructions Thereat, Exclusive of Prostatic Hypertrophy and Cancer, and Their Treatment. R. V. Day, Los Angeles.—p. 158.
The Lay Anesthetist. W. R. Crane, Los Angeles.—p. 160.
Eye Lesions Due to Focal Infections. L. W. Mansur, Los Angeles.—p. 165.
*Multiple Primary Tumors. J. C. Blair, San Jose.—p. 167.
Borderline Types of Sehorrheic Dermatitis and Psoriasis. M. Schaltz, Los Angeles.—p. 170.
Septic Lepto-meningitis of Otitic Origin. Report of Case with Recovery. E. C. Sewall, J. A. Bacher and H. G. Mehrtens, San Francisco.—p. 172.
*Vaccine Treatment of Typhoid. E. V. Adelung, Oakland.—p. 175.
Comparison of End Results in Intermediate and Secondary Perineorrhaphies. O. McNeile, Los Angeles.—p. 178.
*Two Cases of Ethmoidal Malignancy. P. A. Jordan, San Jose.—p. 181.
*Achylia Gastrica Treatment. E. J. Best, San Francisco.—p. 182.
Some Comparisons Between War Neuroses and Those of Civil Life. T. G. Inman, San Francisco.—p. 184.

Multiple Primary Tumors.—One of Blair's patients had a melanosarcoma of the mediastinum, with a primary carcinoma of the esophagus. In the apices of both lungs were found extensive adhesions and evidences of old consolidations. The liver was enlarged but no nodulations or tumor formations were present. There were chains of enlarged glands in both supraclavicular triangles, more marked on the right side. These glands varied in size up to 1 cm. in length and were mostly of a deep black color. Both axillae contained numerous chains of glands accompanying the vessels, those of the left axilla being much larger. On the left side of the trachea, about the level of the arch and slightly compressing it, was a large tumor mass, 3 cm. in length, and 2 cm. in diameter. This mass was without pigmentation. Esophagus: atypical squamous celled carcinoma, occupied the middle of the lower thirds of the esophagus about 10 cm. in length, extending through all the coats of the esophagus and almost obliterating the lumen, with metastases in the paravertebral glands. The remaining parts of the body were remarkably free from the metastases, a few melanosarcomas being found in the left kidney and suprarenal. The nevus was examined but did not show any carcinomatous proliferation. A second patient had a carcinoma of the ileum and an adenocarcinoma of the appendix. The third patient had a carcinoma of the stomach and gastric lymph nodes with metastases to the vertebrae and a mixed tumor of the ovary.

Intravenous Serum Therapy of Typhoid.—Adelung reports on twenty cases of typhoid treated by intravenous injections of polyvalent sensitized typhoid vaccine as prepared by F. P. Gay. The same vaccine was also used subcutaneously for the purpose of immunizing against relapse, but is not included in this report. The vaccine was given intravenously in doses varying from 75 million suspended organisms (0.25 c.c. in volume) to 525 million suspended bacilli (1.75 c.c. in volume), most commonly at two or three day intervals, though many of the intervals were much longer. The impression was gained that the vaccine is most effective when given at the shorter intervals—two or three days. But it is apparent that the proper guide is the course of the fever curve, and not any fixed rule. In this series of twenty cases, nine-one intravenous injections were given, always with Gay's vaccine. Condensed chemical reports are given.

Ethmoid Malignancy.—One of Jordan's patients had a carcinoma; the other had a sarcoma of the ethmoid.

Achylia Gastrica.—Best gives his patients 10 per cent. hydrochloric acid with instructions to take from 20 to 30 drops in a glass of water during each meal. An alkaline mouth wash is used immediately after eating. But maintains that it is physiologically correct to take the acid in this way —in sips or swallows—rather than at one time, as is usually done.

Indiana State Medical Association Journal, Fort Wayne

April 15, 1920, **13**, No. 4

*Hour-Glass Bladder. Report of Case. H. K. Bonn, Indianapolis. —p. 107.
*Résumé of Past Two Years' Prostatic Work. W. N. Wishard and H. G. Hamer, Indianapolis.—p. 111.
*Renal Tuberculosis. P. E. McCown, Indianapolis.—p. 114.
Testing Kidney Function. A. C. Yoder, Goshen.—p. 120.
Case of Epidemic Encephalitis. C. E. Gilliland, Terre Haute.—p. 132.
Case of Primary Pneumococcus Peritonitis. T. B. Noble and S. R. Edwards, Indianapolis.—p. 134.

Hour-Glass Bladder.—This paper was abstracted in THE JOURNAL, Nov. 1, 1919, p. 1391.

Prostate Work.—This paper was abstracted in THE JOURNAL, Nov. 1, 1919, p. 1391.

Renal Tuberculosis.—This paper was abstracted in THE JOURNAL, Nov. 1, 1919, p. 1391.

Journal of Laboratory and Clinical Medicine, St. Louis

April, 1920, **5**, No. 7

Respiratory Studies on Late Stages of Gas Poisoning. R. G. Pearce, Akron, O.—p. 411.
Chemical Changes in Blood in Disease, I. Nonprotein and Urea Nitrogen. C. Myers, New York.—p. 418.
*Histogenesis of Carcinoma in Islets of Pancreas. E. J. Horgan, Rochester, Minn.—p. 429.
*Effects of Heavy Metal Salts on a Protein and Reversal of Such Effects. R. A. Kehoe, Cincinnati.—p. 443.
*Tuberculosis Complement Fixation Test. B. Stivelman, Bedford Hills, N. Y.—p. 453.
Traumatic Hemolysis and Syringe Method of Blood Collection. C. E. Roderick, Battle Creek, Mich.—p. 457.

Histogenesis of Carcinoma in Pancreas.—In the microscopic examination of sections of the pancreas from the 262 cases that were selected by Horgan for this study, hypertrophy of the islets in connection with a chronic pancreatis was found in forty-eight cases. None of the patients showed glycosuria in any of the urinalyses of twenty-four hour specimens made while under observation and examination; 79.3 per cent. were found to be cases in which a gastric or duodenal ulcer was found at operation or at necropsy. In the series of 262 cases gastric ulcer was found in seventy-one; in seventeen the islets showed hypertrophy. Duodenal ulcer was found in sixty-one cases; in nineteen the islets showed hypertrophy. Gastric and duodenal ulcer were found associated in eleven cases; in two the islets showed hypertrophy. Hypertrophy of the islets was also observed in six cases of gastric carcinoma, two cases of carcinoma of the rectum, one case of carcinoma of the sigmoid, and one case of cyst of the pancreas. Hypertrophy of the islets was observed grossly and in section from all portions of the gland.

Effects of Heavy Metals on Proteins.—From his observations, Kehoe concludes that if the toxicity of the heavy metal salts is due to the coagulation of the proteins of the body, and if such coagulated proteins may be restored to their former state by the introduction into the body of proper salts and alkalies, the primary toxic effects of the heavy metal salts may be combatted intelligently.

Tuberculosis Complement Fixation Tests.—Positive fixations were obtained by Stivelman in 24 per cent. of 108 nontuberculous individuals. Of 592 serums from definitely tuberculous individuals, 310, or 52.4 per cent., gave a positive reaction, and 282, or 47.6 per cent., gave a negative reaction. Of these 282 patients, 176 had a positive sputum. Of the 294 cases, a positive reaction was obtained in 178, or 60.5 per cent., while of the 298 inactive cases, 132, or 44.3 per cent., reacted positively. Of 108 patients who had pulmonary hemorrhages subsequent to admission, forty-three had a negative fixation and sixty-five a positive fixation. Among the 700 serums tested, eleven reacted strongly positive to the Wassermann test, or an incidence of syphilis of 1.6 per cent. Four of these patients had a positive sputum and a negative tuberculosis fixation test and clinical evidence pointed to the coexistence of both diseases. Four were nontuberculous and gave a negative tuberculosis fixation. One was nontuberculous but reacted positively to the tuberculosis deviation test.

Journal of Mental and Nervous Diseases, Lancaster, Pa.

April, 1920, **51**, No. 4

*Deep Localization in the Cerebral Cortex. E. G. Van't Hoog, Amsterdam.—p. 313.
*Multiple Brain Abscesses Secondary to Bronchiectasis and Kyphoscoliosis. C. C. Saelhof, Chicago.—p. 330.

Deep Localization in Cerebral Cortex.—The results of Hoog's investigations show that the supragranular cortex layers are receptory associative, in accordance with Ariëns Kapper's functional deviation, and that the functional nature of the granules is also receptive and associative in the postcentral region. The granular cells should, moreover, be conceived of as matrix cells not only in the fascia dentata but also in the neocortex.

Multiple Brain Abscesses Secondary to Bronchiectasis.—Saelhof reports a case of multiple bilateral brain abscesses secondary to bronchiectasis caused by the wedging of the lower lobe of the right lung into a pocket formed by a hyphoscoliosis. The causative agents isolated and cultivated from both the abscesses and the suppurating lung were *B. fusiformis* and anaerobic streptococci. The infection evidently traveled through the blood stream.

Journal of Orthopedic Surgery, Lincoln, Neb.

April, 1920, **18**, No. 4

*Operative Treatment of Irreducible Paralytic Dislocation of Hip Joint. E. Jones, Los Angeles.—p. 185.
Points to Be Observed in First Ten Days of Treatment of Compound Fractures. H. Winnett, Lincoln, Neb.—p. 196.
Orthopedic Laboratory as a Solution of Brace Problem. J. E. M. Thomson, Lincoln, Neb.—p. 205.
Instrument for Tendon Fixation. G. E. Bennett, Baltimore.—p. 204.
Post-War Orthopedic Problems. E. M. Little, London.—p. 210.
Discussion of Cineplastic Amputations British Orthopaedic Association. E. Muirhead Little.—p. 212.

Operation for Irreducible Paralytic Dislocation of Hip Joint.—Jones has enlarged the acetabulum, according to Albee's method. In these cases before operation the luxation could be reduced and created at will. The operation included reefing the capsule, and was followed by plaster fixation for from three to five months. Sufficient muscle activity was present to give a good functional hip joint without ankylosis and with excellent stability.

Journal of Parasitology, Urbana, Ill.

March, 1920, **6**, No. 3

Leucochloridium Problematicum. T. B. Magath, Rochester, Minn. —p. 105.
Biologic Relationships of Ascarids. B. Schwartz, Washington, D. C. —p. 115.
Flagellate Character and Reclassification of Parasite Producing "Blackhead In Turkeys—Histomonas (Gen. Nov.) Meleagridis (Smith). E. E. Tyzzer, Boston.—p. 124.
Resistance of Ascaris Eggs. S. Yoshida, Osaka, Japan.—p. 132.
*New Bi-Flagellated Protozoon of Man. T. Wight and B. Lucke, Camp Zachary Taylor, Ky.—p. 140.
Pediculides. N. Leon, Jassy, Roumania.—p. 145.
New Species of Rhabditoid Worms Found in Human Intestines. H. Kobayashi, Seoul, Korea.—p. 148.
Spirochaeta Recurrentis: A Filter Passer. J. L. Todd, Montreal. —p. 152.
Variation of Ovum (Sarcoptes Scabiei) Under Coverglass Pressure. F. D. Weidman, Philadelphia.—p. 155.

New Protozoon of Man.—A small biflagellated protozoon was found by Wight and Lucke in the direct smears and in cultures from three postmortems of patients dead from acute influenza. They occurred, respectively, in the heart's blood, sphenoidal sinus and the lung, and apparently produced no tissue changes. The organisms were round or pear shaped, possessed two free flagella and a kinetonucleus. They were easily cultivated on rabbit's blood glycerin agar. The authors regard these organisms as accidental invaders, possibly belonging to the genus Prowazekia.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

April, 1920, **15**, No. 2

*Apparatus for Exposure of Skin or Mucous Membrane to Vapor of Toxic Substances; Observations on Dichlorethylsulphide. J. A. E. Eyster and M. E. Maver, Madison, Wis.—p. 95.
Optical Isomers. V. Tropeines. A. R. Cushny, Edinburgh.—p. 105.

*Local Anesthetic Properties of Phenyl Methyl Carbinol. A. M. Hjort and Charles E. Kaufmann, New Haven, Conn.—p. 129.
*Effect of Atropin on Chloroform Hyperglycemia. E. L. Ross, Chicago. —p. 135.
*Effect of Some Antipyretics on Acuity of Hearing. D. I. Macht, J. Greenberg and S. Isaacs, Baltimore.—p. 149.
Clotting Efficiency of Thromboplastic Agents. F. Fenger, Chicago. —p. 167.
*Iodin Absorption from Human Skin. N. C. Wetzel and T. Sollmann, Cleveland.—p. 169.
Drug Perfusion of Medulla of Turtle. 11. Aconitin, Morphin, Cocain, Quinin. A. D. Bush, University, N. D.—p. 173.

Study of Irritating Skin Vapors.—An apparatus is described by Eyster and Maver by means of which the skin or mucous membranes may be exposed to accurately controlled concentrations of toxic vapors under conditions simulating the presence of such vapors free in the atmosphere. Data are included on the skin toxicity of dichlorethylsulphid on rabbits and on man and on the toxicity of the vapors of the rabbit's eye, in order to illustrate the method of use and applicability of the apparatus. The data suggests the necessity of determinations on man when human toxicity determination is desired in the study of other irritant vapors.

Anesthetic Properties of Phenylmethyl Carbinol.—According to Hjort and Kaufmann *dl* phenylmethyl carbinol is a more potent local anesthetic on the rabbit's cornea and in the human skin than either its isomer rose oil or their homologue benzyl alcohol, but not in proportion to its greater toxic action. The relative instability of the α-phenethylol offers further objection to its practical application. It is suggested that the increased physiologic action may be due to the presence of the asymmetric carbon atom.

Effect of Atropin on Hyperglycemia.—The conclusions reached by Ross are based on the following observations: Atropin administered before chloroform anesthesia did not reduce the hyperglycemia. Atropin administered before ether or chloroform anesthesia did not alter the changes in either heart rate or respiration. Chloroform reduced heart rate while ether increased it, a fact which has been observed by others. Chloroform caused more than twice as much respiratory inhibition compared to that of ether. A two days' fast decreased chloroform hyperglycemia and did not affect ether hyperglycemia. Chloroform asphyxiates markedly more through respiratory inhibition and reduced heart rate than ether. This asphyxiation is the probable cause of a large part of chloroform hyperglycemia and the cause for its not being altered by atropin.

Effect of Antipyretics on Hearing.—The effect of a large number of antipyretic and analgesic drugs and of their combinations was studied by Macht and his associates in the relation to the acuity of sound perception. It was found that acetanilid, sodium salicylate, acetylsalicylic acid, phenyl salicylate, and some other drugs decrease the threshold of hearing. Acetphenetidin, antipyrin, pyramidon and some other drugs increase the threshold of hearing. The effects of various combinations were found to produce results which in the case of some, were addictive, while, in case of other combinations, were of a synergistic character; and the significance of these phenomena is discussed in the text.

Iodin Absorption from Skin.—The observations made by Wetzel and Sollmann indicate that the normal human skin is a very poor channel for the absorption of iodin even in the free state.

Minnesota Medicine, St. Paul

May 4, 1920, **3**, No. 5

*Surgery of Kidney. E. S. Judd, Rochester.—p. 221.
Hypertension and Its Clinical Aspects. F. J. Hirschboeck, Duluth. —p. 227.
Handling and Treatment of Dermatologic and Syphilitic Cases in Dispensary. S. E. Sweitzer, J. Butler and H. G. Irvine, Minneapolis. —p. 236.
Applications of Principles of Focal Infection With Method for Removal of Extensive Disease of Alveolar Processes. A. D. Dunn, Omaha. —p. 241.
*Treatment of Tuberculosis of Spine. H. W. Meyerding, Rochester. —p. 245.
Vaginal Drainage. F. J. Plondke, St. Paul.—p. 251.

Surgery of Kidney.—Of the 239 patients on whom nephrectomy was done in the Mayo Clinic, seven (2.9 per cent.) died. Three had tuberculosis of the kidney; one died of tuberculosis bronchopneumonia, one of miliary tuberculosis of the lungs and tuberculous peritonitis, and one of chronic nephritis and bilateral pleuritis. Two of the patients had pyonephrosis; one died of hemorrhage (forceps on pedicle) and one of thrombophlebitis of the inferior vena cava, the common, internal and external iliac veins. One patient with hypernephroma died of an infection. This patient was operated on by the transperitoneal route. One patient with carcinoma of the kidney died of acute nephritis and metastic carcinoma in the lungs.

Tuberculosis of Spine.—Of 405 patients with Pott's disease observed in the Mayo Clinic, 100 were operated on by a modified Albee bone grafting method. Meyerding states that it has been their experience that the most favorable results are obtained by a proper selection of patients to be operated on and the continuance of the conservative treatment after operation until in the judgment of the surgeon, the disease process has been arrested. The bone graft used was curved to fit the deformity. Eighty-six per cent. of the patients in the series have been relieved of clinical symptoms; three patients are unimproved; three have not been heard from; eight have died since operation.

Ohio State Medical Journal, Columbus

April 1, 1920, **16**, No. 4

Points in Abdominal Technic. J. F. Baldwin, Columbus.—p. 232.
Cases of Dislocation of Crystalline Lens. C. F. Clark, Columbus. —p. 238.
Abdominal Hysterotomy. J. D. Smith, Akron.—p. 244.
Advantages of More General Use of Local Anesthesia in Surgical Work. H. T. Sutton, Zanesville.—p. 247.
Differential Diagnosis of Tuberculosis and Syphilis. T. Zbinden, Toledo.—p. 251.
Psychiatric and Neurologic Symptoms Associated with Renal Signs. L. Miller, Toledo.—p. 255.
Comparative Anatomy of Eye. T. M. Stewart, Cincinnati.—p. 258.
Trachoma, Its Diagnosis and Treatment. R. Lockhart, Columbus. —p. 262.
Early and Late Vomiting of Pregnancy; Its Treatment. C. E. Turner, Columbus.—p. 266.

Southern Medical Journal, Birmingham, Ala.

April, 1920, **13**, No. 4

*Is Sprue Endemic in South? M. F. Boyd, Galveston.—p. 229.
Indicanuria (Toxic States), Report of Cases. W. A. Dearman, Long Beach, Miss.—p. 232.
Cardiospasm: Report of One Hundred Cases. J. R. Verbrycke, Jr., Washington, D. C.—p. 236.
*Coccidioidal Granuloma, Including First Reported Case East of Mississippi. K. M. Lynch, Charleston, S. C.—p. 246.
*Control of Malaria by Quinin Sterilization of Human Host. C. C. Bass, New Orleans.—p. 250.
Results of Recent Efforts to Control Malaria. J. A. Ferrell, New York.—p. 256.
Malaria Control in Rural Communities by Antimosquito Measures. H. H. Howard, New York.—p. 260.
Surgical Researches during World War.—G. W. Crile, Cleveland. —p. 267.
Right Sided Abdominal Pain in Female. J. N. Baker, Montgomery, Ala.—p. 271.
*Inguinal Hernia of Uterus. H. A. Royster, Raleigh, N. C.—p. 275.
Management of Tumors of Urinary Bladder. E. G. Ballenger and O. F. Elder, Atlanta, Ga.—p. 279.
Orbito-Palatal Route of Transilluminating Maxillary Sinus. H. H. Briggs, Asheville, N. C.—p. 284.
Maxillary Sinus in Rôle of a Reservoir for Overlying Sinus Disease. H. Dupuy, New Orleans.—p. 287.
Roentgen Ray Aid in Diagnosis of Nasal Accessory Sinus Disease. J. W. Jervey, Greenville, S. C.—p. 291.

Is Sprue Endemic in South?—Evidence is given by Boyd to substantiate the view that this infection is endemic within the Southern United States among individuals who have never been outside of the country.

Coccidioidal Granuloma.—Forty-four cases of this disease have been reported and Lynch adds one more. Forty-one patients were residents or former residents of California. One case originated in Colorado, one in Missouri; the first in the Argentine, and the forty-fifth in South Carolina. The San Joaquin Valley of California has been the source of the majority of reported cases. The author's patient was a colored woman, aged 45 years. She was born and had lived on one of the sea islands near Charleston, had come to work in Charleston as a household servant and had never been out of this region. The case was a typical one in every respect.

Control of Malaria by Quinin Sterilization.—This paper is a brief historical review of the developments and progress of

malaria control work in Bolivar and Sunflower counties, Mississippi, with which Bass has been associated.

Inguinal Hernia of Uterus.—Royster's patient was a colored woman, 45 years of age. She had been married twice but had never been pregnant. Her menses, occurring first in her fifteenth year, had always been vicarious, the flow proceeding from her nose regularly every twenty-eight days. Each month, following the discharge from her nose, she suffered from headache and pain in the epigastrium or in the thighs. About the age of 14 a lump was first noticed in her left groin, but it gave her no trouble and very little attention was paid to it until two months before admission, when she began to experience pain and discomfort. According to her impression the mass had enlarged rapidly for the previous twelve months. An incision over the mass along the groin revealed a hernial sac containing a uterus somewhat larger than normal which harbored a fibroid of the size of a billiard ball. The pedicle was composed of the well developed left tube and ovary with the broad ligament. The specimen showed complete absence of the right tube, ovary and broad ligament.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Children's Diseases, London

Jan.-March, 1920, **17**, Nos. 193-195

*Medical Treatment of Infantile Paralysis. C. Mackay.—p. 1.
*Case of Leukemia with Scalp Nodules. T. H. Gunewardene.—p. 9.
Pre-Leukemia in Infancy. G. Ward.—p. 18.
*Cardiac Angina in a Child of Six Years. W. J. Rutherfurd.—p. 22.
Clinical Features of Typhus Fever in Children. A. Stroe.—p. 24.
Case of Tuberculosis Verrucosa Cutis of Foot. T. McCririck.—p. 26.
Isolated Disease of Tarsal Scaphoid: Kohler's Disease. P. M. Heath.—p. 28.
Congenital Redundant External Meatus; Repeated Abscess Formation; Excision. D. McKenzie.—p. 30.

Treatment of Infantile Paralysis.—The outstanding lines of treatment on which Mackay lays emphasis are complete anatomical rest and muscle reeducation. The treatment for any paralyzed muscles is immediate and anatomical rest. It must be immediate; it admits of no delay because the disease at once destroys muscle adjustments, and so fine are these that immediately the nerve cell governing the action of a flexor, for example, is affected, its extensor opponent begins to overact, and this must be prevented. No definite time can be stated as to when muscle reeducation should be begun, but the guides will be pyrexia, pain and tenderness; until the cessation of these the limbs are best kept at rest. The great underlying principle is to pick up a minimum function and to use it as the commencement. There is a zero position of muscle function for every muscle or muscle group; reeducation must be commenced in this position, and carried on patiently and skilfully during the next two years at least.

Leukemia with Scalp Nodules.—A boy, aged 3 years and 4 months, with an apparently idiopathic severe anemia of 11 per cent. hemoglobin and 760,000 red cells, responded, as evidenced by his general condition and blood picture, to treatment in five weeks. Then he contracted measles, and about three months later he developed nodules, mainly in the scalp, exhibiting at the same time a different blood picture, a hemoglobin percentage of 72, red cells, 5½ million, together with myeloblasts. Without treatment some of the nodules disappeared and others became smaller, but with a reduction of the red cells and the hemoglobin content. With the commencement of treatment, post hoc or propter hoc, the temperature shot up and a soft tender tumor developed. The treatment was discontinued for a fortnight, and recommenced owing to the steadily increasing anemia, but with no evidence of any improvement; eventually, with all the accompaniments of any severe anemia, death took place. Of unusual occurrences were tender hyperemic swellings in connection with the lower ends of the bones (tibiae and right femur) which subsided in a few days; the gradual enlargement of the nodules with the decline of the patient's condition, and the disappearance of some of these twenty-four hours before death.

Cardiac Angina in Child.—A boy, 6 years old, with a negative history, was found suffering from a dry pericarditis and anginoid attacks of considerable intensity Under treatment these attacks ceased.

British Medical Journal, London

May 8, 1920, **1**, No. 3097

*Treatment of Eclampsia by Transfusion of Blood. W. B. Bell.—p. 625.
Partial Pyloric Obstruction. A. E. Maylard.—p. 626.
Heart Affections in Relation to Labor Market. R. O. Moon.—p. 628.
Civil Lessons of War for Treatment of Fractures of Skull. C. M. Kennedy.—p. 630.
*Etiology of Diverticulitis. C. H. Willey.—p. 631.
*Etiologic Factors in Abortion. D. Dougal and J. W. Bride.—p. 632.

Transfusion of Blood in Eclampsia.—Bell reports a case in which 500 c.c. of blood were transfused into an eclamptic. The husband was the donor. The blood was withdrawn into citrate solution from his median basilic vein. Approximately the whole of this was transfused into the median cephalic vein of the patient. The patient made a good recovery.

Temperament and Diverticulitis.—The three patients seen by Willey were suffering from looseness of the bowels. One of these was found to be suffering from an acute kink resulting from adhesions of the sigmoid to the parietal peritoneum, and the other from a fistulous communication between the sigmoid and bladder. Willey thinks it would be illuminating to note in all cases the particular type and build and temperament of the patients, as well as any temporary condition of mental worry or powerful emotional disturbance. He has no doubt of the very close connection between depressing emotion and pathologic conditions of the large intestine, and suggests that this is the first stage in the creation of diverticulitis, a sensitive and impassioned temperament being the most powerful predisposing factor. In men of this build the effect of acute emotional worry tells at once in some way on the large intestine. The colitis of worry evidently results from diminished trophic innervation and tissue resistance, while at the same time the natural digestive ferments are faulty in quantity and quality. Food and the mucous lining become morbidly septic. The *B. colic* becomes more and more virulently active. Probably many follicles are infected, which may account for diverticuli being multiple.

Etiology of Abortion.—One hundred cases were analyzed by Dougal and Bride as to causation. Accidental or reflex causes were present in 18 per cent. General disease of the mother, disease or displacement of her genital organs, and gross abnormalities of the fetus or placenta (other than those due to hemorrhage or infarction) were found in 25 per cent. Syphilis, as represented by a positive Wassermann reaction, accounted for 12 per cent. but its influence as the actual cause of the abortion was probably much less, and nearer 8 per cent. From the remaining 52 per cent. has to be deducted the figure for the self-induced group, which is probably not less than 20 per cent. In the present series, 8 per cent of the women admitted taking lead pills, and a number of these showed clinical evidence of lead poisoning. This leaves over 30 per cent. of cases with no cause assigned. Pathologic investigation throws little additional light on the subject, as most of the morbid changes found do not produce the abortion, but occur during the operation of some other cause. It would appear, however, that the mother is primarily at fault as the result of some diseased condition, whether it be of an organic nature or an increased irritability of the centers presiding over the expulsive action of the uterus.

Dublin Journal of Medical Science

April, 1920, **4**, No. 2

*Compression Neuritis Due to Normal First Dorsal Rib. W. I. de C. Wheeler.—p. 65.
Case of Diabetes Mellitus with Local Infection and Acidosis Treated by Allen Method. H. F. Moore.—p. 72.
*Functions of Suprarenal Glands in White Rats. H. V. Exner.—p. 79.
*Approach to Median Nerve in Forearm. A. A. McConnell.—p. 90.

Compression Neuritis.—Wheeler reports one case of this type in which he removed the first rib. An incision was made above the clavicle, as if for ligature of the subclavian artery. A second limb was added, running parallel to the fibers of the trapezius muscle. The segment of rib removed extended from the posterior edge of the insertion of the scalenus medius to the scalene tubercle, so as to include

the groove for the subclavian artery, and the trunk formed by the eighth cervical and first dorsal nerves.

Function of Suprarenals.—The results of his extensive experimental work have convinced Exner that the glycogenic function of the suprarenals is dependent on, or works in conjunction with, some nervous control; this nervous control, when adequately stimulated, still being able to produce glycosuria independently, and in the absence of all suprarenal tissue. Whether the converse is true is a matter for speculation, but whatever the glycogenic function of the suprarenal glands may be, it seems to be subordinate to and dependent on the central nervous system.

Exposure of Median Nerve in Forearm.—The simplest method of reaching the plane between the superficial and deep muscular groups, where this nerve lies, according to McConnell, is to make an incision along the free border of the flexor carpi ulnaris muscle. On retracting this muscle, the interval between the flexor sublimis and flexor profundus muscles is immediately exposed. The ulnar artery and nerve are seen lying on the flexor profundus. A retractor is then inserted deep to the flexor sublimis, and the muscle is drawn anteriorly and laterally, thus exposing the median nerve in the greater part of its course in the forearm. With full flexion of the wrist the nerve lies easily accessible down to the transverse carpal ligament.

Indian Journal of Medical Research, Calcutta

October, 1919, **7**, No. 2

Pathogenesis of Deficiency Disease. V. Histopathology. R. McCarrison.—p. 269.
Id. VI. Influence of Scorbutic Diet on Bladder. R. McCarrison.—p. 279.
Id. VII. Effects of Autoclaved Rice Dietaries on Gastro-Intestinal Tract of Monkeys. R. McCarrison.—p. 283.
*Id. VIII. General Effects of Deficiency Dietaries on Monkeys. R. McCarrison.—p. 308.
*Id. IX. Occurrence of Recently Developed Cancer of Stomach in Monkey Fed on Food Deficient in Vitamins. R. McCarrison.—p. 342.
Tinturometer Instrument for Measuring Tint and Turbidity. W. F. Harvey.—p. 346.
Measurement of Bacterial Content in Fluid Suspension. W. F. Harvey.—p. 353.
Determination of Incubation Periods from Maritime Statistics, with Particular Reference to Incubation Period of Influenza. A. G. McKendrick.—p. 364.
Evidence Regarding Immunity Conferred by Attack of Influenza; Study of Three Local Epidemics. R. H. Malone.—p. 372.
Pasteurellosis in Rabbits, Following Intravenous Injection of Influenza Bacilli. R. H. Malone.—p. 379.
Report of Epizootic Disease Among Calves at Amara Dairy Farm. T. H. Gloster and G. Shanks.—p. 382.
*Value of Wassermann Test. Frequency of a Positive Wassermann Reaction in an Unselected Adult Male Indian Population. K. R. K. Iyengar.—p. 398.
*Value of Wassermann Test. II. Significance and Value of Positive Wassermann Reaction in Leprosy. K. R. K. Iyengar.—p. 407.
Prevalence of Ankylostomiasis in Madras Presidency. K. S. Mhaskar.—p. 412.
Correlation Between Chemical Composition of Anthelmintics and Their Therapeutic Values in Connection with Hookworm Inquiry in Madras Presidency. Thymol. J. F. Caius and K. S. Mhaskar.—p. 429.
Identification of Three Strains of Trypanosomes from Cases of Sleeping Sickness Contracted in Portuguese East Africa with Trypanosoma Rhodesiense. T. A. Hughes.—p. 464.
Studies in Ankylostomiasis. IV. G. T. Wrench.—p. 475.

Pathogenesis of Deficiency Disease.—Dietaries which are deficient in vitamins and in protein, and at the same time excessively rich in starch or in fat or in both, McCarrison found to be potent sources of disease and especially of gastro-intestinal disease. An excess of fat, in association with deficiency of B vitamin and protein and superabundance of starch, is peculiarly harmful to the organism. Certain dietetic deficiencies greatly favor the invasion of the blood and tissues by bacteria, especially is this the case when deficiency of vitamins and protein is associated with an excessive intake of starch. Complete absence of this vitamin from the food of the human beings is of less practical importance, from the point of view of disease production, than is its subminimal supply. Complete deprivation of B vitamin, especially in the presence of imperfect balance in other essential requisites of the food, will lead to rapid dissolution and death; subminimal supply of this vitamin will lead, in like circumstances, to slow dissolution and disease.

Cancer of Stomach and Vitamin Deficiency.—McCarrison is inclined to attribute the malignant growth in a monkey to the deficiency of certain food factors. The monkey was fed on food which contained an adequate supply of A and C vitamins but was deficient in B vitamin. The animal survived this dietetic regimen for fifty-one days. At the necropsy an obvious carcinoma of the stomach was found. The discovery of this area of carcinoma was largely a matter of chance since there was no macroscopic evidence of its presence. That the carcinoma was of recent origin seems probable since the area of pyloric mucosa involved by it was of very small size.

Value of Wassermann Test.—Twenty-two per cent. of an apparently healthy Indian male adult population tested by Iyengar, without selection, showed latent or clinically inactive syphilis as demonstrated by the Wassermann test.

Value of Wassermann Test in Leprosy.—Iyengar examined the blood serum in 100 cases of undoubted leprosy, all patients being males. Thirty-four cases were nodular, fifty-two of anesthetic, and fourteen of the mixed form of leprosy, respectively. The number of positive Wassermann reactions were for these several types 17, 16 and 8, respectively, which is 41 per cent. The author is convinced that this reaction is characteristic of leprosy in these cases and that it is not syphilitic.

Japan Medical World, Tokyo

April 3, 1920, **10**, No. 14

Maintenance of Function of Transfused Erythrocytes and Production of Antigen. K. Kobe and Y. Komiya.—p. 289.
*A New Vaccine. J. Hishikari.—p. 289.
Biological Study of Vibrios; Toxin Against Blood Corpuscles. T. Yoyoshima.—p. 289.

New Vaccine: Bacterial Solution.—Hishikari has prepared a vaccine which is not a bacterial suspension, but a solution, in which antigen may remain unaffected by the dissolution of bacteria. Ten platinum loopfuls of a twenty-four hour old culture are mixed with 10 c.c. of a 2 per cent. dried sodium carbonate solution and the mixture is allowed to stand for twenty-four hours in the incubator at 37 C. The bacteria will then dissolve in the mixture. The mixture is neutralized by adding 1 c.c. of an 8.4 or 8.7 per cent. acetic acid solution. To this neutralized solution is added urea to 0.52 per cent. In the preparation of the vaccine of putrefactive cocci and the streptococcus of elephantiasis, the cocci must be killed by keeping the suspension in the water bath at 50 C. for two hours before it is neutralized, for these will not be killed even when they are kept for twenty-four hours at 37 C.

April 10, 1920, **10**, No. 15

Influence of Anesthetics against Phagocytosis. T. Aoyama.—p. 313.
*New Immunization Phenomenon; Volumination. R. Torikata.—p. 313.
*Schlatter-Osgood Disease. T. Shibuya.—p. 313.
Toxic Action of Immunized Serum. S. Yamada.—p. 313.
Study of B. Pertussis.—p. Takagi.—p. 314.
Frambesia in Formosa. O. Oho.—p. 314.
Excretion of Urea and Chlorate Salts from Kidney. G. Enami.—p. 314.
Treatment of Gonorrhea. S. Hidaka.—p. 314.

Volumination: New Immunization Phenomenon.—By mixing bacteria with the normal serum, the bacterial bodies will be seen to swell. By employing immune serum, instead of the normal serum the swelling will appear more remarkable. This volumination, as it is named, occurs even in the presence of so small quantity of salts as would never cause agglutination. From these facts, the swelling of the bacterial bodies may be considered to be the results of the direct combination of the antigens and antibodies.

Schlatter-Osgood Disease.—The author is inclined to attribute the cause of the disease to the incomplete ossification of the independent bone nuclei. The immediate cause of avulsion may, therefore, be disposition and stress.

Lancet, London

May 8, 1920, **1**, No. 19

Surgical Treatment of Prolapse of Uterus and Vagina. W. B. Bell.—p. 993.
*Pellagra Outbreak in Egypt. II. Pellagra Among German Prisoners of War: Food Factor in Disease. J. I. Enright.—p. 998.
Syphilis in Diseases of Heart and Circulation. C. W. Chapman.—p. 1004.

Causation of Red Degeneration. R. H. Paramore.—p. 1005.
Orbital Hemorrhage with Proptosis in Experimental Scurvy. S. S. Zilva and G. F. Still.—p. 1008.
*Very Early Case of Ileal Intussusception Following Severe Trauma in a Boy Aged Six Years. C. M. Kennedy.—p. 1008.
Case of Syphilitic Nephritis. H. B. Day.—p. 1009.
Pericardial Effusion Following Injection of Antidiphtheritic Serum. C. W. Cunnington.—p. 1009.

Pellagra: Rôle of Parotid.—In view of his findings Enright believes that the "food deficiency theory," which has been considered on apparently adequate grounds to be the cause of pellagra, is seriously threatened; that a food deficiency can be quite excluded, but it can hardly be considered as of paramount importance. Obviously something more than a dietetic factor is involved. A critical analysis of the diets which German pellagrins ate before capture and during their period of captivity prior to the onset of the eruption is sufficient to explode the food-deficiency theory as a predisposing factor. That the pellagrins suffered from defective digestive assimilation is undoubted. The incidence of malaria and dysentery was very high, and was responsible for intestinal derangement, which was a marked feature of the majority of the cases. Judging from the indicanuria commonly present and the copious foul smelling evacuations which frequently contained undigested food material, it is evident that there was abnormal protein decomposition, and that the ultimate good effects of the diet were largely vitiated or entirely lost in this manner. Enright wonders whether the parotid possesses any rôle in protein metabolism. He suggests that this gland may possess an internal secretion, the function of which is concerned in the economy of protein, just in the same manner as the pancreatic secretion is essential for normal carbohydrate metabolism.

Traumatic Intussusception.—In Kennedy's case a very early intussusception was discovered four and a half hours after a street accident. Kennedy accepts this as being direct evidence that injury may cause intussusception.

South African Medical Record, Cape Town

March 13, 1920, **18**, No. 5

Case of Eversion of Lachrymal Punctum. R. C. J. Meyer.—p. 83.
Chest Wounds at the General Hospital in France. W. Thomas.—p. 84.
Case of Carcinoma of Lungs. H. A. Loeser.—p. 89.
Tremor of Leg after Operation Cured by Hypnotism. H. Goodman.—p. 82.
Shaggy Pericarditis and Congenital Disease of Kidney. C. T. Moller.—p. 90.
Notes from Country Practice. John A. Graham.—p. 90.
A Case of Abdominal Extraperitoneal Abscess with Unusual Features. E. R. Grey.—p. 92.

March 27, 1920, **18**, No. 6

Medical Observation in South Africa. T. J. Mackie.—p. 103.
Woman's Responsibility to the Health of the Nation. G. P. Mathew.—p. 109.
Pedunculated Fibroid Obstructing Labor. W. A. Rail.—p. 111.
Enuresis Nocturna Cured by Hypnotism. H. Goodman.—p. 111.

April 10, 1920, **18**, No. 7

Some Applications of War Surgery to Civil Practice. L. Gordon.—p. 123.
*Tuberculin Treatment of Tuberculosis. D. M. Macrae.—p. 217.

Tuberculin Treatment of Tuberculosis.—Several hundred tuberculosis patients have been treated by Macrae with T. B. E. of Wright and according to Wright's technic. The patient was usually put to bed in the open air until the pyrexia—when present—had subsided. Tuberculin was then given as indicated, the dose being carefully graduated each week, having regard to the nature of the case. The injection was given subcutaneously, and absolute rest for twenty-four hours after was strictly enjoined in each case. Each week the dose was increased by $\frac{1}{10,000}$ mg. or more, according to the patient's progress, until $\frac{1}{2,500}$ mg. was reached. No ill effects were observed from the treatment of serious cases with tuberculin. In fact, Macrae found that in very early cases of pulmonary tuberculosis patients seemed to be benefited by injections of tuberculin. On the other hand, however, other patients did equally well without it; and if it be true that 95 per cent. of the human race have, at some time or other, been tuberculous, it must be equally true that most of them have recovered without any kind of treatment. In surgical tuberculosis the case was different. In all glandular affections it was found that incision, followed by tuberculin treatment, was of value.

Archives des Maladies du Coeur, etc., Paris

January, 1920, **13**, No. 1

*The Heart in Diphtheria. Aviragnet and Lutembacher.—p. 1.
Use of Condenser in Electrocardiography. D. Routier.—p. 17.
Changes in Aorta and Semilunar Valves as Factors in Dicrotic Pulse. Canciulescu.—p. 24.
French Works During the War on Disordered Action of the Heart. P. Merklen.—p. 27.

The Heart in Diphtheria.—Aviragnet and Lutembacher call attention to the great affinity of diphtheria toxin for the heart, about the same as for nerve tissue. The intensity of diphtheric paralysis parallels the cardiac manifestations, as they are both the expression of the common intoxication. The toxin attacks the heart muscle proper as well as the more highly differentiated parts of the heart. The arrhythmia depends on the degree of the toxic impregnation, and disappears with it, but often tachycardia persists for weeks and even months.

February, 1920, **13**, No. 2

*Aneurysm of the Left Ventricle. R. Lutembacher.—p. 49.
*Sinus Arrhythmia from Asphyxia. L. Gallavardin.—p. 59.
*Sino-Auricular Block. L. Gallavardin and A. Dumas.—p. 63.
The So-Called Azurophil Granulations. L.M. Bétancès.—p. 66.

Aneurysm of the Left Ventricle.—Lutembacher states that constant pain at the apex of the heart is the only sign of value that he has been able to discover for the existence of an aneurysm of the left ventricle. It is sometimes violent but more commonly it is a dull aché or merely an uncomfortable sensation in the chest, accentuated by pressure. He gives illustrations of his three cases.

Sinus Arrhythmia from Asphyxia.—Gallavardin reports two cases from which he assumes the possibility of sinus arrhythmia with large waves for which the asphyxia is responsible, by its stimulating effect on the nuclei of the vagus. Apneic and postapneic retardation is the most characteristic form.

Sino-Auricular Block.—Gallavardin and Dumas report a case from which they conclude that abnormally low bradycardia (between 32 and 36 pulse beats) is due to sino-auricular block. Violent exertion would restore in their patient normal rhythm for the time being. As this normal episodic rhythm gave way again to the primary bradycardia, all gradations of arrhythmia characteristic of partial block could be noted. Swallowing movements restored normal rhythm to a certain extent. They could not decide in their case whether the bradycardia from sino-auricular block was the effect of a congenital predisposition or of a lesion in the sino-auricular system.

Bulletin de l'Académie de Médecine, Paris

March 9, 1920, **83**, No. 10

Sulphates of Rare Metallic Elements in Treatment of Chronic Tuberculous Processes. H. Grenet and H. Drouin.—p. 226.
Ambidexterity. Le Dentu.—p. 229.
Arsenic and Colloidal Silver in Influenza. Capitan.—p. 234.
Functional Insufficiency of the Pulmonary Orifice with Mitral Stenosis. H. Vaquez and Magniel.—p. 236.
History of Psychopathology. Cabanès.—p. 241.

April 6, 1920, **83**, No. 14

Dual Personality. Doléris.—p. 323.
Lethargic Encephalitis. E. Jeanselme.—p. 325; C. Achard.—p. 326; A. Netter.—p. 329.
*Acidosis in Course of Acute Abdominal Disease. M. Labbé.—p. 335.
Salts of Certain Rare Metals in Therapeutics. A. Frouin.—p. 337.
Rôle of the International Hygiene Commission During the Macedonian Campaign. P. Armand-Delille and others.—p. 339.

Acidosis in Acute Abdominal Disease.—Labbé insists that tests for acidosis should be applied to all patients as a routine measure, as much as for albuminuria and glycosuria. He uses the Gerhardt, Legal or Lieben tests for diaceturia and acetonuria, and has found the results important for both diagnosis and prognosis. He ascribes the acidosis to disturbance in liver functioning secondary to the infection. It has the same import as insufficiency of the liver from other cause, but he warns that the liver may be gravely affected without acidosis developing.

April 13, 1920, **83**, No. 15

*Substitute for Bismuth. G. Hayem.—p. 344.
Lethargic Encephalitis at Lille. Combemale and Duhot.—p. 348.
Plastic Surgery of the Ear. J. Bourguet.—p. 350.
*Intermittent Parotitis. Jardet.—p. 352.
Biologic Classification of Living Beings. P. Bouquet.—p. 353.

Bismuth and Kaolin in Treatment of the Stomach.—Hayem remarks that nowadays he never meets any one that takes sodium bicarbonate systematically to relieve pain in the stomach except persons from other countries who are unacquainted with the French method of giving a single dose of 20 gm. of bismuth subnitrate in the morning, fasting. He introduced this treatment in 1906, and time has confirmed its efficacy. He has never witnessed any instance of toxic action from this large dose, but he has found kaolin very nearly as effectual as bismuth, as was described in the Paris Letter, May 29, p. 1531.

Hydroparotitis from Artificial Teeth.—Jardet calls attention to a recurring swelling and pain in the parotid gland which is liable to develop when artificial teeth are worn. If the patient has happened to take out the plate when being examined, the physician may be misled.

Bulletin Médical, Paris

April 10, 1920, **34**, No. 20

Profuse Hemorrhage from Small Blood Vessels. C. Achard.—p. 341.
Frequency of Simple Chancres and Importance of Early Bacteriologic Diagnosis. Payenneville.—p. 345.
Case of Pseudo-Hermaphrodism. H. Costantini.—p. 346.

April 17, 1920, **34**, No. 21

Use of the Pneumograph to Overcome Faulty Respiration. R. d'Heucqueville.—p. 359.
*Functional Hyperthermia in Children. H. Jumon.—p. 362.

Functional Hyperthermia in Children.—Jumon states that during childhood many so-called obscure febrile and subfebrile conditions for which a pathologic cause is sought in vain are in reality purely physiologic hyperthermia and not fever. The adult is a stabilized individual; the child, on the other hand, is an organism seeking to acquire a definite equilibrium. There are many physiologic causes that may produce a variation of temperature in children; of these causes exercise is perhaps the most important. The child is more active than the adult, and activity causes a rise of temperature. A walk of 3 miles at an ordinary gait will raise the temperature of a child, sometimes as high as 100.2 F. Hyperthermia may be of alimentary origin. A nursling, during the menses of its nurse will often have a temperature of 100.4. In early childhood the temperature falls a quarter of an hour after eating, then rises about a degree. The temperature is also influenced by the character of the food. Nervous children are naturally more subject to fluctuations of temperature than others. However, the physician should not make a diagnosis of functional hyperthermia until he has made a careful examination of the child and excluded pathologic hyperthermia of obscure origin, of which latent tuberculosis is one main cause.

Bulletins de la Société Médicale des Hôpitaux, Paris

March 5, 1920, **44**, No. 9

Epidemic Encephalitis. Sicard, Vincent and others.—p. 294, 296, 306, 310, 316, 317, 337 and 341.
Meningeal Hemorrhage of Unknown Cause Simulating Lethargic Encephalitis: Recovery. Rathery and Bonnard.—p. 300.
Induced Pneumothorax in Tuberculosis. Bernard and Baron.—p. 308.
Influence of Sex on Gravity of Influenza. Apert and Flipo.—p. 321.
Influence of Sex in Whooping Cough. E. Apert and Cambessédès.—p. 324.
Consideration of Sex in Pediatrics. E. Apert.—p. 326.
*Hemiplegia of Pleural Origin. De Jong and Jacquelin.—p. 331.
*Roentgen Raying of Spleen in Malaria. V. Cordier.—p. 346.

Pleuritic Hemiplegia.—The young man with acute left pleurisy and large effusion developed the twelfth day, four days after a simple exploratory puncture, persisting organic hemiplegia. Two similar cases are on record. Puncture earlier might have warded off the embolism presumably responsible for the hemiplegia. The effusion had collected very rapidly and this should have warned to puncture early.

Roentgen Raying of the Spleen in Malaria.—Cordier's two years of experience have confirmed the advantages sometimes to be derived in rebellious malaria from roentgen exposures of the spleen.

Lyon Chirurgical

November-December, 1919, **16**, No. 6

*Sacrolumbar Pain and Lumbar Vertebra. G. Nové-Josserand.—p. 573.
Outcome of Gunshot Wounds of the Chest. M. Barthélemy.—p. 584.
Reconstruction of Crucial Ligament of the Knee. G. Cotte.—p. 586.
Experimental Study of Chronic Gastric Ulcer. P. Santy.—p. 597.
*Decalcification of Bones. R. Tillier and P. Witas.—p. 606.
Stenosis of Duodenojejunal Flexure with Gastric Ulcer. Guérin.—p. 627.
Cubitus Valgus with Median and Ulnar Paralysis. P. Bonnet.—p. 631.
Access to Arteries in Calf. P. Bonnet.—p. 638.
*Nerves of Arterial Sheath in Causation of Eczema. R. Leriche.—p. 651.

Neuralgia from Malformation of the Fifth Lumbar Vertebra.—Nové-Josserand reports five cases in which patients complaining of pain in the sacrolumbar region were found on roentgen examination to present malformation of the fifth lumbar vertebra, an abnormal development of the transverse processes which were too long, and often too wide, crowding the fifth lumbar nerve. The fact that when the malformation is unilateral the pain radiates from the same side would seem to furnish strong proof that the malformation is the direct cause of the pain. Resection of the transverse processes does not seem irrational in treatment of this sacralization of the vertebra, causing lumbar neuralgia.

Pathogenesis of Decalcification of the Bones.—According to Tillier and Witas, decalcification of the bones is of various origin. It may be postinfectious and represent the defense reaction of the bone marrow which hypertrophies at the expense of the mineral elements of the bones. Or it may be due to faulty nutrition related in turn to some lesion of the central nervous system. It may be associated with vasoconstriction, dependent on conditions in the sympathetic nervous system. Or it may be traced to a direct local irritation of the sympathetic nerve fibers, which causes a circumscribed decalcification of the bone adjacent to the lesion, usually traumatic. The manifestations may be of a reflex character, associated with phenomena affecting primarily the muscles and of the same origin. Close relation between the decalcification and the pain may be evident. In this case the irritation of the sympathetic system has entailed neuritis.

Cure of Eczema Associated with Varicose Veins.—Leriche gives an account of a case of moist eczema of the leg associated with varicose veins which had resisted all forms of treatment for a period of five years, but which receded completely in a few days following denudation of a stretch of the femoral artery—what he calls perifemoral sympathectomy.

Nourrisson, Paris

March, 1920, **8**, No. 2

*Artificial Feeding of Infants in Institutions. A. Mola.—p. 65.
*Common Diarrhea in Infants on Cow's Milk. Marfan.—p. 81.
The Milk Supply in Paris and Suburbs. H. Martel.—p. 107.

Artificial Feeding of Infants in Institutions.—Mola reviews the work of the infant ward at Montevideo, showing that it compares favorably with similar institutions elsewhere. But even at the best, over 38 per cent. of the infants artificially fed died before reaching the sixth month; from 6 to 12 months old the mortality was 15 per cent., and from 1 to 2 years was 3.9 per cent. Institutional care of infants is pernicious at the best from the lack of psychic stimuli and the danger of secondary infection. The mortality of 19 per cent. for infants in the institution for three weeks rose to 50 per cent. with an eight months' stay. During the last six years a total of 1,026 infants have passed through the service; the total mortality has averaged 17 per cent. The rooms are spacious and there is a large court for sunning the babies and one nurse to each four. He remarks in conclusion that there is nothing more individual than the need for food; health and normal growth can be obtained with very different rations according to the subject. Sometimes the infant will begin to thrive for the first time when the amount of food is reduced to much below the normal standard. Over 64 per cent. died of the artificially fed infants weighing less than 3,000 gm., while the mortality was only 17.1 and 2.8 per cent. among those weighing 5,000 and 6,000 gm.

Diarrhea in Infants Fed on Cow's Milk.—Marfan explains that common diarrhea in infants getting cow's milk is due to exaggeration of peristalsis and hypersecretion in the bowel, a reaction to irritating substances which may be of

various origins. The intestinal flora may not have been altered before the diarrhea, but once it is installed, the flora changes and in a way that may maintain or aggravate the irritation from the products of the proteolytic, saccharolytic or lipolytic bacteria. Although these modifications of the flora are the consequences and not the cause of the diarrhea, yet it is important to keep them under control, as nutritional disturbance sets in early from the secondary defective digestion and assimilation.

Paris Médical

March 27, 1920, **10**, No. 13

*Thrombophlebitis of the Upper Extremities. F.-M. Cadenat.—p. 253.
Syndrome of the Posterior Inferior Cerebellar Artery. Duhot.—p. 259.

Thrombophlebitis of the Upper Extremities.—Cadenat states that this rare condition manifests itself by a syndrome similar to phlegmasia dolens of the lower extremities. It develops in from two to four weeks. As a rule, it terminates by a complete return to normal function, without the occurrence of embolism. Treatment is simple. First immobilization with suspension; then massage and mobilization, beginning with the third week. Phlebitis may result from a local infection of the arm, or it may be due to overstrain or to traumas of the chest that show no infection clinically. He summarizes fourteen cases, including two from his own service.

April 3, 1920, **10**, No. 14

Recent Progress in Digestive Pathology. P. Harvier.—p. 269.
Indications with Cancer of the Colon. P. Mathieu.—p. 275.
Repeated Hematemesis in Chronic Pylephlebitis. P. Carnot and J. de Léobardy.—p. 277.
Total Colectomy for Chronic Intestinal Stasis. V. Pauchet.—p. 280.
*The Sham Meal Test. Dupuy.—p. 286.
Rectitis with Secondary Syphilis. Carnot and Friedel.—p. 291.
Appearance and Reaction of the Feces. R. Goiffon.—p. 294.

The Sham Meal Test.—Dupuy discusses the sham meal test recommended by Carnot in 1904 for determination of the quality and quantity of gastric secretion. It is a clinical application of Pawlow's experimental psychical secretion. At the Beaujon hospital the appetizing sham meal usually consists of broiled steak, and bread and butter. The fasting subject is instructed to cut his food fine and to chew slowly each mouthful, but to refrain from swallowing any of the food or saliva. Each mouthful, after thorough mastication is expelled in a basin, the subject rinsing his mouth with water from time to time. The quantity of food set before the patient should require ten minutes for its mastication, as this is the minimal duration of the sham meal, since the psychic secretion reaches its height in about ten minutes. After the meal has been disposed of as described, he keeps quiet for ten minutes longer, during which period he continues to deposit in the basin all the saliva that is secreted. At the end of this time the contents of the stomach are again evacuated with the stomach tube, as was done before the sham meal. From 30 to 90 c.c. of clear gastric juice are thus secured, which contains no food particles if no saliva nor food has been allowed to reach the stomach. The gastric juice thus secured turns diamidoazobenzene red, which is evidence of the high percentage of free hydrochloric acid. Owing to its purity, its analysis is particularly easy. Dupuy has found the method of great value in the differential diagnosis of cancer, ulcer, types of dyspepsia, etc.

Presse Médicale, Paris

April 17, 1920, **28**, No. 23

*Early Diagnosis of Hard Chancre. R. Sabouraud.—p. 221.
*Autoplastic Surgical Treatment of Baldness. R. Passot.—p. 222.
*Reparative Surgery of the Hand. C. Lenormant.—p. 223.

Urgency of Early Diagnosis of Hard Chancre.—Sabouraud insists on the extreme importance of ultramicroscopic examination with every dubious ulceration on the genital organs, and reiterates that syphilis should be managed like rabies.

Operative Treatment of Baldness.—Passot utilizes strips from that part of the scalp which is not affected with calvities, twisting the flaps around to cover the bald region, as he shows in two illustrations. The growth of the hair will soon hide the edges of the long narrow pedunculated flaps, cut to cover about a third of the bald area. The result was a complete and permanent success in his six cases thus treated. By the end of a month the hair had grown enough to conceal all trace of the incisions. By the second or third month the hair had grown long enough to cover the denuded areas entirely. He remarks that this method of *chirurgie esthétique pure* ranks with the operative correction of wrinkles, surgical tattooing of scars, and reconstruction of ugly noses, French surgeons now taking much interest in correction of disfigurements.

Reparative Surgery of the Hand.—Lenormant reviews the extensive literature of the last few years on reconstruction of fingers and of the hand in general. Substitution of the thumb with a toe is giving better results, but the joints can seldom be used actively. When done on a child, the toe does not grow to keep pace with the rest of the hand. The discomfort from the position required to bring the pedunculated toe flap and the hand together also restricts the use of this method. The outcome is more promising when a finger from the other hand is used for the new thumb. Joyce reported in 1918 a successful case, the ring finger of the left hand forming the new right thumb. The hands were fastened together for two months. The man can cut with scissors and otherwise use his right hand normally. Of the nine cases of grafting a finger or toe in place of the thumb, the graft lived in all but two, and the results were excellent.

April 21, 1920, **28**, No. 24

Intranasal Treatment of Ethmoidal Suppuration. G. Portmann.—p. 233.
*The Abdominocardiac Reflex. Prével.—p. 235.

The Abdominocardiac Reflex.—Prével refers to the acceleration of the heart beat on changing from the reclining to the erect position. He has investigated this in several hundred persons, having a table for the purpose which swings the body without personal effort from the horizontal to the vertical position. There is no acceleration in the perfectly healthy, and he has traced it to the traction from sagging organs, especially the stomach, mechanically irritating the solar plexus. There is no acceleration if the stomach is supported with a band or with the hands. Tachycardia after exertion is probably due in part to the same cause, and both require treatment to restore conditions to normal, more careful mastication and refraining from drinking too much fluids with meals, while the flabby abdominal walls should be given physiologic training, and be supported with a band. By this means a damaged heart will be spared extra work and the sound heart of the athlete spared unnecessary strain.

April 24, 1920, **28**, No. 25

Transverse Fracture of the Patella. E. Juvara.—p. 241.
*Glycemia and Acetonuria. H. Chabanier.—p. 242.
The New Laws of Inherited Syphilis. Carle.—p. 244.
Immune Bodies in Treatment of Tuberculosis. C. Spengler.—p. 244.
Trachoma. L. Cheinisse.—p. 246.

Critical Glycemia in Diabetes.—Chabanier expatiates on the light thrown on diabetes by the glycemia figure of the plasma when abrupt and intense acetonuria has been induced by sudden reduction of the carbohydrates in the diet. This will induce acetonuria even in the healthy, but the glycemia does not vary much. In the diabetic it becomes much reduced, and this reduction phase is what he calls the critical glycemia. When there is already acetonuria in the diabetic, carbohydrates should be allowed until the acetone figure is normal; then the glycemia is again the critical figure. He says that this critical glycemia is the most reliable index at our disposal of what is going on in the diabetic's organs. The normal standard is 1 per thousand and any figure above this indicates the abnormal utilization of carbohydrates which is the essence of diabetes. The size of the figure is an index of the severity of the disease and hence of the prognosis. Hyperglycemia in diabetics seems to be a kind of compensating process, like the high uremia with nephritis. The sugar content of the urine is merely a gross sign of diabetes, he affirms; it is not to be compared with the insight afforded by the critical glycemia. The test diet he has found most convenient for the purpose is the clot from 3 liters of milk, all the whey removed, but water allowed freely with it.

Progrès Médical, Paris

April 10, 1920, **35**, No. 15

*Nitrogen Equilibrium of Blood of Cancer Patients. Loeper and others.—p. 159.

The Nitrogen Balance in the Blood of Cancer Patients.—Loeper, Thinj and Tonnet report the results of their investigations on the blood of fifteen cancer patients. They found that cancer, no matter what the localization may be, affects profoundly the nitrogen equilibrium of the organism and more especially that of the blood. This fact is shown by the increase of the residual nitrogen and by the decrease of the relative amount of urea nitrogen. This result is probably due to the secretion by the tumor of proteolytic ferments resembling erepsin, and in some cases possibly by the action of the tumor on the functioning of the liver itself. They regard as especially significant the frequent increase in the amount of urea in the blood in the absence of any renal lesion diagnosticable clinically, a finding in sharp contrast with the hypo-azoturia common in cancer patients. In the fifteen cases the ratio between the urea nitrogen and the total nitrogen of the blood was always below normal; in ten cases even lower than 40 per cent., and in four cases below 20 per cent. The residual nitrogen varied around 0.60 gm., although in one case (cancer of the pylorus) the unusually high figure of 1.82 gm. was noted.

Revue de Chirurgie, Paris

July-August, 1919, **38**, No. 7-8

*Exclusion of Subarachnoid Space. F. Lemaitre.—p. 497.
Principles for Making Artificial Legs. J. Amar.—p. 539.
Surgery in Malaria. H. Alamartine and H. Vandenbosche.—p. 567.
Verticotransverse Fracture of Condyle of Femur. Bergeret.—p. 592.
*Infectious Spondylitis and Perispondylitis. Lance and Jaubert.—p. 607.

To Wall Off the Subarachnoid Space in Operating on the Brain.—Lemaitre refers particularly to operations for abscesses in the brain or cerebellum, but the simple method he has applied successfully in sixteen cases can be used for any operations on the brain. The aim is to evacuate the pus and induce adhesions along the tract of the drain to form a fibrous wall, and thus shut off all communication with the meninges. The meninges are not incised, a Pravaz needle being used to puncture down to the focus. When pus appears, the needle is replaced by a catheter. Usually pus will rise in the catheter, and the abscess will thus be partially drained. Then the catheter is removed and a drain of very small caliber is inserted in its place and worked into the puncture hole with care not to tear the edges. The drain is left in place for from twenty-four to forty-eight hours, during which time it does not act so much as a drain as it does as a foreign body designed, through a process of irritation, to develop meningeal adhesions. Then the tract leading to the collection is further enlarged by the insertion of a larger drain. By thus gradually increasing the size of the drains from day to day the meningeal orifice is widened, the area of thickening produced by the adhesions is increased, and the exclusion of the subarachnoid space is complete. Lemaitre thinks that this walling off of the subarachnoid space around marks a distinct advance in the evolution of brain surgery.

Spondylitis and Perispondylitis.—Among 150 patients whose condition had been diagnosed as Pott's disease, Lance and Jaubert found a considerable number with infectious spondylitis, so-called rheumatismal perispondylitis or tuberculous rheumatism of the Poncet type—a total of fourteen such cases from among the military hospital patients and four more from civil practice. At the height of the process the symptoms could not be controlled by any medication and the pain did not cease by mere rest in bed alone, but when the patient was provided with a plaster body cast the pain yielded rapidly. While strict immobilization is indispensable during the pain crises, it seems that later it is better for patients to be mobilized. At the beginning of the exercises the movements were stiff, but after a few seconds patients regain their suppleness. Mobilization must be carried out very gently and very prudently, as any overfatigue may bring on a new attack of pain. Eleven of the patients were treated with heliotherapy for variable periods and all were more or less benefited. The writers do not pretend that moderate mobilization together with heliotherapy can render supple spines that are already ankylosed, but state that there is no doubt that heliotherapy attenuates and arrests the pathologic process and aids in the resorption of the exudates. Otherwise the cases seemed to be passing on inevitably to ankylosis of the spine.

Schweizer Archiv f. Neurol. und Psychiatrie, Zurich

April, 1920, **6**, No. 1

*Nature of Aphasia. F. Lotmar.—p. 3. Conc'n.
*Organic Variability and Correlations. II. Bersot.—p. 37. Conc'n.
*The Problem of Instinct. R. Brun.—p. 80.
Myokymia and Muscle Changes in Scleroderma. S. Neumark.—p. 125.
Heterotopia of the Choroid Plexus. S. Kitabayashi.—p. 154.

Aphasia.—In concluding this long study of difficulty experienced in finding the proper word, Lotmar emphasizes that the difficulty is much greater for names of unseen objects than for the visible, and that this must be borne in mind, in addition to other points he describes, in training during convalescence from total aphasia.

The Plantar Reflex.—Bersot reviews the literature extensively and explains that reflex action in pathologic conditions is like that of the extremes of life, in infants and the aged. It is the relative frequency and variations that imprint the characteristic stamp, considered in connection with other reflexes.

Instinct in the Light of Modern Biology.—Brun defines the modern biologic conception of instinct and describes its physiology, psychology, and pathology, or "hormopathies." The latter, he says, may be primary morphogenic or metabolic endogenous hormopathies or secondary metabolic or dynamic exogenous hormopathies—all outside of the consciousness and all originating in the instincts for food and for defense.

Schweizerische medizinische Wochenschrift, Basel

March 18, 1920, **50**, No. 12

Lethargic Encephalitis at Zurich. H. W. Maier.—p. 221. Cont'n.
*Vital Shape of the Erythrocytes. O. Wyss.—p. 226.
Prophylactic Raying after Operations for Cancer: Reply. M. Steiger. —p. 227.
Epidemic of Cholera in Corfu, 1916. A. E. Tsakalotos.—p. 230.

Are the Erythrocytes Biconcave?—Wyss presents evidence that the erythrocytes in the blood are round or egg shaped, the plasma exerting a counter pressure to the oxygen inside the corpuscles, which maintains them in this shape. The moment the blood issues from the vessel, this counter pressure is lost; the oxygen escapes from the erythrocytes instantaneously, and they collapse into the biconcave shape. The round or egg shape offers much less chance for friction in the circulating blood than if they were biconcave. He suggests that study of the interval before the corpuscles thus shrink to the biconcave form might have diagnostic value in some conditions.

April 8, 1920, **50**, No. 15

Character of Present Epidemic Influenza. H. Eichhorst.—p. 281.
*Incapacity from Injury of the Eyes. Sidler-Huguenin.—p. 283.
Experimental Research on Action of Drugs on the Intestines by Oral and by Parenteral Administration. F. Uhlmann and K. Zwick. —p. 287. Conc'n in No. 17.

Incapacity from Injury of the Eyes.—Sidler-Huguenin remarks that in estimating the degree of incapacity after injury of the eyes the mistake is generally made of regarding it as greater than it later proves to be. In reviewing the ultimate outcome in 300 cases in which compensation was granted he was impressed with the way in which the subject adapts himself to his impaired vision and seems to regain his old skill to a remarkable degree, as for example, a certain farmer who had lost one eye and can distinguish only fingers at 2 meters is able to manage his farm as before without any apparent detriment. When men gave up their place in the workshop on account of the injury to their eyes, it often happened that they took another similar place elsewhere, or else they founded a similar business of their own with the indemnity they had received. In none of the 300 cases has the other eye been injured later when the men continued at the same occupation. Of the total 300, fully 85 or 90 per cent. resumed their former trade or other work, testifying

that the injury to the eyes does not require a change of occupation unless it is very grave. He was allowed to examine the pay-rolls, and he found that the wages paid (1916) were the same in 81.6 per cent., and only in 8.3 per cent. were they lower. Of those who had resumed work with reduced wages, over half had regained their former wage in a year or two. Fully 90 per cent. of all by the end of two years were getting no less wages than before their accident.

Investigation of the way in which the compensation money had been spent, showed that it had laid the foundation for a competency in a number of cases, fully 80 per cent. of the injured having invested the money wisely, so that their accident had really been fortunate for them, financially. His investigations showed further that the disfigurement from the accident did not interfere with the men's getting work, and the family and friends seemed soon to get accustomed to it. Another important factor in the ultimate outcome is that a single eye gets trained in time to what amounts to stereoscopic vision as it is assisted by the sense of touch. Women become more expert in this way than men, as a rule. The experience with these 300 cases testifies abundantly that after the loss of one organ its mate learns in time to assume the functions of both. He warns that the view that every impairment of vision entitles to compensation as a matter of course is erroneous. Physicians should impress this on the injured, demonstrating to them how certain persons with defective vision even from childhood are yet able to do fine work. Otherwise the physician is liable to lay the foundation for a traumatic neurosis. He should inform the injured that any defect less than 0.75 for fine work and 0.5 for ordinary work does not entitle to indemnity. With graver injury than this, the decision must be left to specialists, but it is well to bear in mind that of the 300 cases on which this communication is based, only 10 per cent. have had their earning capacity reduced by their accident. Instead of speaking of "impairment of earning capacity" it might be better to say that the "integrity of the body is no longer quite intact." This would avoid the suggestion of damage when really such does not exist. It is probable that the experiences with accidents in other fields will yield the same ultimate results as with injury of the eyes.

Pediatria, Naples

April, 1920, **28**, No. 8

Lethargic Encephalitis in Children. P. M. Romano.—p. 353.
Meningococcus Carriers in Regiment. B. Romano.—p. 362.
Sudden Death in Pertussis. I. Nasso.—p. 365.
The Pulse-Viscosity Index in Children. A. Nizzoli.—p. 368. Cont'n.

Riforma Medica, Naples

March 6, 1920, **36**, No. 10

Lethargic Encephalitis and Influenzal Poliencephalitis. G. Zagari.—p. 245.
Histology of Mucosa with Exstrophy of Bladder. Formiggini.—p. 252.
The Law and Medical Secrecy. M. Carrara.—p. 255.

March 13, 1920, **36**, No. 11

Lethargic Encephalitis. G. Zagari.—p. 269; S. Dalmazzoni.—p. 276.
Icterohemorrhagic Spirochetosis with Necropsy. Santi Racchiusa.—p. 273.
Echinococcus Cyst in Abdominal Wall. P. de Tommasi.—p. 278.
Compensation for Injury from Violence While at Work. G. Marchese de Luna.—p. 281.

March 20, 1920, **36**, No. 12

Lethargic Encephalitis. G. Zagari.—p. 293; R. Falcone.—p. 302.
*Parenteral Injection of Milk, etc. S. Corinaldesi.—p. 296.
Maximal Fermentation of Glucose by Colon Bacillus. M. Mazzei.—p. 300.
*Physiologic Acetonuria. E. Pittarelli.—p. 303.

Protein Therapy.—Corinaldesi gave intravenous injections of 1 c.c. of a 2 or 4 per cent. solution of deutero-albumose in a case of typhoid and one of paratyphoid, according to Lüdke's technic. No benefit was apparent. Then he tried intramuscular injections of 5 or 10 c.c. of sterilized milk in five patients with lobar or bronchopneumonia or typhoid and was astonished at the prompt and permanent improvement that followed one, two or three injections, without disturbances or much local reaction. There was only rarely a slight chill and it was mild. His findings thus confirm the way in which parenteral introduction of some protein substance is able to stimulate the defensive forces and aid in the throwing off of the disease, irrespective of the nature of the protein inoculated. He remarks that the facts observed have opened new fields of research even if none of the theories advanced to date explain them satisfactorily.

Physiologic Acetonuria.—Pittarelli's research seems to disprove the assumption that every urine contains some acetone. He has further demonstrated that there must be some substance in the urine which combines with the acetone and prevents its responding to the most sensitive tests until the urine has been distilled. Then the acetone is found prominent in the distillate. The nature of this substance that masks the acetone is still a mystery.

Rivista Critica di Clinica Medica, Florence

Oct. 4, 1919, **20**, No. 40

*Return of Exophthalmic Goiter after Operation. C. Capezzuoli.—p. 469.

Recurrence of Exophthalmic Goiter After Thyroidectomy.—Only a small segment of the three lobes was left at the operation in 1915 and a complete cure followed. A year later the thyroid began to enlarge again and soon reached its former size, with other symptoms of exophthalmic goiter and also tetany. Then the young woman married and all the symptoms subsided; even the thyroid shrank to its post-operative size. She seems clinically cured, not even the shock of the death of her husband just before her child was born having brought back the symptoms.

Nov. 29, 1919, **20**, No. 48

*Pneumothoracentesis in Pleurisy. E. Riccioli.—p. 565. Conc'n.

Injection of Air in Pleurisy.—Riccioli reports six cases of pleurisy with effusion in which he allowed air to gradually take the place of the effusion as it was aspirated. This averted sudden changes in pressure while clearing out the effusion completely and holding the sheets of the pleura apart so that adhesions are less likely to develop; it also checks reproduction of the effusion, and favors the circulation in the chest.

Revista Española de Medicina y Cirugía, Barcelona

December, 1919, **2**, No. 18

Treatment for Extensive Adnexitis. J. Soler y Julia.—p. 657.
*Gangrene Following Injection of Sugar Solution with Epinephrin. Baudilio Guilera.—p. 664.
Digestive Disturbances in the Tuberculous. F. Gallart y Monés.—p. 667. To be cont'd.
Ferran's Vaccine Against Tuberculosis. J. Codina Castellvi.—p. 673.
Tuberculous Vagotonic Syndromes. R. Pla y Armengol.—p. 677.
The Unstable Temperature in Tuberculosis. Dargallo.—p. 679.

Gangrene After Injection of Sugar Solution.—The primipara of 23 with puerperal fever showed slight and sluggish response to injection of turpentine to induce a fixation abscess. The seventh day she was given an injection of 350 gm. of sugar solution containing 20 drops of epinephrin solution. The injection was made 12 cm. from the point where the turpentine had been injected five days before. This was repeated on the other thigh. Within twenty-four hours a patch of gangrene developed at the site of the injections of the sugar solution, and the processes rapidly spread and burrowed deep. When the gangrenous tissue had been cut away, the aponeurosis was left exposed but under hot applications several times a day the defect gradually healed over. Injection of sodium chlorid solution without the epinephrin was borne without by-effects, so that Baudilio inclines to ascribe the gangrene to the local vasoconstricting action of the epinephrin in the much debilitated and infected patient.

Revista Española de Obstet. y Ginecología, Madrid

September, 1919, **4**, No. 45

*Radium Treatment of Cancer of Uterine Cervix. S. Recasens.—p. 385.
*Radium Treatment of Uterine Cancer. Vital Aza.—p. 395.
Traumatisms from Coitus. V. Conill.—p. 403.

Radium Treatment of Cancer of Uterine Cervix.—Summarized April 10, 1920, p. 1054, when it appeared elsewhere.

Radium Treatment of Uterine Cancer.—Vital Aza describes the modifications in rabbit ovaries under exposure to radium and roentgen rays, and discusses the mechanism of the cure of human uterine cancer. He thinks that the proliferation of connective tissue under the influence of the raying is the result, not the cause, of the destruction of the cancer cells.

The radium and roentgen rays do not have any specific action; they merely exaggerate and hasten the degenerative processes going on, while checking mitosis.

Siglo Médico, Madrid

Feb. 7, 1920, **67**, No. 3452

Influenza. B. Hernández Briz.—p. 85.
*Differentiation of Meningitis by the Eye Findings. V. Ribon (Bogotá). —p. 86.
*History of Medicine. Albiñana.—p. 88. Cont'n.
*Acromegaly and Diabetes Insipidus. G. Pittaluga.—p. 90.

Differential Diagnosis of Meningitis by the Eye Findings.—Ribon recalls that malaria frequently induces subjective and objective changes in the eyes, some visible with the naked eye and others requiring the ophthalmoscope for their detection. Malaria may induce symptoms closely resembling those of meningitis but the meninges are sound. Hemorrhages in the retina are explained by accumulation of the hematozoa in the finer vessels. The ophthalmoscope may reveal likewise malarial neuroretinitis. The discovery of the hematozoa in the blood will permit effectual treatment of the supposed meningitis.

History of Medicine.—This instalment of Albiñana's rambling notes of his trip to France to compile data for a history of medicine is accompanied by illustrations of objects of historical interest from the Bordeaux museum. One skull shows a large trephining opening similar to those found in prehistoric skulls. But this skull is a modern one; the trephining opening was made with the prehistoric flint instruments excavated recently. It took nearly two hours to make the opening with these crude tools.

Acromegaly and Diabetes Insipidus.—Pittaluga remarks that acromegaly is probably accompanied by polyuria more often than is generally recognized, as the polyuria may be transient. The condition may right itself later as compression of part of the pituitary subsides or the parts adapt themselves functionally or anatomically to the compression.

Feb. 14, 1920, **67**, No. 3453

General Syphilis and Syphilitic Psychoses. G. R. Lafora.—p. 101. Cont'n.
Types of Infants' Stools. J. E. López-Silvero (Havana).—p. 105.
Home Treatment of Morphin Addiction. C. Juarros.—p. 107.

Feb. 21, 1920, **67**, No. 3454

*Cholecystitis and Abscess in Liver without Jaundice. E. Slocker. —p. 121.
Myiasis of the Skin. E. Hervada.—p. 124.
The Significance of Urethral Filaments. Sicilia.—p. 126.

Gallstones and Abscess in Liver Without Jaundice.—Slocker describes a case in which the symptoms from cholelithiasis were long mistaken for stomach disturbances from hyperchlorhydria. There was no jaundice, but the liver was enlarged and painful, the pain spreading to both shoulders, and the gallbladder region was tender. Over thirty gallstones were removed from the gallbladder, and recovery was soon complete after the partial cholecystectomy and incision of the liver which released fetid pus. He emphasizes the necessity for examination of the liver for a suppurating process in cases of gallbladder disease, and warns that the cystic duct may be compressed by glands in the gastrohepatic omentum; swelling of the duct from the compression may obstruct the lumen and thus entail the clinical picture of gallstone obstruction in the absence of gallstones.

Gann, Tokyo

November, 1919, **13**, No. 3

*Fowl Sarcoma. IV. T. Ogata, S. Kawakita and T. Mita.—p. 7.
*Necropsy Findings in Brain Cancer Case. M. Nagayo.—p. 9.

Fowl Sarcoma.—This report is the continuation of research on this subject since 1917. The filtered extract of the fowl sarcoma was found more virulent when prepared with distilled water than with saline, and even when sodium chlorid was added later up to a strength of 0.8 per cent. The tumor-inducing substance does not diffuse through animal membranes. These and its other properties indicate that it is a colloidal chemical substance, soluble in distilled water, and that the possibility of a filtrable virus cannot be definitely excluded.

Necropsy Findings in Cancer Case.—Illustrations are given with detailed description (in Japanese) of the necropsy findings in the cerebellum, etc., in the case of the late professor of internal medicine at the University of Tokyo, Baron Aoyama.

Deutsches Archiv für klinische Medizin, Leipzig

April 29, 1919, **129**, No. 1-2

*Ratio of Residual to Total Nitrogen. E. Becher.—p. 1.
*Retention of Indican in the Tissues. E. Becher.—p. 8.
*Bilirubin in the Blood. J. Bauer and E. Spiegel.—p. 17.
*Clinical Electrocardiography. F. Klewitz.—p. 41.
*Analysis of the Blood Gases VI. H. Straub and K. Meier.—p. 54.
*Arteriosclerosis and the Blood Pressure. K. Harpuder.—p. 74.
*Nonpuerperal Osteomalacia. H. Curschmann.—p. 93.
*Wandering Heart. Rumpf.—p. 118.

Relation Between Residual and Total Nitrogen.—Becher found the proportions between the residual nitrogen and the total nitrogen about the same in all the tissues, except that it was a trifle lower in the blood serum and in the lungs. After nephrectomy, and in persons who had succumbed to renal insufficiency, the residual nitrogen formed a larger proportion of the total nitrogen than in normal conditions.

Retention of Indican in the Tissues.—In contrast to nitrogen, Becher found no indican in the tissues when the kidneys were functioning well. But with incapacity of the kidneys, retention of indican was evident; the larger proportion was found in the blood, only very small amounts in the tissues.

Bilirubin in the Blood.—Bauer and Spiegel regard familial cholemia as a chemical sign that the liver is constitutionally below par. The bilirubin content of the blood seems to keep at a constant figure in different persons in normal conditions but, they say, it can be reduced by drugs that act on the sympathetic system, and increased by drugs that affect the vagus. Exceptionally high bilirubin content of the blood was found with obstruction of the bile passages, weakness of the myocardium, congested liver, and traumatic hemothorax. On the other hand, the bilirubin content of the blood was abnormally low with diffuse kidney disease, tuberculosis, inanition, and cachexia from cancer.

Electrocardiography in the Clinic.—Klewitz analyzes several hundred electrocardiographic curves from eighty-eight persons, including twelve with sound hearts. He found a negative T peak only in cases of organic heart disease, especially disease of the myocardium. The same can be said when the T peak is lacking, but the prognosis is not so grave as with the negative T peak. A positive T peak does not absolutely exclude organic heart disease, but the prognosis is more favorable when the electrocardiogram shows a positive or even weakly positive T peak. He found further that pressure on the vagus affected the rate of cardiac contraction both in the healthy and in those with heart disease; but a dromotropic effect was evident only with organically diseased hearts. He gives the necropsy findings in some cases in which during life the T peak had been lacking, or had been present at first and had disappeared as the condition grew worse.

Blood Gases.—Straub and Meier describe how the reaction of the blood can be determined by the curve of the binding of carbon dioxid with a known carbon dioxid pressure. They give the normal standard as deduced from fifty-six curves from forty-six persons with 320 separate determinations of the carbon dioxid capacity. The findings in one case of polycythemia suggest a buffer action by the erythrocytes.

Arteriosclerosis, Contracted Kidney and Blood Pressure.—Harpuder paid special attention to the condition of the kidneys and the blood pressure in 1,165 cases of arteriosclerosis, mostly men. The arteriosclerosis alone does not entail high blood pressure, not even when it involves the small arteries of the heart and brain, but the blood pressure runs up as the kidneys develop sclerosis of their smaller vessels. The high blood pressure seems to develop independently of the severity of any disturbance in kidney functioning or the extent of the anatomic lesion. We are justified

in assuming damaged kidneys whenever the blood pressure is over 160 mm. mercury.

Nonpuerperal Osteomalacia.—Curschmann asserts that osteomalacia may occur not only from excessive functioning of the ovaries during the puerperium, but also from excessive functioning of the thyroid gland at other periods of life. This assumption was confirmed by the success of treatment with phosphorus and cod liver oil in a number of cases described. Other cases showed that still others of the ductless glands might be involved, and that the derangement might occur with either deficient or excessive functioning of one or more. Excessive irritability of the vagus or sympathetic system may further complicate the clinical picture, as he shows by some concrete examples. In one, after a phase of hyperthyroidism, there was hypofunctioning of the thyroid, ovaries and parathyroids, manifested in the nullipara of 27 as abortive exophthalmic goiter, then myxedema, and after a few years osteomalacia and tetany. He cites in conclusion a case of neurofibromatosis which seems to be traceable likewise to weakness of the ductless glands, as there is associated nonpuerperal osteomalacia. The woman improved under phosphorus.

Movable Heart.—Rumpf describes the roentgen findings with an abnormally movable heart, and emphasizes the importance of breathing exercises to restore tone to the diaphragm, the wearing of a supporting band, and restriction of the evening meal to fluid or soft food, without meat, and with little bread, to ward off distention of the stomach.

Monatsschrift für Kinderheilkunde, Leipzig

April, 1920, **18**, No. 1

*Protein Therapy for Children. A. Czerny and H. Eliasberg.—p. 1.
*Hyperthermia with Sclerosis of Basal Ganglions. H. Mammele.—p. 5.
Capillaries of the Skin in Infants. A. Mertz.—p. 13.
*Cerebral Rachitis. P. Karger.—p. 21.

Protein Therapy Applied to Cachectic Tuberculous Children.—Czerny and Eliasberg expatiate on the transformation in the condition of certain children with advanced tuberculosis under protein therapy. They used horse serum, and obtained the best results with daily subcutaneous injection of from 0.5 to 2 c.c. Two of the twenty-six cases are reported in detail. A girl of 10, with cyanotic hands and feet, swollen legs, evidently in the demineralization stage with cachexia, almost imperceptible response to the skin tuberculin test, a large tuberculous gland in the neck and a tuberculous focus in the jaw, in three weeks began to improve under two injections weekly of 10 c.c. each of horse serum, to a total of forty-seven injections. By the end of ten months no one would have recognized the plump, rosy child. Nine of the twenty-six children died, but these were apparently doomed when the treatment was begun. The ages ranged from 3 months to 10 years. Of the nine that died all but four were under 2½ years old.

Habitual Hyperthermia with Sclerosis of the Basal Ganglions.—No cause for the constantly high temperature in the 17 months' infant could be discovered until necropsy revealed sclerotic processes in the basal ganglions. Drug tests of the sympathetic nervous system had shown that the temperature anomaly must be of central origin.

Cerebral Rachitis.—Karger states that children with rachitis are mentally backward, they sweat readily from nervous influences and show other anomalies, and the brain is usually abnormally large, although no histologic or chemical changes in it have been detected to date. If a wooden block is laid on the head of a normal infant propped up in bed, it will throw off the foreign weight with its hands or by moving its head, but the rachitic child will let it lie and at most will scream. The softness of the bones does not hinder the child from removing the block; it merely does not think of using its arms for the purpose. It does not begin to walk because it has no spontaneous interest in changing its position. Rachitic children seem to have little sense of taste; they will take cod liver oil or quinin without resistance. Laryngospasm and convulsions, he says, are the only cerebral symptoms of rachitis that have been accorded attention so far. The bending of the legs is not due exclusively to weight bearing, he explains. Even without weight bearing, the legs are drawn up in the Turkish fashion, and the strain from the muscles in time curves the soft bones. There is every reason to get rachitic children on their feet as early as possible on account of the effect on the general health and especially on the intelligence; and on their interest in their environment and to ward off hypostatic pneumonia. He noted extraordinary improvement in one case in which a rachitic child, isolated on account of an acute infection, was placed with another child isolated for the same purpose. Guarding its toys from encroachment, etc., roused dormant energies. In short, he concludes, the cerebral elements are of more moment for the development of the rachitic child than the somatic. Rachitis is not a disease of the skeleton but is a general disease. Not the rachitic bones, but the cerebrally abnormal rachitic child is what we have to treat.

Münchener medizinische Wochenschrift, Munich

Dec. 26, 1919, **66**, No. 52

Composite Picture of Young Soldier. Geigel.—p. 1491 .
*Etiology of Mongolian Idiocy. W. Stoeltzner.—p. 1493.
*Luminal Poisoning with Therapeutic Doses. W. Haug.—p. 1494.
Special Bicycles for the Amputated. L. Zimmermann.—p. 1494.
Tuberculin Inunctions plus Phototherapy. Hufnagel.—p. 1495.
Composition of the Blood in Arid Climates. J. Grober.—p. 1495.
The Military Hospitals of the Foe. E. Michels.—p. 1495.

The Etiology of Mongolian Idiocy.—Stoeltzner found that in three of ten cases of mongolism the mothers during pregnancy had presented constipation, little appetite for food, striking tendency to take on fat in spite of moderate quantity of food eaten, falling out of hair, hypohidrosis, chilliness, great languor, increased need of rest and sleep, apathy and decrease of mental activity—a clear picture of hypothyroidism. Whether there is a causal connection between this syndrome and mongolism Stoeltzner is not prepared to state, but the definite proof of such a causal relation would open the way for active prophylaxis. His findings sustain Lanz' conclusions from his experimental research on the offspring of thyroidectomized animals (1905).

Eruption and Diarrhea During Luminal Treatment.—Haug prescribed in two severe cases of epilepsy 0.1 gm. of luminal three times a day, as recommended by J. Müller. Four weeks in one case, and eleven days in the other after this treatment had been begun, the patients developed high fever, diarrhea with mucous stools, bloody in the first case, and in both an eruption resembling that of scarlet fever, covering the whole body except the face and hands. The total amount taken had been 8.4 and 3.3 gm., and the first patient seemed to be severely ill, with slight stupor. The other presented albuminuria. After suspension of the drug the symptoms subsided in a few days.

Jan. 9, 1920, **67**, No. 2

Infant Feeding with Spontaneously Soured Milk. Rietschel.—p. 35.
Subcutaneous Injections. A. Falck.—p. 36.
*Pathologic Movements of Diaphragm in Paranephritis and Tuberculous Peritonitis. A. Foerster.—p. 38.
Findings with Improved Illumination for the Eye. L. Koeppe.—p. 39.
*Bone Fractures and Plaster Splints. M. von Brunn.—p. 42.
*Secretions of Prostate and Seminal Vesicles. W. Böttcher.—p. 45.
Prognostic Value and Treatment of Important Cardiac Arrhythmias. K. Grassmann.—p. 46. Conc'n.

Pathologic Excursions of the Diaphragm with Paranephritis and Tuberculous Peritonitis.—Foerster has found pathologic movements of the diaphragm, as revealed by roentgenologic examination, of value in the differential diagnosis of paranephritis and tuberculous peritonitis, especially in children. Bilaterally with the latter, and unilaterally with paranephritis, he has observed an upward displacement of the diaphragm with a flattening of the cupolas, obliteration of the phrenicocostal sinuses and marked interference with the respiratory movements. He has never noted this condition with appendicitis, cholecystitis or pyelitis.

Fractures and Plaster Splints.—Von Brunn states that while serving as expert he was astonished to note the large number of bone fractures that heal in an unsatisfactory manner. Either the setting of the fracture had been done improperly or the neighboring joints had been allowed to become stiff. In many cases it was evident that the fracture

had not even been diagnosed as such, which in this era of roentgen rays he finds inexcusable. One common source of error was that fractures of the radius were wrongly diagnosed as sprains. Even when the fracture had been correctly diagnosed, the surgeon had not persisted long enough but had stopped short of normal apposition. When the reduction of the fracture may have been satisfactory, frequently sufficient care had not been taken to make the result permanent, and the bone fragments had not healed in the position assumed when the fracture was reduced. He emphasizes that the common commercial ready-made splints do not usually fit the fracture as they should, and that the surgeon would do well to make his own. He describes in detail his method of preparing plaster splints and points out the advantages of the method.

Significance of the Secretions of the Prostate and the Seminal Vesicles.—Böttcher states that in addition to the three commonly recognized functions of the secretions of the prostate and the seminal vesicles they furnish a protective colloid that counteracts the acidity of the vaginal secretion until the spermatozoa have had time to reach the interior of the uterus.

Wiener klinische Wochenschrift, Vienna

Jan. 8, 1920, **33**, No. 2

Heliotherapy in Pulmonary Tuberculosis, and Its Relation to Immunization. H. Hayek.—p. 33.
Pulmonary Tuberculosis During the War: Statistics. A. Engel.—p. 40.
Reaction of the Tuberculous to Tonsillitis and Revaccination. O. Országh.—p. 42.
*Zinc Precipitation Treatment of Sputum. A. von Fejér and W. von Schulz.—p. 43.
Fatal Case of Dental Periostitis. O. Scheuer.—p. 44.
Leukocyte Count After Drying of Specimen. A. Reichart.—p. 45.

Examination of Tuberculous Sputums by the Zinc Precipitation Method.—Von Fejér and von Schulz had found the Ditthorn and Schultz enrichment process for tuberculous sputum superior to the Uhlenhuth process, especially when examining a large number of specimens, because of the time consumed in centrifuging with the Uhlenhuth method. But they discovered that in the Ditthorn and Schultz method the specimens, when not properly fixed by heat or if left too long in the carbofuchsin solution, take on a dark color which makes the search for tubercle bacilli impossible. They describe a modification which avoids this, and in 1,129 specimens of sputum 16.9 per cent. were positive by their modified method and only 13.8 per cent. by the Ditthorn-Schultz method. The specimen of sputum is rendered homogeneous and fluid by the usual means, and then equal quantities are poured in two sedimenting tubes. To one tube 0.5 cm. of a 20 per cent. solution of ferrous chlorid is added; to the other, 0.5 cm. of a 20 per cent. solution of either zinc acetate or zinc chlorid (the two salts are equally good). With this quantity of the reagent the resulting precipitate can be easily examined on a single slide. The tubes are allowed to stand for several hours, and when the sediment has been precipitated most of the supernatant fluid is poured off. The sediment suspended in a small quantity of the fluid is transferred to a square of filter paper several layers thick. In a few minutes, when the superfluous fluid has been absorbed, the sediment, still damp, is spread on the slide in a moderately thick layer. When it is dry, fixation over a flame follows and staining completes the process.

Hospitalstidende, Copenhagen

March 10, 1920, **63**, No. 10

Isolated Incarceration of the Appendix in Femoral and Inguinal Hernias. O. Vedel Brandt.—p. 145.

March 18, 1920, **63**, No. 11

*Clinical Training in the University. T. Rovsing.—p. 161.
*Gas Phlegmons After Injection of Stimulants. O. Thomsen.—p. 172.

Clinical Training of Medical Students at Copenhagen.—Rovsing describes the system of what he calls "volunteer service" by the medical students in the hospitals, saying that it is peculiar to the University of Copenhagen and has been in vogue there for centuries. The students now have asked to have the period for this service reduced from twelve to six months, and he argues against this, saying that the university may well be proud of this feature. He had special occasion to note its workings during the World War as the newly fledged Danish physicians serving in the various hospitals of the belligerents compared most favorably with the average from other nations,

Gas Phlegmons After Injection of Stimulants.—Thomsen relates that he knows of ten cases in which a gas phlegmon developed at the site of injection of a stimulant during the recent epidemic. In testing means for sterilizing, he found that solutions of morphin, cocain and certain other drugs passed through the Berkefeld filter without loss. After evaporating the filtrate the residue weighed the same.

Norsk Magazin for Lægevidenskaben, Christiania

May, 1920, **81**, No. 5

*Physical Standards for Young Children. C. Schiøtz.—p. 425.
*After-Treatment of Luxation of Hip Joint. V. Bülow-Hansen.—p. 460.
*Influence of Physical Exertion on the Heart. L. Dedichen.—p. 465.
*The Fat in Diabetes. H. C. Geelmuyden.—p. 479.

Standard Weight and Height Between Two and Six.—Schiøtz tabulates the findings in 513 children of this age in Norway, and compares them with similar statistics up to the age of 17, pointing out certain laws and seasons which seem to control the physical development.

After-Reduction of Congenital Dislocation of the Hip Joint.—Among the points emphasized by Bülow-Hansen in the after-care is that adduction should never be done until after pronation of about 90 degrees. Also that even when the roentgen rays show the head concentric in the acetabulum, if there is any contracture of the adductor muscles, he stretches the adductors under general anesthesia and applies a cast anew for two or three weeks, resuming then massage and exercise. In one girl of 6 the bilateral luxation was ideally corrected on one side but on the other the neck of the femur fractured and the leg was 6 cm. shorter than its mate. He advised against further intervention until the child had grown up. At 18, slanting osteotomy on the leg of normal length shortened it for nearly 6 cm. so the legs are now even.

Influence of Physical Exertion on the Heart.—Dedichen's study of 226 ski runners before and after a 50 km. race over a difficult course, and of 361 athletes traced over six years, demonstrates that neither at the time nor later was there any injurious influence on the heart when the ski athletes were at least 20 years old, healthy and in good training. The control over adequate training is possibly not quite severe enough. Hypertrophy of the heart was found later in 13.8 per cent. but nearly all the ski athletes were laborers, doing heavy work. The hospital records of 459 laborers doing heavy work showed hypertrophy of the heart in 8 per cent. and necropsy records showed up to 33 per cent. In one of the ski athletes the heart was hypertrophied, 15.1 cm. in diameter, but he refrained from the sport and from heavy work for a year, and by that time the diameter was only 13.5 cm. for weight of 68 kg., height 170 cm., and in every respect the health has kept perfect to date.

Fat Metabolism in Diabetes.—Geelmuyden's comparative study of the acute diabetes in pancreatectomized dogs and human diabetes has, he thinks, thrown light on the processes in the intermediate metabolism and their genetic connection, especially in regard to the production of sugar from fat. In research of this kind, he emphasizes, all the changes in the metabolism must be taken into account, not only the glycogen and blood sugar, the glycosuria and the ketonuria but the migration of fat, the transformation of albumin, the total metabolism and the transformation of energy. Such studies hitherto have been restricted to only some of these elements and their interrelations have been overlooked. He shows that carbohydrates promote the formation of sugar from fat, and that the output of sugar is not increased by feeding fat unless a certain amount of carbohydrate is given with the fat. This he thinks is probably the reason why carbohydrates are so injurious in human diabetes. Diabetes in pancreatectomized dogs seems to be due to the very same anomaly in the metabolism as in human diabetes. The chief difference between them is that it occurs suddenly in the dogs while in man it is of long, slow development.

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CONSERVATION OF THE MENSTRUAL FUNCTION *

W. J. MAYO, M.D.

ROCHESTER, MINN.

The surgeon approaches his work with the physical condition of the patient in view. He achieves a tangible success, but occasionally is not rewarded by the gratitude of the patient because of intangible changes in the nervous system which follow the operation. Physical cure is sometimes purchased at the price of nervous instability; and we speak wisely of neurasthenia, psychosis, neurosis and hysteria. Often the same physical cure could have been obtained without creating the disturbances so troublesome to the patient, the family and friends. Christian (?) science (?) and similar cults go to the other extreme, refusing to recognize the physical and considering only the psychic.

The central nervous system has a short heredity; its characteristics are not fixed, but unstable, especially in some families. The central nervous system is influencing, to a great extent, visceral functions that existed long before its development. Attempts at retroactive controls always have many exceptions in law, and are physiologically troublesome in man. The nervous system in man weighs as much as the liver and has as many or even more possibilities of functional disturbances, because it is less stable in its functions. The only difference is that the bile function can be seen, and disturbed thoughts cannot be seen—only their results. One group of physicians will say that all these psychic disturbances have a physical basis, apparently believing that a physical basis exists only outside the central nervous system. They then begin very properly to hunt for the cause of these disturbances, and often very improperly attempt to place the blame for them on some real or fancied physical defect with which there is little or no connection.

The uterus, the ovaries and the tubes have chiefly suffered from these misguided efforts at relief, efforts apparently based on the conception that woman's psychic disturbances are generated in her reproductive organs. After all, it is the mental and not the physical which controls our estimate of man.

To one who has had occasion to observe the results of surgical operations on the reproductive organs of women, the truth of these remarks is self evident. Today I consider every surgical disease of the generative organs of women with their future nervous condition in mind, as well as the physical state which is desired. In many instances there is no choice. In malignant disease of the generative organs radical operation is necessary to save life, with relatively small regard for the future mental condition of the patient. In cases of benign neoplasms and inflammatory disease, however, the future condition of the patient as related to the operation, *psychic* as well as physical, must ever be remembered. Happiness is a state of mind, and a state of mind is not necessarily a state of body. This belief is borne to the consulting surgeon by the large number of women he observes who have been operated on once, twice or many times. Their relations to life are changed, they are put out of touch with their social conditions, and they attempt, ever and again, to gain relief from mental and nervous suffering by further resort to treatment of the physical.

When I began practice, abdominal surgery was in its infancy. The ovaries and tubes were removed on indications that would not be considered today. With the growth of knowledge this practice ceased, but in its place developed many miscalled conservative operations. Instead of being removed, the ovary was subjected to unnecessary tinkering, and the ovary does not stand such operations well. Frequently the patient developed sequelae that necessitated removal of the ovaries later. The small cystic ovary especially has been the victim, not of the surgeon, but of the operator. Following this type of operations it will be found that a group of patients return complaining of what they have been told are adhesions, but without mechanical signs. I have seen a number of patients who have been operated on and reoperated on, with only temporary success, for adhesions that did not produce mechanical symptoms. I have little faith in the common belief that adhesions located by the patient, but which cannot be located by the surgeon, are the cause of serious trouble.

IMPORTANCE OF THE OVARY

The generative organs of women are for the purpose of reproduction. The ovary controls the physiologic cycle, the uterus receives and carries the impregnated ovum to term. The uterus is often blamed for troubles with which it really has little to do. The curet is a much abused instrument. The endometrium is relatively seldom diseased, and a high percentage of menstrual disturbances are ovarian and tubal in origin. A sufficient distinction is not made between irregular bleedings from the uterus and true menstruation. Menstrual blood does not clot. If the blood forms true clots, the endometrium may be suspected, otherwise, the ovary. The ovary is an organ of internal secretion independent of the production of ova. The

* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

gonadial secretion of the interstitial cells of the ovary controls the development of the female characteristics. It influences the closure of the epiphyses of the long bones, and is related to the endocrine disturbances to which are due the tall, spindling types of giantism. The effect of the ovary on the individual, including menstruation, is independent of direct nervous connection. Tuffier,[1] in radical operations for pus tubes, removed both ovaries and tubes, sterilized the ovary for surface infection in an alcohol flame or by dipping in tincture of iodin, and planted it between the peritoneum and the abdominal fascia. The menstruation ceased for four or five months, and symptoms of the menopause developed; then menstruation started and continued normally. My colleague, Dr. Sistrunk, has treated a number of cases in this manner.

The effect of the internal gonadial secretion on the breast is marked. Beatson,[2] in some inoperable cases of carcinoma of the breast, removed the ovaries, and most remarkable changes in the breast took place, with disappearance or partial disappearance of the cancer. The autonomic (sympathetic and parasympathetic) nervous system, acting with the hormones (internal secretions) of Starling,[3] controls the functions of the reproductive organs. The sympathetic fibers can be directly traced, and in some of the lower animals (Tasmanian devil) branches of the vagus parasympathetic nerve pass to the horns of the uterus, showing direct cranial connection. The nodes of Keith,[4] acting through the nonstriated uterine muscle, introduce physiologic connections between the visceral and genital functions.

The internal secretion of the ovary generally is closely related to the endocrine system, and widespread effects are manifest on the cessation of the ovarian function. In several instances I have noted that the ovaries maintain their normal size and apparently function after the removal of the uterus. Twenty-two years after performing a vaginal hysterectomy on a young woman for sarcoma of the uterus, I had occasion to open the abdomen. I found the ovaries apparently normal. The lesson to be drawn is that the removal of the ovary is seldom indicated for inflammatory diseases, and a sufficient amount should be saved, if possible, to continue the menstrual function. The transplantation of ovaries from one woman to another, so far as I know, has not been followed by return of menstruation or impregnation. A few suggestive instances have been reported, however, by Franklin Martin [5] and by Robert Morris.[6] Morris suggests that ovarian tissues may have been left in the ovarian ligament at the time the ovaries were removed, and this nonfunctioning ovarian tissue may have been stimulated to action by the introduction of ovaries from another woman. He relates some experiences to confirm this opinion.

The thoughtful surgeon conserves menstruation when the thoughtless operator sacrifices it. On one occasion, a good many years ago, when I was operating for extra-uterine pregnancy on a young woman greatly exsanguinated, I rapidly removed the ovary with the tube in order more quickly to secure a pedicle. Two years later this patient returned with benign cystadenoma in the remaining ovary. At the age of 24 she was deprived of the right to motherhood, and her menstrual function was lost. In tubal pregnancy it is seldom necessary to remove the ovary. I have operated for double dermoid cyst of the ovaries in many cases in which the larger cyst had destroyed the entire ovary, but I have been able to enucleate the smaller cyst from the other ovary, and to save sufficient ovarian tissue so that menstruation may continue. Without discussing further conservation in benign diseases of the ovaries and tubes, I may add that I have seen acute cases of gonorrheal infection of the tubes, including the ovaries and pelvic peritoneum, spontaneously subside, and several years later the patient has become a mother. It is often best not to molest the chronic inflammatory remnants left after such infections have subsided.

Independent of its rôle in reproduction, the menstrual cycle has a striking effect on the female during the period between puberty and the menopause. All surgeons have seen the shrinkage of the uterus, shortening of the vagina, and trophic changes following ovariectomy. The nervous and psychic changes of the normal menopause are aggravated in young women by operations that check the menstrual flow. *It is probable that menstruation itself has some important endocrine function.* The effect on the patient is essentially the same whether menstruation is stopped by removing the ovaries and leaving the uterus, or removing the uterus and leaving the ovaries. Conservation of the reproductive function is of first importance, but conservation of the ovary for the continuance of its internal secretion and its effect on the production of menstruation is second only to the reproductive function; and even if reproduction is impossible, conservation of the ovary or some portion of it for the sole purpose of continuing menstruation is of greatest importance. The estimation of the probable success of an operation from the patient's standpoint may turn on whether or not the menstrual function is to be lost.

Sacrifice of the reproductive and menstrual functions, however, is not confined to removal of the ovaries, but is concerned in operations on the uterus, especially for myoma. Hysterectomy has become an operation so thoroughly organized that almost every operator has some special bit of technic in connection with it of which he is proud, and many a uterus is unnecessarily sacrificed when a myomectomy would be the better operation and would save both the menstrual function and the possibility of motherhood. Hysterectomy is seldom necessary for benign myoma in a woman under 35, and demands an excellent reason in a woman under 30. At 45, hysterectomy is probably the best procedure. Sutton has shown that 10 per cent. of women who require hysterectomy for fibroids after 50 have coincident malignant disease.

RESULTS OF MYOMECTOMY

It has been argued against myomectomy that it is the more dangerous operation; but in our series of 741 cases the mortality was a shade under 1 per cent. (0.9). Abdominal myomectomy was performed in 617 of the 741 cases, with three deaths, or 0.5 per cent. There were four deaths in the 124 vaginal myomectomies, about 2.7 per cent. Every patient dying in the

1. Tuffier, T.: Transplantation of Ovaries, Surg., Gynec. & Obst. **20**: 30-34, 1915.
2. Beatson, G. T.: The Treatment of Inoperable Carcinoma of the Female Mammae, Glasgow M. J. **76**: 81-87, 431, 1911.
3. Starling, E. H.: The Chemical Control of the Body, J. A. M. A. **50**: 835-840 (March 14) 1908.
4. Keith, A.: The Differentiation of Mankind into Racial Types, Lancet **2**: 553-556 (Sept. 27) 1919.
5. Martin, F. H.: Ovarian Transplantation in Lower Animals and Women: Review of the Literature and Bibliography, Surg., Gynec. & Obst. **13**: 53-63, 1911.
6. Morris, R. T.: A Case of Heteroplastic Ovarian Grafting, Followed by Pregnancy and the Delivery of a Living Child, Med. Rec. **69**: 697-698, 1906.

hospital, irrespective of the cause of death or the length of time following operation, is counted as dying from operation. Following myomectomy in these 741 cases, thirty-three women raised one child, eleven raised two or more children, and fifteen were pregnant at the time the investigation was made. Twenty-three married women who were sterile before operation had one or more children after operation.

Nineteen pregnant women were subjected to myomectomy because of acute degenerative changes in myomatous tumors, and all lived. Thirteen of the pregnancies were intra-uterine. Eleven of the patients went to term and bore living children; two miscarried within a week after operation, but in each, miscarriage was imminent at the time of operation; three showed signs of impending miscarriage previous to operation which subsided after the removal of the tumors. Six women had extra-uterine pregnancies at the time the myomectomy was performed; in all, rupture had already occurred, with large pelvic hematoceles, one with a dead fetus of four and one-half months. The myomectomies and the operations for the extra-uterine pregnancies were performed at the same time in these six cases; it seemed possible that the presence of the tumors was responsible for the ectopic pregnancies. One of the patients has since borne a child.

It has been asserted that frequently tumors develop after myomectomy. Nineteen of these 741 patients (2.56 per cent.) required secondary operations; in eleven cases the operation was performed five or more years after the myomectomy, and in one, thirteen years afterward. One of the nineteen patients had a child after myomectomy. The majority of the secondary operations were performed for inflammatory disease. It was difficult to obtain accurate pathologic data of secondary operations, since more than half were performed elsewhere; but none of the patients had developed malignant disease. In many of the cases in which the second operation was performed for recurrence of the fibroids, the operation could today be avoided by the use of radium. In none of the cases reported were the recurring tumors large, because the patients, being aware of the former condition, were on the alert. Hysterectomy was usually performed, because the patient had been carried along by the myomectomy to the age in which a radical operation is of less importance.

In many cases of myomatous disease it is not possible to save a uterus that will bear a child; but in cases otherwise suitable, one ovary and enough of the endometrium can be saved to continue the menstrual function. I have removed all of one wall of the uterus and one ovary and tube and made plastic restoration; the patients have continued the function of menstruation normally for years.

In a former paper [7] I noted the removal, by myomectomy, of a large tumor which had grown from the cervix. In the process of removing the growth, the fundus of the uterus was completely separated from the cervix and vagina, but I was able to anastomose the uterus to the cervix with catgut sutures with perfect results. I have had one other case of the same kind. If the patient has had hemorrhages and a myomectomy is performed, the endometrium should be opened, inspected, and thoroughly curetted under the eye. In my earlier cases I did this with a good deal of hesitation, fearing to infect the uterine wound; but no such infection has occurred. The endometrium covering a submucous fibroid is atrophic. Cancer begins in the hypertrophic mucosa in the vicinity of the tumor, and the danger of cancer of the body of the uterus is increased by fibroids. In 1919, in an examination of 4,000 specimens of myomas of the uterus in our surgical museum, Evans [8] found seventy-two malignant and related nonepithelial tumors of the uterus, thirteen definitely and eleven potentially sarcomatous, and forty-eight cellular tumors with malignant possibilities. He showed that by counting the mitotic figures in the cell nuclei, the chances of cure could be predicted; the giant cells are probably a defense and not a malignancy. The sarcomatous growths may be multiple; they are yellowish rather than glistening white, and on section they are softer than fibroids, and do not enucleate readily. The careful surgeon seldom makes the mistake at the operating table of believing them to be myomas and attempting myomectomy. If so, the frozen section will demonstrate the error before the operation is completed.

Radium must justly be considered, in selected cases, a competitor of hysterectomy, but it has no competitive standing in cases suitable for myomectomy. When bleeding necessitates interference in the menopause period, radium has a remarkable field of usefulness. If the tumors are large, coming well up into the abdomen, and are caused to disappear by the use of radium, the menopause is brought about. Massive doses of radium usually destroy the function of the ovaries and uterus, leaving these nonfunctioning organs to await an uncertain future. We must sharply distinguish between nonoperation and conservation. Radium may be even more destructive than hysterectomy, as in 50 per cent. of hysterectomies one ovary, and in 25 per cent. both ovaries, can be saved. It must be remembered, too, that at middle age 12 per cent. of white women and 30 per cent. of colored women have myomas. Every surgeon has observed, over long periods of time, women with multinodular myomatous uteri who have had no symptoms, and often have raised families. The mere presence of small to moderate sized, symptomless myomas that can be watched by physicians does not indicate operation, or treatment of any kind; many are now having radium treatment. I am convinced that this is not wise. While menstruation usually returns within a few months, if may fail ever to reappear even after the use of a moderate amount of radium.

HYSTERECTOMY FOR UTERINE MYOMA

I believe that total hysterectomy is a wise procedure if it can be performed safely, and usually it can. Leaving the cervix leaves an average cancer liability. We have seen twelve cases of cancer occur in the left-over cervix after supravaginal hysterectomy. Removing a cone of mucous membrane of the cervical canal from above, or plunging the cautery through the cervical canal to destroy it, is not sufficient. Peterson [9] has shown that only one third of the cancers of the cervix begin in the cervical canal (adenocarcinoma). Two thirds of the cervical cancers are epitheliomas

7. Mayo, W. J.: Some Observations on the Operation of Abdominal Myomectomy for Myomata of the Uterus, Surg., Gynec. & Obst. **12**: 97-102, 1911.

8. Evans, N.: Malignant Myomata and Related Tumors of the Uterus (Report of Seventy-Two Cases Occurring in a Series of Four Thousand Operations for Uterine Fibromyomata), Surg., Gynec. & Obst. **30**: 225-239 (March) 1920.

9. Peterson, R.: Age Distribution and Age Incidence in Five Hundred Cases of Cancer of the Uterus, Surg., Gynec. & Obst. **29**: 544-553, 1919.

originating in the vaginal parts of the cervix. After total hysterectomy, the patient seldom complains of local trouble. If the cervix is left, however, a foul, irritating leukorrhea sometimes results from degenerative changes in the mucous glands of the cervix. Shrinkage of the vagina appears to be greater after subtotal than after total hysterectomy. It seems as if nature, in the effort to shrink the cervix following supravaginal hysterectomy, is stimulated so greatly as to increase the shrinkage of the vagina as well.

Russell [10] has called attention to the advisability of opening the abdomen, drawing up the uterus, and opening the anterior wall to expose the endometrium for examination in certain cases of prolonged uterine hemorrhage without apparent good cause. Since Russell's observation we have had occasion to do this twenty-six times in young women, and thus have been able to save the uterus. I have found polyps in one horn, which could not be reached with the curet, and small submucous fibroids. In a young woman who has hemorrhages from uncertain cause, exploration of the cavity of the uterus through the abdomen is preferable to radium, and should precede hysterectomy in doubtful cases.

CONCLUSION

I would reiterate that conservation of the menstrual function is of the utmost importance even if pregnancy is not possible, and that the surgeon who faces the necessity of removing the uterus or the ovaries, and the bringing about of all those endocrine changes attending the procedure, is taking a serious responsibility which must not be assumed lightly. The heredity of the patient is responsible for the nervous instability, but the operation may be the match which lights a fire, in the ashes of which the patient finds herself unable to readjust her life to her living condition.

ABSTRACT OF DISCUSSION

Dr. C. Jeff Miller, New Orleans: I am in accord with Dr. Mayo regarding the conservation of menstrual function, and the necessity of a more conservative attitude toward pelvic pathology. The thoughtful surgeon hesitates to remove ovaries unless they are hopelessly diseased, but we are just as radical in the treatment of fibroids of the uterus. Removal of the uterus is as radical, so far as function is concerned, as removal of the ovaries, and is equally as distressing to the patient. I agree with Dr. Mayo that myomectomy can be performed in many cases in which hysterectomy usually is done. I have had a sufficient number of pregnancies result after myomectomy to prompt me always to review a case with the view of performing myomectomy in preference to hysterectomy. We were formerly taught that myomectomy carried a slightly higher mortality rate than supravaginal amputation, chiefly owing to the risk of hemorrhage and occasional infection when the uterine cavity was opened. Later statistics will show that this was a defect in technic which has been overcome. During the past four years, I have performed more myomectomies than formerly, for the reason that if myomectomy failed to control excessive bleeding, radium could be used to complete the cure without the necessity of a second operation. In some case I have removed the entire musculature, preserving enough of the mucous membrane to conserve menstruation. Several patients developed a metrorrhagia, and sometimes menorrhagia which required further treatment.

Dr. Mayo is also correct in stating that total hysterectomy is preferable to a supravaginal amputation. If the proper technic is followed, total hysterectomy requires no more time, there is no greater risk of postoperative hemorrhage, and convalescence is decidedly smoother. I have employed radium in the treatment of fibroids for six years, and I am enthusiastic as to its results in properly selected cases. But, until we know how much permanent damage is done by radiation, we should consider its use in young women as being probably more radical than myomectomy. I advise myomectomy for all young women, especially if the growth is a single one. It is necessary to produce an amenorrhea in order to cause shrinkage of a fibroid, and as yet we cannot gage the dosage with sufficient accuracy to warrant its indiscriminate use in young women. As to the management of cystic ovaries: surgeons do not follow up their cases if they continue to resect ovaries. Only in exceptional instances should ovaries be resected. As a rule, the ovary is sufficiently involved to justify its removal, or it is healthy enough to let alone. In certain cases of serious pelvic infection where both tubes are removed, and the ovaries are involved to such an extent that it is not safe to leave them, transplantation of portions of an ovary will preserve menstruation for an indefinite time, or sufficiently long to allow of a gradual menopause without the uncomfortable results that so frequently follow abrupt cessation.

Dr. John O. Polak, Brooklyn: Five years ago I reported the end-results of conservation of menstruation in connection with conservation of ovarian function. My observations are in accord with Dr. Mayo's: Ovaries are either damaged or not damaged beyond chance of regeneration. Most of the damage produced in these ovaries is due to the circulatory disturbance which is produced by the associated lesions. When this is corrected these ovaries regenerate themselves, and the so-called multicystic ovary, as large as a walnut, prolapsed in the pelvis, does not necessarily need to be removed. They have been removed only because of lack of knowledge of the pathology. Furthermore, it takes more than the leaving of an ovary to satisfy a woman that the psychic effect of the actual occurrence of the bloody discharge had a great deal to do with the comfort or discomfort of the woman. Where possible, it is advisable to retain a portion of the uterus, with its uterine mucosa, or when leaving a portion of the ovary, or even both ovaries. In cases of fibroid tumors, when the uterus is removed, leaving an ovary or both ovaries, the variations in blood pressure studies are higher than in those cases in which a portion of the uterus is preserved which produces a balance in the ovary and the other internal secretions.

Dr. Robert T. Morris, New York: Conservation of the menstrual function has been overlooked in our zeal to do the right thing for the patient. Conservation of the menstrual function may often be obtained by ovarian grafting—when we remove an ovary in a mass with other structures, if a part of the ovary be placed back anywhere within the patient's economy. The time is coming doubtless when we shall be able to do heteroplasty. The heterograft is destroyed by antibodies and we may be about to make antibodies to meet these antibodies. We are just about on the verge of knowing something about that subject. Many men have argued in favor of the entire removal of the uterus in cases of Neisserian infection with its terminals. Why cannot we sometimes in confidence tell the patient frankly and fearlessly every feature of her case? Tell her the dangers of leaving a part of her uterus, the possibilities of a pregnancy if we leave the uterus, or the larger part of it. The day has passed when we cannot lay our problems before our patients.

Dr. Albert J. Ochsner, Chicago: I agree with Dr. Mayo. There is, however, this feature to be borne in mind. Some years ago I had charge of the surgical material in a hospital in which there was practically always reinfection in cases operated for pelvic infection unless the uterus was removed. At present there is practically never a reinfection because the patients belong to an entirely different social group. In the one case the hospital was supported by the wealthy women of the city and many of the patients treated there did not earn an honest living but depended on vice and charitable citizens. At the expense of these good people they were put into condition to take up again their

10. Russell, W. W.: Remarks on the Treatment of Tuberculosis of Uterus and Fallopian Tubes, Ann. Surg. **28**: 468-471, 1893.

vicious service and they were practically certain again to become infected. In that class of patients in our city hospitals and in the hospitals supported by charity the menstrual function should be abolished by the removal of the uterus. So far as the difference in the mortality between hysterectomy and myomectomy is concerned, I have found that many of the deaths are due to pulmonary thrombosis. The percentage of pulmonary thrombosis in these cases varies from 0.1 per cent. to 2 per cent. The pulmonary thrombosis is very largely due to the lack of perfect hemostasis. Some years ago Kelly pointed out a simple method of securing hemostasis in myomectomy by placing one suture 1.5 cm. beyond either end of the incision in the uterus. Several years ago Professor Bue of Montevideo pointed out the fact that by placing a purse string suture over the entire field at the conclusion of a hysterectomy, whether this be a supracervical or a complete hysterectomy, the same result is obtained—no hemorrhage, no blood clot, no raw surface, a perfectly dry wound. This one feature reduces the mortality from pulmonary thrombosis enormously.

DR. WILLIAM J. MAYO, Rochester, Minn.: The discussions indicate that general surgery interests all surgeons engaged in the surgical specialties, and that the so-called gynecologist is simply a general surgeon who limits his work but not his interests. About twenty years ago, Dr. Ochsner told me that if I did not tie my ligatures so tight in my myomectomies, I would not have any postoperative trouble. I followed his advice and did not again have cause to worry over these unfavorable symptoms.

SPONDYLITIS AND ABDOMINAL PAIN

WITH A DISCUSSION OF NERVE-ROOT SYMPTOMS SIMULATING VISCERAL DISEASE *

DOUGLAS VANDERHOOF, A.M., M.D.
Professor of Medicine, Medical College of Virginia
RICHMOND, VA.

Disease involving the articulations of the spinal column has occurred in human beings since remote times, as shown by examinations of Egyptian and Nubian remains dating back as far as 4000 years B. C. In addition, present-day postmortem investigations indicate that arthritis of the spine is not at all infrequent. In spite of these facts, one is distinctly impressed by the small number of cases that have been reported in the literature. Guffey,[1] in 1905, was able "with considerable difficulty" to find reports of only 131 cases of ostearthritis of the spine. McCrae,[2] in 1909, reported a series of eighty-one cases of spondylitis secured from the records of patients in the Johns Hopkins Hospital, together with a number personally observed elsewhere. In the last few years, however, the extensive employment of roentgen-ray examinations has emphasized the frequent occurrence of spondylitis. The orthopedist has taken prompt cognizance of these roentgen-ray studies of the vertebrae, and by him the condition is regarded as a rather common affliction. It is a question, however, whether the internist and the surgeon also realize the incidence of spondylitis and its definite relation to clinical problems.

In the last seven years (1913-1919) the diagnosis of hypertrophic spondylitis has been made in eighty-seven patients seen in my consulting room, and other instances of this condition have passed through my clinics in the hospitals and outpatient department of the Medical College of Virginia. I must confess that somewhat over half of the private cases have been recognized in the last two years.

Of this series of eighty-seven cases of spondylitis, forty patients complained of abdominal pain. In seventeen of these forty cases, the presence of visceral disease could be demonstrated, and the rôle played by the spondylitis was either questionable or negligible. In twenty-three patients, however, careful and complete studies seemed to exclude visceral disease as the cause of the patients' complaints. These twenty-three cases of spondylitis form the basis of this article.

The production of pain in spondylitis varies according to the extent and location of the inflammatory process in the spinal joints. This arthritis is frequently associated with hypertrophy of bone, atrophy of cartilage, and calcification of ligaments. As a result, there may be pain and muscle spasm in the back, limitation in the movements of the spine, and the gradual development of rigidity. If the arthritis involves the articulations of the ribs with the vertebrae there is likely to be severe pain on breathing, or even complete absence of thoracic respiration. Of particular interest, however, is the involvement of the nerve-roots by extension of the inflammation or by direct pressure of the exudate and new-bone formation.

Pressure on the nerve-roots in spondylitis, or their involvement by extension of the inflammation, gives rise to more or less pronounced sensory disturbance, characterized by pain in the distribution of these nerves. This pain may be perceived in the back, shoulders, hips or extremities, or it may be referred to the thorax or abdomen. The character of the pain varies greatly from a dull aching or drawing sensation to the most agonizing paroxysms. Certain patients with spondylitis suffer little or no pain in the back and make absolutely no mention of stiffness or other disability, while the referred symptoms may be pronounced. The thoracic, abdominal, brachial and sciatic pains of spondylitis may occur on one or both sides of the body; if bilateral, however, they are generally more severe on one side.

The referred pains of spondylitis are increased, as a rule, by movements of the body, especially walking, stooping or bending, and are promptly relieved by rest in the recumbent posture. In other instances the pain occurs in the night after the patient has been sleeping, and is attributed to relaxation of the accompanying muscle spasm, which acts as a guard or splint against sudden movements in the waking hours. Spondylitis occurs occasionally in persons who complain of no symptoms, either local or referred.

The involvement of the nerve-roots in arthritis of the spine was emphasized by some of the earliest writers on the subject. In fact, the preponderance of nervous symptoms in certain cases led von Bechterew, in 1892, to separate a special type of spondylitis, characterized chiefly by referred symptoms, such as pain, paresthesia, muscular atrophy and paralysis.[3] That he regarded this syndrome as primarily a nervous disease, with secondary involvement of the spine, is now only of historical interest.

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* Read before the Section on Practice of Medicine at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Guffey, D. C.: A Collection and an Analysis of the Reported Cases of Osteo-Arthritis of the Spine, Univ. Penn. M. Bull. **18**: 250, 1905.

2. McCrae, Thomas: Osler's Modern Medicine, Philadelphia, Lea & Febiger **6**: 534, 1909.

3. A discussion of von Bechterew's views, together with a good account of the pathologic and neurologic features of hypertrophic spondylitis, is given by Rhein, J. H. W.: Pathologic Report of the Nervous System in a Case of Spondylose Rhizomelique, J. A. M. A. **51**: 463 (Aug. 8) 1908.

The fact that the nerve-root pains of spondylitis may simulate visceral disease is quite obvious. That actual confusion in diagnosis may occur, however, is not generally recognized. After a somewhat detailed search of the literature I have been able to find only five references to such a contingency. Chute,[4] in 1904, reported five cases of arthritis of the spine with referred pains imitating lesions of the kidney, prostate or seminal vesicles. Smith,[5] in reporting sixteen cases of spondylitis in 1907, mentioned that one patient had undergone appendectomy for the relief of abdominal pain, which was subsequently shown to be due to the referred nerve-root pains of spondylitis. In 1912, Dickson and O'Neal[6] gave the histories of three patients who suffered from both visceral disease and vertebral arthritis. In each instance, operation was performed, with removal of gallstones in one case, a kidney stone in a second case, and the repair of perineal lacerations in the third case. The persistence of symptoms in each patient led to the subsequent discovery of spondylitis. In two of their cases the nerve-root pains were acute and similar to tabetic crises. In their conclusions they emphasized the fact that "no examination (of a patient) is complete without a careful inquiry into the condition of the spinal cord and spinal column." Recently Allan and Squires[7] have reported two cases of spondylitis, in one of which the patient was subjected to a laparotomy for supposed gallstones. Finally, a good discussion from the roentgen-ray standpoint is contained in the recent article by Blaine.[8] This author lays particular emphasis on the fact that nerve-root pains may exactly simulate the acute suffering of renal lithiasis. The article is illustrated with roentgenograms of three patients with spondylitis in whom the clinical diagnosis of renal calculus had been made.

ILLUSTRATIVE CASES

As mentioned above, out of a series of eighty-seven personally observed spondylitis cases there were twenty-three patients who complained of abdominal pain, in whom visceral disease could apparently be definitely excluded as the cause of their suffering. In order that this report may not be too lengthy, I have abstracted below the histories of six of these cases. In Case 1 the roentgenogram of the spine showed no gross changes. The clinical findings were typical, however, of acute arthritis, secondary, apparently, to a pyogenic infection of the skin. The nerve-root pains were of a most severe character in Cases 1, 4 and 5, while Cases 3 and 6 illustrate the vague abdominal distress that may accompany arthritic changes in the spine. Cases 2 and 4 were subjected to laparotomy, with only a postoperative discovery of the spondylitis. Surgical treatment had been advocated in Cases 1 and 5 prior to the establishment of the diagnosis of vertebral arthritis. A seventh case, recently seen in my clinic at the Virginia Hospital, is reported because of its extraordinary interest. In all the clinical material at my disposal, both private and institutional, referred pains due to spondylitis have been much more frequently encountered than the visceral crises associated with tabes dorsalis and other organic diseases of the spinal cord itself.

CASE 1.—*Clinical Summary: Severe pain in left back and flank, with acute exacerbations imitating renal colic; urine negative; two roentgen-ray examinations revealed no calculi in urinary tract; roentgen-ray examination of spine also negative, but clear clinical evidence of spondylitis; complete relief followed orthopedic treatment.*

History.—Mr. W. (3575), aged 17, student, seen Jan. 21, 1913, whose complaint was pain in the left flank and back, had been in very good health, with no history of acute infections until the summer of 1911, when he began to suffer with boils, which had been very troublesome. He was weak and had felt bad ever since the furunculosis started. Oct. 11, 1912, he was suddenly seized with an agonizing attack of pain in the left flank, for which he was given large amounts of whisky and three hypodermics. He was at school in North Carolina at the time, and his attack was considered to be kidney colic. The urine was examined and was said to show no albumin, pus or blood. He had no urinary disturbances except that he believed he passed an excessive amount of urine. He had no herpes. For five weeks after this acute attack he suffered with more or less pain in the left back and flank, and had some nausea. Roentgen-ray examination during this period disclosed no renal calculus. Jan. 16, 1913, he had a second similar acute attack and was given six hypodermics. He said that his back had continued to hurt; also that he could not walk or run well because of increasing the pain. He had had pains beneath the costal borders on both sides of the body, also pain across the small of the back about as severe on one side as the other.

Examination.—Complete physical examination was negative, except as follows: The skin showed considerable acne, and there was general abdominal tenderness, more marked on the left side. The patient handled himself stiffly. The lower dorsal and lumbar spine was very tender and showed marked restriction of motion. There was no kyphosis or scoliosis. The slightest jarring caused pain in the back. The reflexes were normal.

Examinations of the blood and urine were negative.

Stereoscopic roentgenograms of the spine disclosed no gross disease. Roentgenograms of the urinary tract revealed no evidence of calculus in kidneys, ureters or bladder.

Course.—The patient was referred to the orthopedist, who concurred in the diagnosis of acute arthritis of the spine with root pains. Under appropriate orthopedic treatment the patient was promptly relieved of his pains, and subsequently went on to a complete recovery.

CASE 2.—*Clinical Summary: Sharp pain in abdomen when up and about; one attack of acute pain in left hypochondrium; patient's back overlooked in examination, as were also significant findings on roentgenograms; operation and removal of grossly diseased appendix; persistence of pain and postoperative discovery of marked spondylitis.*

History.—Mrs. P. (5590), aged 70, seen March 5, 1915, whose complaint was abdominal pain, had always enjoyed good health, and there were no facts of special interest in the past history. The present illness began about one year before with pain across the back at the waistline. She soon developed sharp pains in the abdomen around the navel and radiating to the back. These pains occurred when she was up and about or when she tried to move. She had had one attack of sudden acute pain in the left hypochondrium, associated with vomiting. This required morphin; otherwise she had had no opiates. In addition, the patient complained of pain in the neck and in the right shoulder, increased by moving the arm. She said she was comfortable when lying still, but on trying to move she developed pain through the abdomen and back. She had some sour stomach and much flatulence. Her bowels were constipated and the stools occasionally were light in color. She had had no jaundice.

Examination.—Physical examination was negative, except as follows: The patient was very thin; the systolic blood

4. Chute, D. L.: The Pain of Osteo-Arthritis of the Spine: Its Bearing on the Diagnosis of Urinary Diseases, Boston M. & S. J. **151**: 563, 1904.

5. Smith, H. W.: Hypertrophic Arthritis of the Spine, U. S. Naval M. Bull. **2**: 6, 1907.

6. Dickson and O'Neal: Osteo-Arthritis of the Spine: With a Report of Three Cases Complicating Disease of the Abdominal Viscera, Surg. Gynec. & Obst. **15**: 552, 1912.

7. Allan, W., and Squires, J. W.: Spondylitis Chronica Ankylopoietica, Southern M. J. **11**: 373 (May) 1918.

8. Blaine, E. S.: Renal and Ureteral Stone Symptoms in Spondylitis, Am. J. Roentgenol. **4**: 122 (Jan.) 1917.

pressure was 160 and the diastolic 106; the abdomen was retracted, with thin walls, shadows of the intestines being visible, and the superficial veins distended. An irregular mass was present in the right flank (thought to be either a tumor of the kidney or ascending colon, or possibly a Riedl's lobe of the liver). No note was made of examination of the spine.

The hemoglobin was 65 per cent.; otherwise blood examination was negative. A specimen of catheterized urine showed a heavy cloud of albumin, with an occasional leukocyte and hyaline cast.

Roentgen-ray examination of the urinary tract was negative. The liver was noted to be enlarged or displaced downward, but no mass was shadowed in the right flank.

On surgical consultation, exploration was advised, with the expectation of finding chronic cholecystitis with enlarged right lobe of the liver, or possibly malignant disease. Operation, March 10, 1915, disclosed a grossly diseased appendix that was adherent to a displaced right kidney. The gallbladder, stomach and pelvic contents were normal.

Course.—After convalescence from her operation the patient experienced a return of pain in the abdomen and back as soon as she attempted to sit up. The original roentgenograms were again studied and disclosed slight evidence of hypertrophic arthritis of the lumbar spine. A second roentgen-ray study was then made of the dorsal spine and disclosed marked hypertrophic spondylitis with almost complete obliteration of the disk between the eleventh and twelfth vertebrae. The orthopedist reported distinct rigidity of the spine, with restricted motion, pain, etc. Because of the patient's advanced age he recommended symptomatic treatment and rest in bed on a firm mattress, rather than any attempt at fixation.

CASE 3.—*Clinical Summary: Vague, distressing abdominal pains, characterized by drawing, pulling and burning sensations; no acute pain, but the patient had had a "catch" in the left hip radiating to the lower abdomen; visceral disease apparently excluded; spondylitis not suspected, but found on making roentgen-ray examination of gastro-intestinal tract.*

History.—Mrs. W. (8423), aged 59, occupation a housewife, seen, Jan. 10, 1918, whose complaint was pain in the abdomen, had had malaria years before, pleurisy twenty years before, and rather frequent tonsillitis as a younger woman, but no other acute infections. She had had two children, and no miscarriages; the menopause occurred at the of 43. There was no history of pelvic disturbances.

The patient dated the onset of her present illness to one year before, when she began to suffer with discomfort in the lower abdomen. For the last two years, however, she had had a frequent "catch" in the left hip, running across into the "bowels." The abdominal discomfort had gradually increased, and she described it as "a hard hurting and burning." She said that the intestine seemed to pull and draw, and she felt as if there were a knot in her bowels. She occasionally had pain between the shoulders and down the spine. Her appetite was good and she had no digestive disturbances, except constipation. While her pains bore no relation to meals, yet she had attributed them to indigestion and had restricted her diet; she had become weak and had lost about 35 pounds.

Examination.—The patient was thin and appeared to be weak; she had considerable pyorrhea, but the throat appeared negative; the abdomen was held rather stiffly and showed distinct tenderness in both iliac fossae. The spine was noted to be straight, with tenderness on pressure just to the left of the lumbar spine. No mention was made of the movements of the spine. Physical examination was otherwise negative.

The blood, urine, gastric contents and Wassermann test were negative.

Roentgen-ray studies of the entire gastro-intestinal tract (barium meal and barium enema) were negative. On certain of the plates, however, the lumbar spine showed marked evidence of spondylitis deformans.

Course.—The patient was referred to the orthopedist, who confirmed the diagnosis of spondylitis with root pains. After preliminary rest in bed she was treated with fixation by a plaster cast, with marked relief from her symptoms.

CASE 4.—*Clinical Summary: Recurring attacks of pain in lower left abdomen for over seven years; appendectomy and freeing of kink in sigmoid appeared to afford relief for one year; recurrence of symptoms; second study of patient disclosed arthritis of lumbar spine; pain controlled by fixation.*

History.—Mr. C. (10050), aged 49, a salesman, seen Aug. 25, 1919, whose complaint was pain in the lower left abdomen, had an attack of very severe "inflammatory rheumatism" at the age of 6 years and one attack of gonorrhea complicated by urethral stricture when 21 years old. There was no history of syphilis or of any other acute infections.

The patient first consulted us in July, 1913, complaining of attacks of pain in the lower left abdomen, together with indigestion. He said that he had had seven attacks of "acute indigestion" in the preceding eighteen months. These were characterized by agonizing pain in the lower abdomen, worse on the left side. The attacks were followed by pronounced abdominal soreness, confining him to bed for two or three days. He had some nausea and vomiting with his acute attacks, attributed to morphin that had been administered. His appetite was poor, and he complained of a frequent knot in his throat, but he had no flatulence or constipation. His attacks were likely to be followed by constant aching pain low down in the left abdomen. He stated that two roentgen-ray examinations of the urinary tract were negative and that the urine was reported to be normal.

Examination.—Complete physical examination (in 1913) was negative, except that the tonsils were enlarged and ragged, there was tenderness on palpation over the sigmoid and also tenderness over the head of the cecum, with pain on pressure which radiated toward the navel. Rectal examination was negative, but the spine was not examined.

The blood, urine and gastric contents were found normal. No further roentgen-ray examinations were made, but exploratory operation was advised. The opinion was expressed that the patient probably had diverticulitis of the sigmoid and possibly appendicitis. He was operated on through a median incision in July, 1913, and the surgeon reported that he removed a diseased appendix and freed a kink in the sigmoid.

Subsequent Course.—The patient returned to us in August, 1919, and stated that he had been relieved of symptoms for about a year following his operation. The pain in the lower left abdomen then returned. For the most part this had been a dull ache, but at times had been sharp and acute. He had also noted pains in the lower left back. These pains were increased on moving the leg, on stooping and on lifting. The pain disappeared when he sat still, but recurred as soon as he stirred about. No other symptoms of interest were noted.

Second Examination.—Complete physical examination was negative except as follows: The tonsils were large and ragged, there was receding of the gums with pyorrhea, and slight tenderness over the sigmoid. The spine showed scoliosis, with convexity to the right in the lumbar region, dorsal bowing with increased lumbar lordosis, tenderness on pressure in the lumbar region, restriction of motion on both flexion and extension, muscular spasm of the erector spinae group, and on lateral bending to the right, pain was produced in the left iliac region. There was no tenderness over the sciatic nerve, but the Kernig sign on the left was positive.

The blood, urine and Wassermann test were negative.

Roentgen-ray examination revealed ostearthritis of the lumbar vertebrae, but no bony changes about the sacro-iliac articulations. Films of the teeth disclosed no apical infections.

Course.—The patient was referred to an orthopedist, who first put him at complete rest and then applied a plaster jacket. Several months later the patient reported practically complete relief.

CASE 5.—*Clinical Summary: Attacks of acute agonizing pain on left side resembling renal colic; frequent attacks of pain beneath the right costal border imitating biliary colic; considerable pain in precordial region; no pain in back; visceral disease apparently excluded; extensive hypertrophic spondylitis present.*

History.—Mrs. H. (10246), aged 47, housewife, seen May 23, 1919, whose complaint was pain in the upper right abdomen, had had occasional attacks of tonsillitis in the past, and the tonsils were removed in 1907. She had diphtheria as a child, typhoid fever in 1903, and influenza in October, 1918. She had had no other acute infections and gave no history of arthritis except some "rheumatic pains" in hands and knees. She had had four children and no miscarriages. Hysterectomy and appendectomy were performed in 1913. About fifteen years before the patient had recurring hematuria for six weeks. Nine years before she had a severe attack of apparent kidney colic, but she does not remember on which side. Her past history was otherwise negative.

The patient dated the onset of her present illness to four years before, when she began to have attacks of "acute indigestion," characterized by severe pain in the epigastrium and beneath the right costal border. These required hypodermics for relief, and were thought to be gallbladder colic. She had several such attacks in a year's time. In the last three years she had had no acute attacks, but had had almost constant pain through the lower right chest, at times quite severe in nature. In addition, during the last four years the patient had suffered from attacks of acute agonizing pain in the left lower abdomen, radiating from flank to groin and requiring morphin. She said she had a sore place in the lower left abdomen that was like an electric button. Touching this spot produced pain that radiated all over the left side of the abdomen. The preceding fall the patient weighed 138 pounds; her present weight was 118 pounds. Her history was otherwise unimportant.

Examination.—Complete physical and neurologic examination was negative except as follows: There was some tonsillar tissue present (incomplete operation); the mouth showed considerable dental work with some receding of the gums; there was slight diffuse abdominal tenderness, and definite rigidity of the spine in the dorsal and lumbar regions; there was hyperalgesia over the right lower thorax.

The blood, urine and gastric contents were normal. The Wassermann reaction was negative on blood serum and spinal fluid. The latter showed no increase of globulin, and gave a normal cell count.

Complete roentgen-ray study revealed lipping and hypertrophic bone formation involving the third to the ninth dorsal vertebrae and the third and fourth lumbar vertebrae, with almost complete obliteration of the intervertebral space between the third and fourth lumbar vertebrae. The gallbladder region, the urinary tract and the gastro-intestinal tract (opaque meal) showed no lesions; two alveolar abscesses were found in the mouth.

Course.—The patient was under observation in the hospital from May 24 to Aug. 7, 1919. For seven weeks she was kept absolutely in bed, and during this time was remarkably free from pain. She was then allowed to get up, preparatory to having a plaster cast applied. Shortly after this she was seized with a succession of most agonizing attacks of pain, radiating from the left flank to the groin. Specimens of catheterized urine examined immediately after these attacks showed no pus, blood or albumin.

The patient left the hospital wearing a cast applied by an orthopedist and went to her home in a distant city. Oct. 2, 1919, she reported in person and had a reinforced corset substituted for the cast. She looked well, had gained in weight, and had been entirely relieved of the severe pains in the chest and abdomen.

Case 6.—*Clinical Summary: Vague discomfort in lower abdomen described as pulling, dragging or taut sensations; periods of dull pain in epigastrium together with soreness in left chest and left hypochondrium; these symptoms occurred when the patient was up and about and disappeared when he rested in bed; no acute abdominal pain; no complaint of backache; visceral disease apparently excluded; spondylitis discovered accidentally during roentgen-ray study of gastro-intestinal tract.*

History.—Mr. E. (10295), aged 49, farmer, seen June 5, 1919, whose complaint was indigestion, had "rheumatism" in the shoulders and arms four years before which disappeared after the extraction of certain teeth. He had influenza in April, 1919. Otherwise he had had no acute illnesses and his habits were excellent; his wife had had twelve children and one miscarriage.

The patient dated the onset of his present symptoms to January, 1919, when he began to be troubled with a "taut" feeling in the lower abdomen. Shortly after this he had a slight fall, in a sitting posture; he suffered no immediate pain, but some hours later he had pain in the left side of the chest and abdomen, lasting fifteen days. In April he had a severe attack of influenza with fever for nine days and much hiccup. Following this the abdominal pain returned with marked soreness in the epigastrium and a pulling, dragging sensation in the lower abdomen, with occasional burning and flatulence. These symptoms were present every day. They were aggravated by walking about and were relieved by lying down, so that he had spent much of his time in bed. He said he could not bear any jarring of the body, and he had a tendency to hold the abdomen. His appetite was very good, and he had had no nausea, vomiting or sour stomach; but his bowels were constipated. He was about ten pounds below his usual weight of 160. Careful questioning elicited no other symptoms, and he made no complaint of pain in the back.

Examination.—Complete physical examination was negative, except as follows: The teeth were badly worn, with some pyorrhea; the brachial arteries were easily felt; the systolic blood pressure was 124; the diastolic 78; there was diffuse abdominal tenderness; the spine was straight, not tender, and showed stiffness and restricted motion, especially on lateral movements. Rectal examination was negative, and there was no hernia.

Blood, gastric contents, specimen of stool and Wassermann test were negative. The urine showed a cloud of albumin and a few hyaline casts.

Roentgen-ray studies were made of all the teeth, the urinary tract and the gastro-intestinal tract (immediately and six, twenty-four and thirty hours after eating, with screen and plates) and found negative. On two of the plates, however, a good view was obtained of the lower dorsal spine, and this showed a characteristic picture of hypertrophic arthritis.

Course.—This is not known; orthopedic treatment was advised.

Case 7.—*Clinical Summary: Severe pains in right side of abdomen extending from flank to groin and radiating to the leg; recently similar pains had developed on left side; patient had had two abdominal operations to secure relief, with removal of gallbladder and appendix; persistence of symptoms following operation; well marked evidence of spondylitis confirmed by roentgen-ray examination; visceral disease apparently excluded.*

History.—Mr. M. (Virginia Hospital), aged 53, seen, Oct. 2, 1919, complained of pain in both sides of the abdomen. The patient's general health had been good. He had had a discharging ear as a child, and had malaria ten years before. There was no history of other acute infection, and he denied all venereal diseases.

The patient dated the onset of his present illness to an attack of pneumonia in May, 1918. On convalescing from this illness he began to suffer with sharp pain in the right flank and groin. This pain radiated to the back and also to the right leg. He described it as a dull, cutting pain, and he had taken a great deal of acetylsalicylic acid, which afforded some relief. At times the radiating pains had stopped, but he always had pain in the right groin. He had no pain on the left side until one month before. At that time lumbar puncture was performed and was followed by persistent pain on the left side similar in character and distribution to that on the right.

In December, 1918, the patient was operated on in a distant city and the gallbladder removed. In February, 1919, he was again operated on and the appendix was taken out. He was told that no definite disease was detected in either organ. About this time all of his teeth were extracted except three. There had been no change in the character of his pain, and the pains were no better and apparently no worse than they were at their onset. He had no definite

digestive disturbances, but was constipated. There were no urinary symptoms, and his history was otherwise unimportant.

Examination.—Complete physical and neurologic examinations were negative except as follows: There was moderate atheroma of the peripheral arteries, the systolic blood pressure was 120, the diastolic, 60; the abdomen showed two operative scars and diffuse tenderness, which was most marked in the lower right quadrant. The reflexes were normal. The spine showed moderate posterior bowing in the dorsal region, and marked rigidity and limitation of motion in the lumbar region.

Examination of the blood was negative except for definite secondary anemia; the urine showed a trace of albumin, a few pus cells and an occasional hyaline cast. The Wassermann reaction on the blood and spinal fluid was negative, and the latter showed no increase of globulin or cell count.

Roentgen-ray examination of the urinary tract was negative for calculus. Screen and plate study of the gastrointestinal tract (immediately and six and twenty-four hours after eating) was negative except for evidence of slight adhesions about the cecum. Plates of the spine revealed marked hypertrophic arthritis of the second to fifth lumbar vertebrae.

Course.—This is not known. The patient was advised to put himself under the care of an orthopedist.

In this series of eighty-seven cases of spondylitis, there were sixty males and twenty-seven females.

AGES BY DECADES

Ages, Years	Cases
From 10 to 19	1
From 20 to 29	4
From 30 to 39	7
From 40 to 49	21
From 50 to 59	25
From 60 to 69	21
From 70 to 79	8

No attempt was made to tabulate the age at onset of the spondylitis, as in many instances this was too uncertain.

As to the etiology of spondylitis, one is certainly correct in assuming that it is identical with that of arthritis in general. The vertebral localization of the arthritic process is no more peculiar than the involvement of other joints of the body. The relation of arthritis to focal infections is so definite in most instances that it would seem correct to suppose that the vast majority of arthritides are due to toxic absorption with special tropism on the part of the joints.

In this series of eighty-seven patients with spondylitis, three cases seemed to be consequent to typhoid fever and four cases appeared to be secondary to a gonorrheal urethritis. Nine of the patients gave a history of preceding acute rheumatic fever, and many of the patients had had one or more attacks of tonsillitis. While it may occur in young adult life, it must be recognized that, as a rule, spondylitis is comparatively rare before the fifth decade of life. Now, it is at the age of 40 years and beyond that focal infections about the teeth become manifest in many persons. In this personal series of spondylitis cases, pronounced alveolar infection was the rule in the majority of patients. The Wassermann test on the blood serum was made in sixty-two cases, and was negative in all these patients except one. In nine obvious cases the spine was not roentgenographed. Of the remaining seventy-eight cases, roentgen-ray examination revealed gross changes in sixty-eight and was reported negative in ten cases. From a consideration of all the possible etiologic factors in this series, I believe one is correct in assuming that spondylitis may occur in early adult life as the result of certain infections, especially tonsillitis, acute rheumatic fever, gonorrhea and typhoid fever. In most instances, however, spondylitis is a disease of middle and late adult life, and is generally secondary to chronic focal infection about the teeth.

SUMMARY

The incidence of spondylitis, while familiar to the orthopedist, is not generally recognized by the internist and surgeon. The involvement of the nerve-roots in arthritis of the spine may give rise to referred pains not only in the shoulders, hips and extremities, but also in the chest and abdomen. The symptoms referred to the abdomen may simulate visceral disease, and may vary from vague discomfort to paroxsyms of acute pain. In this series of eighty-seven cases of spondylitis, abdominal pain occurred in twenty-three patients in whom visceral disease could apparently be excluded as the cause. Errors in diagnosis lead to needless operations on gallbladder, appendix and urinary tract. Spondylitis with referred abdominal pain is much more frequent that tabetic crises. Relief of the nerve-root pains is secured by proper orthopedic treatment plus removal of responsible foci of infection.

ABSTRACT OF DISCUSSION

DR. GUSTAVE ROUSSY, Paris, France: [Dr. Roussy spoke in French. His remarks were translated into English by Dr. Thayer.] Professor Roussy calls attention to the similarity of the condition described by Dr. Vanderhoof, to certain observations made in France, in young men, who on roentgen-ray examination of the spinal cord showed rather extensive lesions, spicules, spines, and stalactite-like lesions of the vertebrae. He calls attention to the difference between two types of spinal arthritis, particularly that studied by Marie, and one beginning more commonly in the shoulder joint and in the hip joint, and resulting in extensive immobilization of the spine. The actual symptoms of immobilization are not striking but the symptoms of pressure come out markedly, without the evidences of grave immobilization. He mentions the circumstance that in the rhizometic spondylitis of Marie, he was rather of the opinion that in many instances the cause was gonorrhea. Three of the cases cited by Dr. Vanderhoof may be of that type, but in many of the cases of more benign spondylitis, Dr. Roussy is uncertain as to the cause. In some cases which they observed infection may have been the cause, but in many instances, there was no evidence that infection was at the root of the malady, and no apparent cause could be found. He calls attention to the similarity between these conditions and the interesting condition described by Madame Dejerine of a hyportrophic arthritis consequent on a severe wound, particularly about the knee and of the spinal cord. He mentioned that in several of those instances extensive ossification was observed in the abductor muscles of the thighs, extending for a very considerable distance down the thigh, a change ascribed by Madame Dejerine to some trophic injury to the cord. Dr. Roussy also called attention to the relative frequency of muscular atrophy associated with spondylitis, and spondylitis due to pressure. He calls attention particularly to a number of instances in which the sternomastoid, the trapezius and other muscles in the cervical region and in the region of the shoulder have been affected, in which, on careful roentgen-ray examination, distinct evidence of the cause has been found in the spondylitis.

SIR HUMPHRY ROLLESTON, London, England: I should like to express my surprised appreciation at the large number of cases which the author recognized. It is, indeed, rather remarkable that this connection has not been noted before, because, as many of you remember, many years ago John Hilton of Guy's, who wrote so much on "referred pain,"

pointed out that caries of the spine might cause abdominal pain, and it would appear that the mechanism in which spondylitis deformans produces symptoms simulating those of disease of the gallbladder, the appendix, etc., must be exactly the same.

Dr. Douglas Vanderhoof, Richmond, Va.: The chief aim of my article was to emphasize the frequency of spondylitis. In recent years I have become especially impressed by the fact that arthritis of the spine is a very common condition. There is no reason why it should not be, when we consider the frequent occurrence of arthritis in general. We are often consulted by patients with peculiar girdle pains, underneath the costal borders. When on the right side, we may think of a diseased gallbladder. When the pain is on the left side, we are not so ready to diagnose a visceral condition. We have been able to demonstrate that certain of these persons have a localized spondylitis of the dorsal spine. One should remember that in making a roentgen-ray examination of the dorsal spine, a special technic must be employed. This paper contains the report of eighty-seven cases of spondylitis seen in the course of the past seven years, including 1919. I am sure that in the first three and a half months of this year I have seen twenty-five or thirty additional cases confirmed by roentgen-ray examination. This is important, because we must recognize the incidence of spondylitis, and we must also realize that some of these persons have referred nerve root pains that simulate visceral disease. Furthermore, we must bring these facts to the attention of our students in the same way as we have been trying to impress on them the importance of testing the pupillary reaction, the knee jerks, etc., to save the tabetic from needless abdominal operations.

SUBCUTANEOUS PHLEBECTASIS OF THE LOWER THORACIC AND UPPER ABDOMINAL REGIONS *

WILLIAM GERRY MORGAN, M.D.
WASHINGTON, D. C.

In the course of the routine examination of patients during the last twenty years I have noted here and there individuals presenting a peculiar dilatation of the cutaneous veins in the diaphragmatic area of the chest and upper abdomen. These veins stand out in an irregular wreath shape form, most often occupying the right diaphragmatic area, but occasionally the splenic area. In some instances the veins extend from one axillary line to the other and down each lateral aspect of the abdomen and across the hypogastrium, thus forming a complete wreath. There are two distinct types to be noted—those in which the dilatation is in the form of telangiectasis and those which are true varices. I have used the name "phlebectasis" to designate this affection.

This condition, in my experience, is vastly more often observed in men than in women; yet it does occur in women.

From the first time I observed this down to the present I have promised myself if an opportunity offered with a sufficient number of cases at my disposal, I would take up the study of this condition and attempt to learn its significance and causal relation. We have been taught to consider this as a sign-complex of embarrassed portal circulation, either from cirrhosis, malignant disease or hepatic abscess. Similar vascular nets occur in different parts of the body, but with nothing like the uniformity of formation or the extent with which they are seen in the cases under consideration.

From my experience I am able to say that these varices are seen most frequently after the age of 30 and on up to 60 and even beyond. A definite cause of a more or less constant type must be present because of the constancy of type and the uniformity of arrangement and the constancy of location in the diaphragmatic area, and also, as I have pointed out, because of its greater predilection for men than for women.

It was necessary, in the study of this condition, to try to connect up the varices with the proper part of the vascular system, and if possible to determine whether or not the portal venous circulation was always concerned in it. This naturally has been a very difficult point to clear up, as I have never had the opportunity to have a study made at the postmortem table in one of these cases. If this point could be definitely cleared up it would pave the way for an elucidation of this entire condition.

That the condition is seen frequently in connection with cirrhosis of the liver would indicate that we must look to the portal circulation, near or remote, for causative factors in all of those cases in which no disease of the liver is to be demonstrated. This would lead us to search for causes elsewhere in the circulation even so far removed as the heart and the great blood vesseles of the chest. We have also considered the action of the diaphragm in diseases of the chest organs in its relation to this condition. And finally a study of the nervous system in these individuals has been made in relation to its bearing on phlebectasis.

When there is any interference with the return of the venous blood in the direction of the heart, whether it is in the neighborhood of the superior vena cava or the inferior vena cava or the portal vein, either within or without the liver, there is an immediate attempt to establish the circulation of the blood by means of varices which, in the case under consideration, appear in the cutaneous circulation. Just why the deeper venous circulation does not entirely take care of the necessary collateral routes is not clear.

In looking for possible causes of the disturbed circulation in these cases we should consider compression of the vena cava resulting from an enlarged aorta from one cause or another, syphiloma of the mediastinum or of the lungs, pleuritic effusions, enlarged bronchial glands, cyst or cancer of the thyroid and even hyperthyroidism, and finally, thrombosis of the vena cava itself or of its branches.

Up to the present time, as I have heretofore remarked, we have not had the benefit of postmortem studies to aid us in determining the causative factors of this condition, which, to those of us who have observed it in individuals not suffering from the grosser forms of venous obstruction in this region, is its most interesting feature.

PATHOLOGY OF THE CONDITION

As I have not given sufficient study to this condition, I am not able myself to go more profoundly into the morbid anatomy of phlebectasis; therefore I shall quote at length from an article published in 1914 by Prof. M. Villaret.[1] Villaret gives the result of many years of study of subcutaneous phlebectasis. He has

* Read before the Section on Practice of Medicine at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1 Villaret, M.: Paris méd. **15**: 20, 1913-1914.

subdivided these varices according to their relation to the normal venous circulation. He goes on to say:

In order to simplify their readings, we have arranged schematic tracings showing the normal parietal circulation, noting on them the dilated veins observed and the direction of the current. From a large number of these tracings the following conclusions were drawn:

A. The circulation disturbance which affects the superior vena cava. The pathologic collateral circulation may be caused by compression of the superior vena cava, resulting either from aneurysm of the arch of the aorta, especially the first portion, cancer of the mediastinum or of the lung, syphiloma of the mediastinum, tuberculous tracheobronchial glands, old pleurisy, chronic mediastinitis, cancerous goiter, or even exophthalmic goiter. It may also be due to thrombosis of the vena cava or its branches.

1. Ordinary Topography: It seemed to us to be characterized by the following characteristics:

(1) Venous plexus localized over about one third of the chest.

(2) Usual dilatation of the long superficial thoracicohypogastric veins of both sides, along their entire course, but especially about the thoracic segment.

(3) Frequent dilatation of the cervico-axillary vein.

(4) Notable absence of dilatation of the superficial median xiphoid vein.

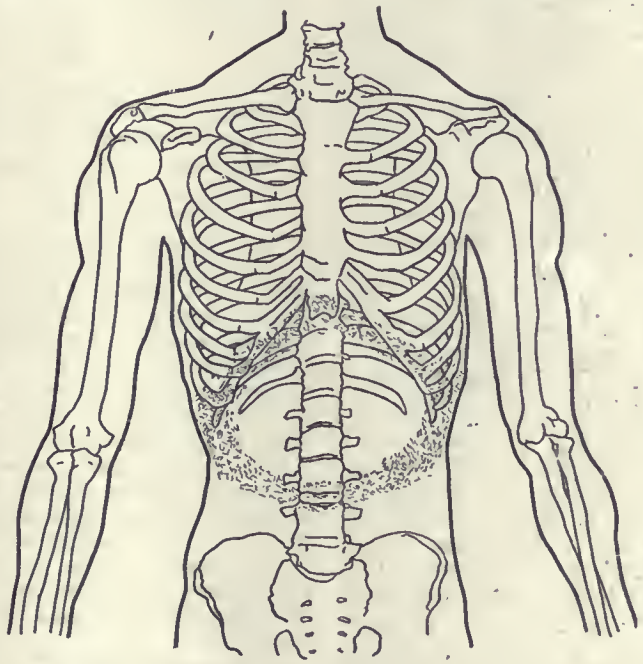
(5) Reduction of supplementary plexuses.

(6) Direction of the venous current from above downward.

(7) Frequent concomitant edema of the face, neck, chest and arms.

2. Localized Forms: When the circulation disturbance is limited to a segment of the domain of the superior vena cava, or when it is quite limited, the superficial phlebectasis may be localized in the upper part of the body on one side, shoulder or arm or middle portion of the chest at the cervico-axillary vein.

3. Mixed Forms: When, on the other hand, venous stasis of the domain of the superior vena cava is accentuated, or is simply persistent, a time frequently comes when the foregoing circulatory type is modified. The partial plexus transgresses on the portal domain or on that of the inferior vena cava, and becomes too complicated for its reading to contribute to a serious etiologic diagnosis.



Wreath of dilated cutaneous vessels in abdominal wall; taken from life.

B. The circulatory disturbance is in the domain of the inferior vena cava.

(1) Localized venous plexus, or at least clearly predominating in the region of the infra-umbilical region of the abdomen.

(2) Habitual dilatation of the middle abdominal subcutaneous veins.

(3) Frequent extension of the abnormal vascularization of the superficial iliac circumflex veins, and to the middle portion of the long tegumentary thoracicohypogastric veins.

(4) Decrease of the abundance of the supplementary plexuses, beginning with the inguinal cavity, where they arise, up to the costal regions.

(5) Absence of notable dilatation of the superficial median xiphoid vein.

(6) Direction of the venous current from below upward.

(7) Habitual concomitant edema of the lower limbs and sometimes of the external genitals.

2. Localized Forms: When the casual disturbed circulation is limited to a segment of the domain of the inferior vena cava, or of limited extent, the superficial phlebectasis may become localized.

3. Mixed Forms: More often, during the second stage, the rapidity of the appearance of which depends on the degree of the obstruction, the preceding superficial vascularization surpasses the primitive limits, in order to encroach on the portal territory. We are then dealing with the cava-porta mixed types, currently observed but not clearly described. They are found in generalized tuberculous peritonitis of the sclerotic form, and of peritoneal cancers.

C. The circulatory disturbance occurring in the domain of the portal vein.

More interesting than the foregoing are the symptomatic collateral circulations of the syndrome of the portal hypertension. They follow diverse hepatic affections of the polyphlebitis opposing the normal current of the blood of the portal vein toward the suprahepatic veins.

The collateral circulation of the thoracico-abdominal wall is very frequent and particularly decided in the course of polyphlebitis of the trunk of the portal vein. They come on suddenly, if the venous obstruction is complete, or slowly and gradually if the thrombosis is simply parietal.

Just as frequent, but much less voluminous and of a more progressive development, are the cutaneous varices following cirrhosis, especially atrophic cirrhosis of Laënnec's type. They may be absent, especially in the case of anascitic cirrhosis.

1. Ordinary Topography: (1) Beginning of the ectasis in the umbilical region, or, more rarely, in the linea alba, the collateral circulation of portal origin not being able to occur, excepting following dilatation of the venous system of the umbilicus, or of the neighboring perforating branches. Caput medusae constitutes a very decided degree of umbilical varix.

(2) Localized venous plexus, or at least decidedly predominating, in the neighborhood of the supra-umbilical and inferior thoracic regions.

(3) Habitual ectasis of the superficial median xiphoid vein.

(4) Frequent dilatation of the superficial long thoracicohypogastric vein.

(5) Possible predominance of ectases in the neighborhood of the hypertrophied liver and spleen.

(6) Absence of noticeable varices in the neighborhood of the abdominal subcutaneous veins.

(7) Direction of the current being from below downward.

(8) Rarity of concomitant edema of the lower limbs and genitals.

2. Localized Forms: (1) The first variety is formed by the exclusively umbilical and periumbilical varices.

(2) The predominating ectasis of the xiphoid median vein and the perixiphoid plexus. Often it is combined with that of a long thoracicohypogastric vein.

(3) The supplementary circulation of portal origin becomes apparent only in the neighborhood of the lower third of the thorax.

3. Mixed Forms: Often subcutaneous phlebectasis of cirrhosis undergoes variations from one period to another of the disease. The most important modification of the plexus of portal origin is when the cava type is added to it.

From the foregoing rather complete summary of the pathology of this condition, the etiology and development of cutaneous phlebectasis in the thoracico-abdominal region is more clearly to be understood.

OBSERVATIONS IN ONE HUNDRED CASES

I will now examine the clinical histories of the 100 cases which have come under my observation during the last five years, these being taken from more than 5,000 patients who were examined by me during that period, and which number certainly warrants some preliminary conclusions to be drawn.

In studying these cases individually I at first took note of every symptom and abnormal sign, however slight; but later, when considering them collectively, all those which clearly bore no relation to this condition were ruled out, and only those signs and symptoms which occurred with sufficient frequency to make it appear that they might have some significance were retained.

A summary of the tabulated findings reveals that out of 100 persons affected with phlebectasis, ninety-five were men and five women. The ages ranged from 24 to 82. Seventy-three were more than 40 years of age. Seventy-six were married and twenty-four were single. Fifty-eight led sedentary lives. Forty-two led active lives. Fifty-eight had prompt capillary circulation; thirty-seven had tardy capillary circulation, and in five the circulation was not noted. Seventy-two had normal radial vessels; sixteen firm, and twelve beady. In seventy the pulse rate was normal; in seventeen rapid, and in thirteen slow. The blood was normal in seventy-seven. Twenty-three were anemic. The blood pressure was normal in forty-seven; seventeen had hypertension; thirty-five had hypotension. The Wassermann reaction was negative in eighty-two, positive in nine, and not made in nine cases. The heart was normal in seventy-eight cases and diseased in twenty-two. The lungs were normal in ninety-one cases and diseased in nine. The liver was normal in seventy-one, and diseased in twenty-nine. The gall-bladder was normal in seventy-five, and diseased in twenty-five. The spleen was normal in ninety-eight, and diseased in two. Bowel action was normal in twenty-eight; sixty-eight were constipated; four had diarrhea. The urine was normal in eighty-seven, and adnomal in thirteen. The gastric juice was normal in forty-seven. Twenty-five had hyperacidity, nineteen, subacidity, and the condition was not stated in nine. The nervous system was normal in seventy-nine, and diseased in twenty-one. The gums were normal in twenty-seven, and diseased in seventy-three. Nutrition was normal in seventy-four, and poor in twenty-six. The roentgen-ray findings were negative in thirty-one, and were not made in twenty-one cases; in forty-eight cases they revealed some pathologic condition in the chest or alimentary tract, or both.

The past history was largely negative so far as this condition goes. Thirty-six had suffered from diseases which might have had some predisposing relation; fifty-four were entirely negative. Seventeen cases either gave a history of syphilis or had a positive Wassermann reaction. Seventy-five used tobacco; twenty-five did not. Eighteen used alcohol; eighty-two did not. Thirty-six suffered from organic diseases affecting the alimentary tract; twenty-nine, from organic diseases affecting exclusively the biliary tract; thirty-one, from organic diseases affecting the circulatory system, and nine from diseases of the respiratory organs.

RECAPITULATION

Phlebectasis of the cutaneous circulation in the lower thoracic and upper abdominal areas occurs almost exclusively in men after middle life. Of the women affected, two suffered from endocarditis, one from syphilis, one from cholelithiasis, and one from hyperthyroidism.

The conditions which are most frequently associated with phlebectasis of the abdominal walls are constipation, disturbed arterial tension, oral infection, syphilis, heart disease, aortitis, diseases of the gall-bladder, diseases of the liver, and organic disease of the nervous system.

CONCLUSIONS

From this study of phlebectasis of the cutaneous circulation of the lower thoracic and diaphragmatic areas it has been impossible to discover the exact determining cause or causes for the condition. It can be definitely stated, however, that it is an accompaniment of more or less profound pathologic changes of the midbody which without doubt affects most probably the liver, the heart or the great blood vessels.

1624 I Street.

ABSTRACT OF DISCUSSION

DR. J. RUSSELL VERBRYCKE, JR., Washington, D. C.: Until Dr. Morgan called my attention to this peculiar purplish red capillary enlargement I paid little attention to it, regarding it as being accidental. Since then, however, I checked up my own cases, and found that this condition is characteristic. It occurs almost exclusively in males, and, as a rule, in adult life. Ordinarily, the patient is not aware of the presence of the condition. One man told me that he had had it since birth; but it is possible that he was in error. The form and distribution of these lesions is also characteristic. They seem to appear in order, most commonly over the liver, second, over the splenic area, then over both, and least commonly, in a semi-wreath shape, extending across the lower costal region, and down on each side. The cause, I am sure, is not to be found in any disturbance of the general circulation or of the viscera. The capillaries, and most of them are capillaries, are not enlarged enough to indicate any gross obstruction. These capillaries resemble those which run down over the edge of the nose in acne rosacea, and I am inclined to think that the same cause is operative in both instances. No one factor is sufficiently constant to warrant considering it etiologically. Therefore, the exact cause of this lesion still remains to be found.

DR. CHARLES F. HOOVER, Cleveland: This condition was described in the late eighties by the physician of Bismarck. He termed it a corona.

DR. LOUIS G. GENELLA, New Orleans: An Italian physician in Milan twenty-five years ago described this condition and illustrated it exceptionally well. He claimed that these abdominal varicose veins are all malignant, but that it is a very slow form of malignancy. He warned every surgeon, however, that whenever he opened an abdomen and found a marked varicose condition of the broad ligaments, to be assured that his patient would die within probably six or seven years.

DR. FRANK BILLINGS, Chicago: I became interested in this subject more than twenty years ago. Sir William Osler happened to be in my clinic when a very illustrative case of this kind was shown. He said that he had frequently found this condition in children and in certain persons of whose tissues it was characteristic.

I found that it did occur in persons who used alcohol, particularly beer, in excess. These dilated venules are at about the junction of the intercostals, the internal mammary and the epigastric veins. In cases of obstruction of the portal vein such varicosities do not occur at this site, or if they do, they are large vein dilatations. Or if there is obstruction of the superior vena cava, and consequent enlargement of the internal mammary veins, the enlargement is not like this. I cannot

accept Dr. Morgan's conclusions as an explanation of the dilatation of these venules.

DR. WILLIAM S. THAYER, Baltimore: Have you seen cases of like venules extending up the chest, all the way to the clavicle? I know of one instance, an active man, about 56, who has a line of them extending away up to his clavicle, along the costochondral articulation.

DR. WILLIAM G. MORGAN, Washington, D. C.: In a close study of between five and six thousand patients I never met a case in a patient less than 30 years of age. The definiteness of arrangement and location was characteristic.

I have seen one patient who had this condition extending up the chest. That woman had a widespread thickening of the lung on that side, for which no definite cause was assigned.

MEASLES: BRAIN COMPLICATIONS *

A. L. SKOOG, M.D.
KANSAS CITY, MO.

Even in a discussion of any neural complications or sequelae that might occur in a case of measles, we are compelled to admit and even bear in mind that the exact cause of measles still remains unknown. If the disease is studied from the standpoint of the epidemiologist or bacteriologist, the logical conclusion is that the etiology can be attributed only to some organism as yet unseen and uncultivated. Thus many investigators finally conclude that some ultramicroscopic organism is responsible.

We are forced to the conclusion that complications or sequelae, whether involving the brain, spinal cord or peripheral nerves, are uncommon. Yet they are probably of sufficient frequency, and certainly of sufficient gravity, to warrant a serious consideration. Surely we have no right to consider measles a simple and harmless affection.

Relative to the frequency of the neural disorders, I find that the recent literature bearing on this subject is not much more abundant than the ancient. According to Orthalan,[1] palsies following acute fevers were mentioned by Hippocrates and Galen; but the first allusion to measles in this connection was made by Olier in 1772, who referred to this disease as "a cause of acute hydrocephalus." H. B. Allyn[2] gives James Lucas credit for reporting the first case, in 1790, in the *London Medical Journal*. Of fifty patients seen in one epidemic in 1890 by Espagne,[3] one died from a complicating meningitis with convulsions and lethargy. Wilhelm Möller[4] reports on 537 deaths in an epidemic of 1887, this being a death rate of 3.72 per cent. Among the many complications, convulsions and aphasias were rare. There were five cases of meningitis, three being reported as simple and two as tuberculous meningitis. A few of the textbooks on nervous diseases and works on internal medicine mention in a line or two the brain disorders resulting from measles, but many make no record of the subject.

A study of the literature indicates that the brain complications and sequelae of measles occur much more frequently in children than in adults, and during the convalescence much oftener than during the febrile or exanthem stage. Thus a large percentage of the disorders might be classed preferably as sequelae than as complications.

A large variety of pathologic lesions is reported as involving the central nervous system during and following measles. However, most of the cases found in the literature may be grouped under three or four headings. The meningitis group has a larger number than any other. Thomas[5] cites cases with meningitis, meningo-encephalitis, hydrocephaly, cerebral thrombosis, cerebrospinal affections, tuberculous meningitis, hemiplegia, apoplexy, hyperemia of the brain, and some others. Jürgensen[6] would doubt the accuracy of the Thomas reports, questioning often the responsibility of the measles.

I am reporting two cases which may be classed as sequelae to measles, one a cerebellar and the other a meningeal involvement.

REPORT OF CASES

CASE 1.—*A cerebellar sequela.—History.*—W. L. W., a girl, aged 4 years, whose mother was well and had had no other pregnancies, and whose family and past history was negative, had always been a robust, healthy child. Teething, walking and talking occurred at the usual age. Measles was first determined by a typical macular eruption, Koplik spots, photophobia and other manifestations. Jan. 30, 1915. Eruption and acute symptoms were practically absent on the seventh day. About the twelfth day and during convalescence the mother noticed that the child did not use her hands quite the same, there being an unsteadiness when playing with toys or performing any voluntary act. The same state was seen soon in the lower extremities so that walking was impaired; and in a very short time she could hardly get about. There was an increased irritability, and some crying. Appetite and stools were normal.

Examination.—On the third day following the first neurologic manifestations, the general nutrition was fair. The temperature and the pulse were normal. There was a slight evidence of a past macular eruption. Cerebration was fairly good. The patient was inclined to be a little sulky or obstinate. The tongue was protruded mesially, but with much coarse tremor. There was a tendency to some nystagmoid movements when looking to the extreme right or left. Other cranial nerve findings were normal. The arms and legs had fair power for individual movements, there being no true palsies. Sensory tests gave normal responses. All deep reflexes were slightly increased, the right equaling the left. The superficial reflexes were normal. The movements in all the extremities were markedly ataxic, the right being the same as the left, but the arms slightly more than the legs. The voluntary movements of the hands were so ataxic that she could scarcely hold and drink a glass of water. The incoordination in the lower extremities made standing and walking quite difficult. There was no Romberg sign. All the incoordinations were typically cerebellar in type. Cerebellar asynergia was evident. Two days later not much change was to be noted. Ten days later a great improvement was found. Seven weeks after the onset of the neurologic sequel, almost no trace of the clinical signs of involvement of the nervous system was present.

I believe that in the case just cited we have had a pathologic process involving esesentially the cerebellum. Possibly other portions of the encephalon were involved in a very minor degree. A complete recovery in a short period indicates that few or no cerebellar neuronal elements were destroyed. There was present an inflammatory process, either the result of an intoxication or directly from some secondary organism or from the hypothetic virus of measles. The termination precluded a necropsy. A spinal puncture was denied.

* Read before the Section on Nervous and Mental Diseases at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Orthalan: Bordeaux thèse, November, 1894.
2. Allyn, H. B.: Med News **59**: 617, 1891.
3. Espagne: Montpellier méd., Series 2, **15**, 1890.
4. Möller, Wilhelm: Wurzburg thesis, July, 1896.
5. Thomas, Measles, Neural Complications, in Ziemssen: Cyclopedia of the Practice of Medicine, 1875, p. 97.
6. Jürgensen, Measles, in Nothnagel: Encyclopedia of Practical Medicine, p. 330.

The only parallel case has been found after searching the literature. A. W. Fairbanks,[7] under the title "Ataxia Following Measles," cites a case indicating an involvement of the cerebellum during convalescence following measles. However, there were evidences of added involvement of the right motor neural tracts. E. Apert [8] mentions a form "rougeole ataxo-adynamique."

Case 2.—*A meningitis complication.—History.*—L. H., a girl, aged 4 years, whose family and past history was negative, had been a healthy, well developed child. In July, 1919, I consulted with Dr. Frank Neff, who had taken charge of the case a few days previously, and about ten weeks after the attack of measles. There was present with the measles a bronchopneumonia. An otitis media followed. The child did not leave the bed after the measles and the subsequent complications. There was a state of marked helplessness, inability for any coordinated movements, and the child was inarticulate. Dr. Neff in his examination found a negative von Pirquet reaction; a white cell count of 5,400; a negative Wassermann reaction on blood and spinal fluid, and a spinal fluid clear, with no pleocytosis or bacteria.

Examination.—The patient was seen in bed, entirely helpless and speechless. She recognized no one. There was present much psychomotor unrest, with constant purposeless movements of hands and feet. There were no true palsies. There was some response to spinal stimuli. The superficial reflexes were present. The deep reflexes were present in the upper extremities, brisk at the right patellar and Achilles tendons, and feeble at the left. The Babinski and Oppenheim reflexes were questionable. The pupils responded to light and accommodation, but to a diminished degree. The eye grounds were nearly normal. Vision and hearing were undoubtedly present.

A neurologic examination in September indicated much improvement. Walking was possible.

A neurologic examination eight months after the first one indicated much favorable progress. The patient walked and played some and recognized her parents. She was unable to talk. Movements were not perfectly coordinated. Petit mal convulsions had been present during certain periods.

This patient undoubtedly had a meningitis with the other complications following the measles. The type of secondary meningeal infection was never determined. A cerebritis with a particular involvement of the cortex, as so frequently happens with meningitis, was evident. In the way of prognosis, it is reasonably certain that imbecility and possibly epilepsy will always be present.

THREE GROUPS OF CASES

In a concluding examination of the subject of brain complications and sequelae appearing in the course of or following measles, after a critical review of the reported cases and discussions in the literature and an analysis of my own few cases, I would make three groups:

1. The first group would include a certain minor number of cases in which the relationship of the measles would be merely incidental. Some of the cited cases have the onset of the brain troubles as first occurring several weeks to a few months following the eruption. Naturally the bearing of the measles infection to such sequelae can be questioned with justice. Of course, bacteria of various kinds may be harbored for a long period and under certain conditions be released as a local or general infection, when resistance in the host has been lowered by a disease such as measles.

2. The second group would include the secondary infections due to various organisms. The bacteria may be delivered to the central nervous system by the blood stream. However, the mode of invasion is undoubtedly in most instances through the cribriform plate from the nasopharyngeal cavities. This route of infection for *Diplococcus intracellularis-meningitidis* and the acute poliomyelitis virus is now well recognized. A great many more cases of meningitis follow measles, compared with all the other complicating disorders in the central nervous system. The fact that a large majority of the complications have their onset a few days following the disappearance of the eruption or during the early convalescence speaks for the importance of this second group. The interval is in accordance with the incubation period required for most of the organisms for secondary infections.

3. The third small group is a less certain one, owing to the fact that the exact etiology for measles is as yet undetermined. Clinical studies of the disease lead us to believe that the blood stream is teeming with the virus. Accordingly, the vascular channels of the meninges and brain may readily become involved. Certainly, some of the brain complications first manifested during the eruptive stage or the early convalescent period may be caused directly by the unknown virus of measles. Even some of the troubles appearing later in the convalescence may be due to this cause.

The prognosis for these brain disorders certainly depends on the brain tissue changes. If there has been much involvement of the leptomeninges or destruction of many important neurons, complete recovery is uncommon. From reports of good recoveries within from one to four months, I infer that the pathogenesis was mild. It was mild in my case with ataxia, which made a complete recovery in a few weeks; and severe in the meningitis case, in which entire recovery could hardly be anticipated.

The management and treatment of these cases depends on the lesions and the attendant deformities or deficiencies. Prophylaxis is first in importance. No unnecessary exposures to measles should be tolerated. Then the disease should be given careful attention, particularly as to preventing complications. Possibly many of the complications with meningitis reported might have been avoided had some attention been given the upper respiratory passages.

CONCLUSIONS

Cases of measles are sufficiently important to warrant careful consideration. Involvements of the brain in the course of measles, while apparently not as frequent as in other infectious diseases, are occasionally encountered. It is possible that many have not been diagnosed or recorded.

I have seen in my consulting practice and in the clinics of other neurologic consultants, certain mild neurologic or mental cases that were difficult to catalogue. This includes some with the neurasthenic syndrome. They may have originated from troubles in the brain or meninges in the course of or following measles and other exanthems. We can trace some of these neurologic disorders back to early childhood without knowing the exact etiology. I believe that at least a portion of these can be attributed to permanent pathologic residues in the encephalon or its leptomeninges, directly caused by the toxin or virus of measles or from one of the complicating secondary infections.

7. Fairbanks, A. W.: Arch. Pediat. **24**: 770 (Oct.) 1907.
8. Apert, E.: Traité de médecine et de thérapeutique, Paris, **2**, Eruptive Fevers, p. 201, 1915.

ABSTRACT OF DISCUSSION

DR. KARL A. MENNINGER, Topeka, Kan.: This paper furnishes additional evidence that we should not be too hasty in drawing a distinction between mental and physical forces. Until we know what feeblemindedness really is, it behooves us not to be too arbitrary in regard to cases of feeblemindedness being born and not made. Kraepelin advanced the theory that there is a faulty specificity in infectious diseases. My own work in influenza has tended to show something to the effect that instead of this sort of thing being faulty specificity, it is rather a quantitative specificity. That is, whereas one physical disease would be accompanied by a single or rare mental complication, others would be accompanied by a great many complications. I do not believe that there is any specific psychosis.

DR. A. L. SKOOG, Kansas City, Mo.: We should be on our guard constantly when making neurologic examinations, especially in these cases in which the etiology is obscure and uncertain, to determine whether the actual cause of the disease may not rest in some long forgotten antecedent disease such as measles.

CONGENITAL FACIAL PARALYSIS

TWO ADDITIONAL CASES *

FRANK R. FRY, A.M., M.D.
ST. LOUIS

Dr. Michael Kasak and I [1] last year presented to the American Neurological Association the notes of a case of congenital facial paralysis of unusual interest. Two additional cases I believe deserve to be recorded, and I am therefore presenting them on this occasion. As a rather extensive bibliography accompanied our paper last year, I am omitting it here.

REPORT OF CASES

CASE 1.—Helen B., aged 1 month, was first brought to the pediatric service of the outpatient department of Washington University School of Medicine. Sept. 9, 1916. On physical examination it was evident that motility was absent in the lower right side of the face, and the upper portions seemed weak. The lower left side also seemed weak. The lower lip was everted to a considerable degree, and the right corner of the mouth was pulled down more than the left when the patient was crying. The upper lip seemed short and thin. The mother noticed the peculiar condition of the face the next day after birth, and stated that the child was not nursing well on account of it.

September 23, the patient was first examined in the neurologic clinic.

October 11, the child was first brought to the ophthalmic clinic with a slight conjunctivitis, which was improved after several visits.

March 23, 1917, the infant appeared in the otologic clinic. The examination revealed an acute otitis media on both sides, and both membranes were punctured. Within three days the acute symptoms had subsided. The patient was finally discharged from the otologic clinic as well, June 1, 1917.

Meantime the patient was seen from time to time by Dr. Michael Kasak and others in the neurologic clinic, until the time of her last recorded visit, Nov. 11, 1918. At this time Dr. Kasak and I examined her together. The child was then 27 months old. In repose, the mouth fell open with an eversion of the lower lip. The upper lip seemed relatively short. When crying, the right corner of the mouth drew down, making an unpleasant deformity. This was evidently due to the action of the platysma. The left side of the face also gave the impression of weakness, and especially when the child was crying there was an evident lack of motility in the upper portions of the face as well as in the lower, more so in the right. The mother stated that the eyes did not close completely when the child slept.[2]

In all other respects, the child seems normal. The family history furnishes no items of importance. The labor was spontaneous and easy, and at full term.

This case was in the service of Dr. Sidney I. Schwab, chief of the neurologic clinic. He saw the patient only once, as he was absent in France in war service, during the time of her subsequent visits to the clinic. The child was 6 weeks old at the time of Dr. Schwab's examination. His impression then was that there was a peripheral paralysis of the seventh nerve only on the right side. He kindly accorded us the privilege of using the clinic's notes in our report. Later on, however, the conditions as we have described them were evident, and they recall certain observations of Vogt: [3]

> In peripheral facial paralysis the whole side of the face is motionless; in central and in most of the bulbar (types) the superior branch retains its movement. In congenital cases the superior branch remains motionless, while the region about the mouth retains either complete or partial motility. When this difference between the upper and lower part of the face is great, it gives a characteristic facial expression: full, protruding lips which are in contrast with the masklike, expressionless, sunken face above. The appearance of the face makes the condition often recognizable at the time of birth, and gives one the impression of an advanced atrophy or aplasia of muscles; also, the skin over the muscles is usually smooth, peculiarly shiny and colorless.

CASE 2.—E. P. L., seen Sept. 2, 1919, had a very evident right facial paralysis, associated with other interesting phenomena, a description of which I shall give after that of the seventh nerve. I am reporting it here as a congenital condition on the grounds of the convincing statements of the patient, a very intelligent, refined and educated young man. Since his earliest recollections his face has had the peculiarities now present. These he recounted in detail. In careful conversations with his mother she had convinced him and others that the condition was congenital. She had further told him that her labor at his birth was normal in all respects. His mission to me was out of the ordinary. The father of his fiancée had asked him to furnish a certificate from a specialist that his facial condition was not hereditary in character. He had gone about this conscientiously and systematically, by first obtaining all the data he could concerning his family history, and then presenting it and himself to me for examination, coming a long distance in order to do so. This history contained nothing bearing on the case.

The right sided paralysis is evident in all portions of the face, but more so in the lower. In going through the usual test movements the corrugations of the right forehead are only slightly less than on the left side. The palpebral fissure is about equal on the two sides, but there is a retracted and fixed appearance of the right lids in contrast to those of the left. The pulling to the left is marked, causing considerable disfigurement. On the right the lips are slightly flabby, the lower lip being somewhat everted. The whole right side of the face has a thinner and more flabby look as compared with the left side, and this is more marked in the lower portion. The condition causes the patient no disability or inconvenience of any kind that he can mention. The function of the left seventh nerve seems to be wholly intact.

In addition to this right facial paralysis there is evidently some defect in both motor fifth nerves, or at least in some

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* Read before the Section on Nervous and Mental Diseases at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Fry, F. R., and Kasak, Michael: Congenital Facial Paralysis, Arch. Neurol. & Phychiat. 2:638 (Dec.) 1919.

2. Prior to this, Dr. Kasak had studied the case carefully, and he and I had expected to include the report of it in our paper on congenital facial paralysis presented to the American Neurological Association, June 16, 1919, but owing to an accident with the notes it was omitted. The credit of its preparation belongs to Dr. Kasak.

3. Vogt, H.: Infantile Beweglichkeitsdefekte im Bereich der Hirnnerven, Handbuch der Neurologie (M. Lewandowsky), Berlin, 1911, p. 270.

of the muscles which they serve. Both temporal muscles are attenuated, giving a sunken appearance to these regions, and the contractions under the finger are feeble compared with a normal subject. The right masseter, compared with the left, has an hypertrophied appearance. This is probably, partly at least, due to attenuated superstructures. The left masseter is deficient in bulk, especially the anterior portion of it. What there is of it, however, contracts forcibly, as does the right. The lower jaw is slightly shifted to the right, and tilted slightly upward on this side, so that the teeth do not articulate regularly. The line of the lower incisors is one-fourth inch to the right of the upper ones. The lateral movements of the mandible, however, seem normal in range and strength, and the same seems to be true of its vertical force, notwithstanding the muscle defects just described. Dr. M. A. Bliss examined the patient with me and called attention to the fact that the platysma function was apparently entirely absent on both sides.

A phenomenon which greatly interested us was a very fine fibrillation, ranging in small waves about the face, almost constantly present in one region or another. This invades more or less all portions of the face below the lower eyelids and seems more pronounced on the right. The masseters appear also to be involved, especially at the acme, as it were, of the larger waves of the movement. The movements are so fine as to be noticeable only when rather close to the patient.

The musculature of all other portions of the body is thoroughly intact. When stripped, he presents a fine symmetrical appearance in this respect. The reflexes in all extremities are normal. He seems well and strong, and is very active. He was through rather intensive service for several months during the war. There is no disturbance in function of any of the ocular muscles, nor of any of the cranial nerves, except those here mentioned.

There are no sensory disturbances anywhere. Taste is not impaired on either side.

In view of these findings it would seem that the defects are nuclear.

TIDAL IRRIGATION OF WOUNDS BY MEANS OF LIQUID-TIGHT CLOSURE

W. H. TAYLOR, M.D.
GUELPH, ONT.
AND
N. B. TAYLOR, F.R.C.S. (EDIN.)
TORONTO, ONT.
FOREWORD BY W. E. GALLIE, F.R.C.S. (ENG.)
TORONTO, ONT.

FOREWORD

The principle of liquid-tight closure was first brought to my attention late in 1917 when the wards of our military hospital were filled with cases of chronic osteomyelitis and chronic septic arthritis. The simplicity and ingenuity of the apparatus devised by the Taylor brothers appealed to us so strongly that we at once gave it a trial, and I have no hesitation in stating that the method of treatment represents a distinct advance. In the osteomyelitis cases it is valuable both before and after the operation, for the purpose of cleaning out the wounds as thoroughly as possible. After operation it was often not necessary to institute any form of treatment, as the wounds healed rapidly by granulation. But in many cases the operation was followed by inflammatory phenomena in the surrounding tissues, and by profuse suppuration. In these cases the Taylor apparatus proved of the utmost value. As soon as the signs of inflammation appeared, the rubber tank was applied and the wound filled with 10 per cent. solution of sodium chlorid. Every two hours the tank was emptied and negative pressure applied for fifteen minutes. In no instance was it necessary to keep the patient under the treatment for longer than twenty-four hours.

During 1918 and 1919 more than 200 patients were treated in this way and in all cases with satisfactory results. We have never seen such rapid improvement in suppurating wounds as occurred after the use of the Taylor apparatus.

METHOD OF TREATMENT

The tidal irrigation of wounds had its origin in France. The improved apparatus and the technic of its use were developed during the latter part of the war, in Canadian hospitals in England. Reports of cases and descriptions of the method and the appliance were published on various occasions under the caption of "liquid-tight closure." [1]

The practicability of tidal irrigation is dependent on liquid-tight closure, which renders possible the copious flushing of wounds without wetting the dressings. The wound is covered by a flexible rubber cap whose brim makes contact circumferentially with the neighboring skin. This ring contact with the skin is water-tight; and the fact of its water-tightness is the sine qua non of this system of treatment. Two tubes leave the top of the cap, the inflow connected with an elevated reservoir and the outflow leading to a waste vessel set below the level of the wound. Each tube communicates with the interior of the cap which, in turn, is continuous with the cavity of the wound. From the reservoir to the waste pail, then, we have a single "pipe line," the dilated section of which is comprised by the wound and its covering cap. This cap-covered wound is capable of containing fluid, even under considerable pressure.

Flooding of the wound is effected by closing the outflow and opening the inflow tube. Suction in the wound is brought about by siphonage; this is established by closing the inflow and opening the outflow. Thus positive and negative pressure may be alternated by the manipulation of pinch cocks on these tubes. The rubber cap is seen to distend during positive pressure and to shrink during negative pressure. There is no moisture of the dressings to suggest that the wound beneath is being flooded.

Continuous irrigation is never used. The wound is filled and left filled for a time. It is then emptied and allowed to remain under the influence of negative pressure until refilled from the reservoir. The amount of tension with which the wound is filled is gaged by the height *above* it to which the fluid extends (i. e., by the water level in the reservoir), the outflow tube being closed. The force of suction with which the wound is emptied is determined by the distance *below* it to which the fluid extends (i. e., by the vertical length of the column of fluid depending in the outflow tube), the inflow being closed. So, by altering the height of the reservoir, and by raising or lowering the end of the outflow tube, complete control over each of these phases of pressure is exercised.

Positive pressure should continue until the fluid has permeated every crevice, or until the wound can hold no more. It has been customary to allow half an hour or so for the full charge of positive pressure to invade its cavity. When wounds reek with pus and teem with germs, it would be better to treat them by frequent alternations of pressure during the first few hours. The duration of negative pressure is purely a ques-

1. Taylor, W. H., and Taylor, N. B.: Lancet **2**: 452 (Sept. 22) 1917; ibid. **1**: 671 (May 11) 1918; Canadian Army M. Corps Bull., April, 1918; Canadian M. A. J. **9**: 11 (Jan.) 1919.

tion of reaction, and should vary according to the intensity of the inflammatory manifestations present, lasting twenty minutes or half an hour in chronic cases, and perhaps only for a few seconds, between positive phases, in acute virulent infections. Likewise, the degree of pressure is determined by the nature of the wound. Negative pressure is more prone than positive to result in tissue reactions of undue severity. Such reactions are accompanied by pain, which is our signal to reduce the amount of suction. Frequently, however, this symptom of pain has been disregarded, and, though the reactions which ensued seemed rather severe, the condition of the wound, after the unwonted activity had subsided, was invariably such as to leave the impression that excessive reactions are salutary. Consideration for the patient's comfort is the chief indication for reducing suction. A very angry looking wound might have the treatment begun by using rapid alternations and insignificant degrees of plus and minus pressure, the duration and amount of each to be increased as the swelling subsides, as the wound becomes less sensitive, and as the effluent grows clearer.

No drainage tubes are used, for the simple reason that the wound itself constitutes, actually, the expanded portion of the conduit leading from the irrigator to the waste vessel, and that continuity of fluid pressure extends into every side track of this conduit, that is to say, into all the ramifications of the wound. Occasionally a small wire cage has been used to keep the mouth of the wound open, in cases showing a tendency to valve. The opening should be large enough to admit one or two fingers, and usually it is best to secure this by incision.

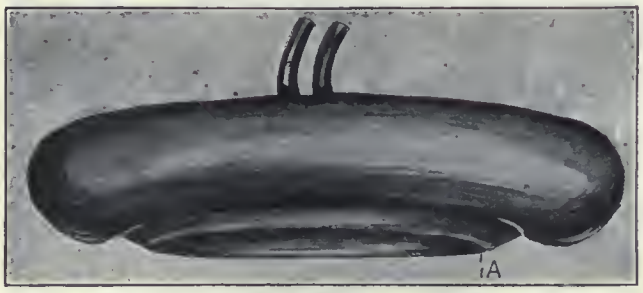


Fig. 1.—Appearance of the appliance, with the inflow and outflow tubes, the loose covering portion of the rubber, and the outer aspect of the circumferential valve (*A*).

During the night, or while the patient is sleeping, neutral pressure may be substituted by allowing a moderate amount of fluid to flow in, and clipping off both tubes while the appliance is neither distended nor collapsed. This is equivalent to a continuous bath. As a fact, so much activity may be induced in the wound during the day that it is a good practice to remove the device altogether at bedtime and apply a dry dressing.

MECHANICS OF LIQUID-TIGHT CLOSURE

Certain anatomic structures exemplify liquid-tight closure—the human lips, the eyelids, the anal sphincter. The hand is capable of maintaining closure by the intelligent application of smooth-lipped vessels to the skin, e. g., the eye bath. That there is nothing inherently impossible in the idea of containing fluid on the skin is shown by the fact that the mouth of a running faucet may be closed by the palm of the hand. Nevertheless, any attempt to bandage or otherwise fasten a vessel to the surface of the body with a view to rendering it water-tight by the direct impingement of its lips on the skin is naturally foredoomed to fail. In the first place, there is not any known system of bandaging or strapping by which the contact pressure may be evenly distributed, as the human fingers are able to distribute it, and, in the second place, there is no means of varying the amount of contact pressure as the degree of fluid pressure varies. For, even when the pressure of the contained fluid is reduced to zero, or negative pressure substituted, the same injurious amount of contact pressure must continue to impinge on the skin, and to impede the circulation of blood in the part. Previous efforts in this direction have always opposed contact, or mechanical pressure to hydrostatic pressure; whereas, with the device herein described, hydrostatic pressure is opposed by hydrostatic pressure.

The formation of a circumferential valve, operating on the surface round the wound, seemed to offer the best prospect of success in dealing with this problem. Most valves are designed to close a round aperture; but, if an area of skin should be covered by a cap, beneath which it is required to contain a quantity of fluid, the exit to be closed would not then be a round aperture; it would be the circumferential line of impingement of the edge of this cap on the skin. Accordingly, on the interior aspect of this line it was proposed to set a circumferential valve.

A general idea of the form of the device may be conveyed most conveniently by reference to a well known article of apparel to which it bears, superficially, a certain resemblance. Allusion is made to a style of headgear worn by Scotch people—the "tam-o'-shanter." If the woolen tassel which tops it be replaced by a couple of tubes; if the headband of the "tam" and its attachment to the loose covering portion be modified slightly, as shown in Figures 1, 2 and 3, and if the whole be composed of rubber, we have, to all intents and purposes, the appliance it is required to describe.

The brim of the device, which is the circumferential valve, having been adjusted to the part so as to circumscribe the wound, the loose top and overhanging portion of the rubber is covered and supported by a bandage. With the growth of positive pressure, the cap expands between the bandage and the skin, much as the bag of a blood pressure apparatus expands between the cuff and the limb to which it is applied. The greater the fluid pressure within the cap, the more securely the circumferential valve impinges. As the pressure of blood in the aorta closes the semilunar valves against each other, so the pressure of fluid in the cap holds the circumferential valve against the skin. Consequently, the contacting force with which the rubber bears on the surface of the part is never greater than the fluid pressure; yet it is always sufficient, for it varies as the fluid pressure varies. When not required, it is not operative; yet, if a sudden rise in pressure is produced in the cap, say by the patient turning in bed, the emergency is met. Its response is automatic.

The integrity of the closure that may be obtained merely by bandaging the device lightly to the skin, and without the aid of any adhesive substance, is hard to credit by those who have not seen it. Though a positive pressure of 40 mm. of mercury (roughly, a 20-inch column of water) answers every clinical requirement, the appliance has repeatedly withstood

a test pressure of 500 mm. of mercury, and withal, it is so soft and flexible that it may be wrapped around a forearm like a compress.

RATIONALE

Perfect clearance of the wound and all its ramifications is effected by the tidal movement of the irrigating fluid. Contaminated solution is replaced periodically by fresh solution. The fluid discharged into the waste pail during siphonage is a composite mixture of the large content of the cap and the small content of the wound. The purification of the latter advances, therefore, by geometric progression, assuming that an intimate commingling of these bodies of fluid occurs with each successive cycle of the flushing process.

Two chief causes are responsible for the intermixing of the wound secretions with the fluid coming from the reservoir. First we have alternating pressures. Innumerable small recesses of the wound are "milked" of their contents by the compression incident to suction, and filled again with clearer solution during the general engorgement accompanying positive pressure. During the growth of positive pressure, the influx of uncontaminated fluid is facilitated, not only by the distention incident to positive pressure, but also by the reexpansion of the wound cavity to its normal size following the cessation of negative pressure. The second cause is fluctuation, i. e., disturbances of the hydrostatic balance existing between the rubber cap and the walls of the wound. The rubber cap is distensible and collapsible; so also, though in less degree, are the walls of the wound. During positive pressure and when the part is at rest, the common body of fluid, contained both by the cap and by the wound, is in a state of hydrostatic balance as regards their respective walls. Any force (accidental contacts, weight of the bedclothes, etc.) which impinges on the cap disturbs this balance. Similarly, this balance is upset by any muscular movement that affects the conformation of the interior of the wound. Even impulses from the heart may be transmitted. It is not unusual to see the inflow tube pulsating in unison with the femoral artery.

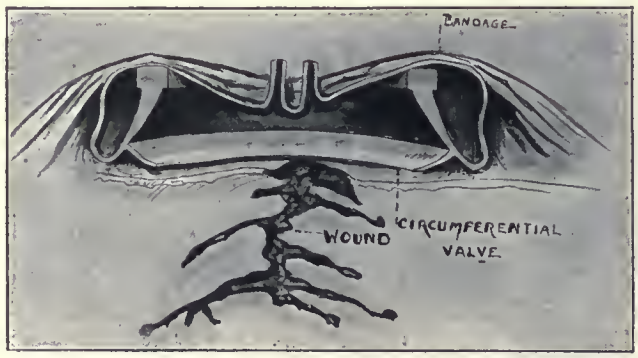


Fig. 2.—Sectional view of a ragged wound covered by the appliance. The rubber cover is sucked down to the skin surface and the wound is shrunken in, by the action of negative pressure.

By virtue of these fluctuations and the ebb and flow movement of the irrigating fluid, the walls of the wound cavity are activated. Nor is it difficult to conceive rhythmic changes in posture of the tissue elements, with alternate compression and relaxation of the neighboring lymph spaces, as occurring in response to the fluid's motility. Microbes, pus cells and other débris are teased out and dislodged from their attachments, thrown into the main body of fluid, and attenuated by progressive dilution. It is the remarkable penetrating power of a body of fluid which lies on the wound, as water may be said to lie on a sand and gravel filter through which it percolates, that is responsible for such far-reaching evacuation of its most distant recesses; for the fluid which invades these recesses under the stress of positive pressure must reappear, under the influence of negative pressure, with washings from the tissues. The tracks along which the fluid finds its way may be tortuous and narrow, may lie in the interstices formed by fragments of broken bone, or between coapted surfaces which it separates. In chronic sinuses such courses may be extremely devious and almost of capillary fineness; yet there is evidence to show that the fluid does find its way along them. No ideas that we have formed as to the penetration of wounds by solutions, when these ideas have resulted from our experience with a syringe or with multiple tubes, are at all applicable to an estimate of the extent to which fluids may be made to penetrate wounds, under hydrostatic pressure. It may be well to illustrate, diagrammatically, the principles of physics involved.

Figure 2 represents a wound covered by a liquid-tight cap, diverticula given off from the main cavity whose terminal loculi contain a little fluid, and channels leading to these loculi with their sides in apposition. The contained fluid is in a state of negative pressure. The wound walls are as completely collapsed as that particular degree of negative pressure is able to collapse them. Fluid no longer flows from the terminal loculi toward the main cavity; that is to say, the negative pressure has become static. (Strictly speaking, however, it is not quite static; for, while negative pressure is operative, the lymph which it aspirates would be flowing toward the center of the wound.) Figure 3 shows the same wound in a state of positive pressure. Here the main cavity and its diverticula contain as much fluid as that particular degree of positive pressure is capable of causing them to contain. The pressure in the terminal loculi is equal to that in the main cavity, and fluid no longer flows from the latter to the former, that is to say, the positive pressure has become static. In each instance (Figs. 2 and 3) a state of finality has been reached.

Accordingly, tidal irrigation may be defined as the slow, rhythmic transformation of the wound from the condition shown in Figure 2 to that in Figure 3 and vice versa indefinitely, or until the wound becomes sterile. That the illustrations exaggerate the distensibility of an ordinary wound cavity is neither here nor there. It must be distensible to some extent, or else its walls are rigid. Nor could this transformation have been effected by any evanescent burst of pressure. The inertia of the wound walls is not to be overcome by such momentary pressure as accompanies ordinary instillation or syringing. It required time for the main cavity to become filled; it required more time for sufficient head of pressure to accumulate within the main cavity to force the openings of the diverticula, and then a further expenditure of time for the fluid to find its way through these channels to the terminal loculi. Additional time was required for the pressure in the terminal loculi to equal that in the main cavity; all of which having had time to occur, the pressure is distributed evenly throughout, "seep-

age" of the fluid having reached the farthest recess of the wound. *It is the duration, not the amount of pressure, which is so important.*

Then, the wound having, so to speak, drunk to repletion, it is constrained to disgorge. Evacuation is inaugurated from the periphery toward the center, rapidly at first and progressively more slowly, as the limit to the collapsibility of the wound walls is reached, when static minus pressure becomes established in the wound.

There is also concrete evidence to show that the fluid actually does penetrate channels of a wound which, to all appearances, are closed. Cases were seen in which the two openings of a tunnel wound had not intercommunicated for weeks: each of these openings seemingly the outlet of a separate wound cavity. Attempts with a syringe to force fluid through from one orifice to the other, had been discontinued as futile. Such cases have served admirably to demonstrate the seepage power of fluid when activated by contrasting pressures, for, applying the cap to the larger of these openings and covering the other with gauze, if any potential channnel existed between them, the fluid would seek it out and issue eventually from the smaller opening.

This would not always occur immediately. It took three days, in one particular instance, for the fluid to ooze from the mouth of a small sinus on the opposite aspect of the thigh, which was hardly suspected as having any connection with the original wound. Possibly, in this case, the communicating channel was blocked by thickened pus, and its reestablishment followed the progressive evacuation of this material occasioned by successive onslaughts of the tidal wave. It is rather more probable, however, that tumefaction of the channel was the cause of the obstruction, and that it became permeable to fluid as the reduction of this tumefaction proceeded. Reduction of swelling, as will be seen, is a constant accompaniment of this form of irrigation. In this case it was not until the thigh, which was quite large, had become reduced in size, that the small sinus began to weep. Positive pressure, of only a few minutes' duration, more often is successful in reestablishing permeability, in which case the explanation is referable solely to the laws of hydrostatics as exemplified in Figures 2 and 3. That *blind* diverticula of a ramifying wound are invaded by the irrigation fluid may be inferred from the fact that fluid was seen issuing from these seemingly occluded channels which terminated on the surface.

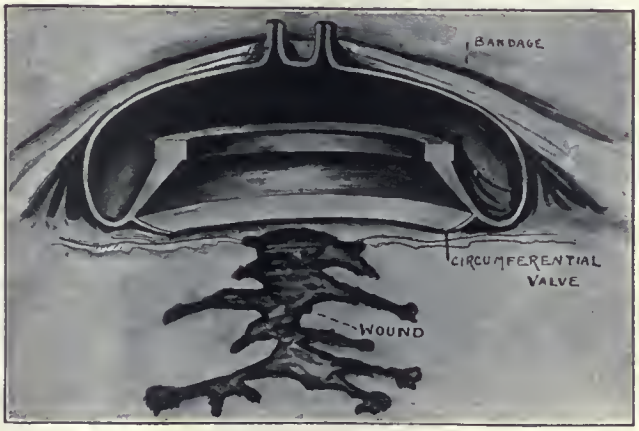


Fig. 3.—Sectional view of the same wound shown in Figure 2, in which the wound cavity is dilated and the appliance distended, by the action of positive pressure.

HYPEREMIA AND LYMPHORRHEA PRODUCED BY NEGATIVE PRESSURE

Beneficent activities are inaugurated, in the tissues surrounding the wound, which transcend in importance even the thorough cleansing of its cavity. The salutary effect of increased blood supply, within certain limits, and the value of lymp as a sterilizing agent, are so universally acknowledged as to constitute surgical maxims. A "cup" applied to the skin produces hyperemia and the same thing, on an abraded surface, causes a flow of lymph. It seems rather remarkable that so comparatively little use has been made of this knowledge in the treatment of wounds.

It is not as though the technic of applying negative pressure presented difficulties comparable with those encountered in devising means to contain fluid in a wound under positive pressure. A suitable rubber mat applied to the wound area and attached to an air exhaust would have served the purpose. Yet suction was not used. However, suction due to the rarefaction of air would need to be very powerfully exerted for a considerable period in order to draw thickened pus from a distance and, at the same time, to leave an overplus of suction to influence the flow of blood and lymph in tributary regions of the wound. Hence, negative pressure, by the abstraction of air, would be confined chiefly to the surface; also, it would interfere seriously with the proper irrigation of the wound cavity, and would be hard to regulate.

On the other hand, negative pressure transmitted through the agency of a retreating column of fluid, which is the reflux following positive pressure—this fluid being freely miscible with the wound secretions and capable of attenuating these to the consistency of water—exerts practically the same pull at the end of a long diverticulum as at the mouth of the wound. Consequently, it would not need to be more powerfully exerted at the mouth of the wound than would be required anywhere throughout its cavity. This, and the ease with which hydraulic suction can be regulated to the fraction of a degree, renders it an instrument of precision, as compared with the method of Bier.

THE EMPLOYMENT OF HEAT

The copious flushing of the wound, rendered possible by our being able to contain the fluid, secures the advantage of temperature control. Each appliance holds, according to size, from 8 to 20 ounces of fluid. This great mass of warm liquid lies over the mouth of the wound and is continuous with its cavity. Its temperature may be raised each time that a fresh supply is run in from the reservoir. This is equivalent virtually to a fomentation applied to the heart of the wound, a fomentation, moreover, that may be renewed without disturbing the dressings. To quote from Adami's monograph on inflammation, "poulticing, the employment of hot compresses, etc., are all means which have been employed for generations to 'bring an inflammation to a head'—to promote an adequate reaction."

THE FLUID USED

Antiseptics in conjunction with tidal irrigation are not contraindicated; indeed, the business of conveying the lethal dose to the haunts where microbes lurk

would be furthered by this mode of administering it. Nevertheless, and while admitting everything that has been said in behalf of antiseptics, it is to be pointed out that no valid reason for using them exists if germs can be "milked" from the tissues by mechanical means. Such being the case, the only question involved in the choice between an antiseptic and a simple fluid is whether the bacteria to be ejected from the wound shall be cast forth as dead or as living organisms. Any bacterial flora that can be reached by a germicide can be evacuated by the mechanical activity of a simple fluid, or destroyed by the reversal of the lymph flow and by the increased output of phagocytes which its activity induces in the wounded tissues. Furthermore, germs which no antiseptic, as ordinarily employed, can be made to reach at all are attracted to the surface by alternating pressures.

In the early days we used surgical solution of chlorinated soda (Dakin's solution). As is well known, this solution has a tendency to irritate the skin. This need not act as a deterrent if the area covered by the appliance is not extensive. By using a small sized appliance, covering little more than the mouth of the wound cavity proper, dermatitis may be prevented; and to do so is quite feasible, since the device functionates well on granulation tissue. Or, Dakin's solution may be used so long as the skin is not affected by it, and hypertonic saline solution substituted if dermatitis supervenes. These suggestions are for those who, naturally enough, may hesitate to discard a well authenticated antiseptic for a measure which they have not tried. One of the anilin dyes might be found more suitable to use with this appliance. When the wound is lined with the fibrinous products of inflammation, preliminary floodings with hydrogen peroxid are advantageous.



Fig. 4.—Under, or "skin" surface of the appliance.

The fluid of our preference is a 10 per cent. solution of sodium chlorid. It is cheap; it does not waterlog the tissues; it is nonirritating to the skin, and it may be used at a properly elevated temperature. Tidal irrigation with this solution has furnished the most phenomenal results.

ANALYSIS OF THE CLINICAL RESULTS

We and others have treated more than 400 cases by this method, and the results obtained have exceeded even the expectations which the logic of the procedure seemed to justify. A good proportion of the cases treated were recently infected wounds. These had not run previously such a protracted course nor exhausted the resourses of other methods, as did the chronic cases. Since, with recent wounds, the natural power to resist infection is an unknown quantity, whatever happens, even though the treatment has been the determining factor, is open to the imputation of being due to natural causes; or, at least, of not being more remarkable than might have been the case if other means had been used. For this reason we would draw attention to an analysis of the chronic cases.

The general characteristics of these indolent old wounds which, at the time tidal irrigation was begun, had earned the reputation of being incorrigible, may be thus tabulated, in a composite way:

1. The duration of invalidism, due to wound infection, varied from three to sixteen months. The average was six months. No improvement had been noted for long periods of time, as gathered from the records and the patient's statements.

2. The condition of these wounds immediately prior to the commencement of treatment was characterized by marked induration, tenderness and swelling, for a radius of several inches around an indolent wound opening, from which much pus exuded. The swelling usually involved the whole circumference of the limb. The granulations were grayish yellow. Fracture was a complication in many instances, and the condition was often associated with aching pain. In some of the cases there was a moderate amount of fever. In one instance the temperature was 103.5 and dropped to normal in eight hours. The bacterial count was on the whole, low, averaging about ten to a field. These patients as a class were thin, of a poor color, irritable and depressed. The changes in the clinical picture which ensued after treatment was begun were truly phenomenal. It was not unusual for a wound from which there had been a persistent discharge for eight or twelve months to become sterile in less than a week, and the cavity to fill with lymph and heal in two or three weeks.

Though nearly all these patients had been operated on a number of times, in other hospitals, for the removal of foreign bodies, to promote drainage or to facilitate the insertion of tubes for instillation into various side tracks of the wound, no operative measures preceded tidal irrigation save, in a few instances, widening of the outlet. The cap was applied and the irrigation started, usually without any preparation of the wound whatever. The sequence of events was fairly constant:

(*a*) Within twenty-four hours, in every case, there was a noticeable reduction of induration, tenderness and swelling. The wound cavity was found to contain irrigating fluid with an admixture of pus cells.

(*b*) On the following day the swelling had disappeared almost entirely. The surrounding tissues, which before were brawny, were now soft and pliable, and tenderness was absent or greatly reduced. The immediate neighborhood of the wound had lost its dusky appearance. The granulations appeared red and succulent. The wound cavity contained clear irrigating fluid with an admixture of lymph, and it was no longer possible to express pus from any of its side tracks. The waste pail contained large quantities of pus. There might or might not be a sharp rise in temperature. A noteworthy phenomenon at this time was an enormous increase in the bacterial count, which had jumped from three or five per field to 100 or 200 per field.

(*c*) After the expiration of another twenty-four hours the swelling and induration had definitely vanished. It needs to be seen to be appreciated, this softening and dwindling of a "stove-pipe" appearing limb, almost to its normal size and texture. The wound at this time bore but slight resemblance to the wound on which treatment had been begun three days before. The bacterial count was still high. There was still a good deal of pus in the waste pail, often more than on the previous day. The temperature, if any, had dropped to normal, and the patient himself felt better than he had felt for weeks.

(*d*) Somewhere between the third and sixth day there was a sharp drop in the bacteriologic curve, down to one or two or none in ten fields. The excretion of pus also was reduced, the fluid in the waste pail being practically clear. Yet this fluid showed, when treated with nitric acid, a large proportion of albumin. The volume of albumin was much

greater than may be accounted for by the osmotic power of the hypertonic sodium chlorid solution; indeed, it is not appreciably lessened in amount if physiologic sodium chlorid solution is used, showing that the exudation of lymph is due, largely, to the incidence of negative pressure.

(*e*) On removal of the appliance about the sixth or seventh day, the surface of the wound was clean and the surrounding tissues were everywhere pliable. After the application of gauze packs for several hours, clear, straw-colored lymph was found staining the dressings and oozing from the mouth of the wound. Frequently the wound was filled with blood. The bacterial count was usually nil in ten fields. The wound, from then on, made rapid strides toward repair.

The foregoing is a fair account of what happens with wounds of the most inveterate type. Of the events recorded, two in particular are deserving of the closest scrutiny. One of these is the greatly augmented discharge of pus cells during the initial stages of the irrigation. Better drainage of the wound does not satisfactorily explain this increment, since the wound proper is capable of holding only a few drams of pus, and this small quantity is washed away during the first few hours of the irrigation. Moreover, the quantity discharged is out of all proportion to the amount, either that the wound can hold, or that its lining granulations would normally excrete within the time. It is believed that the increment is due, both to the increased exudation of leukocytes from the tissue spaces and to their accelerated transmigration from the capillary vessels, in response to the hyperemia produced by negative pressure.



Fig. 5.—Appliance being bandaged to a wounded thigh.

Analogous to this forced excretion of pus, and even more significant, is the abrupt rise and subsequent drop to zero of the bacteriologic curve. Is the rise due only to increased excretion, or is it evidence of stimulated microbial growth? The concomitant amelioration of the clinical signs, and the reduction of swelling, proceeding hand in hand with the copious discharge of inflammatory products, point unmistakably to the conclusion that it is a "catharsis" which occurs, of lymph, pus cells and bacteria, from infected tissues. This view is supported also by the fact that the elevation of the bacterial count was always higher, and the increment of pus cells always greater, in old-standing cases with widespread induration and swelling. Recent wounds frequently showed little or no increase.

The thoroughness with which the neighboring tissues of a wound are "washed" is indicated by the aseptic manner in which Thiersch's skin grafts "take" on a foul granulating surface which first has been cleansed, for two or three days, by tidal irrigation, in which the negative phase has been emphasized to the point of securing a definite reaction. If a portion of such an area is thus treated, and the remaining portion is treated in the customary way, any antiseptic whatsoever being used, and if Thiersch's grafts are then applied to each portion, a marked difference will be observed in the behavior of these two sets of grafts. This test is commended to any one in doubt as to the relative merits of the two procedures.

CONCLUSION

To what extent may we attribute to a plan of treating wounds the clinical results which follow its employment? Experiments verified by "controls" are unequivocally conclusive; yet, for reasons that are obvious, it is rarely possible to apply this method of verification to the treatment of wounds. "Post hoc propter hoc" is notoriously fallacious, since most wounds tend naturally to heal. Nevertheless, if the previous history of a wound infection has been long and tedious, the clinical manifestations of disease overt and palpable, and the condition most intractable; then, if the subsequent history is inaugurated *abruptly*, the clinical signs ameliorate rapidly and the wound, thereafter, makes for repair, and if this right-about-face transformation coincides invariably, in point of time, with the institution of a certain treatment, surely it may be said that the state of the wound prior to the treatment serves well enough for a control to the effect which follows it. In the judgment of those of our surgical staff who had occasion to watch these cases from day to day, the results herein described were extraordinary, and were considered as the outcome of the tidal movement imparted to the irrigating fluid.

Rather would it have seemed strange had the power to control the pressure of the irrigating fluid *not* modified, to some extent, the course of wound infections, considering what a physiologic factor this one of pressure is. In respect to any therapeutic measure capable, as this is, of altering profoundly the physical conditions under which the tissues live, it would not have lacked significance had 400 wounds been treated, with uniformly good results. The tissues were activated to a degree which might have given (and as a fact did give) rise to apprehension. It seemed as though such interference must have some effect, and there were reasons to foresee that the outcome would be gratifying; for though the procedure in question is radical in the sense that its component elements had not been employed in combination before, it is the reverse of radical in that each item of its rationale is the expression of a surgical maxim. Thorough evacuation, drainage, scrupulous cleansing of the wound cavity and its lining granulations, hyperemia, lymphorrhea, warmth, etc., are all old friends whose familiar features need not seem the less familiar for being associated together.

It is not possible, in the scope of the present paper, to give minute instructions for the management of every contingency to be encountered in the different types of cases, nor is it altogether necessary. Wounds may be irrigated in this tidal manner with less of troublesome detail than any other method of wound treatment demands. This is true of any wound situated on an accessible surface of the body which may be conveniently covered by the appliance. Yet, owing to inattention to the laws of physics, or to the surgeon's undue apprehension in the use of an unfamiliar method, and sometimes through the indifference of

a nurse or the whim of a nervous patient, we have seen the treatment hurriedly discontinued, the surgeon nothing doubting that he had given it a trial. Were tidal irrigation as difficult as, actually, it is easy to accomplish, it would still repay the effort made to understand it, and the use of one's constructive faculty ter now stands, the basic fact is established, of a simple to improve it and to simplify its technic. As the mat- and convenient means of containing fluid in a wound. An appreciation of what this fact implies, and the exercise of no more thought and enterprise than most surgical maneuvers impose on the surgeon, will be rewarded by results such as cannot be obtained in any other way.

SUMMARY

1. The irrigating cap herein described is designed to make liquid-tight contact with the skin, circumferentially about a wound, without the aid of any adhesive substance whatever. The mechanical expedient employed, to this end, is used here for the first time in surgery.

2. The cap permits fluid to be contained in a wound without leakage, even under considerable pressure, and without constriction of the part or obstruction to its blood supply.

3. From this a system of wound treatment has resulted whose rationale conforms to the established principles of surgery.

4. This treatment comprises the repeated filling and emptying of the wound and the alternate use of positive and negative pressure, the duration of each of these phases of pressure being sufficiently prolonged to insure its maximum effect on the tissues.

5. The ebb and flow movement of the fluid is shown to have a marked cleansing action as regards the wound secretions, the effect of negative pressure being to induce hyperemia and lymphorrhea, to increase phagocytosis, and to cause a forced output of bacteria from the wound.

148 Wyndham Street, Guelph—184 Spadina Road, 143 College Street, Toronto.



Fig. 6.—Apparatus applied, the inflow tube connected with an irrigating can held by a stand beside the bed, and the outflow tube joined to a length of rubber tubing leading to a waste pail below. The appliance is completely covered by the bandage. The patient is able to conduct the irrigation himself. By opening the pinch cock on the inflow tube and closing the one on the outflow, the wound is filled. By reversing the procedure the fluid is siphoned off and negative pressure maintained by the weight of the column of fluid which hangs in the outflow tube.

Ill Health and Ignorance.—Much of the ill health in the homes of people is due to ignorance. From that ignorance often emerge the beginnings of disease. It is at such times that the first fatal step is taken, and a symptom regarded as trivial, too trivial, indeed, to require medical aid, is dealt with by a much advertised "cure all" patent medicine obtained from a chemist. Deceived by a blatant advertisement, which preys on ignorance, the home treatment is pursued until it is proved worthless during which valuable time is lost, followed by the development of more manifest disease symptoms.—*Medical Press and Circular* **109**:66 (Jan. 28) 1920.

CHRONIC LEUKORRHEA: ITS PATHOLOGY AND TREATMENT*

ARTHUR H. CURTIS, M.D.
CHICAGO

Efforts to advance our knowledge of chronic leukorrhea have thus far yielded only moderate success. The underlying pathology is not thoroughly understood, and treatment has been distinctly unsatisfactory. For these reasons I have made a prolonged study of the subject in an endeavor to learn more about the problems involved.

ETIOLOGY OF CHRONIC LEUKORRHEA

The gonococcus is the primary cause of most chronic purulent discharges of women who have not borne children. This organism cannot often be isolated from chronic cases, but none the less it causes the original discharge, decreases the resistance of the tissues, and thus prepares the soil for mildly virulent bacteria which thereafter stubbornly resist our efforts to dislodge them.

In women who have borne children, resistance is decreased through lacerations, relaxation of supports, continued passive congestion and erosions. Here again, bacteria of low virulence find a foothold and produce chronic discharges which are cured with the utmost difficulty.

An especially important type of chronic leukorrhea, and one which is very difficulty to cure, is that associated with pelvic cellulitis. Whether the cellulitis persists because of a focus lodged deep in the cervical glands, or the cervix becomes reinfected from the cellular tissues, remains in my mind a somewhat open question. In any event, the discharge tends to recur even after apparent recovery.

Less important and less frequent cases, neither the result of gonococcal infection nor consequent to pregnancy, are "nonspecific" venereal infections and persistent mild infections due to abnormally low resistance.

Bacteria.—The bacterial flora of chronic cases is fairly uniform.[1] Anaerobes, especially gram-negative bacilli, are most numerous. At least four types of gram-negative diplococci are encountered. Most

* From the pathologic laboratory and gynecologic service of St. Luke's Hospital.

* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Döderlein: Das Scheidensekret und seine Bedeutung für das Puerperalfieber, Leipzig, 1892. Menge and Krönig: Bakteriologie des weiblichen Genitalkanales, Leipzig, 1897. Curtis, A. H.: On the Etiology and Bacteriology of Leukorrhea, Surg., Gynec. & Obst., March, 1914, p. 299.

important of all are gram-positive diplococci; these may be anaerobic or aerobic, and are almost always found in those cases which are subject to recurrent symptoms of acute inflammation.

PATHOLOGY OF CHRONIC LEUKORRHEA

Pathology of the Cervix.—Some years ago, I became convinced that hypertrophic infected cervical glands are a most important factor in chronic leukorrhea. Study of curetted material from the present series of cases confirms this view. Distinct evidence of chronic cervical infection was obtained from twenty-one out of twenty-two patients with chronic leukorrhea (Fig. 1). Gland hypertrophy was the rule; small areas of scar formation were frequent; in addition to plasma cells and other round cells, the microscope usually revealed abundant polymorphonuclear leukocytes.

Only within the last fifteen months has the frequency of two other cervical lesions been recognized: endocervical granulations and strictures. Their significance is perhaps comparable with granulations and strictures of the male urethra.

Granulations are felt to grate on the dilator as it is passed into the cervix. They may be found anywhere along the canal.

Strictures are most often encountered midway between the external and internal os or at a higher level. Some dilate with ease; others are firmly resistant. Differentiation of strictures from normal arbor vitae occasionally causes difficulty.

The Relation of the Endometrium to Chronic Leukorrhea.—In a previous bacteriologic and histologic study[2] of the endometrium from 118 uteri removed to remedy various pathologic conditions, I found that chronic infection of the uterus above the level of the cervix is infrequent. Patients whose endometria yielded bacteria almost all had salpingitis with equally good growth. It was concluded that chronic endometritis, independent of infection of adjacent pelvic tissues, almost never occurs as a clinical entity.

The present study of chronic leukorrhea indicates that endometritis may occasionally accompany chronic cervicitis (Fig. 2). For the purpose of comparative histologic study, scrapings were obtained from the fundus at the time of diagnostic curettage of the cervix. As previously mentioned, chronic cervicitis, often of considerable severity, was present in all except one of twenty-two curetted patients. Six revealed evidence of chronic endometritis, but in no instance was the inflammation severe.

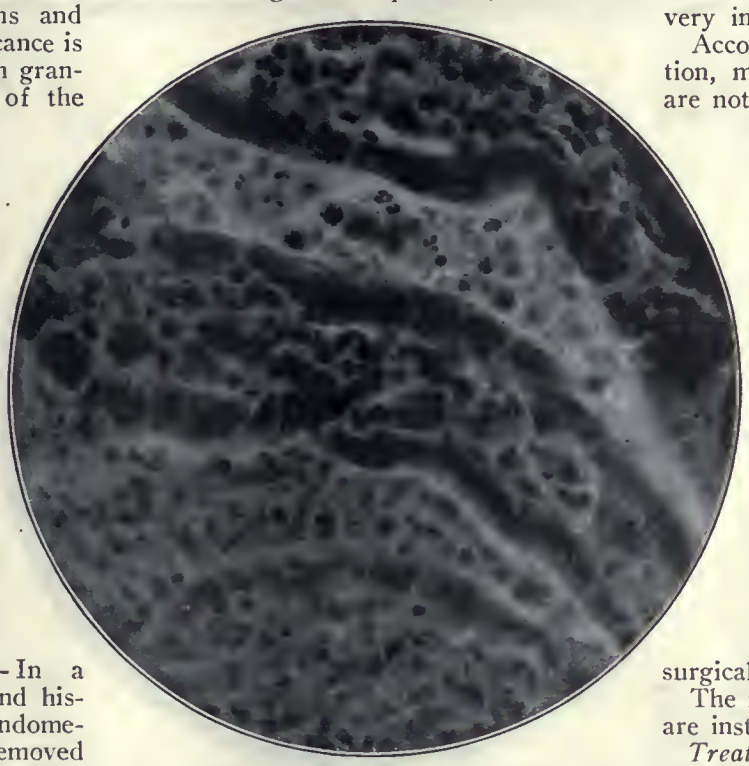


Fig. 1.—Chronic cervical infection; typical severe endocervicitis in a case with leukorrhea of two years' standing; × 450.

It is scarcely necessary to mention that the vaginal portion of the cervix also contributes to leukorrhea when glandular erosions develop on it. Occasionally erosions become implanted throughout the vagina, in which case the vaginal walls produce a discharge.

Skene's ducts, the urethra, and Bartholin's ducts and glands are often considerable factors in the persistence of leukorrhea. This is notably true of infection of Skene's ducts.

TREATMENT

Only chronic leukorrhea is under consideration. Most acute discharges tend to improve spontaneously. Remedies too numerous to discuss have been extensively used. These include curettage, treatment of the uterine cavity, applications to the lower cervix, vaginal douches, administration of glycerin or other hygroscopic solutions, vaginal tampons, various kinds of powders, and vaccines. We have tried them all, with very indifferent results.

According to my interpretation, most popular procedures are not sufficiently directed toward the pathology of leukorrhea. Deep cauterization of the cervix, as employed by Hunner,[3] is theoretically of value, and is said to be helpful in selected cases.

In the series herewith reported, the patients have been subjected to a thorough pelvic examination, the reaction of the discharge tested, smears obtained from the cervix and vagina, and a set of cultures made.

Gross pathologic lesions are corrected surgically.

The usual hygienic measures are instituted.

Treatment of the Cervix.—The most usual and most difficult focus to eradicate lies in the endocervix. Unless the discharge is essentially of vulvovaginal origin, radium is advocated in all severe cases of persistent chronic leukorrhea. After thorough dilatation, the cervix and fundus may be curetted for diagnostic purposes.

Fifty mg. of radium, preferably two 25 mg. tubes in tandem, are introduced high into the cervix, held by a suture passed through the external os, and left for several hours. One or more subsequent radium treatments of shorter duration may be required. It is thought best to plan on an interval of from ten to twelve weeks' duration between applications.

Each radium tube employed in the treatment of this series of cases has been screened by a double gold capsule with a total thickness of 2 mm. The capsule in turn has been incased in dental rubber. At present the screen has been reduced to a single rubber covered

2. Curtis, A. H.: A Combined Bacteriological and Histological Study of the Endometrium in Health and in Disease, Surg., Gynec. & Obst. **26**: 178 (Feb.) 1918.

3. Hunner, G. L.: The Treatment of Leukorrhea with the Actual Cautery, J. A. M. A. **46**: 191 (Jan. 20) 1906.

gold capsule of 1 mm. The duration of application has been correspondingly decreased.

Examination of cervical tissues after successful radium treatment (Fig. 3) reveals atrophy of the glands, a relative increase in fibrous tissue, and the disappearance of any microscopic evidences of infection.

Skene's ducts harbor the next most important focus. At the time of radium application, or under procain anesthesia, the blunt end of a needle, held in forceps, is threaded into the duct lumen, and its end is forced through the base of the duct so that the needle head protrudes into the vagina. The duct is split with a knife and the tract fulgurated.

Bartholin duct infection may be eradicated by similar treatment. Infected Bartholin glands rarely require excision.

The urethra is occasionally treated by dilatation, aided by instillations of weak silver nitrate solution.

STUDY OF MATERIAL

In 1914, there was reported an intensive bacteriologic study of eighty-five cases of chronic leukorrhea. At the same time the results of various kinds of treatment were carefully observed. Before the present study was begun, many additional patients had been treated. The therapeutic results obtained in that entire series were distinctly disappointing.

Treatment of the forty-six patients now under consideration has been essentially that described above. All were afflicted with long-standing persistent discharge, in most instances sufficient to necessitate the constant use of napkins to prevent soiling of linen. A summarized study of these cases is presented in the accompanying table.

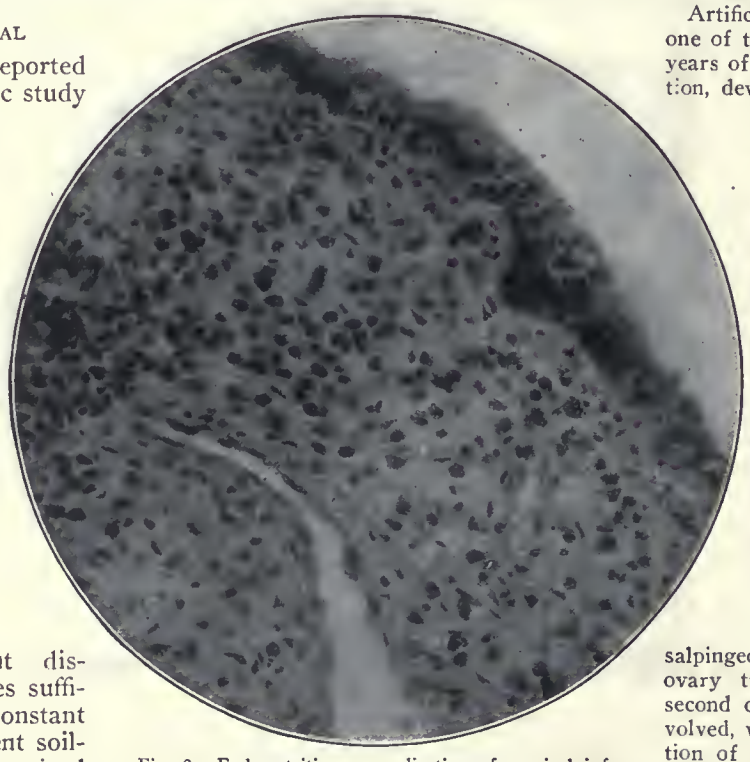


Fig. 2.—Endometritis, a complication of cervical infection; plasma cells abundant; numerous polymorphonuclear neutrophils present; × 300.

GROUP 1.—*Recovered* (twenty-five cases).—Seventeen of these patients had free discharge; in eight it was excessive. All have now returned to a normal condition.

A history of gonorrheal etiology or definite evidence of previous gonorrhea was present in fifteen. In three the leukorrhea followed pregnancy. Radium treatment for uterine hemorrhage had produced stricture and profuse leukorrhea in one instance. A highly irritating chronic discharge was due, in one patient, to repeated douches with cold tap water.

Of five patients with leukorrhea of uncertain etiology, two had been uncomfortable for years because of profuse, creamy discharge. One of these suffered from chronic pelvic cellulitis and femoral thrombophlebitis; the other had cellulitis without evident tubal involvement.

Fifteen of this group of patients had cervical erosions, two of which were slight; seven of moderate size, and six large. Two were excised; all the others disappeared under treatment.

Cervical granulations or strictures were encountered nine times. Obstruction from strictures was of high grade in six cases.

Radium treatment was given to twenty of this group; twelve received one treatment; six, two treatments; one, three treatments, and one, four treatments. I wish particularly to mention one patient whom we had treated for ten years without relief. Fulguration of Skene's ducts and one short radium treatment resulted in an absolute cure within six weeks.

Artificial menopause occurred in one of this group. This patient, 39 years of age, with scanty menstruation, developed amenorrhea after a treatment of 500 millicuries.

GROUP 2. — *Improved* (seven cases).—One patient with excessive foul discharge developed leukorrhea during pregnancy. Abortion followed, with persistence of discharge thereafter; this continued throughout a succeeding pregnancy, which terminated at seven months. Repair of a cystocele, removal of an everted eroded anterior cervical lip, and two short treatments with radium have resulted in almost complete recovery.

A patient 33 years of age had been subjected to salpingectomy and removal of one ovary two years previously; the second ovary, although slightly involved, was not removed. Destruction of infected Skene's ducts and dilatation of a granular, strictured cervix, with one application of radium has decreased a profuse purulent discharge almost to normal. An undesired menopause was ushered in. This patient presumably had very little normal ovarian tissue at the time radium was given.

Another patient with badly infected Skene's ducts, whose scrapings revealed severe endocervicitis and normal endometrium, had received no benefit at our hands from two years' treatment of various kinds. Five months ago Skene's ducts

STUDY OF FORTY-SIX PATIENTS TREATED FOR CHRONIC LEUKORRHEA

		Etiology			Gross Pathology				Treatment					
											Curettage, Radium Applications			
Group	Number of Cases	Gonorrhea	Result of Pregnancy	Other or Unknown Causes	Cervix Erosion	Endocervical Granulations or Strictures	Chronic Pelvic Cellulitis	Infection of Skene's Ducts	Destruction of Skene's Ducts	Dilatation of Cervix	Cervix and Fundus (for Diagnosis)	1	2	3	4
												No. of Patients			
1. Recovered.....	25	15	3	7	15	9	2	11	12	24	9	12	6	1	1
2. Improved.....	7	6	1	0	5	3	0	6	5	4	5	2	3	2	0
3. Treatment interrupted (2) or recently begun (8)	10	7	0	3	6	8	0	9	9	8	6	9	1	0	0
4. Not improved...	4	3	1	0	1	2	3	3	3	2	2	1	1	1	0

were destroyed, and the cervix was dilated and treated with radium. Extreme malaise disappeared; leukorrhea has dwindled to a slight amount.

The fourth and fifth cases, with chronic cervicitis and infected Skene's ducts, showed marked improvement after duct destruction and one radium treatment. Both have very recently received a second treatment, the results of which are not yet evident.

Finally, the very slow response to treatment, encountered in two patients, deserves brief comment.

A woman, aged 23, with offensive, foul, extremely profuse leukorrhea of three years' duration, was found to have all the usual foci of infection, including cervical granulations and complete cervical obstruction. An enormous erosion, bathed in pus, covered nearly the entire vaginal portion of the cervix. Eight months ago Skene's ducts were destroyed, the stenosed cervix dilated, and 600 millicuries of radium administered; there was no improvement. Two months later, a second radium application was made; again there was no notable improvement. Menstruation remained uninfluenced. Three and one-half months ago, after explanation that more radium might suppress menstruation, she received a third treatment. There was no evident improvement for many weeks, but the erosion has now entirely healed, and the malodorous, fetid discharge has given way to a much less abundant creamy leukorrhea; although still profuse, it is not offensive. Menstruation was excessive and prolonged after the last radiation, but has now returned to normal. It is planned to give a final treatment within a few weeks, after a rest of four months since the last application.

The other patient with slow response to treatment had a profuse leukorrhea of two years' duration. It was only after a third administration of radium that the discharge was influenced. At present, recovery is almost complete, but moderate increase in the menstrual flow warns that we have reached this patient's present tolerance for radium. If more is given, it will be a short exposure after many months' delay and with full understanding that temporary amenorrhea may result.

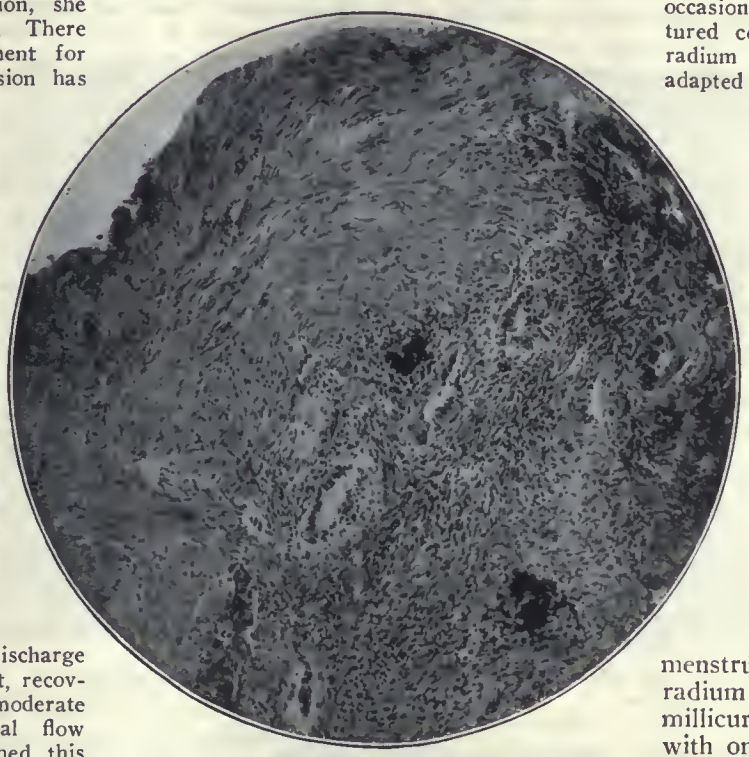


Fig. 3.—Healed cervix, six months after radium treatment for chronic leukorrhea; great decrease in number of glands; those that persist are atrophic; × 120.

GROUP 3.—*Treatment Interrupted or Recently Begun* (ten cases).—Two patients disappeared after a single treatment and have not been heard from. Eight cases are too recent to permit deductions concerning the efficacy of treatment. These cases are included in the present series chiefly because material obtained from them has been used in that portion of this report which is concerned with the pathology of chronic leukorrhea.

GROUP 4.—*Not Improved* (four cases).—A patient with moderate leukorrhea had suffered for many years with left-sided pelvic cellulitis, which was the result of infection after abortion. Infection of Skene's ducts, both Bartholin ducts, and one Bartholin gland, was also present. There was a slight erosion of the cervix, but no strictures or granulations. Scrapings revealed considerable inflammation, which was equally pronounced in the endocervix and in the endometrium. The infected ducts were destroyed, and the cervix was treated with radium. There has been no improvement in the condition; this is ascribed to inaccessible deep-seated pelvic infection.[4]

A patient with irregularly recurrent pain in the right pelvis (cellulitis), since infection at childbirth fourteen years previously, suffered greatly from vulvitis caused by a moderate, thin, milky discharge. At operation elsewhere a catarrhal appendix and normal tubes and ovaries had been found. Two radium treatments have totally failed to give relief.

The third patient in whom treatment has been unsatisfactory had, in addition to the discharge, an otherwise symptomless relaxation of uterine supports with moderate displacement backward and to the right. She has received three radium applications at intervals of several months. Nervousness, flushes and slightly irregular, increased menstruation followed the last treatment. Slow improvement is manifest, but recovery is improbable unless radium is employed in an amount sufficient to destroy ovarian function.

In the last of this group there was low-grade infection, which apparently invaded all of the pelvic organs and cellular tissues. A mild arthritis involved many joints and caused much distress. Slight improvement has been obtained through occasional dilatation of the strictured cervix. It is thought that radium treatment is not well adapted to this type of case, and will be dispensed with if possible.

COMMENT

Of thirty-six patients available for thorough treatment, thirty received radium and twenty were subjected to destruction of Skene's ducts. Twenty-five recovered, seven were distinctly improved, the result in one was doubtful, and three were not materially benefited.

Menopause was produced in two patients. One of these, 39 years of age, with scanty menstruation at the time of radium treatment, received 500 millicuries. The other patient, with one remaining partly diseased ovary, received 700 millicuries.

Sufficient radium distinctly to influence ovarian activity was given to three patients, each of whom received three treatments at infrequent intervals. Symptoms of impending amenorrhea in these three patients were characterized by greatly increased irregular menstruation, with associated nervousness and tendency to occasional flushes. All returned to symptomatically normal condition within three months.

In explanation, it should be stated that these patients were aware of the possibility of artificial menopause before their last radium treatment, but decided to incur the necessary risk.

Granted that radium is a remedy of value, certain questions arise. How many patients, in the course of radium treatment directed to the relief of chronic leukorrhea, will require radiation in an amount suffi-

4. A recent message from this patient states that the discharge has entirely ceased. This report has not been confirmed by local examination.

cient to produce amenorrhea? Again, in those cases amenable to cure through moderate doses of radium, are the functions of childbearing or formation of internal secretion materially disturbed, even though menstruation continues?

Experience thus far indicates that the pathologic changes in most cases are within reach of radium. The present plan is to discontinue the use of a double gold screen, replacing it with a single rubber covered gold capsule, not over 1 mm. in thickness. Short applications, made at intervals of not less than ten weeks, permit observation of the effects of each treatment. Even in repeatedly treated stubborn cases it is thus possible to avoid production of premature menopause. Whether it will often be necessary to discontinue treatment before cure is effected remains to be determined.

It is my opinion that radium in amounts small enough not to disturb menstruation is not to be feared as a cause of sterility. On the other hand, it will probably not be especially beneficial in the relief of sterility because a large percentage of patients with cervix infection have already suffered from catarrhal salpingitis. Two exceptions have been encountered: A patient of Dr. Watkins, who had not been pregnant for five years, complained of sterility. Conception developed within three months after relief of a cervical catarrh through an application of 500 millicuries of radium. The other patient received 925 millicuries. She is now pregnant and expects to be confined in two months.

Finally, a word on the relationship of chronic leukorrhea to focal infections. Chronic arthritis has been noted with unexpected frequency in patients without other demonstrable foci; the regions most involved are the lower spine, sacro-iliac joints, and the finger joints. It is too early to determine the amount of improvement obtainable through cure of the vaginal discharge; this evidence will be awaited with interest.

CONCLUSIONS

1. Important foci of infection are to be found in Skene's ducts and the uterine cervix. The chief cervical lesions consist in hyperplasia of infected cervical glands, endocervical granulations and strictures, and erosions of the cervix.

2. Discharges arising from Skene's ducts are relieved by free incision and fulguration of the infected tracts.

3. Chronic leukorrhea of cervical origin is, in most instances, amenable to cure through dilatation of strictures and treatment with small doses of radium applied at infrequent intervals. The prognosis is less favorable in those cases with chronic cellulitis or uncorrected gross pelvic lesions.

104 South Michigan Avenue.

ABSTRACT OF DISCUSSION

Dr. Francis Reder, St. Louis: The genital tract of woman in a normal condition is usually bathed in a leukorrheal discharge. There has been a tendency to disregard the true meaning of the word leukorrhea, the term being applied to almost any discharge escaping from the female genital fissure. When could a leukorrhea be considered chronic or pathologic? Usually when the woman consults the physician. It is to be regretted that women frequently disregard a vaginal discharge for a long time before seeking advice. This often has its bad consequences, inasmuch as a discharge where bacterial invasion has been of short duration is more readily relieved than a discharge of long standing, where infectious micro-organisms have been allowed full freedom to accomplish their contamination, thus increasing the difficulties of a cure. Furthermore, the anatomic peculiarity of the structures forming the canal of the cervix and the cavity of the uterus favor the persistency of the discharge. There is no submucosa. The mucosa is intimately connected with the underlying muscularis, the extremities of the glands dipping more or less freely into that structure. These occluded and buried glands harbor the micro-organisms. The gonococcus is responsible for a chronic leukorrhea in the majority of cases. A good history will greatly assist in arriving at the true nature of the discharge. It is well to bear in mind that in the adult a gonococcus infection invades the vulva, especially the urethra and vulvovaginal glands, and the cervix uteri. Rarely does the vagina suffer. An infection of the cervix uteri is often primary. In instituting treatment for a chronic vaginal discharge, it should be ascertained if it is a vulvar, a vaginal, a cervical, or an intra-uterine leukorrhea. Often a discharge having its origen in a chronically inflamed cervix, one which has become indurated by alveolar hyperplasia, will be readily cured by a plastic operation. As far as radium is concerned: I have not used it. The present status of the use of radium in chronic leukorrhea, as I see it, is this: Will a woman in the menstrual age consent to have her chronic leukorrhea cured at the risk of sacrificing her menstrual function?

Dr. Thomas J. Watkins, Chicago: Dr. Curtis' work follows up the work of Hitchman and Adler which demonstrated that the amount of endometrium obtained on curettage depends on the menstrual cycle and has very little relation to the question of infection. The bacteriologic work done, especially by Dr. Curtis, three or four years ago, showed that in the great majority of cases the cavity of the uterus is sterile; that the bacterial invasion is limited to the cervix. This means that currettage is an operation which has been done much too often, that there is almost no indication for curettage of the endometrium, except for diagnostic purposes. The reason why curettage has helped in some cases of uterine leukorrhea is that the cervix was dilated. Dilatation of the cervix is valuable to improve drainage. The question of the care of infections in the vaginal orifice is a very important one, one very frequently neglected. As to the action of radium in these cases, I wish to emphasize the fact that erosion of the cervix will almost invariably heal over after the use of radium. It is important to regulate the dose so as not permanently to injure the function of the ovary. Radium diminishes the number of epithelial cells and increases the number of connective tissue cells and in this way drains the deep glands in the cervix.

Dr. Peter B. Salatich, New Orleans: If the uterus is displaced backward, you can plicate and cut as much as you like and the patient will continue to have leukorrhea because the congestion is permanent and continuous. A young woman came to me with her face full of acne. She had headache and joint troubles. I examined her cervix and found it entirely devoid of mucous membrane. I used phenol and curetted. The patient was not relieved. Then I used a solution yielding active chlorin, and in five or ten applications the patient was well.

Dr. Arthur H. Curtis, Chicago: Except in a few instances, when granulations were very excessive, a preliminary curettage was done only for diagnostic purposes. It is not advisable to apply radium when there is marked infection of the upper genital organs. One of the men from the Pasteur Institute who visited with us in Chicago some months ago, stated that he had used radium in 250 cases of pus tubes and that the results were very encouraging. To say that the use of radium is out of proportion to the seriousness of leukorrhea or the infections which cause leukorrhea, indicate that the speaker is a man, not a woman. If he had to walk around with a profuse purulent discharge and was forced to wear a napkin all of the time, he would be glad to have radium used. I do not believe in giving enough radium to sterilize the patient or interfere with the menstrual function. In most of the cases of this series I used a thick double gold

screen. Recently I have screened much less and now I usually employ a gold capsule half a millimeter in thickness, surrounded by a thin covering of dental rubber. I have tried innumerable remedies for the cure of leukorrhea, but have found none of them efficacious.

RESULTS OF THE EXPOSURE OF ANIMAL OVARIES TO THE RAYS OF RADIUM *

JOHN M. MAURY, M.D.
MEMPHIS, TENN.

The experiments here recorded were made for the purpose of determining the changes brought about in the ovaries of rabbits by exposing them to 50 mg. of the element radium for twelve hours. This dosage was selected because it is that generally used in cases of so-called idiopathic uterine bleedings but which are now regarded as being due to an abnormal condition of ovarian secretion.

As some of these cases, particularly in young subjects, can be cured by the internal administration of pituitary extract, it is possible that not all of them are due entirely to ovarian conditions, some being due rather to a disturbance of the balance normally existing between the output of the pituitary gland and the ovaries.

It is well known that the intra-uterine application of radium has an effect on menstruation proportionate to the dose, 50 mg. of the element applied for twelve hours being sufficient to stop menstruation for several months, and in some instances to establish the menopause permanently. The generally accepted theory is that this result is brought about by a destructive action of radium on the follicles most advanced in development, menstruation returning after the young follicles, on which radium is supposed to have had no effect, have had time to mature. Little account, so far as I can learn, seems to have been taken of the effect which must be produced on the endometrium, on which its greatest power must be exerted.

Considering the small amount of radium used in these cases and the distance from the uterine cavity to the ovaries, to one who is accustomed to the use of radium there must be some doubt arising as to the results being brought about in the manner claimed. It is also difficult to imagine a satisfactory reason why the mature follicles should be killed and the less mature ones remain uninfluenced, especially as everywhere else in biology the less mature a thing is the greater its susceptibility to disintegrating influences. As a matter of fact, I have not been able to substantiate this theory by microscopic examination of the ovaries treated, and I have other evidence which seems to show that neither the large nor the smaller follicles are influenced by this dosage of radium.

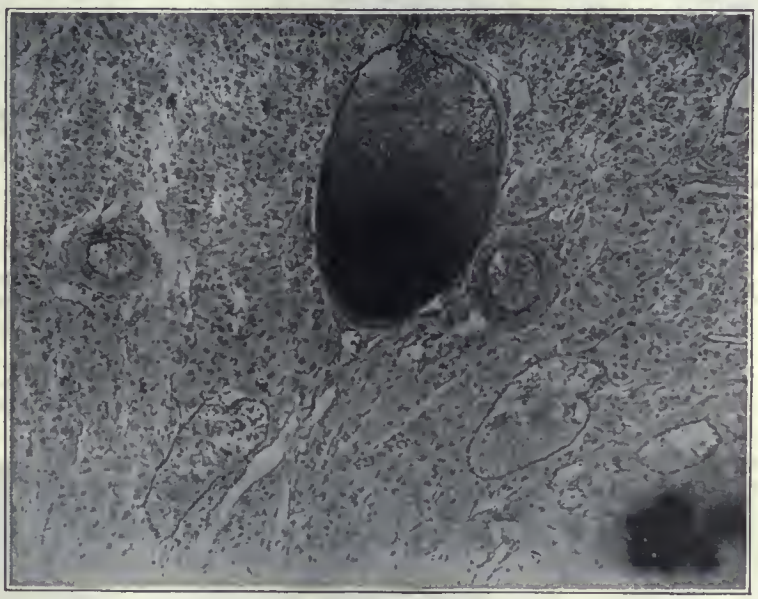


Fig. 1.—Blood vessels nine weeks after 600 mg. hours of radium. No endarteritis; peculiar thin walled vessels filled with blood.

In determining changes which may have resulted from treatment, great difficulty is encountered because the normal ovary presents no fixed standard for comparison. In normal ovaries, degeneration is present to a greater or less degree in follicles in all stages of development, comparatively few completing the cycle of growth to maturity and rupture with the discharge of a living ovum. This is particularly true in the rabbit, because ovulation does not take place without copulation. Follicles maturing except at this time do not continue to live, but die and degenerate and, as pointed out by Graves, all those follicles arriving at maturity during pregnancy must become atretic. It was therefore necessary to examine a large number of normal ovaries to familiarize oneself with the great variations that may exist.

Ovaries of rabbits differ from the human ovaries in the amount of epithelial tissue present. While the human ovary may be described as a connective tissue organ containing graafian follicles and having a fibrous capsule outside of which is the germinal epithelium, the rabbit ovary is a mass of epithelial cells having a thin connective tissue cortex surrounded by the capsule and germinal epithelium. Most of the follicles are found embedded in the connective tissue cortex. The epithelium of the body of the ovary can easily be distinguished from the epithelium of the corpus luteum by the latter cells being of larger size and surrounded by the theca.

The ovaries of rabbits occupy a rather fixed position in either flank, close to the abdominal wall and just above the crest of the ilium. In this position they are much closer to radium placed on the skin surface than are the ovaries of the human being to radium placed in the uterine cavity. Having less tissue intervening, they are therefore more susceptible to the action of the rays.

Fifteen female rabbits were treated, each being given a dosage of 600 milligram hours, the radium applied to the skin surface overlying the ovaries. One was killed in three weeks, two in four weeks, two in five weeks, four in six weeks, three in eight weeks and four in nine weeks. The ovaries removed were not touched with fingers or forceps. They were placed in 70 per cent. alcohol at once and run up for paraffin sections as soon as possible. The first few were sectioned serially and examined throughout. This con-

* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

sumed much more time than was available, and was found to be unnecessary. Therefore in the others, from fifty to seventy-five sections were removed from each side and from the middle portion of the ovary and examined, making about 150 to 200 sections from each ovary. In the examinations of sections, special attention was given to the germinal epithelium, the connective tissue cortex, the blood vessels and the follicles.

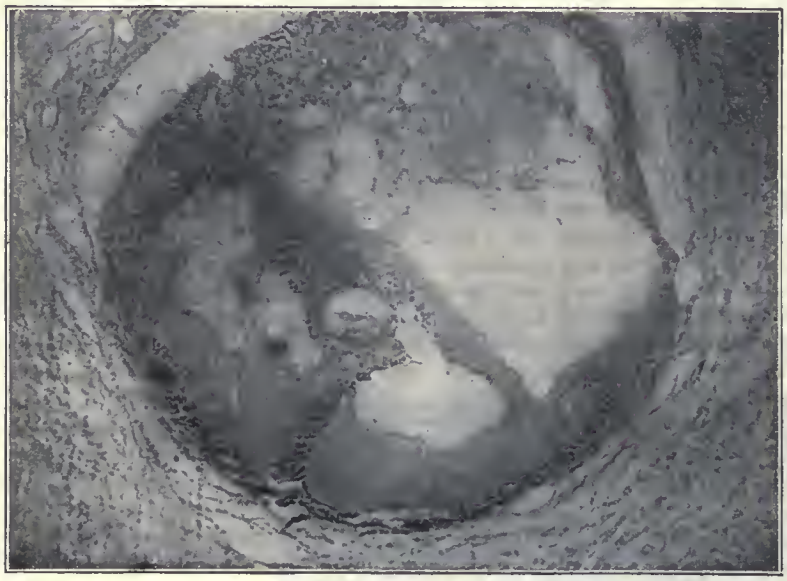


Fig. 2.—An atretic follicle, to illustrate the difference between degenerating follicles and nondegenerating ones.

Macroscopically, the ovaries varied greatly in size. One, a sclerotic ovary, was a mere strip of tissue composed, as seen under the microscope, of only connective tissue with almost no follicles. I do not think this was the result of the treatment because the ovary was removed only three weeks after treatment, and there were no signs of follicles in a state of degeneration and almost no small follicles of any size, a change so great that it could hardly have taken place in three weeks. The variation in size seemed to depend on the number and size of the atretic follicles and corpora lutea present. Both in number and size these structures varied greatly in different ovaries. In all ovaries examined, the germinal epithelium was present and in normal condition. The connective tissue cortex varied much in thickness in different ovaries, even the two ovaries from the same animal presenting considerable variation. The blood vessels showed no signs of endarteritis, and as they normally have unusually thick walls, this change could easily have been observed had it been present.

As would naturally be expected, the greatest variation was shown in the condition of the follicles. In seven of the ovaries examined there were no follicles approaching maturity either alive or in a state of degeneration. In twelve there were living follicles at or close to maturity which showed no evidence of having been affected by the treatment. In the remaining eleven all the large follicles were in a state of degeneration. Deducting, therefore, the seven ovaries not containing follicles of sufficient size to be supposedly affected by radium, there remain twenty-three, twelve of which contained large follicles showing no effect from treatment.

In addition to this evidence, two rabbits were put with a male and became impregnated five weeks after treatment, in one four and in the other five embryos being removed from the uterus several weeks later—rather convincing evidence of the viability of the ovum when it was discharged from the ovary.

Two other animals which had become pregnant were later treated and did not miscarry, indicating that the membrana granulosa of the mature follicles, from which the corpus luteum cells are probably formed, was not degenerated; for it is well known that if the corpus luteum of pregnancy is destroyed in its early stages, the fetus will be cast off.

From these results I think it a fair deduction that a 600 mg. hour dosage of radium does not produce degeneration of the follicles of the ovaries.

REPORT OF EXPERIMENTS

RABBIT 1.—Killed in three weeks after 600 mg. hours of radium.

Right Ovary: Quite small. Not more than half the thickness of the left ovary.

1. The germinal epithelium is normal.

2. This ovary resembles the human ovary in that the connective tissue exists throughout and there is no epithelium except in a few corpora lutea. A cirrhotic ovary.

3. Very few primordial follicles and only a few small follicles; some alive, some dead and degenerating. No medium sized follicles and no large ones. None in a state of cystic degeneration.

4. Blood vessels normal, but few in number.

Left Ovary: Double the size of right one.

1. Germinal epithelium normal.

2. Connective tissue cortex surrounding epithelial mass.

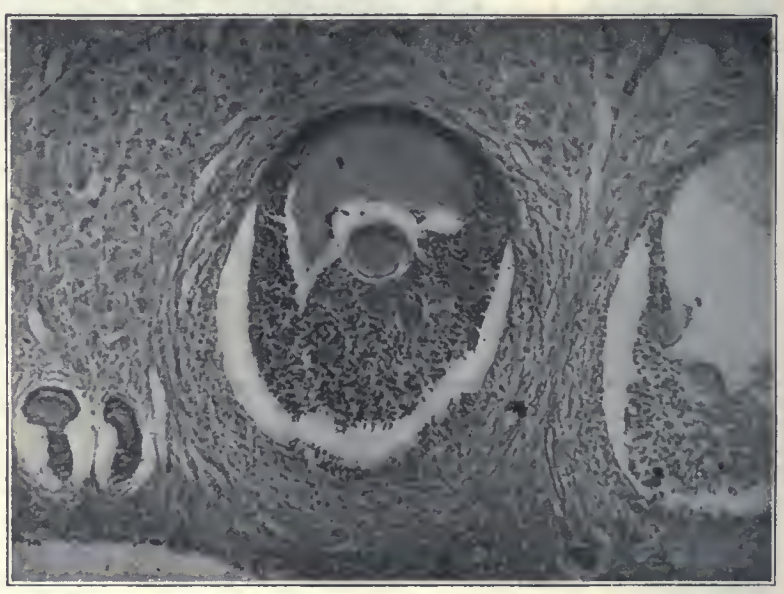


Fig. 3.—A nearly mature nondegenerating follicle eight weeks after 600 mg. hours of radium; shrinkage of granulosa from theca is postmortem.

3. Two primordial follicles which seem to be normal. Fairly large number of small follicles, some degenerating and some in normal state of preservation. A considerable number of large atretic follicles. All large ones atretic.

4. Blood vessls normal.

RABBIT 2.—Killed four weeks after 600 mg. hours of radium.



Fig. 4.—A nearly mature nondegenerating follicle nine weeks after 600 mg. hours of radium; also shows smaller follicle in state of preservation.

Righ Ovary: 1. Germinal epithelium heaped up over one portion of the ovary, opposite which, in the cortex, are a very large number of primordial follicles. This heaping up of the germinal epithelium is irregular in outline and not even, as when cut on a slant.

2. The connective is greatly in excess of the epithelial body of the ovary, extending in places deep down into it.

3. Primordial follicles are in large numbers. A considerable number of small follicles beyond the primordial stage. A number of large follicles just under maturity not in a state of degeneration. A few atretic follicles.

4. Blood vessels normal.

Left Ovary: 1. Germinal epithelium normal.

2. Connective tissue cortex normal.

3. Moderate number of primordial follicles. Very few small follicles. No follicles of any size not in a state of cystic degeneration.

4. Blood vessels normal.

RABBIT 3.—Killed four weeks after 600 mg. hours of radium.

Right Ovary: 1. Germinal epithelium normal.

2. Connective tissue normal.

3. Primordial small and medium size follicles normal. One large nearly mature follicle undegenerated. A few large atretic follicles.

4. Blood vessels normal.

Left Ovary: 1. Germinal epithelium normal.

2. Connective tissue normal.

3. Many primordial and small follicles. No follicles of size supposedly to be affected by radium.

4. Blood vessels normal.

RABBIT 4.—Killed five weeks after 600 mg. hours of radium.

Righ Ovary: 1. Germinal epithelium normal.

2. Connective tissue cortex normal.

3. Primordial follicles relatively few. A fair number of small follicles, some of which are degenerating. No large follicles and no atretic follicles.

4. Blood vessels normal.

Left Ovary: Shows the same condition as the right ovary. Neither shows follicles of a size to be supposedly influenced by radium.

RABBIT 5.—Killed six weeks after 600 mg. hours of radium.

Right Ovary: 1. Germinal epithelium normal.

2. Connective tissue cortex rather thin.

3. Primordial follicles relatively few, and many of them in a state of degeneration. Some small follicles, but none of medium or large size. No atretic follicles. The ovary is of fair size, but contains only a small amount of follicular tissue.

4. Blood vessels normal.

Left Ovary: 1. Heaping up of germinal epithelium in places. Normal elsewhere.

2. Connective tissue thin in places, but quite thick in others where numbers of primordial follicles are embedded.

3. Primordial follicles are found in numbers in places. Scarce in other places. Small and medium size follicles few. A few large cystic follicles. One large nearly mature undegenerated follicle.

4. Blood vessels normal.

RABBIT 6.—Killed six weeks after 600 mg. hours of radium.

Right Ovary: 1. Germinal epithelium normal.

2. Connective tissue cortex thin.

3. Few primordial follicles. A large number of small follicles not degenerated. A number of nearly mature undegenerated follicles. A few atretic follicles.

4. Blood vessels normal.

Left Ovary: Quite small in size.

1. Germinal epithelium normal.

2. Connective tissue cortex normal.

3. Few primordial follicles. Some small follicles not degenerated. Some large degenerated follicles, and several almost mature not degenerated.

4. Blood vessels normal.

RABBIT 7.—Killed six weeks after 600 mg. hours of radium.

Right Ovary: 1. Germinal epithelium normal.

2. Connective tissue cortex normal.

3. A few primordial follicles. A number of small follicles,

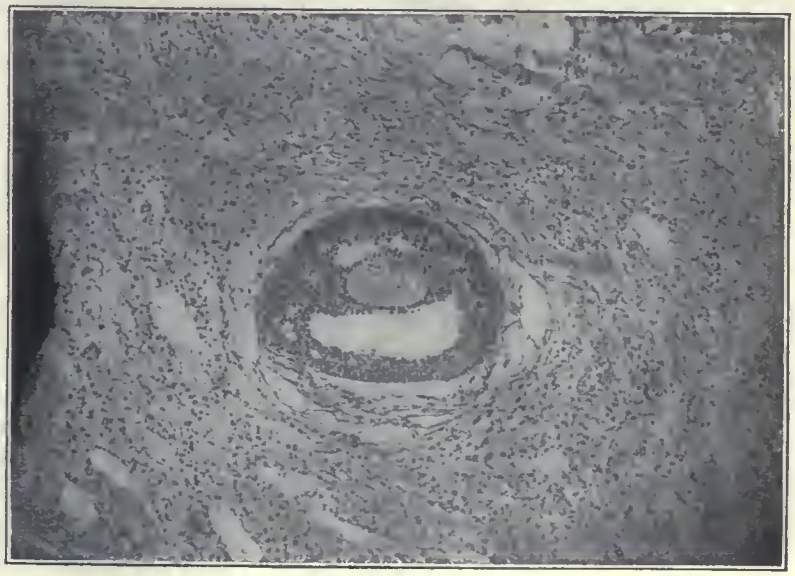


Fig. 5.—A nearly mature nondegenerating follicle six weeks after 600 mg. hours of radium.

some degenerated, others not. No follicles near maturity not degenerated. Several large atretic follicles.

4. Blood vessels normal.

Left Ovary: A number of primordial and small follicles in normal state. No follicles nearing maturity not in state of degeneration. Other structures, i. e., germinal epithelium, connective tissue cortex and blood vessels, in normal state.

Rabbit 8.—Killed six weeks after 600 mg. hours of radium.

Right Ovary: 1. Germinal epithelium normal.

2. Connective tissue normal.

3. Many primordial small and medium size follicles present and in normal condition. Several nearly mature follicles in normal state of preservation. A few atretic follicles.

4. Blood vessels normal.

Left Ovary: 1. Germinal epithelium normal.

2. Connective tissue normal.

3. Primordial small and medium size follicles normal. Several nearly mature follicles in normal state of preservation. A few atretic follicles.

Rabbit 9.—Killed eight weeks after 600 mg. hours of radium.

Right Ovary: 1. Germinal epithelium normal.

2. Connective tissue cortex thin in some places, thick in others. About normal in amount.

3. Primordial follicles few and not affected. Small follicles fairly numerous; some degenerating, others normal. No follicles near full development not degenerated. A few large follicles in state of cystic degeneration.

4. Blood vessels normal.

Left Ovary: 1. Germinal epithelium normal.

2. Connective tissue cortex normal.

3. Primordial small, medium and nearly mature follicles normal. A number of atretic follicles present.

4. Blood vessels normal.

Rabbit 10.—Killed eight weeks after 600 mg. hours of radium.

Right Ovary: 1. Germinal epithelium normal.

2. Connective tissue cortex normal.

3. A large number of primordial and small follicles in normal state. A number of atretic follicles.

4. Blood vessels normal.

Left Ovary: Fairly large, but smaller than the right.

1. Germinal epithelium normal.

2. Connective tissue cortex normal.

3. Many primordial and small follicles in normal state.



Fig. 6.—A nearly mature nondegenerating follicle eight weeks after 500 mg. hours of radium; it shows an unusually developed theca.

Many follicles near maturity in normal state of preservation. Many atretic follicles.

4. Blood vessels normal.

Rabbit 11.—Killed eight weeks after 600 mg. hours of radium.

Right Ovary: 1. Germinal epithelium normal.

2. Connective tissue cortex normal.

3. All follicles except the primordial and small follicles in a state of degeneration. A number of atretic follicles.

4. Blood vessels normal.

Left Ovary: 1. Germinal epithelium normal.

2. Connective tissue cortex normal.

3. Very few follicles of any size. No large follicles present.

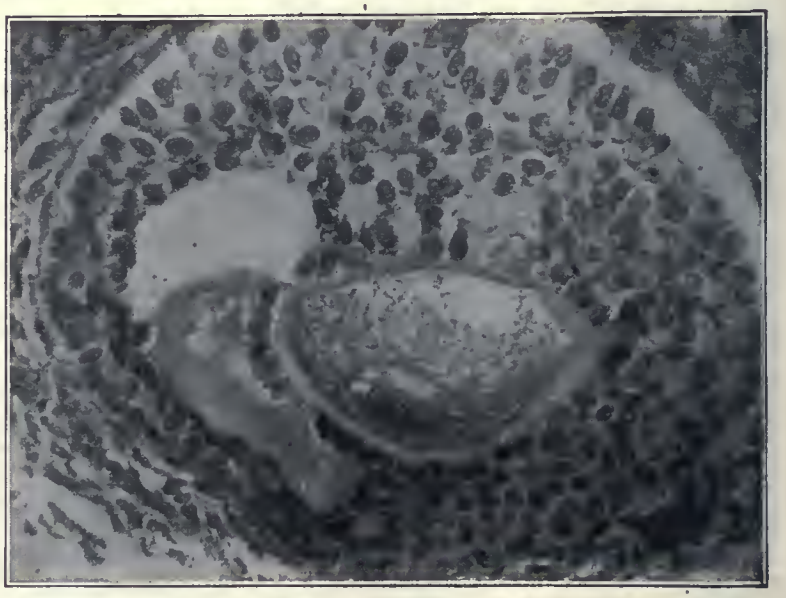


Fig. 7.—High power of nondegenerating follicle nine weeks after 600 mg. hours of radium.

4. Blood vessels normal.

Rabbit 12.—Killed nine weeks after 600 mg. hours of radium.

Right Ovary: 1. Germinal epithelium normal.

2. Connective tissue cortex normal.

3. Primordial follicles few in number. Medium size follicles few. The nearly mature follicles all in a state of degeneration. The degeneration is more marked in the granulosa than in the ovum.

4. Blood vessels normal.

Left Ovary: 1. Germinal epithelium, connective tissue and follicles are as described in right ovary. There are a number of thin walled vessels filled with blood, a condition not seen in other ovaries examined.

Rabbit 13.—Killed nine weeks after 600 mg. hours of radium.

Right Ovary: 1. Germinal epithelium normal.

2. Connective tissue cortex normal.

3. Few primordial and moderate number of medium size follicles. Large follicles all in state of degeneration.

4. Blood vessels normal.

Left Ovary: 1. Germinal epithelium normal.

2. Connective tissue cortex thin.

3. Few follicles of any size to be seen. One nearly mature follicle in state of preservation.

4. Blood vessels normal.

Rabbit 14.—Killed nine weeks after 600 mg. hours of radium.

Right Ovary: 1. Germinal epithelium normal.

2. Connective tissue cortex rather thin.

3. Very few primordial or small follicles present. A few nearly mature follicles in state of degeneration. Several large atretic follicles.

4. Blood vessels normal.

Left Ovary: 1. Germinal epithelium normal.

2. Connective tissue cortex normal.

3. Few primordial, many small follicles. A few medium size and a number of nearly mature follicles in normal state. A number of large atretic follicles.

4. Blood vessels normal.

RABBIT 15.—Killed nine weeks after 600 mg. hours of radium.

Right Ovary: 1. Germinal epithelium normal.

2. Connective tissue cortex normal.

3. Many primordial and small follicles. No follicles of size to be affected by radium.

4. Blood vessels normal.

Left Ovary: 1. Germinal epithelium normal.

2. Connective tissue normal.

3. Many primordial and small follicles, some normal, some degenerated. All follicles near maturity degenerating.

4. Blood vessels normal.

720 Bank of Commerce Building.

ABSTRACT OF DISCUSSION

DR. HENRY SCHMITZ, Chicago: There is much difference of opinion as to how radium causes amenorrhea in the treatment of uterine hemorrhage, either idiopathic or myomatous. Most writers regard it as a destruction or degeneration of the ovarian epithelial cells. I believe that the effect of the radium is almost exclusively confined to the endometrium which receives in a twelve hour exposure of 50 mg. of radium element a burn of the third degree in some parts, a burn of the second degree in the parts more distant from the radium capsule and a burn of the first degree in the most distant lateral portions. A burn of the third degree causes an irreparable damage, while burns of the first and second degrees heal very readily with partial restitution of function in the endometrium. The action of the rays on the ovaries is negligible. I have examined microscopically many ovaries obtained by panhysterectomy in cases of carcinomatous uterus to which from 6,000 to 8,000, and more, milligram element hours of gamma rays had been applied. Macroscopically, a decrease in the size of the ovaries was noted; on section the ovary appeared to be hard and sclerotic and devoid of follicles. Microscopically, a degeneration or absence of all epithelial cell structures was noted. The interstitial tissue or stroma was not affected. The sensibility of the ovaries to the rays in comparison to the erythema skin dose, which is taken as the standard in biologic measurements, is about five times greater. The ovaries are on an average about 8 cm. distant from the middle of the upper portion of the uterine cavity, the usual location of the radium capsule in these treatments. Supposing that the radium carrier is exactly maintained in this position, then according to the law of the inverse ratio the ovary receives one sixty-fourth the amount of rays the endometrium receives at 1 cm. distance. At 1 cm. distance from a radium capsule the lethal erythema skin dose is about 100 milligram element hours and at 8 cm. it is 64×100 or 6,400 milligram element hours. If this is divided by five, the ovarian sensibility quotient, then the amount of milligram element hours to cause degeneration of the ovarian epithelial cell elements, so that amenorrhea results, must be at least 1,280 milligram element hours. Hence, 600 milligram element hours, the amount usually used, cannot produce degeneration in the human ovary. Dr. Maury's findings and conclusions may also be proven by clinical observations. Many of these patients, after a period of amenorrhea lasting usually from three to six months, again menstruate regularly. Evidently, the damage in the endometrium was partly repaired and ovulation, not having been interfered with, begins to exert its influence on the repaired endometrium. Two patients, one treated for an essential menorrhagia, the other for a myomatous menorrhagia, soon after treatment conceived and had normal pregnancies and labors. The infants, also, were perfectly normal. These two instances prove beyond doubt that radiation did not affect the ovaries, or if it did, the injuries were not irreparable. The results of these animal experimentations would be beyond criticism if the erythema skin dose of the rabbit had been determined and the distance between the radium capsule and the ovary had been noted. If one of the ovaries had been removed in each rabbit first, and the one left behind treated immediately afterward, comparisons could have been made between the irradiated and the normal ovary in the same animal.



Fig. 9.—A follicle nine weeks after 600 mg. hours of radium. There is beginning degeneration in the granulosa, with a well preserved ovum. This degeneration is probably not the result of radium, as nine weeks have elapsed since treatment, and the changes are only beginning.

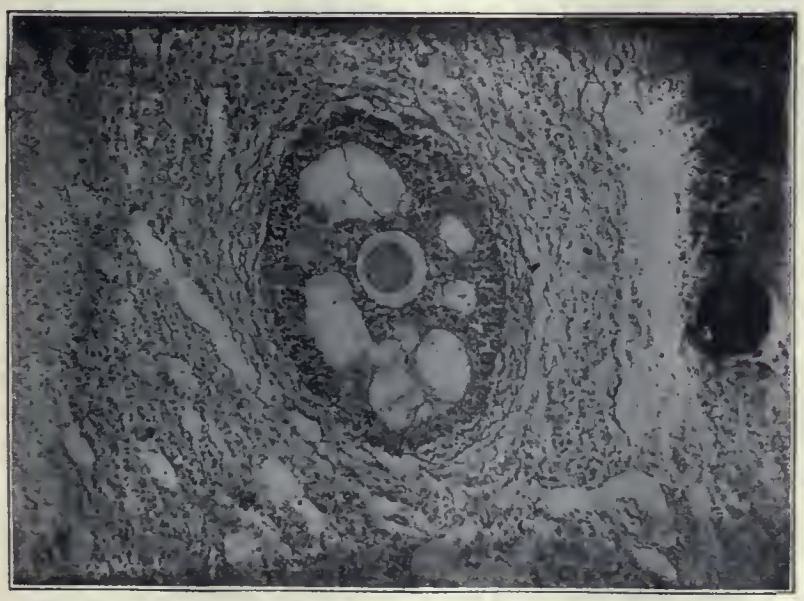


Fig. 8.—A well preserved follicle six weeks after 600 mg. hours of radium.

The Ideal of Preventive Medicine.—Preventive medicine can never be satisfied until it has attained Isaiah's ideal (Isaiah lxv, 20): "There shall be no more thence an infant of days, nor an old man that hath not filled his days; for the child shall die an hundred years old."—Arthur Newsholme, *Commonhealth*, Nov.-Dec., 1919.

Clinical Notes, Suggestions, and New Instruments

APPARATUS FOR COLLECTING CARBON DIOXID SNOW

WILLIAM ALLEN PUSEY, M.D., CHICAGO

I am repeatedly called on for advice as to the best apparatus for collecting and molding carbon dioxid snow, or for information how to collect and mold it. These requests are still so frequent that it seems to me worth while briefly to describe the method which I have found satisfactory and



Apparatus for collecting carbon dioxid snow.

which requires only such apparatus as one can readily devise for himself. This method is as follows:

I use a piece of chamois skin to collect the snow. Two or three layers of towel or cloth can be used, but chamois is better. A piece of chamois skin about the size of a large handkerchief is a convenient size. The tank of liquid carbon dioxid is kept on a rack where it is slightly inclined with the nozzle at the lower end, so that the liquid carbon dioxid will be blown out when the vent is opened. To collect snow, the chamois is wrapped around the tip of the tank so that it bags over the vent but forms a fairly tight sack around the tip. If then the shut-off is opened by a turn of the wrench, carbon dioxid will escape into the chamois, and, if there is any liquid in the tank, will quickly collect as a mass of snow in the chamois. A very few seconds is sufficient to collect enough snow to make the ordinary stick. The vent is closed after a few seconds; the chamois unwound, and the snow can then be scraped up in a spoon to be put into the molds.

For molds I use metal or rubber tubing such as is shown in the accompanying illustration. A good length for the molds is about 3 inches. I keep a supply of molds varying in diameter from one-third inch to 1½ inches. For the smaller molds, which have to stand a severe strain from the pounding necessary to make hard sticks, seamless metal tubing is best; otherwise the tubing is likely to give way at the seam. For making large, thick sticks a rubber mold is sufficient, but it is not so good as a metal one. For convenience, on each mold that is frequently used I have attached a permanent funnel.

With the larger molds I push down the snow through a funnel like the two short molds, one of which stands at either side in front in the illustration. For molding the snow in the cylinders I have metal or wooden rods which correspond approximately in diameter to the diameters of the tubes in which they are used. The only other apparatus necessary is a hammer with which to drive down the snow with the rods.

The snow collects in the chamois in a loose mass. It is pressed down into the molds with the rods by hand as firmly as possible. This procedure is repeated with successive quantities of snow until the cylinder is well filled with a firm mass. Then it is hammered down with a hammer until a firm stick of snow is formed. In a tube of small diameter, one can hammer it down firmly enough to make a stick of ice; but ordinarily it is not desirable to have the stick so hard. In a minute or two after forming the stick, it becomes loose in the mold through evaporation, so that it can easily be pressed out of the mold. It is then handled between the fingers protected by a bit of chamois skin. After the sticks are made they can easily be shaped to any form desired by melting on a metal surface. For this purpose I keep a little nickle-plated flat-iron with the handle taken off. On this, carbon dioxid snow can be readily made in any desired shape.

The only difficulty about this method of molding the sticks is that one must have some solid base on which to pound. I have always done this on a corner of the top of a fire-proof safe. The advantage about this method of molding carbon dioxid snow is that it gives one a wide range in the size of the sticks that he can make. One does not always want the same size sticks. This method is convenient and it has entirely served my purpose.

7 West Madison Street.

A SIMPLIFIED PLATE METHOD OF PARTIAL OXYGEN TENSION IN THE CULTIVATION OF THE GONOCOCCUS *

RUSSELL D. HERROLD, M.D., CHICAGO

The idea of growing the gonococcus and other organisms under reduced tension is not new. Wherry and Oliver[1] have demonstrated the value of the method. Chapin[2] and more recently Maitra[3] have used it with success in obtaining primary cultures on a variety of mediums.

The advantage of using plates in the isolation of the gonococcus is obvious when it concerns the isolation of gonococci mixed with other bacteria. Here, streaking of the material over a large surface is necessary to obtain discrete colonies. The simple method of using partial oxygen tension plates here described has been devised and employed with success in this laboratory.



Two inoculated plates, one with gonorrheal material, the other with Bacillus subtilis: at left, with open sides facing each other; at right, with edges enclosed by rubber band.

Two inoculated plates, one with the gonorrheal material, and the other with *B. subtilis,* are placed together with the open sides facing each other as shown at the left in the illustration. Then a closed rubber band 2½ inches wide by 3½ inches in diameter encircles both, enclosing the edges but allowing aerial communication between them, as shown at

* From the John McCormick Institute for Infectious Diseases.
* This work was carried out by means of a grant from the United States Interdepartmental Social Hygiene Board.

1. Wherry, W. B., and Oliver, W. W.: J. Infect. Dis. **19**: 28 (Sept.) 1916.
2. Chapin, C. W.: J. Infect. Dis. **23**: 342 (Oct.) 1918.
3. Maitra, G. C.: Indian J. M. Res. **7**: 219 (July) 1919.

the right. Satisfactory bands may be obtained by cutting wide rubber tubing into pieces of the required width. The simplicity of this method makes it practical for the small laboratory and, in addition, permits of individual cultures being examined without disturbing others, as is necessary with several cultures in a single jar. The rubber also serves equally well for air exclusion plates, which have a distinct advantage over open aerobic plates in gonococcus cultivation; but they are inferior to the partial oxygen tension method just described, especially in obtaining primary growth. Parallel plates have been tested with a variety of mediums, and the best growth was obtained on nutrient bactoveal agar in which dibasic sodium phosphates were substituted for sodium chlorid.[4] Ascites fluid and defibrinated goat blood were added in the approximate proportion of 2 c.c. of ascites fluid and 0.5 c.c. of blood to each Petri dish before pouring the plates. A fair growth has resulted with this medium minus ascites fluid.

Cultures of gonococci have been obtained in several cases of chronic infections in which the gonococcus could not be identified in smears. In all the acute cases of gonorrheal urethritis there was a profuse growth, parallel aerobic plates showing fewer and smaller colonies.

Recently this scheme has been used in place of the culture of *B. subtilis* with good results: A quantity of sodium bicarbonate is placed in the Petri dish instead of the culture of *B. subtilis,* and at the same time a small glass tube containing 0.5 c.c. of 1 per cent. sulphuric acid is introduced so that when the plates are enclosed in the rubber band the two chemicals come into contact with each other. In this way sufficient carbon dioxid is liberated to produce a favorable tension.

ACETANILID ADDICTION: REPORT OF A CASE

WALTER H. NADLER, M.D., CHICAGO

This case is of clinical interest because of difficulty in diagnosis, aggravated by persistent denial of drug addiction and by malingery on the part of the patient.

REPORT OF CASE

History.—Miss X, graduate nurse, aged 26, was admitted to Wesley Memorial Hospital, Oct. 20, 1919, complaining of attacks of pain in the left hypochondrium, and of chills and fever. The pain was sharp, was transmitted to the back, and had recurred at intervals of about three weeks over a period of two years.

The course of her illness may be divided into two periods. The first period, from 1909 to 1915, consisted apparently of recurrent nose, throat and accessory sinus infections, and of anemia. During this time, tonsillectomy, turbinectomy, frontal sinus and left mastoid operations and drainage of an appendical abscess were performed. From 1915 to 1917 seems to have been an interval of fair health. The second period, from January, 1917, to the present time, is characterized by an entirely new group of symptoms. While the patient was still in bed, following an operation for the relief of apparent intestinal obstruction, cyanosis appeared, together with dyspnea on exertion. During convalescence from a second operation in the left mastoid region, she was seized with sudden, severe pain in the left upper abdomen, followed by fever. The urine was scant and dark colored. Cyanosis had been continuously present, though of variable intensity, since that time, and attacks of pain had recurred at rather regular intervals. For the relief of these symptoms, she submitted to an exploratory laparotomy and a kidney operation. Hospital records indicate that nothing abnormal was found and that no relief was afforded. In view of her occupation and the use of narcotics after her formidable series of operations, the patient was particularly interrogated in regard to the use of drugs. Any such habit was earnestly denied.

Examination.—The patient was intensely anemic and cyanotic, well nourished, apparently febrile and in great pain. The temperature was 103, the pulse and respirations normal. The sclerotics and the oral mucous membranes were definitely icteric. Scars of the operations described were present. Marked tenderness and slight involuntary muscle defense in the left hypochondrium were noted. The liver and spleen were not palpable. Atrophic rhinitis with an accumulation of scabs was reported as a possible atrium of infection. Roentgen examination of the chest and gastrointestinal tract detected nothing abnormal save a limited excursion of the diaphragm, not due to adhesions, on the left side.

The urine, which was reddish brown, contained urobilin and much unidentified sediment, but appeared otherwise normal. The blood serum, also reddish brown, contained neither hemoglobin, bile salts nor pigment (Gmelin test); the Wassermann test was negative. Hemoglobin, in spite of the obviously anemic appearance, was estimated as from 95 to 100 per cent., probably because of the dark color of the serum. The red blood count was 3,180,000, and the white count, 11,800. Blood smears showed slight poikilocytosis and the general appearance of secondary anemia.

Clinical Course.—After the first week in the hospital, during which the afternoon temperature was recorded as from 103 to 104, it became apparent that the fever was simulated, the desired reading being produced through the aid of a hot water bag. At the same time, it was suggested by Dr. E. L. Ross that the clinical picture resembled that of acetanilid poisoning. Examination of the urine revealed the presence of acetanilid. Methemoglobin was not definitely detected in the blood serum.

Cyanosis gradually disappeared, but after five or six days reappeared. Use of the drug was again denied, but, confronted with her written order to a neighboring druggist, the patient surrendered acetylsalicylic acid and acetanilid tablets and admitted that she had taken six of the latter. Confession was finally made of the use of acetanilid, to 50 grains a day, over a period of nearly three years. Use of the drug antedated the appearance of pain in the left side; it was begun for the relief of headache and pain following her early operations. During the remaining weeks in the hospital, cyanosis and icterus disappeared; the urine and blood serum became of normal color, and no attacks of pain occurred. November 17, the patient was discharged from the hospital apparently well, except for persistent slight tenderness in the left hypochondrium.

The following day she applied for admission to the Cook County Hospital, complaining chiefly of pain, weakness and dyspnea. After a period of observation, anemia due to long continued hemolysis caused by numerous infections was suspected. Cyanosis was noted, November 23. Attacks of pain recurred at regular intervals; opiates were administered. Finally, malingery of fever and of certain other symptoms was detected. March 18, the patient was discharged, feeling well enough to go to work. All of the symptoms were explained on a neurotic basis except the cyanosis and slight icterus, which were considered probably due to acetanilid or a similar hemolytic drug.

COMMENT

The symptoms are those of the definite complex characteristic of chronic poisoning due to acetanilid, which is recognized as a habit-forming drug.

30 North Michigan Avenue.

4. Martin, W. B.: J. Path. & Bacteriol. **15**: 76, 1911.

Health Education.—During the year the necessity for health education among teachers has become more evident and courses on the care of mothers and children for use in colleges and normal schools are being prepared under the Federal Board of Vocational Education. Undoubtedly the revelation of our recent draft rejections, showing that at least one half the defects were such as might have been eliminated in childhood, has added impetus to the interest in the physical condition of our children; and the supplementary evidence of malnutrition and defects, as brought out by the weighing and measuring test, has helped focus public opinion on physical fitness.—*Am. J. Pub. Health* **9**:350, 1919.

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SATURDAY, JUNE 19, 1920

HEMOGLOBIN AND CARBON DIOXID

The oxygen-carrying power of hemoglobin has been so widely studied and seems to be so well understood that little attention has been given to this pigment in relation to the movement of other gases in the body. Up to comparatively recent times, the transport of carbon dioxid in the organism has been attributed to the inorganic salts of the plasma, notably the bicarbonate. The rôle of other potential carriers, such as the proteins, has been emphasized more or less, while Buckmaster and Bayliss have even attributed the entire transport of carbon dioxid to hemoglobin directly. The problem of how the bound carbon dioxid could be released from the bicarbonate or protein combination in the lung has been a stumbling block in the theories, although the older workers recognized in the acid properties of hemoglobin a possibility of causing the unloading of carbon dioxid in the lung. As a matter of fact, hemoglobin, with its iso-electric point at p_H 6.7, is always acting as an acid under the conditions of hydrogen ion concentration in the blood. Some such acid liberating agent must be present in the lung, for the mere decrease of carbon dioxid tension from that of the tissues to that of the alveolar air would not cause the gas to pass off from the carbon dioxid-bicarbonate system of the plasma.

Parsons [1] has shown that the concentration of base in the blood is sufficient to account for all of the carbon dioxid to be carried as bicarbonate. In addition, he demonstrated that another weak acid must be present in the lung to aid in the unloading of the carbon dioxid by competing for the base of the bicarbonate. This acid, *a priori,* must be one whose salt with the base is decomposed by such concentrations of carbon dioxid as occur in the tissues. Parsons states that the proteins act as such an acid in the blood, and that the chief among these is hemoglobin.

L. J. Henderson,[2] elaborating somewhat on Parsons' work, has shown that in hemoglobin in the blood we have the unusual case of an acid which, under stress of circumstance, alters its degree of dissociation. Obviously, the circumstance is the presence of oxygen. In the lung, hemoglobin which, as stated above, acts as an acid in the blood, combines with oxygen, and immediately its ionization is increased and its power to bind base is accordingly increased. This base is at hand in the bicarbonate, and on combining with the oxyhemoglobin it leaves the carbon dioxid free to be blown off. In the tissues the oxygen leaves the base-oxyhemoglobin combination, and the hemoglobin, returning to its feebler degree of ionization, loses the base, which is then free to help carry the carbon dioxid back to the lung as bicarbonate. Henderson also states that the other proteins as well as the phosphates take part in transferring base from the lung to the tissue.

Parsons [3] adds that the variation of hydrogen ion concentration under the influence of carbon dioxid, as it occurs in the blood, requires the presence of a slightly ionized acid, such as hemoglobin. In addition to its other functions, hemoglobin thus functions as a buffer. It appears, therefore, that from the latest theoretical considerations of well-known data the hemoglobin of the blood not only acts as a carrier of oxygen throughout the organism, but also plays an important part in the transport and release of carbon dioxid in the body.

1. Parsons, T. R.: The Reaction and Carbon Dioxide Carrying Power of Blood—A Mathematical Treatment, J. Physiol. **53**: 42 (Sept.) 1919.

2. Henderson, L. J.: The Equilibrium Between Carbon Dioxide and Oxygen in the Blood, J. Biol. Chem. **41**: 401 (March) 1920.

3. Parsons, T. R.: The Reaction and Carbon Dioxide Carrying Power of the Blood—A Mathematical Treatment, J. Physiol. **53**: 341 (Feb.) 1920.

ORANGE JUICE CONSIDERED IN A NEW LIGHT

It is recognized by pediatricians that artificially fed infants thrive better if they receive some addition to cow's milk, particularly when the latter is pasteurized or sterilized. One reason for this, now understood, is that many of the artificial food mixtures are likely to be qualitatively incapable of averting scurvy in young children, so that some added antiscorbutic must be provided. For this purpose orange juice has attained a well deserved popularity. Other fruit juices have likewise been used with success as antiscorbutics; and latterly the juices from certain vegetables have been demonstrated to have a similarly beneficial influence in the dietary of the young. Owing to the price and occasional scarcity of oranges, notably during the war, special efforts were made, both here and abroad, to secure suitable substitute antiscorbutics for infant feeding. The use of the tomato, first urged by A. F. Hess of New York, has been particularly promising owing to the fact that, in contrast with some other antiscorbutics, this readily available vegetable can be dried or canned without losing its potency in antiscorbutic vitamin, and it can be administered efficiently in various ways, including intravenous injection of the juice.

From the recent investigations of Osborne and Mendel it appears that the tomato has even further properties to commend its use during the period of growth; for it is rich in the water-soluble antineuritic vitamin,[1] and likewise in the fat-soluble vitamin [2] (fat-soluble A) characteristic of milk fat and egg fat. Such observations, along with numerous others of recent date indicating how widespread is the fat-soluble vitamin in vegetable products,[3] show that this important food factor need not be sought solely in foods known to be rich in fats. As Osborne and Mendel have remarked, the newer studies indicating the richness of many types of plant tissues in those nutritive properties termed vitamins place the dietary importance of the green vegetables in an entirely new light. It emphasizes their use to supplement the refined foods of the modern food industry which furnish products rich in proteins, fats and carbohydrates but in many cases comparatively deficient in the vitamins. The tomato is striking in exhibiting all the now recognized vitamin potencies; the antineuritic, antiscorbutic and the fat-soluble vitamin. Little wonder, then, that it has found an important place in the dietary.

Orange juice has also now been shown to be possessed of something more than attractive flavor and antiscorbutic virtues. The same observers [4] have demonstrated the presence of the water-soluble B, the antineuritic vitamin, in both the juice and the inner peel of the orange—a finding promptly corroborated by Byfield and Daniels [5] at the University of Iowa. Evidently, therefore, when orange juice or tomato is added to the food of an infant, something more than an antiscorbutic is furnished. The Iowa pediatricians have noted that in every case when the antiscorbutic dose of orange juice, 15 c.c., was increased to 45 c.c. a day to infants whose weight had remained stationary for a number of days, there was a marked stimulation of growth. A mere increase of food intake (calories) of itself had no such influence on the rate of gain.

Orange juice from which the antineuritic vitamin (water-soluble B) is removed by adsorption [6] does not thus stimulate growth, although it still has antiscorbutic properties. This answers the assertion that the antiscorbutic vitamin may be responsible for promotion of growth. In feeding orange juice, provided the quantity is not too small, one is administering at least two highly beneficial adjuvants to the diet. This fact, and the growing practice of early enlarging the diet of milk fed infants by the use of fruit juices, etc., is significant further in view of the recent demonstration by Osborne and Mendel [7] that cow's milk, from a comparative standpoint, is not rich in water-soluble vitamin. Osborne and Mendel have pointed out how recent studies of the antiscorbutic value of cow's milk [8] have indicated that on this score it must be classed as less valuable than many of the raw fruits and vegetables. Whereas quantities of the latter—less than 10 gm. daily—will prevent scurvy in guinea-pigs on a diet otherwise devoid of antiscorbutic material, from 100 to 150 c.c. daily of raw cow's milk are required for this species, according to Barnes and Hume, while monkeys require larger quantities. Similarly, relatively large quantities of milk are required to produce the increased intake of food and improved rate of growth which are readily secured by very small quantities of many green vegetables.

1. Osborne, T. B., and Mendel, L. B.: The Vitamines in Green Foods, J. Biol. Chem. **37**: 187 (Jan.) 1919; Nutritive Factors in Plant Tissues, III, Further Observation on the Distribution of Water-Soluble Vitamine, ibid. **41**: 451 (March) 1920.

2. Osborne, T. B., and Mendel, L. B.: Nutritive Factors in Plant Tissues, IV, Fat-Soluble Vitamine, J. Biol. Chem. **41**: 549 (April) 1920.

3. Osborne and Mendel (Footnote 2). Steenbock, H., and Gross, E. G.: Fat Soluble Vitamine, IV, The Fat-Soluble Vitamine Content of Green Plant Tissues Together with Some Observations on Their Water-Soluble Vitamine Content, J. Biol. Chem. **41**: 149 (Feb.) 1920. Steenbock, H., and Boutwell, P. W.: Fat-Soluble Vitamine, V, Thermostability of the Fat-Soluble Vitamine in Plant Materials, ibid., p. 163.

4. Osborne, T. B., and Mendel, L. B.: Do Fruits Contain Water-Soluble Vitamine? Proc. Soc. Exper. Biol. & Med. **17**: 46 (Nov.) 1919.

5. Byfield, A. H., and Daniels, A. L.: The Antineuritic and Growth-Stimulating Properties of Orange Juice, Am. J. Dis. Child. **19**: 349 (May) 1920.

6. Seidell, A.: Pub. Health Rep. **31**: 364 (Feb. 18) 1916; Harden, A., and Zilva, S. S.: Biochem. J. **12**: 93 (June) 1918.

7. Osborne, T. B., and Mendel, L. B.: Milk as a Source of Water-Soluble Vitamine, II, J. Biol. Chem. **41**: 515 (April) 1920.

8. Cohen, B., and Mendel, L. B.: J. Biol. Chem. **35**: 425 (Sept.) 1918. Chick, H.; Hume, E. M., and Skelton, R. F.: Biochem. J. **12**: 131, 1918; Lancet **1**: 1 (Jan. 5) 1918. Barnes, R. E., and Hume, E. M.: Lancet **2**: 323 (Aug. 23) 1919.

9. Flu, P. C.: Experimental Immunization Against Plague, Mededeel. v. d. Burgerl. Gencesk. Dienst in Nederlandsch Indie **8**: 18, 1919.

IMMUNIZATION AGAINST PLAGUE: AN ARGUMENT FOR CONTROLLED EXPERIMENT

The reiterated plea of scientists for accurately controlled experiments in the determination of the value of measures adopted against disease may seem to some physicians to be somewhat too emphatic. Again and again, however, the disinterested scientist is compelled to protest against the use of statistics and experiments by those commercially interested and by overenthusiastic advocates of the prophylactic use of certain products. How difficult it really is to arrive at definite conclusions relative to the efficacy of many such preventive measures is pointed out by Flu,[9] in a recent discussion of experiments on immunization against plague. The reports concerning the results of vaccination against this disease have been contradictory. Haffkine believed that he had demonstrated statistically that his vaccine was effectual in creating immunity. Bitter and other observers, analyzing the work of Haffkine, concluded that the immunity acquired was not of high degree and that it did not last more than six months. That opinions based on statistics may not be reliable, Flu illustrates by the recital of an incident occurring in the Division of Malang in Java:

During the epidemic in the division of Malang (Java), when thousands of plague cases were occurring monthly among the inhabitants of kampongs and desa's, only one single case of plague occurred among the soldiers of the garrison in the capital Malang, being a thousand strong, in the four years the plague was raging there. This one case, was a

man with a bubo in the neck who had not been infected at the barracks, as could be ascertained almost absolutely. If at the beginning of the epidemic the garrison in Malang had been vaccinated against plague, and if the results of that measure had been judged by comparison between the numbers of plague cases among the vaccinated soldiers and among the inhabitants of Malang, then this single isolated case among the former compared to the many thousands among the latter, apparently would prove for the advantage of the vaccination. This conclusion, however, would not be admissible for a local investigation would show that the soldiers in Malang are living under much better and more hygienic circumstances than the best situated inhabitants of the kampong. The fact that the soldiers were not attacked would prove being due not to the vaccination but to the favorable conditions in the barracks, that exclude a tight contact of man and rat.[10]

Flu is able to recite other instances in which incomplete reports of plague epidemics might well be cited as strong evidence of the efficacy of the various measures employed in prophylaxis. One example is an epidemic that occurred in the dessa (village) of Sempal Wadak in Malang, a place of about 1,700 inhabitants, in which a large sugar factory is situated. At the time of the epidemic, there were about fifty European assistants, and about 300 native laborers employed there:

In the dessa the plague was raging most heavily, 80 cases occurring there during three months. Suppose, that the Europeans had had themselves vaccinated against plague with f. i. [for instance] HAFFKINE vaccine, and that by their influence they had persuaded the natives to have done the same. Now, if only was [it were] mentioned how many people were vaccinated at Sempal Wadak and how many not, and if further was said that among the Europeans only one single case of plague occurred, while among the native labourers of the factory two cases occurred against 80 cases among the not vaccinated inhabitants of the dessa, it would wrongly appear as if the vaccination had been of excellent service. Really, these figures would not prove anything. For the Europeans were living in houses that were well protected against visits of rats and were built ratnestproof. Also the labourers of the factory came up to the requirements ordered by the house-improvement service. The only European infected had had to stay in a village-house, his own house being repaired: during his stay in the not improved village-house he was infected.

Because of such instances as these, epidemiologists have begun to be skeptical concerning statistics that are cited without the presentation of all the details necessary for an accurate judgment. The many factors entering into the causation of disease: age, sex, race, social status, occupation, residence, hygiene, house conditions—all have a definite influence. It is only by careful and repeated consideration and the employment of numerous controls that the relative importance of each factor can be estimated in any degree approaching accuracy.

As a result of his consideration of the subject, Flu determined that the only experiments on plague that can be considered of any real value are those on animals, since it is impossible to secure perfectly controlled conditions in such work on man. Experiments of this kind he carried out in great detail, using large numbers of animals. Of all the vaccines examined, only the aqueous extracts were found to have any definite immunizing power. However, as only a low percentage of immunized animals survived injections with large doses of bacteria, he concludes that the expectation that in the course of time some method of immunization against plague may be found which will be effective in 100 per cent. or even 90 per cent. of the cases treated is at present absolutely in vain. That this is the case is supported by the fact that even a natural infection of this disease is not capable of conferring definite immunity.

10. The periodical from which this quotation is taken is published in Java; each page contains two parallel columns, one Dutch, the other English. The English is not always strictly grammatical, as will be noted from the portions cited.

Current Comment

REPUBLICAN PLATFORM AND HEALTH AND EDUCATION

In the General News column [1] appears the full text of the plank on education and health adopted last week by the Republican convention. The association of these two subjects in a single section is significant of the increasing realization of the close relation and mutual interdependence of health and education. Good health either of the individual or of the community is largely a matter of education. All true education results in better health. In the joint development of these closely allied activities there is room and need for the specialist and expert in both fields. Possibly most of our readers will be especially interested in the paragraph that points out that the health activities of the federal government are scattered through numerous departments and bureaus, resulting in inefficiency, duplication and extravagance. It very wisely limits its recommendations to greater centralization of federal functions and better coordination of federal, state and local agencies, without attempting to discuss the exact method by which this result is to be secured. The reorganization and extension of federal public health work has been under discussion for half a century. While all are agreed as to the desirability of such expansion, there is no unanimity as to the exact method by which it should be accomplished or the form it should take. These questions can be answered only after careful study of existing conditions in order to determine what the federal government is now doing for public health, how much is being expended and what is being accomplished, what are the public health functions which belong to the federal government, what are those which belong to the state, and how coordination can be best effected. These are not questions for either partisan or sectarian controversy but rather for patient study and constructive planning. Whatever may be our differences of opinion as to the peace treaty with Germany, the League of Nations or the high cost of living, all good citizens are agreed as to the importance of both education and health. It is to be hoped that the Democratic convention at San Francisco will make an equally broad and constructive declaration on these two subjects.

1. Page 1724, this issue.

PUBLIC HEALTH POETRY

Poets, we are told, are born, not made. But every one has a sense of rhyme and rhythm. Rhyme and rhythm aid memory—they have "catchy" qualities. As a result we have not only spring as the open season for poets but also a year round open season for the public health poet. He takes a simple hygienic slogan, such as "Flies breed disease—swat 'em," and turns out poetry of a practical sort:

"The fly, also, is a nuisance, very small,
The greatest pest, I'm sure, of them all.
In the daytime it is humming, humming though it has no song,
If the city is kept clean, it will disappear ere long."

See how easy it is to write "poetry." One merely measures off so many centimeters of line and puts a big letter on the front. Let us suppose it is desired to inform a nervous public that mosquitoes carry malaria. Does the public health poet hesitate?

"Did you know mosquitoes bring
Other things besides their sting?
Sometimes when they bite, they leave you
With malaria or with fever.
Dry up all the stagnant places—
Breeding places of all their races;
Keep your screen doors closed, and fling
Defiance to Sir Skeeter's sting!
Let your slogan through the summer
Be to kill this wicked hummer."

Simple, isn't it? Yet it gets there all the same. But the subjects have been too broad, too indelicate! Now for something really practical and esthetic:

Oh! blessings on the garbage man:
He comes around and gets our can;
He cleans it up quite nice and neat—
Then it leaks out of his wagon and is scattered all over the blooming street.

ANTHRAX AND THE SHAVING BRUSH

Previous to 1914, anthrax infection in nearly all instances occurred only among those who came in contact with cattle, hides, meat or wool; but soon after the outbreak of the war, numerous cases appeared among persons who had not been associated with any of the usual known sources of the disease. From time to time, outbreaks of anthrax developed among soldiers of both England and the United States, and careful investigation revealed that nearly all cases developed from shaving wounds. It was later found that certain types of shaving brushes harbored virulent anthrax bacilli. Shaving brushes used in this country are for the most part made from badger hair, horsehair or pig bristles, though much of the so-called badger hair is an imitation made by treating white hair or bristles. Until the war, nearly all the horsehair and pig bristles came from Russia, China and Japan, after being cleaned and disinfected in France or Germany. But after 1914 they were shipped directly to this country by the Pacific route. With the advent of the war, the unusual demands on the shaving brush industry necessitated such a rapid output that some manufacturers, through ignorance, carelessness or too great confidence in the certificates of disinfection, made no effort to insure the safety of the material used. The horsehair from China is notoriously dirty, very likely anthrax-infected, and shipped with "no indication of manner or methods of treatment."[1] Domestic hair dealers, principally in Chicago, wash the hair with soap or lye in warm water, but there is no established method to make the hair safe from anthrax. A number of these cleansing processes were investigated;[1] some were found to be thoroughly satisfactory, others certainly offered no guarantee of safety, and there is no doubt that there are now on the market many brushes potentially dangerous, most of these being of the cheaper grades. At present the methods of disinfection used by the manufacturers of shaving brushes are not standardized, and many are inefficient. In England from June, 1915, to October, 1916, fourteen cases[2] of anthrax infection are known to have originated from shaving brushes. In nearly all instances a recently purchased brush had been used a few days before the appearance of the malignant pustule. Virulent anthrax bacilli were found on the patient's brush and on others obtained from the same lot. A rather low human susceptibility was indicated by the fact that only one case is known to have developed from a lot of 10,000 brushes, though anthrax bacilli were found in all samples examined. In this country, twenty-four cases of anthrax from shaving brush infection[3] have been recorded; in six instances the bacilli were isolated from brushes used. It is of interest to note that several cases of meningitis were encountered, anthrax bacilli being isolated from bloody spinal fluid. In three instances, no evidence of an external lesion was found. In thirty-three cases of shaving brush anthrax, twenty-one, or 64 per cent., of the patients died;[4] this high mortality may be due to the site of infection, wounds of the neck being more serious than elsewhere. By the use of proper methods, anthrax infection from shaving brushes is entirely and easily preventable. Systematic inspection and definite requirements of sterilization will eliminate the shaving brush as a source of anthrax infection. Boiling, exposure to streaming steam, or soaking the material for four hours in 10 per cent. dilution of liquor formaldehydi at 110 F. are said to be reliable methods of disinfection.

1. An Investigation of the Shaving Brush Industry, with Special Reference to Anthrax, Pub. Health. Rep. **34**: 994 (May 9) 1919.
2. Anthrax from Shaving Brushes, Pub. Health Rep. **33**: 115 (July 12) 1918. Coutts, F. H.: Reports, Local Govt. Board of Public Health and Medical Subjects, N. S. 112, 1917.
3. Carey, H. W.: Anthrax from the Shaving Brush and Primary Anthrax Meningitis, Am. J. M. Sc. **159**: 742 (May) 1920.
4. Footnote 2, first reference.

Increase in Automobile Accidents.—According to the annual report of the National Highways Protective Association, the total toll of life taken by motor cars throughout New York State during 1918 was 969 persons. The death list in New York City was 528, as against 417 for 1917. Of 441 fatal accidents that occurred outside the metropolitan area, 416 occurred between April 1 and December 31, and only twenty-five between January 1 and March 31. The president of the National Highways Protective Association recommends a law for New York State similar to that in Massachusetts, Connecticut, New Jersey and Maryland, which in New Jersey has been responsible for cutting down the number of fatal accidents from 245 in 1917 to 197 last year.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Graduate Courses in Hygiene.—The University of Alabama is establishing a department of hygiene in which graduate students will be prepared to teach hygiene and health conservation in colleges, normal schools or other like institutions. Satisfactory completion of the course will qualify for the degree of Bachelor of Science in Hygiene. There is immediate need of such graduates in the school health activities of the state. Dr. Hiram Byrd, formerly director of the department of hygiene in the University of Mississippi, is head of the new department.

ARKANSAS

Personal.—Dr. Keith E. Hudson, Dahome, has announced his retirement from the practice of medicine.——Dr. Fergus O. Mahoney has been elected president, and Dr. H. H. Niehuss, secretary, of the Eldorado Board of Health.

District Society Organized.—Greenwood District Medical Society was recently organized, with an initial membership of seventeen, and the following officers were elected: president, Dr. George G. Woods, Huntington; vice president, Dr. Bert L. Ware, Greenwood, and secretary-treasurer, Dr. Charles W. Hall, Greenwood.

State Isolation Hospital Planned.—The leaders of the public health movement in Arkansas are planning to build and equip a state isolation hospital and venereal disease clinic which will not only provide treatment, isolation and detention for commercial prostitutes in all places of the state where there are no clinical facilities or means of isolation, but will also give treatment in all cases of venereal infections in persons committed to the girl's industrial school and to the woman's reformatory.

State Society Election.—At the annual meeting of the Arkansas Medical Society held at Eureka Springs, June 8 and 9, under the presidency of Dr. George S. Brown, Conway, the following officers were elected: president, Dr. Gus A. Warren, Black Rock; vice presidents, Drs. Robert Howard Huntington, Eureka Springs, Andrew J. Clingan, Lockesburg, and Thad Cothern, Jonesboro; secretary and editor of the *Journal of the Arkansas Medical Society*, Dr. William R. Bathurst, Little Rock (reelected); treasurer, Dr. Henry H. Kirby, Little Rock. Hot Springs was selected as the place of meeting for 1921.

FLORIDA

Personal.—Dr. Lorin A. Greene, Greenville, has been appointed superintendent of the new Florida Colony for Feebleminded and Epileptics.——Dr. William J. Buck, Jacksonville, has resigned as assistant state health officer.

New State Officers.—At the forty-seventh annual meeting of the Florida Medical Association held in Daytona, May 12 and 13, under the presidency of Dr. Ralph N. Green, Chattahoochee, the following officers were elected: president, Dr. William E. Ross, Jacksonville; vice presidents, Drs. Clyde C. Bohannon, Daytona, George A. Davis, De Land, and James H. Fellows, Pensacola, and secretary-treasurer, Dr. Graham E. Henson, Jacksonville. Pensacola was selected as the next place of meeting.

Venereal Disease Clinic Established.—Seminole and Gadsden counties have joined hands with the state hoard of health, in its efforts to establish a venereal disease clinic in each of the counties of the state. The Seminole County Clinic is in operation at Sanford, and the Gadsden County Clinic at Quincy. Ten clinics are now in operation, the stationary clinics being located at Key West, Miami, Tampa, Arcadia, West Palm Beach, Jacksonville, Pensacola, Lake City and St. Petersburg in addition to an ambulatory clinic under the charge of Dr. John C. Bertram, Jacksonville.

Possible Deaths from Bubonic Plague.—The state laboratory, on June 13, announced that the death of George Gardina in Pensacola, June 11, was undoubtedly due to bubonic plague and that steps had been taken for an immediate cleanup campaign. Health officials of the state have determined on a thorough extermination of rats.——The officials of the Public Health Service in Washington, D. C., say that it has not yet been definitely established that a case of bubonic plague had developed in Pensacola.——A second case of bubonic plague was officially reported to the authorities of Pensacola, June 15. The patient is an ice wagon driver, and his duties took him through the section of the city where the first case was discovered.

ILLINOIS

Chicago

New Officers.—Dr. John S. Nagel was elected president-elect, and Dr. Hugh N. MacKechnie, secretary of the Chicago Medical Society at the annual election, June 16.

Northwestern Alumni Meeting.—At the annual meeting of the Northwestern University Alumni Association held in Chicago, June 14, the following officers were elected: president, Dr. Franklin H. Martin, '80; vice presidents, Drs. John F. Williams, '65, and Robert Blessing, '20; secretary-treasurer, Dr. James G. Carr, '02, and necrologist, Dr. Samuel C. Stanton, '92 (reelected).

Guthrie Memorial.—At the meeting of the council of the Chicago Medical Society, June 8, a resolution was adopted providing that a proper inscription setting forth the facts of Dr. Samuel Guthrie's discovery of chloroform be placed on the glacial boulder at the entrance of Washington Park, at Garfield Boulevard, known as the Guthrie Stone. This resolution was referred to the committee appointed last year regarding the Guthrie memorial.

University of Illinois Alumni Meeting.—The annual meeting of the Alumni Association of the College of Medicine of the University of Illinois was held in Chicago, June 5, and the following officers were elected: president, Dr. Karl Meyer, '08; president-elect, Dr. Louis J. Hammers, '02; vice presidents, Drs. William H. Bradley, '10, Charles H. Hallberg, '11, and William B. West, '06; secretary and treasurer, Dr. John M. Krasa, '13 (reelected); and necrologist, Dr. O. McWilliams, '99.

MAINE

District Health Officers' Ranks Completed.—By the appointment of Dr. Adin L. Smith, Machias, as district health officer for Hancock and Washington counties, the roll of district health officers of Maine is completed, making a total of eight for the state.

Public Health Association Reorganized.—The work of the Maine Anti-Tuberculosis Association has been transferred to the newly organized Maine Public Health Association, which at its recent meeting in Bangor elected the following officers: president, Dr. Elmer D. Merrill, Foxcroft; vice presidents, Mr. E. M. Hamlin, Milo, Dr. Sylvester J. Beach, Augusta, and Mr. Henry Richards, Gardiner; executive secretary, Mr. W. A. Harris; secretary, Mrs. Howard Ives, Portland, and treasurer, Mr. Ralph Whittier, Bangor. The reorganization was undertaken for the purpose of entering a broader line of work than was possible under the old name and by-laws. Now prenatal care, child welfare and venereal diseases as well as tuberculosis work will be included in its program. One aim in the reorganization is to unify under one head all private health organizations of the state as rapidly as possible and to work more closely with the state department of health, school department, department of charities and corrections and other departments.

MARYLAND

Patients Ordered to Fort McHenry.—Dr. Charles W. Vogel, in charge of the United State Marine Hospital, Baltimore, has received orders from the Surgeon-General, U. S. Public Health Service, to transfer all patients and personnel to the public health hospital at Fort McHenry. The hospital at Fort McHenry is not ready to receive patients, but every effort is being made to put it in order and at the latest it is expected to be ready by July 15. The future fate of the Marine Hospital has not yet been determined.

Gift to Johns Hopkins.—A gift of $400,000 has been made to the General Education Board of the Rockefeller Foundation Fund for the establishment of a department of pathology at the Johns Hopkins Medical School, and is the second appropriation of that amount to the school in less than four months. An appropriation of like amount from the same source was announced for the establishment of a women's

clinic at the hospital several months ago. The present fund is given contingent on the university's raising an additional $200,000 toward a $600,000 fund. The present gift is to be used in rebuilding the pathologic department which was destroyed by fire last January. Work on the new pathologic department will be started as soon as the additional $200,000 is raised by the university.

Infectious Hospital Planned for Baltimore.—An ordinance submitting to the voters of Baltimore in November a loan of $750,000 for an infectious disease hospital has been introduced in the city council. The loan was authorized by the legislature of 1914, but was pigeon-holed by the former administration. It was resurrected by Dr. C. Hampson Jones, health commissioner, who considers the hospital one of the pressing needs of the city. It is estimated that the municipal hospital will cost approximately $1,000,000 to start with. The city is soon to receive $177,000 from the federal government for the quarantine station. This added to the $750,000 from the loan, if approved, will give the health department sufficient money for its needs. It is understood that the medical fraternity is solidly behind the hospital loan and that their influence will aid the public improvement loan materially.

MASSACHUSETTS

New State Officers.—At the one hundred and thirty-ninth annual meeting of the Massachusetts Medical Society held at the Boston Medical Library, June 8 and 9, Dr. Alfred Worcester, Boston, was elected president; Dr. Frederick E. Jones, Quincy, vice president; Dr. Walter L. Burrage, Boston, secretary (reelected); Dr. Arthur K. Stone, Framingham Center, treasurer; Dr. Edwin H. Brigham, Brookline, librarian.

Physicians Oppose Bill for State Maternity Aid.—In a circular letter to members of the legislature, four medical societies in the state, namely, the Worcester North District, Worcester South District, Franklin District and Fitchburg medical societies declare their opposition to the passage of a bill to provide maternity benefits for needy expectant mothers. This proposed legislation is considered as paternalistic and class legislation and as an infringement on the rights of individual citizenship.

MISSISSIPPI

Home for Feebleminded.—Meridian is making strenuous efforts to obtain the location of the proposed state colony for the feebleminded, to secure which, a donation of $100,000 and a 1,000 acre site are essential.

Typhoid Vaccine Available.—Dr. Clyde R. Stingily, Jackson, bacteriologist of the state board of health, announces that he has now a sufficient quantity of typhoid vaccine for 30,000 cases and is ready to ship this to physicians of the state free of all expense.

NEBRASKA

Hospital Transferred.—The new Lord Lister Hospital, Omaha, has been taken over by the Danish Hospital Association. The institution will open this month and will have accommodation for 150 patients.

Alumni Meeting.—The annual meeting of the John A. Creighton Medical College Alumni Association was held, June 2 to 4. During these days, clinics were held at St. Joseph's Hospital, and on June 4, Dr. Henry S. Plummer of the Mayo Clinic delivered an address on "The Function of the Thyroid Gland."

Graduate Clinical Week.—A graduate clinical week was held, June 7 to 13, at the University of Nebraska, College of Medicine, Omaha. Emphasis was placed on social diseases as subjects for study and demonstration. Daily ward walks through the university hospital, and laboratory work in clinical pathology were some of the practical features of the week.

NEW YORK

Encephalitis Made Reportable.—Lethargic encephalitis has been added to the list of reportable communicable diseases by action of the public health council of the state department of health.

Tuberculosis Lecture Outline.—An outline of a lecture on tuberculosis for use before lay audiences in connection with the set of lantern slides belonging to the state department of health is now available and may be obtained by writing to the supervisor of exhibits, state department of health, Albany.

Health Clinics.—The New York State Department of Health in cooperation with the state department of education, state hospital commission, state committee for mental defectives, tuberculosis committee of the state charity aid association, and Atlantic Division of the American Red Cross inaugurated a series of group medical consultation clinics held at the Village Hall of Geneseo, June 8, 9 and 10.——At the clinic held in Rome, May 12, by Dr. Sydney F. Blanchet, Saranac Lake, twenty-five persons were examined for tuberculosis.

New York City

Personal.—Dr. George D. Wolf has been appointed adjunct professor of otology and rhinology in the Bronx Hospital and Dispensary.

Guarding Against Plague.—Owing to the outbreak of bubonic plague in Vera Cruz, the health authorities of the city are acting in cooperation with Dr. Leland E. Cofer, health officer of the port, in an effort to strengthen the lines of defense against the importation of the disease. Cyanid is being used for fumigation of all vessels from any suspected port. A careful sanitary inspection is being made of all city piers.

Milk Charity Transfer.—Nathan Strauss, before sailing for Palestine where he expects to devote himself to relief work, on June 11, made a statement to the mothers of the city of New York stating that he felt that his task of furnishing pasteurized milk to the babies of New York was finished, and that his milk stations would be discontinued after September 1. The work will be continued during the summer, he says, in order to give mothers the opportunity to visit his laboratories and learn methods for the home modification of milk. He has offered to turn over to the city his milk laboratory complete, with all its equipment and motor trucks, provided the city supplies funds to maintain and expand the work.

Tuberculosis Activities.—The first public meeting of the New York Tuberculosis Association was held, May 18, Dr. James Alexander Miller, presiding. Dr. Miller told of the work for the vocational training of soldiers and sailors who have now been transferred to civilian control; Mr. Fred M. Stein explained in full the plans of the workshop to be established in Long Island City; Mr. T. B. Kidner of the National Tuberculosis Association spoke on the "Rehabilitation of Consumptives to Industry"; Dr. C. Floyd Haviland, Middletown, Conn., delivered an address on "Occupation and Treatment in Convalescence," and Dr. John S. Billings presented the plan of the association for the reconstruction of the consumptive. This includes an application bureau as a part of its information bureau, and an employment bureau. A group of the larger sanatoriums in the vicinity of New York City have agreed to cooperate with the association by establishing schools for the vocational training, especially of service men.

OHIO

New State Officers.—At the seventy-fourth annual meeting of the Ohio State Medical Association held in Toledo, June 1 to 3, Dr. Charles Lukens, Toledo, president-elect, was installed as president, and the following officers were elected: president-elect, Dr. Wells Teachnor, Columbus; president emeritus for one year, Dr. John C. Reeve, Dayton, the oldest member of the association (this position is honorary and is granted in recognition of unusually distinguished ability or service). Columbus was selected as the next place of meeting.

New Sanitary Code.—The Ohio Sanitary Code was submitted to the public health council of the state department of health for approval, May 14, and this code will become effective July 1, 1920, on which date all rules and regulations formerly adopted by the state board of health or public health council are repealed. The new code consists of regulations regarding the reporting of communicable disease, naming the ailment according to its classification as a dangerous disease and stating who is responsible for the report. It includes provisions for notification of such diseases as are found in institutions and for the reporting of deaths from notifiable diseases to the state board of health. It embodies the necessary measures for the prevention and control of communicable diseases, including quarantine, isolation and disinfection. Provisions are also included for the transportation of the dead, and for the inspection and examination of school teachers, janitors and children. Essential rules have been drawn up for the operation of tuberculosis and maternity hospitals, including provisions for the record of the patients, advice as to equipment and medical supervision, and regulations as to examination and treatment.

The new code also has a section dealing with the maintenance of sanitary control of the state park sanitary district, the construction of sewage disposal plants, removal of garbage and the protection of food from flies and dust.

OREGON

Alumni Meeting.—The eighth annual meeting of the Alumni Association of the Medical School of the University of Oregon was held in Portland, May 31 to June 2. This was known as the MacKenzie Memorial meeting, and the program consisted of clinics at five hospitals and the reading of papers at the afternoon sessions. Dr. Ludvig Hektoen, Chicago, delivered the Noble Wiley Jones lectures under the auspices of the medical school on Monday and Wednesday evenings, on the subjects, "Phases of Streptococcic Infection," and "Old and New Knowledge of Immunity." On Tuesday, the annual banquet and business meeting was held, and the following officers were elected: president, Dr. Otis F. Akin, '09, Portland; vice presidents, Dr. George A. Cathey, '09, Portland; Carl J. Hoffman, '02, Woodland, Wash.; Charles L. Rybke, '09, Portland, and Christian E. Stafrin, '11, Portland; secretary, Dr. Adalbert G. Bettman, '07, Portland, and treasurer, Dr. Kitty Plummer Gray, '00, Portland.

PENNSYLVANIA

Ambulance Men Meet.—More than 500 registered for the first U. S. A. A. A. C. reunion of soldiers of the United States Ambulance Corps, gathered at Camp Crane on the Allentown fair grounds, June 8.

Physicians' Golf Club Organized.—The Aesculapius Golf Club has been organized at Pittsburgh with Dr. Lee V. L. Brown, Castle Shannon, president; Dr. Jesse S. Demuth, Pittsburgh, vice president, and Dr. Edward J. McCague, Pittsburgh, secretary-treasurer.

Death of Noted Chemist.—Dr. Leonard Merritt Liddle, aged 36; senior industrial fellow of the Mellon Institute of Research, Pittsburgh, since 1912, and from 1914 to 1916 head of the biochemistry department of the University of Pittsburgh School of Medicine; president of the Robert Kennedy Duncan Club; a chemist of marked ability in research; died, February 21.

Philadelphia

Physical Directors Visit Colleges.—Members of the Middle Atlantic Physical Directors' Society, in session in Philadelphia, visited Jefferson and Hahnemann medical school, June 11, and heard lectures on medical problems relating to physical education.

Personal.—Dr. Miriam Warner has been appointed physician in the bureau of charities and corrections by Director Ernest L. Tustin of the department of public welfare, and will have charge of treatment of all women at the Home for the Indigent at Holmesburg and the House of Correction. ——Dr. John E. B. Buckenham, superintendent of the City Hospital for Contagious Diseases since 1914, has resigned to become librarian of the Masonic Grand Lodge of Pennsylvania.

CANADA

Doctors Increase Fees.—Hamilton, Ont., physicians are the latest to increase their fees. Hereafter daily calls will be $3; emergency calls and night calls after 6 p. m., $5; office visits, $1.50, and obstetric cases, $25.

Measles and Smallpox in Ontario.—The epidemic of measles in Ontario is growing. From a total of 3,768 cases of communicable diseases reported during May, the cases of measles numbered 2,264 with forty-five deaths. Two hundred and ninety cases of smallpox were reported with no deaths.

Director-General Resigns.—Major-Gen. John Taylor Fotheringham; C. M. G., who has for the past few years been director-general of Canadian Military Medical Services, with distinguished service overseas, has resigned and has left Ottawa to take up practice in his old home in Toronto.

Dominion Association Meeting.—The fifty-first annual meeting of the Canadian Medical Association will be held in Vancouver, B. C., June 22 to 25, under the presidency of Dr. Robert E. McKechnie, Vancouver. The address in medicine will be delivered by Dr. Charles Lyman Greene, St. Paul, Minn., on "Certain Fundamental Errors in the Diagnosis of Myocardial Insufficiency"; that in surgery, by Dr. Edward W. Archibald, Montreal, on "The Surgical Treatment of Ulcerated Intestinal Tuberculosis, as Occurring Chiefly in the Course of Pulmonary Tuberculosis"; that in orthopedics, by Dr. Virgil P. Gibney, New York City, on "Development and Scope of Orthopedic Surgery," and that in public health, by Dr. John Amyot, Ottawa, Ont., on "The Federal Government and Public Health." Symposiums will also be held on goiter, pulmonary abscess and the stomach and duodenum.

GENERAL

New Officers for Examining Board Federation.—At the annual meeting of the New England Federation of Medical Examiners held in Boston, June 1, Dr. Charles Duncan, Concord, N. H., was elected president; Dr. Michael F. Fallon, Worcester, Mass., vice president, and Dr. Samuel H. Calderwood, Boston, secretary.

Roentgenologists to Meet.—The American Roentgen-Ray Society will hold its twenty-first annual meeting in Rochester and Minneapolis, Minn., September 14 to 17, under the presidency of Dr. James T. Case, Battle Creek, Mich. The sessions of the first day of the meeting will be in Rochester and of the following three days in Minneapolis.

International Sanitary Conference.—At a recent meeting of the committee on arrangements for the Sixth International Sanitary Conference to be held in Montevideo, Uruguay, December 12 to 20, plans for the conference were formulated, and it was recommended that invitations be extended to all the countries of North and South America to assist in the conference.

Medico-Psychologists Hold Meeting.—At the annual meeting of the American Medico-Psychologic Association held in Cleveland, June 1 to 4, Boston was decided on as the next place of meeting, and the following officers were elected: president, Dr. Owen Copp, Philadelphia; vice president, Dr. Sanger Brown, Chicago, and treasurer, Dr. Harry W. Mitchell, Warren, Pa.

General Gorgas Abandons Trip.—Major-Gen. William C. Gorgas has been obliged to abandon his mission to West Africa where he was to investigate sanitary conditions under the auspices of the Rockefeller Foundation. General Gorgas recently suffered a cerebral hemorrhage, complications developed and his condition remains serious. He will probably return to the United States as soon as he is able to travel.

Disposal of Army Medical and Hospital Supplies.—The surplus property division of the office of the Quartermaster General at Washington is offering for sale large quantities of various medical and hospital supplies. A list of these supplies was published on advertising pages 38 and 39 of The Journal for April 24, 1920. Lists of articles that are still unsold are being furnished on application to Director of Sales, Munitions Building, Washington, D. C.

Rockefeller Gifts to Medical Work.—The General Education Board of the Rockefeller Institute announces a gift of $5,000,000 to the Rochester University to be used in conjunction with a second $5,000,000 donated by George Eastman for the founding of a school of medicine and dentistry. A second gift of £1,250,000, with additional smaller sums, is to be given the London University College and Hospital School for a building program whereby the facilities of the college are to be extensively improved for the training of personnel and the setting of standards for health work throughout the British Empire.

Venereal Disease Survey.—Surgeon-General H. S. Cumming, U. S. Public Health Service, announces that approximately 465 of the larger cities of the United States have been surveyed to determine the measures in force for combating venereal diseases. These data are to be published shortly. In four or five months another study of the same localities will be made and the results published. In order that this public health problem may be successfully handled, the cooperation and support of the members of the American Medical Association, its constituent state associations and their component county societies is solicited. The Surgeon-General is desirous of having the support both of these correlated organizations and the influence of their members as leaders in lay organizations—churches, Y. M. C. A., Y. W. C. A., fraternal bodies, rotary clubs, women's clubs and similar societies.

Republican Health Plank.—The following plank on education and health was adopted by the Republican National Convention:

We endorse the principle of federal aid to the states for the purposes of vocational and agricultural training.

Wherever federal money is devoted to education, such education must be so directed as to awaken in the youth the spirit of America and a sense of patriotic duty to the United States.

A thorough system of physical education for all children up to the age of 19, including adequate health supervision and instruction, would remedy conditions revealed by the draft and would add to the economic and industrial strength of the nation. National leadership and stimulation will be necessary to induce the states to adopt a wise system of physical training.

The public health activities of the federal government are scattered through numerous departments and bureaus, resulting in inefficiency, duplication, and extravagance. We advocate a greater centralization of the federal functions, and in addition urge the better coordination of the work of the federal, state, and local health agencies.

LATIN AMERICA

Yellow Fever in Brazil.—Our Brazilian exchanges mention that several cases of yellow fever have been reported recently at Bahia, and several deaths have occurred at different points in the Alagóas region to the northeast.

Plague in Mexico.—According to the last reports, two new cases and three suspected cases of plague have been reported at Vera Cruz, and two deaths among those previously stricken. Two cases were also reported at Tampico.

Personal.—Dr. A. Neiva, chief of the public health service of the state of S. Paulo, Brazil, has been commissioned by the authorities to study the organization of the public health service in Japan and the United States, and the prophylaxis of leprosy in Norway, the Philippines and Hawaii.

Society Election.—The Sociedad de Cirujía of Buenos Aires recently elected as president, Dr. D. J. Cranwell; vice president, Dr. E. Beláustegui; treasurer, Dr. M. Viñas; secretary, Dr. R. Pasman; director of the *Revista*, Dr. D. A. Ceballos, and other directors Dr. P. Chutro and Dr. D. F. Prando.

Election of Officers.—The officers elected for the 1920-1922 term of the Asociación Médica Argentina are Dr. P. Escudero, president; Dr. J. S. Passeron, vice president; Dr. C. Domínguez, secretary general; Dr. J. Iribarne, director of the council on publications; Dr. E. Fidanza, treasurer, and Dr. R. A. Rivarola, librarian.

New Military Hospital at S. Paulo.—The corner stone of the new military hospital was laid in 1918 and it was recently inaugurated with much ceremony by state and military authorities. It was completed in eighteen months at an expense of about $369,000 Major Affonso Ferreira is to be the director of the new hospital.

FOREIGN

New Dermatologic Journal.—With the name *Acta dermato-venerologica* a new journal has been founded by physicians in the Scandinavian countries, to be published in the three main European languages as material accumulates. The editor-in-chief is Professor Almkvist, Sjukhuset St. Gjöran, Stockholm. Each volume is to include about 500 pages, and the subscription to the volume is 20 Swedish crowns.

Health Survey of Haiti.—Dr. John Swan, who was recently sent to the Dominican Republic and Haiti by the American Red Cross to make a survey of sanitary and health conditions, reports an urgent need for help, especially as regards modern medical treatment and sanitary housing. In his opinion, immediate steps should be taken to fight venereal disease, hookworm, malaria, and yaws, to establish antituberculosis measures and to teach personal hygiene.

Vital Statistics of Portugal.—According to figures published in the *Medicina contemporanea* the average rates for the years 1913 to 1917 per thousand inhabitants of Portugal and the Azores and Madeira islands were 6.10 marriages, 31.13 births and 20.13 deaths. The figures for Lisbon alone are 7.25 marriages, 24.29 births and 21.91 deaths. The death rate in the home country has increased during the five years from 20.52 to 21.50. The losses by emigration averaged 5.30. The population of Portugal in 1911 was 5,957,985.

Medical History of the World War.—Portugal was among the first nations to send a civilian medical unit to the front. Dr. Reynaldo dos Santos of Lisbon organized the unit and was in charge of it in France, long before Portugal entered the war. The profession in Portugal is now collecting data to compile the medical history of the war. To inaugurate this task, the *Medicina contemporanea* is publishing a list of the titles and a bibliography of articles that have appeared in Portuguese journals, society transactions or elsewhere, bearing on the war.

The Parkin Prize.—In the terms of a bequest made to the Royal College of Surgeons, Edinburgh, by the late Dr. John Parkin, a fellow of the college, a prize is offered for the best essay on "The Curative Effects of Carbonic Acid or Other Forms of Carbon in Cholera, for Different Forms of Fever and Other Diseases." The prize is 100 pounds sterling. The contest is open to competitors of all nations. Essays intended for competition must be written in the English language, must bear a motto and be accompanied by a sealed envelope bearing the motto outside and the name of the author inside, and must be received by Dr. J. S. Fowler, secretary of the college, not later than December 31.

Deaths in Other Countries

Dr. **A. Suazo** of Comayagua, Honduras.——Dr. **J. J. Naón** of Tucuman, Argentina, professor of anatomy at the university of Buenos Aires until his resignation in 1906.——Dr. **F. T. Christen,** a well known roentgenologist of Lausanne, was drowned recently.——Dr. **Karl Toldt,** professor emeritus of anatomy at the University of Vienna, aged 80.

CORRECTION

Pathological and Not Bacteriological.—In THE JOURNAL of May 1, an Alabama item stated erroneously that the Birmingham Bacteriological Society was formed on March 17 with fourteen members. The society referred to is the Birmingham Pathological Society which was organized on that day, with thirty members.

Error in Discussion of Syphilis.—Dr. G. E. Humphrey, Cambridge Springs, Pa., calls attention to the fact that in the discussion of a paper by Dr. Sanger Brown on "Syphilis," THE JOURNAL, June 5, page 1569, Dr. S. W. Lindsay of Topeka, Kan., says: "Twenty years ago I treated a young man who had syphilis, with the old time salvarsan." Dr. Humphrey calls attention to the fact that salvarsan was not introduced until about 1910.

Government Services

Army Medical School Graduation

The commencement exercises of the Army Medical School were held May 28, in the new National Museum Auditorium, Washington, D. C., Major-Gen. Merritte W. Ireland, Surgeon-General, U. S. Army, presiding. Newton D. Baker, Secretary of War, addressed the graduates and presented the diplomas. The Hoff Memorial Medal was awarded to Major Seymour C. Schwartz, M. C., U. S. Army, and was presented by Major-Gen. Merritte W. Ireland; the Sternberg Medal was awarded to Lieut. August Pacini, M. C., U. S. Army, and was presented by Col. Richard Sternberg, and the Skinner Medal was awarded to William O. Callaway, and was presented by Major John O. Skinner, M. C., U. S. Army, retired. A class of twenty-seven was graduated.

Health Conditions of the Army

Health conditions among troops in the United States continue excellent as evidenced by the decrease in the admission and noneffective rates. There were three new cases of pneumonia reported during the week from Camp Taylor, which for the last few weeks has been reporting a number of sporadic cases of measles. The number of admissions for influenza and measles show a slight increase over last week. There were fifteen new cases of influenza reported during the weeks all from the Eastern Department. The death rate for disease, 4.0, is considerably higher than last week, 2.7. Of thirteen deaths from disease reported, tuberculosis was given as the cause in four, pneumonia and scarlet fever, one each, and streptococcic meningitis three.

MEDICAL OFFICERS, UNITED STATES NAVY, RELIEVED FROM ACTIVE DUTY

ILLINOIS
Chicago—Merrill, L. C.

LOUISIANA
New Orleans—Thomas, G. A.

MASSACHUSETTS
Boston—Meledy, J. A.
Redden, W. R.

NEW YORK
Brooklyn—Cragin, H. S.

PENNSYLVANIA
Dudley—Dovey, H. L.

TEXAS
Tyler—Pope, I., Jr.

Foreign Letters

PARIS

(From Our Regular Correspondent)

May 27, 1920.

Our Present Knowledge of Immunity

Since 1901, when Metchnikoff published his classic work on immunity, our knowledge of the phenomena of immunity has been considerably augmented, especially in the domain of serology. It is no exaggeration to state that the study of these phenomena has been raised to the status of a distinct and independent science. Unfortunately, up to the present, the fundamental literature of this new science is scattered in the special periodicals. We are in need of a general statement of the laws of immunity. No one was better qualified to make such a statement than Prof. Jules Bordet, director of the Pasteur Institute of Brussels. The works of Bordet have, in fact, played an important rôle in the progress of immunology, for it is only since 1898, with Bordet's discovery of hemolytic serums, that the question of the resistance of the organism to pathogenic agents has been able to assume an important position. Bordet's "Traité de l'immunité dans les maladies infectieuses" (just published by Masson et Cie, Paris) undoubtedly represents the most complete exposition of the problem of immunity which has yet appeared. It deserves being called to the special attention of the American medical profession, for the study of immunity has always created a lively interest in the United States. The organization of the American Association of Immunologists in itself sets a good example to the Old World.

Indications for Heliotherapy

At the congress for the promotion of mineral water, climatic, bathing and mountain health resorts, recently held at Monaco, Dr. d'Oelsnitz of Nice made an interesting report on heliotherapy as an auxiliary to climatic treatment.

In surgical tuberculosis marine heliotherapy is apparently the agent of choice. But mountain resorts should not be ignored. Less stimulating than the northern sea coast, they are still the preferable indication for certain nervous and excitable patients. Tracheobronchial tuberculosis is clearly admitted in the list of diseases amenable to treatment by sunlight. In pulmonary tuberculosis, on the other hand, despite early enthusiasm, there is a growing tendency away from this measure. Sunlight can be applied with advantage in pleural tuberculosis after disappearance of the effusion. In pulmonary tuberculosis, heliotherapy often exerts a prophylactic action by arresting the development of glandular foci. For injuries, and atonic and infected wounds, heliotherapy should be employed no matter where. This is not true of disorders of general nutrition, digestive and nervous affections; these are amenable to heliotherapy only secondarily or accidentally, and climatic treatment is always the primary indication. An exception should be noted in rickets, in which heliotherapy at the seaside is the elective treatment. In his conclusions, Dr. d'Oelsnitz insisted on the necessity of subordinating, by attentive observation of the individual reactions, the intensity of treatment to the local and general effects produced in a given case. In a word, the indications for, and the dosage and technic of heliotherapy, aside from a few approximate rules, must still be based more on the individual patient than on climatic factors.

The congress, agreeing with these conclusions, resolved that because of possible accidents and complications, heliotherapy should always be subjected to medical supervision.

Antituberculosis Campaign of Red Cross Societies

The last number of the *Bulletin de la Comité National de defense contre la tuberculose* is exclusively devoted to the antituberculosis work of Red Cross societies during and after the war. Besides giving space to the activities of each of three French Red Cross societies (Société de secours aux blessés militaires, Union des Femmes de France, and Association des Dames françaises), the *Bulletin* gives prominence to an article by Professor Letulle on the rôle of the American Red Cross in the campaign against tuberculosis in France during the war.

LONDON

(From Our Regular Correspondent)

May 29, 1920.

A Systematized Medical Service: A Revolutionary Scheme

A scheme which will revolutionize medical practice in this country and is certain to be adopted, whether in a modified form or not, has been officially brought forward. It is even more revolutionary than the national insurance act, which simply extended contract practice from a section of the working classes to the whole, making provision for illness compulsory instead of optional, and subsidizing the system. The new scheme affects the whole of medical practice and aims at bringing within the reach of every patient all the advances of science and the expensive and complicated equipment necessary for their application.

When the ministry of health was formed last year, provision was made for a consultative council, consisting of physicians, to advise the minister on medical affairs. He invited it to consider the problem of a systematized medical service. The council has now presented its report, which begins with a description of the failure of the present organization of medicine to bring the advantages of medical science within reach of the people. Medical treatment, while becoming more effective, tends to become more complex. This tendency is exemplified in the modern handling of such complaints as appendicitis and tuberculosis. As the complexity of treatment becomes greater, it grows increasingly difficult for the individual practitioner to administer the full range of treatment, requiring, as it does, access to such resources as those of bacteriology, biochemistry, radiology and electrotherapeutics, while the number of patients who can afford to pay for it diminishes. Public opinion, again, appreciates more and more that the home does not always afford the best hygienic conditions for recovery from serious illness. Any scheme of medical service must be open, though not necessarily free, to all classes of the community; it must be such as can grow and expand and adapt itself to varying local conditions, and in each locality it must comprise and provide for all the medical services, preventive and curative, necessary to the health of the people, all these agencies being brought together in close coordination under a single health authority for each area.

At the center of the medical service of the country lies the treatment which the physician gives to his patient, either at his own office or at the patient's house. This domiciliary medical service should continue, the physician attending his patients as heretofore, either at their own homes or at his office, and carrying out there such treatment as falls within his competence. All domiciliary service would, however, be brought into relation with a "primary health center" which would serve as the rallying point of all the medical services, preventive and curative, of the district.

There would be, at the primary health center, wards of varying sizes and for varying purposes, including provision for midwifery, an operating room, a roetgenography room, n laboratory for simple investigations, a dispensary, medical

baths, and a common room which would serve as a meeting place for the physicians of the district and for the storage of clinical records on an agreed and standardized basis. There would also be accommodation for communal and preventive services, such as those for prenatal care, child welfare, medical inspection and treatment of schoolchildren, physical culture, and the examination of suspected cases of tuberculosis. So far as midwives and nurses are not available in particular districts under other arrangements, their services could be provided from a center. A dental clinic with a staff of visiting dental surgeons would be another important branch of the equipment.

These primary health centers, one of which should ultimately be found in every convenient center of population, should be staffed by the physicians of the district, patients who visited them or were accommodated in them retaining the services of their own physician. The physician would be able to arrange for the transference of a patient to the primary health center where, retaining the patient still under his own care and control, he would be able to continue the treatment under more favorable circumstances and with a readier access to the resources of modern medical science than are afforded in the office or are possible within the patient's own home. The primary health center would provide the patient (on the terms described below) with food, nursing and all equipment for efficient treatment, but not with medical attendance, which would be paid for either by the patient himself (if a private patient) or through some method of insurance or by the local health authority. While the primary health center thus provided the physician with means not now generally available of offering his patient what may be described as "hospital treatment," while still keeping him under his own control, it would also serve the physician as a center of professional life, bringing him into daily contact with the other physicians of his district, and occasional contact with the consultants and specialists who would attend at fixed intervals from the "secondary health centers" with which each group of primary centers would be brought into relation.

The "secondary health centers" would be situated in a town where an adequate equipment would be possible and an efficient staff of consultants and specialists could be assembled. Each secondary health center would be within access of all the primary health centers in the area. For many secondary centers the nucleus of organization would be found in existing hospitals. Like the primary health centers, the secondary centers would bring together into one organization agencies both of preventive and curative medicine, though in the secondary center each agency would be of a more specialized character. On the curative side, for example, the services of the secondary health centers would be mainly of a consultative type. They would receive cases referred to them by the primary centers either on account of difficulties in diagnosis or because in the diagnosis or treatment of such cases a highly specialized equipment was necessary. Secondary health centers would, in fact, need a complete hospital equipment.

Patients referred for consultation or treatment from the primary health centers would attend at the outpatient clinics of the secondary center or would occupy inpatient beds. The medical staff of the secondary center would be responsible for the treatment of these patients, but physicians would have every opportunity to keep in touch with their patients while attending the center and to resume supervision over them on discharge. The duties of consultants attached to secondary centers would consist of regular attendance at fixed times in their outpatient clinics where they would see cases referred to them; periodic visits to primary health centers in the district allotted to them, and special visits of emergency to primary health centers and, in certain circumstances, to the homes within their areas, always in consultation with the physician. The consultants would be part-time officers and would be paid on a time basis, with extra fees for special visits. Where it is geographically possible, every secondary health center should be brought into relationship with the teaching hospital. The teaching hospital of the district would be found in some large city, and to it would go cases of unusual difficulty from secondary and primary health centers, which would in turn be permeated by the academic influence and the spirit of inquiry and progress associated with a teaching hospital. While preventive services must of necessity be publicly provided, the provision of curative services free of charge at the health centers would impose a heavy burden on public funds. In the public wards of the primary and secondary health centers, standard charges should be made for treatment, though these charges might vary in different parts of the country, and they could only as a rule be a contribution to the cost of treatment, which is often in its entirety beyond the means of many citizens. Private and self-supporting wards should be a part of the provision at the health centers, though the essential services in the public and private wards would be identical.

In order to administer the scheme in each district, the council glances at the need for a new type of local health authority to bring about unity of local control of all health services, curative and preventive. On this body the council asks for due representation of the medical profession, and is of opinion that the authority should in each case be assisted by a local medical advisory council.

On the subject of a state medical service, it says: "The alternative of a whole-time salaried service for all doctors has received our careful consideration, and the council holds that by its adoption the public would be serious losers. No doubt laboratory workers and medical administrators who do not come in personal contact with the sick can with advantage be paid entirely by salary. The clinical worker, however, requires knowledge not only of the disease but of the patient: his work is more individual, and if he is to win the confidence so vital to the treatment of illness, there must be a basis not only of sound knowledge but of personal harmony. The voluntary character of the association between doctor and patient stimulates in the former the desire to excel both in skill and helpfulness. In no calling is there such a gap between perfunctory routine and the best endeavor, and the latter would not be obtained under a whole-time state salaried service, which would tend, by its machinery, to discourage initiative, to diminish the sense of responsibility, and to encourage mediocrity."

VIENNA

(From Our Regular Correspondent)

May 28, 1920.

Work of the American Red Cross

In April, the American Red Cross took up its welcome work in Vienna, and its beneficial effects are now felt in all hospitals and charitable institutions. The chief aim of the work is to assist the hospitals and convalescent homes in their special efforts, by distribution of the necessary articles of food and nursing supplies. A committee of Vienna physicians is cooperating with the Red Cross in this respect. Infants and nursing mothers are receiving special attention by distributions through the Society of Friends, which depends chiefly on the resources of the Red Cross for its humanitarian work. A large number of charitable institutions which direct their attention to the deplorable conditions of the so-called middle classes (the latter are now really worse off), receive valuable gifts in the form of food

and clothing. It is a good idea that articles of clothing, garments, linens, bed-clothes, etc., show a small label, bearing the words "Compliments, American Red Cross," with the name of the district and the town whence they are sent. Major Davis, in charge of the Department of Vienna, lays special stress on the fact that the American officers connected with the Red Cross do not interfere with commercial, political or religious affairs of the communities in which they are working. Among the most valuable articles provided by the American Red Cross are medicines and drugs which are not obtainable here. Quinin, opium, morphin, cocain and camphor are real rarities. The price for morphin, for instance, rose to 800,000 Kroner (over $4,000) per kilogram. Surgical instruments and objects made chiefly of glass or rubber, which are needed very badly, are available at the Red Cross storehouses in great quantities; the same is true of clothing for hospital patients, shirts, gowns, robes, shoes and the like. Furthermore, 4,000 cases of emergency rations of the American Army, including cocoa, condensed milk, preserved meat, salt, sugar, tea and matches are in storage awaiting distribution. The funds and stocks of the organization are being constantly replenished, so that the activities appear to have a permanent character. This work will prove not only a most valuable help in distress, but it will impress the public with the earnestness and the humane feelings of the American people as a whole.

Dearth of Foreign Scientific Literature

As has been pointed out previously, the scientific institutes of Vienna are very much handicapped in their work by the deplorable lack of books and periodicals published abroad since the outbreak of the war. Because of the exchange rates, the institutions with their insignificant funds cannot purchase foreign journals or books, since, for instance, the annual subscription of a single leading American, English or French medical periodical consumes from 20 to 25 per per cent. of the total sum available. Appeals for gifts of periodicals have been made by the University of Vienna to different foreign institutes, but to date the results are very meager. Another subject of distressing nature is the constant rise in the cost of printing and of paper, whereby the medical press of the country is seriously hampered, with the imminent danger that some of our most distinguished medical periodicals will be forced to suspend publication. Naturally, not only the students in the institutes are materially interested in the matter, but also the general practitioners. It is difficult to see how they are going to keep abreast with the scientific work of the world, and how they will succeed in publishing the results of their own investigations, if the chief means of international communication are suppressed.

The Campaign Against Prostitution and Venereal Diseases

From time to time the daily papers publish items about the fight being waged by the police sanitation committee on prostitution. However, the problem is surrounded by so many difficulties, that public discussion of this serious matter is not readily countenanced. The facts underlying the problem are as follows: It is clearly understood that the great war caused an enormous increase in the incidence of venereal diseases, while the morals of the general public have been quite lax. In all large cities of the continent, public and clandestine prostitution has been promoted to a most deplorable degree by the accumulation of soldiers, but perhaps nowhere so much as in Vienna. Here bad economic conditions have contributed with other factors to deprave the moral standard of certain classes of women. In former times the "street-walker" or the occasional clandestine prostitute hailed chiefly from such classes as waiters, unemployed housemaids and factory girls, while today, these form only a small percentage of the grand total. Now shop girls, clerks, typewriters, and even daughters and wives from reputable families become victims of the economic misery. Not so much the desire for luxury and pleasure as sheer poverty and hunger drive them to the road of shame. The figures obtained by the police are simply appalling. The police, as a routine matter, make surprise visits to small hotels, hostelries, bars and similar places, and cause all women found there without good reasons to be examined. In 1919, 7,000 women and girls were arrested under suspicion of clandestine prostitution. Of these over 1,700 suffered from manifest venereal disease, and 2,400 were dealt with by a special department of the police. Among the latter, 800 were between 18 and 21 years of age, more than 40 per cent. being venereally infected. An additional 380 were under 18 years of age, and of these 50 per cent. were diseased. Even worse conditions were found in the "surprise raids" conducted this year. Up to April 1, the police department had ordered the examination of over 800 women and girls found in suspicious surroundings. Ninety girls were between 14 and 18 years old, 60 per cent. of them diseased, and nearly 40 per cent. of all those examined were found infected. Naturally this represents only a percentage of those who actually lead such a life. The counterpart is to be found in the outpatient departments of our dermatologic clinics, where the number of men suffering from venereal diseases is constantly increasing. The government has instituted a number of so-called evening ambulatory clinics in all districts of the city, chiefly on the outskirts where the working classes are congregated. Altogether about twenty-five such ambulatory clinics are now functioning, conducted by duly qualified specialists in venereal diseases. Here, investigations are being made as to the source of infection, and it appears that about 70 per cent. of all men cohabiting with prostitutes become infected in spite of all prohibitive and prophylactic measures. Therefore the police have recommended the adoption of a law enforcing the examination, and, where necessary, the detention and treatment of the male partner in all instances of prostitution. For what does it avail to detain the women while the men are permitted to disseminate venereal diseases ad libitum? The idea has been commented on favorably by medical experts and by the government, and in the new health act, now under consideration, this point will be earnestly dealt with. It is proposed to make the wilful transmission of venereal diseases, irrespective of the sex of the culprit, a punishable offense and to enforce compulsory treatment of venereal diseases.

Marriages

Clarence J. Manly, Colonel, M. C., U. S. Army, to Mrs. Mabel Graham Billingslea of Westminster, Md., at Baltimore, June 5.

William Parker Herbst, Rochester, Minn., to Miss Catherine Arnold of Chicago, at Lake City, Minn., June 12.

Julius Asher Miller, New York City, to Miss Pearle M. Lebowich of Dixon, Ill., May 28.

Lewis Samuel Booth to Miss Elizabeth Willard Stead, both of New York City, June 1.

Stewart Ellsworth Mandeville to Miss Fern Anderson, both of New York City, May 4.

Lee Hollister Ferguson to Miss Margaret A. Knapp, both of New York City, May 20.

Edward T. Juchhoff, Chicago, to Mrs. Lois E. Masters of Jacksonville, Ill., April 22.

Max John Schroeder to Miss Shirley Goldberg, both of New York City, June 12.

Deaths

Joseph Willis Houston, Lancaster, Pa.; Jefferson Medical College, 1857; aged 86; a member of the Medical Society of the State of Pennsylvania, assistant surgeon of Pennsylvania Volunteers during the Civil War; professor of natural sciences at Lincoln University for six years, and dean of the faculty of the medical department; surgeon of the Maryland Division of the Pennsylvania system for fifteen years; died, June 5.

Edward Herman Miller Sell, New York; Bellevue Hospital Medical College, 1866; aged 87; one of the seven organizers of the New York Academy of Medicine, and the sole survivor; editor of the *Physician and Pharmacist* from 1869 to 1880; a fellow and once vice president and treasurer of the American Academy of Medicine, who made special studies regarding liquor and drug addiction; died, June 6.

Alfred Harris Kelly, Louisville, Ky.; Louisville, Ky., Medical College 1895; aged 46; Captain, M. C., U. S. Army, and discharged on account of physical disability August 21, 1918; formerly coroner of Jefferson County, and professor of chemistry and toxicology at the University of Louisville; for more than a year medical director of Hazelwood Sanatorium; died, May 28, from cerebral hemorrhage.

Carl John Ringnell ⊕ Minneapolis; University of Minnesota, Minneapolis, 1891; aged 55; a member and executive secretary of the State Board of Medical Examiners and a leader of the movement which resulted in the enactment of an anti fee-splitting law; one of the founders of the Swedish Hospital, Minneapolis; at one time deputy coroner of the city; died, June 2.

Henry James Millard, North Adams, Mass.; Berkshire Medical College, Pittsfield, Mass., 1864; aged 84; a member of the Massachusetts Medical Society; a member of the staff of the North Adams City Hospital; assistant surgeon of the Thirty-Fourth Massachusetts Volunteer Infantry during the Civil War; died, May 30, from heart disease.

James Sylvanus Sprague, Belleville, Ont.; Victoria University, Cobourg, Ont., 1869; Trinity Medical College, Toronto, 1890; aged 75; for several years examiner on materia medica and therapeutics of the Medical Council of Ontario, and once a member of the State Board of Medical Examiners of Iowa; died, April 23.

Isaac A. Shirley, Winchester, Ky.; University of Louisville, Ky., 1875; Bellevue Hospital Medical College, 1879; aged 71; a member and president in 1909 of the Kentucky State Medical Association; formerly vice president and president of the Clarke County Medical Society; a member of the State Board of Health; died, June 5.

Edward Dennis McGiverin, Jersey City, N. J.; University and Bellevue Hospital Medical College, 1909; aged 34; Lieutenant, M. C., U. S. Army, during the World War, and resigned on account of poor health; while on his way to California for his health, died at the Elk's Club, Salt Lake City, June 7.

William S. Jones ⊕ Camden, N. J.; Jefferson Medical College, 1878; aged 62; for fourteen years a member of the faculty of his alma mater; superintendent of the Old Soldiers Home, Vineland, N. J., and State Medical Examiner of Institutions; died, June 8, from heart disease.

John Harrell Maxwell, Newton, Ill.; Medical College of Ohio, Cincinnati, 1878; aged 85; hospital steward of the Thirty-Eighth Illinois Volunteer Infantry during the Civil War; one of the founders of the Jasper County Medical Society; died, April 3, from cerebral hemorrhage.

Antonio Villanicencio, Taal, Batangas, P. I.; Santo Tomas University, Manila, P. I., 1915; a member of the Philippine Islands Medical Society, who was taking a postgraduate course in New York; died in the Post-Graduate Hospital, New York, February 6, from lobar pneumonia.

Burl Samuel Hood, Bond, Miss.; University of Nashville, 1906; aged 39; a member of the Mississippi State Medical Association; lieutenant, M. C., U. S. Army, with service in France, and discharged July 3, 1919; was shot and instantly killed at the home of a patient, June 3.

Ferdinand Siegel ⊕ Brooklyn; University of the City of New York, 1890; aged 53; chief of the general medical staff and associate pediatrician in Bedford Maternity Hospital; died, May 25, from a nervous breakdown.

Francis Joseph Adams ⊕ Great Falls, Mont.; Georgetown University, Washington, D. C., 1881; aged 60; a specialist in surgery; while returning in his automobile from Belt to Great Falls, Mont., June 2, was killed by the overturning of his car.

Harry Dushane Todd ⊕ Akron, Ohio; Eclectic Medical Institute, Cincinnati, 1898; aged 43; police surgeon of Akron for fifteen years; visiting physician to the Akron City Hospital; died, May 25, from heart disease.

Richard William Muller ⊕ New York; University of the City of New York, 1879; aged 69; a specialist in dermatology; a member of the New York Academy of Medicine; died, June 3, from heart disease.

Nathaniel F. Lindsay, Robinson, Ill.; University of Louisville, Ky., 1878; aged 70; a member of the Illinois State Medical Society; died, March 26, from carcinoma of the pancreas.

William Henry Woodbury, Buffalo; University of Buffalo, 1888; aged 56; a member of the Medical Society of the State of New York; a specialist in diseases of the lungs; died, May 8.

Kesey Shindle Marlin, Dakota, Ill.; Pennsylvania Medical College, Philadelphia, 1854; aged 89; surgeon of U. S. Volunteers during the Civil War; died, March 2, from senile debility.

Alvah M. Davis ⊕ Philadelphia; University of Pennsylvania, Philadelphia, 1892; aged 49; assistant to the nose, throat and ear clinic of Germantown Hospital; died, May 14.

Edith Winifred Stewart ⊕ Hume, N. Y.; University of Buffalo, 1898; aged 45; died in the Warsaw (N. Y.) Hospital, May 16, three weeks after an operation for appendicitis.

George E. Powell, LaCrosse, Wis.; College of Physicians and Surgeons, Keokuk, Iowa, 1884; aged 71; a noted scout on the plains during the Indian uprisings; died, May 17.

Guy Burrell Stall, Detroit; Detroit Homeopathic College, 1904; aged 39; a member of the Michigan State Medical Society; died, May 17, after an operation for a carbuncle.

Isham Griffin Wilson, Demopolis, Ala.; Tulane University of Louisiana, New Orleans, 1868; aged 76; died at the home of his niece in Selma, Ala., May 17, from heart disease.

William Ardrey Kellogg, Fort Adams, Miss.; Jefferson Medical College, 1897; aged 47; is reported to have been accidentally burned to death in his room, May 17.

Simon D. Shive, Bannerville, Pa.; Baltimore Medical College, 1882; aged 66; a member of the Medical Society of the State of Pennsylvania; died, March 12.

Charles O'Reilly, Toronto, Ont.; McGill University, Montreal, 1867; aged 73; for thirty years superintendent of the Toronto General Hospital; died, May 3.

Wyndon Hewitt Davis, Libertyville, Iowa; University of Iowa, Iowa City, 1920; an intern in Harper Hospital, Detroit; died in that institution, about May 19.

Joseph R. Baker, Sanders, Ky.; University of Louisville, Ky., 1908; aged 43; died in the Jewish Hospital, Louisville, May 11, after a surgical operation.

Harry Abram Cosler, Osborn, Ohio; Ohio Medical University, Columbus, 1902; aged 47; a member of the Ohio State Medical Association; died, May 13.

Clyde H. Duncan, Fairmont, W. Va.; Chicago Homeopathic Medical College, 1894; aged 47; died in the McMillan Sanitarium, Columbus, Ohio, May 12.

Samuel F. Hazlehurst, Colorado Springs, Colo.; University of Pennsylvania, Philadelphia, 1876; died in a hospital in Colorado Springs, May 13.

O. L. Kilborn, Chengtu, China; Queen's University, Kingston, Ont., 1889; a medical missionary for twenty-nine years; died in China, about April 20.

Calvin E. Parker, Los Angeles; Missouri Medical College, St. Louis, 1877; formerly a practitioner of Philo and Champaign, Ill.; died recently.

James Thomas Growdon, Akron, Ohio; Kentucky School of Medicine, Louisville, 1894; aged 52; died, May 9, from the effects of rheumatism.

J. Thompson Hume, St. Petersburg, Fla.; College of Physicians and Surgeons, Baltimore, 1887; aged 64; died, May 15.

William M. Bright, Hickman, Ky.; University of Nashville, Tenn., 1869; aged 73; died, May 11, from heart disease.

Anonymous Earl Hardin ⊕ Fort Smith, Ark.; Louisville (Ky.) Medical College, 1875; aged 72; died, May 14.

⊕ Indicates "Fellow" of the American Medical Association.

The Propaganda for Reform

In This Department Appear Reports of The Journal's Bureau of Investigation, of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Fraud on the Public and on the Profession

FORMITOL TABLETS, II

Report of the Council on Pharmacy and Chemistry

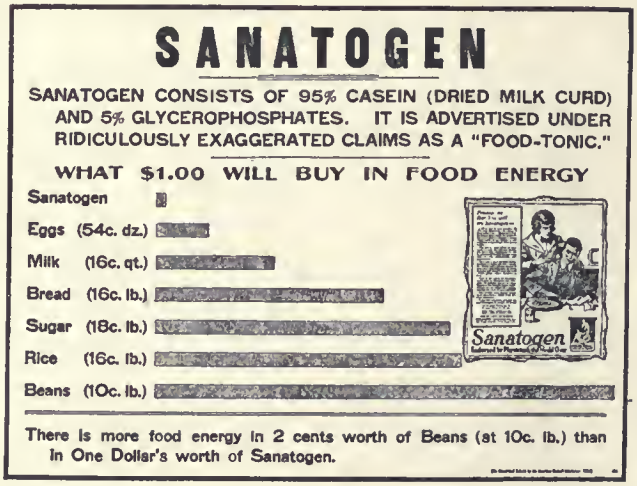
The Council has authorized publication of the following supplementary report on Formitol Tablets.

W. A. Puckner, Secretary.

In the Council report (The Journal A. M. A., Oct. 4, 1919, p. 1077) on the ineffectiveness of lozenges claimed either to contain formaldehyd or to liberate formaldehyd in the mouth, the composition of Formitol Tablets of the E. L. Patch Co. was briefly discussed in the following terms:

> "The A. M. A. Chemical Laboratory reported that Formitol Tablets contained formaldehyd (or paraformaldehyd), an ammonium compound, and some hexamethylenamin. It is probable that the formaldehyd (or paraformaldehyd) was produced by the decomposition of hexamethylenamin originally present in the tablets but decomposed by long contact with the acid."

At the time this report was published, the label and the advertising matter contained but vague and indefinite statements with regard to the composition of Formitol tablets. In the October, 1919, issue of *Patchwork*, the house organ of the E. L. Patch Co., it was denied that these tablets contain hexamethylenamin since none had ever been used in their manufacture. It was also claimed that the company had a "printed sheet giving the formula of these tablets."



Miniature reproduction of one of the educational posters prepared by the Propaganda Department of The Journal. The originals measure 22 by 28 inches.

The Council advised the E. L. Patch Co. that it desires to publish only facts about the products which it examines and that if the report on Formitol Tablets was inaccurate in any way the Council would want to correct any error it might have unintentionally made. As the Formitol advertising in the files of the Council contained no information as to the composition of the tablets, the firm was also requested to send the printed sheet giving the "formula."

When this printed "formula" came it was found to be a sheet used by the E. L. Patch Co. for the purpose of giving its salesmen information regarding Formitol tablets, to be passed on to the physician. This printed sheet conveyed the information that Formitol Tablets contain ammonium chlorid, benzoic acid, citric acid, guaiac, hyoscyamus, menthol, paraformaldehyd and tannic acid, but it gave no information in regard to the amount of any of the ingredients except that it declared that each tablet represents the equivalent of 10 minims of a 1 per cent. formaldehyd solution.

Because of the nonquantitative and therefore meaningless printed "formula" and because, also, of its complexity, it was thought desirable to make a more complete analysis of Formitol Tablets. Experience has shown that frequently the real formula of a thing is quite different from the alleged formula published by the manufacturer. The details of the laboratory's later analysis will appear in the Annual Reports of the Chemical Laboratory or may be had on request.

The result of the laboratory's additional experimental work, especially when taken in connection with investigations made elsewhere on the interaction of formaldehyd and ammonium chlorid justifies the conclusion that Formitol Tablets do contain some hexamethylenamin, even though the amount may be very small. As the E. L. Patch Co. declare that no hexamethylenamin is put into Formitol Tablets the conclusion drawn in the Council's original report to the effect that the formaldehyd probably was formed by the decomposition of hexamethylenamin was evidently an error. The hexamethylenamin present is doubtless produced by the action of the paraformaldehyd on the ammonium chlorid present.

The analysis also showed that more than 78 per cent. of the weight of Formitol Tablets was made up of sugars and about 16.5 per cent. was starch and other material, some of which was talcum or similar material. This means that about 94 per cent. of the total weight of the tablets is sugar and starch none of which are mentioned in the printed "formula." The significance of this is apparent when it is considered that there are eight ingredients listed in the "formula" for which therapeutic effects are claimed. Since a tablet weighs about 13.5 grains, the combined weight of all the claimed active ingredients is less than 1 grain per tablet!

The amount of ammonium chlorid found, as indicated by the total nitrogen, was not more than 1.0 per cent. or about ⅛ grain per tablet. The amount of benzoic acid found was 0.34 per cent. or 1/25 grain per tablet. Yet these two drugs are said to exert their peculiar expectorant action. (The U. S. P. lozenge of ammonium chlorid contains 1½ grains ammonium chlorid or twelve times the amount of this drug in a Formitol tablet.)

The tannic acid contained in the tablets could not be determined with accuracy but it was much less than 1 per cent. (or ⅛ grain per tablet) yet it is said to add valuable astringent qualities to Formitol Tablets! (The U. S. P. lozenge of tannic acid contains 1 grain of tannic acid.)

The quantity of guaiac (as resin) is but a fraction of 1 per cent. Yet it is said to impart to Formitol tablets "stimulant resolvent" properties and it is intimated that there is sufficient to be of value in "cases of abscess of the throat and inflammation of the tissues."

The total acidity indicates the presence of about 2 per cent. of citric acid or ¼ grain per tablet. Yet this amount is said to be "antiseptic" and "aids in the general results."

While the presence of the drug hyoscyamus (henbane) was not positively identified by microscopic examination, alkaloids were present.

The manufacturers claim that the tablets contain menthol yet only a suggestion of menthol could be obtained from the odor. However the odor of methyl salicylate—a constituent *not* declared in the "formula"—predominated throughout the operations of analysis.

Formitol tablets furnish a good illustration of some well established but often ignored truths:

1. "Formulas" that are nonquantitative are valueless or worse than valueless.

2. The fact that a manufacturer puts certain drugs in a mixture, is no proof that these drugs are there when the mixture reaches the patient. The physician must be assured that they are there when he prescribes them.

3. Complex mixtures should be avoided. It is absurd to expect, as is claimed in the case of Formitol Tablets, anodyne, antiseptic, astringent, expectorant, and resolvent action all at the same time.

Correspondence

MEASUREMENT OF RADIUM

To the Editor:—In the routine testing of hermetically sealed radium preparations, the ionization produced in a given ionization chamber by the penetrating gamma radiation proceeding from the preparation is compared with that produced under the same conditions by the similar radiation from a standard containing a known amount of radium. Mesothorium preparations also emit a penetrating gamma radiation, and consequently by a single comparison with the radium standard in the manner just indicated there is no means for distinguishing such a preparation from one containing only radium and its derivatives.

It is for this reason that the usual radium certificate issued by the National Bureau of Standards contains no statement concerning the actual amount of radium contained in the preparation, but merely a statement of its equivalent radium content. The primary object of the measurement of such preparations by the bureau is to insure the purchaser against any serious error in the radioactive measurement of the preparation.

The carnotites, from which the domestic radium is produced, are known to contain only a negligible amount of mesothorium. Tests made on radium produced from such ore gave no evidence of the presence of mesothorium, and were such as to indicate that the mesothorium present cannot exceed 0.2 per cent. of the radium content of the material. Consequently, it is quite safe to assume that the radium produced from these deposits will be practically free from mesothorium unless the latter product is deliberately added. This is a matter over which the producer has control and concerning which he can speak with confidence. It is customary for the domestic producers of radium to guarantee that their product is practically free from mesothorium, and such a guarantee might well be requested by the purchaser.

Although the examination of a hermetically sealed radium preparation for the presence of mesothorium forms no part of the routine measurement of such materials by the bureau, such examination will be made when requested under conditions that justify the work. These examinations are laborious, require the opening of the preparation and the removal of some of the salt, and involve the risk of a considerable loss of material. As in the case of all tests made by the bureau, the applicant must furnish the material used, assume the risk of loss, and pay a fee commensurate with the labor involved.

On the other hand, even without this examination the purchaser is not left entirely to the mercy of unscrupulous dealers. Repeated gamma ray comparisons, using radiations filtered through different thicknesses of lead, will in general furnish data from which it can be determined whether much of the radiation from the preparation is due to mesothorium. Such tests on sealed specimens are deliberately made from time to time, and similar but less complete data are incidentally obtained from many specimens in the routine course of the testing. In no case has such test revealed to us the presence of mesothorium in any preparation that has been submitted to this bureau as one free from mesothorium; but few imported preparations have been so tested.

Another check on the possible presence of a significant amount of mesothorium in a radium preparation is afforded by its remeasurement. If the preparation contains a significant amount of mesothorium, then a second measurement made several months after the first will reveal:

1. A growth in the intensity of its radiation if all radiothorium had been removed from the material shortly before the first measurement.

2. Little or no growth if the radiothorium was last removed two or three years before.

3. A decrease of the radiation if the radiothorium had not been removed for over three years.

It is evident that unless the two measurements are very specially related to the age of the contained mesothorium, they will reveal its presence.

In the course of its work, the bureau has to its knowledge remeasured forty-seven radium preparations after intervals varying from two weeks to four years. Preparations from three domestic producers are included in the list. Some of these preparations were resubmitted by their producers, others by their purchasers. For fifteen of the preparations, the interval between these measurements exceeded six months. In no case did the difference between the two measurements exceed the sum of the allowable uncertainties of the two measurements. Excepting a single case in which the initial determination was known to have an unusually low precision, a difference as great as 0.9 per cent. was found in only one instance. The average difference was 0.34 per cent. The second measurement usually, but not always, exceeded the first. This probably results from the fact that in many cases the radium had not fully attained its equilibrium at the time of the first measurement. Even thirty days after the radium preparation is sealed, it is 0.45 per cent. short of its maximum gamma radiation.

Whence it is seen that as yet we have found no indication that any hermetically sealed preparation offered by a domestic producer as a radium preparation contains an appreciable amount of mesothorium. Very few such specimens offered by small dealers, jobbers or importers of radioactive material have been submitted to the bureau. Consequently we are at present not prepared to express an opinion concerning the material obtained from such sources.

S. W. STRATTON, PH.D., Washington, D. C.
Director, Bureau of Standards.

A NEGLECTED AID IN DIAGNOSIS AND PROGNOSIS—THE OPHTHALMOSCOPE

To the Editor:—My object in writing is to promote the more frequent use by the general practitioner of an instrument that is far too little used, considering its value to the medical profession, namely, the ophthalmoscope. The ophthalmoscope is an aid to the diagnosis not only of diseases of the eye itself but also of general diseases. And yet it is deplorable to see what little use is made of this aid by the majority of physicians. In looking over case reports, how often do we see the records of the findings of every test known to science, except the easiest of all tests, the ophthalmoscope? Since easily manipulated electric instruments are now obtainable, a practitioner is lax indeed who does not own one along with his blood pressure apparatus. The most surprising thing of all is that the large insurance companies have not before this insisted on it as part of the examination.

On the other hand, the chief may look at an eye-ground and say nonchalantly to the resident, "There is an interesting case of so-and-so;" handing the ophthalmoscope to the resident, who, looking into the eye, does not at once see the condition, but is ashamed to admit it, says that he does, and thereby learns nothing. Thus he goes all through his service, rarely seeing an eye-ground, and later, never even attempting to look at one, as it seems too intricate for him to master. Of course the only solution of this is closer cooperation in the eye department, and the only way in which this can be brought about is for the ophthalmologist to show enough interest in the intern so that he will be glad to learn, and, once having gained the knowledge, will be more likely to follow it up in later years.

By this means the whole interior of the eye is accessible; blood vessels and nerves, which in other parts of the body are exposed only by surgery, are here plainly seen in their normal positions.

From a diagnostic and prognostic standpoint it is the only reliable instrument that we have. By the use of the sphygmomanometer one can tell that the pressure is high at that particular time, but that does not show us whether it is transient or permanent. With the ophthalmoscope, when one finds the small, hard, tortuous or ruptured vessel, one knows definitely that it is a permanent affair, and what the ultimate outlook is. If physicians would use it more generally as a part of the routine examination, many vague and indefinite cases would have their diagnosis established earlier.

L. G. Redding, M.D., Scranton, Pa.

GAIN IN WEIGHT IN SOLDIERS

To the Editor:—Many exaggerated statements have been made as to the gain in weight soldiers have acquired during the war. So says the Surgeon-General of the Army (The Journal, Feb 21, 1920, p. 499), and he adds that at the present time no correct statement can be made.

The following facts were observed on the personnel of Base Hospital 76, with which we were mobilized at Camp Devens in July, 1918 (first weighing), and with which we served in Vichy, Allier, France (second weighing, six months later). During the first month in the American Expeditionary Forces, 42 per cent. of our unit had so-called influenza, but otherwise suffered comparatively few food difficulties or other hardships, and may therefore be presumed to show as favorable a gain as any command.

Gain in weight was seen in 194 men, or 84 per cent. of the series of the 229 subjects studied; and in these the gain averaged 8 per cent., with a maximum of 25 per cent. above the weight at enlistment. Loss in weight was noted in 10 per cent. of the series and in these the loss averaged 5 per cent. with a maximum of 18 per cent. below the weight at Camp Devens. Constant weight was observed in 6 per cent. of the series, whereas in 94 per cent. there was some change. This variation, averaging gains and losses together, was 7 per cent. of the weight at entry into service. Age played no part, that is, gains were no greater nor more frequent among the younger men than among the older. The foregoing conclusions are derived from figures presented but not analyzed elsewhere (Gray, Horace, and Mayall, J. F.: Body Weight in 229 Adults, *Arch. Int. Med.*, to be published).

Horace Gray, M.D., Boston, and
F. B. Allen, M.D., North Wales, Pa.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

EXAMINATIONS FOR OFFICERS OF MEDICAL DEPARTMENT

To the Editor:—Will it be necessary for a physician who is already in the Medical Reserve Corps to take any further examinaton in order to enter the regular army? A. A. Sizer, M.D., Sebuyler, Va.

Answer.—Yes. An examination will be held, July 7, 1920, for officers of the Medical Department at the following places:

Northeastern Department, Headquarters, Boston.
General Hospital No. 6, McPherson, Ga.
General Hospital No. 21, Denver.
General Hospital No. 28, Fort Sheridan, Ill.
General Hospital No. 41, Staten Island, N. Y.
Camp Pike, Little Rock, Ark.
Camp Taylor, Louisville, Ky.
Camp Funston, Manhattan, Kan.
Fort Sam Houston, San Antonio, Texas.
Letterman Hospital, San Francisco.
Walter Reed Hospital, Washington, D. C.

All physicians who served as officers of the Medical Department between April 6, 1917, and June 5, 1920, are eligible, and all grades are open within the restrictions of the law.

Applications must be in the War Department on or before June 23. Applications will be considered only from persons who since March 25 have received and replied affirmatively to inquiry from the War Department as to whether or not they desire further consideration given their application in the Regular Army; also to persons who since March 25 submitted Form 739 to the War Department, and all other eligible persons who submit Form 739 at once. Copies of this form may be obtained through the Surgeon-General's Office.

The age limit for all grades is 58 years: 48 to 58 for Colonel; 45 to 58 for Lieutenant-Colonel; 36 to 58 for Major, with no restrictions regarding captain. Appointment and grade will be determined by record of the applicant while in the service. His rank at the time of discharge will probably not be exceeded in the reappointment. The possession of a medical degree will exempt the applicant from the general educational examination, but a professional examination is required on the subjects of medicine, surgery, sanitation and administration.

FORMULA FOR MOUTHWASH

To the Editor:—Please furnish me with a formula for the best mouth wash to be used by patients after tooth extraction and for general mouth hygiene. I desire this for my private practice and for use in my clinic. A. R. W.

Answer.—

LIQUID DENTIFRICE

	Gm. or C.c.
Castile soap, dried and granulated	6.00
Benzosulphinid	0.20
Basic fuchsin	0.002
Oil of cassia	0.50
Oil of peppermint	0.50
Oil of cloves	1.00
Alcohol	75.00
Water to make	100.00

A few drops added to water to be used as a mouth wash.

It will be noted that, excepting for the volatile oils present, antiseptics and disinfectants are conspicuous by their absence. As is well known, it is impossible to disinfect the mouth. Mere bacteriostatic (germ growth inhibitive) influence can be of value only as long as the agent is present; and the time that one is willing to keep the mouth full of fluid is limited.

The chief virtue of mouth wash preparations lies in their esthetic qualities: their pleasant appearance, odor and taste, which make one use them with a greater degree of pleasure and therefore more faithfully. The formula given yields a pleasant detergent.

METHOD OF SECURING MEDICAL LICENSURE IN LARGE NUMBER OF STATES

To the Editor:—I am about to enter on the practice of medicine but have no definite location in mind. By what method can I secure medical licensure in the largest number of states? Please omit my name. E. M. B.

Answer.—1. By taking the examination of the National Board of Medical Examiners you could obtain a certificate now recognized in twenty states. These were named in The Journal, April 17, 1920, p. 1100. For further information, write to Dr. John S. Rodman, secretary, 1310 Medical Arts Building, Philadelphia.

2. Take your examination in some state—such as Michigan, Indiana or Wisconsin—which has reciprocal registration with thirty or more other states. To secure reciprocal privileges, however, you will need to practice for at least one year in the state granting your original license. Full information is contained in "Laws Regulating the Practice of Medicine," which is published by the American Medical Association. A copy of this book will be forwarded on receipt of 50 cents.

SMALLPOX PITTING UNREMOVABLE

To the Editor:—Is there a remedy for treating the old lesions of the skin caused by smallpox? If so, which is the best?
Honorio F. Delgado, M.D., Lima, Peru.

Answer.—There is no way of removing the scars (pitting) of smallpox.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA: Montgomery, July 13. Chairman, Dr. S. W. Welch, Montgomery.

ARIZONA: Phoenix, July 6-7. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.

CALIFORNIA: San Francisco, June 28-July 1. Sec., Dr. Chas. B. Pinkham, 135 Stockton St., San Francisco.

COLORADO: Denver, July 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

CONNECTICUT: Hartford, July 13-14. Sec., Regular Board, Dr. Robert L. Rowley, 49 Pearl St., Hartford.

CONNECTICUT: New Haven, July 13. Sec. Eclectic Board, Dr. James Edwin Hair, 730 State St., Bridgeport. Sec. Homeo. Board, Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

DISTRICT OF COLUMBIA: Washington, July 13-15. Sec., Dr. Edgar P. Copeland, The Rockingham, Washington.

INDIANA: Indianapolis, July 13-15. Sec., Dr. Wm. T. Gott, Crawfordsville.

MAINE: Portland, July 6-7. Sec., Dr. Frank W. Searle, 140 Pine St., Portland.

NEW MEXICO: Santa Fe, July 12-13. Sec., Dr. R. E. McBride, Las Cruces.

NORTH DAKOTA: Grand Forks, July 6-9. Sec., Dr. Geo. M. Williamson, 860 Belmont Ave., Grand Forks.

OKLAHOMA: Oklahoma City, July 13-14. Sec., Dr. James M. Byrum, Mammoth Bldg., Shawnee.

OREGON: Portland, July 6. Sec., Dr. Urling C. Coe, 1208 Stevens Bldg., Portland.

PENNSYLVANIA: Philadelphia and Pittshurgh, July 6-10. Sec., Dr. Thos. E. Finnegan, State Capitol, Harrisburg.

RHODE ISLAND: Providence, July 1-2. Sec., Dr. Byron U. Richards, State House, Providence.

SOUTH DAKOTA: Deadwood, July 13. Sec., Dr. Park B. Jenkins, Waubay.

UTAH: Salt Lake City, July 5-6. Sec., Dr. G. F. Harding, 405 Templeton Bldg., Salt Lake City.

VERMONT: Burlington, June 29-July 1. Sec., Dr. W. Scott Nay, Underhill.

WASHINGTON: Seattle, July 6-8. Sec., Dr. Wm. M. O'Shea, 305 Old National Bank Bldg., Spokane.

WEST VIRGINIA: Charleston, July 13. Sec., Dr. S. L. Jepson, Masonic Bldg., Charleston.

WISCONSIN: Milwaukee, June 29-July 1. Sec., Dr. John M. Dodd, 220 E. Second St., Ashland.

REPORT OF EIGHTH EXAMINATION OF THE NATIONAL BOARD OF MEDICAL EXAMINERS

The eighth examination of the National Board of Medical Examiners was held in Chicago and St. Louis, Feb. 18-25, 1920. The written examinations were held simultaneously in the two places from 9 a. m. to 1 p. m., and the laboratory and clinical examinations in the afternoons from 2 to 5. The subjects of the examination and the relative value of each were: anatomy, 100; physiology, 75; chemistry, 75; pathology, 75; bacteriology, 50; materia medica, pharmacology, and therapeutics, 75; medicine, 200; surgery, 200; obstetrics and gynecology, 75; hygiene and sanitation, 50; medical jurisprudence, 25. A percentage of 75 was required to pass. Falling below 65 per cent. in two subjects, or below 50 in one subject, constituted a failure.

There were sixty-two applicants who applied for examination. Sixty were found to have the essential preliminary and medical qualifications. Forty-eight appeared for examination, of whom thirty-six passed and twelve failed.

PASSED AT CHICAGO

Name	College	Year of Graduation
Philip Wade Whitely	Rush Medical College	1919
William R. Meeker	Rush Medical College	1919
Franklin P. Schuster	Rush Medical College	1918
S. John Hathaway	University of Minnesota	1919
Warren E. Tupper	Rush Medical College	1919
B. Raymond Weston	Rush Medical College	1917
Eugene F. Traut	Rush Medical College	1918
Chester H. Williams	Rush Medical College	1919
John H. Gernon	Rush Medical College	1919
George H. Miller	University of Pennsylvania	1917
Henry J. Profant	Rush Medical College	1919
Blackburn W. Lowry	Northwestern University Medical College	1919
Norman C. Paine	Rush Medical College	1919
Edward C. Holmblad	Rush Medical College	1919
Richard Torpin	Rush Medical College	1917
Charles J. Eldridge	Rush Medical College	1919
Roger Anderson	Northwestern University Medical College	1918
George J. Mohr	Rush Medical College	1918
Louis J. Petritz	Northwestern University Medical College	1918
David O. Conly	Northwestern University Medical College	1918
George Douglas Brand	Northwestern University Med. College	1917
Raymond C. Thompson	Rush Medical College	1919
Ralph J. Frackelton	University of Michigan	1918
George W. Hogeboom	Rush Medical College	1919
Abraham J. Weinberg	Rush Medical College	1919
David M. Levy	Rush Medical College	1918

FAILED

	University of Illinois	1919
	Northwestern University Medical College	1919
	University of Illinois	1919
	Jefferson Medical College	1919
	University of Minnesota	1918
	University of Nebraska	1919
	Western Reserve Medical College	1917

PASSED AT ST. LOUIS

Anthony B. Day	Washington University Medical School	1919
Martha M. Eliot	Johns Hopkins	1918
Mort B. Pelz	Washington University Medical School	1919
Fred J. Hodges	Washington University Medical School	1919
George R. Herrmann	University of Michigan	1919
Mary Wright	Johns Hopkins	1918
Earl C. Padgett	Washington University Medical School	1918
Edward F. Studer	Rush Medical College	1919
John E. Elmendorf, Jr.	Johns Hopkins	1918
J. P. Caffey	University of Michigan	1919

FAILED

	University of Minnesota	1919
	University of Iowa Medical College	1919
	Rush Medical College	1919
	University of Texas School of Medicine	1919
	University of Iowa Medical College	1919

In the case of candidates from the Rush Medical School, the M.D. certificate is withheld pending the completion of the one year internship. For successful candidates who have not completed their intern year, the board's certificate is withheld pending the completion of that work.

AVERAGES OBTAINED

CHICAGO CANDIDATES

Candidates by Number	Anatomy; Value, 100	Chemistry; Value, 75	Mat. Med., Pharm. and Therapeutics; Value, 75	Obstetrics and Gynecology; Value, 75	Hygiene; Value, 50	Medicine; Value, 200	Surgery; Value, 200	Pathology; Value, 75	Bacteriology; Value, 50	Physiology; Value, 75	Medical Jurisprudence; Value 25	Final Average
1	61	50	84	65	85	61.5	71.2	78.6	75	60	76	678.8
2	80	62.5	88	77	81	69	87	66.6	84	79	80	774.4
3	86	79	84	85	71	82	87	77.3	68	79	92	819.8
4	87	83	88	77	80	84	87.5	86.6	80	71	72	832.3
5	55	75	80	75	84	72	70.7	77.3	76	69	96	726.8
6	68	76.5	72	65	84	73	76.7	76	74	59	68	724.9
7	82	77	83	85	79	85	85.7	90.6	84	70	84	830.1
8	69	69	74	75	86	71	75	75.3	80	70	80	736.6
9	76	81	76	75	76	79	86.2	69.3	82	77	72	787.3
10	72	77.5	78	70	73	60	72	58.6	72	53	72	681.4
11	79	68	72	75	67	58	81.7	73.3	90	72	72	725.3
12	90	89	84	77	80	83	82.5	75.3	72	87	80	819.5
13	73	78	88	86	84	84.8	82.5	82.6	82	92	88	832.6
14	92	80	84	86	84	77	89	54	82	84	96	822.5
15	80	80	80	75	83	85	85.7	86.6	78	81	80	823.5
16	90	70	84	80	86	81	89	85.3	76	82	88	834.0
17	86	84	80	87	64	76	91.7	75.3	76	72	72	808.3
18	68	92	78	84	76	77	86.2	77.3	87	77	68	799.2
19	61	72	78	86	73	86	82.2	75.3	75	82	72	784.5
20	72	80	76	86	85	86.5	87.7	70.6	78	70	72	810.0
21	66	68	78	84	81	86	86.7	77.3	82	76	68	797.5
22	77	50	76	80	73	70.5	78.5	75.3	78	73	76	735.2
23	72	81	78	85	72	87.5	80.2	75.3	74	67	80	790.3
24	88	92	82	82	75	82	85	82.6	80	79	84	833.7
25	76	78	80	87	79	83	82.5	78.6	78	70	68	797.8
26	83	77	74	78	69	81.5	87.7	78.6	78	68	80	796.8
27	84	71	82	86	84	78	88.5	69.3	82	74	92	809.8
28	83	71	60	85	78	74	85.5	76	80	78	72	791.6
29	68	78	72	82	80	82	77.5	60.6	68	70	84	753.5
30	80	83	70	83	77	85	80.7	66	75	82	76	795.1
31	84	80	31	100	78	86	90	68	76	76	72	837.0
32	79	80	77	82	69	71	84	70.6	77	79	72	771.2
33	73	87	88	70	72	79	85.2	66	76	74	72	782.8
Gen'l Aver.	76.9	76.4	79.1	80.1	77.8	78.1	83.3	74.4	78	74.3	78	

ST. LOUIS EXAMINATION

1	84	95	89	82	85	79.5	83.5	81.3	88	88	76	842.3
2	73	73	81	75	83	82.5	85.5	80	83	92	76	808.8
3	75	95	84	80	92	90	87	84	82	89	88	850.3
4	72	69	69	80	85	68	78.2	69.3	64	76	76	707.8
5	72	98	84	90	81	80.5	84.7	86.6	93	82	72	838.5
6	78	97	80.5	75	81	89	88.2	88	91	92	66	850.7
7	74	93	82.5	68	73	77	77	81.3	81	74	66	776.3
8	59	98	78.5	77	76	87	79.7	68	76	83	80	790.3
9	81	80	89	80	80	77	76.7	75.3	83	85	66	793.2
10	73	78	80	72	79	74	69.5	61.3	77	70	68	728
11	78	48	79.2	80	73	62	71.5	60.6	80	63	66	683.5
12	71	62	88.5	78	80	87.5	85	77.3	91	85	72	814
13	70	62	81	80	82	71	83	75.3	75	67	72	751
14	48	60	71.5	77	82	66	74.2	53.3	73	60	72	668
15	69	63	83	75	82	76.5	75	78.3	74	69	68	744.6
Gen'l Aver.	73.1	78	81.3	77.9	80.9	77.1	79.8	74 6	80	78.3	72.2	

ANATOMY

Examiner, Dr. Herbert Harlan, Baltimore. Associate examiners in practical anatomy: In Chicago: Drs. Roy L. Moody, Ruben Strong, S. W. Ransom, Charles F. Swift and B. S. Harvey. In St. Louis: Drs. C. H. Danforth, A. G. Pohlman, R. G. Terry and D. M. Schoemaker.

Written Examination.—1. Describe the ankle-joint, including relations with tendons, vessels and nerves. 2. Describe the pancreas. 3. What are the chief muscles of mastication, and give attachments, action and nerve supply of each. 4. What nerves are most liable to injury in case of the following fractures: surgical neck of the humerus, internal condyle of humerus, clavicle, upper end of fibula, and state probable cause of injury in each case. 5. What is the site of election for ligation of the subclavian artery; reason therefor; and through what arteries is collateral circulation carried on after such ligation?

Oral Examination.—This was conducted with the use of specimens of the brain, osseous system and internal organs, and specially prepared dissection demonstrating the gross anatomy of joints and definite regions of the body; the identification of specimens of histology under the microscope.

CHEMISTRY

Examiner, Dr. Victor C. Vaughan. Associate examiners in laboratory chemistry: In Chicago: Drs. William H. Welker, F. C. Koch, W. D. Sansum and G. Tracy. In St. Louis: Drs. Ralph W. Hoffman and J. L. Bollman.

Written Examination.—(Physics): 1. Explain by drawings and description the structure of a compound microscope. 2. Explain the mechanism and the use of the ophthalmoscope. 3. What are induced electromotive forces, and what are some experimental ways of producing them? How may they be made of value?

(Chemistry): 1. How would you detect wood alcohol in grain alcohol? What chemical change takes place in wood alcohol in the human body? What poison is formed? 2. Give the most successful chemical methods of purifying drinking water. 3. Give the chemical changes that occur in the protein, fat and carbohydrate constituents of food as they pass through the body. 4. Define an amino-acid and give a list of those amino-acids which have been found in protein molecules. 5. What are the xanthin bases? Where are they found? What is their chemistry and their physiology? 6. What deposits may be found in urine and how may they be identified? 7. Give the chemistry of the red blood corpuscle. 8. What are the five food principles? Construct a daily ration.

Laboratory Examination.—Each candidate was given three samples of urine and required to make a qualitative examination of each for sugar. In the specimen containing the largest amount, a quantitative examination was required.

MEDICINE

Examiners, Drs. H. D. Arnold and W. L. Bierring. Associate examiners: In Chicago: Clinical medicine: Drs. Ellis K. Kerr, Charles S. Williamson, C. C. McCulloch, James G. Carr, Frederick Tice, Joseph L. Miller and Joseph A. Capps, Clinical laboratory: Drs. J. J. Moore, B. O. Raulston and Ralph W. Webster. In St. Louis: Drs. George Dock, F. N. Wilson, E. P. Buddy and J. I. Tierney. Clinical laboratory: Drs. Ralph A. Kinsella and W. P. Elmer.

Written Examination.—(Answer ten questions the first seven questions are required; select three from questions eight to twelve): 1. You are called to treat a child of 8 years who has had a sore throat for twenty-four hours. Pulse, 110; temperature, 102.5; respiration, 22. There is moderate inflammation of the pharynx and tonsils, with a few small whitish spots on each tonsil. (*a*) What further investigation would you make for purposes of diagnosis. (*b*) Describe your treatment in detail. 2. A man of 60 years, complaining of intercostal neuralgia, is found to have sugar in the urine. A twenty-four-hour specimen of the urine shows: amount, 1,200 c.c.; specific gravity, 1.029; albumin, faintest possible trace; sugar, 3.45 per cent.; diacetic acid and acetone, absent; sediment negative except for a very rare hyaline cast. His diet for the same day shows 60 gm. protein; 71 gm. fats; 180 gm. carbohydrates; 1,600 calories. (*a*) Comment on the degree of deficiency in the utilization of carbohydrates and the probable severity of his diabetes. (*b*) Outline a program of treatment. 3. (*a*) Describe a typical case of alcoholic cirrhosis of the liver with ascites. (*b*) Treatment. 4. A man, aged 53, has had for six months epigastric pain, usually two or three hours after eating; recently he has vomited occasionally, but has noticed no blood in the vomitus. He has lost weight and strength. The question of cancer of the stomach arises. Comment on the diagnostic aid that may be derived from (*a*) gastric analysis; (*b*) examination of the blood; (*c*) examination of the stools; (*d*) what other methods of examination would aid toward a diagnosis? (*e*) Discuss briefly the question of operation, assuming that the diagnosis of cancer of the stomach has been established to your satisfaction. 5. What physical signs would you expect to find in a patient with a sacculated aneurysm of the ascending arch of the aorta? 6. Differential diagnosis between smallpox and varicella. 7. A man, aged 65, suffers an attack of right-sided hemiplegia with aphasia. Discuss the location and probable nature of the lesion and the prognosis. 8. Tuberculosis of the kidney: (*a*) How may it arise? (*b*) What would you expect to find in the urine? (*c*) What evidence would warrant this diagnosis? (*d*) Treatment. 9. Typhus fever: (*a*) Discuss the etiology. (*b*) Differential diagnosis from typhoid fever. (*c*) This disease was prevalent in the recent war and still exists in certain sections of Europe. What measures should be adopted to prevent its introduction into this country? 10. How would you recognize the development of an empyema in a case of pneumonia? (*b*) Treatment. 11. Diagnosis, prognosis and treatment of paralysis agitans. 12. Discuss the etiology, diagnosis and treatment of Hodgkin's disease.

Clinical Laboratory (one hour).—Each candidate was required to examine specimens of urine with pathologic sediments, specimens of stool and diagnose blood slides.

Clinical Examination.—This was held in the wards of the Cook County Hospital, Chicago, and in the Barnes and St. John's Hospitals, St. Louis, each candidate being assigned to a long case and then quizzed on his findings. Following this the candidate was assigned to short cases representing some well defined condition, as pleural effusion, enlarged heart, large liver, aortic insufficiency, subacute endocarditis, severe anemia, etc.

MATERIA MEDICA AND THERAPEUTICS

Examiners, Dr. W. L. Bierring and Dr. H. D. Arnold. Associate examiners: Pharmacology: In Chicago: Drs. Hugh McGuigan, R. W. Keeton, F. C. Becht, W. G. Lee and A. L. Tatum. In St. Louis: Drs. J. E. Thomas and Herbert S. Gasser.

Written Examination.—1. Describe one method of standardization of digitalis. In a case of heart failure with auricular fibrillation, outline the use of digitalis, giving the preparation, dosage and mode of administration. 2. Given a case of a man, aged 25, with the history of intermittent fever during the last ten days, the blood slide examination revealing the presence of the tertian type of *Plasmodium malariae*, write the directions for the medication indicated, giving the preparation, dosage and mode of administration of the drug used. Discuss the pharmacologic action of the drug in this case. 3. In a case of a girl, aged 14 years, with acute tonsillitis, in which the bacteriologic examination of a throat swab reveals the presence of *Bacillus diphtheriae* (Klebs-Loeffler), outline in detail the specific therapy indicated during the course of the illness. 4. The patient is a man, aged 36, with a macular eruption of the skin, acute lymphadenitis of the cervical, epitrochlear and inguinal lymph nodes and positive (++++) Wassermann blood reaction. Outline in detail the specific medication indicated (including preparation, physical properties, dosage and mode of administration of the drugs used) during the course of treatment until the blood shows a negative Wassermann reaction. 5. Compare the analgesic value of morphin and hydrated chloral. Write a prescription containing potassium bromid and hydrated chloral for hypnotic effect, to be administered in a vehicle to disguise the disagreeable taste of the mixture, giving full directions to the patient and indicating the dose intended of each drug.

PHARMACOLOGY

1. Demonstration experiment: A dog was prepared and various drugs injected to show effect on respiration, heart rate, and blood pressure. The effects to be interpreted by the candidate with recognition of the drug used. 2. Diagnosis of a number of tracings as to the pharmacologic effect and the character of drug producing it.

PHYSIOLOGY

Examiner, Dr. W. S. Carter. Associate examiners: In Chicago: Drs. J. T. Groat, H. P. Saunders, J. M. D. Olmstead and George P. Dreyer. In St. Louis: Drs. Frank N. Wilson, R. J. Terry and Don R. Josepb.

Written Examination.—(Answer any five questions): 1. (*a*) What is the cause of the rhythmic contractions of the heart? (*b*) Where does the contraction have its origin and how is it conducted to the different parts of the mammalian heart? 2. Describe the normal movements of the stomach and the mechanism controlling the action of the pyloric sphincter. 3. Tell how the excretion of urine may be influenced: (*a*) By changes in the general circulation, and (*b*) By changes in the circulation within the kidney. 4. (*a*) Describe the structural changes which take place in the peripheral end of a nerve after it has been severed and united by primary suture. (*b*) How much time is required for the restoration of function, and what changes take place in the electrical reactions of the muscles supplied by the nerve? 5. What results (*a*) from destruction and (*b*) from the administration of extracts of different parts of the pituitary body? 6. (*a*) State briefly in what ways glycosuria may be produced experimentally in animals. (*b*) Discuss the "sugar tolerance" test or alimentary tolerance for glucose as an index of carbohydrate metabolism in man.

Practical Examination.—Determine the blood pressure in man by the auscultatory method in the recumbent and erect postures, and record the systolic, diastolic, mean and pulse pressure in each case. Explain the effect of the postural change. Explain from tracings furnished the effects produced on respiration, pulse rate and blood pressure by stimulation (1) of the central end of a divided vagus; (2) a mixed spinal nerve. Explain from tracings the effects of applying the Gaskell clamp or the ligature of Stannius to the frog's heart. Take a tracing of the arterial pulse with a sphygmograph. Describe the features of the arterial and venous pulse in tracings furnished. With a muscle preparation arranged, record the minimal and maximal simple contractions; also complete tetanus. Explain, from the blood pressure tracings furnished, the effects of stimulating the distal end of the cut splanchnic nerve; of stimulating the depressor nerve. Demonstrate the "light" and "accommodation" reflexes of the pupil, and explain the purpose of each reaction.

SURGERY

Examiners, Dr. E. Wyllys Andrews and Col. Louis A. LaGarde. Associate examiners: Operative surgery: In Chicago: Drs. D. B. Phemister, G. L. McWhorter, Linn F. McBride, A. H. Montgomery, M. Hanchett, Gatewood, Edmund Andrews, Carl B. Doris. Clinical surgery: Drs. Karl A. Meyer, R. W. Nealy, Kellogg Speed, Frederic Besley, William R. Cubbins and F. G. Dyas. Surgical specialties: Examiners: Eye, Ear, Nose and Throat: Drs Herbert Harlan and David Strickler. Skin: Dr. Isadore Dyer. Associate examiners: In Chicago: Skin: Drs. Edward A. Oliver and T. E. Senear. Ear, nose and throat; Drs. E. K. Findlay, D. J. Holinger, E. V. L. Brown and G. W. Boat. In St. Louis: Operative surgery: Drs. A. O. Fisher, W. E. Leighton and Max W. Myer. Clinical surgery: Drs. Edwin P. Lehman, Barney Brooks and Evarts A. Graham. Surgical specialties: Eye: Drs. E. T. Sensensy, W. E. Shahan, William F. Hardy and Joseph M. Keller. Ear: Drs. H. W. Lyman, J. B. Shapleigh and C. F. Fingsten. Nose and throat: Drs. Greenfield Sluder, William M. C. Bryan and M. F. Arbuckle. Skin: Drs. M. A. Engman and Joseph Grindon.

Written Examination.—(Answer first seven questions; choose three from last five): 1. Indications for decompression of the brain: (*a*) Subtemporal. (*b*) Subtentorial. 2. Discuss the surgical management of toxic goiter. 3. Surgical management of empyema: (*a*) Caused by *Streptococcus hemolyticus*. (*b*) Pneumococcus. 4. Differential diagnosis of chronic obstruction at the pylorus, ileocecal valve and sigmoid flexure. 5. Treatment of gunshot wound of the liver. 6. Give indications for and technic of the operation of cholecystectomy. 7. Discuss chronic ulcer of the stomach from the standpoint of its complications and sequelae. 8. Treatment of compound fracture of both bones of the forearm just above the wrist-joint. 9. Varieties and diagnosis of dislocations of the humerus. 10. Discuss the diagnosis, prognosis and treatment of malignant pustule. 11. Differential diagnosis between shock and internal hemorrhage. 12. Discuss advantages and disadvantages of: (*a*) Open method of administering anesthetics. (*b*) Closed method of administering anesthetics.

Operative Surgery.—Each candidate was given one operation on a dog previously killed by ether from the following list: trephine; tracheotomy; thoracotomy; lateral intestinal anastomosis: etc.

Clinical Surgery.—This was held in the wards of the Cook County Hospital, Chicago, and the City and Barnes Hospital, St. Louis. Each candidate was given at least three cases and these were chosen from the following: fracture of hip; fracture of tibia and fibula; fracture of femur; supracondylar; leg ulcers; abscess of the neck; obstructive jaundice; carcinoma of stomach; carcinoma of rectum; tuberculous peritonitis; empyema, etc.

PATHOLOGY

Examiner, Dr. Louis B. Wilson; associate examiner, Dr. Eugene L. Opie, St. Louis.

Written Examination.—(Answer the first and any other four of the following questions): 1. (*a*) Describe in detail necropsy technic, including methods for the preservation of tissues. (*b*) In how many postmortems have you taken part? (*c*) How many more have you observed? 2. Discuss the pathology of epidemic influenza. 3. Discuss wound healing. 4. Discuss the pathology of chronic interstitial nephritis. 5. Give the distinguishing characteristics, gross and microscopic, of benign and malignant overgrowths of the uterine mucosa in women past the climacteric. 6. Contrast in parallel columns: (*a*) the blood pictures; (*b*) the gross pathologic changes, and (*c*) the histologic changes in pernicious anemia and lymphatic leukemia. 7. (*a*) Discuss the criteria of malignancy. (*b*) Name five tumors, giving sites, which are malignant. (*c*) Name five tumors, giving sites, which are not malignant.

Laboratory Examination.—During the written examination each candidate was given gross specimens and microscopic sections chosen from the following: cancer of breast, cancer of uterus, congenital cystic kidney; amebic abscess of liver; pyemic lung; lobar pneumonia; tuberculous lung; hypertrophic heart; contracted kidneys; vegetative endocarditis (*Streptococcus viridans*); aortic aneurysm; duodenal ulcer; cancer of the pylorus involving the head of the pancreas; tuberculous ulcers of the small intestine; typhoid hyperplasia of small intestine; fat necrosis; tuberculous peritonitis; colloid goiter; infarct of spleen; osteosarcoma of tibia; Pott's spine; osteomyelitis. Microscopic: cancer of breast; cancer of lip; tuberculosis of lung; chronic nephritis; tuberculosis of bone; exophthalmic goiter; cancer of uterus.

OBSTETRICS

Examiner, Dr. Austin Flint; associate examiners: In Chicago: Drs. W. G. Lee, D. S. Hillis and W. F. Hewitt. In St. Louis: Drs. A. S. Schlosstein and Otto H. Schwarz.

Written Examination.—1. (*a*) From the time of conception, what are the sources from which the ovum (and subsequently the embryo) draws its nourishment? (*b*) What changes take place in a woman at the menopause? 2. Describe the mechanism of labor: (*a*) In a simple flat pelvis, moderate degree, cephalic presentation. (*b*) In a normal pelvis, head extended, chin anterior. 3. (*a*) What are the symptoms indicating low implantation of the placenta? (*b*) Describe the management of such a case in labor at term, membrane unruptured, vertex presentation, cervix three fingers dilated. 4. What are the indications for (*a*) cesarean section; (*b*) version with breech extraction; (*c*) midpelvic forceps operation? 5. Describe the treatment of: (*a*) Puerperal septicemia. (*b*) Threatened eclampsia at the thirty-sixth week of pregnancy.

GYNECOLOGY

1. In a douhtful case, how would you proceed to establish the diagnosis of gonorrhea in a woman? 2. Give the differential diagnosis between: (*a*) Acute septic salpingitis and tubal pregnancy threatening rupture. (*b*) Intraligamentous ovarian cyst and fibroid of the uterus. 3. Describe in detail an operation for the repair of a complete tear of the perineum. 4. What are the indications and contraindications for the use of vaginal tampons, ring pessaries and stem pessaries? 5. Discuss the advantages and disadvantages of removing both ovaries and tubes when doing a hysterectomy for fibroids.

Oral Tests.—During the written examination each candidate was required to make demonstrations on the manikin and to explain different obstetric operations.

BACTERIOLOGY, SEROLOGY AND PARASITOLOGY

Examiner, Admiral E. R. Stitt. Associate Examiners: In Chicago: Drs. Arthur I. Kendall and D. J. Davis. In St. Louis: Drs. M. S. Fleisher and L. S. N. Walsh.

Written Examination.—1. (*a*) Give a simple method of culturing anaerobes. (*b*) Briefly discuss the subject of botulism, giving name and characteristics of causative organism, and practical importance of the infection (*c*) What do you know concerning *Bacillus fusiformis?* 2. How has the recent epidemic of influenza altered our views as to the etiology of the disease? Prepare a concise statement not exceeding three pages. 3. (*a*) Briefly discuss the nonpathogenic acid-fast bacteria and method of differentiation from the tubercle bacillus. (*b*) What are the usually recognized types of tubercle bacillus, and discuss their relation to clinical types of tuberculosis in man? (*c*) Name the diseases in which the question of secondary infection is of importance. 4. (*a*) Discuss serologic methods of separating meningococcus groups from one another and from the gram-negative organisms frequently isolated from the nasopharynx. (*b*) Name the diseases against which prophylactic vaccination has been of value during the World War. (*c*) Briefly discuss methods of desensitization. 5. (*a*) Name the common trematode, cestode and nematode parasites of man (give only four in each group with zoological and common name). (*b*) How do the sexual forms of estivo-autumnal malaria differ from the nonsexual ones? (*c*) What is the nature of the parasite causing African sleeping sickness?

Laboratory Examination.—The examiner is provided with tubes, plates, etc., of various standard culture mediums. The candidate is examined as to the composition, uses, technic of inoculation and study of these. There are also provided plates of plain agar, blood agar, etc., showing colonies, and the candidate is examined as to his ability to recognize and discuss colony characteristics with the unaided eye and magnifying glass. Various serologic preparations, such as Wassermann or other complement fixation tests, microscopic agglutination, precipitin reactions, etc., are provided, and interpretation of these is required. Specimens of intestinal parasites and their ova, together with stained smears of blood preparation of parasites, will be given the candidate for identification.

HYGIENE

Examiners, Surgeon-General Rupert Blue, U. S. P. H. S.; Col. W. C. Rucker, Assistant Surgeon-General, U. S. P. H. S.

Written Examination.—1. What points should be stressed in the sanitary inspection of a public restaurant? 2. What directions should a practicing physician give to prevent the familial spread of whooping-cough? 3. Briefly outline the various methods of water purification. 4. Discuss mental hygiene in the home. 5. How would you prevent the spread of smallpox in a hotel?

MEDICAL JURISPRUDENCE

Examiner, Dr. Isadore Dyer.

Written Examination.—1. State generally the causes for which a license to practice medicine can be revoked. 2. Describe the Harrison act as it applies to the practice of medicine. 3. What do you understand by vital statistics, their scope and purpose? 4. State what you understand by the term "quarantine" as applied to contagious and reportable diseases. 5. A man employed in a factory, while carrying a box of goods upstairs, falls against a loosened steam pipe and is scalded over an area about 6 inches square in the lumbar region. In claiming damages he bases the claim on the severe burn received. Examination in court is ordered one year after the accident. What condition would you expect to find in evidence? (*a*) If he had a burn of the first degree? (*b*) If he had a burn of the second degree?

Book Notices

COLLECTED STUDIES ON THE PATHOLOGY OF WAR GAS POISONING. From the Department of Pathology and Bacteriology, Medical Science Section, Chemical Warfare Service. Under the Direction of M. C. Winternitz, Major M.C., U.S.A. Published with the Consent of the Surgeon General, U. S. Army, and the Director, Chemical Warfare Service. Cloth. Price, $20. Pp. 165, with illustrations. New Haven: Yale University Press, 1920.

This magnificently printed book contains a complete review of experimental work on the pathologic changes observed in experimental animals subjected to various war gases, during the investigations carried out with these substances at Yale University and at the American University at Washington, D. C., under the direction of the Bureau of Mines and the Chemical Warfare Service. The effects of chlorin, phosgen, chlorpicrin, superpalite, "mustard" gas, cyanogen chlorid and bromid, arsin and organic arsenic compounds are described. These studies have been carried out in great detail, with especial reference to the comparative features of poisoning with the different gases. No human material is described, thus differing from the monograph on "mustard" poisoning by Warthin and Weller, recently reviewed in these columns. The importance of the breaking down of resistance to bacterial infection from mouth organisms is especially emphasized. Particular stress is laid on what the author believes to be evidence that edema within the lungs is of itself not so important a factor in causing symptoms or death as has commonly been believed. It is stated that up to 20 c.c. of salt solution per kilogram of animal, or from 200 to 400 c.c. for an ordinary size dog, can be injected directly into the trachea without harm, although the lung is so completely filled with this salt solution that the excess begins to come back. It is also stated that as much as 3,000 c.c. of salt solution has been injected into the trachea of a dog in thirty minutes without any serious harm being observed. In these experiments the lungs are flooded with salt solution, and as the solution ceases to flow out of the trachea and mouth they are again flooded; or else a continuous small stream is allowed to flow into the lung throughout the experiment. Experiments showed that the salt solution had not simply short-circuited through the bronchi and out again but had entered the alveoli extensively. The salt solution that remains in the lung after the experiment is absorbed within three or four days. It is suggested that such irrigation of the lung might even be possible as a therapeutic method under certain conditions, since materials employed as indicators can be washed out of the lungs by this means. It is not made clear how the animal escapes drowning in such an experiment, or how it is able to carry on respiration with the respiratory passages full of fluid.

The justification for so expensive a form of reproduction of research work is certainly open to question. The selling price of this book of 165 pages is $20, which means, of course, that its circulation will be virtually limited to distribution copies and to the files of a few libraries. The expense is chiefly from the presence of forty-one large colored

plates and a great number of black and white illustrations. Even the excellence of these plates will seem to many scarcely to justify the expense of reproducing all of them, since in most respects the information given by many of the plates can be adequately conveyed by descriptions in the text. Such simple conditions as ordinary pulmonary edema or congestion of the pulmonary capillaries are made the subjects of special colored plates.

Lehrbuch der Augenheilkunde. Von Dr. Paul Römer, Geh. Medizinalrat, o. ö. Professor der Augenheilkunde. Third edition. Paper. Price, 30 marks. Pp. 496, with 297 illustrations. Berlin: Urban & Schwarzenberg, 1919.

The third German edition of Roemer's textbook is an improvement on its predecessors in its reduced size and in the fact that less emphasis is placed on theoretical matters. Much of absorbing interest to the specialist, however, is found along these lines, for instance, his vigorous attack on the prevailing Leber theory of the constant formation and circulation of the aqueous humor, and Grawitz's contention that the leukocytes of corneal inflammation and repair are derived from the fixed corneal cells, and that the most constant finding in fresh glaucoma eyes is an edema of the back of the eye due to a swelling of the vascular tunic. Roemer accepts the Fuchs findings in sympathetic ophthalmia, and deals a hard blow to Elschnig's anaphylactic theory in a single short paragraph. He makes the points first, that anaphylactic phenomena are in no way concerned with the origination of inflammation, as contended by Elschnig, but represent only the expression of the protective capacity of our organism against protein products, and, second, that resorption of one's own injured uveal tissue cannot lead to oversusceptibility of one's organism, because there is no such thing as autoanaphylaxis. Among the newer things, one may note the irrigation treatment in ophthalmia, the description of "inclusion blennorrhea" in the new form, and the use of gentian violet along with zinc in angular conjunctivitis, ethylhydrocuprein in serpentic ulcer, benzosalin in sympathetic ophthalmia, and bloodletting and chloral hydrate to control acute congestive glaucoma. He gives first place among operations to trephining in both chronic congestive and simple glaucoma. There is an excellent chapter on the Wassermann reaction and another on tuberculin in diagnosis. One is astonished, however, to find "rheumatism" still given in the etiology of iritis, and no mention of focal infections. Possibly American medicine is a bit conscious of its own achievements, nowadays, but we can see no justification for ignoring the name of Bullers in connection with the shield of the other eye in gonorrheal ophthalmia; of the Ferdinand Hotz trachoma operation, or of the brilliant work of Woodyatt in reducing intra-ocular tension by means of intravenous glucose injections. The work is well supplied with colored plates, and is helped by marginal notes and short topic sentences. For the first time in any eye textbook, public health matters and measures, such as school examinations, compulsory notification of gonorrheal ophthalmia, and the prevention of trachoma and eye accidents, are given the special consideration and strong emphasis they should have.

Handbook of Anaesthetics. By J. Stuart Ross, M.B., Ch.B., F.R.C.S.E., Lecturer in Practical Anaesthetics, University of Edinburgh. Introduction by Hy. Alexis Thompson, C.M.G., M.D., F.R.C.S.E., Professor of Surgery, University of Edinburgh. Chapters upon Local and Spinal Anaesthesia by William Quarry Wood, M.D., F.R.C.S.E., Lately Temporary Assistant Surgeon, Edinburgh, Royal Infirmary, and upon Intratracheal Anaesthesia by H. Torrance Thomson, M.D., F.R.C.S.E., Anaesthetist to the Leith Hospital. Cloth. Price, $2.50. Pp. 214 with illustrations. New York: William Wood & Co., 1919.

This is a convenient pocket edition on the subject, useful for students taking the course. It is well written, and good suggestions are made for recognizing, and also avoiding the danger zones of anesthesia. Ross dwells lightly on several theories of shock without giving anything new or conclusive on the subject. He is instructor in a Scottish university, and he describes at length the various forms of anesthetic apparatus used at home, while giving only passing notice of those used in America. He advocates the use of preanesthetic narcotics, which is sound in practice, and is gaining in popularity in this country.

Medicolegal

Admissibility of Evidence Touching Mental Capacity—Imbecility

(State v. Kelsie (Vt.), 108 Atl. R. 391)

The Supreme Court of Vermont, in overruling exceptions in this case, in which there was a conviction of murder in the first degree, says that the defendant called a physician as a witness, and, having qualified him as an expert in mental diseases, and having shown by him the examinations, observations and tests to which the defendant was subjected, he drew from the witness the statement that as a result the witness had reached the conclusion that the defendant, who was then nearly 34 years of age, had the mental capacity of a child only 8 years old. The witness was then asked how, from a medical standpoint, an adult of that mentality is classified, and replied, "As an imbecile." On motion by the state, that answer was stricken out. The witness was then asked, "From your observations and tests, Doctor, what would you say Mr. Kelsie is?" This question was objected to by the state, and was excluded by the trial court. Assuming for the purposes of this discussion that it was sufficiently apparent that he would have answered that he regarded the defendant as an imbecile, the ruling was without error. Such an answer would have added nothing to the testimony of the physician, as given. He was allowed to give, and did give, during his examination and cross-examination a very clear, comprehensive and intelligent account of the various tests that were applied to the accused to determine his physical condition and his mental development, together with his responses and reactions, and from it all gave his conclusion that the accused was mentally and morally an 8 year old boy. The purpose of this evidence was apparent. At common law an infant under the age of 7 years was conclusively presumed to be incapable of committing a crime. Between 7 and 14, he was presumed to be incapable, but the fact might be shown otherwise. Above 14, he was presumed to be capable, but this presumption was rebuttable. So if common-law rules were to be applied, the defendant had by this evidence, if believed, raised a presumption of his incapacity, and made a jury question of it. If the witness had added that he regarded Kelsie an imbecile, the statement would have afforded the jury no additional aid in estimating the man's mentality. For the term "imbecile" has no fixed meaning in the law, and would require definition by the witness to ascertain the meaning which he ascribed to it. There are grades of imbecility, just as there are grades in insanity, and in the matter of criminal responsibility, the law makes no distinction between imbecility and insanity. The test of the law in all cases is, Did the accused, as applied to the act in question, have the mental capacity to understand the character, consequences and quality of such act, and successfully to resist the impulse to do it?

Another physician was a witness for the defense, and testified that when the defendant was a child he treated him for epilepsy. When the physician mentioned first was under cross-examination by the state's attorney, he was asked if in his examinations of the defendant he discovered any signs of epilepsy, and subject to exception he replied that he did not. The only objection made to this question and answer was that the defendant did not examine this witness regarding epilepsy. But the rule that the cross-examination is circumscribed by the direct examination does not mean that a cross-examiner is limited to the specific inquiries of the examiner. A witness may be cross-examined in respect of his examination in chief in all its bearings, and as to anything that tends to explain, characterize or modify what he has therein stated. The mental and physical symptoms and conditions of the defendant were the most prominent features of the direct testimony of this witness. Anything germane to those subjects and pertinent to the questions involved in the trial was a proper matter of inquiry in cross-examination. Specific reference to epilepsy in the examination in chief was not necessary to make proper in cross-examination the question objected to; and this ruling, too, was without error.

Care Required in Selecting and Retaining Physician

(Woody v. Carolina Spruce Co. (N. C.), 101 S. E. R. 258)

The Supreme Court of North Carolina, on the third appearance before it of this case, affirms a judgment in favor of the plaintiff, who sued the defendant company for damages which he alleged that he had sustained through the negligence and malpractice of a physician employed by the defendant but compensated by sums collected monthly from its employees, of whom the plaintiff was one when he was injured and required the services of the physician. The court said before that the defendant was under no legal obligation to employ a physician to treat its employees, but when it assumed to do so and to deduct a monthly sum from their wages for medical attention, it was under obligation to exercise due care in selecting the physician and in continuing him in its service. To the same effect the court now holds that there was no error in instructing the jury in substance that if it found by the greater weight of the evidence that the defendant engaged the physician in question to treat the plaintiff and other employees, and after it had notice of his incompetence and unskilfulness, it continued him in its employment, the jury should find the defendant negligent in so continuing him in its employment. The defendant owed the duty to the plaintiff, after it had undertaken to secure a physician for him, to secure one of reasonable skill and ability. There was no other physician, so far as it appeared, immediately at hand, and the plaintiff had paid his assessments for the employment of the company's physician, and, though he may have had doubts as to his competence, when the president of the company assured him that the fracture was simple and that he and the physician could set the fracture as well as any one, the plaintiff was not guilty of contributory negligence, nor did he assume the risk, by trusting to the assurance of the president, under the circumstances of the case. The reply of the president was equivalent to telling the plaintiff that the company would not employ any other physician, and that the plaintiff had to take the service offered to him or go without medical treatment.

Who Must Make Required Inquiry Before Corpses May Be Used for Dissection

(Burke et al. v. New York University (N. Y.), 179 N. Y. Supp. 626)

The Supreme Court of New York, Special Term, New York County, in sustaining a demurrer to the complaint, with leave to the plaintiffs to serve an amended complaint, says that the action was brought by the children of a man who had died in a hospital, to recover damages for injury to their feelings due to the act of the defendant, through its medical department, in dissecting the body of their deceased parent. After the father's death his body had been taken to the morgue, which delivered it to the defendant. Now Section 316 of the Public Health Law of New York not only permits, but in certain cases requires, morgues and other institutions and persons named to deliver any corpse in their possession not placed there by relatives or friends for keeping or burial to medical institutions like the defendant. The statute prohibits such delivery or receipt, however, of the corpse of any person "known to have relatives or friends, without the assent of such relatives or friends." The court takes it that these words necessarily mean known to the institution charged with the wrongful receiving of a corpse, or, what is equivalent to knowledge, lack of reasonable inquiry. But the statute seems to place on the persons having control of the institutions mentioned and having possession of such corpses the duty of ascertaining whether any particular corpse is one "which may be delivered . . . under this section." The persons so in control in this case were those who had charge of the morgue, and the statute would appear to have placed on them the duty of making inquiry to ascertain whether the particular corpse was that a person "known to have relatives or friends." Since it was their duty to make such inquiry, it is not apparent that any useful purpose would be accomplished by requiring the defendant to make the same inquiry over again, and, in the absence of plain language to that effect, the statute should not be held to have intended duplication of inquiry.

Society Proceedings

COMING MEETINGS

Canadian Medical Association, Vancouver, B. C., June 22-25.
Maine Medical Association, Augusta, June 29-30.
Montana State Medical Association, Helena, July 14-15.
Nevada State Medical Association, Lake Tahoe, June 25-26.
Southern Minnesota Medical Assn., Fairmont, Minn., June 28-29.

AMERICAN SOCIETY FOR CLINICAL INVESTIGATION

Annual Meeting, held in Atlantic City, N. J., May 3, 1920

(Continued from page 1669)

Clinical and Electrocardiographic Observations on Inversion and Other Anomalies of the P Wave

DR. WALKER W. HAMBURG, Chicago: Eighteen cases of inversion of the P wave (migration of the pacemaker) are reported: twelve cases with normal rhythm and six cases with arrhythmia (auricular extrasystoles). Inversion of the P wave is most frequent in Lead 3; five cases showed inversion in Leads 2 and 3, and one case, Leads 1, 2 and 3; five cases showed a diphasic P; four cases, bifurcated P. Analysis of these cases discloses that the majority of them suffer with varying degrees of myocardial insufficiency and are associated with acute or chronic infectious processes. In addition, evidence of vagal influence is frequent, as shown by disturbances in respiration, effect of atropin, occurrence in vagotonic individuals, etc. Electrocardiographic study of cases showing inverted P, or of cases occurring in suspect vagotonic individuals should include the effect of (*a*) deep breathing, (*b*) change of posture, (*c*) atropin and (*d*) the effort test.

Results of Antemortem Lung Punctures in Lobar Pneumonia; Their Bearing on the Mechanism of Crisis

DRS. HENRY M. THOMAS, JR., and FREDERIC PARKER, JR., Boston: Study of lung puncture performed to hasten or confirm bacteriologic diagnosis of lobar pneumonia yields interesting facts. Incidentally, the procedure of puncturing solid lung was entirely innocuous. It was found that the mortality of patients yielding viable organisms by lung punctures after the fifth day of disease was 56 per cent., whereas patients yielding no organisms by lung puncture, no matter what day of the disease, with two exceptions, recovered. Positive lung punctures were obtained, however, just before, during and just after crisis in a few cases. These facts seem to indicate that destruction of the organisms is the first step toward recovery, but also that crisis may occur before the organisms have been entirely killed, or several days after. That definite antibacterial properties are developed in the blood has been shown by many investigators; but that these properties are in any way efficacious in combating the toxic manifestations of lobar pneumonia has not been claimed. We offer our results as further evidence that two mechanisms—antibacterial and detoxifying—act, in a measure, independently. That the second mechanism may be brought about by a sudden change in ferment-antiferment balance seems quite likely, but the possibility of true toxin-antitoxin reaction has not been definitely ruled out.

DR. FREDERICK T. LORD, Boston: There are certain considerations which suggest, as Dr. Thomas has mentioned, that a dual mechanism may be responsible for recovery from lobar pneumonia. The demonstration in small amount of protective substances in the blood at about the time of the crisis and the presence of agglutinins and bacteriotropic substances, operative against the homologous organism, suggest that humoral immunity is of importance in recovery and may serve to check the septicemia and limit the spread of the local lesion. There are, however, certain observations in conflict with the humoral theory as an entirely satisfactory and complete explanation of recovery. The humoral factors are, for example, less constantly and strikingly demonstrable than might be expected were they the sole explanation of so

decisive an event as the crisis. Blake and Cecil's observation that monkeys with experimental pneumonia may die with septicemia and the local lesion be found at necropsy to be undergoing resolution may have a bearing on this matter. In such cases it is suggestive that humoral immunity may fail, while certain local factors influencing recovery may succeed. In human cases the successive pneumonic invasion of different lobes may be observed during life, with recession of the earlier lesions coincident with the spread of the later processes. At necropsy it is not uncommon to find in the same subject several pneumonic areas in different stages of development. At times a consolidated area previously recognized during life may be found at necropsy to have undergone almost complete resolution, while one or more areas are in a stage of earlier development. Recovery from lobar pneumonia fails to confer any considerable or lasting protection against subsequent attacks. A repetition of pneumonia in certain persons is so common as to suggest that the duration of humoral immunity is short, and may actually give place to a condition of increased susceptibility. Relapsing pneumonia within a few days of crisis or lysis is uncommon; but during the last few years we have had one case of Type I, another of Type II and a third of Type III pneumonia with apparent recovery, followed by a second attack due to the same organism after an afebrile interval of only a few days. The occurrence, reported to me by Dr. Benjamin White, in three horses, highly immunized against Type I pneumococcus, of a fatal Type I pneumonia indicates that even a high degree of acquired immunity does not prevent the development and progress of a local lesion. In such cases one may assume that the local factors influencing recovery failed.

In seeking an explanation of the local factors that may influence recovery, our attention has been directed to the chemistry of the pneumonic exudate. From evidence in favor of partial isolation of the pneumonic lung, an increase in the local H ion concentration and the short viability and rapid dissolution of the pneumococcus at an equal degree of acidity, we have been led to believe that local biochemical changes may be of importance in recovery.

Catalase Content of the Blood in Different Types of Anemia

Drs. E. B. Krumbhaar and John H. Musser, Jr., Philadelphia: The catalase content of the blood was compared with the erythrocyte count in nine cases of pernicious anemia, eleven cases of other primary and secondary anemia, and nine normal controls. Contrary to Van Thienen's observation that the catalase content was always relatively high in pernicious anemia, we found that it was as low in this disease as in other anemias, and always lower than in nonanemic persons. The variations in different persons were roughly proportional to the differences in erythrocyte counts, so that the "catalase index" (obtained by dividing the number of cubic centimeters of oxygen liberated by 0.1 c.c. of blood during fifteen minutes by the erythrocyte count expressed in millions) gave very close averages for the three groups (pernicious anemias, 28.6; other anemias, 28; normal cases, 32.7). In anemia following experimental splenectomy the catalase content of the blood fell; when the blood picture improved after removal of a diseased spleen, the catalase content increased; but in both cases the index remained approximately unchanged.

Effect of Small Doses of Roentgen-Ray on Lymphoid Deposits

Dr. James B. Murphy, New York: It is a matter of common observation that lymphoid tissue is more vulnerable to infections than are other tissues; also it is well known that in these tissues infections tend to persist and are less amenable to treatment than in other tissues. Since such a state is peculiarly characteristic to this tissue, it would seem that the lymphoid elements constitute an important contributing factor, and, if this is true, a reduction of these elements in infected lymphoid tissue might so alter the course of infection that its tendency to persist would be diminished. The utilization of the roentgen ray affords a method of approach to such an experimental investigation, since through the selective action of the roentgen ray for the lymphoid elements it may be hoped to effect a considerable reduction of them and at the same time do no injury to other tissue elements.

Infected tonsils seemed to offer suitable material to which this method of investigation might be applied, and preliminary observations on results obtained were most satisfactory. A number of patients with infected tonsils have been selected from various clinics by those in charge of the clinics and sent to us for treatment and observation. These have included types of hypertrophied and atrophic infected tonsils, with characteristic involvement of the surrounding tissues, associated with constitutional disturbances. After noting the general condition of tonsils and neighboring tissues, cultures on blood agar have been prepared from material obtained by passing a sterile platinum loop into the crypts of the tonsils, and from the postnasal vault. Immediately following this procedure, crossfire treatments of filtered roentgen ray have been given. These patients have then returned at weekly intervals for further observation, at each visit additional notes have been made and cultures again made. The original cultures from all individuals showed either hemolytic streptococci or hemolytic staphylococci.

The results following the roentgen-ray treatment are striking. After the first week the injection of the surrounding tissues has disappeared, as also has excess lymphoid tissue previously noted along the margins of the pillars; and where accumulations of tissue had been noted in the postpharynx, it is seen to be definitely lessened in amount. By the third week and after, cultures are free from the hemolytic cocci previously recovered in abundance. When tonsils were at the beginning hypertrophied, they are seen to be much diminished in size. It would seem in the light of the results briefly stated that with the elimination of the lymphoid elements from infected lymphoid tissue the course of the infection has been arrested, since no other treatment than the roentgen-ray exposure has been used. While it is yet too soon to form any opinion regarding more remote effects, from a clinical point of view the present observations form a basis for further development and present a possible method of treatment of infected tonsils other than surgical interference.

Chemical Difference Between the Young Erythrocytes from the Blood of Pernicious Anemia Cases and Normal Individuals

Drs. Edwin Locke and T. E. Hackman, Boston: Blood specimens from six cases of pernicious anemia showing from 5 to 12 per cent. of reticulated cells, four cases of hemorrhagic (acute) anemia showing from 5 to 12 per cent. of reticulated cells, one case of acquired hemolytic jaundice with 16 per cent. of reticulated cells, two cases of pernicious anemia and four normal cases with less than 1 per cent. of reticulated cells were studied with respect to (1) the resistance of the cells to hypotonic salt solutions; (2) the oxygen consumption of the cells, and (3) proteolysis (loss of amino acid nitrogen) and creatin consumption during incubation at body temperature. The cells from the cases of pernicious anemia with an increased number of reticulated cells showed uniformly less oxygen consumption than the cells from the hemorrhagic cases, and always a marked proteolysis and loss of creatin. The cells from the hemorrhagic cases and the case of hemolytic jaundice showed no proteolysis and from slight to marked gains, but never loss, of creatin. Cells from normal individuals and from cases of pernicious anemia with less than 1 per cent. of reticulated cells showed insignificent variations with respect to oxygen consumption, proteolysis and creatin consumption (or loss). All the cases of pernicious anemia with increased numbers of reticulated cells showed a greater percentage of these cells in the lower than in the higher dilutions of hypotonic salt solutions. The reverse was true in the case of acquired hemolytic jaundice. The findings in the hemorrhagic cases were, in this respect, not constant. These observations suggest that the young erythrocytes seen in pernicious anemia are atypical and biologically less hardy than the "normal" reticulated cells found after acute hemorrhage.

(*To be continued*)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Insanity, Baltimore

April, 1920, 76, No. 4

*Psychosis Associated with Tetany. A. M. Barrett, Ann Arbor, Mich. —p. 373.
*Nature of Substance Causing Colloidal Gold Reaction. P. G. Weston, Warren, Pa.—p. 393.
Anticipation of Paresis and Tabes in Syphilitics. S. Brown, Kenilworth, Ill.—p. 397.
Thymic Reactions in Differentiation of Neurotic from Psychotic Conditions. D. Gregg, Wellesley, Mass.—p. 403.
Classification of Industrial Applicants. A. W. Stearns.—p. 409.
Nervous and Mental Disorders of Soldiers. S. Brown.—p. 419.
*Amnesias in War Cases. D. A. Thom and N. Fenton.—p. 437.
*Neurosyphilis Investigation of Massachusetts Commission on Mental Diseases. O. J. Raeder, Boston.—p. 449.
Dissociated Personality: Analysis of its Psychologic Problems. E. E. Mayer, Pittsburgh.—p. 465.

Psychosis Associated with Tetany.—From an analysis of cases, Barrett is convinced that there is no specific tetany psychosis, but that the neuromuscular disturbances and the psychosis are both the result of a toxic process affecting the central nervous system. In two cases reported by him this disturbance seems to have had some relationship to disease of the pituitary body.

Nature of Colloidal Gold Precipitating Substance.—According to Weston the colloidal gold precipitating substance in the spinal fluid of paretics is a globulin. It is not the Wassermann reacting substance and can be separated from the latter quantitatively. This explains why there may be a paretic curve in the gold test with either a positive or negative Wassermann reaction.

Neurosyphilis.—A complete recovery mental, physical, and laboratory, after less than five years or ten years or even before death Raeder says may be questioned. An apparently recovered neurosyphilitic may show none of the above signs or findings, yet at necropsy following intercurrent disease of senility, a focus of inactive treponemas may be found to occupy a circumscribed area somewhere in the brain, just as is commonly found an area of fibrosis or calcification in the lungs, the scar of a healed tuberculosis. In 428 cases of neurosyphilis treated during a period of four years, 129 cases or practically 30 per cent. showed definite benefit. One hundred twenty-five patients are under treatment in hospitals of which a certain percentage can be expected to show similar improvement. The relatives (spouses, parents, offspring) of syphilitics and neurosyphilitics form a most important group in which not only syphilis but the earliest degrees of neurosyphilis, in the presymptomatic, often entirely unsuspected, stages, are brought to light by lumbar puncture and sero-analysis. It is in these types that by far the most benefit can be expected.

American Journal of Public Health, Boston

April, 1920, 10, No. 4

American Public Health Association, Present, Past, and Future. W. S. Rankin, Raleigh, N. C.—p. 297.
Protective Value of Typhoid Vaccination as Shown by Experience of American Troops in War. G. A. Soper, New York.—p. 301.
Importance of Confirmatory Colon Bacillus Tests in Fairly Safe Drinking Water. N. Novick, East Norfolk, Mass.—p. 305.
*Bacteriologic Examination of Soft Drinks. W. R. Stokes, Baltimore. —p. 308.
Treatment of Beet Sugar Plant Sewage. L. Pearse and S. A. Greeley, Chicago.—p. 312.
*What Should be the Basis of the Control of Dehydrated Foods? S. C. Prescott, Cambridge, Mass.—p. 324.
Sociologic Aspects of Housing. J. S. Wile, New York.—p. 327.
Traffic Regulation as a Means of Preventing Injury and Death from Street Vehicles. S. J. Byrne, Brooklyn.—p. 331.
Diphtheria Bacillus Stains; Description of a "New" One. H. Albert, Iowa City, Iowa.—p. 334.
Infant Mortality in Registration Area for Births. W. H. Davis, Washington, D. C.—p. 338.
Purification of Oysters as Conservation Measure. W. F. Wells, Albany.—p. 342.
Studies on Viability of Tubercle Bacillus. J. B. Rogers, Cincinnati. —p. 345.
Excessive Mortality from Influenzal Pneumonia Among Bituminous Coal Miners of Ohio in 1918. E. B. Starr, Columbus.—p. 348.
Early School of Public Health at Lyons, France. W. T. Sedgwick, Cambridge, Mass.—p. 352.

Bacteriology of Soft Drinks.—In his examination of about one dozen well known soft drinks Stokes only sought specially for the colon bacillus, but many soft drinks contain variable numbers of bacteria and this large bacterial content may be explained partially by the improper sterilization of bottles. A few bacteria remaining in the bottles may increase in the small quantity of water often left in the bottle after sterilization. Dust organisms getting into the bottles may also resist sterilization even if the bottles are dried properly. This matter may be of some importance in relation to the possibility of intestinal infection, since the organisms which produce so-called food poisoning often find a favorable culture medium in the carbohydrates of these soft drinks.

Use of Dehydrated Vegetables.—From the practical standpoint, Prescott says the use of dehydrated vegetables is to be commended, providing they can be prepared from the best quality of raw material and by methods which conserve the food values to the highest possible degree. The great advantages of dehydration in making possible the utilization of materials which now goes to waste, in reducing the cost of carriage, in their easy transportability to all parts of the world, in the saving of expensive containers and in the stabilization of agriculture and the price of materials, seem incontrovertible and argue strongly for the development of this industry.

American Journal of Roentgenology, New York

April, 1920, 7, No. 4

Oil Immersed Roentgen Ray Generating Outfits. W. D. Coolidge, Schenectady, N. Y.—p. 181.
Radium Treatment of Enlarged Thymus Glands in Infants. A. C. Heublein, Hartford, Conn.—p. 191.
Tests of Roentgen-Ray Intensifying Screens. R. B. Wilsye, Rochester, N. Y.—p. 196.
Radium in Treatment of Carcinoma of Cervix and Uterus. R. H. Boggs, Pittsburgh.—p. 202.
Roentgenotherapy in Malignant Disease Within the Abdomen; Reports of Cases. G. E. Pfahler, Philadelphia.—p. 210.

Annals of Otology, Rhinology and Laryngology, St. Louis

December, 1919, 28, No. 4

Case of Influenza, Followed by Pneumonia, Laryngitis, Otitits Media Suppurativa Acuta, Right Side; Tonsillitis, Hypertrophic; Chronic Bilateral Streptococcus Type. J. H. Bryan, Washington, D. C. —p. 1009.
Value of Laboratory Examinations in Diagnosis and Prognosis in Oto-Laryngology. S. Oppenheimer and H. J. Spencer, New York. —p. 1012.
Angiomas of Larynx: Report of Three Cases. G. B. New and C. M. Clark, Rochester, Minn.—p. 1025.
An Ethmoid Operation. J. A. Pratt, Minneapolis.—p. 1051.
Maleruption into Nose of Lateral Deciduous Incisor. V. B. Fischer, Boulder, Colo.—p. 1067.
Case of Otitis Media Suppurative, Chronic, Right, Mastoiditis; Operation followed by Meningitis; Abscess in Temporosphenoidal Lobe of Brain. J. H. Bryan, Washington, D. C.—p. 1083.
Reports for 1918 from Ear and Throat Department of Royal Infirmary, Edinburgh. J. S. Fraser and W. T. Garretson, Salem, Iowa.—p. 1091.
Conservative Surgery of Lateral Sinus. C. C. Jones, Cincinnati. —p. 1164.

Archives of Diagnosis, New York City

January, 1920, 12, No. 3

Education and Recreation in the Army. W. G. Haan, U. S. Army. —p. 121.
Practical Value and Utilization of Wassermann Test in General Practice. R. A. Kilduffe.—p. 125.

Archives of Neurology and Psychiatry, Chicago

May, 1920, 3, No. 5

An Account of Witch Craze in Salem, with Reference to Some Modern Witch Crazes. C. S. Potts, Philadelphia.—p. 465.
*Lethargic Encephalitis: Report of Cases and Analysis of Literature. M. E. Alexander and H. E. Allen, Waterbury, Conn.—p. 485.
*Neurosyphilis and Psychoses. L. G. Lowrey, Boston.—p. 500.
*Heredity in Exophthalmic Goiter. Report of Two Juvenile Cases. H. Climenko, New York.—p. 530.
*Curative Influence of Influenza in a Case of Specific Meningomyelitis with Cystitis. C. W. Burr, Philadelphia.—p. 536.

Brain in Lethargic Encephalitis.—One of the cases reported by Alexander and Allen terminated in death. Examination of the brain revealed congestion of the meninges with considerable dilatation of the veins. Over the parietal region there appeared, here and there in the pia arachnoid, a small exudate, following the course of sulci. At the base there was intense congestion with a graying yellow exudate of moderate degree in the region of the optic chiasm. Cultures taken from the exudate and from the cortex of the brain showed no growth. Smears showed red blood cells, lymphocytes, mononuclear cells and an occasional polynuclear cell. No organisms were found with methylene blue and acid fast stains. On section of the formaldehyd hardened brain, the ventricles appeared slightly dilated, but the ependyma and choroid plexuses were normal. Sections from the cortex (parietal and occipital lobes) showed in each instance considerable involvement of the meninges. The blood vessels were dilated and there was an accumulation of inflammatory cells in the pia arachnoid consisting chiefly of lymphocytes and mononuclear cells. The cortica gray and subcortical white matter showed dilated vessels, and here and there capillaries surrounded by a few lymphocytes. Sections of the base of the brain showed most marked involvement in the region of the optic thalmus. Here no hemorrhages were evident, but the capillaries were distended with blood There was marked perivascular infiltration with lymphocytes and mononuclear cells. In places underneath the pia anachroid and in the substance of the brain an accumulation of lymphoid cells was present. In other places there was a heaping up of endothelial cells of the pia directly in contact with the brain substance. In the pons the vessels were congested, but the perivascular infiltration was less marked. In the medulla, at the floor of the fourth ventricle, the congestion was much more apparent. There were several hemorrhagic areas, the vessels and capillaries were dilated and surrounded by a perivascular infiltration of lymphocytes and mononuclear cells.

Neurosyphilis and Psychoses.—Nineteen cases are presented by Lowrey of which fourteen were undoubted cases of neurosyphilis, one case of pseudoparesis and four had negative physical and equivocal serologic findings. Of the fourteen undoubted cases only four presented clinical evidence from which a diagnosis of neurosyphilis could be made. Since neurosyphilis may exist in association with any type of mental symptoms, and since such states may exist in the absence of any of the usual signs and symptoms of neurosyphilis, Lowrey urges that lumbar puncture should be done at least in all cases which present any atypical features. It is equally important to puncture in cases with any clinical signs of neurosyphilis, since the signs may be misleading.

Hereditary Exophthalmic Goiter.—Climenko's patients were related: mother, two daughters and children of each of these—a boy, in one case and a girl in the other. The transmission was a direct one and along the female line. It is emphasized that the occurrence of exophthalmic goiter in a boy, aged 10, and in a girl, aged 6, is in itself an extremely rare condition.

Curative Effect of Influenza.—Burr's case is an example of the favorable influence exerted by an acute infection—influenza—on an illness of many months' duration, enabling a bedridden woman suffering from an old meningomyelitis, with severe cystitis, to recover sufficiently to do housework.

Boston Medical and Surgical Journal

May 27, 1920, **182**, No. 22

John Hunter at Oxford. H. Viets, Boston.—p. 545.
Fracture of Posterior Tubercle of Astragalus vs. Inconstant Os Trigonum. F. W. O'Brien, Boston.—p. 548.
Urological Cases. W. C. Quinby, Boston.—p. 551.

Bulletin of Medical and Chirurgical Faculty of Maryland, Baltimore

February, 1920, **12**, No. 5

Argument in Favor of Establishment of Medical Newspaper Comparable to Trade Journal of Other Walks of Life. B. M. Bernheim, Baltimore.—p. 81.

Colorado Medicine, Denver

April, 1920, **17**, No. 4

Artificial Menopause Induced by the Roentgen Ray. C. E. Giffin, Boulder.—p. 84.
Personal Reminiscences of Earlier Years of Sir William Osler. E. J. A. Rogers, Denver.—p. 88.
Hernias in Children. L. J. Weldon, Denver.—p. 95.
Complete Epispadias; Review of Literature. L. I. Miller, Denver.—p. 97.

Florida Medical Association Journal, St. Augustine and Jacksonville

March, 1920, **6**, No. 9

Care and Individuality in Obstetrics. J. H. Bickerstaff, Pensacola.—p. 168.
Motor Insufficiency and Dilation of Stomach with Therapeutic Suggestions. G. M. Niles, Atlanta, Ga.—p. 170.

Georgia Medical Association Journal, Atlanta

April, 1920, **9**, No. 12

Essential Factors in Public Defense Against Venereal Disease. R. L. DeSaussure, Rome.—p. 85.
What We Have Done in Georgia to Aid in Control of Venereal Diseases. J. P. Bowdoin, Atlanta.—p. 88.
Economic Value of Early Diagnosis and Treatment in Hand Infections. R. H. Wicker, Rome.—p. 91.
Toxic Tonsils. W. C. Lyle, Atlanta.—p. 93.
Radium Therapy for Uterine Hemorrhages. O. D. Hall, Atlanta.—p. 95.

Iowa State Medical Society Journal, Des Moines

April 15, 1920, **10**, No. 4

Rest in Tuberculosis. H. V. Scarborough, Oakdale.—p. 98.
Roentgenology in Diagnosis of Incipient Tuberculosis. A. W. Erskine, Cedar Rapids.—p. 104.
Nerve Injuries of War. A. B. Phillips, Clear Lake.—p. 106.
Relation of Day Schools for Deaf to State Institution. H. G. Langworthy, Duhuque.—p. 108.
Instruction of Deaf. H. W. Rothert, Council Bluffs.—p. 109.
Medical Education in Iowa. D. S. Fairchild, Clinton.—p. 113.
Brief History of Mobile Hospital No. 1. D. Macrae, Jr., Council Bluffs.—p. 118.

May 15, 1920, **10**, No. 5

Value of Military Surgery in Civilian Practice. G. W. Crile, Cleveland.—p. 137.
Surgical Management of Gastric and Duodenal Ulcer. J. E. O'Keefe, Waterloo.—p. 142.
Epilepsy. E. M. Williams, Sioux City.—p. 149.

Journal of Orthopedic Surgery, Lincoln, Neb.

May, 1920, **2**, No. 5

*Habitual Dislocation of Shoulder Joint. R. Ollerenshaw, Manchester, England.—p. 255.
*Syphilitic and Tuberculous Joints. P. W. Roberts, New York.—p. 265.
*An Unusual Abnormality of Elbow Joint. L. T. Brown.—p. 268.
Birth Paralysis. H. Platt, Manchester, England.—p. 272.

Habitual Dislocation of Shoulder.—In Ollerenshaw's opinion the deltoid muscle flap operation offers the best means of overcoming the tendency to dislocation because it provides, first, a good sling bracing up the head and neck of the humerus and, second, a muscular sling which contracts when the rest of the deltoid is in action, that is to say, in abduction of the arm, in which position the dislocation occurs.

Syphilitic and Tuberculous Joints.—Roberts has observed more than 200 cases of chronic destructive joint disease with symptoms usually ascribed to tuberculosis which, from their behavior under mercury and potassium iodid, their suggestive family histories, and the presence in many of the patients of dental stigmata, it is reasonable to believe were syphilitic.

Abnormal Spur at Elbow Joint.—In Brown's case a spur formation was present on the inner side of the ulna at the joint line. The spur was so large that it overlapped and curved around the internal side of the trochlea surface of the humerus. At the tip of this spur was a small bony mass which was not connected by bone trabeculae to the spur. There was also a slight amount of hypertrophic arthritis at other parts of the joint. Flexion and extension were limited in degree.

Kansas Medical Society Journal, Topeka

April, 1920, **20**, No. 4

Empyema Complicating Influenza. T. J. Carter, Wichita.—p. 89.
Treatment of War Amputated. T. G. Orr, Kansas City.—p. 92.

Protein Therapy in Hodgkin's Disease. W. E. McVey, Topeka, and D. D. Wilson, Nortonville.—p. 96.

May, 1920, **20**, No. 5

Myocardial Diseases and Cholelithiasis. M. T. Sudler, Roseda'e. —p. 119.
Child Welfare in Kansas. L. A. DeVilhiss, Ottawa.—p. 120.
Nasal Accessory Sinusitis. L. B. Spake, Kansas City.—p. 123.

Kentucky Medical Journal, Bowling Green

May, 1920, **18**, No. 5

Auricular Flutter and Use of Electrocardiograph. L. K. Baldauf, Louisville.—p. 151.
Auricular Fibrillation and Auricular Flutter. F. C. Askenstedt, Louisville.—p. 155.
*Appendiceal Abscess Rupturing Through Back. C. B. Spalding, Louisville.—p. 159.
Suffocative Pneumothorax in a Child Aged Five Years. E. F. Katzmann, Louisville.—p. 160.
Two Cases of Pernicious Anemia. C. G. Lucas, Louisville.—p. 161.
Treatment of Rectal Carcinoma. G. S. Hanes, Louisville.—p. 163.
Few Conditions Treated by Means of Neosalvarsan Other than Syphilis Dating from 1914 to Date. S. J. Rose, Winchester.—p. 169.
Influenza as I Saw It. T. H. Hardesty, St. Mary.—p. 170.
Influenza. G. R. Keen, Scottsville.—p. 172.
Treatment of Influenza. S. S. McReynolds, Russellville.—p. 174.
Report of Case. Z. A. Thompson, Pikeville.—p. 175.
Surgery in Rural Districts. C. C. Howard, Glasgow.—p. 176.
Trachoma. J. N. Bailey, Paducah.—p. 177.
Imperforate Anus; Case Report. C. Skinner, Louisville.—p. 178.

Rupture of Appendiceal Abscess Through Back.—In Spalding's case an abscess had formed seventeen years previously half way between the vertebrae and the crest of the ileum on the right side posteriorly, which was opened without the use of anesthesia. A large quantity of pus drained at the time, and the sinus continued to discharge for nine months. At the age of 17 the sinus reopened and discharged for one month. Her health then remained fairly good until an attack of supposed "rheumatism" for which she was treated more than a year, and which culminated in an abscess opening on the outer side of the right thigh at the junction of the middle and lower third, July 1, 1918. The area continued to drain until Spalding saw the patient. At the operation it was found that a ruptured appendix had been the cause of the original abscess.

Maine Medical Association Journal, Portland

April, 1920, **10**, No. 9

Medical Defense. J. A. Spalding, Portland.—p. 263.

Medical Record, New York

May 29, 1920, **97**, No. 22

Diagnosis of Chronic Gallbladder Pathologies. A. Bassler, New York. —p. 899.
Surgery of Gallbladder. J. F. Erdmann, New York.—p. 901.
*Diagnosis of Spinal Cord Tumors. H. Climenko, New York.—p. 903.
Management of Certain Mental and Nervous Cases; A. Medicolegal Aspect. D. E. Hoag, New York.—p. 910.
Stammering; Underlying Causes and Method of Correction. F. Martin, New York.—p. 914.
*Deficient Thyroid Secretion as Etiologic Factor in Gastric and Duodenal Ulcers and Hyperacid Conditions. J. Katz, Brooklyn.—p. 916.
Cooperation of Physician and Dentist Necessary for Success in Treatment of Systemic Diseases. R. R. Reed, Bay City.—p. 916.

Diagnosis of Spinal Cord Tumors.—Pain was a common factor in the three cases cited by Climenko. It expressed itself differently, however, in each case. In two cases of extramedullary tumors, it was an early symptom. In one case of intramedullary tumor, it was of later development. In one case the pain was more like the type of paresthesia at the beginning, and only later did it assume the sharp, lancinating character. In the other two cases it began as a severe sharp, cutting pain, and continued all through the course of the disease. This subjective symptom, pain, is a very valuable guide when properly interpreted. In eliciting this symptom, Climenko says, the patient's psyche must be taken into consideration. The best way is to watch the patient's facial expression when the right question is put and the proper answer is given. The facial expression is particularly valuable in testing for tenderness. An essential point in diagnosis, to which Climenko calls attention, is, that in one case after lumbar puncture the patient became suddenly more paralyzed and the Brown-Séquardian syndrome became more pronounced. This is due to the fact that after a sudden withdrawal of the fluid the tumor pressed more on the cord and produced the given syndrome. Such occurrence, Climenko believes, should be considered as pathognomonic of spinal cord tumors where vertebral disease can be excluded.

Deficient Thyroid Secretion in Gastric Ucer.—Having observed clinically that hyperacidity may be caused by faulty thyroid secretion, and cured or relieved by the administration of thyroid extract, Katz decided to try the use of thyroid extract in the treatment of ulcers of the stomach and obtained good results.

Mental Hygiene, New York

April, 1920, **4**, No. 2

Childhood: Golden Period for Mental Hygiene. W. A. White, Washington, D. C.—p. 257.
Essentials of an Education. S. Paton, Princeton, N. J.—p. 268.
Trade Unionism and Temperament. E. E. Southard, Boston.—p. 281.
Applicability of Findings of Neuropsychiatric Examinations in Army to Civil Problems. P. Bailey, New York.—p. 301.
Experience of Child: How They Affect Character and Behavior. C. M. Campbell, Baltimore.—p. 312.
Program for Mental Hygiene in Public Schools. E. S. Abbot, Philadelphia.—p. 321.
Some Adaptive Difficulties Found in School Children. E. L. Richards, Baltimore.—p. 331.
Mental Disorder in Adolescence. M. A. Harrington, New York. —p. 364.
Mental Deficiency in New York State. W. C. Sandy, New York. —p. 380.
Does There Exist a Need for a Program of Education in Mental Hygiene. D. A. Laird, Iowa City, Iowa.—p. 393.
Nervous and Mental Disorders of Soldiers. S. Brown, Washington, D. C.—p. 404.
What Can Be Done for the Maladjusted? Anne T. Bingham, Baltimore.—p. 422.

Michigan State Med. Society Journal, Grand Rapids

May, 1920, **19**, No. 5

Urterer Stone. G. Kolischer and J. S. Eisenstaedt, Chicago.—p. 190.
Medical Service in Community Hospital. J. G. R. Manwaring, Flint. —p. 191.
Certain Aspects of Hysteria. G. K. Pratt, Flint.—p. 192.
Drainage of Uterus After Labor, Abortion or Menstruation and Its Relation to Septic Infection. G. H. Judd, Detroit.—p. 196.
Errors in Surgical Diagnosis. S. Levin, Lake Linden.—p. 197.
Roads. E. H. Foust, Ithaca.—p. 200.

Missouri State Medical Ass'n Journal, St. Louis

May, 1920, **17**, No. 5

Neuritis. G. W. Robinson, Kansas City, Mo.—p. 184.
Surgical Treatment of Goiter. W. Bartlett, St. Louis.—p. 190.
Prevention of Complications in Pregnancy and Labor. G. D. Royston, St. Louis.—p. 196.

New York Medical Journal

May 29, 1920, **111**, No. 22

Sex Disproportion and Its Consequences. R. M. Leslie, London. —p. 925.
*Secondary Nephrectomy. A. L. Chute, Boston.—p. 931.
Deaf Child in Relation to Parents, Teacher and Physician. E. Amberg, Detroit.—p. 936.
Year's Observation in Orthopedic Surgery. E. Adams, New York. —p. 938.
Frost-Lang Operation. H. F. Hansell, Philadelphia.—p. 943.
Relation of Neurology to General Medicine. J. W. McConnell, Philadelphia.—p. 944.
Roentgen-Ray Diagnosis. J. W. Shuman, Sioux City, Iowa.—p. 946.
Spinal Subcutaneous Injections. S. Block, Brooklyn.—p. 949.

Secondary Nephrectomy.—Of twenty cases in which Chute did a secondary nephrectomy, nine were cases in which a primary nephrectomy had been done to lessen the danger to life from a subsequent nephrectomy. Seven of these nine patients presented a pyonephrosis; three due to renal stone; two of tuberculous origin and accompanied by perirenal abscess, and two nontuberculous; one of these patients also had a perinephritis abscess. There were also two large, acute hydronephroses, both in children, one the result of trauma, mildly infected, the other apparently of congenital origin. Of the nine patients subjected to secondary nephrectomy only one died. This was one of the tuberculous cases with a perirenal collection of pus, and as death did not take place until about six weeks after the secondary nephrectomy, it probably cannot be charged directly against the operation; there was no necropsy but death was supposed to have been due to a more or less generalized tuberculosis. Chute feels sure that had a primary nephrectomy been carried out on these nine patients the mortality would have been much greater than it

was; that the operation of secondary nephrectomy, in spite of its increased technical difficulties was really a conservative procedure for these patients. The remaining eleven cases represent a group in which Chute did not plan to do secondary nephrectomy but was forced to do it. Four of the patients in this group had had stones removed from their kidneys. Each had a urinary sinus in his loin that had existed for periods that varied from seven months to twenty years. Three additional cases in this group illustrate errors in diagnosis in connection with renal stones that led finally to secondary nephrectomies. Only one patient in this group died, a man with hypernephroma, on whom an unsuccessful attempt at removal had been made some months before.

Ohio State Medical Journal, Columbus

May 1, 1920, **16**, No. 5

Prevention and Treatment of Industrial and Traumatic Deformities. W. G. Stern, Cleveland.—p. 325.
Relative Value of Dry, Wet and Ointment Dressings for Wounds. C. T. Souther, Cincinnati.—p. 333.
Birth of Large Children. M. A. Tate, Cincinnati.—p. 336.
Coloboma and So-Called Congenital Dislocation of Lens. C. F. Clark, Columbus.—p. 338.
Cases Presenting Indications for Bronchoscopy; Complications Incident to Operation. T. Hubbard, Toledo.—p. 343.
*Sarcoma of Cerebellum; Report of Case. P. J. Steuber, Lima.—p. 349.
Intermediary Operation After Childbirth and Its Technic. J. L. Bubis, Cleveland.—p. 354.
Some Phases of Rural Health Problems. J. C. Larkin, Hillsboro.—p. 356.
Venereal Diseases as Problem of Preventive Medicine. J. M. Shapiro, Haifa, Palestine.—p. 358.

Sarcoma of Cerebellum.—Steuber's patient was only 8 years of age. He was under observation for one year. At the necropsy the cerebellum presented on section a sharply circumscribed, necrotic, caseated mass, replacing practically all the entire vermis, and extending well out into the cerebellar hemispheres, leaving only a small capsule of cerebellar structure varying in width from a few millimeters to 2 centimeters. The pathologic diagnosis was small round cell sarcoma.

Psychobiology, Baltimore

April, 1920, **2**, No. 2

Relative Stimulating Efficiency of Continuous and Intermittent Light in Vanessa Antiopa. W. L. Dolley, Jr., Ashland, Va.—p. 137.
Relation of Phototropism to Swarming in Honey Bee, Apis Mellifera L. D. E. Minnich, Cambridge, Mass.—p. 177.

Public Health Journal, Toronto

April, 1920, **11**, No. 4

Peace-Time Program of Red Cross Society. J. G. Fitzgerald, Toronto.—p. 149.
Syphilis and Gonorrhoea from Public Health Point of View. R. R. McClenahan, Toronto.—p. 177.
Plan for More Effective Federal and State Health Administration. F. L. Hoffmann, Newark, N. J.—p. 181.

Rhode Island Medical Journal, Providence

April 1, 1920, **3**, No. 4

Clinical Neuropathology; Value in General Practice. F. J. Farnell, Providence.—p. 64.
Need of Mental Hygiene in Rhode Island. A. H. Ruggles, Providence.—p. 68.
Education and Recreation in the Army. W. G. Haan, U. S. Army.—p. 71.

May, 1920, **3**, No. 5

Analysis of One Hundred Deaths from Diphtheria. D. L. Richardson, Providence.—p. 87.
Posterior Positions of Occiput. H. G. Partridge, Providence.—p. 93.

South Carolina Medical Ass'n Journal, Greenville

April, 1920, **16**, No. 4

Gallbladder Surgery. A. E. Baker, Charleston.—p. 95.
Hyperthyroidism. C. M. Rakestraw, Chester.—p. 97.

May, 1920, **16**, No. 5

Basal Metabolism in Hyperthyroidism. S. McGuire, Richmond.—p. 107.
Federal and State Program for Control of Venereal Diseases. C. V. Akin, Washington, D. C.—p. 120.

Southern Medical Journal, Birmingham, Ala.

May, 1920, **13**, No. 5

Comparison of Tests of Renal Function. C. W. Dowden, Louisville.—p. 305.
Acute Ascites. J. B. Guthrie, New Orleans.—p. 313.
Sippy Treatment of Peptic Ulcer. J. Friedenwald and T. H. Morrison, Baltimore.—p. 318.
Prognosis of General Paralysis of Insane. E. W. Fell, Cincinnati.—p. 326.
Acute Infections of Childbood. R. M. Pollitzer, Charleston, S. C.—p. 329.
Work of Public Health Service in Care and Treatment of Sick and Disabled Persons Discharged from Military Service. C. H. Lavinder, Washington, D. C.—p. 335.
Malaria Control Through Application of Antimosquito Measures: Results Obtained in Southeast Arkansas. H. A. Taylor, Mound, La.—p. 339.
*Malignant Moles. H. H. Hazen, Washington, D. C.—p. 345.
Pre-Cancerous Lesions of Breast with Special Reference to Chronic Cystic Mastitis. J. S. Rodman, Philadelphia.—p. 348.
Benign Tumors of Breast. J. S. Horsley, Richmond, Va.—p. 356.
*Importance of Early Diagnosis in Circulatory Disturbances of Extremities. B. M. Bernheim, Baltimore.—p. 365.
Operative Treatment of Pelvic Inflammation. C. R. Robins, Richmond, Va.—p. 368.
Report of Eye Cases. H. H. Martin, Savannah, Ga.—p. 373.
Unusual Eye Cases. T. McDavitt, St. Paul.—p. 377.
Trend of Modern Medical Education. W. W. Herrick, New York.—p. 381.

Malignant Moles.—This paper was abstracted in The Journal, Dec. 6, 1919, p. 1796.

Early Diagnosis of Circulatory Changes in Extremities.—Bernheim suggests that physicians might well direct a little more attention to a study of circulatory changes in the extremities. If a patient complains of cold feet, pain in the feet, especially if the pain is sufficient to keep him awake at night, the state of the circulation ought to be investigated, instead of dismissing the subject with a snap diagnosis of neuritis. Neuritis it is, of course. There is most likely an inflammatory process going on in the nerves, but it is of the degenerative type and due to a lack of blood supply, an ischemia. It is an ischemic pain, a pain that is cumulative in its effect and one that is most difficult to relieve. Indeed, the pain is but the outward expression, the earliest perhaps, of blood vessel changes which become more and more profound as time goes on, until finally there is a collapse from which recovery is not possible.

Southwest Journal of Med. and Surg., El Reno, Okla.

March, 1920, **28**, No. 3

Effectiveness of Neurosurgical Procedures. E. Sachs, St. Louis.—p. 50.
Trachoma. L. H. Buxton, Oklahoma City.—p. 56.
Bone Transplantation. B. Brooks, St. Louis.—p. 59.

Southwestern Medicine, El Paso, Texas

April, 1920, **4**, No. 4

Eggleston Method of Digitalis Therapy; Case Report. D. N. Shulman, Tucson, Ariz.—p. 1.
Blastomycetes. Report of Case. G. Werley, El Paso, Texas.—p. 4.
Nitrous Oxid and Oxygen Anesthesia in General Surgery. F. O. Barrett, El Paso, Texas.—p. 9.

Tennessee State Medical Ass'n Journal, Nashville

April, 1920, **12**, No. 12

Surgery and Roentgen Rays in Malignancy. W. A. Bryan, Nashville.—p. 433.
Vacuum Frontal Sinusitis. L. Levy, Memphis.—p. 435.
Post War Physician. H. R. Fairfax, Bristol.—p. 436.
Birth and Death Registration. H. L. Baugh, Nashville.—p. 439.
Educating Patient in Treatment of Gastro-Intestinal Diseases. S. Harris, Birmingham.—p. 440.
Municipal Narcotic Dispensaries. S. D. Hubbard, New York.—p. 445.
Lethargic Encephalitis. S. S. Crockett, Nashville.—p. 447.

Virginia Medical Monthly, Richmond

April, 1920, **47**, No. 1

Roentgen Rays in Treatment of Menstrual Disorders. J. W. Hunter, Norfolk.—p. 1.
Treatment of Menorrhagia with Radium. S. W. Budd, Richmond.—p. 5.
Symptoms and Signs Suggesting Possibility of Syphilis, Observed in Routine Examinations. J. D. Willis, Roanoke.—p. 9.
Importance of Routine Bacteriologic Studies in Eye Diseases. E. Hill, Richmond.—p. 12.
Traumatic Rupture of Diaphragm with Hernia of Stomach, Spleen and Transverse Colon into Left Pleural Cavity, and Communicated Fracture of Fourth Lumbar Vertebra. S. S. Gale, Roanoke.—p. 16.
Chronic Knee Strains. H. P. Mauck, Richmond.—p. 18.
Spontaneous Rupture of Uterus. Case Report. M. P. Rucker, Richmond.—p. 21.
Hyperthyroidism. C. M. Rakestraw, Chester.—p. 24.
Removal of Morbid Fears and Similar Besetments: Illustrative Cases. T. A. Williams, Washington, D. C.—p. 25.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Annals of Tropical Medicine and Parasitology, Liverpool

March 15, 1920, **13**, No. 4

Mechanism of Spontaneous Elimination of Yellow Fever from Endemic Centers. H. R. Carper.—p. 299.
*Metaholism of White Races Living in Tropics. Influence of External Temperature and Rate of Cooling on Respiratory Metabolism. W. J. Young.—p. 313.
Hypopus of Carpoglyphus Anonymus, Haller. H. M. Morris.—p. 339.
*Xerophthalmia in Native of Gold Coast. J. W. S. Macfie.—p. 343.
*Effect of Malaria in Leukemia. J. W. S Macfie.—p. 347.
Tropical Australia and Its Settlement. A. Breinl and W. J. Young.—p. 351.
*Experimental Infection in England of Anopheles Plumbeus, Stephens, and Anopheles Bifurcatus, L., with Plasmodium Vivax. B. Blacklock and H. F. Carter.—p. 413.
Anopheles (Coelodiazesis) Plumbeus, Stephens; Its Breeding-Places, Occurrence in Liverpool District, and Possible Connection with Spread of Malaria. B. Blacklock and H. F. Carter.—p. 421.
Description of Male Genital Armatures of British Anopheline Mosquitoes. H. F. Carter.—p. 453.
Human Trypanosomiasis in Peru (T. Escomeli). W. Yorke.—p. 459.

Metabolism of White Races in Tropics.—During the hot season of the year a greater metabolism was observed by Young than in the cooler season, excepting on certain days in the latter, when the rate of cooling was sufficiently great to cause the subject to shiver. This greater metabolism is attributed to the effects of the ordinary activities of everyday life which had preceded the actual experiment, which in the hot, moist weather produce a greater increase in body temperature, and consequently in the metabolism, than in the cool season. These effects also are reduced much more slowly during the hot season, when the cooling power of the atmosphere is low, than during the cool weather when the cooling power is much greater. The effects of such conditions prior to the actual measurement have thus a larger influence on the level of metabolism in the hot season. With tropical heat the metabolism is at a high level on account of the increase in body temperature produced by even slight exertion, and which decreases only very gradually after the exertion has ceased. Cold may also increase the metabolism but by producing shivering and so increasing the muscular activity.

Xerophthalmia.—Attempts to reproduce the disease in animals, by means of the bacillus obtained from a case of this disease, were unsuccessful.

Effect of Malaria in Leukemia.—In myelogenous leukemia as in lymphatic leukemia, a notable reduction in the number of leukocytes concides with the appearance in the blood of malaria parasites. This reduction is not permanent, and is rapidly effaced by treatment with quinin.

Experimental Anopheles Infection.—Blacklock and Carter have been able to infect laboratory-bred *Anopheles plumbeus* with *Plasmodium vivax*. At 28 C. infections of the gut and salivary glands were obtained; at room temperature (maximum 26 C., minimum 17 C.) gut infection only was obtained. They have also produced infection of the gut with *P. vivax* in the case of *A. bifurcatus* at 28 C. This is the first experimental evidence produced that *A. plumbeus* is capable of becoming infected with a malaria parasite.

Bristol Medico-Chirurgical Journal

March, 1920, **37**, No. 138

Queen Elizabeth's Academy. L. M. Griffiths.—p. 1.
Applications of Physiology to Medicine. G. A. Buckmaster.—p. 7.
Modern Treatment of Tuberculosis of Spine. A. Rendle Short.—p. 19.
Cases of Lethargic Encephalitis in Bristol. D. S. Davies, J. O. Symes, F. H. Edeworth, I Walker Hall and J. A. Nixon.—p. 25

British Journal of Tuberculosis, London

April, 1920, **14**, No. 2

*Care of Tuberculous Children: Treatment at Treloar Cripples' Hospital, Alton. H. Gauvain.—p. 49.
Infection and Predisposition in Tuberculosis: Summary of Some Views Held During Last Hundred Years. S. Delépine.—p. 60.
Criticism of London Scheme for Prevention of Tuberculosis. G. H. Dart.—p. 64.
Discharged Soldier and Sanatorium Treatment. G. B. Dixon.—p. 67.

Treatment of Tuberculosis.—The chemotherapeutic treatment of Ellis consisting of the use of an unstable brass compound, combined with picric acid, has been tested clinically at Alton with promising results in suitably selected cases. Hitherto its value has been most apparent in certain types of lupus, particularly when heliotherapy has been simultaneously applied. Further investigation is proceeding. Gauvain does not attach the importance to the sun cure ascribed to it by Rollier and other enthusiasts although it is a useful aid to treatment in many cases, and its psychological effect is remarkable.

Predisposition in Tuberculosis.—In Delépine's opinion it is better to attach too little than too much importance to the determining influence of predisposition. Tuberculosis can be controlled permanently only by taking comprehensive and thorough measures against infection, but in doing so one must keep in mind that there are predisposing circumstances which call for special measures. It is also important to distinguish between latent or occult and manifest disease. Finally, it must always be remembered that, accidentally or not, several factors generally act concurrently, and that their relative importance varies according to circumstances.

British Medical Journal, London

May 15, 1920, No. 3098

*Nutrition of Articular Cartilage. T. S. P. Strangeways.—p. 661.
Use of Polarized Light in Detection and Investigation of Suture Materials Embedded in Tissues. M. J. Stewart.—p. 663.
Gall Stones. R. P. Rowlands.—p. 665.
Air-Way Infections. Tfl H. C. Benians.—p. 668.
*Loewi's Epinephrin Mydriasis as Sign of Pancreatic Insufficiency. W. L. Cockcroft.—p. 669.
Vagasthenia. J. A. W. Watts.—p. 669.
Acute Suffocative Catarrh. J. A. Smyth.—p. 670.

Nutrition of Articular Cartilage.—Strangeway's studies show that the articular cartilage of the joints may derive some, if not the greater part, of its nourishment from the synovial fluid. If this hypothesis is true, then the changes which are found in the degenerative types of arthritis can also be explained. The primary cause of these degenerative types will be found not in the cartilage or bone, but in changes in the nutritive value of the synovial fluid. There is evidence that changes in the nutritive value of the synovial fluid may be due to changes in the vessels of the capsule of the affected joints.

Loewi's Test in Pancreatic Disease.—In one case reported by Cockcroft this sign was negative on three occasions; 2 drops of the adrenalin chlorid brand of epinephrin solution (1 : 1,000) were dropped into one eye. After one hour there was no reaction, the pupils remaining exactly equal. The jaundice was found to be due to carcinoma of the bile ducts with secondary growths in the liver. Suppurative cholangitis was also present. The pancreas was nowhere invaded by the growth, nor were there any secondary deposits in it, the gland itself being quite healthy. In a second case the test was positive; marked dilatation of the pupil appeared after one hour. At the postmortem examination, there was found to be malignant disease of the head of the pancreas, which invaded the duodenum and common bile duct. There were metastases in the liver, and obstruction and dilatation of the common bile duct and bile passages. The growth in the pancreas caused stenosis of the duodenum, with secondary dilatation and hypertrophy of the stomach and upper part of the duodenum.

China Medical Journal, Shanghai

March, 1920, **34**, No. 2

Study of Thirty-five Cases of Typhoid and Paratyphoid. H. J. Smyly.—p. 109.
*Unusual Pathologic Conditions of Intestines. R. H. Mole.—p. 115.
*Cancer in Hainan: Statistical Study of 131. Operations. N. Bercovitz.—p. 119.
Cases of General Paresis in China. J. L. Harvey.—p. 123.
Surgical Gleanings from War Experience. E. W. Kirk.—p. 131.
Dystrophia Adiposa Genitalis: Report of Case. G. D. Whyte.—p. 139.
Case of Cretinism. W. G. Lennox.—p. 140.
Surgical Hints to Young Medical Missionaries. C. C. Elliott.—p. 144.

Intestinal Cases.—The cases cited by Mole were as follows: (1) Almost complete obstruction of the rectum, due to

dysentery; (2) a ringed ulceration of the ileum, 2 inches from the ileocecal junction, causing complete intestinal obstruction; (3) extensive ulceration of the large intestine in a case of pulmonary phthisis; (4) extensive thrombosis of the mesenteric veins in a case of cholera.

Cancer in Hainan.—It appears from Bercovitz's study that cancer in Hainan is as much a disease of the early decades of life as of the later, for which no reason can be assigned. Cancer of the penis and glands of the neck is unusually frequent; for the former an old primary sore may be the etiologic factor; for the latter no reason can be assigned. Cancer of the exposed surface of the body is very common. Inasmuch as in most cases these people wear a scanty amount of clothing, the arms, trunk and legs of men who work the fields being bare, the rays of the sun may be a contributing factor. But it is rather more likely that large ulcers, treated in the native fashion, and the sores resulting from counter irritation as practiced by the Chinese, are the etiological factors. This is all the more probable in view of the tendency to keloid formation and the universal infection of wounds. Cancer of the stomach is infrequent. The absence of certain virulent streptococcic infections which are responsible for gastric ulcer may have something to do with this; or it may be that in this case, as in cancer of the uterus, the surgeon has not seen the cases. Cancer of the uterus is infrequent. It may be that these cases have not been seen by the physician, but it seems rather suggestive that the virulent infections of the female generative organs seem to be infrequent here.

Indian Medical Gazette, Calcutta

March, 1920, **55**, No. 3

Epidemic Encephalitis. L. P. Stephen and K. M. Bulchandani.—p. 81.
Actual Weight of Cataractous Lens; Clinical Notes on Cataract. A. E. J. Lister.—p. 84.
Kala-Azar In Europeans in Nowgong District of Assam. J. Dodds-Price.—p. 87.
Influenza in Sambhu Nath Pundit Hospital, Calcutta. D. N. Sen. —p. 89.
Work of Meiktila Vaccine Depot. J. Entrican.—p. 92.
Basrah Oil Fuel Refuse Destructor. G. R. Oberai.—p. 97.

Kitasato Archives of Experimental Medicine, Tokyo

December, 1919, **3**, No. 3

Study of Spirochaeta Morsus-Muris in Nippon Field Vole (Microtus Montebelli). R. Kobayashi and M. Kodama.—p. 199.
*Spirochete-Like Bodies Appearing in Culture of Certain Species of Bacteria. G. Koga and I. Otsubo.—p. 207.
Origin of D-Lactic Acid in Animal Organism. K. Taguchi.—p. 223.
*Early Treatment of Tuberculosis by Protective Immunization. K. Shiga.—p. 239.

Studies on Bacillus Mallei.—Koga and Otsubo have proved by cultivation that *Bacillus mallei* has flagella and produces spiral bodies. These spirochete-like bodies seem to be an abnormal development of either bacillary bodies or, more probably, the flagella in a certain condition. They bear close resemblance to the involuted form of *Treponema macrodentium* described by Noguchi.

Vaccine Therapy of Tuberculosis.—The results obtained by Shiga from the use of his T. B. serovaccine as an immunizing agent in the treatment of 300 cases of pulmonary tuberculosis have been very gratifying to him. Nutrition was improved markedly, the patient gained in weight and the symptoms of slight fever and lung sounds disappeared completely. Patients seen four years after cessation of treatment were still well. This vaccine was also used after the cessation of a pleurisy, following extirpation of tuberculous kidneys and testes. Dilutions of from 1:20 to 1:5,000 were used in doses varying from 0.1 to 0.8 c.c.

Lancet, London

May 15, 1920, **1**, No. 5046

Ambulatory Treatment of Fracture of Limbs; Tuberculous and Arthritic Disease of Joints. C. A. Hoefftcke.—p. 1042.
Rev. John Ward and Medicine. D'Arcy Power.—p. 1043.
Bone Grafting in Treatment of Fractures? E. W. H. Groves.—p. 1048.
Resection of Tibia with Grafting. L. E. B. Ward.—p. 1055.
*Infections of Hand. H. W. L. Molesworth.—p. 1055.
Specificity and Evolution in Disease. W. J. Collins.—p. 1059.
*Gastrocolic Fistula. D. Firth.—p. 1061.

Infections of Hand.—Analysis of 168 cases by Molesworth showed that hand infections in working people are too frequently the cause of grave disability. The time to treat these conditions efficiently is in their early stages. When tendon sheaths, etc., have become infected the hope of a useful finger is a thing of the past; the object of treatment then becomes to save whole hands, forearms and even lives. The outlook of the profession toward hands is much the same as it was toward the appendix twenty years ago. If localized tenderness became the danger signal in the hand, as it has become in the abdomen, and if suppuration in the hand, however small the area involved, were regarded as an indication for immediate operation, Molesworth says the morbidity of infected hands would fall in much the same way as the mortality of infected appendices has fallen.

Gastrocolic Fistula.—In the case recorded by Firth, a correct diagnosis was not made. The past history was indefinite, the patient had undergone no operation, and two of the most characteristic symptoms, diarrhea and vomiting, subsided on admission to hospital, so that no opportunity occurred to investigate their nature. The patient died. Firth discusses in detail a combination of symptoms which should arouse a suspicion of the existence of a gastrocolic fistula.

Medical Journal of Australia, Sydney

April 3, 1920, **1**, No. 14

Fracture-Dislocation of Cervical Spine in a Child. J. G. Edwards. —p. 311.
Case of Suppurating Hydatid of Liver with Multiple Abscesses: Recovery. C. Gordon Shaw.—p. 311.

April 10, 1920, **1**, No. 15

Surgical Shock. V. Hurley.—p. 331.
Plea for Standard of Cure in Cases of Gonorrhoeal Urethritis in the Male. V. N. B. Willis.—p. 336.
Cholecystitis in a Patient with Transposition of Viscera. G. Bell and R. C. Winn.—p. 339.

Practitioner, London

April, 1920, **104**, No. 4

Medicolegal Notes. J. Collie.—p. 241.
Medical Notes. T. Horder.—p. 246.
Recent Public Health Work. J. Priestley.—p. 249.
Therapeutic Measures in Influenza. G. E. Beaumont.—p. 263.
*Splenomegaly and Jaundice; Splenectomy. A. A. McConnell.—p. 278.
Lethargic Encephalitis. A. Howell.—p. 290.
*Syringing Ears. T. B. Layton.—p. 299.
Maladies and Medicines. A. Campbell.—p. 305.
Ascaris Lumbricoides as Cause of Urgent Symptoms in Disease Among Children. C. Pentland.—p. 313.

Splenectomy in Splenomegaly and Jaundice.—In a case of Hanot's cirrhosis without enlargement of the liver, McConnell did a splenectomy. He says that if there is any evidence that the liver is involved secondarily to the spleen, or if the spleen is a factor in the causation or an adjuvant to the course of hepatic cirrhosis, splenectomy is indicated. His patient did very well for thirty-six hours, when she suddenly vomited a large amount of blood. Her pulse became imperceptible. Twelve hours later she vomited more blood, and died shortly afterward. The postmortem report showed that the stomach and duodenum were full of blood without any lesion whatever of their walls. This gastric hemorrhage was undoubtedly the cause of death and was in all probability due to the advanced cirrhotic state of the liver.

Syringing Ears.—Two rules are laid down by Layton: First, that water at the body temperature must be used; second, that for wax the syringing must be done hard, and for pus it must be done gently. To each of these rules there is an exception: to the first when the observer wishes to produce giddiness to test the function of the vestibular nerve; to the second when the patient has earache, and may have an acute otitis media, or other painful lesion, beneath the plug of wax.

Tubercle, London

April, 920, **1**, No. 7

Thoracoplasty in Treatment of Pulmonary Tuberculosis. C. Saugman.—p. 305.
Tuberculosis Care Work. Z. P. Fernandez.—p. 317.

May, 1920, **2**, No. 8

*Traumatic Pulmonary Tuberculosis. J. B. McDougall.—p. 353.
Von Pirquet Investigations in a Parish without a Notified Death from Tuberculosis. E. Bjorn-Hansen.—p. 359.

Traumatic Pulmonary Tuberculosis.—In only two cases among 139 cases of gunshot wounds of the chest investigated by McDougall was there a history of former pleurisy or tuberculosis of the lungs. In the severe types of wound seen four or five days after infliction of the injury, it was scarcely possible to make a positive diagnosis of tuberculosis from the physical signs present. In four cases a tuberculous infiltration was suspected clinically, and was corroborated by the roentgen ray. Tubercle bacilli were not found in the sputum in any cases.

Annales de Médecine, Paris

January, 1920, **6**, No. 6

*Tumor of Spinal Meninges. C. Roubier and P. Brette.—p. 433.
*General Paresis Among Arabs. A. Porot and N. Sengès.—p. 444.
*Sequelae of Rachitis in Adults. A. Léri and T. Beck.—p. 449.
*Gland Extracts in Differential Diagnosis. R. Porak.—p. 469.

Tumor of Spinal Meninges.—The woman of 48 complained for six or seven months of pains in the neck and left arm. Then came spastic paraplegia and amyotrophic paresis of the smaller muscles of the hands, predominant on the left. Finally sphincter and trophic disturbances ushered in the terminal phase. The pains throughout the whole year's course were so severe that morphin was required almost daily. Nothing but compression from a tumor could explain the sequence of events, and necropsy revealed a small subdural myxosarcoma, not adherent to cord or meninges, but its anterior position would have rendered access to it extremely difficult.

General Paresis Among Arabs.—The total absence of general paresis among Arab syphilitics has long attracted attention. Not even the stress of years of service at the front brought any tendency to general paresis among the Arab troops. Porot and Sengès relate that in their experience at Alger, notwithstanding the extreme prevalence of syphilis, they have never encountered but one instance of general paresis, and this was of such a mild form that the Arab officer was able to serve for more than three years at the front, and the necropsy findings were meager.

Rachitic Adults.—Léri and Beck draw the composite picture of what they call *les petits rachitiques* from study of twenty-two such cases and forty suspects. In ordinary life there is nothing to suggest that they are not normal except that the legs are rather short, with tendency to genu varum; the teeth are irregular; the root of the nose is somewhat sunken; the nostrils wide and the mentality is backward. Under physical or mental strain their bones soon begin to ache and they whine and complain, and are listless and inert, striving to avoid every effort, even the effort of speaking clearly. This inertia during military service brought some of these men up for discipline, as they simply refused to get up when ordered, wishing to be left alone, while their statements as to their bones aching were so vague that they were not believed. This pathologic type is usually misunderstood. Such persons need peace and quiet, and they should be advised to live in the country, although even here they are liable to break down during periods of extra work, harvesting, etc. Ordinary treatment for rheumatism is of no benefit; rest is what they need until they can reassemble their forces enough for tranquil living.

Gland Extracts for Differential Diagnosis.—Porak has been studying for some years the response to thyroid, pituitary and other gland extracts in health and in disease. The difference in the reaction is often so marked as to aid in differential diagnosis. Suprarenal extract and thyroid extract in the healthy display an immediate pressure reducing and pulse slowing action, but with myxedema nothing of the kind occurs, or it is very slight, or the effect may be the reverse, the pulse becoming accelerated. In one girl of 10 with a white swelling of the knee and tendency to obesity, no effect was apparent from test administration of thyroid extract. This confirmed the suspicion of myxedema, and under regular and continuous thyroid treatment improvement was soon observed; in ten days the weight dropped from 34.3 kg. to 30. Pituitary extract accelerates the pulse in myxedema and slows it in the normal, while it causes the pulse to grow slower from the oculocardiac reflex in myxedema. The test is made with intramuscular injection of 0.5 to 2 c.c. of thyroid extract or pituitary extract. In seven tests with suprarenal extract the blood pressure was not raised as high or as long in myxedema as in the healthy except when the myxedematous were taking thyroid treatment, in which case the response was about the same as in the healthy.

Archives de Médecine des Enfants, Paris

May, 1920, **23**, No. 5

Congenital Deformity of Bones. E. Apert and Cambessédès.—p. 265.
Physical and Mental Condition of the Schoolchildren in the Evacuated Districts. G. Heuyer.—p. 273.
Permanent Congenital Cyanosis; Four Cases. Variot and Bouquier.—p. 292.
*Meningococcus Arthritis. P. Nobécourt and J. Paraf.—p. 297.
*Nodding Spasm in Children. J. Comby.—p. 303.

Meningococcus Arthritis in Infant.—Nobécourt and Paraf warn that arthritis in an infant should suggest the meningococcus. In the case reported the left ankle was the only joint involved. The child had been having slight fever for four days. There were no symptoms of meningitis but lumbar puncture was done nevertheless, and meningococci were found in the fluid. No improvement followed vigorous antiserum and vaccine treatment, which included injection of the antiserum directly into the ventricle. Necropsy disclosed an abscess deep in the brain, communicating with the ventricle by a minute opening.

Head Shaking in Children.—Comby compares recent works on nodding spasm with Herrman's report of sixty-four cases of what he calls head shaking with nystagmus in infants. The treatment, Comby reiterates, should be by hygiene alone, avoidance of every kind of nervous excitement and of sedatives such as bromids, belladonna and arsenic. Children with a tendency to rachitis should be given phosphorus and cod liver oil.

Bulletin de l'Académie de Médecine, Paris

April 20, 1920, **83**, No. 16

*The Contents of the Fasting Stomach. L. Pron.—p. 361.
The Murderous Capacity of Heavy Artillery. R. Mercier.—p. 363.
*Virus of Epidemic Encephalitis. C. Levaditi and P. Harvier.—p. 365.
*Congenital Dislocation of the Hip Joint. Calot.—p. 367.

Analysis of the Fasting Stomach Content.—Pron declares that sometimes analysis of the content of the fasting stomach is the only means to distinguish between ulcer and simple hyperchlorhydria, to detect the secondary nature of certain stomach disturbances with liver disease, and to diagnose catarrh. He was impressed with the infrequency of retention of food in the fasting stomach; this was evident only in 7 per cent. of his 500 cases, and it could be detected only with the microscope in 14 of these 35 cases. He first tests for the splashing sound, and found frank acid catarrh in 64 per cent.; acid catarrh without free hydrochloric acid but considerable fermentation acids in 85 cases; pure mucous catarrh, without free hydrochloric acid and blood in 29, and a catarrhal condition with transudation of serum and chlorids from the blood in 5. In 24 cases pure bile was found.

The Virus of Epidemic Encephalitis.—Levaditi and Harvier report the successful inoculation of a rabbit with virus from the cortex, midbrain and medulla of a patient with lethargic encephalitis. The rabbit showed similar lesions in the nervous system and they could be reproduced in other rabbits by inoculation in the sciatic nerve or anterior chamber of the eye. Virus from the clinical case did not prove pathogenic for the monkey and guinea-pig until after passage through the rabbit. The virus is filtrable and can be kept in glycerin or desiccated, and can be refound in the spinal cord of animals inoculated in the brain. Convalescents' serum has no neutralizing action on it.

Treatment of Congenital Luxation of the Hip Joint.—Calot declares that roentgenologic study of several thousand cases of congenital luxation of the hip joint has shown that some of the prevailing conceptions are erroneous. Treatment based on the information thus derived has amply demonstrated, he says, the importance of the new data thus learned. The primitive acetabulum in very young children belongs more to the ischium than to the ilium, and the head and neck of

the femur should be kept in a horizontal instead of a slanting position during the entire treatment. The thigh should be flexed to the extreme in the first cast. By these means we can obtain a large and stout horizontal cavity which will retain the head of the femur in this rediscovered primitive acetabulum. To prevent any adhesion between the head and its bed, he applies three plaster casts instead of leaving one on for the entire eight or twelve months. The flexion is slightly modified in the three casts, from 1½ right angle in the first to 1 in the second and ½ right angle in the third.

Bulletins de la Société Médicale des Hôpitaux, Paris

March 12, 1920, **44**, No. 10

Sex as Factor in Certain Infectious Diseases. J. Comby.—p. 353.
Epidemic Encephalitis. J. Comby and others.—p. 355, 357, 359, 382, 384.
*Spastic or Mental Torticollis. P. Marie and A. Léri.—p. 359.
*Congenital and Familial Ophthalmoplegia. Crouzon and Béhague. —p. 372.
Curable Meningeal Episodes in the Course of Chronic Pulmonary Tuberculosis. de Massary and Léchelle.—p. 377.
Adequate Doses of Diphtheria Antitoxin. P. F. Armand-Delille.—p. 380.

Vertebral Lesions and Torticollis.—Marie and Léri give the details of seven cases of what is called mental torticollis as the head can be passively straightened. In each case stereoscopic roentgenograms showed irregular outlines of the vertebrae in the neck, excrescences and hooks like those seen in chronic rheumatism of the spine.

Congenital and Familial Ophthalmoplegia.—Crouzon and Béhague describe a family in which there were from one to three members with pronounced ophthalmoplegia in each of three generations.

Paris Médical, Paris

April 10, 1920, **10**, No. 15

*Surgical Intervention in Dysentery. J. Leveuf and Heuyer.—p. 301.
Neuropathic Lethargic Pseudo-Encephalitis. Roger and Chaix.—p. 308.
Fracture of Ulna with Luxation of Radius. Dujarier and Mathieu. —p. 311.

Surgical Intervention in Grave Forms of Dysentery.—Leveuf and Heuyer observed in Albania, in 1917 and 1918, 700 cases of dysentery that came directly from the front. Among these there were 49 deaths, or 7 per cent. This percentage might be larger if the deaths of soldiers after evacuation from the service could be included. In Prussia in 1917 there were 7,076 deaths in 58,196 cases, a mortality rate of 12 per cent. Their success with cecostomy in saving 6 in 10 extremely severe cases with tender colon and rapid aggravation of the general condition should encourage, they say, earlier operative intervention in both acute and chronic dysentery. By opening up the cecum amply, the feces are diverted away from the diseased mucosa, while it allows direct medication of the intestine walls. They operated between the eighteenth and the twenty-fifth days and found the cecostomy a comparatively mild intervention while it protected against hemorrhage and perforation, and allowed the patients to be amply fed.

Presse Médicale, Paris

April 28, 1920, **28**, No. 26

*Pathogenesis of Migraine. P. Pagniez and A. Nast.—p. 253.
*Circulation of the Cerebrospinal Fluid. V. Stepleanu-Horbatsky (Bucharest).—p. 254.

Nature and Cure of Migraine.—Pagniez and Nast report further experiences which confirm the alimentary anaphylactic nature of migraine, and how it can be warded off by a small dose of peptone before meals, to desensitize. After concluding a course of peptone, one man who had been subject to migraine since childhood, could take chocolate with impunity for a certain time, but then a smaller amount brought on the migraine. It was preceded by certain changes in the blood, the *crise hémoclasique*. Repeated blood counts showed normal leukocytosis after ingestion of the chocolate in five tests at three or four days' intervals. The sixth test showed total absence of the digestive leukocytosis, and in a few hours the leukocytes dropped from 6,000 to 3,700, with other signs of the phase of hemolysis characteristic of anaphylaxis. Prophylactic treatment with the peptone is not always effectual in these alimentary anaphylactic reactions, but it should be given a trial, at least, as it often is temporarily and sometimes is permanently successful.

Circulation of the Cerebrospinal Fluid.—Four children from 9 months to 11 years old with grave gastro-enteritis or tuberculous meningitis were given an intraspinal injection of 1 c.c. of methylene blue in a 1:20 solution. The spread of the stain corresponded to our conceptions of the action of anesthetics injected intraspinally. The nerve roots were intensely stained but the spinal cord only on the surface. The stain evidently spread to the general circulation by way of the lymphatic glands. It reached the base of the brain and even the ventricles, and the presence of the stain in the jugular vein, cranial sinuses and venous plexuses of the skull testifies to the direct communication between the subarachnoid space and the venous system. The fluid is thus constantly and slowly passing from the center to the periphery, but there is no actual cycle of circulation.

Progrès Médical, Paris

April 17, 1920, **35**, No. 16

*Metastatic Cancer of Douglas Pouch and Rectum. A. Cade and C. Roubier.—p. 171.
Serofibrinous Pleurisy in Children. Hutinel.—p. 174.

Metastatic Cancer of Douglas' Pouch and Rectum.—Cade and Roubier report three cases of metastasis in the Douglas pouch and the rectum. The recognition of such metastases they regard of great diagnostic and prognostic importance. In the cases in which the primary cancer has not been recognized, the examination by palpation and rectoscopy will aid in excluding primary rectal cancer. As emphasized by Bensaude, if examination reveals the existence of an infiltration of the walls of the rectum, with no ulcerations of the mucosa nor proliferation, metastatic cancer of the rectum should be suspected, and the primary tumor should be sought for in the stomach. When the primary neoplasm has been diagnosed, the finding of the metastatic tumor will signify to the clinician that peritoneal generalization has taken place, while the surgeon will know that he must confine himself to a purely palliative operation or refrain from any intervention whatsoever.

Schweizerische medizinische Wochenschrift, Basel

April 15, 1920, **50**, No. 16

*Drainage of Congenital Hydrocephalus. E. Wieland.—p. 301.
Danger of Blindness after Loss of One Eye. E. Hegg.—p. 304.
*Rhizomelic Spondylosis in Girl. K. Schnyder.—p. 306.
Action of Drugs on the Intestines by Oral and by Parenteral Administration. F. Uhlmann and K. Zwick.—p. 308. Conc'n.

Spontaneous Drainage of Hydrocephalus.—Wieland relates that a 9 weeks' infant with congenital internal hydrocephalus of unknown origin suddenly developed polyuria; the weight dropped rapidly and the symptoms of pressure on the brain rapidly subsided. The fluid had forced its way through the brain substance which had been flattened out into a very thin layer at the top of the skull. The skull bones sank until the edges of the anterior fontanel overlapped. The fluid collected again soon, and after an attempt to trephine, the roentgenogram showed hydropneumocephalus, the cerebrum above as thin as paper. He compares the conditions with those of Goltz' decerebrated dog. The child drank vigorously from its bottle, cried and developed further, but is a spastic imbecile and blind. At the third month the parietal bones overlapped the frontal.

Rhizomelic Spondylosis.—Schnyder's case is unusual from the first appearance of the disease at the age of 9 or earlier in the girl, the involvement of the peripheral joints and the long failure to recognize the true nature of the disturbances. The girl is now 14.

Policlinico, Rome

April 5, 1920, **27**, No. 14

Cultivated Atropa Belladonna. G. Gaglio.—p. 403.
Extraperitoneal Appendicular Hernia. G. Mafera.—p. 404.
*Heliotherapy as Adjuvant to Quinin. G. Viale.—p. 406.
Kidney Disease and Accident Insurance. G. Dragotti.—p. 406.

Heliotherapy in Malaria. — Viale comments on the rapid improvement in six cases of long rebellious malaria when each time, after taking the dose of quinin, the nude trunk was exposed to the sunlight for several hours. This treatment was suggested, he says, by the reflection that quinin and methylene blue, the two drugs most effectual in malaria, are both fluorescent substances.

Riforma Medica, Naples

March 27, 1920, **36**, No. 13

Italian Mineral Waters in Dysentery. C. Fedeli.—p. 317.
Pathologic Anatomy of Lethargic Encephalitis. G. Tarozzi.—p. 320.
Psoriasis with Amenorrhea; Recovery Under Ovarian Treatment. G. Verrotti.—p. 321.
Acute Myoclonic Encephalitis and Dubini's Disease. A. Litvak.—p. 322.
*Placenta Implants. G. Romano.—p. 324.
Present Status of Colchicin. A. Jappelli.—p. 325.

Placenta Implants.—Romano implanted the whole placenta or a suspension of mashed placenta tissue in the peritoneal cavity of rats. The suspension was used in ten of the tests, and in all these rats some of the placenta elements invaded the lungs of the animals and multiplied there indefinitely, substituting the parenchyma of the lung, the animals dying sooner or later from asphyxia.

Rivista di Clinica Pediatrica, Florence

March, 1920, **18**, No. 3

*Mediastinal Tumors in Children. A. Lorenzini.—p. 129.
*Tumors of the Mesentery in Children. C. L. Rusca.—p. 159.
Recent Literature on Extrasystoles in Children. P. Busacchi.—p. 178.

Mediastinal Tumors in Children.—Lorenzini reports the case of a girl of 6 who for a month had presented symptoms suggesting left pleurisy with large effusion, but the left arm soon showed edema and the displacement of the heart toward the right was not modified by thoracentesis. About 8,000 c.c. of fluid were released by puncture repeated nine times in the course of the following six weeks before the child succumbed to asphyxia from the lymphosarcoma found in the mediastinum. The pains almost throughout had been restricted to the upper left abdomen. A dry spasmodic cough had been the first and for some time the only symptom. The temperature was constantly febrile. A systolic murmur was heard in the right hemithorax evidently due to compression of the pulmonary artery. In Siccardi's case, in an adult, 34,900 c.c. of fluid were evacuated by thoracentesis repeated seventeen times in one month. A list of references to articles on mediastinal tumors and pleural eosinophilia is appended.

Tumors of the Mesentery in Children.—Rusca's patient was a girl of 6 with signs of an abdominal tumor, not tender, and dubious response to the skin tuberculin test. There was eosinophilia of 14 per cent. but the stools were free from parasites, and there was no fever, no pain, and the general condition was constantly good. The tumor was in the mesentery of one of the first loops of the small intestine and a segment of the intestine with the mesentery involved were resected, with prompt recovery. It proved to be an echinococcus cyst and it might have been spontaneously absorbed later, but there would have been danger of rupture of the cyst and toxic action from its contents. Devé and Penna have reported fatalities from this cause.

Rivista Critica di Clinica Medica, Florence

Feb. 5, 1920, **21**, No. 4

*Protein Therapy in Colitis. A. Furno.—p. 37. Conc'n.

Dysenteriform Hemorrhagic Colitis.—In Furno's five cases there was evidently mild mixed infection, the colon bacillus predominating. From some unknown cause, possibly chilling, the virulence becomes exalted and treatment should aim to reenforce the natural defensive forces. For this he has found Nolf's proteose therapy remarkably effectual, that is, intravenous injections of 10 or 12 c.c. of 10 per cent. solution of peptone on alternate days. (Nolf described his method in THE JOURNAL, June 28, 1919, page 1901, and Nov. 22, 1919, p. 1579.) Furno emphasizes that by prompt resort to protein therapy the colitis is arrested before it reaches the ulcerative stage which may be as grave a condition as in typhoid. Vaccine therapy may answer the same purpose. The reaction to the peptone is sometimes intense but is harmless if properly managed.

Archivos Latino-Amer. de Pediatría, Buenos Aires

January-February, 1920, **14**, No. 1

*Acute Meningitis. L. Morquio.—p. 1.
*Psoitis from Inherited Syphilis. Martagao Gesteira.—p. 20.
The Cerebrospinal Fluid in Differential Diagnosis of Meningitis and Meningo-Encephalic Reactions. G. Aráoz Alfaro.—p. 28.
Organization of Bureau of Infant Hygiene in New York Health Department. Alicia Armand Ugón.—p. 55.

Acute Meningitis.—Morquio relates that in a recent two weeks he encountered 12 cases of tuberculous meningitis in children, 2 of pneumococcus and 4 of meningococcus meningitis, 2 following influenza and 1 otitis, and 1 with clear spinal fluid during life but necropsy revealed pus, a total of 22 cases in two week. With serotherapy the prognosis is losing its extreme gravity in other than tuberculous forms. Pneumococcus meningitis has usually a stormier and graver onset. One boy of 5 died in twelve hours. He has had cases in which everything seemed to indicate primary tuberculous meningitis but the progressive improvement and recovery eliminated this. This was particularly marked in some cases of meningitis following mumps, but in a case reported by Pelfort, two months after the mumps meningitis, actual tuberculous meningitis developed. Meningitis with poliomyelitis was always mild and promptly subsided in his experience. A syphilitic meningitis does not affect the general health so much; it may assume a chronic form with or without functional reactions; differentiation is particularly important with inherited syphilis. In the graver cases, he always found tuberculous meningitis superposed. Seicht was able to compile only 6 cases of acute syphilitic meningitis, and the diagnosis was made during life only in one of them. In one child an acute primary meningitis with slight leukocyte reaction, polynuclears predominating, subsided completely in less than ten days, but bacteriologic examination was constantly negative.

Syphilitic Psoitis.—Martagao calls attention to two children about 5 years old who both complained of pain and tenderness in the right flank suggesting appendicitis plus coxitis. The right leg was drawn up, abducted and rotated outward. There was no fever and the rapid onset seemed to exclude a tuberculous process. By exclusion, psoitis seemed the probable explanation of the symptoms and under specific treatment they promptly susided.

Revista Española de Medicina y Cirugía, Barcelona

January, 1920, **3**, No. 19

Operations on the Eyes. M. Márquez.—p. 1.
*Test for Formaldehyd in Milk. A. Gallego.—p. 10.
Disturbances in the Digestive Apparatus in the Tuberculous. F. Gallart y Monés.—p. 13. Conc'n.

Fuchsin Test for Formaldehyd in Milk.—Gallego recalls that formaldehyd modifies fuchsin, transforming its red to a violet and rendering it less soluble in water and alcohol. This property of formaldehyd is proving useful in histologic examinations, and the addition of ten drops of fuchsin to 10 c.c. of milk turns the milk pink and the tint deepens to violet in case the milk contains any formaldehyd even in the dilution of 1:100,000. This test is much simpler than Denigès' technic which is based on the recoloration of previously decolored fuchsin.

Revista Española de Obstet. y Ginecología, Madrid

January, 1920, **5**, No. 49

*Surgical Treatment of Prolapse of the Uterus. F. Botín.—p. 1.
Pneumonia in Advanced Pregnancy. J. Torre y Blanco.—p. 7.
Occipito-Posterior Presentation. Macías de Torres.—p. 11.

Prolapse of the Uterus.—Botín explains how insufficiency of any one of the different factors involved in sustaining the uterus modifies the indications for correction of prolapse, so that no one method of correction can be applied to all. But he has been quite successful with ventral fixation of the uterus by the Delbet method, and declares that the mishaps

with it that have been reported and repeated by the detractors of this technic seem to be more numerous than they really are, and in many cases the abortion, etc., would have occurred without the fixation. He refers to a number of his personal cases in which pregnancy later developed without complications, but he advises such patients to keep in bed for twenty-five or thirty days after delivery, taking small doses of ergot daily, and, after the tenth day, hot irrigation and gentle massage of the uterus to promote involution without detaching the uterus from its artificial attachment. Recurrence of the prolapse seems to be much less frequent than with other methods, he says.

Revista Médica del Uruguay, Montevideo

March, 1920, **23**, No. 3

*Gonococcus Arthritis. Aquiles di Lorenzo.—p. 121.
*Factitious Eruptive Disease. P. E. Duprat.—p. 123.
Influenza and its Prophylaxis. F. Paladino.—p. 130.
Bacteriology of Influenza. A. Prunell.—p. 141.

Gonococcus Arthritis.—The temporomaxillary articulation was the only one involved in the young woman. The arthritis was refractory to the usual local and vaginal treatment but improved under three weeks of vaccine therapy.

Factitious Eruptive Disease.—The puzzling "epidemic" that broke out in the penitentiary can only be explained, Duprat thinks, by some visitor having left some croton oil.

Mitteilungen a. d. med. Fak. d. kais. Univ., Tokyo

Aug. 28, 1919, **22**, No. 1. German Edition.

*Pathogenesis of Epitheliomas. IV. K. Yamagiwa and K. Ichikawa.—p. 1.
*The Interstitial Cells. M. Ishibasi.—p. 39.
*Fate of Morphin in Animal Body. I. K. Tamura.—p. 121.

Artificial Cancers.—THE JOURNAL has mentioned from time to time the success of Yamagiwa and Ichikawa in inducing the production of epitheliomas by painting the rabbit ear with tar. They here report similar research on the mammary gland. In 6 per cent. of 47 cases, repeated application of a tar-lanolin mixture was followed by changes in the tissues, as they show in ten handsome plates, which are of an unmistakable adenocancroid or carcinoma type. Their research is being continued with the aid of the Japanese Cancer Research Society and a special grant from the government. They say that they have never learned of an instance of spontaneous mammary cancer in rabbits. They injected subcutaneously 1 c.c. of the mixture of lanolin and an aqueous extract of tar, twice a month and later once a month, or the injection was made with 0.3 c.c. of pure tar directly into the mammary gland once a month. The rabbit with the adenocancroid cast four litters during the 463 days of the experiments.

The Interstitial Cells.—Ishibasi concludes his long study of the nature and purposes of the interstitial cells of the testicles with the statement that he was unable to detect any connection between the proportions of epithelial cells and the degree of development of the external sexual characteristics. The plates show the microscopic findings in these cells at different ages and in the rat under vital staining.

Fate of Morphin.—Tamura's research was mainly on the oxidation products of morphin and their action. The data presented seem to indicate that the paralyzing action of morphin is the work of the alkaloid itself, while the second phase, the stage of excitement, is the work of some product of its disintegration.

Berliner klinische Wochenschrift, Berlin

Dec. 29, 1919, **56**, No. 52

Sensitiveness of the Cornea. Goldscheider and Brückner.—p. 1225.
Street Car Fracture of the Humerus. Pawel.—p. 1231.
*Immunotherapy of Cancer. C. Lewin.—p. 1233.
*Effect of Digitalis on Diuresis. A. Jarisch.—p. 1235.

Autoserotherapy of Cancer.—Lewin relates his experience with autoserotherapy in the treatment of a woman, aged 44, who had been suffering for three years with various complications from cancer of the breast. In April, 1916, the right mamma had been amputated for carcinoma simplex. In 1917 a second operation was required, followed by roentgen-ray treatment. In April, 1918, when reexamined, vision of the right eye was almost gone, doubtless owing to cancerous metastases in the right orbit. From May 3 to May 15, 1918, the patient was given intensive roentgen-ray treatment, whereupon vision in the right eye improved and some of the nodules on the breast disappeared. In November, 1918, the nodules adjacent to the operation scar had returned, with ascites. Jan. 11, 1919, 3 liters of clear serous fluid were withdrawn from the abdominal cavity. In May, 1919, as the ascites was gradually increasing, treatment by autoserotherapy was begun. He aspirated 10 to 20 cm. of fluid from the abdominal cavity, and reinjected it under the abdominal skin. June 23, 1919, she was readmitted to the hospital, and received two or three injections of the fluid from the abdomen per week, from 15 to 20 cm. each, and at the same sitting the nodules were given roentgen-ray treatment. The nodules, in sharp contrast to their behavior following the preceding series of exposures, began to show a marked tendency to retrogress. July 15, 1919, 3½ liters were withdrawn from the abdominal cavity, part of the fluid being left in order to continue the autoserotherapy. After the puncture, several abdominal tumors, some as large as a fist, could be palpated. The patient continued to receive two injections weekly into September. The nodules gradually receded more and more, and the ascites showed no tendency to develop again. Gradually all symptoms disappeared. Nov. 26, 1919, the nodules on the breast and back had entirely retrogressed, leaving merely pigmented spots. The ascites had disappeared by October, and the tumors in the abdominal cavity had likewise completely receded. The right eye still protrudes, and is quite blind. No clinical trace of a carcinomatous disease process could be discovered then, and the appetite and general health were good as compared with the former condition. He has previously published a case of the kind in which the results were equally good from this autovaccination, and no roentgen exposures had been made.

Inhibitive Effect of Digitalis on Diuresis.—Jarisch reports two cases of syphilis of the aorta with insufficiency of the semilunar valves in the uncompensated stage, in which diuresis was inhibited by therapeutic doses of digitalis but was increased by very small doses. He thinks that owing to the increased excitability of the blood vessels of the kidney, the threshold for both the vasoconstricting and vasodilating effect of digitalis was reduced. As both patients had incipient contracted kidney, the conclusion may perhaps be drawn that overexcitability of the blood vessels of the kidney is characteristic of contracted kidney in the incipient stage. A second conclusion would be that in the presence of contracted kidney great caution should be observed in fixing doses of digitalis, and that small doses are to be preferred. In heart patients the same caution is required if the low specific gravity of the urine points to renal sclerosis.

Medizinische Klinik, Berlin

March 14, 1920, **16**, No. 11

*Operative Treatment of Duodenal Ulcer. Haberer.—p. 275.
Effect of Epinephrin on Blood. P. Schenk.—p. 279. To be cont'd.
*Sequels of Enterogenous Cholangeitis. A. Albu.—p. 282.
Rheumatoid Conditions with Eye Affections. Junius.—p. 283.
Relations Between the Vestibule and the Posterior Cranial Fossa. O. Fleischmann.—p. 288.

Operative Treatment of Duodenal Ulcer.—On the basis of 205 cases of duodenal ulcer observed during the course of his practice, Haberer gives his conclusions in regard to indications for operation. It is his experience that gastroenterostomy does not give very satisfactory results; several times after exclusion of the pylorus he was obliged to operate for peptic jejunal ulcer, so that he has come to regard this as a bad postoperative complication. Of late years he has been more and more inclined to resection of the duodenum, as with increasing experience and an improved technic the danger has been reduced to a minimum. He has performed 105 resections, 55 exclusions of the pylorus and 45 gastro-enterostomies for the relief of duodenal ulcer. In his first series, reported in 1918, he had 4 fatal cases out of 46 resections, a mortality rate of 8 per cent. In his second

series of 59 resections he has had only one fatal case, a mortality of under 2 per cent.

Sequels of Enterogenous Cholangeitis.—Albu states that cholecystitis in children and others under 20 years of age is not so rare as is commonly supposed, as he has had seventeen cases during the past five years. He therefore recommends that if children have protracted, severe pains in the stomach, especially if they suggest colic, even though no icterus is present, a possible pathologic condition of the gallbladder should be considered, as in order to prevent the development of chronic cholelithiasis in children the first attack of cholecystitis should be recognized and given proper treatment. One girl of 11 had a typical gallstone colic, with pains mainly in the liver region but spreading to stomach and back. After vigorous purging she voided a soft calculus, weighing 2 gm., which consisted entirely of cholesterin. She had complained for a few weeks of slight stomach disturbance, but has been entirely well since passage of the calculus.

Münchener medizinische Wochenschrift, Munich

March 19, 1920, **67**, No. 12

*Adiposis Dolorosa. . E. Grafe.—p. 339.
Collargol by the Vein in Chronic Arthritis. A. Böttner.—p. 341.
*The Relative Size of the Heart. R. Geigel.—p. 343.
*Effect of Ultraviolet Rays on the Blood. K. Traugott.—p. 344.
*Meat from Tuberculous Cattle. M. Müller.—p. 349.
Improved Technic for Levaditi Silver Stain. J. Saphier.—p. 352.
Abortive Course in Case of Lethargic Encephalitis after Intralumbar Injection of Influenza Antiserum. Fendel.—p. 353.

Atypical Adiposis Dolorosa.—Grafe reports a case in which the onset of the disease at the early age of 14 was unusual, as there is only one other case of record (White) in which the disease appeared at an earlier age than 30. The symptoms were also unusual. Ordinarily the deposits of fat are tender and spontaneous pains (commonly of a neuralgic or rheumatic order) are slight, and only appear occasionally; in Grafe's case there was scarcely any pain on pressure, and spontaneous burning sensations and an inner feeling of great tension characterized the subjective aspect of the case. In other reported cases the periodicity of the pains and the fact of their appearing just before the beginning of new bunches have been ascribed to new deposits of fat infiltration, but Grafe thinks that the cause of the intermittent pains in his patient was accumulation of water in the fatty tissue, and perhaps in the musculature also. This alone would explain the intermittent swelling up of the deposits of fat and their subsidence at certain times. Bernoulli has published a case suggesting this in some respects. He called it a case of "false obesity from retention of fluid."

Formula for Determining the Relative Size of the Heart.—Geigel thinks that the main question from the clinical standpoint is not "How many cubic centimeters does the heart measure?" but "How many cubic centimeters of heart muscle are there to the kilogram of body weight?" As a rough formula for determining this ratio, he measures the size of the heart orthodiagram shadow (S) in square centimeters, multiplies this figure by 3/2, divides the product by the weight (naked) in kilograms (W). The formula is thus $\frac{S^{3}/_{2}}{W}$. He has been using this formula for five years and has found it reasonably accurate and of great clinical value. He calls it the reduced heart quotient.

Effect of Ultraviolet Rays on the Blood.—Traugott states, as the result of his investigation, that ultraviolet rays do not affect the number of red blood corpuscles in man. Under normal conditions the same number of leukocytes are found in the capillary blood and in the venous blood stream. A uniform increase in the leukocytes takes place usually following raying with ultraviolet rays provided the sitting is continued long enough (from ten to fifteen minutes); if the exposure is of shorter duration, there will be a difference between the number of leukocytes in the capillary and in the venous blood. The increase caused by the raying affects leukocytes and lymphocytes alike. Another effect on the blood from the influence of the ultraviolet rays is that it coagulates sooner. The number of blood platelets is likewise increased.

Meat of Tuberculous Cattle.—Müller opposes the idea that the basis of judging tuberculous food-producing animals should rest on whether there is a blood infection or a lymph gland infection. He thinks the criterion should be the degree of pathologic changes. In the presence of a high degree of emaciation, the carcass should be condemned as totally unfit for human consumption; otherwise, if only certain organs are affected, it may be used subject to certain restrictions.

Wiener klinische Wochenschrift, Vienna

April 8, 1920, **33**, No. 15

Diagnostic Significance of Examination of Vestibule of Internal Ear. S. Gatscher.—p. 305.
*Early Treatment of Corrosive Esophagitis. H. Salzer.—p. 307.
Friedmann Treatment for Tuberculosis. M. Weiss.—p. 307.
Pelvic Abscess After Gunshot Wounds. W. Sacken.—p. 310.
Latent Syphilis and Changes in the Spinal Fluid. J. Kyrle.—p. 313. Conc'n.

Early Treatment of Corrosive Esophagitis.—Salzer waits only from two to six days, that is, until the first severe symptoms from swallowing the caustic have subsided, before he begins preventive treatment by introducing a weighted bougie to ward off the development of a stricture. His twelve patients thus treated all recovered and showed no trace of stenosis when dismissed from the hospital. According to Hacker, a well known authority on the subject, more than 50 per cent. of the patients who survive the swallowing of caustic alkalis, have a severe stricture of the esophagus, and the rest, with few exceptions, mild strictures, and 33 per cent. of those who have strictures succumb from the effects. Salzer finds that by the old waiting policy, patients suffer great pain and often become greatly emaciated, whereas if early intervention is practiced it is not difficult to keep up nutrition, and the pain suffered is very slight.

Zentralblatt für Chirurgie, Leipzig

April 3, 1920, **47**, No. 14

Ten Years of Arthroplasty. E. Payr.—p. 313.
*Habitual Luxation of the Shoulder. F. Loeffler.—p. 324.
End-Results in Primary Joint Injuries. P. Erlacher.—p. 327.
Two Crossed Safety Pins as Improvised Wound Clip. Hofmann. —p. 331.

Correction of Habitual Dislocation of the Shoulder.—Loeffler prevents the luxation by fastening the humerus to the acromion without opening the joint. Through a vertical incision on the outer aspect of the arm, from two finger-breadths above the acromion to the middle of the deltoid muscle, he separates the fibers of the deltoid and holds them apart with retractors. The arm is then rotated to bring the greater tuberosity into prominence, and a tunnel is made in this with an electric drill and a corresponding single hole is drilled in the acromion above. The holes are enlarged and a strip of fascia, 2 by 10 cm., taken from the thigh, is passed through the tunnel in the tuberosity and one end through the acromion, the ends being brought together over the acromion and sutured, end to end. The arm in the case described can be lifted to 85 degrees and rotated, and further functional improvement may be anticipated.

Zentralblatt für Gynäkologie, Leipzig

April 3, 1920, **44**, No. 14

*Puerperal Inversion of the Uterus. F. Engelmann.—p. 337.
Intraperitoneal, Cervical Cesarean Section. Lichtenstein.—p. 343.
*Ascaris Lumbricoides in Fallopian Tube. P. Nacken.—p. 346.

Puerperal Inversion of the Uterus.—Engelmann states that inversion of the uterus seems to be getting more common than published statistics would indicate. On the basis of observations of three cases he holds the view that the Credé method, which seems to be universally used in cases of hemorrhage from atony of the uterus, may easily lead to inversion of the uterus. He therefore suggests that the maneuver be done with both hands and outstretched fingers, which he finds minimizes the danger. Unless there is pronounced shock, he recommends immediate reduction of the inverted uterus under ether narcosis.

Ascaris in Fallopian Tube.—Nacken reports a case in which a dead ascaris, 25 cm. long, was found in the suppurating fallopian tube.

Zentralblatt für innere Medizin, Leipzig

April 3, 1920, **41**, No. 14

Gurgling Sound with Suppuration in the Thoracic Cavity. W. Stepp and Bennighof.—p. 250.

April 10, 1920, **41**, No. 15

*Sweating Procedures and Secretion of Urine. H. Brütt.—p. 266.

Effect of Sweating Procedures on the Quantity of Urine and on Its Specific Gravity.—Brütt has been experimenting with the view to so modifying the Volhard test for the concentration activity of the kidney that in place of the dry-food diet that the test requires a sweating procedure may be substituted. He found that all healthy subjects did not react alike to the various sweating procedures. In some a maximal concentration of the urine was produced; in others a marked polyuria with very low specific gravity occurred, while in others, again, no appreciable effect was noted. While it was evident that a sweating procedure could not in all cases be substituted for the Volhard test, the experiments showed that in applying sweating procedures to kidney patients if a specific gravity of 1.030 for the urine could be shown, we are justified in assuming that the concentration activity is satisfactory. But if there is no increase of the specific gravity, or if there is a decrease, either with or without an increase in the quantity of the urine, no definite conclusions can be drawn in regard to the functional capacity of the kidney. Only the positive result is decisive—and it is only in a small proportion of these cases that such a result is secured.

Acta Medica Scandinavica, Stockholm

May 6, 1920, **53**, No. 3

*Xanthochromia in Cerebrospinal Fluid. A. Wallgren.—p. 303.
*Etiology and Pathogenesis of Sciatica. F. Lindstedt.—p. 318.

Xanthochromia in Spinal Fluid.—Wallgren regards the hemorrhagic tendency of epidemic meningitis as one explanation of the xanthochromia observed in the cerebrospinal fluid. Or the xanthochromia may come from stagnation of the spinal fluid from obstruction of communication with the cranial subarachnoid space. In 103 cases of epidemic meningitis at the Upsala hospital in the last five years the mortality after the first twenty-four hours was 19.6 per cent., but it was only 14.8 per cent. among the 74 without xanthochromia while it was 39 per cent. among those with xanthochromia. The total mortality in these groups was respectively 28.3 per cent. 25, and 42.1 per cent., testifying to the gravity of the cases in which xanthochromia is observed. It forms part of what he calls the syndrome of Froin, that is, the spinal fluid is frankly yellow, with abundance of albumin, coagulates *en masse*, and contains numerous mononuclears. It not only throws light on the prognosis, but warns of the necessity for intraventricular injection of the antiserum if the condition is not improving under spinal injections. More attention should be paid to serotherapy by the vein in these cases, as epidemic meningitis is a general septicemic condition, not confined to the meninges. The details of six cases are described to sustain these conclusions and two pages of bibliography are appended. The article is in French.

Sciatica.—Lindstedt declares that it is impossible to draw the line between neuritic, myitic and neuralgic symptoms in sciatica, and states that in practically all of his 100 cases he found abnormal conditions of traumatic, inflammatory, neoplastic or varicose nature in the bones, joints, or soft parts of the legs, back or pelvis, usually near the course of the sciatic nerve, or else deformity of some kind or static anomalies. The nature, the localization, the chronology and the frequency of changes of these kinds in his cases of sciatica testified to a causal connection, the irritation from these abnormal conditions entailing in time a functional overexertion of that part of the central sensory nervous system involved, until it gets the "neuralgia habit" from the constantly recurring irritations from the periphery. This conception of sciatica opens new horizons for treatment of both sciatica and lumbago, and explains the benefit from empiric measures and also the neurotic or psychic factor prominent in certain cases. The article is in German.

Finska Läkaresällskapets Handlingar, Helsingfors

March-April, 1920, **62**, No. 3-4

*Hematogenous Nephritis. B. Runeberg.—p. 165.
Hairs in Supernumerary Nipples. Y. Kajava.—p. 210.
*Postdiphtheric Stenosis. H. Bardy.—p. 223.
Heterochromia of the Iris. J. G. Lindberg.—p. 231.
Bothriocephalus Latus and Digestive Symptoms. G. Becker.—p. 240.

Aseptic Renal Pyuria.—Runeberg was surprised to find that in only 33 per cent. of his 56 cases of aseptic renal pyuria was tuberculosis responsible. In 12.5 per cent. a calculus was a factor. An individual predisposition rather than any special causal agent is involved in this hematogenous pyelitis persisting interminably. The staphylococcus was most often responsible in his cases. The pyelitis is abacterial only because it does not reach us in the florid stage; sections of the kidney usually reveal the bacteria. His histologic and clinical experience has demonstrated, he says, that the blood borne infection induces first a glomerular nephritis, sometimes too mild to induce appreciable symptoms; then elimination of bacterial and waste products entails foci in the kidney tissue and an elimination pyelitis. Interstitial nephritis develops gradually from this, with subcapsular foci and possibly complicating thrombotic and embolic processes. It seems to conflict with this theory, he admits, that 17 per cent. of the 23 men in the 30 operative cases had prostatitis, but we know that urinary disease is a disease of an apparatus not of a single organ. Examining the pus in the urine of 10 tuberculous and 10 of nontuberculous abacterial pyuria and a large number of other pathologic conditions in the urinary passages, Runeberg found striking and characteristic changes in the leukocytes only in the tuberculous cases. The leukocytes showed uneven, polyhedral, gnawed edges, and they took the stain badly, while with other infections they were usually round and stained normally. With tuberculosis, the nuclei may drop out and vacuoles appear. Acute onset and alternation of symptoms and free intervals testify further against tuberculosis, but if the unilateral pyuria is sapping the patient's vitality, nephrectomy is indicated as the kidney will usually be found malformed or otherwise congenitally inferior. This was manifest in 3 of his 10 nephrectomy cases. His experience has confirmed the prompt subsidence of the symptoms of cystitis after nephrectomy for blood borne pyelitis, proving anew the integrity of the bladder. In 2 cases an abacterial pyelitis flared up and bacteria appeared in the urine under the provocative influence of operative measures elsewhere. This secondary flaring up of this elimination pyelitis might prove misleading in some cases.

Treatment of Postdiphtheric Stenosis.—Bardy reviews his experience with stenosis of larynx or trachea rendering it impossible to discard the tube. From five to fifteen months was required for the progressive dilatation, and any method will succeed, he says, if perseveringly applied. The tracheotomy tube has to be worn during the whole period of dilating as acute edema is liable to develop otherwise. He found Schmiegelow's translaryngeal permanent drain method difficult to apply to small children and liable to set up inflammation. The diphtheria in itself, without intubation, may induce necrotic processes responsible for stenosis, as in one of his cases, but as a rule the stenosis develops at the end of a tube. The mucosa in diphtheria seems to be exceptionally sensitive to mechanical irritation.

Hospitalstidende, Copenhagen

March 24, 1920, **63**, No. 12

*Nail Extension for Old Fractures. E. Nielsen.—p. 177.
Action of Light on Vitiligo. C. With.—p. 182.

Nail Extension for Old Fractures.—Nielsen cut away the callus and reduced the overlapping stumps in two cases of fracture of the femur which had healed three or four years before with a shortening of 6.5 to 7 cm. He then applied weight extension from nails driven into the bone, and the deformity was corrected, the shortening being reduced to 1 and 1.5 cm. Except for a little pressure necrosis, there were no mishaps; the nails were removed the twenty-first day. The only inconvenience from the method was from the counter pressure in the perineum and axillae. The counter pressure was aided by raising the foot of the bed.

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THE FUTURE OF PEDIATRICS*

FRITZ B. TALBOT, M.D.

BOSTON

I have chosen the "Future of Pediatrics" as the subject of this address because I desire to emphasize the fact that our specialty is no longer one in which a group of physicians have problems which are of interest only to themselves, for these problems are intimately connected with the welfare of the community and the nation. Since thoughtful people, both in and out of the profession, are bound to give pediatrics even greater consideration in the future, it is well that we should consider the possibilities of future development in the advancement of our own knowledge, and especially in the improvement of the general welfare.

Although this subject can be considered from many equally important angles, there is not sufficient time to discuss them all. Let me, therefore, outline the whole and then consider in detail the most important problems which present themselves to the specialist in the diseases of children. These problems should be considered from the point of view of (1) the medical schools, (2) the practitioner and (3) the public.

Research into the nature, cause and prevention of disease is assuming an importance not recognized a decade ago. It has added knowledge which has made it possible to cure many diseases which were often fatal. Such advances have been made in our knowledge that our conception of many diseases have been entirely changed. Our knowledge of what normally takes place in the body has been so enlarged that we now have a better standard with which to compare pathologic physiology. As a result of this new knowledge we are now able to treat and prevent disease more efficiently than ever before. The returns from effort and painstaking research in the laboratory, and in the field, have been so great that they have more than justified the money spent in this manner, and have made it possible to expand the work tremendously. The accomplishments of those medical schools which already have well endowed departments of pediatrics will undoubtedly stimulate expansion in other schools. We may expect the future to give still more generous support to our young men, and, as a result, to see America assume the world's leadership in pediatrics. Research, therefore, plays an important part in the study of the nature and cause of disease, and it also plays an equally important part in the study of the prevention of disease.

Preventive pediatrics, which in the past was the object of many studies, received great impetus during the war. The annual meetings of the American Child Hygiene Association have been devoted to preventive pediatrics. The object of the campaigns and propaganda of the "Children's Year" was to increase the interest in preventive pediatrics in every home in the United States. Finally, the conference of the League of Red Cross Societies, which met in Cannes, France, April 1, 1919, brought together men interested in public health from France, Great Britain, Italy, Japan and the United States. Child welfare, or preventive pediatrics, next to stopping the epidemic of typhus fever then prevalent, was given the place of greatest importance by this group of scientists. The tendency of the present, therefore, is to emphasize the importance of the child as the citizen of the future. The part which preventive pediatrics will hereafter play will undoubtedly be so great that medical schools as well as physicians will be compelled to adapt themselves to their changed relations to the public.

Any effort to improve the welfare of children should bring results which will yield far greater returns than efforts directed toward improving the welfare of adults; the establishment of correct habits in a healthy child ought to insure a healthy adult life. This may be accomplished in two ways: either by training the individual child, or by training groups of children as in public child welfare clinics. It is especially important that this work be done during childhood, because it is now believed that many, if not most of the diseases of adult life originated in childhood. Think how much indigestion in the adult could be prevented if proper dietetic habits had been learned during childhood. Think of the deafness, the blindness and the other crippling diseases which could have been prevented if treated skilfully during the age of life which comes under the charge of the obstetrician and the pediatrician. There is much evidence that tuberculosis and endocarditis first gain entrance to the body in childhood. How much easier it would be to cure these diseases at their inception than to cure them after the various organs have been invaded and damaged by them.

The magnificent work done in preventing malaria, yellow fever and typhoid shows what a great saving in life and national efficiency can be accomplished by preventive work. Such examples should be sufficient to emphasize the importance of preventive pediatrics, from the further advances of which results, even beyond our dreams, may be expected.

Advances may be expected from medical schools, practitioners, public health officers, public health nurses, social workers, and the public itself. The public was awakened to its responsibility to the child by the recent campaign of the Children's Year and the terrible sufferings among the children of devastated countries during the war, and we must be prepared to

* Chairman's address, read before the Section on Diseases of Children at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

meet the new demands with sane and balanced judgment.

The problems should be worked out in those educational centers in which the medical school forms the nucleus. The advances can first be made by those medical schools in which the proper methods can be worked out, and taught to students who later graduate and devote their lives to their application. In most medical schools the teaching of preventive medicine as applied to child life is almost entirely lacking. In the few that give it any attention whatsoever, so little time is allotted that the student hardly becomes interested. It is only when this student graduates that he appreciates how wofully lacking is his education in a phase of medicine that makes up so large a part of his work with children.

The physician is often called in to advise the mother as to how to nurse her baby. How many young graduates have not been taught this but have been obliged to learn it by experiment on their patients? Too often they find it easier to wean the baby than to go through the trouble of straightening out the mother. How many babies' lives could have been saved if the physician understood the physiology of lactation and had had experience in the art of handling the nursing mother. There are more opportunities to use such knowledge than to recognize and treat rickets. If, however, the student acquired and used such knowledge successfully he should have little or no rickets among his own patients to treat. If this medical student is multiplied by the thousands that graduate each year, it should not be long before a marked diminution in the number of cases of rickets throughout the country would be seen.

We are all called on to regulate the artificial feeding of infants. In fact, almost the first thing we are called on to do in practice is to regulate the feeding of a normal infant. Of my first thousand cases seen in private practice 264, or more than one quarter, were for the regulation of their feeding. Although five or ten years ago this may have been true only of the specialist in pediatrics, today it is becoming equally true of all general practitioners. These general practitioners are always anxious to have papers read to them on infant feeding, and it is evident that the public is demanding of them greater knowledge of this art.

A century ago, Underwood [1] said that "a very principal cause of the above mentioned neglect has arisen from an ancient idea, for a long time too generally entertained, that, as medical people can have but a very imperfect knowledge of the complaints of infants, from the inability of children to give any account of them, it is safer to trust the management of them to old women and nurses; who at least are not likely to do mischief by violent remedies, though they may sometimes make use of improper and inadequate ones." This applies all too commonly today. The feeding of normal infants is a subject the teaching of which is wofully lacking in our medical schools. In some schools, as a requirement for the degree, the student must deliver twelve infants. I believe that he should also be required to regulate the feeding of twenty infants during at least a six months' period so that he will be familiar with the feeding of both naturally and artifically fed infants. This work should be done under competent supervision, and would give the prospective practitioner that familiarity with the subject which can never be obtained in lectures or books. If he were also given suitable training in the normal physiology and care of the infant and young child (and experience in their care), there would be less need for the knowledge of those diseases which now results because of the lack of this training. It is much easier to keep a healthy baby well than to cure one of infantile atrophy.

This improved instruction and training could be best accomplished by making the child welfare and baby hygiene stations an integral part of the medical school. Such well-baby clinics and clinics for the runabout child could be manned by the staff of the medical school and used in teaching.

Much of the teaching in medical schools today is on subjects which have less and less practical importance. When I was a house officer from 1905 to 1907, there were always several patients in the hospital with typhoid fever, often including one or two unfortunate nurses or house officers. With the advent of preventive inoculation, and the more advanced practice of the principles of public hygiene and sanitation, typhoid fever (in my community at least) is becoming almost as much of a medical curiosity as is smallpox.

Several years ago, a successful practitioner in a summer resort told me that the previous summer he had had 120 patients with infectious dirarrhea, of whom several died. The next summer, with the establishment in that community of a certified milk dairy, he had less than a dozen cases. This experience is not unique because the wards in my hospital which used to be full to overflowing with infectious diarrhea now receive only five or six cases each summer.

Since the character and incidence of disease is changing, the type of teaching should be modified to conform with our increasing understanding of the factors responsible for this change. If many diseases are fast becoming extinct, could not that time which is now being spent in teaching the methods of their treatment be used to greater advantage in teaching the methods of their prevention? The greater part of the teaching in medical schools today is directed toward the diagnosis and treatment of disease. I doubt whether one fiftieth of it is directed toward the prevention of disease among children. I believe that at least one quarter and probably more of the time should be spent in teaching the normal physiologic processes during growth, and that adequate instruction should be given in the personal and public hygiene of children. Such a program could be carried out efficiently only by the close cooperation of all departments of the medical school. The relative importance of all the subjects in the students' curriculum should be carefully weighed and balanced, and adjustments made to meet the changing times.

Although the medical supervision of the infant has been empasized above, there is much that is lacking in the supervision of the child. Many diseases do not find a foothold in the body if the child lives in proper surroundings, has a suitable diet, and learns good and regular habits. This applies both to the home and to the school. If the physician is taught what is normal for the healthy growing child he can influence both the home and the school life. A thorough understanding of all the factors which make up a healthy home life cannot be had unless the "social" elements involved are studied and understood. A generation ago this

1. Underwood: A Treatise on the Diseases of Children; with Directions for the Management of Infants from the Birth 1: xxii, 1811.

understanding formed an essential part of the art of medicine as intuitively practiced by the "family doctor." In hospitals and in our own highly organized and specialized lives, it was almost a lost art until "social service" made it not only an art but also a science. The social element of medicine could well be taught along with the scientific aspects of medicine at the bedside, and thus revive that element in our professional life in which we should have a just pride.

The department of pediatrics cannot isolate itself from the other departments in teaching preventive work but, on the contrary, should cooperate with them all. The department of obstetrics could well introduce the whole subject by teaching in lectures and practice the theory and practice of prenatal care. It would be ideal if the same student could oversee the prenatal care, deliver the baby, and supervise its feeding, during the first five or six months. In this manner he would gain experience in what later he must do in actual practice. (There should also be cooperation between the department of pediatrics and the department of preventive medicine, and consideration should be given to school hygiene.)

After graduation, every practitioner should apply the principles of the prevention of disease. In those communities in which he is a pioneer, he should organize child welfare stations so that the poor as well as the rich will profit by his knowledge. The public is already prepared for such work and will welcome it, and perhaps even demand it. The practitioner need not fear that the application of these principles will decrease his income. On the contrary, although he will treat fewer sick children, he will have an increasing stream of children coming to his doors to be kept well. He will have the satisfaction of knowing that he has played a small part in diminishing suffering, in increasing efficiency, and in preparing the manhood and womanhood of our country for any emergency which the future may have in store for us.

311 Beacon Street.

OBSTRUCTION OF THE HEPATIC VEINS *

C. F. HOOVER, M.D.
CLEVELAND

My interest in this subject was aroused by a patient who entered Lakeside Hospital, Nov. 22, 1918:

CASE 1.—The history which the man gave at the time of entrance was that he had been ill for about two weeks prior to entrance to the hospital. His essential complaint was severe pain, which started about the suprasternal notch and followed in the midline to the epigastrium. The pain was accompanied by cough and a choking sensation, and he also discovered that slight exercise caused marked air hunger. The temperature on entrance had an evening rise of 101.5, and morning remissions to 100 and 99. The pulse rate varied between 100 and 120, and the respiratory rate was between 20 and 30 a minute. The physical signs at the time of entrance revealed pericarditis with moderate accumulation of fluid in the pericardial sac. In addition to this, there was some dulness and impairment of excursion at the base of the right thorax, which was accounted for in the personal history by an attack of pleurisy one year before admission to the hospital. On that occasion about 1 pint of clear fluid was removed from the right pleural cavity. On entrance to the hospital, the patient's liver occupied a position in the nipple line 5 cm. below the costal margin. The edge of the liver was not accessible, and as there was symmetrical inspiratory narrowing of the subcostal angle, the interpretation at this time was that the liver was displaced downward by an enlargement of the pericardial sac. There was not a sufficient amount of fluid in the pericardial sac to compress the left lung in the infrascapular region.

Within ten days after admission, the evidences of pericarditis were subsiding, the inspiratory narrowing of the subcostal angle had disappeared; and by the third week all evidences of pericarditis and effusion in the pericardial sac had vanished. December 6, the patient passed two intestinal parasites, which proved to be *Taenia saginata*. The temperature varied between 99.5 and 102. The leukocyte count was 1,200; the red cell count about 4,800,000, and hemoglobin, 65 (Tallqvist). Blood cultures were made from venous puncture and proved to be negative.

About ten weeks after entrance to the hospital, the only physical sign that the patient presented was an enlargement of the liver. There was no cause for displacement of the liver, but it still extended well below the costal margin. There was no icterus or intestinal hypocholia. The blood was centrifuged and the serum found to contain no bilirubin. Therefore cholemia, choluria and intestinal hypocholia were all excluded. Although he still had moderate elevation in temperature, the only physical signs that could be associated with infection were the evidences of enlarged liver. Unfortunately, it is not accurately known just how much the lower border of the liver rose directly after recovery from effusion in the pericardial sac. That the liver dulness lessened during this period of recovery from the pericardial effusion is definitely known, but the amount is not accurately recorded.

February 8, about the end of the thirteenth week of hospital residence, the patient developed violent pain across the upper abdomen. There was no rise of temperature, and the cardiorespiratory functions were normal. The patient's pain was intense, and required the use of morphin. The following day the liver had greatly enlarged; it had become much more resistant and was very sensitive to pressure, and the lower border occupied a position about six finger breadths below the costal margin. Within twenty-four hours after the onset of this very acute pain, which was accompanied by a rapid and painful enlargement of the liver, there was also an accumulation of free fluid in the abdominal cavity, and moderate edema of the left leg and ankle. The second day after the onset of this attack of acute pain, puncture of the abdominal cavity was performed and 20 c.c. of opalescent fluid, slightly blood-tinged, was removed. The cellular contents showed about 9,000 red and 1,000 white cells per cubic millimeter. The white cells were about equally divided among the large mononuclear, small mononuclear and polymorphonuclear cells.

The acute pain and tenderness subsided in the course of several days, but the ascitic fluid continued to accumulate, until about three weeks after the acute attack of pain, when 4,100 c.c. of fluid were removed from the abdominal cavity. The fluid was slightly turbid and opalescent; did not coagulate on standing; the specific gravity was 1.014, and there were 10,000 cells per cubic millimeter, 160 of which were white blood cells. Nine days later 5,300 c.c. were again removed, with the same character as the first.

The abdomen has been tapped twenty-seven times in the last year. The character of the fluid has always been the same; but the fluid has been accumulating at much longer intervals during the last five months. The man's physical condition has steadily improved, and now the only evidences of disease are ascites and the slight elevation in temperature associated with a hepatic enlargement. The liver is no longer sensitive. There are no irregularities on the edge or on the surface of the liver. The edge is slightly rounded. On entrance to the hospital the spleen was not enlarged, but within a few weeks after the first attack of pain with acute hepatic enlargement, the spleen became enlarged and remains now palpable at the costal margin.

* Because of lack of space, this article is abbreviated in THE JOURNAL. The complete article appears in the Transactions of the Section and in the author's reprints.

* Read before the Section on Practice of Medicine at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

In reviewing this case we can say that the man, one year before entrance to the hospital, had pleurisy with effusion of the right side, from which he made a prompt recovery, and then a few weeks before entrance to the hospital, there developed a pericarditis with effusion. As the pericarditis subsided, there suddenly developed an acute painful enlargement of the liver, which was unassociated with any new evidence of infection or any evidence of disease of the hepatic parenchyma or peritoneum. There was no evidence of disturbed production or excretion of bile. This was at a time when the heart's function was perfectly competent.

The only manner in which this collection of phenomena could be explained would be by some obstruction to the passage of blood through the liver. The enlargement was due to blood stasis within the hepatic and portal veins. If the rise in pressure within the radicles of the portal vein had been due to obstruction within the trunks of the portal vein, there would have been no acute enlargement of the liver. One cannot conceive, in fact, of the blood stasis originating elsewhere than in the large trunks of the hepatic vein. Obstruction of the hepatic veins offers the only satisfactory explanation for such an acute and pronounced enlargement of the liver, accompanied by stasis in the radicles of the portal vein and without disease of the hepatic parenchyma. Although the logic of the clinical evidence was inescapable, the diagnosis was made at the time with many misgivings on account of want of knowledge of the subject.

CASE 2.—A man, aged 31, admitted to the hospital, Aug. 21, 1919, up to the onset of his present illness had always been vigorous and strong. In March, 1914, he had an acute infection with a rise in temperature to 104. He was confined to his bed only four days. With the exception of lethargy and drowsiness, which persisted throughout the entire summer, he cannot recall any very distinct symptoms. How long his fever lasted is not known. We know only that during the acute period his temperature rose as high as 104. During the winter of 1914-1915, he was able to work, although he suffered from air hunger with moderate exertion, and a sense of constriction about the epigastrium, which was relieved in a short time by rest. In the spring of 1915, he was feeling depressed and sick, and was quite surprised when, after moderate exertion, he suddenly vomited all the contents of his stomach without the slightest premonition of nausea. The vomiting was projectile in character, and proved very embarrassing to him by occurring in street cars and public places, and attended vigorous exercise or unusual efforts in laughing or coughing. The vomiting originated purely through nervous excitation in the vicinity of the diaphragm, and was brought on by unusual phrenic activity.

In the winter of 1915-1916, he worked very little and his strength gradually improved. In March, 1917, he was put on the police force. He was quite vigorous and was able to handle recalcitrant prisoners, but even during this period the projectile vomiting would occasionally occur. In February, 1918, he found he could not continue his work. Medical examination at that time revealed an enlarged heart and a large liver. In June, 1918, he gave up his work on account of dyspnea with slight exertion, swelling about the epigastrium and fulness in the precordial region. His feet and legs and abdomen, and at times his chest and neck, were edematous. There was no cyanosis.

In January, 1919, he apparently received very much benefit from mercuric therapy, which was given on the assumption that he had had a syphilitic infection. He says that at that time the liver became smaller. In March, 1919, he was well enough to be about. His edema had disappeared and he was comparatively comfortable. In June, 1919, he went to work as a shop policeman. Then the upper half of the abdomen swelled; he became short of breath, and the medicine which previously had benefited him failed to give relief. He then entered Lakeside Hospital. He says there was no jaundice at any time during his illness, and he thinks he had no fever except in 1914, and he has had no nocturnal dyspnea at any time.

When he entered Lakeside Hospital, he had marked edema of the lower extremities and the abdominal wall. The liver dulness was 22 cm. in the right nipple line. The surface of the liver was perfectly smooth. The edge was not palpable; it was somewhat rounded, although the consistency was quite like that of hepatic cirrhosis. The enlargement of the liver was uniform. The spleen was palpable at the costal margin; it was firm and plump. On admission there was an abundance of free fluid in the abdominal cavity, and there was some fluid in the right pleural cavity. In October there was no fluid in the left pleural cavity, but the right pleural cavity was tapped, and 1,100 c.c. were removed. It was pale straw-colored, did not clot, and was very clear. It contained only 630 cells per cubic millimeter, only 20 of which were white cells, and the specific gravity was 1.008. There were only 2 gm. of albumin per liter by the Esbach test. Although the evidences of thickened pleura were pronounced and pleural frictions were abundant, after the removal of the fluid there was no pain. Although there were evidences of thickening of the pleura of the left side, no fluid was ever obtained.

About 5,300 c.c. were removed from the abdominal cavity, and it was identical in character with that removed from the pleural cavity. So the fluid from both serous cavities was decidedly that of a transudate, although there were never evidences from the kidney or from the heart which would account for retention of body fluids. There were marked evidences of anastomotic dilatation of the radicles of the veins of the upper thorax and the superficial epigastric veins, and from the first it seemed evident that the accumulation of fluid in both pleural and peritoneal cavities was the result of stasis in the radicles of the azygos and portal veins.

Since his residence in the hospital, repeated employment of antisyphilitic treatment and large doses of digitalis have failed to modify the accumulation of ascitic fluid, although there has been no return of the fluid in the pleural cavity. The abdomen has been tapped thirty times, and there never has been evidence in the fluid to indicate peritoneal inflammation. The blood plasma has failed to show any bilirubin, and there has been no urobilin in the urine. The general edema has entirely disappeared. The patient's heart is of normal size, with no evidence of any myocardial incompetence. The great enlargement of the liver and the persisting stasis in the portal vein unaccompanied by any evidence of disease of the hepatic parenchyma, together with the evidences of stasis in the inferior cava, which has gradually been compensated for by anastomosis, justify the diagnosis of obstruction of the inferior cava with obstruction of the hepatic veins.

It is not difficult to understand why medical literature is very meager on the subject of the hepatic veins. They are not examined as a routine at necropsy, and when they have been studied it has been usually in histologic sections. The gross appearance of the intrahepatic portion of the cava and the opening of the hepatic veins are not studied at necropsy. The literature on the subject contains about thirty cases, and teaches that obstruction of the hepatic veins may be caused in several ways. The cases which have been studied show that the large hepatic trunks may be invaded by active inflammatory processes in the liver, such as metastatic abscesses; also, inflammation of the peritoneum and pericardium may invade the cava and ostia of the hepatic trunks; it may result from primary inflammatory processes in the cava and trunks of the hepatic veins; obstruction of the hepatic trunks may also occur from primary thrombotic

processes within the veins, and this may occur when there is no evidence of any primary inflammatory process in the cava or hepatic veins or the peritoneum or Glisson's capsule.

LITERATURE

The first case reported was by Budd,[1] who reported two instances of obstruction of the hepatic veins which attended hepatic abscess, and one case of obstruction of the hepatic veins which was associated with synechia cordis, perihepatitis and peritonitis.

About the same time Frerichs[2] reported what he described as phlebitis hepatica adhesiva. He says: "This is on the whole a rare form of inflammation and in most cases results from inflammation of the capsule of the liver and coriaceous covering of the diaphragm at the posterior margin of the liver, which is projected into the vein. The wall of the vein becomes thickened, whilst gelatinous deposits and occasional valvular projections, narrowing the channel of the vessels and sometimes completely obliterating some of the branches, will develop on the internal surface. This condition is attended by symptoms of obstruction similar to those which result from occlusion of the portal vein, with the addition of extravasations of blood into the hepatic tissue. Thrombi are liable to develop in the portal vein on account of obstructed circulation."

Frerichs concluded his necropsy observations on this case with the statement that clinical differentiation between obliteration of the hepatic veins and obstruction of the portal vein is impossible.

A case of complete obliteration of the mouths of the hepatic veins has been reported.[3] A child, aged 17 months, three months before death showed evidences of a painful swelling of the abdomen. There was no jaundice and no hemorrhage. When the child was 16 months old, two months after the onset of illness and one month before death, the abdomen was tapped and 12 ounces of greenish serum were withdrawn which had a specific gravity of 1.011. Nineteen days after the first tapping, the second tapping was done and 2 pints of fluid withdrawn. Death occurred in five days after the second tapping. Although there is a statement that there was no peritoneal inflammation and that the liver, which weighed 16¾ ounces, was probably smaller than it should be and increased in density with rounded edges, nevertheless the capsule of the liver was everywhere thickened, especially about the suspensory ligament and half of the left lobe, and Glisson's capsule was much thickened in the portal fissure. Section revealed a nutmeg character to the liver. The hepatic lobules had a dark center, surrounded by a fatty zone. Tracing the hepatic veins toward the vena cava, they were found to end abruptly just short of entering the cava, and were cut off from the cava by a thin membrane. The lining of the cava was perfectly smooth and normal. Where the mouths of the hepatic veins should have been, there were shallow dimples, which had not at all the look of scars. Many of the large branches of the hepatic veins were filled by colorless adherent thrombi.

Eppinger[4] reported a case of obstruction of the intrahepatic portion of the cava with thrombosis of the hepatic veins and diffuse interstitial hepatitis, which was interpreted as syphilitic.

From Quincke's clinic at Kiel, 1886, William Lange reported a case.

From the same clinic in 1899, J. H. Thran reported the case of a woman, aged 32, who entered the Frauenklinik in August, 1897, where an exploratory incision was made. The liver was not enlarged, but the spleen was slightly enlarged and there was a large ascitic accumulation. Four months later she entered the medical clinic on account of an enormous ascites. It was there observed that the right lobe of the liver was not enlarged but was hard and granular. The left lobe of the liver was, however, increased in size, and the spleen was at the costal border. At necropsy the liver weighed 1,760 gm. and the spleen weighed 550. There was thrombosis of the cava just below the entrance of the hepatic veins. The large trunks of the hepatic veins were obstructed by fresh thrombi. The portal vein and hepatic artery were normal.

Churton[5] reported the case of a man, aged 26, who died after a short residence in the hospital. The case was interpreted as hydatid cyst, but turned out at necropsy to be due to serous fluid, which was fixed between the liver and the diaphragm. In the center of a cirrhotic liver was found a hepatic vein with an organized thrombus. Churton says the histologic appearance suggested that fibrous tissue had invaded the hepatic vein from the outside. There were no evidences of involvement of the cava.

In 1899 Chiari[6] of Prague reported three cases under the title of "Obliterating Phlebitis of the Large Trunks of the Hepatic Veins as a Cause of Death." In reviewing older literature, Chiari makes the statement that obliterating phlebitis of the large hepatic veins had been interpreted as evidence of a process of contiguity, and supposedly originated from inflammatory processes in the vicinity of the hepatic veins. But he reports three cases in which the necropsy revealed a primary obliterating phlebitis of the hepatic veins.

The first case, seen in 1885, concerned a woman, aged 28, who was serving as a wet nurse. The patient died at the end of a three days' illness, which began with very stormy symptoms of abdominal pain, nausea and vomiting. The sudden onset of the illness and the obscurity of the symptoms led to a medicolegal investigation on account of the suspicion of poisoning. The severe symptoms in this patient lasted only fourteen hours before death occurred.

The interpretation of this case was that the patient had a moderate amount of stasis due to syphilitic phlebitis, which had existed for a long time; but the acute symptoms which developed a few days before death were due to complete occlusion of the hepatic veins by the formation of fresh thrombi.

Chiari's second case came to necropsy in 1893. The patient was ill for several months and developed the clinical signs of ascites attended with pain which suggested peritonitis. Three and five-tenths liters of bloody serum were found in the peritoneal cavity. There was an aneurysm of the left ventricle of the heart the size of a hen's egg, which was traceable to an obliterating arteritis of the left coronary artery. The liver was slightly enlarged; the capsule was not thickened; the veins were full of blood and there were thrombi in the portal vein. At the openings of the hepatic veins into the cava there was scar tissue which completely obstructed the lumen of the veins.

Chiari's third patient, a man, aged 29, was examined at necropsy in 1895. This patient showed symptoms for three months prior to his death. There was rapid enlargement of the liver, enlargement of the spleen, and ascites. Six liters were withdrawn from the abdomen shortly after entering the hospital. Two days later another paracentesis was performed, and 10 liters were withdrawn. Five days later the patient died. The patient gave the history of gonococcus infection, but denied syphilis, and prior to his terminal illness had never been sick. A clinical diagnosis was made of hepatic cirrhosis, ascites and hydrothorax. When the abdomen was opened at necropsy, 10 liters of hemorrhagic serum were removed. The left pleural cavity contained about 50 c.c. of hemorrhagic serum. Following the hepatic veins to their ostia, it was found that their walls were greatly thickened. At the point where they opened into the cava, the lumina were so narrow that an anatomic sound could scarcely be passed.

Hess[7] reports the case of a girl, aged 16, who at 12 years of age was admitted to the Prague hospital with ascites, from which she recovered and lived four years before the ascites returned. After the return of ascites, death followed very rapidly. Hess says this was clearly due to a growth of the intima of the cava encroaching on the intima of the hepatic veins at their ostia. The cava and hepatic veins

1. Budd: Diseases of the Liver, 1857, p. 195.
2. Frerichs: Disease of the Liver, Sydenham translation **2**: 482, 1861.
3. St. Bartholomews Hosp. Rep. **7**: 144.
4. Eppinger: Prag. med. Wchnschr. **1**: 725, 1876.
5. Churton, T.: Tr. Path. Soc. London **50**: 145, 1899.
6. Chiari: Beitr. f. Anat. u. Physiol. **26**: 1, 1899.
7. Hess, A. F.: Am. J. M. Sc. **130**: 986, 1905.

were both involved. There was no evidence of syphilis, nor was there any evidence of the process being secondary to perihepatitis.

Umbreit[8] reports a case in which he found no primary phlebitis but a chronic thrombotic process in the radicles of the large hepatic veins, and these thrombi gradually extended to the large branches of the hepatic veins. This was a purely intrahepatic disease, and could not be well accounted for by syphilis, as the process was purely thrombotic and not phlebitic.

Sternberg[9] reports a case in which the patient had a history of illness for six months prior to death. There was stenosis of the cava in its intrahepatic portion, and thrombi of the hepatic veins. The hepatic veins at their ostia, however, were intact. The cava process and the hepatic vein process seemed to be independently developed; it was purely a thrombotic process within the large trunks of the hepatic veins, and Sternberg suggests that the process could have been infectious in origin and may have originated from a preceding influenzal infection.

Issel[10] found thrombi in the large hepatic veins, which gave the same picture as in Umbreit's cases. The process was interpreted as being purely thrombotic, and not a primary phlebitis with secondary formation of thrombi. The openings of the veins and cava were normal.

Rendu and Poulain[11] report a case in which the liver weighed 1,200 gm. There was slight thickening in Glisson's capsule. There was no pronounced perihepatitis, however, or synechia at any point. The portal veins and cava were normal. There was nothing visible to account for portal stasis. It was only on histologic examination that organized thrombi were found in the hepatic veins which involved nearly four fifths of the liver. In this case gross examination was not satisfactory, but the histologic examination revealed a disease of the hepatic veins.

Nagayo[12] describes four cases, two with and two without cava obstruction. All the cases were diagnosed clinically as cirrhosis of the liver and cirrhosis with peritonitis.

A few years later, Nishikawa[13] published a report of ten cases of obstruction of the hepatic veins. Among these ten are the four cases reported by Nagayo in 1910, and two reported by Yamagiwa[14] in 1905.

The first case that Nishikawa reports is of a man, aged 51, who died after four days' residence in the hospital. He complained of pressure and pain in the right upper abdomen, and 6 liters of blood-tinged, straw-colored fluid were removed by paracentesis. The necropsy disclosed complete closure of the abdominal cava directly below the conflux of the liver veins with the cava, marked stenosis of the large hepatic veins, and complete occlusion of the other hepatic veins. There was great enlargement and cirrhosis of the liver from stasis in the left lobe of the liver, and pronounced atrophy of the right lobe, so that it consisted of a fibrous mass and was a mere appendage to the enlarged left lobe. There were also ascites, edema of the trunk and lower extremities, typical stasis of the spleen, diffuse fibrous union between the liver and the right kidney, and obsolete pleurisy of the right side. Only a brief history of the last illness of this man could be procured.

The second patient had an adhesive pericarditis, but the statement is made that no demonstrable relation between the old pericardial lesion and obstruction of the cava and hepatic veins could be detected. This patient had also obstruction of the portal veins as well.

The third patient, aged 31, was examined at necropsy in 1914. During the clinical observation of this patient, it was observed that he had marked dilatation of the abdominal veins, and although on entrance to the hospital he had marked edema of the lower extremities, it had entirely disappeared. After a few weeks' residence in the hospital, the patient vomited a large amount of blood. More hematemesis occurred three days later, and death three days after the last vomiting of blood. In this case the clinical diagnosis of obliteration of the inferior vena cava and hepatic veins was made. At necropsy, complete obliteration of the inferior vena cava was found as it passes through the diaphragm, and there was obstruction of the large hepatic veins at their entrance to the cava, marked stasis, cirrhosis of the liver with hepatic adhesions, and multiple rupture of varicose esophageal veins.

The fourth patient was a man, aged 26, whose illness began when he was 15 years old. At that time he had marked protrusion of the epigastrium, great impairment in the appetite, and was very intolerant of cold. When he was 23 years of age he had gastro-intestinal disturbances, diarrhea and some fever. Following this there developed a pleurisy of the right side, from which he recovered in two months. At that time an enlargement of the spleen was observed. Two years before his death there was marked edema of the legs, which, however, disappeared after a few days. Four years prior to his death he had a syphilitic infection. When this patient entered the clinic, the subcutaneous veins in the anterior abdominal wall were dilated. The thoraco-epigastric veins and median xiphoid veins were varicosed. The current was from below upward. Abdominal paracentesis was performed eleven times. The fluid was on some occasions chylous and hemorrhagic, and at other times straw colored and slightly turbid.

The fifth patient, a woman, aged 34, was examined at necropsy in January, 1915. When she was only 10 years old, a diagnosis was made of hepatic disease. Eight years before death, marked dilatation of the subcutaneous veins of the abdomen was observed, and two years before death there was marked swelling of the abdomen, which did not subside and which led to paracentesis. The fluid was yellow and slightly turbid. The liver was then found about three finger breadths below the costal borders and had a rough surface and firm edge. Three months later, paracentesis was again performed, and 2.5 liters were removed. Paracentesis was performed again after three months. A month later, death occurred. In this instance a clinical diagnosis of obstruction of the intrahepatic portion of the cava was made. Necropsy revealed obliteration of all the hepatic veins at their opening into the cava, marked stenosis of the vena cava as it passed through the diaphragm, and stasis cirrhosis of the liver.

The sixth patient was a man, aged 39, who had syphilis when he was 21, and two years later suffered from anorexia, vomiting and pain in the epigastrium. At that time he noticed dilatation of the abdominal veins. Two years before death, he noticed protrusion of the abdomen, and later edema of the lower extremities. Six months before death he entered the hospital. At that time there was no ascites and the liver was not palpable. There was no clinical diagnosis reported in this case. However, the necropsy revealed obliteration of the inferior cava as it emerges through the diaphragm.

The seventh patient, a woman, aged 30, examined at necropsy in July, 1913, had noticed two years before death moderate distention of the epigastrium, and two months before death there was edema of the lower extremities and distention of the whole epigastrium. She was never icteric, but had hematemesis on several occasions. There was also some blood in the stools, and the urine contained some urobilin but no bile pigment. Paracentesis was performed four times. A clear, yellow fluid was procured each time. The Wassermann reaction was negative. A clinical diagnosis of cirrhosis of the liver was made. Necropsy revealed complete obliteration of all liver veins emptying into the cava, marked stenosis of the vena cava below the entrance to the hepatic veins, a high degree of stasis cirrhosis of the liver, adhesions between the lower surface of the liver and the ascending colon, and diffuse adhesive pleurisy of the left side. The liver weighed 1,650 gm.; the whole organ was firm and finely granular. The cut surface showed a typical picture of stasis cirrhosis. The statement is made that there was no evidence of syphilis at the necropsy.

8. Umbreit: Virchows Arch. f. path. Anat. **183**: 102, 1906.
9. Sternberg: Verhandl. d. deutsch. path. Gesellsch. **10**: 131, 1906.
10. Issel, E.: Centralbl. f. d. ges. Physiol. u. Path. d. Stoffwechs. **8**: 331, 1907.
11. Rendu and Poulain: Bull. et mém. Soc. méd. d. hôp. de Paris **18**: 555, 1901.
12. Nagayo, D. M.: Mitt. a. d. med. Fak. d. Univ. Tokyo **9**: 1, 1910-1911.
13. Nishikawa: Mitt. a d. med. Fak. d. Univ. Tokyo **20**: 151-298, 1915.
14. Yamagiwa: Ztschr. med. Gesellsch. d. Tokyo **20**, 1906.

The eighth patient, a woman, aged 38, examined at necropsy in 1910, a year and a half before death had accidentally discovered a painless tumor in the right hypochondrium the size of a pigeon's egg. The tumor gradually increased in size, and about eight weeks before death she noticed pain in the epigastrium and loss of appetite. She was treated at home for tumor of the stomach. One month before death she entered the hospital. She was a small woman, with dry skin, no edema, and slightly icteric hue of the sclera. The liver was palpable three finger breadths above the umbilicus in the median line. The left lobe was particularly hard; the surface was uniform and granular. There was a tumor in the right lobe of the liver. The spleen was palpable, firm and not painful. The clinical diagnosis was made of carcinoma of the liver. Carcinoma of the stomach was apparently eliminated on account of the presence of hydrochloric acid, pepsin and lab-ferment, and the want of lactic acid in the stomach contents. The necropsy revealed a complete obliteration of the large liver veins at their entrance to the cava. Just below the entrance of the liver veins, the cava was almost completely obstructed by membranous thrombi.

The ninth patient, a woman, aged 32, observed the first symptoms in March, 1908, and she died, Aug. 30, 1909. In March, 1908, she observed edema of the legs, which increased with standing. At that time her appetite was good, but after eating she suffered from a sense of pressure in the epigastrium. At the same time the patient observed a hard tumor in the region of the liver, which was not sensitive. In May, 1909, the patient noticed distention of the abdomen and dilatation of the subcutaneous veins in the anterior abdominal wall. There were occasional remissions of this abdominal swelling, and suddenly, about the beginning of August, 1909, the abdominal distention greatly increased. She was admitted to the hospital only ten days before death. There was general anasarca, and the abdomen was greatly distended with fluid. Nine days before death, 8,750 c.c. of fluid were removed from the abdomen and proved to be a transudate. After paracentesis the liver was palpable about a finger breadth below the costal margin. The edge of the liver was hard. The clinical diagnosis was hepatic cirrhosis. Necropsy revealed obliterating phlebitis of all hepatic veins at their entrance to the cava.

The tenth patient, a man, aged 28, examined at necropsy in October, 1908, had noticed dilatation of the superficial veins of the trunk when 15 years of age. At 24 years of age the dilatation of the epigastric veins was notably increased. The abdomen was much distended, when the patient entered the hospital one month before death. During the month's stay in hospital, four paracenteses were performed, and each time about 6 liters of transudate were removed. The liver and spleen were not palpable. The liver in this case was not enlarged. It was irregular and grossly nodular. There were numerous nodules the size of an egg, which were interpreted as indicating primary carcinoma of the liver. The portal vein was completely filled with gray-red thrombi. All the hepatic veins were completely obstructed by organized thrombi at their entrance to the cava, and the cava was completely obliterated below the entrance of the hepatic veins.

SUMMARY AND CONCLUSIONS

Thirty cases of obstruction of the hepatic veins have been reported in accessible medical literature since the time of Budd in 1857.

Ten cases, or one third of all, are reported in a monograph by Nishikawa from Tokyo University, and they were all observed in the ten years from 1905 to 1915.

In the reports of Nishikawa's cases it is quite apparent that if the intrahepatic cava and ostia of the hepatic veins had not been examined as a routine measure, the ascites from portal stasis could have been explained by some other attending causes to the satisfaction of less critical pathologists. Nearly all his cases were attended with some lesion associated with ascites, namely, syphilis, cirrhosis, carcinoma, perihepatitis, thrombi of the portal veins or tuberculosis. These are all enumerated as lesions that were present, and yet either thrombophlebitis or primary thromboses of the hepatic veins were the sole causes of ascites in all of Nishikawa's cases.

The other lesions were incidental in some instances, and probably in other cases played a contributing part to production of hepatic vein lesions.

In only two of all reported cases was the diagnosis of obstruction of the hepatic veins made before death. All the other diagnoses were made at necropsy. Several writers suggest that the clinical diagnosis should be made, and others say the lesion is purely a pathologic curiosity which cannot be differentiated from obstructive lesions in the branches or trunk of the portal veins.

The affluent blood flow of the liver consists, 70 per cent. of portal blood, and 30 per cent. of blood from the hepatic artery. The total efferent flow is through the hepatic veins. There is a free anastomosis between the bed of the hepatic artery and the bed of the portal vein. Should obstruction occur in the trunks of the hepatic veins, the pressure within the entire capillary system of the liver will arise not only from pressure in the portal vein but also from the hepatic artery, whose branches anastomose freely with those of the portal vein.

The result of such obstruction will cause great distention of Glisson's capsule.

The convexity of the upper surface of the liver is increased, the edge is rounded, and the resistance of the liver is greatly increased. The bursting tension on Glisson's capsule is very great, on account of the liver's large diameter. Bursting tension is equal to the pressure multiplied by the diameter, so in this case there is ample source for sensitiveness to pressure from an examining hand. The cases seen at necropsy show that auxiliary veins opening into the cava will readily give some relief to the high capillary pressure, and so will the anastomotic veins offer new efferent paths, as occurs in portal obstruction.

Should obstruction of the portal vein occur, there will be a diminution in size of the liver. Enlargement of the liver accompanied by ascites cannot be caused by heightened resistance to blood flow from lesions in the portal veins. If there is obstruction in both hepatic veins and portal veins, then the liver will not be enlarged; but ascites follows from stasis in the portal radicles.

When the hepatic veins are obstructed, the clinical signs are essentially: acute enlargement of the liver; convex upper surface; increased resistance; rounded edge and pain on pressure, and an ascitic transudate which is opalescent and contains numerous red cells with few white cells and does not readily clot on standing. The specific gravity of the transudate ranges between 1.004 and 1.014. These are the positive signs; but the want of any evidence of disease of the hepatic parenchyma is also important. There is neither choluria nor cholemia, and urobilin is not increased in the urine. The two cases discussed which have been under observation for the last year have at no time had an icteric plasma, and a notable feature of the other cases reported was the want of any icterus of the skin or bilirubin in the urine. In fact, every contributor on the subject comments on this absence of icterus of the skin and of bile from the urine. It is doubtful whether such acute and pronounced

enlargements of the liver due to parenchymatous and interstitial disease could occur without constant or at least intermittent icterus of the plasma, even should there be no bile in the urine or visible jaundice of the skin.

If all sources of hepatic enlargement with the exception of venous stasis can be eliminated, the problem remains to determine whether hepatic stasis originates from cardiac insufficiency, obstruction of the inferior cava above the ostia of the hepatic veins, or obstruction of the hepatic veins.

The possibility of a cardiac source must be disposed of by the usual methods employed in estimating the size and functional capacity of the heart.

Involvement of the cava with hepatic vein obstruction reveals an association between these two lesions which requires further elucidation of the mechanism by which the two paths are obstructed. With stenosis of the inferior cava above the hepatic vein there will follow exactly the same symptoms in the liver that occur in stenosis of the hepatic veins, and in addition there will be signs of obstruction of the cava. In four of Nishikawa's ten reported cases there was obstruction of the cava where it pierces the diaphragm. In the tenth case there was stenosis of the cava both above and below the opening of the hepatic veins. In five of his ten cases, the cava was narrowed only below the hepatic veins. In only one case of the Japanese reports were the hepatic veins open, and in that case (the fourth of the report) the lumen of the cava was narrowed to 1 mm. above the entrance of the hepatic veins.

In all ten cases there was stenosis of the cava, and in only one instance were the hepatic veins unobstructed.

In some of the cases reported from other sources the hepatic veins were not examined until after the liver had been removed, and in other reports the account of the cava is not sufficiently clear to inform us whether there was an adequate examination of the cava and its lumen.

About half of the reports prior to the Japanese publication give definite accounts of narrowing of the cava by either old or recent thrombi. There is certainly a definite interdependence between the two lesions.

The relation may be direct extension from inflammation of the cava wall into the walls of the hepatic veins, as described in two of Chiari's cases and in the case reported by Hess; but in other instances there has been no demonstrable phlebitis or even endophlebitis. There was a deposit of riffled thrombi composed of red and white cells and fibrin. Aschoff [15] gives an interesting discussion on the manner in which agglutinated red cells, leukocytes, bacteria and fibrin may be deposited on the intima of veins in the vicinity of stenosis, or in widening of the vascular lumen and also near the point of confluence of a lesser stream and slower velocity of current with a larger stream and swifter current. All these physical conditions contribute to formation of eddies, which are currents moving contrary to the main current and usually in a circular direction. There may be two eddies moving circularly but in opposite directions, and it is opposite the points of friction between the surfaces of these contrarily moving eddies that the riffled thrombi are deposited. The intrahepatic portion of the cava is a location very favorable for the production of eddies.

The cava here widens into a considerable bulbus into which open the mouths of the hepatic veins. There is then a wide lumen into which open a number of lesser lumina, and the velocity of the confluent currents is subject to great variations from breathing, coughing and rotation of the liver on a transverse axis, which is located by the posterior border of the liver that is not covered by peritoneum.

Not all the factors that contribute to formation of these thrombi are clear; but it seems that the causes mentioned above may share in the deposit of thrombi in the hepatic veins and in the cava when there is no basis for thrombus formation on account of disease of the venous walls.

This mechanism of thrombus formation seems very reasonable in view of the number of cases reported in which thrombi of the hepatic veins were located at the mouths of the veins or within a centimeter of their openings into the cava. When the intrahepatic cava was opened, the sites of the ostia of the hepatic veins were indicated by so many dimples on the hepatic aspect of the cava. In a few cases the thrombi were located at some distance from the ostia of the veins when the process was purely thrombotic and unaccompanied by evidence of endophlebitis.

Even in those cases, like Chiari's, in which there was severe inflammation of the cava and veins, the sudden precipitation of symptoms and rapidly fatal course may be traceable to the mechanism of eddies in the blood current which produced the fatal thrombi in both the cava and at the ostia of the hepatic veins.

The clinical course of hepatic vein obstruction interpreted from necropsy findings and histories of the patients proves that partial obstruction of all the veins or complete obstruction of some of the large veins, may cause acute hepatic symptoms from which partial recovery will follow.

There may remain a regional stasis cirrhosis which will go on to atrophy of all the liver cells in one lobe so that at necropsy (in one case) the entire right hepatic lobe consisted of nothing more than fibrous tissue surrounding the vascular structures. The liver cells had all succumbed, and the right lobe was only a fibrous adnexa to a comparatively well preserved left lobe. There may be enlargement of auxiliary hepatic veins to compensate for obstruction of the original veins; and when portal stasis follows, anastomoses between the portal vein radicles and tributaries to the cava may suffice to produce a long history with varying ascites and the same variety of changes in size, conformation and consistency of the liver that are seen in chronic alcoholic and syphilitic cirrhosis.

The fact that a clinical diagnosis of hepatic cirrhosis was made in most of the cases will indicate the character of the physical signs that are produced by the chronic course of the disease.

The ages of patients ranged from 18 months to advanced life, and the duration of symptoms from three days to thirteen years.

The number of cases of hepatic vein obstruction thus far reported makes it advisable to examine carefully the intrahepatic cava and hepatic veins at the necropsies of all patients who present signs of hepatic disease with ascites.

The collected reports justify the suspicion that, in the past, obstructive lesions of the hepatic veins have

15. Aschoff: Beitr. z. path. Anat. u. z. allg. Path. 52: 205, 1912.

escaped the pathologist's observations on account of failure to make careful examinations of the intrahepatic cava and its tributaries.

These reports also emphasize the importance of trying to interpret the clinical histories and physical findings in definite relations to disease of the liver cells, interstitial structures and disturbances of blood flow in the portal and hepatic veins and hepatic artery.

ABSTRACT OF DISCUSSION

SIR HUMPHRY ROLLESTON, London, England: Some time ago I analyzed the reported cases, only about thirty, so that, with the eleven which Dr. Hoover has added, there are still less than fifty cases on record. It is, therefore, a curiosity, and not always of the same nature. There may be an acute thrombosis, which was probably the condition in Dr. Hoover's cases. There may be a very remarkable lesion, viz: cicatricial contractions of the orifices of the veins, and this may occur extremely early in life, as in a case of the late Dr. S. Gee. Possibly it is due to an extension of the process of obliteration of the ductus venosus, comparable to the excessive process described by Bland-Sutton as occurring at the site of the duct of Meckel's diverticulum in connection with the small intestine. In some of the cases, as Dr. Hoover has mentioned, syphilis has been given as a cause. Some cases, but by no means all, are associated with obliteration or narrowing of the inferior vena cava in the immediate neighborhood; this may be, as Turnbull and Theodore Thompson suggest, a result of thrombophlebitis, or it may be due to trauma, such as may follow jumping from a considerable height, with the result that a certain amount of tearing occurs either in or underneath the endothelium, where the liver is attached to the inferior vena cava by the hepatic veins, and that from the reparative process, cicatricial contraction follows. I was under the impression that the condition had never been diagnosed correctly. It is true that I have diagnosed it myself, but, as compared with Dr. Hoover, I was doubly unfortunate. In the first place, the patient died, and in the second place, there was not any stenosis of the hepatic veins. Another curious point is the association of well marked stenosis, obviously of long standing, of the orifice of the hepatic veins, with an illness which has only lasted a short time—a few weeks. It looks, indeed, as if the slow current through the hepatic veins was sufficient until, perhaps, as a result of some terminal thrombosis, the orifices were almost or completely obstructed, when complete insufficiency of the liver took place, with an acute onset of symptoms.

DR. FRANK B. WYNN, Indianapolis: About four years ago I saw a case of phlebitis involving the lower limb on the right side, first, then passed to the left side. Under rest, the patient slowly recovered, except for slight edema of the leg incident to the venous obstruction following the thrombophlebitis. Four months later he developed a phlebitis of the veins in the side of the chest, which under rest gradually improved. But, again, after about two months, he returned with what he thought was an acute indigestion. One night he had an attack of excruciating pain, requiring a hypodermic. The pain was referred to the region of the gallbladder. It was so excruciating that he broke out with a clammy sweat. A surgeon called in consultation considered it a gallbladder lesion. In a few hours swelling had occurred in the hepatic and epigastric areas. Six hours later the man was seized with vomiting of dark blood, which continued until he died, four or five hours afterward. The necropsy revealed some of the things which have been described by Dr. Hoover, and some additional ones; namely, that he had had one after another, attacks of phlebitis, first in the legs, and then in the different veins, with the last attack in the cavae and hepatic veins. But the dominant feature, pathologically speaking, was the extensive thrombophlebitis of the portal vein. His intestine was entirely filled with dark blood, and his stomach was also full of blood. The liver was greatly swollen, and the hepatic veins were distended.

DR. CHARLES F. HOOVER, Cleveland: Dr. Wynn's case probably involved tributaries to the vena cava as well as tributaries to the portal vein. It is very surprising to find that patients with complete obstruction of the cava below the openings of the hepatic veins rarely show severe evidences of stasis, and in many instances there is no edema and no dilatation of visible veins to indicate the obstruction. In fact, with few exceptions, the obstruction of the cava is only suspected, and the evidence of symptoms having existed at any time is elicited only on carefully questioning the patient. The histories of these patients have extended all the way from a few days to thirteen years. In many instances a partial restoration of the lumen of the hepatic veins and the enlargement of accessory hepatic veins have sufficed to allay symptoms for as long as four or five years. The two patients I have had are still living; therefore, the pathologic proof of the lesion is wanting. Had I not seen the first patient in his acute attack, I am sure the case would have been passed without question as one of hepatic cirrhosis.

A STUDY OF THE BILE PIGMENTS IN PERNICIOUS ANEMIA*

J. P. SCHNEIDER, M.D.
MINNEAPOLIS

In 1916 I described[1] a spectroscopic method for measuring the bile pigments, urobilin and urobilinogen, secured with the ordinary Einhorn duodenal tube in the fasting patient. I asserted for the method simplicity, reliability and reasonable accuracy. After five years of experience, embracing several hundred determinations, I can report no serious defects in the method, nor have I seen in the literature any valid criticisms. Krumbhaar[2] points out apparent wide fluctuations in the urobilin content of bile found by Wilbur and Addis. That wide variations are not found can be readily demonstrated by securing duodenal contents in healthy student material. This is shown in Table 1. Variations such as obtain in all the gastro-intestinal secretions is to be expected, and for clinical purposes these do not vitiate the test. Moreover, the stool method is subject to precisely the same variation plus the added errors of variable resorption by the intestine, to say nothing of the disappearance of a fraction of these very unstable pigments through the action of an inconstant intestinal flora. Of prime significance is the detection of urobilinogen in the duodenal contents, for this pigment is never present in health. Krumbhaar's final objection that the method is more liable to errors in the collection of material than the stool method is certainly true in the hands of the inexperienced, but here again several removals may be made on the same patient for control, in less time and with far less labor than is consumed by a forty-eight hour stool determination.

Lyon[3] apparently has neglected to establish the values of bilirubin and urobilin as they obtain in the fasting healthy individual, for he says: "When bile is

* From the Department of Medicine, University of Minnesota Medical School.

* Read before the Section on Practice of Medicine at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Schneider, J. P.: The Splenic Pathology of Pernicious Anemia and Allied Conditions, a Duodenal Method of Estimating Hemolysis, Arch. Int. Med. **17**: 32 (Jan.) 1916.

2. Krumbhaar, in Pearce, R. M.; Krumbhaar, E. B., and Frazier, C. H.: The Spleen and Anemia, Philadelphia, J. B. Lippincott Company, 1918.

3. Lyon, B. B. V.: Diagnosis and Treatment of Diseases of the Gallbladder and Biliary Ducts, J. A. M. A. **73**: 980-982 (Sept. 27) 1919.

found in the fasting duodenum in sufficient quantities to be grossly visible we believe that there is either a disturbed physiologic condition or a pathologic lesion of group organs physiologically related to this intestinal zone." A little experience with healthy student material would have obviated this totally erroneous assumption. Hansmann and Howard [4] used the duodenal method in five cases of pernicious anemia. "Three showed the abnormal presence of urobilinogen, which amounted to 6,800, 2,400 and 1,520 dilutions, respectively; the other two cases which were negative were undoubted cases of pernicious anemia, and there was a well defined increase of the urobilinogen in the stools. We have therefore placed less confidence in the duodenal determination than in that of the urine and stools, contrary to our expectation entertained after reading Schneider's and Giffin's articles. It is, of course, possible that more experience in the method might overcome our present prejudice." Since these workers give no evidence of having first at least reasonably perfected their technic of securing duodenal contents, and at the same time state that in the two cases in which they missed the pathologic increase of pigments in the supposed duodenal contents they found abnormal urobilinogen stool content, it is safe to assume that they failed to enter the duodenum. Among the workers who have used the method extensively there stand out Giffin, Sanford and Szlapka.[5] They report a total of 119 tests in eighty-nine cases, sixty-one of which were patients afflicted with pernicious anemia. They thus report their experience:

> The values obtained by the author's method have been so definitely in accord with the clinical manifestations that there is little doubt of the existence of a relationship which it is to be hoped may be made clearer by further study. These values are also in accord with the results obtained from estimations on the stool. . . . In pernicious anemia the amounts of urobilin and urobilinogen in the duodenal contents were above normal in 84 per cent. of the cases. The amount of urobilinogen was constantly increased when the anemia was severe.

It is necessary to explain that the total of urobilin and urobilinogen as estimated by the spectroscopic technic is not intended to be chemically correct. The absorption bands of these two pigments disappear on dilution at a dissimilar rate; therefore the number of dilutions may not be added. With this explanation it is to be taken that the total pigment values of urobilin and urobilinogen are so grouped merely for comparative purposes. The quantitative estimation of bilirubin by the Huppert method leaves so much to be desired that the values are indicated but roughly.

In the securing of the duodenal sample it is not uncommon, if the patient retches a good deal, to have bile mixed with gastric secretion issue from the tube when the bulb is still in the stomach. When there is an absence of free hydrochloric acid the contents may be alkaline to litmus, and the inexperienced worker will take this diluted material for genuine duodenal secretion and naturally find lower readings. To obviate this error it is necessary, if the patient has been nauseated by the introduction of the tube, to give an added allowance of time for this regurgitated material to be siphoned off and for the bucket to pass over into the duodenum, when by comparison a much stronger alkaline reacting secretion will be found, and a gentle tug at the tube by the operator will be resisted by the bucket if it be beyond the sphincter. When free acid is present in the stomach this error is not likely to happen. However, all of the refinements in the technic of securing the material, which I originally described, should be painstakingly followed.

In my experience the most difficult cases have been those in which the spleens were very large. In a number of these it was impossible to get the bucket into the duodenum. In one I succeeded by allowing the tube to remain in situ for twenty-four hours.

In order to reestablish the truth of my contention that urobilin does not occur in the duodenal secretion as obtained by the Einhorn tube in the normal fasting adult in amounts exceeding 1,000 units, that urobilinogen is never present in health, and that diet has no immediate influence on the values of either, I had a series of twenty-three removals made on volunteer students, the results of which appear in Table 1. Incidentally, it occurred to me, acting on a suggestion derived from the work of Barratt and Yorke,[6] to investigate in a small way the effect on these pigments of quinin sulphate. Relative to the first contention, it is obvious that, regardless of diet, the lowest value of urobilin found was 400 units, the highest 800, that

TABLE 1.—BILE PIGMENT STUDIES IN HEALTHY STUDENTS: DIET, DRUGS, ETC.

No.	Name	Date	Diet, Drugs, etc.	Amount, C.c.	Color	Bilirubin	Urobilin	Urobilinogen	Total	Comment
1	R. S.	11/22/19	Mixed diet	30	Light	++	600	0	600	
2	R. S.	3/13/20	60 gr. quinin sulphate, 48 hrs.	40	Dark	+++	1,600	600	2,200	Urine, both pigments
3	D. D.	11/22/19	Mixed diet	30	Light	++	400	0	400	
4	D. D.	12/16/19	60 gr. quinin sulphate, 48 hrs.	35	Dark	+++	1,400	600	2,000	Urine not tested
5	D. D.	1/24/20	Carbohydrate diet, 3 days	25	Light	++	600	0	600	
6	D. D.	2/28/20	Milk diet, 4 days	25	Light	++	600	0	600	
7	D. D.	3/13/20	60 gr. quinin sulphate, 72 hrs.	50	Dark	+++	1,000	200	1,200	Urine, both pigments
8	V. G.	1/ 6/20	Mixed diet	30	Light	++	800	0	800	
9	V. G.	1/10/20	Milk diet, 4 days	25	Light	++	600	0	600	
10	A.	1/21/20	Mixed diet	35	Light	++	600	0	600	
11	A.	1/23/20	75 gr. quinin sulphate, 48 hrs.	35	Dark	+++	1,600	800	2,400	Urine, not tested
12	A.	1/30/20	Carbohydrate diet, 6 days	35	Light	++	600	0	600	
13	R. K.	1/21/20	Mixed diet	30	Medium	+++	800	500	1,300	Laeunar tonsillitis
14	R. K.	1/25/20	Carbohydrate diet, 4 days	30	Light	++	400	0	400	Infection past 4 days
15	R. K.	2/27/20	75 gr. quinin sulphate, 48 hrs.	50	Dark	+++	2,400	1,600	4,000	
16	R. K.	3/11/20	Milk diet, 3 days	30	Dark	+++	2,200	1,600	3,800	Tinnitus still present
17	R. K.	3/15/20	Mixed diet (control)	30	Light	++	600	0	600	No symptoms for 3 days
18	A. S.	3/ 3/20	Mixed diet	30	Light	++	500	0	500	
19	A. S.	3/ 5/20	Quinin sulphate, 75 gr., 48 hrs.	60	Dark	+++	2,800	1,200	4,000	
20	A. S.	3/12/20	Tinct. opii, 20 minims, 3 days	30	Light	++	800	0	800	One bowel movement 3 days
21	A. S.	3/15/20	Quinin sulphate, 60 gr., 48 hrs.	45	Dark	+++	1,600	300	1,800	Urine, urobilin
22	D.	3/29/20	Mixed diet	20	Light	++	800	0	800	
23	D.	3/31/20	Quinin sulphate, 75 gr., 48 hrs.	40	Dark	+++	2,400	0	2,400	Urine, urobilin

4. Hansmann, G. H., and Howard, C. P.: Urobilin and Urobilinogen of Stool and Urine in Pernicious Anemia, J. A. M. A. **73**: 1262-1264 (Oct. 25) 1919.

5. Giffin, Z. G.; Sanford, A. H., and Szlapka, T. L.: The Estimation of Urobilin and Urobilinogen in the Duodenal Contents, Am. J. M. Sc. **155**: 562-563 (April) 1918.

6. Barratt, J. W., and Yorke, W.: The Relation of Bile Pigment to Hemoglobin, Ann. Trop. Med. and Parasitol. **8**: 509-536 (Dec.) 1914.

urobilinogen occurred only once, and that in a student, the third day of a lacunar tonsillitis. In this, as in other bacterial invasions, such as scarlet fever, there is every reason to suspect acute parenchymatous hepatitis. It is to be particularly noted that the liver disturbance affects urobilinogen and not urobilin, the value of which is normal. Severe constipation induced by tincture of opium did not affect the value of either pigment.

still high thirteen days later. Four days later a control test gave normal values. While urobilinogen was always found, urobilin values were particularly high, suggesting the relative values found in hemolytic states. It is not improbable that quinin has hemolytic properties, and those who contend that the hemoglobinuria occurring in certain malarialized districts is due to the ingestion of quinin may be shown eventually to be correct in their belief. Work is now in progress

TABLE 2.—BILE PIGMENT STUDIES IN PATIENTS ILL WITH PERNICIOUS ANEMIA, 1915-1916

				Blood				Blood Pigments							
No.	Name	Age	Months Ill	Red Blood Cells	Hemoglobin	Index	White Blood Cells	Bilirubin	Urobilin	Urobilinogen	Total	H-H	Cord Extent	Total Ill	Status Quo
1	J. A.	48	12	930	25	1.3	3 800	+++	3.000	3 000	6 000	1.1	Mod., late	42	Deceased
2	S. H.	42	20	1,500	30	1.0	2,200	+++	2,000	1,800	3,800	0.9	Prom., early	45	Deceased
3	J. H.	38	14	1,100	27	1.2	2,400	+++	4,000	2,800	6 800	1.3	Slight	48	Deceased
4	Mr. H.	52	18	1,200	26	1.2	3,800	+++	2,000	1,200	3,200	0.7	Prom.	24	Deceased
5	Mr. W.	36	20	1,300	30	1.1	2,700	+++	2,300	2,500	4.800	1.0	Slight	36	Deceased
6	J. D.	33	15	2,800	70	1.3	4,200	+++	1,400	1,600	3 000	0.9	Severe	48	Deceased
7	Mr. S.	50	13	2,000	37	0.9	3 800	+++	1,800	2,000	3.800	0.9	Moderate	36	Deceased
8	Mr. B.	29	6	1,700	30	0.9	2.200	+++	2,200	3,200	5,400	1.1	Absent	18	Deceased
9	Mrs. B. B.	38	14	2,500	45	0.9	4,200	+++	1,400	1,200	2,600	0.85	Slight	30	Deceased 1 year after splenectomy
10	C. S.	33	13	1,300	36	1.4	4,900	+++	1,400	1,000	2,400	0.61	Slight	32	Deceased ¾ year after splenectomy
11	Mrs. T.	47	10	1,600	36	1.1	5,200	+++	3,200	600	2,800	0.7	Early, severe	36	Deceased
12	W. H.	53	18	1,960	38	0.9	3,200	+++	2,000	600	2,600	0.7	None	42	Deceased
13	Miss L.	18	30	2,940	50	0.8	5,900	++++	5,000	1,000	6,000	1.4	None	..	Living, well, splenectomized
14	Mrs. S.	42	12	4,000	78	0.9	3,800	+++	1,000	1,000	2,000	1.0	Moderate	18	Deceased after splenectomy
15	Mr. P.	58	20	2,000	48	1.2	3 000	+++	2,400	800	3.200	0.87	Moderate	36	Deceased
16	W. M.	50	16	1,500	31	1.0	5,100	+++	1,600	600	2,200	0.61	Severe	20	Deceased
17	Mr. M.	39	6	2,500	48	0.9	4,700	+++	1,800	800	2.600	0.85	Slight	14	Deceased
18	Mr. H.	48	13	1,300	20	0.8	4 000	+++	2,800	800	3,600	0.81	Slight	21	Deceased
19	Mrs. S.	40	18	1,500	25	0.8	5,200	+++	3,600	2,000	5,600	1.1	Slight	42	Deceased
20	Mrs. F.	49	6	2,400	43	0.9	3,800	+++	1,400	1,600	3.000	0.9	Severe	24	Deceased
21	J. B.	40	9	1,750	35	1.0	4,200	+++	1,600	800	2.400	0.7	Slight	18	Deceased
22	Dr. M.	42	20	1,500	32	1.0	4 000	+++	1,400	600	2 000	0.6	Slight	22	Deceased
23	M. H.	40	11	1,270	20	0 8	3,200	+++	2 400	800	3 200	0.7	Prom.	28	Deceased
24	Mrs. H.	52	14	1,970	30	0.8	4,200	+++	1,200	400	1 600	0.6	Moderate	18	Deceased
25	M. S.	33	8	1,800	36	1.0	5,200	+++	1,200	2 000	3 200	0.8	Severe	20	Deceased
26	Mrs. R.	36	10	1,270	30	1.2	3.800	+++	2 400	800	3.200	0.7	None	24	Deceased
27	Mr. O.	49	18	1,970	38	1.0	4.800	+++	1,200	400	1 600	0.6	Moderate	24	Deceased
28	Mrs. T.	30	12	2,000	39	1.0	3,900	+++	2 000	1 800	3 800	0.9	Moderate	..	Not traced
29	Mr. S.	56	24	1,750	28	0.8	3,200	+++	1,200	2,000	3,200	0.8	Very slight	..	Deceased

TABLE 3.—BILE PIGMENT STUDIES IN PATIENTS ILL WITH PERNICIOUS ANEMIA, 1917-1918

				Blood				Blood Pigments							
No.	Name	Age	Months Ill	Red Blood Cells	Hemoglobin	Index	White Blood Cells	Bilirubin	Urobilin	Urobilinogen	Total	H-H	Cord Extent	Total Ill	Status Quo
30	O. W.	57	12	8.600	70	1.0	6,200	+++	2,200	2.400	4.600	1.5	Only symptom	28	Living; atoxic
31	Mrs. H.	39	11	2.000	40	1.0	4 800	+++	1,800	2.000	3,800	0.9	Moderate	28	Deceased
32	Mrs. O.	45	6	3,300	45	0.7	6,800	+++	1,600	2,200	3 800	0.9	None	14	Deceased
33	Prof. G.	56	17	1,760	30	0.9	3,600	+++	1,200	1,000	2.200	0.65	Very slight	34	Living; weak
34	Mrs. S.	47	4	1,856	50	1.3	3,200	++	800	0	800	0.4	Early, severe	26	Living; undoubted pernicious anemia
35	Mr. S.	64	7	2,032	32	0.8	4 000	+++	1,200	1 400	2,600	0.8	None	31	Living; fair health
36	Mr. A.	41	6	1,000	22	1.1	2 800	+++	2.000	3 000	5 000	1.0	None	12	Deceased; 5 T
37	Mr. A.	61	12	1,780	20	1.3	3 850	+++	1 800	2.200	3,000	0.8	None	29	Living; 3 T
38	O. W.	39	9	2,000	38	0.9	6,200	+++	2,000	3 200	5.200	1.1	None	31	Living; fair
39	Mrs. C.	45	12	1,600	36	1.1	3 600	+++	2,000	3 000	5.000	1.1	Moderate	36	Deceased; 6 T
40	Mrs. N.	33	8	2,160	48	1.1	6 100	+++	1,600	1 600	3.200	0.9	None	36	Living; fair
41	Mrs. H.	54	22	1,200	30	1.2	2,800	+++	1,800	1 800	3 600	0.8	Slight	23	Deceased; 2 T
42	Mrs. S.	49	36	2,000	42	1.0	3,400	+++	1,200	1 400	2.600	0.7	Early, severe	42	Deceased
43	Mrs. C.	46	18	2,500	58	1.1	5,800	+++	1 200	1.600	2,800	0.9	Marked, early	38	Living; atoxic
44	Mrs. E.	54	8	2,400	50	1.0	6,200	+++	2 000	2,200	4,400	1.1	Moderate	30	Living; remission
45	Brad.	32	6	3,500	65	0.9	6 400	+++	1,200	0	1.200	0.8	Early, marked	12	Deceased; atoxic
46	Mr. C.	62	36	1,808	37	1.0	5,760	+++	2,600	1,800	4 400	1.1	None	54	Living; remission
47	Mrs. S.	40	12	1,760	38	1.1	3 800	+++	1,800	0	1,800	0.6	Slight, late	28	Deceased; 6 T
48	Mrs. S.	26	2	2,600	44	0.8	3 000	+++	1,200	1 000	2.200	0.8	None	6	Deceased; 1 remission
49	Mrs. S.	46	5	2,400	55	1.0	5 400	+++	1,000	1 400	2.400	0.8	None	24	Deceased
50	Edwards	56	3	2,560	60	1.2	5,400	+++	1,200	1,000	2,200	0.8	Early only	24	Has syphilis also
51	Mrs. P.	28	7	1,040	28	1.4	2 800	+++	2,200	2 000	4.400	0.9	Early, marked	20	Remission
52	Mrs. O.	42	60	2,100	38	0.9	2 800	+++	2 400	1.800	4,200	1.0	Slight, late	78	Hy-uria
53	Mrs. E.	66	48	1,200	28	1.1	3,800	+++	1,800	2,000	3,800	0.8	Early, severe	72	Deceased
54	Roe	46	12	2,400	38	0.8	4,800	++	800	0	800	0.5	Early	..	Deceased; mental
55	Mrs. A.	56	36	1,600	32	1.0	5,600	+++	1,200	1,400	2,600	0.7	None	42	Deceased

Relative to the effect on the values of these two pigments particularly, of from 60 to 75 grains of quinin sulphate administered by mouth in the preceding forty-eight hours, the table tells a rather striking story. In each of the eight instances a pathologic pigment level was found. In two instances the same student was used a second time with a similar result. In one instance in which the student complained of a persistence of ringing in his ears, the pigments were with the end in view of determining whether quinin acts on the red cell directly or on the liver or spleen parenchyma.

From October, 1915, to March, 1920, a total of 104 patients ill with pernicious anemia was seen and rather completely studied. Of these, seventy-eight have sufficiently complete records to allow of tabulating (Tables 2, 3 and 4) for the years 1915-1916, 1917-1918 and 1919-1920, respectively. In these seventy-

eight cases there were repeated bile examinations in a considerable number, so that the total number of duodenal removals is 120. Only one determination is given in the tables for each patient, and when there were more, the duodenal test nearest to the blood examination in point of time was selected. (Frequently both were done the same day.)

normal pigment values, two of which were repeated with the same result. One is dead, two are living. Two are certainly cases of pernicious anemia; in the other there are still a few elements of doubt.

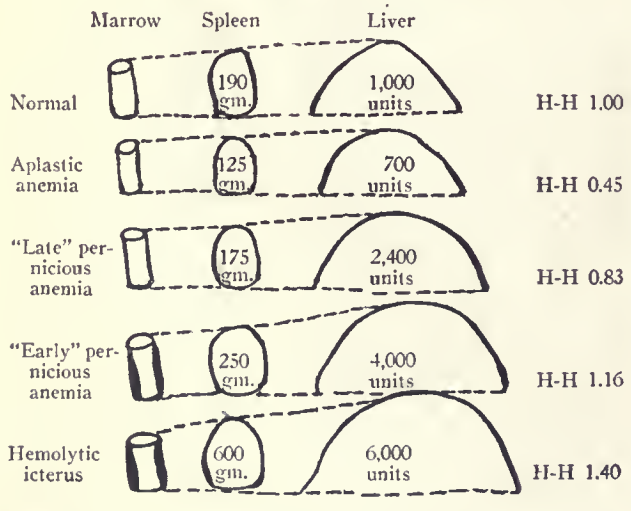
An indication of the fatal character of this disease is the fact that of seventy-five patients traced, fifty-two are dead. Of the 1915-1916 series only one, and that

TABLE 4.—BILE PIGMENT STUDIES IN PATIENTS ILL WITH PERNICIOUS ANEMIA, 1919-1920

				Blood				Blood Pigments							
No.	Name	Age	Months Ill	Red Blood Cells	Hemoglobin	Index	White Blood Cells	Bilirubin	Urobilin	Urobilinogen	Total	H-H	Cord Extent	Total Ill	Status Quo
56	Cable	43	12	1,800	32	0.9	3,900	+++	1,800	2,000	3,800	0.9	Mod., late	24	Deceased; 6 T
57	Mrs. S.	45	24	2,640	38	0.7	4,000	+++	1,200	1,200	2,400	0.8	Slight	36	Splenectomy; deceased
58	Mrs. M.	48	24	1,000	24	1.2	3,200	+++	1,200	1,400	2,600	0.6	Moderate	30	Deceased
59	Mr. O.	52	12	1,000	26	1.2	4,200	+++	1,200	1,600	2,800	0.6	Slight	18	Deceased
60	Mrs. S.	58	24	1,200	28	1.1	5,200	+++	1 800	600	2,400	0.6	Early, severe	27	Deceased
61	Dr. W.	52	6	1,250	30	1.2	3,200	+++	3 000	2,000	5,000	1.0	Slight	10	Fulminating; deceased
62	Dr. H.	33	18	2,000	42	1.0	5,100	+++	1.800	2,000	3,800	0.9	Moderate	30	Deceased
63	Mr. P.	39	12	1,800	36	1.0	4,800	+++	2,200	3,200	5,400	1.2	Slight	24	Living; remission
64	Mrs. H.	33	9	2,400	50	1.0	5,200	+++	1,800	1,800	3,600	1.0	None	12	Living
65	Mr. O.	54	18	3,000	62	1.0	6,200	+++	2,800	2,000	4,800	1.3	Slight	30	Living; remission
66	Mrs. H.	36	24	2,400	50	1.0	3,200	+++	2,000	2,000	4,000	1.0	None	..	Untraced
67	Mrs. G	63	36	2,500	67	1.3	4,200	+++	1 800	1,600	3,400	0.9	Slight	48	Living
68	Mrs. W	48	9	1,200	28	1.0	5,800	+++	1,200	1,000	2,200	0.5	Moderate	18	Deceased
69	Mr. A.	33	12	1,000	22	1.0	4,200	++	1 800	400	2,200	0.5	None	16	Deceased
70	Miss B.	28	8	2,500	55	1.1	3,900	+++	1 000	1,000	2,000	0.7	Severe	18	Deceased
71	Mr. O.	56	24	3,000	65	1.1	5,000	+++	2,000	800	2,800	0.9	Moderate	36	Living
72	Mrs. S.	56	24	2,500	58	1.1	3,100	+++	2.200	1,800	4,000	1.0	None	30	Living
73	Mrs. A.	34	12	3 000	65	1.1	4,500	+++	2,400	2,200	4,600	1.2	Moderate	36	Living
74	Mr. M.	54	24	2,800	50	1.0	5.600	+++	1 800	1,600	3,400	1.0	Early, mod.	36	Deceased
75	M. M.	56	36	1,200	26	1.0	4,000	+++	2 200	800	3,000	7.0	Moderate	..	Untraced
76	O. W.	49	9	4,200	78	0.9	6,800	+++	2,400	2,200	4,600	1.4	Only symptom	..	Living; ataxic; looking well
77	Miss E.	35	12	2,000	45	1.1	3,800	+++	800	0	800	0.4	Typical	..	Living; undoubted pernicious anemia
78	Mr. C.	50	12	2,166	50	1.2	4,000	+++	2,400	1,400	3,600	0.9	Early, mod.	..	Living; remission

Of the seventy-eight patients, forty-one were men and thirty-seven were women. The average age was 45 years. The oldest patient was 66, the youngest, 18. The average number of months the patient had been ill when first seen was fifteen. The average total length of illness of those who died was 2.6 years, the shortest being six months and the longest six and one-half years. The average red blood cell count was

TABLE 5.—RELATION OF MARROW TO SPLEEN-LIVER



2,000,000 per cubic millimeter. The average hemoglobin (Sahli, corrected, and Dare) was 40 per cent. The average hemoglobin index was 1 and the average white blood cell count 4,400. The degree of cord involvement was: twenty, severe; twenty, moderate; twenty, slight; eighteen, none. The average total bile pigments (urobilin and urobilinogen) was 3,330 units, the highest total being 6,800, and the lowest 800. Three patients out of the total (Cases 34, 54 and 77) gave a splenectomized patient, is living. Of the 1917-1918 series, fourteen are dead and twelve living. Of the 1919-1920 series, eleven are dead and ten living.

In 1917 [7] I proposed a simple formula by means of which it might be possible to express the relation of blood regeneration to blood destruction in a given instance. For short this hematopoietic-hemolytic relationship is designated as the H-H index. Normally this is 1. When hemolysis is very active it will tend to be plus, and when hemopoiesis fails it will fall below 1.

If our concept that early in pernicious anemia the hemolytic factor is uppermost and that later in the life history of the disease the marrow fails is true, then the H-H index should be higher in the early cases. In our series the H-H index of all who gave a history of twelve months or less of illness is 1.16 (disregarding Cases 34, 54 and 77). The H-H index of all who were ill more than twelve months is 0.83. If Cases 34, 54 and 77 are included, those of twelve months or less standing yield an H-H index average of 0.86. The early cases have a higher average red blood cell count, the highest being 4,200,000. The average H-H index in all having a red cell count of 2,000,000 or over—namely, thirty-eight cases, including Cases 54 and 77, is 0.95. The average H-H index of the forty cases with a count under 2,000,000 is 0.78.

If we are correct in our concept relative to the meaning of a low H-H index, then the degree of leukopenia should run more or less parallel with it. In twenty-four of the seventy-eight cases the total white blood cell count was 5,000 or over, and here the average H-H index is 0.95. In fifty-four of the seventy-eight cases the leukocyte count was less than 5,000, and in these the average H-H index is 0.83. To my mind this fact is highly confirmatory of a previous statement in which I indicated that a low H-H index

7. Schneider, J. P.: Further Quantitative Study of the Duodenal Blood-Derived Pigments, Arch. Int. Med. **19**: 156-162 (Jan.) 1917.

taken with a leukopenia, however short the illness in point of time, indicated a bad prognosis. Table 5 schematically represents the marrow-spleen-liver relationship, and the resulting H-H index in the normal, aplastic anemia, late pernicious, early pernicious, and hemolytic icterus.

In a recent editorial [8] in THE JOURNAL commenting on the work of Rous and Oliver occur these sentences: "The diagnosis of diseases like pernicious anemia and hemochromatosis involving a hemosiderosis has sometimes been extremely difficult, unless a conspicuous siderosis of the skin has developed. Necropsy usually reveals far more siderosis in the internal organs, but it cannot be detected during life." Table 6 [9] summarizes the pigment findings at necropsy in seventeen patients dying of pernicious anemia. Six of these are represented in our series, and presented high duodenal values. In Case 76, O. W., there was no clinical evidence of pigment accumulation, nor was there hematologic evidence for pernicious anemia. The only suggestive findings were neurologic. The bile study, with values of 4,800, 4,600 and 4,800 units on three separate occasions, was the decisive finding in the case. I would therefore say that siderosis can be detected during life.

414 Syndicate Building.

TABLE 6.—PIGMENT STUDIES IN SEVENTEEN PERNICIOUS ANEMIA NECROPSIES

No.		Sex*	Age	Nourishment	Duration	Hemoglobin	Red Blood Cells	White Blood Cells	Anisocytes	Poikilocytes	Nucleated Reds	Weight, Gm. Liver	Weight, Gm. Spleen	Pigmentation Liver	Pigmentation Spleen	Pigmentation Kidney	Bone Marrow
1.	A-19-46	♀	42	Poor	3 yr.	..	1,150,000	1,200	+++	+	+	1,725	430	+	+++	+	Red
							840,000	925									
2.	A-19-218	♀	50	Poor	2 yr.	..	1,984,000	4,600	+++	++	.....	1,100	125	+	+++	+	Red
3.	A-18-31	♂	53	Fair	1 yr.	18	780,000	4,800	+++	+++	+	2,060	195	+++	++	+	Red
						12	540,000	4,400									
4.	A-18-35	♂	62	Poor	6 yr.	50	2,235,000	8,600	.....	.....	.....	1,260	315	+++	+	+	Red
						20	800,000	6,750									
5.	A-18-39	♂	39	Poor	1 yr.	45	1,161,000	5,800	+++	+++	++	1,700	160	+++	+++	—	Red
						28	1,046,000	7,100									
6.	A-18-49	♂	44	Poor	1 yr.	28	1,400,000	9,600	+++	+++	++	1,760	240	.....	++	+	Red
7.	A-18-70	♀	50	Poor	5 yr.	28	1,900,000	7,600	+++	+++	+	1,325	Removed 3 years before	+++	+++	++	Red
						40	2,400,000	15,000									
						34	1,680,000	6,500									
8.	A-18-256	♀	32	Poor	3 yr.	40	600,000	.....	++	+	+++	1,760	260	+	+	.....	Red
						46	800,000										
9.	A-15-365	♂	44	Poor	.....	30	1,400,000	3,000	.....	.....	.....	1,460	165	+++	+	+	Red
10.	A-15-358	♀	53	Poor	7 mo.	20	1,000,000	8,000	+++	+++	+++	.....	...	++	+++	++	Not examined
11.	A-15-149	♀	48	Good	.....	..	1,900,000	3,500	+++	++	.....	1,900	175	+	++	+	Red
12.	A-19-173	♀	47	Poor	8 mo.	..	.....	.....	.....	.....	.....	.....	175	.....	.....	.....	Red
13.	A-17-138	♀	66	Good	?	60	1,900,000	.....	.....	++	+	1,000	55	+++	+	+++	
14.	A-17-161	♀	47	Good	5 mo.	25	1,100,000	3,100	+++	+++	—	1,400	160	++	+	—	Not examined
						12	760,000	1,400	+++	+++							
15.	A-17-264	♀	47	Poor	2 yr.	30	2,100,000	6,000	+++	+++	+	1,460	470	++	+++	++	Not examined
						18	752,000	3,600									
16.	A-16-70	♀	57	Poor	3 yr.	20	1,100,000	3,200	+++	+++	—	1,897	248	+++	++	.....	Red
17.	A-16-303	♂	53	.....	.....	..	.....	.....	.....	.....	.....	1,975	200	+++	++	+	Red

* In this column, ♂ indicates male and ♀, female.

ABSTRACT OF DISCUSSION

DR. LEONARD G. ROWNTREE, Minneapolis: For two or three years prior to going to Minnesota I was interested in the development of functional tests for the liver. We made a large number of determinations of urobilinogen in relation to liver diseases. During the course of this work, Wilbur and Addis reported their results, showing the tremendous variations which they encountered. We never published the results of these experiments because the variations were tremendous. When I came to Minnesota, I was not in a particularly receptive frame of mind for these studies which Dr. Schneider reported. I saw his work. I saw cases of pernicious anemia followed after splenectomy and after transfusion. In some cases fifteen or twenty determinations were made on the same patient, and always I saw these constant high values for the bile pigments. I could not help but become converted to a belief in the value of his methods. They deserve much greater attention than they have received. Dr. Schneider's quinin experiments are of interest. Quinin is absorbed from the intestine, is held in the red blood cells, and most of it is destroyed in the body. Some of it is excreted in very small quantities in the urine, the milk and other secretions. It is interesting to note that blackwater fever has followed the use of quinin in pernicious anemia. Of course, in malaria blackwater fever occurs with and without the use of quinin. With the storage of quinin in the blood cells and the hemorrhagic influence on the part of the plamosdium, it is more than probable that some causal relationship exists between quinin and blackwater fever. The greatest need in the study of diseases of the blood and of the liver at present is a more exact chemical knowledge of both the bile and the blood pigments.

DR. G. J. HIRSCHBOECK, Duluth, Minn.: We have used this test rather frequently since Dr. Schneider first initiated its use, and we were rather forcibly impressed at the beginning with its value in the differential diagnosis of obscure conditions. In a case of beginning carcinoma of the stomach, in which the findings were not by any means definite, the patient's nutrition was good, but he had ulcerative stomatitis and anemia, without any definite blood picture and negative roentgenologic findings. We made the diagnosis of pernicious anemia. The case was referred to Dr. Schneider, who after making his duodenal estimate said that the case was not one of pernicious anemia. The case was followed subsequently, and blood was found in the stools. Later on, typical symptoms developed, the patient was operated on and eventually died, with characteristic postmortem findings of carcinoma of the stomach. The test is also of extreme value in cases of pernicious anemia in which neurologic symptoms predominate, whether only peripheral paresthesias, or as far advanced as a true combined scleroses. Oftentimes, in these cases, the number of red cells is large and the blood picture is inconclusive, as well. In these cases the test is of great value in differentiating combined scleroses due to pernicious anemia from those that are not of such origin. It is also of value in cases of syphilis accompanied by anemia. In cases of syphilis, with secondary anemia, in which we find normal pigment values in the duodenum, we obtain improvement by antisyphilitic treatment. Furthermore, in cases with positive serologic findings, and with the typical clinical picture of pernicious anemia if duodenal estimation is performed, if it is found to be low in duodenal pigment units, the spirocheticides improve the cases to cure; and if the units are found to be excessive, antisyphilitic

8. The Diagnosis and Possible Nature of Hemosiderosis, editorial, J. A. M. A. 72: 574-575 (Feb. 22) 1919.

9. Courtesy of Dr. E. T. Bell of the Department of Pathology, University of Minnesota Medical School.

measures are of no value. This test is not difficult to perform when done frequently, and after the technical difficulties are overcome. It is far less laborious, the amount of time consumed is far less, and it is far more accurate than the stool examination. I would strongly urge its more common adoption and use, because you will find it of immense clinical value in differential diagnosis.

Dr. Lewellyn Sale, St. Louis: The usefulness of a quantitative test, even though it be a rough quantitative estimate of the bile pigments, is realized and admitted. It is not always possible to make use of the duodenal method, as described by Dr. Schneider. I want to call attention to another method, and at the same time, to ask Dr. Schneider if he has made any experiments with this method, in controlling his own, as to its clinical usefulness. This is a quick clinical laboratory estimation of urobilinogen, a rough quantitative estimation by the use of the so-called Ehrlich's reagent, dimethylamidoparabenzaldehyd. Using that reagent in the urine, we were always able to demonstrate the presence of an increased amount of urobilinogen in the urine in cases of increased blood destruction in pernicious anemia, and in other anemias. At the same time, a worker in the same clinic in which we were using this reagent was trying to determine whether or not it might not be of some prognostic value in cases of pulmonary tuberculosis. He claimed that in the more advanced cases, and those which offered a bad prognosis, because of the high degree of toxicity, there was always, even though it was not demonstrable, a certain degree of parenchymatous hepatitis, which could at least be predicated on the presence of an excessive amount of urobilinogen in the urine.

Dr. J. P. Schneider, Minneapolis: To determine pathologic hemolysis, the duodenal technic is the method of choice, with the quantitation stool examination second, largely because of the time element. Urine pigment studies (urobilin and urobilinogen) are utterly valueless in pernicious anemia. They are of signal value in hemolytic icterus and of some differential value in diseases affecting the entire parenchyma of the liver as against obstructive pathology involving the common duct.

THE REPORTING OF VENEREAL DISEASES BY PHYSICIANS*

WILLIAM EDLER, M.D.

Scientific Assistant, United States Public Health Service; Director, Bureau of Venereal Diseases, Louisiana State Board of Health

NEW ORLEANS

Every innovation in medicine has been either preceded or followed by an educational campaign among both the public (the laity) and physicians. Medical progress must be made by acquainting the general public with medical facts. Too long have physicians kept their medical knowledge within their own sphere, expecting the laity to gather their medical education in the stern school of disease experience, leaving the public helpless except for minatory lectures in preventive medicine. The public mind is analogous to the child's mind: Not only must both be told to do a thing, but both demand the whys and wherefores of the thing to be done. Sustained preventive medicine will never come to pass until every child, man and woman knows the immense economic and material reasons for prophylactic medicine.

One can readily understand why a great deal of energy must be expended to acquaint the public with some departure from the routine in medicine. The average person is not presumed to know the needs of medicine at any given time. But it is difficult to appreciate why the same laborious process must be gone through with physicians. Surely it is expected of them to recognize the demands of the various evolutionary periods that go to make ultimately the history of medicine. Yet it is a fact, and any state health officer will verify the statement, that a great deal of the time of the vital statistics bureau of a state health department is taken up in an attempt to get physicians to write legibly and give reasonable causes for death; or, on the other hand, an expert statistician's time is devoted to doing propaganda work to convince physicians that birth records are a necessity in these modern days of statistical accuracy. In returning death reports to physicians for proper revision, and in a multiplicity of other tasks growing out of the carelessness and negligence of physicians who, in making their reports, do not give the subject the ordinary care that a subject of this kind merits, is the energy and money of this important branch of health activity dissipated.

When we transfer our investigations from the vital statistics bureau to the epidemiology department, the sins of omission and commission increase in a ratio directly proportional to what the physician thinks is an invasion of the rights or privileges of either the patients under his care or of himself.

Only a few years ago it became obligatory on the physician to report tuberculosis as a communicable disease. Despite the law, contrary to all medical knowledge, opposed to the conscientious convictions of the medical practitioner himself, nevertheless an educational campaign had to be conducted among physicians to teach them what they already knew: that tuberculosis is a communicable disease; that there is only one way to control it, and that is for the health officials to know where and to what degree it exists.

State and city boards of health need a law enforcement division for physicians, rather than an educational department. The physician *knows;* he simply does not consider the reporting of communicable diseases a part of his professional duties; and until such time when he is punished for law violations the same as any other individual, until such time as he is impressed with license revocations varying in time with the degree of his offense, not until then will reporting of disease reach any degree of accuracy. One or two prosecutions of this kind in a community, with ample publicity, will produce more communicable disease reports in a week than will years of propaganda.

Recently, in the state of Louisiana, there were found in one small community forty cases of typhoid fever, not one of which had ever been reported. Did any of the physicians attending these cases feel that from a legal and moral standpoint they were criminally liable for this epidemic? Did they feel that they were grossly negligent of a duty they owed their community, their state and the nation? Were they prosecuted? And, above all, will they not do precisely the same thing at some future time?

Much of this sounds like scolding. It is not. It is a frank appeal for state health officers to hold in strict accountability every licensed physician to a trust that the state has imposed on him. A man is readily punished for violation of a traffic ordinance because he endangers the life of a few persons. The physician has under his thumb the lives of whole communities, and he should not be permitted to violate this trust and responsibility.

* Read before the Section on Preventive Medicine and Public Health at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

Laxness and negligence being true in the reporting of those diseases that have been reportable in the past, it can readily be surmised how much more difficult it is to get reports on diseases recently added to the list of communicable diseases. The problem begins to get more complicated when the physician attempts to shield certain classes of his patients; or, in a more mercenary type of physician that is occasionally encountered, when he attempts to enlarge his clientele by circulating among the laity the information that he does not report certain diseases. I refer to the venereal disease triad. I can think of nothing more contemptible than to compete unfairly on such a basis with a fellow practitioner who reports his venereal disease cases. Equally unfair is the physician who thinks he shields wealthy patients by not reporting their venereal disease when, at the same time, he painstakingly reports those not so fortunately situated.

There can be no question that there are physicians who are conscientious objectors to venereal disease reporting. Nevertheless, in this state (Louisiana) they violate the law every time they do not report. Their recourse is in a court of justice. They have no more right to interpret the law, no more justification for violating it, than they have for ignoring any other law. Yet it is only just that an answer should be made to those objections that superficially appear legitimate; and I will discuss them in the order of their importance.

INVALIDITY OF OBJECTIONS TO THE REPORTING OF VENEREAL DISEASES

It is contended that the reporting of venereal diseases in a patient not only violates the individual right of the person to conceal his malady from his fellow man, but also contravenes the established principle of privileged communications between the physician and his patient. This argument has no merit in point of law or in any ethical code. The courts have invariably ruled to the contrary, in the first instance; and our social structure is based on a philosophy diametrically opposed, in the second. No system of government could long endure if it were based on any other principle than that the right of the individual is always subservient to that of the mass. Any other creed spells rank individualism, and individualism carried to its logical conclusion means nothing more nor less than anarchy. In any system of ethics a right implies a duty. The physician's *right* to practice medicine by virtue of a license issued him by the state, protecting him in the exclusive privilege of healing the sick and shielding the well, implies a *duty* and an allegiance to the creator of that self-same right; and all other ethical ties to individuals or groups of individuals are insignificant when compared to the loyalty and protection demanded by the great social structure whose existence is always threatened, and whose efficiency is always impaired, by bacterial invasion. Every physician is a state officer, a public health officer, commissioned and protected by the state, and in this day and age not only is it his privilege to heal the sick, but it is his absolute duty to shield the well. He who practices today only the healing art, and leaves out of his medical armamentarium preventive medical science, is very poorly equipped. An individual has no rights that conflict with society's interests. In other words, an infected person's rights cease where community protection begins.

Again, we meet the argument that the reporting of venereal disease must inevitably result in blackmail, scandal and various other social calamities that are presumed to make the health officer shudder over the dire effects of his pernicious meddling in communicable diseases. Physicians have tried to be serious in explaining that the reason they did not report was the fear of being shot, prosecuted for libel, charged with malpractice, and what not. Their argument was always to bolster up something that they originally did not intend to do. As a matter of fact, Ohio has obtained the second largest number of venereal reports in the United States, and the cases there are reported by name and street number. Certainly, in most states where the reporting is done by some cipher code, all of these objections must perforce be groundless. But the point of the matter is, that even when the patients are reported by their names, no such catastrophes have taken place. At the risk of repetition and reiteration, may I again call your attention to the fact that the courts of the country have invariably upheld the venereal disease laws; and the responsibility is theirs, and not ours.

We are also admonished by the profession to have a care in enforcing venereal disease reporting in infected married men, lest their wives come into possession of the data, and domestic turmoil and tragedy result. Nowhere has the medical profession shown its lack of keeping up with modern economics and politics so much as by attempting to protect their own sex at the expense of helpless women and children. Why this maudlin sympathy for the venereally infected married man? You who have been struck with horror when your male syphilitic, in exceptional instances, acquired his disease from his wife: What about the hundreds of thousands of venereally diseased women who have conjugally acquired their maladies? What about the children who have innocently gone down in the struggle? Is it because you believe that men have a right to arrogate to themselves sexual privileges that they will not give, or is it because you are a man, and that despite the handwriting on the wall you cannot overcome the prejudices of ages for men to repudiate the very sex that gave them birth. If these reports are to cause domestic discord; if the wife should through this system of reporting find that her husband is venereally diseased; if the fiancée of some venereally diseased man should by the remotest chance discover the true health status of her prospective husband—all of which I deny is at all probable under the reporting system in use—I ask you, not as physicians, not as scientists, not as sociologists, but as plain, reasonable men, were it not better that she have this information before she is infected than to have it thrust on her in the clinic, in the hospital, or on the other side of the river Jordan?

May I suggest to the profession to prospect just a bit. Would it not be well to anticipate woman's coming political power and, medically at least, give her the protection that each one of us expects legally for ourselves? Shall we, who are presumed to represent all that is humane and ideal in science, be pushed or shall we pull?

BENEFITS FROM REPORTING

If, then, there are no valid objections to the reporting of venereal disease, there ought to be positive benefits derived from reporting if the physician is asked for his cooperation. In the first place, statistical

data on venereal disease are urgently necessary. We ought to know our rate of infection. We should be thoroughly acquainted with the geographic distribution of venereal disease so that intensive work can be done in those heavily infected areas. We must have data of an accurate kind if we are to go before legislative bodies and civil communities to ask for funds. Some of the men engaged in this propaganda work have met with a peculiar situation; namely, they cannot get appropriations without statistical data, and they cannot get the data without funds to enforce the obvious duty of the physicians to report. Truly, a vicious circle.

Another important value in reporting is the recording of the patient so that he can be under surveillance in the event that he absconds from treatment. We have in this city returned for treatment in one clinic as many as twenty-seven patients in one day by threatening to placard their houses. We all know that much of the dissemination of the venereal diseases is due to inadequate treatment. With the abatement in their symptoms comes an indifference to ultimate cure, and it is only through a proper follow-up system that these patients can be compelled to remain in the physician's care until they are at least noninfectious.

Here in Louisiana we have on our report card a space for the reporting of the infector's name and address. Some physicians help greatly in acquiring this information. In most instances, I believe, it may be obtained from the patient if the physician will take the trouble to ascertain it. The patient's trauma is invariably mental as well as physical. If for no other reason than having his exalted ego wounded in misplaced confidence in his sexual selection, he will, by judicious questioning, reveal the source of his infection.

Where the state venereal disease laws are at all adequate, such an infector can readily be corralled. In the case of prostitutes, immediate action is imperative. The detention of a syphilitic prostitute militates against community syphilis to a degree few physicians realize. We have sent prostitutes to the State Detention Hospital from remote parts of the state on telegraphic order immediately on the receipt of a report card from a physician stating that this or that person had infected his patient.

CONCLUSION

Let us remember as physicians that we have no right, legal, moral or ethical, to violate a law. The venereal disease laws of the various states can accomplish results inestimable, but they are all based on the recording of the cases. This must be done by the practitioner. He will do it gladly, if he is true to himself and his community interests. He will do it by compulsion, if necessary. The time has passed when the state health officials should be expected to conduct educational campaigns among physicians. Neither the time, the money nor the patience is available to be wasted in persuasion when the offender is obviously negligent. The physician can be detected readily who evades reporting. He is not at all secure in the secret connivance with his patient. The laboratory diagnostician offers an excellent record of the practitioner's clientele of syphilitics; and the druggists' prescription files are an ideal place to dig out the protected patient with gonorrhea. But why should we be compelled to prosecute the very men who ought to give us aid?

ABSTRACT OF DISCUSSION

Dr. Oscar Dowling, New Orleans: We have been unable to get the doctors of Louisiana to report their cases, even by numbers. They certainly ought not to be afraid of sending in a report with say "Number 16" as a case of gonorrhea, or "Number 76" as a case of syphilis, or "Number 87" as a case of chancroid. It is more important to have a case of gonorrhea or a case of syphilis reported than to have reported a case of smallpox or a case of leprosy or a case of diphtheria. A man suffering from a venereal disease is allowed to be at liberty. On the other hand, a woman who has the same disease can be confined in the isolation hospital in New Orleans. I do not recall more than one or two men who have been arrested and confined because they had a venereal disease. If it is necessary to confine the women, it is necessary to confine the men. I do not believe in two standards of morality, and I do not believe in two sets of laws for the treatment of these cases. I do not believe in a law which says that woman shall do one thing and a man shall not, or that a man can do one thing and a woman can not. If we can receive from you some suggestion or some plan whereby we can bring about the reporting of these cases, and whereby we can have them treated and cured, we shall be grateful.

Dr. A. C. Chace, Texarkana, Ark.: I wonder if you would be able to sleep when you leave New Orleans in your sleeper, if you knew that the train dispatcher, who is dispatching your train from one telegraph station to the next, had incipient paresis? And yet that happens. It was a feeling of duty toward the public which led the railroads with which I am connected to install what is termed a complete—although it is really incomplete—venereal service, and it is the only venereal service on any railroad in the world, so far as I know. After two years of practical experience with that service, certain points have been brought out that I think will answer, in a slight degree, what Dr. Dowling has asked about. Pennsylvania has seceded from the public health program on venereal disease. Dr. Martin has taken the stand that venereal diseases cannot be made reportable at present because the medical profession will not report them, and he does not believe in putting a rule on the statute books which cannot be enforced. If dangerously communicable diseases, diseases which are the most widely distributetd among human beings of any communicable disease, are not reportable, then what diseases are reportable? On the other hand, the U. S. Public Health Service, which has done all that any one could ask for in the way of cooperation, is not using what is admitted to be one of the greatest weapons in this work, and that is the prophylactic or early treatment of venereal diseases. If we have a weapon which is effective in this work, why not use it? The answer, of course, is that churches and certain moralists are against it. I do not believe that is true, however. Dr. Martin has proved that it is not true, because he has put it through in Pennsylvania, and there has not been one single word of criticism from any one of nine million people. In regard to the question of not reporting venereal diseases, here is the only way—to prosecute the physician. It has come to that in every other state in regard to other communicable diseases, and it will have to come in regard to venereal diseases.

Dr. W. D. Calvin, Fort Wayne, Ind.: This paper emphasizes the need of a high central power, directly under the control of a national secretary of health. Then we will have efficiency. The attitude of Pennsylvania is directly attributable to this lack of central power. The fact that physicians in Louisiana are not reporting venereal cases is also due to the same lack of control. If it was a federal proposition, they would report their cases. It has been said by good authority that 8 per cent. of our population is syphilitic. The doctor who states that he has no venereal diseases, he has no syphilis in his practice, is blind, does not recognize that it exists. You cannot go anywhere and fail to see it. It is found everywhere. It is no respecter of persons. If it is true that 8 per cent. of the people of this country are syphilitic, then we have approximately one hundred syphilitics for every physician in the United States. Two propositions present themselves in regard to this question: The first is the general

practitioner's inability to diagnose syphilis, and the second is the lack of ability to treat it. Dr. Edler's statements in regard to the ambulatory clinic and free clinics is in itself a condemnation and censure of all men who do not know how to treat venereal diseases. The United States government, in the free clinics, is doing great work, and doing it better than it is done by the average physician. The educational proposition is most important. Every medical man ought to be willing to go out among the people with whom he lives and instruct them in regard to the dangers of venereal disease. It is by instruction given to the next generation that we will in large part assist in the eradication of these conditions.

We should at least report these cases to our state. There is some objection to making the reports locally, in certain places. You cannot quarantine cases of influenza because there is no law under which to report the cases. The same is true with regard to venereal disease.

DR. MILTON BOARD, Louisville, Ky.: A few days ago I was in the office of a specialist in our city who advised me that in the judgment of himself and his associates 60 per cent. of the cases of venereal disease were referred cases. If that be true, this is very largely a problem for the general practitioner, for the family doctor. If 60 per cent., or even half the cases which go to the specialists in the large cities are referred, then it follows naturally that practically all the cases in rural communities, and in smaller cities, are to be treated, and as a matter of fact are treated, by the general practitioner. The responsibility for the solution of this great civic problem rests on the shoulders of the American doctors. If we are to succeed we must have the conscientious support of the family doctor and not his antagonism. In Kentucky we have adopted two slogans. We print them in our literature, and we try to inculcate these principles in the minds of our people. First, we deny that venereal disease is a private affair between physician and patient. We claim that being infectious and communicable, it is a matter of public concern. Therefore, it should be handled as are other infectious and communicable diseases. Second, we deny that any individual with venereal disease has the right to infect any other person. We have put those principles into organic law of our state. Our state board of health is given wide power so long as it does not abuse this power. Our courts have done remarkably well in upholding our health officers in the wise and just enforcement of the law. Recently the legislature enacted a law creating a bureau of venereal diseases. We go further than that. We have the different towns and cities take action along these lines. The whole proposition resolves itself into the question of enforcement of the law. I agree with Dr. Calvin. The success of the federal law in this country is not the severity of the punishment, but the certainty of the punishment. If we are to get anywhere, the doctors must report these cases, and they must become missionaries in the cause. They must advise their patients of the danger they are to the community, and that if they do not keep within the law, if they do not refrain from spreading the disease, they will be put in quarantine. In our state full power is given for the quarantining of both males and females. Oklahoma sent a man to the penitentiary for five years for infecting a woman with syphilis. Every state should have that kind of a law.

DR. HARDIE R. HAYS, Jackson, Miss.: Ninety-four per cent. of the doctors of Mississippi presented morbidity reports on venereal diseases in 1919, but only a very small number gave us clinical reports. I wrote to the physicians of the state and asked them whether they were willing to give the doctors of the future some statistics by which they might see what was being done in solving the present-day problem of venereal diseases. I got quite a response to that circular letter, but some doctors did not even read the letter. In the next circular letter I told the physicians that if they did not read the literature which was being sent them under separate cover, the laity would soon be better informed on this progressive work than they were. This letter produced a great deal of interest, and a large percentage of the physicians of the state became interested in the campaign. As to the use of prophylaxis: In our "Keeping Fit" campaign we tried to impress the boy that continence is rewarded with the highest physical and mental development. We cannot put prophylaxis on any basis which will be consistent with that plan of teaching. Women are going more actively into every phase of human endeavor. They work side by side with men; they are going to vote; they are going into every phase of life on the same footing as men and they have the same right to be immoral as men have. We must take the stand that there is only one standard of morals. We men must raise our standard of living so that the standard of womanhood will not have to degenerate to reach the single standard which is here to stay and must be adopted. If we advocate prophylaxis and encourage its use we will say to the world that we cannot raise the standard of morals in our people. I believe in teaching continence. It is the only teaching founded on the truth and that will finally lead man to the highest civilization. Doctors must demand a higher standard in their ranks and in their teaching.

DR. H. F. WHITE, Washington, D. C.: Our present campaign is divided into three phases which we considered essential in combating this disease: the medical, the educational and the legal. We feel that it is necessary to attack this problem from those three sides in order to control venereal disease. We believe from our investigations that many of those who spread this disease are mentally deficient. When such people are found they should be institutionalized. Those of a low grade of development should be kept permanently segregated; those of higher grade should remain until such time as they can take their place in society. That applies equally to both sexes. We have also learned that it will be necessary in the future to provide some logical, well-arranged plan of systematic sex education, beginning in the cradle, if necessary, and continuing at least through the premarital age. We must see to it that those who are suffering from this disease are given proper medical attention. Much has been said in reference to the value of prophylaxis and the need for it. The Public Health Service has investigated the subject very seriously, and during the war prophylaxis was tried out very extensively in the service. But from the studies we have made, and from what we are able to find out, we cannot endorse prophylaxis as being as valuable as the term would suggest. We found that the army, with the strongest military discipline, with punishment inflicted on any one who failed to live up to regulations, was only 50 per cent. efficient. Of course, there is also a moral question which we respect. We would rather have cooperation than dissension. But our principal reason for not talking about prophylaxis is because we do not believe it to be as efficient as it has been represented to be in the past.

DR. WILLIAM EDLER, New Orleans: A doctor told me that a prostitute had come to his office with a florid syphilis. The doctor told her she ought to have medication; that it would cost $25 for a dose of arsphenamin. She said she did not have the money and left the office. Two days later she returned and laid twenty-five one dollar bills on his desk. Their source was evident. The doctor did not report that case to the city board of health, nor did he retain that woman in his office until the health officer could get her. That physician was a criminal, in my opinion, and should be prosecuted as such. If I were the head of that department of health and had the power I would revoke his license for a period of time. That is my whole interpretation of a venereal disease reporting campaign. It is not to beg doctors to report, but to go out and prosecute and show them that they must not violate the law.

How Much Are You Worth?—The average man contains the constituents found in 1,200 eggs, has iron enough to make four ten-penny nails, fat contents to make seventy-five candles and a good sized piece of soap, not to speak of a bowl of sugar. Considering that eggs are selling for 95 cents a dozen, matches at 6 cents a box, and candles for 5 cents each, $582.84 is the actual worth of the constituents of a grown person, to say nothing of what the sugar he contains may be worth.—*Minnesota Public Health Association Journal*, Jan. 15, 1920.

DISEASES DUE TO INTESTINAL PARASITES IN COLOMBIA, AND THEIR TREATMENT

OTTO T. BROSIUS, M.D.
Medical Director, Pato & Nechi Mining Company, Limited
PATO, COLOMBIA
AND
WILLIAM A. BISHOP, M.D.
WATERTOWN, MASS.

Since the publication of our preliminary report on chenopodium,[1] the opportunity has presented itself for one of us (O. T. B.) to study the human intestinal fauna of the interior of Colombia; so while in this article we propose to continue in large measure the discussion of the use of chenopodium, it has seemed feasible to include remarks on the prevalence of parasites in this region as well as some of the experiences with them there.

TABLE 1.—OCCURRENCE OF PARASITES

	Number
Uncinaria (alone): both Old and New World types	146
Ascaris (alone)	71
Trichocephalus dispar (alone)	20
Ameba (alone; ameba coli and histolytica)	24
Strongyloides (alone)	4
Cercomonas, trichomonas or lamblia (alone)	3
Balantidium coli (alone)	0
Tapeworm (saginata or solium, alone)	0
Uncinaria and Ascaris	58
Uncinaria and Trichocephalus dispar	52
Uncinaria and Strongyloides	14
Uncinaria and ameba	13
Uncinaria and Trichomonas	3
Uncinaria and Balantidium coli	1
Ascaris and Trichocephalus dispar	23
Ascaris and Strongyloides	3
Ascaris and ameba	3
Trichocephalus dispar and Strongyloides	4
Trichocephalus dispar and ameba	5
Ameba and Strongyloidea	2
Uncinaria, Ascaria and Trichocephalus dispar	46
Uncinaria, Ascaris and ameba	9
Uncinaria, Ascaris and Strongyloides	2
Uncinaria, Ascaris and tapeworm	1
Uncinaria, Trichocephalus dispar and Strongyloides	9
Uncinaria, Trichocephalus dispar and Trichomonas	4
Ascaris, Trichocephalus dispar and Strongyloides	3
Ascaris, Trichocephalus dispar and ameba	4
Ascaris, Trichocephalus dispar and Trichomonas	2
Trichocephalus dispar, Strongyloides and ameba	1
Uncinaria, Ascaris, Trichocephalus dispar and Strongyloides	15
Uncinaria, Ascaris, Trichocephalus dispar and ameba	4
Uncinaria, Ascaris, Strongyloides and Oxyuris vermicularis	1
Uncinaria, Trichocephalus dispar, ameba and Trichomonas	3
Uncinaria, Ascaris, Trichocephalus dispar, Strongyloides and tapeworm	1
Uncinaria, Ascaris, Trichocephalus dispar, ameba and Trichomonas	5
Uncinaria, Ascaris, Trichocephalus dispar, Strongyloides and Balantidium coli	1
Uncinaria, Trichocephalus dispar, ameba, Trichomonas and Bilharzia	1

The Pato and Nechi mines, gold dredging companies in the department of Antioquia, Colombia, are located along the Nechi River, a branch of the Cauca River, which is a branch of the Magdalena. They are situated about 7 degrees north of the equator, and about 450 feet above sea level. The weather is torrid and the humidity very high, even in the dry season (the temperature ranging approximately between 75 and 95 F.). The natives, chiefly negroes and mulattoes, are very poor; the majority go barefoot or wear thin sandals when traveling in the jungle. Their diet consists chiefly of rice, beans, "platanos" (plantains), meat and a great abundance of "panela" or brown sugar. Along the rivers, fish contribute largely to their diet.

The hospital of the Pato and Nechi mines includes a large clinic for native and American employees, together with a considerable outside native practice. The three chief diseases with which it has to deal are malaria, syphilis and hookworm disease; of these, the last named is the greatest malefactor, especially when associated with its other allied intestinal conditions. Over 13 per cent. of the diagnoses made in the hospital during a period of twenty-six months were those of uncinariasis, ascariasis and amebiasis, and a large majority of this number came with symptoms pointing directly to these three diseases.

Of 600 routine stool examinations, covering a period of thirty months, thirty-seven were of white foreigners (mostly Americans), four were of West Indian negroes, and the remaining 559 were of native Colombians. Only thirty-eight of this number were found to be absolutely negative for all parasites, and twenty-six of these were white foreigners and black West Indians, while only twelve were natives. This gives a percentage of almost 98 as positive among the natives of this region for some one of the intestinal parasites. Of the 600 cases, the various parasites were noted as occurring singly or existing in the combinations reported in Table 1.

TABLE 2.—RELATIVE PROPORTION OF VARIOUS CLASSES OF PARASITES

Class of Parasite	Number	Percentage
Uncinaria	390	65
Ascaris	253	40 7/30
Trichocephalus dispar	204	34
Ameba	75	12½
Strongyloides	61	10¼
Trichomonas, Cercomonas or Lamblia	22	3⅔
Balantidium coli	2	⅓
Tapeworm (Tinea saginata)	2	⅓
Oxyuris vermicularis	1	⅙
Bilharzia	1	⅙

The coexistence in symbiosis of the hookworm, roundworm and whipworm is strikingly characteristic of all the tropical lands of the western hemisphere.

Of the 600 stool examinations, the various classes of parasites appeared in the total numbers and percentages, as shown in Table 2.

For diagnosis, specimens were simply prepared on clean slides with a drop of water and cover-glass in the usual manner and examined with the low power, the high power being used for details; the specimens were first centrifuged, as recommended by Bass. The Bass method would surely have increased the percentage of positives; but it is almost unnecessary when the parasites are so abundant, although it must be essential for health officers; for example, those who give final examinations to the emigrants coming from the Orient, and who are treated on board ship en route to California, or to those guardians of public health who examine applicants for employment for the deep gold mines in California and China.[2] However, we do not pronounce a negative here until several specimens have been examined, covering usually several days.

When the diagnosis was established, the hemoglobin was taken and registered, after which the treatment was given and repeated (about every fifth day) until a cure had been effected. An interval of from one to three months, depending on the convenience of the patient, was then allowed to elapse before the hemo-

1. Bishop, W. A., and Brosius, O. T.: Chenopodium in the Treatment of Uncinariasis, J. A. M. A. 65: 1610 (Nov. 6) 1915.

2. Compare articles by Dr. Herbert Gunn, San Francisco.

globin was again examined, in order to ascertain the improvement of the blood obtained from the treatment. The average hemoglobin percentage of 250 unselected cases harboring intestinal parasites, regardless of types or combinations, was found to be less than 47.

We think that we can safely state that this is the average percentage of the hemoglobin of the natives of the district of Zaragoza in which the mines are situated. One hundred of the above named unselected cases, taken at random, showed an average hemoglobin of 45.49 per cent. before taking treatment, and an average of 65.25 per cent. after taking a complete course of the therapy, making an average increase of almost 20 per cent. in the hemoglobin. Some of these cases showed marked improvement; for example, yielding an increase of 50 per cent. and over, in the hemoglobin; while others, as will be hereinafter submitted, in persistent cases and in cases that presented only few hookworms, showed slight or no improvement.

The foregoing series contained all types. In another series, however, of fifty selected cases, the hemoglobin was raised from an average of 35.5 per cent. to 68.6 per cent., making an average increase of 33.1 per cent.

The hemoglobin, after treatment, improves very rapidly in young children and less rapidly in young adults; it responds more slowly after middle life. It is not uncommon to raise the hemoglobin in children 40 or 60 per cent. in two or three months after careful treatment. The normal percentage of hemoglobin is in all probability lower in the tropics than in the northern latitudes; and in attempting to raise the hemoglobin, it is here noteworthy that one commonly finds chronic malaria and syphilis present and other stubborn obstructions.

TABLE 3.—DIFFERENTIAL COUNTS

Case No.	Types	Polymorphonuclears, per Cent.	Large Mononuclears, per Cent.	Small Mononuclears, per Cent.	Eosinophils, per Cent.	Transitionals per Cent.	Mast Cells, per Cent.
1	Uncinaria	33	9	39	18	1	0
2	Uncinaria	64	3	26	7	0	0
3	Uncinaria	40	18	33	7	1	1
4	Uncinaria	31	18	40	5	6	0
5	Uncinaria	45	13	26	11	5	0
6	Uncinaria	49	10	34	5	2	0
7	Uncinaria	46.5	4.5	31.5	16	1	0.5
8	Uncinaria	40	10	35	7	8	0
9	Uncinaria	52	7	28	7	4	2
10	Uncinaria	61	5	23	10	0	1
11	Uncinaria	44	11	34	7	4	0
12	Uncinaria	25	10	54	8	2	1
13	Uncinaria	38	17	33	6	6	0
14	Uncinaria	41	10	41	6	2	0
15	Uncinaria	28	10	33	26	1	2
16	Uncinaria	59.5	5	28.5	5.5	1.5	0
17	Uncinaria	44	4	40	9	1	2
18	Uncinaria	33	5	55.5	6	0	0.5*
19	Uncinaria	54.5	4	21.5	19.5	0	0.5
20	Uncinaria	55	5	34	6	0	0†
21	Uncinaria	53	6	33	8	0	0
22	Uncinaria	32	7	43.5	17.5	0	0
23	Uncinaria	45.5	11	22	20.5	0	1
24	Uncinaria	42	9	33	16	0	0
25	Uncinaria	37	11	42	8	0	2
26	Uncinaria	30	12	38	19	0	1
27	Uncinaria	17.5	15.5	45.5	19.5	1	1
28	Uncinaria	33	14	50	3	0	0
29	Uncinaria	40	9	37	11	2	1
30	Uncinaria	48	5	36.5	9	1	0.5
31	Uncinaria	49	5	38	5	3	0
32	Uncinaria and Ascaris	44	13	37	6	0	0
33	Uncinaria and Ascaris	50	14	31	3	2	0
34	Uncinaria and Ascaris	56	16	20	7	6	1
35	Uncinaria and Ascaris	34	10	41	12	2	1
36	Uncinaria and Ascaris	36	14	41	7	2	0
37	Uncinaria and Ascaris	35	16	28	14	6	1
38	Uncinaria and Ascaris	32.5	11.5	45	8	3	0
39	Uncinaria and Ascaris	38	10	34	16	2	0
40	Uncinaria and Ascaris	36	10	35	16	3	0
41	Uncinaria and Ascaris	31	13	39	9	8	0
42	Uncinaria and Ascaris	44	7	37	11	1	0
43	Uncinaria and Ascaris	38.5	14	37.5	6	4	0
44	Uncinaria and Ascaris	37	10	43	5	5	0
45	Uncinaria and Ascaris	46.5	10.5	33	7	3	0
46	Uncinaria and Ascaris	46	2	40	11	1	0
47	Uncinaria and Ascaris	45	8	39	6	2	0
48	Uncinaria and Ascaris	53⅓	7⅔	31⅓	5⅔	2	0
49	Uncinaria and Ascaris	40	5	30	23	1	1
50	Uncinaria and Ascaris	43	9	37	7	4	0
51	Uncinaria and Ascaris	40	5	26	27	2	0
52	Uncinaria and Ascaris	66	5	12	15	1	1
53	Uncinaria and Ascaris	56	5	32	6	1	0
54	Uncinaria and Ascaris	74	2	20	3	1	0
55	Uncinaria and Ascaris	81.5	2.5	10	4	1.5	0.5
56	Uncinaria and Ascaris	39	6.5	40.5	10	2.5	1.5
57	Uncinaria and Ascaris	37	10	30	17	5	1
58	Uncinaria and Ascaris	41	8	34	14	3	0
59	Uncinaria and Ascaris	41	8	29	27	0	0‡
60	Uncinaria and Ascaris	46	4	35	13	1	1
61	Uncinaria and Ascaris	48	9	28	15	0	0
62	Uncinaria and Ascaris	70	4	20	6	0	0
63	Uncinaria and Ascaris	39	9	39	11	1	1
64	Uncinaria and Ascaris	35	5	34	23	1	2
65	Uncinaria and Ascaris	46	7	39	6	2	0
66	Uncinaria and Ascaris	43	9	38	5	5	0
67	Uncinaria and Trichocephalus dispar	42	8	39	11	0	0
68	Uncinaria and Strongyloides	44	6	42	8	0	0
69	Uncinaria and tapeworm	32	5	60	3	0	0
70	Uncinaria, Ascaris and ameba	75.5	2	18.5	4	0	0
71	Uncinaria, Ascaris and ameba	22	8	50	13	2	0
72	Uncinaria, Ascaris and tapeworm	36	6	41	16	1	0
73	Uncinaria, Ascaris and Trichocephalus dispar.	34	4	43	17	1.5	0.5
74	Uncinaria, Ascaris and Trichocephalus dispar.	33	7	49	6	5	0
75	Uncinaria, Ascaris and Balantidium coli	50	9	35	5	1	0
76	Uncinaria, Ascaris, Trichocephalus dispar, Strongyloides and ameba	36	5	46	11	2	0
77	Uncinaria, Ascaris, Trichocephalus dispar, and Trichomonas	55	4	34	5	2	0
78	Uncinaria, Ascaris, Trichocephalus dispar, Strongyloides and ameba	40	4	49	7	0	0
79	Uncinaria, Ascaris, Trichocephalus dispar and Strongyloides	29	9	52	9	1	0
80	Uncinaria, Ascaris, Strongyloides and Trichomonas	26	11	47	13	3	0
81	Uncinaria, Trichocephalus dispar, ameba and Trichomonas	47	6	36	9	2	0
82	Uncinaria, Trichocephalus dispar and Trichomonas	40	5	35	18	1	1
83	Uncinaria, Trichocephalus dispar, Trichomonas and Strongyloides	41	4	32	22	0	1
84	Ascaris and Trichocephalus dispar	42	3.5	49	2	3	0.5
85	Ascaris and Trichocephalus dispar	25	7	41	24	2	1
86	Ascaris and Trichocephalus dispar	51.5	3	36	8.5	0	1
87	Ascaris and Trichocephalus dispar	40	4	47	9	0	0
88	Ascaris and Trichocephalus dispar	64	6	22	8	0	0
89	Ascaris and Trichocephalus dispar	41	7	46	6	0	0
90	Ascaris and Trichocephalus dispar	34	12	45	7	2	0
91	Ascaris and Trichocephalus dispar	50	9	28	10	3	0
92	Ascaris and Trichocephalus dispar	56	11	28	4	0	1
93	Ascaris and Trichocephalus dispar	46	5	28	20	0	1
94	Ascaris and Trichocephalus dispar	43	6	37	14	0	0
95	Trichocephalus dispar	30	13	38	9	7	3
96	Trichocephalus dispar	39	14	41	6	0	0
97	Trichocephalus dispar	49	5	17	27	0	2
98	Trichocephalus and Strongyloides	51	5	37	7	0	0
99	Ameba	59	10	26	3	1	1
100	Ameba and Trichomonas	60	11	25	4	0	0

* Filaria. † Nucleated reds; poikilocytosis; anisocytosis; achromia. ‡ Nucleated reds.

There were cases, though fortunately these were rare, in which the hemoglobin actually continued to decrease even after thorough treatment. The red blood count and the hemoglobin gave a color index greater than 1; and although erythroblasts were found to be extremely rare, on differential counts, the polychromatophilia, anisocytosis, poikilocytosis, basic stippling and leukopenia presented a blood picture not unlike that of pernicious anemia. In three such cases, hookworm eggs were persistently found in the stools, though never in large numbers, after thorough and repeated treatments.

One patient died about four months after a course of treatment, showing no other pathologic manifestations; unfortunately, a necropsy was not permitted. The case presented a clinical picture of pernicious anemia. Another patient who came under our observation, and whose case was previously reported,[1] was given three thymol and two chenopodium treatments. His stools continued positive. At necropsy, the small intestine was literally filled with hookworms, which were embedded deeply in the mucosa of the valvulae conniventes of especially the duodenum and cecum.

As resident physicians in the hospitals of Ancon and Santo Tomas, in the Canal Zone and in Panama, respectively, where routine blood smear and stool examinations are made in all cases admitted, we had often heard discussions as to whether long-standing infections of intestinal parasites would or would not cause eosinophilia; and in this connection we were interested to learn from Dr. McClanahan's paper[3] that eosinophils were not increased in infestations of *Trichocephalus dispar*.

To investigate these questions, differential counts in 100 cases which appeared to be of long standing were made. The results are given in Table 3.

The result of the tabulation yielded ninety, or 90 per cent., as having shown eosinophalia; that is, a presence of more than 4 per cent. eosinophils. The average percentage of eosinophils in those showing the increase of these cells was 10.91. The high percentage of lymphocytes in some cases is due to the fact that there were quite a few children among the cases.

In eighty-three of the cases, hookworms existed alone or in combination with other parasites, and seventy-seven of these, or almost 93 per cent., showed eosinophilia. The average percentage of eosinophils in these cases was 10.86. Of the ten cases presenting *Ascaris* alone, eight, or 80 per cent., showed an increase in eosinophils averaging 8.5 per cent. to the individual. This series, as well as the three cases presenting *Trichocephalus dispar* alone and showing 14 per cent. eosinophils, was too small to submit any information of value.

UNUSUAL SYMPTOMATOLOGY

The general symptomatology of hookworm and roundworm disease is so well known that we will not repeat it, but we wish to mention some of the unusual symptoms and conditions that sometimes arise.

We have seen here diarrheas caused by hookworm alone. On several occasions, ascariasis and uncinariasis have caused severe abdominal pains, which were quieted by chenopodium treatment, with subsequent expulsion of the worms, when previously applied cathartics and other simple remedies had failed. Ascarides existing alone have been known to cause severe anemia, which improved after chenopodium treatment; more often, however, the patient in this region first recognizes that he has roundworms when he vomits one or more during an attack of malaria or some other febrile complaint.

Ascarides causing suffocation when lodged in the trachea of children, and ascariasis necessitating surgical interference for various and remote reasons are also on record.

TREATMENT OF HOOKWORM AND ROUNDWORM DISEASE

In hookworm and roundworm disease we now use chenopodium exclusively. Salant[4] has discussed the pharmacology of this drug. We do not wish here to discuss the superior merits, as a vermifuge, of the drug over thymol, for we are still strongly of the same opinion as when we presented our preliminary findings,[1] but we do want to bring out the fact that it has been possible to moderate the dose considerably, and we have found the diminished dosage equally as efficient as the larger doses and less troublesome to the patient.

UNTOWARD EFFECTS

At the Hospital Santo Tomas, and early in our experience with the drug, we were accustomed to give to adults two capsules of 8 minims each every two hours for three doses, followed in several hours by 2 ounces of castor oil. In that hospital, this therapeutic procedure was continued for eighteen months, during which time only one case was noted in which this drug was directly responsible for death. The patient was a cardionephritic, with a severe hookworm infection. At necropsy it was found that the kidneys had chronically degenerated.

Several cases of partial and one case of permanent deafness were noted, which were attributed to chenopodium by the majority of the staff. Those cases, however, which occurred in our wards, gave positive Wassermann reactions, the examinations of the ear revealing a nerve deafness, with normal drums. But it may be worthy of mention that the ill effects arose only with a second supply of the oil, none having occurred with the supply first received.

After the use of chenopodium at Pato was begun, it was taken up with some enthusiasm at Medellin, Antioquia, Colombia, but was quickly abandoned because of some unfortunate untoward results, namely, marked deafness in many cases and death in three, as reported by Dr. Gil in the *Revista clinica* of Medellin.

It is probable that some of the oils on the market have more toxic effects than others. Whether the varying toxicity is dependent on the purity of the product, its age, conditions of storage and manner of dispensing, or is due to idiosyncrasies of the individual are questions that need further study. But until such time as definite information is obtained, we feel that only the purest oils furnished by reliable drug firms should be administered.

In an attempt to lessen the possibilities of the untoward effects of the drug, the original dosage with which we worked at Santo Tomas has been modified. Soft gelatin capsules of 0.3 c.c. each were used, as supplied by reliable pharmaceutical houses. Undoubtedly the freshly filled hard gelatin capsules recom-

3. McClanahan, H. M.: Intestinal Parasites in Children, J. A. M. A. 71: 623 (Aug. 24) 1918.

4. Salant, William: The Pharmacology of the Oil of Chenopodium, with Suggestions for the Prevention and Treatment of Poisoning, J. A. M. A. 69: 2016 (Dec. 15) 1917.

mended by Darling, Barker and Hacker [5] would have yielded even a higher percentage of efficiency.

In the hospital of the Pato and Nechi mines, 430 cases have so far been treated with chenopodium, requiring 750 treatments, or an average of 1.75 treatments per case, without any marked or permanent deleterious effect. The worst symptoms that have been noted were nausea and vertigo, with slight temporary partial deafness such as follows quinin administration. These always passed away after the castor oil purge; but we acknowledge the slight, general depressing effect it often has, even when given in moderate doses. Vomiting has never occurred from this moderated dosage.

OIL AS A PROPHYLACTIC MEASURE

Following the suggestions of several writers on the subject, the taking of much oil or fats prior to and on the days of treatment has been recommended patients, and an apparent decrease in the toxic symptoms mentioned above has been noticed, possibly because the fat rendered the intestinal wall less permeable to absorption of the toxic principles of the drug.

Chenopodium should have infinite value in field work in hookworm therapy because of the simple method of administration, and because, as Weston stated in his discussion of McClanahan's paper [3]: "We seldom found a case of uncinariasis that was not complicated with other intestinal parasites, and the use of oil of chenopodium was equally effective in the elimination of these other intestinal parasites as with the uncinaria." Two treatments at least should be given with the safer dosage herein recommended.

Our experience has shown that dietetic restrictions and preliminary purges are unnecessary, which makes the treatment very simple for patient and nurse, and chloroform has seemed to us to be superfluous. A strong adult is given three capsules, two hours later two capsules, and after two hours, three capsules more. Three hours later, 2 ounces of castor oil are given. An adult woman receives generally only six capsules in the entire treatment, three doses of two capsules each, at two-hour intervals, followed by the castor oil. The doses for children are moderated almost in accordance with Young's rule, very young children being given the drops with a teaspoonful of sugar. It is safe to give a child 1 minim for every year of his age, to be repeated once in two hours, followed in three hours by the castor oil. In all cases, the condition of the patient is noted before the subsequent dose is given, and if there is evidence of much depression, the last dose is omitted.

As evidence concerning the efficiency of the moderated dosage, we tabulated the results produced in 100 unselected cases, showing the number of hookworms expelled, and the number of treatments necessary to produce a cure. Where ascarides coexisted, a record of their expulsion was also made.

It may be generally safe to call any case an absolute cure wherein the last treatment has expelled only ten or less hookworms, assuming that a subsequent treatment would yield nothing (we know, however, that this rule would not hold for some few very persistent cases, as hereinbefore cited). But with this as a standard, we may consider the first fifty cases as absolute cures; 120 treatments being necessary in these cases to establish fifty cures, making an average of 2.4 treatments to the absolute cure, with the decreased dosage. From this series of 100 cases, we learn that the first treatment almost always expels most of the worms. In 100 first treatments 30,548 worms were expelled, making an average of over 300 worms expelled in an average case of hookworm disease in the first treatment in this region. In the first fifty absolute cures, 19,867 worms were expelled, making an average of 397.34. In the same fifty cases, 16,593 worms were expelled by the first treatment, or 331.86 per case of the total worms. Thus, about 84 per cent. of all the worms were expelled in the first treatment, with this reduced dosage. In the first and second treatments together, in the same series, 18,994 worms were expelled, or 379.88 worms per case, making altogether 95.58 per cent. of the worms expelled in the first two treatments.

In view of the fact that hookworms cannot reproduce themselves in the intestine of the host, it is quite conceivable that great good is done even by giving only one treatment, wherewith most of the other associating parasites are simultaneously expelled, and the body's resistance is raised to battle with the persisting parasites. Of course, a thorough cure should always be effected when possible and convenient.

A record of 100 cases of infestation with *Ascaris lumbricoides* demonstrates that these respond to treatment more quickly and require fewer treatments for a complete cure.

In addition to uncinariasis and ascariasis, the chenopodium treatment has a slight effect on infestation with *Strongyloides,* but we believe this to be due more to the purge than to the anthelmintic. Saline purges alone will yield similar results. We have read with interest that chenopodium has established cures in amebic dysentery, but experimentation at Pato has not borne that out. However, we have seen the intestine cleaned with chenopodium from apparently harmless amebas (probably *Endameba coli*) existing without dysentery and ulceration of the intestine, and found only in a given series of routine stool examinations, probably because the amebas were free in the intestine and not deeply embedded in their characteristic undermined ulcers, as is *Endameba histolytica* in the disease which it produces.

When *Endameba histolytica* is concerned with the production of an active dysentery, we have found the emetin-bismuth combination so far to be the most satisfactory. We have not as yet given the emetin-bismuth-iodid preparation mentioned by Crowell [6] a sufficiently long or thorough test to discuss it.

The muddy waters of the Nechi River, and the many little streams existing hereabout, laden with decomposing vegetable matter, reap their yearly death toll from the unfortunate inhabitants.

In 600 stool examinations, amebas appeared in seventy-five cases, making a total of 12.5 per cent. These were mostly *Endameba histolytica* and were producing active dysentery, which we are at present treating as follows: An absolute milk diet is prescribed. To a strong adult, a heaping teaspoonful of bismuth subnitrate is given four times a day for several days (depending on the severity of the case) and emetin hydrochlorid injections of ⅓ grain, three times the first day, ⅔ grain, three times the second day and 1

5. Darling, S. T.; Barber, M. A., and Hacker, H. P.: The Treatment of Hookworm Infection, J. A. M. A. **70**: 499 (Feb. 23) 1918.

6. Crowell, B. C.: Treatment of Intestinal Amebiasis, with Special Reference to Ipecac and Its Derivatives, J. A. M. A. **69**: 6 (July 7) 1917.

grain, three times the third day, making a total of 6 grains in three days, taken in progressively increased doses. After an interval of from three to four days, during which the bismuth alone is given, the emetin treatment is repeated as given before, and the bismuth is given only three times a day. After this, as the patient continues to improve, the bismuth is gradually decreased and the diet is gradually brought to the normal.

In very severe cases, opium and phenol are given with the bismuth, and intestinal irrigations, given high, of weak potassium permanganate solutions, have been found very effective.

After the bismuth-emetin treatment, we often administer tablets of bismuth subnitrate (5 grains), powdered opium (¼ grain), aromatic powder (1 grain) and phenol (⅛ grain) with gratifying results. With this treatment we have had splendid success when given thoroughly, and have had few recurrences when there had been no hepatic complications. When *Endameba histolytica* has undergone cyst formation, the recurrences are less common, and these often successfully resist thorough treatments. We have not had sufficient time as yet to give a fair trial to the large doses of ipecac suggested by Dr. Simon[7] of New Orleans in these persistent cases.

In this connection it will be of interest to narrate a unique experience of a refined and educated man who came under observation and examination, and whose veracity is unquestioned.

Case 1.—As a mining engineer in Australia about twenty years ago, he became afflicted with an unusually severe type of amebic dysentery, so severe that he was told that he could not live. His wife nursed him, and several physicians attended him in consultation. His wife was instructed to inject rectally at regular given intervals a 20 c.c. syringeful of a mixture of starch and laudanum, and to paint at the same time an ulcer of the buttock with tincture of iodin. In her newly acquired vocation as nurse, and in the attendant excitement, mingled with intense anxiety, she injected by mistake a syringeful of the tincture of iodin into the rectum. From that time on, the man began to improve, and rapidly recovered. To this day he has never had a relapse. On three occasions, one of us (O. T. B.) has examined the stool, and no trace of amebas have been found.

It is noteworthy that chenopodium treatments for hookworm and roundworm disease have frequently, by their irritation of the intestinal mucosa, lighted up old amebic dysenteries, wherein the amebas were not detected on the first stool examination. Also we have seen cases here, wherein amebic dysenteries would not yield to emetin and bismuth alone, but these in conjunction with neo-arsphenamin proved effective, most probably because of a coexisting syphilitic ulceration of the intestine. Neo-arsphenamin alone is ineffective.

Chenopodium seems to have very little effect on whipworms, which, however, as far as we can ascertain, produce no ill effects, although they have been accused of many. Out of 600 stool examinations, 204, or 34 per cent., were positive for whipworms. Out of fifty cases, in which *Trichocephalus dispar* coexisted with uncinarias and ascarides, and in which chenopodium yielded a complete cure for the latter two types of parasites, *Trichocephalus dispar* eggs continued positive in the stool examinations in forty-six cases. We rarely see whipworms in the examinations of whole stools after chenopodium treatments. Case 2 was an exception.

Case 2.—A native woman, aged 20, was examined in this hospital for intestinal parasites after complaining of severe abdominal pains. The stool was found positive for uncinarias, ascarides and *Trichocephalus dispar*. Accordingly she was given a chenopodium treatment and passed 319 hookworms, twenty-three roundworms and thirty whipworms. Five days later a second chenopodium treatment was given which expelled eleven hookworms and five whipworms. The third and last chenopodium treatment a week later expelled only one whipworm.

The treatment of the flagellate protozoa with chenopodium seems equally as discouraging as the treatment of the whipworm. The diarrheas due to *Cercomonas*, *Trichomonas* and *Lamblia* yield well, however, to intestinal irrigations of methylene blue, or to weak solutions of potassium permanganate, given high, with opium, bismuth and phenol tablets given by mouth. These diseases have a peculiar faculty of subsiding in the temperate zones, untreated, but again recurring after long lapses of time—even years—on return into the tropics.

Case 3.—A young English army officer recently came under the observation of one of us (O. T. B.). He acquired a severe *Trichomonas* infection, with diarrhea, in southern China several years ago, and was there treated, as far as could be ascertained, symptomatically. On his subsequent return to England, the diarrhea quickly disappeared. When the war broke out, he received his commission and was sent to Egypt on duty. Shortly after his arrival there, his old diarrhea again made itself manifest, and after some treatment he was transferred to the British Isles, where his diarrhea completely disappeared once more. After the signing of the armistice, he received his discharge and came to Colombia. Six weeks after his arrival, his old complaint again returned. At this time he became a patient at the Pato Hospital, received the treatment outlined above, and as yet has had no return of symptoms.

The diarrheas due to *Balantidium coli*, however, are most persistent. They resist all forms of treatment, including intravenous injections of neo-arsphenamin, which often is a valuable asset in the treatment of intestinal diseases in the tropics; probably because of the tremendous prevalence of syphilis.

Tapeworm is rare here because the natives cook all of their food well, especially the meats. In 600 stool examinations, only two were positive for tapeworm, and these were both *Taenia saginata*. One of these cases proved very interesting.

Case 4.—A man, Colombian, aged 50, well developed and nourished, came to the hospital to be treated for tapeworm. He had been unsuccessfully treated elsewhere. The stool examination revealed uncinarias, ascarides and *Tenia saginata*. He was given a chenopodium treatment, with the intention of removing the hookworms and roundworms present, with the result that eighty-nine hookworms and two roundworms were passed. The attendant, trained to examine these whole stools, noted that many tapeworm segments were present in the stool, but not having been instructed "to look for the head," he neglected to do so. Four days later, the patient was given a thorough treatment for tapeworm, with aspidium, after which the whole stool examination, carefully rendered by several of us, yielded an absolutely negative result. Three days later another chenopodium treatment was given and only two hookworms were passed—absolutely nothing more. Four days later another aspidium treatment was given to confirm our findings, and as before, it expelled nothing. Evidently the chenopodium had removed the tape-

7. Simon, S. K.: Comparative Value of Ipecac and Its Alkaloids in Treatment of Intestinal Endamebiasis, J. A. M. A. **71**: 2042 (Dec. 21) 1918.

worm, even without the preliminary purge which is so essential in the treatment with aspidium. Unfortunately, no similar cases have presented themselves since.

We have dwelt at length on the effects of chenopodium on the important intestinal parasites, with a view of submitting convincing evidence concerning the value of this drug in field work therapy of hookworm and roundworm disease. The decided improvement made in the thymol treatment by the addition of lactose and sodium bicarbonate is interesting, as is the recommendation by some writers of the use of chloroform for uncinariasis; but are these drugs as safe as chenopodium, when given in the dosage recommended herein, and are they as practical, when they are acknowledged to have an anthelmintic effect on only one class of intestinal parasites?

We have purposely omitted a discussion of the prophylaxis of hookworm and roundworm disease. These are so well known, as well as are the modes of infection on which they are based.

The control of amebiasis is more difficult because of the difficulty in educating the natives to the dangers of drinking the river water and water from many of the "quebredas" or jungle streams, and to the necessity of drinking only water which has been boiled or filtered, or such as is supplied them by the companies.

SUMMARY

1. Hookworm disease is almost ubiquitous among the natives of the district of Zaragoza, 98 per cent. of the inhabitants being infected. We believe that with the centrifugal method of diagnosis this percentage might be made a little higher, and we also are of the opinion that this figure is almost generally applicable to all the inhabitants of the low hot lands of Colombia. Here, if anywhere, there is due need of hookworm campaigns, education and sanitation.

2. All forms of intestinal parasites apparently live and thrive in the same individual, no type producing conditions inimical to the life of the others.

3. We have come to the conclusion that the normal hemoglobin content of the natives of this region is somewhat lower than that of natives of the temperate zones; about 70 per cent., and think possibly this assertion may prove applicable to all natives of the equatorial belt. Our investigations have shown that the present hookworm infested population of Zaragoza has an average hemoglobin percentage of 47. Except in rare instances, a removal of the hookworms from the intestine of a sufferer is immediately followed by a rise in the hemoglobin percentage, without any other treatment being employed to bring this about. Doubt exists in our minds as to whether the exhibition of iron-containing medicines will accelerate or augment the normal gain that has been noted after a thorough removal of all hookworms. The gain in hemoglobin varies from 20 to 50 per cent., being most marked and most rapid in children, less rapid in young adults, and more slow after middle life.

4. Ninety-eight per cent. of a selected list of apparently chronic hookworm cases showed eosinophilia, and the average percentage of these cells in these cases was 10.91.

5. The unusual symptoms of hookworm disease, noticed in the cases coming under our observation, have been general depression, nausea and vomiting, and diarrhea. Severe abdominal pains are at times traceable solely to the presence of hookworms or ascarides.

6. During our work with chenopodium at Santo Tomas Hospital, we saw several cases that exhibited toxic symptoms which we believed were attributable to chenopodium. Those symptoms were nausea, vomiting, general depression and weakness and vertigo, with deafness rarely permanent, usually being temporary. When permanent, it always had a background of syphilis or other preexisting disease. Deaths have been reported, one of which came under our observation.

Endeavoring to eliminate the possibility of these uncomfortable occurrences, the dosage of the drug was reduced from 48 minims to from 35 to 40 minims for a treatment, and we find that in 430 cases, 750 treatments were necessary to effect cures. Or, in other words, we have found that 1.75 treatments per case was necessary, in this series of 430 cases, to effect a cure. In a smaller unselected series, 2.4 treatments were necessary.

We feel certain that most investigators will agree with us that whatever the dosage, the great majority of cases will require more than one treatment thoroughly to remove the worms in a given case.

If the fact can be established that a 35 to 40 minim treatment is all that is necessary, and that in the great majority of instances two of such treatments will effect a cure, it should do much to lighten the field work of the hookworm commissions and operate to widen their scope and hasten results.

The fact that oil of chenopodium acts as a vermifuge to more than one of the other intestinal parasites is an added factor in its favor.

The result of these investigations shows that the first treatment always removes most of the worms; namely, about 84 per cent., and the percentage removal for ascarides is about the same (88).

7. *Ameba histolytica* occurred in 12.5 per cent. of the cases investigated, and we believe that this represents the average incidence of this disease in this district.

8. *Trichocephalus dispar* has an average incidence of about 34 per cent. In fifty cases treated with chenopodium, in which complete cures were obtained of the coexisting uncinaria and ascaris infection, only four were noted in which *Trichocephalus dispar* eggs could not be detected in the stools at the end of the treatment.

The Teaching of Internal Medicine.—In the efforts which have been made to improve the teaching of medicine, not infrequently that division of medicine having to do with the study of so-called internal diseases has received the least and last consideration. These diseases, however, because of the suffering and loss of life which result from them, are of far more practical importance than any other group of diseases. Of much more significance than this, at least from the educational standpoint, is the fact that the diseases of internal medicine are the ones which are most susceptible to scientific study, and thus far they are the principal diseases to which modern scientific methods of investigation have been applied. They are therefore the diseases with which the student of medicine should be chiefly concerned during his earlier years. It is in the study of these diseases that the student should develop his perspective and should obtain a knowledge of the methods which should be employed in the study of all other diseases.—Rufus Cole, *Science*, April, 2, 1920.

INFREQUENCY OF INTESTINAL PARASITES IN YOUNG CHILDREN *

STAFFORD McLEAN, M.D.
NEW YORK

The object of this study was to determine the frequency of helminthiasis in children attending an outpatient department in New York City. There have been a number of studies made in recent years regarding the presence of intestinal parasites in children. Most of these investigations have been on children over 3 years of age, and the majority have been in institutions where the incidence of all diseases is higher than in children living at home. In the study made by De Buys and Dwyer [1] the stools were collected from seven institutions, and of the 595 individuals whose stools were examined, 53.2 per cent. were infected, the ages varying from 3 weeks to 18 years.

The outpatient department of The Babies' Hospital, where these stools were examined, is not a neighborhood clinic. The patients are recruited from all parts of the city. They represent a class sufficiently interested in their children's welfare to travel long distances for advice. This type of child is likely to live under better hygienic conditions and receive more intelligent care than the average child of the neighborhood clinic.

This study covered a period of five months, from July, 1919, to January, 1920. The stools were collected at random, without reference to the condition of the child or to the symptomatology. Many stools were examined of children who attended the clinic as visitors accompanying a sick brother or sister. Some were of children who attended for vaccination. Mothers attending the clinic with a sick child were urged to bring stools of their other children for examination. Some brought them because a neighbor believed the child had worms.

The routine procedure was to place the child on a vessel for a few minutes; if no stool was obtained, the child was given an enema of warm tap water; if this was unsuccessful, the parent was given a container and told to bring a fresh stool to the next class.

The method employed in this study for examination of stools was the brine flotation-loop method as perfected by Kofoid and Barber.[2] This method has the advantage of being simple and accurate. Kofoid and Barber found from 6 to 8 per cent. more hookworm infections by their method than by the centrifuge method. They found that the ova of the following parasites were floated up by the brine into the surface layer of the pool without distortion or noticeable change in appearance: *Ancylostoma duodenale; Ascaris lumbricoides; Trichuris trichiura; Taenia solium; Hymenolepis diminuta; Necator americanus; Oxyuris vermicularis; Taenia saginata; Hymenolepis nana,* and *Dipylidium canium.*

Schloss,[3] in 1910, made an admirable study of helminthiasis; his efforts were directed toward securing data regarding several phases of the subject. In consecutive examinations of the stools of 280 children he found that 28.57 per cent. harbored worms. The low percentage of infection reported here as compared with the high figures reported by Schloss may be due to the difference in the age of the children and to the fact that the children in this study came from better hygienic surroundings. In Schloss' study, 78 per cent. of the positive cases were in children over 5 years of age.

The samples of stools varied between 25 and 100 gm. in weight. The entire sample was thoroughly mixed with brine in a 350 c.c. tumbler. A disk of steel wool approximately one-fourth inch in thickness was used to force the particles of feces to the bottom of the tumbler. The mixture was allowed to stand approximately an hour, this interval allowing the ova time to ascend to the surface of the fluid. Several loopfuls of the surface fluid were then placed on a slide and searched with the low power. Frequently several slides of the same specimen were examined, about fifteen minutes being allowed to each slide. Except in a few instances, only one specimen was examined from each child. The examinations were made by two young women students of Hunter College. Their work was supervised by the hospital pathologist.

It was found that a history of symptoms commonly associated in the minds of the laity with the presence of intestinal parasites could be elicited frequently from parents of children over 12 months of age. The symptoms which the parents most commonly attribute to the presence of intestinal parasites are restlessness at night, grinding of teeth, picking the nose and lips, loss of weight, capricious appetite and irritability.

Three hundred and eight stools were examined. Fifty-three stools from infants during the first year of life, sixty-six during the second year of life, sixty-four during the third year, fifty-six during the fourth year and sixty-nine from children from 4 to 12 years of age.

The number of stools found harboring intestinal parasites in the entire group of 308 cases was only seven, or 2.27 per cent. Of these seven cases, the presence of parasites was determined in four cases by the finding of ova, and in three by the presence of the parasites.

If the statements of the parents could be accepted regarding their findings of worms in the stools, the percentage would be higher. Fruit skins and strings of mucus may readily be mistaken by anxious mothers for some types of intestinal parasites.

Of the fifty-three examinations of infants during the first year, none were positive. Of the sixty-six during the second year, none were positive. Of the sixty-four during the third year, three were positive. In one child, 28 months of age, the ova of *Ascaris* were found; in another the same age, the *Ascaris* parasite, and in a third, 26 months of age, the *Oxyuris* parasite.

Of the fifty-six examinations in the fourth year, there were no positive cases.

Of the sixty-nine examinations in children from 4 to 12 years of age, four were positive; one, aged 6 years, with the ova of *Oxyuris;* another, aged 4 years, with the ova of *Ascaris lumbricoides;* another, aged 7 years, with *Oxyuris vermicularis* as well as the ova of *Ascaris lumbricoides;* and one, aged 4 years, with *Oxyuris vermicularis.*

* From the outpatient department of The Babies' Hospital.

1. De Buys, L. R., and Dwyer, H. L.: Study of the Stools in Children's Institutions Showing the Incidence of Intestinal Parasitic Infections, Am. J. Dis. Child. **18**: 269 (Oct.) 1919.

2. Kofoid, C. A., and Barber, M. A.: Rapid Method for Detection of Ova of Intestinal Parasites in Human Stools, J. A. M. A. **71**: 1557 (Nov. 9) 1918.

3. Schloss, O. M.: Helminthiasis in Children, Am. J. M. Sc. **139**: 675 (May) 1910.

Of the sixty-nine children from 4 to 12 years of age, 5.7 per cent. harbored intestinal parasites.

Of the 189 children from 2 to 12 years of age, 3.7 per cent. harbored intestinal parasites.

It is possible that the ova of *Oxyuris vermicularis* might have escaped detection in certain stools, as frequently they are only found about the anal folds.

The examination of stools for ova in infants under 1 year of age is not customary. It was made in this study because many of the infants over 9 months of age receive the same variety of food in limited amounts as children during the second year of life, and in other ways are as susceptible to infection. The number of positive cases in the entire group is small as compared with the findings of other investigators. This low incidence of infection may be explained by the good hygienic conditions of the children included in this study.

SUMMARY

1. In an examination of 308 stools in children up to 12 years of age, 2.27 per cent. harbored parasites.

2. There were 3.7 per cent. positive in 189 examinations of children from 2 to 12 years of age.

3. In a group of sixty-nine children from 4 to 12 years of age, 5.7 per cent. were positive.

4. In another group of 189 children from 2 to 12 years of age, 3.7 per cent. harbored intestinal parasites.

CONCLUSION

Intestinal parasites are infrequent in New York City children living under good hygienic conditions.

17 East Seventy-First Street.

INCREASING THE PATHOLOGIST'S USEFULNESS AND HIS REWARDS

WITH DIRECTIONS FOR PREPARATION AND USE OF A POLYCHROME METHYLENE BLUE STAIN FOR FROZEN SECTIONS *

BENJAMIN T. TERRY, M.D.
NASHVILLE, TENN.

It is now extremely difficult for most universities to secure pathologists. This conclusion I have reached after talking with a number of pathologists, after having written to others, and after my own comparatively recent experience in attempting to secure an assistant.

It seems that few are entering and remaining in pathology. Present rewards are inadequate to attract men to become pathologists,[1] and the high cost of living is causing many of those who were in pathology to go into clinical medicine, where the rewards are greater.

The average pathologist is probably not properly trained to show his real value. He devotes more time to the pathology of the dead than to that of the living. He is usually taught that the diagnosis of frozen sections is unreliable. Nevertheless, rapid and reliable methods of diagnosis are necessary if the surgeon is to receive the assistance he needs during an operation. If pathologists can learn to make reliable diagnoses from frozen sections, the value of these diagnoses to the clinicians will be very great.

Frozen section work is relied on where it is used extensively. Dr. William Mayo told me last summer that he did not see how the clinicians at the Mayo Clinic could get along without the aid which the department of surgical pathology is now continuously furnishing. Repeatedly surgeons at the Mayo Clinic stop in the midst of an operation to get a report from the surgical pathologist before deciding on the nature and extent of the operation.

EXAMPLES

A few examples[2] will show how diagnoses made from frozen sections may help the surgeon.

1. A patient has an ulcer of the lip which is excised for malignancy, but the microscopic examination shows that it is syphilitic. The surgeon's operative plan is halted by this diagnosis and the treatment is entirely altered.

2. A young woman has prolonged bleeding from the uterus. On account of her age the surgeon hesitates to perform a hysterectomy. He curets the uterus, however, and in the scrapings the pathologist finds carcinomatous tissue. The surgeon at once performs a hysterectomy.

3. The surgeon obtains a history of gastric trouble, and at operation the stomach appears to be cancerous. The neighboring lymph glands are enlarged. On examining these glands microscopically there are marked inflammatory changes present, but no evidence of malignancy is seen. If the area in the stomach after wide excision shows no evidence microscopically of malignancy, the prognosis and treatment will be determined by the pathologist's report.

Statistics from the Mayo Clinic based on 14,167 operative cases of all kinds show that a microscopic examination is necessary in 20 per cent. of the cases.[2]

If the statistics are limited to cases which are sufficiently difficult to necessitate the removal of tissue for diagnosis, the percentage of these cases in which the microscope must be resorted to may rise as high as 83.[3]

PROPER CONDITIONS

In order that the diagnoses on frozen sections may be reliable, four conditions should be realized:

1. The pathologist should be well trained in pathology, and in addition should be specially trained in the technic of cutting, staining and diagnosing frozen sections. In this work he should have had extensive experience.

2. There should be perfect cooperation between the clinician and the pathologist. The pathologist, in advance of his examination of the surgical specimen, should have full and free access to all the clinical data on the patient.

3. As often as possible the pathologist should be present at the operation and should receive the whole, unfixed specimen immediately after its removal from the patient. This specimen he should at once section in the gross in the laboratory nearby and, if a microscopic examination is necessary, he should select for this examination the part which his experience shows is most likely to be the best for his purposes.

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* From the Department of Pathology, Vanderbilt University Medical Department.

* Read before the Section on Pathology and Physiology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Erlanger, Joseph; Jackson, C. M.; Lusk, Graham; Thayer, W. S., and Vaughan, V. C.: An Investigation of Conditions in the Departments of the Preclinical Sciences, J. A. M. A. 74: 1117 (April 17) 1920.

2. MacCarty, W. C.: J. Lab. & Clin. Med. 4: 687 (Aug.) 1919.

3. MacCarty, W. C.: Minnesota Med. 1: 178 (May) 1918.

4. He should have an excellent stain for his work. Unna's polychrome methylene blue, after ripening, is a very satisfactory stain.

Unfortunately the method of ripening this stain has in the past required from six months to a year [4] or more. The slowness with which the stain ripens has discouraged its use.

EXPERIMENTAL RIPENING

After seeing last summer through the kindness of Dr. MacCarty how rapidly and beautifully this stain works, I began in the fall a series of experiments to see whether a more rapid method of preparation could be worked out.

My first success was obtained by simultaneously aerating and stirring the solution mechanically at room temperature for ten hours a day for three weeks. By this means I secured 2.5 liters of excellent stain, and this stain is still good.

Later I found that I could dispense with both the mechanical stirring and the aeration, and could ripen the stain three times as quickly if I raised the temperature of the stain to 37.5 C. To make this stain I now place in a clean Petri dish 0.5 gm. of methylene blue (Bausch and Lomb), 0.5 gm. of potassium carbonate (Merck), and dissolve these in 50 c.c. of distilled water. The Petri dish is then left uncovered in an incubator regulated to 37.5 C. Each day the water lost by evaporation is made up by the addition of distilled water.

Under these conditions, each of the last twelve batches of stain has ripened satisfactorily in six days. The stain is tested on the sixth day on a frozen section of unfixed tissue. A piece of uterus is an excellent test object. The stain is regarded as satisfactory if all the nuclei are very sharply stained and if the smooth muscle in the uterus stains a sharp and beautiful purple when viewed by a good electric lamp provided with a daylight filter. If the stain is incubated at 37.5 C. for nine to fifteen days, it becomes rich in purple but stains weakly and unsatisfactorily.

TECHNIC

The technic of using this stain has been described in detail by Dr. Louis B. Wilson,[4] from whose paper the following six steps are quoted.

1. Freeze bits of tissue, not more than 2 by 10 by 10 mm., in dextrin solution and cut sections 5 to 15 microns thick.
2. Remove the sections from the knife with the tip of the finger and allow them to thaw thereon.
3. Unroll the sections with a camel's hair brush or glass lifter in 1 per cent. sodium chlorid solution.
4. Stain 10 to 20 seconds in Unna's polychrome methylene blue.
5. Wash out momentarily in fresh 1 per cent. sodium chlorid solution.
6. Mount in Brun's glucose medium.

The fresher the tissues, the better the result. "Most failures are due to the fact that the cells are dead before the tissues are frozen." [4] For many interesting details, Dr. Wilson's paper should be consulted.

ADVANTAGES OF THE METHOD

1. The method is extremely rapid. With the stains I have prepared, the staining is completed usually in from two to three seconds.

2. No preliminary fixation is necessary. This also makes for speed, as a tissue may be frozen as soon as it reaches the laboratory.

3. The unfixed tissue is seemingly more translucent than fixed tissue. This enables one to examine satisfactorily relatively thick specimens. Thicker specimens are more easily cut and handled than are thinner sections.

4 The nuclear stain is exceedingly sharp, and nucleoli are brought out with great distinctness by this method.

5. The stain has excellent differential qualities. This is not so evident in the nuclei as in the cytoplasm and in connective tissue fibrils. Epithelial cells have a somewhat bluish cytoplasm, while smooth muscle fibers are purplish, and the fibrils of connective tissue are faintly stained or take varying shades of red. The hyalinized intima of blood vessels usually takes an intense red, and the matrix of hyaline cartilage may also stain red. Bacteria are often well stained.

6. If properly carried out, the technic of staining frozen sections probably produces less shrinkage and fewer artefacts than are observed in tissues that are fixed and embedded in paraffin.

7. This stain is inexpensive to make and is easily prepared; moreover, it can be used over and over again, if after using it is filtered back into a bottle and the bottle is corked to prevent evaporation.

DISADVANTAGES OF THE METHOD

1. The specimens stained by the polychrome methylene blue method are not permanent. They may be kept a few hours, but in a comparatively short time the epithelial cells go to pieces. Up to the present no satisfactory method of preventing this has been discovered.

2. The method is of very little value in staining tissues that have been fixed in the usual ways. In fixed tissues the staining is not so sharp, and the color effects are less contrasting and less brilliant.

3. The method is also of less value in the diagnosis of tissues that have been out of the body for a long time before being received at the laboratory. Moreover, tissues which are necrotic stain less well by this method than they do after fixation and staining with hematoxylin and eosin.

4. The color effects with the polychrome stain are so different from those with hematoxylin and eosin that one has to become accustomed to the differences before one feels confident of the diagnosis.

SIMPLIFIED TECHNIC

A simpler technic than the one described by Dr. Wilson has given satisfactory results in our hands. Instead of freezing the tissues in dextrin, physiologic sodium chlorid solution or even tap water has been used without obvious disadvantage. Even the washing out of the stain and the mounting of the specimen may be done in Nashville tap water or in physiologic sodium chlorid solution. While not absolutely essential, Brun's glucose solution is, however, probably better for mounting the specimens than either water or sodium chlorid solution. I have not found it necessary to permit the sections to thaw out on the finger before placing in water.

RULES FOR JUDGING MALIGNANCY

In diagnosing malignancy in sections stained by the polychrome methylene blue method, the same

4. Wilson, L. B.: J. Lab. & Clin. Med. **1**, October, 1915.

criteria are employed as in determining malignancy in sections that have been stained with eosin and hematoxylin. For details about morphology, invasion, metastases, recurrences, etc., the reader may consult any good textbook. Here I shall refer merely to a few points which I understand are especially stressed by Dr. MacCarty and Dr. Broders when examining fresh tissues stained by the methylene blue method.

MORPHOLOGY

1. Malignant cells depart from the normal in size and shape and often in the appearance of the nucleus. This departure of the malignant cells is in the direction of lack of differentiation. Undifferentiated cells usually have nuclei that are vesicular, round, oval or slightly irregular in shape, and they usually show a single, prominent nucleolus. These are the cells that Dr. Broders calls "one eyed cells." The presence in the specimen of many cells showing these variations in size and shape is suggestive of malignancy. If the variation is sufficiently great, Dr. MacCarty and Dr. Broders regard the cells as malignant. Malignant cells also depart from the normal in their relation to other cells and tissues, and in their greater rapidity of growth.

2. A large number of mitotic figures is suggestive of malignancy.

3. According to Dr. Broders, the presence of hyalinized fibrous tissue around atypical epithelial cells, especially in the breast, is suggestive "of malignancy or of a malignant tendency." [5]

INVASION

Malignant cells break barriers and invade the surrounding tissues. Occasionally benign tumors may invade; for example, angiomatous tumors.[6] On the other hand, there are instances in which the basement membrane is not broken, and yet glandular cells are completely replaced by undifferentiated cells which correspond in practically every particular with cells which, if they had broken the basement membrane, would be regarded as malignant. MacCarty regards this stage as precancerous; [7] but as the treatment is that appropriate for early carcinoma, it might be better to label it "early carcinomatous stage." Benign tumors are usually not invasive, and are frequently encapsulated.

Every pathologist who is doing tissue work should be interested in improving the service which he can render. His service should be greater if he masters the frozen section technic and finds that his diagnoses under proper conditions are as accurate with this method as with the more time consuming usual methods. Such pathologists should be in demand and they should be adequately rewarded. Universities will then probably be forced either to raise considerably the salaries of their pathologists, or else to require only part time service.

CONCLUSION

The salaries now paid pathologists by many universities are inadequate to cause many men to take up pathology as a profession. Other fields offer greater rewards. Frozen section work has been discouraged in the past as being unreliable. But those who use the method most frequently are the most enthusiastic about it. A drawback to the diagnosing of tissues stained after being frozen and sectioned has been the lack of an easily procured, yet satisfactory staining fluid. A comparatively quick method of preparing a good stain is here described and directions are given for its use, as well as some rules for judging malignancy. It is hoped that many pathologists may be induced to try this method, for increasing the pathologist's usefulness is one of the surest ways of increasing his rewards. If pathologists become expert in diagnosing frozen sections they will increase greatly the value of their tissue diagnoses, and it should then be comparatively easy for them to earn salaries greater than universities usually pay.

5. Broders: Personal communication to the author.
6. Ewing, James: Neoplastic Diseases, Philadelphia, W. B. Saunders Company, 1919.
7. MacCarty, W. C.: Surg., Gynec. & Obst., July 1, 1915, p. 596.

ABSTRACT OF DISCUSSION

DR. WILLIAM C. MACCARTY, Rochester, Minn.: When I first went to Rochester I found Dr. Wilson's staining method in use and I have seen beautiful sections in paraffin and celloidin stained with this stain. I rarely see a celloidin or paraffin section now. We never make paraffin sections any more except when we want serial sections. We are getting a new idea of pathology from studying perfectly fresh unfixed cells. All our tissues are studied less than two minutes after their circulation is cut off, so they are practically alive when we get them. The sections are kept in isotonic solutions. There is just as much difference between studying tissues under these conditions and under the older conditions of fixation as there is between studying birds in the field and birds in the museum. The pathologist is a great aid to the surgeon and to the patient. You would be surprised to know how many patients demand that a certain pathologist examine their tumors. The layman is becoming educated to the necessity of the pathologist working with the surgeon. He is beginning to select his pathologist just as he selects his surgeon. Not a day passes that we do not render some great service to patients by Dr. Terry's method. I know of no other stain that we can use with the same efficiency. My experience with Dr. Terry's modification in preparing the stain has shown that it is an excellent method of ripening a stain.

DR. BENJAMIN T. TERRY, Nashville, Tenn.: If any one who is interested in trying the stain will send me his name and address, I will send him a sample so that he will not be put to the trouble of making the stain until after he has had an opportunity of testing it. I do not believe, however, that the preparation of the stain will be troublesome if the directions are followed carefully. With slower methods I have had trouble. Occasionally, under those conditions, the stain became infected and subsequently was found to have unsatisfactory staining qualities. With this six day method I have not had a single failure.

Symptoms of Breast Cancer.—The so-called classical symptoms of the textbooks are positively dangerous from the point of view of prognosis. To wait for their appearance is, in many cases, to wait till the disease is well-nigh incurable. The early signs of breast cancer are symptomless; the accidental discovery of a lump in the breast is usually the first sign of trouble. Pain is very rarely present at this stage, and here be it noted how extraordinarily difficult it is to convince many women of the very serious nature of a lesion which is causing no discomfort! The only other sign of breast cancer with which I am acquainted is dimpling of the skin of the breast over the tumor; this is never to be seen over nonmalignant tumors unless they have become infected. On the presence of a single hard lump in the breast of any woman over thirty years of age I am prepared to suspect cancer; if the skin dimples over the lump, I believe she has cancer, and that the least possible delay should take place in operating if our patient is to have a permanent cure.—W. Doolin, *Med. Press*, April 28, 1920.

TRAUMATIC ANEURYSM OF THE RIGHT PULMONARY ARTERY*

HENRY C. MARBLE, M.D.
AND
PAUL D. WHITE, M.D.
BOSTON

History.—O. O., aged 25, a second lieutenant of infantry, who had served in the army four and one-half years, was admitted to Base Hospital No. 6, A. E. F., France, Sept. 5, 1918, with the diagnosis: perforating gunshot wound in the right chest; double pneumonia. The patient was wounded in action, August 5, with a perforating gunshot wound of the right chest. The field card, Evacuation Hospital No. 6, August 5, stated that a roentgenogram disclosed the right lung opaque with evidence of fluid; that there were signs of hemothorax; that the patient should be kept in the sitting posture, and that morphin should be administered. At Base Hospital No. 15, August 14, roentgenoscopy revealed pleural exudate in the lower right chest with intrapulmonary consolidation, and August 16, left peribronchial pneumonia. The patient entered U. S. Base Hospital No. 6 convalescing from double pneumonia. September 5 he was very thin and was constantly spitting up dark red sputum.

September 25, there was a pulmonary hemorrhage of 6 ounces of bright red blood. Repetition of the hemorrhage seemed to be uncontrollable. Transfusion was performed with temporary relief, but not complete hemostasis.

October 3, physical examination of the chest revealed dulness on the right side, bronchial breathing, and markedly increased whisper fremitus at the extreme right base posteriorly, especially close to the spine. No râles were heard. The heart was in the normal position; all sounds were normal, except for a murmur along the sternum, loudest at the lower end, continuous through systole and diastole and much accentuated with systole. There was no thrill anteriorly. The second sound at the aortic and pulmonary areas was normal, low in the right back at the angle of the scapula. The murmur was very loud, continuous in time with systolic accentuation, and heard loudest near the spine. The murmur sounded like the rhythmic increase and decrease of the roaring of dynamos, and was much louder in the back than in the front of the chest. Immediately after the examination the patient had a small pulmonary hemorrhage. The diagnosis made at that time was a probable arteriovenous aneurysm of vessels of the right lung with engorgement and hemorrhage over the right lower lobe.

November 30, the patient was becoming more anemic. A transfusion of about 500 c.c. was performed.

December 6, there was noted a good result from transfusion. The patient's color was much better. He continued to raise a little blood-stained sputum.

December 12, there was a hemorrhage of moderate severity.

Jan. 2, 1919, roentgenoscopy revealed a spherical area of shadow at the root of the right lung, from 8 to 10 cm. in diameter. January 3, at 3:45 a. m., the patient died suddenly of hemorrhage from the lungs.

Postmortem Examination (January 3).—There was a large aneurysm of the main trunk of the right pulmonary artery 4 cm. beyond the bifurcation of the pulmonary artery. The aneurysm was as large as a medium sized orange. The middle lobe and almost all of the lower lobe of the right lung were obliterated, but some lung tissue containing air in the periphery and especially at the extreme base remained. The valvelike hole from the aneurysm into the bronchus had thickened edges. Trabeculae of tougher tissue made up of obliterated bronchi crossed the aneurysm. The stomach was full of blood. The heart was normal.

COMMENT

This case of traumatic aneurysm of the right pulmonary artery is of interest because of its extreme rarity, the roentgen-ray findings and the type and position of the murmur heard in the back over the aneurysm. Still another point of interest is the occurrence of the hemorrhages. The first one did not take place until more than a month after the wound; the pressure of the hemothorax may have prevented earlier bleeding from the lung. In all, there were between twenty-five and thirty hemorrhages, varying in amount up to 30 ounces. The hemorrhage was of the emetic type.

Operation was considered but not attempted. Thoracotomy posteriorly with collapse of the lung offered a hope of relief. At Paris, Chutro performed such an operation during the war with satisfactory result.

Traumatic aneurysm of the pulmonary artery or of the right or left main branches is extremely rare. Of course, damage to the pulmonary vessels, usually the smaller arteries or veins, is a common cause of death; but in the medical literature of the war we have found only one reference dealing specifically with traumatic aneurysm of one of the larger branches of the pulmonary artery. Even this was not, however, one of the main trunks. Konjetzny [1] in 1918 described one case—a soldier, aged 21, who suffered severe pulmonary hemorrhage two months after a chest wound and died of meningitis three months after his hemorrhage. Necropsy revealed an aneurysm of one of the branches of the left pulmonary artery.

Pulmonary aneurysms in general are also very rare. In 1906 Henschen [2] reviewed all the reported cases—forty-six in all, 53 per cent. male and 47 per cent. female—some of them thought to be due to syphilis or infectious disease. The correct diagnosis was made during life in only one or two of these cases. As a matter of fact, some of these cases were not saccular, but general dilatations of the pulmonary artery associated with a patent ductus arteriosus and so were essentially of congenital origin.

Since 1906, ten more cases of aneurysm of the pulmonary artery or of its main branches have been reported, one each by Genersich,[3] Durno and Brown,[4] Reiche,[5] Ploeger,[6] Entz,[7] Zak,[8] Nikolayeff,[9] Warthin,[10] Boinet,[11] and Konjetzny.[1] Of these cases, three showed also a patent ductus arteriosus. Nikolayeff [9] gave figures of 271 cases of mediastinal aneurysms, among which were only two of aneurysm of the pulmonary artery. Warthin [10] reported the first case of pulmonary aneurysm in which *Spirochaeta pallida* was found in the wall of the artery and in the aneurysmal sac.

At the Massachusetts General Hospital, among 3,500 necropsy cases in the twenty years from 1896 to 1915, there were forty cases of aortic aneurysm, six of cardiac aneurysm, two of aneurysm of the cerebral artery, and one each of aneurysm of the coronary artery, innominate artery, celiac axis, splenic artery, and femoral artery. There was no case of aneurysm of the pulmonary artery.

SUMMARY

In a case of traumatic aneurysm of the right pulmonary artery, the patient died of hemorrhage five months after the wound.

Fifty-six cases of aneurysm of the pulmonary artery or of its main branches have hitherto been reported, only one of which was of traumatic origin.

* From the Massachusetts General Hospital.

1. Konjetzny: Mitt. a. d. Grenzgeb. d. Med. u. Chir. **30**: 671, 1918.
2. Henschen: Samml. klin. Vortr. (Volkmann's), 1906, Nos 422-423.
3. Genersich: Orvosi hetil. **51**: 614, 1907.
4. Durno and Brown: Lancet **1**: 1693, 1908.
5. Reiche: München. med. Wchnschr. **56**: 2166, 1909.
6. Ploeger: Frankfurt Ztschr. f. Path. **4**: 286, 1910.
7. Entz: Pest. Med. Chir. Presse **47**: 293, 303, 1911.
8. Zak: Wien. med. Wchnschr. **62**: 1128, 1912.
9. Nikolayeff: Russk. Vrach **15**: 249, 1916.
10. Warthin, A. S.: Am. J. Syphilis **1**: 693 (Oct.) 1917.
11. Boinet: Marseille méd. **55**: 115, 1918.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

POLLEN EXTRACTS-ARLCO.—Liquids obtained by extracting the proteins from the pollen of various species of plants.

Actions and Uses.—See general article, Pollen Extract Preparations, New and Nonofficial Remedies, 1920, p. 226.

Dosage.—See general article, Pollen Extract Preparations, New and Nonofficial Remedies, 1920, p. 226. Each of the Arlco products listed below is marketed in sets of four vials representing graduated concentrations, viz., 1:10,000, 1:5,000, 1:1,000 and 1:500, respectively: also in concentrated solution in capillary tubes for diagnostic tests, each tube containing sufficient for one skin test. For hospital use, the diagnostic solution is supplied in 1 Cc., 2 Cc. and 3 Cc. containers.

Aster Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the aster *(Aster multiflorus?)*.

Birch Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the birch *(Betula populifolia)*.

Cherry Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the cherry *(Prunus species)*.

Clover Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the clover *(Trifolium species)*.

Corn Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the corn *(Zea mais)*.

Dahlia Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the dahlia *(Dahlia variabilis)*.

Daisy Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the daisy *(Crysanthemum leucanthemum)*.

Dandelion Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the dandelion *(Taraxacum officinale)*.

Dock Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the dock (*Rumex acetocella.*)

Elm Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the elm *(Ulmus americana)*.

Goldenglow Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the goldenglow *(Rudbeckia laciniata)*.

Goldenrod Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the goldenrod *(Solidago species)*.

Hickory Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the hickory *(Carya alba)*.

June Grass Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the June grass *(Poa pratensis)*.

Locust Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the locust *(Rabinia pseudacacia)*.

Maple Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the maple *(Acer rubrum)*.

Narcissus Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the narcissus *(Narcissus species)*.

Oak Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the oak *(Quercus species)*.

Orchard Grass Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the orchard grass *(Dactylis glomerata)*.

Poplar Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the poplar *(Populus balsamifera)*.

Poppy Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the poppy *(Papaver somniferum)*.

Ragweed Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the ragweed *(Ambrosia trifida)*.

Ragweed Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the ragweed *(Ambrosia artemisiaefolia)*.

Red Top Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the red top *(Agrostis alba)*.

Rose Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the rose *(Rosa rugosa)*.

Rye Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the rye *(Secale cercale)*.

Sunflower Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the sunflower *(Helianthus annuus)*.

Timothy Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the timothy *(Phleum pratense)*.

Walnut Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the walnut *(Juglans nigra)*.

Willow Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the willow *(Salix fragilis)*.

Pollen Extracts-Arlco are prepared by the method of Walker (Am. Jour. Med. Science **157**: 409, 1919): To 0.5 gm. of the dry pollen are added 44 Cc. of sterile physiologic sodium chloride solution and the mixture is shaken thoroughly at frequent intervals for twenty-four hours. Sufficient absolute alcohol (6 Cc.) is then added to make the alcohol content 12 per cent. The mixture is thoroughly shaken at frequent intervals for twenty-four hours, after which it is centrifugalized at high speed and the supernatant fluid is drawn off with a pipet. This liquid, therefore, consists of the pollen protein dissolved in a 12 per cent. alcoholic physiologic sodium chloride solution and it represents, by weight, 1 part of pollen in 100 parts of solvent. This 1 in 100 solution is used as stock and from it other dilutions, such as 1 in 500, 1 to 1,000, 1 in 5,000 and 1 in 10,000 are made. Cresol is added as a preservative.

ANTIPNEUMOCOCCUS SERUM (See New and Nonofficial Remedies, 1920, p. 269).

Lederle Antitoxin Laboratories, New York.

Antipneumococcus Serum (Polyvalent) (Lederle), Types I, II and III.—Prepared by immunizing horses (in cycles) with dead and living pneumococci of the three fixed types (Types, I, II and III) and standardized against Type I culture according to Hygienic Laboratory method. It is of the same strength with regard to Type I as Type I sernm and in addition contains antibodies against Type II and III; tricresol, 0.35 per cent., is added as preservative.

Marketed in double ended vials containing 50 Cc. each, with sterile needle and tubing for intravenous injection; also in bottles containing 100 Cc.

PERTUSSIS BACILLUS VACCINE (See New and Nonofficial Remedies, 1920, p. 285).

Gilliland Laboratories, Inc., Ambler, Pa.

Pertussis Bacillus Vaccine-Gilliland.—Prepared from several strains of Pertussis Bacillus (Bordet-Gangou) grown on blood agar. The killed bacterial emulsion is suspended in physiological solution of sodium chloride; three cresols, 0.25 per cent., is added as a preservative.

Marketed in packages of four syringes containing 250, 500, 1,000 and 2,000 million killed bacteria, respectively; in packages of four ampules containing 50, 500, 1,000 and 2,000 million killed bacteria, respectively; also in 5, 10 and 20 Cc. vials containing 2,000 million killed bacteria per Cc.

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SATURDAY, JUNE 26, 1920

THE PHYSIOLOGIC SIGNIFICANCE OF HUMAN MILK

When an infant is deprived of mother's milk, it is robbed of its birthright. There is no ideal substitute. The claims for the superiority of woman's milk in infant nutrition have been reechoed by almost every one who has devoted attention to the problem. But, in the attempts to explain the greater excellence of a secretion which in many respects resembles closely the composition of cow's milk, one may find marked diversity of opinions. The statement that the mammary glands have been evolved primarily to make a food that is best suited for rapidly developing human beings will not satisfy a scientific inquirer. Teleology should have a basis of fact as well as of good intention.

Some writers have ascribed the lesser excellence of cow's and other animal milks in comparison with mother's milk to a vague "foreign" character of the former. They are believed to be ill "adapted" to the human organism, producing objectionable reactions in the body, as "foreign" proteins are nowadays said to do. The proteins, in particular, entering into the artificial feeding of infants have been charged with being poorly digested. Cow's milk is far richer than human milk in proteins and casein in particular. The relative preponderance of lactalbumin in human milk is well known. Even admitting a possible difference between human casein and cow's milk casein, the majority of pediatricians will probably contend that the digestive apparatus of the healthy infant is equipped to digest properly the proteins from both species of animals. The occurrence of casein curds in the stools, about which so much has been written, is presumably a symptom of inadequacy of the individual rather than inherent unfitness of the food. Edelstein and Langstein [1] have summarized the matter by stating that normally there is no fundamental difference in the digestion of cow's milk proteins and human milk proteins by infants.

The assumption of indefinable or as yet undefined biologic or immunologic properties in human milk which peculiarly adapt it to the use of the species entails too much that is vague and intellectually intangible to be seriously considered. Digestion, which destroys the integrity of the food molecules and breaks them into comparatively simple fragments before absorption, must necessarily alter, if it does not entirely abolish, any larger structural basis which might be responsible for specific immunity or biologic advantage. Chemical investigation, however, has shown that lactalbumin, in which human milk abounds, is discoverably unlike its companion protein casein, which predominates in the cow's mammary secretion. The comparative yield of some of the indispensable amino-acids is quite unlike for these two types of proteins. Correspondingly, Osborne and Mendel,[2] in feeding experiments on small animals, have demonstrated that casein and lactalbumin have an unlike nutritive value, growth being more efficient on lactalbumin fed in equivalent amounts under otherwise unchanged dietary conditions.

This superior nutritive efficiency of lactalbumin has now been verified in an elaborate series of experiments by Edelstein and Langstein [1] in Charlottenburg. They determined for the first time the protein minimum and relative nutritive value of the nitrogen furnished as cow's milk, woman's milk, lactalbumin and casein, respectively, and established an advantage for lactalbumin and that type of milk—human milk—in which it abounds. The outcome is not a result of superior solubility or digestibility of different milk proteins. The advantage of the lactalbumin lies in its chemical make-up, as Osborne and Mendel have contended, whereby it supplies to better advantage than casein that relative proportion of amino-acid structural units needed in the growth of the infant. From this standpoint, Edelstein and Langstein remark, the peculiar proportions of albumin and casein in human milk deserve special consideration. We must shift our attitude from the contemplation of possible detrimental features of cow's milk proteins to superior merits of the human analogues. In this way we may perhaps sooner attain the ultimate end, foretold by Underhill,[3] of assigning more or less specific functions to the various amino-acids, and indirectly indicating the relative efficiency of this or that protein in bringing about a desired result in nutrition.

Although human milk contains much less protein (though of perhaps superior nutritive quality, as indicated above) than does cow's milk, it furnishes considerably more lactose. Mathews [4] does not hesitate to correlate the greater proportion of lactose in human

1. Edelstein, F., and Langstein, L.: Das Eiweissproblem im Säuglingsalter, experimentelle Untersuchungen über die Wertigkeit der Milcheiweisskörper für das Wachstum, Ztschr. f. Kinderh. **26**: 112 (Aug.) 1919.

2. Osborne, T. B., and Mendel, L. B.: A Quantitative Comparison of Casein, Lactalbumin and Edestin for Growth or Maintenance, J. Biol. Chem. **26**: 1 (Aug.) 1916.

3. Underhill, F. P.: The Physiology of the Amino-Acids, New Haven, Yale University Press, 1915, p. 158.

4. Mathews, A. P.: Physiological Chemistry, New York, William Wood & Co., 1915, p. 307.

milk with the vastly greater brain development of human beings early in life. The myelinization of fibers in the brain requires galactose, yielded by lactose and seemingly formed only in the mammary gland. Let us bear in mind, however, that this view is mere hypothesis. A discussion of the lactose problem would soon bring us into troubled waters; but we believe that here, too, experimental science can find a way out into a place of clearer understanding.

INFLUENCE OF THE MALE IN THE PRODUCTION OF TWINS

The frequency of the appearance of twins in a family unquestionably has a hereditary aspect. It has been assumed, however, that inheritance from the paternal side can play little if any part in the tendency toward the birth of twins. As most of the latter represent plural births resulting from twin labors following double ovulation in the mother, it seems at first thought almost impossible that the father should exercise any influence in determining the twin production. There are, of course, cases of identical twins arising from a single egg by an early fission of the embryonic blastodisk, and these might be affected by paternal influence so far as the sperm cell as well as the egg cell might carry the tendency to twin-producing fission of the ovum. But the common view assumes that two-egg twins are due to simultaneous bursting of two graafian follicles, while single births result from rupture of a single ovum-discharging follicle. An effect of male hereditary tendencies in determining the number of such twins would therefore seem to be excluded.

Statistics collected by Davenport[1] of the Station for Experimental Evolution at Cold Spring Harbor, L. I., upset these seemingly logical assumptions. The data indicate that, from the hereditary standpoint, the father has about as much influence in the production of the twins as the mother. In explanation of this, Davenport points out that there is a good deal of evidence that single births are not always the consequence merely of the bursting of a single follicle. He emphasizes that there are several other factors that determine a single birth, such as the failure of one of two simultaneously expelled eggs to be fertilized, or the inability of one of two simultaneously expelled fertilized eggs to develop to maturity. If it should turn out that two eggs are ovulated more frequently than is at present recognized, the comparative rarity of twin births in woman might be due either to failure of fertilization or to failure of development of more than one egg.

On such possibilities the fathers may have an influence in relation to the production of twins. As Davenport interprets it, families that readily produce twins do so not only because in the mother the eggs were laid in pairs, but also because in the father the sperm is active, abundant and without lethal factors, so that the number of eggs fertilized and brought to full term approaches a maximum.

Lethal factors probably play a more important part in relation to human germ cells than is commonly assumed. Failure of development is not an uncommon phenomenon in genetics. The number of corpora lutea in mammals that have large litters is usually greater than the number of embryos in the uterus. In gynecology, blighted twins are not unknown. It is stated[1] that in a fairly large proportion of all twin births, one of the twins has remained at a stage of development of the third, fourth, or even earlier month. The fetus is often compressed and flattened (papyraceous twin). The number of blighted twins that have been referred to in the literature amounts to several score, but naturally this is a very small proportion of the whole. As Davenport further recites, a record is made only of the larger blighted fetuses; the others are entirely overlooked, since search is rarely made for undeveloped embryos in the afterbirth, and the birth is consequently regarded as a single one. If he is correct in this, we may assume with him that a certain proportion, perhaps a large proportion, of fraternities that show two or three twin labors interspersed with single labors are those in which pairs of eggs have been ovulated in each case, but one of the pair has failed to develop, either through failure of fertilization or through early blighting.

1. Davenport, C. B.: Influence of the Male in the Production of Human Twins, Am. Naturalist 54: 122 (March-April) 1920.

PRIMARY POLYCYTHEMIA

Polycythemia—an increase in the number of red corpuscles or in the amount of hemoglobin per unit of blood volume—is not a rare clinical condition. True polycythemia should, of course, be carefully distinguished from relative increases in erythrocyte count due to concentration of the blood such as occurs after marked losses of fluid by copious diarrheas, profuse perspiration, or large localized edemas. In the latter conditions there is no absolute increase in the number of red cells, but merely a reduction in the amount of plasma in the circulation. A true polycythemia is likely to arise as the result of a comparative deficiency in oxygen in the respired atmosphere; hence its common occurrence at high altitudes, as has often been pointed out in THE JOURNAL. An increased number of red blood cells is frequently observed in the cyanosis of congenital heart disease. In all such instances the increment in pigment-carrying cells is evidently dependent on other pathologic or environmental changes, and therefore the designation of secondary or symptomatic polycythemia has been applied to the cases in question. In another group of persons, on the other hand, similar blood changes occur for which the cause is not so clearly established. They have been described as primary, essential or cryptogenic polycythemias. In exceptional cases, counts of red blood cells totaling 15 million per cubic millimeter

have been recorded, the hemoglobin being increased up to 26 gm. or over. This is true in so-called erythrocytosis megalosplenica, the malady brought into prominence by Vaquez in 1899 and Osler in 1903.

The pathogenesis of primary polycythemia (polycythemia rubra vera) is not yet known. It is evident that the number of corpuscles existing at any moment in the blood must represent a balance between factors of erythrocyte formation and destruction in the organism. Both processes are believed to be going on more or less continually in some degree in the body. Heretofore most attempts at an explanation of polycythemias have been concerned with the hematopoietic aspects. Thus, polycythemia has been attributed to a hyperplasia and hyperfunctioning of the bone marrow, and in fact vivid purple marrow has been described as an anatomic finding in certain characteristic cases. Another explanation, however, is likewise within the range of pathogenic possibilities. It is conceivable that the erythrocytes, formed without undue function in the bone marrow, are somehow protected from the ready destruction that is the usual fate of circulating red blood cells. This is the conclusion that Herrnheiser[1] has adopted from the study of a new patient in von Jaksch's clinic at Prague. There was no occasion to assume the existence of a stimulation of the marrow, whereas an examination of the erythrocytes gave some reason to conclude that there was a decreased destructibility of the red cells. Hence in Herrnheiser's case, at least, upset in the balance between production and destruction of cells was believed to be determined by an unusual conservation factor under conditions of normal hematopoiesis.

We must frankly admit ignorance as to the real determining factor in these polycythemias. Splenic tuberculosis has been abandoned as a probable cause of Vaquez-Osler's disease. Hyperplasia of the erythroblastic bone marrow has been accepted as a more probable pathogenic agency by some writers. Now we are asked to consider the possible rôle of decreased destruction of blood cells in producing a high absolute cell count. Perhaps each explanation may be applicable to certain cases so that true polycythemia is not attributable to a single causative process. For therapy it is not a matter of indifference as to which explanation is correct. If the marrow alone is involved, roentgen-ray treatment may give the best results. In several instances recorded it seems to have been helpful, as it is at times in improving conditions attending leukemia. But if the marrow is to be excluded from etiologic consideration, perhaps recourse to bleeding would offer a better prospect of relief. Hemorrhage has accordingly been tried with alleged advantage. Here, as so often, rational therapy awaits the determination of the exact cause or causes of symptoms that demand relief.

1. Herrnheiser, G.: Polycythaemia ruhra vera, Deutsch. Arch. f. klin. Med. **130**: 315 (Oct.) 1919; abstr. J. A. M. A. **74**: 1549 (May 29) 1920.

PHYSIOLOGIC EFFECTS OF EXERCISE IN THE TROPICS

Under ordinary environments, the human body engaged in physical exercise protects itself against undue changes of temperature by certain well known physiologic mechanisms. Muscular activity liberates heat in large amounts. The tendency to become overheated from this is averted by increased surface blood flow, increased perspiration, and, under favorable conditions, to a certain extent by the deepened breathing, which removes heat from the organism by warming the expired air and saturating it with aqueous vapor. Despite these protective devices, the adjustment to normal is not instantaneous or perfect. Exercise temporarily affects the pulse rate, blood pressure and body temperature in ways that have often been described. Indeed, the adequacy and promptness of the corrective responses to exercise are often taken as criteria of the efficiency of the circulatory apparatus of patients.

In the tropics, the added unusual environmental factors of a hot climate, often including great humidity, place a further task on the physiologic devices for counteracting the heat produced through exercise. How well and in what ways are these trying conditions met? There have been a number of investigations of the effects of heat and humidity on exercise, but they have for the most part been conducted under experimental conditions in temperate climates. Whether prolonged residence under the trying conditions of a humid tropical atmosphere would alter the physiologic performances is by no means clearly ascertained. A group of physiologists[1] working in the Australian Institute of Tropical Medicine at Townsville have made important records bearing on the subject. The climatic conditions during the hottest months of the year were essentially like those at Calcutta, the dry-bulb temperature standing between 80 and 90 F. with a highly saturated atmosphere. Vigorous exercise of short duration caused an increase in the pulse rate and blood pressure, both of which fell rapidly to the normal as in temperate climates, after discontinuation of the work. The corrective response to prolonged exercise was characterized by profuse sweating, so that very considerable losses of water often ensued. It was a quite common occurrence to lose as much as 1 kg. (2⅕ pounds) in weight during an hour's walk at a moderate pace; and even as much as 3.2 kg (7 pounds) might be lost in the course of a two hours' walk. The water eliminated under such conditions is derived almost entirely from tissues other than the blood, so that no pronounced concentration of the latter occurs. Otherwise, serious results might ensue.

Even in temperate zones, vigorous exercise may bring about a transient rise in body temperature. In Townsville, prolonged but mild exertion, such as walk-

1. Young, W. J.; Breinl, A.; Harris, J. J., and Osborne, W. A.: Effect of Exercise and Humid Heat on Pulse Rate, Blood Pressure, Body Temperature, and Blood Concentration, Proc. Roy. Soc., London (B), **91**: 111 (Jan. 1) 1920.

ing during the hot hours of the day, caused higher rectal temperatures, often amounting to 2 or 3 degrees Fahrenheit. The increase was more marked during the first part of the exercise than later. Hence, in contrasting conditions in the tropics with those obtaining elsewhere, the Australian observers remark that both exercise and humid heat play a part in producing a rise in blood pressure, pulse rate and rectal temperature. The degree of rise, however, is controlled by atmospheric conditions which influence the rate of cooling of the body.

Current Comment

HEREDITY AND ACQUIRED DEFECTS

According to the current theories of heredity there is a "physical continuity of the germinal material from generation to generation." Hereditary characteristics of the germ cells are not created anew in each generation; they are racial. To what extent, if any, what has been termed the morphology of inheritance can be altered or influenced in any one generation has been the subject of much discussion. Can acquired characters be inherited? In other words, can the environment seriously modify the fundamental features of the development of an individual so that new potencies or structural peculiarities will be permanently introduced into the race? There was a time, not long ago, when the possibility of altering the hereditary factors in the germ cells was accepted more readily than it has been in recent years. Mutilations of the body are not transmitted as new characters. Amputations of the tail in dogs or removal of the horns in cattle in successive generations have not brought about a tailless or hornless race. On the other hand, there are growing numbers of instances in which damage to the germ cells through an improper composition of the blood and tissue fluids which bathe them may lead to transmissible defects of the offspring. This has been shown experimentally as the outcome of intoxication with alcohol and by lead salts. A unique further illustration that the blood can convey modifying influences to the germ cells has been furnished by the investigations of Guyer[1] and his associates at the University of Wisconsin. They have reasoned that if the serum of one species of animal can be so sensitized to a given tissue or tissues of another species that it will become toxic or lytic for the tissue in question, it may be that there is sufficient constitutional identity between the mature substance of the tissue and at least some of its material antecedents in the germ that the latter may also be influenced specifically by the sensitized serum. This is, indeed, the case. When pregnant rabbits were injected with serum of an animal sensitized to rabbit-lens, antenatal lens defects appeared in the offspring. Opaque (and sometimes liquid) lenses and eyes otherwise defective were found. The effect of the lens-sensitized serum was specific; for the eye defects were never observed in offspring of parents injected with serum sensitized to rabbit tissues other than lens. More significant, however, is the added fact that the defect once secured in the way mentioned may be transmitted to successive generations through breeding. In Guyer's experiments it has already been passed to a sixth generation. There is not merely a placental transmission of antibodies or other lens-damaging factors. The heredity of the acquired defects has been demonstrated by transmission through the male line, normal females being mated with defective eyed males. As Guyer and Smith remark, since the defect can thus be made to reappear in the descendants of a male with abnormal eyes when he is mated to a female from unrelated and untreated stock, it is obvious that it could have been conveyed only through the germ cells of the male, and that it may, therefore, be pronounced an example of true inheritance. We suspect that some of the current beliefs on the stability of good stock and the impossibility of damaging it through acquired blood changes will require revision in the near future.

1. Guyer, M. F., and Smith, E. A.: Transmission of Eye-Defects Induced in Rabbits by Means of Lens-Sensitized Fowl-Serum, Proc. Nat. Acad. Sc. **6**: 134 (March) 1920.

ARTEFACT "SPIROCHETES"

The search for spirochetes in material taken for both experimental and diagnostic purposes from supposedly infected individuals is no longer an uncommon procedure confined to specialized laboratories. Dark field examinations for these significant micro-organisms are nowadays frequently made under a variety of conditions and circumstances. It is important, therefore, that all who are accustomed to work in this domain of microscopy should be made aware of the possible sources of error. For this reason, attention is directed to the recent warning by Eberson[1] of St. Louis regarding the appearance of artefacts—extremely tenuous, filamentous forms resembling *Spirochaeta pallida* in motility and spiral structure. Investigation disclosed that they are derived from the red corpuscles, may be produced at will, and bear no relationship whatever to the organism of syphilis. Apparently, earlier observations of them without a real appreciation of their accidental origin have given rise to the suspicion that these artefacts were possible stages in the complete development of *Spirochaeta*. Eberson's experiments seem to make it clear beyond question, however, that influences, such as H-ion content of solutions, tonicity and transfer from the usual environment, are sufficient for the demonstration of the phenomenon, and that the newly described bodies have nothing whatever to do with the life-cycle of the specific agent in syphilis.

1. Eberson, Frederick: "Spirochetes" Derived from Red Blood Corpuscles, Arch. Dermat. & Syph. **38**: 638 (June) 1920.

Lowering Infant Mortality by Better Obstetric Teaching.—The teachers in midwifery at the medical schools should remember that if the suffering and mortality of childbirth is to be ameliorated, not only must the teaching of the medical student be improved, but also that of the midwife. The blame for the present large mortality and morbidity of childbirth cannot be laid solely at the door of the doctor or of the midwife; they are both involved, and no one who knows the facts could say that improvements in the teaching of both are not urgently called for.—*Lancet*, Dec. 13, 1919.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Chinese Doctor Convicted.—It is stated that T. Wah Hing, a Chinese herb doctor of Sacramento, was recently convicted of practicing in violation of the state medical act.

Fined for Practicing Without a License.—Rose Trattner of Los Angeles was fined $300 and given a ninety days' suspended jail sentence for practicing medicine without a license.

Chiropractors Convicted.—It is reported that on May 12, Frances J. Freenor and Simon Mueller, chiropractors, were convicted at San Francisco for practicing medicine without licenses.

Osteopaths Exceed Rights.—According to report the health officer of Stockton has refused to honor a death certificate filed by J. C. Rule, an osteopath, showing that a 10 year old "infant" died after an operation for peritonitis and appendicitis. The health officer holds that an osteopath has no right to perform such an operation.——The certificate of Dr. William T. Harlan, an osteopath of Arbuckle, was revoked on the ground that he had used drugs and written prescriptions, which the certificate to practice osteopathy does not permit.

GEORGIA

New District Officers.—At the annual meeting of the Twelfth District Medical Society, held in Swainsboro, June 9, Dr. Edward B. Claxton, Dublin, was elected president, and Dr. Thomas E. Blackburn, Swainsboro, vice president. It was decided to hold the next meeting at Wrightsville, December 2.

License Revoked.—The Georgia State Board of Medical Examiners, June 10, revoked the license of Philip Dyment, now of Pasadena, Calif., on the grounds that Dyment did not graduate from the Homeopathic Medical College of Missouri in 1891 or in any other year and that he had a substitute take the examination for him. The evidence showed that Dyment was neither a graduate nor had he ever been a student at the college named. Evidence further showed that Dr. L. G. Wright of Chicago had written the examination before the Georgia board in 1914 by which Dyment's license had been granted. A year later Dyment obtained a license in California through reciprocity with the Georgia board. The fraudulent nature of the credentials was discovered through data on file with the Council on Medical Education of the American Medical Association.

ILLINOIS

Personal.—Dr. C. Cartledge of the University of Chicago has been appointed assistant professor of chemistry at Johns Hopkins University, Baltimore.——Dr. Downs, Bloomington, was assaulted in his office, May 22, by two men to whom he had refused to issue a prescription for liquor.

College Commencement.—At the commencement exercises of the College of Medicine of the University of Illinois, June 16, a class of forty was given the degree of Doctor of Medicine. Dr. David Kinley, president of the university, conferred the degrees and delivered an address on "Some Questions in Medical Education."

Work on Sanatorium to Begin at Once.—Reconstruction of Edward Sanatorium, Naperville, which was destroyed by fire in February, is to be started at once. Although the entire amount necessary for the rebuilding of the institution has not been obtained, a sufficient sum has been realized to permit the reconstruction work to be entered on at once.

Campus for Professional Schools.—A site for the erection of the new schools of medicine, dentistry, commerce and law of Northwestern University, Chicago, was assured, June 15, when the board of trustees voted unanimously to buy the Fairbanks-Farwell tract at Chicago Avenue and Lake Shore Drive. The purchase price is more than $1,000,000.

Physicians' Club Election.—At the annual meeting of the Physicians Club of Chicago, June 17, Drs. Frank Morton, Edward H. Ochsner, Truman W. Brophy, Joseph A. Capps, Coleman G. Buford and Ralph W. Webster were elected directors. Prof. Frederick Starr discussed "Mexico of Today"; and at the meeting of the board of directors which followed, Dr. Truman W. Brophy was elected president and Dr. Victor D. Lespinasse was reelected secretary.

INDIANA

Hospital Projects.—The proposed new Methodist Episcopal Hospital at Gary is now under construction, the cornerstone having been laid recently.——At a special election, the project for the erection of a Vermilion County Hospital at Clinton, to cost $100,000, was carried by a majority of 1,100.

Nurses Graduate at Indianapolis.—At its eleventh commencement the Methodist Episcopal Hospital Training School for Nurses graduated a class of fifty-one nurses, the largest class in the history of the institution.——Eleven nurses were graduated at the recent commencement of the training school of the Protestant Deaconess Hospital, Indianapolis.

MARYLAND

Personal.—Asst. Surg.-Gen. Henry R. Carter, U. S. Public Health Service, Baltimore, has sailed from New York for Peru, where he will take charge of the sanitary forces of the Peruvian government in their effort to stamp out yellow fever. During the past winter, Dr. Carter has been in charge of a Rockefeller Foundation party which combated the disease in the Piura district. His headquarters will now be at Piata, a seaport, where the fever is at its worst, and he will remain in Peru until next January.——Dr. Daniel H. Lawler, U. S. Public Health Service, Baltimore, is under treatment at the Union Memorial Hospital for serious injuries of the spine received when he fell 25 feet into a concrete culvert at Round Bay, June 12.

Immigration Station Turned Over to U. S. Public Health Service.—Immigration Commissioner-Gen. Anthony Caminetti recently visited the quarantine station at Fort McHenry, Baltimore, and it has been practically decided that the quarantine site and buildings will be turned over to the U. S. Public Health Service, for a year or longer, instead of being returned to the control of the local bureau of immigration. This solution of the problem was suggested by Commissioner Stump of the local bureau. With virtually no immigrants landing at Baltimore, the annual expenditure of from $60,000 to $75,000 would be unjustified. The site was given to the Immigration Service by the War Department in 1913, and shortly afterward Congress appropriated $550,000 for the erection of buildings. The group was nearing completion when America entered the war and it was at once turned over to the War Department to form part of the U. S. Army General Hospital No. 2 group.

MICHIGAN

Nurses Graduate.—A class of four nurses was graduated at the recent commencement of the Mercy Hospital Training School for Nurses at Jackson.

State Health Law Upheld.—In the damage suit for $10,000 brought by Nina McCall Rock against Dr. Thomas J. Carney, formerly health officer of Alma, Judge Moinet decided in favor of the defendant, June 4, and the court directed the jury to return a verdict of no cause of action.

Personal.—Major Harry C. Coburn, Jr., M. C., U. S. Army, late commanding officer Base Hospital Unit No. 17 at Harper Hospital, Detroit, was tendered a testimonial banquet recently at the Detroit Athletic Club by officers who were associated with him while on duty at Dijon, France.——Dr. H. B. Markham, Marquette, has been appointed acting assistant surgeon, U. S. Public Health Service, to fill the vacancy caused by the resignation of Dr. Frederick McD. Harkin.——Dr. Guy L. Kiefer, Detroit, has been appointed medical director of the Michigan State Telephone Company, succeeding Dr. Robert B. Hasner.

MINNESOTA

Hospital Items.—Dr. William J. Stock, Hastings, has purchased a building at Pierz and is having it remodeled into a hospital.——A building to house the nurses in the Southwestern Sanatorium, Worthington, is being built at a cost of $74,000.

Southern Minnesota Physicians to Meet.—The midsummer session of the Southern Minnesota Medical Association will be held at Fairmont, June 28 and 29, under the presidency of Dr. Herbert Z. Giffin, Rochester. The banquet will be held the first evening.

NEW YORK

Personal.—Dr. William A. Groat, Syracuse, has been elected a member of the board of trustees of Syracuse University.——Dr. Alexis Carrel of the Rockefeller Institute, New York City, was awarded the degree of Doctor of Science by Princeton University, June 14.——Dr. Menas S. Gregory, New York City, has been appointed a member of the board of managers of the state reformatory for women, Bedford.

Sanatorium Superintendents Meet.—The annual meeting of the New York State Association of Managers and Superintendents of Local Tuberculosis sanatoriums was held in Syracuse, June 2 and 3. The session of the first day was at the chamber of commerce and that of the second day at the Onandaga Sanatorium. In addition to addresses by Dr. Hermann M. Biggs and Mr. Homar Folks, discussions were held on tuberculosis clinics, county tuberculosis nurses, the standardization of tuberculosis hospitals, necessity of laboratory work, and throat and dental work in tuberculosis hospitals. Resolutions were passed thanking Governor Smith for vetoing the Fearon bill, which would have divested boards of managers of county tuberculosis hospitals of the power to fix the salaries of hospital employees. The state department of health was invited to investigate the incorrigible tuberculosis patients problem with a view to designating a part of some state custodial institution for their care. Drs. John J. Lloyd, Stanley L. Wang and Edwin P. Kolb were appointed a committee to consider the plan of the American Sanatorium Association for standardizing tuberculosis hospitals of New York state. A legislative committee consisting of Drs. H. J. Brayton, John J. Lloyd and Edwin P. Kolb was appointed. Dr. Joseph H. Marshall, president of the board of managers of the Suffolk County Tuberculosis Hospital, was elected president of the association for the ensuing year, succeeding Dr. A. Clifford Mercer, Syracuse. Dr. H. St. John Williams, Dr. Aden C. Gates and Dr. Robert L. Bartlett were reelected secretary, vice president and treasurer, respectively.

New York City

Medical College Commencements.—During the past week Cornell Medical College conferred the degree of Doctor of Medicine on thirty-eight men and thirteen women. The John Metcalf prize for general efficiency in medicine was awarded to Alexander G. Davidson, who led the honor roll. The degree of Doctor of Medicine was conferred on fifty-eight men at Fordham University.

City Accepts Strauss Laboratory.—The board of estimate has accepted the offer of Nathan Strauss to turn over to the city his milk pasteurization laboratory for the benefit of the children of New York on condition that the city provide funds to carry on and extend the work. The board of estimate plans to appropriate $31,691 to operate the laboratory for the remainder of this year.

Anthrax in Public School.—A student taking a vocational course in brush making at Public School No. 12 recently contracted anthrax. Dr. Frank J. Monaghan, acting health commissioner, has asked the board of education to adopt regulations protecting students from this danger. He has drawn a report of precautionary measures which will be presented to the commissioners of the department of education. The health department has for the present taken charge of all materials used for brushmaking in the public schools.

OHIO

Hospital Construction Postponed.—Owing to the high cost of materials and labor, the construction of the $500,000 Masonic Home Hospital at Springfield has been indefinitely postponed.

Executive Secretary Appointed.—Mr. Guy M. Wells has been appointed executive secretary of the Academy of Medicine of Cleveland, effective June 7. The work of the executive secretary will include the organization of an information bureau for members of the organization, the increasing of membership among eligible physicians, the publication of a monthly bulletin and cooperation with the state medical association and academies of other cities in legislative and educational matters.

PENNSYLVANIA

Personal.—Dr. Edward Martin, state commissioner of health, has appointed the following officials to genito-urinary clinics: Dr. George S. Armitage, chief at Chester City; Dr. Walter Leonard Lynn, Kingston, Pa., assistant at Wilkes-Barre; Dr. Robert M. Hursh, assistant at Harrisburg, and Dr. Ray M. Alexander, Bolivar, assistant at Reading.

"Cancer Day."—Under the auspices of the committee on cancer of the Medical Society of the State of Pennsylvania, Tuesday, June 22, was set aside as "Cancer Day" for Scranton and vicinity. The object of "Cancer Day" is to increase interest in this disease with especial reference to more frequent early diagnosis and more prompt and efficient treatment. There were operative, demonstrative and diagnostic clinics, as follows: State Hospital, arranged by Dr. Edward A. McLaine, Scranton, and Drs. John S. Rodman, P. Brooke Bland, Edward E. Montgomery, all of Philadelphia; Hahnemann Hospital, arranged by Dr. John L. Peck, Scranton, and Dr. George W. Roberts, New York City; Moses Taylor Hospital, arranged by Dr. Jonathan M. Wainwright, Scranton, and Drs. John G. Clark and John H. Gibbon, Philadelphia. An evening meeting was held in the Y. M. C. A. auditorium at which introductory remarks were made by Dr. Edward Martin, commissioner of health of Pennsylvania, chairman of the meeting; Drs. John G. Clark, Herbert L. Northrup, John S. Rodman, Edward E. Montgomery and Frank J. Osborne, executive secretary of the American Society for the Control of Cancer.

Philadelphia

Tablet in Honor of Dr. Mills.—A tablet in honor of Dr. Charles K. Mills was unveiled at the Philadelphia General Hospital, June 17. Dr. Mills resigned last October after forty-two years' service as chief of the neurologic staff at the hospital. The tablet is of bronze, 48 by 28 inches, with a bas-relief medallion of Dr. Mills' head surmounting it.

Experts Confer on Tuberculosis.—The Henry Phipps Institute, Seventh and Lombard streets, during the week of June 14, was the center of conferences attended by experts in tuberculosis from all parts of the country. Plans were discussed by the executive committee of the National Tuberculosis Association to further the scope of the modern health crusade, which aims to make the child's consideration of its health a part of the classroom program in schools.

University of Pennsylvania Surprises Retiring Provost.—The one hundred and sixty-fourth annual commencement exercises of the University of Pennsylvania were held in the Metropolitan Opera House, June 16. After conferring nine honorary degrees on prominent men, and awarding 863 degrees to members of the graduating class and delivering the annual commencement address, Edgar Fahs Smith himself was granted an honorary degree of Doctor of Medicne by the faculty of the school of medicine and the board of trustees. That action came as a complete surprise to the provost, the members of the graduating class and to many of the faculty. Dr. Smith had just completed conferring the honorary degrees, when Dr. William Pepper, dean of the medical school, announced that his colleagues of the faculty wished to confer the degree of Doctor of Medicine on Dr. Smith.

VIRGINIA

Hospital Sold.—The Hygeia Hospital, Richmond, owned and conducted by Dr. James Allison Hodges for nearly twenty years, has been sold to Dr. John R. Blair. The building is equipped as a general hospital with about forty rooms.

Smallpox.—During the first four months of the year, there were 1,821 cases of smallpox reported in the state with six deaths, as compared with 770 reported cases during the same period of 1919. In February, the disease reached its apex for the season, with 703 cases or nearly 600 more than for the corresponding month of 1919. Wise and Lee counties lead in the number of cases reported.

CANADA

Hospital News.—At present there are in Ontario 11,000 mentally deficient citizens and 8,000 nerve racked war veterans. There are only twenty-three institutions in that province where these patients can be cared for. Work at the new federal government institution near London, Ont., is being pushed rapidly to provide accommodation for them. Its capacity is expected to reach 8,000. It is being constructed on the lines of the Soldiers' Home at Dayton, Ohio.

Health News.—The Women's Labor Party, Hamilton, Ont., has requested that women be employed as inspectors under the department of health.——The federal government has apportioned the grant of $200,000 for the campaign against venereal diseases approximately as follows: Ontario, $57,000; Quebec, $47,000; Manitoba, $12,000; Nova Scotia, $10,000; New Brunswick, $7,000; Saskatchewan, $15,000; Alberta, $11,000; British Columbia, $14,000, and Prince Edward Island,

$1,900. The payments have been allotted on the basis of population.

Personal.—Dr. Delmar A. Craig, medical superintendent of the Byron Sanitarium, London, Ont., has been made medical consultant on the staff of the Massachusetts-Halifax Health Commission.——Miss Jessie L. Ross, for eight years engaged in public health work, president of the Public Health Nursing Association of Pennsylvania, has been appointed chief nurse of the Massachusetts-Halifax Health Commission, Halifax, N. S. She will reside in Health Center No. 1, being conducted in old Admiralty House, and in addition to directing the public health work from this center will give lectures on public health and tuberculosis nursing and coordinate the practical field service in the course for public health nurses, organized under the auspices of the Red Cross of Nova Scotia and Dalhousie University.

GENERAL

Association for the Study of Epilepsy.—The nineteenth annual meeting of the National Association for the Study of Epilepsy was held in Hosack Hall, New York Academy of Medicine, June 3, under the presidency of Dr. L. Pierce Clark, New York City. The following officers were elected: president, Dr. G. Kirby Collier, Sonyea, N. Y.; vice president, Dr. Joseph J. Williams, Woodstock, Ont., and secretary-treasurer, Dr. Arthur L. Shaw, Camden, N. Y. (reelected).

Bequests and Donations.—The following bequests and donations have recently been announced:

New Orleans Child Welfare Association a donation of $5,000 by Mrs. Alfred Parker, New York City, in memory of her father, Mr. Leon Fellman.

Charity Hospital, New Orleans, $37,806.82 for the restoration of the Miles Amphitheater, by the will of Miss Catherine Voss.

Charity Hospital, New Orleans, a bequest of $5,000 for the hospital and $1,000 for the ambulance fund, by the will of E. J. Bobet.

Dooley Hospital, Richmond, Va., a donation of $11,000, by Major James H. Dooley.

The University of Washington, Seattle, $100,000 to be used for research work in tuberculosis, by the will of Mrs. Frank McDermott, Seattle, Wash.

Grant Hospital, Chicago, $5,000, by the will of Harry Rubens, Chicago.

Coordination of Child Health Activities.—The American Child Hygiene Association, American Red Cross, Child Health Organization of America, National Child Labor Committee and National Organization for Public Health Nursing have held several conferences with a view to the correlation of efforts, and as a result the council for coordination of child health activities has been organized which will act as an advisory agency with the following objects: to define and develop so clearly their own work that each organization will be working in harmony and cooperation with all the others; to develop new methods which will lead to meeting more effectively some of the special problems still unsolved; and to afford an opportunity for any organization dealing with the health of children to submit its plan or program for suggestions.

LATIN AMERICA

Plague in Mexico.—Two cases of bubonic plague were reported in Vera Cruz, June 18. A suspected case has also been found in Mexico City.

Chile Joins Red Cross League.—The central committee of the Chilean Red Cross Society with heaquarters at Punta Arenas has joined the League of Red Cross Societies.

Aid Plague Sufferers.—The American Red Cross, Gulf Division, with headquarters at New Orleans, has volunteered its assistance to bubonic plague sufferers of Vera Cruz, Mexico, and has sent a supply of vaccines and rat traps on a special United States revenue cutter to United States Consul Foster at Vera Cruz.

Medical Societies Organized.—The León Medical Society has recently reorganized, with Dr. L. H. Debayle as president; Dr. F. Berrios, secretary, and Dr. Ecolástico Lara as treasurer. The *Gaceta médica de Nicaragua*, published at León, is the official organ of the society.——The physicians in Granada district of Nicaragua have also recently organized a medical society, with Dr. H. Pallais B. as the secretary.

FOREIGN

Sanitation in Palestine.—The American Zionist Unit, sent by the Zionist organization of America to make the Holy Land a safe place to live in, has taken up the question of malaria, and has practically driven the disease from the country. Hospitals and clinics have been established in Jerusalem, Jaffa, Tiberias and Safed.

Physicians Marooned in Asia Minor.—Among the medical missionaries marooned in the interior of Asia by hostile tribes are Dr. J. S. Stewart, at Mardin; Dr. Urse Little, at Diarbekr, and Drs. W. H. Bell and Marion Wilson, at Marash.

Red Cross Hospitals in Flanders.—A hospital with a dispensary and accommodation for thirty inpatients is being constructed at Roulers.——At Houthen, an extensive skin clinic has been organized with accommodation for fifty inpatients.——The Werwicq Hospital possesses the only operating theater in the region.——Dispensaries have been equipped in the town hall or school in fifty-three villages in the region.——Four maternity wards have been established: one at Roulers, one at Werwicq, a twelve-patient ward at Peperinghe, and a fully equipped maternity hospital at Ypres.

Rumanian Medical Research Bureau.—The Institutol Medice Legal at Bucharest was established as a morgue by the Rumanian government in 1894, but has undergone constant and careful development since that time and now in point of efficiency is a revelation to men from foreign countries. The institute handles on an average 2,500 bodies a year. The bodies as a rule are claimed by relatives or friends before the expiration of the twelve days, when interment is made at public expense. Students from the medical school attend classes of the institute on two afternoons of each week, and two rooms in the basement contain a complete equipment for necropsy.

Personal.—Dr. H. Violle has been appointed by the League of Red Cross Societies as medical liaison officer between the central committee of the French Red Cross, the League of Red Cross Societies and the French Ministry of Health.——Dr. Massimo Selmo, Rome, has been appointed chief of the department of malaria of the general medical department of the League of Red Cross Societies.——Col. Richard P. Strong, chief medical director of the League of Red Cross Societies, has been unanimously elected to honorary membership in the Serbian Medical Society as an expression of the profound admiration of his scientific achievements, and as a mark of appreciation for the great sympathy which he showed to the Serbian people.——To continue his research on occupational hygiene, Professor Hellpach of the chair of psychology at Karlsruhe has been given an award of 6,000 marks. The exact field he is investigating is the "psychophysics of industrial work" and the "social psychology of organized labor."

Deaths in Other Countries

The cable brings word of the death of Dr. **Gustav Zander**, Stockholm, aged 85, whose name is known the world over for his system of medicomechanic exercises and apparatus. He began his efforts to correct and prevent curvature of the spine by this means in 1857, and in 1865 founded his private institute for the Zander exercises and apparatus.——Dr. J. de **Freitas Pimentel** of the Azores islands.

Government Services

Health Conditions in the Army

During the week ending June 11, only two new cases of pneumonia were reported, both from Camp Taylor. Sixteen new cases of malaria were reported, eight from the Southern Department. There were sixteen new cases of measles, of which six were from Camp Meade and four from Camp Dodge. There was one new case of scarlet fever from Camp Meade and one from Fort Logan. Of ten deaths from disease, four were due to tuberculosis and one to pneumonia, a death rate of 3.1 per thousand as compared with 4.0 in the preceding week. Excellent health conditions continue among the American forces in Germany, no deaths being reported during the week.

MEDICAL OFFICERS, UNITED STATES NAVY, RELIEVED FROM ACTIVE DUTY

MICHIGAN

Benton Harbor—Ryno, C. M.
Grand Rapids—Whalen, J. M.

NEW YORK

Schenectady—Dewey, H. G.

PENNSYLVANIA

Philadelphia—Lewis, P. A.

RHODE ISLAND

Providence—Granger, F. W.

Foreign Letters

MEXICO CITY

(From Our Regular Correspondent)

June 2, 1920.

Plague Epidemic

The sanitary authorities of the port of Vera Cruz have reported recently the occurrence of several cases of suspected plague, and two in which the diagnosis was confirmed. The National Board of Public Health at once took the necessary measures; a well-equipped sanitary detachment was ordered immediately to Vera Cruz, having at its head Dr. O. González Fabela, who is an expert on this subject, having performed the same duty in 1902, when the plague imported from San Francisco invaded the city of Mazatlán. He was also the official delegate of Mexico at the International Plague Conference, held at Mukden several years ago. All land communication with Vera Cruz was immediately stopped, except for sanitary purposes, and all maritime traffic was placed in quarantine after the facts had been reported to foreign sanitary authorities, as required by international conventions. Immediate steps were taken to manufacture prophylactic vaccine, and a large quantity of antiplague serum was ordered from the United States. There were put in force without delay the accepted prophylactic measures, the effectiveness of which was recently demonstrated during the New Orleans outbreak (deratization, isolation, disinfection, etc.). So far, there have been eight cases reported, six of which were fatal. All these patients had the glandular type of the disease, no case having been observed so far of the pneumonic or septicemic type. The federal and local authorities will place at the disposal of the public health department all the funds required, and enforce strictly the necessary measures. As a gratifying sign of Pan-American solidarity, I must mention the fact that the American Consul at Vera Cruz offered, on behalf of the American government, the necessary assistance to combat the disease. His offer was accepted, as might be expected in view of the liberal policy of the new Mexican government.

Opium Smuggling

In a previous letter, mention was made of the fact that the National Board of Public Health had seized large quantities of opium, as traffic in it was considered unlawful, when not intended for medicinal purposes. It was reported afterward that the board intended to extract the alkaloids and use them in the hospitals. The owner of the opium did not agree to this, and taking advantage of the change of government requested that the drug should be returned to him. It was then found that the opium had been sold to some individual on condition that he should reexport it. The former owner has brought suit against Dr. Rodríguez, who claims in his defense that he followed the instructions of the government. The only thing certain about the matter is that this opium was shipped out of the country.

The Academy of Medicine

Among recent papers presented before the Scientific Research Association, mention may be made of one by Dr. F. Ocaranza, on Sixto's sign, in which there were copied several paragraphs from an article by the well known poet Rubén Darío entitled, "Don Juan's Inheritance," which shows that the poet was familiar with this sign of hereditary syphilis. Even more interesting was Dr. Perrín's address reporting the result of the investigation carried out last year in this city by Dr. S. B. Wolbach on the pathology and etiology of typhus fever. The Harvard pathologist thinks that the vascular and cutaneous lesions produced by this disease are identical to those caused by the European typhus fever. He also alleges that in the vascular lesions of the Mexican typhus fever he has found an organism morphologically like the germ of Rocky Mountain spotted fever, but different in its grouping and distribution. Wolbach and his co-worker J. L. Tood have proposed for the new parasite the name of *Dermacentorxenus typhi*, on account of its analogy with the spotted fever germ, *Dermacentorxenus rickettsi*. They consider only barely probable that their organism may be identical to *Rickettsia prowazeki*. An article on this subject was published by them in the *Annales de l'Institut Pasteur* (**34**, No. 3, 1920). Drs. J. J. Izquierdo and Santiago Ramírez have been admitted as members of the academy, the first one in the section on physiology and the second in the section on medicine. Dr. Izquierdo, who is the incumbent of the chair of physiology in the school of medicine, presented a paper on the volume of glucose in the blood, based on sixty personal cases, and Dr. Ramírez, who is the editor of *El Observador Médico*, took for his subject, "The Syphilitic Plea."

Personal

The most recent political events have brought about several changes in the official medical personnel. Dr. Gabriel Malda has become the president of the superior board of public health, and Dr. Alfonso Pruneda the secretary. Dr. Rosendo Amor has become a senator, having been replaced as dean of the school of medicine by Dr. Guillermo Parra. The presidency of the national university, which was abandoned by Lic. Macías, May 7, has been assumed in succession by Lic. Antonio Caso, director of the postgraduate school, Lic. Balbino Dávalos, and finally by Lic. José Vasconcelos, a former secretary of education, and who until recently lived in the United States. Dr. Darío López has become governor of the state of Mexico, and Dr. Castillo Nájera placed in charge of the army sanitary service. The Real Academia de la Historia, de Madrid, has made a correspondent member Dr. Manuel Mestre Chigliazza, former governor of the state of Tabasco and a well known writer. Dr. Tomás G. Pellicer, who recently was Mexican consul at Philadelphia, has returned to this city and opened his office.

PARIS

(From Our Regular Correspondent)

June 3, 1920.

Amenorrhea and Marriage

Should a young girl who has never menstruated marry? This question, often propounded to the practicing physician, invariably proves embarrassing, as brought out recently in an interesting study by Dr. A. Siredey, physician to Paris hospitals.

Although in the majority of cases amenorrhea is caused by functional disorders resulting from general conditions which do not constitute a real obstacle to marriage, this is not true when the suppression of the periods is due to genital malformations absolutely incompatible with the conjugal state. Sometimes hermaphrodism, or more correctly, a sexual defect, is at fault, the greater number of such subjects being in reality members of the male sex. Even though the condition is somewhat rare, it should be considered. Less uncommon anomalies are the following: complete absence of the uterus with rudimentary vagina from 2 to 3 cm. long, or even without vagina. Siredey lays particular stress on the fact that the characteristics of girls with such anomalies may be exceedingly feminine. Therefore a detailed examination should be made by determining the condition of the external genitals, by introducing a sound or uterometer into the vagina in order to determine its depth, by digital rectal exploration with the aid of a

sound in the bladder to make certain that no other organ is interposed between the bladder and the rectum.

One would be tempted to believe that such self-evident facts make the task of the physician easy; for when he has made known to the family the results of his examination the conclusions may be arrived at with sufficient clarity. However, far from meeting unhesitating acceptance, one is often obliged to combat the obstinate desire of the parents to marry off their daughter, even under such circumstances. In fact, it is absolutely necessary to prohibit the marriage of young girls who by reason of physical malformation are unfitted for conjugal life.

In well-formed young girls and women with normal organs, primary radical amenorrhea constitutes less of a real obstacle to marriage, since it does not exclude all hope of maternity, a factor which has been possible of determination. The amenorrhea following such acute diseases as typhoid fever, scarlatina and influenza is certainly compatible with marriage, as it yields to treatment in almost all cases. The amenorrhea of chronic diseases such as tuberculosis, malaria and cancer would not prove prohibitory if one considers only the physiologic side, for one sometimes sees under these unfortunate circumstances conceptions occur, almost invariably aggravating the condition of the mother who brings forth a stillbirth or a wretched being with little vitality, or one burdened with ineradicable defects. Such marriages are undesirable, and the physician should do everything to prevent or at least to postpone them until recovery has taken place. Transitory amenorrhea dependent on endocrine disorders, being serious only when it accompanies myxedema, Addison's disease and other diseases, does not constitute a contraindication except in these conditions. This can be discussed when rational treatment has led to a cure; there is always occasion to anticipate a relapse, and in reality, those with myxedema and Addison's disease have nothing to gain and very little to give in marriage. Young girls with so-called nervous amenorrhea showing thyroid instability, most often do not lose any of their aptitude for marriage. Encouragement of their designs and hopes sometimes suffices to improve their health and to cause disappearance of even the most inveterate troubles. Many of these girls may make splendid spouses and excellent mothers. In the case of those who have at the time dysmenorrhea and irregular menstruation with long periods of amenorrhea, if there are manifest signs of aplasia, it is preferable to do everything possible in order to put off the marriage. Their chances of maternity are very slight, their feeble constitution makes pregnancy very precarious. It should not be forgotten that very often these subjects are victims of congenital defects (syphilis, tuberculosis, etc.) which will be transmitted in a certain measure to their descendants.

Finally, Siredey calls the attention of physicians to the necessity of informing the relatives that in most cases of persistent or prolonged amenorrhea, marriage should not be decided on without apprising the fiancé or his family of the abnormal condition. The most elementary fairness demands this and it is the best means of diminishing the responsibility of the young lady and her parents. To avoid delicate explanations, the relatives are only too glad to entrust this duty to the physician. Siredey thinks that in order to maintain absolutely the principle of professional secrecy, the physician should refuse to make direct explanations to the fiancé or his family. It is sufficient to write to the parents of the young lady, summarily revealing the situation without going into details and giving the basic conclusions on the subject of marriage. The parents are free to communicate the letter to whomever they please. This method of procedure does not violate professional secrecy in the least and gives the desirable guarantees to the interested parties.

American Gift to the Société de Neurologie

At a recent meeting of the Société de Neurologie de Paris, the secretary-general read a letter from Dr. Hugh T. Patrick, Chicago, a foreign corresponding member of the society, in which the writer expressed his admiration for the work of French neurologists during the war and enclosed a check for 10,000 francs to help the society in continuing the publication of its transactions. The society unanimously voted its thanks to Dr. Patrick for his aid to the diffusion of its works, and expressed the hope that he, together with the new American members would attend the next annual Réunion neurologique at which collaboration could be established between neurologists of France and the United States. This reunion will be held July 9-10. Only one subject will be discussed: "The Clinical Forms and Treatment of Syphilis of the Nervous System." The titles of discussions and the names of those who anticipate being present should be communicated to the secretary-general, Dr. Henry Meige, 55 Rue de Grenelle, Paris.

Death of Pamard

Dr. Alfred Pamard of Avignon, a national associate of the Academy of Medicine since 1899, recently died at the age of 83. Dr. Pamard belonged to a long line of surgeons, perhaps unique in the history of France for it dates back to 1697, when Pierre Pamard established himself as physician and surgeon in Avignon and since which time the Pamard family has given Avignon many generations of surgeons and oculists.

LONDON

(From Our Regular Correspondent)

June 5, 1920.

Vital Statistics

The eighty-first annual report of the Registrar-General, for the year 1918, has just been issued. The estimated total civilian population of England and Wales is given as 13,777,100 civilian males and 19,697,600 females. The difference between the sexes is, of course, largely due to the number of men in the army during the war. The marriage rate was 15.3 per thousand, being 1.5 above the low rate in the preceding year (13.8) and 0.1 below the average in the last ten years, 1905-1914, which were unaffected by war conditions (15.4). The birth rate in 1918 was 17.7 per thousand, being the lowest on record. This rate was 0.1 per thousand below that recorded for 1917, and 6.1 below that for 1914, which, particularly, so far as the birth rate was concerned, might be regarded as the last year unaffected by war conditions. Even this large reduction, however, amounting in all to nearly 26 per cent. in 1918 as compared with 1914, is believed to compare very favorably with the experience of other belligerent countries. The provisional figures for 1919 indicate a recovery, showing an increase of 0.8 per thousand. The civilian death rate in 1918 was 17.6 per thousand, being 3.2 above the rate in the preceding year. The increased mortality was due to the epidemic of influenza. Apart from this, the year was one of extraordinary healthiness. The provisional figures for 1919 indicate a fall of about 3.8 per thousand, notwithstanding the continuance of the epidemic into the early part of the year. Infant mortality was 97 per thousand births, being 1 per thousand above the rate in the preceding year, but 10 per thousand below the average of the ten years 1908-1917. It is one of the four lowest rates hitherto recorded. As a result of the influenza epidemic, phthisis and pneumonia showed considerably increased mortality. On the other hand, decreased mortality was recorded for other forms of tuberculosis and diseases of the circulatory system. The remarkable increase in the deaths from tuberculosis in lunatic asylums, to which attention was drawn in

1917, continued in 1918. The deaths attributed to influenza in the year numbered 112,329, and throughout the epidemic 151,447, and the total mortality was estimated as close on 200,000. A table is given showing the annual average number of persons divorced during the last forty-two years. In the period 1876-1880, the total was 554; 1881-1885, 671; 1886-1890, 707; 1891-1895, 744; 1896-1900, 980; 1901-1905, 1,126; 1906-1910, 1,247; 1911, 1,160; 1912, 1,174; 1913, 1,154; 1914, 1,712; 1915, 1,360; 1916, 1,980; 1917, 1,406; 1918, 2,222. The increase in the latter years was no doubt largely due to the war.

The Crescograph

Sir J. C. Bose, the Indian scientist who has attained the distinction of F.R.S. for his experiments in plant life, has demonstrated at the Royal Society an instrument termed the crescograph which magnifies movements 2,000,000 times and demonstrates the growth of plants. Dr. A. D. Waller, F.R.S., the well known physiologist, who has for many years studied plant life, chiefly by electrical apparatus, holds that the effects shown by the crescograph are not vital but occur in dead tissues. At the Royal Society a discussion took place on the subject. By using an apparatus of his own which magnified only 1,000 times, Dr. Waller showed on a photographic plate the effect of electric stimulation on living plants, on plants killed by boiling, and on fiddle-strings. In the actual demonstration the so-called growth movements of Bose were shown with complete success on a fiddle-string, and with rather less success in the case of living and dead plants. In a somewhat animated discussion, the general feeling was that the crescograph was a valuable instrument, and, that, although Dr. Waller had shown by his own method the existence of responses to electrical stimulation in dead tissues closely similar to those which Sir J. C. Bose attributed to growth, he could not shake confidence in the Bose results unless he showed that the movements in fiddle-strings were also arrested by poisons and varied with other factors known to influence the rate of growth. Dr. Waller offered to leave his apparatus at the Royal Society, so that any fellows might themselves make experiments with it. He expressed the hope that Sir J. C. Bose would take a similar course. If that were done, it would be possible to make parallel experiments on the same materials with the two sets of apparatus, and so arrive at the only object of his criticism, the advancement of knowledge. Sir J. C. Bose, who had joined in the discussion, did not accept the suggestion.

Marriages

WILLIAM H. MONCRIEF, Col., M. C., U. S. Army, Washington, D. C., to Miss Ulah Lee Ensley of Covington, Ky, recently.

JAMES A. BETHEA, Major, M. C., U. S. Army, to Miss Margaret Hazel Bostrum of Philadelphia, June 2.

RUFE EDWIN ADAMS, Comanche, Texas, to Mrs. L. Gwyndoyln Williamson of San Antonio, Texas, June 2.

CLYDE SUMNER CULP of Salineville, Ohio, to Miss Helen McLean Thompson of Toronto, Ohio, May 5.

VICTORIA CALLA A. BERGSTROM, Chicago, to Mr. James Francis Hill of New York City, March 8.

WILLIAM CHARLES BRONS, Queens, N. Y., to Miss Mary E. Stanton of Little Falls, N. Y., May 20.

ANDREW ROY MACAUSLAND, Boston, to Miss Katherine Brayton of Fall River, Mass., June 2.

THOMAS WRAY GRAYSON, Pittsburgh, to Miss Mary E. Bard of Meadville, Pa., June 9.

JULIUS FRISCHER, Kansas City, Mo., to Miss Marion Frances Sickle of Chicago, recently.

JOHN BAKER CARSON to Miss Francis Tyson, both of Philadelphia, May 26.

Deaths

John Warren Little ⊕ Minneapolis; Jefferson Medical College, 1883; aged 60; president of the Minnesota State Medical Association in 1916; formerly professor of clinical surgery in the University of Minnesota; local surgeon to the Chicago and Great Western Railway; president and one of the founders of Hill Crest Hospital; surgeon to the Asbury and City hospitals; consulting surgeon to St. Mary's and Swedish hospitals; died, June 5.

Stephen Curtis Priest, Newark, Ohio; Eclectic Medical College of Pennsylvania, Philadelphia, 1869; Cincinnati College of Medicine and Surgery, 1877; aged 72; for thirty-three years medical examiner for the relief department of the Baltimore and Ohio system; once president of the Licking County Medical Society; for seven years major and surgeon, Ohio National Guard; died, May 31, from cerebral hemorrhage.

Edward Hervey Currier, Manchester, N. H.; Dartmouth Medical School, Hanover, N. H., 1881; aged 42; a member of the New Hampshire Medical Society and of the Association of Military Surgeons of the United States; chairman of the State Board of Medical Examiners for several years; physician to the Sacred Heart Hospital, Manchester; died, June 1.

Benjamin George Cool, Washington, D. C.; George Washington University, Washington, D. C., 1879; aged 65; a member of the Medical Society of the District of Columbia, and the Association of Military Surgeons of the United States; surgeon, Fourth Battalion, D. C., N. G., for twenty years; died at the home of his daughter in Washington, May 25.

Grover Cleveland Roberson, Hurricane, W. Va.; University of Louisville, Ky., 1909; aged 36; captain, M. C., U. S. Army, with service abroad, and discharged May 8, 1919; local surgeon for the Chesapeake and Ohio system; died, May 28, from injuries received by the overturning of his automobile while making a professional call.

William S. Harroun, Santa Fe, N. M.; Georgetown University, Washington, D. C., 1865; aged 83; physician to the United States Indian School of Santa Fe until 1917; assistant surgeon, U. S. Army, during the Civil War; at one time physician of Cook County, Ill.; died, about May 23.

Theodore Frelinghuysen Bliss, Springfield, Ohio; Geneva (N. Y.) Medical College, 1869; aged 77; formerly eye and ear surgeon to the Mitchell-Thomas Hospital, Springfield; died in Lansing, Mich., May 29, from cerebral hemorrhage.

Benjamin Addison Sawyer, Haverhill, Mass.; Harvard University Medical School, 1865; aged 77; assistant surgeon of the Fiftieth Massachusetts Volunteer Infantry during the Civil War; died, May 28, from heart disease.

Charles Jackson Pollard, Princeton, Ky.; Southwestern Homeopathic Medical College, Louisville, Ky., 1897; aged 46; a member of the Kentucky State Medical Association; died, May 26, from rheumatic endocarditis.

Frank Dean Patterson, Colorado Springs, Colo.; University of Michigan, Ann Arbor, 1893; aged 51; for several years physician in the United States Indian Service at Schurz, Nev.; died, April 10, from heart disease.

James Tipton Rice, Excelsior Springs, Mo.; University Medical College of Kansas City, Mo., 1889; aged 59; a member of the Missouri State Medical Association; died, April 6, from cerebral hemorrhage.

James Dewitt Clinton Hoit, Elmwood, Ill.; Missouri Medical College, St. Louis, 1885; aged 77; a member of the Illinois State Medical Society; for many years a practitioner of Chicago; died, May 24.

Robert Lee Loftin, Olney, Ill.; Indiana University, Indianapolis and Bloomington, 1919; aged 32; an intern in the Olney (Ill.) Sanitarium; died in that institution, April 23, from meningitis.

Edward Horace Spooner, Park Ridge, N. J.; New York Homeopathic Medical College, New York City, 1869; aged 81; a veteran of the Civil War; also a clergyman; died, May 30.

George W. Garner, Stamps, Ark.; University of Tennessee, Nashville, 1880; aged 77; a practitioner for fifty years; surgeon in the Confederate service during the Civil War; died, May 29.

⊕ Indicates "Fellow" of the American Medical Association.

Charles O. Brock, Jefferson, Ga.; Atlanta (Ga.) Medical College, 1880; aged 62; a member of the Medical Association of Georgia; died, May 29, from chronic nephritis.

John Strobel ⊕ Philadelphia; Jefferson Medical College, 1880; aged 61; visiting physician to the Northern Day Nursery; died, May 28, from carcinoma of the liver.

Benjamin D'Arcy, Mayville, Mich.; Detroit Medical College, 1870; aged 80; a member of the Michigan State Medical Society; died, May 2, from cerebral embolism.

Thomas D. Hall, Oakland, Calif.; California Eclectic Medical College, Los Angeles, 1886; aged 71; a practitioner of Oakland for forty-five years; died, May 30.

Horace S. Hutchins, Batavia, N. Y.; Homeopathic Medical College of the State of New York, New York, 1861; aged 91; died, May 28, from bronchopneumonia.

Walter S. Hatfield, Walnut Hill, Cincinnati; Hahnemann Medical College of Philadelphia, 1882; aged 66; died, May 25, from carcinoma of the transverse colon.

Emma B. Standley, Alexis, Ill.; Northwestern University Woman's Medical School, 1887; aged 61; died in Kansas City, Mo., March 21, from myocarditis.

William Baxter Threlkeld, Providence, Ky.; University of Nashville, Tenn., 1905; aged 41; died at the home of his brother in Clay County, Ky., May 19.

Henry Barnabas Hill ⊕ Logansport, Ind.; Rush Medical College, 1895; aged 53; a specialist on diseases of the eye, ear, nose and throat; died, May 24.

William E. Bell, Osceola, Mo.; Missouri Medical College, St. Louis, 1880; aged 72; died in Kirkwood, Mo., May 20, from carcinoma of the intestine.

Herbert William Wilson, Toronto, Ont.; Trinity Medical College, 1889; aged 58; for many years a practitioner of Tamworth, Ont., died, April 24.

Jesse R. Harrod, Little Rock, Ark. (license, Eclectic State Medical Board of Arkansas, 1903); aged 57; died, May 23, from cerebral hemorrhage.

Gilliford Brown Sweeney, Pittsburgh; College of Physicians and Surgeons, Baltimore, 1886; aged 58; died, May 16, from cerebral hemorrhage.

Joseph Lander Sanborn, North Amherst, Mass.; Atlanta (Ga.) Medical College, 1894; aged 53; died, May 17, from cerebral hemorrhage.

William H. Herrick, Cleveland, Ohio; Western Reserve University, Cleveland, 1866; aged 75; a veteran of the Civil War; died, May 28.

Horace Greeley Boynton, Columbus, Ohio; Starling Medical College, Columbus, Ohio, 1888; aged 60; died, May 22, from heart disease.

Allan Gordon Rice, Toronto, University of Toronto, Ont., 1908; aged 35; division surgeon to the Grand Trunk System; died recently.

George Phineas Haley, Boise, Idaho; Jefferson Medical College, 1879; aged 66; died, May 29, from carcinoma of the stomach.

Orlando P. Shoemaker, Covina, Calif.; Northwestern Medical College, St. Joseph, Mo., 1885; aged 60; died, about May 24.

William Backus Cook, Chicago; Bennett Medical College, Chicago, 1882; aged 69; died, May 19, from cirrhosis of the liver.

Charles Carson Messer ⊕ Turner's Falls, Mass.; Dartmouth Medical School, Hanover, N. H., 1880; aged 66; died, May 20.

Elmer Legrand Straub ⊕ Minersville, Pa.; Jefferson Medical College, 1890; aged 54; died suddenly, May 31.

Henry James Allen ⊕ Corinth, N. Y.; University of Vermont, Burlington, 1884; aged 66; died, May 6.

Milton Grant Conger, Cincinnati; Miami Medical College, Cincinnati, 1890; aged 50; died, May 18.

Ulysses Montgomery, Louisville, Ky.; University of Louisville, Ky., 1873; aged 72; died, March 30.

Alfred Mullhanpt ⊕ St. Mary's, Pa.; Jefferson Medical College, 1884; aged 60; died, May 26.

Fred Augustus Hall, Roslindale, Mass.; Boston University, 1899; aged 52; died, about May 12.

John Edward Noble, Fannin, Miss.; Jefferson Medical College, 1870; aged 72; died, May 23.

Joseph Paradis Lavorie, Quebec; Laval University, Quebec, 1877; aged 65; died, April 15.

Correspondence

THE WORLD'S FOOD SUPPLY

To the Editor:—A recent issue of THE JOURNAL (June 12, 1920, p. 1650) contains a quotation from Mason to the effect that "today there seems reason to believe that in the whole world there is not all the food which could be consumed by all the people," and "for the first time in history the world at large faces a universal food shortage." Permit me to suggest that statistical foundation for these statements is not available. The United States Food Administration and the American Relief Administration records, supplemented by those of The International Agricultural Institute and the data of the Allied and Associated Powers, indicate that at the close of the present crop year the world may face a new year without a carry-over in bread grains. The future of bread will depend on the new planting and the following yield. Outside of wheat and rye, the world possesses snpplies enough in hand and in prospect so that the population could be fed as in the past, if transportation and buying power were normal. Europe is eating less than normal; the rest of the world is eating more than normal, judged by prewar practice. If by a magic wand the transportation and exchanges of 1913 could be restored, the world would find the food in hand. The food supply would be less animal and more vegetarian, but it would be sufficient.

A. E. TAYLOR, M.D., Philadelphia.
Professor of Physiological Chemistry,
University of Pennsylvania.

"PRIORITY IN SUGGESTING TRANSILLUMINATION FOR FOREIGN BODIES"

To the Editor:—With regard to transillumination in locating foreign bodies, the question of priority in suggesting which was mentioned by Dr. Morris H. Kahn of New York (THE JOURNAL, May 29, 1920, p. 1536), I would remark that I used this method occasionally as early as 1900, both to detect foreign bodies and to note the shape of bones, though the rather surprising translucence of bones detracts considerably from the anticipated value of the method. The same remark applies to various foreign bodies. However, nothing is further from my intention than to claim personal priority for the method. The aborigines of Central America are reputed to have shaded areas with a mass of soft feathers where a foreign body was supposed to have lodged and to have inspected it against the sun's rays; and it is not unlikely that the method was used in some form by various peoples in prehistoric times. When our attention was first called to roentgen rays, I made a good many experiments with various methods of transillumination, by artificial light and sunlight, visually and by slow action on covered photographic plates, and doubtless many others did the same. In this connection, it may be of interest to note that my first attempts to locate the stomach with bismuth (and iron tablets which may be useful today for some purposes) were by roentgenography, but the experiments failed through lack of proper plates and unfamiliarity with the necessary technic. The first successful location of the stomach was by bismuth and the fluoroscope, early in July, 1897. Roux of Paris succeeded a few months before this time, but I was unaware of his work for several years afterward.

Transillumination should be more commonly practiced. Gastrodiaphany has properly fallen into disuse, as the results are vague and often misleading, and the roentgen rays or even auscultatory percussion give much more accurate infor-

mation. Transillumination as for hydrocele can often be applied to abdominal tumors and ascites, to give an idea of the consistency of the contents, some form of tube being employed to limit the field of vision. Too much dependence should not, however, be placed on the appearances. For foreign bodies, fractures, etc., especially in the hands and when the limbs are not too thick, transillumination with sunlight or a bright electric lamp, especially that of some form of projecting instrument, is often available when roentgenoscopic examination is not available. As stated, the bones are quite translucent and do not present the distinct shadows that might be expected. Still, a fracture or dislocation would be seen under favorable conditions. Foreign bodies, such as wood, which do not give a shadow with the roentgen rays, may be better seen by ordinary transillumination. Heavy cloth—for example, an old hat with a hole cut in it—may be used to obscure the light about the limb or part examined, and it may be necessary to reduce the illumination by gauze, by the aboriginal method of using feathers, or by some similar device, to secure a degree of transillumination at which the foreign body will show an opacity. Metallic substances will ordinarily give a distinct opacity, even including aluminum, and often the results are quite as decisive as with the roentgen rays. Wood, etc., may at times fail to give a recognizable shadow. It seems to me that the method should be taken up and carefully studied in its various details as a potentially valuable means of diagnosis and not merely as a rough-and-ready substitute for roentgen rays in an emergency.

A. L. BENEDICT, M.D., Buffalo.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TECHNIC OF SACHS-GEORGI REACTION

To the Editor:—Can you give me an outline of the technic of the Sachs-Georgi reaction?

J. C. L.

ANSWER.—The Sachs-Georgi reaction is a precipitation test for syphilis, based on the fact that the addition of cholesterinized organ extract to syphilitic serum will cause a flocculent precipitate.

A cholesterinized extract is prepared with alcoholic extract of beef heart, 100 c.c. (1 gm. of heart to 5 c.c. of alcohol); alcohol, 200 c.c., and 1 per cent. alcoholic solution of cholesterin, 13.5 c.c. At the moment of use, a quantity of the cholesterinized extract is gently agitated with an equal part of freshly prepared physiologic sodium chlorid solution (0.85 per cent.), after which four parts more of the sodium chlorid solution are rapidly added. It is very important that a 0.85 per cent. sodium chlorid solution be employed. Clear, fresh normal serum is obtained for control tests and is inactivated by heating at 55 C. for half an hour. The technic of the reaction is as follows:

To 1 c.c. of the patient's serum, diluted ten times with physiologic sodium chlorid solution, 0.5 c.c. of the dilute organ extract is added. These are mixed well and placed over a water bath at 37 C. for two hours, then kept at room temperature for from twenty to forty-eight hours, after which the results should be noted. The limit of forty-eight hours must not be exceeded as a false reaction may take place. Some serologists have obtained excellent results by centrifuging the tubes after incubation for three or four hours. A dissecting microscope makes an excellent substitute for the agglutinoscope in reading the results, for the inclined tubes may be placed on the black stage and examined for precipitates with the No. 8 lens. Parallel control reactions are run with the normal serum.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA: Montgomery, July 13. Chairman, Dr. S. W. Welch, Montgomery.
ARIZONA: Phoenix, July 6-7. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.
CALIFORNIA: San Francisco, June 28-July 1. Sec., Dr. Chas. B. Pinkham, 135 Stockton St., San Francisco.
COLORADO: Denver, July 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.
CONNECTICUT: Hartford, July 13-14. Sec., Regular Board, Dr. Robert L. Rowley, 49 Pearl St., Hartford.
CONNECTICUT: New Haven, July 13. Sec. Eclectic Board, Dr. James Edwin Hair, 730 State St., Bridgeport. Sec. Homeo. Board, Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.
DISTRICT OF COLUMBIA: Washington, July 13-15. Sec., Dr. Edgar P. Copeland, The Rockingham, Washington.
INDIANA: Indianapolis, July 13-15. Sec., Dr. Wm. T. Gott, Crawfordsville.
MAINE: Portland, July 6-7. Sec., Dr. Frank W. Searle, 140 Pine St., Portland.
MASSACHUSETTS: Boston, July 13-15. Sec., Dr. Walter P. Bowers, Room 144, State House, Boston.
NEW MEXICO: Santa Fe, July 12-13. Sec., Dr. R. E. McBride, Las Cruces.
NORTH DAKOTA: Grand Forks, July 6-9. Sec., Dr. Geo. M. Williamson, 860 Belmont Ave., Grand Forks.
OKLAHOMA: Oklahoma City, July 13-14. Sec., Dr. James M. Byrum, Mammoth Bldg., Shawnee.
OREGON: Portland, July 6. Sec., Dr. Urling C. Coe, 1208 Stevens Bldg., Portland.
PENNSYLVANIA: Philadelphia and Pittsburgh, July 6-10. Sec., Dr. Thos. E. Finnegan, State Capitol, Harrisburg.
RHODE ISLAND: Providence, July 1-2. Sec., Dr. Byron U. Richards, State House, Providence.
SOUTH DAKOTA: Deadwood, July 13. Sec., Dr. Park B. Jenkins, Wanbay.
UTAH: Salt Lake City, July 5-6. Sec., Dr. G. F. Harding, 405 Templeton Bldg., Salt Lake City.
VERMONT: Burlington, June 29-July 1. Sec., Dr. W. Scott Nay, Underhill.
WASHINGTON: Seattle, July 6-8. Sec., Dr. Wm. M. O'Shea, 305 Old National Bank Bldg., Spokane.
WEST VIRGINIA: Charleston, July 13. Sec., Dr. S. L. Jepson, Masonic Bldg., Charleston.
WISCONSIN: Milwaukee, June 29-July 1. Sec., Dr. John M. Dodd, 220 E. Second St., Ashland.

Iowa March Examination

Dr. Guilford H. Sumner, secretary, Iowa State Board of Medical Examiners, reports the written examination held at Iowa City, March 29-31, 1920. The examination covered 48 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 48 candidates examined, 47 passed and 1 failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Northwestern University	(1918)	82.7
University of Illinois	(1920)	84.9
State University of Iowa College of Medicine (1917) 92.1, (1920) 83.9, 84.7, 85, 85.4, 86.1, 86.5, 86.6, 86.9, 87, 87, 87.1, 87.1, 87.2, 87.4, 87.5, 87.5, 87.7, 87.9, 88, 88.1, 88.1, 88.1, 88.4, 88.6, 88.7, 88.9, 89.1, 89.2, 89.5, 89.5, 89.6, 89.6, 90.1, 90.4, 90.9, 90.9, 90.9, 91.4, 91.7, 91.7, 92.		
Medical-Chirurgical College of Kansas City	(1900)	82.1
John A. Creighton Medical College	(1919)	83.4
University of Nebraska College of Medicine	(1920)	85.6
FAILED		
Chicago College of Medicine and Surgery	(1918)	69.9

Rhode Island April Examination

Dr. Byron U. Richards, secretary of the Rhode Island State Board of Health, reports the written and practical examination held at Providence, April 1-2, 1920. The examination covered 7 subjects and included 70 questions. An average of 80 per cent. was required to pass. Of the 8 candidates examined, 6 passed and 2 failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
George Washington University	(1917)	86.4
Johns Hopkins University	(1916)	85.2
Tufts College Medical School (1917) 86.1,	(1919)	82.1
University and Bellevue Hospital Medical College	(1919)	91.9
Montreal School of Medicine and Surgery	(1901)	90.4
FAILED		
Eastern University School of Medicine	(1913)	77.1
Tufts College Medical School	(1917)	74.2

Book Notices

LABORATORY MANUAL OF PHARMACOLOGY INCLUDING MATERIA MEDICA, PHARMACOPAEDICS AND PHARMACODYNAMICS. By A. D. Bush, B.Sc., M.D., Professor of Pharmacology, University of North Dakota. Cloth. Price, $3.50 net. Pp. 251, with illustrations. Philadelphia: F. A. Davis Company, 1919.

This manual has been compiled with the object of better training medical students in the fundamentals of therapeutics and not for the development of specialists in pharmacology. Sections are included on pharmacology, materia medica, pharmacopedics and pharmacodynamics. The materia medica consists of testing the main properties of selected drugs from the pharmacopeia. The tests consist mainly of the appearance, odor, taste, solubility and the most important incompatibilities. Stress is laid on the unimportant differences between the obsolete word "pharmacopedics" and the word "pharmacy," though where greater accuracy of definition is attainable and more important, less care is used; for example, the statement is made that alcohol is obtained by the distillation of a fermented amylaceous substance, and two other alcohols are official: alcohol dehydratum and alcohol dilutum. Th section labeled pharmacopedics is what is called pharmacy in most texts. It includes the preparation of a representative of each U. S. P. preparation and the examination of shelf samples of all official (U. S. P.) preparations. No "reasons" or "whys" are given for the steps taken in the processes. This section closes with the compounding of ten prescriptions written in Latin. No instruction in prescription writing is given. The section on pharmacodynamics consists of the usual class experiments, with an attempt to connect the laboratory work with work in the hospital. This is an excellent suggestion, altogether too unavailable in most schools. The book closes with an outline of pharmacology based largely on Cushny's Pharmacology, and intended as an outline to guide the student in his studies. This part is well illustrated by diagrams. The student who satisfactorily works through the exercises given in this book should have an adequate knowledge of the foundations of therapeutics.

SWANZY'S HANDBOOK OF THE DISEASES OF THE EYE AND THEIR TREATMENT. Edited by Louis Werner, M.B., F.R.C.S.I., Surgeon to the Royal Victoria Eye and Ear Hospital. Twelfth edition. Cloth. Price, $6 net. Pp. 671, with illustrations. Philadelphia: P. Blakiston's Son & Co., 1919.

To one familiar with the first edition of this book, published about thirty years ago, it is difficult to realize that the present edition is from the same author. Virtually every chapter has been rewritten and revised, and additions have been made that keep it abreast of the most recent advances in the science of ophthalmology. The value of colored plates in treatises on ophthalmology is becoming more and more recognized, and the editor has made a selection that will be of the greatest help to the student in acquainting himself with the various pathologic fundus conditions. With painstaking care, many things are explained in detail which might seem superfluous to the practitioner, but will be received with gratitude by the student. One of the noteworthy additions in the present edition is the chapter on ocular diseases and symptoms likely to accompany focal disease of the brain, in which a summary is given of Gordon Holmes' investigations on the cortical center of vision. The book will without doubt receive the highest commendation of the profession.

APHASIA AND ASSOCIATED SPEECH PROBLEMS. By Michael Osnato, M.D., Associate in Neurology, Columbia University. Cloth. Price, $2.50 net. Pp. 190. New York: Paul B. Hoeber, 1920.

This small book gives a very readable account of aphasia and its associated problems. The author, in brief, abandons all the old ideas of cortical localization for speech. To him there is no such thing as sensory or motor aphasia—speech is the result of functioning of the entire brain. With this view most neurologists will not agree, for the many years of painstaking work on cortical localization cannot be thrown out, merely on theory; one must have some pathologic facts, which the author does not give. The book is well written, however, and the subject is adequately presented.

Medicolegal

Liability for Damages from Sale of Opiates

(Moberg v. Scott (S. D.), 175 N. W. R. 559)

The Supreme Court of South Dakota affirms a judgment in favor of the plaintiff, who recovered a verdict for $12,500 damages in this action to recover actual and exemplary damages occasioned by her loss of conjugal consortium, as it was termed, during a period of illness preceding the death of her husband, and for damages resulting from his death, which sickness and death were alleged to have been caused by the defendant's unlawfully, wilfully, maliciously and knowingly furnishing the husband with commodities of which opium was an ingredient. The court says that it deems it unnecessary to review the evidence. It was largely circumstantial in its nature, but, while there was much conflict therein, there was ample from which the jury was warranted in finding that the plaintiff's husband, for the last year or more of his life, was in a physical and mental condition unfitting him to give to his wife that aid, support, society and companionship to which she was entitled, and which she had theretofore enjoyed; that such condition and the death which followed were caused by the husband's use of a drug containing opium; and that such drug was wrongfully, unlawfully and knowingly furnished the husband by the defendant. Lay witnesses could testify as to their observations touching the health, general demeanor, etc., of the husband during the time of his alleged illness and prior thereto. Nor was there error in allowing proof that the defendant had no license as required by local ordinance, authorizing him to sell opium or drugs containing opium. Such evidence was competent, both because it negatived any right to sell even on a physician's prescription, and because it had a direct bearing on the good faith of the defendant, and therefore on the right of the plaintiff to recover exemplary damages. This court must presume that the jury found all the facts in favor of the plaintiff. If so, it must have found that the defendant had intentionally and wrongfully sold opium to the plaintiff's husband, knowing the character of the drug, and knowing that the husband was using it and being injuriously affected thereby. To so find was to find malice.

Cold and Fever Constitute a "Disease"

(Sovereign Camp of the Woodmen of the World v. Treanor (Texas), 217 S. W. R. 204)

The Court of Civil Appeals of Texas sets aside a judgment recovered by plaintiff Treanor and in its stead renders one for the defendant, in this action on an insurance certificate, because the case was apparently tried on a misapprehension of what was embraced within the term "disease." The court says that when the insured made his application for insurance he answered "No" to the question: "Have you ever consulted or been attended by a physician for any disease or injury during the past five years?" The medical examiner accepted that as correct, although he had himself not long before been called once to see the insured, who had what is designated in the case a "cold and fever." This was perhaps to be explained by the examiner's conception of the word "disease." But the word "disease" comprehends a cold and fever, as Webster defines the word "disease" as "a morbid condition of body; sickness," and gives the words "disorder" and "distemper" and "malady" as synonyms of the word "disease." The insured was sick enough to remain at home and to consult and to be attended by a physician. He was sick enough for his physician to prescribe medicine for him and to tell him to go to bed, and he had a cold and fever. It is clear to the court that his cold and fever was a disease comprehended by the plain and commonly understood meaning of the word "disease" contained in the question. The defendant had a right to ask all such questions, so that the medical examiner would be able to pass on the application to determine the risk or seek further information if

desirable. Neither the applicant nor the physician making the examination had the right to pass on what question to answer or the materiality thereof. Those questions were there for some purpose, and required a truthful answer. The word "disease" embraced the very ailments for which the physician treated the insured prior to his making the application.

Society Proceedings

COMING MEETINGS

Maine Medical Association, Augusta, June 29-30.
Montana State Medical Association, Helena, July 14-15.
Southern Minnesota Medical Assn., Fairmont, Minn., June 28-29.

AMERICAN SOCIETY FOR CLINICAL INVESTIGATION

Annual Meeting, held in Atlantic City, N. J., May 3, 1920

(Concluded from page 1738)

The Disappearance of Foreign Bodies from the Circulation, and the Formation of Antibodies

DRS. WARFIELD T. LONGCOPE and GEORGE M. MACKENZIE, New York: The observations included in this report are based on a study of fourteen patients with pneumococcus Type I pneumonia who were treated with antipneumococcus serum, and received in this way from 100 to 630 c.c. of horse serum intravenously. The curves of precipitin and precipitinogen (horse serum) in the circulation, and the relation of these curves to the onset, duration and termination of the serum disease are shown. The presence of precipitinogen in the circulation and the time when it disappeared were determined by specific precipitation, using an antihorse rabbit serum. Repeated efforts to demonstrate the excretion of horse serum in the urine were, without exception, negative. The appearance of precipitins and the length of time during which they persisted in the circulation were followed by titrations of the patient's serum against normal horse serum. Several of the patients, however, were lost to observation before the precipitins had disappeared. Fresh serum was used in all tests, the tubes being set up in most cases the same day that the blood was drawn. In a few of the tests the serum stood in the ice-box overnight before being used. After being set up, the tubes were placed in the water bath for one hour, when the final reading was made. The titrations in each case were made by using dilutions of the antigen and a constant amount of precipitating serum.

With one exception the fourteen patients fall into two distinct groups. In the first group there were eight patients. These were all characterized by (1) severe serum disease; (2) a high titer of precipitins in the circulation, which either first appeared or rose to the crest of the curve synchronous with the termination of the symptoms of serum disease; and (3) disappearance of the precipitinogen near the time that the symptoms were subsiding. The onset of the serum disease in this group varied from the third to the eleventh day after the first administration of serum; the duration varied from eleven to twenty-eight days. The horse serum disappeared during the period between the eighteenth and the thirty-eighth day. Precipitins made their first appearance between the sixth and the fifteenth day, and in four of the eight patients were still present when the patient was lost to observation—from thirty-eight to fifty-seven days after the first dose of serum. In the other four the precipitin reaction was first negative on the twenty-sixth, fifty-seventh, sixty-sixth and forty-first days, respectively. In the second group there were five patients. They were characterized by (1) very mild or complete absence of symptoms of serum disease; (2) inefficient precipitin formation or none at all, demonstrable in the serum, and (3) a persistent reaction for horse serum in the circulation. In four of the five patients the reaction for horse serum was still positive when the patients were lost to observation, the last test having been made on the forty-ninth, sixty-seventh, fifty-second and sixty-third days, respectively. In the other patient it was negative on the sixty-ninth day.

One patient out of the fourteen showed a marked serum disease of fourteen days' duration, precipitins of high titer and persistence of precipitinogen for seventy-six days. This patient was studied before we began testing the antihorse rabbit serum for traces of antigen, and it is possible that the apparent persistence of precipitinogen in the patient's serum was due to antigen in the rabbit serum, precipitated by the precipitins in the patient's serum.

The full significance of these interesting relations between serum disease, precipitin formation and disappearance or persistence of precipitinogen, which the results indicate, is not yet clear. But obviously, they suggest that those individuals who have mild serum disease or none at all, following administration of heterologous serum, possess something that acts like a protective mechanism and prevents or delays the union of antigen with the cells of the body, and thus limits or makes impossible the formation of precipitins. The results also indicate that when precipitins in high titer are produced, the precipitinogen disappears promptly, and that when there is little or no precipitin formation the precipitinogen persists.

Urea Excretion

DRS. J. HAROLD AUSTIN, EDGAR STILLMAN and DONALD D. VAN SLYKE, New York: In using the rate of urea excretion as an index of kidney capacity, there are certain factors besides the functional capacity of the kidneys which influence the urea excretion rate to such an extent that they must either be kept constant or be allowed for by calculation, before the excretion rate of urea can be taken as even an approximate measure of the functional capacity of the kidney. One of these factors is the concentration of urea in the blood. Contrary to the view of Ambard and in accordance with the observations of Marshall and Davis, we find in dog and in man that, other factors being constant, the rate of urea excretion is directly proportional to the concentration of urea in the blood, and not proportional to the square of the latter.

On the basis of our own observations on normal human subjects, and of those of McLean and Addis, we find that the ratio of urea excretion to blood urea concentration varies considerably in the normal subject. These variations cannot be explained by variations in the concentration of urea in the urine. A constant relation has, however, been observed between these variations and changes in the rate of urine volume output. The relationship that holds may be thus expressed:

$$\frac{D}{W} = K B \sqrt{\frac{V}{W}}$$

D, grams of urea excreted per diem, calculated from seventy-two minute period.
B, grams of urea per liter of blood.
V, liters of urine excreted per diem calculated from seventy-two minute period.
W, body weight in kilograms.

In all observations on normal human subjects as published in the data of McLean and Addis and in our own observations, the value of K is 7.5 ± 3.

The influence of increasing the rate of urine volume output on the rate of urea excretion holds, however, for all normal subjects studied only up to a certain limit, which we call the "augmentation limit," which appears to be characteristic for the individual, and which has in our experience been between the rates of 3 and 5 liters per diem. Beyond this "augmentation limit," the limit is to be used as V in the formula in place of the urine volume output observed.

For the calculation of the daily rate of urea or of urine volume excretion from urine collected during a short period of time, it has been found desirable in many instances, when the normal daily output of creatinin for the individual in question is known, to calculate the rate of excretion from the ratio of the creatinin contained in the sample of urine collected to the total daily excretion of creatinin for that individual.

Site of the Cardiac Lesion in Two Instances of Intraventricular Heart Block

DRS. B. S. OPPENHEIMER and H. E. B. PARDEE, New York: The hearts of two patients were examined in order to locate the site of the lesion associated with electrocardiograms suggesting partial block of either the right or the left branch of the auriculoventricular system. As the main deflections in the two sets of electrocardiograms were in opposite directions, it was to be expected that the lesions, if any, in the two instances, would be found on opposite sides of the heart. There has been considerable theoretical discussion as to which type of electrocardiogram is associated with right-sided and which with left-sided block. The first case showed electrocardiographically a main deflection inverted in Lead I, upright on Leads II and III, a marked widening of the foot-points of the Q. R. S. complex and only moderate voltage; in addition, there was auricular fibrillation. Microscopic examination of serial sections of the auriculoventricular system revealed that the right bundle branch became attenuated almost immediately after its origin from the main stem, and was surrounded by connective tissue. This diminution became more pronounced, until at a distance of 7.5 mm. from the bifurcation, scarcely one or two doubtful muscle fibers could be seen. Below this the right branch increased in size again, until at 4 cm. below the bifurcation it was of normal dimensions. There was marked fibrous myocarditis of the septum, involving chiefly the left side, especially the subendocardial region. The left branch presented no lesion. In the second case on two examinations at an interval of six weeks, electrocardiograms revealed that the main deflection was upright in Lead I and inverted in Leads II and III, and that it was notched, the foot-points being abnormally separated. Wave P was present throughout. Serial sections showed the auriculoventricular node, stem and right branch intact. The left bundle branch was embedded in dense fibrous tissue throughout its course, and at a distance of 3.5 cm. below its origin, its posterior (dorsal) half was replaced by connective tissue continuous with an adherent, organized mural thrombus. In addition, there was a general fibrous myocarditis, which predominated on the left side only.

The direct application of the published electrocardiograms associated with experimental bundle branch lesion in dogs to the interpretations of bundle branch block in man is rendered doubtful by certain anatomic peculiarities of the dog's heart and its relation to the thorax. In view, therefore, of the pathologic findings in these two human cases, it seems that the usually accepted electrocardiographic interpretation of right and left bundle branch block in man may possibly have to be revised.

Study of a Case of Low Carbon Dioxid Combining Power of the Blood

DRS. O. H. PERRY PEPPER and LEON JONAS, Philadelphia: A young man, aged 16, who entered the University Hospital complaining of shortness of breath and a feeling that his heart beat fast, four weeks before admission, while in good health but without previous training, had run for over an hour, "at least 5 miles." Three days later he became conscious of the beating of his heart. Still a week later he had an attack of dizziness and vomiting which lasted for two days. He asserted that he lost ten pounds in the last two weeks. He had not been well since the overexertion in running. His previous medical history was negative, nor was there anything of importance in the social and family history. The boy was a marked mouth breather; the breathing was very deep and the rate more rapid that normal, from 24 to 32 per minute. The hands and fingers were cyanosed, the blood pressure low and the tonsils enlarged. Repeated examinations of the heart by several examiners, by fluoroscopy and by electrocardiography revealed no alteration from the normal. The lungs, also, were normal. The Wassermann reaction and blood count were normal. Neurologic examination was negative. Because of the respiratory behavior, the laboratory was requested to determine whether or not an acidosis was present. Examinations revealed the blood carbon dioxid combining power to be 29 per cent. by volume, and persistently remained between this figure and 50 per cent. by volume. The urinary urea nitrogen and the titratable acidity were always within normal limits. This unexpected low figure could not be explained on a diabetic basis, as the blood sugar was 0.1 per cent. after starvation, and the urine was always free of sugar and ketones.

It was not felt that renal involvement was the cause, because frequent blood urea nitrogen determinations were always below 15 mg. per hundred c.c. The phenolsulphonephthalein elimination was constantly normal. Urinary analyses occasionally revealed a trace of albumin and a few casts; a marked polyuria occurred at times, although the urine could be easily concentrated to less than 500 c.c. per twenty-four hours and the specific gravity raised to 1.029.

In order to determine whether a hypersensitive respiratory center might not be the cause of the low carbon dioxid combining power through overventilation, the rebreathing of increasing amounts of carbon dioxid was resorted to, but with negative results. Under the influence of morphin the rate and depth of respiration were markedly reduced and the carbon dioxid combining power raised, only to relapse after the influence of the morphin had ceased. In view of these various investigations, the low carbon dioxid remains unexplained.

Studies in Sugar Tolerance

DR. W. R. OHLER, Boston: One hundred and fifteen glucose tolerance tests were made at the Boston City Hospital according to the technic of Janney and Isaacson. Of the entire group, a small group of eleven is here presented for discussion. All of these cases were referred to the diabetic clinic with a diagnosis of diabetes based on the finding of sugar in the urine, in amount varying from a trace to 1 per cent. One patient gave a history of diabetes in father and grandfather; three a history of thirst and polyuria; four had been told by family physicians that they had diabetes; one had been discharged from the army because of diabetes, and two were unaware of any metabolic disorder.

Tolerance tests were made because of the absence of hyperglycemia, and because glycosuria was not always present, even on an unrestricted diet. The results of the tolerance tests were as follows: 1. Glycosuria was present in nine of the eleven cases at the end of the two-hour period 2. One case gave a so-called typical diabetic curve. 3. Four cases gave curves that were not typical of diabetes but which were distinctly abnormal in that the readings went over 0.16 per cent. at the end of one hour and did not return to within two points of the fasting figure at the end of two hours. 4. Six cases, including the two that did not have glycosuria, gave curves very similar to the curve given by a normal adult.

Comment: 1: Are these cases to be considered true diabetes or so-called renal diabetes? The one patient showing a typical diabetic reaction undoubtedly had true diabetes, despite the fact that glycosuria is not always present on an unrestricted diet. The four cases presenting distinct abnormalities in the curve may represent a transitional stage in the development of the disease, the onset of which we know to be insidious. The six cases giving practically normal reactions, except for the presence of glycosuria in four of the group, may or may not be true diabetes. One case is presented in which a second tolerance test had been made after an interval of nine months on an unrestricted diet. The only striking difference between the two curves was a rise in the fasting blood sugar from 0.06 to 0.09. The answer to the foregoing question can be given only after a long period of observation. 2. There are probably many more such cases in existence than have been previously pointed out. Glucose tolerance studies in such cases add greatly to our knowledge of the diagnosis and development of the disease. 3. It is quite possible that some cases of diabetes which have shown remarkable progress as measured by glycosuria and hyperglycemia readings may belong to a group of the sort here presented. 4. Abnormal glucose tolerance curves are found in a variety of clinical conditions in which there has never been any question of diabetes. In drawing conclusions from glucose tolerance studies, one must be careful to eliminate other conditions that may influence the results.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

May, 1920, **19**, No. 5

*Scorbutic Beading of Ribs. A. F. Hess and L. J. Unger, New York. —p. 331.
Water Retention in Pneumonia. H. O. Lussky and H. Friedstein, Chicago.—p. 337.
*Prenatal Syphilis with a Plea for Its Study and Prevention. J. A. Kolmer, Philadelphia.—p. 344.
*Antineuritic and Growth Stimulating Properties of Orange Juice. A. H. Byfield, A. L. Daniels and R. Loughlin, Iowa City, Ia.—p. 349.
*Fluid Injections in Dehydrated Infants. S. McLean and C. A. Lang, New York.—p. 359.
*Length of Large and Small Intestine in Young Children. L. Robbin, New York.—p. 370.
*Treatment of Birth Fractures at Fordham Hospital. S. W. Boorstein, New York.—p. 375.
*Craniotabes and Beading of Ribs as Signs of Rachitis. H. Schwartz, New York.—p. 384.
Artificial Infant Feeding. M. Ostheimer, Philadelphia.—p. 386.
Subcutaneous Emphysema in an Infant Three Days Old. H. K. Faber, San Francisco.—p. 388.
Review of Literature of Past Five Years on Anaphylaxis and Related Phenomena. A. R. Cunningham, Boston.—p. 392.

Scorbutic Beading of Ribs.—According to Hess and Unger, beading of the ribs, the so-called rachitic rosary, should not be regarded as pathognomonic of rickets. It occurs very frequently in connection with infantile scurvy and is one of the typical signs of this disorder, developing in the course of the disease, and disappearing rapidly with the recession of the other symptoms when an antiscorbutic foodstuff is given. This is borne out by clinical observations on man and on animals, as well as by postmortem examinations.

Prenatal Syphilis.—Kolmer believes that it is proper to regard all children as syphilitic when born of parents one or both of whom react positively to the Wassermann test, even though both child and parents are clinically free of the disease, and even to institute specific treatment as a precautionary measure, and especially if such children are manifestly below par in weight and nutrition.

Growth Stimulating Properties of Orange Juice.—The results obtained by Byfield and his associates by the addition of orange juice to or omission from the diet of babies were uniform and constant. Under the conditions maintained, growth, as evidenced by the weight curves, was in all cases stimulated when orange juice was given. On the other hand, orange juice from which the antineuritic vitamin had been removed was without influence.

Fluid Injections in Dehydrated Infants.—The effects of introduction of fluids in the case of dehydrated infants were studied by McLean and Lang. Only infants showing signs of dehydration were given treatment. Seventy-six infants received 269 injections of fluid. Of these, 155 were hypodermoclyses; ninety-two were intraperitoneal injections, and twenty-two were sinus injections. The mortality among these seventy-six cases was 56.6 per cent. The amount of the clyses varied between 90 and 150 c.c., depending on the size and the condition of the child. The following solutions were used: 6 per cent. dextrose in physiologic sodium chlorid solution; 6 per cent. dextrose in distilled water; physiologic sodium chlorid solution; 2 per cent. sodium bicarbonate with 1 per cent. dextrose solution. Among the special effects were the following: The pulse is more frequently affected after sinus and intraperitoneal injections than after hypodermoclyses. The respiratory rate is more frequently affected in peritoneal injections than in sinus injections and hypodermoclyses. The temperature is more frequently elevated in sinus injections than in intraperitoneal injections or hyperdermoclyses. Weight gains are more frequently noted following intraperitoneal injections than after sinus injections or clyses. Certain infants show no improvement until after repeated injections. The shorter the interval between the onset of symptoms and the beginning of treatment, the greater the response.

Length of Intestine in Children.—The length of the large intestine in young children Robbin found was between 80 and 130 per cent. of the length of the body in 91.3 per cent. of 185 bodies of infants examined. The length of the small intestine was found to be between 500 and 900 per cent. of the length of the body in 79.9 per cent. of all cases. An unusually long large intestine was not accompanied by an unusually long small intestine; an unusually short large intestine was not accompanied by an unusually short small intestine. No association of an unusually short or long small or large intestine with the clinical condition could be established. That the anomaly of an unusually long large intestine might be a potential factor in the causation of chronic intestinal indigestion or chronic constipation of later life is worthy of consideration. The indications are that during early life the body grows somewhat more rapidly in length than does either the small or large intestine.

Treatment of Birth Fractures.—Six cases are cited by Boorstein. They show that the Thomas Jones splint can be used with safety in cases of birth fractures affecting the femur or the humerus. It allows easier transportation, permits cleansing of the children and saves a great deal of watching. It permits early massage. The deformity is easily controlled. The union probably occurs earlier on account of the ability of the infant to use the limb, to elevate it together with the brace.

Craniotabes and Beading of Ribs in Rachitis.—Among 4,944 children examined by Schwarz, 734 showed craniotabes some time during the first year, and 301 had evidences of these soft spots during the first months of life. This number decreased regularly as the infants grew older. Thirty-five per cent. of all the children presented beading of the ribs, 13 per cent. during the first month of life, and this proportion changed very little throughout infancy, perhaps becoming slightly less at an age when rachitis is more common. Schwarz is sure that nearly all infants, if examined regularly throughout the first year, will present this condition in a greater or less degree at some time or other in their infancy.

American Journal of Medical Sciences, Philadelphia

May, 1920, **159**, No. 5

Sir William Osler as a Man of Letters. C. W. Burr, Philadelphia, —p. 625.
Sir William Osler as Host to Americans in England During War. G. W. Norris, Philadelphia.—p. 630.
*Diagnostic Significance of Inspiratory Movements of Costal Margins. C. F. Hoover, Cleveland.—p. 633.
*Early Lesions in Gallbladder. W. C. MacCarty and J. R. Corkery, Rochester, Minn.—p. 646.
*Results of Operations for Chronic Appendicitis. Study of 555 Cases. C. L. Gibson, New York.—p. 654.
*Gastric Secretions in Neurocirculatory Asthenia. J. H. Musser, Philadelphia.—p. 664.
*Newer Conceptions of Pathogenesis and Treatment of Empyema. A. V. Moschcowitz, New York.—p. 669.
*Rheumatic Fever at Base Hospital No. 6, A. E. F., in Spring of 1918. P. D. White, Boston.—p. 702.
Prenatal Transmission of Syphilis. 1. Syphilis of Testicle. L. Herman and J. V. Klauder, Philadelphia.—p. 705.
Tuberculosis Problem and General Hospital. M. Taschman and B. Stivelman, New York.—p. 722.
*Fibrinuria in Case of Carcinoma of Kidney. V. J. O'Conor, Boston. —p. 729.
Anthrax from Shaving Brush and Primary Anthrax Meningitis. H. W. Carey, Troy, N. Y.—p. 742.

Inspiratory Movements of Costal Margins.—In interpreting the inspiratory movements of the costal margins, Hoover says, one must study the symmetry and asymmetry of not only the entire costal margins but of the inner and outer portions of each costal margin. Movements of the costal margins are modified with changes in the curve of the plane of the diaphragm, by paresis of either the diaphragm or the intercostal muscles, and by synechia between the diaphragm and the thoracic wall. Such studies improve the accuracy with which one differentiates between infraphrenic and supraphrenic disease, and enable one also to estimate the conformation of the heart and the size of the pericardial sac and to differentiate between lesions which cause phrenic displacement and those which do not modify the place of the diaphragm.

Pathology of Gallbladder.—The stimulation of greater interest and more detailed research in conditions of the bile

passages which have heretofore been mistaken for normal is the object of this paper, which is based on an examination of 4,998 gallbladders, of which 4,824, or 96.5 per cent., showed gross pathologic lesions.

Chronic Appendicitis and Continued Ill Health.—Gibson suggests that the presence of other undiscovered lesions may often account for continued ill health after appendectomy. Therefore, it is advisable to make a good sized incision, and, even if a frankly pathologic appendix is found, look for other possible lesions, and if no obviously pathologic appendix is found until every other possibility has been exhausted, making a supplementary incision, if necessary.

Gastric Secretion in Neurocirculatory Asthenia.—Musser has found that in patients suffering with neurocirculatory asthenia there is a very definite increase in the total acidity and the free hydrochloric acid as compared with controls. These figures do not represent abnormal hyperacidity. They do show, however, that almost uniformly soldiers suffering with neurocirculatory asthenia as contrasted with apparently normal soldiers, both eating the same food, under identical routine and under the same conditions of living, show a higher gastric acidity. This is a diagnostic point which may be of value in differentiating the disorder in questionable cases. It seems to add further evidence to that already accumulated that these soldiers are suffering from a neurosis with which is probably associated a hyperirritable vagus.

Pathogenesis of Empyema.—In Moschcowitz' opinion, empyema in most instances results from the rupture of a small subpleural pulmonary abscess. An empyema is the final stage of a process in which the first stage is a serous pleurisy and the second a seropurulent pleurisy. The latter is the so-called "formative" stage of an empyema. The "formative" stage is unaccompanied by pleural adhesions. The stage of final empyema is always accompanied by adhesions. The vast majority of empyemas are of the encapsulated variety. Very few occupy the entire pleural space. Metastatic suppurations accompanying empyema are to be found rather as complications of the causative pneumonia than of the empyema. Moschcowitz outlines in detail the treatment he employs at various stages.

Rheumatic Fever.—In a series of seventy-three soldiers with acute rheumatic fever, 51 per cent. gave a previous history of rheumatic fever and 40 per cent. showed large or ragged tonsils. The joints involved in order of frequency were knee, ankle, shoulder, wrist, foot, elbow, hand and hip. Acute pericarditis was found in 10 per cent. of the cases, usually very transient. Acute pleuritis was found in 19 per cent. There was evidence of mitral endocarditis in 40 per cent. of the cases; mitral and aortic endocarditis combined in 8 per cent. Most of these cases were apparently of long standing. Acute temporary heart block was discovered in 4 per cent. of the cases. Response to forced salicylate therapy was very striking. It seemed that the course of the disease was shortened by salicylates.

Fibrinuria in Kidney Carcinoma.—O'Conor reviews twenty-five cases recorded in the literature and adds one personal case. He claims that the fibrin found in the urine in these cases was not a product of the carcinoma itself, but a result of the associated renal dstruction. The pathologic condition underlying the etiology of this condition seems to be a nephritis of varying grade and severity.

Annals of Medical History, New York

September, 1919, **2**, No. 3

Ancient Poems on Infant Hygiene. J. Foote, Washington, D. C.—p. 213.
Walter Harris, A Seventeenth Century Pediatrist. J. Ruhräh, Baltimore.—p. 228.
New Observations in Paleopathology. R. L. Moodie, Chicago.—p. 241.
Jean Paul Marat; Physician, Revolutionist, Paranoiac. C. W. Burr, Philadelphia.—p. 248.
Appreciation of Henry Bence Joncs, J. Rosenbloom, Pittsburgh.—p. 262.
Finances of Felix Platter Professor of Medicine at Basle. C. G. Cumston, Geneva.—p. 265.
William Paul Crillon Barton, Surgeon U. S. Navy; Pioneer in American Naval Medicine. F. L. Pleadwell, Washington, D. C.—p. 267.

Boston Medical and Surgical Journal

June 3, 1920, **182**, No. 23

Clinical Importance of Anatomic Anomalies in Biliary Surgery. D. N. Eisendrath, Chicago.—p. 573.
Cesarean Section under Local Anesthesia Combined with Morphin and Scopolamin Narcosis. F. C. Irving, Boston.—p. 578.
Surgical Aspects of Syphilis. W. P. Coues, Boston.—p. 582.

June 10, 1920, **182**, No. 24

Control of Influenza. J. M. Taylor, Philadelphia.—p. 601.
*Differential Diagnosis of Diseases of Hip Joint in Children. A. T. Legg, Boston.—p. 602.
Dr. Jacques Belhomme—Prince of Profiteers. J. W. Courtney, Boston.—p. 606.
Psychical Research and Physician. J. D. Taylor, Boston.—p. 610.
*Perforation of Cecum. E. H. Risley, Boston.—p. 612.
*Congenital Cystic Kidney: Report of Case. H. Green, Boston.—p. 614.

Hip Joint Disease in Children.—The points on which Legg insists are: A more careful history should be obtained; a more complete physical examination should be made; a roentgenogram should be made in every case of suspected bone or joint disease, and every laboratory method should be used before making a positive diagnosis. He emphasizes the extreme importance of early differentiation whenever possible.

Perforation of Cecum.—An entirely sloughed-off gangrenous appendix, with a perforation of the cecum 1.75 cm. in diameter was found in Risley's case.

Congenital Cystic Kidney.—The records of the Children's Hospital, Boston, contain only three cases of congenital cystic kidney. Greens' patient was 2 years old. The child had spells of "getting blue," coming usually in the morning. He had them every day for a week, usually lasting fifteen minutes. The mother had also noticed a yellowish-white discharge on the diaper. The urine had been dirty white. Eyes had been puffed, but the mother had noticed that the body was swollen. The child died and at necropsy both kidneys were found lobulated and cystic.

Indiana State Medical Association Journal, Fort Wayne

May 15, 1920, **13**, No. 5

The Physician. "A Doctor of the Old School." E. B. Wynn, Indianapolis.—p. 151.
Influenza in Children. N. B. Powell, Marion.—p. 153.
Clinical Manifestations and Sequelae in Influenza. C. P. Emerson, Indianapolis.—p. 155.
Morbid Anatomy and Bacteriologic Findings in Epidemic Influenza. E. N. Kime, Indianapolis.—p. 157.
Chronic Uterine Infections. W. H. Baker, South Bend.—p. 166.
Neurocirculatory Asthenia. M. F. Porter, Jr., Fort Wayne.—p. 169.

Journal of Infectious Diseases, Chicago

May, 1920, **26**, No. 5

*Experimental Pneumococcus Meningitis in Rabbits and Dogs. G. Idzumi, Philadelphia.—p. 374.
*Biologic Studies of Diphtheria Bacillus. L. C. Havens, Iowa City, Iowa.—p. 388.
Bacillus Enteritidis Infection in Laboratory Rats. P. R. Cannon, Chicago.—p. 402.
*Green Producing Cocci of Influenza. R. Tunnicliff, Chicago.—p. 405.
Fermentation of Polysaccharids by Bacillus Aerogenes. R. L. Layhroun, Ames, Iowa.—p. 418.
Experiments on Immunization with Pseudo-Blackleg Pellets. T. P. Haslam and O. M. Franklin, Manhattan, Kan.—p. 424.
Differentiation of Paratyphoid-Enteritidis Group: VIII. Irregular and Variable Strains. E. O. Jordan, Chicago.—p. 427.
Limiting Hydrogen-ion Concentration of Various Types of Pneumococci. H. M. Jones, Chicago.—p. 434.
Sensitized and Nonsensitized Vaccines in Cholera Immunization. M. Takenouchi, Tokyo.—p. 441.
*Action of Leukocytic Extracts on Phagocytic Activity of Leukocytes. R. Tunnicliff, Chicago.—p. 447.
Acid Production by Streptococcus Viridans in Mediums of Different Hydrogen-ion Concentration. L. G. Grace and F. Highberger, Cleveland.—p. 451.
Variations in Hydrogen-ion Concentration in Uninoculated Culture Medium. L. G. Grace and F. Highberger, Cleveland.—p. 457.
*Immunity in Influenza. E. O. Jordan and W. B. Sharp, Chicago.—p. 463.

Experimental Pneumococcus Meningitis.—The experiments reported on by Idzumi show that pneumococcus cerebrospinal meningitis may be produced in rabbits by injecting virulent cultures directly into the subarachnoid of the spinal cord. The reaction is much less marked in dogs, and usually takes

the form, of hyperemia without well defined suppurative changes, owing to the high resistance of this animal to the pneumococcus. The intravenous injection of virulent pneumococci was not followed by the development of meningitis. The intravenous injection of these virulent pneumococci into rabbits, followed by spinal puncture and the subthecal injection of sterile broth and serum, was usually followed by the production of acute meningeal congestion and occasionally by suppurative leptomeningitis. In dogs there was invariably acute congestion with no evidence of suppurative changes. The subthecal injection of virulent pneumococci into the lumbar region of the spinal cord of rabbits is usually followed by the development of a fatal suppurative leptomeningitis accompanied by definite changes in the tissues and spinal fluid, fever, leukocytosis and clinical symptoms of meningitis, such as hyperthesia, opisthotonos and convulsions.

Studies on Diphtheria Bacillus.—By the use of the agglutination test two groups of the diphtheria bacillus have been determined. These groups are distinct, showing no evidence of cross agglutination. The members of the two groups show no differences in morphology or in relative virulence. Evidence is presented by Havens showing that the antitoxins of these groups are not so sharply differentiated as are the agglutinins. Group antitoxins seem to exist in small amounts common to both groups. Havens suggests that the effectiveness of therapeutic diphtheria antitoxin could probably be enhanced by the inclusion in its production of a member of the second or smaller group.

New Influenza Coccus.—Tunnicliff has isolated a peculiar green producing coccus from the edematous brain in influenzal bronchopneumonia, and generally in pure culture. In no instance was the Pfeiffer bacillus cultivated from the brain. The serum of rabbits immunized with strains of this coccus from influenza and its complications contained opsonins and agglutinins for other similar, bile insoluble influenzal cocci, and also for certain influenzal cocci, which were bile soluble and agglutinable by antipneumococcus serums. These results indicate that the green producing influenzal cocci form a group, the members of which are closely related immunologically. The results of absorption experiments with reference to agglutinins also suggest that this is a group of closely allied organisms. Immune rabbit serum treated with the homologous influenza coccus lost its agglutinins for the homologous coccus and for allied influenza cocci. Absorption with allied influenza organisms also removed the immune bodies for the homologous coccus as well as for the closely related cocci, but absorption with pneumococci of Types 1 and 2 not of influenzal origin, did not remove the agglutinin for the influenza cocci.

Effect of Leukocytic Extracts on Leukocytes.—The results of Tunnicliff's experiments show that the subcutaneous injection of leukocytic extract in rabbits produces an appreciable increase in the number of leukocytes in the circulating blood lasting from one to four days. The leukocytes set free by the extract possess considerably more phagocytic power than normal leukocytes. While the intravenous injection of leukocytic extract produces a more rapid rise in the number and activity of the leukocytes, the duration is shorter than that produced by subcutaneous injection. Leukocytic extract appears to exert no influence on the leukopenia produced by benzene.

Immunity in Influenza.—The results reported by Jordan and Sharp indicate that no marked immunity exists from twelve to fifteen months after a previous attack. They do not show that some degree of immunity may not obtain at an earlier period.

New Orleans Medical and Surgical Journal

May, 1920, **72**, No. 11

Pollens in Their Relation to Hay Fever. W. Scheppegrell, New Orleans.—p. 618.
Clinical and Anatomic-Pathologic Aspects of American Trypanosomiasis. C. Chagas, Rio de Janeiro, Brazil.—p. 630.
Speech Disorders and Corrective Work. S. Spyker, New Orleans.—p. 660.
Difficulties of Speech and Acquired Deafness. S. B. Powers, New Orleans.—p. 667.

New York Medical Journal

June 5, 1920, **111**, No. 23

*Radium Treatment of Nonmalignant Uterine Bleeding. W. P. Graves, Boston.—p. 969.
*Endocrine Therapy of High Blood Pressure. S. W. Bandler, New York.—p. 972.
Experiences in Obstetrics. G. L. Brodhead, New York.—p. 974.
Relation of Appendicitis to Intrapelvic Disease in Women. F. C. Hammond, Philadelphia.—p. 978.
*Pregnancy in Advanced Carcinoma of Cervix. G. E. Shoemaker, Philadelphia.—p. 981.
Preservation of Procreative Function in Women. F. W. Langstroth, New York.—p. 982.
Case of Uterus and Both Ovaries in Indirect Inguinal Hernia Sac. N. A. Ludington, New Haven, Conn.—p. 986.
Technic of Vaginal Palpation of Ureter and Ureterotomy . A. M. Judd, Brooklyn.—p. 986.
Bloodless Removal of Vulvovaginal Glands. D. H. Stewart, New York.—p. 991.
Uterine Hemorrhage. J. T. Schell, Philadelphia.—p. 992.
Care of Patient During Puerperal Period. R. McPherson, New York.—p. 994.
Chlorcosane in Gonorrheal Vaginitis in Children. C. Wachs and C. Mazer, Philadelphia.—p. 997.

June 12, 1920, **111**, No. 24

Lethal Dose of Radium in Malignancy. R. H. Boggs, Pittsburgh.—p. 1013.
Standardization of Operations for Internal Hemorrhoids. L. J. Hirschman, Detroit.—p. 1017.
Sodium Carbonates. W. H. Porter, New York.—p. 1019.
Physiology of Carbonated Brine Baths. N. P. Norman, New York.—p. 1022.
Dental Hygienist as a Factor in Dental Progress. A. H. Stevenson, New York.—p. 1024.
Physician and Social Hygiene Problem. W. Bierman, New York.—p. 1027.
Importance of Fundus Examinations as Clinical Evidence of General Disease. S. Morse, New York.—p. 1034.
Tuberculosis Complement Deviation Test. B. Stivelman, Bedford Hills, N. Y.—p. 1037.
Treatment of Patients with Slight Cardiac Failure. H. E. B. Pardee, New York.—p. 1048.

Radium Treatment of Uterine Hemorrhage.—Certain disagreeable sequels from intra-uterine radiation are reported by Graves. Though mentioned by several writers they have received minor attention or have been lost sight of in the reports of brilliant end results. Some of these symptoms are significant chiefly from the psychologic influence which they may exert on the patient, but even these may be of considerable import to the patient's general welfare. The symptoms are nausea, continuation or reappearance of the bleeding, for the cure of which the operation was undertaken, leukorrhea, pain, acute nephritis and nervous symptoms. Graves warns those who have not yet used radium in the treatment of nonmalignant uterine hemorrhage that the immediate convalescence from a given treatment is by no means always a bed of roses. Radium is a powerful and dangerous agent, and in certain cases, not always recognizable. Its use is attended with the gravest risks. The possibilities of radium for harm have not been sufficiently exploited in the literature, and it is the duty of those who are using it to spread the propaganda of caution, in view of the general and, perhaps, indiscriminate distribution which radium is inevitably soon to enjoy.

Endocrine Therapy.—To illustrate the action of thyroid in its protective rôle over the renal epithelium, two cases are reported by Bandler. Observation and therapy have convinced him also that the pituitary, particularly the posterior lobe, plays the most important rôle in fibromyomata of the uterus.

Pregnancy in Advanced Cancer of Cervix.—Shoemaker's patient was 47 years of age, para VII, who was brought in by ambulance when actually in labor, with a history of pulmonary tuberculosis and asthma of long standing. There had been no early symptoms of pregnancy. For six months there had been irregular uterine hemorrhage and increasing abdominal enlargement, with loss of weight. Within two days the hemorrhage had been extreme, requiring packing by her physician. There were labor-like pains, chills, temperature of 102 F., pulse 124, leukocytosis 28,000, rising to 32,000. Apparently the membranes had ruptured within twenty-four hours. The diagnosis was pregnancy with dead child; epithelioma of cervix. A craniotomy was done, the body of the child delivered and the uterus packed. At the end of three

weeks, the patient was out of bed, eating a full diet, with no soreness or pain, very slight vaginal discharge, no bleeding. As radical operation for removal of the disease is out of the question, the future treatment will be palliation with radium.

Philippine Journal of Science, Manila

January, 1920, **16**, No. 1

Intestinal Animal Parasites Found in One Hundred Sick Filipino Children. F. Haughwout and FéS. Horrilleno.—p. 1.
Trypanosome Associated with Fatal Disease in Carabao. F. G. Haughwout and S. Youngberg.—p. 77.
Remote Manifestations of Focal Dental Infections, with Case Reports. B. Fernandez.—p. 89.
Case of Human Synophthalmia. S. De Los Angeles and A. Villegas. —p. 99.

Surgery, Gynecology and Obstetrics, Chicago

May, 1920, **30**, No. 5

*General Method of Repairing Loss of Bony Substance and of Reconstructing Bones by Osteoperiosteal Grafts Taken from Tibia. H. Delangenière, Le Mans, France, and P. Lewin, Chicago.—p. 441.
*Operative Treatment of Vesicovaginal Fistula. E. S. Judd, Rochester, Minn.—p. 447.
*Congenital Anomaly of Duodenum; Surgical Significance. L. Freeman, Denver.—p. 454.
Endo-Aneurysmorrhaphy. R. Matas, New Orleans.—p. 456.
Treatment of Duodenal Fistula. S. McGuire, Richmond.—p. 460.
Some Abdominal Complications of Influenza. A. McGlannan, Baltimore.—p. 462.
Repair of Peripheral Nerve Injuries. G. C. Huber, Ann Arbor.—p. 464.
Clinical Signs of Nerve Injury and Regeneration. L. J. Pollock, Chicago.—p. 472.
Cervical Ribs: Cases and Bibliography. J. A. Honeij, New Haven. —p. 481.
Brachial Birth Palsy and Injuries of Similar Type in Adults. A. S. Taylor, New York.—p. 494.
*Recurrent Vesical Calculi Associated with Calculus in Diverticulum and Contracture of Vesical Orifice. E. G. Davis, Omaha.—p. 503.
Latent Stage and Period of Reinfection in Mastoiditis Due to Streptococcus Mucosus Capsulatus. F. Whiting, New York.—p. 506.
*Syphilis and Pregnancy. W. J. Young, Louisville.—p. 508.
Fractures of Patella, Os Calcis and Olecranon Treated by Fischer's Apparatus. D. Foldes, Cleveland.—p. 510.
*Indications for Cholecystectomy and a Method of Performing It. J. L. Yates, Milwaukee.—p. 514.
Cases of Arthroplasty of Temporomaxillary Joint and of Elbow Joint. A. A. Kerr, Salt Lake City.—p. 518.
Rubber Band Catheter Retainer. B. H. Caples, New York.—p. 521.
Open Reduction Operations of Fractures of Long Bones with Two New Bone Clamps. J. S. Wight, Brooklyn.—p. 522.
Apparatus for Implantation of Radium Emanation Points. R. M. Lewis, Balimore.—p. 528.

Osteoperiosteal Transplants.—This report is based on 273 observations of osteoperiosteal grafts, and covers the use of the method under normal and abnormal conditions.

Vesicovaginal Fistula.—According to Judd all vesicovaginal fistulas should be considered operable as long as the sphincter muscle of the bladder is intact or can be repaired. If the sphincter has been completely destroyed it will be necessary to consider some other procedure. Suprapubic extraperitoneal operations seem to be indicated if the cystoscopic examination reveals injury to a ureter as well as to the bladder, or it may be indicated if the fistulous tract is adherent to the pubic bone. The plastic vaginal operation consists in completely separating the bladder from the vagina, and closing the two separately and obliterating all dead space. A large percentage of complete and permanent cures follow such operations.

Congenital Occlusion of Duodenum.—Freeman has operated in six cases of partial occlusion of the duodenum at the duodenojejunal angle, simulating pyloric obstruction, which occasionally occurs from the persistence of a condition normally existing in fetal life. In this, the duodenum, instead of appearing in the abdominal cavity from beneath the transverse mesocolon to the left of the spine, as it should, emerges to the right, its transverse and ascending portions possessing a peritoneal covering and mesentery of their own, similarly to the rest of the small intestine, instead of being fixed in fibrous tissue, as is normally the case. At the duodenojejunal angle, however, the bowel is hung up to the root of the colonic mesentery by a firm adhesion (duodenal fold of fetal life), the "kink" thus produced being intestified by the downward pull of the free duodenal loop. This kink is deeply situated and in freeing it care must be taken not to injure the bowel, the inferior mesenteric vein or the left colic artery. A considerable denudation of the gut may be necessary, which should be covered either by reuniting the peritoneum or by means of a free omental graft.

Recurrent Bladder Calculi and Diverticulum.—The case reported by Davis is of unusual interest, in that the recurrent vesical calculi were associated with a residual urine due to a contracture of the vesical orifice, and in that it was definitely shown that the recurrent vesical calculi formed in turn on a spicule projecting into the bladder from a calculus contained in a diverticulum.

Syphilis and Pregnancy.—A routine Wassermann test made by Young on twenty-five pregnant women was positive in about 25 per cent.; of these 18.7 per cent. were either 3 plus or 4 plus.

Cholecystectomy.—Yates describes a submucous separation of the gallbladder and cystic duct from the serosa and subserosa largely by blunt dissection.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Bulletin of Naval Medical Association of Japan, Tokyo

April, 1920, No. 28

*Case of Sudden Death from Syphilitic Lesion of Heart. E. Nakajima and J. Ishiguro.—p. 1.
*Case of Hirschsprung's Disease in Old Age. J. Ueda.—p. 2.

Death from Syphilis of Heart.—A man, aged 24, fainted with symptoms of angina pectoris, and died suddenly, while undergoing strenuous muscular exercise, three years after contracting syphilis. At the postmortem two gummas were found in his heart, one situated in the auricular septum, and the other in the aortic orifice and its connecting part with the ventricular septum. The latter pressing on the left coronary artery caused the formation of cicatrical tissue in the posterior wall of the left ventricle near the apex and among posterior papillary muscles. The cause of the sudden death was presumed to be extravasation in the gummas, resulting from muscular strain and followed by total compression of the left coronary artery.

Hirschsprung's Disease in Aged.—Ueda's patient was aged 61. He had suffered from Hirschsprung's disease since the age of 57.

Edinburgh Medical Journal

April, 1920, **24**, No. 4

Scurvy in North Russia. J. D. Comrie.—p. 207.
Causes of Persistence of Puerperal Septicemia Since End of Pre-Antiseptic Times. D. Berry Hart.—p. 216.
Provisional Point Scale for Blind. W. B. Drummond.—p. 232.
Perforated Gastric and Duodenal Ulcer; Ninety Cases. J. W. Struthers.—p. 248.
*Effects of Tuberculin in Lupus Vulgaris. R. Aitken.—p. 251.
Bacterial Types. W. R. Logan.—p. 257.

Tuberculin in Lupus Vulgaris.—Koch's tuberculin was used by Aitken with good results in eleven cases.

Glasgow Medical Journal

April, 1920, **11**, No. 4

Work of Ophthalmic Department of 3rd Scottish General Hospital, Glasgow, from May 27, 1915, to Feb. 1, 1919. A. M. Ramsay and J. H. McIlroy.—p. 145.
*Case of Diffuse Symmetrical Scleroderma. J. Henderson.—p. 160.
"Concentrating" and "Centrifugal" Vibrations. E. F. Cyriax.—p. 165.

Diffuse Symmetrical Scleroderma.—The mode of onset of Henderson's case with muscular and articular pains, is quite in accord with classical descriptions of the disease. The deformities produced in the hands, as the disease progressed, strongly resembled those of rheumatoid arthritis. The steadily progressive character under observation was very striking, despite nourishing diet, tonics, and abundant lubrication of the skin. The very remarkable degree of emaciation reached before death is of itself almost unique. Some idea of the extreme degree of emaciation may be derived from the following measurements taken a few days before death: neck, 9 inches; chest, 24 inches; waist, 18 inches; hips (around), 26 inches; upper and forearm (maximum),

4½ inches; thighs (maximum), 8 inches; calves (maximum), 6 inches. The patient weighed 54 pounds. The mode of death by intercurrent complication is usual, but the exact nature of the pulmonary condition was rendered doubtful by the scarcity of physical signs, the absence of spit, and the scanty degree of febrile reaction. No lesion was found to shed any light on the cause of such a marked condition.

Indian Medical Gazette, Calcutta

April, 1920, **55**, No. 4

*Result of Trials of Sodium Hydnocarpate and Sodium Morrhuate in Thirteen Indian Leper Asylums. E. Muir.—p. 121.
Case of "Hypospadias Perinealis." S. Chelliah.—p. 123.
Case of Hernia (Inguinal) of Bladder. Y. V. Chabukswar.—p. 124.
*Treatment of Leprosy. L. Rogers.—p. 125.
*Gynocardate and Morrhuate Treatment of Leprosy Based on Forty Cases Treated in Kashmir State Leper Hospital. E. F. Neve.—p. 128.
*Sodium Morrhuate in Tuberculosis. P. Ganguli.—p. 131.
Cases of Leprosy in Bangkok, Treated with Sodium Gynocardate "A." M. Cathew.—p. 134.
Stone in Scrotum. B. R. Gohl.—p. 138.
Two Cases of Cerebrospinal Meningitis due to Diplococcus Intracellularis, Treated with Intrathecal Injections of Antimeningococcic Serum in Field Ambulance in Mesopotamia. J. C. John.—p. 139.
After-Treatment of Leprosy. E. Muir.—p. 139.

Sodium Hydnocarpate and Sodium Morrhuate in Leprosy.—The results obtained from the use of sodium hydnocarpate, and sodium morrhuate in the treatment of 300 cases of leprosy are analyzed by Muir. These cases were of the anesthetic, mixed and nodular types, 179, 81 and 40 cases, respectively. The dosage of both drugs varied from ½ c.c. to 5 c.c. of a 3 per cent. solution, beginning with the smaller dose and gradually increasing to the larger. Injections of hydnocarpate were chiefly given intravenously and the morrhuate was given hypodermically or intramuscularly, and in some cases intravenously. Of the patients treated with hydnocarpate, there was improvement in 132, and much improvement in fifty-eight. In several cases the lesions disappeared entirely. With sodium morrhuate no patients were recorded as being worse, 33 were not improved, 48 were slightly improved, and 36 were much improved. Thus 71 per cent. showed some measure of improvement, of which 31 per cent. showed much improvement. The opinion is that the best results are obtained in anesthetic cases with sodium hydnocarpate, but that the veins soon become blocked, and that sodium morrhuate has then to be resorted to as it can be given hypodermically and intramuscularly. In nodular leprosy sodium morrhuate does not appear to be in any respect behind sodium hydnocarpate, and it has the advantage that it may be injected in small doses into the nodules where it acts locally on the bacilli, causing first a swelling of the nodule infiltrated and thereafter a shrinking and softening, while the local lymphatics become temporarily red and swollen.

Morrhuate in Leprosy and Tuberculosis.—Rogers has recently been giving an ethyl ester morrhuate in both leprosy and tuberculosis by the subcutaneous method with very little trouble to the patient and apparently distinctly favorable results, although much further experience will be necessary before the exact value of the new preparation can be decided.

Gynocardate and Morrhuate in Leprosy.—Neve's investigation shows that on an average treatment of six months about half the patients appear to derive benefit from the gynocardate and morrhuate treatment. Those not definitely improved appear to remain stationary. Only about 10 per cent. show fresh manifestations of disease while under treatment, some of which have been due to the freeing of toxins by overaction of the drug. Laryngeal and ocular leprosy require great caution in the exhibition of these remedies.

Sodium Morrhuate in Tuberculosis.—Ganguli is thoroughly convinced of the value of sodium morrhuate treatment in pulmonary tuberculosis. It was noted that in cases where intravenous injections were given, the results were far more satisfactory than those obtained by the subcutaneous method. Rogers' directions were strictly followed, beginning with ½ c.c. of a 3 per cent. solution, gradually increased by ¼ c.c. once or twice a week up to 2 c.c. after which doses were increased by ½ c.c. weekly till the maximum of 4 c.c. had been reached. Besides bacteriolytic action as shown first by beading and then disappearance of the tubercle bacillus from the sputum, there is some fibrolytic action marked in cases where sodium morrhuate has been tried.

Journal of State Medicine, London

April, 1920, **28**, No. 4

Public Health Administration in Belgium. R. Sand.—p. 97.
Infection and Predisposition in Tuberculosis. S. Delépine.—p. 107.

Journal of Tropical Medicine and Hygiene, London

March 15, 1920, **23**, No. 6

Four Cases of Bilbarzia Disease Treated by Tartar Emetic. F. G. Cawston.—p. 69.
Case of Bronchospirochetosis (Castellani's) Bronchitis. I. Iacona.—p. 70.

April 1, 1920, **23**, No. 7

Larvae-Destroying Action of Small Fish in Malay Archipelago. N. H. Swellengrebel and J. M. H. Swellengrebel-de-Graaf.—p. 77.

April 15, 1920, **23**, No. 8

Some Soudanese Diphtheroids. A. J. Chalmers and N. MacDonald.—p. 85.

May 1, 1920, **23**, No. 9

Higher Fungi in Relation to Human Pathology. A. Castellani.—p. 101.
*New Vehicle for Emetin Bismuthous Iodid. T. J. G. Mayer.—p. 110.

Mutton Fat as Vehicle for Emetin Bismuthous Iodid.—The problem of finding a vehicle for this drug which would pass through the stomach unchanged and be digested by the intestinal juices, was solved by Mayer by rubbing up the drug with sixteen parts of mutton fat, molding the mass into rounded pills of about 7 grams each in weight, and covering each with a layer of melted mutton fat applied with a paint brush. These pills pass through the stomach unchanged. The fat is solid at body temperature, is not digested until it is too far from the pyloric orifice to be regurgitated and cause vomiting or even nausea. That the drug is altered by the intestinal juices is shown by the discoloration of the feces and the cure of the dysentery in a case in which these pills were used.

Quarterly Journal of Medicine, Oxford

April, 1920, **13**, No. 51

*Segmental Hyperalgesia in Visceral Lesions. D. W. C. Jones.—p. 241.
*Anaphylaxis in Treatment of Hemophilia. H. W. C. Vines.—p. 257.
*Fat Metabolism in Health and Disease with Special Reference to Infancy and Childhood. H. S. Hutchison.—p. 277.
Mechanism of Postoperative Massive Collapse of Lungs. J. C. Briscoe.—p. 293.

Segmental Analgesia in Visceral Lesions.—Inflammation of any viscus induces a state of hyperalgesia in the skin supplied by the same segments of the spinal cord as the viscus. If this is true, it follows that if the nerve supply of the viscera is known, it is possible to diagnose inflammation in any viscus by demonstrating hyperalgesia in the corresponding area of the skin. The area of distribution which Jones mapped out for each segment is described in detail. The number of persons examined for the data in this paper was 1,040, of which 120 were normal men, used as controls. But many of the patients were suffering from more than one disorder, as for instance trench fever and bronchitis, or dysentery or endocarditis, so that more lesions than patients were examined. The results obtained show that segmental hyperalgesia is not universally present in visceral disease. In cases of very acute illness, although symptoms may be marked, hyperalgesia is often not demonstrable, probably because the attention cannot be concentrated. In the most favorable circumstances, segmental hyperalgesia will not be found in more than three cases out of four, and it will rarely be found in any case of very acute illness. Segmental hyperalgesia in the diagnosis of visceral lesions has considerable value in positive cases but is not infallible, and its negative value is negligible.

Anaphylaxis in Treatment of Hemophilia.—The intradermal reaction is a modified form of anaphylactic shock of general as well as of local significance, and in which the stimulation of the thrombogenetic functions of the somatic cells is a salient feature. The changes in coagulability of

the blood in anaphylactic shock occur in two stages: a period of acceleration which occurs early, followed by a period of retardation; further, that the predominance of the former or the latter depends on the lesser or greater severity of the shock. The intoxicating injection in a sensitized individual may act as a catalytic agent in inducing the intracellular reactions which constitute the anaphylactic phenomena. In cases of hemophilia, Vines says, the duration of the effect of the intradermal reaction is dependent on the duration of the anaphylactic period. But the shorter or longer duration of this effect is also directly dependent on the greater or lesser severity of the hemophilic condition.

Fat Metabolism in Marasmus.—Observations made on the digestion and absorption of fats in cases of marasmus or infantile atrophy are reported by Hutchison. They show that the digestion of fats in infantile atrophy, rickets, and tetany is carried out as efficiently as in healthy children. There is a slightly greater loss of fat in infantile atrophy, due to the motions being larger than in healthy children, but the excessive loss, which amounts to 0.88 gm. per day, cannot be neglected so far as nutrition is concerned. There is no true deficient absorption. In rickets, the excess loss of fat per day over that in healthy children averages 0.6 gm., an amount which is quite sufficient to affect nutrition. In tetany, the excess loss is 2.4 gm. per day. This is due chiefly to the passage of larger motions than normal, viz. 14.4 gm. compared with 9.9 gm., and to a less extent to a true deficient absorption, since the fat in the feces averages 38 per cent. This loss is sufficient to affect nutrition. Other facts point to a normal fat absorption in atrophy, viz. the increased amount of fat absorbed with an increased intake, and the fact that improvement frequently follows the lowering of the fat content of the milk. Saponification of fats in the intestine does not affect the absorption of fats. The fairly constant percentage of fat in the feces of man and other animals suggest that fecal fat has a function to perform, and that it is not a pure excretion. There is no evidence, however, to indicate what this function is.

Annales de Médecine, Paris

January, 1920, **7**, No. 1

Pathologic Anatomy of Lethargic Encephalitis; Four Cases. P. Marie and C. Trétiakoff.—p. 1.
*The Arterial Tension in Chronic Pulmonary Tuberculosis. A. B. Marfan and J. B. Van Nieuwenhuyse.—p. 16.
*The War as Factor in Pulmonary Tuberculosis. L. Bernard, C. Mantoux and P. Jacquet.—p. 37.
*Rectocolitis of Uremic Origin. R. Bensaude and others.—p. 41.
*Bronchopulmonary Spirochetosis. M. Salomon.—p. 53.

The Blood Pressure in Tuberculosis.—The results of the research reported indicate that when the systolic, the maximal, arterial tension is normal, or even slightly above normal, in chronic pulmonary tuberculosis, the trend of the disease is toward recovery, or at worst the course is very slow. With a low systolic pressure, a favorable course is the exception. The minimal or diastolic pressure does not vary much from normal. The arterial tension cannot be estimated by a single examination; several readings are required, the tests made all under the same conditions.

The War and Pulmonary Tuberculosis.—Bernard and his co-workers analyze conditions in 872 cases of pulmonary tuberculosis in soldiers some of whom had been on active service at the front for nearly the entire war. They could not have stood the strain of the campaign for so long if they had not been sound to begin with, and the disease got a foothold in them as the direct consequence of the war conditions at the front. These vigorous men were "wounded" by the tubercle bacillus just as surely as their mates were wounded by the enemies' projectiles.

Hemorrhagic Rectocolitis of Uremic Origin.—Bensaude, Cain and Antoine refer to dysenteriform enteritis in the course of acute and chronic uremia. In a case reported, with the microscopic findings, the woman's mental confusion, the dysenteriform stools with red blood and the intense albuminuria and terminal coma were explained by the pronounced atrophy of both kidneys and adenomatous condition of the suprarenals. Nearly all the organs showed congestion and hemorrhages, most pronounced in the lower bowel—all evidently of toxic origin. In a second case, hypertrophy of the prostate had induced retention, distention of the bladder and nephritis, the consecutive uremia causing intestinal hemorrhages, but there was no ulceration; the lesions in the intestines were exclusively mechanical, and they were found throughout the entire digestive tract from stomach to anus. Instead of ascribing the blood in the stools to hemorrhoids, the rectoscope will reveal the toxic injury of the intestine.

Bronchopulmonary Spirochetosis.—Salomon gives a critical review of the literature on this subject since Castellani's first report in 1904. The disease has been reported from most parts of the tropics, from Missouri, Ohio, Switzerland, Italy, and in 1918 was noted in France. The spirochetes in the sputum can be readily seen with the dark field, and the disease is highly contagious. The diagnosis is based usually on the discordance between the profuse and protracted, blood stained expectoration and the relative mildness of the auscultation findings. No fatal pure case has been recorded as yet; the subacute cases keep up usually for two months, and the chronic for years. Isolation is indispensable not only to protect others but to protect the patient against superposed infection which is liable to be particularly injurious. In treatment of the chronic form, general hygiene and fresh air, arsenic and other tonics are useful, supplemented by some form of arsphenamin by the vein, especially in the fetid and gangrenous cases. Intratracheal injections or inhalations of balsamics might be tried as also intramuscular injections of iodipin as recently recommended by Najib Farah.

Paris Médical, Paris

April 17, 1920, **10**, No. 16

*Amblyopia from Carbon Disulphid Poisoning. F. Terrien.—p. 317.
*Pulsation at the Arch of the Aorta. Babes and Dumitresco.—p. 321.
*Fistulization of the Trachea. G. Rosenthal.—p. 325.
Case of Pulmonary Mycosis. Jourdran—p. 326.
Open Plaster Jacket. L. Thyss-Monod and G. Monod.—p. 328.

Amblyopia from Poisoning with Carbon Disulphid.—The two men were employed in making commercial mustard plasters, the mustard being spread on a base of a solution of rubber and carbon disulphid. After doing this work through the hot weather in a poorly ventilated workroom, both developed bilateral central scotoma with considerable restriction of the visual field, the clinical picture of alcohol or tobacco retrobulbar axial neuritis. The scotoma was more extensive than with alcohol or tobacco poisoning, and objects were seen as through a veil. The poisoning may induce general symptoms, besides, vomiting, colics and nervous disturbances, dizziness and delirium, and sensations of chilliness and of electric currents, especially in the arms, tremor and even paralysis. In the cases on record, recovery ensued in 33 per cent. and improvement in 25 per cent. In the two cases reported here, there has been no improvement in the impaired sight during the three months to date. Intoxication occurs by inhaling the vapor. Treatment may include strychnin and weak doses of iodids, diaphoresis, steam baths and infusions of jaborandi. Ample ventilation of the workrooms is imperative.

Pulsation in the Aorta Above the Sternum.—Babes and Dumitresco refer to pulsation in the aorta when the finger is worked down between the two sternocleidomastoid muscles where they join the sternum. The pulse beat is vertical and strong, and in 500 persons examined they found this pulsation not only with dilatation of the aorta but also whenever the heart was pushed up toward this region by hypertrophy of the left ventricle or by pressure in the chest or abdomen from pericarditis with effusion, ascites, abdominal tumor or great enlargement of the liver.

Induced Fistulization of the Trachea.—Rosenthal comments on our inconsistency as we do not hesitate to do tracheotomy at once when an acute throat trouble threatens suffocation, but we seldom think of doing this when the throat disease is slowly progressive although the ultimate outcome is the same suffocation in both. With tuberculosis of the larynx, he advises an early small opening into the trachea, a mere fistula, with a miniature tracheotomy tube. He introduces first a curved needle, only 6 or 7 mm. in diameter, in the

cricothyroid space. The curving of the needle prevents injury of the posterior wall of the larynx, and it permits local medication. He follows this with the tracheotomy tube; the diameter of the tube is child's size for an adult, although the outside portion is standard adult size.

Presse Médicale, Paris

May 1, 1920, **28**, No. 27

The Fundamental Laws for Bone Grafting in Treatment of Pseudarthrosis. F. A. Albee (New York).—p. 261.
*The Saliva in Diabetes. F. Rathery and L. Binet.—p. 263.
*The Blood Pressure and the Gallop Sound. A. Amblard.—p. 263.
*Plurality of Spirochetes of Syphilis. P. Pagniez.—p. 266.

The Saliva in Diabetes.—Rathery and Binet present evidence that the salivary glands are involved in the production of diabetes; sugar may be eliminated in the saliva as well as or in the place of its elimination in the urine. They noted elimination of glucose under pilocarpin in the saliva of a dog, after pancreatectomy, that had 3 gm. of glucose per liter of blood. Ferrannini has reported the case of a man of 70 with grave diabetes but no sugar in the urine. There was a constant flow of saliva, to a total of several liters a day, and it contained from 1 to 2.5 per cent. glucose. On an antidiabetic diet the secretion of saliva returned to normal and the sugar disappeared from it. Pellegrino has also published a case in which glycosuria alternated with sialorrhea, with much sugar in the saliva.

The Gallop Sound.—The midsystolic and the presystolic gallop sounds, with their different mechanisms and origins, both indicate that the heart is weakening. They appear as the blood pressure rises and disappear as the maximal pressure drops. With the midsystolic gallop sound, phosphorus, strychnin or spartein should be pushed to tide the myocardium along until it has regained strength. The high blood pressure is not permanent. The presystolic gallop sound is heard with permanently high blood pressure, and this has to be combated with venesection, diuretics, purges, and dieting, and the weak heart must be sustained with digitalis and absolute repose. Digitalis is required whenever the ear or the hand detects a tendency to the presystolic gallop after a test exertion.

Plurality of Syphilis Spirochetes.—Pagniez reviews recent research by Levaditi and others which is rendering more and more plausible the assumption that the spirochetes which induce cutaneous syphilitic manifestations, the dermotropic, are a different strain from those which induce general paresis. Animals inoculated with the one can develop a new primary chancre when inoculated with the other. The dermotropic strain after passage through rabbits continues to be pathogenic for monkeys, while the neurotropic loses its virulence for monkeys after a single passage through a rabbit. The neurotropic virus was applied to a scarification on the arm of a man who volunteered for the purpose, but there have been no local or general symptoms during the months since, while the dermotropic virus got into a scratch on the hand of one of the workers and induced a typical chancre with positive Wassermann reaction. A rabbit that had recovered from a dermotropic chancre was inoculated in one testicle with the dermotropic and in the other with the neurotropic virus; the latter alone developed a chancre. Virus from persons with general paresis behaves quite differently from the virus from skin lesions. A number of instances are cited in which persons infected from the same source all developed general paresis in the course of time. In the experiments in animals, the dermotropic incubation period was about six weeks; with the neurotropic, four months, and the lesions presented quite a different aspect.

May 5, 1920, **28**, No. 28

*Pylorospasm. F. Ramond.—p. 273.
Sclerosis in Patches from Shell Concussion. Ducamp and Milhaud.—p. 275.
Apparatus for General Anesthesia with Ethyl Chlorid. H. Abrand.—p. 276.

Pylorospasm.—Ramond remarks that aerophagia may simulate pylorospasm but the tape measure will show that the distention with this is real, while it is only subjective with true pylorospasm. With the latter a little of the bismuth suspension always passes at once through the pylorus before it has a chance to contract. The cylindrical shadow in this upper part of the duodenum is separated from the shadow cast by the stomach by a nearly horizontal open band in which there is no shadow.

Revue Neurologique, Paris

January, 1920, **27**, No. 1

Cerebral Paraplegia. P. Marie and C. Foix.—p. 1.
Early Reflex Contracture. S. Davidenkof.—p. 9.
Senile Skin in Child. P. Haushalter.—p. 15.
*Electric Tests of Skin Sensibility. V. Neri.—p. 19.
Constitutional and Periodical Alternations of Excitement and Depression. R. Benon.—p. 30.

Electric Tests of Sensibility of the Skin.—Neri remarks that although electric tests of the sensibility of the skin are not particularly instructive in normal conditions, in pathologic conditions they reveal characteristic changes of great importance for the diagnosis and progress of the case. He prefers the unipolar Erb electrode; this reveals the differences between the two halves of the body, the sensation just below the sensation of pain, in examining organs and individual nerves, in connection with the conductibility of the nerve. Several illustrations are given showing the more important points. In conclusion he emphasizes the possible medicolegal importance of the findings, confirming or refuting the subjective claims. With central lesions he always found complete parallelism between the afferent tracts and the sensitive organs.

Schweizerische medizinische Wochenschrift, Basel

April 22, 1920, **50**, No. 17

Auto-Urine Reaction in the Tuberculous. W. Lanz.—p. 321.
Apparatus for Measuring and Exercising Pronation and Supination of the Hand. F. v. Mandach.—p. 333.
*Ascaris as Cause of Pulmonary Disease. G. Steiner.—p. 334.

Ascaris as Cause of Pulmonary Disease.—Steiner comments on the importance of the statements in Ransom's recent article with this title in THE JOURNAL **73**:1210, 1919.

Pediatria, Naples

May, 1920, **28**, No. 9

*After Osteosynthesis. A. Curcio.—p. 401.
Bulbar Paralysis in Children. F. Amenta.—p. 408.
Relations Between Pulse and Viscosity of Blood. Nizzoli.—p. 419.

After-Treatment of Fractures.—Curcio emphasizes the necessity for utilizing the traction of the muscles in the healing of fractures, so that this will promote instead of interfering with regeneration of the part and restoration of function. He insists that perfect anatomic reconstruction is mainly the result and not the cause of perfect recovery of function.

Policlinico, Rome

March 29, 1920, **27**, No. 13

*Present Status of Vagotonia. P. Alessandrini.—p. 379.
*Eruptive Disease. D. Falcioni.—p. 385.

Vagotonia and Sympathicotonia.—Alessandrini admits that the assumption of vagotonia as opposed to sympathicotonia as the explanation of visceral neuroses has much promoted the study of neuroses. But his experience with drug tests in 100 persons has confirmed the general view that the subject is not so simple. No two of his subjects responded alike, some of the organs showing greater susceptibility than others, and the findings testifying to dissociation; some reacted alike to both epinephrin and pilocarpin; others did not respond to either. Each organ has its isolated balance, independent of all the other analogous systems in the organism. Clinical distinctions based on vagotonia and sympathicotonia are artificial.

Eruptive Disease with Rheumatoid Symptoms.—Falcioni has encountered a number of cases of an acute disease which commenced with rheumatoid pains, stomach derangement and rising temperature, and at the fourth or fifth day an intense eruption of a maculopapulous type but no pruritus; the temperature may reach 40 C., but declines as the eruption appears. The whole course of the disease is about two weeks,

and it is not contagious. Women form the main contingent, and there is always a history of overexertion or exposure. The eruption differs from those of the usual contagious eruptive diseases although there is some resemblance to the incipient stage of smallpox. In two of his cases typhus was diagnosed at first, but there was not the sudden onset of typhus nor the tendency to hemorrhage, and the nervous system did not seem to be involved in any of his cases.

Riforma Medica, Naples

April 3, 1920, **36**, No. 14

*Diathermy and Stomach Functioning. G. Setzu.—p. 342.
Arteriovenous Aneurysm in Internal Carotid. De Raffele.—p. 345.
*Injections of Milk in Venereal Disease. M. Trossarrello.—p. 350.

Influence of Diathermy on Stomach Functioning.—Setzu found that thermopenetration applied to the stomach had a constant and uniform stimulating and regulating action on both motor and secretory functioning and on the relief of pain, far beyond what can be realized with heat from without. The temperature of the stomach was raised by about 2 degrees C.

Protein Therapy in Gonococcus Infection.—Trossarello has been giving parenteral injections of milk in treatment of forty-five cases of gonococcus infection and in fifteen cases of venereal bubo. In the apyretic there is an interval of two or three hours before the chill follows the injection, and this allows ambulatory treatment as the patients are able to reach home before it. No benefit was apparent in the cases of urethritis, prostatitis, epididymitis and arthritis, but in ovarian and tubal disease marked benefit was realized. All were improved, some after a single injection. His results in these twenty cases of adnexitis surpassed, he says, those obtained with specific vaccines or antiserums; the pain subsided promptly even before any objective improvement was apparent. The outcome in his fifteen cases of venereal adenitis justifies the tentative application of the simple and easy treatment to abort the lesion. He injected into the buttocks 5 or 10 c.c. of ordinary milk, at intervals of three or four days, to a total of five injections. The febrile reaction seems to be the main factor; the best results were noted in the patients that presented the strongest reactions.

Rivista Critica di Clinica Medica, Florence

Feb. 25, 1920, **21**, No. 6

*Chemotherapy in Rabies. A. Martiri.—p. 61. Conc'n.

March 5, 1920, **21**, No. 7

Echinococcus Cysts in Liver. F. Schupfer.—p. 73. Cont'n.
Scrap of Shell in Myocardium. A. Carlesi.—p. 79.

Chemotherapy of Rabies.—Martiri has been experimenting with drugs known to act on protozoa, and states that quinin and its derivatives seem to neutralize rabies virus in vitro but no action was apparent in the living body.

Brazil-Medico, Rio de Janeiro

March 20, 1920, **34**, No. 12

*Gastric Pains. Rocha Vaz.—p. 183.
*Retromalar Foreign Body. Renato Machado.—p. 185.
*Dysenteroid Syndrome with Inherited Syphilis. Calixto de Medeiros.—p. 189.
Ergographic Findings with Fatigued Muscles under Esmarch Bandage. M. Ozorio de Almeida.—p. 190.

March 27, 1920, **34**, No. 13

Eruptions. F. Terra.—p. 199.
Leishmaniosis in São Paulo. Romeu da Silveira.—p. 200.
Action of Collargol on Micro-Organisms in Human Conjunctiva. H. Xavier.—p. 206.
Acute Fatal Diverticulitis. O. Clark.—p. 207.

Pain in the Stomach.—In this third instalment of his study of gastric pains, Rocha Vaz reviews the conflicting theories that have been advanced to explain hunger pain. His own view is that hunger pain is merely an exaggeration of the normal sensation of hunger; in his own cases of duodenal ulcer, the hunger pain occurred constantly only when the ulcer was close to the pylorus, and the stomach and the bowel below were intact. Necropsy showed ulcers in the second part of the duodenum in two cases in which there had not been the slightest symptoms from the stomach. The hunger pain with duodenal ulcer usually merges into the pain after eating and finally into the clinical picture of stenosis of the pylorus.

Access to Foreign Body Behind the Malar Bone.—Renato Machado gives an illustrated description of the removal by way of the vestibule of the mouth of a scrap of shell close to the lower margin of the orbit, behind the malar bone.

Dysenteroid Symptoms with Inherited Syphilis.—De Medeiros' two cases warn that when the symptoms of dysentery persist unmodified by the usual measures, the possibility of syphilis should be borne in mind. One patient was a girl of 2, the other a woman of 32. The latter had had the rebellious diarrhea for three years, the stools sometimes containing blood, with no benefit from persevering antidysentery treatment of all kinds. Improvement began at once from the first mercurial injection. The symptoms had been noted for fifteen months in the infant who had become extremely debilitated and apathetic, with ten or twenty passages a day.

Cronica Médica, Lima, Peru

March, 1920, **37**, No. 681

*Tuberculous Floating Kidney. E. Odriozola.—p. 85.
Simplified Ureosecretory Ambard Index. M. A. Velásquez.—p. 88.
Teaching of Anatomy in Early Peru. F. Quesada.—p. 92.
*Diagnosis of Ascariasis. E. A. Martínez.—p. 99.
Localization of Disease in the Heart. M. Arias Schreiber.—p. 102.

Tuberculous Floating Kidney.—Odriozola remarks that a floating kidney in the young should suggest possible tuberculosis. In a case reported the first symptom in the youth of 18 had been hematuria without known cause and without pain. The urine also contained much sediment. The absence of uremia confirmed further the tuberculous nature of the process. Even in advanced cases of tuberculosis the intact portions of the kidney seem to become more functionally active and thus ward off uremia.

Ascariasis.—Martínez compares four cases in adults to show the wide variety of symptoms for which the ascaris may be responsible. Its effects are felt not only in the digestive tract but in the nervous system, although there are no pathognomonic disturbances. Even eosinophilia may be absent, and the clinical pictures are of the most varied types. In these cases the diagnosis had been a neurosis, epilepsy, essential anemia or enteritis at first. No ova could be detected in the stools, but the voiding of one or more ascarides and the subsidence of the clinical picture thereafter apparently confirmed their causal connection.

Gaceta Médica de Caracas

Jan. 15, 1920, **27**, No. 1

Opening Lecture of Clinical Medicine Course. F. A. Risquez.—p. 2.

Jan. 31, 1920, **27**, No. 2

Chaulmoogra in Treatment of Tuberculosis. E. González Rincones, and others.—p. 13.

Repertorio de Medicina y Cirugía, Bogota

March, 1920, **11**, No. 6

*Acidosis in Children at Bogotá. C. Torres.—p. 283.
Mechanical Stenosis of Pylorus from Fibrous Band. A. Echeverri Marulanda.—p. 311.
Treatment of Fractures. L. Leyva Pereira.—p. 313.

Acidosis in Children.—Torres made a special study of acidosis in children when in this country, publishing his conclusions in the *Am. J. Dis. Child.* **14**:365, 1917. He here expatiates on the exceptional frequency of acidosis in children at Bogotá, especially in infants, and its exceptional gravity, which he ascribes to racial factors, the altitude and the tropical climate. The perversion of the metabolism responsible for it may be primary from insufficiency of the liver or ductless glands, entailing overproduction of acids, or secondary to some disturbance which depletes the alkali reserves or causes retention of acids normally produced, or there may be acidosis from digestive or renal disturbance. The reaction of the blood is the only reliable criterion, and he describes the simple exosmosis test for this. The urine can be made and kept alkaline much more readily when the food contains little protein and abundance of vegetables. Normal fat and protein metabolism is contingent on keeping the digestion of carbohydrates as perfect as possible. The

uncontrollable vomiting in acidosis may entail hematemesis, and the only means to ward this off is by allowing nothing, not even water, by the mouth. We must be firm to enforce this, knowing that children have got along for a whole month without water by the mouth, when fluids were supplied by the rectum or by infusion. The needed carbohydrate is best supplied in the form of a 5 per cent. solution of dextrose by the rectum, or by the mouth in small repeated doses if the stomach will bear anything. Alkalines, sodium bicarbonate or sodium citrate can be given by rectum, vein, or subcutaneously until they can be given by the mouth. He injected 100 c.c. by the vein of a mixture of 12 gm. of dextrin; 10 gm. of sodium bicarbonate; 0.10 gm. calcium chlorid and 300 c.c. of distilled water, repeating the injection once or twice a day. In four infants less than a year old he saved two by this means, injecting the mixture directly into the longitudinal sinus at the anterior fontanel. Transfusion of blood also proved successful in one infant of 14 months. Dextrin, well boiled vegetables and skimmed milk are the main reliance as the child improves.

Revista de la Asoc. Médica Argentina, Buenos Aires

December, 1919, **31**, No. 181

Pathogenesis of Diabetes. A. Pi y Suñer.—p. 517. Cont'n.
Lymphogranulomatosis. F. C. Arrillaga.—p. 535. Cont'n.
*Cancer of Male Mamma. B. N. Calcagno.—p. 558.
*Arterial Anesthesia. B. N. Calcagno.—p. 566.
Palliative Trephining. J. M. Jorge.—p. 568.
*Correction of Cicatricial Atresia of the Nose. J. M. Jorge.—p. 597.
*Conservative Treatment of Fracture. Rauenbusch.—p. 606.
Treatment of Acute Stenosis of the Larynx. G. Zorraquin.—p. 620.

Cancer of Male Mamma.—Calcagno's patient was a man of 70 with weak heart and lungs, and he removed the malignant growth under infiltration anesthesia supplemented by blocking the brachial plexus. Postoperative radium treatment for twenty-four hours induced immediate necrosis, leaving two cavities which were long in healing, as was also a focus of congestion in the lung beneath.

Arterial Anesthesia.—Calcagno was compelled to amputate after the foot of the man of 43 had been injured in a railroad accident, the symptoms by the third day indicating severe infection and incipient gas gangrene. Both general and local conditions were alarming. He applied an Esmarch bandage at the middle and upper thirds of the thigh and then punctured the femoral artery through the skin and injected 0.25 gm. of procain with epinephrin, compressing the artery above at once. The anesthesia was complete in five minutes, and the temperature dropped the same day to normal. He reiterates in conclusion that the smooth and rapid recovery in this and his other cases refutes the objection that has been made to this arterial technic that it might favor the spread of the infectious process. It is merely a form of local anesthesia, and leaves vital organs unmolested.

Atresia of the Nasal Passages.—Jorge gives an illustrated description of the technic with which he corrected atresia following smallpox. The flaps for the purpose were taken from the cheek and there has been no retraction during the more than a year since. In another case he corrected the atresia by means of a flap from the arm.

Compound Fractures.—Rauenbusch gives twenty roentgenograms of different types of serious war fractures observed during his service in military hospitals in Germany during the war, and the treatment for each type.

Semana Médica, Buenos Aires

Jan. 1, 1920, **27**, No. 1

Tuberculosis in Argentine Navy J. W. Howard.—p. 1.
Hot Beverages as Factor in Gastric Cancer. Bullrich.—p. 15.
*Evolution of Syphilography in France. E. Jeanselme.—p. 18.

Syphilography in France.—Summarized in THE JOURNAL, Oct. 25, 1919, p. 1315, when published elsewhere.

Jan. 8, 1920, **27**, No. 2

Influenza as Pathologic Entity. J. Méndez.—p. 37.
Organized Prophylaxis of Tuberculosis. W. Alvarez.—p. 48.
Vaccine Therapy of Diphtheria. M. Spangenberg.—p. 56.
Psychophysiology of the Aviator. J. A. López.—p. 58. Cont'n.
Urologic Examination. E. Castaño.—p. 65.
*Normal Serum in Treatment of Anthrax. F. v. Hutyra and R. Maninger.—p. 71.

Normal Serum in Treatment of Anthrax.—The tabulated results show that no protection was afforded rabbits inoculated with anthrax by treatment with normal beef, horse or sheep serum.

Siglo Médico, Madrid

Feb. 28, 1920, **67**, No. 3455

*Congenital Tumors of the Head. Goyanes.—p. 141.
Cerebral Syphilis and Syphilitic Psychoses. Lafora.—p. 144. Conc'n.

March 6, 1920, **67**, No. 3456

Tabes and Disturbance in Vision. E. Fuchs (Vienna).—p. 161.

March 20, 1920, **67**, No. 3458

Cesarean Section in Pneumonia During Pregnancy. J. Torre y Blanco.—p. 204.
Malacia of Medulla Oblongata. J. M. de Villaverde.—p. 206. Begun in No. 3457, p. 181.

Congenital Tumors of the Head.—In the first of the two cases illustrated by Goyanes, a large tumor at the vertex swung to and fro on a small pedicle. It had been noted from birth, and the child was a little over a year old when the meningocele was successfully removed. The second patient, a robust young man, had a congenital tumor corresponding to the superior longitudinal sinus of the dura. It fluctuated in size and was about as large as an egg when removed. On compression the tumor flattened out, confirming its hematocele nature. The profuse hemorrhage was arrested by tamponing which had to be kept up for eight days, the skin sutured over the gauze.

Deutsches Archiv für klinische Medizin, Leipzig

June 12, 1919, **129**, No. 3-4

*The Auricle Electrocardiogram. G. Ganter.—p. 137.
*Sphygmovolumetric Research in Heart Disease. A. Reinhart.—p. 167.
*War Nephritis. E. R. Toenniessen.—p. 183.
*Agglutination After Vaccination against Typhoid. Brösamlen.—p. 208.
Classification of Stages of Tuberculosis. III. K. E. Ranke.—p. 224.
*Improved Index of Kidney Functional Capacity. J. T. Peters.—p. 253.
*Pathologic Physiology of Innervation of Stomach. P. Klee.—p. 275.
*Roentgenographic Examination of the Liver. E. Rautenberg.—p. 296.

Electrocardiogram of the Auricle.—Ganter found that the electrocardiogram of the auricle behaved differently from the electrocardiogram of the ventricle under the application of heat and cooling. He accepts this as evidence that the electrocardiogram from these two regions differs in its nature. The findings throw light further on the conduction of the impulse, as he explains.

Volume of the Pulse.—Reinhart was unable to find any characteristic feature in the systolic increase in the volume of the pulse peculiar to certain types of valvular disease. With failing compensation, the improvement under the influence of certain drugs is plainly evident.

War Nephritis.—Among the practical conclusions from Toenniessen's study of 254 cases of war nephritis (mortality, 3 per cent.) is that the diuretics to be selected should be those which act on the elements in the kidneys which are least damaged by the disease. This can be determined by the water and concentration tests and by estimation of the residual nitrogen, the amount of urine, the specific gravity and the behavior of the blood pressure. He warns that theobromin-sodium salicylate sometimes materially exaggerated the aluminuria in his total of 296 nephritis cases.

Agglutination Test After Vaccination Against Typhoid.—Brösamlen reports a positive response to the Gruber-Widal agglutination test in 74 per cent. of 482 healthy persons who had been vaccinated against typhoid. The reaction was still positive in 100 per cent. in a week or two after the vaccination, in 50 per cent. by the end of a year, and in 41 per cent. by the end of the second year. When any of the vaccinated developed typhoid, the titer ran up rapidly in 53 per cent., so that a rapid rise is corroboratory evidence of the typhoid nature of a febrile disease when at least three months have passed since the vaccination.

Improved Ambard Index of Kidney Functioning.—Peters describes a method with which it is possible to estimate approximately the weight of the kidneys in the living subject. The figure thus obtained he incorporates in the Ambard formula, and expatiates on the greater precision thus realizable, especially in children, instead of applying the Ambard

formula to them as if their kidneys were as large as those of adults. In one case, for example, the Ambard formula after nephrectomy was 0.121, which represents a loss of 66.5 per cent. Including the weight of the remaining kidney, showed a loss of only 48 per cent. The remaining kidney had hypertrophied and was compensating its lost mate to a most satisfactory extent.

Innervation of the Stomach.—In this second communication, Klee reports research on decerebrated cats, severing the splanchnic or other nerves to study the pathologic physiology of the gastric innervation.

Injection of Air in Roentgen Study of the Liver.—Rautenberg gives some roentgenograms to confirm the much clearer pictures obtained in examining the liver when about 3 liters of air are allowed to enter the abdominal cavity. One of his earliest communications on the subject was summarized in The Journal, July 11, 1914, p. 204, but, as a late editorial remarks (April 10, 1920, p. 1029), the importance of this advance in roentgenographic technic was not recognized until comparatively recently.

Deutsche medizinische Wochenschrift, Berlin

Jan. 15, 1920, **46**, No. 3

Chemotherapeutic Antisepsis: II. Morgenroth and Abraham.—p. 57.
Cholesterinized Extracts in Serodiagnosis of Syphilis. H. Sachs.—p. 60.
Seroscopy and Some of its Results. H. Dold.—p. 62.
*Diagnosis of Syphilis of the Heart. H. Luce.—p. 64.
*Roentgen Therapy in Polycythemia. A. Böttner.—p. 66.
*Deficiency Disease of Bone. O. Hamel.—p. 68.
*Stenosis of Small Intestine. J. Kretschmer.—p. 69.
*Organotherapy in Atrophy of Prostate. Rohleder.—p. 70.
*Bladder Function with Myelodysplasia. Sieben.—p. 72.
*Autogenous Vaccine in Glanders in Man. Fischer.—p. 73.
Epidemic Influenza in Infants. Reiche.—p. 75.
My Recovery from Apical Tuberculosis. E. Brann.—p. 76. Comment. W. Holdheim.—p. 76.
Method of Dissolving Eosin-Methylene Blue, Hollborn,—p. 77.

Syphilis of the Heart.—This may be diagnosed, says Luce, if, all other etiologic factors having been excluded, heart symptoms suddenly or gradually appear without any apparent clinical cause, especially in young subjects with a positive blood Wassermann reaction. The localization of syphilis in the septum may sometimes be established clinically by the appearance of symptoms of valvular rupture, spontaneous or following trauma, when a gummatous nodule in the region of the septum has broken through and opened communication between the right and left heart. Under such conditions clinical physical findings will be the same as characterize other defects of the interventricular wall especially the intensity of the heart sounds and the presence of a marked thrill over the whole heart area. The prognosis for life following specific treatment of syphilis of the heart is uncertain on account of the frequency of obliterative endarteritis occurring in the centers of irritation located in the heart.

Roentgen Therapy in Polycythemia.—In polycythemia Böttner strongly recommends roentgen therapy with strict control of the blood picture, especially of the leukocyte findings. Both the short and the long bones should be rayed. As to what extent, will depend on the severity of the illness. The long bones should receive the most attention, especially those that are paining. Only irritant doses should be applied to the spleen. Raying of the spleen alone is almost useless. Raying of the pelvic bones is contraindicated on account of possible injury to the genital glands. In leukemia, an intense raying of the spleen should precede raying of the osseous system.

Deficiency Bone Disease.—Hamel summarizes five cases representing all stages of osteopathies in adolescents due to the restricted war diet. At the general hospital in Hamburg, a highly nutritious diet, combined with cod liver oil and almost complete rest of body, together with intense active hyperemia and massage locally, brought good results. At first passive hyperemia (induced congestion) had been tried in various cases four, six and ten weeks, respectively, without improvement, but the effect of active hyperemia brought about by hot air baths, partial light baths, thermopenetration, energetic massage and light active and passive gymnastic exercise was marked. In fourteen days the patients were symptom-free and in three weeks they were cured, as was shown by roentgeonographic examination.

Clinical and Roentgenologic Aspects of Stenosis of the Small Intestine.—Kretschmer states that this stenosis may present no characteristic subjective symptoms. The more or less pronounced attacks of pain are the only constant feature. The well known clinical signs of intestinal stenosis are not regularly observable. Perhaps the most regular symptom is a form of meteorism—either tympanitic or assuming the aspect of intestinal rigidity, general or local. If the clinical symptoms are insufficient for a diagnosis, the roentgen picture will decide. There is often excessive peristalsis in the stomach.

Testicle Organotherapy in Hypertrophy and Atrophy of the Prostate.—Rohleder emphasizes that not hypertrophy but atrophy of the prostate is characteristic of old age. The symptoms of atrophy of the prostate are much the same as those of hypertrophy of the prostate: residual urine, dilatation of the bladder, difficult micturition, in the first stage. Chronic (partial or total) retention of urine with constant residual urine in the bladder, decrease in the curvature of the jet, desire to urinate immediately following evacuation of the bladder, mark the second stage. Incontinence, with the gradual development of insufficiency of the urinary organs, necessity of catheterization, painful micturition and possibly cystitis are the symptoms of the third stage. Rohleder gives an account of his results from testicle organotherapy, which were favorable in the first stage, palliative in the second and noneffective in the third stage.

Disturbance of Bladder Function with Myelodysplasia.—Sieben states that in the treatment of refractory cases of enuresis nocturna one should look for abnormalities or fissures in the sacral region. Of special importance is the presence of a circular indentation in the vicinity of the upper sacral vertebrae, which on palpation feels like a fistulous tract and is to be regarded as a rudimentary fissure. With purely functional enuresis nocturna, there are no signs of bladder disturbance during the day time, that is, so long as the patient is awake; but in the presence of myelodysplasia, bladder automatism and possibly hypofunctioning of the sphincter internus are constant, which often give rise to involuntary evacuation of the bladder during the day time.

Autogenous Vaccine Treatment of Glanders in Man.—Fischer reports a case of glanders that during a period of three years had been falsely diagnosed, first as tertiary syphilis and later as carcinoma or lupus. Until vaccine treatment was instituted the lesions showed no tendency to heal. Following vaccine treatment, as soon as a certain degree of immunity could be established, rapid and steady improvement began. At the beginning of the vaccine treatment it looked as if the patient would lose soon his whole nose, but after five injections the nose, which had partly necrosed, began to heal and the healing process continued to keep pace with the further injections. Fischer regards this as strong evidence that the autogenous vaccine was responsible for the cure, and that a spontaneous cure would scarcely have been effected, although he admits that it might otherwise be urged that in a large proportion of cases of glanders (50 per cent. according to Kolle and Hetsch) a spontaneous cure can be anticipated.

Jahrbuch für Kinderheilkunde, Berlin

January, 1920, **91**, No. 1

*Influenza and Predisposition in Children. F. Jamin and E. Stettner.—p. 1.
*Metabolism in Moeller-Barlow Disease. M. Frank.—p. 21.
*Action of Magnesium Sulphate on Calcium and Magnesium Metabolism in Infants. E. Schiff.—p. 43.
*Differentiation of Nephrosis and Brain Tumor. E. Janzen.—p. 51.

Influenza and Predisposition in Children.—The term used by Jamin and Stettner is "preparedness for disease" rather than "predisposition," and they discuss in particular the age of the child as a factor in susceptibility to infections.

Moeller-Barlow Disease.—Frank gives an illustrated description of the technic used in obtaining material from infants for research on metabolism, and tabulates the find-

ings from two cases. They confirm the retention of ash substances in the early stage of the disease and the abnormally high elimination of calcium during convalescence.

Action of Magnesium Sulphate on Calcium and Magnesium Metabolism in Infants.—Schiff injected the magnesium sulphate subcutaneously in three infants, and found that the output of calcium in the urine was much increased thereafter. Most of the magnesium salt was retained for several days.

Kidney Disease and Brain Tumor.—The coincidence of the nephrosis and the brain tumor in the boy of 6 was not suspected until death over two years after the first symptoms. The symptoms from the kidneys had masked those from the brain tumor or had been accepted as of uremic origin.

Medizinische Klinik, Berlin

March 21, 1920, **16**, No. 12

Rare Complications with Typhoid. F. Marchand.—p. 303.
Predisposition to General Paresis. F. Meggendorfer.—p. 305.
Effect of Epinephrin on Blood. P. Schenk.—p. 309. Conc'n.
*Barium Shadow of Bronchial Tree in Man. O. A. Rösler.—p. 312.
War Diet in Relation to Hypothyroidism. C. Hinz.—p. 313.
Further Experiences with Silver Salvarsan. J. Sellei.—p. 315.
"Epidemic" of Plant-Vincent Angina. E. Kronenberg.—p. 317; Idem. Seligmann.—p. 317.

Roentgen Shadow of Entire Bronchial Tree in Man.—Rösler reports with roentgenogram the case of a man of 50 with carcinoma of the esophagus. The lumen was nearly completely closed, and in straining to swallow the suspension of barium for roentgenoscopy, it went astray into the air passages, and suddenly the entire bronchial tree cast a distinct and perfect shadow, the thin barium paste having rapidly spread throughout the whole. The man soon succeeded in coughing or hawking up the barium paste, stooping over, and did not seem to be any the worse for this mishap; there was no dyspnea and no cyanosis, and merely slight inconvenience. The cancer was removed sixteen days later but the patient did not long survive. The complicating paralysis of the vocal cords was evidently responsible for this alarming experience. In another case the opaque suspension found its way into part of the bronchi through a communication in the cancerous region. The cases warn against straining to swallow with cancer in the upper esophagus.

Münchener medizinische Wochenschrift, Munich

Jan. 16, 1920, **67**, No. 3

Diagnosis of Bronchopneumonia in Children. J. Duken.—p. 63.
*Serologic Test for Syphilis. H. Sachs and W. Georgi.—p. 66.
Prolapse of Umbilical Cord. E. Zweifel.—p. 67.
*Leukemia with Skin Infiltration. Saphier and Seyderhelm.—p. 69.
Salvarsan Prophylaxis in Metasyphilis. W. Mayer.—p. 71.
Weight and Height of Schoolchildren at Augsburg. Bachauer.—p. 72.
Forceps to Close Laceration in Cervix. Democh-Maurmeier.—p. 73.
Adjustable Retractor for the Mouth. Hölscher.—p. 74.
Differentiation of Bacteria by Capillary Attraction. Klinger.—p. 74.
The Fundamental Conception of Cause. B. Fischer.—p. 74.

The Serologic Test for Syphilis by the Precipitin Method and the Use of Cholesterinized Organ Extracts.—Sachs and Georgi admit that in the application of their method there are some positive results that are not specific. They do not deny that this fact militates against the value of their test as a whole, and state that they have been endeavoring for some time to so modify the conditions of the test that unspecific reactions cannot occur. They find that the simplest way to avoid such reactions is to keep the test tubes the full time (eighteen to twenty-four hours) in the incubator instead of two hours in the incubator and the balance of the time at room temperature. However, this method is slightly less sensitive than the technic first recommended.

Chronic Myeloid Leukemia with Myeloid Skin Infiltration.—Saphier and Seyderhelm describe some peculiar skin phenomena appearing eleven days before death in a case of myeloid leukemia. Fairly hard, reddish nodules about as large as a pea developed on nose, jaw and brow and a small tumor on the cheek. The latter was movable on its base and was found to be suppurating in the depths. The efflorescence finally extended and presented the appearance of a flat infiltrate, the face cyanotic.

Wiener klinische Wochenschrift, Vienna

Jan 15, 1920, **33**, No. 3

Indications for Operation on the Brain for Foreign Body. Demmer.—p. 55.
Variants of the Proteus X_{19} Strain. F. Weil.—p. 61.
Spinal Fracture without Nerve Symptoms. Rosenfeld and Zollschan.—p. 62.
Lipoma of the Large Intestine. K. Kothny.—p. 64.
Criticism of Official Malaria Circular. F. Maliwa.—p. 65.

Jan. 22, 1920, **33**, No. 4

An Austrian Historical Medical Museum. K. F. Wenckebach.—p. 75.
*Neo-Arsphenamin in Syphilis of Heart and Aorta. K. Kothny and A. Müller-Deham.—p. 77.
*Meningitis Following Bacillary Dysentery. H. Herschmann.—p. 83.
Symptomatology of Tumors of Frontal Lobe. Sztanojevits.—p. 85.
*Splenectomy in Pernicious Anemia. G. Spendler.—p. 86.

Neo-Arsphenamin in Syphilis of the Heart and the Aorta.—Müller-Deham gives several detailed case reports and emphasizes the need of beginning neo-arsphenamin therapy with very small doses (0.05 or 0.075 gm.) and rejects as dangerous beginning doses of 0.3 gm. or more, as used by some. After seven years' experience treating syphilitics of this type he recommends that as soon as the general condition of the patient permits, in all cases of syphilitic aortitis, neo-arsphenamin treatment should be begun. The general condition of the patient and the Wassermann reaction will decide whether the treatment should be repeated. He recommends along with neo-arsphenamin the usual mercury and iodin therapy.

Meningitis Following Bacillary Dysentery.—Herschmann reports a case of meningitis following bacillary dysentery in a woman of 27, in which intravenous injections of polyvalent staphylococcus vaccines (Wagner-Jauregg) were successfully employed, a therapy that had repeatedly given good results in cases of acute, purulent meningitis. Toch recently reported a case of otogenous meningitis in which this therapy effected a complete cure. Herschmann thinks that these favorable results in etiologically different types of meningitis confirm the view of Wagner-Jauregg that in staphylococcus vaccine therapy we are dealing with the formation of nonspecific antibodies. He believes that when we consider how powerless we are in the face of meningitis if compelled to rely on the usual remedies, a wide field is here opened to vaccine therapy, especially since no untoward effects from this treatment have been observed.

Splenectomy in Pernicious Anemia.—Spengler gives an account of a case of pernicious anemia in which the red cell count became permanently normal following splenectomy. Before the operation the red cell count had been 1,140,000.

Zentralblatt für Chirurgie, Leipzig

April 10, 1920, **47**, No. 15

Surgery of Blood Vessels. J. Keppich.—p. 346.
Successful Resection of Intestine in an Infant. P. G. Plenz.—p. 350.
*Sign of the Viability of the Colon. A. Hedri.—p. 352.

Reliable Sign of Viability of the Colon.—Hedri states that during operations in which it is necessary to ligate the mesentery or the mesocolon, the condition of the blood supply of the corresponding intestine can be learned by examination of the appendices epiploicae. If the stretch of intestine is suspected of not being adequately nourished, he cuts off one of these pouches of fat. If the artery in its stump bleeds, the suspected portion of the intestine may be regarded as adequately nourished and can be left without danger. If the artery in the stump does not bleed, the corresponding stretch of intestine cannot be safely left, and the resection must be more extensive.

Zentralblatt für Gynäkologie, Leipzig

April 10, 1920, **44**, No. 15

Transformation during Delivery of Brow into Occiput Presentation. P. Lindig.—p. 369.
*Carcinomatous Ovarian Dermoid. O. Frankl.—p. 373.

A Carcinomatous Ovarian Dermoid.—Since carcinomatous ovarian dermoids are comparatively rare, something over sixty being reported in the literature, as Frankl finds, he reports a case that presented marked anatomic peculiarities.

The carcinomatous growth nearly as large as a man's head had doubtless arisen from multiple dermoids, as seemed evident from the fact that three separate locks of hair were found in three separate cavities.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

July 26, 1919, 2, No. 4

Auscultation of Blood Pressure. L. Kaiser.—p. 233.
Contract Practice in Family Sickness Insurance. Vrendenberg. —p. 239.
Oil of Laurel a Dangerous Household Remedy N. A. Scheers. —p. 244.

Nov. 22, 1919, 2, No. 21

*Medical Examinations. G. van Rijnberk.—p. 1615.
*Cause of Pseudohermaphroditism. A. J. P. van den Broek.—p. 1625.
*Fracture of Neck of Femur. W. F. Wassink.—p. 1632.
*Constitutional Diseases in the Tropics. C. D. de Langen.—p. 1638.
Contraction of Muscle from Corneal Reflex. Anna Schoondermark. —p. 1642.

Medical Examinations.—Van Rijnberk remarks that the medical examination usually pays no attention whatever to the three things which yet are of the greatest importance as demonstrating fitness for the practice of medicine, namely, physical cleanliness, moral character and common sense. Some day some young professor on the examining board is going to surprise his colleagues by declaring that a certain candidate must be turned down "because no one with such dirty hands and black fingernails should be allowed to practice medicine." Dirty fingernails can do much harm in the sickroom, but no examining board now rejects a candidate on this account or for known pilfering tendencies.

Cause of Pseudohermaphroditism.—Van den Broek explains that the embryo stands under the influence of the mother's blood during its development in the uterus. It is thus all the time under the influence of the hormone from the mother's sexual glands. A male embryo develops its male sexual organs but, under the influence of the maternal ovarian hormone, female characteristics develop at the same time; the mammary glands are as well developed in newly born male infants as in female infants. After birth the maternal influence ceases. If the maternal hormone is secreted in excess it may outbalance the effect of the embryo's own male organs, and spurious hermaphroditism may result. This explains why male spurious pseudohermaphroditism is so much more common than the female.

Fracture of the Neck of the Femur.—Wassink gives illustrations of his method of immobilizing the fractured neck of the femur with a frame which holds two metal skewers driven parallel into the head and the great trochanter of the femur. A metal tube is mounted lower down on the frame, at right angles to the skewers, and this tube is held against the femur in a prolongation of the axis of the neck. Through this tube a drill is worked up into the neck. The frame ensures stability and exact localization of the parts, and healing occurs without chance for deformity, even without a plaster cast.

Constitutional Diseases in the Tropics.—De Langen writes from Java to confirm his previous statements in regard to the predominance of the sympathetic nervous system in the tropics. This modifies the chemical processes and the composition of the blood, and may explain the rarity of gastric ulcer and of some pathologic conditions common in Europe, and the extraordinary preponderance of others. Among the 422,943 patients in the hospitals of the interior of Java during the last ten years, no case of myxedema was encountered; only 6 of hypertrophied prostate; 30 of gallstones; 31 of leukemia; 10 of exophthalmic goiter, and 39 of diabetes, but there were 139 cases of appendicitis and 460 of cancer. Comparing these figures with similar material in Europe, shows the striking difference in the proportionate numbers of different diseases. He queries whether the tropical sympatheticotony may not be responsible for this.

Mededeelingen v. d. Burg. Geneesk. Dienst, Java

1919, No. 8. Dutch-English Edition

*Immunity of Common Fowls to Plague. P. C. Flu.—p. 1.
*Experiments on Immunization against Plague. P. C. Flu.—p. 18.
*The Nitric Acid Test for Indol. J. Groenewege.—p. 61.

Immunity of Common Fowls to Plague.—Flu found that hens and roosters inoculated by intramuscular injection of plague bacilli, bore them without harm, and also even direct injection into a vein of half an agar culture of plague bacilli. Guinea-pigs injected with blood from the fowls, taken during the four following days, all died, showing that the bacilli had retained their virulence. None could be found in the fowl blood by the fifth or sixth day. The plague bacilli are engulfed by the phagocytes but retain their virulence to the last moment until they are seized by the phagocytes. As the most favorable temperature for development of plague bacilli is about 25 to 32 C, the naturally high temperature of fowls, 42 C., may have a bearing on their lack of susceptibility to the infection.

Immunization Against Plague.—Flu remarks that if the garrison at Malang had been vaccinated against plague, the fact that only one case of plague occurred in the garrison during the four years when thousands of civilians were dying of plague in the town, would undoubtedly have been ascribed to the protection from vaccination. But as it happened no vaccinations had been done in the garrison; rat-proof buildings were evidently responsible for the immunity of the soldiers. He warns that not unless conditions are exactly the same in the group of the vaccinated and the group of the unvaccinated are conclusions as to the efficacy of any vaccination justified. Inoculation of animals is more instructive, and Flu has been conducting extensive experiments in this line since the untimely death of his co-worker, Borger, who succumbed to laboratory plague infection not long ago. Flu used distilled water extracts from plague bacilli, inoculating guinea-pigs, monkeys and rats, and reports that the results with this compare favorably with those from the best of other methods, but even at the best we cannot hope to immunize up to 90 per cent. against the disease, as even the natural infection does not confer immunity to this degree.

The Nitric Test for Indol.—Groenewege presents evidence that all bacteria that form indol and do not reduce nitrate further than to nitrite, induce a positive response to the Salkowski test. To avoid error he has modified the technic somewhat, as he describes.

Ugeskrift for Læger, Copenhagen

March 18, 1920, 82, No. 12

*Deforming Osteochondritis of the Spine. H. Scheuermann.—p. 385.
*Tuberculosis and the First Born. S. Hansen.—p. 393.

Kyphosis in the Young.—Scheuermann has been studying 105 cases of what he calls kyphosis dorsalis juvenilis, with or without lateral curvature. It forms a group in which the curvature in the dorsal region cannot be corrected by an effort. Fully 88 per cent. of those affected were boys, and the ages ranged from 10 to 17, with three of 18 and 19. In all the cases there was a history of hard work, either on a farm or in a smithy or the like, or factory or bicycle messenger work, or in athletics. He reproduces the roentgen findings, and concludes from his analysis of conditions that the trouble is a process in the spine analogous to that of the Calvé-Perthes deforming osteochondritis of the hip joint. Instead of the usual name for it, "muscular kyphosis" or "apprentices' kyphosis," it should be called juvenile deforming osteochondritis of the spine.

Tuberculosis and the First Born.—Hansen refers to Karl Pearson's works on the handicapping of the first born, and relates that at two sanatoriums in Denmark there was a much larger proportion of the first born among the total 5,635 inmates than would seem to be probable unless the number of births does have some influence on the resisting powers. Investigation of large series of schoolchildren, however, failed to confirm that positive reactions to the skin tuberculin test were proportionately more frequent among the first born than among others, and no physical differences could be detected between them. He accepts the possibility, however, of endogenous factors determining the flaring up later of latent tuberculosis. One such factor may be a congenital inferiority of the lung tissue, restricted to the first born, and traceable to undernourishment. It is possible also that this inferiority may be heritable.

JOURNALS ABSTRACTED IN THE CURRENT MEDICAL LITERATURE DEPARTMENT, JANUARY-JUNE, 1920

The following journals have been abstracted in the Current Literature Department of THE JOURNAL during the past six months. Any of the foreign journals will be lent by THE JOURNAL to subscribers in the United States and to Fellows of the American Medical Association for a period not exceeding three days. Only one journal may be borrowed at a time. Requests for periodicals should be addressed to the Library of the American Medical Association and six cents in stamps should be enclosed. This covers the average expense of mailing a journal. Domestic journals can be obtained by sending the approximate amount direct to the respective publishers. Thus most of the journals indexed are accessible to the general practitioner, no matter where he may be located.

Acta Medica Scandinavica. Irregular. 20 kronor. Stockholm.
Acta Scholae medicinalis universitatis imperialis in Kioto. Irregular. 1.50 yen. Kioto.
American Journal of Anatomy. Bi-m. $7.50. 36th St. and Woodland Ave., Philadelphia.
American Journal of Diseases of Children. M. $4. American Medical Association, 535 N. Dearborn St., Chicago.
American Journal of Insanity. Q. $5. Johns Hopkins Press, Baltimore.
American Journal of the Medical Sciences. M. $5. Lea & Febiger, 706 Sansom St., Philadelphia.
American Journal of Ophthalmology. M. $10. 7 W. Madison St., Chicago.
American Journal of Physiology. M. $5. Johns Hopkins Medical School, Baltimore.
American Journal of Public Health. M. $3. 126 Massachusetts Ave., Boston.
American Journal of Roentgenology. M. $5. 69 E. 59th St., New York.
American Journal of Syphilis. Q. $6. C. V. Mosby Co., St. Louis.
American Review of Tuberculosis. M. $3. 2419 Greenmount Ave., Baltimore.
Anales de la Facultad de medicina, Montevideo. Bi-m. $2. Montevideo.
Anales de la Facultad de medicina, Universidad de Lima. Bi-m. 6 soles. Lima, Peru.
Annales de gynécologie et d'obstétrique. M. 22 francs. Paris.
Annales de médecine. M. 23 francs. Paris.
Annali d'igiene. M. 20 lire. Rome.
Annals of Medical History. Q. $6. Paul B. Hoeber, 67 E. 59th St., New York.
Annals of Otology, Rhinology and Laryngology. Q. $6. Mermod-Jaccard Bldg., St. Louis.
Annals of Surgery. M. $6. J. B. Lippincott Co., 227 S. 6th St., Philadelphia.
Annals of Tropical Medicine and Parasitology. Q. $5. Liverpool.
Archiv für Verdauungskrankheiten. Bi-m. 36 marks. Berlin.
Archives of Dermatology and Syphilology. M. $5. American Medical Association, 535 N. Dearborn St., Chicago.
Archives of Diagnosis. Q. $2. 141 W. 36th St., New York.
Archives of Internal Medicine. M. $5. American Medical Association, 535 N. Dearborn St., Chicago.
Archives des maladies de l'appareil digestif et de la nutrition. M. 14 francs. Paris.
Archives des maladies du cœur, des vaisseaux et du sang. M. 22 francs. Paris.
Archives médicales belges. M. 18 francs. Paris.
Archives de médecine des enfants. M. 18 francs. Paris.
Archives mensuelles d'obstétrique et de gynécologie. M. 25 francs. Paris.
Archives of Neurology and Psychiatry. M. $6. American Medical Association, 535 N. Dearborn St., Chicago.
Archives of Ophthalmology. Bi-m. $5. G. P. Putnam's Sons, 2 W. 45th St., New York.
Archives of Radiology and Electrotherapy. M. $5. London.
Archivos españoles de pediatria. M. 18 pesetas. Madrid.
Archivos Latino-Americanos de pediatria. Bi-m. $3. Buenos Aires.
Arquivos do Instituto bacteriológico Camara Pestana. Price varies. Lisbon.
Berliner klinische Wochenschrift. W. 40 marks. Berlin.
Boston Medical and Surgical Journal. W. $5. 126 Massachusetts Ave., Boston.
Brain. A Journal of Neurology. Irregular. $4. London.
Brazil-medico. W. 20 milreis. Rio de Janeiro.
Bristol Medico-Chirurgical Journal. Irregular. 5 shillings.
British Journal of Children's Diseases. Q. $5. London.
British Journal of Surgery. Q. $6.50. William Wood & Company, 51 Fifth Ave., New York.
British Journal of Tuberculosis. Q. $1.25. G. E. Stechert & Co., 151 W. 25th St., New York.
British Medical Journal. W. 8d per issue. London.
Bulletin de l'Académie de médecine. W. 23 francs. Paris.
Bulletin médical. Semi-w. 14 francs. Paris.
Bulletin of the Johns Hopkins Hospital. M. $3. Baltimore.
Bulletin of the Lying-In Hospital of the City of New York. New York.
Bulletin of the Medical and Chirurgical Faculty of Maryland. M. (except June, July, August and September) 25 cents. 1211 Cathedral St., Baltimore.
Bulletin of the Naval Medical Association of Japan. Irregular. Tokio.
Bulletin of the Porto Rico Medical Association. Q. San Juan, Porto Rico.
Bulletins et mémoires de la Société médicale des Hôpitaux de Paris. W. 32 francs. Paris.
California State Journal of Medicine. M. $1. Butler Bldg., San Francisco.
Canadian Journal of Mental Hygiene. Q. $2. 121 Bishop St., Montreal.
Canadian Medical Association Journal. M. $5. 386 Victoria St., Toronto.
China Medical Journal. Bi-m. $5. Shanghai.
Chirurgia degli organi di movimento. Bi-m. 35 lire. Bologna.
Colorado Medicine. M. $2. Metropolitan Bldg., Denver.
Correspondenz-Blatt für schweizer Aerzte. See Schweizerische medizinische Wochenschrift.
Crónica médica. Semi-m. 15 francs. Lima, Peru.
Delaware State Medical Journal. M. $1. Wilmington.
Deutsche medizinische Wochenschrift. W. $5.04. Leipzig.
Deutsche Zeitschrift für Chirurgie. Irregular. 28 marks. Leipzig.
Deutsches Archiv für klinische Medizin. M. 24 marks. Leipzig.
Dublin Journal of Medical Science. M. $5.
Edinburgh Medical Journal. M. $6.
Endocrinology: Bulletin of the Association for the Study of Internal Secretions. Q. $5. 1100-1103 Title Insurance Bldg., Los Angeles.
Finska Läkaresällskapets Handlingar. Bi-m. Helsingsfors.
Gaceta médica de Caracas. Semi-m. 16 bolivares. Caracas, Venezuela.
Gaceta médica de México. Irregular. $6. Mexico City.
Gann. Irregular. Tokio.
Glasgow Medical Journal. M. $5.
Grèce médicale. Semi-m. 12 francs. Athens.
Hospitalstidende. W. 27.5 kronen. Copenhagen.
Hygiea. M. $5. Stockholm.
Illinois Medical Journal. M. $3. 155 N. Ridgeland Ave., Oak Park.
Indian Journal of Medical Research. Q. 10s. Calcutta.
Indian Medical Gazette. M. $5. Calcutta.
Jahrbuch für Kinderheilkunde und physische Erziehung. Irregular. 32 marks. Berlin.
Japan Medical World (Nippon No Ikai). W. Tokio.
Journal of Abnormal Psychology. Bi-m. $5. 194 Boyleston St., Boston.
Journal of the American Medical Association. W. $5. 535 N. Dearborn St., Chicago.
Journal of the Arkansas Medical Society. M. $2 Boyle Bldg., Little Rock, Ark.
Journal of Bacteriology. Bi-m. $5. Williams & Wilkins Company, Baltimore.
Journal of Biological Chemistry. M. $3. 2419 Greenmount Ave., Baltimore.
Journal of Cancer Research. Q. $5. Williams & Wilkins Company, Baltimore.
Journal de chirurgie. M. 44 francs. Paris.
Journal of Experimental Medicine. M. $5. Rockefeller Institute for Medical Research, 66th St. and Avenue A, New York.
Journal of the Florida Medical Association. M. $1.50. P. O. Box 136, Jacksonville, Fla.
Journal of General Physiology. Bi-m. $5. Rockefeller Institute for Medical Research, 66th St., and Avenue A, New York.
Journal of Immunology. Bi-m. $5. Williams & Wilkins Company, Baltimore.

W.—Weekly; M.—Monthly; Semi-m.—Semi-monthly; Bi-m.—Bi-monthly; Q.—Quarterly.

Journal of the Indiana State Medical Association. M. $2. 406 W. Berry St., Fort Wayne, Ind.
Journal of Industrial Hygiene and Abstract of the Literature. M. $6. Harvard University Press, Cambridge, Mass.
Journal of Infectious Diseases. M. $5. 629 S. Wood St., Chicago.
Journal of Iowa State Medical Society. M. $2. Des Moines.
Journal of Kansas Medical Society. M. $2. 303 Commerce Bldg., Topeka, Kan.
Journal of Laboratory and Clinical Medicine. M. $5. C. V. Mosby Company, St. Louis.
Journal of Laryngology, Rhinology and Otology. M. $5. London.
Journal of Maine Medical Association. M. $2. Portland, Maine.
Journal of Medical Association of Georgia. M. $1. Lamar Bldg., Augusta, Ga.
Journal of Medical Research. Bi-m. $4. 240 Longwood Ave., Boston.
Journal of Medical Society of New Jersey. M. $2. 12 Cone St., Orange, N. J.
Journal de médecine de Bordeaux. M. 15 francs.
Journal of Mental Science. Q. 20 shillings. London.
Journal of Michigan State Medical Society. M. $3.50. Powers' Theatre Bldg., Grand Rapids, Mich.
Journal of Missouri State Medical Association. M. $2. 3517 Pine St., St. Louis.
Journal of Nervous and Mental Diseases. M. $8. 64 W. 56th St., New York.
Journal of Oklahoma State Medical Association. M. $2. Muskogee.
Journal of Orthopaedic Surgery. M. $4. Lincoln, Nebraska.
Journal of Parasitology. Q. $2. Urbana, Ill.
Journal of Pathology and Bacteriology. Irregular. £1.1s. Cambridge, England.
Journal of Pharmacology and Experimental Therapeutics. M. $6. 2419 Greenmount Ave., Baltimore.
Journal de radiologie et d'électrologie. M. 28 francs. Paris.
Journal of South Carolina Medical Association. M. $2. Greenville, S. C.
Journal of State Medicine. M. 2 shillings. London.
Journal of Tennessee State Medical Association. M. $2. 601 Cedar St., Nashville, Tenn.
Journal of Tropical Medicine and Hygiene. Semi-m. $5. London.
Journal d'urologie médicale et chirurgicale. M. 42 francs. Paris.
Journal of Urology. Bi-m. $5. Williams & Wilkins Co., Baltimore.
Kentucky Medical Journal. M. $2. State and Twelfth Sts., Bowling Green, Ky.
Kitasato Archives of Experimental Medicine. Twice a year. 60 cents. Tokio.
Lancet. W. 10d per issue. London.
Laryngoscope. M. $6. 3858 Westminster Place, St. Louis
Lyon chirurgical. M. 25 francs.
Lyon médical. M. 15 francs.
Médecine. M. 18 francs. Paris.
Mededeelingen van den Burgerlijken Geneeskundigen Dienst in Nederlandsch-Indië. Irregular. Price varies. Batavia, Java.
Medical Journal of Australia. W. 6 d. Sydney.
Medical Journal of the Siamese Red Cross. 5 ticals. Bangkok.
Medical Journal of South Africa. M. £1.1. Johannesburg.
Medical Record. W. $5. W. Wood & Co., 51 Fifth Ave., New York.
Medizinische Klinik. W. 60 marks. Berlin.
Mental Hygiene. Q. $2. National Committee for Mental Hygiene, 50 Union Square, New York City.
Military Surgeon. M. $3.50. Army Medical Museum, Washington, D. C.
Minnesota Medicine. M. $2. Lowry Bldg., St. Paul.
Mitteilungen aus der medizinischen Fakultät der Kaiserlichen Universität Kyushu. Irregular. Price varies. Fukuoka.
Mitteilungen aus der medizinischen Fakultät der Kaiserlichen Universität zu Tokyo. Irregular. Price varies. Tokio.
Modern Hospital. M. $3. 22 E. Ontario St., Chicago.
Modern Medicine. M. $3. 22 E. Ontario St., Chicago.
Monatschrift für Kinderheilkunde. M. Berlin.
Münchener medizinische Wochenschrift. W. $6. Munich.
National Medical Journal of China. $2. Shanghai.
Nebraska State Medical Journal. M. $2.00. 468 Brandeis Bldg., Omaha.
Nederlandsch Tijdschrift voor Geneeskunde. W. 10.50 florins. Amsterdam.
Neurological Bulletin. M. $5. Paul B. Hoeber, 69 E. 59th St., New York.
New Orleans Medical and Surgical Journal. M. $2. 1551 Canal St., New Orleans.
New York Medical Journal. W. $6. A. R. Elliott Publishing Co., 66 W. Broadway, New York.
New York State Journal of Medicine. M. $2. 17 W. 43d St., New York.
Norsk Magazin for Lægevidenskaben. M. $5. Christiania.
Northwest Medicine. M. $2. Cobb Bldg., Seattle, Wash.
Nourrisson. Bi-m. 14 francs. Paris.
Ohio State Medical Journal. M. $2. Physician's Bldg., Columbus.
Paris médical. W. 16 francs.
Pediatria. M. 20 lire. Naples.
Pennsylvania Medical Journal. M. $2. Athens, Pa.
Philippine Journal of Science. Monthly. $5. Manila, P. I.
Policlinico. W. 32 lire. Rome.
Practitioner. M. $6.50. London.
Presse médicale. Semi-w. 15 francs. Paris.
Progrès médical. W. 12 francs. Paris.
Psychobiology. Bi-m. $5. Williams & Wilkins Co., Baltimore.
Public Health Journal. M. $2. York Publishing Co., 169 Bay St., Toronto.
Quarterly Journal of Medicine. $6.50. London.
Repertorio de medicina y cirugía. M. $3. Bogotá, Colombia.
Revista clinica. Q. $1. Medellin.
Revista de la Asociación médica argentina. M. Buenos Aires.
Revista de medicina y cirugia de la Habana. Semi-m. $4.50. Havana.
Revista de la Universidad de Buenos Aires. M. $5. Buenos Aires.
Revista del Instituto bacteriológico. Q. Buenos Aires.
Revista española de medicina y cirugía. M. 24 pesetas. Barcelona.
Revista médica. M. $5. Puebla.
Revista médica del Uruguay. M. 30 francs. Montevideo.
Revue de chirurgie. M. 33 francs. Paris.
Revue de médecine. M. 23 francs. Paris.
Revue médicale de la Suisse romande. M. 14 francs. Geneva.
Rhode Island Medical Journal. M. $2. 219 Waterman Street, Providence.
Riforma medica. W. 35.50 lire. Naples.
Revue mensuelle de gynécologie et d'obstétrique. M. 15 francs. Paris.
Revue neurologique. M. 45 francs. Paris.
Rivista critica di clinica medica. W. 16 lire. Florence.
Rivista di clinica pediatrica. M. 18 lire. Florence.
Schweizer Archiv für Neurologie und Psychiatrie. Irregular. Price varies. Zurich.
Schweizerische medizinische Wochenschrift. W. 17.20 francs. Basel.
Sei-I-Kwai Medical Journal. M. $2. Tokio.
Semana médica. W. $5. Buenos Aires.
Siglo médico. W. 20 pesetas. Madrid.
South African Medical Record. Semi-m. 31 shillings 6 pence. P. O. Box 643, Capetown.
Southern Medical Journal. M. $3. 807 Empire Bldg., Birmingham, Ala.
Southwest Journal of Medicine and Surgery. M. $1. El Reno, Okla.
Southwestern Medicine. M. $2. El Paso, Texas.
Surgery, Gynecology and Obstetrics with International Abstract of Surgery. M. $10. Surgical Publishing Co., 30 N. Michigan Ave., Chicago.
Svenska Läkaresällskapets Handlingar. Q. 7.50 kroner. Stockholm.
Texas State Journal of Medicine. M. $2.50. Western National Bank Bldg., Fort Worth, Tex.
Therapeutische Halbmonatsbefte. Semi-m. Berlin.
Tubercle. M. 25 shillings. London.
Ugeskrift for Læger. W. 20 kroner. Copenhagen.
United States Naval Medical Bulletin. Q. $1. Washington, D. C.
Upsala Läkareförenings Förhandlingar. Irregular. 10 kroner.
Virginia Medical Monthly. M. $2. Richmond.
War Medicine. M. Published by the American Red Cross Society in France. Paris.
Washington Medical Annals. Bi-m. $1. 2114 Eighteenth Street, N.W., Washington, D. C.
West Virginia Medical Journal. M. $1.50. Huntington, W. Va.
Wiener Archiv für innere Medizin. Irregular. Vienna.
Wiener klinische Wochenschrift. W. 40 marks, with foreign postage. Vienna.
Wisconsin Medical Journal. M. $2. Goldsmith Bldg., Milwaukee.
Zeitschrift für Urologie. M. 30 marks. Leipzig.
Zentralblatt für Chirurgie. W. 60 marks per year. Leipzig.
Zentralblatt für Gynäkologie. W. 60 marks per year. Leipzig.
Zentralblatt für innere Medizin. W. 60 marks per year. Leipzig.

W.—Weekly; M.—Monthly; Semi-m.—Semi-monthly; Bi-m.—Bi-monthly; Q.—Quarterly.

SUBJECT INDEX

This is an index to all the reading matter in THE JOURNAL. In the Current Medical Literature Department only the articles which have been abstracted are indexed.

The letters used to explain in which department the matter indexed appears are as follows: "E," Editorial; "C," Correspondence; "T," Therapeutics; "Ml," Medicolegal; "P," Propaganda for Reform; "ME," Medical Economics; "ab," abstract; the star (*) indicates an "Original Article" in THE JOURNAL.

This is a subject index and one should, therefore, look for the subject word, with the following exceptions: "Book Notices," "Deaths" and "Society Proceedings" are indexed under these titles at the end of the letters "B," "D" and "S." Matter pertaining to the Association is indexed under "American Medical Association." The name of the author follows the subject entry in brackets.

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SOCIETIES

A.—Association
Acad.—Academy
Am.—American
Coll.—College
Conf.—Conference
Cong.—Congress
Conv.—Convention
Dist.—District
Hosp.—Hospital
Internat.—International
M.—Medical or Medicine
Nat.—National
Phar.—Pharmaceutical
Phys.—Physicians
Ry.—Railway
S.—Society
Surg.—Surgical or Surgeon, Surgery

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